



Report: Potchefstroom emergency simulation

Mock Emergency Simulation at Potchefstroom on the N12 route.

23rd and 25th of June 2025





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DEFINITIONS AND ACRONYMS

Emergency Medical Services (EMS) - A system that provides emergency medical care and transportation to individuals in need of immediate medical attention.

Emergency Room (ER) - A specialized department in a hospital where patients with acute illnesses or injuries receive immediate medical treatment.

Emergency Response Guidebook 2020 (ERG2020) - A guidebook used by emergency responders to identify hazardous materials and provide response recommendations during transportation incidents.

Incident Co-Ordinator - The person nominated by the Management Team at the scene of an accident. The role of the Co-Ordinator is to facilitate decisions ensure and that action plan is agreed to implemented by all.

The coordinator also maintains a communication link with the JICP and the Centralized Communication Centre.

A JICP position consisting of a single person who has responsibility for all interactions between JICP and the media and who coordinated the release of information on the incident situation and response efforts from JICP to media.

Joint Incident Command Post (JICP) - The safe, convenient location set up at an incident/crash scene of the tactical-level at which the Management Team manages the incident.

Liquefied Petroleum Gas (LPG) - A type of flammable hydrocarbon gas that is commonly used for heating, cooking, and as fuel in vehicles.

Personal Protective Equipment (PPE) - Clothing, gear, or equipment worn to protect individuals from various hazards or risks in their working environment.

Priority 1 (P1) - a patient whose life is in immediate danger and requires immediate treatment.

Priority 2 (P2) - a patient whose life is not in immediate danger (moderate to serious injury).

Priority 3 (P3) - Non-life-threatening injury (walking wounded)

Priority 4 (P4) - deceased patient/ dead on arrival

Road Incident Management System (RIMS) - The coordinated and pre-planned use of human, mechanical and electronic resources to manage incidents and to restore traffic to normal operating conditions as soon as possible.

Routine Road Maintenance (RRM) - The RRM team is all Routine Road Maintenance Contracts on Proclaimed National Roads. When called upon the Contractor shall proceed immediately to the scene of the crash event, with equipment and material, to normalize, restore and safeguard any dangerous area for the safe passage of any traffic using the road.

Self-Contained Breathing Apparatus (SCBA) - A device worn by firefighters and other emergency responders to provide breathable air in hazardous environments where the atmosphere is compromised.



South African Police Service (SAPS) - The South African Police Service is responsible for internal security and crime prevention. "The Constitution of South Africa lays down that the South African Police Service has a responsibility to prevent, combat and investigate crime and maintain public order, to protect and secure the inhabitants of the Republic and their property, uphold and enforce law and create a safe space and secure environment for all people in South Africa.

The hot zone - The area of an emergency or disaster scene where hazardous materials or life-threatening conditions are present. It requires special precautions and protective gear for personnel who enter this area.



Executive summary

Sasol Product Logistics Safety, in collaboration with DP World and Road Incident Management Systems (RIMS) under the auspices of the South African National Road Agency (SANRAL), successfully hosted a comprehensive Emergency Awareness Roadshow and a full-scale Emergency Simulation Exercise in Potchefstroom from 23 to 25 June 2025.

These annual initiatives are integral to Sasol and DP World's commitment to public safety, environmental protection, and inter-agency preparedness. Each year, a strategic logistics corridor—through which high-risk products are frequently transported—is selected for these exercises. The objective is to identify and address potential gaps in the preparedness and response capabilities of all first responders operating within that corridor.

To enhance readiness, Sasol delivers a targeted Dangerous Goods and Emergency Preparedness & Response Awareness Roadshow prior to the exercise. This approach ensures that critical knowledge is disseminated and embedded among stakeholders, enhancing the efficacy of coordinated emergency response.

Two major events were conducted in Potchefstroom:

- **Emergency Preparedness & Response Awareness Roadshow** (23 June 2025, Madiba Hall): This session aimed to align multi-agency preparedness efforts, raise awareness of hazardous material risks, and promote shared responsibility among emergency services and local stakeholders.
- **Full-Scale Emergency Simulation Exercise** (25 June 2025, N12 Potchefstroom Weighbridge): This high-fidelity simulation tested response strategies to a complex hazardous material incident, involving simultaneous chemical releases and requiring integrated multi-agency coordination.

These events also served to evaluate adherence to International Cyanide Management Institute (ICMI) protocols, test inter-agency integration, and assess technical response capacity in one of South Africa's critical logistics corridors.

Through these collaborative efforts, Sasol continues to strengthen stakeholder relationships and reinforce the importance of unified, proactive response mechanisms to hazardous goods transportation incidents.

The exercise included:

- a) Sasol
- b) JB Marks fire department
- c) Mediclinic Potchefstroom
- d) Potchefstroom Public Hospital
- e) Spill Tech Response
- f) ER24
- g) Provincial EMS



- h) Road Incident Management Systems (RIMS) under SANRAL
- i) Traffic department (Local and Provincial)
- j) Disaster Management
- k) Police
- l) Routine Road Maintenance (RRM)

Objectives:

Awareness Roadshow- 23 June 2025

- To educate stakeholders on key risks associated with the transportation and handling of hazardous materials in general because we have all classes of dangerous goods passing through the N12 corridor except explosives and radioactive materials.
- To raise awareness of the expected roles and responsibilities of various disciplines in an emergency.
- To promote a shared understanding of emergency escalation procedures, communication lines, and protocols.
- To strengthen inter-agency relationships in preparation for coordinated incident responses.
- To ensure that all parties are familiar with scene safety principles, zoning, and basic hazard control procedures.
- To refresh about Incident Management Systems and how all disciplines form part and play a role.



Simulation Emergency Exercise- 25 June 2025

- To ensure DP World comply with the requirements of International Cyanide Management Institute (ICMI)
 - Cyanide transporters are not only prepared for potential emergencies but also actively practice and refine their response capabilities through regular exercises, contributing to the overall safety of cyanide transportation operations. As per the ICMI code, Cyanide transporters must conduct an emergency exercise once a year.
- Test the Response to a Major Spillage as per the ICMI code
 - Evaluate the response time and effectiveness of containment measures for flammable and toxic liquids.
- Coordination Between Emergency Services
 - Assess communication and coordination between fire services, traffic control, medical teams, and other stakeholders.
- Rescue Operations in Hazardous Conditions
 - Practice the safe extraction and treatment of injured personnel (from P1 to P4 patients) while dealing with dangerous smoke, flammable and toxic substances.
- Environmental Protection
 - Implement strategies to protect the surrounding environment and human settlements from potential contamination and fire hazards.
- Post-Incident Analysis
 - Ensure detailed debriefing and identification of improvement areas in emergency protocols related to dangerous goods transportation and road maintenance activities.

Feedback : 23 June 2025: Emergency Awareness Roadshow – Madiba Hall

Awareness Roadshow positive Aspects:

- Approximately 50% of invited stakeholders attended.
- All major emergency services were present, excluding towing services, pathology, and SAPS.
- Madiba Hall was well suited for the session, with ample space and accessibility.
- Stakeholder participation and engagement were constructive and solution-driven.

Awareness Roadshow concerns identified:

- Late opening of Madiba Hall, resulting in a delayed start.
- Projection screen and sound system arrived late, disrupting initial flow.
- Several disciplines did not send the agreed number of participants.



Feedback : 25 June 2025: N12 Potchefstroom Emergency Simulation Exercise

Staged Scenario Summary

A high-impact simulation was conducted at the N12 Potchefstroom Weighbridge, based on the following sequence:

1. A cyanide tanker from DP World entering the weighbridge experienced a malfunctioning air lock mechanism, partially activating a product valve.
2. A technician sent to assess the issue fell onto the secondary offloading valve, cracking a weld seam and causing a release of toxic gaseous cyanide.
3. A ULP 95 fuel tanker from Sasol Energy (with 2 crew members), entering the staging area for axle inspection, encountered the cyanide plume. One crew member became unconscious, causing the vehicle to lose control and collide with the stationary cyanide tanker.
4. The collision led to a breach in the fuel tanker's mid-compartment, spilling unleaded petrol and pooling near stormwater drains, creating combined toxic and explosive hazards.

People Involved

- DP World Cyanide Tanker: 1 driver
- Sasol Sales & Marketing Energy Fuel Tanker: 2 crew (1 unconscious)
- Technical Team: 1 injured lead technician, 1 apprentice
- Weighbridge: 1 security officer, 1 clerk (eyewitness and responder)

Observations from Simulation

Positive Aspects:

- Incident reporting was conducted well to all services' call centres and response activated.
- The first arriving service (Traffic Department), stopped a good distance away and placed an orange cone on top of the vehicle to mark it as Incident Command post.
- The traffic flow was managed effectively.
- Makeup artists performed an impressive job illustrating injuries on patients as real as possible.
- All role players followed appropriate upwind approach towards the incident scene
- Hazmat equipment was sufficient; JB Marks Fire department has a Sasol Hazmat Trailer in their custody; Spill Tech has a Sasol Hazmat Trailer and own equipment.

Concerns

- Two responding services created two incident command posts by placing the orange cone on top of their roofs
- Several first responders did not do a scene size up and went to close to the incident zone without determining what products they were dealing with.
- No gas testing conducted throughout the incident, to determine how far the contamination perimeters were.
- No clear demarcations of zones (hot, warm and cold zones).
- No communication between all services that were on scene.



- Lack of communication resources (intrinsically safe radio's not available) to communicate from the hot zone to the IC post.
- All services worked in silos.
- All services' most senior personnel did not form part of the technical support team of the incident command structure.
- The Incident commander did not take charge of the scene
- Incident commander did not call all other required services to the scene
- There was no plan of action from the IC.
- The first responding officers that later were tagged as patients, were removed last from the hot zone.
- There was no safety officer to ensure safety of the scene.
- Staging area was identified but lacked order. Responding vehicles blocking each other.
- Incident Command was not structured
- No JOC (Joint Operations Centre) was activated during the simulation.
- No use of the ERG to identify chemical properties or determine isolation zones.
- No concern to immediate hazards and personal protection despite active Cyanide and petrol runoff.
- No plans done to informing nearby residents/ businesses of the incident and to advice weather to shelter in place or evacuate.
- The first team to enter the hot zone did not have a charged hose for protection against unknown ignition sources despite active Cyanide and petrol runoff.
- No foam used for vapor suppression and to control any ignitions towards the products involved.
- There was no scientific methodology used in decision-making on where patients were to be transported to. There was no record-keeping or check-in with local hospitals to inform them of the type and number of patients requiring hospitalization.
- No triaging and scene size up of patients and scene inside the hot zone by the first team inside the hot zone.

Recommendations

1. All first responder departments to ensure that they have and are aware of their emergency response plans- this is derived from the desktop emergency exercise held on the 19th of June 2025. During the Desktop emergency exercise it was evident that first responders either do not have an emergency response plan, if it existed, the first responders did not know the details of it.
2. All participants to undergo RIMS training.
3. All participants to undergo Dangerous Goods training through RIMS.
4. ICS (Incident Command System) roles must be reinforced and clarified before future simulations.
5. Consistent use of the Emergency Response Guidebook (ERG) and scene size up must be integrated into response drills.
6. Emphasize importance of environmental containment, especially for fuels near stormwater drains.
7. Formal JOC activation procedures should be included in all exercises.
8. Enhanced coordination across services to avoid siloed operations.



Conclusion

The dual activities conducted on 23 and 25 June 2025 offered critical insights into stakeholder readiness, emergency response coordination, and hazard mitigation in a high-risk logistical environment.

While the Awareness Roadshow at Madiba Hall served as a valuable precursor in setting context and expectations, the N12 Simulation Exercise provided a live test of theoretical and operational capabilities. Sasol's ongoing facilitation together with DP World and RIMS on these engagements contributes significantly to regional preparedness and public safety.

The learnings from this simulation will directly inform future training, stakeholder engagement, and cross-functional collaboration efforts.



Annexure A: Videography and Photography

Video link: [VID-20250722-WA0013.mp4](#)









Annexure B: Budget Sasol

Budget: Sasol		
ITEM	Description	COST
Branding	<ul style="list-style-type: none"> Telescopic Flags, Gazebos, Media Wall Banner, Pop up banners etc. 	R8,282.50
TOTAL		R8,282.50

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Annexure C: Combined Budget (Sasol and BP World)

Budget: (Split in Half between DP World and Sasol for 23rd of June 2025)		
ITEM	Description	COST
Food & beverages Total number personnel 120	<ul style="list-style-type: none"> 5 participants per the below stakeholders: <ul style="list-style-type: none"> Fire Department EMS ER24 Spill Tech RRM Disaster Management SAPS Provincial Traffic Local Traffic Pathology Hospital Staff Tow Services Weighbridge Personnel Additionally, an invitation will be extended to: <ul style="list-style-type: none"> DP world Sasol- 7 RIMS Petrol Station Staff Truck Stop Personnel Primary School Teachers 	R12,000.00
TOTAL		R12,000.00

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SAFETY
EXCELLENCE
IN TRANSIT

Budget: (Split in Half between DP World and Sasol for 25th of June 2025)



ITEM	Description	COST
Event requirements	<ul style="list-style-type: none"> Furniture & Ablution Facilities 	R25,715.50
Visual media	<ul style="list-style-type: none"> Photography and video 	R5,000.00
Food & beverages TBC on Friday 30 th of May 2025 (To be covered by RIMS)	<ul style="list-style-type: none"> - 	-
TOTAL		R30,715.00

SAFETY
EXCELLENCE
IN TRANSIT

Total Budget: (Split in Half between DP World and Sasol)



ITEM	Description	COST
23 rd of June 2025	<ul style="list-style-type: none"> Food and Beverages Total number personnel 120 (R100 X 120) 	R12,000.00
25 th of June 2025	<ul style="list-style-type: none"> Furniture & Ablution Facilities Photography and video 	R30,715.00
Food & beverages TBC on Friday 30 th of May 2025 (To be covered by RIMS)	<ul style="list-style-type: none"> - 	-
TOTAL		R42,715.00

Compiled by: Diamond Tsolo

Emergency Prep & Res Specialist

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