Non-Compliance Event 14-Day Report: Clapham Yard Acid Sulphate Soil Management Event

NCE Ref	CRRDA-NCE-RIS-008	**NCE Ref (DA)**	CRRDA-010-RIS-004
Reported By	Delivery Authority	**Date of 14-day Investigation Report**	28 October 2022
Date, Time and Location of event	Clapham Yard Tuesday 10 May 2022		

Event Summary

As part of the works scope at Clapham Yard there are a number of activities that are occurring in areas of Potential Acid Sulphate Soil (PASS) or known Acid Sulphate Soil (ASS) areas.

These activities occur under the RIS Acid Sulfate Soil Management Sub-Plan (RIS-UNA-000-001-MPL-000272) which is part of the RIS Construction Environmental Management Plan (RIS-UNA-000-001-MPL-000268). As required under these documents a site-specific Clapham Yard Acid Sulfate Soil Management Plan (CYASSMP) had also been developed for applicable activities at this worksite.

In the period of early May 2022 there were a number of construction activities occurring at Clapham Yard that included excavation of material that was proximal to Moolabin Creek that was identified as being potential PASS/ASS material.

One of the key activities that was occurring was piling activities associated with bridge structures that was generating wetter than anticipating soils as the piling activities intercept groundwater. The Soils in this area had been classified as Acid Sulphate Soils that required to be stored on site in a suitable Acid Sulphate Soil Treatment/Management Pad.

On a joint inspection with the Environmental Monitor and Unity Environmental Manager on the 10 May 2022 it was identified that the Acid Sulphate Soil Treatment/Management Pad in use for the temporary storage and/or treatment of PASS/ASS material on site had not been established and used in accordance with the requirements of the Clapham Yard Acid Sulphate Soil Management Plan and latest edition of the Queensland Acid Sulphate Soil Technical Manual (QASSIT). The aspect identified was that:

1. The required perimeter bund was not fully installed with the southern end bund partially opened to allow unloading of the material by trucks and,
2. That spoil was starting to overtop the perimeter bund in place and
3. The pad collection drain system appeared not to be installed.

Given recently experienced rainfall and forecast rainfall (Table 1 and 2) at the time of this inspection this was identified as a potential incident on site as potentially acidic, low pH water had the potential to enter stormwater drains via Erosion and Sediment Controls.

Loading of material to the pad was ceased and the southern perimeter bund was re-instated. Whilst it is noted that the collection system was not installed, due to the non-spadable nature of the spoil, the collection system would not have been effective.

It was confirmed with Unity's Certified Professional Soil Scientist (CPSS), that whilst the ASSMP makes collection drains and sumps mandatory the QASSIT only recommends the installation of such a system.

The CPSS confirmed that whilst appropriate leachate collection system and containment bund should be used to contain stormwater runoff and leachates inside the bunded pad when soils are spadable; when soils are not spadable, as was the case for Clapham Yard materials, the construction of leachate collection systems within the pad may not be practicable and therefore the bunds must be constructed as such (height and compaction) that they have a low permeability similar to the pad base.

Notwithstanding this specific aspect, the missing bund was not in accordance with the CYASSMP and the amount of material placed in the pad was in excess of the pad capacity.

Table 1: Clapham Yard Rainfall Overview for January-April 2022

Main statistics	Jan	Feb	Mar	Apr
Mean rainfall (mm) (data source from BoM)	159.6	158.3	140.7	92.5
Actual rainfall experienced	90	**912**	**206**	28
Mean number of days of rain ≥ 1mm (data source from BoM)	8.4	8.8	9.4	6.8
Actual number of days of rain ≥ 1mm	**13**	**15**	9	7

Table 2: Clapham Yard Early May Rainfall Totals (Archerfield BOM Station)

Date	5/5/2022	6/5/2022	7/5/2022	8/5/2022	9/5/2022	10/5/2022
Rainfall Volume (mm)	0	19.6	0.8	8.0	3.6	16.2

Investigation Summary

The Cross River Rail Delivery Authority has undertaken an investigation of the Event, to ascertain the root cause and contributing factors to the event. The Delivery Authority's investigation has also been informed by information provided by RIS Unity Alliance and observations provided by the Environmental Monitor.

On the basis of the information that has been provided, the Cross River Rail Delivery Authority is of the view that several separate causes contributed the Event. These include both environmental and site-based aspects and are:

- Weather Conditions.
- Changed work programs;
- Program Delays; and
- Workforce changes.

Appropriate corrective actions for these potential causes have been identified and are included in a subsequent section.

Accordingly, the Delivery Authority **has identified a non-compliance event** with the Imposed Conditions 4 (d) and 19 (a), in relation to the Event.

Corrective Actions and Opportunities for Improvement

The following corrective actions have been implemented:

- Immediate response:
    - Undertake sampling of material on the pad and any seepage from it, that demonstrated the material had been treated to achieve a neutral pH and seepage was also neutral.
    - Cease use of the pad until it could be utilised correctly.
    - Undertake sampling of material being generated to confirm acidity and if treatment was occurring during excavation process.
- Additional items:
    - Construction of a new Acid Sulphate Soil Treatment/Management Pad in accordance with requirements.
    - Communicate management requirements for PASS/ASS material to construction staff.
    - Complete an update to the Clapham Yard Acid Sulphate Soil Management Plan to reflect current site practices and conditions.