Sasolburg Community Emergency Exercise

J Fourie

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Scenario

On 18 October 2023, a service provider assigned to Fine Ash Dam 5 observed a significant failure occurring on a section of the dam's outer slope. An alarm was promptly raised, initiating evacuation procedures.

Unfortunately, during the evacuation process, one of the service providers stumbled and tumbled down the outer slope of the dam. Meanwhile, fine ash tailings start flowing downstream in the direction of Afrikaans High School and Leeuwspruit Primary School. Two patients were reported at the schools.

Actual release estimated: 5 630 322 m^3

Product information

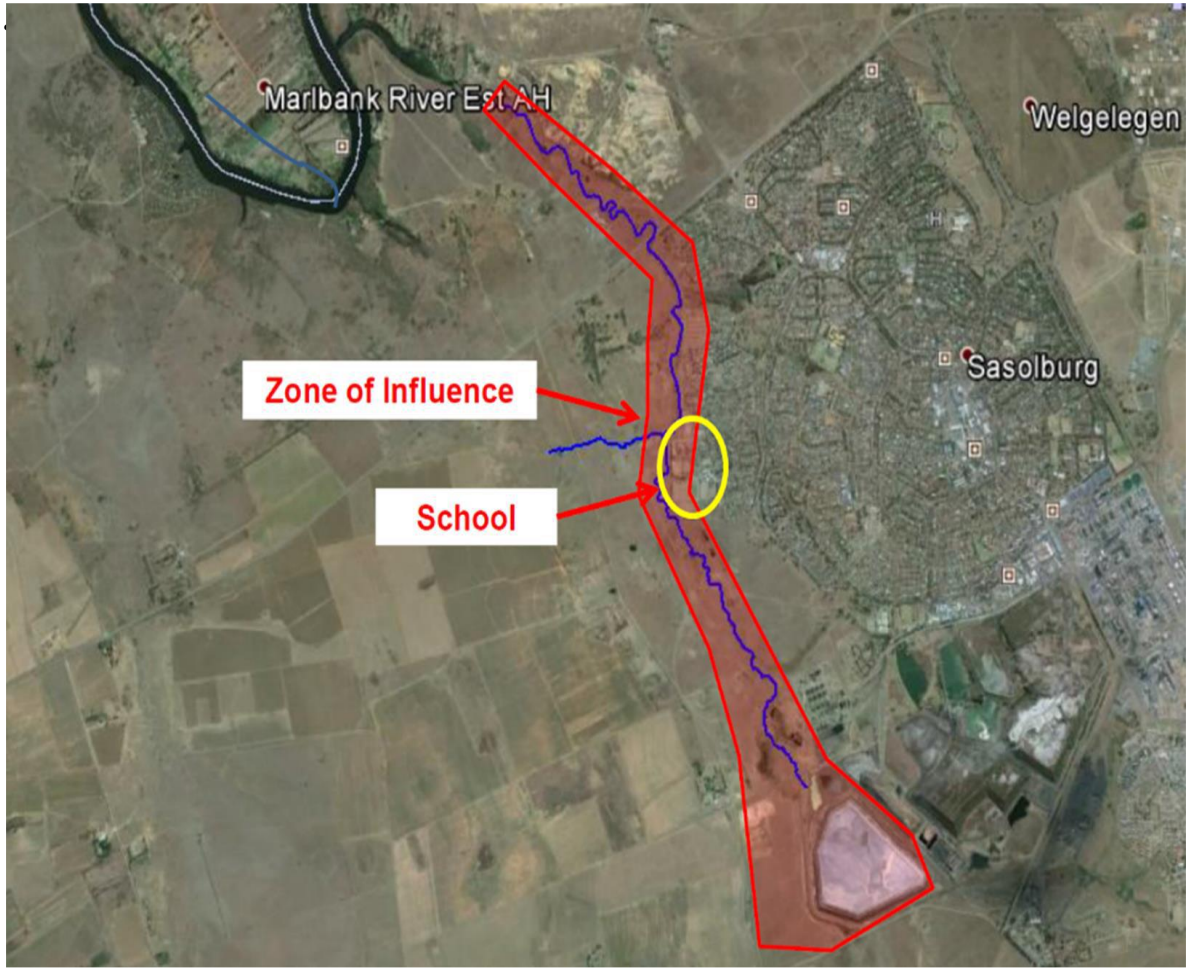
Product: Fine Ash Tailings

Product temperature: Temperature of tailings may be influenced by several factors such as location and climate, depth, seasonal variations, mixing and composition as well as chemical reactions. In this case, the tailings would be expected to be “cool” to “moderate”.

Potential release volume: 17 426 136 m^3 (total volume of tailings based on 2021 Lidar survey)

Actual release estimated: 5 630 322 m^3 (highest sunny day breach volume as estimated from the 2023 dam breach

Zone of influence



- Time to reach school fields approximately 35 minutes
- Some flow along a portion of the Western boundary of the Sasolburg town
- Crosses and overtops the R59 in approximately 1hr
- Flows until it reaches the Vaal river approximately 2hrs

Primary affected areas

- Sasol 1 (The Site alarm will be activated)
- SGEPP
- Steam Station 2
- Fine Ash
- Bio Works
- Afrikaans High School
- Leeuwspruit Primary School

Objectives

Fine Ash Plant

- To test and evaluate the effectiveness of the Emergency Preparedness Plan(EPP) and Emergency Response Plan (ERP) for the fine ash dams.
- To identify and address any gaps, weaknesses, or areas for improvement in the EPP and ERP.
- Test communication and coordination with the relevant stakeholders about the potential consequences of a dam breach and the actions to be taken to mitigate them.
- To enhance awareness and preparedness of the public and the environment for the possible impacts of a dam breach and the measures to protect themselves and their property.

Emergency Management

- Test the activation of Mutual Aid assistance
- Test the EM Operations response and treatment of the patients
- Test the Works Emergency Team actions.
- Evaluate the evacuation plan for Afrikaans High School and Leeuwspruit Primary School
- Test communication from the Incident Command to the Works Emergency Centre

Objectives

Community Affairs
- Test the changes in the Communication Plan

Medical Centre
- Test patient handover from EM to Medical Centre
- Test patient treatment

Environmental
- Test the Sampling protocol (downstream)
- Test Disaster communication through WECC
- Test internal Communication to authorities (DFFE and DWS)

Security
- Test communication to Security personnel at Bio Works
- Test the collaboration between Security and Local Traffic department regarding road closures

Required actions

Traffic (Metsimaholo and Provincial)

- Road closure at Afrikaans High School and Leeuwspruit Primary School
- R59 will not be close for the purpose of the exercise but in an actual incident this area/road will be affected

SAPS and Metsimaholo Fire

- Assist with incident management, public safety, evacuation and assembly at Afrikaans High School and Leeuwspruit

Ambulance Services (Vaal Emergency Care (VEC), Netcare and Free State Health)

- Assist with possible injuries when evacuating children at Afrikaans High School and Leeuwspruit Primary School
- VEC and Free State Health situated at Afrikaans High School
- Netcare situated at Leeuwspruit
- Simulation of patient treatment and transportation
- There will be one Teacher from each school that will be patients on the day.
- They need to be treated (simulate as per patient tag) and transported to Netcare Vaalpark Hospital and Fezi Ngubentombi Provincial Hospital

Required actions

Hospitals (Netcare Vaalpark Hospital and Fezi Ngubentombi Provincial Hospital)

- Simulation of patient acceptance and treatment
- One patient will be transported to Netcare Vaalpark Hospital
- One patient will be transported to Fezi Ngubentombi Provincial Hospital
- Only simulation of patient acceptance and treatment whereby there after the will return to the schools

Disaster Management (Metsimaholo and Fezile Dabi)

- Simulation of activating the Disaster Management Plan
- Is this scenario captured in the Plan?

Scene set-up

- Traffic road closures
- School assembly area
- Netcare 911
- VEC & FS Health
- Media & Observers
- Sasol & Metsimaholo Incident Command
- Available parking for media, observers etc.

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Outcome - Positive aspects

- Very good communication regarding the new Community Affairs communication plan was established.
- Emergency preparedness and response at Afrikaans High School and Leeuwspruit Primary School went very well.
- Emergency Management response and rescue of the patient at the fine ash dam was well executed.
- Evacuation of the fine ash dam area went quickly and promptly.

Major learnings

- Normal activities at the Sasolburg dump and cemetery area took place.
- Tetra radio signal in the Leeuwspruit area is very poor and this delayed communication between the incident command and works emergency center.
- The local authorities did not take over incident command at the schools.
- Communication from the plant to the schools went very well and follow up calls was made to the schools.