



**File: W2017D0004**

December 11<sup>th</sup>, 2020

Dominion Diamond Mines ULC  
Misery Underground Project  
900 – 606 4<sup>th</sup> Street SW  
CALGARY, AB T2P 1T1

**Attention: Ms. Claudine Lee – Head of Environment**

**Re: Land Use Permit W2017D0004  
Mining & Associated Activities  
Ekati Diamond Mine, Northwest Territories**

Dear Ms. Lee,

An inspection of the Misery Underground Project at the Ekati Diamond Mine was conducted by Inspector Joe Heron on November 27<sup>th</sup>, 2020. The inspection was carried out to ensure operating conditions annexed to the above-noted land use permit are being adhered to during this land use operation. All findings of the inspection were discussed onsite with Mr. Cody Hopkins (Project Superintendent, Misery Underground), Mr. Erik Beck (Mining Engineer, Misery Underground) and Mr. Dustin Chaffee (Environment Advisor, Permitting).

Overall, the Inspector is pleased with the Permittees efforts to adhere to the operating conditions annexed to Land Use Permit W2017D0004. Your copy of the Environmental Inspection Report is enclosed and should be self-explanatory. If you have any questions or concerns, please contact the undersigned at (867) 767-9187 ext. 24192.

Sincerely,

Joseph Heron  
Resource Management Officer III (Inspector)  
GNWT Department of Lands, NSRO

cc: *Scott Stewart (GNWT Lands, NSRO)*  
*Jamie Steele (GNWT Lands, NSRO)*  
*Rhiana Bams (WLWB)*  
*Roberta Judas (WLWB)*  
*Lorne Newbury (DDM, Project Superintendent)*  
*Cody Hopkins (DDM, Project Superintendent)*  
*Shannon Moore (IEMA)*



**ENVIRONMENTAL INSPECTION REPORT**

|            |  |  |
|------------|--|--|
| Permittee: | Dominion Diamond Mines ULC – MUG Project | Inspection Date(s): November 27 <sup>th</sup> , 2020 |
|------------|--|--|

|                      |  | Permit Expiry Date           | Last Previous Inspection        |
|----------------------|--|------------------------------|---------------------------------|
| Land Use Permit No.  | W2017D0004   | July 11 <sup>th</sup> , 2023 | October 22 <sup>nd</sup> , 2020 |
| Quarrying Permit No. | N/A  |                              |                                 |
| Contractor:          | Procon, Ryfan, Civeo, BAT Construction, Nuna Logistics | Subcontractor:               | N/A                             |

|                        |  |
|------------------------|--|
| Location(s) Inspected: | The Ekati Diamond Mine Misery Underground Project. |
|------------------------|--|

|                             |   |
|-----------------------------|---|
| Current Stage of Operation: | The Misery Underground Project remains in a temporary Care & Maintenance status. Current activities include maintenance, equipment installation to support underground mining of the kimberlite ore, and rehabilitation of the underground drifts to increase ground support in anticipation of the commencement of active mining operations. |
|-----------------------------|---|

Condition of Operation A- Acceptable U - Unacceptable N/A - Not Applicable

|   | Operating Condition   | Aspect Inspected |             |  | Condition |
|---|---|------------------|-------------|--|-----------|
|   |   | MUG Project      | Misery Camp |  |           |
| A | Location & Area   | A                | A           |  |           |
| B | Time  | A                | A           |  |           |
| C | Type & Size of Equipment  | A                | A           |  |           |
| D | Methods & Techniques  | A                | A           |  |           |
| E | Type, Location, Capacity & Operation of All Facilities                                    | A                | A           |  |           |
| F | Control or Prevention of Ponding of Water, Flooding, Erosion, Slides & Subsidence of Land | A                | A           |  |           |
| G | Use, Storage, Handling & Ultimate Disposal of Any Chemical or Toxic Material              | A                | A           |  |           |
| H | Wildlife & Fisheries Habitat  | A                | A           |  |           |
| I | Storage, Handling & Disposal of Refuse or Sewage  | A                | A           |  |           |
| J | Protection of Historical, Archeological & Burial Sites                                    | A                | A           |  |           |
| K | Objects & Places of Recreational, Scenic or Ecological Value                              | N/A              | N/A         |  |           |
| L | Security Deposit  | A                | A           |  |           |
| M | Fuel Storage  | A                | A           |  |           |
| N | Methods & Techniques for Debris & Brush Disposal  | A                | A           |  |           |
| O | Restoration of the Lands  | A                | A           |  |           |
| P | Display of Permits & Permit Numbers   | A                | A           |  |           |
| Q | Biological & Physical Protection of the Land  | A                | A           |  |           |
| R | Sections 8 to 16 M.V.L.U.R.   | A                | A           |  |           |



**ENVIRONMENTAL INSPECTION REPORT Pg. 2**

|  |                     |
|--|---------------------|
| Date: November 27 <sup>th</sup> , 2020 | Permit#: W2017D0004 |
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|---------------------|
| Explanatory Remarks |
|---------------------|

An inspection of the Misery Underground Project at the Ekati Diamond Mine was conducted by Inspector Joe Heron on November 27<sup>th</sup>, 2020. The inspection was carried out to ensure operating conditions annexed to the above-noted land use permit are being adhered to during this land use operation. All findings of the inspection were discussed onsite with Mr. Cody Hopkins (Project Superintendent, Misery Underground), Mr. Erik Beck (Mining Engineer, Misery Underground) and Mr. Dustin Chaffee (Environment Advisor, Permitting).

**Misery Underground Project**

Currently, two access portals to the underground workings have been developed: the 2235 Lower Portal and 2340 Upper Portal. The 2340 Upper Portal is currently blocked off with fencing to prevent access and a temporary bulkhead (large canvas) has been placed to cover the entrance (Photos #1 & #2). The temporary bulkhead has been put in place to prevent the heated air from the Fresh Air Raise (FAR) station on the Misery Pit 440 Bench from escaping the underground as its being pumped down and to allow for the proper, planned air flows to resume.

As mentioned previously, the FAR on the 440 Bench was commissioned on February 27<sup>th</sup>, 2020 and the electrical workings to the underground were commissioned on March 4<sup>th</sup>, 2020 (Photo #3). The commissioning of the FAR and the electrical allowed for the removal of the temporary infrastructure staged along the 2235 Lower Portal ramp. As seen in Photos #4-#11, equipment such as the electrical generators, fuel tanks, vent tubes, air heaters and other assorted staging seacans have been removed as they are no longer required to support the underground operations. The underground compressors, escapeway seacan, staff room seacan, and a washroom remain on the ramp.

At the U/G 2150 Level, the majority of the electrical (Photo #12), MudWizard (water separation units – Photo #13), and 500 hp water pumps along with the corresponding control panels have been commissioned and are supporting the underground workings. As seen in Photo #14, concrete is being used to construct water collection tanks behind the water pumps. The collection tanks allow a place for water to hold prior to its use in the underground operations or its discharge out of the underground up into King Pond. Water volumes pumped from the underground are currently calculated using figures from the pump readings in Photos #15 & #16. Additionally, the compressor pad in Photo #17 has been poured and is being readied for the installation of compressors that will support the underground operations.

Ekati is currently operating under a temporary Care & Maintenance status and no mining of the Misery Underground (MUG) Project kimberlite pipe is occurring. However, crews continue to ensure mining readiness as evidenced by the ongoing development of the underground along with the installation of equipment that is used to support the underground operations (Photos #18 & #19). As seen in Photo #20, crews were using a MacLean Bolter to hang screen along the U/G 2100 Level production drifts as part of the ongoing drift rehabilitation activities (Photo #21).

Once the mining of the kimberlite re-commences, crews will continue to drill, blast and remove ore from the U/G 2120 (Photos #22 & #23) and 2100 Levels and development will continue towards the U/G 2075 Level. Prior to the restart of active mining operations in the Ekati Diamond Mine Misery Underground Project, the Inspector is reminding the Permittee of the requirement to comply with all operating conditions attached to Land Use Permit W2017D0004. The Inspector did not note any major concerns regarding the underground operations.

**Explosives**

Prior to the mine entering its Care & Maintenance status in March 2020, drill patterns were established and holes were loaded with explosives in the production drifts. Once mining activities paused, the loaded blast holes were left in place. Upon the re-commencement of active mining of the kimberlite, new patterns will be established, loaded and blasted. The blast will generate enough heat to volatize the old explosives and help to remove any risk that may be associated with the old blast materials (Photo #24).

The Inspector was informed some of the boxes used to stage blast caps and magazines were found to have mould during the Care & Maintenance phase of the underground. When noticed, the boxes were cleaned and treated to remove the mould and keep the integrity of the blast materials intact. It appeared the storage, handling and preparation of the blast materials were being managed in an acceptable manner to comply with the Ekati Mine Explosives Management practices. The Inspector did not note any concerns regarding explosives in the underground.



**ENVIRONMENTAL INSPECTION REPORT Pg. 3**

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|--|---------------------|
| Date: November 27 <sup>th</sup> , 2020 | Permit#: W2017D0004 |
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Explanatory Remarks

**Conclusion**

Overall, the Inspector is appreciative of the Permittees efforts to ensure adherence to the operating conditions annexed to Land Use Permit W2017D0004 while in temporary Care & Maintenance. As operations continue to ramp up towards production at the Misery Underground Project, the Inspector reminds the Permittee to demonstrate continued diligence in regards to complying with the operating conditions found within LUP W2017D0004.

Completed off Site  
Representative's Signature

Joseph Heron  
Inspector



Inspector's Signature



Photo 1: A heat-traced water line is used to discharge water into King Pond via the 2340 Upper Portal.



Photo 2: A water sump has been established downgrade and adjacent to the 2340 Upper Portal.



Photo 3: The FAR on the Misery Pit 440 Bench has been commissioned along with the electrical to the underground. A backup generator has also been installed in the event of electrical failures.

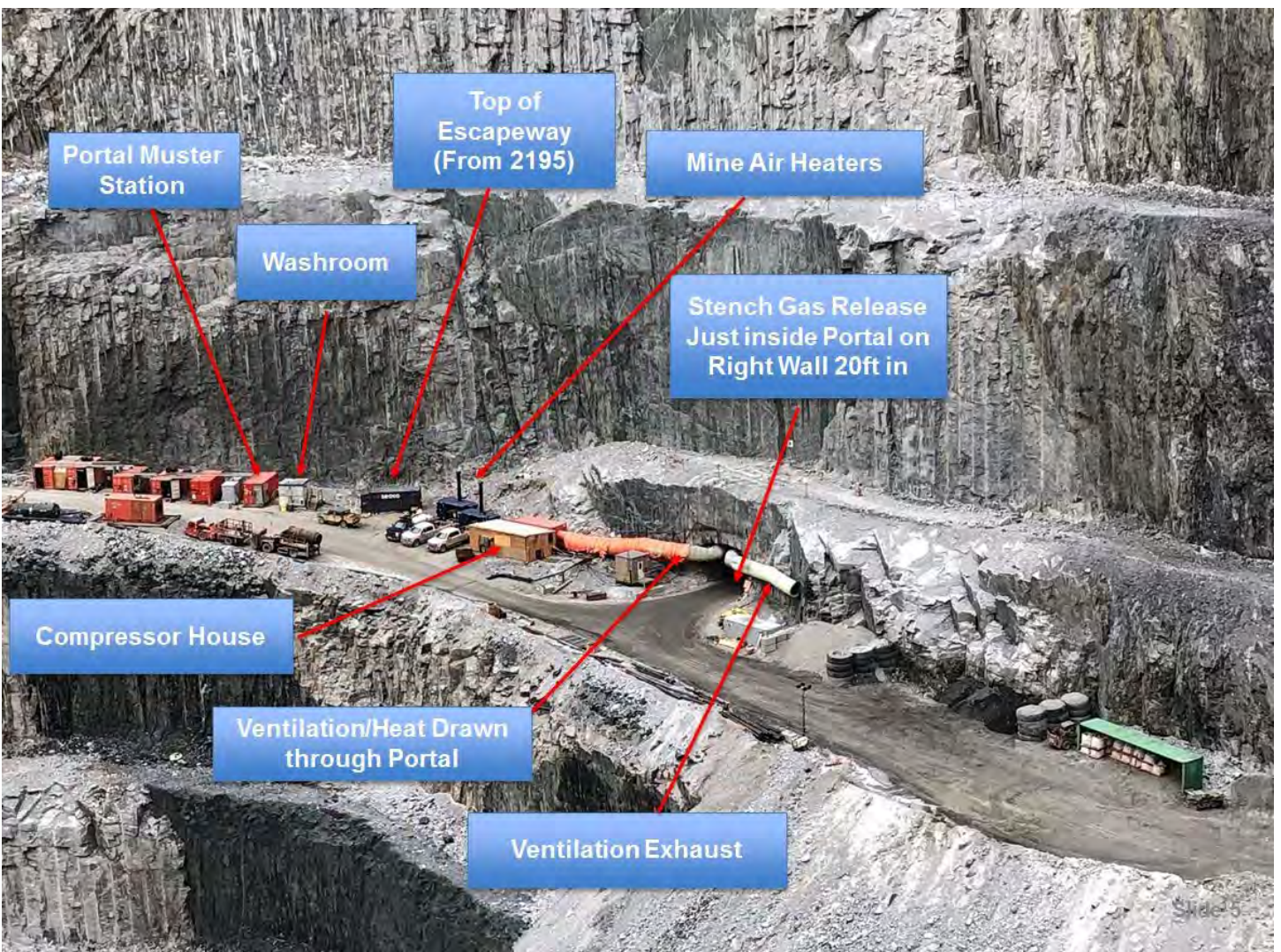


Photo 4: This equipment was staged on the 2235 Lower Portal ramp to support the underground operations (Photo courtesy DDM).



Photo 5: As seen in this photo, the majority of the equipment staged on the 2235 Lower Portal ramp was removed as it was no longer required to support the underground mining activities.



Photo 6: As seen, fuel tanks, generators and other equipment are no longer present on the 2235 Lower Portal ramp.



Photo 7: Seacans housing the escapeway portal (L) and lunch room (Muster Station) on the 2235 Lower Portal ramp.



Photo 8: These drip boards are placed under parked equipment to help contain hydrocarbons on the 2235 Lower Portal ramp.





Photo 9: Compressors on the 2235 Lower Portal ramp will remain in use until a compressor station is established at the U/G 2150 Level.



Photo 10: Spill response materials were readily available at the washroom building on the 2235 Lower Portal ramp.



Photo 11: Heated air and vent lines have been removed at the 2235 Lower Portal as they are no longer required.



Photo 12: The electrical distribution unit at the U/G 2150 Level.



Photo 13: The MudWizard water treatment system is fully commissioned at the U/G 2150 Level.



Photo 14: These 500 hp pumps are used to pump water to King Pond. In the background, concrete is being formed to establish one of the two water holding tanks.



Photo 15: These control centres are used to operate the pumps in Photo #14. There is a dedicated control for each pump.



Photo 16: Water volumes pumped in the underground are currently calculated using these readings until flow meters are installed.



Photo 17: A compressor station will be installed on this concrete pad at the U/G 2150 Level.



Photo 18: Crews were plumbing in water lines at the U/G 2100 Level.



Photo 19: This screen is used to separate sediments and other debris from water in the underground.



Photo 20: This Maclean Bolter was being used to hang screen at the U/G 2100 Level as part of the ongoing drift rehabilitation work.



Photo 21: As seen, shotcrete was being used to stabilize production drifts at the U/G 2100 Level. Soft vent lines are installed to ensure a proper air supply in working areas of the underground.



Photo 22: These supplies used in drift rehabilitation activities are staged at the U/G 2120 Level.



Photo 23: Bags of shotcrete and soft vent lines are also being staged at the U/G 2120 Level.



Photo 24: Blast patterns will be re-established at this production drift at the U/G 2100 Level.