



water & sanitation

Department:
Water and Sanitation
REPUBLIC OF SOUTH AFRICA

Enquiries: Ms Z Makhathini
Telephone: 012 336 7305
Reference: 21/15/P5

MINISTER OF WATER AND SANITATION

NATIONAL ASSEMBLY: QUESTION 900 FOR WRITTEN REPLY

A draft reply to the above mentioned question asked by Dr P J Groenewald (FF Plus) is attached for your consideration.


ACTING DIRECTOR-GENERAL

DATE: 16/04/2018

DRAFT REPLY APPROVED/AMENDED 


**NKWINTI GE, MP
MINISTER OF WATER AND SANITATION**

DATE: 20/04/2018

CONFIDENTIAL

NATIONAL ASSEMBLY

FOR WRITTEN REPLY

QUESTION NO 900

DATE OF PUBLICATION IN INTERNAL QUESTION PAPER: 23 MARCH 2018
(INTERNAL QUESTION PAPER NO. 9)

900. Dr P J Groenewald (FF Plus) to ask the Minister of Water and Sanitation:

- (1) Whether he is aware of the incident on 21 February 2017 at the Kareerand Silt Dam near Stilfontein in North West where large quantities of silt were dumped into the Vaal River; if so, (a) what was the extent of the pollution in the immediate environment of the Kareerand Silt Dam and in the Vaal River and (b) what steps (i) have been taken to limit and neutralise the impact of the immediate pollution and (ii) are being taken to prevent future dumping;
- (2) whether he will make a statement on the matter? NW1095E

---0000---

REPLY:

- (1) My Department was aware of the incident on 21 February 2017. On 21 February 2017, following a heavy rainstorm event of more than 50mm in the Klerksdorp / Stilfontein area as a result of the passing tropical cyclone "Dineo" that affected large parts of South Africa, the authorised Return Water Dam of Mine Waste Solutions' Kareerand Tailings Storage Facility ("Kareerand TSF") overflowed and subsequently discharged downstream into the Vaal River. The rain recorded on 21 February 2017 fell within a period of roughly three hours. Consequently, the return period of this storm can be calculated to be 20 years. However, the fact that this event was preceded by two days of heavy rainfall meant that saturated ground conditions prevented infiltration and resulted in higher runoff than would normally be experienced. The cumulative effect of three successive days of rain was close to the 50-year return interval event of three-day duration.

In addition to the Return Water Dam overflow, storm water and some tailings material from the area surrounding the Kareerand TSF also spilled into the draining line towards and into the Vaal River. The Kareerand TSF remained stable during the incident and freeboard of the dam was safely maintained. Following the incident on 21 February 2017, My Department, Bloemfontein and the National Nuclear Regulator were immediately notified telephonically of the occurrence by Senior Officials from Mine Waste Solutions.

- (1) (a) *'what was the extent of the pollution'*

Storm water from the catchment north of the Kareerand TSF mixed with the storm and return water from the Kareerand TSF before flowing into the Vaal River. The total storm water run-off from the Kareerand TSF footprint and surrounding catchment (600 hectare) was estimated to be ~25000 kl. Water quality samples were taken downstream of the Kareerand TSF in the tributary and inside the Vaal River downstream of the discharge at Vermaasdrift, on the 21 & 22 February 2017.

CONFIDENTIAL

The Vaal River sample analysis on 21 February 2017 indicated that Total Dissolved Solids (TDS) and Sulphate exceeded the Vaal River in-stream water quality objectives, 625mg/l (versus 560mg/l limit) and 346mg/l (versus 160 mg/l limit), respectively, during the incident. Sample analysis on 22 February 2017 for Total Dissolved Solids (TDS) and Sulphate was 265mg/l and 73mg/l, respectively. The sample analyses for cyanide in the discharge to the Vaal River were below detection limit.

(1) (b)(i) *'what steps (i) have been taken to limit and neutralise the impact'*

Immediate action(s) taken on 21 February 2017 include:

- The operations at the Kareerand TSF were suspended;
- Downstream water sampling was initiated immediately;
- Midvaal Water Company, the local water service provider (downstream of the discharge) was notified to ensure frequent water quality monitoring of its water intake continued;
- My Department and the National Nuclear Regulator were also notified.
- The clean-up of residue around the offices and workshops.

(1) (b)(ii) *'are being taken to prevent future dumping'*

Actions(s) taken to prevent recurrence of the incident include:

- Due to the volume of storm water and the potential erosion of the Kareerand TSF's side slopes in extreme rain fall events, an upgrade of the toe wall in order to attenuate slurry and storm water on the Kareerand TSF side slope was done.
- Construction of a rolled edge at the site offices and workshops to prevent dirty storm water from the tailings footprint from flooding offices and potentially leaving the Kareerand TSF footprint
- Installation of clean storm water diversion culverts at the entrance to Kareerand TSF, to prevent clean water from entering the Kareerand TSF footprint
- The construction of temporary storm water containment inside the Kareerand TSF footprint to further contain storm water runoff

Subsequently, the company has set aside funding to upgrade the temporary storm water containment facility to a permanent facility. Design is in progress and construction is planned for 2019.

Additionally, on 14 November 2017, officials from MyDepartment conducted a site inspection to verify the operations progress toward implementing remedial action as presented in the close-out report submitted 19 October 2017 (refer to the report attached as **Annexure A**).

(2) Since this matter was resolved last year (February 2017), I see no need to issue a statement.

---0000---

I Olegan Moodley, hereby acknowledge receiving a hard copy of the Action Plan and Close Out Report for the Loss of Containment – Process Water Overflow at Kareerand Tailings Storage Facility Return Water Dam on 21 February 2017.

Our Reference: DWA/MWS/LOC-PWO/Maj/170221

Olegan Moodley

Signature

17/11/2017

Date



ANGLOGOLDASHANTI
Chemwes Proprietary Limited

Registration Number 1964/002378/07
76 Rahima Moosa Street, Newtown 2001
PO Box 62117, Marshalltown 2107, South Africa
Tel: +27 (0) 11 637 6000
Fax: +27 (0) 11 637 6624
Website: www.anglogoldashanti.com

OUR REFERENCE: DWA/MWS/LOC-PWO/Maj/170221

19 October 2017

The Regional Chief Director: Free State
Department of Water Affairs and Sanitation Free State
P.O. Box 528
Bloemfontein
9300

Attention: Mr. George Nel

Dear Sir,

RE: LOSS OF CONTAINMENT – PROCESS WATER OVERFLOW AT KAREERAND TAILINGS STORAGE FACILITY RETURN WATER DAM ON 21 FEBRUARY 2017.

Following the initial incident notifications by Mr J Ellis, herewith the outcome of the investigation and the proposed actions to prevent a similar occurrence.

Date, Time and Description of Incident

On 21 February 2017, following a heavy rainstorm event of more than 50mm in less than 3 hours, the return water dam at the Kareerand Tailings Storage Facility (TSF) overflowed into the drainage line and subsequently discharged downstream into the Vaal River.

In addition to the return water overflow, storm water and some tailings material from the area surrounding the Kareerand TSF also spilled towards and into the Vaal River. The estimate of the total run-off from the Kareerand footprint is approximately 25 000m³.

The Kareerand TSF remained stable during the incident and freeboard of the dam was safely maintained.

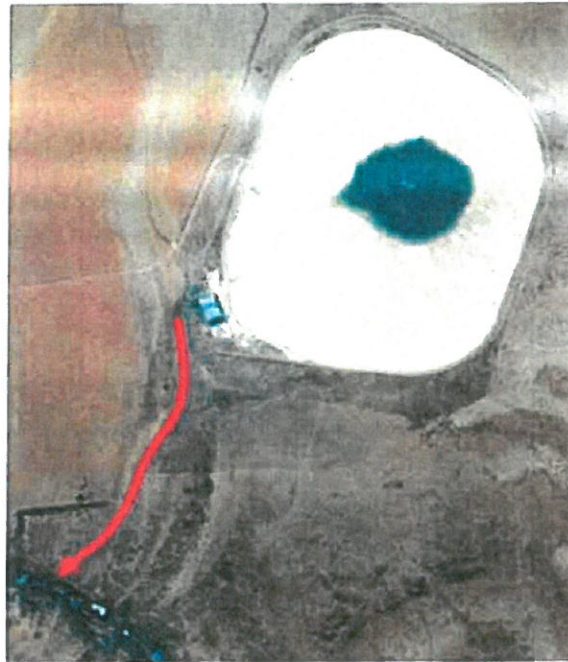


Figure 1: Drainage line towards the Vaal River



Figure 2: Spillage towards the Vaal River (21 Feb 2017)

Source of potential pollution, impact or potential impact (water users)

Storm water from north of the Kareerand TSF (Khuma) mixed with the storm and return water from the Kareerand TSF before flowing into the Vaal River.

Water quality samples was taken at KM16, downstream of Kareerand TSF in the unnamed tributary, and VRS23, inside the Vaal River downstream of Kareerand discharge at Vermaasdrift, on the day of the incident. The water quality results of the samples and locations is shown in Figure 3.



Water quality samples on the 22nd February 2017 was taken at KM16, VRS 23 and VRS63 inside the Vaal River upstream of Kareerand TSF at the Kromdraai Weir.

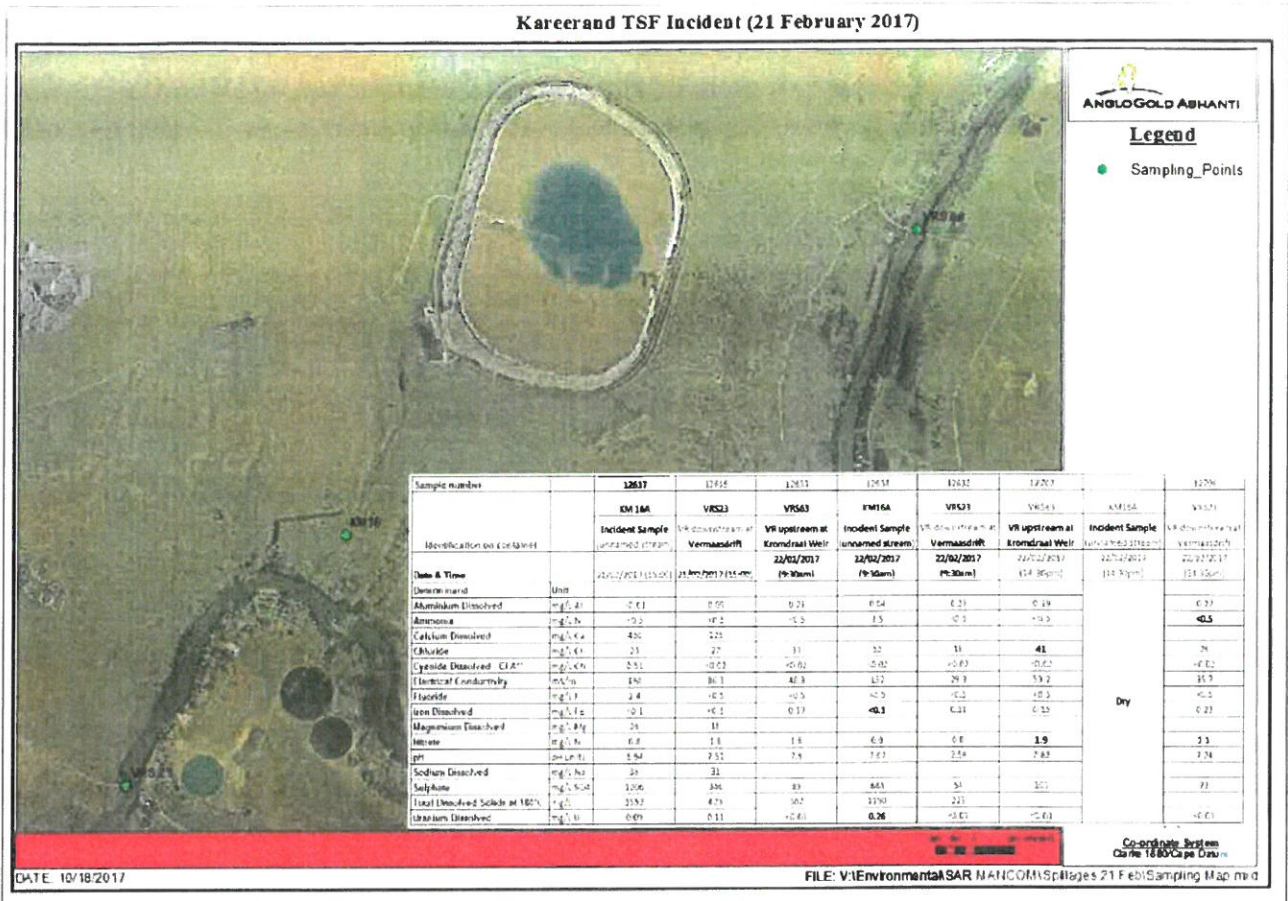


Figure 3: Kareerand Incident Sampling locations and Water Quality Results

Vaal River sample analysis indicated that Total Dissolved Solids (TDS) and Sulfates exceeded the regulatory instream water quality objectives, 585mg/l (vs 560mg/l limit) and 346mg/l (vs 160 mg/l limit) respectively during the incident. The cyanide levels in the discharge and the Vaal River remained within limits.

Remedial Action

The immediate remedial action(s) taken on 21 February 2017 included:

- All operations at Kareerand TSF was suspended;
- Extensive downstream water sampling was initiated (see Figure 3);
- Midvaal Water Company (downstream of discharge) was notified to ensure monitoring frequency continued; and
- The Department of Water and Sanitation and the National Nuclear Regulator was notified.

Interim actions taken:

- Follow up water samples was taken and sent for analysis (see Figure 3 for results);
- An internal incident investigation was initiated on 28 February 2017;



The medium to long term action(s) planned to prevent recurrence of spillages include:

- The clean-up of residue around the offices and workshops : Completed.
- Construction and maintaining an toewall on the TSF side slope to attenuate slurry and storm water on the TSF side slope : Ongoing
- Construction of a rolled edge at the Kareerand offices and workshops to prevent storm water from flooding the offices and leaving the site : November 2017
- Installation of clean storm water diversion culverts at the entrance to Kareerand, to prevent clean water from entering the TSF footprint : December 2017
- The design and construction of temporary storm water containment on Kareerand TSF footprint to attenuate stormwater fro the facility : March 2018
- Evalaute the stormwater capacity of the current pollution control dam to accommodate a 1:50 rain event : March 2018

These actions planned and completed will reduce the risk of spillage and recurrence.

Yours sincerely

Duran Archery
Acting General Manager