



HANSLAB (PTY) Ltd  
ENVIRONMENTAL AND GROUND  
ENGINEERING SPECIALIST

# SITE INFORMATION REPORT



PROJECT NAME: EMADONGENI MUD TRACK UPGRADE

AREA/MUNICIPALITY: ALFRED DUMA MUNICIPALITY

CLIENT: KZN DOT LADY SMITH

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## PROJECT TITLE

Proposed upgrade of the existing Emadongeni mud track to a type 7A gravel road with associated structures along the road.

## PROJECT DESCRIPTION

The KZN Department of Transport (DOT) proposes to upgrade the existing Emadongeni mud track to a type 7A gravel road. The upgraded local road will be approximately 3.1km in length, 6 m width and 20 m road reserve which conforms to DOT standards for a local road upgrades. The upgrade will take place in the Kleinfontein area in Ladysmith under the Alfred Duma Local Municipality administered by the UThukela District Municipality. The upgrade of the mud track will allow for improved access to dwellings, and minimize erosion along the track as a result of storm water run-off. The mud track transverses over a watercourse, which has an existing pipe culvert structure in place. However, this structure is severely blocked and requires an upgrade for the ease of water flow. Therefore, the applicant proposes to construct a causeway structure (portal culvert structure) at the crossing point to allow for the natural flow of water within the channel.

## LISTED ACTIVITIES TRIGGERED:

- **Listing Notice 1 of 2014, Listed Activity 12**

*The development of -*

*(iii) bridges exceeding 100 square metres in size;*

*(xii) infrastructure or structures with a physical footprint of 100 square metres or more.*

*where such development occurs-*

*(a) within a watercourse.*

### **Description of activity that triggers Activity 12**

The proposed road upgrade traverses a number of watercourses/drainage lines. Therefore, the applicant proposes to construct a portal culvert causeway structure at the major water crossing (as indicated on Map 1 below). Based on DOT standard details for a portal culvert structure, the approximate width is 8.45 m and length is 7.4 m which varies according to the stream width. The physical footprint of the activity is greater than 100 m<sup>2</sup> and therefore triggers activity 12 of listing notice 1 as mentioned above.

The proposed construction of the portal culvert structure (causeway) will also trigger activity 19 of listing notice 1 of GNR 983. Approx. 10-15 cubic meters of soil will be removed from the major water crossing point.

- **Listing Notice 1 of 2014, Listed Activity 19**

*The infilling or depositing of any material of more than 5 cubic metres into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock of more than 5 cubic metres from -*

- (i) a watercourse;*

### **Description of activity that triggers Activity 19**

The proposed road extension traverses' drainage lines where the Department of Transport (DOT) proposes to **construct pipe culvert structures**. The proposed activity will require the temporary removal of soil from the drainage line for the proposed construction of pipe culvert structures. Approximately 7 m<sup>3</sup> of soil will be removed from the drainage lines to allow for the construction. The removed soil & material from the drainage lines will be re-used for stabilization of the banks.



MAP 1 SHOWING: PROPOSED ROUTE - EMADONGENI MUD TRACK

## FEASIBLE AND REASONABLE ALTERNATIVES

### SITE ALTERNATIVE 1 – Preferred Option

#### Portal Culvert Causeway Structure

The proposed upgrade of the Emadongeni mud track traverses a watercourse which necessitates the need for an appropriate structure to be constructed at the existing crossing point (Refer to Map 1 above). An existing structure is present at this water crossing point, namely a 300mm pipe culvert structure. However, the structure is continually blocked creating a pooling effect behind the structure. Therefore, the applicant proposes to construct a causeway structure at this specific water crossing point. For the purposes of this Basic Assessment Report the design of the causeway structure will be based on DOT standard causeway details.

Based on DOT standard details for a causeway, the approximate width is 8.45 m and length is 7.4 m which varies according to the stream width.

#### Location of the Portal Culvert Causeway Structure:

<u>Lat. (DDMMSS)</u>	<u>Long. (DDMMSS)</u>
28°20'0.32"S	29°46'18.13"E



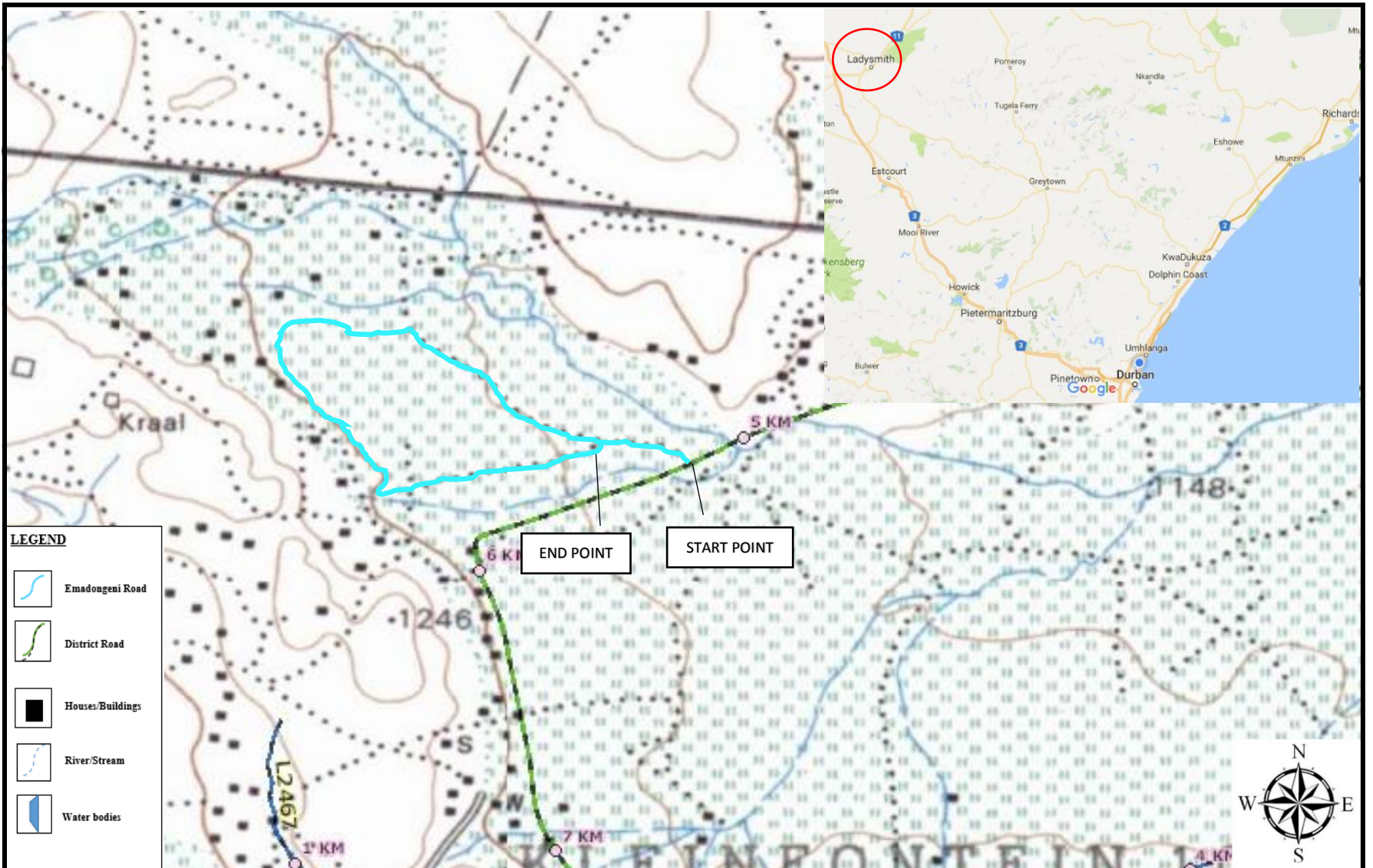
**Figure 1 showing: Proposed Portal Causeway Structure**



**Figure 2 Showing: Existing Pipe Culverts**



**Figure 3 Showing: The back log of water at the existing pipe culvert structure**



MAP 2: LOCALITY MAP



## Technology Alternatives

### **Portal Culvert Causeway Structure**

Based on DOT standard details for a portal culvert causeway the approximate width is 8.45 m and length is 7.4 m which varies according to the stream width. The physical footprint of the structure is > 100 m<sup>2</sup>. The causeway structure will be supported on pad foundation founded on bedrock.

### **No-go Alternative**

No gravel road and pipe culvert structures will be constructed, therefore there will be no negative impacts associated with construction activity. However, there will also be no positive impacts associated with the road construction such as the improved connectivity and access for local residents. Residents will continue walking long distance to get to public transport facilities and delays in emergency service response time. Erosion along the mud track is evident in areas as a direct result of poor drainage. The proposed route is transformed by existing footpaths and highly degraded, most natural vegetation has been invaded by alien vegetation along the track.

## PHYSICAL SIZE OF THE ACTIVITY

**Alternative:**

**Size of the activity –  
Causeway Structure**

Alternative A1<sup>1</sup> (preferred activity alternative)

>100 m <sup>2</sup>
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Alternative A2 (if any)

N/A m <sup>2</sup>
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Alternative A3 (if any)

N/A m <sup>2</sup>
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## ACTIVITY MOTIVATION

<b>1. Is the activity permitted in terms of the property's existing land use rights?</b>	<b>YES</b> X	NO	Please explain
<p>The proposed road is located off D797, providing access to the local communities, and school children. The structures will be constructed to ensure safe access to pedestrians, motorists and school kids. This activity is in line with the property's existing land use rights.</p>			
<b>2. Will the activity be in line with the following?</b>			
<b>(a) Provincial Spatial Development Framework (PSDF)</b>	<b>YES</b> X	NO	Please explain
<p>According to the SDF (2015), secondary and tertiary roads exist in the area. The general qualities of these roads are of a good standard good apart from the access routes which are located in the rural areas. The Ladysmith region is predominately rural and access to basic developmental areas is limited. Development in this area will provide opportunities and create new development .Therefore the activity is in line with the PSDF.</p>			
<b>(b) Urban edge / Edge of Built environment for the area</b>	<b>YES</b> X	NO	Please explain
<p>The crossing points are not in a built urban environment thus urban edge policies are not affected.</p>			

<b>(c) Integrated Development Plan (IDP) and Spatial Development Framework (SDF) of the Local Municipality (e.g. would the approval of this application compromise the integrity of the existing approved and credible municipal IDP and SDF?).</b>	YES	NO X	Please explain
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The Ladysmith Municipality IDP was examined in detail and the requirement of access routes where emphasised in the report. According to the IDP (2016/2017), tertiary development corridors enable access between settlements and serve as strategic areas for the location of public facilities. They also form the basis for the identification of settlement webs. Therefore the activity is in line with both the IDP and SDF of the local municipality. The IDP has prioritized road development and transport nodes.

<b>(d) Approved Structure Plan of the Municipality</b>	YES X	NO	Please explain
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The activity is in line with the approved structure plan of the municipality, as identified in the IDP.

<b>(e) An Environmental Management Framework (EMF) adopted by the Department (e.g. Would the approval of this application compromise the integrity of the existing environmental management priorities for the area and if so, can it be justified in terms of sustainability considerations?)</b>	YES	NO X	Please explain
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According to the UThukela District Municipality EMF (2015), mitigation and environmental practices are aimed at safeguarding the environment as well as its features. Therefore no existing environmental management priorities for the area will be compromised, as the activity will contribute to the EMF.

<b>(f) Any other Plans (e.g. Guide Plan)</b>	YES	<b>NO</b> X	Please explain
N/A			
<b>3. Is the land use (associated with the activity being applied for) considered within the timeframe intended by the existing approved SDF agreed to by the relevant environmental authority (i.e. is the proposed development in line with the projects and programmes identified as priorities within the credible IDP)?</b>	<b>YES</b> X	NO	Please explain
According to the Emnambithi/Ladysmith municipality IDP (2016/2017), the proposed development is in line with the municipal five year service delivery plan. The proposed activity contributes to improved access routes within the local municipality, and therefore is in line with the IDP and SDF.			
<b>4. Does the community/area need the activity and the associated land use concerned (is it a societal priority)? (This refers to the strategic as well as local level (e.g. development is a national priority, but within a specific local context it could be inappropriate.)</b>	<b>YES</b> X	NO	Please explain
The community will benefit directly from the proposed gravel road, as there is no formal crossing structure along the watercourse area. The construction process will bring about increased employment opportunities for the local community, as the contractor will employ local labour and provide them with the relevant skills training. The proposed development is therefore a high societal priority, as this will be socio-economically uplifting for the community.			

<b>5. Are the necessary services with adequate capacity currently available (at the time of application), or must additional capacity be created to cater for the development?</b>	<input checked="" type="radio"/> YES X	<input type="radio"/> NO	Please explain
All necessary services are available for the activity to commence.			

<b>6. Is this development provided for in the infrastructure planning of the municipality, and if not what will the implication be on the infrastructure planning of the municipality (priority and placement of services and opportunity costs)?</b>	<input type="radio"/> YES	<input checked="" type="radio"/> NO X	Please explain
No infrastructure planning is envisaged by the municipality with regards to this project. The project costs are borne by the Department of Transport.			

<b>7. Is this project part of a national programme to address an issue of national concern or importance?</b>	<input type="radio"/> YES	<input checked="" type="radio"/> NO X	Please explain
The proposed activity is site specific and is at a localized level.			

<b>8. Do location factors favour this land use (associated with the activity applied for) at this place? (This relates to the contextualisation of the proposed land use on this site within its broader context.)</b>	<input checked="" type="radio"/> YES X	<input type="radio"/> NO	Please explain
The site location is mostly degraded, as a result of poor drainage of the existing track. Natural vegetation is also disturbed. Therefore, the location factors favour this activity, as the site will be rehabilitated once construction has concluded.			

<b>9. Is the development the best practicable environmental option for this land/site?</b>	<b>YES</b> X	<b>NO</b>	Please explain
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The proposed site has been assessed, and a favourable position for the road construction has been identified with all stakeholders. This will significantly decrease the overall costs of proposing to construct an entirely new gravel road. The upgrade of the existing mud track will minimize the negative environmental impacts in the surrounding area.

<b>10. Will the benefits of the proposed land use/development outweigh the negative impacts of it?</b>	<b>YES</b> X	<b>NO</b>	Please explain
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The proposed construction of the road will positively impact the local community by providing access to basic facilities and services, minimizing the negative impact of flooding, and reducing soil degradation.

<b>11. Will the proposed land use/development set a precedent for similar activities in the area (local municipality)?</b>	YES	<b>NO</b> X	Please explain
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No precedent will be set in the area; however the upgrade of the road from a track to a gravel road will improve accessibility for community members.

<b>12. Will any person's rights be negatively affected by the proposed activity/ies?</b>	YES	<b>NO</b> X	Please explain
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No dwellings will be relocated as the existing track does not transverse any properties or infringe on the rights of the residents. In this regard, no person will have their rights negatively affected in any way from the construction.

<b>13. Will the proposed activity/ies compromise the "urban edge" as defined by the local municipality?</b>	YES	<b>NO</b> X	Please explain
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The project is located in a rural area, and therefore the urban edge is not affected.

<b>14. Will the proposed activity/ies contribute to any of the 17 Strategic Integrated Projects (SIPS)?</b>	YES	<b>NO</b> X	Please explain
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This is a localized site specific activity, and will benefit the local community members.

<b>15. What will the benefits be to society in general and to the local communities?</b>	Please explain
<p>The community is in need of safe and secure means of crossing the road, for both vehicles and pedestrians. The proposed activity to upgrade the existing mud track and construct an adequate upgrade for the existing pipe culvert that is currently blocked, lays the foundation for further development opportunities, thus leading to the socio-economic development of the community. While the local road may not have benefits as far reaching as to society in general, it is paving the way for improvement of disadvantaged societies. The majority of the population has no formal education and is illiterate. Most people earn a living from governmental social grants, pensions and others from informal trading. Development in this area is therefore of high priority, and the proposed construction activities can be considered the first step towards uplifting of community.</p>	
<b>16. Any other need and desirability considerations related to the proposed activity?</b>	Please explain
<p>According to the IDP (2016/2017) there is a critical need to develop access roads within the local municipality. The area is primarily rural and developmental efforts are limited with regards to funding. The Department of Transport has funded the project and similar projects within the District.</p>	
<b>17. How does the project fit into the National Development Plan for 2030?</b>	Please explain
<p>The National Development Plan for 2030 sets out strategic goals in terms of access to basic services and amenities. Although this project is site specific in nature, it contributes to the cumulative effect of developmental nodes of rural communities to the urban environments.</p>	



**18. Please describe how the general objectives of Integrated Environmental Management as set out in section 23 of NEMA have been taken into account.**

According to section 23 of NEMA, appropriate Environmental Management Tools have been put in place in order to ensure the Integrated Environmental Management of activities. The EAP which has been appointed by the client (DOT) has assessed negative as well as positive impacts of the proposed development. Mitigation measures have been outlined in order to reduce negative impacts. The EAP has identified socio-economic conditions, cultural heritage as well as the risks and consequences of alternatives. The Draft BAR will be circulated into the public domain as part of the public participation process.

**19. Please describe how the principles of environmental management as set out in section 2 of NEMA have been taken into account.**

All principles highlighted in section 2 of NEMA have been taken into consideration. The construction of the proposed portal causeway structure will benefit the community. Access to basic amenities would be made available to all. Section 2(4) highlights factors in order to achieve sustainable development. The BAR has taken into account section 2 of NEMA, by assessing the predicted and actual impacts of the proposed activity as a way to assist the Competent Authority in adequately making an informed decision.

## **APPLICABLE LEGISLATION, POLICIES AND/OR GUIDELINES**

- **NEMA and the Environmental Impact Assessment Regulations, 2014**

The EIA Regulations 2014, promulgated under NEMA (1998), focus primarily on creating a framework for co-operative environmental governance. NEMA provides for co-operative environmental governance by establishing principles for decision-making on matters affecting the environment, institutions that will promote co-operative governance and procedures for coordinating environmental functions exercised by State Departments and to provide for matters connected therewith.

In terms of the EIA Regulations of 2014 and activities listed in GN No. 983 and GN No. 985 (requiring a Basic Assessment (BA) process), there are listed activities that are triggered. The listed activities are deemed to include activities that could potentially have an impact on the social and biophysical state of an area and as such, the applicant is required to obtain an Environmental Authorization (EA) by way of a BA process.

- **National Heritage Resources Act, 1999 (Act No. 25 of 1999)**

This Act legislates the necessity for cultural and heritage impact assessment in areas earmarked for development, which exceed 0.5 hectares (ha) and where linear developments (including roads) exceed 300 meters in length. The Act makes provision for the potential destruction to existing sites, pending the archaeologist's recommendations through permitting procedures. Permits are administered by Amafa KwaZulu-Natal, the Provincial Heritage Resources Authority.

- **Constitution of Republic of South Africa (Act No 108 of 1996)**

The project falls within the boundaries of South Africa. The Constitution of the Republic of South Africa has major implications for environmental management. The main effects are the protection of environmental and property rights, the change brought about by the sections dealing with administrative law, such as access to information, just administrative action and broadening of the locus standing of litigants. These aspects provide general and overarching support and are of major assistance in the effective implementation of the environmental management principles and structures of the NEMA. Section 24 in the Bill of Rights of the Constitution specifically states that:

Everyone has the right –

- To an environment that is not harmful to their health or well-being; and
- To have the environment protected, for the benefit of present and future generations, through reasonable legislative and other measures that -
- Prevent pollution and ecological degradation;
- Promote conservation; and
- Secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development.

- **National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004)**

The purpose of the Biodiversity Act is to provide for the management and conservation of South Africa's biodiversity within the framework of the NEMA and the protection of species and ecosystems that warrant national protection. As part of its implementation strategy, the National Spatial Biodiversity Assessment was developed. This Act is applicable to this application for environmental authorization as it requires the project applicant to consider the protection and management of local biodiversity.

- **National Water Act, 1998 (Act No. 36 of 1998)**

The National Water Act, 1998 (Act No. 36 of 1998) (NWA) aims to provide management of the national water resources to achieve sustainable use of water for the benefit of all water users. This requires that the quality of water resources is protected as well as integrated management of water resources with the delegation of powers to institutions at the regional or catchment level. The purpose of the Act is to ensure that the nation's water resources are protected, used, developed, conserved, managed and controlled in responsible ways. Of specific importance to this application is Section 19 of the NWA, which states that an owner of land, a person in control of land or a person who occupies or uses the land which thereby causes, has caused or is likely to cause pollution of a water resource must take all reasonable measures to prevent any such pollution from occurring, continuing or recurring and must therefore comply with any prescribed waste standard or management practices.

- **Occupational Health and Safety Act, 1993 (Act No. 85 of 1993)**

To provide for the health and safety of persons at work and for the health and safety of persons about the use of plant and machinery; the protection of persons other than persons at work against hazards to health and safety arising out of or about the activities of persons at work; to establish an advisory council for occupational health and safety; and to provide for matters connected therewith.

**WASTE, EFFLUENT, EMISSION AND NOISE MANAGEMENT:**

- **Solid waste management**

Will the activity produce solid construction waste during the construction/initiation phase?

YES	NO
X	
Approx.3 m <sup>3</sup>	

If YES, what estimated quantity will be produced per month?

How will the construction solid waste be disposed of?

All solid waste accumulated during construction will be kept in designated areas and disposed weekly by the constructor at the registered local landfill site. This will be addressed in the EMPr. The ECO will audit the EMPr and submission will be made to the CA for review.

Where will the construction solid waste be disposed of?

The construction solid waste will be disposed of at the registered municipal landfill site by the contractor.

Will the activity produce solid waste during its operational phase?

YES	NO
	X

If YES, what estimated quantity will be produced per month?

- **Liquid effluents**

Will the activity produce effluent, other than normal sewage, that will be disposed of in a municipal sewage system?

YES	NO
	X

Will the activity produce effluent that will be treated and/or disposed of at another facility?

YES	NO X
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- **Emissions into the atmosphere**

Will the activity release emissions into the atmosphere other than exhaust emissions and dust associated with construction phase activities?

YES	NO X
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If YES, is it controlled by any legislation of any sphere of government?

YES	NO X
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- **Waste permit**

Will any aspect of the activity produce waste that will require a waste permit in terms of the NEM: WA?

YES	NO X
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- **Generation of noise**

Will the activity generate noise?

YES X	NO
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If YES, is it controlled by any legislation of any sphere of government?

YES	NO X
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