SUB-SLAB, SOIL, SURFACE WATER AND GROUNDWATER ASPECTS RELATING TO THE UPL WAREHOUSE FIRE - CORNUBIA

9TH OCTOBER 2023

UPL OpenAg™

GEOMEASURE GROUP
Groundwater, Environmental & Geotechnical Consultants

KEY WORK & MILESTONES

- Monthly surface water and sediment / sampling and reporting
- Quarterly groundwater sampling
- Sub-slab sampling and reporting
- Sub-slab test pit sampling
- Geohydrological investigation (ongoing)

WORK COMPLETED OVER PRECEDING TWO (2) MONTHS

- August & September 2023 routine monthly surface water and sediment / sampling and reporting.

- October 2023 routine monthly sampling – awaiting receipt of laboratory results.

- Completion of sub-slab test pit sampling for comment.

- Geohydrological investigation (ongoing).

RECENT RESULTS & FINDINGS
SUB-SLAB REPORT

- Phases of sub-slab sampling were undertaken and the results were provided to Prof. Mary Gulumian to calculate Rick Based Screening Levels (RBSLs) for comparison of results.
- The RBSLs for the site included the following scenarios:
  - Residential –Soil
  - Composite Worker – Soil
  - Indoor Worker – Soil
  - Ingestion of Fish
  - Soil to Groundwater
- Impacts exceeding the RBSLs were seen to extend from 0.5 to 2 m below the base of the slab and impacts were largely not found to have infiltrated the fill / in-situ soils at depth below the slab.
- The site meets the requirements of the:
  - composite worker RBSLs,
  - the indoor worker RBSLs,
  - residential soils RBSLs and the
  - commercial / industrial screening levels.
- The site can continue to be used as a commercial / industrial property in its current state. A vapour intrusion assessment may need to be conducted if structures such as buildings are built on the site in the future, as impacts may still be present in the cracks, joints, fire damaged areas and the concrete slab itself.

RECENT RESULTS & FINDINGS
SUB-SLAB TEST PIT REPORT

- Purpose of the sampling is to visually observe what is beneath the slab, to bulk sample hot spot areas and to conduct geotechnical tests.

- Two (2) test pits were excavated and geologically logged and the fill layers including the G5, G7 and bulk fill were sampled.

- The G5, G7 and bulk fill remains impacted in these two (2) test pits.

- Pools of perched water (mixture of contaminants and fire fighting water) still remain beneath the slab.

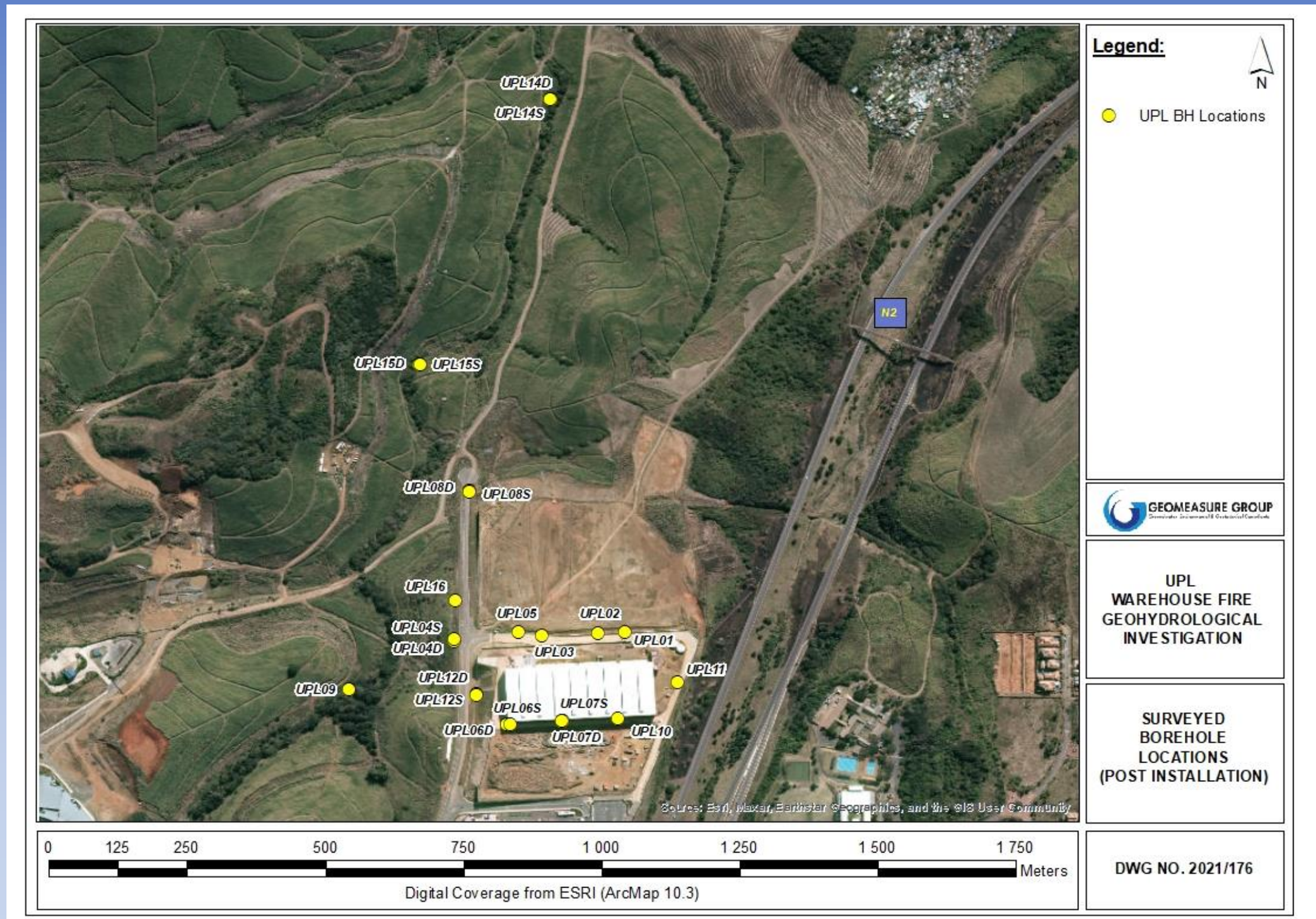
- The review of fill sample results indicate that the samples meets the requirements of the
  - composite worker RBSLs
  - indoor worker RBSLs,
  - residential soils RBSLs and the
  - commercial / industrial screening levels.

- The geotechnical tests have shown that the fill material is not very permeable.

SUB-SLAB TEST PIT SAMPLING
EXCAVATION OF TEST PITS

RECENT RESULTS & FINDINGS
GEOHYDROLOGICAL INVESTIGATION

- Installation of shallow and deep monitoring boreholes based on geophysical results to determine impacts on groundwater in study area



RECENT RESULTS & FINDINGS
GEOHYDROLOGICAL INVESTIGATION

- Soil and groundwater sampling and aquifer characteristics testing have been conducted and the reporting and analysis of results and data is currently being undertaken.

- Preliminary review of the soil results indicate impacts on the slab area at shallow depth and minimal shallow impacts further down the study area. No soil impacts at depth as a result of the UPL incident are noted.

- Some groundwater results are still outstanding and results are being captured.

CHALLENGES & CONCERNS

- Challenges and concerns include the following:

- Three (3) routine monthly sediment sampling points in the tributary show elevated pesticide and organics concentrations after periods of rainfall and increased run-off.

- Impacted water present in the cable ducts / services on the UPL slab is evident after rainfall events.

GOOD NEWS

- From the results received thus far, the groundwater down-gradient of the UPL slab is not impacted as a result of the UPL incident. This includes the monitoring boreholes located on Platform 4 where Fortress is currently undertaking construction.

WORK TO BE CONDUCTED IN THE NEXT TWO (2) MONTHS

- Completion of the geohydrological report.
- Sub-slab perimeter and drain sampling to commence.
- Microbial trials are proposed to be conducted in TP 2 excavated during the sub-slab test pit sampling.
- October 2023 routine monthly sampling report completion.
- November and December 2023 routine monthly sampling to be conducted.

OVERALL PROGNOSIS

- The fill material below the slab remains impacted between depths of 0,5 m and 2 m beneath the base of the slab, predominantly on the eastern portion of the slab.

- Whilst hot spot areas are noted in the tributary sediments after periods of high rainfall, the sediments and surface water quality have improved since the initial event.

- From the results received thus far, the shallow and deep groundwater away from the slab has not been impacted as a result of the UPL incident.

- Whilst the sub-slab fill material meets the requirements of residential soils and composite workers, the site can still be used as a commercial / industrial property in its current state with the current slab in place. However, the pools of perched water beneath the slab will require intervention / rehabilitation.

THANK YOU

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