Business Procedure

/Tarong Power Station

Cooling Water Dam Emergency Action Plan (EAP)

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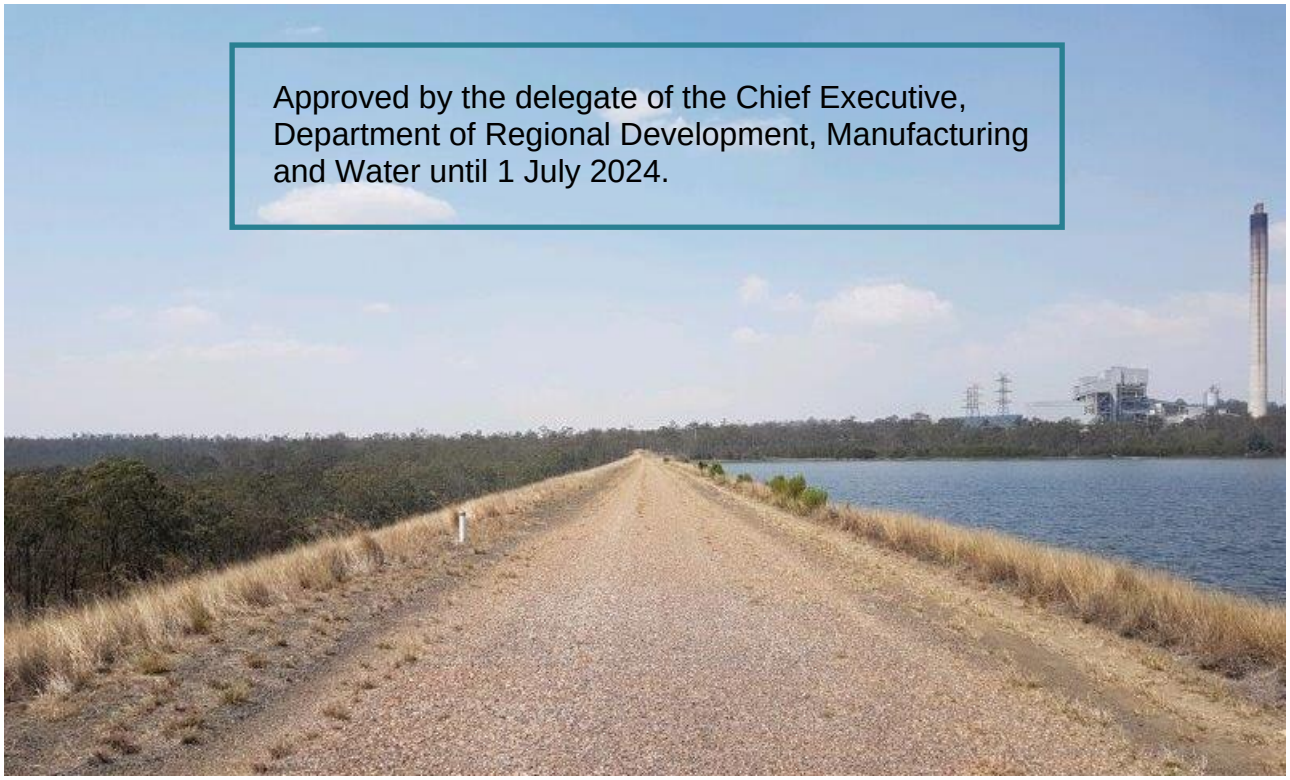

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21	29.09.2023	Minor change made to update contact information and include previous RDMW comments.			

Quick Reference

Tarong Cooling Water Dam Emergency Level Flow Chart – QUICK REFERENCE GUIDE					
Dam Hazard	**NORMAL**	**ALERT**	**LEAN FORWARD**	**STAND-UP**	**STAND-DOWN**
Flood Event Page 31	Storage at or below FSL	Storage level between RL435 and 435.2m AHD Storage above FSL and spilling. **Refer Section 4.2.1**	Storage level between RL435.2 and 435.3m AHD Significant Flood Event **Refer Section 4.2.1**	Storage level greater than RL435.3m AHD Major Flood Event and/or imminent dam failure from overtopping. **Refer Section 4.2.1**	Storage level less than RL435.3m AHD and decreasing Flood event has passed. **Refer Section 4.2.1**
Dam Integrity Risk Page 38	No significant dam integrity issues	Dam integrity issue identified: • New or increased seepage identified, • New structural damage or movement such as cracking or sliding, • Earthquake magnitude >3 detected in the region or felt on site, • Erosion of spillway or embankment due to spillway discharge. **Refer Section 4.2.2**	Potential dam failure risk identified: • Seepage increasing or appears turbid, • Structural damage or movement increasing, • Erosion or scour increasing, • Earthquake magnitude >5 detected in region or felt on site. Damage detected. **Refer Section 4.2.2**Error! Reference source not found.	Imminent dam failure risk identified: • Seepage increasing uncontrollably, piping failure identified, • Dam movement indicating structural failure could occur, • Erosion or scour indicating embankment or spillway failure could occur, • Seismic activity felt AND damage detected, includes increased seepage. **Refer Section 4.2.2**	Potential dam failure no longer considered a risk. **Refer Section 4.2.2**
Terrorist Activity Page 48	No terrorist activity	Suspected risk of Terrorist Act: • Threats via audio communication, • Unauthorised entry to site, • Suspicious activity detected by personnel on site. **Refer Section 4.2.3**	Terrorist Act confirmed, unsure if risk to dam. **Refer Section 4.2.3**	Terrorist Act confirmed. Involves risk to dam integrity **Refer Section 4.2.3**	Terrorist Act over, threat no longer exists **Refer Section 4.2.3**

Figure 1-1: Tarong CWD emergency stage flow chart for flooding and hazard release

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1.0 INTRODUCTION

1.1. Purpose of this Plan

This Emergency Action Plan (EAP) provides the details of Stanwell Corporation's (SCL) Plans with relation to the occurrence of an emergency condition at the **Tarong Cooling Water Dam (CWD)** and provides information necessary for emergency agencies to manage a downstream evacuation in the unlikely event of a potential dam failure or significant flood event through the spillway. **This plan should not be used for emergencies relating to the Meandu Creek Dam (refer ASM-PLAN-ENG-TPS-06).**

The main purpose of the EAP is to ensure that timely warning is provided to the appropriate authorities in the event of a potential dam failure or significant flood event situation, and to provide relevant information for use in the emergency response to that situation. This EAP identifies emergency conditions at the CWD and describes the procedures that are to be followed to investigate the emergency conditions and provide warning to appropriate emergency managers in the event of a potential dam failure or significant flood event. This enables the emergency managers to implement measures for the protection of downstream persons and property.

This EAP also provides direction for operating staff in the handling of unsafe or emergency conditions where dam failure is unlikely, so that the dam can be returned to a safe condition with minimal delay.

This EAP has been developed in accordance with Emergency Action Plan for Referable Dam Guideline, (DRDMW, 2017) which was drawn up to support the legislative requirement to develop an EAP under the Water Supply (Safety and Reliability) Act (2008). This EAP is also in line with the Water Legislation (Dam Safety) Amendment Bill 2017.

The location and description of the storage is given in Section 6.0 and drawings of the dam are provided in Appendix C.

This EAP details:

The responsibilities of persons and organisations involved in the surveillance, maintenance, and operation of the dam, and the persons/organisations responsible for activating the EAP **(Section 2.0)**
Dam hazards, dam hazard events and dam emergency events **(Section 3.0)**
The procedure for identification, evaluation and classification of potential emergency conditions **(Section 4.2)**
The how, when and the content of the of the notification and warning messages to be disseminated during a Dam Hazard, Dam Hazard Event, Emergency Event and once the event has ended **(Section 4.3)**
Access and communication procedures that inform the development of warnings and notifications **(Section 5.0)**
The persons and relevant entities to be notified in the event of an emergency situation **(Appendix H)**
Assessment protocols designed to minimise the occurrence of events and to identify events as they occur **(Section 7.0)**
The area which would be inundated by a dam failure **(Appendix D)**
Training and Exercises **(Section 8.0)**
Preventative actions and contingency items **(Section 9.0)**

1.2. EAP Abbreviations

Abbreviations used within this document can be found in Table 1-1.

Table 1-1: EAP Abbreviations

Abbreviation	Definition
AEP	Annual Exceedance Probability
AHD	Australian Height Datum
ANCOLD	Australian National Committee on Large Dams
CEO	Chief Executive Officer
CWD	Cooling Water Dam
DCF	Dam Crest Flood (for an embankment dam) – flood event, which when routed through the storage with the storage initially at full supply level, results in still water in the storage excluding wind and wave effects, reaching the lowest point of the embankment crest.
DCL	Dam Crest Level
DRDMW	The Department of Regional Development Manufacturing and Water
DFL	Design Flood Level
EA	'Emergency Alert' – notification system operated by QFES
EAP	Emergency Action Plan
EER	Emergency Event Report
FIA	Failure Impact Assessment
FRT	First Response Team
FSL	Full Supply Level;
IMT	Incident Management Team
LDC	Local Disaster Co-ordinator
LDMG / DDMG	Local Disaster Management Group / District Disaster Management Group
LDMP	Local Disaster Management Plan
MM	Modified Mercalli Intensity Scale
PAR	Population at Risk
PMF	Probable Maximum Flood
PMF-F	Probable Maximum Flood - Failure
PMF-NF	Probable Maximum Flood – No Failure
PMP	Probable Maximum Precipitation - The theoretical greatest depth of precipitation for a given duration that is physically possible over a particular catchment.
QFES	Queensland Fire & Emergency Services
QPS	Queensland Police Service
SBRC	South Burnett Regional Council
SCL	Stanwell Corporation Limited
SDF	Sunny Day Failure

Table 1-2 Communication Plan Abbreviations

Abbreviation	Role	Current Incumbent	
SEC	Site Security	Depends on the shift	depends on the shift
SS	Shift Superintendent (depends on the shift)	[redacted]	[redacted]
EC	Emergency Controller	Nominated at the time of event	
IM	Incident Manager	Nominated at the time of event	
TSM	Tarong Site Manager	[redacted]	
FRT	First Response Team	Site Services Manager Site Services Superintendent	FRT Captain FRT Team
EM	Engineering Manager	[redacted]	
MESS	Mechanical Engineering Superintendent – Station	[redacted]	
SSM	Site Services Manager	[redacted]	
EVM	Environmental Manager	[redacted]	
CRM	Community and Indigenous Relations Manager	[redacted]	
LDC	Local Disaster Coordinator	[redacted]	
LDMG	Local Disaster Management Group	Refer Appendix H	
COO	SCL Chief Operating Officer	[redacted]	
CEO	SCL Chief Executive Office	[redacted]	
DSC	Dam Safety Consultant	Aurecon	
DSLO	Downstream Land Owners	Refer to Appendix E	
MM	Meandu Mine		

1.3. Safety Policy

Our Health and Safety Vision:

'Zero Harm Today'

At Stanwell we are committed to achieving Zero Harm Today where we all go home from work without injury and illness every day.

We are committed to undertaking our business in a manner that prevents injury or illness to employees, visitors, contractors and the public who may be impacted by our work activities. We encourage best practice in health and safety management, process safety and a continuous improvement culture.

Stanwell is committed to ensuring the continued safe operation of its dams, by managing its dams in accordance with the Queensland Dam Safety Management Guidelines and the Australian National Committee on Large Dams (ANCOLD) Guidelines for Dam Safety Management.

1.4. Participation in Plan Development

This EAP has been developed in consultation with the South Burnett Regional Council (SBRC) and the South Burnett Local Disaster Management Group (LDMG), to confirm responsibilities, communication protocols and ensure that this plan aligns with the LDMG plans and processes. Copies of communications during the development of this EAP and their acceptance of their responsibilities are provided in Appendix F.

2.0 ROLES, RESPONSIBILITIES AND SAFETY ORGANISATION

2.1. Roles and Responsibilities

Table 2-1 lists the assigned roles and responsibilities under this EAP. Contact details for these responsible parties are provided in Appendix H.

2.2. Safety Management Organisation Chart

The organisation structure for dam safety management based on the roles and responsibilities listed in Table 2-1 is shown in Figure 3-1.

Table 2-1: Assigned roles and responsibilities under EAP

Organisation	Responsible Person/s	General Responsibilities	Emergency Responsibilities
Stanwell Corporation Limited	Site Security (SEC)	24-hour contact at Power Station	- Direct Emergency Calls from the Public & Media - Supports the Emergency Controller and directs external emergency services to the scene - Locks down the site
	Shift Superintendent (SS) / Emergency Controller (EC)	**Dam Operator** Inspection, maintenance & operation of dam Update EAP annually in consultation with the Dam Safety Consultant Liaison with the Local Disaster Management Group	- Contacts Manager Engineering Services and Tarong Site Manager - Manages the Scene of the Event - Directs the Emergency Response Team
	Incident Manager (IM)	**Incident Manager** Formulation, implementation and supervision of dam safety management program	- Activation / de-activation of this EAP - Activation of Emergency Response Team - Coordination of operations response
	General Manager Southern Generation (GMSG)	**Dam Owner** Overall responsibility for dam safety	- Activation of the Incident Management Team - Notify and update the Chief Operations Officer or Crisis Leadership Team if formed
	First Response Team (FRT)	**Primary Contacts**	- Direct emergency response as directed by the Incident Management Team - Clean up action if required
	Engineering Manager (EM)	**Dam Inspector** Dam inspection and maintenance services for Asset Manager – Tarong	- Notify Dam Safety (RDMW) of incident - Consultation with RDMW and other regulators with respect to Dam Safety requirements - Consult specialist Dam Engineer - Notify Mechanical Engineering Superintendent (Station) - Notifies the South Burnett Local Disaster Coordinator and Stanwell's Tarong Site representative on this Group Raise the Emergency Alert Request
	Mechanical Engineering Superintendent, Station (MESS)	**Dam Inspector** Dam inspection and maintenance services for Asset Manager – Tarong	- Monitoring overflow of Meandu Creek Dam (and Cooling Water Dam/Ash Dam) - Provide advice and support the Engineering Manager

Organisation	Responsible Person/s	General Responsibilities	Emergency Responsibilities
	Site Services Manager (SSM)	**Dam Operator** Inspection, maintenance & operation of dam Update EAP annually in consultation with the Dam Safety Consultant Liaison with the Local Disaster Management Group	- In an event Liaison with the Local Disaster Management Group. - Update dam information and follow out inspections during an event. - Provide dam support to EM in communications during an event.
	Environmental Manager (EVM)		- Notification of DES (Env.) if toxic spill involved.
	Community & Indigenous Relations Manager (CRM)		- Prepares and issues media communications and update as part of the Tarong Incident Management Group
South Burnett Local Disaster Management Group	Local Disaster Coordinator (LDC)		- Receive advice from Stanwell Site Services Manager to enact EAP - Notify District disaster Management Group (DDMG) that the EAP has been enacted - Coordinates local disaster operations

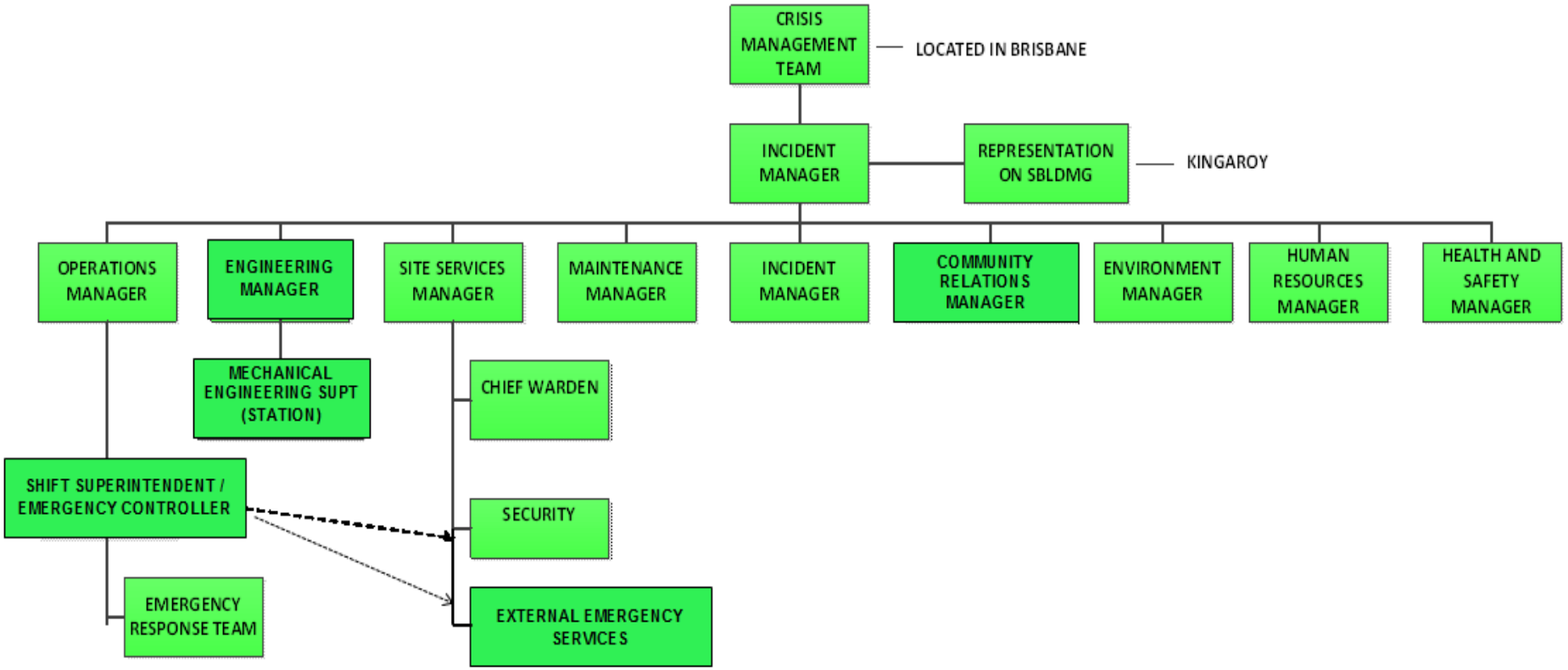


Figure 2-1 Dam Safety Management Organisation Chart

3.0 DAM HAZARDS

3.1. Overview of Hazards and their Management

Typically, an emergency condition for a dam is defined in the Act as:

(a) A dam failure hazard;
(b) A downstream release hazard;
(c) A circumstance that potentially indicates an increase in the likelihood of a dam failure hazard or downstream release hazard happening.

The inclusion of (c) means that the hazard does not need to fully develop before an emergency condition is considered to have occurred.

Generally, the consequences of dam failure can be grouped into two basic types:

- Those that occur because of elevated dam lake levels during floods;
- Those that occur in the absence of other flooding ('Sunny Day' floods).

3.1.1. Principal Hazards

The principal hazards for the CWD identified are: -

1. Flood events due to heavy rainfall – Hazard 1;
2. Dam integrity risks from piping, erosion or structural failure - Hazard 2; and
3. Terrorist Threat / activity or High energy impact – Hazard 3.

Hazard 1 could result in dam failure due to deformation, overtopping, erosion or scouring of the embankment (e.g. Probable Maximum Precipitation Design Flood Failure or PMPDF-F, Probable Maximum Precipitation Design Flood No Dam Failure or PMPDF-NF) causing inundation of the downstream flood plain. The PMPDF-F and PMPDF-NF flood inundation maps provide an indication of flooding extents expected and are shown on Figure 10-22 and Figure 10-23 in Appendix D.

Hazard 2 could result in dam failure due to piping, cracking or slippage of the embankment or deformation of the spillway and can occur without any significant rainfall or flooding (Sunny Day Failure (SDF)) and can still result inundation of the downstream flood plain. An indication of flooding extents expected for the SDF is shown on Figure 10-14 and Figure 10-15 in Appendix D.

Hazard 3 could result in dam failure due to intended or unintended damage of the spillway or embankment causing inundation of the downstream flood plain. Depending on whether a flood event is also occurring, either the SDF (no flooding) or the PMPDF-F (flooding) provide an indication of flooding extents and are shown in on Figures Figure 10-22 to Figure 10-23 in Appendix D.

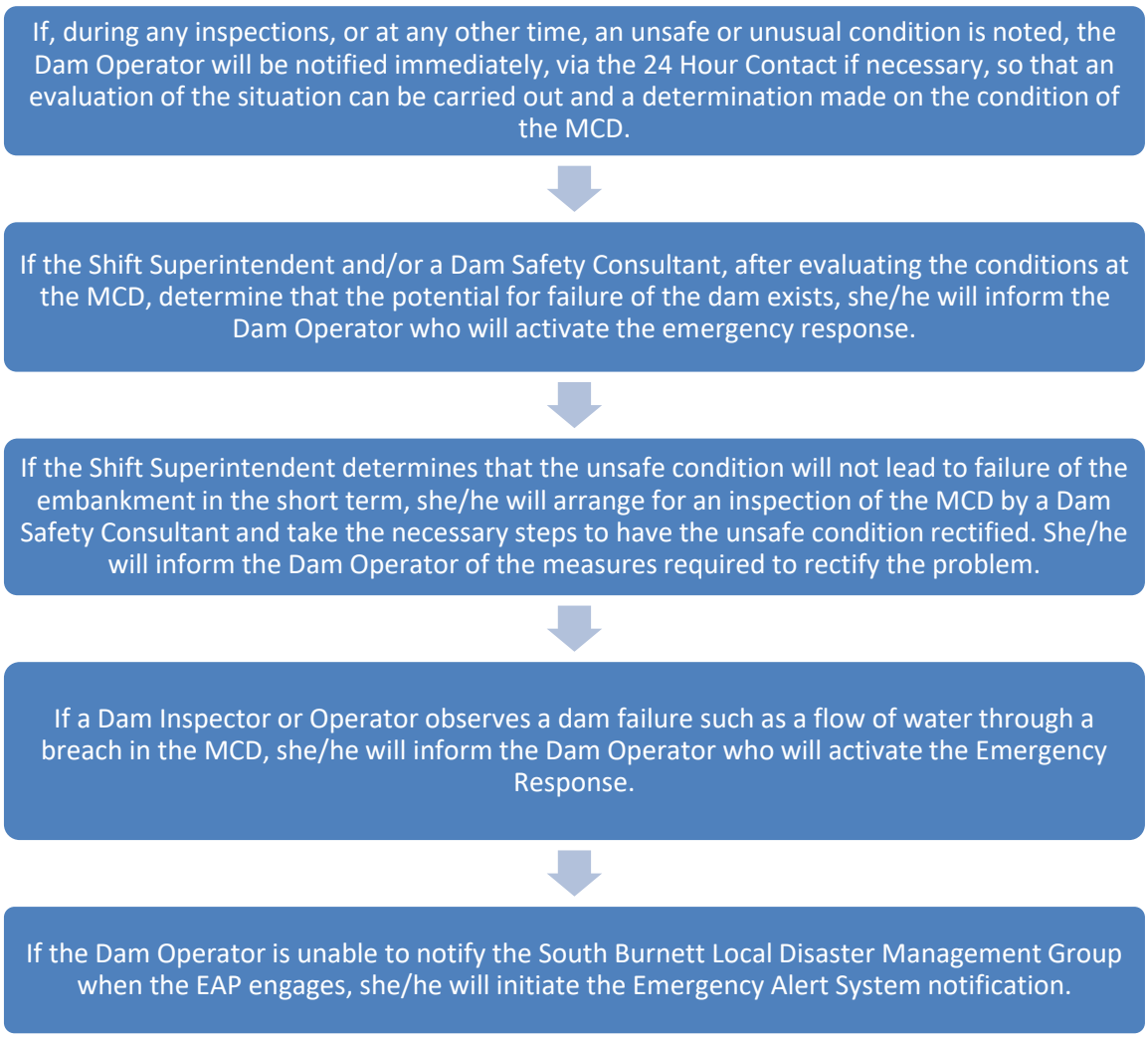
All dam hazards have the potential to become ‘hazard events’ which may progress to ‘emergency events’ as defined by the legislation (WLAB 2017; DNRME 2017).

The definitions of “dam hazard event”, “emergency event” and “relevant entity” in line with current legislation (WLAB 2017; DNRME 2017) are presented in Appendix A.

The prime means of detecting the development of a potential emergency conditions is through regular inspections of the CWD by the Dam Operator. (Refer Section 7.0)

The CWD has been designed to pass a Probable Maximum Flood (PMF) event, so that overtopping of the dam is not likely even in extreme flooding, although the spillway walls could overtop, and water could flow over the abutment. The most likely dam failure scenario would be a piping failure induced within the earth embankment, possibly because of an earthquake or unprecedented high storage levels. The prime means of detecting the onset of piping is through the regular routine dam inspections.

Although the CWD is maintained in good condition it is recognised that an unsafe or emergency condition could occur at any time due to natural events or project related incidents.



The water depth in the CWD is monitored daily and recorded. Relevant design drawings are provided in Appendix C. The current CWD hydraulic parameters are provided in Table 2-1.

3.1.2.Flood Classification Triggers

A flood event for the Cooling Water Dam is defined as reservoir level of 435.1 m AHD or greater (0.1m over spillway) and expected to rise to greater than RL 435.2m AHD. The associated elevation triggers for each escalation level are in Table 3-1. Escalation definitions can be found in Section 4.1.

Table 3-1 Flood Classification Triggers

DESCRIPTION	ELEVATION	EMQ ACTIVATION LEVEL	SPILLWAY DEPTH OF FLOW	SPILLWAY OUTFLOWS
Trigger Level 1	RL 435.1 m	ALERT	0.1 m	0.5 m^3/s
Trigger Level 2	RL 435.2 m	LEAN FORWARD	0.2 m	1 m^3/s
Trigger Level 3 (Auxiliary spillway activation level)	RL 435.3 m	STAND UP	0.3 m	1.5 m^3/s
N/A	FSL	STAND DOWN	N/A	N/A

3.1.3.Earthquake Events

For earthquake events, the Emergency Action Plan will be activated to ALERT stage if any earthquake that is felt on the Tarong Power Station or reported nearby.

Furthermore, Stanwell is registered to receive earthquake notifications through Geoscience Australia (Community Safety and Earth Monitoring Division for Earthquake Alerts and Tsunami Warning). If no earthquake is felt on site, the Emergency Action Plan will still be activated to ALERT stage if Stanwell receive a Geoscience Australia notification of an earthquake of magnitude greater than 3 within 100km of the Tarong Power Station.

The Geosciences Australia website https://earthquakes.ga.gov.au/ provides a map of recent earthquakes and a searchable record of historical earthquakes for Australia.

Earthquake notifications from Geosciences Australia are typically sent within 20 minutes of an earthquake occurring. It is also important to note that this is not a tailored service.

A Tarong email group has been set up to receive messages in response to the receipt of earthquake notifications that meet the following criteria:

- Any earthquake of magnitude greater than 3 identified within 100km of the Tarong Power Station, or
- Any earthquake that is felt on the Tarong Power Station or reported nearby

The email group includes the following Stanwell Corporation personnel:

- Civil Engineer (Tarong) -
- Mechanical Engineer Superintendent Station –
- Engineering Manager (Acting)-
- Site Services Manager -
- Tarong Operations Group (24 hour, 7 day per week coverage on site)

The magnitude defined by Geoscience Australia and may be referenced against the Modified Mercalli Intensity Scale (MM), as shown in Appendix I.

However, it is noted that SCL does not rely on this email notification. If there is an event that registers as an earthquake or is physically felt on site a dam inspection should be undertaken regardless of receipt of an email notification providing it is safe to do so.

3.1.4. Acts of Terrorism

To effectively control the unlikely event of a terrorist act, the following scenarios have been identified as 'possible':-

- A terrorist threat is received by Tarong staff;
- Attack on the spillway or embankment by explosive device, impact from aircraft of other air-borne devices. This may have the potential to cause spillway or embankment instability and will instigate a response action in line with Potential Dam Hazard 3 as described in Section 3.1.1.

Stanwell Corporation has existing internal procedures for threats as provided in:

- *Stanwell Crisis Leadership Plan*, Stanwell Document Reference GOV-PROC-60.
- *Tarong Emergency Response Plan,* Stanwell Document Reference OHS-PROC-311

These documents clearly define the Roles and Responsibilities when a Crisis of Incident is declared.

The *Stanwell Event Evaluation and Escalation Matrix*, GOV-STD-32, provides an outline of how these processes interact and is included in Appendix G.

In all instances where an act of terrorism is suspected or confirmed, the Power Station Manager will contact the **Policelink hotline on Ph. 131 444**, local counter-terrorism authority and Stanwell Manager Enterprise Risk and Resilience, to activate Stanwell's response. Stanwell will act on advice from these authorities as appropriate for the situation.

All actions will be undertaken only when it is safe to do so.

3.2. Dam Release and Dam Failure Inundation Hazards

Flood Inundation maps for dam failure hazards are included in Appendix D. The scenarios assessed were:

- Sunny day failure (SDF)
- 1:1000 AEP Flood with and without Dam Failure
- 1:100,000 AEP Flood with and without Dam Failure
- 1:1,000,000AEP Flood with and without Dam Failure
- PMF event (1:10,000,000 AEP) with dam failure (PMF-F)
- PMF event (1:10,000,000 AEP) with no dam failure (PMF-NF)

It should be noted that the 'flood' scenarios assume concurrent 1:100 AEP flood levels within the Cooling Water Dam and Meandu Creek catchment. All the dam failure scenarios have been shown to cause inundation of residential properties adjacent to the Meandu Creek floodplain. Due to uncertainties involved in modelling the dam failure, the inundation fringe areas shown on the maps are approximate and should only be used as a guide.

As discussed in Section 6, the spillway from the Cooling Water Dam discharges directly to Meandu Creek Dam, which is controlled by Stanwell Corporation. There is no direct discharge from the Cooling Water Dam off-site. The interaction between the Cooling Water Dam and Meandu Creek Dam leads to there being no need to prepare separate flood release hazard mapping for the Cooling Water Dam. The Cooling Water Dam is included as a catchment for the Meandu Creek Dam and therefore any flood release from the Cooling Water Dam will ultimately be discharged to Meandu Creek via the Meandu Creek Dam. Flood release hazards from Meandu Creek Dam are covered under the Meandu Creek Dam EAP.

The Cooling Water Dam Acceptable Flood Capacity Assessment indicated that the flood wave from a Sunny Day Failure of the Cooling Water Dam would flow into Meandu Creek downstream of the Meandu Creek Dam and travel through Meandu Creek with discharge rates exceeding 1,000 m^3/s. The travel time of a dam failure flood wave from the site to the more populated area downstream of the dam near Allen Road would be of the order of one hour.

Travel times for the SDF and flood failure event to key locations are summarised in Table 3-2 below. The referenced reporting locations are shown in Figure 3-1. The SDF is considered the most likely failure scenario for the dam. The PMP-Flood event is equivalent to a 1:10,000,000 AEP event and would indicatively be relatively fast and available time for warning would be limited.

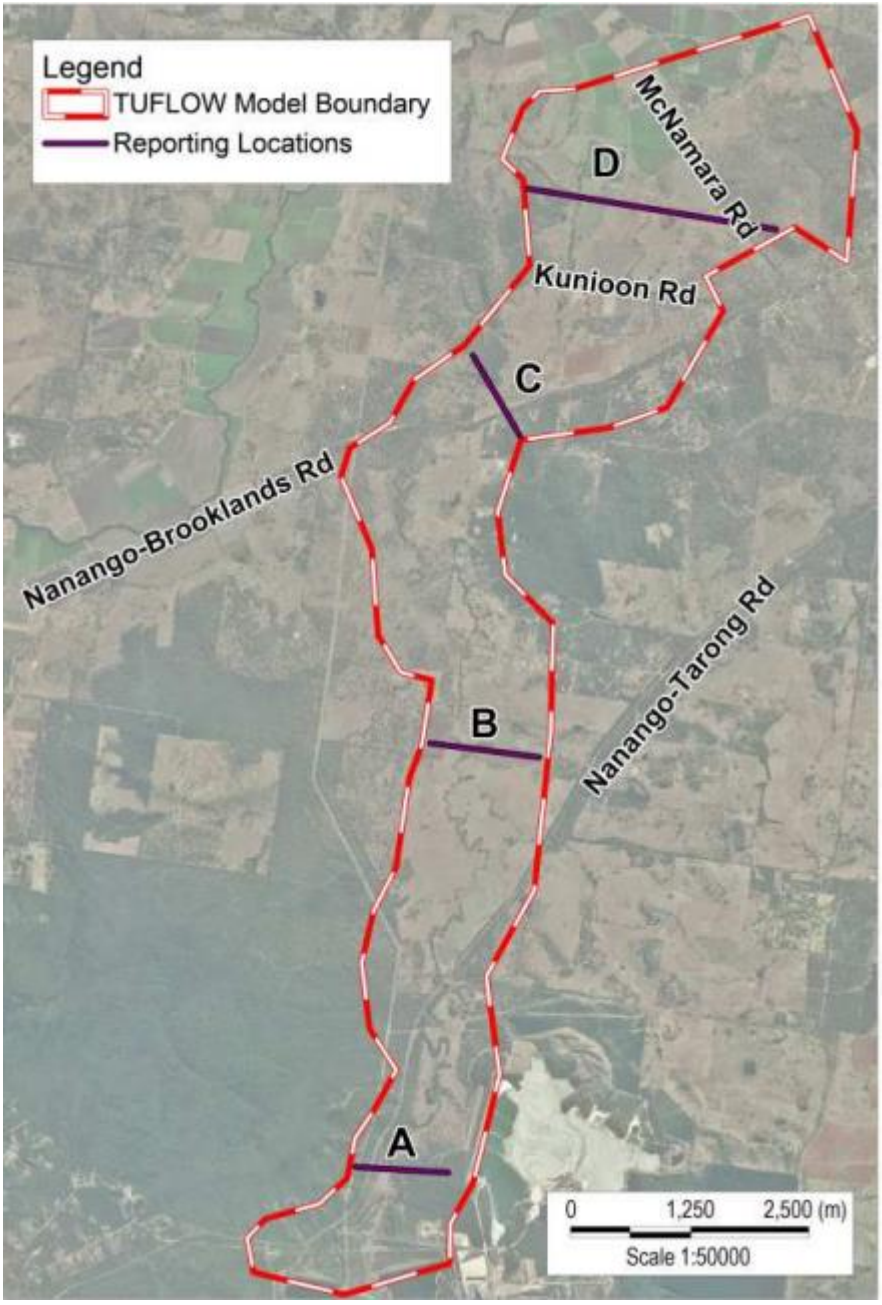


Figure 3-1 Reporting Locations

Table 3-2 SDF Inundation Times

Location	SDF		
	Peak flow (m^3/s)	Time to peak (hours)	Time from breach to first impact (hours)
A	1,516	0.7	0.3
B	1,016	1.3	1.2
C	687	2.2	2.0
D	541	2.8	2.5

Table 3-3 1:1000 AEP Inundation Times

Location	1:1000 AEP				
	NO FAILURE		DAM FAILURE		
	Peak flow (m^3/s)	Time to peak (hours)	Peak flow (m^3/s)	Time to peak (hours)	Time from breach to first impact (hours)
A	373	12.3	3,073	13.2	12.9
B	380	13.0	2,244	13.6	13.5
C	528	12.3	1,777	14.1	13.8
D	543	12.1	1,599	14.3	14.0

Table 3-4 1:100,000 AEP Inundation Times

Location	1:100,000 AEP				
	NO FAILURE		DAM FAILURE		
	Peak flow (m^3/s)	Time to peak (hours)	Peak flow (m^3/s)	Time to peak (hours)	Time from breach to first impact (hours)
A	570	22.2	3,207	27.5	27.2
B	592	22.8	2,432	27.9	27.7
C	684	23.3	2,112	28.3	28.1
D	711	23.7	1,982	28.7	28.3

Table 3-5 1:1,000,000 AEP Inundation Times

Location	1:1,000,000 AEP				
	NO FAILURE		DAM FAILURE		
	Peak flow (m^3/s)	Time to peak (hours)	Peak flow (m^3/s)	Time to peak (hours)	Time from breach to first impact (hours)
A	1,563	4.7	3,831	7.9	7.8
B	1,647	5.0	3,174	8.3	7.9
C	2,141	4.8	2,807	8.7	8.4
D	2,211	5.0	2,656	8.9	8.5

A number of habitable dwellings are at risk from inundation from dam failure flooding under both Sunny Day and Flood Failure conditions. There are also a number of habitable dwellings at risk during normal flood events. Properties at risk of flooding downstream of the Cooling Water Dam have been identified in Appendix E. To assist with planning purposes, these properties have been listed in order of their distance from the dam (closest properties at the top of the list). Stanwell will undertake the notification of the PAR by using standard notification procedures. These include the use of the Emergency Alert tool, social media, radio, phone calls and in some cases door knocking if safe to do so.

The estimated PAR values are based on the Flood Impact Assessment undertaken by Aurecon in 2023. Hydraulic modelling of a Sunny Day Failure (SDF) and PMF Flood Event (PMF-F) were undertaken in the assessment. The estimated total PAR for the PMF-F initiated failure of the Cooling Water Dam is 19 and an incremental PAR of 4. This is based on the properties downstream identified in Appendix E and shown on the mapping in Appendix D. The assessments completed as part of the study have identified that there is a PAR for both sunny day failure and flood failure scenarios with the total incremental PAR for SDF of 6. The maximum total PAR for flooding without dam failure is 0 and 6 with dam failure for a 1:10,000,000 AEP Event.

It should be noted that the dam could fail under flood conditions before the flood level reaches the PMF or Dam Crest Flood (DCF) level. If that occurs, then properties below the PMF level on the inundation plan could be inundated by the flood failure wave.

In the event of dam failure, evacuation efforts would focus from upstream properties to downstream, initially concentrating on properties adjacent to the Meandu Creek floodplain. Notification of these properties will be Stanwell using the techniques identified in Section 4.0.

Since the dam has an uncontrolled spillway there are no means available to reduce or otherwise control the outflow from the dam during flood events.

Stanwell will provide notification to the LDMG when flood releases reach a trigger level of 1m over the spillway (this corresponds to a flood magnitude of approximately 1:5 AEP. Properties downstream of the

dam at risk from flooding will be warned by Stanwell via the methods identified above. On-going notifications will be made to the LDMG during the duration of the flood in accordance with procedures outlined in Section 5.0 below.

4.0 EMERGENCY EVENTS - RESPONSES AND NOTIFICATIONS

4.1. Escalation Stages

This EAP uses the Escalation Levels provided in Table 4-1 as part of the notification and action communications.

Table 4-1: EAP Escalation Stages

Level	Conditions
Alert	▪ A heightened level of vigilance due to the possibility of an event occurring that requires increased frequency of monitoring. Duration of this stage is dependent on the rate of development of the potential failure condition. ▪ During the alert stage, agreement on the need for and frequency of situational reports should be discussed with the disaster management group. ▪ No further action may be required. However, the situation may need to be monitored by someone capable of assessing the potential of the threat.
Lean Forward	▪ A heightened level of situational awareness of a potential dam hazard event. The disaster management group and dam operational staff are placed in a state of operational readiness to move to the 'Stand-up' stage of activation in the event of an emergency event occurring or to mitigate the consequences of such an event. ▪ The chief executive is advised of the status of the potential disaster event. ▪ An increase in frequency of monitoring is undertaken. ▪ Situational reports to the disaster management group and chief executive should continue as previously arranged or otherwise requested.
Stand Up	▪ The disaster management group and the dam owner have mobilised resources and personnel as part of the EAP activation. ▪ Any works that may become necessary at the dam site to minimise the risk of dam failure or minimise the consequences of failure should be undertaken. ▪ Situational reports should be provided to the disaster management group and chief executive according to agreed timelines.
Stand Down	▪ Transition from responding to an event back to normal core business and/or continuance of recovery operations. ▪ The disaster management group and chief executive are advised of the end of the event. ▪ There is no longer a requirement to respond to the event and the threat is decreasing.

4.2. Emergency Events

Table 4-2 lists the various scenarios and their reference actions. The emergency action plan engages at the Stand-Up escalation stage.

Table 4-2: Scenarios, Escalation and References

Scenario (Hazard)	Initiating Event	Characteristics	Escalation Level	Reference
Flood event	Flood	Water level expected to exceed spillway crest level	Alert	Refer Section 4.2.1: Escalation Details Refer Section 4.3: Notification Distribution Refer Section 4.4: Notification Content
			Lean Forward	Refer Section 4.2.1: Escalation Details Refer Section 4.3: Notification Distribution Refer Section 4.4: Notification Content
			Stand-Up	Refer Section 4.2.1: Escalation Details Refer Section 4.3: Notification Distribution Refer Section 4.4: Notification Content
Dam integrity event: Piping, Erosion, Earthquake, Structural-Failure	Embankment stability issues Seepage related issues	Dam crest deformation due to erosion or scouring Scouring of or severe damage to spillway Wave scour on crest due to wind and wave action Embankment toe or abutment groin scour due to spillway or outlet discharges Gullying of embankment due to rainfall Signs of distress in embankment such as cracking or deformation/ sliding Differential movements of walls etc. Seepage erosion or piping New springs, seeps or boggy areas Increase in seepage along outlet conduit Rapid increases or cloudy appearance of seepage	Alert	Refer Section 4.2.2: Escalation Details Refer Section 4.3: Notification Distribution Refer Section 4.4: Notification Content
			Lean Forward	Refer Section 4.2.2: Escalation Details Refer Section 4.3: Notification Distribution Refer Section 4.4: Notification Content
			Stand-Up	Refer Section 4.2.2: Escalation Details Refer Section 4.3: Notification Distribution Refer Section 4.4: Notification Content
	Terrorist Threat	Threats via audio communication Unauthorised entry to site	Alert	Refer Section 4.2.3: Escalation Details Refer Section 4.3: Notification Distribution

Scenario (Hazard)	Initiating Event	Characteristics	Escalation Level	Reference
Failure of Embankment or Spillway: Terrorism		Suspicious activity detected by personnel on site		Refer Section 4.4: Notification Content
			Lean Forward	Refer Section 4.2.3: Escalation Details Refer Section 4.3: Notification Distribution Refer Section 4.4: Notification Content
			Stand-Up	Refer Section 4.2.3: Escalation Details Refer Section 4.3: Notification Distribution Refer Section 4.4: Notification Content

4.2.1.Flood Event

This section covers hazard characteristics for flooding scenarios and the process for risk elevation. Table 4-3 outlines the hazard characteristics for flooding scenarios and the notification process. This table is to be read in conjunction with

Figure 4-1 that illustrates the notification flow chart for flooding. Section 4.4 outlines the messages to be provided to PAR under flooding events.

Table 4-3: Flooding scenario - no structural issues

Potential problem	Activation stage	General characteristics	When and what to check
Flooding and rainfall events – **Refer to Appendix D for flood inundation mapping.**			
Flood releases from CW Dam	Alert	Water level in the dam is at 435mAHD OR Water level in the dam is rising between 435mAHD and 435.2mAHD Between 0 and 0.2m spill depth over the primary spillway (if not blocked)	**Shift Superintendent (SS) / Emergency Controller (EC)** • Initiate Alert Stage Actions • Monitor reservoir water levels and notify MESS: - Describe current situation with dam—What is the event? - What is the status and are any flood releases due to commence? - Advise of current storage level (RL in meters) from T3000 control room screen **Mechanical Engineering Superintendent – Station (MESS)** • Inspect the dam at least daily. During the inspection looks for signs of damage occurring. This includes such things as sink holes, slumps, erosion, springs, cracks, high seepage flows or any deformations. Photograph any damage identified. If any damage is noted refer to the appropriate emergency procedures, as listed within other sections of this table. • Maintain the Log of Events and all communications as per the Tarong Site Incident Management Plan 13/158121. • Record the rainfall at regular intervals. • Using the sheets included in Appendix J, record the reservoir level and plot a graph of storage levels versus time so that the trend of the inflows may be monitored. • Initiate manual readings of water levels and rainfall if instrument feed-back is lost • Notify EM and GMSG of ‘Alert’ stage

Potential problem	Activation stage	General characteristics	When and what to check
			General Manager Southern Generation (GMSG) • Ensure notification processes are authorised/actioned. **Engineering Manager (EM)** • Notify LDC, DSLO, QPS and DRDMW of 'Alert', • Notify LDC to alert downstream properties (refer Appendix E) of dam status; • LDMG to issue a 'Flood Warning' message via Emergency Alert to downstream landholders – refer Appendix E that will initiate appropriate emergency action to safeguard persons in downstream areas. • Emergency Alert: Refer Table 4 6 in Section 4.4 for notification. SMS text message & voice message *Notifications to LDC or QFES may not be required to be notified at ALERT as per the notification flow charts (If LEAN FORWARD not expected). If in doubt over the potential for the emergency condition to develop, complete all necessary notifications.* **Incident Manager (IM)** • Review all event logs, records and reports from the incident **Site Services Manager (SSM)** - Assist EM where needed
	Lean Forward	Water level in the dam is at 435.2mAHD OR Water level in the dam is rising between 435.2mAHD and 435.3mAHD An indication of downstream flooding	**Shift Superintendent (SS) / Emergency Controller (EC)** • Monitor water levels in the dam every 2 hours (from the T3000 control system) and notify the EM on reservoir levels: - Describe current situation with dam—What is the event? - What is the status and are any flood releases due to commence? - Advise of current storage level (RL in meters) **Mechanical Engineering Superintendent – Station (MESS)**

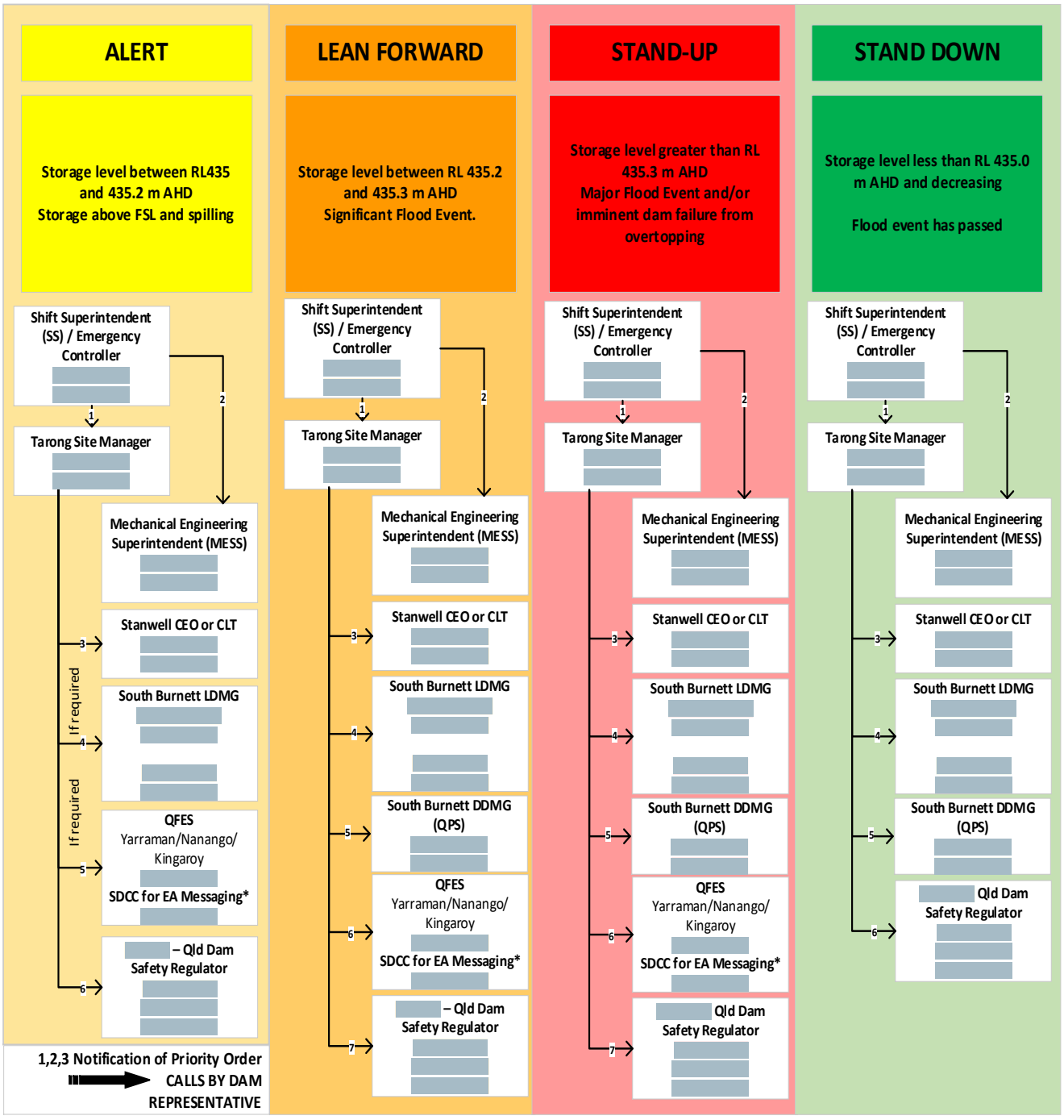
Potential problem	Activation stage	General characteristics	When and what to check
		extents expected to be generated from events of this magnitude are shown in Figure D2 (Appendix D).	• Inspect dam as per Lean Forward phase. Increase dam inspections to twice daily (a.m. and p.m.). If required, technical advice will be sought from the DSC. • Maintain the Log of Events and all communications as per the Tarong Site Incident Management Plan 13/158121. • Monitor water levels in the dam every 2 hours and notify the EM on reservoir levels. Record water levels on sheets in Appendix J as per advice in lean forward phase. • Obtain rainfall forecast from the Bureau of Meteorology (BOM) and track progress and effects of flood and inform the EM of the flood forecast. • On detection of leakage and/or springs, proceed with the emergency actions for > Embankment Stability – Seepage >Embankment Stability – Structural. • Notify EM and GDSM that the EAP has been activated to 'Lean Forward' stage. **General Manager Southern Generation (GMSG)** • Ensure notification processes are authorised/actioned. **Engineering Manager (EM)** • Notify of the flood status and critical events to COO, LDC, DSLO, QPS and DRDMW that the EAP has been activated to 'Lean Forward' stage. Update daily: - Describe current situation with dam—What is the event? - What is the status and are any flood releases due to commence? - Advise of current storage level (RL in meters) • If necessary consult Dam Safety Consultant. • Notify LDC of dam status. • Notification to include current release rate, expected inundation levels and expected trend in release rate. • Notify LDC to alert downstream properties (refer Appendix E) of dam status: - Emergency Alert. Refer **Error! Reference source not found.** in Section **Error! Reference source not found.** for notification. SMS text message & voice message - **Information shall be communicated via LAND LINE PHONES as the REDUNDANCY METHOD OF COMMUNCATION**

Potential problem	Activation stage	General characteristics	When and what to check
			Incident Manager (IM) • Review all event logs, records and reports on the incident • Activation of IMT • Activation of ERT • Coordination of Operations Response **Site Services Manager (SSM)** - Assist EM where needed
	Stand-up	Downstream release hazard flows anticipated OR Water level in the dam is at or above 435.3mAHD High risk of failure initiating or downstream release hazard This water level is approaching the PMF event for the Cooling Water Dam **If signs of structural issues exist OR** **Dam failure is initiated, refer to Section 4.2.2 dam integrity event**	**Shift Superintendent (SS) / Emergency Controller (EC)** • Monitor water levels in the dam every 2 hours (from the T3000 control system) and notify the SEC, EM and GMSG on reservoir levels. • [redacted] • Describe current situation with dam—What is the event? • What is the status and are any flood releases due to commence? • Advise of current storage level (RL in meters) from T3000 control room screen **Mechanical Engineering Superintendent – Station (MESS)** • Inspect dam as per Stand-up phase and include inspection of the Meandu Creek Dam auxiliary spillway and spillway chute. Increase dam inspections to 4 hourly daily. If required, technical advice will be sought from the DSC. • Maintain the Log of Events and all communications as per the Tarong Site Incident Management Plan 13/158121. • Monitor water levels in the dam every hour and notify the EM on reservoir levels. Record water levels on sheets in Appendix J as per advice in Alert phase. • Obtain rainfall forecast from the Bureau of Meteorology (BOM) and track progress and effects of flood and inform the EM of the flood forecast • If damage has been detected, continue to follow emergency actions associated with the following depending on nature of dam instability occurring: - Embankment Stability – Structural section 9.0)

Potential problem	Activation stage	General characteristics	When and what to check
			- Embankment Stability – Seepage section 9.0) • IF SAFE, monitor water levels in Cooling Water Dam and Meandu Creek Dam downstream of the dam • Notify EM and GMSG that the EAP has been activated to 'Stand Up' stage **General Manager Southern Generation (GMSG)** • Ensure notification processes are authorised/actioned. **Engineering Manager (EM)** • Notify of the flood status and critical events to COO, LDC, DSLO, QPS and DRDMW that the EAP has been activated to 'Stand-up Level 1' stage. Update daily. • If necessary consult Dam Safety Consultant. • Notify LDC to alert downstream properties (refer Appendix E) of dam status; • LDMG to issue a 'Flood Warning' message via Emergency Alert to downstream landholders – refer Appendix E that will initiate appropriate emergency action to safeguard persons in downstream areas. • Emergency Alert: Refer **Error! Reference source not found.** in Section **Error! Reference source not found.** for notification. SMS text message & voice message • **Information shall be communicated via LAND LINE PHONES as the REDUNDANCY METHOD OF COMMUNCATION** • Activation of the Local Disaster Plan • Notify the LDC and QPS of an imminent dam failure or extreme flood level **Site Services Manager (SSM)** • Provide hourly updates to IM, GMSG • Assist EM where needed **Incident Manager (IM)** • Review all event logs, records and reports on the incident • Coordination of operations response • Notify and update the COO and CLT on an hourly basis

Potential problem	Activation stage	General characteristics	When and what to check
	Stand-down	Lake levels falling to FSL (435.0mAHD).	**Shift Superintendent (SS) / Emergency Controller (EC)** • Monitor reservoir water levels and notify Site Security (SEC) **Mechanical Engineering Superintendent – Station (MESS)** • Undertake a dam safety inspection and submit the report to the EM for review • After the event compile an Emergency Event Report and forward unedited copies to the IM • Log Book Entry • Notify EM and GMSG that the EAP has been deactivated and is now at the 'Stand Down' stage **General Manager Southern Generation (GMSG)** • Ensure notification processes are authorised/actioned. • Ensure the downstream PAR have been notified that the potential dam hazard emergency is over. **Engineering Manager (EM)** • Notify of the flood status and critical events to COO, DSLO, QPS and DRDMW that the EAP has been activated to 'Stand-down' stage. • Inform LDC that the potential dam hazard emergency is over and request it to advise the PAR; **Incident Manager (IM)** • Review all event logs, records and reports on the incident and authorise their release to LDMG and DRDMW **Site Services Manager (SSM)** • Submit report to SBRC where damage to the dam or potential dam safety issues have occurred • Assist EM where needed

Notification Flow Chart for Flooding and Hazard Release



Notifications to LMDG or DDMG or QFES may not be required to be notified at ALERT as per the notification flow charts (If LEAN FORWARD not expected). If in doubt over the potential for the emergency condition to develop, complete all necessary notifications.

***If the QFES Emergency Alert system is not available, contacting downstream PAR listed in Appendix E may also be required.**

Figure 4-1: Tarong CW dam notification flow chart for flood event

4.2.2.Dam Integrity Event – Piping, Erosion or Structural Failure

This section covers hazard failure characteristics for SDF failure scenarios, and the process for risk elevation. Table 4-4 outlines the hazard failure characteristics for SDF scenarios and the notification process. This table is to be read in conjunction with

Figure 4-2 that illustrates the notification flow chart for SDF. Section 4.4 outlines the messages to be provided under SDF events.

Table 4-4: Sunny day failure scenario - embankment and seepage issues

Potential problem	Activation stage	General characteristics	When and what to check
Dam integrity issues – **Refer to Appendix D for flood inundation mapping.**			
Signs of distress in embankment such as cracking or deformation/ sliding **Earthquake** **Differential movements of walls etc.** **Scouring of or severe damage to spillway or embankment due to flood event**	Alert	Scouring or gullying of embankment notching of the upstream face of embankments by waves Identification during routine inspection of initial signs of embankment distress such as cracks or scarps near the crest and bulges at the toe Identification of new areas of seepage of growth in existing areas of seepage	**Shift Superintendent (SS) / Emergency Controller (EC)** - Initiate Alert Stage - Inspect affected area of embankment to watch for signs of scour progressing. Undertake remedial action if practical - Notify MESS: - Describe current situation with dam—What is the event? - [redacted] - What is the status and are any flood releases due to commence? - Advise of current storage level (RL in meters) from T3000 control room screen - Report the nature of the problem and details of influencing factors e.g. cracking, sliding, differential movement of walls, etc. **Mechanical Engineering Superintendent – Station (MESS)** - On receipt of damage reports, carry out a field inspection. If necessary, obtain specialist technical advice from a dam consultant. - Monitor extent of scour or damage and take steps to remediate problem if practical. Photograph any damage. - Maintain the Log of Events and all communications as per the Tarong Site Incident Management Plan 13/158121.

Potential problem	Activation stage	General characteristics	When and what to check
		Seismic activity felt at the dam or in the region **AND** Intensity less than MM5	- All information to be reported to Manager Engineering Services - On receipt of damage reports, carry out a field inspection. If necessary, obtain specialist technical advice from a dam consultant. - Inspect affected area of embankment and look for source of seepage. Environmental changes such as vegetation damage, salt scalds, etc. can help to identify seepage areas. If necessary, obtain specialist technical advice from a dam consultant. - Measure and review the rate of seepage flow and observe its clarity, keeping notes and photographs for the Dam Logbook. Where data indicates sudden unexplained increases in seepage, request Engineering Manager to inspect the dam and structures for signs of damage - Using the sheets in Appendix J, record the reservoir level using and plot a graph of storage levels versus time. Record the rainfall (if any) at regular intervals. - Maintain the Log of Events and all communications as per the Tarong Site Incident Management Plan 13/158121. - All information to be reported to Manager Engineering Services - Notify EM and GMSG that the EAP has been activated to 'Alert' stage *Specifically for Earthquake:* - Respond to any information of an earthquake in the area. Assess its intensity on the Modified Mercalli Scale – refer details in Appendix I. (Earthquakes with intensities MM5 or greater have higher potential to damage the embankment). - Inform the Manager Engineering Services of any seismic activity felt at the dam or in the region and assist in monitoring the performance of the dam - Review seepage records or alarms and where data indicates a sudden increase in seepage inspect the dam and structures for signs of damage - Immediately inspect the embankment, outlet pipe, and spillway structure for springs, deformation, cracking and erosion, concrete damage, etc. Check for signs of slumps, sink holes and erosion on the downstream face of the embankment, especially near the spillway and the pipe outlets - On detection of springs, sink holes or slumps, inform 1) the Manager Engineering Services and/or 2) FRT of the number, size and location. Photograph and monitor their development - Maintain the Log of Events and all communications as per the Tarong Site Incident Management Plan 13/158121. - All information to be reported to Manager Engineering Services

Potential problem	Activation stage	General characteristics	When and what to check
			General Manager Southern Generation (GMSG) - Instigate the formation of the Incident Management Team, if required - Review all event logs, records and reports during the incident **Engineering Manager (EM)** - Notify QPS and DRDMW of 'Alert'. - Notify LDC to alert downstream properties (refer Appendix D) of dam status. - Emergency Alert. Refer **Error! Reference source not found.** in Section **Error! Reference source not found.** for notification. SMS text message & voice message - **Information shall be communicated via LAND LINE PHONES as the REDUNDANCY METHOD OF COMMUNCATION.** **Incident Manager (IM)** - Review all event logs, records and reports during the incident **Site Services Manager (SSM)** - Assist EM where needed
	Lean Forward	Cause of scour continuing and erosion becoming significant to the point where stability may be starting to be impaired. An indication of downstream flooding extents expected to be generated from this event occurring is shown in Appendix D.	**Shift Superintendent (SS) / Emergency Controller (EC)** - Inspect affected area of embankment to watch for signs of scour progressing. Undertake remedial action if practical - Notify MESS, EM and GMSG: - Describe current situation with dam—What is the event? - [redacted] - What is the status and are any flood releases due to commence? - Advise of current storage level (RL in meters) from T3000 control room screen - Report the nature of the problem and details of influencing factors e.g. cracking, sliding, differential movement of walls, etc.

Potential problem	Activation stage	General characteristics	When and what to check
		Detection of signs of cloudy water in seepage - look for the source of cloudy water Seismic activity felt at the dam or in the region **AND** Damage detected during initial inspections includes increased seepage **OR** Intensity greater than 5MM	**Mechanical Engineering Superintendent – Station (MESS)** - [redacted] - All communications to INCIDENT MANAGEMENT TEAM (IMT) as per the Tarong Site Incident Management Plan - Inspect dam as per Lean Forward phase. Increase dam inspections to twice daily (a.m. and p.m.). If required, technical advice will be sought from the Dam Safety Consultant. - If possible, organise emergency repairs to reduce the potential for scour to cause failure of the dam. Obtain prognoses of weather conditions from the BOM to determine the likelihood of bad weather preventing or hampering repairs - Maintain the Log of Events and all communications as per the Tarong Site Incident Management Plan 13/158121. - All information to be reported to Manager Engineering Services - Inspect dam as per Alert phase. Increase dam inspections to twice daily (a.m. and p.m.). During the inspection note signs of sink holes, slumps, erosion, springs, cracks, high seepage flows or any deformations. If necessary, obtain specialist technical advice from a dam consultant. Photograph area of impact with video camera. - If possible, organise emergency repairs to prevent the rate of seepage from causing failure of the dam. - Obtain prognoses of weather conditions from the Bureau of Meteorological to determine the likelihood of bad weather preventing or hampering repairs - If the damage is unlikely to lead to dam failure, continue monitoring the damage for signs of increased seepage - Maintain the Log of Events and all communications as per the Tarong Site Incident Management Plan 13/158121. - All information to be reported to Manager Engineering Services *Specifically for Earthquake:* - Immediately perform a dam safety inspection to confirm damage. During the inspection note signs of sink holes, slumps, erosion, springs, cracks, high seepage flows or any deformations. If necessary, obtain specialist technical advice from a dam consultant. - On detection of structural damage, e.g. slumps, cracks etc., proceed with the emergency actions for Embankment Stability – Structural (section 9.0)

Potential problem	Activation stage	General characteristics	When and what to check
			- On detection of leakage and/or springs, proceed with the emergency actions for Embankment Stability – Seepage (section 9.0) - If possible, organise emergency repairs to prevent damage from causing failure of the dam. Obtain prognoses of weather conditions from the BOM to determine the likelihood of bad weather preventing or hampering repairs - If the damage is unlikely to lead to dam failure, continue monitoring the damage for signs of increased seepage - Maintain the Log of Events and all communications as per the Tarong Site Incident Management Plan 13/158121. - All information to be reported to Manager Engineering Services **General Manager Southern Generation (GMSG)** - Ensure notification processes are authorised/actioned. **Engineering Manager (EM)** - If reports from the Emergency Response Team and/or Mechanical Engineering Superintendent (Station) confirm that significant damage has occurred or an emergency is developing, immediately notify the Director Dam Safety, DRDMW of the event. - If embankment failure is likely to occur assess the necessity to pump water from the dam in order to lower the reservoir level of the dam. This will allow a decrease in loading on the structure, and to minimise the impact of any failure. - If necessary, consult Dam Safety Consultant, DRDMW. - If reports from the Mechanical Engineering Superintendent (Station) confirm that significant damage has occurred or an emergency situation is developing, immediately notify the Director Dam Safety, DRDMW of the event. - If embankment failure is likely to occur assess the necessity to pump water from the dam in order to lower the reservoir level of the dam. This will allow a decrease loading on the structure, and to minimise the impact of any failure. - If reports from the Mechanical Engineering Superintendent (Station) confirm that significant damage has occurred or an emergency situation is developing, immediately notify the Director Dam Safety, DRDMW of the event.

Potential problem	Activation stage	General characteristics	When and what to check
			- If embankment failure is likely to occur assess the necessity to pump water from the dam in order to lower the reservoir level of the dam. This will allow a decrease loading on the structure, and to minimise the impact of any failure. - Notify LDMG to alert downstream properties (refer Appendix D) of dam status: - QFES system. Refer **Error! Reference source not found.** in Section **Error! Reference source not found.** for notification. SMS text message & voice message - **Information shall be communicated via LAND LINE PHONES as the REDUNDANCY METHOD OF COMMUNCATION** - Notify of the flood status and critical events to COO, LDC, QPS and DRDMW that the EAP has been activated to 'Lean Forward' stage. Update daily: - Describe current situation with dam—What is the event? - What is the status and are any flood releases due to commence? - Advise of current storage level (RL in meters) - Notification to include current release rate, expected inundation levels and expected trend in release rate. - Maintain regular contact with LDC at least twice daily (a.m. and p.m.) to update on the status of the dam - LDMG and/or the QLD Police notified of an imminent dam failure or extreme flood level. **Incident Manager (IM)** - Review all event logs, records and reports on the incident - Activation of IMT - Activation of ERT - Coordination of Operations Response **Site Services Manager (SSM)** - Assist EM where needed
	Stand-up	Scouring progressing to state where the	**Shift Superintendent (SS) / Emergency Controller (EC)**

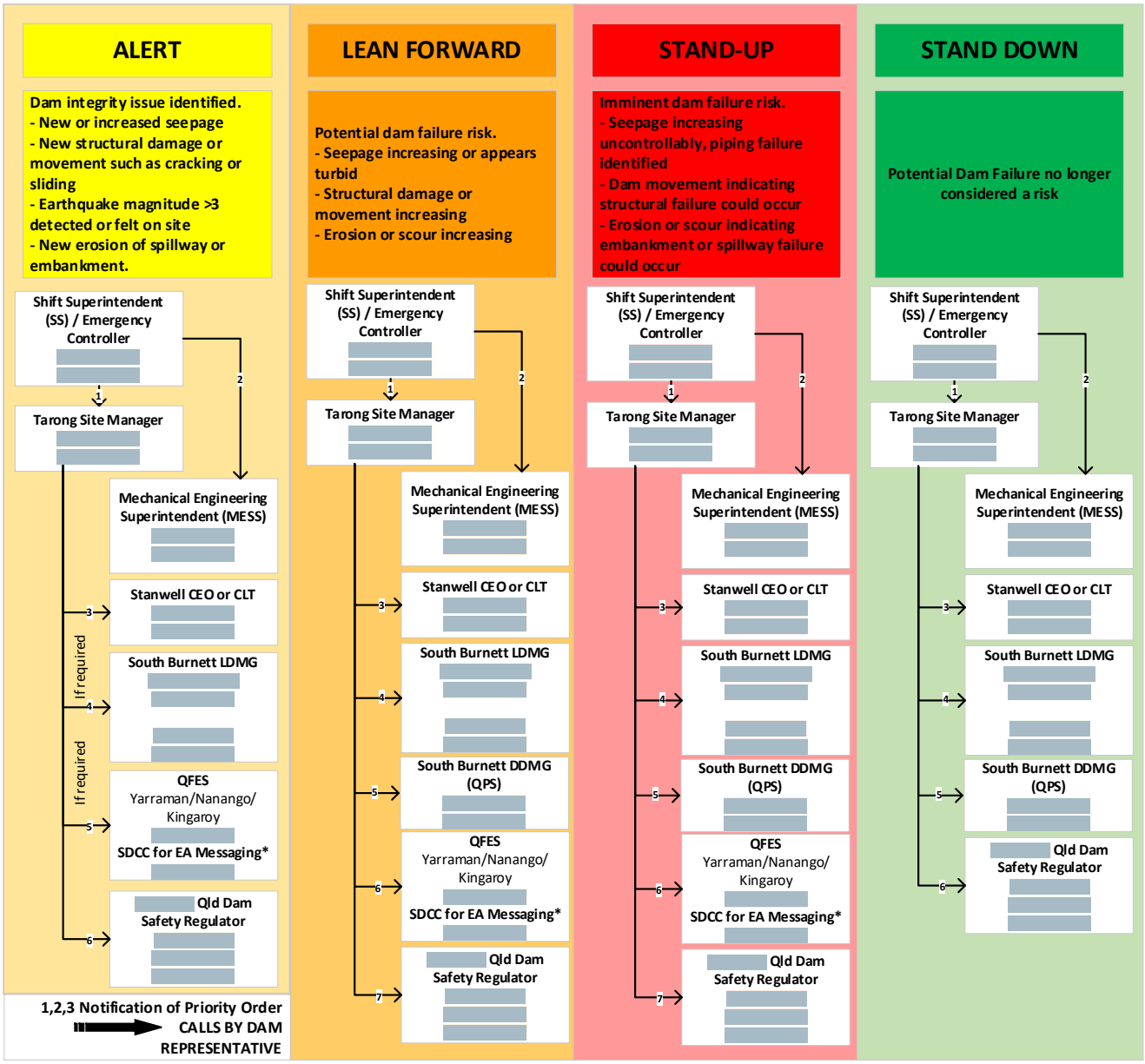
Potential problem	Activation stage	General characteristics	When and what to check
		safety of the dam is significantly impaired. Loads on embankment increasing or cracking/ deformation increasing to state where the safety of the dam is significantly impaired An indication of downstream flooding extents expected to be generated from this event occurring as a SDF is shown in Appendix E. Seepage developing further. Discharge is clouding and increasing (piping failure has started) Progressive internal erosion of the embankment or foundation to form an open conduit or pipe Sufficient Water in storage to create a dam failure hazard	• Inspect affected area of embankment to watch for signs of scour progressing. Undertake remedial action if practical • Notify MESS: • • Describe current situation with dam—What is the event? • What is the status and are any flood releases due to commence? • Advise of current storage level (RL in meters) from T3000 control room screen • Report the nature of the problem and details of influencing factors e.g. cracking, sliding, differential movement of walls, etc. **Mechanical Engineering Superintendent – Station (MESS)** • Monitor extent of scour as per Stand-up phase. Increase dam inspections to 2 hourly. If required, technical advice will be sought from the Dam Safety Consultant. • Further increase efforts to remediate problem, if practical • Maintain the Log of Events and all communications as per the Tarong Site Incident Management Plan 13/158121. • All information to be reported to Manager Engineering Services • Review status of the dam and if dam failure is occurring or is considered imminent evacuate any areas of the site at risk from dam failure. • In the event of an imminent dam failure, arrange for an inspection and determine any requirements for remedial works at the dam. • If necessary, seek technical advice from the Dam Safety Consultant. • If practical pump water from the dam in order to lower the reservoir level of the dam. This will allow a decrease loading on the structure, and to minimise the impact of any failure. • If embankment failure occurs, immediately report to the Incident Manager, evacuate the site where required and photograph the event using video camera (IF SAFE) *Specifically for Earthquake:* • Continue monitoring • Carry out emergency actions depending on nature of dam instability occurring, as outlined above

Potential problem	Activation stage	General characteristics	When and what to check
		Seismic activity felt at the dam or in the region AND Damage detected during initial inspections includes increased seepage	• Photograph area of impact • If possible, perform a dam safety inspection to confirm damage. During the inspection note signs of sink holes, slumps, erosion, springs, cracks, high seepage flows or any deformations. If necessary, obtain specialist technical advice from a dam consultant. • On detection of structural damage, e.g. slumps, cracks etc., proceed with the emergency actions for Embankment Stability – Structural (section 9.0) • On detection of leakage and/or springs, proceed with the emergency actions for Embankment Stability – Seepage (section 9.0) • If possible, organise emergency repairs to prevent damage from causing failure of the dam. Obtain prognoses of weather conditions from the BOM to determine the likelihood of bad weather preventing or hampering repairs • If the damage is unlikely to lead to dam failure, continue monitoring the damage for signs of increased seepage • Maintain the Log of Events and all communications as per the Tarong Site Incident Management Plan 13/158121. • All information to be reported to EM and GMSG. **General Manager Southern Generation (GMSG)** • Ensure notification processes are authorised/actioned. **Engineering Manager (EM)** • Review status of the dam and if dam failure is occurring or is considered imminent evacuate any areas of the site at risk from dam failure. • In the event of an imminent dam failure, arrange for an inspection and determine any requirements for remedial works at the dam. If necessary, seek technical advice from the Dam Safety Consultant. • If practical pump water from the dam in order to lower the reservoir level of the dam. This will allow a decrease in loading on the structure, and to minimise the impact of any failure. • Inform periodic (hourly) the Director Dam Safety, DRDMW. If failure is occurring or has initiated, inform Director Dam Safety THAT THE DAM IS LIKELY TO FAIL. • Notify DRDMW that the EAP has been activated to ‘Stand Up’ stage

Potential problem	Activation stage	General characteristics	When and what to check
			• Inform periodic (hourly) the Director Dam Safety, DRDMW. If failure is occurring or has initiated, inform Director Dam Safety THAT THE DAM IS LIKELY TO FAIL. • Notify LDC to issue a '**Flood Warning**' message via Emergency Alert to downstream landholders – refer Appendix E for PAR and contact details in downstream areas. • Emergency Alert. Refer **Error! Reference source not found.** in Section **Error! Reference source not found.** for notification. SMS text message & voice message • **Information shall be communicated via LAND LINE PHONES as the REDUNDANCY METHOD OF COMMUNCATION** • Notify the LDC and QLD Police of an imminent dam failure or extreme flood level. Provide hourly updates. • Identify if possible, evacuations are required. • Maintain contact with the LDC while the risk of dam failure remains. • Provide hourly updates to IM, GMSG • If embankment failure occurs, immediately report to the Incident Manager, evacuate the site where required and photograph the event using video camera (IF SAFE) **Site Services Manager (SSM)** • The LDMG and/or the QLD Police, when notified of an imminent dam failure, will initiate appropriate emergency action to safeguard persons in downstream areas. This may involve activation of the Local Disaster Plan • Initiate appropriate emergency action to safeguard persons in downstream areas. • Assist EM where needed **Incident Manager (IM)** • Review all event logs, records and reports on the incident • Coordination of operations response • Notify and update the COO and CLT on an hourly basis • If dam failure is imminent or initiating, arrange for additional steps to be taken to mitigate the effects of the damage. • The DDS-DRDMW may choose to direct emergency activities based on the extent and type of the damage.

Potential problem	Activation stage	General characteristics	When and what to check
	Stand-down	Cause of erosion abates and risk of failure drops significantly Remedial works completed and risk of failure drops significantly Remedial works completed and cause of seepage removed.	**Shift Superintendent (SS) / Emergency Controller (EC)** - Monitor reservoir water levels and notify EM and GMSG **Mechanical Engineering Superintendent – Station (MESS)** - Undertake a dam safety inspection and submit the report to the Manager Engineering Services for review - After the event compile an Emergency Event Report and forward unedited copies to the Incident Manager - Log Book Entry - Notify DRDMW that the EAP has been deactivated and is now at the 'Stand Down' stage **Site Services Manager (SSM)** - If failure of the dam does not occur, arrange for a dam safety inspection after the event. - Where emergency repairs have been carried out, arrange for construction details to be recorded - Submit Emergency Event Report to the Director Dam Safety, DRDMW - If failure of the dam does not occur, arrange for a dam safety inspection after the event. - Where emergency repairs have been carried out, arrange for construction details to be recorded - Submit Emergency Event Report to the Director Dam Safety, DRDMW **Engineering Manager (EM)** - Inform LDC that the potential dam hazard emergency is over and request it to advise the PAR; - Submit report to LDMG where damage to the dam or potential dam safety issues has occurred **General Manager Southern Generation (GMSG)** - Ensure the downstream PAR have been notified the potential dam hazard emergency is over **Incident Manager (IM)** - Review all event logs, records and reports on the incident and authorise their release to LDMG and DRDMW Arrange for an investigation

Notification Flow Chart for Dam Integrity Issue – Piping, Erosion or Structural Failure



Notification to LDMG or DDMG or QFES may not be required to be notified at ALERT as per the notification flow charts (If LEAN FORWARD not expected). If in doubt over the potential for the emergency condition to develop, complete all necessary notifications.

***If the QFES Emergency Alert system is not available, contacting downstream PAR listed in Appendix E may also be required.**

Figure 4-2 Tarong CW dam notification flow chart for dam integrity issues

4.2.3.Terrorism Event

This section covers hazard failure characteristics for SDF and embankment failure scenarios, and the process for risk elevation. Table 4-5 outlines the hazard failure characteristics for terrorism scenarios and the notification process. This table is to be read in conjunction with

Figure 4-3: Tarong CW dam notification flow chart for terrorism that illustrates the notification flow chart for terrorism. Section 4.4 outlines the messages to be provided under terrorism events.

Table 4-5: Terrorism failure scenario - embankment and scouring issues

Potential problem	Activation stage	General characteristics	When and what to check
Embankment stability issues – **Upon receiving or identifying terrorist related threat, Stanwell shall trigger its security protocol for terrorist activities, including notifying QPS via Policelink at 131 444 and QPS, Nanango. First and foremost, the safety of Stanwell personnel must be confirmed. In line with Stanwell's security protocol, Police shall be escorted by Stanwell's representatives including the Stanwell personnel to determine the status of the terrorist threat and the extent of damage if the attack has already occurred.** – **Dam failure triggers for terrorist attack are generally similar to those for sunny day failure and the Figures for sunny day failure should be referred to identify impact zone expected from a terrorist attack failure (Appendix D).**			
Terrorist Activity Initial signs of distress in embankment due to the damage from terrorist attack including cracking or deformation/ sliding, differential movements of walls	Alert	Suspected Risk of Terrorist Act. Could be: - Threats via audio communication - Unauthorised entry to site - Suspicious activity detected	***IF SAFE (Police escort may be required and to be determined by SS/EC in consultation with QPS):*** **Shift Superintendent (SS) / Emergency Controller (EC)** • Initiate Alert Phase • Contact QPS **Mechanical Engineering Superintendent – Station (MESS)** • No Action **Engineering Manager (EM)**

Potential problem	Activation stage	General characteristics	When and what to check
			• Notify LDC of Alert. • If Required, Notify LDC to issue a 'Flood Warning' message via Emergency Alert to downstream landholders – refer Appendix E for PAR and contact details in downstream areas. • Emergency Alert. Refer Table 4 6 in Section 4.4 for notification. SMS text message & voice message **General Manager Southern Generation (GMSG)** • No Action. **Site Services Manager (SSM)** • Assist EM where needed **Incident Manager (IM)** • No Action.
	Lean Forward	Terrorist Act Confirmed, unsure if risk to dam	**Shift Superintendent (SS) / Emergency Controller (EC)** • Continue liaising with QPS **Mechanical Engineering Superintendent – Station (MESS)** • No Action **Engineering Manager (EM)** • Notify LDC of Activation. • Notify LDC to issue a 'Flood Warning' message via Emergency Alert to downstream landholders – refer Appendix E for PAR and contact details in downstream areas. • Emergency Alert. Refer Table 4 6 in Section 4.4 for notification. SMS text message & voice message **General Manager Southern Generation (GMSG)** • No Action.

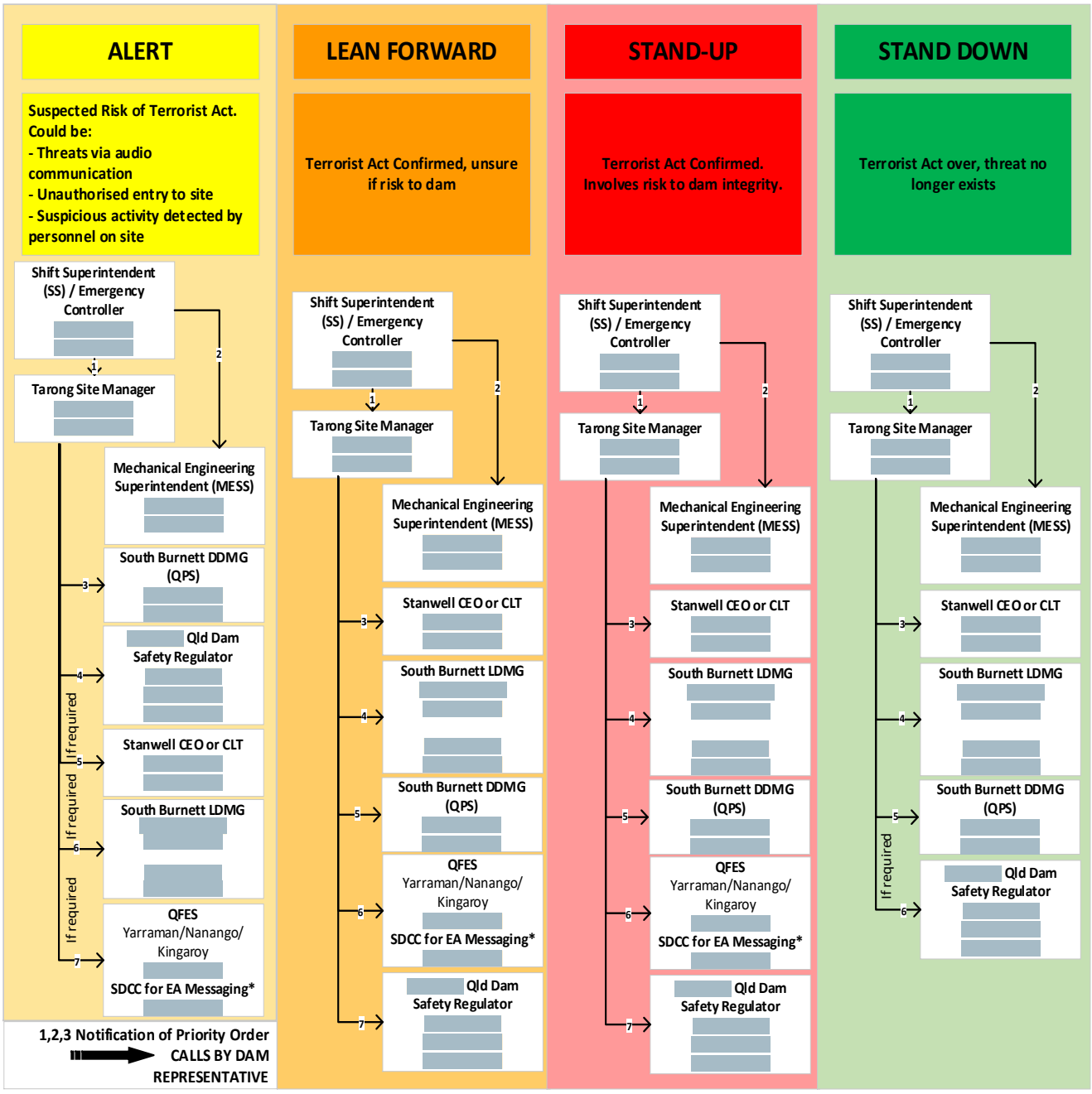
Potential problem	Activation stage	General characteristics	When and what to check
			Site Services Manager (SSM) • Assist EM where needed **Incident Manager (IM)** • Review all event logs, records and reports on the incident • Activation of IMT • Activation of ERT • Coordination of Operations Response • If Safe, monitoring and photograph area of impact.
	Stand-up	Terrorist Act Confirmed. Involves risk to dam integrity continue monitoring in accordance with section **4.2.2 Dam Integrity Event**	**Shift Superintendent (SS) / Emergency Controller (EC)** • If any suspicious behaviour noticed, contact GMSG OR ESM OR SSM advice. • If instructed by GMSG OR ESM OR SSM, ring: • [redacted] • [redacted] • *This enacts the Tarong Site Emergency Response Process - TAR-MAN-08: Emergency Control and Incident Management Plan for Tarong and Tarong North Power Stations.* • Continue recording all communications • Undertake surveillance inspect dam (if safe) • Photograph/video the damage from a safe point • Vacate the immediate vicinity of the affected area • Continue monitoring **Mechanical Engineering Superintendent – Station (MESS)** • Vacate the immediate vicinity of the affected area • Ensure no further access **Engineering Manager (EM)**

Potential problem	Activation stage	General characteristics	When and what to check
			• Vacate the immediate vicinity of the affected area • Ensure no further access • Review status of the dam and if dam failure is occurring or is considered imminent evacuate any areas of the site at risk from dam failure. • Notify LDC to issue a '**Flood Warning**' message via Emergency Alert to downstream landholders – refer Appendix E for PAR and contact details in downstream areas. • Emergency Alert. Refer **Error! Reference source not found.** in Section **Error! Reference source not found.** for notification. SMS text message & voice message • **Information shall be communicated via LAND LINE PHONES as the REDUNDANCY METHOD OF COMMUNCATION** • Notify the LDC and QLD Police of an imminent dam failure or extreme flood level. Provide hourly updates. • Identify if possible, evacuations are required. • The LDMG and/or the QLD Police, when notified of an imminent dam failure, will initiate appropriate emergency action to safeguard persons in downstream areas. This may involve activation of the Local Disaster Plan **General Manager Southern Generation (GMSG)** • Vacate the immediate vicinity of the affected area **Site Services Manager (SSM)** • Continue monitoring • Maintain the Log of Events and all communications as per the Tarong Site Incident Management Plan 13/158121. • If damage has been detected, continue to follow emergency actions for a Dam Integrity Event (**Error! Reference source not found.**) associated with the following depending on nature of dam instability occurring: • Embankment Stability – Structural (section 9.0) • Embankment Stability – Seepage (section 9.0) • Inspect dam (if safe) and ensure all security measures are in place (locked gates, etc.) • Photograph/video the damage from a safe point and record using the record sheets in Appendix J

Potential problem	Activation stage	General characteristics	When and what to check
			• Close any affected roads, if not already closed by others • Vacate the immediate vicinity of the affected area **Incident Manager (IM)** • Review all event logs, records and reports on the incident • Coordination of operations response • Notify and update the Chief Operations Officer or Crisis Leadership Team if formed • If dam failure is imminent or initiating, arrange for additional steps to be taken to mitigate the effects of the damage. • The DDS- DRDMW may choose to direct emergency activities based on the extent and type of the damage.
	Stand-down	Terrorist Act resolved. Remedial works completed and risk of failure drops significantly	**Shift Superintendent (SS) / Emergency Controller (EC)** • Monitor reservoir water levels and notify IM and GMSG **Mechanical Engineering Superintendent – Station (MESS)** • No Action **Site Services Manager (SSM)** • Carry out a dam safety inspection and submit the report to the Manager Engineering Services for review • Compile an Emergency Event Report and forward unedited copies to the Incident Manager • Log book entry • Submit Emergency Event Report to IM for review **Engineering Manager (EM)** • No Action **General Manager Southern Generation (GMSG)**

Potential problem	Activation stage	General characteristics	When and what to check
			• No Action **Incident Manager (IM)** • Review all event logs, records and reports on the incident and authorise their release to LDMG and DRDMW • If required, arrange for an investigation

Notification Flow Chart for Terrorist Activity



ONLY UNDERTAKE EMERGENCY ACTIONS IF CONSIDERED SAFE TO DO SO. Notifications to LDMG or DDMG or QFES may not be required to be notified at ALERT as per the notification flow charts (If LEAN FORWARD not expected). If in doubt over the potential for the emergency condition to develop, complete all necessary notifications.

***IF the QFES Emergency Alert system is not available, contacting downstream PAR listed in Appendix E may also be required.**

Figure 4-3: Tarong CW dam notification flow chart for terrorism event

4.3. Notification Distribution

The Queensland Emergency Alert Guideline (QEAG 2015) outlines requirements for alerting population at risk (PAR) to the associated dam hazard events and emergency events relating to identified hazards, such as hazards pertaining to dam failure. Table 4-6 details the message severity to be transmitted based on the associated activation stage. These activation stages are consistent with the requirements of DNRME 2017 and WLAA 2017.

Distribution of these warnings will be dictated by the polygon area provided by Stanwell located in Appendix B. The polygon area was determined to be: the area covered by the PMF dam failure flood outline expanded to the nearest road crest.

Table 4-6: Hazard and emergency alert message outline (Adapted from QEAG 2015)

Message Severity	Activation stage	Priority	General Meaning	Guidance on Use
Advice	Alert	3	There is no immediate danger. General information to keep you up-to-date with developments.	Unlikely that EA will be used to disseminate Advice messages
Watch and Act	Lean Forward	2	It is likely that you may be impacted by the emergency. You may be in danger and should start taking action to protect your life and your family.	EA may be used to disseminate Watch messages
Warning	Stand Up	1	You will be impacted by the emergency. You are in danger and must take action immediately. Voice messages will be preceded by a four second sound of the Standard Emergency Warning Signal, followed by the words “Emergency, Emergency”.	Most likely that EA will be used to issue Emergency Warnings

Prior to issuing Emergency Alert messaging, where time permits Tarong will liaise with the South Burnett LDMG to agree on the messaging, particularly for events with natural flooding already occurring downstream. If the Emergency Alert system is not available, for notifying downstream Population at Risk (PAR), Stanwell will directly contact these PAR as listed in Appendix E.

4.4. Warnings and Notifications

A ***notification*** provides appropriate information and advice on a heightened risk to enable those potentially involved to make informed decisions about preparedness and safety.

A ***warning*** is the dissemination of an urgent message signalling an imminent hazard event, or emergency event and provides advice on protective measures.

The warning messages involve more than notifying people about the technical nature of a release of water from the dam. The message includes telling people if, when, and potentially even how, they need to act to protect life or property.

Warning messages inform those at risk, or whose property is at risk, of an impending escalation of an emergency event and aims to prompt an appropriate response or action from those persons. The required action is contained in the warning message, for example, ‘seek further information’, ‘take shelter’, ‘evacuate’ or ‘activate your personal emergency plan’.

Table 4-7 below outlines the content of notification and warning messages to be disseminated during different dam hazards, based on activation stages.

Table 4-7: Prescribed alerts for notifications and warnings (Adapted from QEAG 2015)

Message Type / Dam Hazard	Activation Stage (Severity)	Voice Message	Text Message
Flood Event Embankment Issue or Seepage Failure or Flash Flood	Alert (Advice)	This is a Flash Flood Advice from Tarong Power Station. An incident has started. Areas in the Meandu Creek flood plain downstream of Tarong Power Station are likely to experience rapidly rising water levels and possible property inundation over the next few hours, posing a possible danger to residents. Warn neighbours, secure belongings and move to higher ground now. Stay up to date in case the situation changes. For more information, listen to local radio. For flood assistance, contact the SES on 132500.	TARONG POWER STATION FLOOD ADVICE An incident has started. Meandu Ck downstream Tarong Power Station-Possible threat life-property- warn others- prepare NOW-seek higher ground/leave area/Listen to radio. Stay up to date in case the situation changes.
Flood Event Embankment Issue Seepage Failure Flash Flood	Lean Forward (Watch and Act)	This is a Flash Flood Watch and Act message from Tarong Power Station . Areas in the Meandu Creek flood plain downstream of Tarong Power Station are likely to experience rapidly rising water levels and possible property inundation between 2-4m, posing a possible danger to residents. Warn neighbours, secure belongings and evacuate to your nearest evacuation centre now. Conditions are changing and you need to start taking action now to protect you and your family. Do not enter floodwater, prepare to evacuate, prepare to isolate, avoid the area. For further information listen to your local radio, or visit www.dashboard.southburnett.qld.gov.au For flood assistance, contact the SES on 132500	TARONG POWER STATION FLOOD WATCH & ACT: Conditions are changing and you need to start taking action now to protect you and your family. Do not enter floodwater, prepare to evacuate, prepare to isolate, avoid the area. Meandu Ck downstream Tarong Power Station-possible threat to life/property-Warn others-Leave area NOW/seek higher ground-Listen to radio
Flood Event Embankment Issue Seepage Failure Flash Flood	Stand Up (Warning)	Emergency Emergency. This is a Flash Flood Warning from Tarong Power Station. Areas in the Meandu Creek flood plain downstream of Tarong Power Station are likely to experience rapidly rising water levels and property inundation between 2-4m. Warn neighbours, secure belongings and evacuate to your nearest evacuation centre now. You may be in danger and need to take action immediately. Evacuate now. Move to higher ground. For further information listen to your local radio, or visit www.dashboard.southburnett.qld.gov.au For flood assistance, contact the SES on 132500. If your life is in danger call Triple zero	TARONG POWER STATION FLASH FLOOD WARNING: Meandu Ck downstream Tarong PwrSt IMMEDIATE THREAT TO LIFE & PROPERTY You may be in danger and need

Message Type / Dam Hazard	Activation Stage (Severity)	Voice Message	Text Message
			to take action immediately. Evacuate now. Move to higher ground. Warn others Leave area NOW or seek higher ground-Listen to radio
Dam Integrity Event – SDF event Earthquake event Embankment Issue Seepage Failure	Alert (Advice)	This is a Flash Flood Advice from Tarong Power Station. An incident has started. Stay up to date in case the situation changes. Areas in the Meandu Creek flood plain downstream of Tarong Power Station are likely to experience rapidly rising water levels and possible property inundation over the next few hours, posing a possible danger to residents. Warn neighbours, secure belongings and move to higher ground now. For more information, listen to local radio. For flood assistance, contact the SES on 132500.	TARONG POWER STATION FLOOD ADVICE An incident has started. Stay up to date in case the situation changes. Meandu Ck downstream Tarong Power Station-Possible threat life/property-Warn Others prepare NOW/seek higher ground/leave area-Listen to radio
Dam Integrity Event – SDF event Earthquake event Embankment Issue Seepage Failure	Lean Forward (Watch and Act)	This is a Flash Flood Watch and Act message from Tarong Power Station . Areas in the Meandu Creek flood plain downstream of Tarong Power Station are likely to experience rapidly rising water levels and possible property inundation between 2-4m, posing a possible danger to residents. Warn neighbours, secure belongings and evacuate to your nearest evacuation centre now. Conditions are changing and you need to start taking action now to protect you and your family. Do not enter floodwater, prepare to evacuate, prepare to isolate, avoid the area. For further information listen to your local radio, or visit www.dashboard.southburnett.qld.gov.au For flood assistance, contact the SES on 132500	TARONG POWER STATION FLOOD WATCH & ACT: Conditions are changing and you need to start taking action now to protect you and your family. Do not enter floodwater, prepare to evacuate, prepare to isolate, avoid the area. Meandu Ck downstream Tarong Power Station-possible threat to life/property-Warn others-Leave area NOW/seek higher ground-Listen to radio

Message Type / Dam Hazard	Activation Stage (Severity)	Voice Message	Text Message
Dam Integrity Event – SDF event Earthquake event Embankment Issue Seepage Failure	Stand Up (Warning)	Emergency Emergency. This is a Flash Flood Warning from Tarong Power Station. Areas in the Meandu Creek flood plain downstream of Tarong Power Station are likely to experience rapidly rising water levels and property inundation between 2-4m. Warn neighbours, secure belongings and evacuate to your nearest evacuation centre now. You may be in danger and need to take action immediately. Evacuate now. Move to higher ground. For further information listen to your local radio, or visit www.dashboard.southburnett.qld.gov.au For flood assistance, contact the SES on 132500. If your life is in danger call Triple zero	TARONG POWER STATION FLASH FLOOD WARNING: Meandu Ck downstream Tarong PwrSt IMMEDIATE THREAT TO LIFE & PROPERTY You may be in danger and need to take action immediately. Evacuate now. Move to higher ground. Warn others Leave area NOW or seek higher ground-Listen to radio
Terrorism Embankment Issue Seepage Failure	Alert (Advice)	This is a Flash Flood Advice from Tarong Power Station. An incident has started. Stay up to date in case the situation changes. Areas in the Meandu Creek flood plain downstream of Tarong Power Station are likely to experience rapidly rising water levels and possible property inundation over the next few hours, posing a possible danger to residents. Warn neighbours, secure belongings and move to higher ground now. For more information, listen to local radio. For flood assistance, contact the SES on 132500.	TARONG POWER STATION FLOOD ADVICE An incident has started. Stay up to date in case the situation changes. Meandu Ck downstream Tarong Power Station-Possible threat life/property-Warn Others prepare NOW/seek higher ground/leave area-Listen to radio
Terrorism Embankment Issue Seepage Failure	Lean Forward (Watch and Act)	This is a Flash Flood Watch and Act message from Tarong Power Station . Areas in the Meandu Creek flood plain downstream of Tarong Power Station are likely to experience rapidly rising water levels and possible property inundation between 2-4m, posing a possible danger to residents. Warn neighbours, secure belongings and evacuate to your nearest evacuation centre now. Conditions are changing and you need to start taking action now to protect you and your family. Do not enter floodwater, prepare to evacuate, prepare to isolate, avoid the area. For further information listen to your local radio, or visit www.dashboard.southburnett.qld.gov.au For flood assistance, contact the SES on 132500	TARONG POWER STATION FLOOD WATCH & ACT: Conditions are changing and you need to start taking action now to protect you and your family. Do not enter floodwater, prepare to evacuate, prepare to isolate, avoid the area. Meandu Ck downstream

Message Type / Dam Hazard	Activation Stage (Severity)	Voice Message	Text Message
			Tarong Power Station-possible threat to life/property-Warn others-Leave area NOW/seek higher ground-Listen to radio
Terrorism Embankment Issue Seepage Failure	Stand Up (Warning)	Emergency Emergency. This is a Flash Flood Warning from Tarong Power Station. Areas in the Meandu Creek flood plain downstream of Tarong Power Station are likely to experience rapidly rising water levels and property inundation between 2-4m. Warn neighbours, secure belongings and evacuate to your nearest evacuation centre now. You may be in danger and need to take action immediately. Evacuate now. Move to higher ground. For further information listen to your local radio, or visit www.dashboard.southburnett.qld.gov.au For flood assistance, contact the SES on 132500. If your life is in danger call Triple zero	TARONG POWER STATION FLASH FLOOD WARNING: Meandu Ck downstream Tarong PwrSt IMMEDIATE THREAT TO LIFE & PROPERTY You may be in danger and need to take action immediately. Evacuate now. Move to higher ground. Warn others Leave area NOW or seek higher ground-Listen to radio

5.0 ACCESS AND COMMUNICATIONS

5.1. Access

Normal local access to the Cooling Water Dam is via Nanango-Tarong Road. The dam is situated immediately adjacent to the Tarong Power Station. Access routes are shown on the Locality Plan and Alternative Access Routes Plan provided in Appendix C.

Travel time from Tarong Power Station to Nanango is approximately 20 mins via Nanango-Tarong Road. This road is subject to flooding. During flood events alternative access to the Power Station is via Tarong Power Station Road, off the D'Aguilar Highway.

No internal roads on site will be flooded by a release from the Cooling Water Dam. However, during larger storms the access off Nanango-Tarong Road is likely to be cut if the Meandu Creek Dam is discharging.

If a dam failure does occur, access to the dam area will be via Tarong Power Station Road and internal access through the Western Gate.

Overland access to both abutments should be possible during all weather conditions. The western abutment may be reached from Nanango Road. Access to the eastern abutment may be possible via the internal road through the Western Gate (if safe to do so).

5.2. Communications

5.2.1. Overview

During a flood release event or dam failure occurs, Stanwell has agreed to undertake the notification to downstream landholders. Stanwell will use a combination of social media, radio broadcasting, phone calls and door knocking where safe to do so to notify people at risk during flooding events. Regular contact will be provided by Stanwell personnel (refer Section 4.0) to provide information on the expected flooding levels and to make notifications as necessary to warn people occupying dwellings that may be affected by flood waters.

During non-flood dam failure event (Sunny Day Failures) Stanwell will provide notifications when it is identified that the dam structure is at risk. Further details regarding the scenarios notification protocol including trigger stages, refer to Sections 4.2.2 to 4.2.3 and Section 4.4.

Based on the dam break modelling undertaken, no flooding impacts are expected to be noticeable near habitable dwellings within the first hour following dam failure initiation occurs.

If a situation arises where the failure of the dam is considered possible (a dam emergency event), Stanwell will issue appropriate notifications to persons located downstream of the dam using the National Emergency Alert System and other media outlets.

This system is the national telephone-based emergency warning system that sends messages to a nominated area:

- via landlines based on the location of the handset,
- via mobile phones based on an individual's billing address, and
- for Telstra mobile account holders based on the device's location.

A polygon in Google Earth KML format has been created to enclose the properties of affected persons. The polygon is ready to be uploaded by the State Disaster Co-ordination Centre (SDCC) to reside directly within the National Emergency Alert System for immediate use if needed for a dam failure emergency.

Pre-prepared notification messages have also been created for the different stages of the different hazard/emergency events which could apply to the Dam. Polygon set-out and texts of pre-prepared notification messages are shown in Appendix B and Table 4-7.

5.2.2.Redundancy of Warning Systems

If the Emergency Alert system is not available, for notifying downstream Population at Risk (PAR), Stanwell will directly contact these PAR as listed in Appendix E.

In the event that all established communication protocols become redundant, Stanwell with the assistance of the LDMG, will use radio broadcasting and door knocking where safe to do so to notify people at risk during flooding events. The order of priority will be given to downstream landowners highlighted in Appendix E.

Potential Affected Properties that are identified firstly, as

- Population at risk directly impacted as per the Failure Impact Assessment, followed by
- Properties adjacent to identified population at risk.

The priority of notifications is as follows

- QFES State Disaster Coordination Centre (SDCC) Watch Desk; for Emergency Alert System notification;
- Radio broadcasting;
- Door knocking

6.0 DAM DESCRIPTION AND BASIC DATA

6.1. Dam Overview

The dam is in an un-named gully off Meandu Creek, approximately 1.0 km north-west of Tarong Power station and 11 km south-west of Nanango. The water in the dam is supplied from Wivenhoe and Boondooma Dams and is used at the power station in cooling processes. The dam was designed by Macdonald Wagner & Priddle Pty Ltd and constructed by Tarong Energy in 1982. The dam is currently owned and operated by Stanwell Corporation who own Tarong Power Station.

The Cooling Water Dam is located directly east of the Meandu Creek Dam, also owned and operated by Stanwell Corporation. A locality plan is included in Appendix C

The key technical details of the dam are shown in Table 6-1. The Storage Curve is provided in Figure 6-2 and the Spillway Rating Curve in Figure 6-3.

This catchment area consists mainly of natural bushland and an open cut mine. The dam receives runoff from this direct catchment

The dam embankment comprises a zoned earth fill dam with central clay core and cut-off trench. The embankment was constructed with upstream and downstream batters of 1V:2H and 1V:3.5H, respectively.

The spillway connects an unlined and uncontrolled open channel with a crest level of 435 m AHD, a crest width of 5m and the spillway capacity is 19.7m³/s.

The spillway from the dam flows to the Meandu Creek Dam directly west of the Cooling Water Dam. In the vicinity of the spillway is a saddle dam. The crest level of the saddle dam is equal to the lowest level of the main embankment crest.

The spillway has capacity to pass the PMF event. The most likely failure scenario for the dam is a Sunny Day Failure event. Failure of the main embankment would cause a discharge of water directly to Meandu Creek, and not via Meandu Creek Dam. The risk of cascading failure of the two dams is therefore considered unlikely.

The outlet works comprise of a series of pumps installed on the right abutment well upstream of the embankment that have the capacity to pump at 100 L/s. These outlet works are completely separate from the embankment structure and there are no conduits running underneath or adjacent to the embankment.

Figure 6-1: Tarong Cooling Water Dam Location

Downstream of the dam, Meandu Creek flows north-east towards D'Auguilar Highway and on to where it meets Barker Creek. Downstream of the confluence with Meandu Creek, Barker creek flows through agricultural and open grassland before running parallel to Burnett Highway. Barker Creek generally runs north parallel to Burnett Highway until it eventually enters Lake Barambah more than 60km downstream from Site. Meandu Creek meanders through low to medium density residential areas such as Brooklands before reaching Lake Barambah.

6.2. Dam Reference Data

The principal details of the Tarong CWD are listed in Table 6-1.

Table 6-1: Tarong CWD Principal Details

Location	**Tarong Power Station, Not on a watercourse**
Dam ID	1491
Property description of lots	Lot 1 SP138386
Co-ordinates	Latitude 26º 46'24"S; Longitude 151°54'25"E
Purpose	Industrial Water Supply
Full Supply Level	RL 435 m AHD
Full Storage Capacity	3,000 ML
Catchment (Surface Area)	55 ha
MAIN DAM	
Construction Type	Zoned earthfill dam with central clay core and cut-off trench
Dam Crest Level	RL 436.75 to 437 m AHD
Length	700 m
Dam Height	25 m
Crest width	7 m
SADDLE DAM	
Dam Crest Level	RL 436.75 m AHD
Length	239 m
Dam Height	3 m
Crest width	6 m
SPILLWAY	
Type	Unlined and uncontrolled open channel

Crest Level	RL 435 m AHD
Crest Length	5 m
Spillway Capacity	19.7 m^3/s
OUTLET WORKS	
Location	Right Bank, upstream of Embankment
Capacity	100L/s

6.3. Dam Catchment

The Cooling Water Dam is located directly east of the Meandu Creek Dam, also owned and operated by Stanwell Corporation. The Cooling Water Dam has a very small catchment area, 55 ha, consisting largely of the dam surface area itself. Given its small catchment the water level in the dam is largely controlled by the demand and supply pumping arrangements and therefore there is no regular discharge from the dam.

A catchment map prepared by Stanwell Corporation is presented in Appendix C.

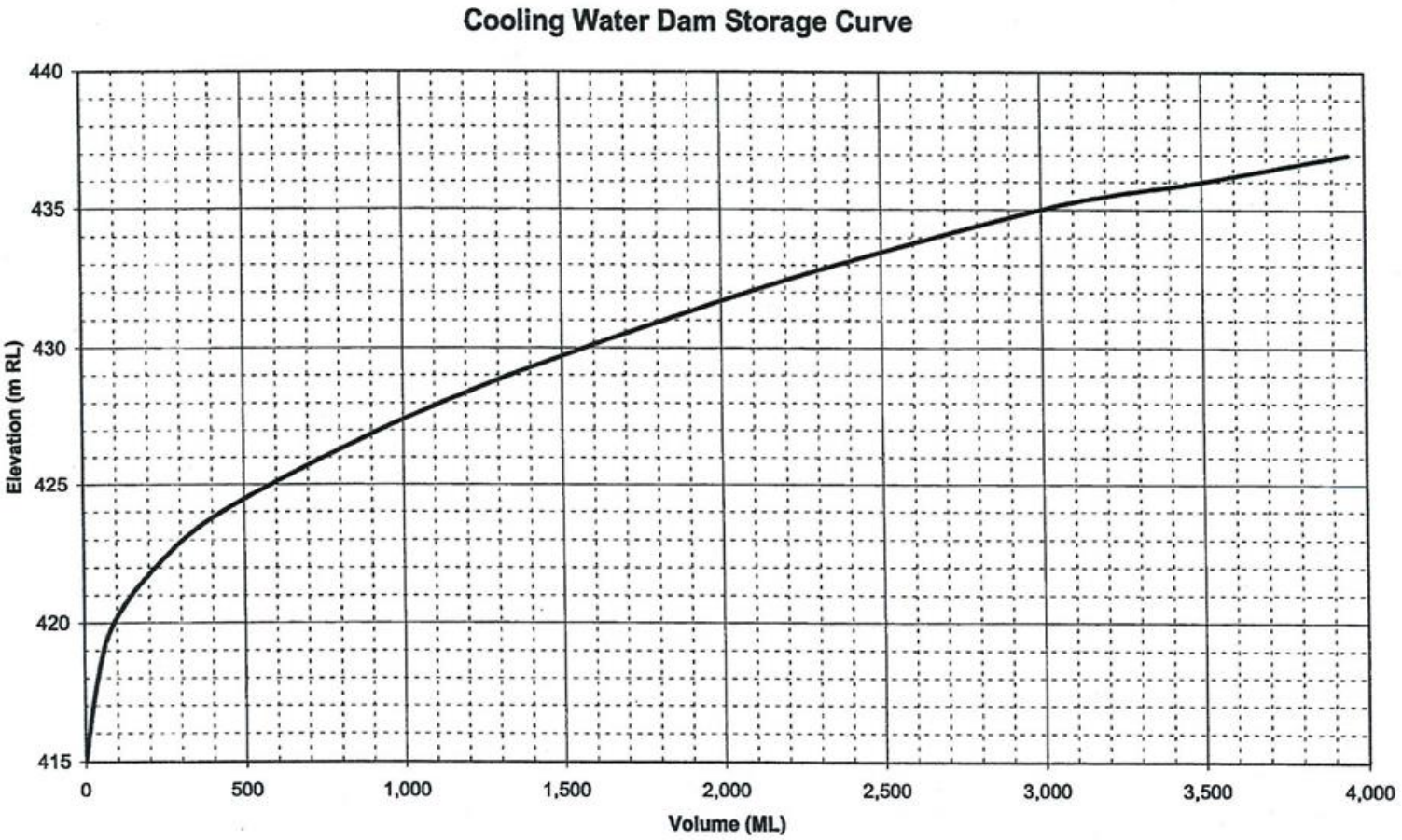


Figure 6-2 Cooling Water Dam Storage Curve

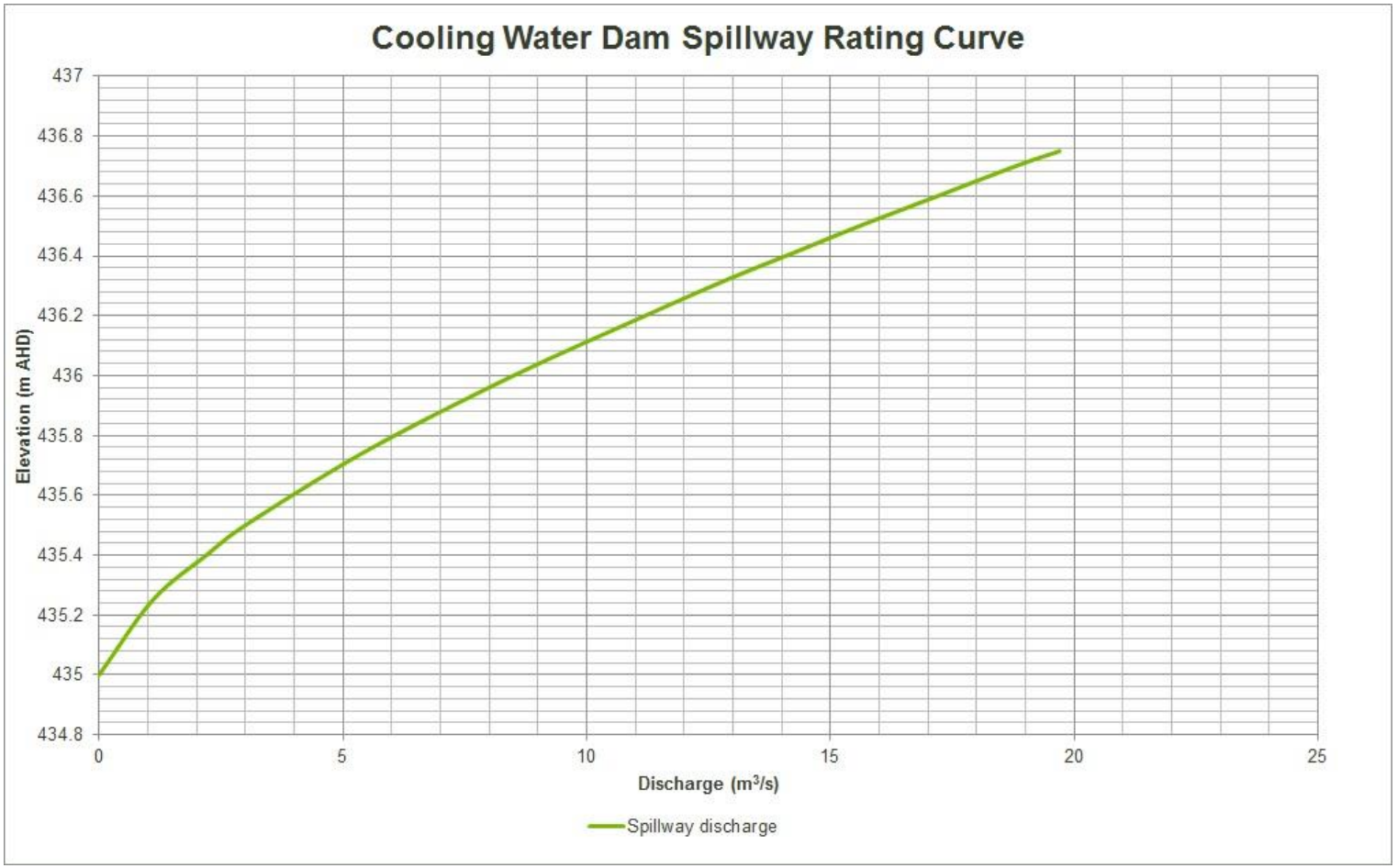


Figure 6-3 Cooling Water Dam Spillway Rating Curve

Prepared based on data presented in SunWater (2010), where a rating curve was derived based on an assumed broad crested weir

7.0 DAM SAFETY ASSESSMENTS AND INSPECTIONS

7.1. Routine Inspection and Assessment

In order to maintain the CWD in a safe condition and detect any potential emergency conditions as soon as they begin to develop or become apparent, the following types of inspection are undertaken (DNRME 2003):

(a) ***Routine Visual Inspection*** – carried out 3 times per week by inspection staff under the direction of the Dam Operator, and directed towards detection of deficiencies in the CWD which may lead to an emergency condition e.g. uncontrolled seepage, instability etc;

(b) ***Annual Inspection*** – carried out by the Stanwell Shift Superintendent or Dam Safety Consultants, at which time a thorough on-site inspection is undertaken together with a detailed evaluation of data;

(c) ***Comprehensive Inspection*** – carries out by an experienced and qualified Dam Safety Consultant at 5-year intervals.

7.2. Event Inspections and Surveillance

Where a defect has been identified from routine inspection that has the potential for dam failure or in the case of a flood or other damaging event, the procedures shall be followed as per Sections 4.1 to 0 for identification, notification and management of any potential event.

8.0 TRAINING, EXERCISES AND OPERATIONAL MANAGEMENT

8.1. Training Programme

Stanwell undertakes the following internal training of its personnel associated with the EAP and dam operations as listed following:

- All site management staff nominated with a role under this EAP will attend an annual desk top exercise session to familiarise individuals of specific roles and responsibilities.
- Where possible, a more detailed 'rehearsal' of the EAP is to take place approximately at 3 year intervals. These rehearsals will be managed as part of Stanwell's broader emergency management framework.
- Each person involved in the inspection of the dam condition and monitoring will be suitable trained, so they are familiar in the early identification and notification requirements of a potential dam event or failure.

8.2. Exercises

A desk top exercise will be conducted each year. This exercise may be extended to include key stakeholders such as the local disaster management group(s); particularly for those with roles and responsibilities in implementing the EAP so they can improve the effectiveness of the plan.

The most recent desk-top exercise was undertaken in June 2022.

Where possible, a more detailed 'rehearsal' of the EAP is to take place approximately at 3-year intervals. These rehearsals will be managed as part of Stanwell's broader emergency management framework.

A combined exercise with SBRC is scheduled for September 2023.

Following each exercise, an analysis of the plans effectiveness during an exercise and post-emergency event response will be reviewed to identifying plan deficiencies and training requirements. Actions arising from the review will be updated in this EAP as a revision.

8.3. Stakeholder Education

Stanwell maintains a good relationship with the most at-risk landowner downstream of the CWD. When a new EAP is released, a Stanwell representative visits the aforementioned property and walks the residents through the existing processes and any amendments.

In addition to providing tailored education to the most at-risk landowner, Stanwell has committed to facilitate easy access of information pertaining to this EAP for the wider public. This is planned to be achieved by partnering with South Burnett Regional Council to provide a direct link to this information through the SBRC Emergency Management website.

8.4. Fatigue

Fatigue can have serious consequences for the management of an emergency event. On the-job fatigue reduces emergency event readiness, affecting staff endurance, efficiency and effectiveness. This can lead to impaired judgement, poor decisions and slow response times during a high stress emergency event.

Stanwell has a Fatigue Management Procedure (refer OHS-PROC-406) which provides details on the management of fatigue within the business. Personnel engaged in an EAP activation event will be managed under this procedure.

In the event of a declared emergency or crisis, extraordinary hours outside of those noted in section 14 of the procedure may be worked and must be signed off by the CEO or a Representative of the CEO after the completion of an appropriate risk assessment.

Prior to working extraordinary hours, individuals must agree to be transported home and/or to be provided a suitable place for restorative sleep. In the case of an emergency or crisis arising it is important to also consider the time Emergency Personnel are on task as well as the task itself. This is particularly the case if it is expected to be a protracted event.

Regular rotation of Emergency Personnel is required to ensure adequate rest and recovery (to assist in avoiding heat stress and fatigue, and compounding effects). After emergency responses, rest breaks shall be provided to ensure adequate restorative sleep.

8.5. Emergency Event Report (EER)

The Act requires dam owners to submit an EER to the chief executive within 30 business days after the end of the emergency event or, at a period agreed to in writing by the chief executive and the dam owner.

The content of the EER is specified by the Act and must include:

- A description of the emergency event to which the report relates.
- Details of how the EAP was implemented.
- A list of the communications made and actions taken in response to the emergency event.
- Actions undertaken to monitor the dam and the area affected or potentially affected by the emergency event.
- A description of any damage to the dam, including by reference to photographs of the damage.
- A statement as to whether and to what extent any damage to the dam has been caused or contributed to by the emergency event.

- An assessment of whether and to what extent the approved EAP effectively dealt with the emergency event.
- Recommendations for any changes to the approved EAP that would allow the plan to deal with a similar emergency event more effectively.
- Details of any other matter that is relevant to the emergency event or how it was dealt with under the emergency action plan

9.0 PREVENTATIVE ACTIONS

In the event of a rapidly deteriorating structural deficiency which is likely to threaten the stability of the dam embankment (for example, due to internal erosion or following a major earthquake), the Tarong Site Incident Management Team shall ensure the following monitoring actions are established.

1. Ensure that a responsible person with portable communication is left in a safe position at the dam to monitor the emergency condition.
2. Restrict access to the dam area.
3. Liaise with Emergency Management Authorities.
4. If possible, document the emergency condition with photographs and or video camera.
5. Regularly update the Incident Manager of any change in the emergency condition.
6. Do not take any unnecessary risks in undertaking the above actions.

Since the Cooling Water Dam's spillway discharges to Meandu Creek Dam, all flood releases from the dam will be managed under the Meandu Creek Dam EAP. The spillway on the Cooling Water Dam is an uncontrolled spillway and there are no means available to reduce or otherwise control the outflow from the dam during flood events. However, modelling has indicated that discharge from the Cooling Water Dam to Meandu Creek Dam make up a very small proportion of total inflows to Meandu Creek.

The spillway for the Cooling Water Dam is located on the western side of the dam and not in the main dam embankment. The spillway has capacity to pass the PMF flood event. The most likely failure scenario for the Cooling Water Dam is a Sunny Day Failure. As this would not result in discharge to the Meandu Creek Dam, it is considered that the risk of a cascading failure of the two dams is very unlikely.

It may become necessary during an emergency to lower the reservoir level of the dam to decrease seepage and/or loading on the structure, and to minimise the impact of any failure. This would be performed using the pumps installed on the right abutment well upstream of the embankment that have the capacity to pump at 100 L/s and would only be an option where an emergency condition was identified in the early stages.

10.0 REFERENCES

ANCOLD (2003), Guidelines on Dam Safety Management, Australian National Committee on Large Dams Inc.

Department of Natural Resources, Mines and Energy (2002), Queensland Dam Safety Management Guidelines, Accessed 5th February 2018, https://www.dews.qld.gov.au/__data/assets/pdf_file/0007/78838/qnrm02013.pdf

Department of Natural Resources, Mines and Energy (2017), Emergency Action Plan for Referable Dam Guideline, Accessed 5th February 2018, https://www.dews.qld.gov.au/__data/assets/pdf_file/0018/84015/eap-guideline.pdf

Disaster Management Act (2003), Accessed 5th February 2018, https://www.legislation.qld.gov.au/view/pdf/inforce/current/act-2003-091

South Burnet Regional Council (2017), Local Disaster Management Plan, https://www.southburnett.qld.gov.au/downloads/file/3048/south-burnett-regional-council---local-disaster-management-planpdf

Water Supply (Safety and Reliability) Act (2008), Accessed 5th February 2018, https://www.legislation.qld.gov.au/view/pdf/2017-07-03/act-2008-034

Water Legislation (Dame Safety) Amendment Bill (2016), Accessed 5th February 2018, https://www.legislation.qld.gov.au/view/pdf/asmade/act-2017-011

10.1. Appendix A – Definitions

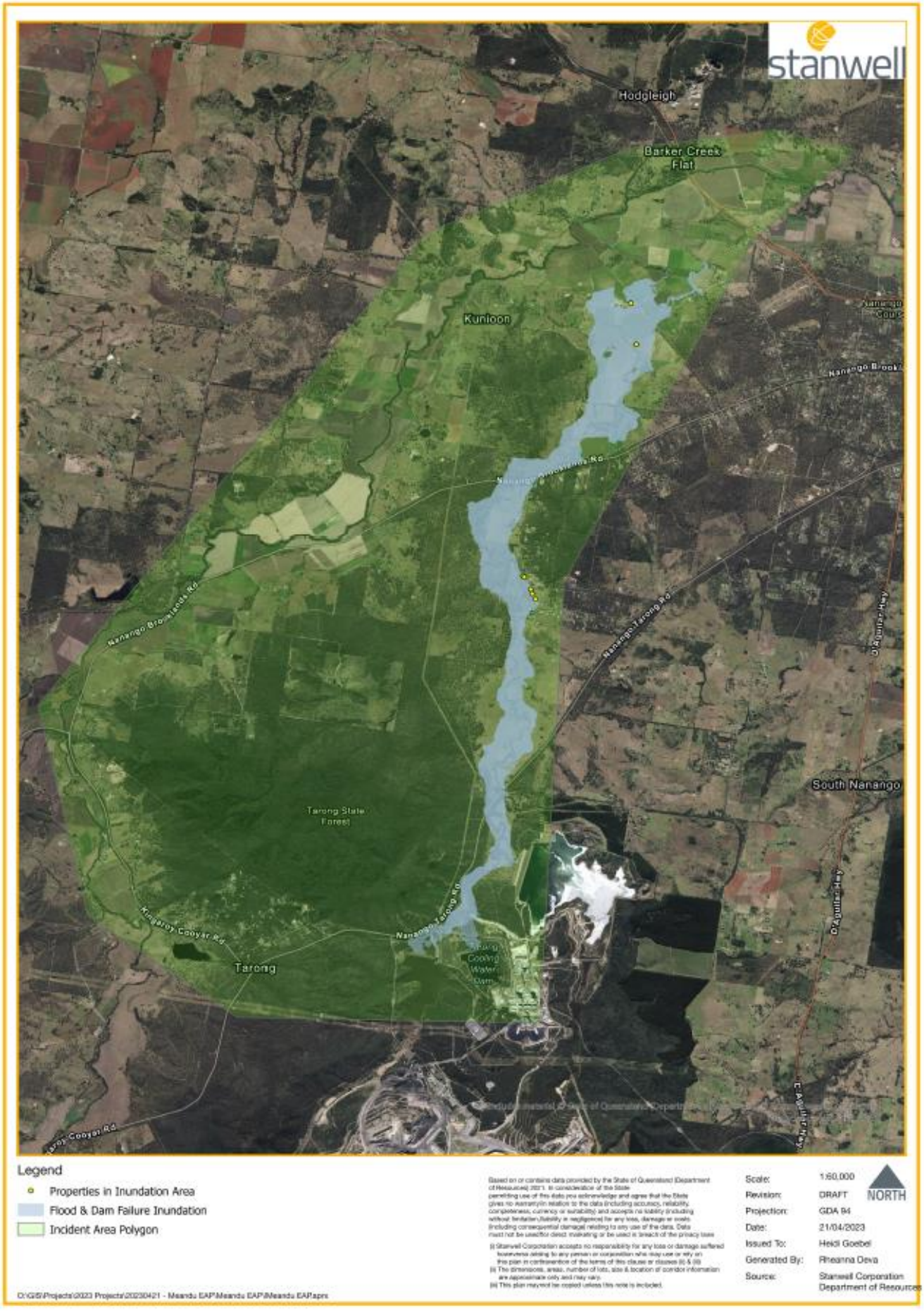
Table 10-1: Definitions

Term	Definition
AEP	Annual exceedance probability - the probability of exceedance of a given magnitude storm or flood within a one-year period
(EAP) Activation	Is defined as actions undertaken by the dam owner as per the EAP in response to a dam event if: 1. persons or property may be harmed, because of the event; 2. a coordinated response involving two or more of the following relevant entities is likely to be required to respond to the event: ▪ each local group (LDMG) and district group (DDMG) for the emergency action plan; ▪ each local government whose local government area may be affected if a dam hazard event or emergency event were to happen for the dam; ▪ the DRDMW chief executive; ▪ another entity the dam owner considers appropriate i.e. QPS, QFES.
Alert	The first stage of emergency response whereby a heightened stage of vigilance is maintained due to the possibility of an emergency event occurring. Action is required to ensure the situation is monitored by someone capable of assessing the potential of the threat.
Dam Hazard	Dam hazard, for a dam, means a reasonably foreseeable situation or condition that may: (a) cause or contribute to the failure of the dam, if the failure may cause harm to persons or property or; (b) require an automatic or controlled release of water from the dam, if the release of the water may cause harm to persons or property. (Refer s 352A of the Act.)
Dam Hazard Event	An event arising from a dam hazard if persons or property may be harmed because of the event and (a) a coordinated response involving 2 or more of the relevant entities mentioned in paragraphs (b) to (d) of the definition relevant entity is unlikely to be required to respond to the event; (b) the event is not an emergency event. (Refer s 352A of the Act.)
Emergency Event	An event arising from a dam hazard if persons or property may be harmed because of the event, and any of the following apply: (a) A coordinated response where two or more of the relevant entities, mentioned in paragraphs (b) to (d) of the definition relevant entity, are likely to be required to respond to the event. (b) The event may arise because of a disaster situation declared under the DM Act. (c) An entity performing functions under the State disaster management plan may, under that plan, require the owner of the dam to give the entity information about the event. (Refer s 352A of the Act)

Term	Definition
Emergency Event Report (EER)	A report on the performance of the dam and the functioning of the EAP during an emergency event which is presented to the chief executive following the end of the event. ('End' of an emergency event means when the dam hazard giving rise to the event is no longer a risk to persons or property.) (Refer s 352T(2) of the Act)
Failure Impact Assessment	Is the process used under the Water Act 2000 to determine the number of people whose safety could be at risk should a dam fail (the 'population at risk')
Failure Impact Rating	A failure impact rating is a measure of the population at risk should the dam fail. There are two categories for referable dams: ▪ category 1: 2 to 100 people at risk if the dam were to fail; ▪ category 2: more than 100 people at risk if the dam were to fail.
Hazard	A source of potential harm, or a situation with a potential to cause loss (Emergency Management Australia, 2004).
Inspector	A Stanwell Corporation person based at Tarong Power Station who has been trained in dam safety observation skills. This person will carry out routine dam inspections at the CWD
Lean Forward	The stage of emergency response prior to 'stand-up' whereby a heightened stage of situational awareness of a disaster event (either current or impending) is maintained and a state of operational readiness is developed. Personnel at dam are on standby, ready to activate the EAP.
Local Disaster Management Group	Local disaster management groups are established to support local government disaster management activities. The local group is supported by the relevant district group if and when disaster management activities exceed the capacity of a local group.
Population at Risk (PAR)	Population At Risk is an indicator of the potential for loss of life or injury in the event of a dam failure
Probable Maximum Flood (PMF)	Probable maximum flood - the flood hydrograph resulting from the probable maximum precipitation coupled with the worst flood producing catchment conditions that can be realistically expected in the prevailing meteorological conditions
Referable Dam	A dam, or a proposed dam after its construction will be a referable dam if: (a) a failure impact assessment of the dam, or the proposed dam, is required to be carried out under the Act; (b) the assessment states the dam has, or the proposed dam after its construction will have, a category 1 or category 2 failure impact rating; (c) the chief executive has, under s 349 of the Water Supply (Safety and Reliability) Act 2008, accepted the assessment. (Refer s 341 of the Act)
Relevant Entities	Means each of the following under the emergency action plan for the dam: (a) the persons who may be affected, or whose property may be affected, if a dam hazard event or emergency event were to

Term	Definition
	happen for the dam E.g. owners of parcels of farmland adjacent to the dam, residents of a township; (b) each local group and district group for the emergency action plan; and each local government whose local government area may be affected if a dam hazard event or emergency event were to happen for the dam; (c) the chief executive; (d) another entity the owner of the dam considers appropriate. E.g. the Queensland Police Service. (Refer to s 352A of the Act.)
Stand Down	The final stage of emergency response when there is no longer a requirement to respond to the event and the threat is no longer present. At 'stand down' there is a transition from responding to an event back to normal core business and/or recovery operations.
Stand Up	The operational state following 'lean forward' whereby resources are mobilised, personnel are activated and operational activities commenced. Moving into this operational state triggers the potential requirement for an EER.
Sunny Day Failure (SDF)	The failure of a dam without any other general flooding or spillway discharges.

10.2. Appendix B – Polygon and Emergency Messages


stanwell
Hodgleigh
Barker Creek Flat
Kunloon
Nanango Brooklands Rd
Nanango Tarong Rd
D'Aguilar Hwy
South Nanango
Tarong State Forest
Kingaroy Cooyar Rd
Tarong
Cooling Water Dam
Legend
Properties in Inundation Area
Flood & Dam Failure Inundation
Incident Area Polygon
Scale: 1:60,000
Revision: DRAFT
Projection: GDA 94
Date: 21/04/2023
Issued To: Heidi Goebel
Generated By: Rheanna Deva
Source: Stanwell Corporation Department of Resources
NORTH
D:\GIS\Projects\2023 Projects\20230421 - Meandu EAP\Meandu EAP\Meandu EAP.aprx

Queensland Government

PHONE THE SDCC WATCH DESK [redacted] – ADVISE EA IS BEING DEVELOPED

EMERGENCY ALERT REQUEST

Location of Alert: Tarong (e.g. Suburb, Town) | **Date:**

LGA/Agency requesting: Stanwell Tarong Power Station | **Time:**

Requesting Officer (e.g. Disaster Coordinator/Incident Controller)
Name: [redacted]
Agency/Position: Stanwell Tarong Power Stations
Telephone: [redacted]
(SDCC Watch Desk may telephone you)

Email: [redacted]

Advised LDC/LDMG: ☒ YES DDC/DDMG: ☒ YES **Neighbouring LDMG/LGA:** ☐ YES ☐ N/A

Send Alert **Immediately:** ☒ YES **Scheduled:** ☐ YES Date & Time / / : hrs

Event Type
☐ Cyclone ☐ Storm Tide ☒ Flash Flood ☐ Flood
☐ Bushfire ☐ Fire Incident ☐ Smoke / Toxic Plume ☐ Chemical Spill
☐ Tsunami (Sent as Location Based Text Message ONLY)
☐ Other (please specify):

Distributed by: (Channel)
☒ Voice (Landline only) ☒ SMS – Location Based (Location of phone at time of distribution) ☒ SMS – Service Address Based (Registered billing address)

Message Severity ☐ Emergency Warning (Activates SEWS) ☐ Watch & Act ☒ Advice

Threat Direction Required? (e.g. Fire, Chemical Spill, Dam Spill) ☒ YES ☐ N/A
Threat location indicated on map? Only For Emergency Warning Voice & Service Address SMS ☒ YES ☐ N/A

EA Messaging Filename (Doc, Pdf):

Polygon Filename, (Kml, Kmz, Gml, GeoJSON):
See attached.
Number of polygons ____ (if multiple, attach list in order of priority)

Supplied via: ☒ DM Portal ☐ Email ☐ Verbal ☐ Other
Other (please specify):

Supplied via: ☒ DM Portal ☐ Email ☐ Verbal ☐ Other
Other (please specify):

Voice: Type or handwrite, max 4000 characters incls spaces. (Ideally message should be < 450 characters)

This is a Flash Flood Advice from Tarong Power Station. An incident has started. Areas in the Meandu Creek flood plain downstream of Tarong Power Station are likely to experience rapidly rising water levels and possible property inundation over the next few hours, posing a possible danger to residents. Warn neighbours, secure belongings and move to higher ground now. Stay up to date in case the situation changes.

For more information, listen to local radio. For flood assistance, contact the SES on 132500.

SMS: Type or handwrite, use capitals for clarity, max 612 characters incls spaces. (Ideally should be < 160 characters incl. spaces)

TARONG POWER STATION FLOOD ADVICE An incident has started. Meandu Ck downstream Tarong Power Station- Possible threat life-property- warn others- prepare

NOW-seek higher ground/leave area/Listen to radio. Stay up to date in case the situation changes.

Remove EA from websites:
☐ 12 hrs ☐ 24 hrs ☐ 48 hrs ☐ Specify Date & Time: ☒ Check back in 12 hrs:
☐ Replace previous EA message / / : hrs Contact #:_____

Requesting Officer: **Signature:** **Date:** / /

Send to [redacted] to confirm receipt

FOR USE BY SDCC
EA Request Form completed by: SDCC Watch Desk ☐ Requesting Officer ☐
Notification of any delays provided to Requestor: ☐ YES ☐ NO

EA User Name:
Signature: Date: / /
Authorising Officer Name:
Signature: Date: / /

Emergency Alert No:
EMS EA Campaign Report ID:

Report provided to Requestor on EA outcomes: ☐ YES ☐ NO

Queensland Government

PHONE THE SDCC WATCH DESK [redacted] – ADVISE EA IS BEING DEVELOPED

EMERGENCY ALERT REQUEST

Location of Alert: Tarong (e.g. Suburb, Town)	**Date:**
LGA/Agency requesting: Stanwell Tarong Power Station	**Time:**

Requesting Officer (e.g. Disaster Coordinator/Incident Controller) **Name:** [redacted] **Agency/Position: Stanwell Tarong Power Stations**	**Telephone:** [redacted] (SDCC Watch Desk may telephone you)
Email: [redacted]	

Advised LDC/LDMG: ☒ YES DDC/DDMG: ☒ YES Neighbouring LDMG/LGA: ☐ YES ☐ N/A

Send Alert — **Immediately:** ☒ YES **Scheduled:** ☐ YES Date & Time / / : hrs

Event Type
☐ Cyclone ☐ Storm Tide ☒ Flash Flood ☐ Flood
☐ Bushfire ☐ Fire Incident ☐ Smoke / Toxic Plume ☐ Chemical Spill
☐ Tsunami (Sent as Location Based Text Message ONLY)
☐ Other (please specify):

Distributed by: (Channel)
☒ Voice (Landline only) ☒ SMS – Location Based (Location of phone at time of distribution) ☒ SMS – Service Address Based (Registered billing address)

Message Severity ☐ Emergency Warning (Activates SEWS) ☒ Watch & Act ☐ Advice

Threat Direction Required? (e.g. Fire, Chemical Spill, Dam Spill) ☒ YES ☐ N/A	**Threat location indicated on map?** Only For Emergency Warning Voice & Service Address SMS ☒ YES ☐ N/A
EA Messaging Filename (Doc, Pdf):	**Polygon Filename, (Kml, Kmz, Gml, GeoJSON):** See attached. **Number of polygons** _____ (if multiple, attach list in order of priority)
Supplied via: ☒ DM Portal ☐ Email ☐ Verbal ☐ Other Other (please specify):	**Supplied via:** ☒ DM Portal ☐ Email ☐ Verbal ☐ Other Other (please specify):

Voice: Type or handwrite, max 4000 characters incls spaces. (Ideally message should be < 450 characters)

This is a Flash Flood Watch and Act message from Tarong Power Station . Areas in the Meandu Creek flood plain downstream of Tarong Power Station are likely to experience rapidly rising water levels and possible property inundation between 2-4m, posing a possible danger to residents. Warn neighbours, secure belongings and evacuate to your nearest evacuation centre now. Conditions are changing and you need to start taking action now to protect you and your family. Do not enter floodwater, prepare to evacuate, prepare to isolate, avoid the area.
For further information listen to your local radio, or visit www.dashboard.southburnett.qld.gov.au For flood assistance, contact the SES on 132500

SMS: Type or handwrite, use capitals for clarity, max 612 characters incls spaces. (Ideally should be < 160 characters incl. spaces)

TARONG POWER STATION FLOOD WATCH & ACT: Conditions are changing and you need to start taking action now to protect you and your family. Do not enter floodwater, prepare to evacuate, prepare to isolate, avoid the area. Meandu Ck downstream Tarong Power Station-possible threat to life/property-Warn others-Leave area NOW/seek higher ground-Listen to radio

Remove EA from websites:
☐ 12 hrs ☐ 24 hrs ☐ 48 hrs ☐ Specify Date & Time: ☒ Check back in 12 hrs:
☐ Replace previous EA message / / : hrs Contact #:_____

Requesting Officer: **Signature:** **Date:** / /

Send to [redacted] to confirm receipt

FOR USE BY SDCC

EA Request Form completed by: SDCC Watch Desk ☐ Requesting Officer ☐

Notification of any delays provided to Requestor: ☐ YES ☐ NO

EA User Name: Signature: Date: / /	Emergency Alert No:
Authorising Officer Name: Signature: Date: / /	EMS EA Campaign Report ID:

Report provided to Requestor on EA outcomes: ☐ YES ☐ NO

The EA Manual, EA Quick Reference Guide, EA Request Form Template are available at: www.disaster.qld.gov.au

EA Request Form – F.1.177 Last Updated: 26 September 2023 Version: 4.0

Queensland Government

PHONE THE SDCC WATCH DESK [redacted] – ADVISE EA IS BEING DEVELOPED

EMERGENCY ALERT REQUEST

Location of Alert: Tarong (e.g. Suburb, Town)	**Date:**
LGA/Agency requesting: Stanwell Tarong Power Station	**Time:**

Requesting Officer (e.g. Disaster Coordinator/Incident Controller) **Name:** [redacted] **Agency/Position: Stanwell Tarong Power Stations**	**Telephone:** [redacted] (SDCC Watch Desk may telephone you)
Email: [redacted]	

Advised LDC/LDMG: ☒ YES DDC/DDMG: ☒ YES Neighbouring LDMG/LGA: ☐ YES ☐ N/A

Send Alert — **Immediately:** ☒ YES **Scheduled:** ☐ YES Date & Time / / : hrs

Event Type
☐ Cyclone ☐ Storm Tide ☒ Flash Flood ☐ Flood
☐ Bushfire ☐ Fire Incident ☐ Smoke / Toxic Plume ☐ Chemical Spill
☐ Tsunami (Sent as Location Based Text Message ONLY)
☐ Other (please specify):

Distributed by: (Channel)
☒ Voice (Landline only) ☒ SMS – Location Based (Location of phone at time of distribution) ☒ SMS – Service Address Based (Registered billing address)

Message Severity
☒ Emergency Warning (Activates SEWS) ☐ Watch & Act ☐ Advice

Threat Direction Required? (e.g. Fire, Chemical Spill, Dam Spill) ☒ YES ☐ N/A	**Threat location indicated on map?** Only For Emergency Warning Voice & Service Address SMS ☒ YES ☐ N/A
EA Messaging Filename (Doc, Pdf):	**Polygon Filename, (Kml, Kmz, Gml, GeoJSON):** See attached. **Number of polygons** ____ (if multiple, attach list in order of priority)
Supplied via: ☒ DM Portal ☐ Email ☐ Verbal ☐ Other Other (please specify):	**Supplied via:** ☒ DM Portal ☐ Email ☐ Verbal ☐ Other Other (please specify):

Voice: Type or handwrite, max 4000 characters incls spaces. (Ideally message should be < 450 characters)

Emergency Emergency. This is a Flash Flood Warning from Tarong Power Station. Areas in the Meandu Creek flood plain downstream of Tarong Power Station are likely to experience rapidly rising water levels and property inundation between 2-4m. Warn neighbours, secure belongings and evacuate to your nearest evacuation centre now. You may be in danger and need to take action immediately. Evacuate now. Move to higher ground.
For further information listen to your local radio, or visit www.dashboard.southburnett.qld.gov.au For flood assistance, contact the SES on 132500. If your life is in danger call Triple zero

SMS: Type or handwrite, use capitals for clarity, max 612 characters incls spaces. (Ideally should be < 160 characters incl. spaces)

TARONG POWER STATION FLASH FLOOD WARNING: Meandu Ck downstream Tarong Power Station IMMEDIATE THREAT TO LIFE & PROPERTY
You may be in danger and need to take action immediately. Evacuate now. Move to higher ground. Warn others Leave area NOW or seek higher ground-Listen to radio

Remove EA from websites:
☐ 12 hrs ☐ 24 hrs ☐ 48 hrs ☐ Specify Date & Time: ☒ Check back in 12 hrs:
☐ Replace previous EA message / / : hrs Contact #:_____

Requesting Officer: **Signature:** **Date:** / /

Send to [redacted] to confirm receipt

FOR USE BY SDCC

EA Request Form completed by: SDCC Watch Desk ☐ Requesting Officer ☐
Notification of any delays provided to Requestor: ☐ YES ☐ NO

EA User Name: Signature: Date: / /	Emergency Alert No:
Authorising Officer Name: Signature: Date: / /	EMS EA Campaign Report ID:
Report provided to Requestor on EA outcomes: ☐ YES ☐ NO	

The EA Manual, EA Quick Reference Guide, EA Request Form Template are available at: www.disaster.qld.gov.au

10.3. Appendix C – Drawings

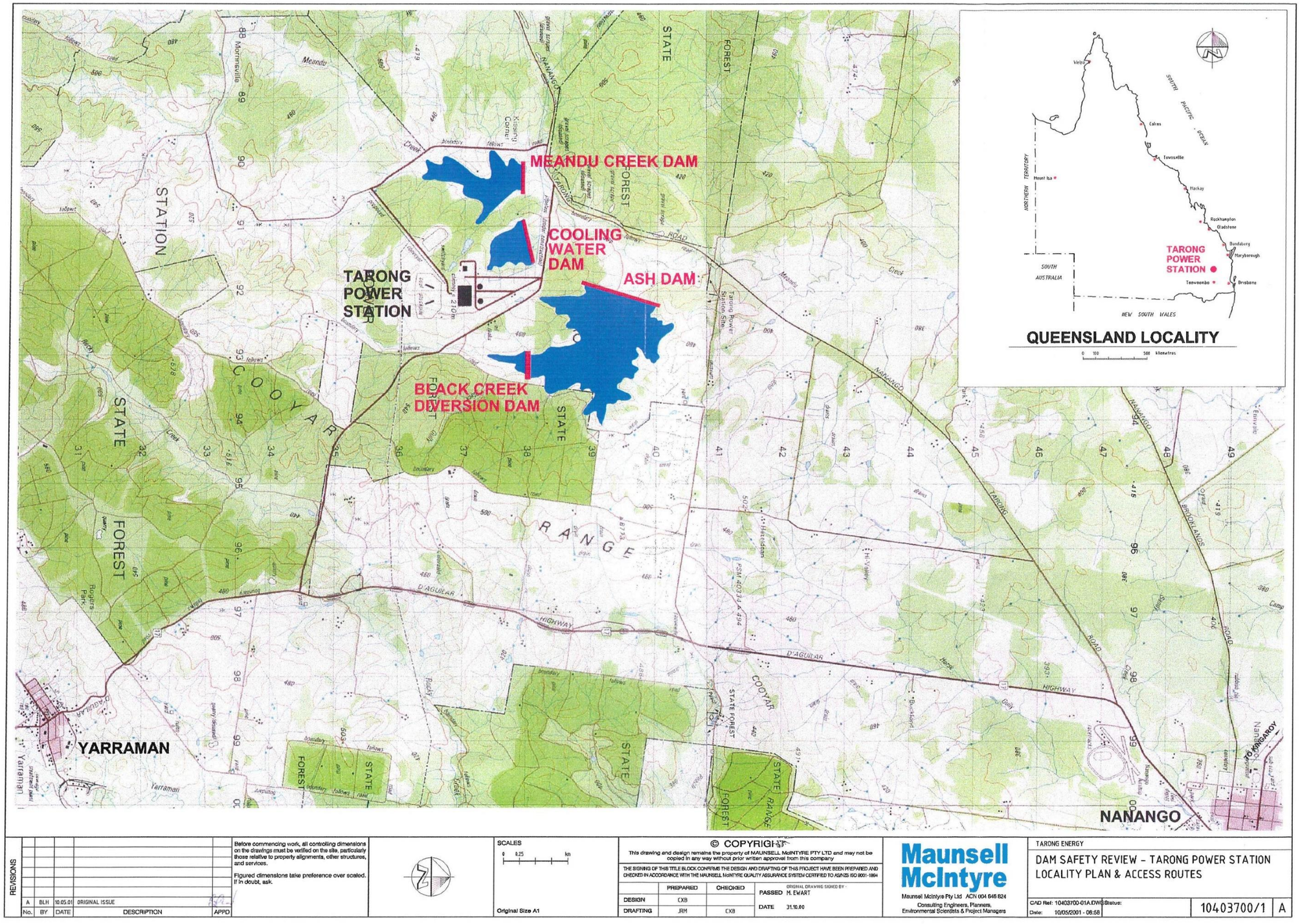


Figure 10-1 Tarong Power Station Precinct Major Dams

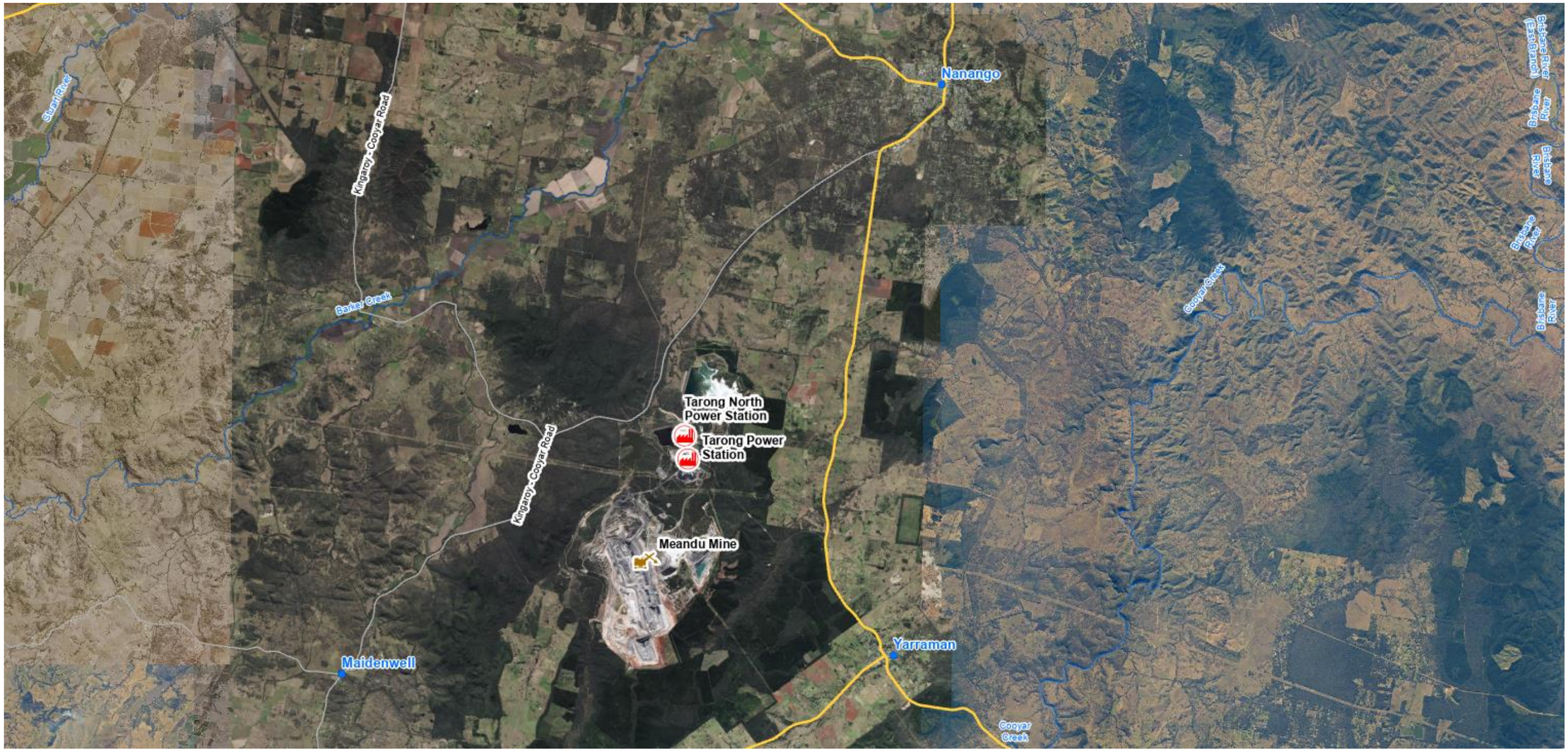


Figure 10-2 Tarong Power Station Locality Plan

Figure 10-3 Site Access Routes

Figure 10-4 Dam Plan View

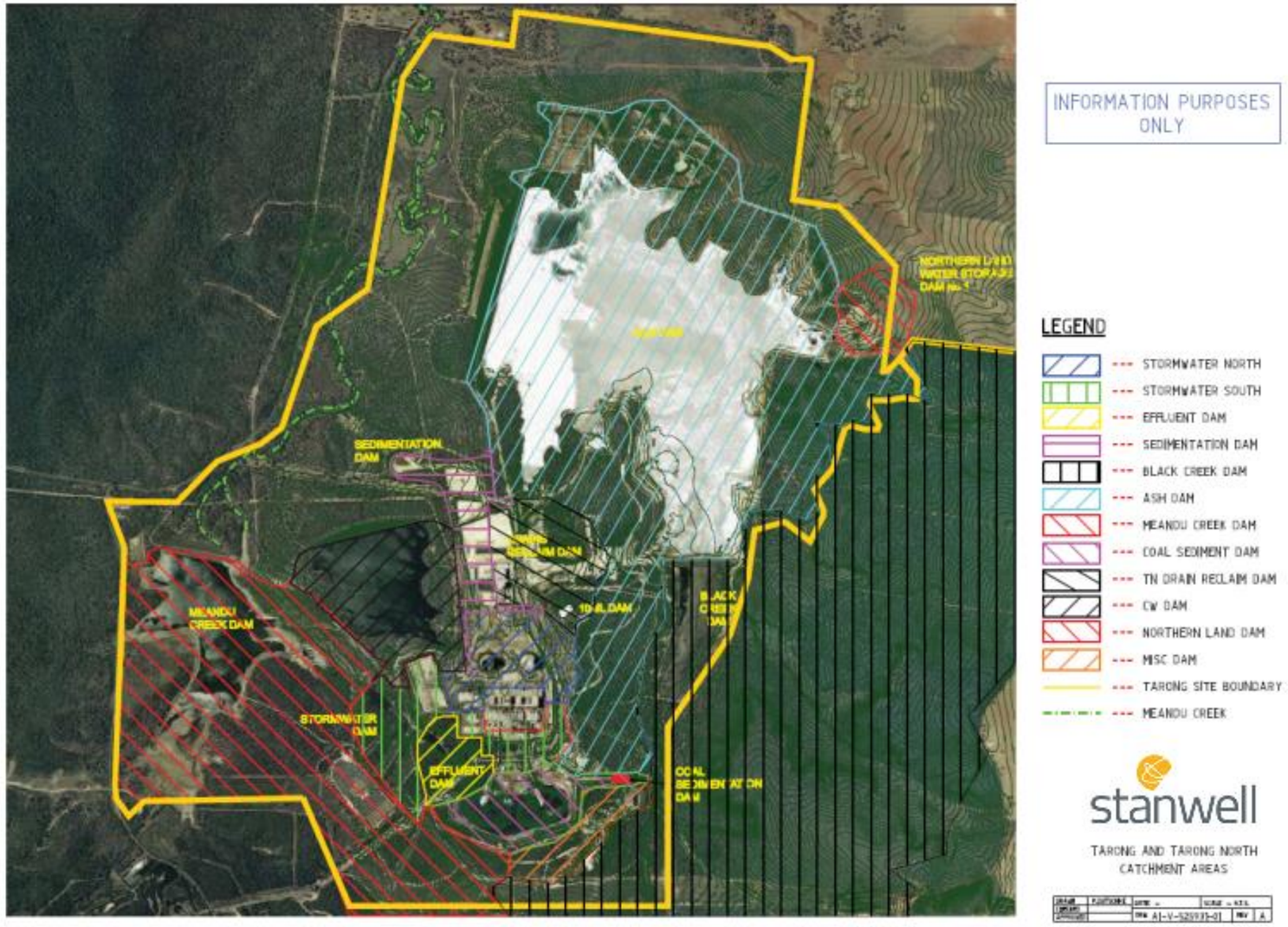


Figure 10-5 Catchment Areas

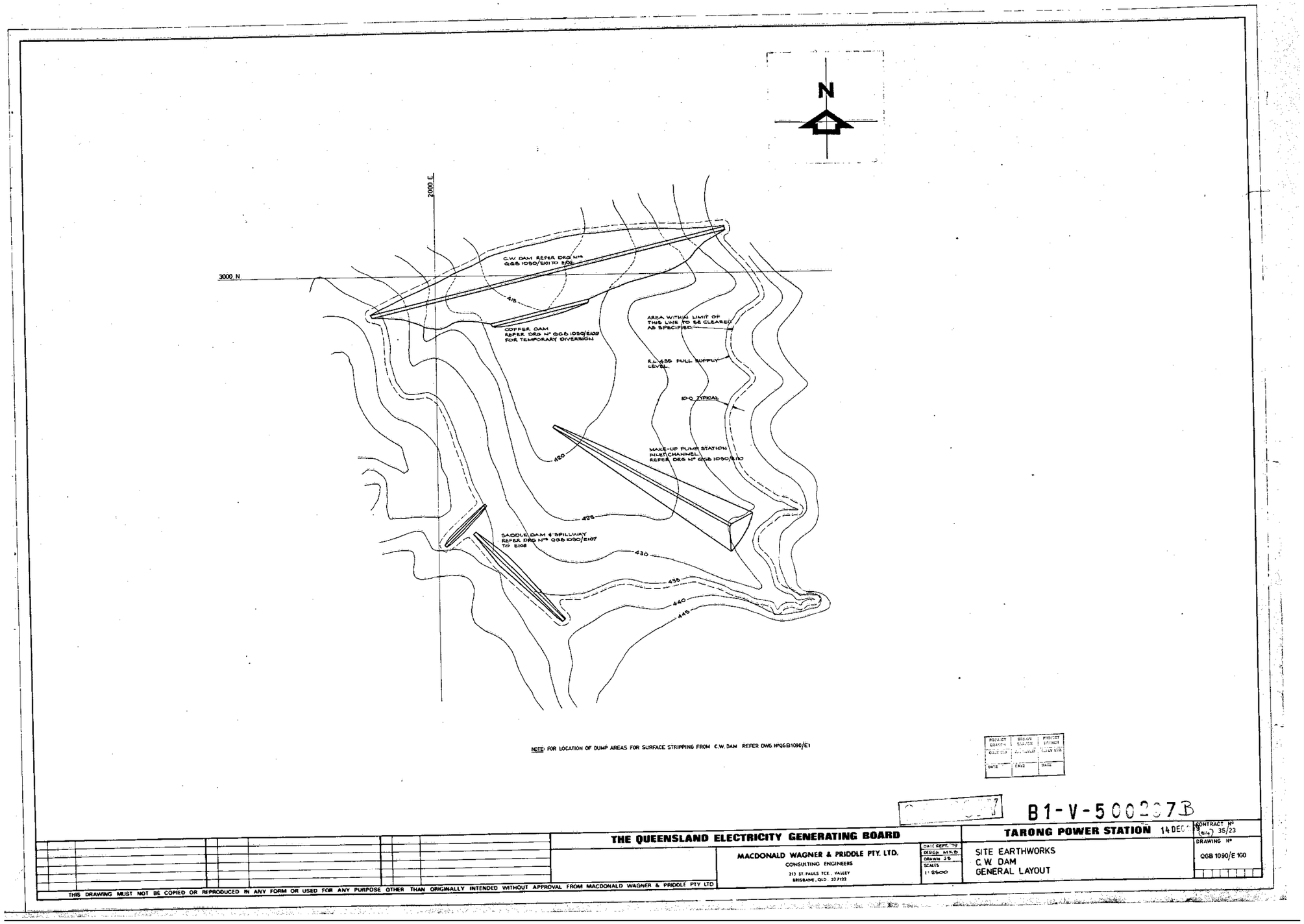


Figure 10-6 Drawing 500297-01 General Layout

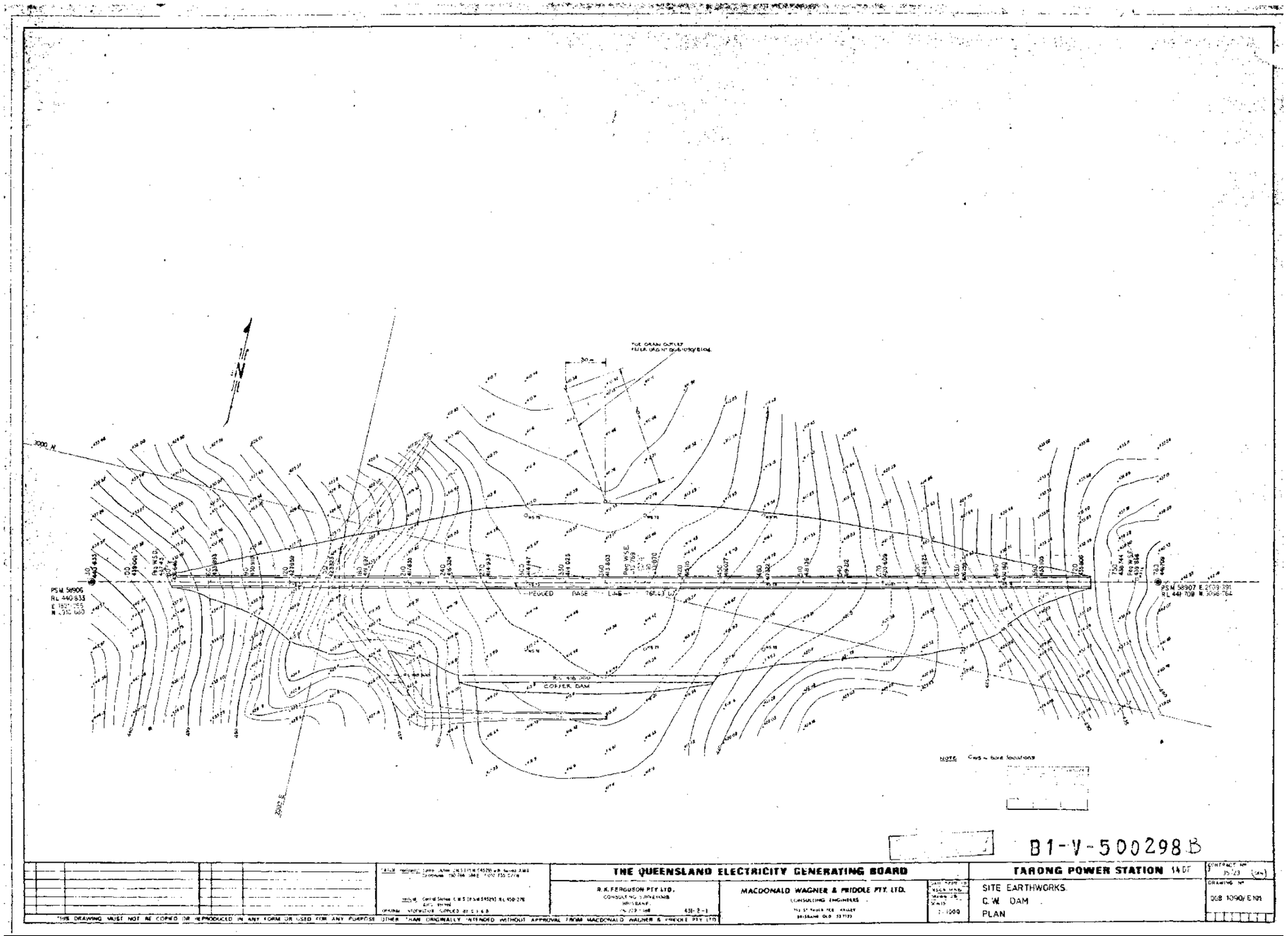


Figure 10-7 Drawings 500298-01 Dam Plan

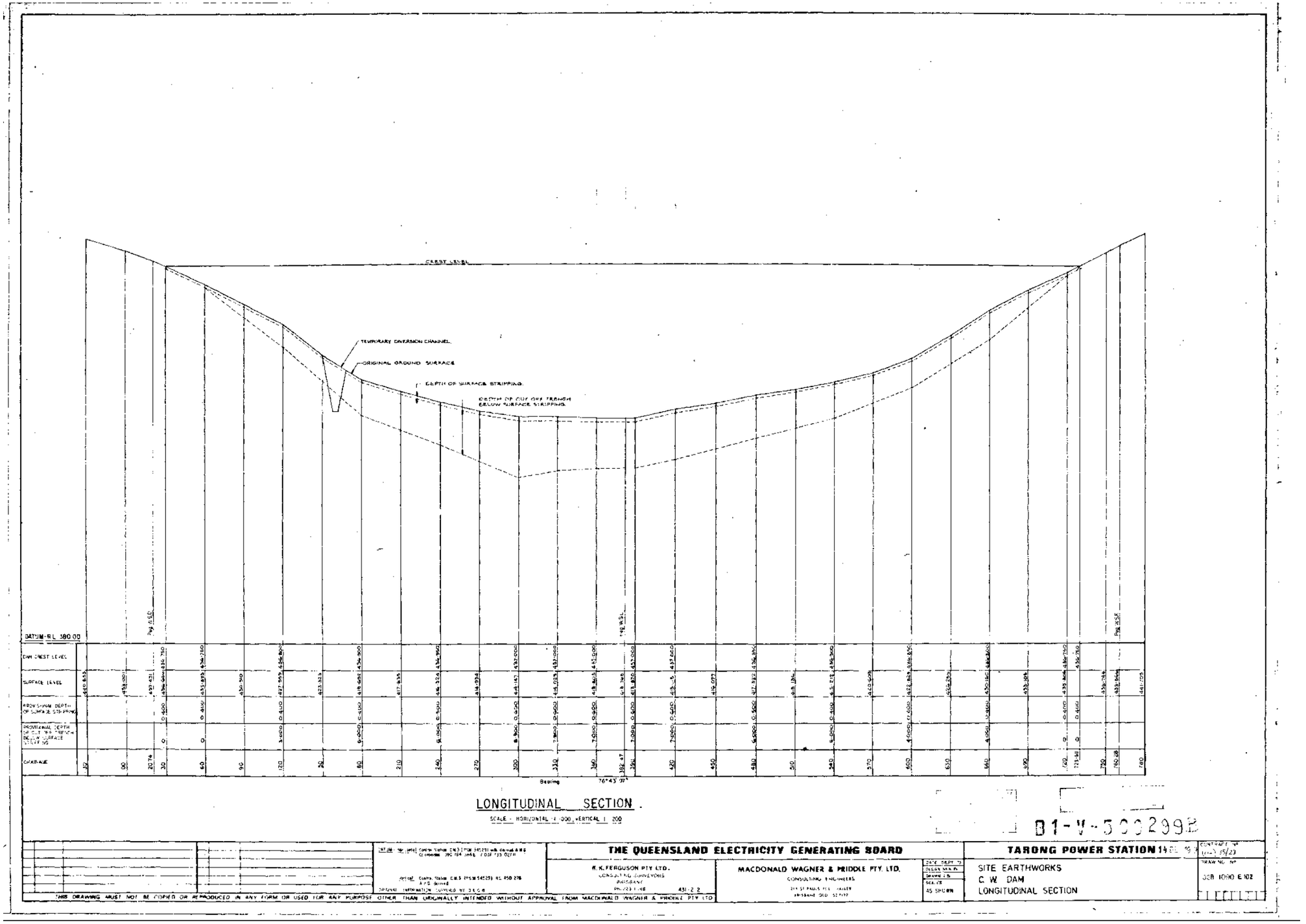


Figure 10-8 Drawing 500299-01 Longitudinal Section

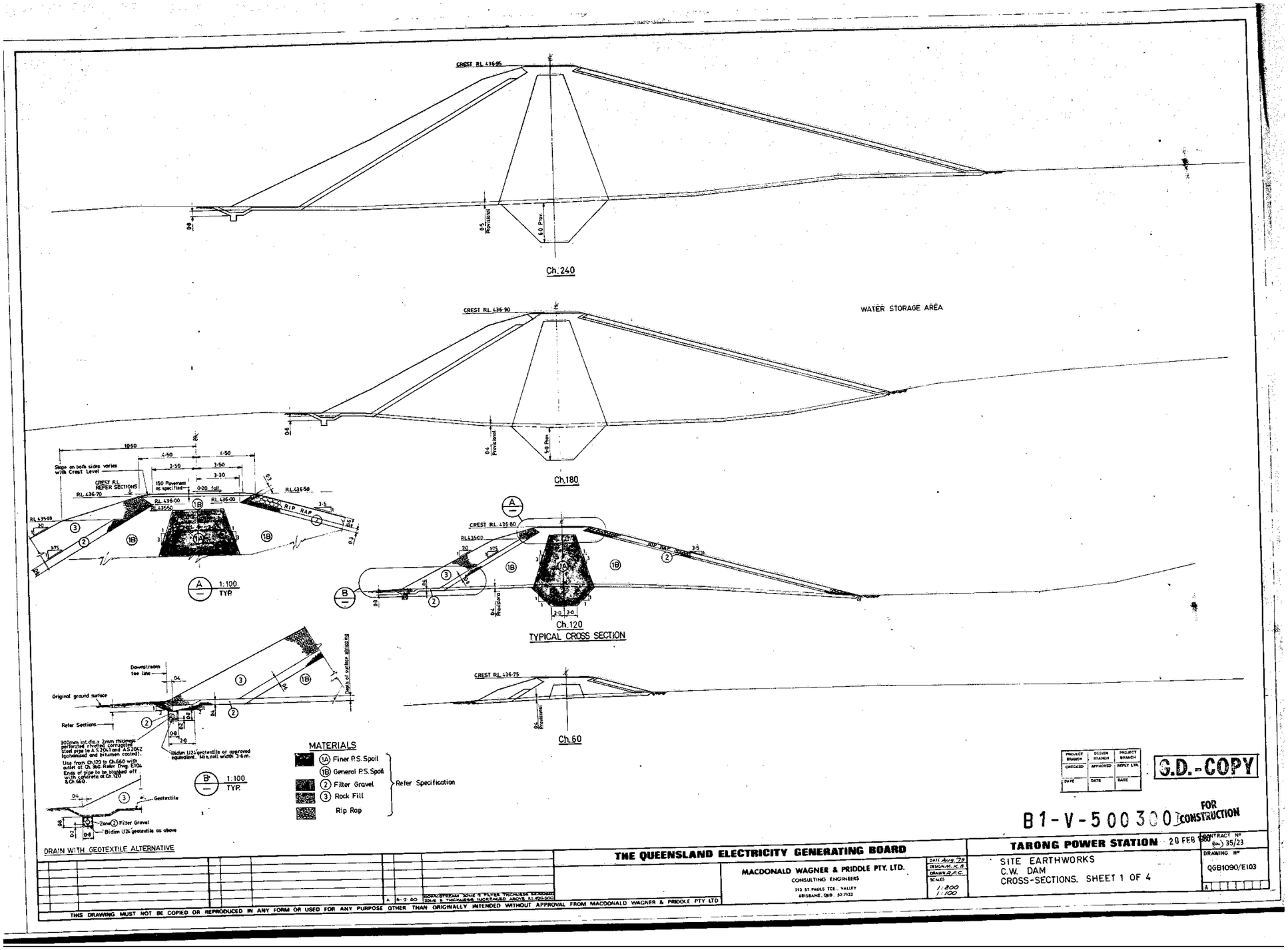


Figure 10-9 Drawing 500300-01 Dam Sections Sheet 1

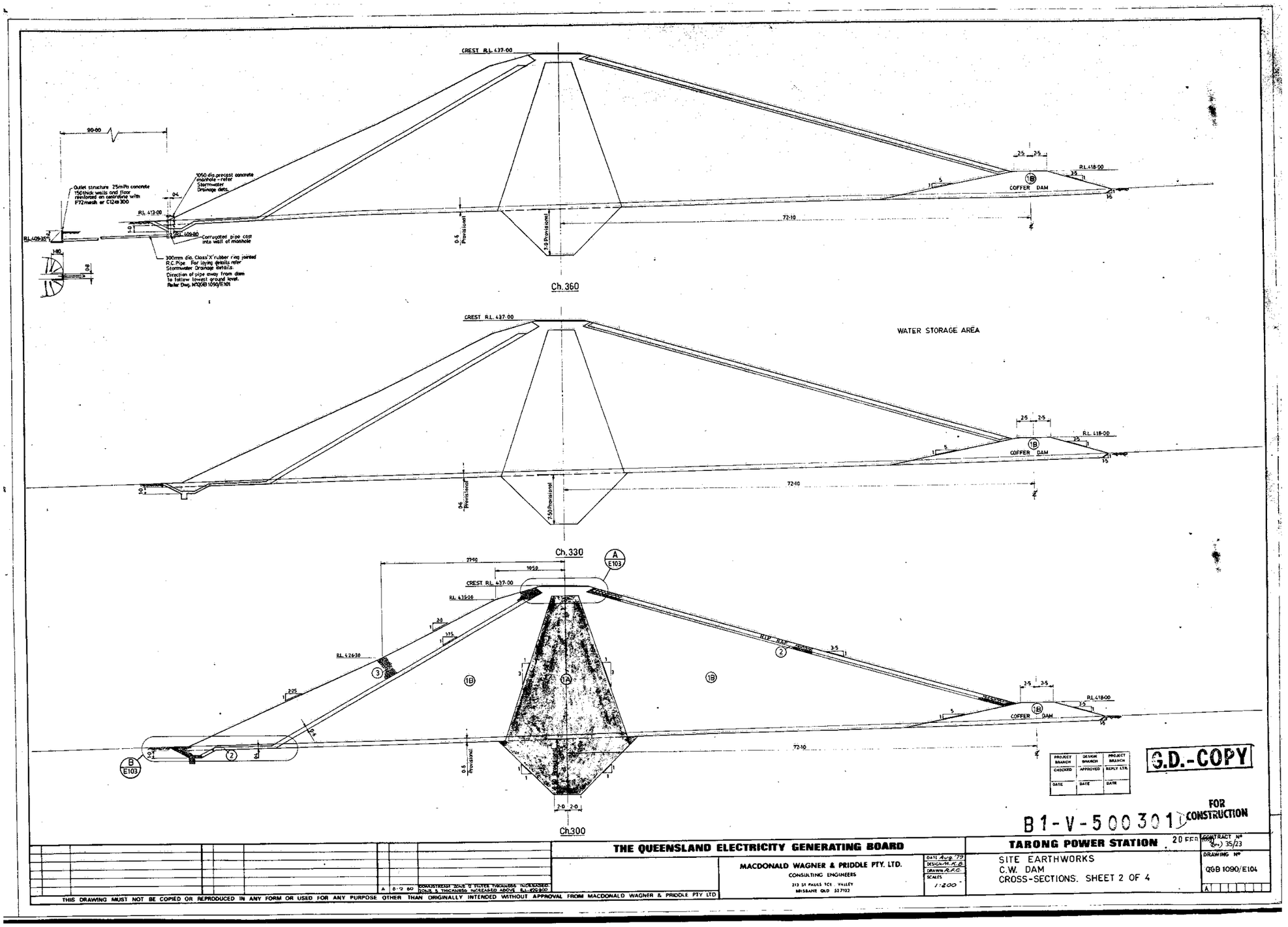


Figure 10-10 Drawings 500301-01 Dam Sections Sheet 2

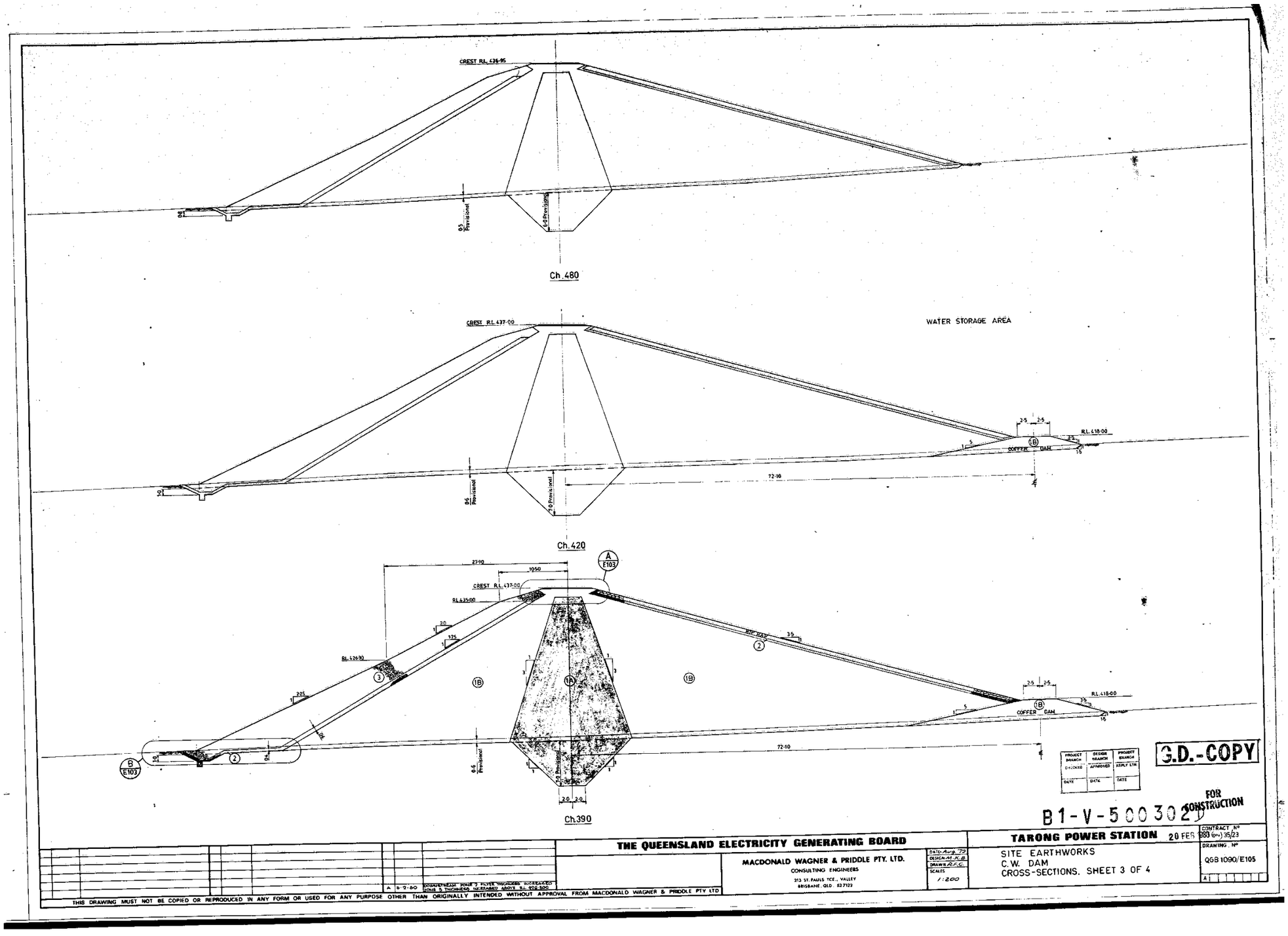


Figure 10-11 Drawing 500302-01 Dam Sections Sheet 3

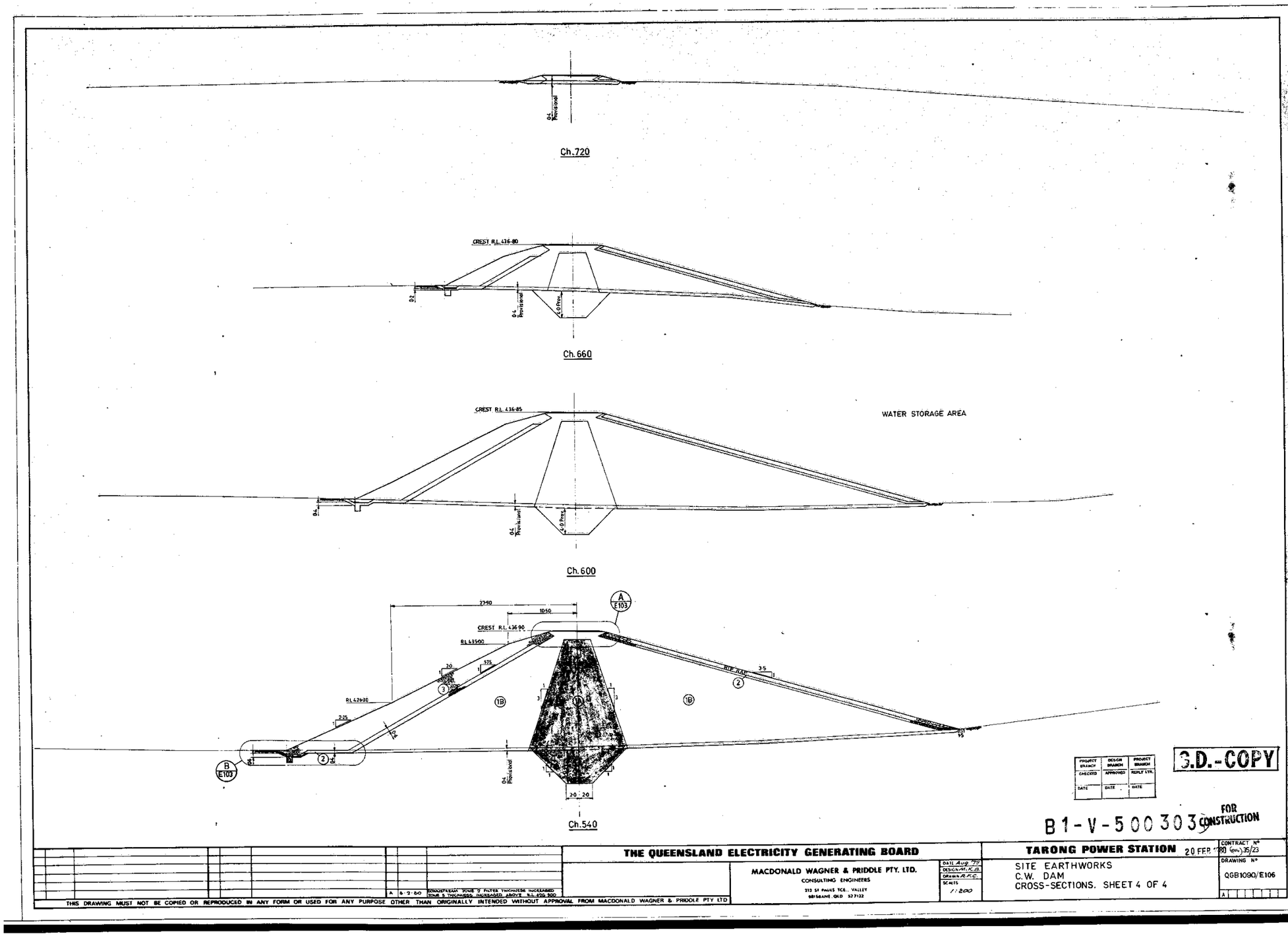
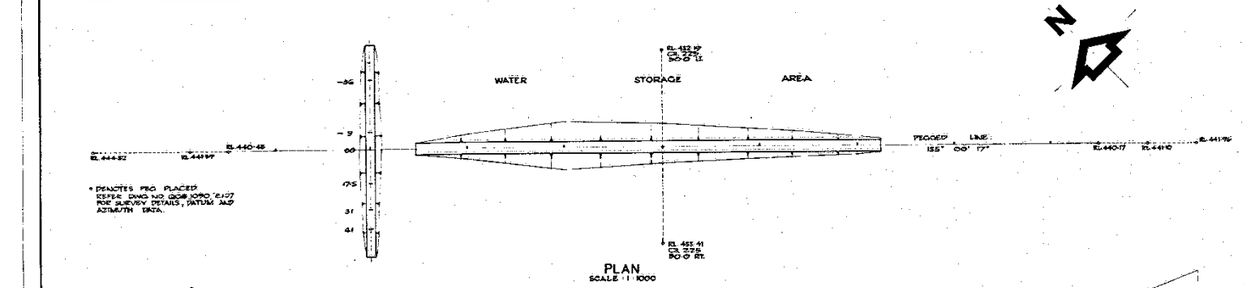
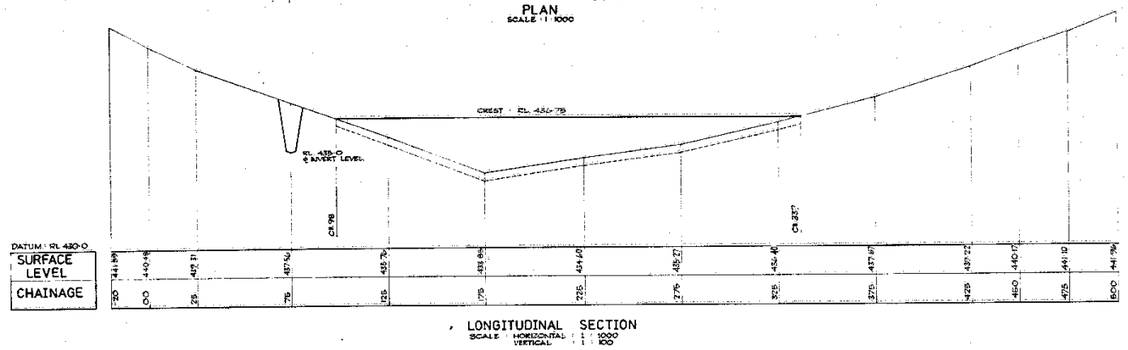


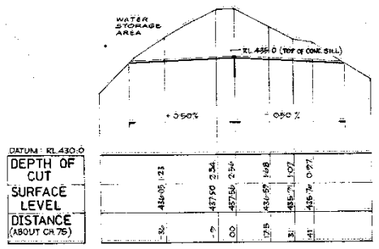
Figure 10-12 Drawing 500303-01 Dam Sections Sheet 4



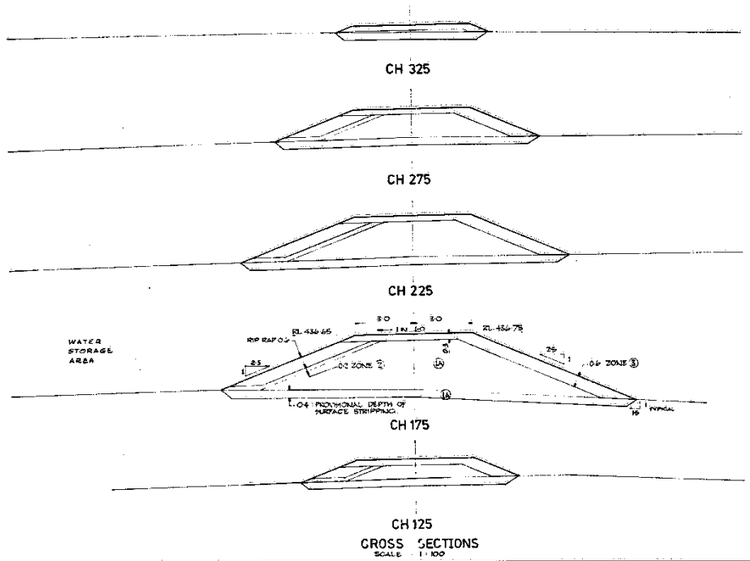
PLAN
SCALE 1:1000



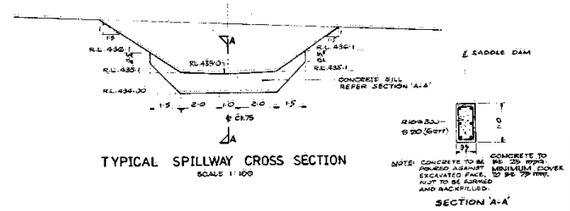
LONGITUDINAL SECTION
SCALE : HORIZONTAL 1:1000
VERTICAL 1:100



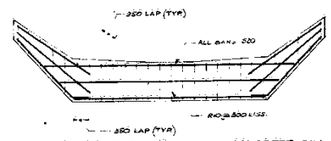
LONGITUDINAL SECTION ON
℄ OF SPILLWAY
SCALE : HORIZONTAL 1:1000
VERTICAL 1:100



CROSS SECTIONS
SCALE 1:100



TYPICAL SPILLWAY CROSS SECTION
SCALE 1:100



REINFORCEMENT DETAIL FOR CONCRETE SILL
SCALE 1:50

DRAWN	DESIGN	PROCESS ENGINEER
CHECKED		
DATE	DATE	DATE

B1-V-500205B

THE QUEENSLAND ELECTRICITY GENERATING BOARD

TARONG POWER STATION 14 DEC 1977

CONTRACT Nº 35/23 (QPM)

MACDONALD WAGNER & PRIDDLE PTY. LTD.
CONSULTING ENGINEERS
213 ST. PAULS TCE., VALLEY
BRISBANE, QLD. 32 7122

DATE Sept. '77
DESIGN M.W.B.
DRAWN R.L.A.
SCALES AS SHOWN

SITE EARTHWORKS
C.W. DAM
SADDLE DAM AND SPILLWAY

DRAWING Nº Q6B 1090/E108

THIS DRAWING MUST NOT BE COPIED OR REPRODUCED IN ANY FORM OR USED FOR ANY PURPOSE OTHER THAN ORIGINALLY INTENDED WITHOUT APPROVAL FROM MACDONALD WAGNER & PRIDDLE PTY LTD

Figure 10-13 Drawing 500205-01 Saddle Dam and Spillway

10.4. Appendix D – Flood Inundation Maps

Figure 10-14 Peak Flood Depth - Sunny Day Dam Failure (South)

Figure 10-15 Peak Flood Depth - Sunny Day Dam Failure (North)

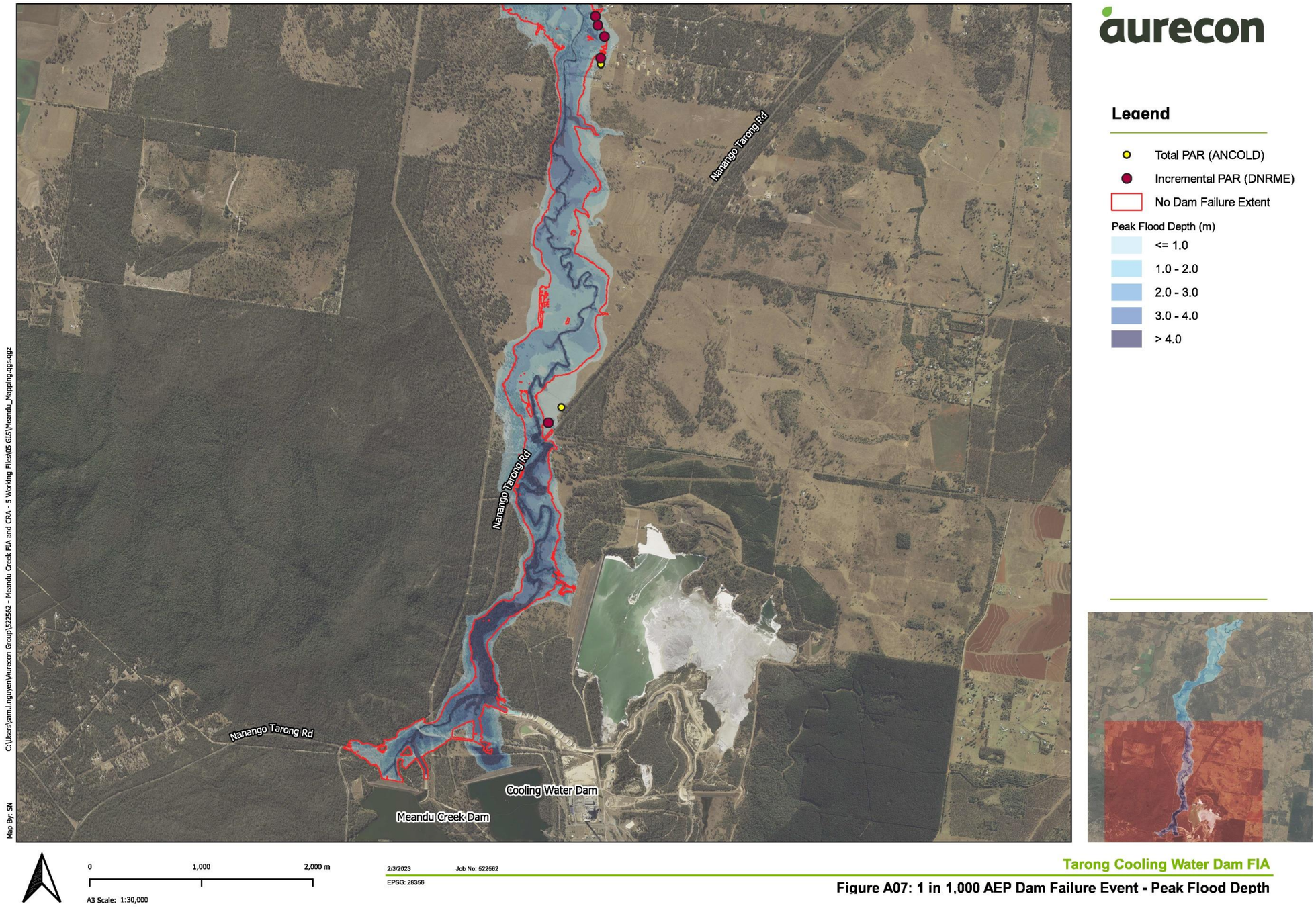


Figure 10-16 Peak Flood Depth - 1:1000 AEP Dam Failure Event (South)

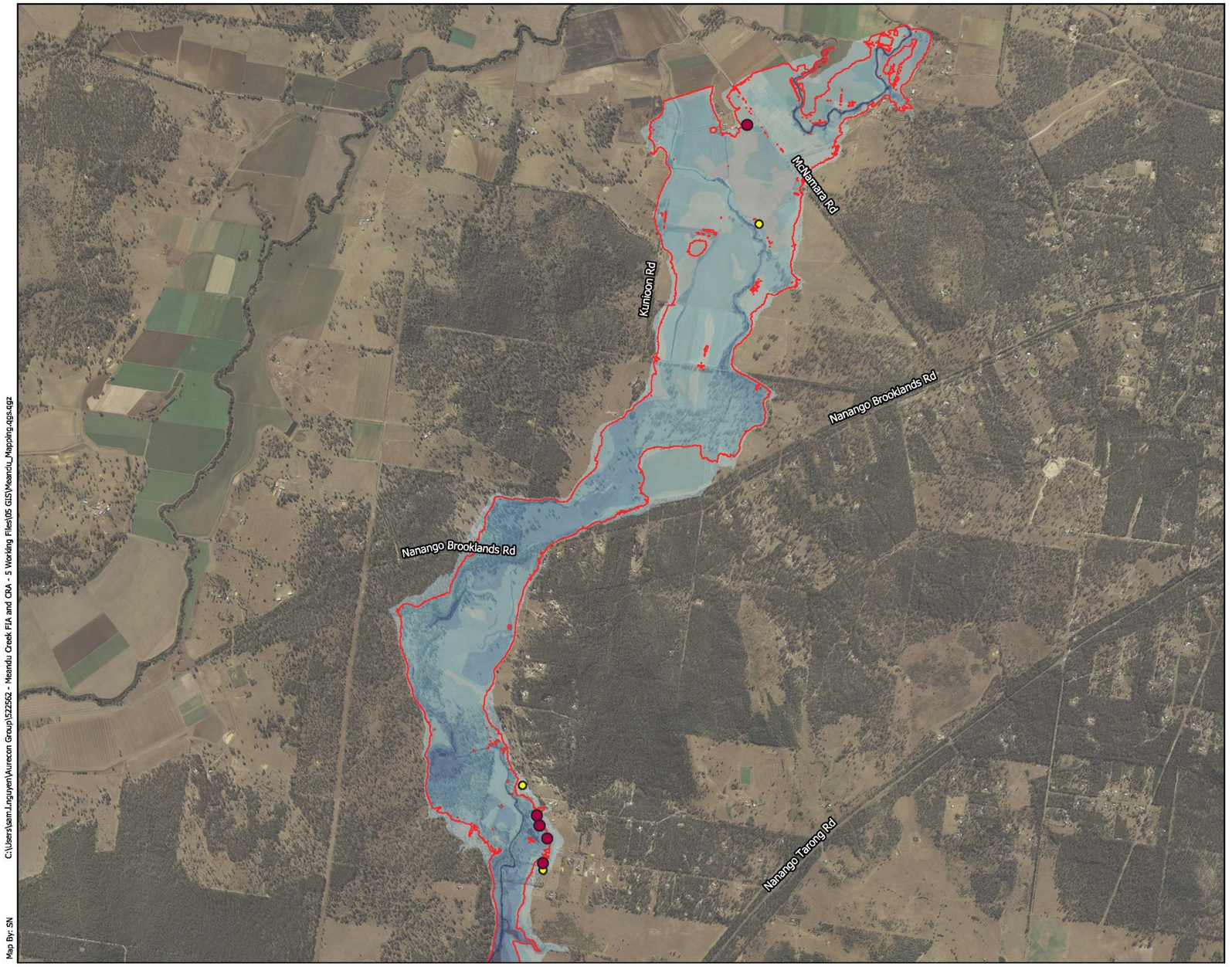


Figure 10-17 Peak Flood Depth - 1:1000 AEP Dam Failure Event (North)

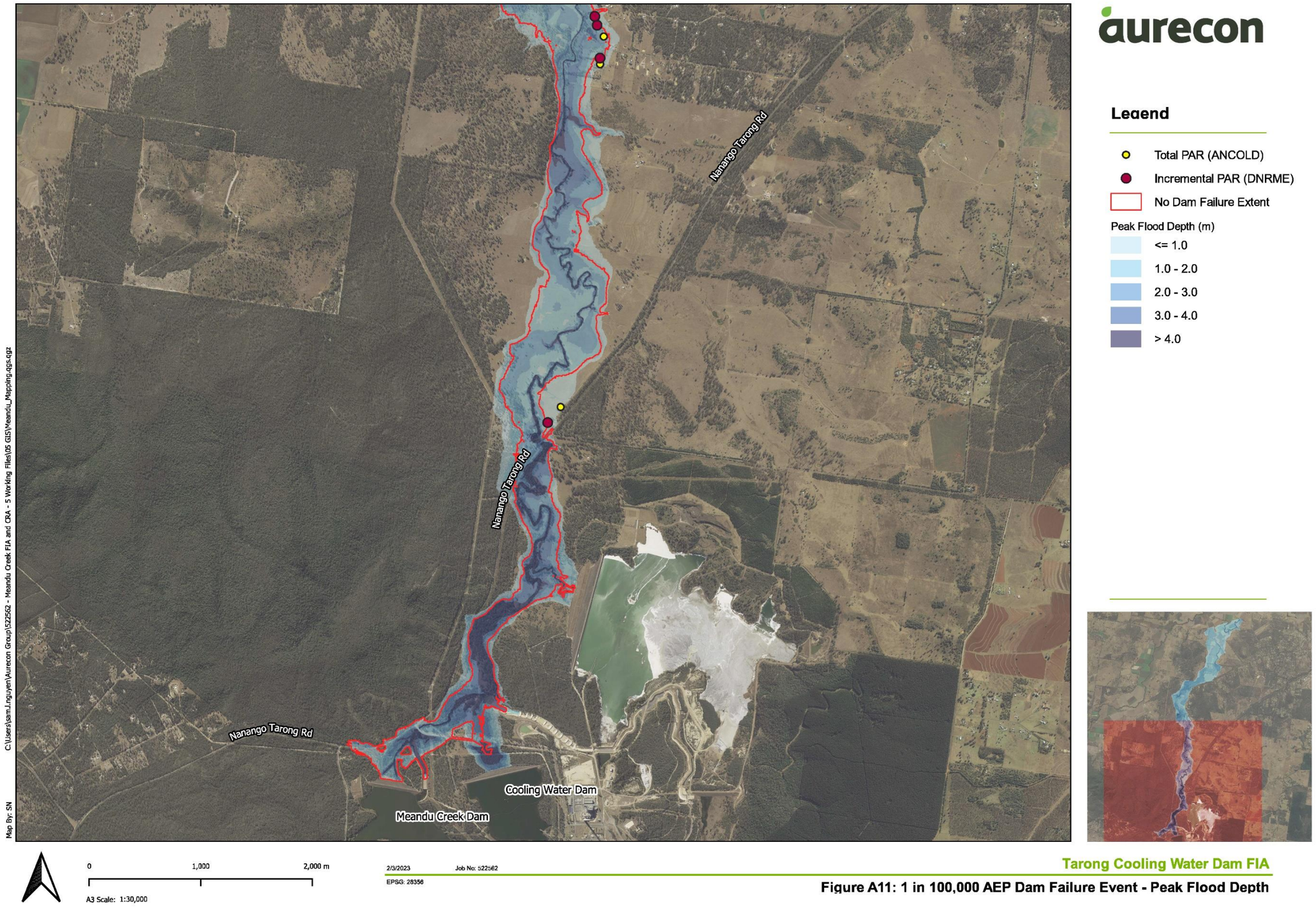


Figure 10-18 Peak Flood Depth - 1:100,000 AEP Dam Failure Event (South)

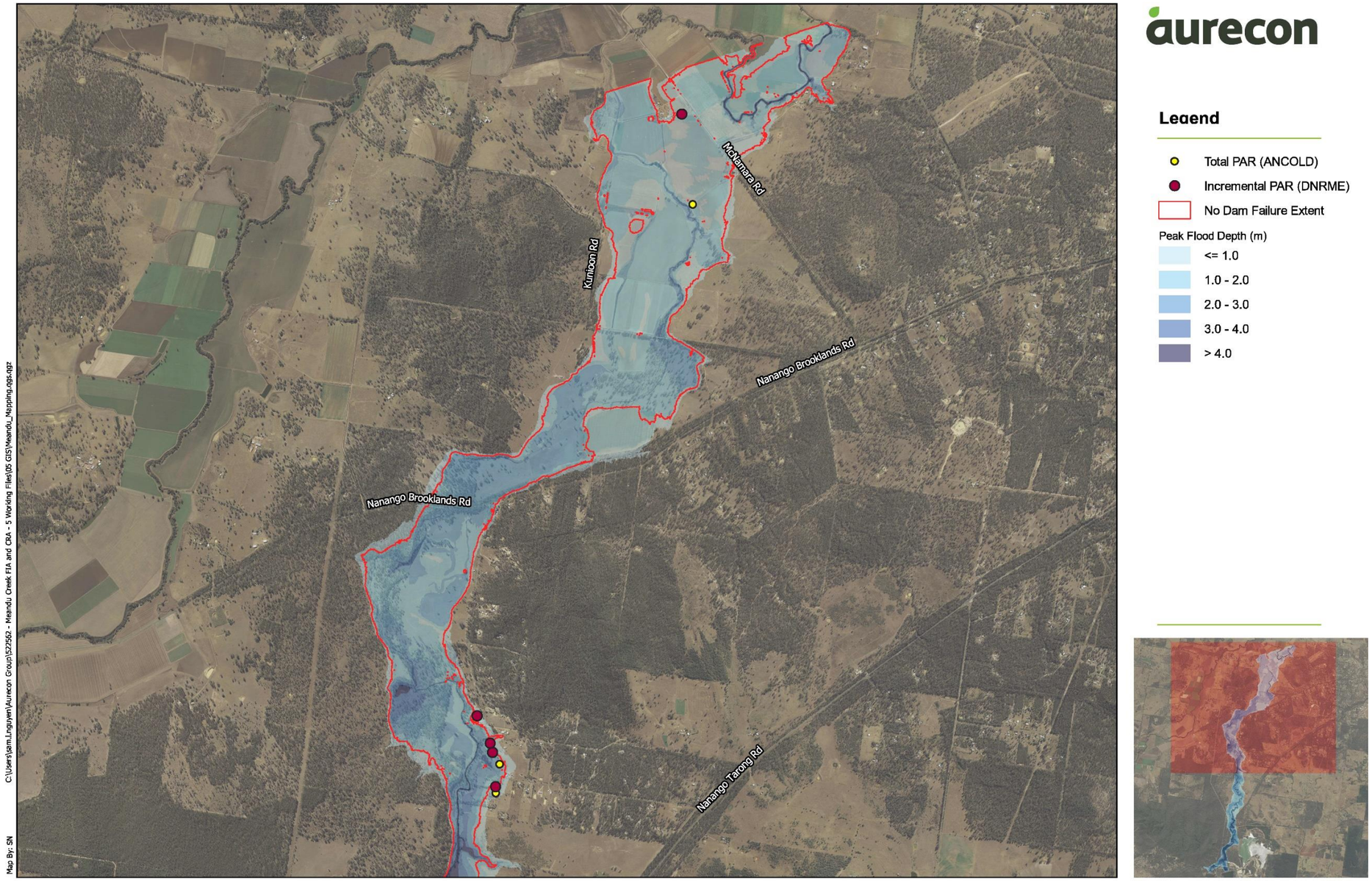


Figure 10-19 Peak Flood Depth - 1:100,000 AEP Dam Failure Event (North)

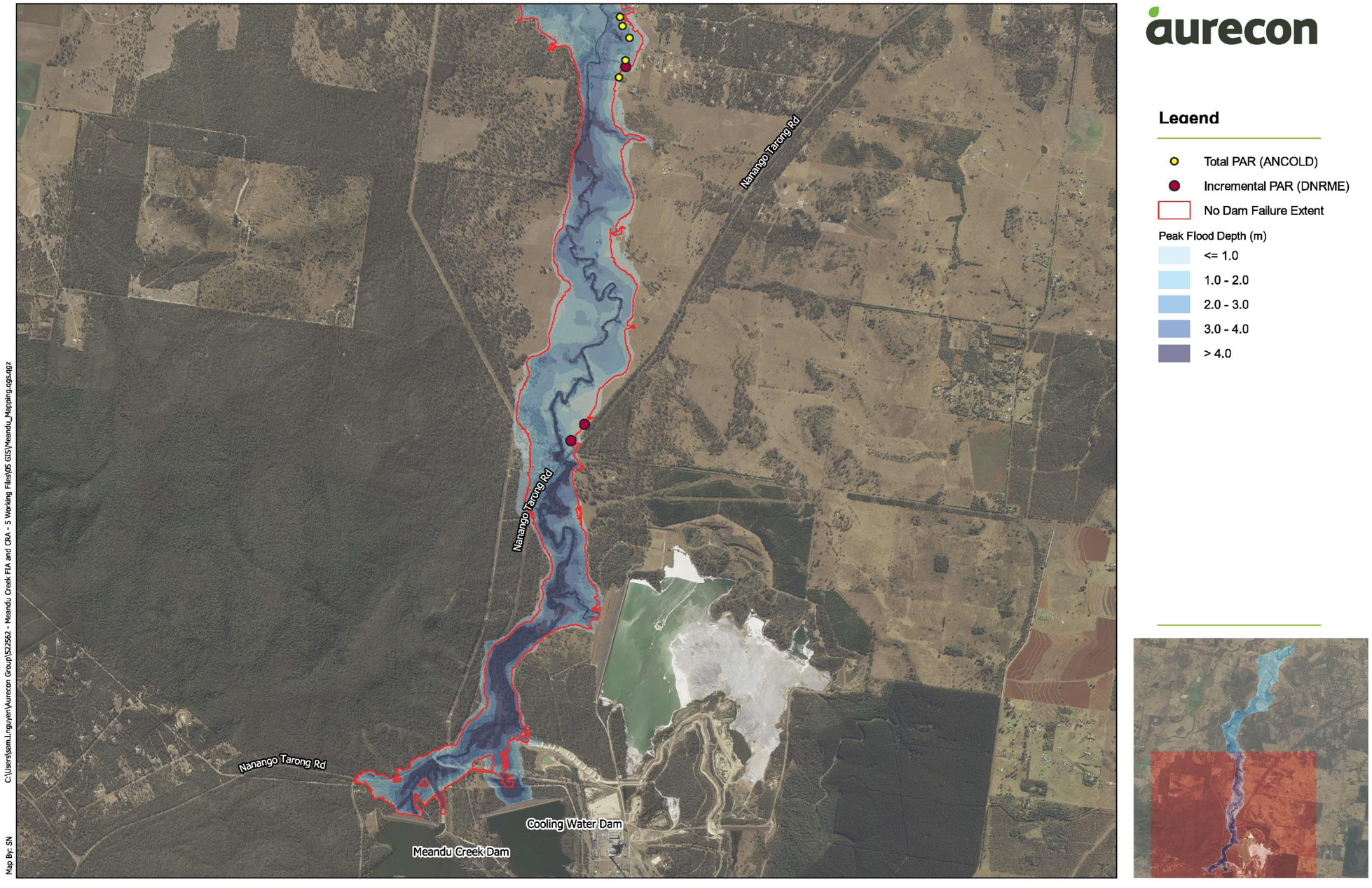


Figure 10-20 Peak Flood Depth - 1:1,000,000 AEP Dam Failure Event (South)

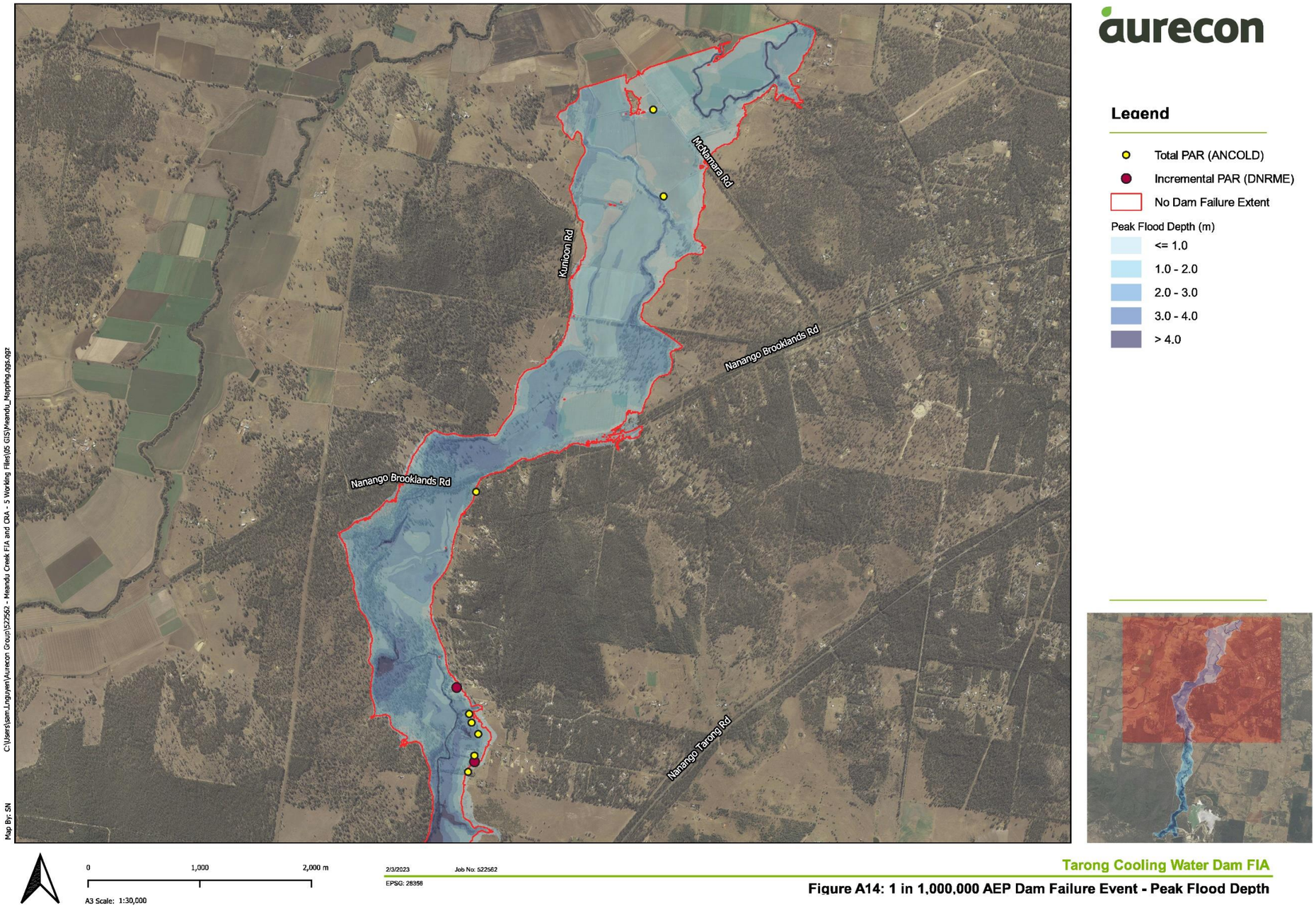


Figure 10-21 Peak Flood Depth - 1:1,000,000 Dam Failure Event (North)

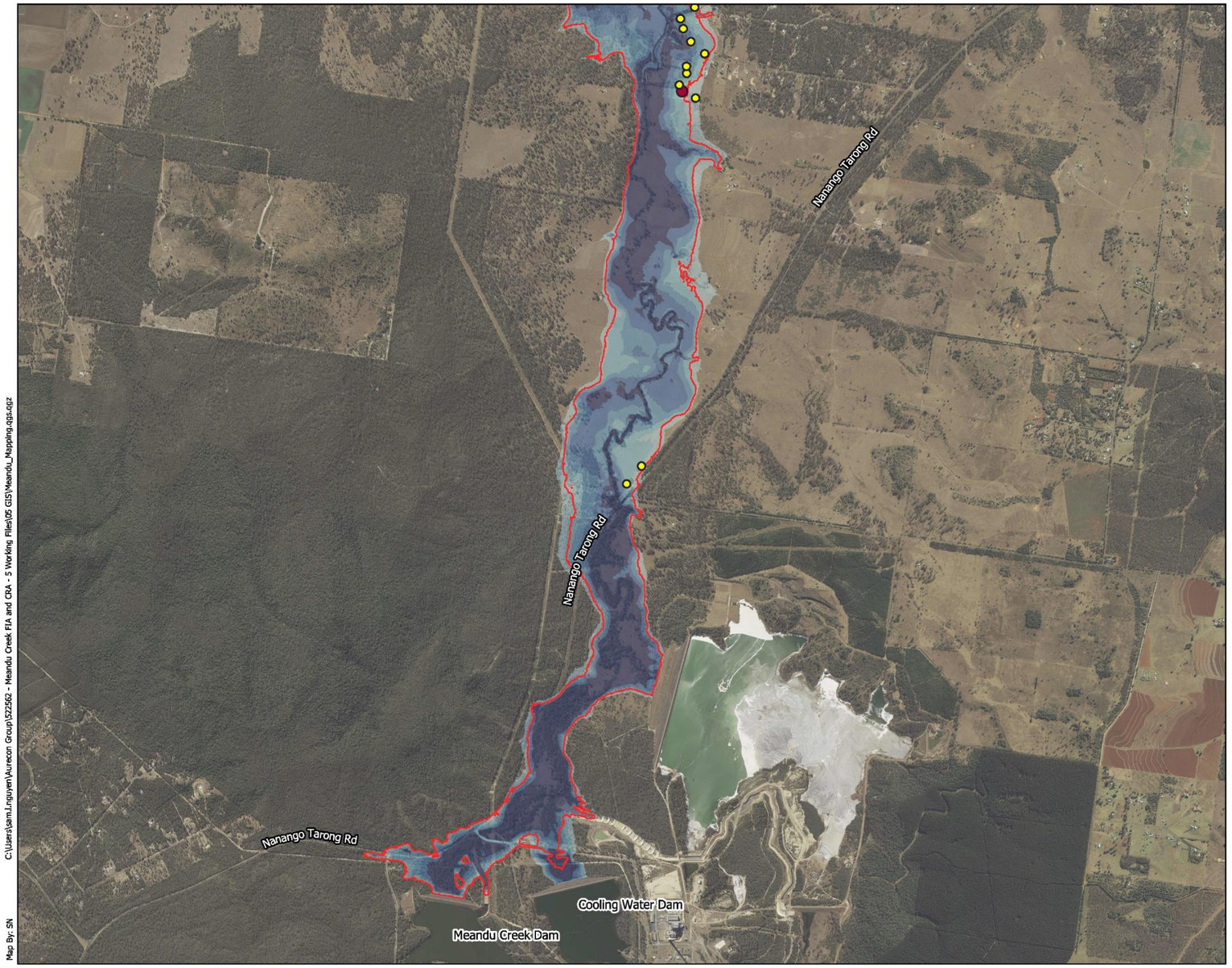


Figure 10-22 Peak Flood Depth - 1:10,000,000 AEP Dam Failure Event (South)

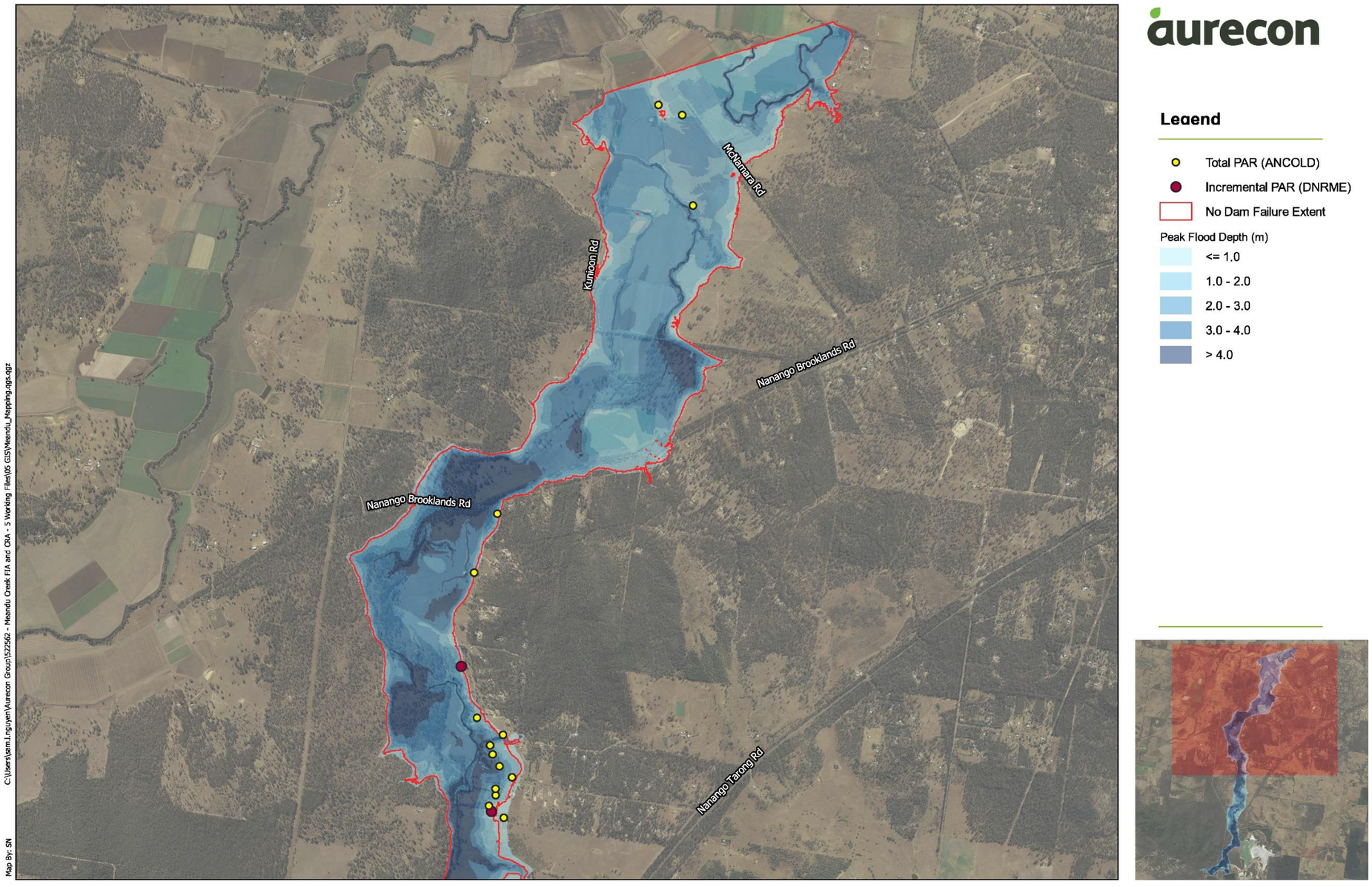


Figure 10-23 Peak Flood Depth - 1:10,000,000 AEP Dam Failure Event (North)

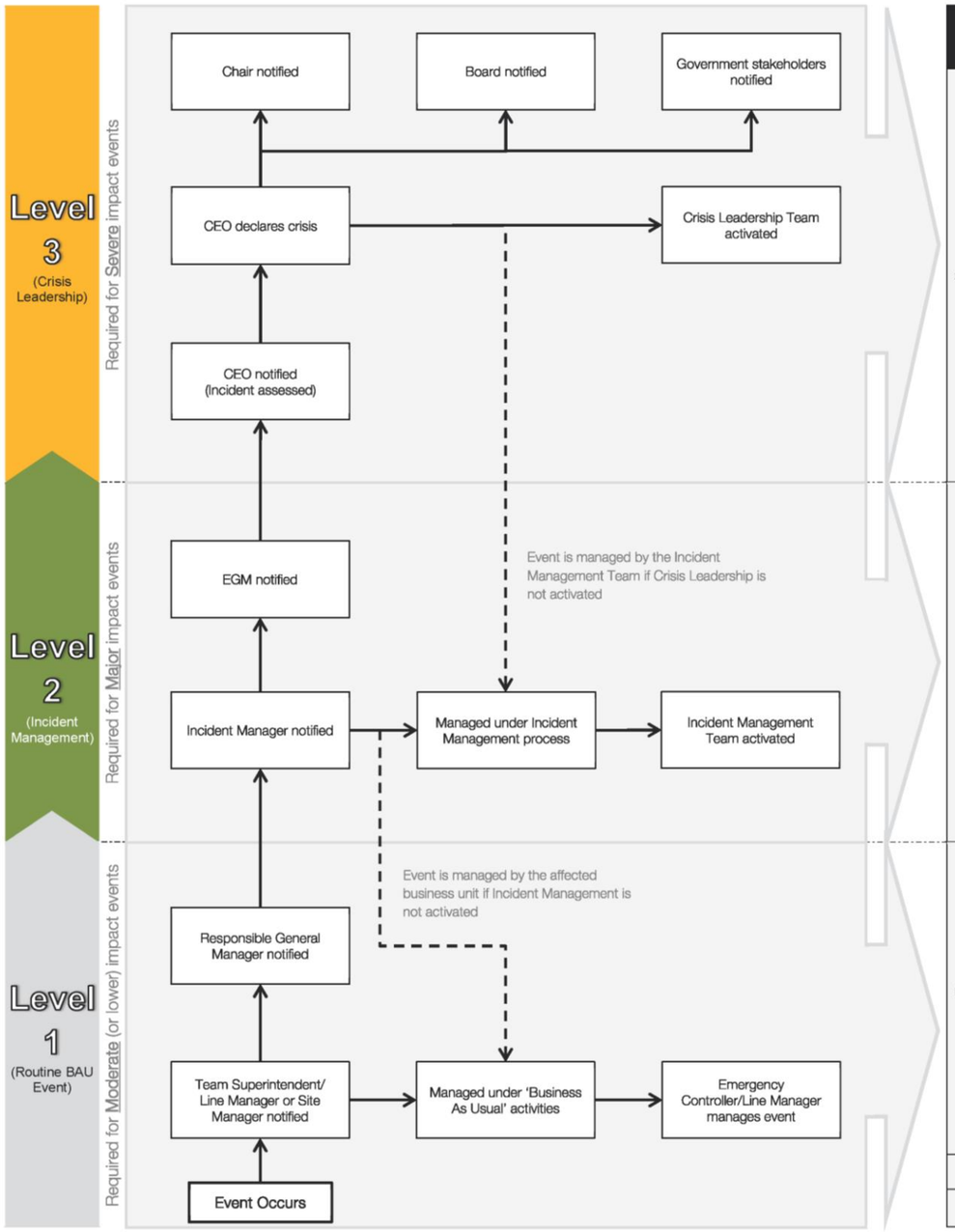
10.5. Appendix E – Potentially Affected Properties on PMF Event

Appendix E has been redacted

10.6. Appendix F – Evidence of Agreements

Appendix F has been redacted

10.7. Appendix G - Stanwell Crisis Event Evaluation and Escalation Matrix



IMPACT LEVEL	IMPACT CATEGORIES				
	Health & Safety	Environment	Financial	Reputation/Culture	Compliance/Legal
Severe (5)	*Fatality or Serious Injury with permanent impairment* (as defined by the *Work Health Safety Act 2011* (Qld)).	Widespread contaminant release to air, water or land or noise emission where an area of high conservation value or special significance is affected. Results in irreversible environmental harm. Widespread outbreaks of prohibited matter in areas of high conservation value or of special significance. Widespread impact and/or death of flora, fauna and/or species of interest or concern. Irreversible harm to significant Aboriginal area and/or significant Aboriginal object on authorised or unauthorised sites.	≥ $50 million	Significant and recurring negative national and/or metropolitan media coverage relating to Stanwell's business activities. Significant disruption to the achievement of Stanwell's business objectives (>12 months). Extensive intervention by Shareholding Ministers in Stanwell's business activities. Widespread and/or continuous public criticism. Worker dissatisfaction and/or industrial action leading to large scale loss or unavailability of critical staff (1 week to 1 month). High staff turnover (> 5% above target). Inability to attract and/or retain appropriately skilled employees to meet business objectives.	Breach of legislative or regulatory obligation(s) for which there are significant fines (>$1M) and/or legal proceedings instituted by an external body or regulator. Multiple systemic and material compliance incidents or breaches. Cancellation of operating licences, permits or authorities. Breach, alleged breach or contractual dispute that requires one or more external parties to be engaged to manage the response and regular engagement with external stakeholders (e.g. Shareholding Ministers and/or the community). Results in lengthy and/or costly litigation (including class actions) or prosecution or multiple legal actions.
Major (4)	*Serious Injury without permanent impairment* (as defined by the *Work Health Safety Act 2011* (Qld)).	Contaminant release to air, water or land or noise emission where an area of high conservation value or special significance is affected. Long-term remediation required. Localised outbreaks of prohibited matter in areas of high conservation value or of special significance. Localised impact and/or death of flora, fauna and/or species of interest or concern. Harm to significant Aboriginal area and/or significant Aboriginal object on unauthorised sites resulting in preventative remediation works.	≥ $20 million	Negative national and/or metropolitan media coverage relating to Stanwell's business activities. Disruption to the achievement of Stanwell's business objectives (<6 months). Approvals or funding withheld and/or restrictions imposed by Shareholding Ministers. Localised and/or short-term public criticism. Worker dissatisfaction and/or industrial action resulting in medium scale loss or unavailability of critical employees (< 1 week). Inability to attract and/or retain qualified employees in critical roles.	Ongoing or repeated breach of legislative or regulatory obligation(s) for which there are major fines ($100,001 - $999,999) and/or investigations by an external body or regulator and/or enforceable undertaking issued or likely to be issued. Suspension of material licences, permits, approvals. Intentional and material breach of obligations. Systemic material compliance incident or breach. Intentional and/or repeated breach of Stanwell's Code of Conduct and/or underlying policy framework which is referred to an external body for investigation and/or enforcement action. Breach, alleged breach or contractual dispute which requires an external party to be engaged to manage the response and engagement with external stakeholders (e.g. Shareholding Ministers and/or the community). Results in litigation or prosecution or individual legal actions.
Moderate (3)	Medical Treatment Injury (MTI) or Lost Time Injury (LTI) (that is, a Recordable Injury).	Contaminant release to air, water, land or noise emission where a localised off-site area is affected. Short term remediation required. Uncontrolled, localised outbreaks of prohibited matter in off-site areas. Unauthorised death and/or disturbance of flora, fauna and/or of a species of interest or concern.	≥ $10 million	Negative regional media coverage relating to Stanwell's business activities. Delivery of one or more of Stanwell's business objectives is prevented or delayed. Public reaction contained at a local level. Worker dissatisfaction and/or industrial action resulting in medium scale loss or unavailability of non critical employees (< 1 week). Inability to attract and/or retain qualified employees in non-critical roles.	Breach, repeated breaches or ongoing breaches of legislative or regulatory obligation/s for which there are moderate fines ($10,001 - $50,000) issued or likely to be issued and/or administrative action taken by a regulator to prevent or rectify the breach/s (e.g. environmental evaluation) Multiple non-systemic compliance incidents or breaches. Intentional and/or repeated breach of Stanwell's Code of Conduct and/or underlying policy framework where there is no investigation and/or enforcement action by an external body. Breach, alleged breach or contractual dispute which requires an external party to be engaged to manage the response (e.g. external lawyers engaged to run the matter with some input from Stanwell). Results in, or has the potential to result in, litigation.
Minor (2)					
Low (1)					

Figure 10-24 Crisis Event Evaluation and Escalation Matrix

10.8. Appendix H – Emergency Communications Contact List

Appendix H has been redacted

10.9. Appendix I – Modified Mercalli Intensity Scale

Table 10-3: Modified Mercalli Intensity Scale

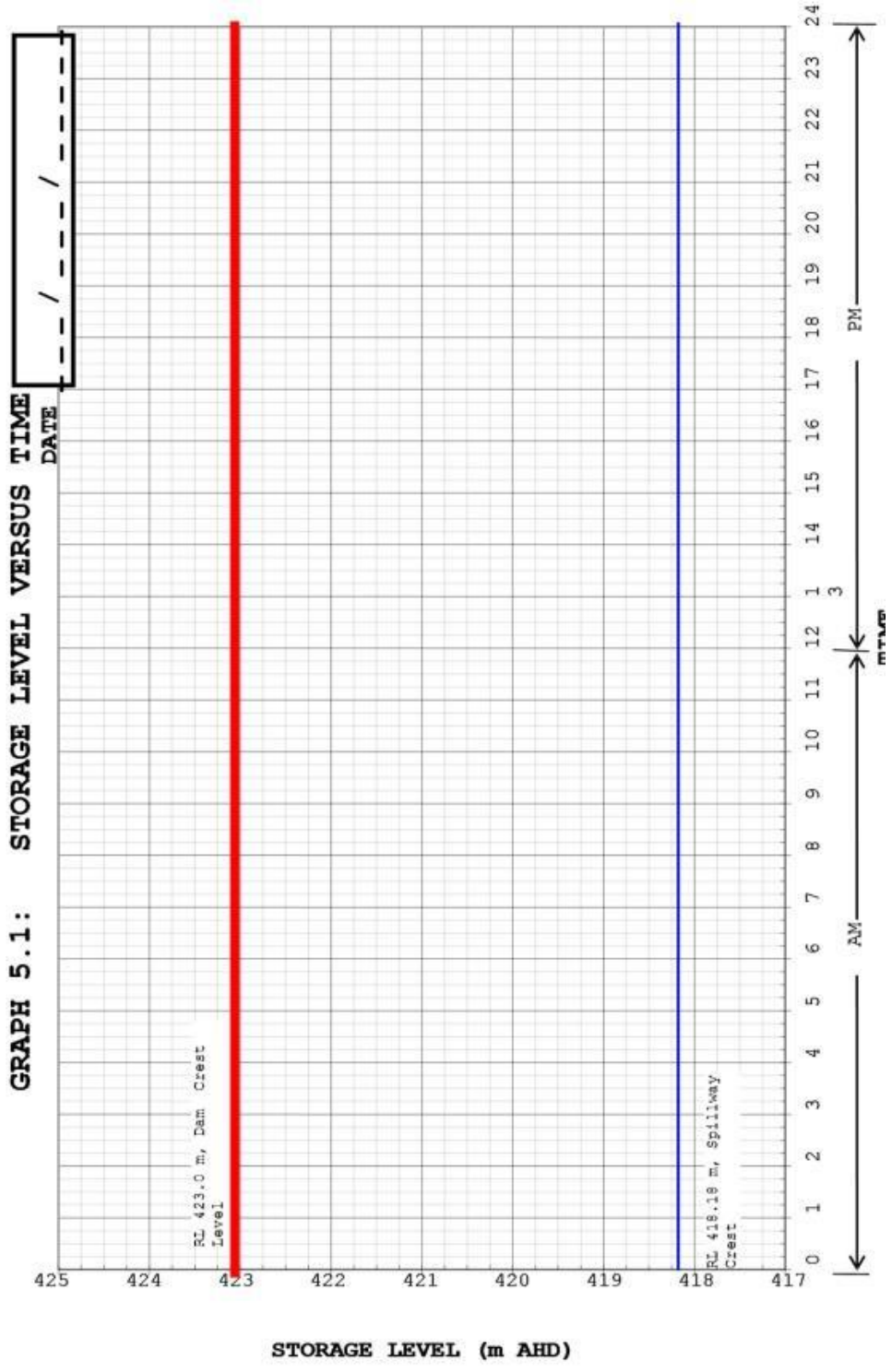
Earthquake Magnitude	Typical Maximum Modified Mercalli Intensity
1.0-3.0	I
3.0-3.9	II-III
4.0-4.9	IV-V
5.0-5.9	VI-VII
6.0-6.9	VII-IX
7.0 and higher	VIII or higher
Abbreviated Modified Mercalli Intensity Scale	
I	Not felt except by a very few under especially favourable conditions.
II	Felt only by a few persons at rest, especially on upper floors of buildings.
III	Felt quite noticeably by persons indoors, especially on upper floors of buildings. Many people do not recognize it as an earthquake. Standing motor cars may rock slightly. Vibrations similar to the passing of a truck. Duration estimated.
IV	Felt indoors by many, outdoors by few during the day. At night, some awakened. Dishes, windows, doors disturbed; walls make cracking sound. Sensation like heavy truck striking building. Standing motor cars rocked noticeably.
V	Felt by nearly everyone; many awakened. Some dishes, windows broken. Unstable objects overturned. Pendulum clocks may stop.
VI	Felt by all, many frightened. Some heavy furniture moved; a few instances of fallen plaster. Damage slight.
VII	Damage negligible in buildings of good design and construction; slight to moderate in well built ordinary structures; considerable damage in poorly built or badly designed structures; some chimneys broken.
VIII	Damage slight in specially designed structures; considerable damage in ordinary substantial buildings with partial collapse. Damage great in poorly built structures. Fall of chimneys, factory stacks, columns, monuments, walls. Heavy furniture overturned.
IX	Damage considerable in specially designed structures; well-designed frame structures thrown out of plumb. Damage great in substantial buildings, with partial collapse. Buildings shifted off foundations.
X	Some well-built wooden structures destroyed; most masonry and frame structures destroyed with foundations. Rails bent.
XI	Few, if any (masonry) structures remain standing. Bridges destroyed. Rails bent greatly.
XII	Damage total. Lines of sight and level are distorted. Objects thrown into the air.

10.10. Appendix J – Recording Sheets

RECORD OF RAINFALL DURING A FLOOD

Date	Time	Rainfall (mm)	Daily Total (mm)	Comments

Plot of water level versus time



NATURE OF THE EVENT

Describe the event (e.g. spillway discharge, earthquake, chemical spill, etc.)

Commencing Time……..….Date……/……../……..
Finishing Time……....Date……./……./……...

DESCRIPTION OF THE EVENT

Describe in your own words the lead up to and progress of the event (e.g. a spillway discharge)
Include such information as listed below:
Weather conditions and rainfall in the catchment
The rate of rise of the storage
When the spillway was overtopped
Date and time of highest level
Briefly describe any immediate downstream damage caused by the discharge
Include any other information considered relevant

STATISTICS

Total inflow…….Megalitres
Total discharge……....Megalitres
Capacity of storage prior to inflow……..%
Volume prior to inflow……Megalitres
Maximum inflow…….Megalitres per day
Maximum discharge……Megalitres per day

EVENT PROGRESS

Briefly describe the daily rate of storage rise, time to peak level, and weather conditions.
Attach copies of the Spillway Level Versus Time Graph, the Communications Record Sheet, and the Log of Events / Actions Sheet

GENERAL COMMENTS

Include in this section any observations or comments regarding the event, such as equipment malfunctions, safety issues or any suggestions which may improve monitoring and reporting of the event

DAMAGE REPORT

Detail any tailwater damage to the embankment or stream bank in the immediate area of the dam. Attach photos

ATTACHMENTS

Photos / video of the event
Spillway Level versus Time Graph
Communications Record Sheet
Log of Events / Action Sheet

Signed……..……Designation……...Date……../…...…/…...…

10.11. Appendix K – Emergency Alert System

Queensland Disaster Management System

The Queensland Disaster Management System operates on three distinct levels. These are:

- Local Government
- Disaster District
- State Government

A fourth level, The Commonwealth is also included in our Disaster Management System recognising that Queensland may need to seek Commonwealth support in times of disaster.

Each of these levels within the Queensland Disaster Management System has as its basis a committee structure supported by a disaster coordination centre. These committees and coordination centres are activated when required to manage and coordinate support for disaster stricken communities. When not activated, these committees meet to prepare for and practice their role within the Disaster Management System.

Figure 1 depicts the Queensland Disaster Management System including the link to the Commonwealth for National-level support when required.

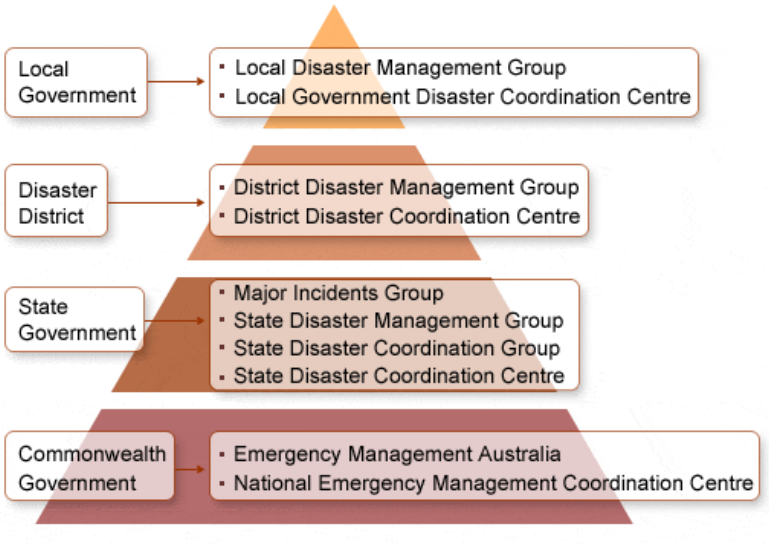


Figure 1 – The Queensland Disaster Management System

Description of the System

The Queensland Disaster Management System has three principal tiers that quickly provide both technical and tangible assistance to disaster stricken communities.

Management of a disaster at the community level is conducted by Local Government who are responsible for the implementation of their Local Disaster Management Plan. If Local Governments require additional resources to manage the event, they are able to request support from their Disaster District Coordinator. This allows for the rapid mobilisation of resources at a regional or district level. If

Disaster District resources are inadequate or inappropriate, requests for assistance can be passed to State via the State Disaster Coordination Centre. Finally, when State resources are inadequate or inappropriate, support from the Commonwealth can be obtained via Emergency Management Australia (EMA).

Reference: http://www.disaster.qld.gov.au/about/

A brief summary of each of the key components of the Queensland Disaster Management System is set out below:

- **Local Disaster Management Group**. (Formerly called Local Government Counter Disaster Committee). Local Disaster Management Groups (local groups) coordinate the response to a disaster at a local level. The Committees are usually chaired by the Mayor and the Local Government Chief Executive Officer is usually the Executive Officer of the committee. Local Government Counter Disaster Committees develop and maintain Counter Disaster Plans for their Shire. These Local Government Committees are best placed to decide what resources are needed, when they are needed and how best to apply such resources so as to minimise hardship and suffering. They play a key role in the Queensland Disaster Management System.

- **District Disaster Management Group** (formerly called Disaster District Control Group). There are 23 Disaster Districts in Queensland which are based on the Police Districts. The senior Police Officer in each district is designated as the Disaster District Coordinator who Chairs a Disaster District Control Group. These Disaster District Control Groups comprise representatives from regionally-based Queensland Government departments who are able to provide and coordinate whole-of-government support to disaster stricken communities. The Disaster Districts perform a 'middle' management function within the Disaster Management System by providing coordinated State Government support when requested by Local Governments.

- **The State Disaster Coordination Group (SDCG)** is the working body of the State Disaster Management Group (State Group) at State-level. SDCG members are designated liaison officers from each of the Departments represented on the State Group. This Group is the primary mechanism through which coordinated whole-of-government State-level support is provided to disaster-stricken communities.

- **The State Disaster Management Group**. The State Disaster Management Group (State Group) is established as the principal organisation under the new Act for the purposes of disaster management throughout the State. It replaces the State Counter-Disaster Organisation and its executive, the Central Control Group. In particular, the State Group is responsible for disaster mitigation and disaster planning and preparation at a State level and for coordinating whole-of-Government response and recovery operations prior to, during and after a disaster impact. This includes accessing interstate and/or Commonwealth assistance when local and State resources are exhausted or not available.

The State Group comprises Chief Executive Officers (CEO's) from all Queensland Government Departments. The CEO of the Department of the Premier and Cabinet is the Chair, while the Executive Director of Counter Disaster and Rescue Services is the Executive Officer.

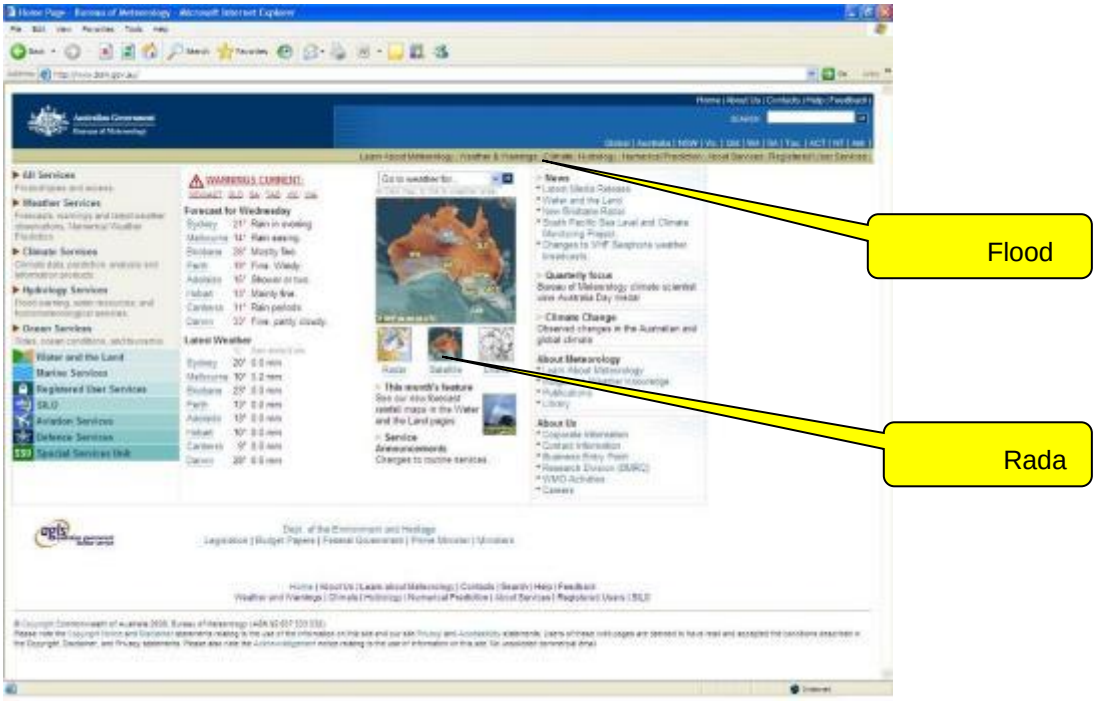
- **Major Incidents Group (MIG)**. The Queensland Government has established a MIG to provide high level Ministerial guidance and support in the event of a significant incident with major community consequences. Conceptually, membership of the MIG would be determined on an incident-by-incident basis and may include, but not be limited to:

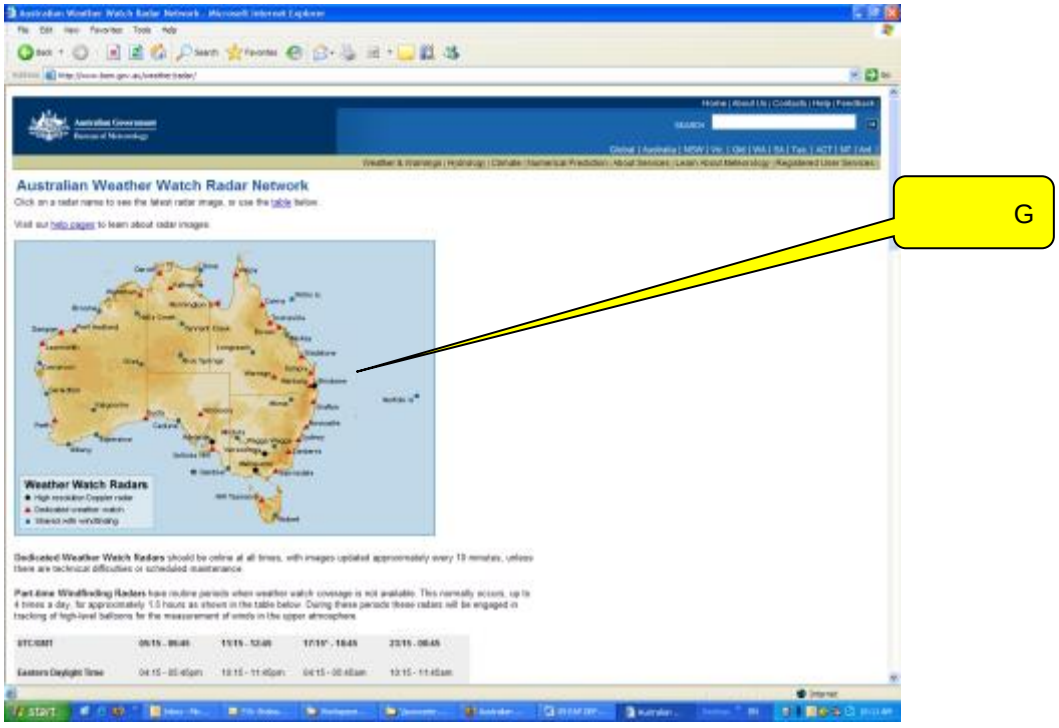
  - Premier (Chair)
  - Treasurer
  - Attorney-General
  - Minister for Police
  - Minister for Emergency Services
  - Minister for Health

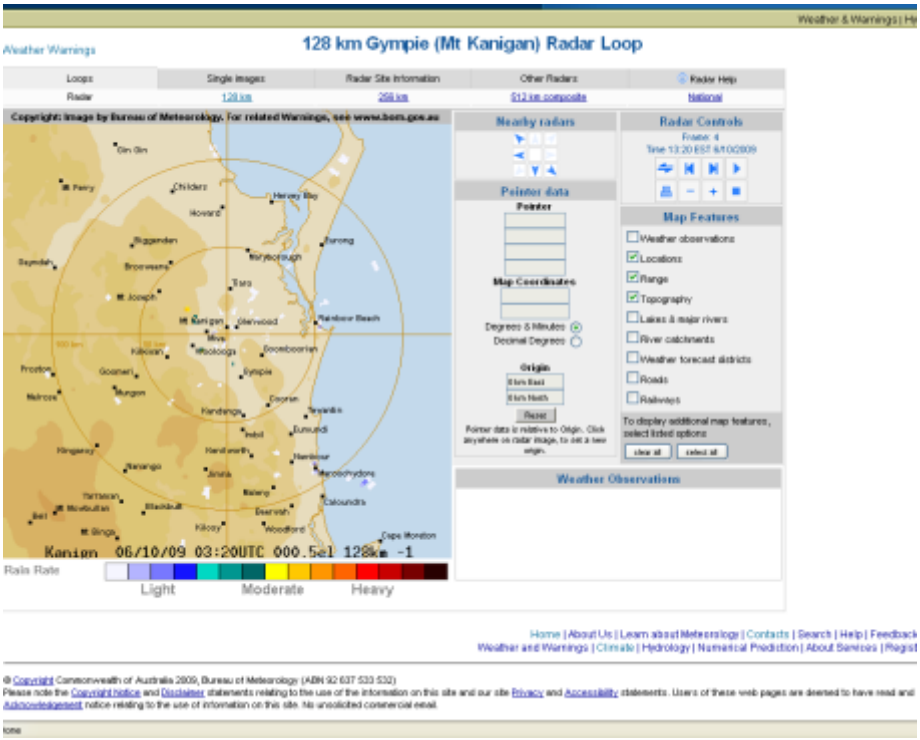
  Reference: http://www.disaster.qld.gov.au/about/

WEATHER INFORMATION (FLOOD WARNING)

Using the Internet ***http://www.bom.gov.au/***






128 km Gympie (Mt Kanigan) Radar Loop
Weather Warnings
Loops
Single images
Radar Site Information
Other Radars
Radar Help
Radar
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National
Copyright: Image by Bureau of Meteorology. For related Warnings, see www.bom.gov.au
Nearby radars
Radar Controls
Pointer data
Pointer
Map Coordinates
Degrees & Minutes
Decimal Degrees
Origin
Map Features
Weather observations
Locations
Range
Topography
Lakes & major rivers
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Weather forecast districts
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Railways
To display additional map features, select listed options
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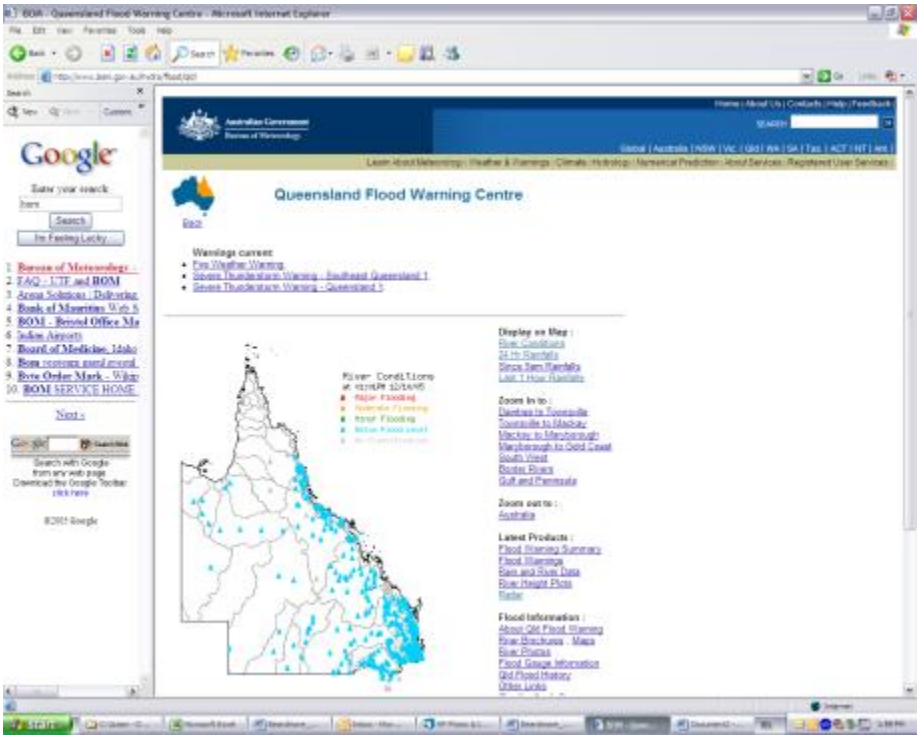
Google
Search
I'm Feeling Lucky
Queensland Flood Warning Centre
Warnings current
Display on Map
Zoom in to
Zoom out to
Latest Products
Flood Information

10.12. Appendix L – Annual Public Notice

NOTICE OF EMERGENCY ACTION PLAN

Meandu Creek Dam and Cooling Water Dam

Emergency Notification Process

Stanwell's Tarong Power Stations use water from the Meandu Creek Dam and Cooling Water Dam for its cooling systems to produce power for South East Queensland.

Stanwell advises that residents living within the Meandu Creek flood zone and inundation areas of the Meandu Creek Dam and Cooling Water Dams may receive a letter outlining the Emergency Alert notification systems which would be activated in the event of an emergency of either of these dams.

The letter to property holders in the Meandu Creek flood zone forms part of Stanwell's preparedness for its Meandu Creek Dam and Cooling Water Dam Emergency actions Plans.

For further information contact

To check if your property is in the Meandu Creek flood zone visit

https://floodcheck.information.qld.gov.au/

10.13. Appendix M – Letter to the downstream landholders – Update of contact details

Ref: 21/

Tarong Power Stations
GPO Box 800
Brisbane Q 4001

13 October 2023

Property Owner Name
Address
Suburb State P/code

Dear [Property Owner],

RE: EMERGENCY ACTION PLANS – MEANDU CREEK DAM, TARONG COOLING WATER DAM AND TARONG ASH DAM Lot Nos; (your property)

Stanwell's Tarong Power Stations store and use water from the Meandu Creek Dam and Cooling Water Dam for its cooling systems to generate electricity for the National Electricity Market. Ash is stored in the Tarong Ash Dam.

In line with the *Water Supply (Safety and Reliability) Act 2008* these are classified as large dams and determined "referable" by the Department of Regional Development, Manufacturing and Water.

Under the *Act*, Stanwell is required to develop an Emergency Action Plan for the water dams, and for consistency a plan has also been developed for the Tarong Ash Dam. As part of this process, your property has been identified as one that might be affected in the very unlikely event of a dam failure.

In the event that you should ever be required to act to preserve life or property because of a dam failure, all mobile phones in the area where your property is situated would receive an SMS. This message would be sent by the Emergency Alert System that is controlled by the Local Disaster Management Group (please note this is not a Stanwell controlled system). All landline phones in the area would receive a voice message.

The emergency alert system in our area is likely to be tested at some point. If you are within the notification area at the time of a test you will receive a mobile SMS or landline message generated by the Emergency Alert System. The message would indicate it is a "test" and not an actual emergency requiring you to act.

Please be aware that it is your responsibility to manage your safety and the safety of others on your property, in the very unlikely event of a dam-related incident with potential to impact downstream properties.

We recommend that you familiarise yourself with the emergency action plans. Copies can be found at:
https://www.business.qld.gov.au/industries/mining-energy-water/water/industry-infrastructure/dams/emergency-action-plans/map
for the Tarong Power Station - Cooling Water Dam and for the Meandu Creek Dam.

Additional information about referable dams can be found here:

https://www.business.qld.gov.au/industries/mining-energy-water/water/industry-infrastructure/dams/emergency-action-plans

Stanwell regularly updates additional information about its Dam. Please see our website: www.stanwell.com/energy-assets/our-fuel-assets/water/ for further information.

To ensure Stanwell can contact you in the event of an emergency, please return the enclosed form via post, or alternatively email [redacted] Your information will ensure Stanwell can keep you informed.

Please don't hesitate to contact me if you require any further information.

Yours sincerely

[redacted]
General Manager Southern Generation

Enquiries: [redacted]

PLEASE COMPLETE		
Property Owner		
Property Title		
Is there a house on the property?	☐ YES	☐ NO
If yes, in what capacity does someone live at the property?	☐ Permanent place of residence ☐ Occasional weekend or holiday use	☐ Property is rented ☐ Property is Vacant ☐ Other
What is your contact telephone number/s? (please give all numbers to assist with communication)	**Telephone:** _____ **Mobile:** _____ **Other:** _____	
Do you give permission for these numbers to be provided to the State Emergency Alert Centre for use in the case of an emergency?	☐ YES	☐ NO
What is your email address?		
What is your postal address?		
If the property is rented:		
If known, what is the best telephone number for the tenants at the property?	**Telephone:** _____ **Mobile:** _____ **Other:** _____	
If known, what is the tenants email address?		
Name: _____ **Signature:** _____		

Please return to Stanwell Corporation Limited, GPO Box 800, Brisbane Q 4001 or email details to