

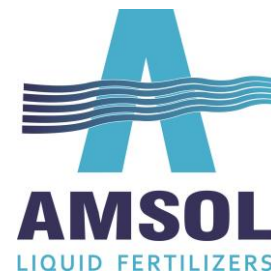
**ENVIRONMENTAL IMPACT ASSESSMENT PROCESS  
DRAFT BASIC ASSESSMENT REPORT**

**PRODUCTION AND STORAGE OF CHEMICAL FERTILISERS  
AT A PROPOSED FACILITY NEAR BOTHAVILLE,  
FREE STATE PROVINCE  
(REF No: EMB/13/14/23)**

**DRAFT BASIC ASSESSMENT REPORT  
FOR PUBLIC COMMENT**

**MAY 2014**

**Prepared for:**  
AMSOL Fertilizers  
16 Mosquito Road  
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## BASIC ASSESSMENT REPORT

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(For official use only)

**File Reference Number:**

**Application Number:**

**Date Received:**


Basic assessment report in terms of the Environmental Impact Assessment Regulations, 2010, promulgated in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended.

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**Kindly note that:**

1. This **basic assessment report** is a standard report that may be required by a competent authority in terms of the EIA Regulations, 2010 and is meant to streamline applications. Please make sure that it is the report used by the particular competent authority for the activity that is being applied for.
2. The report must be typed within the spaces provided in the form. The size of the spaces provided is not necessarily indicative of the amount of information to be provided. The report is in the form of a table that can extend itself as each space is filled with typing.
3. Where applicable **tick** the boxes that are applicable in the report.
4. An incomplete report may be returned to the applicant for revision.
5. The use of "not applicable" in the report must be done with circumspection because if it is used in respect of material information that is required by the competent authority for assessing the application, it may result in the rejection of the application as provided for in the regulations.
6. This report must be handed in at offices of the relevant competent authority as determined by each authority.
7. No faxed or e-mailed reports will be accepted.
8. The report must be compiled by an independent environmental assessment practitioner.
9. Unless protected by law, all information in the report will become public information on receipt by the competent authority. Any interested and affected party should be provided with the information contained in this report on request, during any stage of the application process.
10. A competent authority may require that for specified types of activities in defined situations only parts of this report need to be completed.



## BASIC ASSESSMENT REPORT

### SECTION A: ACTIVITY INFORMATION

Has a specialist been consulted to assist with the completion of this section?

YES	NO
	✓

If YES, please complete the form entitled "Details of specialist and declaration of interest"

for appointment of a specialist for each specialist thus appointed:

Any specialist reports must be contained in Appendix D.

#### 1. ACTIVITY DESCRIPTION

Describe the activity, which is being applied for, in detail<sup>1</sup>:

##### Introduction

Dry and liquid fertilizers are typically manufactured in large, centralized, capital intensive production plants where various raw materials are combined through processes in which heat, pressure, cooling and drying is alternately applied. A significant number of these processes address cosmetic characteristics rather than contribute to the products functional specifications. Air, soil and water pollution is a serious problem on these sites.

In contrast to the above, a concept was developed in which the spontaneous chemical reactions between the raw materials that are used in the Fertilizer Industry is optimized in such a way compound liquid fertilizers can be produced which will have the same functional characteristics. **AMSOL Fertilizers** therefore proposes to implement a concept in which the physical production of a liquid fertilizer is decentralized (to farming or market areas) and proposes to establish a chemical liquid fertiliser mixing facility for commercial agricultural application.

##### Site description

The site of the proposed fertiliser manufacturing facility is situated on Portion 961 of the Farm Emilio, approximately 13km south of the farming town of Bothaville in the Free State Province. An existing zinc shed which currently stores farming implements and equipment belonging to the landowner is located on the property. The proposed facility will be located inside of the existing zinc shed and leased from the landowner. Neighbouring land uses are agricultural in nature. Abandoned dwellings, a farmhouse, a regional road and a grain silo are situated within 1km from the proposed site.

<sup>1</sup> Please note that this description should not be a verbatim repetition of the listed activity as contained in the relevant Government Notice, but should be a brief description of activities to be undertaken as per the project description.



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### Need and desirability of the activity

The NPK market in South Africa on an elemental bases, Nitrogen (N) 362 000 tons, Phosphate (P) 115 000 tons and Potassium (K) 110 000 tons. An estimate of 70% of this is consumed in the growing of summer crops, 15% in sugar and 15% in winter crops.

The proposed fertilizer mixing plant is strategically located in order to cater to an established demand for NPK fertilizers within the Bothaville region due to the high concentration of farms / arable land under cultivation. The facility will be able to manufacture fertiliser for approximately 10 000ha of cropland under cultivation with the catchment/market extending an estimated 40-50km radius around the site. The applicant will be responsible for the manufacture, marketing and distribution of the fertilizer, although it is expected that individual farmers will be primarily responsible for collecting the fertilizer.

### Chemicals utilised in the manufacturing process

The fertilizer product will be manufactured through a blending process whereby the following hazardous chemical substances will be used in the process:

- » Phosphoric acid - 72m<sup>3</sup> (118 tons)
- » Sulphuric acid - 50m<sup>3</sup> (110 tons)
- » Ammoniated water (anhydrous ammonia) - 130m<sup>3</sup> (117 tons)

Up to 211m<sup>3</sup> of hazardous chemicals will be stored on the site at any one time. This is the primary and only listed activity requiring environmental authorisation under the EIA Regulations in accordance with GN R 544, Activity 13 –

*“Construction of facilities or infrastructure for the storage and handling, of a dangerous good, where such storage occurs in containers with a combined capacity of 80 but not exceeding 500 cubic metres”*



## BASIC ASSESSMENT REPORT

### **Sourcing and supply of chemicals utilised in the blending process**

Ammoniated water and sulphuric acid will be supplied by Sasol and Foskor and will be transported to the site in tankers. All of the hazardous substances will be transported in a liquid state and pumped from the tankers into the storage tanks at the facility.

**Characteristics of inputs: Sulphuric acid** - Sulphuric acid has a wide range of industrial and household applications and is also a central substance in the chemical industry. Principal uses include mineral processing, fertilizer manufacturing, oil refining, wastewater processing, and chemical synthesis. Sulphuric acid is toxic for aquatic organisms and prolonged and repeated exposure to humans through fumes/mists may cause chronic bronchitis, irritation of the skin, mucous membranes and gastrointestinal tract.

*Refer to Material Safety Data Sheet in Appendix G.*

**Characteristics of inputs: Phosphoric acid** - The most common source of phosphoric acid is an 85% aqueous solution although non-toxic when diluted. In agricultural application, phosphoric acid gradually reacts with alkaline minerals to form soluble and insoluble phosphates, which are readily absorbed as a source of phosphate by plants and micro biota. Direct contact of the product with humans may cause burns to skin, eyes and the gastrointestinal tract.

*Refer to Material Safety Data Sheet in Appendix G.*

**Characteristics of inputs: Ammoniated water (Anhydrous ammonia)** - Ammonia's chemical structure is  $\text{NH}_3$ , meaning it contains one part nitrogen and three parts hydrogen, making it a very desirable fertilizer. Adding ammonia to soil contributes to nitrogen production, a vital component needed for plant growth.

The word "Anhydrous" means "without water" meaning that there is no water involved in the reaction responsible for its manufacture. Anhydrous ammonia has several advantages, including its relatively easy application and ready availability. Anhydrous ammonia is compressed into a clear, colourless liquid when used for an agricultural fertilizer.

Anhydrous ammonia is considered safe to store in large quantities, and only becomes volatile at extremely high temperatures. Direct exposure to anhydrous ammonia can be harmful, causing eye and skin irritation, respiratory problems and, at high concentrations, could potentially result in death. Anhydrous ammonia is stored in tanks as a liquid under pressure and without the added pressure, would convert into a gas. Ammonia gas is colourless and has a sharp, penetrating odour. Leaks of gaseous anhydrous ammonia can also be dangerous if human exposure occurs for prolonged periods.

*Refer to Material Safety Data Sheet in Appendix G.*

### **Construction of the mixing plant facility**

The facility will create approximately 25 employment opportunities during the construction phase. It is anticipated that seasonal farmworkers will be employed for this purpose. The facility will take a maximum of 3- 4 months to construct. The construction phase will involve the construction of concrete hard-standing and the installation of industrial grade high-density polyethylene (HDPE) holding, mixing and end-product tanks on the site. Each tank will have a 10 000 litre capacity. PVC tubing between the holding, blending and product tanks will be installed. Concrete bunds will be constructed around hazardous chemical storage tanks.



**the detea**

the department of economic  
development, tourism and  
environmental affairs  
FREE STATE PROVINCE

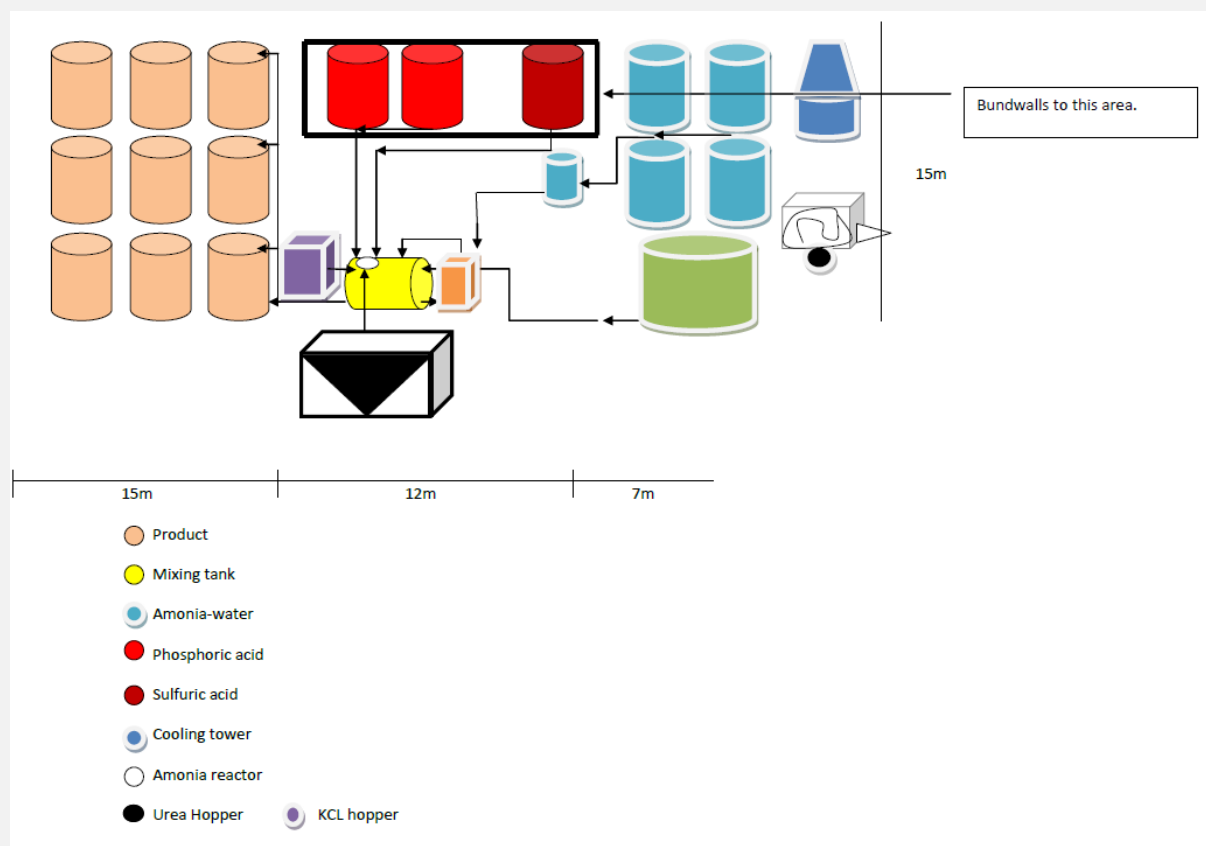
## BASIC ASSESSMENT REPORT

### Operation of the mixing plant facility

The operation of the facility will create approximately 6 employment opportunities during the operational phase. Operators will be required to accept the chemicals from the suppliers, oversee the handling/transfer of the chemicals into the tanks, and from there undertake the mixing process.

Up to 250m<sup>3</sup> collectively of phosphoric acid, sulphuric acid and ammoniated water will be stored on the site at a time in designated storage/holding tanks. All blending and mixing of the liquids will occur through a patented process within a mixing tank, therefore human exposure to the chemicals used in the production process will be limited.

From the ammonia water storage tanks, ammonia water will be gravity fed into the mixing tank. The sulphuric and phosphoric acids will be gravity fed through a flow meter and introduced to the mixing tank. Thereafter a solution of urea and potassium chloride is added. Urea is introduced to the mixing tank by the urea hopper. An exothermic reaction occurs and a plant starter or N-P-K (Nitrogen (N), Phosphorus (P), and Potassium (K) fertilizer is produced in liquid form for commercial agricultural application (end product), which is released to the product tanks.



Refer to the complete process flow diagram and facility profile in Appendix G.

**Spill protection:** All components will be situated on concrete hard-standing. Bund walls will be provided around the acid tanks.

**Distribution:** Once the mixing of the chemicals is complete, the NPK fertiliser will be distributed to surrounding



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farmers in preparation for the growing season. The first batch of fertiliser will be produced and distributed in time for the 2014 growing season (October/November). Farmers from the region will collect the product in liquid form. The facility will operate for 7 hours per day, 5 days per week.

**Resources:** The entire blending process is gravity controlled and reliant on the exothermic and endothermic reactions of the chemicals within the tanks, therefore electricity is only required to operate the hoppers and pumps. For every batch produced, approximately 4 m<sup>3</sup> of water is required and this water will be obtained from boreholes located on the farm.

## 2. FEASIBLE AND REASONABLE ALTERNATIVES

**“alternatives”**, in relation to a proposed activity, means different means of meeting the general purpose and requirements of the activity, which may include alternatives to—

- (a) the property on which or location where it is proposed to undertake the activity;
- (b) the type of activity to be undertaken;
- (c) the design or layout of the activity;
- (d) the technology to be used in the activity;
- (e) the operational aspects of the activity; and
- (f) the option of not implementing the activity.

Describe alternatives that are considered in this application. Alternatives should include a consideration of all possible means by which the purpose and need of the proposed activity could be accomplished in the specific instance taking account of the interest of the applicant in the activity. The no-go alternative must in all cases be included in the assessment phase as the baseline against which the impacts of the other alternatives are assessed. The determination of whether site or activity (including different processes etc.) or both is appropriate needs to be informed by the specific circumstances of the activity and its environment. After receipt of this report the competent authority may also request the applicant to assess additional alternatives that could possibly accomplish the purpose and need of the proposed activity if it is clear that realistic alternatives have not been considered to a reasonable extent.

**Paragraphs 3 – 13 below should be completed for each alternative.**



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**3. ACTIVITY POSITION**

Indicate the position of the activity using the latitude and longitude of the centre point of the site for each alternative site. The co-ordinates should be in degrees and decimal minutes. The minutes should have at least three decimals to ensure adequate accuracy. The projection that must be used in all cases is the WGS84 spheroid in a national or local projection.

List alternative sites, if applicable.

	Latitude (S):		Longitude (E):	
<b>Alternative:</b>				
Alternative S1 <sup>2</sup> (preferred or only site alternative)	27°	30'45.26"	26°	39'57.73
Alternative S2 (None)	0	'	0	'
Alternative S3 (if any)	0	'	0	'

**In the case of linear activities:**

	Latitude (S):		Longitude (E):	
<b>Alternative:</b>				
Alternative S1 (preferred or only route alternative)				
• Starting point of the activity	0	'	0	'
• Middle/Additional point of the activity	0	'	0	'
• End point of the activity	0	'	0	'
Alternative S2 (if any)				
• Starting point of the activity	0	'	0	'
• Middle/Additional point of the activity	0	'	0	'
• End point of the activity	0	'	0	'
Alternative S3 (if any)				
• Starting point of the activity	0	'	0	'
• Middle/Additional point of the activity	0	'	0	'
• End point of the activity	0	'	0	'

For route alternatives that are longer than 500m, please provide an addendum with co-ordinates taken every 250 meters along the route for each alternative alignment.

**4. PHYSICAL SIZE OF THE ACTIVITY**

Indicate the physical size of the preferred activity/technology as well as alternative activities/technologies (footprints):

Alternative:	Size of the activity:
Alternative A1 <sup>3</sup> (preferred activity alternative)	510m <sup>2</sup>
Alternative A2 (if any)	m <sup>2</sup>
Alternative A3 (if any)	m <sup>2</sup>
or, for linear activities:	

<sup>2</sup> "Alternative S.." refer to site alternatives.

<sup>3</sup> "Alternative A.." refer to activity, process, technology or other alternatives.





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**Length of the activity:**

**Alternative:**

Alternative A1 (preferred activity alternative)

M
M
M

Alternative A2 (if any)

Alternative A3 (if any)

Indicate the size of the alternative sites or servitudes (within which the above footprints will occur):

**Size of the site/servitude:**

**Alternative:**

Alternative A1 (preferred activity alternative)

510m <sup>2</sup>
m <sup>2</sup>
m <sup>2</sup>

Alternative A2 (if any)

Alternative A3 (if any)

**5. SITE ACCESS**

Does ready access to the site exist?

<b>YES</b>	NO
<b>X</b>	
M	

If NO, what is the distance over which a new access road will be built

Describe the type of access road planned:

The site is accessed via the existing Schuttendraai Silos turnoff from the R30 (road between Bothaville and Odendaalsrus) which is within 75m from the site. Access is then provided via an existing gravel road approximately 220m in length from the turnoff to the zinc shed which is proposed to house the facility.





## BASIC ASSESSMENT REPORT

Include the position of the access road on the site plan and required map, as well as an indication of the road in relation to the site.

### 6. SITE OR ROUTE PLAN

A detailed site or route plan(s) must be prepared for each alternative site or alternative activity. It must be attached as Appendix A to this document.

The site or route plans must indicate the following:

- 6.1 the scale of the plan which must be at least a scale of 1:500;
- 6.2 the property boundaries and numbers of all the properties within 50 metres of the site;
- 6.3 the current land use as well as the land use zoning of each of the properties adjoining the site or sites;
- 6.4 the exact position of each element of the application as well as any other structures on the site;
- 6.5 the position of services, including electricity supply cables (indicate above or underground), water supply pipelines, boreholes, street lights, sewage pipelines, storm water infrastructure and telecommunication infrastructure;
- 6.6 all trees and shrubs taller than 1.8 metres;
- 6.7 walls and fencing including details of the height and construction material;
- 6.8 servitudes indicating the purpose of the servitude;
- 6.9 sensitive environmental elements within 100 metres of the site or sites including (but not limited thereto):
  - rivers;
  - the 1:100 year flood line (where available or where it is required by DWA);
  - ridges;
  - cultural and historical features;
  - areas with indigenous vegetation (even if it is degraded or invested with alien species);
- 6.10 for gentle slopes the 1 metre contour intervals must be indicated on the plan and whenever the slope of the site exceeds 1:10, the 500mm contours must be indicated on the plan; and
- 6.11 the positions from where photographs of the site were taken.

Attached in Appendix A.

### 7. SITE PHOTOGRAPHS

Colour photographs from the centre of the site must be taken in at least the eight major compass directions with a description of each photograph. Photographs must be attached under Appendix B to this form. It must be supplemented with additional photographs of relevant features on the site, if applicable.

Attached in Appendix B.

### 8. FACILITY ILLUSTRATION



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A detailed illustration of the activity must be provided at a scale of 1:200 as Appendix C for activities that include structures. The illustrations must be to scale and must represent a realistic image of the planned activity. The illustration must give a representative view of the activity.

A facility illustration is attached in Appendix C

**9. ACTIVITY MOTIVATION**

**9(a) Socio-economic value of the activity**

What is the expected capital value of the activity on completion?

What is the expected yearly income that will be generated by or as a result of the activity?

Will the activity contribute to service infrastructure?

Is the activity a public amenity?

How many new employment opportunities will be created in the development phase of the activity?

What is the expected value of the employment opportunities during the development phase?

What percentage of this will accrue to previously disadvantaged individuals?

How many permanent new employment opportunities will be created during the operational phase of the activity?

What is the expected current value of the employment opportunities during the first 10 years?

What percentage of this will accrue to previously disadvantaged individuals?

<b>R900,000</b>
<b>R1.7m before Tax</b>
YES    NO X
YES    NO X
<b>12</b>
<b>R176,000</b>
<b>65%</b>
<b>6</b>
<b>R900k per annum</b>
<b>35%</b>

**9(b) Need and desirability of the activity**

Motivate and explain the need and desirability of the activity (including demand for the activity):

<b>NEED:</b>			
1.	Was the relevant provincial planning department involved in the application?	YES	NO X
2.	Does the proposed land use fall within the relevant provincial planning framework?	YES X	NO
3.	If the answer to questions 1 and / or 2 was NO, please provide further motivation / explanation: The proposed activity involves the production of fertilizers for agricultural application and is thus compatible and consistent with the land use. Fertilizers are manufactured by farmers utilizing similar chemicals and processes and these are not subject to the provisions of the planning framework.		



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<b>DESIRABILITY:</b>			
1.	Does the proposed land use / development fit the surrounding area?	<b>YES</b> <b>X</b>	NO
2.	Does the proposed land use / development conform to the relevant structure plans, SDF and planning visions for the area?	<b>YES</b> <b>X</b>	NO
3.	Will the benefits of the proposed land use / development outweigh the negative impacts of it?	<b>YES</b> <b>X</b>	NO
4.	If the answer to any of the questions 1-3 was NO, please provide further motivation / explanation: N/A		
5.	Will the proposed land use / development impact on the sense of place?	YES	<b>NO</b> <b>X</b>
6.	Will the proposed land use / development set a precedent?	YES	<b>NO</b> <b>X</b>
7.	Will any person's rights be affected by the proposed land use / development?	YES	<b>NO</b> <b>X</b>
8.	Will the proposed land use / development compromise the "urban edge"?	YES	<b>NO</b> <b>X</b>
9.	If the answer to any of the question 5-8 was YES, please provide further motivation / explanation. N/A		

<b>BENEFITS:</b>			
1.	Will the land use / development have any benefits for society in general?	YES	<b>NO</b> <b>X</b>
2.	Explain: There will be no societal impact as a result of the fertilizer manufacturing facility and any benefit will be regional to local in nature.		
3.	Will the land use / development have any benefits for the local communities where it will be located?	<b>YES</b> <b>X</b>	NO
4.	Explain: Farmers within a catchment of a 40-50km radius around the facility will benefit due to convenience and an associated reduction in transportation costs. Some of the seasonal farm workers will benefit from employment at the facility.		

**10. APPLICABLE LEGISLATION, POLICIES AND/OR GUIDELINES**



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List all legislation, policies and/or guidelines of any sphere of government that are applicable to the application as contemplated in the EIA regulations, if applicable:

Title of legislation, policy or guideline:	Administering authority:	Date:
National Environmental Management Act, Act 107 of 1998	DETEA	1998
Hazardous Substances Act, Act 15 of 1973	Department of Labour / Department of Health	1973
GN R 1179 – Hazardous Chemical Substances Regulations	Department of Labour	1995
Occupational Health and Safety Act (Act No. 85 of 1993)	Department of Labour	1993
Road Traffic Act (Act No. 29 of 1989)	Department of Transport	1989

**11. WASTE, EFFLUENT, EMISSION AND NOISE MANAGEMENT**

**11(a) Solid waste management**

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

YES	NO
	X

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

m <sup>3</sup>
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How will the construction solid waste be disposed of (describe)?

There will be no construction waste as all materials (predominantly plastics) will be pre-cast and delivered to the site from the supplier according to the applicants specifications.

Where will the construction solid waste be disposed of (describe)?

Any construction waste that is generated will be collected by the developer and disposed of at a suitable municipal landfill facility, however the volumes of waste are expected to be such that a standard municipal sized bin can be utilised to dispose of any plastic offcuts or other waste.

Will the activity produce solid waste during its operational phase? 

YES	NO
	X

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

m <sup>3</sup>
----------------

How will the solid waste be disposed of (describe)?

The manufacturing process will involve only the blending of fertilizers for dispatch/collection by farmers in tanks. All of the inputs will become outputs and the process is essentially waste free. Only day to day waste from workers activities will be generated.

Where will the solid waste be disposed if it does not feed into a municipal waste stream (describe)?

Into a municipal waste stream

If the solid waste (construction or operational phases) will not be disposed of in a registered landfill site or be taken up in a municipal waste stream, then the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.

Can any part of the solid waste be classified as hazardous in terms of the relevant legislation? 

YES	NO
	X

If yes, inform the competent authority and request a change to an application for scoping and EIA.



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Is the activity that is being applied for a solid waste handling or treatment facility? 

YES	NO
	X

If yes, then the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.

**11(b) Liquid effluent**

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

YES	NO
	X

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

m<sup>3</sup>

Will the activity produce any effluent that will be treated and/or disposed of on site? 

Yes	NO
	X

If yes, the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.

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

YES	NO
	X

If yes, provide the particulars of the facility:

Facility name:			
Contact person:			
Postal address:			
Postal code:			
Telephone:	Cell:		
E-mail:	Fax:		

Describe the measures that will be taken to ensure the optimal reuse or recycling of waste water, if any:

Not applicable

**11(c) Emissions into the atmosphere**

Will the activity release emissions into the atmosphere? 

YES	NO
	X

If yes, is it controlled by any legislation of any sphere of government?

YES	NO

If yes, the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.

If no, describe the emissions in terms of type and concentration:

Emissions are experienced as a slight odour in the vicinity of the tanks which will remain sealed during the process. This is anticipated to be a highly localised impact whereby sulphuric and phosphoric acid could manifest as a "rotting eggs". These odours are not anticipated to migrate off of the site. There are no sensitive receptors near to the site which could be affected by the insignificant odours generated during the process.

**11(d) Generation of noise**



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Will the activity generate noise?	YES	<b>NO X</b>
If yes, is it controlled by any legislation of any sphere of government? If yes, the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA. If no, describe the noise in terms of type and level:	YES	NO

The entire process involves the precise mixing of chemicals through controlled flow meters which is entirely gravity fed. The operation of the hoppers will generate some noise during the blending process. Noise will also be experienced from the vehicles delivering/collecting inputs or product. There are no noise sensitive receptors near to the site which could be affected by nuisance noise impacts.

**12. WATER USE**

Please indicate the source(s) of water that will be used for the activity by ticking the appropriate box(es)

<b>Private borehole</b>	water board	groundwater	river, stream, dam or lake	other	the activity will not use water
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If water is to be extracted from groundwater, river, stream, dam, lake or any other natural feature, please indicate

the volume that will be extracted per month:

litres	
Does the activity require a water use permit from the Department of Water Affairs?	<b>YES</b> <b>NO X</b>

If yes, please submit the necessary application to the Department of Water Affairs and attach proof thereof to this application if it has been submitted.

**13. ENERGY EFFICIENCY**

Describe the design measures, if any, that have been taken to ensure that the activity is energy efficient:

The entire blending process will be gravity controlled and electricity will only be required for two pumps, two screw conveyors. Lighting will be done via solar panels.

Describe how alternative energy sources have been taken into account or been built into the design of the activity, if any:

Lighting will be done via Solar panels. The pumps and screws have been designed such that the entire facility requires a maximum of 25Kwh at any given time.

**SECTION B: SITE/AREA/PROPERTY DESCRIPTION**

**Important notes:**

- For linear activities (pipelines, etc) as well as activities that cover very large sites, it may be necessary to complete this section for each part of the site that has a significantly different environment. In such cases please complete copies of Section C and indicate the area, which is covered by each copy No. on the Site Plan.

Section C Copy No.



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(e.g. A):

2. Paragraphs 1 - 6 below must be completed for each alternative.

3. Has a specialist been consulted to assist with the completion of this section? 

YES	NO
	X

If YES, please complete the form entitled "Details of specialist and declaration of interest"

for each specialist thus appointed:

All specialist reports must be contained in Appendix D.

Property description/physical address:

Portion 961 of the Farm Emilio

(Farm name, portion etc.) Where a large number of properties are involved (e.g. linear activities), please attach a full list to this application.

In instances where there is more than one town or district involved, please attach a list of towns or districts to this application.

Current land-use zoning:

Agriculture

In instances where there is more than one current land-use zoning, please attach a list of current land use zonings that also indicate which portions each use pertains to, to this application.

Is a change of land-use or a consent use application required? 

YES	NO
	X

Must a building plan be submitted to the local authority? 

YES	NO
	X

Locality map: An A3 locality map must be attached to the back of this document, as Appendix A. The scale of the locality map must be relevant to the size of the development (at least 1:50 000. For linear activities of more than 25 kilometres, a smaller scale e.g. 1:250 000 can be used. The scale must be indicated on the map.) The map must indicate the following:

- an indication of the project site position as well as the positions of the alternative sites, if any;
- road access from all major roads in the area;
- road names or numbers of all major roads as well as the roads that provide access to the site(s);
- all roads within a 1km radius of the site or alternative sites; and
- a north arrow;
- a legend; and
- locality GPS co-ordinates (Indicate the position of the activity using the latitude and longitude of the centre point of the site for each alternative site. The co-ordinates should be in degrees and decimal minutes. The minutes should have at least three decimals to ensure adequate accuracy. The projection that must be used in all cases is the WGS84 spheroid in a national or local projection)





**BASIC ASSESSMENT REPORT**

**1. GRADIENT OF THE SITE**

Indicate the general gradient of the site.

**Alternative S1:**

<b>Flat</b>	1:50 – 1:20	1:20 – 1:15	1:15 – 1:10	1:10 – 1:7,5	1:7,5 – 1:5	Steeper than 1:5
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**Alternative S2 (if any):**

Flat	1:50 – 1:20	1:20 – 1:15	1:15 – 1:10	1:10 – 1:7,5	1:7,5 – 1:5	Steeper than 1:5
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**Alternative S3 (if any):**

Flat	1:50 – 1:20	1:20 – 1:15	1:15 – 1:10	1:10 – 1:7,5	1:7,5 – 1:5	Steeper than 1:5
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**2. LOCATION IN LANDSCAPE**

Indicate the landform(s) that best describes the site:

- 2.1 Ridgeline
- 2.2 Plateau
- 2.3 Side slope of hill/mountain
- 2.4 Closed valley
- 2.5 Open valley**
- 2.6 Plain
- 2.7 Undulating plain / low hills
- 2.8 Dune
- 2.9 Seafront

**3. GROUNDWATER, SOIL AND GEOLOGICAL STABILITY OF THE SITE**

Is the site(s) located on any of the following (tick the appropriate boxes)?

	<b>Alternative S1:</b>		<b>Alternative S2 (none):</b>		<b>Alternative S3 (if any):</b>	
Shallow water table (less than 1.5m deep)	YES	<b>NO X</b>	YES	NO	YES	NO
Dolomite, sinkhole or doline areas	YES	<b>NO X</b>	YES	NO	YES	NO
Seasonally wet soils (often close to water bodies)	YES	<b>NO X</b>	YES	NO	YES	NO
Unstable rocky slopes or steep slopes with loose soil	YES	<b>NO X</b>	YES	NO	YES	NO
Dispersive soils (soils that dissolve in water)	YES	<b>NO X</b>	YES	NO	YES	NO



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Soils with high clay content (clay fraction more than 40%)	YES	<b>NO X</b>	YES	NO	YES	NO
Any other unstable soil or geological feature	YES	<b>NO X</b>	YES	NO	YES	NO
An area sensitive to erosion	YES	<b>NO X</b>	YES	NO	YES	NO

If you are unsure about any of the above or if you are concerned that any of the above aspects may be an issue of concern in the application, an appropriate specialist should be appointed to assist in the completion of this section. (Information in respect of the above will often be available as part of the project information or at the planning sections of local authorities. Where it exists, the 1:50 000 scale Regional Geotechnical Maps prepared by the Council for Geo Science may also be consulted).

**4. GROUNDCOVER**

Indicate the types of groundcover present on the site:

The location of all identified rare or endangered species or other elements should be accurately indicated on the site plan(s).

Natural veld - good condition <sup>E</sup>	Natural veld with scattered aliens <sup>E</sup>	Natural veld with heavy alien infestation <sup>E</sup>	Veld dominated by alien species <sup>E</sup>	Gardens
Sport field	Cultivated land	Paved surface	<b>Building or other structure</b>	Bare soil

If any of the boxes marked with an “<sup>E</sup>” is ticked, please consult an appropriate specialist to assist in the completion of this section if the environmental assessment practitioner doesn’t have the necessary expertise.

**5. LAND USE CHARACTER OF SURROUNDING AREA**

Indicate land uses and/or prominent features that does currently occur within a 500m radius of the site and give description of how this influences the application or may be impacted upon by the application:

**5.1 Natural area**

**5.2 Low density residential (single farmhouse)**

5.3 Medium density residential

5.4 High density residential

5.5 Informal residential<sup>A</sup>

5.6 Retail commercial & warehousing

5.7 Light industrial

5.8 Medium industrial<sup>AN</sup>

5.9 Heavy industrial<sup>AN</sup>

5.10 Power station



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- 5.11 Office/consulting room
- 5.12 Military or police base/station/compound
- 5.13 Spoil heap or slimes dam<sup>A</sup>
- 5.14 Quarry, sand or borrow pit
- 5.15 Dam or reservoir
- 5.16 Hospital/medical centre
- 5.17 School
- 5.18 Tertiary education facility
- 5.19 Church
- 5.20 Old age home
- 5.21 Sewage treatment plant<sup>A</sup>
- 5.22 Train station or shunting yard <sup>N</sup>
- 5.23 Railway line <sup>N</sup>
- 5.24 Major road (4 lanes or more) <sup>N</sup>
- 5.25 Airport <sup>N</sup>
- 5.26 Harbour
- 5.27 Sport facilities
- 5.28 Golf course
- 5.29 Polo fields
- 5.30 Filling station <sup>H</sup>
- 5.31 Landfill or waste treatment site
- 5.32 Plantation
- 5.33 Agriculture**
- 5.34 River, stream or wetland
- 5.35 Nature conservation area
- 5.36 Mountain, koppie or ridge
- 5.37 Museum
- 5.38 Historical building
- 5.39 Protected Area
- 5.40 Graveyard
- 5.41 Archaeological site
- 5.42 Other land uses (describe)

If any of the boxes marked with an "N" are ticked, how will this impact / be impacted upon by the proposed activity?

Not applicable

If any of the boxes marked with an "An" are ticked, how will this impact / be impacted upon by the proposed activity?

If YES, specify and explain:

Not applicable

If any of the boxes marked with an "H" are ticked, how will this impact / be impacted upon by the proposed activity.



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If YES, specify and explain:	
Not applicable	

**6. CULTURAL/HISTORICAL FEATURES**

Are there any signs of culturally or historically significant elements, as defined in section 2 of the National Heritage Resources Act, 1999, (Act No. 25 of 1999), including Archaeological or palaeontological sites, on or close (within 20m) to the site?	YES	<b>NO</b> <b>X</b>
If YES, explain:		
If uncertain, conduct a specialist investigation by a recognised specialist in the field to establish whether there is such a feature(s) present on or close to the site. Briefly explain the findings of the specialist:	No heritage specialist study was necessary as the facility footprint and all associated activities will be limited to the existing zinc shed situated on the farm.	
Will any building or structure older than 60 years be affected in any way?	YES	<b>NO</b> <b>X</b>
Is it necessary to apply for a permit in terms of the National Heritage Resources Act, 1999 (Act 25 of 1999)?	YES	<b>NO</b> <b>X</b>
If yes, please submit or, make sure that the applicant or a specialist submits the necessary application to SAHRA or the relevant provincial heritage agency and attach proof thereof to this application if such application has been made.		

**SECTION C: PUBLIC PARTICIPATION**

**1. ADVERTISEMENT**

The person conducting a public participation process must take into account any guidelines applicable to public participation as contemplated in section 24J of the Act and must give notice to all potential interested and affected parties of the application which is subjected to public participation by—

- (a) fixing a notice board (of a size at least 60cm by 42cm; and must display the required information in lettering and in a format as may be determined by the competent authority) at a place conspicuous to the public at the boundary or on the fence of—
  - (i) the site where the activity to which the application relates is or is to be undertaken; and
  - (ii) any alternative site mentioned in the application;
- (b) giving written notice to—
  - (i) the owner or person in control of that land if the applicant is not the owner or person in control of the land;



## BASIC ASSESSMENT REPORT

- (ii) the occupiers of the site where the activity is or is to be undertaken or to any alternative site where the activity is to be undertaken;
  - (iii) owners and occupiers of land adjacent to the site where the activity is or is to be undertaken or to any alternative site where the activity is to be undertaken;
  - (iv) the municipal councillor of the ward in which the site or alternative site is situated and any organisation of ratepayers that represent the community in the area;
  - (v) the municipality which has jurisdiction in the area;
  - (vi) any organ of state having jurisdiction in respect of any aspect of the activity; and
  - (vii) any other party as required by the competent authority;
- (c) placing an advertisement in—
- (i) one local newspaper; or
  - (ii) any official *Gazette* that is published specifically for the purpose of providing public notice of applications or other submissions made in terms of these Regulations;
- (d) placing an advertisement in at least one provincial newspaper or national newspaper, if the activity has or may have an impact that extends beyond the boundaries of the metropolitan or local municipality in which it is or will be undertaken: Provided that this paragraph need not be complied with if an advertisement has been placed in an official *Gazette* referred to in subregulation 54(c)(ii); and
- (e) using reasonable alternative methods, as agreed to by the competent authority, in those instances where a person is desiring of but unable to participate in the process due to—
- (i) illiteracy;
  - (ii) disability; or
  - (iii) any other disadvantage.

## 2. CONTENT OF ADVERTISEMENTS AND NOTICES

A notice board, advertisement or notices must:

- (a) indicate the details of the application which is subjected to public participation; and
- (b) state—
  - (i) that the application has been submitted to the competent authority in terms of these Regulations, as the case may be;
  - (ii) whether basic assessment or scoping procedures are being applied to the application, in the case of an application for environmental authorisation;
  - (iii) the nature and location of the activity to which the application relates;
  - (iv) where further information on the application or activity can be obtained; and
  - (iv) the manner in which and the person to whom representations in respect of the application may be made.

## 3. PLACEMENT OF ADVERTISEMENTS AND NOTICES

Where the proposed activity may have impacts that extend beyond the municipal area where it is located, a notice must be placed in at least one provincial newspaper or national newspaper, indicating that an application will be submitted to the competent authority in terms of these regulations, the nature



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and location of the activity, where further information on the proposed activity can be obtained and the manner in which representations in respect of the application can be made, unless a notice has been placed in any *Gazette* that is published specifically for the purpose of providing notice to the public of applications made in terms of the EIA regulations.

Advertisements and notices must make provision for all alternatives.

### 4. DETERMINATION OF APPROPRIATE MEASURES

The practitioner must ensure that the public participation is adequate and must determine whether a public meeting or any other additional measure is appropriate or not based on the particular nature of each case. Special attention should be given to the involvement of local community structures such as Ward Committees, ratepayers associations and traditional authorities where appropriate. Please note that public concerns that emerge at a later stage that should have been addressed may cause the competent authority to withdraw any authorisation it may have issued if it becomes apparent that the public participation process was inadequate.

### 5. COMMENTS AND RESPONSE REPORT

The practitioner must record all comments and respond to each comment of the public before the application is submitted. The comments and responses must be captured in a comments and response report as prescribed in the EIA regulations and be attached to this application. The comments and response report must be attached under Appendix E.

### 6. AUTHORITY PARTICIPATION

**Please note that a complete list of all organs of state and or any other applicable authority with their contact details must be appended to the basic assessment report or scoping report, whichever is applicable.**

Authorities are key interested and affected parties in each application and no decision on any application will be made before the relevant local authority is provided with the opportunity to give input.

List of authorities informed:

- Nala Local Municipality
- Lejweleputswa District Municipality
- South African Heritage Resources Agency
- Free State Department of Police, Roads and Transport
- Department of Water Affairs

List of authorities from whom comments have been received:

To be completed upon finalisation of this draft Basic Assessment Report



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### 7. CONSULTATION WITH OTHER STAKEHOLDERS

Note that, for linear activities, or where deviation from the public participation requirements may be appropriate, the person conducting the public participation process may deviate from the requirements of that subregulation to the extent and in the manner as may be agreed to by the competent authority.

Proof of any such agreement must be provided, where applicable.

Has any comment been received from stakeholders?

YES	NO
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If "YES", briefly describe the feedback below (also attach copies of any correspondence to and from the stakeholders to this application):

To be completed upon finalisation of this draft Basic Assessment Report
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### SECTION D: IMPACT ASSESSMENT

The assessment of impacts must adhere to the minimum requirements in the EIA Regulations, 2010, and should take applicable official guidelines into account. The issues raised by interested and affected parties should also be addressed in the assessment of impacts.

#### 1. ISSUES RAISED BY INTERESTED AND AFFECTED PARTIES

List the main issues raised by interested and affected parties.

None identified thus far. To be completed upon finalisation of this draft Basic Assessment Report.

Response from the practitioner to the issues raised by the interested and affected parties (A full response must be given in the Comments and Response Report that must be attached to this report as Annexure E):

To be completed upon finalisation of this draft Basic Assessment Report

#### 2. IMPACTS THAT MAY RESULT FROM THE PLANNING AND DESIGN, CONSTRUCTION, OPERATIONAL, DECOMMISSIONING AND CLOSURE PHASES AS WELL AS PROPOSED MANAGEMENT OF IDENTIFIED IMPACTS AND PROPOSED MITIGATION MEASURES

List the potential direct, indirect and cumulative property/activity/design/technology/operational alternative related impacts (as appropriate) that are likely to occur as a result of the planning and design phase, construction phase, operational phase, decommissioning and closure phase, including impacts relating to the choice of site/activity/technology alternatives as well as the mitigation measures that may eliminate or reduce the potential impacts listed.

##### Alternative (preferred alternative)

###### Direct impacts:

**Change of land-use or land transformation (negative)** – There will be no change in land-use and no transformation of land as the facility will be constructed in an existing zinc shed located on the farm.

**Potential impacts on sensitive receptors due to spillages of hazardous substances (negative)** – there are no sensitive environmental receptors (including watercourses, wetlands, heritage features or sensitive vegetation) near to the site and it is expected that should spillage of hazardous chemical substances occur during storage, that the spill will be captured by the bund walls provided and the potential for contamination outside of the site will be limited.

**Potential health impacts on employees or contractors due to exposure to hazardous chemical substances during transit or transfer (negative)** – The storage and handling of the hazardous chemicals used in the fertilizer manufacturing process must be undertaken in accordance with the specifications of the respective Material Safety Data Sheets.





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**Nuisance odour impacts (negative)** – Localised odours are anticipated around the facility during the blending process however due to the absence of sensitive receptors nearby, this impact is not considered to be of significance.

**Employment opportunities during construction and operation (positive)** – The facility has the potential to employ 20 workers during construction and 6 permanent employees during operation.

**Improved access of farmers to fertilizers (positive)** - Farmers within a catchment of a 40-50km radius around the facility will benefit due to convenience and an associated reduction in transportation costs.

**Indirect impacts:**

No indirect impacts have been identified.

**Cumulative impacts:**

Improved access of farmers to fertilizers (positive) resulting in cumulative impacts on farming efficiencies and cost savings.

**3. ENVIRONMENTAL IMPACT STATEMENT**

Taking the assessment of potential impacts into account, please provide an environmental impact statement that summarises the impact that the proposed activity and its alternatives may have on the environment after the management and mitigation of impacts have been taken into account, with specific reference to types of impact, duration of impacts, likelihood of potential impacts actually occurring and the significance of impacts.

[Empty rectangular box]

[Empty rectangular box]

[Empty rectangular box]

**Alternative A (preferred alternative)**

**1) Transformation of land**

This impact will not occur as the proposed mixing facility will be constructed within an existing zinc structure situated on the farm. Access roads to the operation exist and no other ancillary infrastructure is required which will lead to the transformation of land.

**2) Potential impacts on sensitive receptors due to spillages of hazardous**

The potential spillage of hazardous chemical substances into the environment during transport or during handling could occur. The likelihood of the impact occurring is considered to be very



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low and limited to the road network and to the facility itself as all chemical storage tanks will be positioned on concrete hard standing and surrounded by the necessary bund walls. For this reason the impact will be short in duration and the significance of the impact is rated as low.

### **3) Potential health impacts on employees or contractors due to exposure to hazardous chemical substances during transportation and handling**

The potential spillage of hazardous chemical substances affecting human health could occur. The likelihood of the impact occurring is considered to be very low as the period for exposure to the hazardous substances will not be for prolonged periods and the blending process in itself is contained within the mixing tanks. The impact is easily mitigated through the use of personal protective equipment and any road spillages exposing the public to the potential health effects mitigated in accordance with the Hazardous Substances Act and Regulations and clean-up procedures extending therefrom. For this reason the impact will be very short in duration and the significance of the impact is rated as low.

### **4) Nuisance odour impacts**

The likelihood of this impact occurring is considered to be very low due to the limited exposure of the chemicals to air and the absence of settlements (only abandoned structures) nearby. For this reason the impact will be very short in duration and the significance of the impact is rated as low.

### **5) Employment opportunities during construction and operation**

The likelihood of this impact occurring is definite, of permanent duration (for operational phase), but of limited (low) extent and significance due to the limited number of employees employed. The impact will be of permanent duration, very probable and of low significance (positive).

### **6) Improved access of farmers to fertilizers**

The decentralization of the fertilizer manufacturing process improves efficiencies and results in cost savings to farmers who will source the fertilizer from the applicant. The impact will be of permanent duration, very probable and of medium significance (positive).

### **No-go alternative (compulsory)**

*The no-go alternative is not preferred due to the following:*

- *No sensitive environmental features or receptors have been identified near to the site*
- *The handling and storage of the hazardous chemicals will be controlled (by supplier and operator) in accordance with the industry standards governing the manufacture of fertilizers*
- *The potential employment opportunities offered by the proposed facility will not be realised*



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- ***The opportunity to decentralise the fertilizer manufacturing process will not be realised to the benefit of the local farming community***



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**SECTION E. RECOMMENDATION OF PRACTITIONER**

Is the information contained in this report and the documentation attached hereto sufficient to make a decision in respect of the activity applied for (in the view of the environmental assessment practitioner)?

<b>YES</b> X	NO
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If "NO", indicate the aspects that should be assessed further as part of a Scoping and EIA process before a decision can be made (list the aspects that require further assessment):

If "YES", please list any recommended conditions, including mitigation measures that should be considered for inclusion in any authorisation that may be granted by the competent authority in respect of the application:

- All hazardous chemical storage tanks should be appropriately bunded and the facility should be situated on concrete hard standing.
- All substances should be transported, stored and handles in accordance with the specifications of the relevant Material Safety Data Sheet.
- A hazardous chemical spill response plan should be compiled or a service provider consulted to evaluate in the event of a spill during transportation, handling or storage.
- Appropriate signage should be placed on vehicles transporting hazardous substances and transport emergency cards carried by the vehicles in excess of the exempted quantities.
- An emergency spill kit should be stationed at the site to address smaller spills should they occur.
- Local labour should preferably be sourced for the construction and operation of the facility.

Is an EMPr attached?

<b>YES</b> X	NO
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The EMPr must be attached as Appendix F.



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### **SECTION F: APPENDIXES**

The following appendixes must be attached as appropriate:

Appendix A: Site plan(s)

Appendix B: Photographs

Appendix C: Facility illustration(s)

Appendix D: Specialist reports

Appendix E: Comments and responses report

Appendix F: Environmental Management Programme (EMPr)

Appendix G: Other information