How Broad-Brush Risk Assessments Reveal True Critical Risks

Christian Young – CEO

Tell us about you

Where are you watching from?
Rename to full name

What's your experience with Broad Brush Risk Assessment?

- 0: None > 10: I live and breathe them

Turn on video

How Broad Brush Risk Assessments Reveal True Critical Risks

Christian Young – CEO

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3 Gets

Broad Brush Risk Assessment (BBRA)

- The BBRA looks across an entire site/business to identify risks, controls and prioritise them.
- Identifies Critical Risks
- It’s the gateway to the Critical Risk Management Process
- WRAC template most common

- BBRA Vs BLRA?

Geographic Area	Hazard / Risk Source Classification	Hazard / Risk Source Description	Release Mechanism (Example of how this energy can be released (Unwanted events)	Description of Unwanted Event	Maximum consequence (with no controls)	Material Unwanted Event (Yes, No)	Functional Ownership	Current Controls	Likelihood of the Event (given current controls)	Consequence Types (given current controls)						Max Risk Rank
										(H&S	(E	(F	(R	(L&R	(S&C	
Underground	Mechanical (Mobile)	Underground Mobile Equipment	Single Vehicle Incident (Rollover, runaway, uncontrolled movement, break through window, runaway vehicle) Multiple Vehicle Incident (Vehicle Collision), Pedestrian Strike	Loss of control of mobile equipment (underground)	CE: Ext	Yes	Open Pit Manager Mining	Corporate - Major Hazard Management Standard Regional - Principal Mining Hazard Management Standard TM & SD - Areas where mobile equipment operates PHMP TM & SD - Traffic Management Plans TM & SD - Underground Traffic Management Plan	L4: Likely	CE: Ext						34 (E)
Surface	Mechanical (Mobile)	Surface Mobile Equipment	Single Vehicle Incident (Rollover, runaway, uncontrolled movement, contact with infrastructure, contact with Pit wall) Multiple Vehicle Incident (Vehicle Collision), Pedestrian Strike, Dussling of personnel SD - Haulage vehicles crossing public access road Autonomous drill interaction or uncontrolled movement	Loss of control of mobile equipment (surface)	CE: Ext	Yes	Open Pit Manager Mining	Corporate - Major Hazard Management Standard Regional - Principal Mining Hazard Management Standard TM & SD - Areas where mobile equipment operates PHMP TM & SD - Traffic Management Plans SD - Autonomous Equipment Management Plan	L4: Likely	CE: Ext						34 (E)
Offlease	Mechanical (Mobile)	Offsite vehicle incident	Journey incident, Single Vehicle Incident, vehicle Collision,	Loss of control of vehicle offsite	CE: Ext	Yes	Open Pit Manager Mining	Corporate - Major Hazard Management Standard Regional - Principal Mining Hazard Management Standard SD - Offsite Journey Management and Remote Area Access Procedure TM - Drive in and Drive Out Procedure	L4: Likely	CE: Ext						34 (E)
Whole of Site	Mechanical (Fixed)	Collapse of Structure	Processing plant structural failure, Tank Failure, Conveyor structure failure, Bin Structural Failure, Failure of concrete foundations	Collapse of Structure	CE: Ext	Yes	Chief Engineer	TM - TDM Scaffolding Management Plan SD - Classified Plant Procedure Third Party Annual Structural Integrity Audit	L3: Unlikely	CE: Ext						32 (E)
Whole of Site	Aviation	Aviation Incident	On site incident, offsite incident, Drones, Helicopter operations, Charter Flights, underground drones	Aviation Incident	CE: Ext	Yes	Regional Aviation Appointed person - Aerodrome Survey - Drone	Corp - ADAA Aviation Procedure Corp - ADAA Remotely Piloted Aircraft SD - Aerodrome Safety Management System, SD - Aerodrome Manual SD - Drone RPA Flying Guideline TM - Aerodrome Safety Management System, TM - Aerodrome Manual TM - Aviation Management Plan TM - drone SHMS documents TBA	L2: Very Unlikely	CE: Ext						30 (M)
Whole of Site	Confined Spaces	Confined Spaces	Toxic Atmosphere, Engulfment, Inrespirable atmosphere flammable atmosphere Tanks, chutes, pits, mobile plant spaces,	Exposure to toxic or inrespirable atmosphere in confined space	CE: Ext	Yes	Processing Manager	TM - Confined Spaces Procedure TM - Permit to Work and Isolations Procedure SD - PTW - Confined Entry Procedure SD - PTW Permit to Work	L2: Very Unlikely	CE: Ext						30 (M)
Whole of Site	Pressure / Explosions	Explosion (not from Explosives)	Flammable gas, Bottled Gas, O2 Plant, Hot Works,	Explosion (not from Explosives)	CE: Ext	Yes	H&S Manager	Corporate - Major Hazard Management Standard Regional - Principal Mining Hazard Management Standard SD - Fire Explosions PHMP TM - Fire Explosions PHMP	L2: Very Unlikely	CE: Ext						30 (M)
Surface	Fire	Surface Fire	Building fire, conveyor fire, tyre fire, bush fire, warehouse, hazardous substance, Mobile Equipment Fire, Mill Fire, Lithium batteries in battery propelled transport (e.g. buggy's).	Surface Fire	CE: Maj	Yes		Corporate - Major Hazard Management Standard Regional - Principal Mining Hazard Management Standard SD - Fire Explosions PHMP TM - Fire Explosions PHMP SD - Fire Protection Equipment Procedure SD - Fire Protection Systems Impairment Procedure	L2: Very Unlikely	CE: Maj						27 (M)

What’s the impact if you have no BBRA or a deficient BBRA?

Where are we with BBRA?

What’s The Problem?

How do we know this to be true?

My Promise

I help you save lives at work

BHP
AngloAmerican
Teck
GLENCORE
NEWCREST MINING LIMITED
OCEANAGOLD
AMPOL
fitzroy
stanmore
ANGLOGOLDASHANTI
SOUTH32
MMG
KESTRELCOAL RESOURCES
Aeris RESOURCES
YANCOAL 兖煤澳大利亚有限公司
Peabody ENERGY
sojitz
Resources Safety & Health Queensland
Ensham RESOURCES
Coronado
OZ MINERALS
Mitchell SERVICES

My style

UMM!!!!

Shorten it to “CCM”

We’ll move fast

I need you

Content

- 3 secrets
- Q&A
- My all won’t be enough

Stick around

Slides

This Recoding

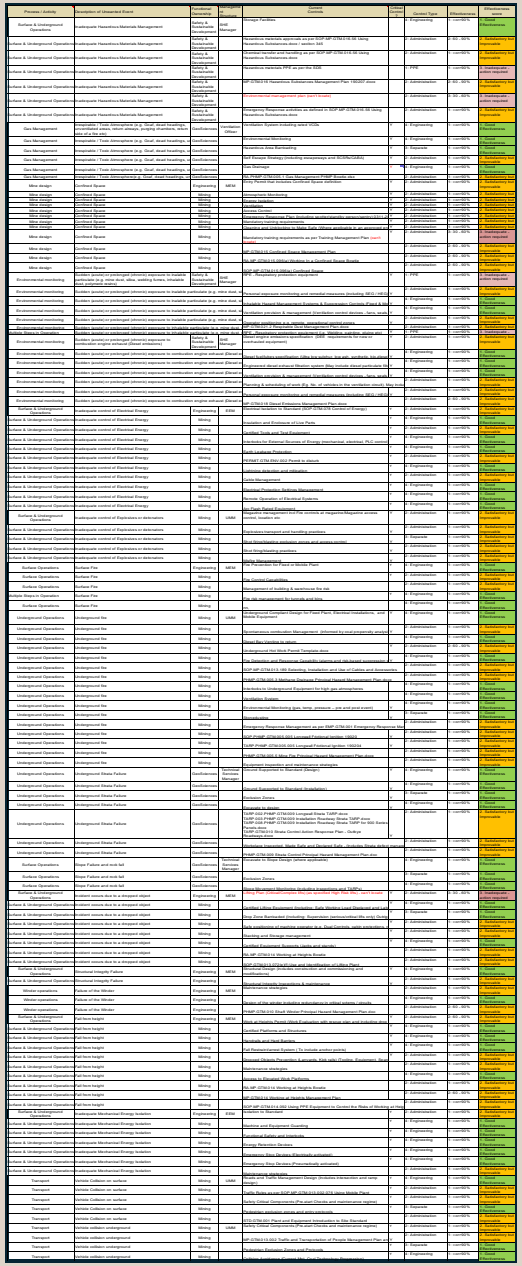
Free bonus?

What's the hardest part about getting BBRA's right in your business or from your experience?

1. Separate the wheat from the chaff

Clarify the level of BBRA risks

Imagine if



Does this sound familiar?

- Too many line items
- Uncertainty on what risks live in the BBRA
- Overwhelmed by BBRA size
- BBRA does not link to rest of Risk Management System

Wouldn’t it be nice if

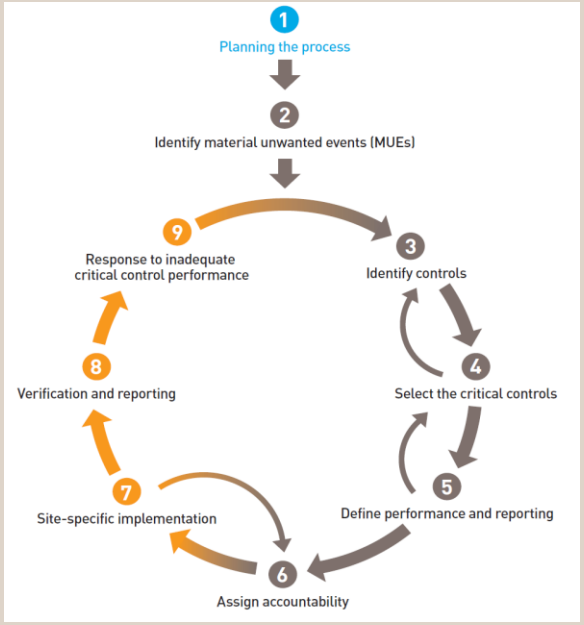
You get clarity on BBRA content

Your BBRA contained only the most important risks for your business

The BBRA integrated with the Risk Management system

All Risks

BBRA Risks



Materiality Criteria

The consequence criteria that meets a certain threshold

Material Consequences will be included within the BBRA

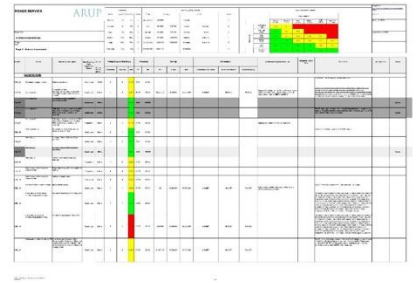
Materiality Threshold

Immaterial Consequences will not be included within the BBRA Managed via other Risk Management (WRAC, JSA, SLAM)

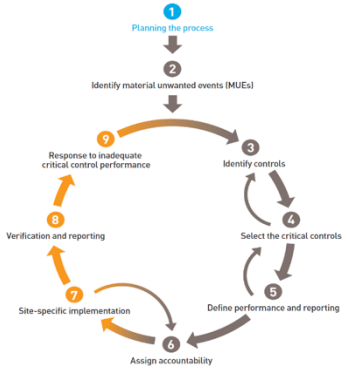
	Health & Safety	Environment	Financial Impact	Image & Reputation / Community	Legal & Compliance
5 Catastrophic	• Multiple fatalities (5 or more fatalities in a single incident) • Multiple cases (5 or more) of Permanent Damage Injuries or Diseases that result in permanent disabilities in a single incident	• Unconfined and widespread • Environmental damage or effect (permanent; >10 years) • Requires major remediation	• >$600M investment return • >$100M operating profit • >$20M property damage	• Loss of multiple major customers or large proportion of sales contracts • Security incident resulting in multiple fatalities or major equipment damage • Formal expression of significant dissatisfaction by government • Grievance from internal or external stakeholder alleging human rights violation resulting in multiple fatalities	• Major litigation / prosecution at corporate level • Nationalisation / loss of licence to operate
4 Major	• Single incident resulting in: Less than 5 Fatalities Permanent Damage Injury or Disease that results in a permanent disability- less than 5 cases in a single incident	• Long-term (2 to 10 years) impact • Requires significant remediation	• $60-600M investment return • $20-100M operating profit • $2-20M property damage	• Security/ stakeholder incident resulting in single loss of life or equipment damage • Topic of broad societal concern and criticism • Negative media coverage at international level • Complaints from multiple "final" customers • Loss of major customer • Negative impact on share price	• Major litigation / prosecution at Department level
3 Moderate	• Lost Time Injury (LTI) • Lost Time Disease (LTD) • Permanent Disabling Injury (PDI) • Permanent Disabling Disease (PDD) • Single incident that results in multiple medical treatments	• Medium-term (<2 years) impact (typically within a year) • Requires moderate remediation	• $6-60M investment return • $2-20M operating profit • $200K-2M property damage	• Negative media coverage at national level over more than one day • Complaint from a "final" customer • Off-spec product • Local Stakeholder action resulting in national societal scrutiny	• Major litigation / prosecution at Operation level
2 Minor	• Medical Treatment Injury (MTI) • Medical Treatment Disease (MTD) • Restricted Work Injury (RWI) • Restricted Work Disease (RWD)	• Near source • Short-term impact (typically <week) • Requires minor remediation	• $600K-6M investment return • $200K-2M operating profit • $10-200K property damage	• Negative local/ regional media coverage • Complaint received from an internal or external stakeholder	• Regulation breaches resulting in fine or litigation
1 Negligible	• First Aid Injury (FAI) or illness (not considered disease or disorder)	• Near source and confined • No lasting environmental damage or effect (typically <day) • Requires minor or no remediation	• <$600K investment return • <$200K operating profit • <$10K property damage	• Negligible media interest	• Regulation breaches without fine or litigation

All Risks

BBRA Risks



Critical Risks




50%

Self Assessment

- Provide a rating of 1 to 10 on whether you have clearly defined and utilised Materiality Criteria.

Using Materiality Criteria to identify hazards is one of the secrets to your BBRA revealing your True Critical Risks

2. Assess your business processes

Identify and review your business processes

Imagine if

Does this sound familiar?

?

- Focus on hazard checklists and historical risks to identify BBRA risks
- Uncertainty if the BBRA covers all operational processes

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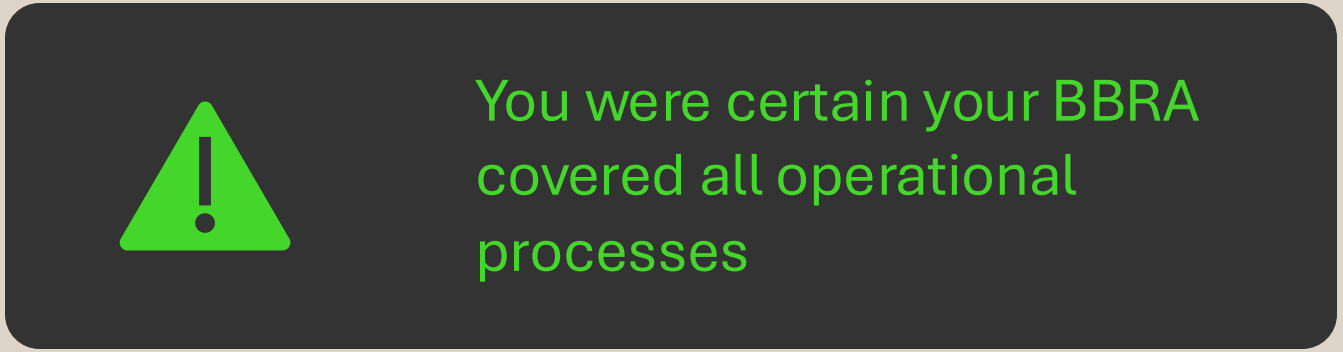
How can you perform an effective Risk Assessment if you don’t know the process you are analysing?

Wouldn’t it be nice if

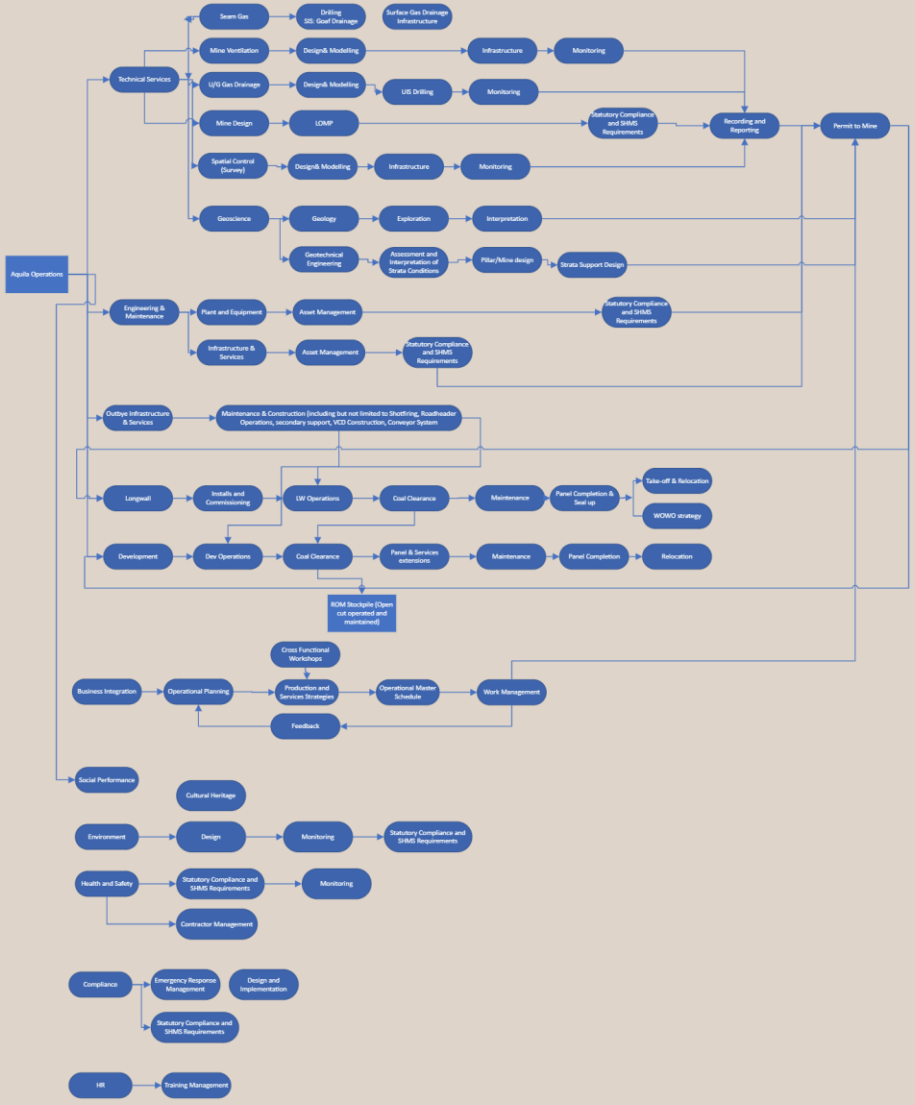


Define your processes

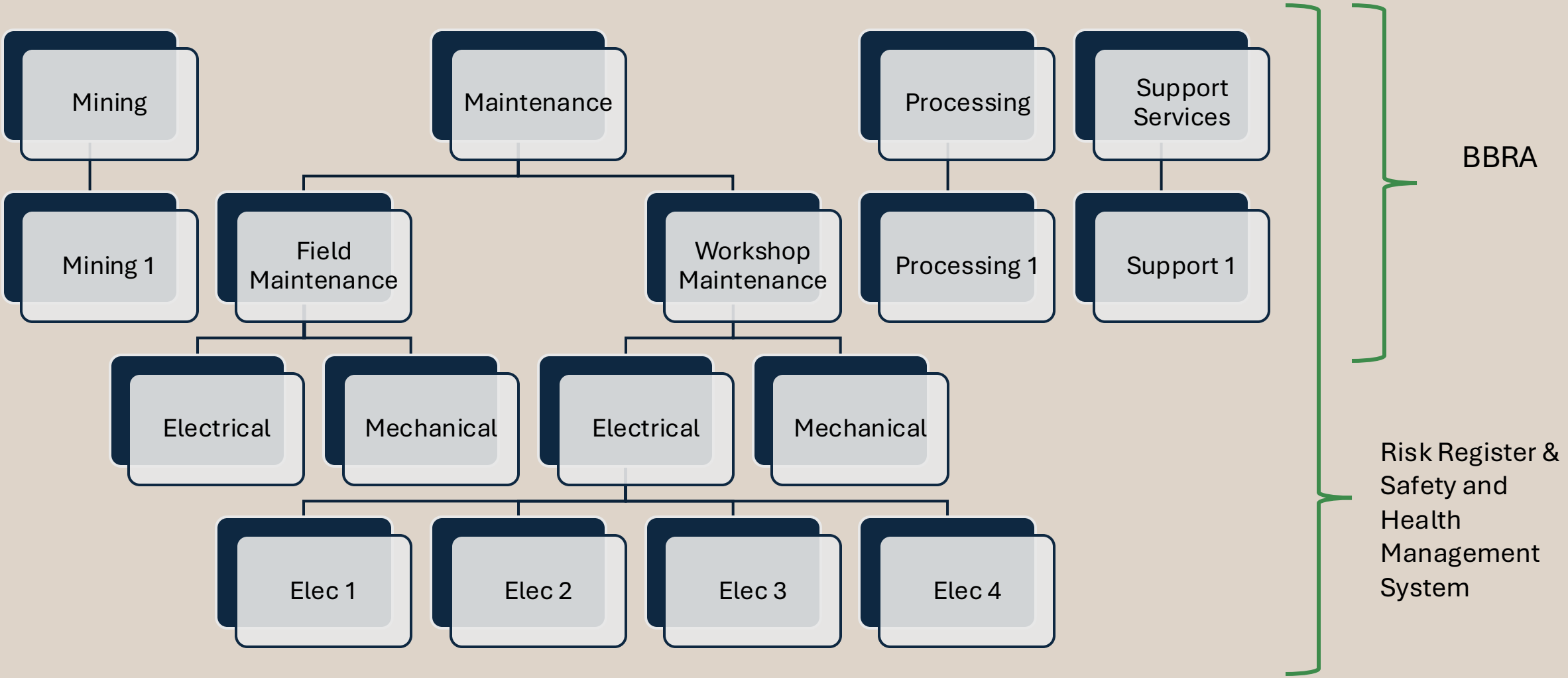
Table View

Process Map		
Process	**Sub-Process**	**Element**
Mine Establishment	Exploration	
		Drilling & Coring Surface boreholes
		Seismic Surveys
		Inseam Drilling
		Geological Modelling
Mine Design	UG Mine Plan	Intergration with Open cut
		Changing plans and schedules
		UG water storages
		Mining down dip/seam
	Water Management	Water Courses
		Impoundment / Storage / UG aquifers
		Culverts / Crossings
		Levee / Bunds / Diversions
		Water make (opencut catchment)
		UG in proximity to Highwall Mining
	Strata Control	Roof Stability
		Pillar Stability
		Rib Stability
		Barrier Pillar Stability
		Panel Stability
		Portal Stability
		Shaft stability
		UG in proximity to Highwall Mining
		Highwall stability
		Low wall stability
		Unsupported Places
	Gas Drainage	TBD
	Gas Management	Ventilation (road size, etc.)
	Ventilation Design	Pressure
		Resistance
		Fan Size
		Ventilation Capacity
		Heat Management
		Atmospheric Contaminants
	Spontaneous Combustion	pressure differential, void management
	Traffic Control	Traffic Management
	Interaction with other services	Boreholes
		Underground workings / ventilation shafts
		multi-seam mining
		Subsidence
		Intersecting gas drainage holes, etc.
		Interaction with Opencut activities
		Interaction with Auger activities
Mine Operation	Underground Construction	Conveyors
		Ventilation
		Services
		Roadway Construction
		Roadway Maintenance
		Sumps and Pumps
		UG Maintenance Facilities (refuelling pods, etc.)
		Power
	Surface Construction	Compacted Fill management (floor)
		Highwall support
		Dust Management
		Stockpile
		Conveyors
		Main Fans
		Hardstand
		MIA
		Water Tanks
		Road Maintenance
		Traffic Management
		Transport / unloading of heavy equipment to site
		Radiation Management
		Lasers
	Main Roads Development	Strata Control
		Ventilation
		Auxiliary Fan Operation
		Ventilation Control Devices
		Gas monitoring and management
		Environmental Monitoring (dust, noise, DPM)
		Mine Services
		Dewatering
		Coal Clearance
		Transport
		Inspections
		Cut & Flit
		In place Mining
		Road header operations
		Stone dusting (including returns)
		Stopping Installations
		Panel Extensions
		Outburst
		Equip't Servicing / Repairs
		Supplies & Transport
		Dust suppression
		Stoneworks
		Fault Management

Flow Diagram View



Find the right level



How to use

- As a cross reference during BBRA Front End loading
- During the session by asking for each process step – “are there any hazards that meet our materiality criteria when performing this activity?’
- Suggest using as a cross reference as opposed to primary BBRA driver.

30

Pro Tip

Perform the same level of assessment for the Geographic area also

Self Assessment

- Provide a rating of 1 to 10 on how effective your BBRA process is at identifying all operational activities and geographic areas and using this within the BBRA process.


IT's YOUR
DECISION

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Developing and using a process map is a secret to your BBRA revealing your True Critical Risks

Stay above the waterline

Focus on the right level of hazards and controls

It’s gone offtrack

Does this sound familiar?

?

- BBRA controls include system controls down to ‘on the job on the day’ controls.
- BBRA identifies hazard causation
- BBRA Performs control effectiveness assessments
- BBRA performs duplicate risk analysis of subordinate RA’s

Wouldn’t it be nice if

The BBRA identified the right level of controls

The BBRA integrated with the overall Risk Management Framework

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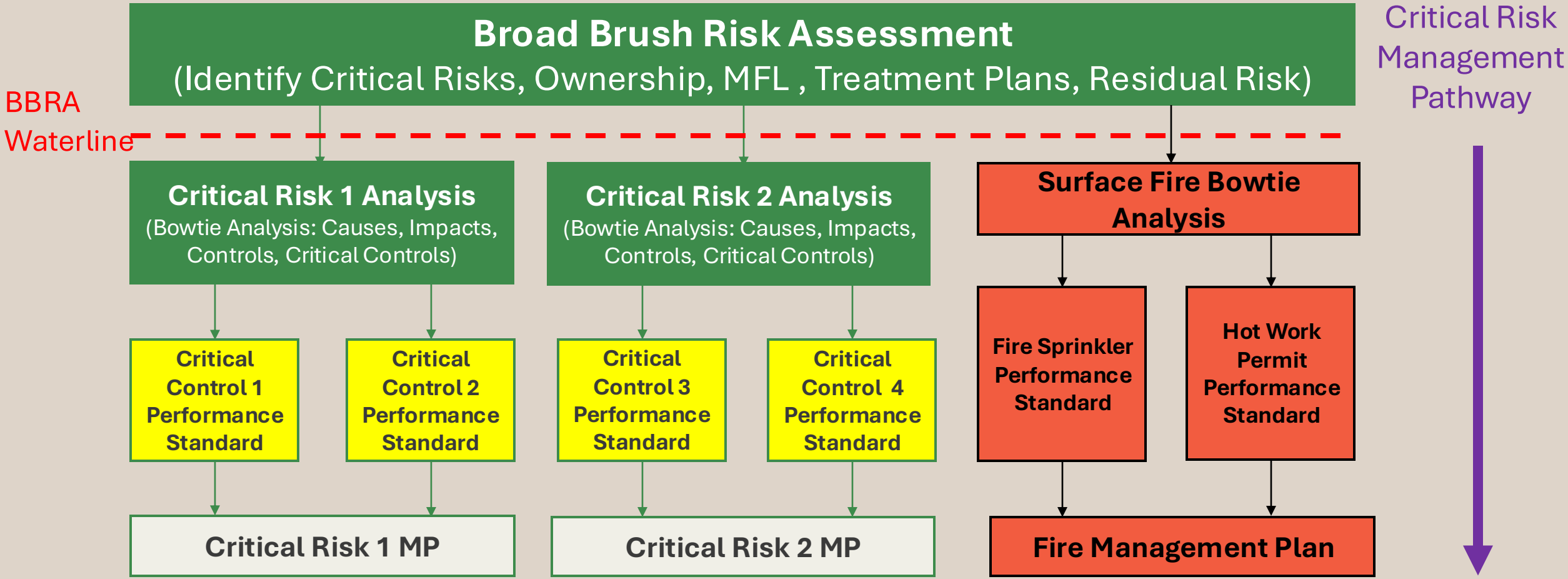
The purpose of the BBRA is to identify key hazards and prioritise them.

BBRA and the CRM Framework



Get the BBRA columns right

Columns that go below the waterline

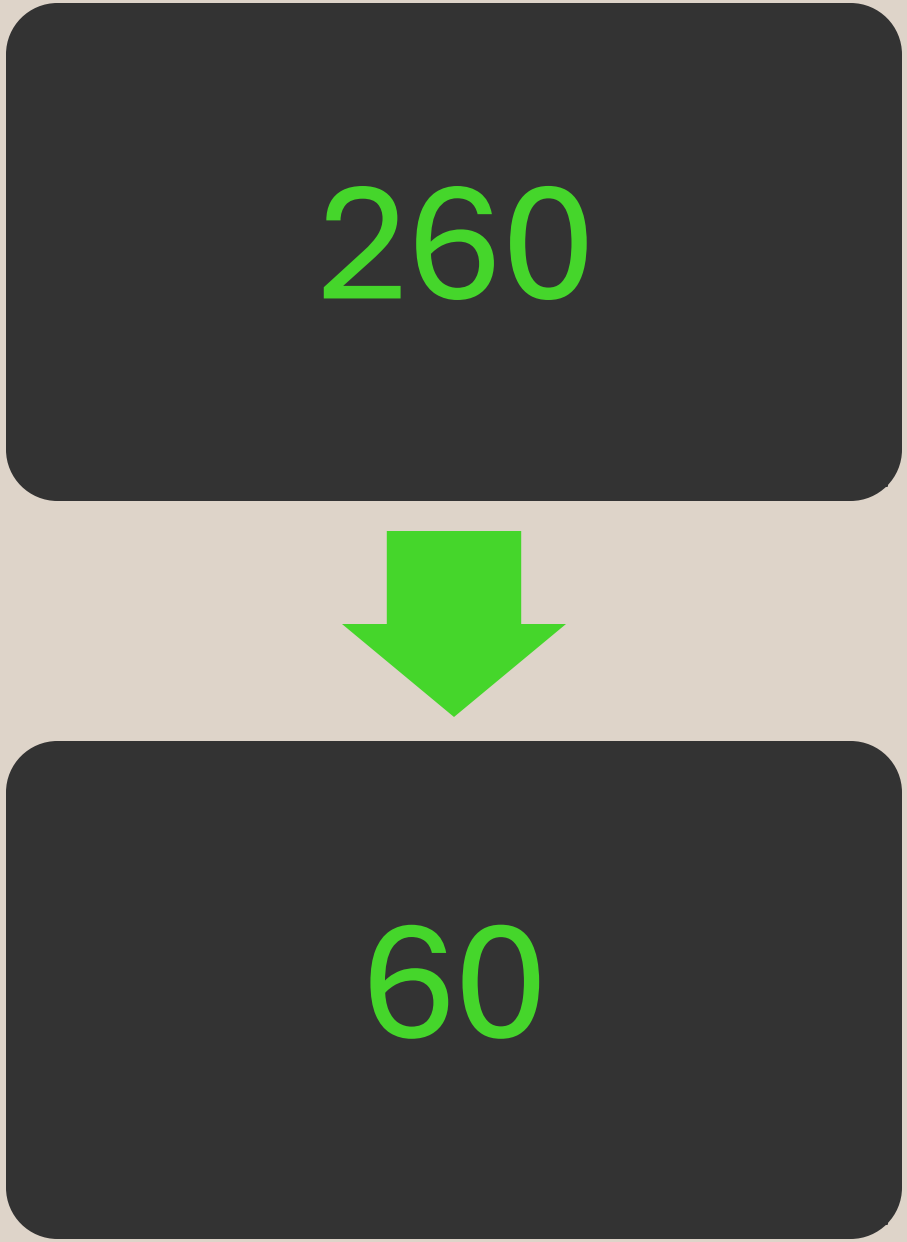
Process	Unwanted Event	Causes	Existing Controls	Critical Control?	Control Effectiveness Assessment	Consequence	Likelihood	Risk Rating	Additional Control	Who / When
Underground Workshop	Fire in the U/G workshop	Hot works Mobile equipment failure Hazardous Substances Electrical fire	Fire Suppression systems	Y		Level 5	Unlikely	25H		
			Hot Work Permit	N						
			Haz Substance Storage Requirements	N						
			Mobile Equipment Maintenance	N						
			Daily Area Inspection	N						
			Fire Extinguishers	Y						

Columns that go above the waterline

Process	Unwanted Event	Maximum Foreseeable Loss (without controls)	Critical Risk?	Treatment Strategies	Consequence	Likelihood	Risk Rating	Additional Control	Who / When
Underground Workshop	Fire in the U/G workshop	4	Yes	Management Plan – Underground Fire Bowtie – Underground Fire	Level 5	Unlikely	25H		

Pro Tip

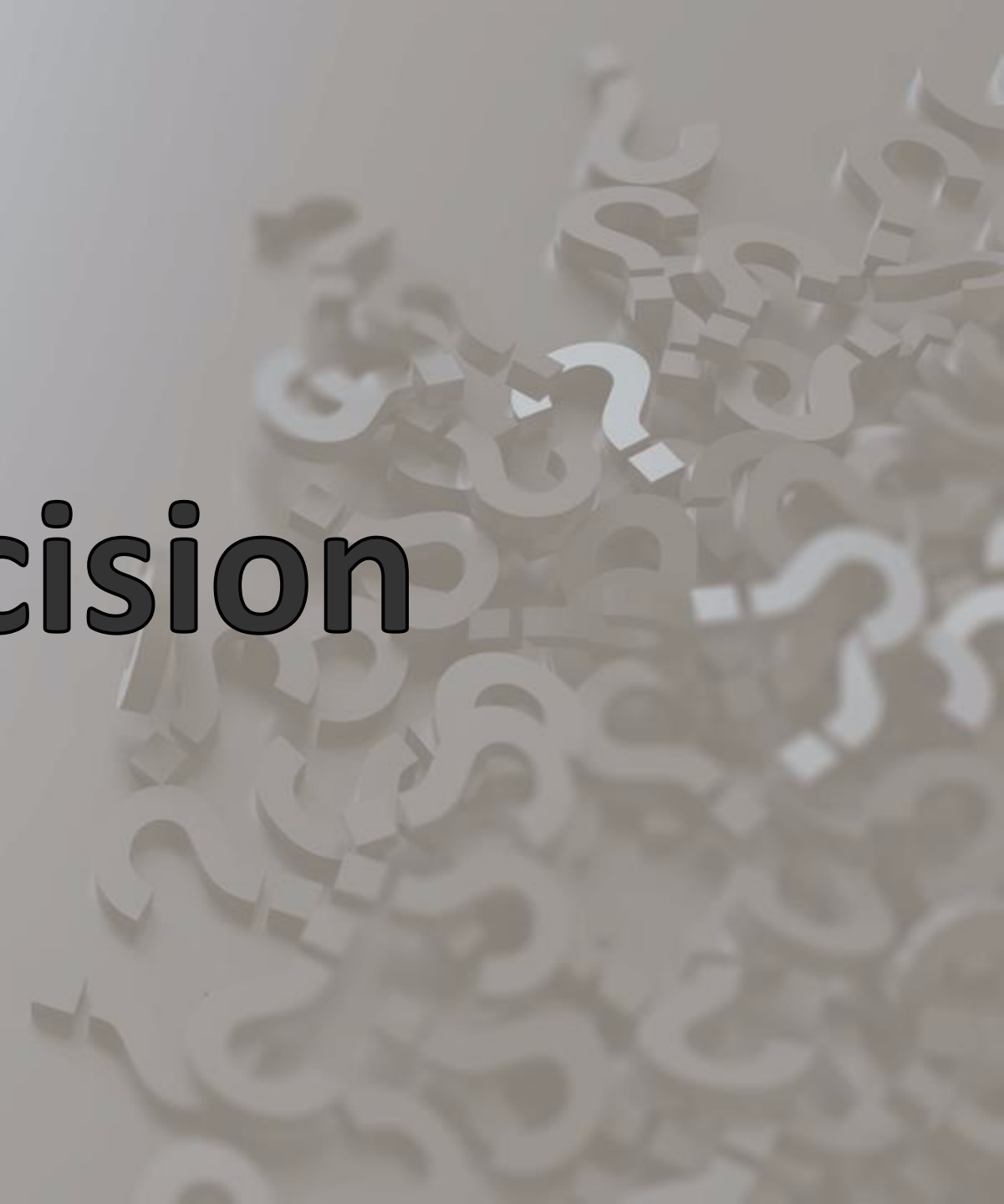
- Controls at system level (e.g. SHMS documents, Maintenance Program, etc).
- Should be no risk analysis or control analysis


260
60

Self Assessment

- Provide a rating of 1 to 10 on how effective your BBRA is at staying above the waterline?

Another decision



Getting your columns and level of controls right is a secret to your BBRA revealing your True Critical Risks

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Using Materiality Criteria to identify hazards is one of the secrets to your BBRA revealing your True Critical Risks

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Developing and using a process map is a secret to your BBRA revealing your True Critical Risks

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Getting your columns and level of controls right is a secret to your BBRA revealing your True Critical Risks

What has been your biggest “ah-hah” moment?

The obvious question

How do I do it?

Slow or Fast

Trial and Error Vs system

Help is here

Free trial of BBRA AI Platform

It’s not for everyone


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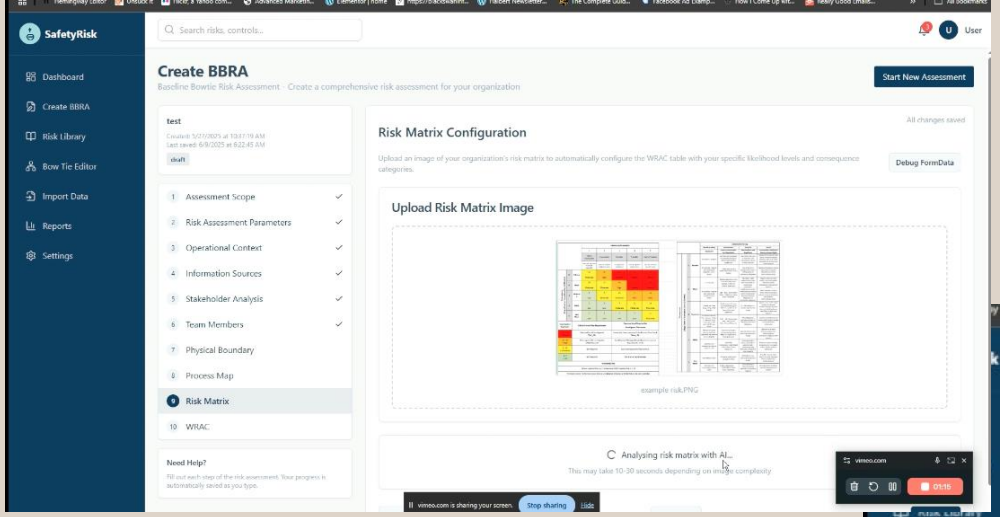
SafetyRisk
Dashboard
Create BBRA
Risk Library
Bow Tie Editor
Import Data
Reports
Settings
Create BBRA
Baseline Bowtie Risk Assessment · Create a comprehensive risk assessment for your organization
Start New Assessment
test
Risk Matrix Configuration
Upload an image of your organization's risk matrix to automatically configure the WRAC table with your specific likelihood levels and consequence categories.
Debug FormData
Upload Risk Matrix Image
1 Assessment Scope
2 Risk Assessment Parameters
3 Operational Context
4 Information Sources
5 Stakeholder Analysis
6 Team Members
7 Physical Boundary
8 Process Map
9 Risk Matrix
10 WRAC
Need Help?
Analysing risk matrix with AI...
This may take 10-30 seconds depending on image complexity
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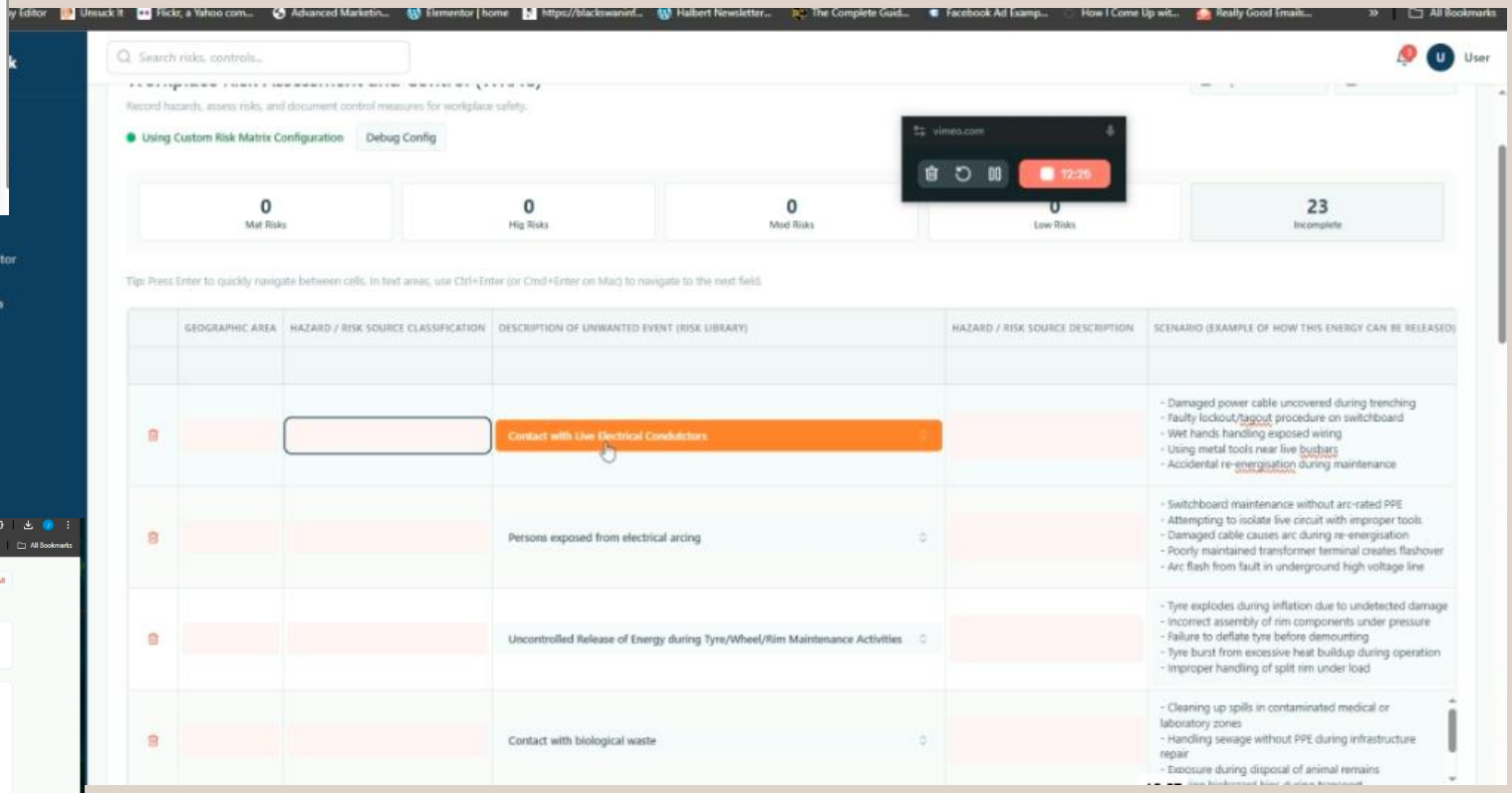
Stop sharing
Hide


Search risks, controls...
User
Using Custom Risk Matrix Configuration
Debug Config
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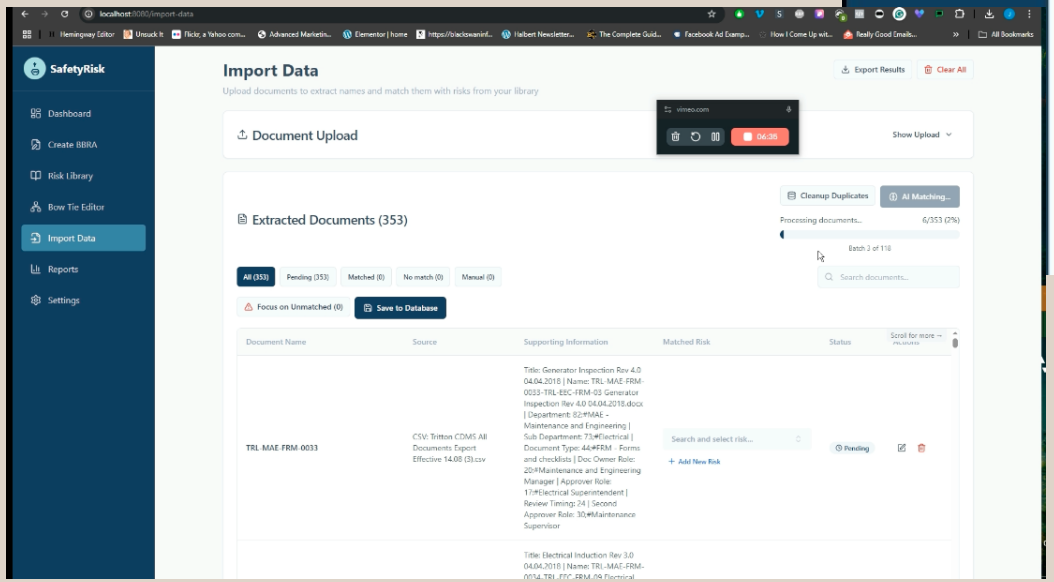
0
Mat Risks
0
Hig Risks
0
Mod Risks
0
Low Risks
23
Incomplete
Bow Tie Editor
Import Data
Reports
Settings
GEOGRAPHIC AREA
HAZARD / RISK SOURCE CLASSIFICATION
DESCRIPTION OF UNWANTED EVENT (RISK LIBRARY)
HAZARD / RISK SOURCE DESCRIPTION
SCENARIO (EXAMPLE OF HOW THIS ENERGY CAN BE RELEASED)
Contact with Live Electrical Conductors
- Damaged power cable uncovered during trenching
- Faulty lockout/tagout procedure on switchboard
- Wet hands handling exposed wiring
- Using metal tools near live busbars
- Accidental re-energisation during maintenance
Persons exposed from electrical arcing
- Switchboard maintenance without arc-rated PPE
- Attempting to isolate live circuit with improper tools
- Damaged cable causes arc during re-energisation
- Poorly maintained transformer terminal creates flashover
- Arc flash from fault in underground high voltage line
Uncontrolled Release of Energy during Tyre/Wheel/Rim Maintenance Activities
- Tyre explodes during inflation due to undetected damage
- Incorrect assembly of rim components under pressure
- Failure to deflate tyre before demounting
- Tyre burst from excessive heat buildup during operation
- Improper handling of split rim under load
Contact with biological waste
- Cleaning up spills in contaminated medical or laboratory zones
- Handling sewage without PPE during infrastructure repair
- Exposure during disposal of animal remains


localhost:3000/import-data
SafetyRisk
Dashboard
Create BBRA
Risk Library
Bow Tie Editor
Import Data
Reports
Settings
Import Data
Upload documents to extract names and match them with risks from your library
Export Results
Clear All
Document Upload
vimeo.com
06:35
Show Upload
Extracted Documents (353)
Cleanup Duplicates
AI Matching...
Processing documents...
6/353 (2%)
Batch 2 of 118
All (353)
Pending (353)
Matched (0)
No match (0)
Manual (0)
Focus on Unmatched (0)
Save to Database
Search documents...
Document Name
Source
Supporting Information
Matched Risk
Status
TRL MAE FRM 0033
CSV: Tritton CDMS All Documents Export Effective 14.08 (3).csv
Search and select risk...
Add New Risk
Pending

Benefits

Automated gap analysis of your SHMS

Don’t pay $20K for external consultants

Cross reference organisation data with our Impress Library

Identify low hanging fruit that can make meaningful change.

Only offered for first 5 organisations

2 Day Critical Risk Management Masterclass (Virtual)

In this two-day intensive course, we will provide you with the practical skills and knowledge to develop and implement a robust Critical Risk Management (CRM) program for your mine site.

The Future of CRM	Industry trends and future developments
Elements of a CRM	Key components of a successful CRM program
Identification of Critical Risks	Developing and delivering a leading Baseline Risk Assessment
Analysis of Material Critical Risks	Bowtie Analysis, Layers of Protection Analysis, Identification of Controls and Critical Controls
Critical Control Performance Standards	Developing statistically significant verification processes
Site Implementation	Ensuring successful and sustainable CRM implementation
Verification, Reporting, and Response	Effective CRM reporting and response strategies

Why this course?

- Content includes; Critical Controls, Bowtie Analysis, Broad Brush Risk Assessment, Critical Control Performance Standards
- CRM templates included
- Real world industry case studies
- Hands-On Learning: Participate in interactive sessions and practical activities
- Ensure a long-term success and compliance of your CRM program
- Content can be applied across any industry.
- Earn credit for the QLD Mining industry CPD program

Satisfaction Guarantee

- We’re so confident in the transformative power of our Master Class that we offer an unmatched satisfaction guarantee.

- If you’ve fully participated in the Masterclass, completed all coursework, and still feel that it hasn’t delivered exceptional value, we will not only provide you with a full refund but also allow you to keep all course resources.

- Our commitment is to your absolute satisfaction and empowerment in mining safety – without any risk to you.

Free Copy of BBRA Template

Geographic Area	Hazard / Risk Source Classification	Hazard / Risk Source Description	Release Mechanism Example of how this energy can be released (unwanted events)	Description of Unwanted Event	Maximum consequence (with no controls)	Material Unwanted Event (Yes, No)	Functional Ownership	Current Controls	Likelihood of the Event (given current controls)	Consequence Types (given current controls)						Max Risk Rank
										(HE)	(E)	(F)	(R)	(LR)	(SEC)	
Underground	Mechanical (Mobile)	Underground Mobile Equipment	Single Vehicle Incident (Rollover, runaway, uncontrolled movement, break through window, runaway vehicle) Multiple Vehicle Incident (Vehicle Collision), Pedestrian Strike	Loss of control of mobile equipment (underground)	CE: Ext	Yes	Open Pit Manager Mining	Corporate - Major Hazard Management Standard Regional - Principal Mining Hazard Management Standard TM & SO - Areas where mobile equipment operates PHMP TM & SO - Traffic Management Plans TM & SO - Underground Traffic Management Plan	L4: Likely	CE: Ext						24 (E)
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Whole of Site	Mechanical (Fixed)	Collapse of Structure	Processing plant structural failure, Tank failure, Conveyor structure failure, Bin Structural Failure, Failure of concrete foundations	Collapse of Structure	CE: Ext	Yes	Chief Engineer	TM - TEM Scaffolding Management Plan SO - Classified Plant Procedure Third Party Annual Structural Integrity Audit	L3: Unlikely	CE: Ext						12 (E)
Whole of Site	Aviation	Aviation Incident	On site Incident, offsite Incident, Drones, Helicopter operations, Charter Flights, underground drones	Aviation Incident	CE: Ext	Yes	Regional Aviation Appointed person - Aerodrome Survey - Drone	Corp - ADAA Aviation Procedure Corp - ADAA Remotely Piloted Aircraft SO - Aerodrome Safety Management System, SO - Aerodrome Manual SO - Drone RPA Flying Guideline TM - Aerodrome Safety Management System, TM - Aerodrome Manual TM - Aviation Management Plan TM - drone SHMS documents TBA	L2: Very Unlikely	CE: Ext						30 (M)
Whole of Site	Confined Spaces	Confined Spaces	Toxic Atmosphere, Engulfment, Immerpirable atmosphere flammable atmosphere Tanks, drums, pits, mobile plant spaces,	Exposure to toxic or immerpirable atmosphere in confined space	CE: Ext	Yes	Processing Manager	TM - Confined Spaces Procedure TM - Permit to Work and Isolations Procedure SO - PTW Confined Entry Procedure SO - PTW Permit to Work	L2: Very Unlikely	CE: Ext						30 (M)
Whole of Site	Pressure / Explosions	Explosion (not from Explosives)	Flammable gas, Bottled Gas, O2 Plant, Hot Works,	Explosion (not from Explosives)	CE: Ext	Yes	H&S Manager	Corporate - Major Hazard Management Standard Regional - Principal Mining Hazard Management Standard SO - Fire Explosions PHMP TM - Fire Explosions PHMP	L2: Very Unlikely	CE: Ext						30 (M)
Surface	Fire	Surface Fire	Building fire, conveyor fire, tyre fire, bush fire, warehouse, hazardous substance, Mobile Equipment Fire, Mill Fire, Lithium batteries in battery propelled transport (e.g. buggy's).	Surface fire	CE: Maj	Yes		Corporate - Major Hazard Management Standard Regional - Principal Mining Hazard Management Standard SO - Fire Explosions PHMP TM - Fire Explosions PHMP SO - Fire Protection Equipment Procedure SO - Fire Protection Systems Impairment Procedure	L2: Very Unlikely	CS: Maj						27 (M)

Services we provide

- Done by you (we set you up for success)
  - CRM training for CRM Specialists, Risk Owners, Front Line Supervisors
  - Critical Risk Management Audits

- Done with you (You do it with our help)
  - Critical Risk Management Advisory Services
  - We draft the documents, you take them through to completion

- Done for you (we take care of it for you)
  - Critical Risk Management Consultancy / Contractor

General H&S Services

- Consultants, Labour Hire, Safety & Health Management Systems, Audits, Safety Training, Learning Teams, Leadership in Safety,

Questions / Comments

IMPRESS SOLUTIONS

saving lives at work™

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Thank you