**MINES INSPECTORS AND GROSVENOR SENIOR MANAGEMENT**

**09th February 2016 Grosvenor Methane HPI MRE MG 101 C heading HPI**

DNRME

Richard Gouldstone 09/02/16, 10/02/16, 11/02/16, 01/04/16, 06/06/16, 07/06/16, 05/07/16

Shaun Dobson 09/02/16, 10/02/16, 11/02/16, 01/04/16, 13/06/16,

Paul Brown 01/04/16, 05/07/16

Keith Brennan 07/04/16

Fritz Djukic, 11/02/16, 13/06/16

Noel Towers 06/06/16

Paul Sullivan (Elec) 08/03/16

GROSVENOR

Mr Glen Britton (Executive Head of Underground Operations). 22/08/16

Mr Adam Foulstone (SSE) 09/02/16, 10/02/16, 11/02/16, 07/04/16, 06/06/16, 13/06/16

Mr Wayne Bull UMM 09/02/16, 10/02/16, 11/02/16, 01/04/16, 07/04/16, 06/06/16, 07/06/16

Mr Brad Watson (Operations Manager) 09/02/16, 10/02/16, 11/02/16

Mr Tim Reeves (Production Manager) 05/07/16

Mr Mark Bobeldyk (Ventilation Superintendent/Officer) 09/02/16, 10/02/16, 11/02/16

Mr David Thomasson (TSM) 09/02/16, 10/02/16, 01/04/16, 05/07/16

Mr Malcolm Smyth (Technical Services Superintendent) 06/06/16, 07/06/16

Mr Scott Barker Operations Support Superintendent 11/02/16, 01/0416

Mr Wayne Pate Longwall Superintendent 01/04/16, 05/07/16

Mr Paul Buddery (AAMC Principal Underground Geotechnical Engineer) 06/06/16, 07/06/16

Mr Joe Wills (Acting Development Superintendent), 06/06/16

Mr Justin Joubert (SHE Manager) 06/06/16, 05/07/16

Mr Neal Bryan (Shift Undermanager) 05/07/16

Mr Stuart Sulter (Compliance Superintendent) 05/07/16

Mr Stephen Livingstone-Blevins (Outbye Superintendent) 08/09/16

Mr Lyle Bridgeman Electrical Engineering Manager (EEM) 08/03/16

**RESPIRABLE DUST/WORKING IN RETURNS**

11/02/2016

**RESPIRABLE DUST WORKING IN RETURNS**

**Over 6mg/m3 is very high and it is for workers employed in the return roadway. For a start should not be happening at all because dust levels are too high. Also exposed to potential greater than 2.5% methane.**

**Inspectors say static readings are very high but not how high.**

**Just “Controls are ineffective”**

**TG 101**

**Working secondary support in Returns Installing megabolts.**

**No signage or indication been Inspected by ERZC Controller.**

**A Sign board is on order. None in the store? Do not believe none available Here**

**is the sign that roof support when developed is inadequate.**

**Hence mega-bolts being installed**

**No Risk assessment, Standard Work Instruction.**

**Obviously never seen document or trained in it. It is their primary if only task.**

**Not possible to that unaware if properly trained and competent.**

**1st April 2016 Mackay office, DNRME**

**Open forum for discussion on Grosvenor Longwall 101 Second Workings**

*-People positioning regarding respirable dust exposure.*

*-Respirable dust monitoring equipment - PDM 3700 monitors.*

*-TARP development for Respirable Dust when data is collected and a dust map is constructed.*

*-Flight plans for first 50m advance.*

*-Shield dust control and sprays.*

*-Combustible float dust and method to be used to verify incombustibles introduced. This also lead to discussion on method of stonedusting in the TG roadway with 2 x 5T pods and a 150T surface silo set up.*

**DUST MANAGEMENT PLAN SHOULD EXIST THAT ADDRESSES THESE POINTS AS A MINIMUM**

**13th June 2016 RESPIRABLE DUST SAMPLING REVIEW REQUEST LW101**

*This Postal Mine Record is to provide Site Senior Executive with formal request to review personal monitoring requirements with respect to the longwall similar exposure group (SEG) at Grosvenor Coal Mine.*

*Until advised otherwise the SSE is required to increase the frequency of personal monitoring of coal mine workers operating in the longwall SEG to at least fortnightly. Both samples taken in this SEG to date have exceeded the regulatory limit.*

*Inspectors Dobson and Djukic state Grosvenor Mine is “required” to as a minimum do Respirable Dust sampling at least fortnightly.*

**NO DIRECTIVE ISSUED just stated as “Required”**

*The Inspectors do acknowledge the risk based process being undertaken by Grosvenor with respect to evaluating exposures to atmospheric contaminants, however based on the initial results obtained from longwall operators, it is important that the level of risk is understood in a timely mater so that controls can be developed and implemented where required. Monitoring requirements for all other SEGs can continue as per the current baseline monitoring program.*

*The fortnightly requirement for personal monitoring of longwall SEG will be reviewed by the Inspectors after three (3) months upon commencement and at this time, if warranted, the mine may be able to divert back to original program.*

**5th JULY 2016 FALL LW 101 MAINGATE #1 and #2 CHOCK**

***3.2 LW 101 Dust Mitigation Measures***

*Discussions on the surface and on meeting with Mr Wayne Pate (Longwall*

*Superintendent) on the longwall included -*

*Pick modifications - the need to cut stone floor (200mm) had created several instances where the tungsten tips had been lost or damaged (20 to 30 [week replaced). Design has been modified after discussions with OEM. A supply of new picks is awaited.*

*Shearer on board sprays not seen in operation no cutting due to fall — the 'Bretby' spray looked to have been effective from the clean appearance of the Bretby.*

*Chock spray on shearer — this is mounted facing the goaf and hoses down the front face of each support. — later on inspection there was evidence that this blasted down dust as most supports, even after 12 hours post roof fall, were still clean.*

*Leg (halo) sprays — these are mounted to wash-down powered support legs but have not proved too successful as the time taken to lower-advance-set meant the spray was only triggered for a short time.*

*Beam sprays — observed but not in operation*

*Spray curtain adjacent to MG face end — this is planned to be installed as it has proven effective elsewhere.*

*The shearer drum cowls originally fitted have been removed and work has still to be effectively applied to linking the spray operations to shearer position and speed of operations to gain maximum dust mitigation outcomes.*

*Only 3 operators are on the longwall during production.*

*Spill plates mounted sprays for product on AFC — positioned to spray on the top of a loaded AFC to help quell dust on discharge to the BSI-.*

*BSL modified covers — these are in the out-bye cross cut (22) the plan being to install them imminently but the roof fall has prevented that. Had they been in place it is almost certain that the debris from the fall would have destroyed them.*

*The monitoring regime has been discussed with fellow inspectors Shaun Dobson and Fritz Djukic on 13/06/16 and details are contained in the MRE.*

**Mine hates cutting stone floor. Loses 20 to 30 tungsten tip bits. Frictional ignition risk if not changed**

**Spray system elements for dust suppression discussed. Never seen operational.**

**Comment about being effective because the face was clean.**

**It was over 12 hours in between fall and inspectors arriving on site. Besides how much coal was being cut.**

***4.2 LW 101***

*We were met by ERZ Controller Mr Bill Ramsey (window shift ERZC) who explained the activity on-going in the district. We first viewed the fall area which was as described earlier in this MRE*

*Three CMW were engaged in pinning heavy duty mesh over the BSL to better contain the bagged mesh and were in close proximity to a telltale which was showing no further roof movement post fall,*

*As we passed through the longwall Mr Pate explained the various dust mitigation issues already listed in section 3.3 of this MRE. Dust gathered on supports was not excessive and there was clear evidence of caking of dust and washing down leaving clean surfaces where suppression water had been applied. This was 18 hours after the face had been stood post fall. The dust that was present increased in amounts towards the tailgate.*

*Water guns were present on alternate powered supports.*

*Mr Pate explained that the volume of water used was causing belt slip problems and that dewatering chute work was planned to assist with the matter.*

*The line, grade, pan angles and roof conditions, with the exception of the MG face-end, were all good.*

**Shearer drum cowls removed. Why? Normally fitted with sprays.**

**Breaker Stage Loader new covers would have been destroyed if fitted. Obviously not fit for purpose if they would be destroyed by 1 roof fall.**

**Dust discussed by Inspectors Dobson and Djukic on 13/06/2016**

**Comments about dust towards the tailgates tells me little cleaning in fact.**

**Pate comments about belt slip for excess water.**

**All water sprays and hoses are not used because that is when the belt slippage problems occur. That is why a dewatering chute is planned.**

**8th SEPTEMBER 2016 ANONYMOUS COMPLIANT WORKING IN RETURNS and INSPECTION**

**DNRME Keith Brennan**

*Today the 8th September 2016, Department of Natural Resources and Mines Inspector Keith Brennan traveled to Grosvenor Underground operations to investigate an anonymous complaint regarding coal mine workers in Return/HomotropaI roadways.*

*Opening Meeting:-*

*An opening meeting was held with Underground Mine Manager (UMM) Wayne Bull. I described the nature of the compliant from a concerned coal mine worker with regard working in return roadways and respirable dust monitoring. I was advised by UMM Wayne Bull No work is carried out in Maingate 102 Homotropal Roadway and work in Tailgate 101 is only undertaken during non-production periods.*

**Inspector seems to take Bull at his word. Does not appear to confirm that by looking at any Statutory Reports.**

*I requested the following information:-*

*Results Summary - Respirable Dust - July 2016 (Respirable Dust and Silica Results)*

*Hazard Management Plan - Use of Polymeric Chemicals. UMM Wayne Bull informed me Wilson Mining Services were currently pumping Rocksil on Longwall 101 face cavities. I requested a copy of the HMP for Polymeric Chemicals. Personal Gas Detectors - Operators*

*Training Manual Altair 4 & Altair 5X*

*Standard Work Instruction (SWI) - Working in Returns*

*Risk Assessment for SEG grouping (GCG)*

*Investigation into Void Sample Number 1688202 - 23/08/2016 - in Pit Services and Secondary Support*

*e Prior to travelling underground I requested a copy of Grosvenor Coal Mine - CHK Working in Returns and*

*Grosvenor Coal Mine - SWI - Working in Returns*

*Underground Inspection:-*

*In the company of UMM Wayne Bull and Outbye Superintendent Stephen LivingstoneBlevins we travelled to 101 Tailgate 17ct C heading, on arrival a group of coal mine workers involved in pumping cans for passive tailgate support were exiting the tailgate.*

*We entered the tailgate and I was immediately aware of the high ventilating pressure on the man door. In the tailgate I was provided an overview of the can pumping process by Outbye Superintendent Stephen Livingstone - Blevins, inbye two coal mine workers were setting up a pump.*

**Why does this not set off alarm bells?**

**Pressure, is it high to pull high quantities of Air around the longwall face?**

**How are the Regulators set?**

**Are they set with minimal resistance openings, or are they set at high restriction?**

**Is the mine ventilation system total resistance vastly increased by the methodology of Regulator being set at far higher resistance opening size than necessary?**

**Is the Ventilation system fit for purpose.**

*The pump was located in a low spot in the roadway, I enquired of the workers who was carrying the Altair gas detector as required by Grosvenor Coal Mine - SWI - Working in Returns Task - 5. Accessing into Returns dot point 1?*

*The workers responded neither had the required gas detector, I explained the requirement for compliance with the SWI. I requested to inspect the Dust Curtain as required in Grosvenor Coal Mine - SWI - Working in Returns Task - 7 - Installing Dust Curtain with water spray. UMM Bull and Superintendent Stephen Livingstone - Blevins were carrying Altai gas detectors, we allowed the coal mine workers to continue their work while we walked inbye to inspect the water curtain.*

*The water curtain was erected inbye 17ct meters outbye the Restricted Access Zone, we discussed the effect of the curtain on ventilation quantities, the curtain acts in a similar manner as a regulator, however has minimal effect on longwall ventilation during maintenance tasks. Water was filtering across the curtain, while the curtain was in place it did not comply with the design parameters in Task 7 of Grosvenor Coal Mine - SWI - Working in Returns Task - 7.*

*I suggest if a design is incorporated into an SWI the design parameters shall be evaluated if the deign is practical for all applications?*

*All persons exited the tailgate where we had a discussion with all the coal mine workers with regard the requirement of SWI - Working in Returns Task - 5 - Accessing into Returns dot point one? We identified a coal mine worker who was carrying an Altair gas detector, UMM Bull impressed the importance of communication within a work group, the work group in the return without an Altair gas detector was a compliance failure.*

*I enquired of the Deputy where the "Working in Returns Inspection Board" is located as documented in Grosvenor Coal Mine SWI - Working in Returns Task - 4. Accessing Panel dot point two? Workers explained the Grosvenor Coal Mine - CHK - Working in Returns requires the ERZC to Check and sign off, therefore No Inspection Board is Required? I suggested the coal mine workers familiarize themselves with the Checklist document.*

*Grosvenor Coal Mine - CHK - Working in Returns, under the heading Dust/lnhalable Particles dot point five requires the following "Working in Return Inspection Boards in work area have been filled out and advanced with workgroup if required" I suggest the removal of "if required" from the document. Note the requirements of the Coal Mining Safety and Health Regulation 2001 Schedule 5 Matters to be covered in inspections. The results of the inspection shall be provided in a prominent location for all coal mine workers to read prior entry, in this case to return roadways.*

**No gas detectors on workers in Returns as required.**

**Water curtain to suppress respirable airborne dust not installed properly also acts as a Regulator.**

**No one properly aware of requirements to work in Return.**

**ERZC Inspection Boards not required, Statutory Reports by ERZC not avaliable to workers going into Returns.**

**Still does not stop Grosvenor putting workers in Returns no matter how many procedures are not trained and followed and how not compliant with Inspection Regime.**

**21ST AND 22ND SEPTEMBER 2016 STRATA FAILURE INVESTIGATION continued Dobson**

*Respirable Dust Sampling*

*The expectations of this monitoring procedure need to be defined to ensure that all coal mine workers are aware of this and do not think that they only have to wear a monitor for 4 hours.* **Obviously sampling company (never states who they are) and mine management do not have proper mandated procedures; or if they do, they don’t train workers in them.**

*The SSHR monthly inspection report from an inspection conducted in the Longwall on*

*05/09/16 was sighted. This stated that "Dust increased immensely during production " and Canopy sprays not in use. Had been turned off manually. Dust suppression at crusher and bootend ok*

**NO COMMENT FROM DOBSON**

*We travelled inbye to the Longwall from the last open cut through and minimal visible airborne dust could be seen from here to the BSL. All cross over sprays, bootend and BSL hood sprays were operating with no impacts/ increase to visible dust being evident. Signage at the BSL was posted requiring persons to contact the Maingate before proceeding, and compliance to this procedure was observed.*

*At the Maingate drive sprays were operating on the turnaround/AFC side discharge area and no increase in the visible dust in the ventilation stream was observed at the Maingate. The Shearer was at the Tailgate end of the face cutting towards the Tailgate. A canopy spray was operating at #20 shield.*

*We traveled through the face on the front walkway/pontoons due to weighting on the face and a lack of height enabling the rear walkway to be used. The canopy sprags were deployed throughout the face and UMM Bull informed me that the cut height had been reduced to mitigate the hazard of face slabbing. Good housekeeping standards were being maintained for the Shields with minimal dust on the walkways. However the presence of airborne dust in the ventilation stream was clearly visible with this make increasing as we progressed to the Tailgate.*

*When approaching the Shearer the Shearer driver and Shield operator were noted to be operating in positions that kept them out of the dust make generated from Shield and Shearer operations. I observed the Shearer cutting in Bi - Di cutting mode whilst cutting towards the Tailgate and completing the double shuffle where the operators maintained this discipline throughout these cutting operations.*

*I discussed with the ERZ Controller what pre-start checks were undertaken for dust suppression equipment. He informed that this was done by the window crew whose ERZ Controller then informed him of the status of these matters. All dust suppression equipment on the Shearer was operating as required. The Shearer had recently had "Chock washer" fitted as a trial to assist with the housekeeping of the shields. This had just been changed onto the Maingate end of the*

*Shearer and was not operating with the same efficiency as it had whilst on the Tailgate end. The ERZ Controller committed to investigate this at the first opportunity.*

**Dobson: Low roof, have to walk front walkway/pontoons weighting on face. Sprags deployed**

**Wayne Bull Height reduced to reduce slabbing.**

**Airborne dust visible gets worse towards the tailgate**

**SD to ERZC What pre-start checks dust suppression?**

**ERZC Reply: Done by “Window crew. ERZC then informed him of the status of these matters.**

**Verbally or by written report?**

**ERZC committed to investigate why “Chock washer not working with same efficiency as when it was mounted on Tailgate end.**

**Where has Wayne Bull gone? Good enough for that shift. Management level needed for this.**

**No one wants to admit what Wayne Pate admitted in previous 05/07/2016 Inspection (Gouldstone and Brown).**

**The belt slips badly if water sprays used too much. Affects production**

*Visible dust that was apparent in the general ventilation stream whilst coal cutting activities were being undertaken appeared visibly excessive and this was still the case when operations stopped due to an outbye conveyor issue. This is a visible comparison to other conventional Longwall operations which have returned compliant personal monitoring samples. I was not surprised by this given the excessive ventilation velocity of 6.1 m/s on the Longwall face. In other operations these velocities are rarely in excess of 3 m/s.*

*Methane 1.75%*

*Oxygen 20.1%*

*Ventilation 5.5m/s*

*Ventilation Quantity 82m3/s*

**Quantity and velocity are very high. Obviously done deliberately to try and dilute methane by more dilution as they cannot control it. Roadway about 15m2 in area**

*This was compounded by the lack of canopy sprays that were not working. When travelling back through the face it was noted that only the one at #20 shield was operational and these were supposed to be operating on every 20th shield, therefore 6 sprays were not operating. This was discussed on the face, and the window crews ERZ Controller had reported the only sprays working were at #20, #40, & #60 shields. A commitment was made to have all of these made operational immediately. It was believed that these were not operating due to blocked filters which was even more astounding as these are mounted in the rear of the shields and could be worked on at any time whilst production is ongoing. No one was observed working on these prior to this.*

**Visible dust while coal cutting and lasted even after Outbye belt stopped.**

**Remarks due to speed of ventilation. Twice normal**

**No canopy sprays other than#20 working. Other six towards tailgate not.**

**Window ERZC reported only #20, #40 and #60 only ones working.**

**ERZC undertook to get blocked filters remedied immediately.**

**Astounded that not done when could be done at any time and were mounted in rear of chocks.**

**APPEARS THAT SPRAYS ARE NOT CHECKED BY MAINTENANCE SHIFT. OTHERWISE WOULD NOT BE BLOCKED FILTERS AFER BEING “Checked and Cleaned” BY WINDOW SHIFT.**

**IS THERE A SYSTEM IN PLACE AND IS IT BEING USED AND SIGNED OFF?**

*Work orders are issued for all these matters and I requested copies of these to discuss further at the close out meeting.*

*CLOSE OUT MEETING*

*I then raised the issues found with regards to the control of respirable dust on the Longwall. The use of the work order system was in place where a work order 00092538 for Equipment LWMGIOI was provided for Longwall operational Dust & Fl checks from the day shift and night shift for the last 24 hours. These both had a Longwall operational dust control checklist attached which had been completed, signed off as complete, and reported on the statutory report as "Fl Checks completed during window" . These are comprehensive checklists however neither of these were complete and also included defective items. 23 items were not recorded as checked(17 n/s & 6 d/s) with front canopy sprays not identified as operational on both shifts(4 n/s & 4 d/s), these appeared to be the same sprays which were identified as needing the filters cleaning out. It was apparent from this and making reference to the TARP for this matter that these controls were not being effectively implemented. This was also evident from the inspection. A SCP was issued to ensure that all persons who are responsible for ensuring these checks are carried out to the standard required to mitigate the production of respirable dust have been trained and deemed competent to ensure these checks are completed correctly in accordance with the TARP metrics for these matters.*

*The TARP for Longwall Respirable dust & Frictional Ignition was then discussed as the actions required with some of the metrics do not give clear defined actions as to the additional controls or actions that are required to be implemented. The level 2 response actions for an ERZ*

*Controllers are to "Consider through risk management (JSA) what further controls need to be put in place to mitigate dust generation and inhalation". These controls should have been clearly defined with regards to the magnitude of the hazard that is present. This does not also consider how the risk profile of respirable dust exposure increases where a number of "Zone" controls are at an increased trigger level. The interpretation of "Ensure repairs are conducted as soon as possible" does not appear to be understood as per the previous issue with canopy sprays. A Directive is issued to review the TARP for Longwall Respirable dust & Frictional Ignition to define the aforementioned items and other metrics to ensure the implementation of direct corrective actions. This includes ensuring all persons with obligations under this procedure are trained, assessed and deemed competent in the application of their accountabilities.*

*Respirable Dust*

**Longwall operational dust and Frictional Ignition checks from dayshift and nightshift previous day.**

**1. Checklists not completed**

**2. Defective Items included**

**3. 23 Items not recorded as checked (17 on N/S and 6 on D/S)**

**4. With front canopy sprays not identified as operational (4 on N/S and 4 on D/S).**

**5. Same as ones identified previous day with blocked filters**

**6. Controls not being effectively implemented**

**7. Substandard Condition or Practise issued**

**8. Longwall TARP Respirable Dust. Does not have mandated actions/controls where needed**

**9. L2 “ERZC to consider through risk management process to mitigate generation and inhalation etc”**

**10. Should have clearly defined controls**

**11. Ensure repairs as soon as possible does not appear to be understood.**

**12. Directive Issued. To Review TARP to define aforementioned matters and other metrics to ensure implementation of “direct corrective actions”**

**13. Ensure all persons with obligations are trained, assessed and deemed competent in application of accountabilities**

**14. No go zones in LW for Resp Dust and operation. Moranbah has fixed issue and refining it.**

**I raised the use of dust control by defining operational positioning procedures. I was informed that the Longwall has "No go zone procedures for all operators". I explained that there is a difference in these two requirements where the operator positioning requirements need to be developed for all operational sequences and all reasonably foreseeable variations in operating sequences. The sister mine of Moranbah North has developed these which are currently being refined. These need to be developed for Grosvenor. A SCP was issued to develop these.**

**15th DECEMBER 2016 METHANE and HPI’s Dobson and Brennan**

*The 12CM12 Continuous miner was between 27c/t and 26 c/t in TG102. No activities were being undertaken here. Rib conditions were poor on the right hand rib but were being controlled adequately. The Methanometer on the CM displayed 0.37%. Cable management was acceptable. I noted that no tail sprays were installed on the tail of the miner to suppress any dust from the delivery from the centre chain to the car. This had been identified as a key dust suppression control in the development of the recent Recognised Standard for dust control. Mr Bull committed to investigate this.*

**No tail water dust suppression sprays on 12CM Miner.**

**Another BULL Committment**