

**THIESS**



# Mount Pleasant – North Pit RL160 Dump - Truck Breach Tip Head

Ryan Fox

Integrity | Accountability | Innovation | Delivery | SAFETY

## RD2623 – Cat 793D

Great response from supervisor and crew to take recovery trailer and mobilise other machines to secure truck. Operator remained in cab until truck secured.



# Response to Incident in June and MOC for 930E commencement

## Safety Alert

### Near Hit - RD2812 Breaches Dump Windrow

#### Summary

RD2812 (Cat 793D) was hauling waste to the North Pit RL200 dump from Ex1 in the centre pit. At approximately 12:50pm, the operator of LW9001 (dump pushcart) spotted RD2812 into position on the corner of the dump. Whilst positioning RD2812 did not back up to the windrow square and pushed position 5/8 tyres through the safety windrow on the dump. The reversing speed of the truck was <5km per hour. The operator of LW9001 indicated that he had intended to request RD2812 dump short but was unable to due to congestion on the two-way at the time of the event.

The dump windrows were not to standard in the corner. The dump was approximately 10m high and under yellow tarp conditions due to the type of material being dumped (alluvial). The mining supervisor (OCE) had inspected the dump on a number of occasions throughout the shift. At approximately 11:40am the OCE instructed the operator of LW9001 to raise the height and the width of the dump windrow. This was completed across the dump face with the exception of the corner where spotting was implemented.

#### Preliminary Findings

- The dump windrows were not to standard.
- The operator did not back up to the windrow square.
- Adequate instruction on dumping requirements was not provided to the truck operator.

#### Preliminary Actions

- Incident scene preserved, notifications, undertaken, and investigation commenced.
- Incident details and lessons learned communicated to crews during pre-shift.
- Re-communication of the dump windrow height standard to all production crews.
- Review of relevant training adequacy.
- Source life size wall art for the Training Room depicting windrow standards to allow for a visual of height and width dimension requirements and full scale.



EVENT DATE	22/06/2022	ALERT NO.	MPO SA 0005
WORKPLACE	Mount Pleasant Operation	ALERT ISSUE DATE	25/07/2022



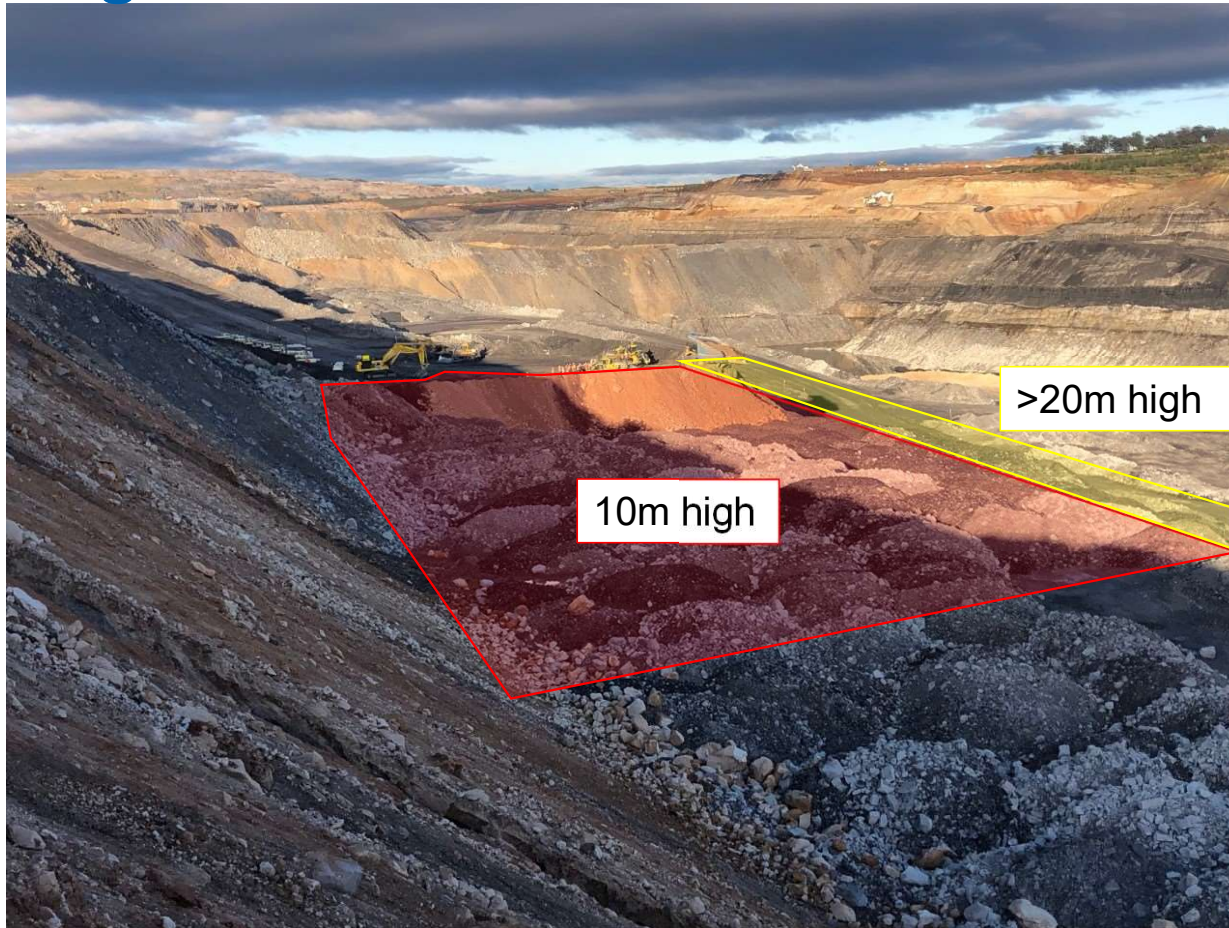
# Mount Pleasant North Pit RL160 Dump – Geotechnical Inspection

- On the morning (4am) of the 16<sup>th</sup> August RD2623 breached the tip head bund on the RL160 dump.
- Geotechnical inspection of the dump showed the tip head comprising of both weak, weathered Cat 1 material and wasted coal.
- The western edge of the tip head immediately adjacent to the breach has been surveyed at 24m height.
- The truck was backed all the way to the windrow.
- The dump was under Yellow TARP at the time of incident.
- **Tip head windrows at or above required site standard.**
- Truck not completely square to tip head.

# Crew Safety Stop



# Dump Heights

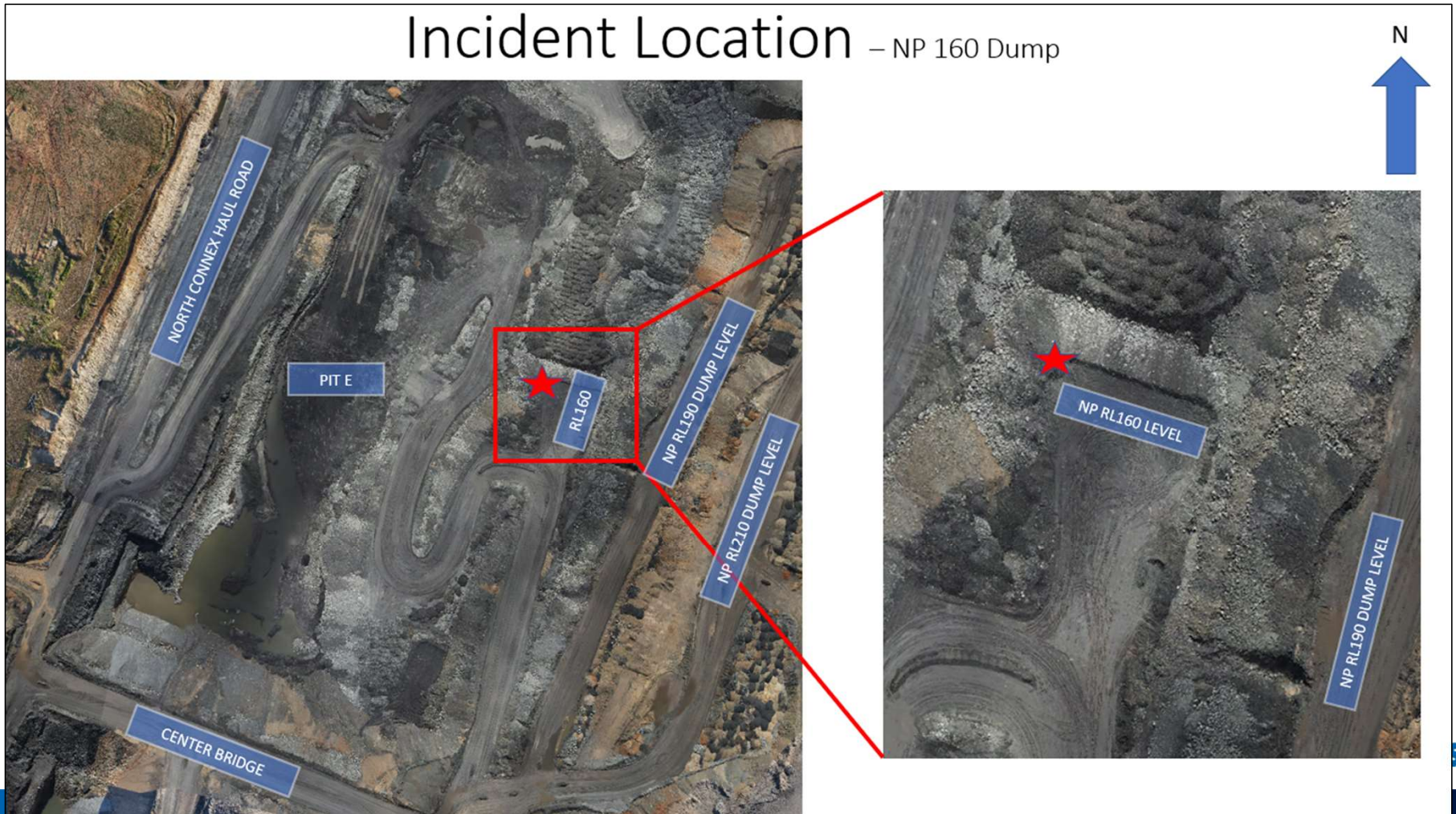


Dump Design was to remain inside limits of previous dump with a 10m catchbench.

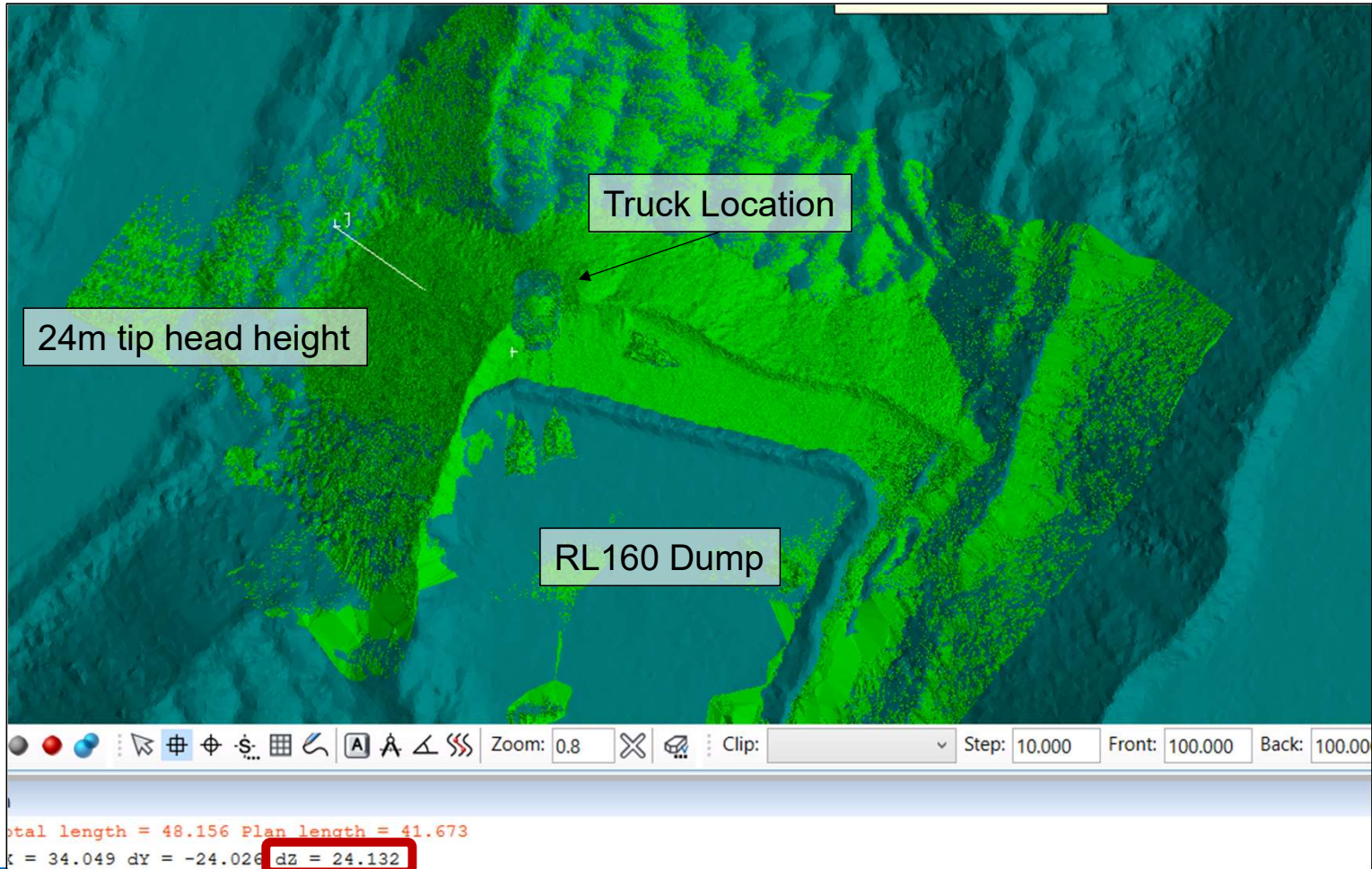
There was blocktip below this and outside of design which was setup for appropriate containment to allow dump to be unknowingly brought outside of design limits. We didn't pick this up!

# Location

## Incident Location – NP 160 Dump



# Dump Height 24m



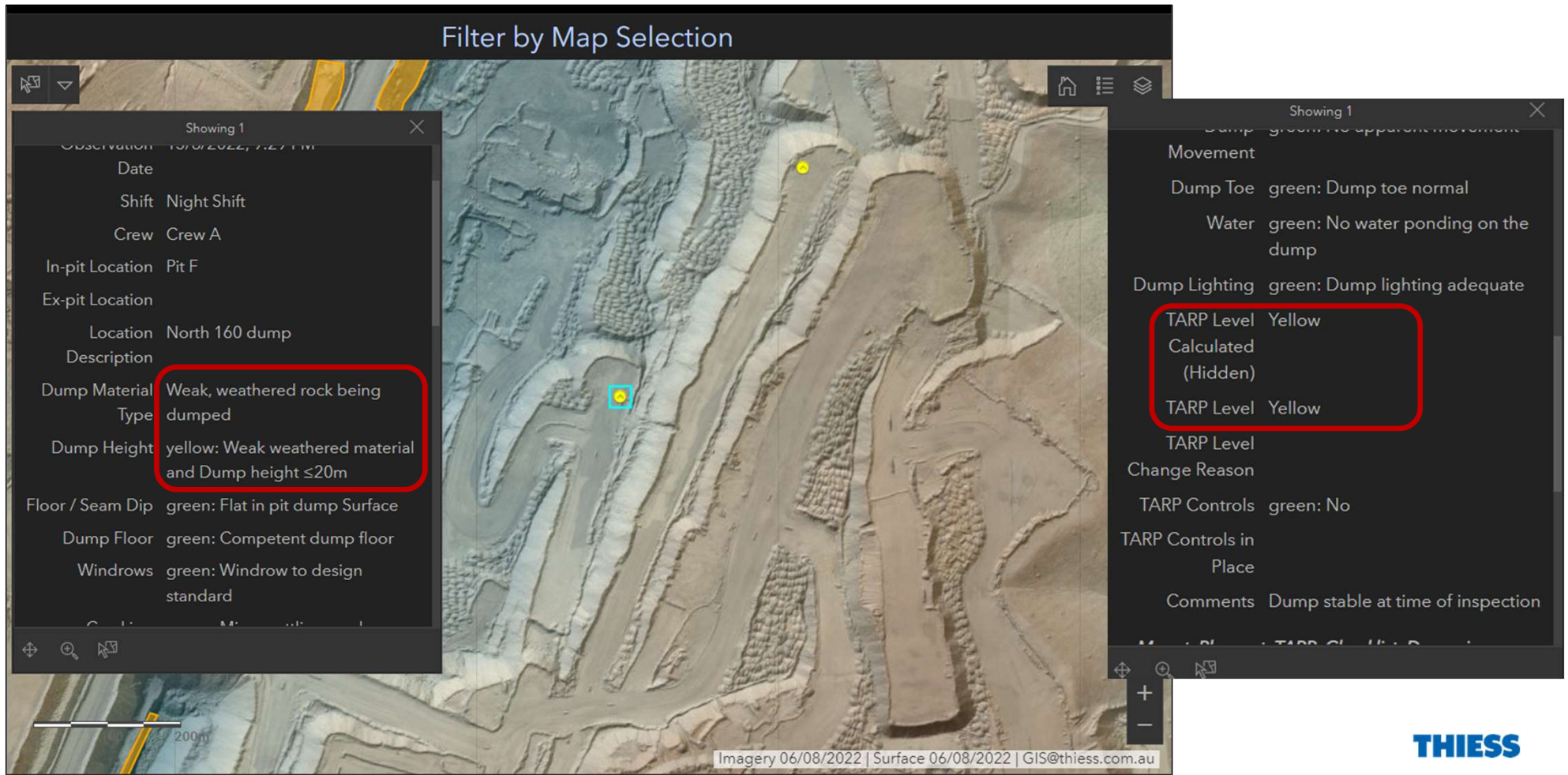


# Dump Material – Weak weathered rock and coal



# Yellow TARP Level at time of Incident

Filter by Map Selection



Showing 1

Observation	19/08/2022, 7:27 PM
Date	
Shift	Night Shift
Crew	Crew A
In-pit Location	Pit F
Ex-pit Location	
Location	North 160 dump
Description	
Dump Material Type	Weak, weathered rock being dumped
Dump Height	yellow: Weak weathered material and Dump height $\leq 20m$
Floor / Seam Dip	green: Flat in pit dump Surface
Dump Floor	green: Competent dump floor
Windows	green: Window to design standard

Showing 1

Dump Movement	green: No apparent movement
Dump Toe	green: Dump toe normal
Water	green: No water ponding on the dump
Dump Lighting	green: Dump lighting adequate
TARP Level Calculated (Hidden)	Yellow
TARP Level	Yellow
TARP Level	
Change Reason	
TARP Controls	green: No
TARP Controls in Place	
Comments	Dump stable at time of inspection

Imagery 06/08/2022 | Surface 06/08/2022 | GIS@thiess.com.au

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# MPO – Material Classifications

Dump Material Strength <b>THIESS</b>	
<u>CATEGORY 1 MATERIALS</u>	
	<ul style="list-style-type: none"><li>- Highly Weathered</li><li>- Soft &amp; Loose</li><li>- Low Dump Strength</li></ul>
	<ul style="list-style-type: none"><li>- Lox Coal Sent to Dump</li><li>- Highly Weathered</li><li>- Soft &amp; Loose</li><li>- Low Dump Strength</li></ul>
	<ul style="list-style-type: none"><li>- Coal Rejects</li><li>- Soft &amp; Loose</li><li>- Low Dump Strength</li></ul>

Dump Material Strength <b>THIESS</b>	
<u>CATEGORY 2</u>	<u>CATEGORY 2.5</u>
	
<ul style="list-style-type: none"><li>- 50/50 rock and broken down material</li><li>- Moderate Dump Strength</li></ul>	<ul style="list-style-type: none"><li>- 50/50 rock and broken down material</li><li>- Moderate Dump Strength</li></ul>
<u>CATEGORY 3</u>	
	

# Dumping TARP - Triggers

Category	Inspection	Tick Appropriate Boxes			
Dump Height	<b>For competent, fresh grey rock being dumped (CAT 2 Minimum):</b>				
	Dump height ≤30m	Green			
	Dump height range >30m, ≤40m		Yellow		
	Dump height >40m			Orange	
	Dump over highwall			Orange	
	Weathered old dump surface		Yellow		
	<b>For weak, weathered rock or carbonaceous material being dumped:</b>				
	Dump height ≤20m		Yellow		
	Dump height >20m or on a downhill grade			Orange	
	Weathered old dump surface and competent material being dumped		Yellow		
	<b>For soil or granular material:</b>				
	Dump height >10m			Orange	
	Top-soil (height greater than a paddock dump)				Red

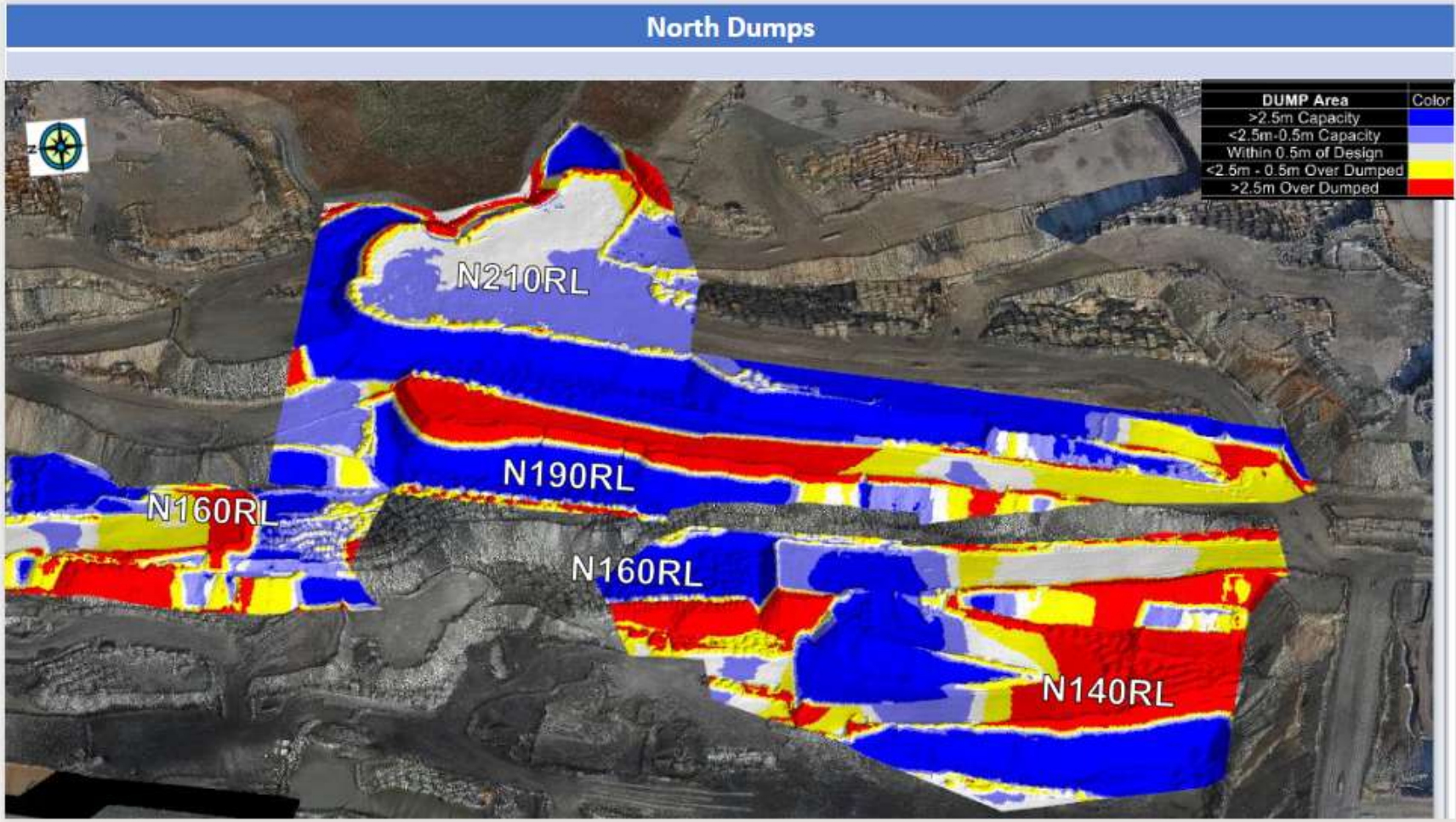
Orange TARP for weak weathered rock and dump height >20m

# Dumping TARP - Controls

	L1 Green	L2 Yellow	L3 Orange	L4 Red
Dump Controls	<p>Windrows to design standard</p> <p>Lighting to be adequate for N/S.</p>	<p>Windrows to design standard</p> <p>O.C.E and operators to conduct regular inspections.</p> <p>Maintain level dump horizon.</p> <p>Reverse slowly and brake gently/evenly to dump position.</p> <p>Recovery equipment to be available.</p> <p>Lighting to be adequate for N/S.</p>	<p>Windrows to design standard</p> <p>Maintain dump horizon</p> <p>Prepare a rip line or V drain and if necessary, install any additional delineation to delineate a tipping position.</p> <p>Dump at least ½ truck length short and dozer push over edge.</p> <p>Tracked dozer only to maintain dump</p> <p>Positive communication with dozer operator.</p> <p>Reverse slowly and brake gently/evenly to dump position.</p> <p>Establish access to dump toe if practically possible.</p> <p>Frequent inspections to be made by dozer operator, and O.C.E.</p> <p>Recovery trailer to be on dump.</p> <p>Additional lighting to be available for N/S.</p> <p>Light vehicle and sling trailer available at dump.</p> <p>When dumping on terraced ground, dumps MUST not exceed 30m in height.</p>	<p>Close dump face and toe locations.</p> <p>Geotechnical evaluation and formal JSEA to be completed before proceeding.</p>

Orange TARP for weak weathered rock and dump height >20m

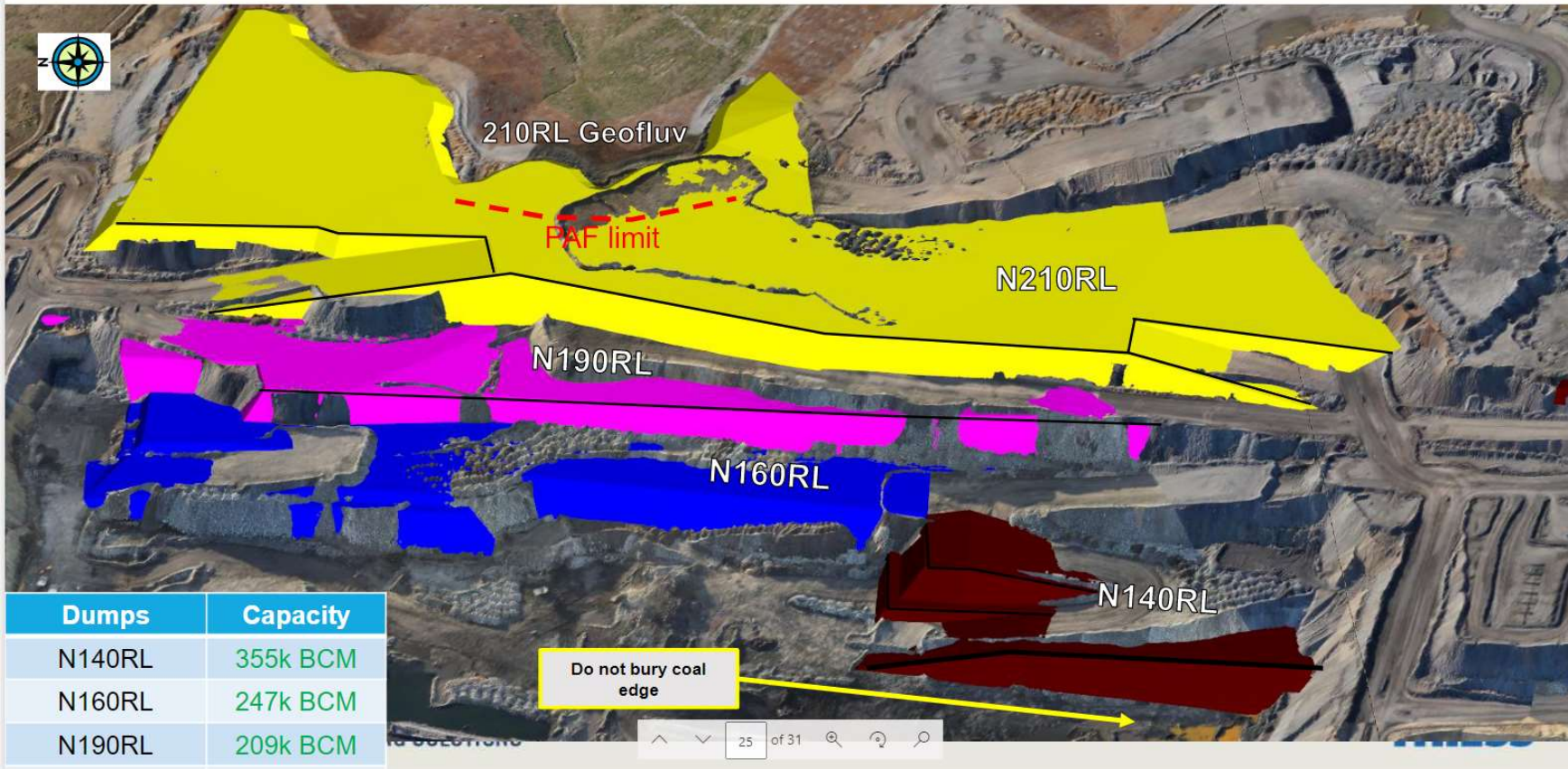
# Dump Compliance Report – 24/07/2022



# Weekly Plan – 12<sup>th</sup> to 18<sup>th</sup> of August

## North Pit Dumps – Material from North Pit Dig Areas to fill these dumps

1. Waste from North Pit to run to these dumps
2. Clean dirt from BC Hill to run to geofluv dumps
3. Carb dirt from Central Pit hill to target the southern end of the North 160RL Dump.




# OCE Statutory Report 15/08/2022 7:46pm

acceptable standard	
DUMPS	3 OF 3
<b>Dumps</b>	
Dump Location	North Pit
Dump RL	160
Is the Dump house keeping to standard	Yes
Is the Dump a Narrow Dump (<running road width)	No
Are there any hazards present in the work area	No
What is the Dump work area Risk Ranking	Low
Is the Dump Tarp sign in position	Yes
What is the Dumps Tarp Level	Yellow
Are the dump Tarp controls being followed	Yes

Dump only commenced running at the end of DS. Controls at this time were suitable.



# OCE Statutory Report 16/08/2022 prior to incident

DUMPS		4 OF 4
<b>Dumps</b>		
Dump Location	North Pit	
Dump RL	160	
Is the Dump house keeping to standard	Yes	
Is the Dump a Narrow Dump (<running road width)	No	
Are there any hazards present in the work area	Yes	
	↳ Vehicle interaction	
What is the Dump work area Risk Ranking	Low	
Is the Dump Tarp sign in position	Yes	
What is the Dumps Tarp Level	Yellow	
Are the dump Tarp controls being followed	Yes	
Dump Photo		
Comments	Adequate controls in place and procedures being followed at time of inspection	
If the dump is used to park up HME is it to standard	Yes	

## Findings

Yellow tarp controls in place - weak material therefore should have been an Orange tarp due to height on western edge. We had become complacent with material type as it transitioned with some “bones” in it

Dump outside of design Limits – Not picked up

Note: GPS systems in the process of being implemented on site. Only machine previous to the new fleet with GPS was the rehab dozer, 1 pit dozer and 2 x 996s.

## Truck Recovery

Kept truck secured with 2 x Dozers



## Secure truck

Reposition slings and then remove majority of load



Waste Tipped and then dozer pushed in material to secure the truck.

## Tipped waste around the truck and dozed in behind Pos 5/6



# Platform established for 35t excavator to clean tray out



# RD2623 Towed out, Operator in Truck to release brakes and assist





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# Mount Pleasant Dumping TARP Update

28.02.2023

# Dumping TARP Update

The Mount Pleasant Dumping TARP has been updated to better reflect the amount of weak dump material onsite following the recent truck breaching the windrow.

The following has been updated:

- Yellow TARP trigger at 20m for competent rock.
- Free dig material (and/or alluvial), wasted coal (any modelled seam) or Dry Coarse Rejects separated in the TARP.
- Topsoil, or Wet fine rejects separated in the TARP.
- TARP Checklist now contains questions and direction regarding Co-disposal of Rejects or Waste Coal.



# Dumping TARP Update

The Survey123 app has been updated as part of this change.

TARP Cards are now available.

Wall wrap has been updated

The updated Dumping TARP can be found on the Mount Pleasant PGS site in the following location;

Enabling Mining > Technical Services > Geotechnical

Please advise your supervisor if any further information is required.

Mount Pleasant Dumping Trigger Action Response Plan				
24hr GEOTECHNICAL HAZARD IDENTIFICATION Dumping TARP				
Date: _____ Shift: _____ OCE: _____ Location: _____				
Category	Inspection	Tick Appropriate Boxes		
Dump Height	<b>For competent, fresh grey rock being dumped (CAT 2 Minimum):</b>			
	Dump height ≤20m	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Dump height range >20m, ≤40m	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Dump height >40m	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Dump over highwall	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Weathered old dump surface	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<b>For weak, weathered rock or carbonaceous material being dumped:</b>			
	Dump height ≤20m	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Dump height >20m or on a downhill grade	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Weathered old dump surface and competent material being dumped	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<b>For free dig material (and/or alluvial), wasted coal (any modelled seam) or Dry Coarse Rejects:</b>			
	Dump Height ≤5m	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Dump height range >5m, ≤10m	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Dump Height >10m	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<b>For topsoil, or Wet fine rejects:</b>			
	Dump height ≤5m	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Dump height >5m	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Rejects or Waste Coal	Confirm all rejects or waste coal loads have been selectively dumped to ensure they are not placed within 10m of pit floor.	YES	NO
Co-disposal of Rejects or Waste Coal	Has there been any co-disposal on this tiphead?  Note: If co-disposing on tip-head, any reject load or waste coal load must be separated by a minimum of 2 loads of competent blasted grey rock - for ≤20m tip head (3 load separation for ≤30m head). No co-disposing within 10m of tiphead corner.	YES	NO	

# Co-disposal

## Reject or Waste Coal:

- Waste coal or Reject pose serious risk or dump issues if they are not separated appropriately.
- Generally the codisposal requirements we are rolling out are managed naturally due to the number of loads of waste running to the dump, however if waste coal and or reject are running at high ratios it is crucial to separate these by 2 loads and keep this material off the leading corners and edge (10m distance)



# Questions