

Mine Name	Mine ID	Operator	Activity Type	Activity Date
Vulcan Mine	MI04148	Vulcan Mine Management Pty Ltd	Inspection	12/01/2022

Mine Record Entry

This report forms part of the Mine Record under s68 of the Coal Mining Safety and Health Act 1999. It must be placed in the Mine Record and displayed in 1 or more conspicuous positions at the mine in a way likely to come to the attention of workers at the mine.

Note that inspection or audit activities conducted by the Mines Inspectorate are based upon sample techniques. It remains the primary responsibility of Mine Personnel to identify hazards, and risks associated with Operations and ensure those risks are at an acceptable level.

Site Safety & Health Reps Consulted:

Today Wednesday 12 January 2022, I, Paul Brown Inspector of Mines conducted an inspection of Vulcan Mine. The Inspection resulted in advice provided to the Project Manager. On arrival to site I signed in and participated in the sites D&A testing and COVID declaration form protocols.

Vulcan Mine staff attending the opening meeting were:

Shane Walters, HST Superintendent

Matt McGregor, Project Manager

(SSE Michael Cavanagh had provided apologies being unable to attend site today)

Opening meeting

I explained that due to the escalation in COVID cases the opening and close out meetings would be kept brief to minimise exposures.

Summary of the opening meeting discussion:

- Mr McGregor provided an overview of the mines status - The site is operating on 2 shifts on one side of the tour and dayshift only on the other, this changes early February 2022 when the mining operations become 24/7. Approximately 1 million BCM removed to date and by end of month December 2021 400,000 ton of coal produced.

Vulcan mining operations commenced with the first 2 strips as free dig. Blasting products were introduced on commencement of the third strip. Products used at the site are:

- Hanwha HiNEL non-electric Detonators
- Hanwha HiMEX Bulk Emulsion
- Orica Boosters

- Orica Ammonium Nitrate

- Mine Dust Lung Disease cases across industry is currently at 244. This number may be higher by now as this was current to end of December 2021.
- Q1 2022 Dust and Noise monitoring has been completed for the site. Other related matters for the sites Health Risk Assessment (HRA) were discussed with MRE 17/11/21, comments are contained within today's MRE.
- Onboarding of 3 new Mining Inspectors for both Mackay and Rockhampton regions has commenced.
- Proximity detection systems and their application to the recent fatality involving a Dragline were discussed and information shared to industry from the QRC November 2021 was provided to Mr Walters after the inspection.
- Fire Ignition Assessments for mobile plant discussed. I explained fires on mobile plant were often within the top three hazard classifications of incidents reported to the Inspectorate, Mr Walters provided an example of a site's fire hazard assessment for an excavator on site (Risk Assessment HYUNDAI LCR-9 Vitrinite).

I explained that these types of assessments come in many and varied formats across industry and that I would provide an example of one conducted with the information disseminated differently. (DRAFT Fire Ignition Assessment - D11T V3, sent to Mr Walters 14/01/22).

- Recent Mine Record Entry by other Inspectors November 2021:

MRE 2/11/21 - Reference to Electrical Inspector Paul Sullivan's MRE, the MRE stated the Igloo workshop as having a REPQ assessment. I raised this for discussion to understand what are the places of safety on site. Mr McGregor identified the main Administration complex and the pre start shed as places of safety identified by Risk Assessment. I provided an example through Safety Bulletin 195, Building failures during severe weather events, the relevance is to ensure places of safety are identified through risk assessment and personnel on site are aware of the hazards severe storm cells can produce. We also discussed the several sea containers and temporary buildings that are in the immediate workshop area, Safety Bulletin 177 Anchoring of temporary building structures is the relevant reference for this. Mr McGregor was aware of this and an action plan would be developed to address containers not currently secured. I requested Mr McGregor provide me with an update of this action plan when established.

MRE 10/11/21 - Inspectors Richard Gouldstone and Fritz Djukic conducted an unannounced inspection and Audits. Reference to the current state of the mine operation referenced is relatively unchanged with the exception it is intended to go to 24/7 operation early February 2022.

MRE 15/11/21 - SCP actions are still ongoing from Health & Hygiene Inspector, Fritz Djukic inspection. Site is still to establish a baseline for monitoring and has requested further advice on Fit testing from SIMTARS.

MRE 16/11/21 - Postal MRE from Regional Inspector Stephen Smith providing advice on matters involving legislative requirements for OCE presence on site. No further advice was requested on this matter. The MRE was clear on requirements.

MRE 17/11/21 - Completion of the mining Inspection and Audit from 10/11/21, matters requiring attention related to Health and Hygiene Risk Assessment are recorded for actioning in MRE 15/11/21.

- I demonstrated how the RSHQ dashboard system works for both Dust monitoring data and Incident / Accident data.

Site Incidents within the past 3 months- We discussed in brief the site incident October

2021, a Light Vehicle with trailer in the Mine Industrial Area (MIA) was left unattended and rolled approximately 20m, the LV made contact with a support beam of the Mine Industrial Area LV Car Port. Parking fundamentally stable has been reinforced and a parking hump has been placed at the site as this area is frequently used for signing out from site.

- The site has a TARP for adverse weather events including lightning. I viewed the document VUL-TAR-005 and discussed the practical application of ensuring CMWs are safe where lightning is a risk.

Examples of reference material can be sourced from the RSHQ website for:

- SB176 Lightning strikes on rubber-tyred vehicle
- SA383 Tyre Explosion following lightning strike
- SB47 Tyre fires, pyrolysis and explosions _ Resources Safety & Health Queensland

Further examples can be sourced through other state Regulators Websites

- Western Australian Significant Incident report No.260, Autonomous trucks significantly damaged by lightning strike.
- New South Wales Safety Alert SA08-03 Lightning strikes stationary truck.
- Site OCE training for conducting atmospheric monitoring and use of gas detection equipment. Training for this is ongoing and progressing well, site is aware of the time frame for compliance to the Chief Inspectors communication of this to be completed by 17 June 2022.

Prior to commencing the site inspection I viewed recent drone footage of the full mine site, we discussed the current mining operations, the life of mine plan and the impacts of this on the public access road and other neighbouring mining operations.

Documents requested and received today were:

- 220111DS_OCE Report Vulcan Mine
- Vulcan Mine - Drone Footage - Site - 220111
- 220112_Vulcan Mine Weekly Plan
- 211117_Vulcan Mine Weekly Plan-Safety
- Risk Assessment HYUNDAI LCR-9 Vitrinite (Fire Ignition Assessment document)

Inspection

Mr McGregor escorted me on site for the inspection.

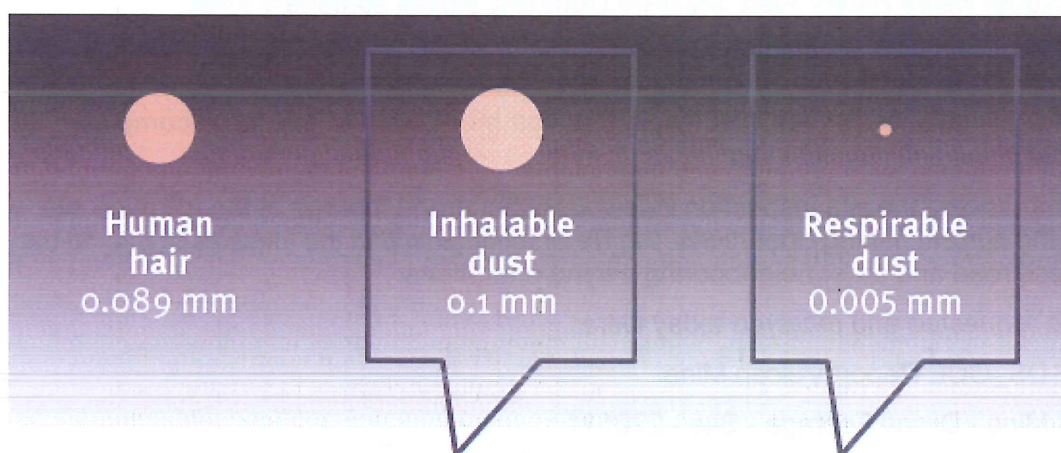
Travelling along the haul road I observed and discussed the sites road construction standards. Actions taken were evident to minimise water pooling through gaps in side bunding with rock checks / Geofab at low points across site.

Safety berm/bund construction was observed and discussed. Mr McGregor explained the sites limited access to other materials until recently has impacted on some construction materials. I explained my principal concerns (in particular for centre berms) is how effective the safety berm would be for its intended purpose, the damage the berm material could do to tyres if mobile plant contacted the berm edges even if only briefly, the damage the berm could do to light vehicles if contact made. (Reference to recognised Standard 19, section 15 for appropriate guidance, safety berms/bunding is noted as an area for improvement for the next inspection).

Jupiter Pit

Strip 5 Block 2 Drilling - Drill 21 in operation, Drill 42 idle waiting on fuel. We spoke to the operator of Drill 42 about safety prestart checks and operational requirements. The operator was able to demonstrate the prestart checks and describe the operational process of the drill. The operator placed emphasis on ensuring the compressor was functioning correctly and the water was maintained to the drill. We inspected the Cabin, while dust ingress was minimal the door seals showed signs of wear and tear, we discussed this needs to be captured on the prestart form for scheduling replacement seals. The operator explained the maintenance undertaken for air-conditioner filtration and cabin pressurisation function. An area for improvement is to remove storage of hole ID timber stakes from the cabin, the cabin already has limited room and the timber stakes bring dust into the cabin, I suggested the site to look at an external storage container that could be slung from the hand rails bias the carousel side of the cabin.

While at the Drill I provided the operator with an explanation of the risk both Inhalable and respirable dust presents to CMWs. Respirable dust (in particular silica dust) presents the higher risk. See extract of the RSHQ Pocket Guide booklet below for illustration.



	Inhalable dust	Respirable dust
Size	Dust particles of all sizes (typically less than 0.1 mm diameter)	Smallest dust particles (typically less than 0.005 mm diameter)
Visibility	Can be seen with the naked eye	Cannot be seen with the naked eye

I recommend the SSE make available the 4 Pocket Guide Books to all CMWs, the booklets are free of charge from the RSHQ website:

<https://www.rshq.qld.gov.au/miners-health-matters/support/pocket-guides-mine-quarry-workers>

1. Mine dust lung disease
2. Health assessment information for coal mine workers
3. Airborne dust exposure in mines and quarries
4. Respiratory Health surveillance for mineral and quarry workers

The booklets can either be ordered online or downloaded electronically. This web site is also

accessible to all CMWs.

Strip 4 Block 2 Pass 2 - An excavator was in operation, double benching with 3 x 789C rear dump trucks on circuit. Mr McGregor described the queuing practices required by the SHMS, this was verified by observation at this working place. Operationally the loading practices observed today were managed well by the operators, trucks were not reversing in until the bucket was presented and clear of the tray.

For general information only, I explained a common cause to vehicle collisions industry wide in these types of operations are either lack of positive communications or not conforming to site operating procedures.

A water truck was operating on the EX circuit during the inspection, Mr McGregor explained that due to the normal prevailing winds and proximity to another mining operation, there is a high focus on dust control across the site.

Ex-pit Dump RL265 - Dumping operations consist of a mixture of conventional tip head operations to form the bench and then paddock stack dumping to reduce the risk of Dozer / Truck interaction. At the current tip head I observed separation being maintained between the Dozer and Trucks, communications was sensibly applied. We discussed again the risk of tyre damage with the type of material used in centre berms.

Fatigue Management - I asked how the site manages fatigue, Mr McGregor explained the site has a Fatigue assessment tool and checklist to populate, each case is on its own merit and may require some level of job rotation.

Close out meeting

Both Mr McGregor and Mr Walters attended the close out meeting, I provided a summary of the inspection contained within this MRE.

Asset Superintendent & EEM Ben Kachel also attended the meeting briefly to discuss the Fire Hazard Assessment conducted at the site. We also discussed how the site manages Introduction to site inspections through its I-Auditor system.

We discussed the current format of the OCE reports. When accessed electronically the document has photos attached, I provided verbally examples of other mines embedding photos to particular hazards within the reports with a tab icon, another mine I recently inspected have a whole of mine scan on the second page of the printed version identifying plant operations for the shift as well, this is currently covered in the Weekly Plan.

I thanked the team at Vulcan Mine for their time and input for today's inspection.



Paul Brown
Inspector of Mines