



## environmental affairs

Department:  
Environmental Affairs  
**REPUBLIC OF SOUTH AFRICA**

### RISK ASSESSMENT IN TERMS OF REGULATION 8 OF THE WASTE EXCLUSION REGULATIONS

<b>APPLICANT</b>	Sasol South Africa (Ltd)
<b>WASTE STREAM OR PORTION OF A WASTE STREAM</b>	Weathered fine ash
<b>BENEFICIAL USE/S</b>	Sasol Weathered fine ash may be beneficially utilised in the construction and agricultural sectors. Its uses may include but are not limited to:  (a) Aggregate
<b>WASTE GENERATING FACILITY OR FACILITIES</b>	
<b>PHYSICAL ADDRESS OF FACILITY OR FACILITIES</b>	PdP Kruger Road, Secunda, 2302
<b>GPS CO-ORDINATES OF WASTE GENERATING FACILITY OR FACILITIES</b>	26° 32' 23" Latitude; 29° 8' 55" Longitude 26° 33' 39" Latitude; 29° 8' 41" Longitude 26° 33' 56" Latitude; 29° 10' 44" Longitude 26° 32' 43" Latitude; 29° 10' 55" Longitude
<b>CONTACT PERSON</b>	
<b>NAME</b>	Kashmira Doelab (Secunda Synfuels Operations (SSO): Acting Manager SHE: Waste)
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<p><b>* DETAILED DESCRIPTION OF WASTE GENERATING PROCESS</b></p>	<p><u>Secunda Synfuels Operations Process:</u> The sources of ash generated at Secunda Synfuels Operations are the Steam plant and Gasification plant where synthesis gas and steam are generated respectively.</p> <p>Ash from the gasification process is made up of an 80 % coarse ash fraction, which is transported to the coarse ash heaps via conveyor belts, and a 20 % fine ash fraction which is transported to the fine ash dams in a slurry form by means of pumping.</p> <p>Ash from the combustion process is made up of 86.4 % fine ash, which is transported to the fine ash dams together with the gasification fine ash fraction. The remaining 13.6% coarse ash is transported to the ash heaps together with the gasification coarse ash fraction.</p>	
<p><b>PRODUCTION PROCESS FLOW CHART ATTACHED</b></p>	<p><b>YES X</b></p>	<p><b>NO</b></p>
<p><b>IDENTIFICATION OF HAZARDS</b></p>		
<p><b>WASTE CLASSIFICATION</b></p>	<p><b>HAZARDOUS</b></p> <p>X</p>	<p><b>GENERAL</b></p>
<p><b>IF WASTE IS HAZARDOUS LIST THE HAZARDS OF THE WASTE</b></p>	<p><b>Health hazards due to the presence of lime (CaO) and SiO<sub>2</sub> occurring as quartz</b></p>	

**\*A process flow chart must be attached to the process description**

## RISK ASSESSEMENT WITHOUT MITIGATION

Activity	Risk Description	Environmental receptors	Impact	Assessment of the risk				Significance
				Probability	Magnitude	Duration	Scale	
1. Loading of ash onto trucks	Loss of containment of ash	Air	<ul style="list-style-type: none"> <li>Localised dust generation</li> <li>Air pollution</li> </ul>	Inherent: Definite: 5	Inherent: Minor: 2	Inherent: Immediate: 1	Inherent: Site only: 1	Inherent: 20, low environmental significance
2. Transportation of ash	Loss of containment of ash	Air	<ul style="list-style-type: none"> <li>Dust generation along transportation route</li> <li>Air pollution</li> </ul>	Inherent: Definite: 5	Inherent: Minor: 2	Inherent: Immediate: 1	Inherent: Local: 2	Inherent: 25, low environmental significance
		Land	<ul style="list-style-type: none"> <li>Load of ash deposited on land in the vicinity of the road</li> <li>Land pollution</li> </ul>	Inherent: Medium probability: 3	Inherent: Low: 4	Inherent: Short term (0 to 12 months): 2	Inherent: Site only: 1	Inherent: 21, low environmental significance
		Water	<ul style="list-style-type: none"> <li>Load of ash deposited in water body in the vicinity of the road</li> <li>Water pollution</li> </ul>	Inherent: Medium probability: 3	Inherent: Moderate: 6	Inherent: Short term (0 to 12 months): 2	Inherent: Site only: 1	Inherent: 27, low environmental significance
3. Off-loading of ash	Loss of containment of ash	Air	<ul style="list-style-type: none"> <li>Localised dust generation</li> <li>Air pollution</li> </ul>	Inherent: Definite: 5	Inherent: Minor: 2	Inherent: Immediate: 1	Inherent: Site only: 1	Inherent: 20, low environmental significance
4. Storage of ash	Loss of containment of ash	Air	<ul style="list-style-type: none"> <li>Localised dust generation</li> <li>Air pollution</li> </ul>	Inherent: Highly probable: 4	Inherent: Minor: 2	Inherent: Immediate: 1	Inherent: Site only: 1	Inherent: 16, low environmental significance
		Land	<ul style="list-style-type: none"> <li>Ash carried by run-off deposited on land in the vicinity of the ash storage area</li> <li>Land degradation</li> </ul>	Inherent: Medium probability: 3	Inherent: Minor: 2	Inherent: Short term (0 to 12 months): 2	Inherent: Site only: 1	Inherent: 15, low environmental significance
		Water	<ul style="list-style-type: none"> <li>Ash deposited by run-off in storm water channels and water body in the vicinity of the ash storage area</li> </ul>	Inherent: Low probability: 2	Inherent: Low: 4	Inherent: Short term (0 to 12 months): 2	Residual: Local: 2	Inherent: 16, low environmental significance
5. Handling of ash which includes the production of	Loss of containment of ash	Air	<ul style="list-style-type: none"> <li>Localised dust generation</li> <li>Air pollution</li> </ul>	Inherent: Definite: 5	Inherent: Minor: 2	Inherent: Immediate: 1	Inherent: Site only: 1	Inherent: 20, low environmental significance

<p>aggregate (i.e. screening, crushing, blending etc.)</p>								
<p>6. Disposal of ash and ash containing products</p>	<p>Loss of containment of ash</p>	<p>Air</p>	<ul style="list-style-type: none"> <li>Localised dust generation</li> <li>Air pollution</li> </ul>	<p>Residual: Medium probability: 3</p>	<p>Inherent: Minor: 2</p>	<p>Inherent: Short term (0 to 12 months): 2</p>	<p>Inherent: Site only: 1</p>	<p>Inherent: 15, low environmental significance</p>
		<p>Land</p>	<ul style="list-style-type: none"> <li>Load of ash disposed illegally on land</li> <li>Land degradation</li> </ul>	<p>Inherent: Medium probability: 3</p>	<p>Inherent: Low: 4</p>	<p>Inherent: Short term (0 to 12 months): 2</p>	<p>Inherent: Site only: 1</p>	<p>Inherent: 21, low environmental significance</p>
		<p>Water</p>	<ul style="list-style-type: none"> <li>Illegally disposed ash reaching water body in the vicinity of the dumping area</li> <li>Water pollution</li> </ul>	<p>Inherent: Medium probability: 3</p>	<p>Inherent: Low: 4</p>	<p>Inherent: Short term (0 to 12 months): 2</p>	<p>Inherent: Site only: 1</p>	<p>Inherent: 21, low environmental significance</p>
<p>7. Residual ash stockpiled after closure, decommissioning or change of ownership of user facility</p>	<p>Loss of containment of ash</p>	<p>Air</p>	<ul style="list-style-type: none"> <li>Localised dust generation</li> <li>Air pollution</li> </ul>	<p>Inherent: Medium probability: 3</p>	<p>Inherent: Minor: 2</p>	<p>Inherent: Immediate: 1</p>	<p>Inherent: Site only: 1</p>	<p>Inherent: 12, low environmental significance</p>
		<p>Land</p>	<ul style="list-style-type: none"> <li>Ash carried by run-off deposited on land in the vicinity of the ash storage area</li> <li>Land degradation</li> </ul>	<p>Inherent: Medium probability: 3</p>	<p>Inherent: Low: 4</p>	<p>Inherent: Short term (0 to 12 months): 2</p>	<p>Inherent: Site only: 1</p>	<p>Inherent: 21, low environmental significance</p>
	<p>Water</p>		<ul style="list-style-type: none"> <li>Ash carried by run-off deposited in storm water channels and water body in the vicinity of the ash storage area</li> </ul>	<p>Inherent: Low probability: 2</p>	<p>Inherent: Low: 4</p>	<p>Inherent: Short term (0 to 12 months): 2</p>	<p>Residual: Local: 2</p>	<p>Inherent: 16, low environmental significance</p>

**The following factors and criteria must be used to assess the impacts of the activities:**

Criteria	
MAGNITUDE (Severity)	DURATION
10 - Very high	5 - Permanent (longer than 10 years)
8 - High	4 - Long-term (5 to 10 years)
6 - Moderate	3 - Medium-term (12 months to 5 years)
4 - Low	2 - Short-term (0 to 12 months)
2 - Minor	1 - Immediate
SCALE	PROBABILITY (Likelihood)
5 - International	5 - Definite
4 - National	4 - Highly probable
3 - Regional	3 - Medium probability
2 - Local	2 - Low probability
1 - Site only	1 - Improbable
0 - None	0 - None

**Magnitude**

Magnitude measures the size of the impact

**Duration**

Duration refers to the lifetime of the impact i.e. how long it will last

**Scale**

The scale refers to the extent of the impact.

**Probability**

The probability refers to the chance of impact to occur. The potential impact could be most likely to occur, unlikely, etc.

**Assessment of Significance of impact**

Significance rating of the potential impacts illustrates the importance of the impact itself. The size of area affected by pollution may be extremely high but the significance of this effect is dependent on the concentration or level of pollution in that area. In order to determine the significance of impact, the following method was used:

$$\text{Significance Points (SP)} = (\text{Magnitude} + \text{Duration} + \text{Scale}) \times \text{Probability}$$

The values of SP are then ranged as follows:

Rating	Description
SP >60	Indicates high environmental significance An impact which could influence the decision about whether or not to proceed with the activities regardless of any possible mitigation.
SP 30 – 60	Indicates moderate environmental significance An impact or benefit which is sufficiently important to require management and which could have an influence on the decision unless it is mitigated.
SP <30	Indicates low environmental significance Impacts with little real effect and which will not have an influence on or require modification of the activities.
+	Positive impact An impact that is likely to result in positive consequences/effects

I **Kashmira Doelab** hereby declare that I have read the completed the Risk Assessment form and hereby confirm that the information is to the best of my knowledge true and correct.

Furthermore, I declare that I am fully aware of my responsibilities in terms of the Waste Exclusion Regulations, and that failure to comply with these Regulations may constitute an offence in terms of the National Environmental Management: Waste Act, 2008 (Act 59 of 2008).

Applicant (Full names) **Kashmira Doelab**

Designation **Secunda Synfuels Operations (SSO) Acting Manager: Waste**

Signature *Doelab*

Date **28 November 2018**

Place **Secunda**

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Date Received				
Decision Taken	Authorised		Not Authorised( provide reasons)	
Reference Number				