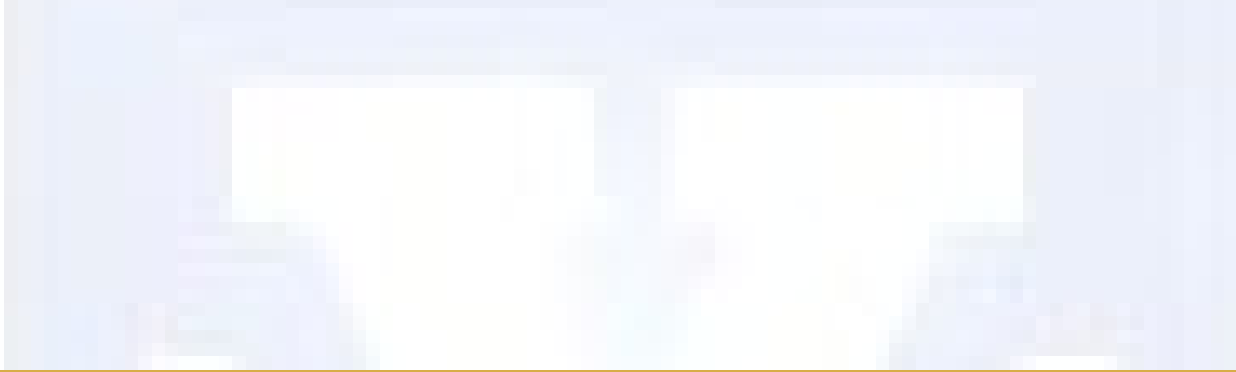




VULCAN MINE



Trigger Action Response Plan

Heat Stress Management



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VULCAN MINE

Vulcan Mine – Safety and Health Management System
Trigger Action Response Plan – Heat Stress Management



Conditions / Positions	Normal State (Low)	Level 1 Response (Moderate)	Level 2 Response (High)	Level 3 Response (Very High)
Triggers	Apparent Temperature Heat Index = ≤ 34 .	Apparent Temperature Heat Index = 35 - 45.	Apparent Temperature Heat Index = 46 - 53.	Apparent Temperature Heat Index = ≥ 54 .
Hydration Rate (Cups per hr – 250ml)	- Remain hydrated and self-manage hydration. - Minimum 2/hr	- Remain hydrated and self-manage hydration. - Minimum 2.5/hr	- Remain hydrated and self-manage hydration. - Minimum 3/hr	- Remain hydrated and self-manage hydration. - Minimum 4/hr
Work/Rest Ratio	Self-manage work	- Consult with Supervisor - Rule of thumb 50/10 ratio for moderate work rate. 40/20 ratio for hard work rate.	- Consult with Supervisor - Rule of thumb 40/20 ratio for moderate work rate 30/30 ratio for hard work rate.	- Consult with Supervisor - Rule of thumb 30/30 ratio for moderate work rate. 20/40 ratio for hard work rate.
OCE	Continue to monitor weather and communicate to Supervisors, ERT, OCE Report.	Continue to monitor weather and communicate to Supervisors, ERT, OCE Report.	Continue to monitor weather and communicate to Supervisors, ERT, OCE Report	No work is to be undertaken until a risk assessment is completed for the task.
All Supervisors	- Supervisors to review OCE Report and 7-Day heat Risk Outlook and be aware of controls to plan effectively - Discuss at prestart, options regarding suggested controls, work/rest ratio, hydration etc - Monitor conditions and be alert to other indicators of heat stress - Work scheduling can be planned as needed	- As per normal state and; - Initiate options that will reduce the temperature of the working place - Assess Work/Rest Ratio - In consultation with other members of the crew, review current controls. - Review suggested controls listed above and implement if required - Ensure all team members are aware of current temperature levels and required controls.	- As per Level 1 and. - Initiate options that will reduce the temperature of the working place - Assess Work/Rest Ratio - In consultation with other members of the crew, review current controls. - Review suggested controls listed above and implement if required - Ensure all team members are aware of current temperature levels and required controls.	- As per Level 2 - Withdraw team to a place of safety (non-TARP area) as initial response. - No work is to be undertaken until a risk assessment is completed for the task. - Ensure all team members are aware of current temperature levels and required controls. - Unacclimatised workers to be removed from hot work areas.

Vulcan Mine – Safety and Health Management System
Trigger Action Response Plan – Heat Stress Management



Conditions / Positions	Normal State (Low)	Level 1 Response (Moderate)	Level 2 Response (High)	Level 3 Response (Very High)
All CMW's	Ensure you have adequate cool drinking water available and drink regularly	- As per Normal state - In consultation with other members of the crew, review current controls with supervisor and implement additional controls if required - If controls are inadequate or ineffective, stop work and notify supervisor and or OCE for further review - Report any signs of heat stress to the supervisor and others in work group	- As per level 1 - Notify superintendent/manager of changes to TARP level. - Implement work rest regimes as required for Level 2 and implement additional controls if required. - If controls are inadequate or ineffective, stop work and notify supervisor and or OCE for further review - Report any signs of heat stress to the supervisor and others in work group	- All controls from Level 2 - Withdraw to a place of safety as initial response. - No work to be undertaken until a risk assessment (JHA) is completed for the task in consultation with your supervisor. - Report any signs of heat stress to the supervisor and others in work group

Temperature Heat Index Chart

Relative Humidity %	Air Temperature °C											Metabolic work rate		
	21	24	27	29	32	35	38	41	43	46	49	Low	Moderate	High
0	18	21	23	26	28	31	33	35	37	39	42	Example: Using electric tools, walking on flat surfaces, operating equipment, inspection of work, basic fitting, welding and oxy-cutting	Example: Sustained hand and arm work, arm and trunk work, walking around 4.5km/h, serving equipment, tyre fitting.	Example: Intense arm work, carrying heavy material, shovelling, carrying loads upstairs, handling of pipes.
10	18	21	24	27	29	32	35	38	41	44	47			
20	19	22	25	28	31	34	37	41	44	49	54			
30	19	23	26	29	32	36	40	45	51	57	64			
40	20	23	26	30	34	38	43	51	58	66				
50	21	24	27	31	36	42	49	57	66					
60	21	24	28	32	38	46	56	65						
70	21	25	29	34	41	51	62							
80	22	26	30	36	45	58								
90	22	26	31	39	50									
100	22	27	33	42										