IDM MINING LTD.
RED MOUNTAIN UNDERGROUND GOLD PROJECT



BROMLEY HUMPS BASELINE HYDROGEOLOGY REPORT

PREPARED FOR:

IDM Mining Ltd.
1500 - 409 Granville Street
Vancouver, British Columbia
Canada, V6C 1T2

PREPARED BY:

Knight Piésold Ltd.
Suite 1400 – 750 West Pender Street
Vancouver, BC V6C 2T8 Canada
p. +1.604.685.0543 • f. +1.604.685.0147

VA101-594/4-5
Rev 2
August 25, 2017

Knight Piésold
CONSULTING
www.knightpiesold.com

IDM MINING LTD.
RED MOUNTAIN UNDERGROUND GOLD PROJECT

BROMLEY HUMPS BASELINE HYDROGEOLOGY REPORT
VA101-594/4-5

Rev	Description	Date
0	Issued in Final	June 7, 2017
1	Issued with updated Sections 3.3.3, added Sections 3.2.1, 3.3.5.	August 23, 2017
2	Issued with updated Section 3.3.5.	August 25, 2017

Knight Piésold Ltd.
Suite 1400
750 West Pender Street
Vancouver, British Columbia Canada V6C 2T8
Telephone: (604) 685-0543
Facsimile: (604) 685-0147
www.knightpiesold.com

Knight Piésold CONSULTING

EXECUTIVE SUMMARY

IDM Mining Ltd (IDM) proposes to develop the Red Mountain Underground Gold Mine (the Project), a gold-silver deposit located in northwest British Columbia, approximately 18 km west-southwest of Stewart. The Project is composed of two main areas of activity:

- The Mine Site including underground workings and dual portal access at the upper elevations of Red Mountain.
- Bromley Humps with a Tailings Management Facility (TMF) and Process Plant Site, situated in Bitter Creek Valley.

The key objectives of this baseline hydrogeology study for Bromley Humps includes the following:

- Document data sources and methods used to compile information on the existing groundwater flow regime.
- Describe the baseline groundwater flow conditions including overburden and bedrock geology, bulk hydraulic conductivity values and groundwater levels.
- Estimate the rate and direction of groundwater flow.
- Assess the expected interaction of groundwater with surface water.
- Develop a conceptual model of the baseline groundwater flow conditions to support the definition of potential effects during all stages of the Project. The key consideration for potential effects at Bromley Humps is seepage from the TMF to the receiving environment.

The technical study area (TSA) for the baseline hydrogeology assessment at Bromley Humps includes surface waters that could be affected by seepage of mine contact water (i.e., seepage from the TMF or Ore Stockpile). These surface waters include Bitter and Otter creeks.

Geological and hydrogeological information for the TSA was derived from three main sources:

- Surficial geology and bedrock mapping by IDM at Bromley Humps.
- Two site investigations that were completed to support the TMF design. The first program was carried out in 1996 by Golder Associates (Golder) and the second in 2016 by Knight Piésold (KP).
- Ongoing groundwater level data collection from installations completed during the 2016 site investigation by KP.

Several episodes of glaciation have shaped the geology at Bromley Humps. Overburden cover is sparse and where encountered, generally thin (average thickness of 1.8 m). Overburden is comprised of mainly colluvium and glacial moraine deposits. The bedrock geology is interpreted to be mainly siltstone with intrusions of gabbro, quartz monzonite and goldslide porphyry intrusives exposed in the bedrock outcrops. Past deformation of the bedrock is evident in the drill core data based on commonly described high fracture density, numerous broken, sheared and brecciated zones and some slickensided joint faces. Hydraulic testing indicates a moderately permeable bedrock with some enhanced permeability associated with structures.

Relatively deep water levels (greater than 30 mbgs), downward gradients and rapid responses to rainfall events were observed in water level data collected during drilling and from monitoring sites. These observations are likely indicative of near saturated conditions with depth, and are conceptualized to represent a vertical flow regime to the top of the regional water level, below which a sub-horizontal flow regime is present. Groundwater recharge will occur upslope of the TMF as well

as locally in the area of the proposed TMF. The recent glaciation of this area likely resulted in some associated disturbance to the near-surface bedrock, creating enhanced permeability and effective porosity. This disturbance is likely to allow for elevated recharge rates during rain and snowmelt events, particularly on the terrace like feature where the proposed TMF is located.

Deep groundwater, originating from upslope of the TMF, flows under the proposed facility and towards Bitter Creek. Local recharge entering the shallow groundwater regime migrates downwards and then laterally, also ultimately toward Bitter Creek. A groundwater mound is expected below the high relief gabbro intrusion that lies between the TMF North and South Embankments (referred to as one of the Bromley Humps). This groundwater mound will result in shallow flow from the crest of Bromley Hump toward the proposed TMF impoundment area. Some of this shallow groundwater flowing toward the impoundment area is anticipated to migrate to the northwest, primarily along structures, and the remaining flow will flow south to Bitter Creek. The flow to the northwest may discharge at surface within an area of low relief, downgradient of the proposed TMF North Embankment. This discharged water may then potentially recharge the groundwater system, and flow to Bitter Creek. Alternatively, flow to the northwest may discharge directly to Bitter Creek.

Leakage from the proposed TMF is expected to be less than the current natural recharge. The proposed TMF is therefore not expected to result in a noticeable change in the groundwater flow regime.

TABLE OF CONTENTS

PAGE

TABLES

FIGURES

APPENDICES

ABBREVIATIONS

ACS	ARSENEAU Consulting Services Inc.
Avison	Avison Management Services
BC	British Columbia
BCS	Brownhill Consulting Services
DEM	digital elevation model
DFO	Department of Fisheries and Ocean
Golder	Golder Associates
IDM	IDM Mining Ltd.
JDS	JDS Energy & Mining Inc.
KP	Knight Piésold Ltd.
MAP	mean annual precipitation
masl	metre above sea level
mbgs	metre below ground surface
MOE	Ministry of Environment
PECG	Palmer Environmental Consulting Group Inc.
the Project	Red Mountain Underground Gold Project
ROM	Run of Mine
RMR	Rock Mass Rating
RQD	Rock Quality Designation
SNC	SNC-Lavalin
SRK	SRK Consulting Inc.
TMF	Tailings Management Facility
TSA	Technical Study Area
VWP	vibrating wire piezometer
WRSA	Waste Rock Storage Area

1 – INTRODUCTION

1.1 PROJECT DESCRIPTION

IDM Mining Ltd. (IDM) proposes to develop the Red Mountain Underground Gold Project (the Project), a gold-silver deposit located in northwest British Columbia (BC). The Project is composed of two main areas of activity:

- The Mine Site including underground workings and dual portal access at the upper elevations of Red Mountain.
- Bromley Humps with a Tailings Management Facility (TMF) and Process Plant Site, situated in Bitter Creek Valley.

Ore will be mined year-round, using conventional underground mining methods at a nominal 1000 tonnes per day over an estimated 6-year mine life. Waste rock generated from mining will be stored temporarily at the Mine Site in designated waste rock storage areas (WRSA) on surface or backfilled directly into mined out workings. A Run of Mine (ROM) stockpile located next to the Process Plant Site will be used for temporary storage of the ore that is trucked from the Mine Site during the operations phase of the Project. The TMF impoundment will be fully lined with a geomembrane liner, and at closure, capped with a dry cover comprised of a synthetic liner and soil layer.

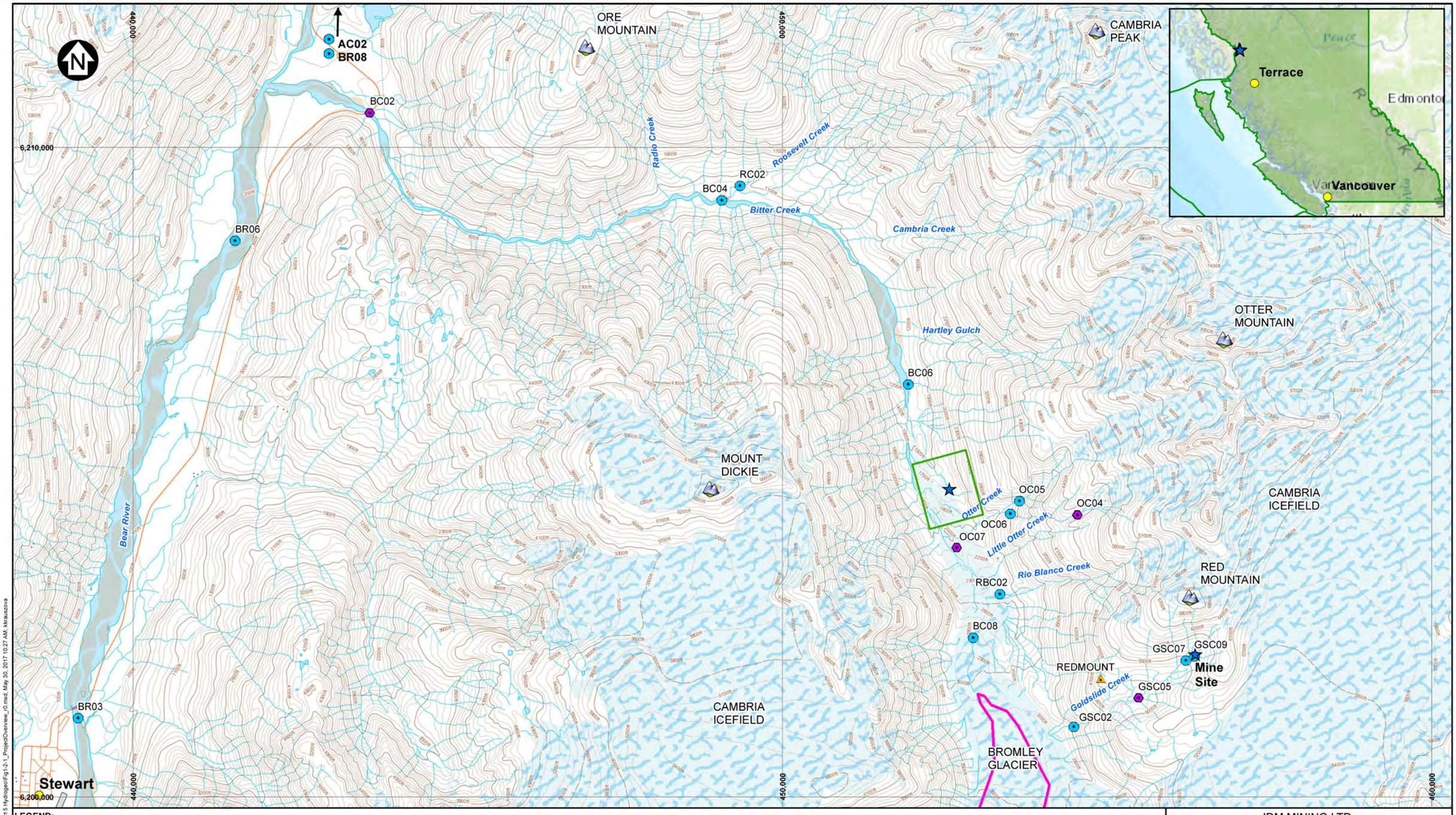
Prior to IDM acquiring the Project in 2014, mineral exploration work was conducted over the following periods (ACS, 2017):

- 1989-1991: Bond Gold Canada Inc.
- 1991-1995: LAC Minerals Ltd.
- 1996: Royal Oak Mines Ltd.
- 2000: North American Minerals Inc.
- 2002-2012: Seabridge, and
- 2012: Banks Island Gold Ltd.

Engineering and environmental studies were completed concurrently with the mineral exploration work in the 1990s (ACS, 2017). IDM initiated environmental and engineering studies again and submitted a NI 43-101 Preliminary Economic Assessment Technical Report in 2016 (JDS, 2016). A Feasibility Study is to be submitted in 2017.

1.2 PROJECT LOCATION

The Project is located in the Regional District of Kitimat-Stikine, BC, at approximately 55°57’53”N Latitude and 129°41’28”W Longitude (UTM coordinates: 452,450 E, 6,250,325 N, Zone 9, NAD 83). The closest community is Stewart, at approximately 18 km west-southwest of the Project (Figure 1.2-1). Helicopter service from Stewart is currently the preferred method of access as there is no road route. For the construction and operation phases of the Project, an access road is to be built between Highway 37A and Bromley Humps as well as a haul road connecting the Process Plant Site to the Mine Site.



LEGEND:

- MTN
- CITY/TOWN
- CLIMATE STATION
- ACTIVE HYDROMETRIC AND SURFACE WATER QUALITY STATION
- ACTIVE SURFACE WATER QUALITY STATION
- APPROXIMATE CURRENT EXTENT OF BROMLEY GLACIER
- APPROXIMATE ORIENTATION OF LOCAL SITE FIGURES

1 0.5 0 1 2 3 4 5 Kilometers

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED
0	02JUN'17	ISSUED WITH REPORT	CHS	KK	JEF

NOTES:

1. BASE MAP: ATLAS OF CANADA TOPOGRAPHIC DATA.
2. COORDINATE GRID IS IN METRES.
COORDINATE SYSTEM: NAD 1983 UTM ZONE 9N.
3. THIS FIGURE IS PRODUCED AT A NOMINAL SCALE OF 1:55,000 FOR 11x17 (TABLOID) PAPER. ACTUAL SCALE MAY DIFFER ACCORDING TO CHANGES IN PRINTER SETTINGS OR PRINTED PAPER SIZE.

IDM MINING LTD.

RED MOUNTAIN UNDERGROUND GOLD PROJECT

PROJECT OVERVIEW

Knight Piésold CONSULTING

PIA NO. VA101-594/4 | REF NO. 5

FIGURE 1.2-1 | REV 0

SAVED: M:\1\01\00594\04\A\GIS\Figs\Report 5 Hydrogeo\Fig1-2-1_ProjectOverview_r0.mxd; May 30, 2017 10:27 AM; kkrauszova

1.3 SCOPE OF WORK

The baseline hydrogeology study for Bromley Humps was developed with consideration for the Water and Air Baseline Guidance Document for Mine Proponents and Operators by the Ministry of Environment (BC MOE, 2016). The key objectives of the baseline hydrogeology study are to:

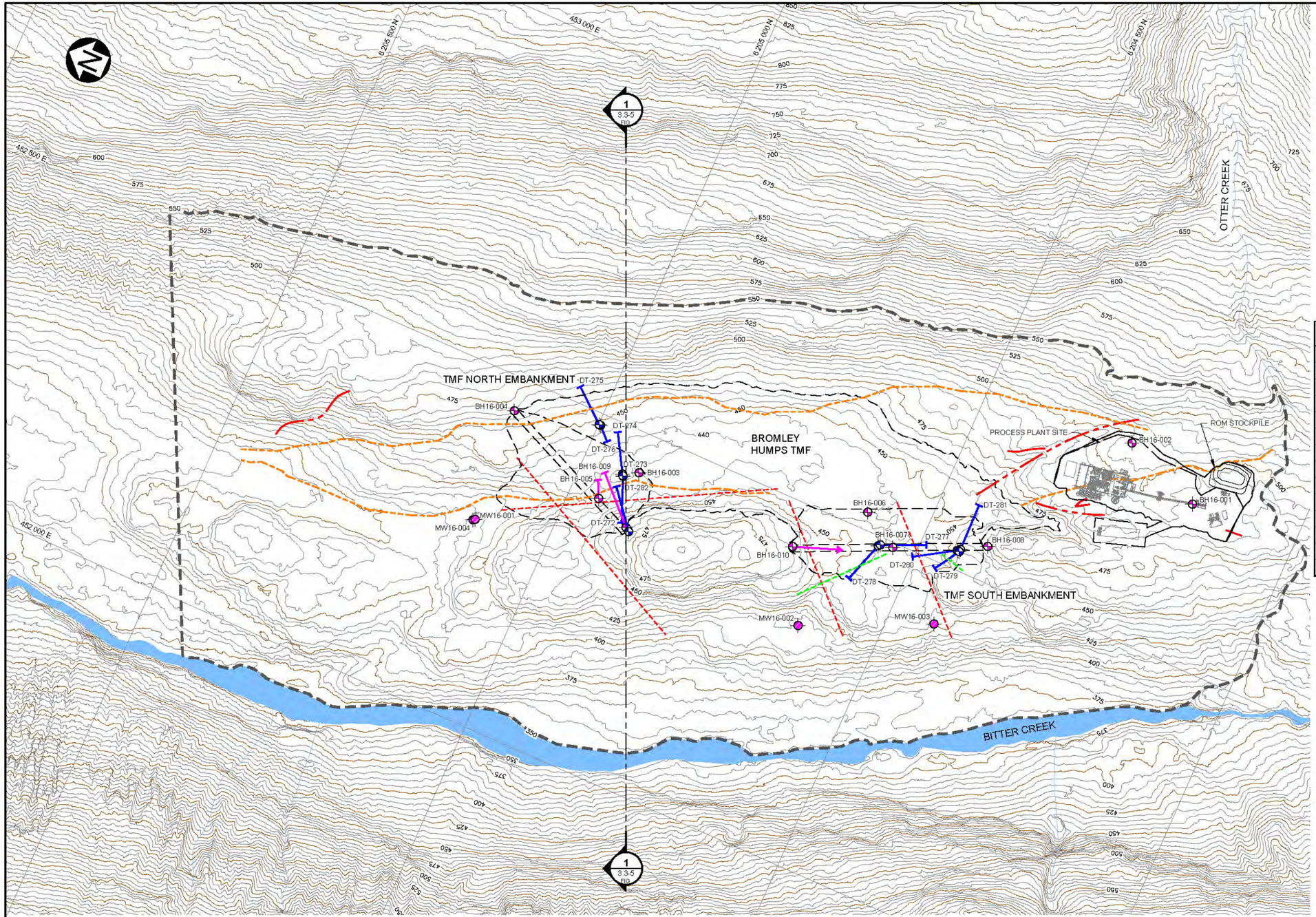
- Summarize data sources and methods used to compile information on the existing groundwater flow regime.
- Describe the groundwater conditions including overburden and bedrock geology, bulk hydraulic conductivity values and groundwater levels.
- Estimate the rate and direction of groundwater flow.
- Assess the expected interaction of groundwater with surface water.
- Develop a conceptual model of the baseline groundwater flow conditions to support defining potential effects during all stages of the Project.

The hydrogeology for the Mine Site as well as groundwater quality for Bromley Humps and the Mine Site are described in separate reporting by SRK (2017a).

1.4 STUDY AREA

A Technical Study Area (TSA) was defined to bound the physical structures and mine activities of the Project in the area of Bromley Humps, as shown on Figure 1.4-1. This TSA also bounds potential effects on the groundwater flow regime as a result of the Project. For the purpose of the hydrogeological assessment at Bromley Humps, the key consideration for potential effects is seepage from the TMF to the receiving environment.

The mine infrastructure in the TSA includes the TMF, Process Plant Site and ROM Stockpile. Bitter and Otter creeks are natural boundaries of the TSA to the west and south, respectively. The boundary to the north is defined by an area of low relief located northwest of the TMF North Embankment, where groundwater discharge may be expected. The contour elevation of El. 550 m along the eastern slope of Bitter Creek Valley was assigned as the east boundary and reflects the approximate upper limit at which mine infrastructure along this slope exists.



LEGEND:

- BH16-001 — 2016 GEOTECHNICAL DRILLHOLES
- MW16-001 — 2016 MONITORING WELLS
- DT-272 — 1996 HISTORIC DRILLHOLE (GOLDER ASSOCIATES)
- INFERRED FAULTS (FROM IDM)
- INFERRED (FROM DEM)
- FAULT LINE (FROM IDM)
- TSA
- INFERRED FAULT (GOLDER, 1996)

LABEL	INSTALLATION	EASTING (m)	NORTHING (m)	AZIMUTH °	DIP °
BH16-001	STANDPIPE PIEZOMETER	452,728	6,204,160	0°	-90°
BH16-002	STANDPIPE PIEZOMETER	452,774	6,204,277	0°	-90°
BH16-003	STANDPIPE PIEZOMETER	452,442	6,204,918	0°	-90°
BH16-004	VWP	452,451	6,205,121	0°	-90°
BH16-005	VWP	452,384	6,204,956	64°	-60°
BH16-006	VWP	452,525	6,204,589	0°	-90°
BH16-007	VWP	452,493	6,204,535	0°	-90°
BH16-008	VWP	452,550	6,204,409	0°	-90°
BH16-009	STANDPIPE PIEZOMETER	452,362	6,204,903	45°	-50°
BH16-010	VWP	452,435	6,204,669	160°	-50°
MW16-001	MONITORING WELL	452,283	6,205,109	0°	-90°
MW16-002	MONITORING WELL	452,332	6,204,615	0°	-90°
MW16-003	MONITORING WELL	452,415	6,204,434	0°	-90°
MW16-004	MONITORING WELL	452,281	6,205,112	0°	-90°

NOTES:

1. COORDINATE GRID IS UTM NAD 83 ZONE 9.
2. TOPO PROVIDED BY JDS MINING (JANUARY 2016).
3. CONTOUR INTERVAL IS 5 METRES.
4. ALL ELEVATIONS ARE IN METRES, UNLESS NOTED OTHERWISE.
5. PROCESS PLANT SITE LOCATION PROVIDED BY JDS MINING (NOVEMBER 2016).
6. NEGATIVE DIP IMPLIES DOWNHOLE.
7. DRILLHOLE COORDINATES ARE FINAL SURVEYED COORDINATES PROVIDED BY IDM MINING LTD. (OCTOBER 2016).
8. FAULT AND INFERRED FAULTS PROVIDED BY IDM MINING LTD. (AUGUST 2016).
9. INFERRED LINEAMENT FROM DIGITAL ELEVATION MODEL (DEM).

60 30 0 100 200 300 m
SCALE A

PLAN
SCALE A

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED
0	02JUN'17	ISSUED WITH REPORT	CHS	ND	JEF

IDM MINING LTD.

RED MOUNTAIN UNDERGROUND GOLD PROJECT

BROMLEY HUMPS LOCATION PLAN

Knight Piésold CONSULTING

P/A NO. VA101-594/4 | REF NO. 5

FIGURE 1.4-1 | REV 0

SAVED: M:\101\00594\04\A\Acad\FIGS\B13_r0, 6/1/2017 2:03:49 PM , NDANCHOVA PRINTED: 6/1/2017 2:07:07 PM, Layout1, NDANCHOVA
XREF FILE(S): IMAGE FILE(S):

2 – SITE DESCRIPTION

2.1 PHYSIOGRAPHY

The Project is situated within the northern Coastal Mountains, between the Cambria Icefield and tongue of the Bromley Glacier (Figure 1.2-1). The terrain is steep and rugged with mountain peaks above El. 2,000 m.

Locally, the elevation at Bromley Humps varies from about El. 350 m at Bitter Creek to El. 500 m just above the upper extent of the proposed TMF, along the steep eastern slope of Bitter Creek Valley. This area of the Bitter Creek Valley is primarily within the Mountain Hemlock Biogeoclimatic zone, characterized by high snowfall and a short growing season (SNC, 2017). The proposed TMF is located below the treeline in a densely forested area (Figure 2.1-1).

LEGEND:

PROJECT FACILITIES

50 25 0 50 100 150 200 250 Meters

NOTES:

1. BASE MAP: ATLAS OF CANADA TOPOGRAPHIC DATA.

2. COORDINATE GRID IS IN METRES.
COORDINATE SYSTEM: NAD 1983 UTM ZONE 9N.

3. THIS FIGURE IS PRODUCED AT A NOMINAL SCALE OF 1:3,500 FOR 11x17 (TABLOID) PAPER. ACTUAL SCALE MAY DIFFER ACCORDING TO CHANGES IN PRINTER SETTINGS OR PRINTED PAPER SIZE.

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED
0	02JUN'17	ISSUED WITH REPORT	CHS	KK	JEF

IDM MINING LTD.

RED MOUNTAIN UNDERGROUND GOLD PROJECT

VIEW OF PROPOSED TMF AREA AT BROMLEY HUMPS

Knight Piésold CONSULTING

P/A NO. VA101-594/4

REF NO. 5

FIGURE 2.1-1

REV 0

SAVED: M:\101\00594\04\A\GIS\Figs\Report 5 Hydrogeo\Fig2-1-1_TMFatBromleyOrthophotos_r0.mxd, May 30, 2017 10:25 AM, kkrauszova

2.2 CLIMATE

The baseline meteorology study for the Project is described in SRK (2017b) and includes data from a meteorological station (Redmount Station El. 1,498 m) installed in July 2014 at the Mine Site (Figure 1.2-1). The specific installation location of this site station was considered ideal for wind speed and direction but less desirable for precipitation, in particular measurements of snow depth, due to wind scour during the winter (SRK, 2017b). Long-term records from regional climate stations supplement the data from the Redmount Station (SRK, 2017b).

The following sections summarize the temperature and precipitation for the Project based on the study by SRK (2017b).

2.2.1 Temperature

Hourly temperature data from the Redmount station were collected between July 2014 and July 2016 (SRK, 2017b). SRK (2017b) only presented monthly average temperatures when fewer than five days of data were missing (Table 2.2-1).

Table 2.2-1 Monthly Average Temperature (^{o}C) Recorded at Redmount Station (El. 1498 m)

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2014	-	-	-	-	-	-	-	8.7	6.2	0.7	-3.2	-4.2
2015	-4	-	-	-	-	-	-	6.4	2.3	1.6	-4.3	-6.2
2016	-3.2	-3.3	-2.4	0.3	3.3	5.5	-	-	-	-	-	-

NOTES:
1. SOURCE SRK (2017b).

Based on correlations between site and regional datasets, the mean annual air temperature at El. 1,514 m (considered representative for the Mine Site) was estimated as -0.8°C, with monthly variability ranging between -6.4°C in December and January and 6.9°C in August (SRK, 2017b).

2.2.2 Precipitation

Hourly precipitation data from the Redmount station were collected between August 2015 to June 2016. Similar to temperature, SRK only presented monthly precipitation when fewer than five days of data were missing (Table 2.2-2).

Table 2.2-2 Monthly Precipitation (mm) Recorded at Redmount Station (El. 1498 m)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2015	-	-	-	-	-	-	-	155.4	179.3	349.6	-	-
2016	-	-	250.6	160.6	128.9	98.6	-	-	-	-	-	-

NOTES:
1. SOURCE SRK (2017b).

The Environment Canada climate station at Stewart A (El. 7m), was considered by SRK (2017b) to be the most representative for the Project for daily precipitation, with a mean annual precipitation (MAP) of 1,847 mm/year (SRK, 2017b). This assessment by SRK (2017b) assumes that the MAP at station Stewart A, is directly representative of the Project.

For the purposes of engineering design work, KP (2017a) provided alternate MAP values taking into consideration orographic effects, which were not included in the SRK (2017b) estimates. KP (2017a) presented two MAP cases for the Bromley Humps and Mine Site areas as follows:

- Base Case: Assumes the MAP estimate by SRK (2017b) is representative for El. 1,500 m. An orographic factor of 2.4% is applied to estimate the MAP at the lower elevation area of Bromley Humps.
- Adjusted Case: Precipitation values for Bromley Humps and the Mine Site were generated using PRISM, a climate generation feature on the ClimateBC website.

The base case resulted in a MAP of 1,457 mm at El. 500 m and 1,847 mm at El. 1,500 m. The adjusted case resulted in a MAP of 2,084 mm at El. 500 m and 2,635 mm at El. 1,500 m. The distribution of precipitation as rain and snow, as well as estimates for evapotranspiration for the base case and adjusted case are presented in Tables 2.2-3 and Table 2.2-4. The base case and adjusted case values are considered the lower and upper bounds, respectively for precipitation (KP, 2017a).

Table 2.2-3 Bromley Humps Monthly Average Hydrometeorological Parameters (Base Case)

Month	Total Precipitation (mm)	Rainfall (mm)	Snowfall Water Equivalent (mm)	Evapotranspiration (mm)
January	173	138	36	0
February	108	84	21	4
March	96	79	20	26
April	71	71	2	59
May	57	55	0	88
June	52	51	0	88
July	61	62	0	96
August	96	99	0	81
September	167	171	0	41
October	230	225	1	19
November	179	153	22	7
December	169	131	35	0
Annual	**1,457**	**1,319**	**138**	**509**

NOTES:
1. SOURCE KP (2017).

Table 2.2-4 Bromley Humps Monthly Average Hydrometeorological Parameters (Adjusted Case)

Month	Total Precipitation (mm)	Rainfall (mm)	Snowfall Water Equivalent (mm)	Evapotranspiration (mm)
January	247	197	52	0
February	155	120	29	4
March	137	113	28	26
April	102	101	3	59
May	81	79	0	88
June	75	73	0	88
July	87	88	0	96
August	137	142	0	81
September	238	245	0	41
October	329	322	2	19
November	256	219	32	7
December	242	187	50	0
Annual	**2,084**	**1,886**	**198**	**509**

NOTES:
1. SOURCE KP (2017).

2.3 HYDROLOGY

Glaciated areas as well as the many tributary creeks discharging into Bitter Creek define the hydrology regime at the Project. Bitter Creek flows to the west of the proposed TMF and is a tributary of Bear Creek, which flows into the Portland Canal at Stewart (Figure 1.2-1). Otter Creek, a tributary of Bitter Creek is south of the proposed TMF, flowing along the steep eastern slope of the valley.

Knight Piésold (KP) observed a small flowing unmapped channel in the area of the proposed TMF during 2016 field investigations. Palmer Environmental Consulting Group Inc. (PECG) and a representative from the Department of Fisheries and Ocean (DFO) inspected this channel during a May 2017 site visit. The channel was concluded to be non-fish bearing due to a series of chutes and drops within a 200 m section immediately upstream of the confluence with Bitter Creek (PECG, 2017). The section of the channel below the most downstream drop was described as shallow and lacking in definition where the channel fans before entering Bitter Creek (PECG, 2017).

2.3.1 Discharge Measurements

The baseline hydrology study for the Project is described in SRK (2017b) and includes four active hydrometric stations (Table 2.3-1). The location of the hydrometric stations are shown on Figure 1.2-1.

Table 2.3-1 Active Site Hydrometric Stations

ID	Station Name	Area (km^2)	Average Watershed Elevation (m)	Average Watershed Slope	Forest Cover %	Glacier Cover %
GSC05	Goldslide Creek before drop- off	1.6	1,756	26.3	100	0
OC04	Otter Creek before drop-off	2.2	1,849	28.3	100	45.8
BC02	Bitter Creek at HWY37A Bridge	267.1	1,483	20.9	89.6	57.8
OC7	Lower Otter Creek	6.6	1,709	23.6	93.3	38.7

NOTES:
1. SOURCE SRK (2017b).

Manual discharge measurements are presented between June 2014 and September 2016 for stations OC04 and GSC05 (SRK, 2017b). Discharge measurements are reported from station BC02 from August 2014 to July 2016 (SRK, 2017b). No discharge measurements were reported for station OC07 as data until December 2016 was limited (SRK, 2017b). Manual discharge measurements during the data collection periods only includes winter measurements at station BC02 in 2016 (January and February).

Two runoff models were generated by SRK (2017b) based on glacier cover. Watersheds with less than 10% glacial cover were estimated to have a mean annual runoff of 1,555 mm/year (i.e., Goldslide Creek), and watersheds with more than 10% glacial cover were estimated to have a mean annual runoff of 2,828 mm/year (i.e., Otter and Bitter creeks). SRK (2017b) reports the freshet peak-flow occurs in July for Bitter and Otter creeks. Using a base-flow separation analysis, the lowest base-flow values were estimated to occur in January as 1.6 l/s/km² for Bitter and Otter creeks, and 1.9 l/s/km² for Goldslide Creek (SRK, 2017b).

Field staff investigated the unmapped channel in the area of the TMF during the climate and hydrology site visit in March 2017 (Avison, 2017). A section of the channel is adjacent to the trail used to access monitoring well MW16-004 and a point along this area was inspected. The channel was found to be largely snow covered. Flow in the channel was estimated at 4 L/s, based on visual similarities to Goldslide Creek (Avison, 2017). This discharge estimate may have been influenced by snowmelt as Avison (2017) reported temperatures as high as 8^{o}C during the March site trip.

2.4 WATER QUALITY

The baseline water quality study for the Project is described in SRK (2016) and includes surface water and groundwater quality monitoring stations at both the Mine Site and Bromley Humps. The active surface water quality stations for the Project are shown on (Figure 1.2-1). Groundwater quality data for Bromley Humps is being collected from three monitoring wells (MW16-002, MW16-003 and MW16-004) installed in August 2016, downslope of the proposed TMF (Figure 1.4-1). The monitoring wells are sampled quarterly but no data were available from these wells for reporting in SRK (2016).

The following is a summary of the water quality conditions for the Project sourced directly from SRK (2016).

Surface water has circumneutral pH. Calcium and sulphate are the dominant ions in Bitter, Goldslide and Otter creeks. Baseline water is naturally influenced by mineralization in the watersheds, and many of water quality samples have pH, fluoride, and total and/or dissolved aluminum, arsenic, cadmium, cobalt, copper, iron, lead, manganese, mercury, nickel, selenium, silver, and zinc concentrations that exceed Federal and/or Provincial water quality guidelines. Bitter and Otter creeks, which are strongly influenced by glacial meltwater, have high seasonal suspended sediment loads during high flow periods in the summer, and are associated with elevated levels of trace metals.

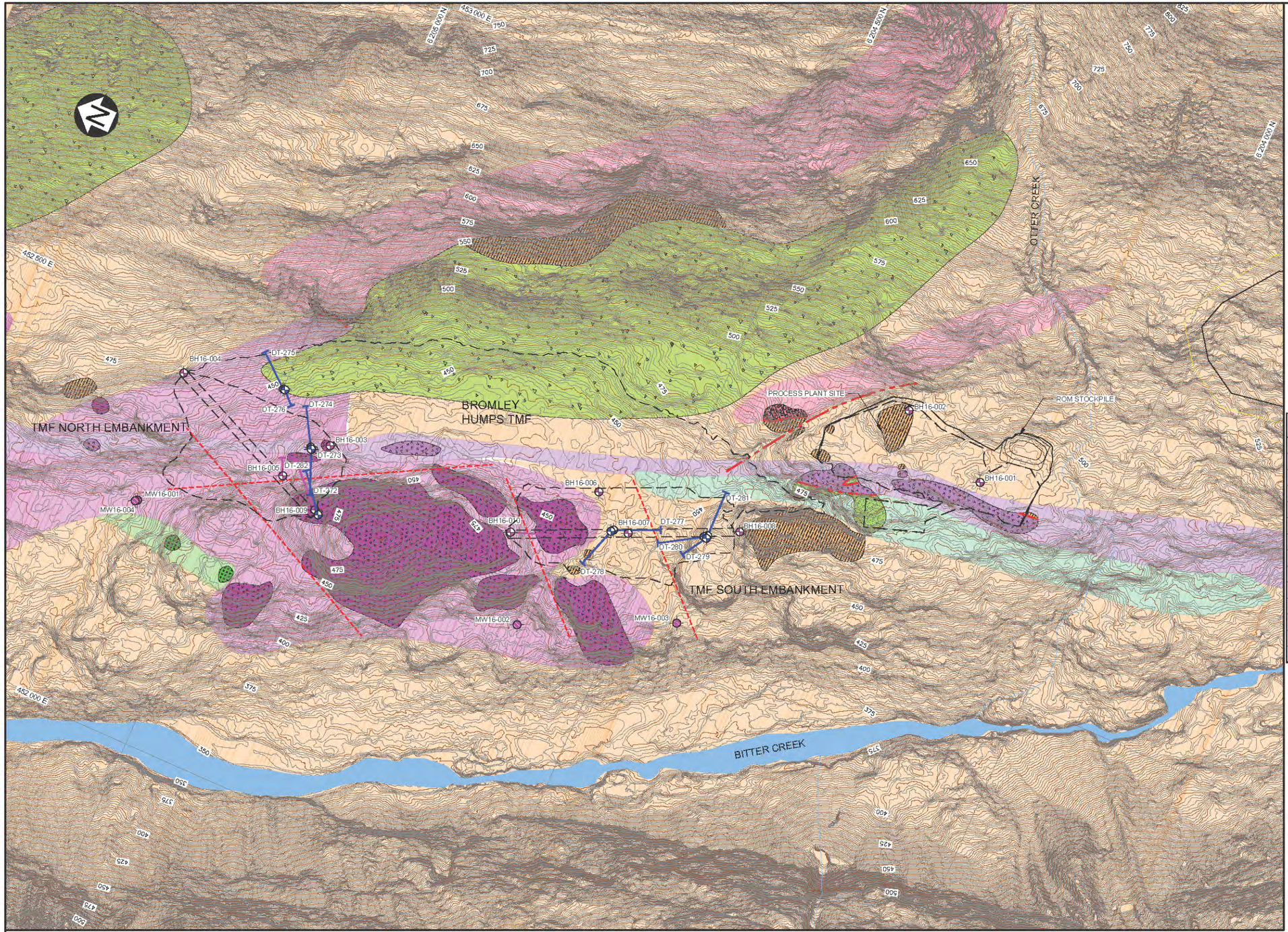
2.5 GEOLOGY

2.5.1 Surficial Geology

The regional surficial geology for the Project, as described by SNC (2017), is summarized below.

Several episodes of glaciation at the Project are evident in the regional geology, largely in the deposition of glacial material as well as in the erosion or debuttressing of valley slopes. The most recent major glacial episode at the Project was the Fraser Glaciation, about 10,000 to 30,000 years ago. Through the Holocene, four periods of Bromley glacial advance were documented between 2,470 ± 30 to 830 ± 30 years before present, the most recent of these corresponding to early Little Ice Age expansion. The Bromley Glacier did not reach the same ice thickness in these expansions as it did during the earlier Fraser glaciations. As a result, recent advances have stripped away the lower elevations of prior lateral moraine deposits, and oversteepened these slopes. Presently, local glaciers continue to modify the environment through ongoing glacial retreat. Glacial ice originating in the Cambria Icefield primarily enters the valley via the Bromley Glacier, which has been retreating at an average rate of 86 m/year over the hundred year period between 1910 to 2010.

Surficial geology mapping by IDM and drilling from the 2016 site investigation (KP, 2016) provides information on the local setting at Bromley Humps. Overburden cover is sparse and was generally thin where encountered during drilling, with thickness ranging from 0 to 6.8 m with an average thickness of 1.8 m (KP, 2016). The thickest overburden was intersected in lower lying areas above gently sloping bedrock near the centre of the valleys along the proposed embankments. The surficial geology is primarily comprised of bedrock outcrops, colluvium and glacial moraine. The colluvium is generally described as a dense gravel to sandy gravel unit with a low fines content based on six samples KP(2016). The glacial till is described as a sandy silt to well graded sand gravel with moderate fines content based on two samples (KP, 2016). Surficial geology mapping and interpretation completed by IDM in 2016 is presented on Figure 2.5-1.



LEGEND:

- BH16-001 — 2016 GEOTECHNICAL DRILLHOLES
- MW16-001 — 2016 MONITORING WELLS
- DT-272 — 1996 HISTORIC DRILLHOLE (GOLDER ASSOCIATES)
- INFERRED FAULT
- FAULT LINE
- GABBRO
- MORAINE
- QUARTZ MONZONITE
- SILTSTONE
- GOLDSLIDE PROPHYRY
- ANDESITE
- ARGILLITE
- GABBRO OUTCROP
- QUARTZ MONZONITE OUTCROP
- SILTSTONE OUTCROP
- GOLDSLIDE PROPHYRY OUTCROP
- ANDESITE OUTCROP
- ARGILLITE OUTCROP

LABEL	INSTALLATION	EASTING (m)	NORTHING (m)	AZIMUTH °	DIP °
BH16-001	STANDPIPE PIEZOMETER	452,728	6,204,160	0°	-90°
BH16-002	STANDPIPE PIEZOMETER	452,774	6,204,277	0°	-90°
BH16-003	STANDPIPE PIEZOMETER	452,442	6,204,918	0°	-90°
BH16-004	VWP	452,451	6,205,121	0°	-90°
BH16-005	VWP	452,384	6,204,956	64°	-60°
BH16-006	VWP	452,525	6,204,589	0°	-90°
BH16-007	VWP	452,493	6,204,535	0°	-90°
BH16-008	VWP	452,550	6,204,409	0°	-90°
BH16-009	STANDPIPE PIEZOMETER	452,362	6,204,903	45°	-50°
BH16-010	VWP	452,435	6,204,669	160°	-50°
MW16-001	MONITORING WELL	452,283	6,205,109	0°	-90°
MW16-002	MONITORING WELL	452,332	6,204,615	0°	-90°
MW16-003	MONITORING WELL	452,415	6,204,434	0°	-90°
MW16-004	MONITORING WELL	452,281	6,205,112	0°	-90°

NOTES:

1. COORDINATE GRID IS UTM NAD 83 ZONE 9.
2. TOPO PROVIDED BY JDS MINING (JANUARY 2016).
3. CONTOUR INTERVAL IS 1 METRE.
4. ALL ELEVATIONS ARE IN METRES, UNLESS NOTED OTHERWISE.
5. PLANT SITE LOCATION PROVIDED BY JDS MINING (NOVEMBER 2016).
6. NEGATIVE DIP IMPLIES DOWNHOLE.
7. FAULTS PROVIDED BY IDM MINING LTD. (AUGUST 2016).
8. DRILLHOLE COORDINATES ARE FINAL SURVEYED COORDINATES PROVIDED BY IDM MINING LTD. (OCTOBER 2016).

SCALE A: 50 25 0 50 100 150 200 250 m

PLAN
SCALE A

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED
0	02JUN'17	ISSUED WITH REPORT	JEF	ND	KDE

IDM MINING LTD.

RED MOUNTAIN UNDERGROUND GOLD PROJECT

SURFICIAL GEOLOGY AND BEDROCK MAPPING BY IDM MINING LTD.

Knight Piésold CONSULTING

P/A NO.: VA101-594/4 | REF NO.: 5

FIGURE 2.5-1 | REV 0

SAVED: M:\101\00594\04\AAcad\FIGS\B15_r0, 6/1/2017 2:35:40 PM, NDANCHOVA PRINTED: 6/1/2017 2:52:45 PM, Layout1, NDANCHOVA
XREF FILE(S): IMAGE FILE(S):

2.5.2 Bedrock Geology and Structures

The Project is located at the western perimeter of the Bowser Basin, near the boundary of the Intermontane and Coast Mountain belts. The regional bedrock geology is described by SNC (2017) as composed of well bedded Jurassic (157-174 Ma) marine clastic rocks of the Hazelton Group, overlying Paleozoic to Lower Jurassic (174-201 Ma) oceanic arc, volcanic and volcaniclastic basement rocks also of the Hazelton Group. The units were intruded by granitoids of the Coast Plutonic Complex dated to the Eocene and older (35-56 Ma).

The following interpretation of the regional geology of the Bitter Creek valley south of Roosevelt Creek is sourced directly from Klohn Crippen (1994). The interpretation includes a geological contact in the eastern slope of Bitter Creek valley mapped from the Red Mountain area, north toward the Roosevelt area. This contact is steeply dipping to the west and was mapped in Goldslide and Rio Blanco creeks. In Rio Blanco, the contact was placed at approximately El. 450 m and from air photos appears to trend slightly upslope to the north. This contact defines a gradational boundary between intercalated siltstones and lithic greywackes in the lower slope and pyroclastic rocks such as crystalline and lithic tuffs in the upper slope.

Information about the local bedrock geology at Bromley Humps is based on the mapping of bedrock outcrops by IDM, a terrain assessment by SNC (2017), and drill core from site investigations in 1996 (Golder, 1996) and 2016 (KP, 2016).

Bedrock outcrops mapped by IDM at Bromley Humps in the area of the TMF and Process Plant Site include siltstone, gabbro and quartz monzonite. The mapped bedrock outcrops and interpreted lithology units at Bromley Humps by IDM are shown on Figure 2.5-1. IDM also identified four potential faults in the area of the TMF embankments with general orientation as follows:

- Subparallel to Bitter Creek intersecting the alignment of the TMF North Embankment. The mapping by IDM consists of one inferred fault at the left abutment but there are likely additional sub-vertical features. A Digital Elevation Model (DEM) of the TMF area suggests this inferred fault identified by IDM potentially extends through the TMF area, following the unmapped channel. At least one other lineament intersecting the TMF North Embankment at the right abutment was identified from the DEM (Figure 2.5-2).
- Perpendicular to Bitter Creek with two inferred faults acting as boundaries to the gabbro intrusion between the TMF North and South Embankments (referred to as one of the Bromley Humps). One of these two faults intersects the TMF South Embankment at the right abutment. A third fault intersects the TMF South Embankment near the centreline.

As indicated, the TMF North and South Embankments are separated by a high relief gabbro intrusion, which is referred to as one of the Bromley Humps. SNC (2017) recommended the stability of the north valley headwall above the TMF and within the Bromley Humps be evaluated, based on evidence of a pre-glacial rotational rock slide (slump) above the proposed TMF. The confinement of the Bromley Hump relative to the elongate structure of the adjacent faults suggests the Bromley Hump is likely to be less susceptible to erosion than the surrounding siltstone and/or faulted stratigraphy resulting in preferential erosion of the surrounding material relative to the gabbro intrusion during glacial periods.

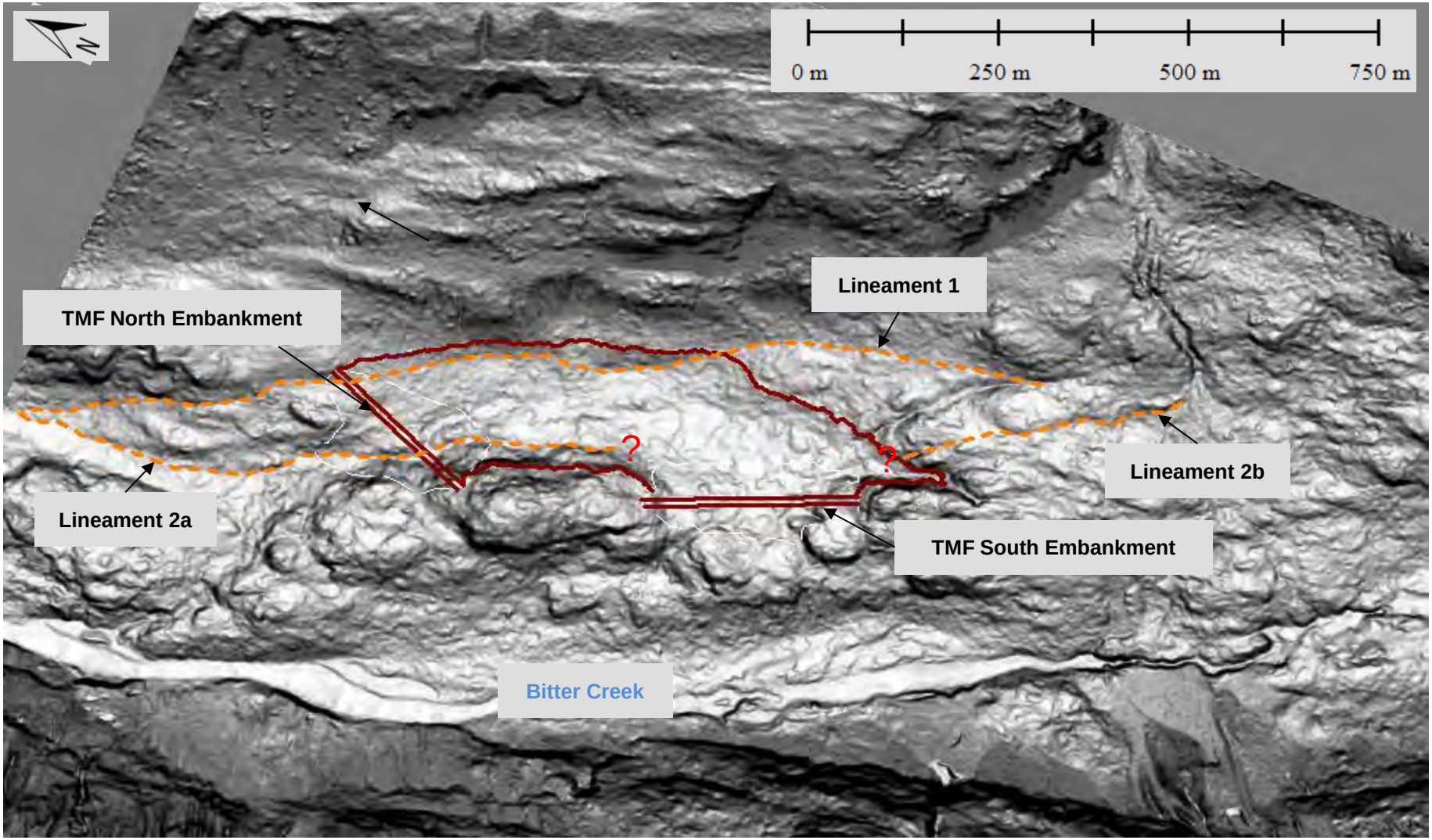
The geology in the TMF area was characterized by KP (2016) based on the drilling data from the 1996 and 2016 site investigations. Past deformation of the bedrock is evident in the drill core data,

based on commonly described high fracture density, numerous broken, sheared and brecciated zones and some slickensided joint faces.

Drilling for the TMF North Embankment mainly encountered gabbro, diorite, tuff and goldslide porphyry suite rocks. The rock (excluding faulted zones) had an average Rock Quality Designation (RQD) and Rock Mass Rating (RMR) of 62% and 57% respectively (KP, 2016). KP (2016) indicates the inferred fault intersecting the alignment near the left abutment was identified in two drill holes (BH16-009 and DT-282).

Bedrock in the area of the TMF South Embankment was generally comprised of gabbro and mafic and felsic dykes. Siltstone, mudstone greywacke and conglomerate rocks were encountered at the left abutment and downslope of the embankment. The rock (excluding faulted zones) had an average RQD and RMR of 46% and 53%, respectively. The suspected fault intersecting the alignment near the right abutment was encountered in BH16-010. The second inferred fault intersecting the alignment of the TMF South Embankment was identified in DT-277 and DT-280 (KP, 2016).

Cross-sections along and perpendicular to both the alignments are presented in KP (2016). For general reference, one of the sections has been reproduced as Figure 2.5-3.



TMF Outline

Inferred Fault Trace

REV	DATE	DESCRIPTION	PREP'D	RVW'D
0	02JUN'17	ISSUED WITH REPORT	KTD	CHS

IDM MINING LTD.

RED MOUNTAIN UNDERGROUND GOLD PROJECT

INFERRED FAULT LINEAMENTS FROM DIGITAL ELEVATION MODEL

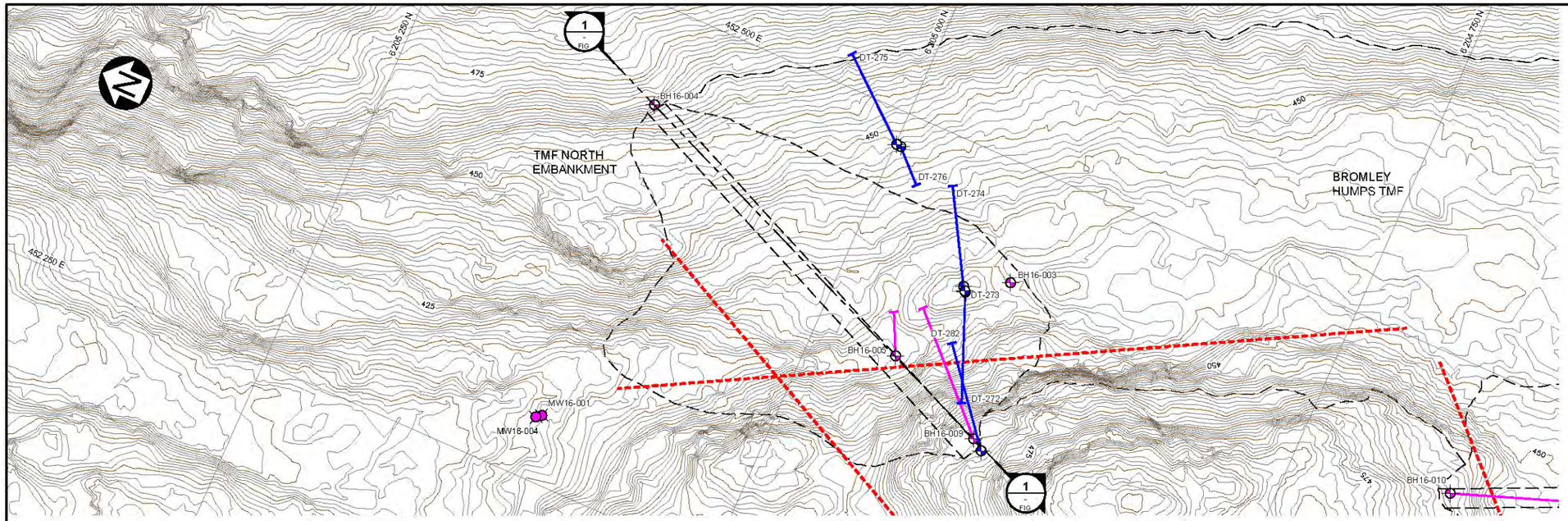
Knight Piésold CONSULTING

P/A NO. VA101-594/4

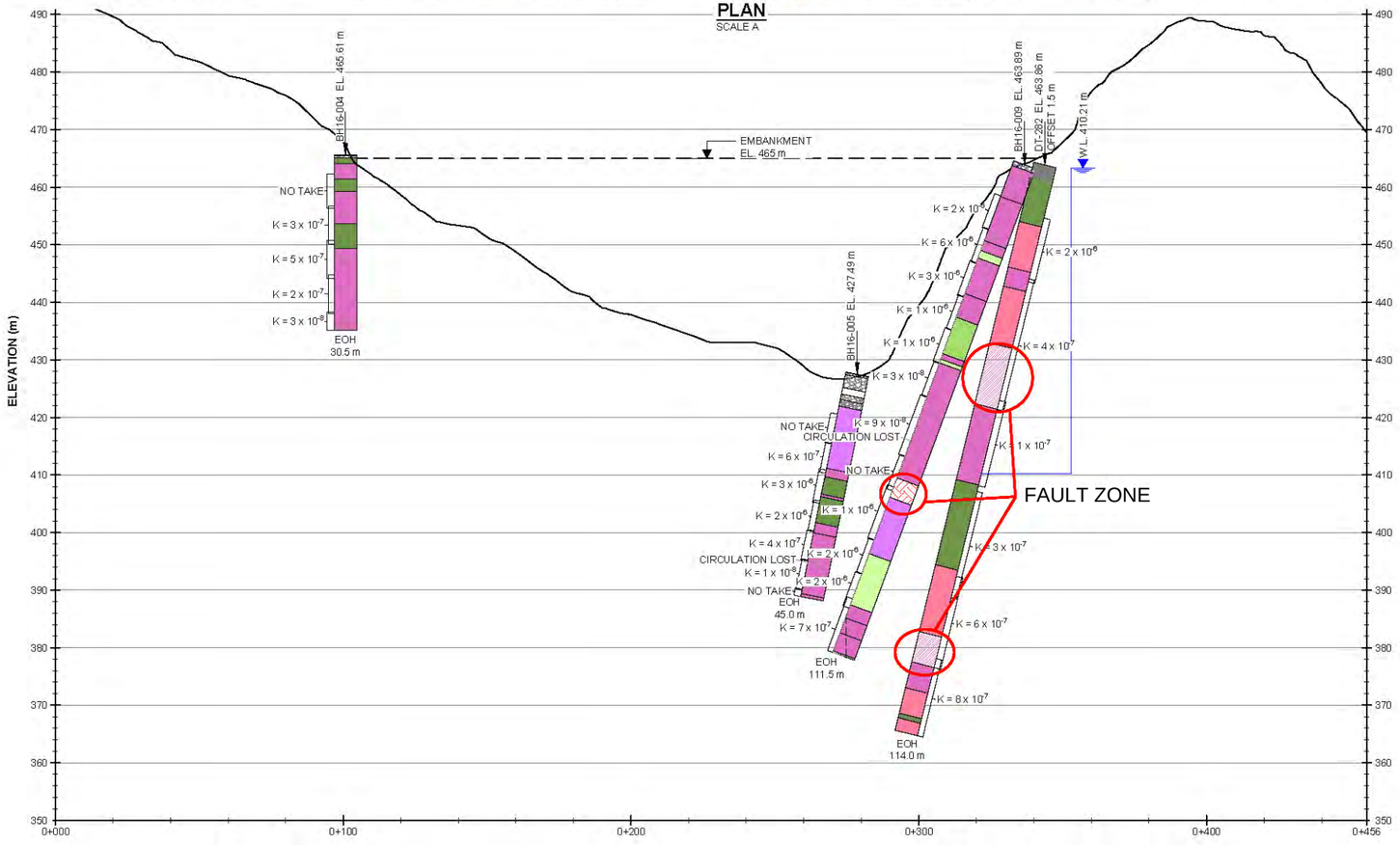
REF. NO. 5

FIGURE 2.5-2

REV 0



PLAN
SCALE A



1 FIG
SECTION
HORIZONTAL: SCALE B
VERTICAL: SCALE C

NOTES:

1. IN FIVE INSTANCES, HYDRAULIC CONDUCTIVITY TEST INTERVALS IN HISTORIC DRILLHOLES WERE TESTED TWICE, ONCE USING A FALLING HEAD TEST METHOD AND ONCE USING A CONSTANT HEAD TEST METHOD. THE MAJORITY OF REPORTED HISTORIC HYDRAULIC CONDUCTIVITY TESTS USED THE FALLING HEAD TEST METHOD. WHERE AN INTERVAL WAS TESTED USING TWO METHODS, THE FALLING HEAD TEST RESULT IS SHOWN. THE REPORTED FALLING HEAD TEST AND CONSTANT HEAD TEST RESULTS WERE WITHIN A MULTIPLE OF TWO, WITH THE EXCEPTION OF THE FIRST TEST INTERVAL IN DT-277 AND THE SECOND TEST INTERVAL IN DT-275 THAT WERE HALF AN ORDER OF MAGNITUDE AND OVER ONE ORDER OF MAGNITUDE DIFFERENT RESPECTIVELY.

LEGEND:

- BOULDERS
- COBBLES
- GRAVEL
- SAND
- SILTY SAND
- SILTY GRAVEL
- SILTY SANDY GRAVEL
- FOREST DUFF AND TOPSOIL
- OVERBURDEN
- CONGLOMERATES
- WACKE
- GREYWACKE
- SILTSTONE
- MUDSTONE
- TUFF (WELDED)
- DYKE
- MAFIC DYKE
- FELSIC DYKE
- FELDSPAR-HORNBLENDE PORPHYRY DYKE
- QUARTZ VEIN
- GABBRO
- SHEARED GABBRO
- DIORITE
- GOLDSLIDE PORPHYRY SUITE
- FAULT ZONE
- STRAINED FAULT ZONE
- BRECCIATED FAULT ZONE
- BH16-001 — 2016 GEOTECHNICAL DRILLHOLES
- MW16-001 — 2016 MONITORING WELLS
- DT-272 — 1996 HISTORIC DRILLHOLE (GOLDER ASSOCIATES)
- INFERRED FAULTS (IDM, 2016)
- K = 3 x 10⁻⁵ — HYDRAULIC CONDUCTIVITY (m/sec)
- WATER LEVEL (MEASURED SEPT. 2016)
- HISTORIC WATER LEVEL (MEASURED AUG. 1996)
- DRILLING CIRCULATION LOSS ZONE

SCALE C: 10 5 0 10 20 30 40 50 m
SCALE B: 20 10 0 20 40 60 80 100 m
SCALE A: 25 12.5 0 25 50 75 100 125 m

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED
0	02JUN'17	ISSUED WITH REPORT	JEF	ND	KDE

IDM MINING LTD.

RED MOUNTAIN UNDERGROUND GOLD PROJECT

TMF NORTH EMBANKMENT SECTION ALONG ALIGNMENT

Knight Piésold CONSULTING

P/A NO. VA101-594/4 | REF NO. 5

FIGURE 2.5-3 | REV 0

SAVED: M:\1\01\00594\04\A\Acad\FIGS\B14_r0_6/1/2017 3:20:31 PM, , NDANCHOVA PRINTED: 6/1/2017 3:24:35 PM, , Layout, NDANCHOVA
XREF FILE(S): IMAGE FILE(S):

2.6 EXISTING GROUNDWATER USE

There are no identified aquifers mapped in the TSA based on a review of the BC Water Resource Atlas (BC MOE, 2017a). Similarly, there are no records of groundwater use in the TSA (BC MOE, 2017a). The closest observation well to the Project within the BC Groundwater Observation Well Network (BC MOE, 2017b) is over 200 km away near the town of Smithers.

3 – BASELINE HYDROGEOLOGY

3.1 SITE INVESTIGATIONS

Site investigations for the purposes of geotechnical and groundwater data collection were conducted in 1996 and 2016 at Bromley Humps. Golder Associates (Golder) completed the site investigation in 1996 and the program is summarized in a Draft Technical Memorandum (Golder, 1996). This program included 11 drill holes with in-situ hydraulic conductivity tests and the installation of standpipe piezometers with spot water level measurements.

KP completed a geotechnical site investigation in 2016 for the purposes of advancing the understanding of the ground conditions in the areas of the TMF and the Process Plant Site. This site investigation is summarized in KP (2016), and included 14 drill holes with in-situ hydraulic conductivity tests and installation of monitoring wells (groundwater level and groundwater quality data collection), standpipe piezometers (groundwater level only) and vibrating wire piezometers (VWPs).

A summary of the drill holes are included in Table 3.1-1 and Table 3.1-2. The location of the 1996 and 2016 drill holes and installations as well as the inferred faults targeted during drilling are shown on Figure 1.4-1.

Knight Piésold CONSULTING

TABLE 3.1-1

IDM MINING LTD.
RED MOUNTAIN UNDERGROUND GOLD PROJECT

SUMMARY OF DRILL HOLES AND INSTRUMENTATION
(1996 SITE INVESTIGATION)

Print Aug/23/17 15:45:25

Drill Hole ID	Location	Coordinates						Azimuth	Dip	Drill Hole Size	Total Depth	Standpipe Piezometer Completion Zone[3,4]		Completion Zone Comments
		Golder (1996)			Survey by IDM in 2016									
		Easting	Northing	Elevation[2]	Northing	Easting	Ground Elevation							
		(m)	(m)	(m)	(m)	(m)	(m)	(º)	(º)		(m from drill floor)	From (m below drill floor)	To (m below drill floor)	
DT-272	TMF North Embankment	452,548	6,204,746	435.69	452,428	6,204,937	436.29	248	-45	BQ	80	1.7	4.0	Not documented
DT-273	TMF North Embankment	452,549	6,204,747	435.56	452,429	6,204,937	436.28	-	-90	BQ	80	11.8	21.8	Completed in sheared gabbro and fractured porphyry
DT-274	TMF North Embankment	452,549	6,204,747	435.55	452,431	6,204,939	436.31	60	-50	BQ	80	3.0	9.0	Not documented
DT-275	TMF North Embankment	452,608	6,204,811	449.64	Not Located			40	-50	BQ	80	50.5	57.5	Completed in a fractured and oxidized zone
DT-276	TMF North Embankment	452,608	6,204,808	450.28	Not Located			226	-75	NQ	82	8.8	81.7	Not documented
DT-277	TMF South Embankment	452,608	6,204,361	445.29	452,489	6,204,553	445.22	156	-50	BQ	91	25.5	90.8	Completed in multiple fractured and oxidized zones
DT-278	TMF South Embankment	452,606	6,204,363	445.30	452,486	6,204,555	445.62	288	-45	NQ	76	34.5	45.7	Completed in a fractured and oxidized zone
												9.8	32.5	Not documented
DT-279	TMF South Embankment	452,645	6,204,251	454.29	452,526	6,204,443	454.56	302	-64	NQ	82	61.9	82.0	Completed in a fractured and oxidized zone
												35.6	60.0	Completed in a fractured zone
												14.0	33.8	Not documented
DT-280	TMF South Embankment	452,646	6,204,255	454.02	452,527	6,204,447	454.36	328	-47	NQ	85	38.4	48.4	Completed in a fractured and oxidized zone
												14.3	36.2	Completed in a fractured and oxidized zone
DT-281	TMF South Embankment	452,649	6,204,251	453.83	452,530	6,204,443	454.69	89	-44	NQ	81	49.5	66.1	Completed in a fractured and oxidized zone
DT-282	TMF North Embankment	452,491	6,204,700	464.55	Not Located			51	-60	NQ	114	90.8	105.5	Completed in a fractured and oxidized zone
												72.8	82.0	Completed in a fractured and oxidized zone

M:\1\01\00594\04\A\Data\400 - Bromley Humps Hydrogeology\6- Drill Hole and Instrumentation\[Table 3.1-1_3.1-2_Drillhole_KP2016_Golder1996_Rev0.xlsx]Table 3.1-1

NOTES:
1. SOURCE: GOLDER (1996)
2. ELEVATION OF CASING COLLAR
3. COMPLETION ZONE MEASURED FROM THE DRILL FLOOR ALONG THE DIP OF THE HOLE. DRILL FLOOR HEIGHT VARIED BETWEEN DRILL HOLES FROM 0.34 TO 1.1 m.
4. COMPLETION ZONE INCLUDES SAND PACK OR OPEN INTERVAL BELOW AND ABOVE THE SCREENED (SLOTTED PVC PIPE) INTERVAL.

REV	DATE	DESCRIPTION	PREP'D	RVW'D
0	02JUN'17	ISSUED WITH REPORT VA101-548/04-5	JZ	CHS

Knight Piésold CONSULTING

TABLE 3.1-2

IDM MINING LTD.
RED MOUNTAIN UNDERGROUND GOLD PROJECT

SUMMARY OF DRILL HOLE AND INSTRUMENTATION INSTALLATIONS
(2016 SITE INVESTIGATION)

Print Aug/23/17 15:41:03

Drill Hole ID	Location	Coordinates[2]			Azimuth	Dip	Drill Hole Size	Total Depth	Depth to Bedrock	Vibrating Wire Piezometer Information		Standpipe Piezometer/Monitoring Well Information[4]				
		Easting	Northing	Elevation						Installation Depth	Target	Screened Interval		Completion Zone		Target
		(m)	(m)	(m)	(º)	(º)		(m-along hole)	(m-along hole)	(mbgs)		From (mbgs)	To (mbgs)	From (mbgs)	To (mbgs)	
BH16-001	Process Plant Site	452,728	6,204,160	492.2	-	-90	HQ3	30.8	0.58	Not Applicable		14.0	17.1	6.9	20.1	Contact between Dyke & Greywacke
BH16-002	Process Plant Site	452,774	6,204,277	507.9	-	-90	HQ3	30.8	0.00	Not Applicable		24.5	27.6	20.3	30.8	Fractured Bedrock (Greywacke) Zone
BH16-003	TMF North Embankment	452,442	6,204,918	434.6	-	-90	HQ3	31.0	1.00	Not Applicable		22.0	25.0	18.9	28	Contact between Tuff and Sheared Gabbro Unit
BH16-004	TMF North Embankment	452,451	6,205,121	465.6	-	-90	HQ3	30.5	0.50	28.5	Water Level Monitoring	Not Applicable				
BH16-005	TMF North Embankment	452,384	6,204,956	427.5	64	-60	HQ3	45.0	6.84	33	Highly Broken and Chlorite Altered Zone	Not Applicable				
BH16-006	TMF South Embankment	452,525	6,204,589	442.6	-	-90	HQ3	34.9	4.83	27.7	Highly Broken and Rubbleized Zone	Not Applicable				
BH16-007	TMF South Embankment	452,493	6,204,535	443.6	-	-90	HQ3	34.8	2.57	31.5	Water Level Monitoring	Not Applicable				
BH16-008	TMF South Embankment	452,550	6,204,408	470.2	-	-90	HQ3	31.5	1.20	27.1	Weak and Highly Fractured Bedrock Unit	Not Applicable				
BH16-009	TMF North Embankment	452,362	6,204,903	463.6	45	-50	HQ3	111.5	1.00	Not Applicable[3]		28.4	40.1	1.1	40.1	Highly Broken and Rubbleized Zone
BH16-010	TMF South Embankment	452,435	6,204,669	463.1	160	-50	HQ3	95.6	0.60	22.2	Water Levels	Not Applicable				
										5.7	Broken Zone					
MW16-001	Downstream of TMF North Embankment	452,283	6,205,109	410.1	-	-90	HQ3	30.8	0.80	Not Applicable		20.0	23.0	12	30.8	Groundwater Quality Data Collection
MW16-002	Downstream of TMF South Embankment	452,332	6,204,615	412.3	-	-90	HQ3	32.8	2.80	Not Applicable		26.8	29.8	6	32.8	Groundwater Quality Data Collection
MW16-003	Downstream of TMF South Embankment	452,415	6,204,434	426.3	-	-90	HQ3	31.2	1.22	Not Applicable		27.1	30.2	2.2	31.2	Groundwater Quality Data Collection
MW16-004	Downstream of TMF North Embankment	452,281	6,205,112	410.0	-	-90	HQ3	45.6	1.49	Not Applicable		34.5	37.6	3.5	45.6	Groundwater Quality Data Collection

M:\1\01\00594\04\A\Data\400 - Bromley Humps Hydrogeology\6- Drill Hole and Instrumentation\[Table 3.1-1_3.1-2_Drillhole_KP2016_Golder1996_Rev0.xlsx]Table 3.1-2

NOTES:
1. SOURCE: MODIFIED TABLE FROM TABLE A1.1 IN KP (2016).
2. COORDINATES AND ELEVATIONS ARE FINAL SURVEYED COORDINATES PROVIDED BY IDM.
3. VIBRATING WIRE PIEZOMETER INSTALLATION ABORTED DUE TO HIGH GROUT TAKE. STANDPIPE PIEZOMETER INSTALLED IN PLACE.
4. MONITORING WELL CONSTRUCTION SPECIFICATIONS PROVIDED BY SRK.

REV	DATE	DESCRIPTION	PREP'D	RVW'D
0	02JUN'17	ISSUED WITH REPORT VA101-548/04-5	JZ	CHS

3.2 METHODOLOGY

The following sections summarize the methodology used for drilling, installing instrumentation, hydraulic testing and water level data monitoring during the 1996 and 2016 site investigations.

3.2.1 Data Management and QA/QC

As outlined by MOE guidelines (2016), data management and QA/QC for the Project included the following:

- Compilation and storage of data into excel spreadsheets, ACAD and GIS for review and spatial mapping.
- Review and verification of all data and test analyses including the methodology, input values, calculations and interpretations.
- Compensation of groundwater levels from automatic water level loggers for atmospheric pressures and then calibrated with manual groundwater depth measurements (Section 3.2.4). The raw data (download) files were retained for the water level loggers.

3.2.2 Borehole Drilling and Installations

1996 Site Investigation

Golder (1996) documented that drill holes during the 1996 site investigation were completed by diamond drilling NQ or BQ sized holes. At total of 16 installations including single and nested standpipe piezometers or open-ended PVC standpipes were completed (Table 3.1-1). The installations targeted fractured and oxidized intervals (Golder, 1996).

All installation used 1-inch Schedule 60 PVC pipe except DT-276, which used 2-inch PVC (Golder, 1996). The screened sections were slotted using a hacksaw with the slots approximately 1 mm in width and 4 cm apart on alternating sides. Sand pack around the screened sections consisted of borrow material (0.5 to 3 mm diameter) with pebble deposits (up to 10 mm diameter) from Bitter Creek and were sealed with bentonite. The open-ended PVC pipe completions were constructed by using burlap above the open end of the PVC pipe to seal the annulus between the drill hole and PVC. Sand and then bentonite were placed above the burlap (Golder, 1996).

All the drill holes except DT-275, DT-276 and DT-282 were located and re-surveyed by IDM in 2016 (KP, 2016). Golder (1996) did not include geology logs for the drill holes. KP logged the core of four of the 1996 drill holes (DT-273, DT-277, DT-280 and DT-282). The logs for these four drill holes were presented in KP (2016) and are included for reference in Appendix A.

2016 Site Investigation

Drill holes during the 2016 site investigation were completed by diamond drilling HQ3 sized holes (KP, 2016). Drill holes were advanced with only water except for BH16-010 where a biodegradable drilling additive was used because of drilling difficulties.

Four monitoring well installations (MW16-001 to MW16-004) were completed downslope of the proposed TMF embankments. These monitoring wells were installed under the direction of SRK Consulting Inc. (SRK), using the following general procedure (KP, 2016):

- Filter sand backfilled the drill hole to the desired installation depth.

- A 3 m (10 ft) long, 2-inch diameter Schedule 40 PVC 0.020-inch machine slotted screen (washed and bagged) with a bottom cap was placed on the sand. Schedule 40 PVC blank pipes were installed to surface above the screen section in 3 m lengths.
- Filter sand backfilled the annulus around the screened section of the monitoring well and above to just below the overburden/bedrock contact.
- Coated (slow release) 3/8-inch bentonite pellets were placed at the bedrock/overburden contact area, above the filter sand.
- A quick setting bentonite grout mix was used to backfill the annulus around the standpipe piezometer above the bentonite seal to ground surface, as required.
- Standard PVC well caps and locking protective steel well head covers were installed and cemented into place.
- A concrete surface pad was installed to minimize surface water ponding and direct water away from the well.

The drill hole sloughed at about 12 mbgs while installing MW16-001. As a result it was not possible to install filter sand to the overburden/bedrock contact and SRK recommended installing a replacement monitoring well (MW16-004).

The relatively large completion zones, extending to the overburden/bedrock, that were requested for the monitoring wells installations by SRK, were to increase the likelihood of intercepting permeable features. However, the shallow surface seal with the fractured nature of the bedrock creates the potential for flow from the surface or overburden through shallow broken bedrock into the completion zone and ultimately to the well.

Three of the four standpipe piezometers (BH16-001, BH16-002 and BH16-003) followed a similar procedure as the monitoring wells except the completion zones (i.e. filter sand and screened zone) were shortened and a grout seal placed above the bentonite pellets to surface. The remaining standpipe piezometer (BH16-009) used a less conventional installation method. A VWP installation was initially attempted at BH16-009, but was aborted because of high grout take during the installation. As an alternative, a slotted PVC pipe was placed at depth in the open hole and a plug was installed at surface to minimize surface runoff to the standpipe piezometer. This approach was considered sufficient to provide general information on groundwater levels and avoid the problems associated with a conventional installation because of the high grout take and shallow angle (-50 degrees) of the drill hole. Similar to the monitoring wells, for the standpipe piezometers with shallower surface seals, the potential exists for flow from surface or the overburden to travel through fractured bedrock into the completion zone. There were seven VWPs completed in six drill holes (two sensors in BH16-010) using a fully grouted approach that included field zero and open hole readings during installation (KP, 2016).

The drill holes and instrumentation are summarized in Table 3.1-2. Drill hole logs, as reported in KP (2016), are compiled in Appendix A.

3.2.3 Hydraulic Testing

Golder (1996) reported 46 hydraulic (packer) tests completed in the 11 drill holes completed in 1996. Five of these tests were completed over duplicated test interval zones. Packer testing was performed using a pneumatic single packer system inflated with nitrogen. Test intervals were approximately

20 m but varied to set the packer in unfractured bedrock (Golder, 1996). A summary of the 1996 test results are in Appendix B.

KP (2016) reported 71 tests in 12 drill holes completed in 2016 (two of the 2016 drill holes were not tested). Packer testing was performed over 6 m intervals using a pneumatic single packer system inflated with nitrogen. The results are consistent with the 1996 test data. A summary of the 2016 test results are in Appendix B.

3.2.4 Groundwater Levels

Water levels were collected during drilling and manual water levels were taken at all of the installations at the end of the 1996 site investigation (Golder, 1996). These spot measurements are the only recorded water levels from these installations. The spot water level measurements are presented in Appendix C. The drilling and spot water levels are also summarized in Table 3.2-1.

Water level loggers (Mini-Divers manufactured by Van Essen) were installed in three of the four monitoring wells (no logger at MW16-001) and all four of the standpipe piezometers installed in 2016 (KP, 2016). The loggers were deployed at the end of the site investigation (September 2016) for all of the sites except BH16-009, which was installed in December 2016. The measurement interval was set at hourly. Monitoring at MW16-001 included manual measurements with a water level dip meter when the neighbouring well (MW16-004) was accessed. Data loggers (manufactured by RST Instruments Ltd.) were installed for all seven VWPs installed in 2016 (KP, 2016). The logging interval was set at every 12 hours. An atmospheric pressure data logger (Baro-Diver manufactured by Van Essen) was deployed at MW16-004 to facilitate barometric correction of the data from the water level loggers and VWPs.

Data from the monitoring wells is reported from September 2016 to March 2017. The standpipe piezometers and vibrating wire piezometers are available from September 2016 to the last visit to these locations in either November or December 2016.

A summary of the 2016 water levels is in Table 3.2-2. Manual water level measurements and time series plots for the 2016 installations are presented in Appendix C. All water level data were compensated for variations in barometric pressure. The logger data from the monitoring wells and standpipe piezometers was also calibrated using manual water level readings measured at the time of downloading the data.

Knight Piésold CONSULTING

TABLE 3.2-1

IDM MINING LTD.
RED MOUNTAIN UNDERGROUND GOLD PROJECT

GROUNDWATER LEVELS (1996 DATA)

Print Aug/23/17 15:48:30

Location	Drill Pad	Drill Hole ID	Water Levels Measured during Drilling prior to Packer Testing[1]					Water Levels from Installations[1]		
			Date	Drilling Depth (From - m along hole)	Drilling Depth (To - m along hole)	Water Levels From Packer Tests (mbgs)	Notes	Completion Zone (m along hole)	Measured Water Level[2] (mbgs)	Notes
TMF North Embankment	Same Drill Pad	DT-272	August 1, 1996	40	80	24	Lower water levels estimated at DT-272 (24 mbgs) and DT-273 (62 mbgs) compared to DT-274. Artesian pressures (+ 3 m) noted from 40 to 60 m at DT-274.	1.7 - 4.0	1.2	
		DT-273	August 1, 1996	57	80			11.8 - 21.8	5.8	
				69	80	62.19				
		DT-274	August 2, 1996	14	24	5.20		3.0 - 9.0	4.3	
			August 3, 1996	23	40	1.22				
				40	60	-3.03				
				40	60	-3.11				
			August 4, 1996	58	80	1.91				
	Same Drill Pad	DT-275	August 5, 1996	9	21	0.60	Water levels decreased with depth at DT-275 with a gradient of about 1 to a depth of 40 m. Water levels also decreased with depth at DT-276 but with a lower gradient.	50.5 - 57.5	36.3	Water levels from packer tests consistent with water levels measured in installations.
				19	40	15.65				
				19	40	15.65				
			August 6, 1996	40	60	39.93				
				40	60	39.93				
				61	80	41.2 m or greater				
		DT-276	August 7, 1996	10	24	12.24		8.8 - 81.7	13.5	
				22	39	5.76				
			August 8, 1996	38	60	13.23				
				59	82	19.17				
		DT-282	August 22, 1996	10	23	10.02	Water levels decreased with depth to greater than 85 m.	90.8 - 105.5	dry to 52.8	Water levels from packer tests consistent with water levels measured in installations.
				22	49	18 m or greater				
			August 23, 1996	47	64	21 m or greater				
				65	82	63m or greater				
				86	100	85m or greater		72.8 - 82.0	dry to 52.8	
			August 24, 1996	99	114	85m or greater				
				99	114	85m or greater				
TMF South Embankment	Same Drill Pad	DT-277	August 10, 1996	6	21	4.28	Downward gradient indictated from water levels at DT-277 and DT-278.	25.5 - 90.8	dry to 32.5	
				6	21	4.28				
				19	42	11.10				
				19	42	11.10				
				39	60	11.6m				
			August 11, 1996	61	81	17.30				
				84	91	13.16				
		DT-278	August 12, 1996	10	23	2.38		34.5 - 45.7	dry to 31.6	
				22	42	22.45				
			August 13, 1996	43	60	18.99		9.8 - 32.5	dry to 11.9	
				59	76	20.32				
	Same Drill Pad	DT-279	August 14, 1996	10	21	4.06	No discernable gradient from water levels at DT-279, DT-280 and DT-281.	61.9 - 82.0	3.2	Water levels from packer tests consistent with water levels measured in installations.
				22	39	6.21		35.6 - 60.0	3.7	
			August 15, 1996	38	61	4.34		14.0 - 33.8	3.7	
			August 16, 1996	62	82	3.52				
		DT-280	August 17, 1996	13	21	2.37		38.4 - 48.4	5.3	Slight upward gradient (0.04) based on nested peizometers.
				19	42	6.83				
			August 18, 1996	38	61	3.40		14.3 - 36.2	6.0	
				59	85	1.89				
		DT-281	August 19, 1996	9	20	2.92		49.5 - 66.1	2.5	Water levels from packer tests consistent with water levels measured in installations.
				19	39	1.80				
			August 20, 1996	39	61	2.16				
				58	81	2.33				

M:\11\01\00594\04\A\Report\5- Baseline Hydrogeology\Rev 1\3-Tables\[Tables 3.2-1_3.2-2_Rev0.xlsx]Table 3.2-1

NOTES:

1. SOURCE: WATER LEVEL DATA FROM GOLDER (1996)
2. WATER LEVELS MEASURED ON AUGUST 29, 1996.

REV	DATE	DESCRIPTION	PREP'D	RVW'D
0	02JUN'17	ISSUED WITH REPORT VA101-594/04-5	CHS	MBG

Knight Piésold CONSULTING

TABLE 3.2-2

IDM MINING LTD.
RED MOUNTAIN UNDERGROUND GOLD PROJECT

SUMMARY OF GROUNDWATER LEVELS (2016 DATA)

Print Aug/23/17 15:47:35

Location	Drill Hole ID	Circulation Loss During Drilling[1]		Water Levels from Installations[2]			
		Depth Lost Circulation (From - m along hole)	Depth Regained Circulation (To - m along hole)	Installation Type	Completion Zone (m along hole)	Well Depth/VWP Depth (mbgs)	Water Levels over Period of Record
TMF North Embankment	BH16-003	1.9	2.24	Standpipe Piezometer	18.9 - 28	25	Dry at 24.6 mbgs with exception of increases to about 24 mbgs in response to rainfall events.
		23.66	24.37				
	BH16-004	-	-	VWP	-	28.5	Water level varies from 13 to 14.2 mbgs and is response to rainfall events.
	BH16-005	37.85	38.38	VWP	-	33	Slowing decreasing over the two months since installation to a stable value of about 32 mbgs.
	BH16-009	16.9	not regained	Standpipe Piezometer	1.5 - 52.3	52.3	Only one measurement after installation recorded as 38 mbgs when transducer installed in December 2016.
	MW16-001	4.8	5	Monitoring Well	12 - 30.8	23	Recorded as dry after installation and all subsequent measurements.
	MW16-004	-	-	Monitoring Well	3.5 - 45.6	37.6	Water levels varies from 4.5 to 10.2. Higher head compared to neighbouring well, MW16-001, indicating an upward gradient.
TMF South Embankment	BH16-006	-	-	VWP	-	27.8	Dry at 27.8 mbgs
	BH16-007	3.2	17.2	VWP	-	31.5	Water level varies from about 22.3 to 27.6 mbgs and is responsive to rainfall events.
	BH16-008	-	-	VWP	-	27.1	Water level varies from about 18.6 to 22.1 mbgs and is response to rainfall events.
	BH16-010	26.1	27.6	VWP	-	5.7 (VWP2)	Water levels at VWP2 varies from 4 to 6.6 mbgs in response to rainfall events. Water levels at VWP1 varies from 19 to 24.2 in response to rainfall events. Strong downward gradient close to 1.
					-	22.2 (VWP1)	
	MW16-002	-	-	Monitoring Well	6 - 32.8	29.8	Generally dry at 28 mbgs with increases to 13 mbgs in response to rainfall events.
	MW16-003	-	-	Monitoring Well	2.2 - 31.2	30.2	Water levels after installation indicate well is dry.
Process Plant Site	BH16-001	-	-	Standpipe Piezometer	6.9 - 20.1	17.1	Water level varies from dry to 10 mbgs in response to rainfall events.
	BH16-002	-	-	Standpipe Piezometer	20.3 - 30.8	27.6	Water levels indicate the well is dry.

M:\1\01\00594\04\A\Report\5- Baseline Hydrogeology\Rev 1\3-Tables\[Tables 3.2-1_3.2-2_Rev0.xlsx]Table 3.2-2

NOTES:

1. SOURCE: DRILL CIRCULATION LOSSES FROM KP(2016).
2. SEE APPENDIX C FOR WATER LEVEL TIME SERIES PLOTS.

REV	DATE	DESCRIPTION	PREP'D	RVW'D
0	02JUN'17	ISSUED WITH REPORT VA101-594/04-5	CHS	MBG

3.3 RESULTS AND DISCUSSION

3.3.1 Hydraulic Conductivity Bedrock

1996 Tests

The hydraulic conductivity values from the 41 tests in 1996 range from 2×10^{-9} m/s (DT-273 Test 2) to 2×10^{-6} m/s (DT-274 Tests 3 and 4, DT-280 Test 1, DT-281 Test 3 and DT-282 Test 1). The geometric and arithmetic mean of the 1996 hydraulic conductivity data is 2×10^{-7} m/s and 5×10^{-7} m/s, respectively. The bulk permeability for a site is often considered to be best represented by the geometric mean of local-scale measurements. The arithmetic mean is more strongly influenced by outliers than the geometric mean. The arithmetic mean is therefore presented to provide an indication of how the higher permeability test results influence the average of the dataset. The cumulative distribution of the test results is shown on Figure 3.3-1.

Fault zones were identified in DT-277 (from 75.59 to 78.49 m along hole) and in DT-282 (36.27 to 48.46 m along hole and 94.18 to 100.28 m along the hole) based on the four 1996 drill holes logged by KP in 2016. Descriptions of the drilling in Golder (1996) included reference to a fault zone encountered in DT-279 (at 60 m along hole). The four test intervals that include identified fault zones have values between 4×10^{-7} m/s (DT-282 Test 2) and 1×10^{-6} m/s (DT-279 Test 3).

Hydraulic conductivity results from the 1996 tests are plotted vs depth on Figure 3.3-2. The hydraulic conductivity values ranged from about 5×10^{-9} m/s to 1×10^{-6} m/s at the limit of testing (about 100 mbgs). The higher packer test results at depth were within drill holes that had documented fault zones (DT-279, DT-282). Excluding these tests, there is a trend of decreasing hydraulic conductivity with depth.

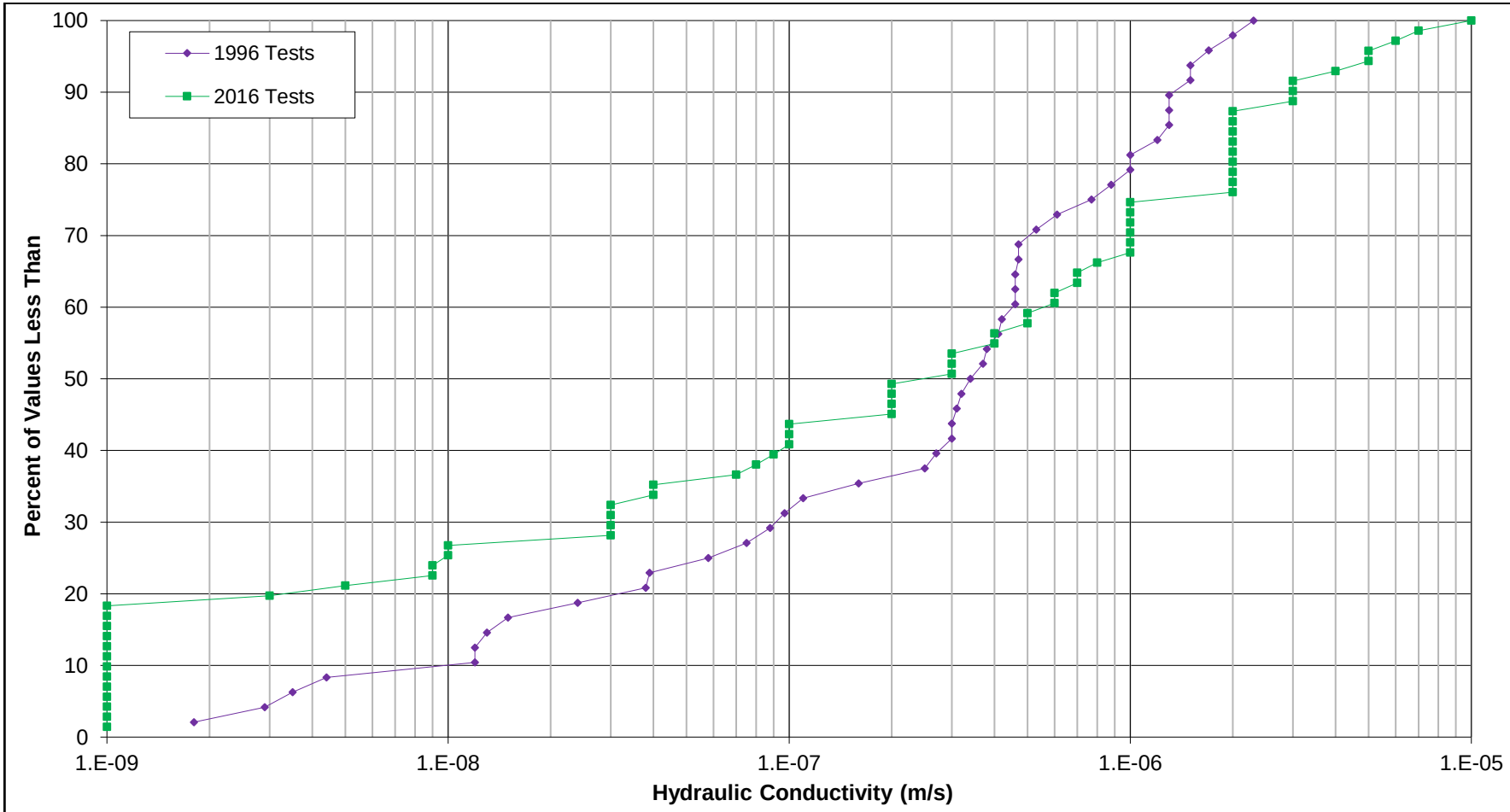
2016 Tests

The hydraulic conductivity values from the 71 tests in 2016 range from no take (13 tests in nine drill holes) to 1×10^{-5} m/s (BH16-008 Test 2). The water level for BH16-008 Test 2 (completed from 5.8 to 12 mbgs) was below the top packer after packer inflation. This condition and observed water levels on site indicate this test was likely completed above the water table. Using an assumed low hydraulic conductivity value of 1×10^{-9} m/s for the no-take tests, the geometric and arithmetic mean of the 2016 hydraulic conductivity data is 1×10^{-7} m/s and 1×10^{-6} m/s, respectively. The cumulative distribution of the test results is shown on Figure 3.3-1.

The 2016 tests were completed within all the lithological units encountered during drilling as testing was carried out in continuous down-hole intervals. Fault zones were identified in three drill holes (BH16-009, BH16-010 and MW16-002). The hydraulic conductivity values within the fault zones range from no take (BH16009 Test 8) to 1×10^{-6} m/s (BH16-010 Test 1). Circulation losses encountered during drilling indicate the presence of zones with enhanced permeability (Table 3.2-2).

Hydraulic conductivity results from the 2016 tests are plotted vs depth on Figure 3.3-3. Only two (BH16-009 and BH16-010) of the 2016 drill holes were drilled deeper than about 30 m. Similar to the 1996 test data, the hydraulic conductivity values in the upper 30 m are relatively high with values up to about 1×10^{-5} m/s. Testing at BH16-010 is indicative of decreasing hydraulic conductivity with depth. The tests from BH16-009 at depth were high and within poor ground conditions including circulation losses during drilling and indicate the presence of a permeable structure.

The 1996 and 2016 packer test results yield a wide range of variation in hydraulic conductivity (10^{-9} to 10^{-5} m/s). This four order of magnitude variation in hydraulic conductivity across a data set is typically of packer test results conducted in a fractured rock setting. The 1996 and 2016 datasets, representing 113 tests, are indicative of a moderately permeable bedrock with some enhanced permeability associated with structures.



NOTES:

1.HYDRAULIC CONDUCTIVITY DATA FROM GOLDER (1996) AND KP (2016). ALL RESULTS FROM IN-SITU PACKER TESTS.

2.TESTS REPORTED AS NO TAKE IN KP (2016) ASSIGNED AS 1E-9 m/s.FOR PLOTTING PURPOSES.

REV	DATE	DESCRIPTION	PREP'D	RVW'D
0	02JUN'17	ISSUED WITH REPORT	JZ	CHS

IDM MINING LTD.

RED MOUNTAIN UNDERGROUND GOLD PROJECT

CUMULATIVE DISTRIBUTION OF HYDRAULIC CONDUCTIVITY RESULTS (BEDROCK)

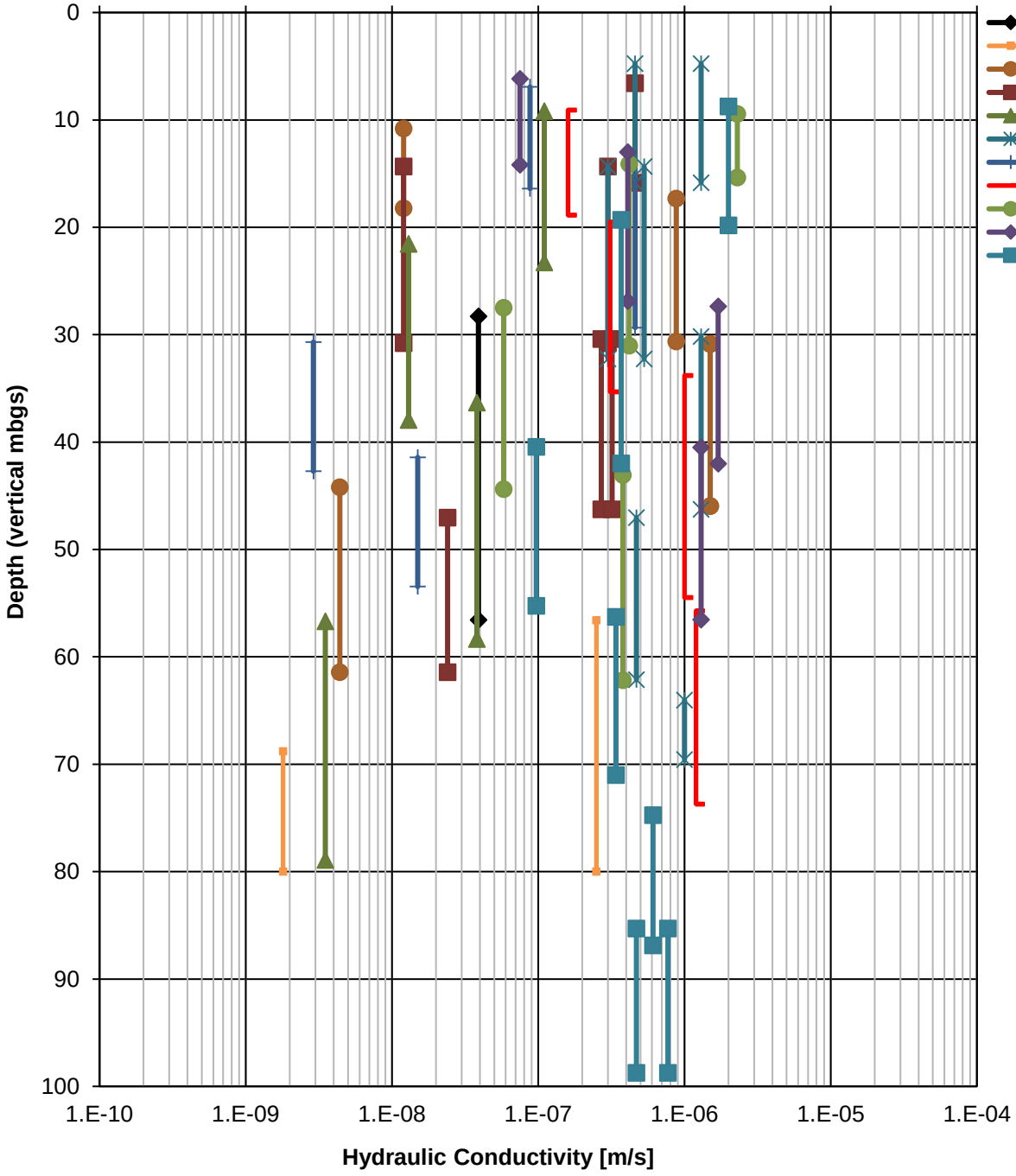
Knight Piésold CONSULTING

P/A NO. VA101-594/04

REF. NO. 5

FIGURE 3.3-1

REV 0



NOTES:

1. HYDRAULIC CONDUCTIVITY DATA FROM GOLDER (1996). ALL RESULTS FROM IN-SITU PACKER TESTS.
2. SEE TABLE B1 IN APPENDIX B FOR PACKER TEST RESULTS SUMMARY.

IDM MINING LTD.

RED MOUNTAIN UNDERGROUND GOLD PROJECT

BEDROCK HYDRAULIC CONDUCTIVITY WITH DEPTH (1996 SITE INVESTIGATION)

Knight Piésold CONSULTING

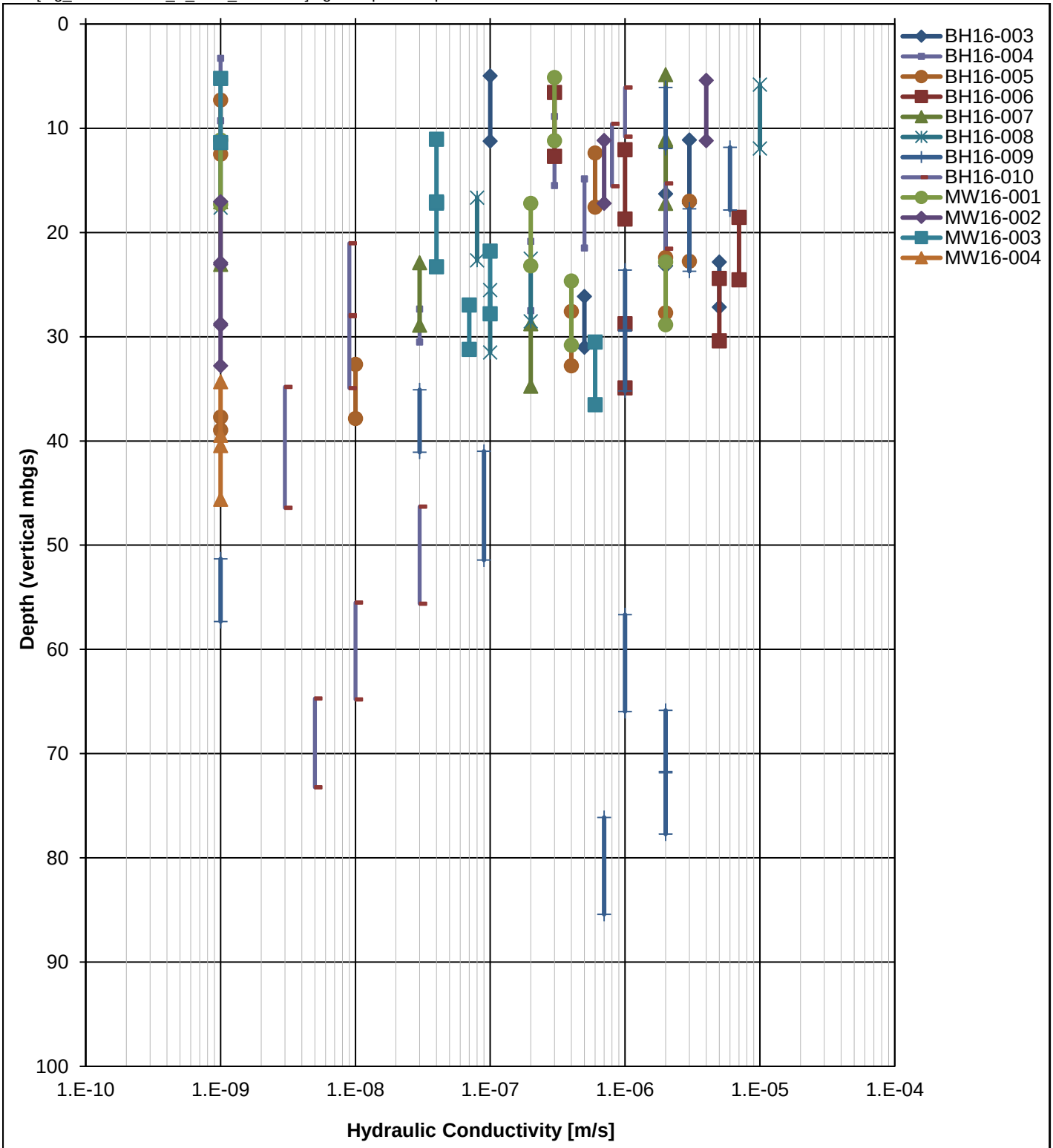
P/A NO. VA101-594/04

REF. NO. 5

FIGURE 3.3-2

REV 0

REV	DATE	DESCRIPTION	PREP'	RVW'D
0	02JUN'17	ISSUED WITH REPORT	JZ	CHS



NOTES:

1. HYDRAULIC CONDUCTIVITY DATA FROM GOLDER (1996). ALL RESULTS FROM IN-SITU PACKER TESTS.
2. TESTS REPORTED AS NO TAKE IN KP (2016) ASSIGNED AS 1E-9 m/s.FOR PLOTTING PURPOSES.
3. SEE TABLE B2 IN APPENDIX B FOR PACKER TEST RESULTS SUMMARY.

IDM MINING LTD.

RED MOUNTAIN UNDERGROUND GOLD PROJECT

BEDROCK HYDRAULIC CONDUCTIVITY WITH DEPTH (2016 SITE INVESTIGATION)

Knight Piésold CONSULTING

P/A NO. VA101-594/04

REF. NO. 5

FIGURE 3.3-3

REV 0

REV	DATE	DESCRIPTION	PREP'D	RVW'D
0	02JUN'17	ISSUED WITH REPORT	JZ	CHS

3.3.2 Groundwater Levels and Gradients

Groundwater levels collected in August 1996 from Golder (1996) are summarized below and in Table 3.2-1. All noted drilling and installation depths are along the inclination of the drill hole. All water levels are corrected for the inclination of the drill hole (i.e., vertical distances from collar level). The completion zones referenced for the standpipe piezometers includes the sand pack or open interval above and below the screened (slotted) PVC pipe.

Proposed TMF North Embankment (1996 Data)

- Three drill holes (DT-272, DT-273 and DT-274) were drilled from the same platform but at different orientations near the middle of the valley at the proposed North TMF Embankment. Water levels measured in DT-272 and DT-273 were 24 m and 62 mbgs during packer testing. Water levels measured in DT-274 flowed at 40 m to 60 m depth. Water levels measured in the standpipe piezometers at DT-272, DT-273 and DT-274, which are installed within the upper 20 m of bedrock, were 1.2 mbgs, 5.8 mbgs and 4.3 mbgs, respectively.
- Two drill holes (DT-275 and DT-276) were drilled from the same platform upstream from the right abutment of the proposed North TMF Embankment. Water levels measured in DT 275 (drilled into the slope) decreased with depth with a gradient of about 1 to a depth of about 40 m. It is possible that the ground was not saturated above 40 m. The water level noted as 41 mbgs or greater at 61 m to 80.2 m supports this assumption. Water levels at DT-276 (drilled downslope) also indicated a lower head with depth, but with a lower gradient. Lower heads with depth might be because of drilling downslope. Water levels measured in the standpipe piezometers at DT-275 (from 50.5 to 57.5 m) and DT-276 (from 8.8 to 81.7 m) were 36.3 mbgs and 13.5 mbgs, consistent with data collected during drilling.
- DT-282 was drilled at the left abutment of the proposed North Embankment. During testing, the estimated groundwater level decreased with depth to greater than 85 mbgs, at a depth of about 86 m. Standpipe piezometers installed in this drill hole (from 90.8 to 105.5 m and 72.8 to 82 m) both indicated dry to 52.8 mbgs.

Proposed TMF South Embankment (1996 Data)

- Two drill holes (DT-277 and DT-278) were drilled from the same platform in the middle of the valley along the proposed TMF South Embankment. Measurements during drilling indicated a downward gradient in both DT-277 and DT-278 reaching water levels of 17.3 mbgs and 22.45 mbgs. The standpipe piezometers installed at DT-277 (from 25.5 to 90.8 m) was dry to 32.5 mbgs and at DT-278 (from 34.5 to 45.7) dry to 31.6 mbgs.
- Three drill holes (DT-279, DT-280 and DT-281) were drilled from the same platform but at different orientations at the left abutment of the proposed TMF South Embankment. In all three drill holes, there was no discernable downhole gradient with measured levels from 1.8 mbgs to 6.8 mbgs. Water levels measured in the standpipe piezometers ranged from 2.5 mbgs (DT-281) to 6 mbgs (DT-280). The water levels measured in the nested piezometers at DT-280 indicated a slight upward gradient.

KP (2016) reported water levels in four monitoring wells, four standpipe piezometers and seven VWPs in six drill holes (two VWPs in BH16-010). Groundwater level measurements from manual and transducer data records at these installations are summarized below and in Table 3.2-2. All water levels are corrected for the inclination of the drill hole (i.e., vertical depth from ground level). The

completion zones referenced for the standpipe piezometers and monitoring wells include the thickness of the sand pack interval below and above the slotted screened section.

Proposed TMF North Embankment (2016 Data)

- BH16-003
  - Standpipe piezometer is located near the centre of the valley at the upstream toe of the proposed embankment with a completion zone from 18.9 to 28 m and screen depth of 25 mbgs.
  - The piezometer is almost dry at about 24.6 mbgs for most of the period of record, with rainfall events resulting in spikes up to about 24 mbgs.
- BH16-004
  - VWP installed at the right abutment at 28.5 mbgs.
  - Water level varied from 13 to 14.2 mbgs (1.2 m) in response to rainfall events.
  - Drain-down from rainfall event response indicates an early time rate of 0.15 m/day and late time of 0.05 m/day.
- BH16-005
  - VWP installed at the centre of the valley on centreline of alignment at 33 m.
  - Slowly draining down over two months from installation to a near stable value at about 32 mbgs.
  - Water level may show minor responses to rainfall events.
- BH16-009
  - Standpipe piezometer at left abutment with open interval from 1.5 to 52.3 m.
  - Only one manual measurement (after installation) of 38 mbgs on December 12, 2016 recorded.
  - Transducer installed on December 12, 2016 and data not yet available.
- MW16-001
  - Monitoring well located at the centre of the valley about 50 m downstream of the downstream toe of the proposed embankment with a completion zone from 12 to 30.8 m.
  - Recorded as dry on installation and all subsequent manual measurements.
- MW16-004
  - Monitoring well installed adjacent to MW16-001 with completion zone from 3.5 to 45.6 mbgs.
  - Water level varies between about 4.5 to 10.2 mbgs (5.7 m).
  - Responsive to rainfall events with early time drain-down of about 1 m/day.
  - Much higher head compared to MW16-001 implies an upward gradient.

Proposed TMF South Embankment (2016 Data)

- BH16-006
  - VWP installed at 27.8 mbgs at centre of valley at upstream toe of proposed embankment.
  - Transducer indicates dry at 27.8 mbgs.
- BH16-007
  - VWP installed at 31.5 mbgs at centre of the valley along centreline of alignment.
  - Water level varies from about 22.3 to 27.6 mbgs (5.3m) and responsive to rainfall events.
  - Early drain-down of 0.4 m/d decreasing to 0.2 m/day.
- BH16-008
  - VWP installed at 27.1 mbgs on right abutment.
  - Responsive to rain events 18.6 to 22.1 mbgs (3.5 m).

  - Immediate drain-down rate of 0.47 m/day decreasing to 0.12 m/day later.
- BH16-010
  - Two VWPs installed at 5.7 mbgs (VWP2) and 22.2 mbgs (VWP1) on left abutment.
  - Water level at VWP2 varies between 4 and 6.6 mbgs (2.6 m) and is responsive to rainfall events.
  - Water level at VWP1 varies between 19 and 24.2 mbgs and is responsive to rainfall events.
  - VWP2 demonstrates a drain-down approaching 1 m/day.
  - VWP1 drain-down response is slower with a maximum rate of about 0.2 m/day.
  - A strong downward gradient that is close to 1 is indicated by the measurements from these sensors.
- MW16-002
  - Monitoring well is installed about 115 m downslope of BH16-010 with a completion zone between 6 to 32.8 m.
  - Water levels generally vary from dry (28 mbgs) to 13 mbgs in response to rainfall events.
- MW16-003
  - Monitoring well was installed about 110 m downslope of centreline of the alignment with a completion zone from 2 to 31.2 m.
  - Available measurements after installation indicate the well is dry.

Process Plant Site (between TMF and Otter Creek)

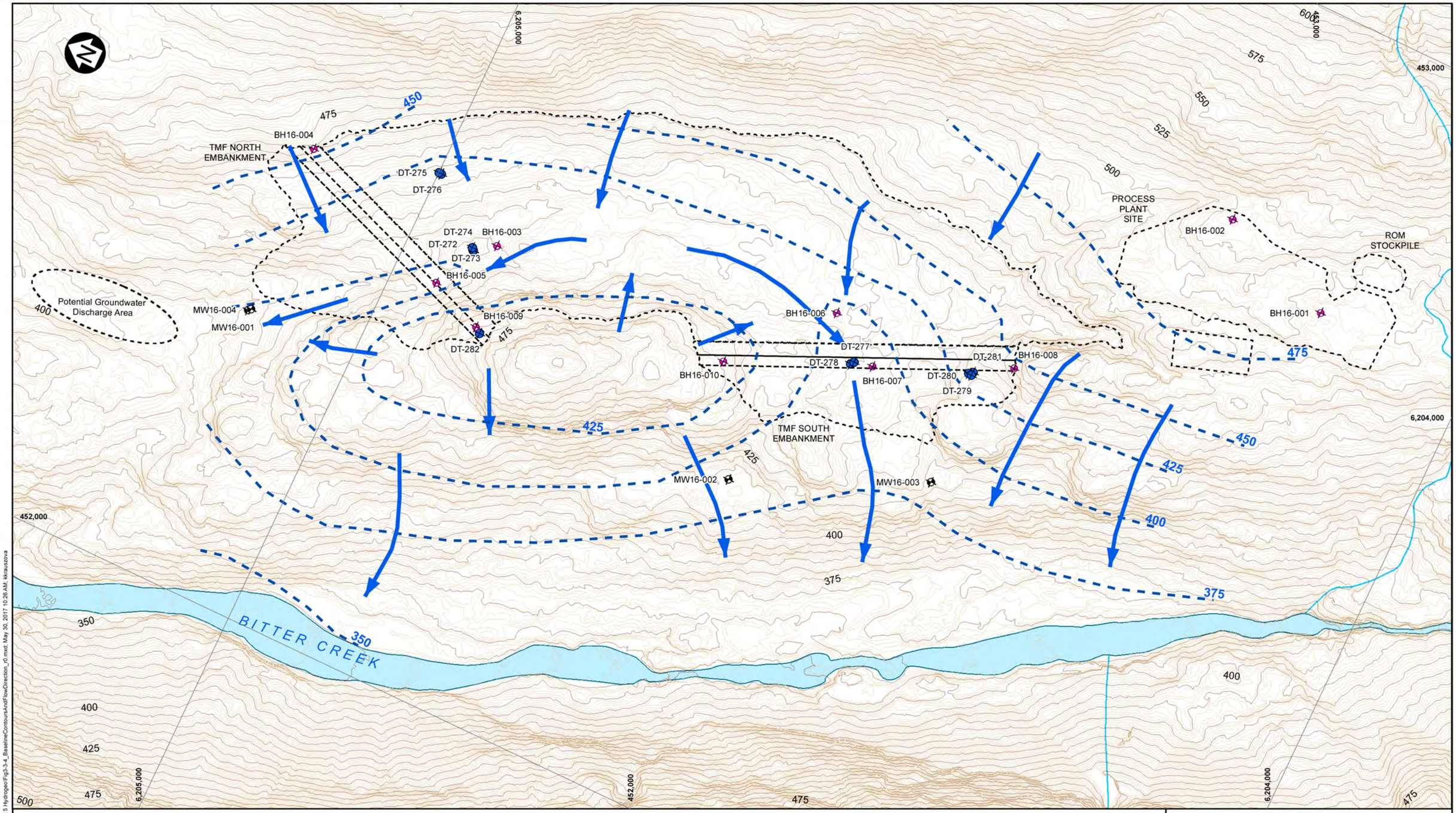
- BH16-001
  - Standpipe piezometer installed at about the mid-point between the proposed TMF and Otter Creek to the south (about 150 m from each) with completion zone from 6.9 to 20.1 mbgs.
  - Water level varies from dry to 10 mbgs in response to rainfall events.
- BH16- 002
  - Standpipe piezometer installed more south and about 100 m closer to Otter Creek than BH16-001 with screened interval from 20.3 to 30.8 mbgs.
  - Water level indicates the piezometer is dry.

3.3.3 Piezometric Contours and Flow Direction

The relatively fast response to rainfall events may be due to low storage within the bedrock but is likely also indicative of near saturated conditions with depth. Water levels measured prior to packer testing in the 1996 drill holes and the nested VWPs in BH16-010 demonstrate a downward gradient. Observed upward gradient conditions are limited to the water levels measured at MW16-001 and the neighbouring well, MW16-004. Also artesian pressures were noted during drilling at DT-274 and there was a slight upward gradient at the nested installations at DT-280.

The conceptual understanding is that there is a downward vertical flow regime to the top of a regional water level, below which a sub-horizontal flow regime is present. The site investigations largely documents a vertical flow regime, however it is a reasonable assumption that flow is generally across each of the TMF embankments. A conceptual flow regime was prepared based on the available information (Figure 3.3-4).

The reported substantial changes in groundwater level over short distances is consistent with a groundwater flow regime influenced by structures. Therefore, the current expectation is that structures will likely provide preferential groundwater seepage pathways away from the TMF.



LEGEND:

- 2016 GEOTECHNICAL DRILLHOLE
- 1996 HISTORIC DRILLHOLE (GOLDER ASSOCIATES)
- 2016 MONITORING WELL
- CONTOUR 5M
- CONTOUR 1M
- RIVER/STREAM
- PROJECT FACILITIES
- INTERPRETED GROUND WATER CONTOUR
- INTERPRETED GROUND WATER DIRECTION

50 25 0 50 100 150 200 250 Meters

NOTES:

1. BASE MAP: PROJECT LIDAR.
2. COORDINATE GRID IS IN METRES. COORDINATE SYSTEM: NAD 1983 UTM ZONE 9N.
3. THIS FIGURE IS PRODUCED AT A NOMINAL SCALE OF 1:3,500 FOR 11x17 (TABLOID) PAPER. ACTUAL SCALE MAY DIFFER ACCORDING TO CHANGES IN PRINTER SETTINGS OR PRINTED PAPER SIZE.

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED
0	02JUN'17	ISSUED WITH REPORT	CHS	KK	MBG

IDM MINING LTD.

RED MOUNTAIN UNDERGROUND GOLD PROJECT

CONCEPTUAL BASELINE PIEZOMETRIC CONTOURS AND FLOW DIRECTION

Knight Piésold CONSULTING

P/A NO. VA101-594/4 | REF NO. 5

FIGURE 3.3-4 | REV 0

SAVED: M:\1\01\00594\04\A\GIS\Figs\Report 5 Hydrogeo\Fig3-3-4_BaselineContoursAndFlowDirection_r0.mxd: May 30, 2017 10:26 AM: kkrauszova

3.3.4 Bromley Humps Conceptual Model of Groundwater Flow (Baseline)

The conceptual model for groundwater flow at the Bromley Humps area is described based on the following three main components: groundwater recharge, groundwater flow and groundwater discharge. Each of these components is discussed below. A schematic, identifying these components using a cross section through the Bromley Humps area, is shown on Figure 3.3-5.

Groundwater Recharge

Groundwater recharge estimates provide the volume of water that moves towards groundwater discharge areas along groundwater flow paths. Groundwater recharge includes the following:

- Meteoric recharge is the component of precipitation that does not contribute to immediate runoff or evaporation. At Bromley Humps, the relatively rapid response to rainfall events at almost all the installations indicates that there is substantial local recharge from meteoric recharge (including both rainfall and snowmelt). Assuming an effective porosity of 1% for fractured bedrock, recharge of 10 mm would result in a water level rise of 1 m. Groundwater level increases of over 5 m were recorded (BH16-001, BH16-007, MW16-002 and MW16-004) and daily precipitation totals of up to 65 mm (regional Terrace A station) were recorded indicating relatively high local recharge rate.
- Losses from creeks to the groundwater system. There may be recharge from local creeks or seasonal streams to the groundwater regime.

Groundwater flow paths

Development of groundwater flow paths includes an understanding of flow directions and rates, including the following considerations:

- Geologic materials, including stratigraphy, lithology, loading history and structure. In particular, the geology supports an understanding of the units that will dominate the groundwater system and provide input to understanding the continuity of these hydrogeological units. Groundwater flow paths will be dominated by the following hydrogeological units:
  - Bedrock: This site has shallow bedrock with little documented differences of rock type influencing the hydraulic conductivity. All lithologies are therefore grouped into one unit with an indication of the hydraulic conductivity decreasing with depth.
  - Faults: Structures are expected to have some enhanced permeability and provide a preferential flow pathway.
- Hydrogeological properties such as hydraulic conductivity, transmissivity, storage, porosity, and effective porosity. Testing indicates a relatively permeable bedrock with some enhanced permeability associated with structures. The relatively recent glaciation of this area likely resulted in some related permafrost action, which would have disturbed near surface bedrock and enhanced permeability and effective porosity. In turn, this disturbance would allow for high recharge rates during rain and snowmelt events, particularly on this terrace like feature.
- Regional groundwater is recharged on the slopes above the proposed TMF site, and flows downslope. Deep groundwater flows under the proposed TMF area and towards Bitter Creek. Local recharge enters the shallow groundwater regime, migrating downwards and then laterally. A groundwater mound is expected below Bromley Hump resulting in shallow flow from the crest of Bromley Hump to the northeast and a southwest toward the proposed TMF impoundment area. The conceptual flow regime is shown on Figure 3.3-4.

Groundwater Discharge

Groundwater discharge describes the movement of groundwater from the subsurface to the surface. Groundwater discharge at Bromley Humps will occur primarily as follows:

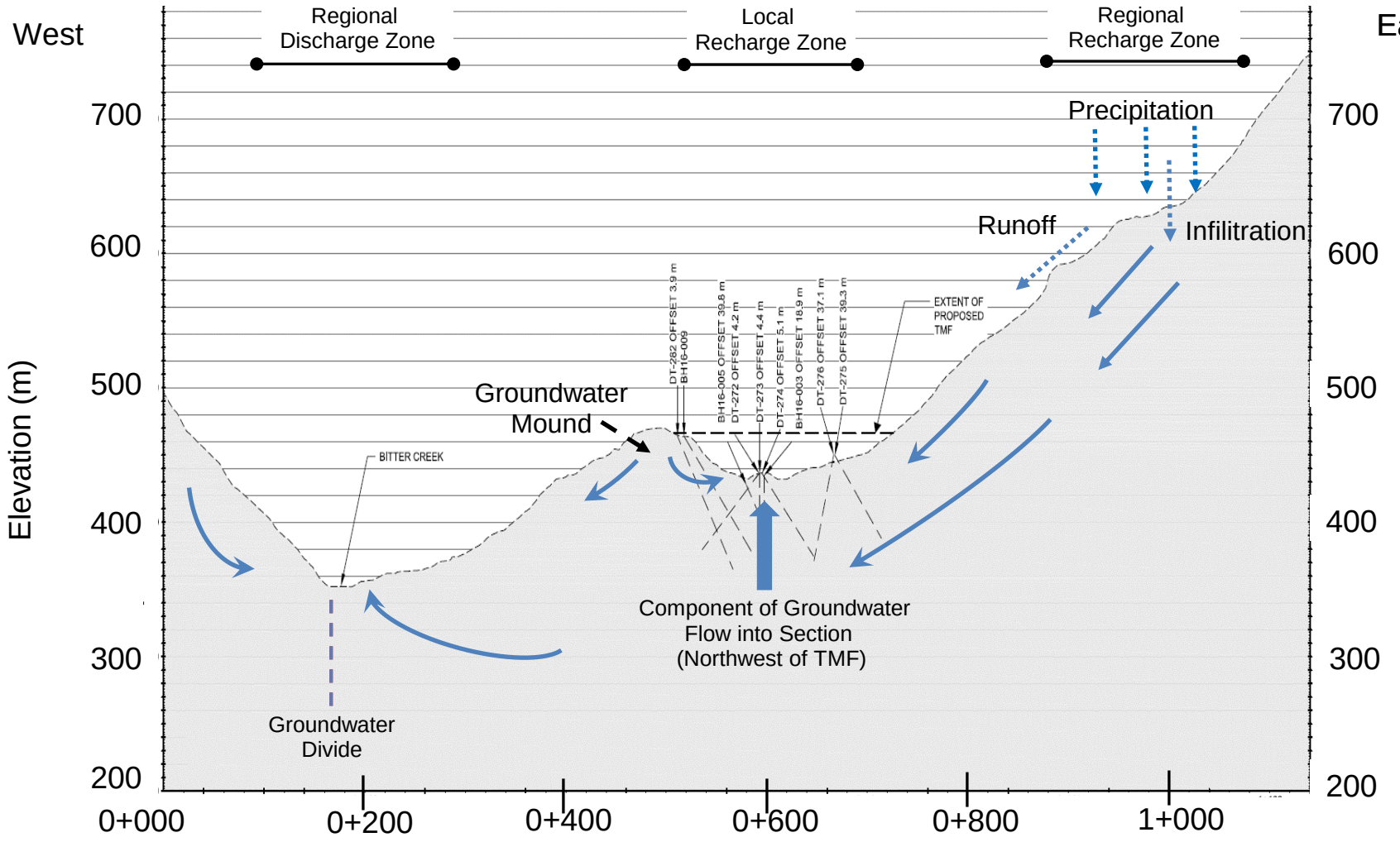
- Discharge to creeks and channels. Most groundwater bypassing or originating at the proposed TMF is expected to discharge into Bitter Creek. There may also be groundwater discharge to the local unmapped channel in the area of the TMF.
- Discharge as seeps and springs. Some of the groundwater flowing past the proposed TMF North Embankment may discharge as seeps or springs to a low relief area to the northwest of the TMF. There is also the potential for discharge as seeps and springs along the slope above Bitter Creek.

Groundwater Flow Rates

Average groundwater flow rates at Bromley Humps were estimated as part of the conceptual groundwater model. These estimates were completed for an area along the approximate length of the proposed TMF as follows:

- Groundwater flow migrating from upslope of the TMF area was estimated at about 16 L/s This rate was estimated using Darcy's Law and the following assumed parameters:
  - Hydraulic conductivity of 1 X 10^{-6} m/s based on the expected upper bound for the bulk value of the bedrock.
  - Hydraulic gradient of 0.7 m/m, which represents an average slope of the ground above the TMF, assumed to be equivalent to the water table.
  - Area of 22.5 km^2 based on a length of 750 m (approximately the lateral extent of the TMF) and a thickness of 30 m of rock (assuming the upper rock will be the most permeable and therefore dominant flow path).
- Local recharge in the area of the proposed TMF was estimated as 4 L/s based on an assumed recharge rate of 1,000 mm/year and approximate surface area for this plateau area.
- Groundwater flowing past the TMF North and South Embankment areas were estimated at 4 L/s each. These flow rates were estimated using Darcy's Law with a hydraulic conductivity of 1 X 10^{-6} m/s for the South Embankment and a slightly higher value of 3 X 10^{-6} m/s for the North Embankment. The hydraulic gradient was estimated as 0.2 m/m for the North Embankment and 0.5 m/m for the South Embankment. The area was assigned based on the approximate length of each alignment and a thickness of 30 m.
- Groundwater migrating from upslope that bypasses the TMF was estimated at 12 L/s. This estimate assumes that half of the flow discharging below the embankments originates from local recharge.

These groundwater flow paths and rates are based on a conceptual understanding of the groundwater regime, which will continue to be advanced upon as additional data are collected. Ongoing data collection is outlined in Section 4.



NOTES:

1. THE CONCEPTUAL FLOW REGIME INCLUDES A HORIZONTAL COMPONENT OF FLOW TOWARDS THE NORTHWEST, TRANSVERSE TO THE CROSS SECTION.
2. SEE FIGURE 1.4-1 FOR SECTION 1.

REV	DATE	DESCRIPTION	PREP'D	RVW'D
0	02JUN'17	ISSUED WITH REPORT	JZ	CHS

IDM MINING LTD.

RED MOUNTAIN UNDERGROUND GOLD PROJECT

CONCEPTUAL MODEL OF GROUNDWATER FLOW ALONG SECTION 1

Knight Piésold CONSULTING

P/A NO. VA101-594/04

REF. NO. 5

FIGURE 3.3-5

REV 0

3.3.5 Bromley Humps Groundwater Flow Predictions (Operations, Closure and Post Closure)

The TMF is designed to be fully lined with a geomembrane liner during operations (KP, 2017c). Therefore, during mine operations, the controlling factor on seepage from the TMF will be the performance of the liner, the hydraulic head and the hydraulic conductivity of the overlying tailings.

For mine closure, the TMF will be capped with a geomembrane liner as well as rock and soil cover that is designed to shed runoff. For post-closure, the finite life span of the basin geomembrane liner was considered in estimating the leakage rate from the TMF.

Modelling Approach

Seepage from the TMF during operations was assumed to be limited to the leakage from potential defects in the geomembrane liner. Leakage from potential defects was estimated using an accepted practice of Bernoulli's equation for free flow though an orifice (Giroud & Bonaparte, 1998). This approach provides a conservative estimate of the leakage rate from the TMF, as the analysis does not consider the reducing effect of the tailings permeability (or reduction in permeability from consolidation) from tailings deposition in the TMF over time.

The seepage estimate for the TMF during post-closure assumed the basin liner is completely degraded (a conservative assumption). Seepage will therefore be controlled by infiltration through the capped TMF. Similarly to mine operations, Bernoulli's equation was used to estimate the leakage through potential defects in the geomembrane liner (installed as part of the TMF cap) with an assumed constant head (i.e., ponding at the surface). This assumption will result in a conservative leakage estimate, as the calculation does not consider the influence of the tailings permeability (or consolidation) or that the TMF cap is engineered to shed runoff and therefore prevent ponding.

For the purpose of the water and load modelling work, the potential interaction between the estimated leakage from the TMF and Bitter Creek assumed that all leakage through liner defects reports directly to Bitter Creek. Given this conservative modelling approach, groundwater pathways and travel times from the TMF to Bitter Creek were not required for the water and load modelling work for the mine operations or post closure phases. In practice, the TMF design will include seepage collection ponds to collect as much seepage as possible.

Assumptions

The key assumptions for the seepage assessment approach described above include the following:

- Seepage from the TMF during operations will be limited to leakage from potential defects in the geomembrane liner.
- Seepage from the TMF during post-closure is based on the complete degradation of the basin liner and seepage will be controlled by infiltration through the capped TMF.
- The reducing effect caused by tailings permeability (and reduction in permeability from consolidation and compaction over time) on seepage from the TMF is not considered; this would result in lower seepage rates.
- All estimated leakage from the TMF will report directly to Bitter Creek.

The values assigned to parameters for the seepage analysis includes the following (KP, 2017b):

- Defect hole size: The analysis considered a typical diameter hole (defect) size of 2 mm. Giroud and Bonaparte (1989) describe this diameter as a size that might escape detection by construction quality assurance. This hole size is recommended by Giroud and Bonaparte (1989)

for calculations conducted to evaluate the performance of a lining system. This value was assigned for operations and post closure leakage estimates.

- Frequency of defects: The analysis assumed a defect per acre (~4,050 m^2) of geomembrane liner. This frequency was assigned based on guidance outlined in Giroud and Bonaparte (1989) for evaluating engineering liner designs. This value was assigned for the operations and post closure leakage estimates.
- Head on liner: A pond level of 15 m was assumed to be acting on the geomembrane liner for the leakage estimate calculated for operations. The 15 m corresponds to the maximum water level at startup. Over the course of the mine operations, the TMF will be filled with tailings and the pond level will be less than 15 m. Additional information regarding the TMF filling is described in the Tailings and Water Management Feasibility Report (KP, 2017c). For the post closure leakage estimate a head value of 0.25 m was assumed.

Results

KP (2017b) estimated leakage through defects in the liner during mine operations at 1 L/s. This leakage rate is not expected to be as much as the current groundwater recharge rates (Section 3.3.4). Therefore, the proposed TMF is not expected to result in an observable change in the flow regime or reduction in baseflow to Bitter Creek during operations.

The seepage from the TMF at post-closure was estimated at 0.1 L/s (KP, 2017d). Similar to mine operations, leakage from the proposed TMF is expected to be less than the existing natural recharge and therefore there will not be an observable change in the groundwater flow regime.

Uncertainties and Sensitivity

There are inherent uncertainties to the construction and long-term performance of geomembrane liners. The assigned defect hole size and frequency for the leakage estimates are selected based on Giroud & Bonaparte (1998) and are dependent that intensive quality assurance monitoring is performed during construction. In addition, the performance of the liner is based on the absence of design flaws and poor construction practices.

Sensitivity analyses were not carried out as the leakage estimates are considered upper bound rates since the reduction in seepage from the overlying tailings and underlying ground conditions are not taken into consideration (KP, 2017b). Further, there were additional conservative assumptions made for the leakage estimates including the maximum expected pond level during operations was applied and all leakage is reported directly to Bitter Creek.

4 – ONGOING DATA COLLECTION

Ongoing groundwater data collection that is recommended to increase the robustness of the groundwater baseline dataset includes the following:

1. Continued groundwater level data collection at all the monitoring wells, standpipe piezometers and VWP installations to support the understanding of seasonal variations. Groundwater data collection will include manual measurements as well as collection of transducer data.
2. Delineating the unmapped channel identified by KP with GPS and ongoing monitoring of the channel downslope of the TMF to establish baseline conditions. This information will provide a better understanding of the potential interaction of the channel with the groundwater regime.
3. Site reconnaissance of the low relief area northwest of the TMF North Embankment to identify any groundwater seeps or springs or changes in vegetation that may indicate it is an area of groundwater discharge.
4. Logging of the historical drill holes, in particular, drill hole DT-275, that intersects an interpreted fault (based on the DEM) at the right abutment of the proposed TMF North Embankment. This task will be a key step to gaining a better understanding of the potential of this feature to be a preferential seepage pathway. Drilling with packer testing and instrumentation is also proposed to intersect this feature at the alignment.
5. Drilling of deeper holes with nested instrumentation to collect data to further support defining the groundwater flow regime. An installation is also planned upslope of the TMF for background data control.

The above items 3 to 5 are proposed to be completed as part of detailed engineering design for the TMF, which is currently planned to be completed in 2017.

5 – REFERENCES

ARSENEAU Consulting Services Inc. (ACS). 2017. Mineral Resource Update for the Red Mountain Gold Project, Northwestern BC, Canada. Report prepared for IDM Mining Ltd. Report Date March 1, 2017.

Avison Management Services (Avison). 2017. *IDM Mining – Red Mountain Project Hydrology and Climate Monitoring Report*. March 20th-24th, 2017.

British Columbia Ministry of Environment (BC MOE). 2016. Water and Air Baseline Monitoring Guidance Document for Mine Proponents and Operators. Version 2 – June 2016.

BC MOE. 2017a. BC Water Resources Atlas. Available: http://maps.gov.bc.ca/ess/sv/wrbc/. Accessed: April 2017.

BC MOE. 2017b. *Provincial Groundwater Observation Well Network*. Available: http://www2.gov.bc.ca/gov/content/environment/air-land-water/water/groundwater-wells/aquifers/groundwater-observation-well-network. Accessed: April 2017.

Giroud, J.P. & Bonaparte, R., 1989, "Leakage through Liners Constructed with Geomembranes, Part I: Geomembrane Liners", Geotextiles & Geomembranes, Vol. 8, No. 1, pp. 27-67.

Golder Associates Ltd. (Golder). 1996. *Draft Technical Memorandum Red Mountain Project Hydrogeology Field Investigation - Proposed Tailings Impoundment*. Prepared for Royal Oak Mines. December 1996.

Environment Canada. 2017. *Historical Climate Data*. Available: http://climate.weather.gc.ca/ Accessed April 2017.

IDM Mining Ltd. 2017. *Personal communication on April 17, 2017*.

JDS Energy & Mining Inc. (JDS). 2016. NI 43-101 Preliminary Economic Assessment Technical Report for the Red Mountain Project, British Columbia, Canada. Report prepared for IDM Mining Ltd. Report Date August 25, 2016.

Klohn-Crippen. 1994. *Red Mountain Project Preliminary Assessment Tailings Disposal and Hydrogeology*. Reported prepared for LAC North America Ltd. March 1994.

Knight Piésold Ltd (KP). 2016. *2016 Geotechnical Site Investigation Report*. Report Prepared for IDM Mining Ltd. VA101-594/2-1. December 16, 2016.

KP. 2017a. *Water Balance Report*. Report Prepared for IDM Mining Ltd. VA101-594/4-2. August 4, 2017.

KP. 2017b. *Bromley Humps TMF Seepage and Stability Analysis.* Memorandum Prepared for IDM Mining Ltd. VA17-00261.

KP, 2017c. *Tailings and Water Management Feasibility Report*. Report Prepared for IDM Mining Ltd. VA101-594/4-4. August 4, 2017.

KP, 2017d. *Email to SRK from KP*. March 9, 2017.

Palmer Environmental Consulting Group Inc. (PECG). 2017. *Red Mountain Field Visit May 15-18, 2017 – Field Report.* Memorandum prepared for Brownhill Consulting Services Ltd. May 25, 2017.

SNC-Lavalin (SNC). 2017. *Red Mountain Geophysical Base Line. Final Report*. Prepared for IDM Mining Ltd. March 29, 2017. Internal Ref. 638736. March 29, 2017.

SRK Consulting (Canada) Inc. (SRK). 2016. *Red Mountain Project – Environmental Assessment Baseline Surface Water and Groundwater Quality Report Draft*. Report prepared for IDM Mining Ltd. November 2016.

SRK Consulting (Canada) Inc. (SRK). 2017a. *Red Mountain Underground Gold Project – Mine Area Hydrogeology*. Report prepared for IDM Mining. April 2017.

SRK Consulting (Canada) Inc. (SRK). 2017b. *Red Mountain Underground Gold Project – Baseline Climate and Hydrology Report*. Report prepared for IDM Mining. February 2017.

6 – CERTIFICATION

This report was prepared and reviewed by the undersigned.

<Original signed by>

Prepared:

Cathy Saladi, P.Eng.
Senior Hydrogeologist

<Original signed by>

Reviewed:

Ben Green, P.Geo
Senior Hydrogeologist

Approval that this document adheres to Knight Piésold Quality Systems: <Original signed by>

APPENDIX A

DRILL HOLE AND INSTALLATION LOGS (EXCERPT KP, 2016)

Appendix A1 Summary of Drill Logs
Appendix A2 Installation Completion Logs

APPENDIX A1

SUMMARY OF DRILL LOGS

(Pages A1-1 to A1-112)

Contractor: More Core Diamond Drilling Service Ltd.
Location: Process Plant Site
Coordinates: 452,728 E , 6,204,160 N
Coordinate System: UTM NAD83 Zone 9N
Hole Size HWT to 1.41 m; HQ3 to 30.80 m

Drillhole No.: BH16-001
Drill Type: B15 Diamond Drill
Total Length: 30.8 m
Elevation: 492.2 m
Azimuth, Inclination: 0 , -90

Page: 1 of 4
Date Started: Aug 13, 16
Date Completed: Aug 14, 16
Logged by: CAG/MEA
Reviewed by: JEF

DEPTH - (m)	ELEVATION - (m)	GRAPHIC LOG	MATERIAL DESCRIPTION	RUN RECOVERY (%)	SAMPLE NO.	SAMPLE REC. (%)	SAMPLE TYPE	UCS (MPa) / BLOW COUNTS (PER 6")	SPT 'N' VALUE	KEY ROCK MASS PARAMETERS / SPT TEST 'N' VALUES	INSTRUMENTATION / WELL DETAILS	DRILLING NOTES
0	492		**BOULDERS & COBBLES** (0 to 0.58 m) Subrounded; poorly graded; grey; loose; moist; finer materials washed away during drilling process. Inferred from core samples retrieved from casing.	0								No hydraulic conductivity testing completed.
				68				50				
1	491		**GREYWACKE** (0.58 to 8.05 m) Grey to dark grey; fine grained; some convoluted textures, weakly bedded; medium strong; slightly to moderately fractured, some low angle fractures; slightly weathered; some chloritic and iron oxide staining on joint surfaces; few 1-3 mm thick calcite veinlets; some convoluted textures; few zones of lighter coloured beds.	94				50				
2	490				UCS-01							
3	489			100				50				
4	488			100				50				
5	487											
6	486			100				25				
7	485		**BROKEN ZONE** (6.84 to 8.01 m) Broken Zone within Greywacke unit	99				20				
8	484		**DYKE** (8.05 to 9.59 m) Light grey purple; fine grained; weakly foliated; medium strong; moderately to highly fractured and rubbleized; slightly weathered; dyke present in shear zone; calcareous matrix.	100				15				
9	483			100				20				

KEY ROCK MASS PARAMETERS: RQD, RMR
SPT TEST 'N' VALUES - 20 40 60 80

GENERAL REMARKS:
Bedrock lithology and detailed geology logs provided by IDM. Elevations and coordinates are surveyed coordinates provided by IDM.

IDM Mining Ltd.
Red Mountain Project

Knight Piésold CONSULTING

Project No.	Ref. No.	Rev.
VA101-594/02	1	A

FIGURE B1-1

Logging conducted according to the ASTM 2488 standard and the Canadian Foundation Engineering Manual, 4th Edition, 2006.

Contractor: More Core Diamond Drilling Service Ltd.
Location: Process Plant Site
Coordinates: 452,728 E , 6,204,160 N
Coordinate System: UTM NAD83 Zone 9N
Hole Size HWT to 1.41 m; HQ3 to 30.80 m

Drillhole No.: BH16-001
Drill Type: B15 Diamond Drill
Total Length: 30.8 m
Elevation: 492.2 m
Azimuth, Inclination: 0 , -90

Page: 2 of 4
Date Started: Aug 13, 16
Date Completed: Aug 14, 16
Logged by: CAG/MEA
Reviewed by: JEF

DEPTH - (m)	ELEVATION - (m)	GRAPHIC LOG	MATERIAL DESCRIPTION	RUN RECOVERY (%)	SAMPLE NO.	SAMPLE REC. (%)	SAMPLE TYPE	UCS (MPa) / BLOW COUNTS (PER 6")	SPT 'N' VALUE	KEY ROCK MASS PARAMETERS / SPT TEST 'N' VALUES	INSTRUMENTATION / WELL DETAILS	DRILLING NOTES
11	482		**GREYWACKE** (9.59 to 10.22 m) Dark grey; fine grained; some convoluted textures, weakly bedded; medium strong; slightly to moderately fractured, some low angle fractures; slightly weathered; some chloritic and iron oxide staining on joint surfaces; few 1-3 mm thick calcite veinlets; some convoluted textures; few zones of lighter coloured beds.	100				50		RQD / RMR; SPT 'N' 20 40 60 80		
12	481		**GABBRO OR MAFIC DYKE** (10.22 to 12.89 m) Dark grey with light brown blebs; fine grained; weakly bedded; weak; moderately to highly fractured and rubbleized; slightly weathered; fine pyrite veinlets (1-2 mm thick) along the edges of the intrusion; dyke intruding subparallel to core axis; too fine grained to identify mineralization.	100				50				
13	480		**GREYWACKE** (12.89 to 30.8 m) Dark grey; fine grained; weakly bedded, some beds look convoluted, small offsets by microfaults; strong to very strong; moderately fractured, joints generally dipping approx. 50° relative to core axis; fresh to slightly weathered; trace iron oxide staining on most joint surfaces; few calcite veins cross-cutting bedding.	100				50				
14	479											
15	478											
16	477		**BROKEN ZONE** (15.8 to 17.3 m) Broken Zone within Greywacke unit	96				40				
17	476			100	UCS-02			40				Mini-Diver Pressure Transducer - S/N: SNV1119 - Installation Depth: 16.61 mbgs
18	475			68				75				
19	474			100				75				
	473			100				35				

GWL measured during Pressure Transducer Installation.

GENERAL REMARKS:
Bedrock lithology and detailed geology logs provided by IDM. Elevations and coordinates are surveyed coordinates provided by IDM.

IDM Mining Ltd.
Red Mountain Project

Knight Piésold CONSULTING

Project No.	Ref. No.	Rev.
VA101-594/02	1	A

FIGURE B1-1

Logging conducted according to the ASTM 2488 standard and the Canadian Foundation Engineering Manual, 4th Edition, 2006.

Contractor: More Core Diamond Drilling Service Ltd.
Location: Process Plant Site
Coordinates: 452,728 E , 6,204,160 N
Coordinate System: UTM NAD83 Zone 9N
Hole Size HWT to 1.41 m; HQ3 to 30.80 m

Drillhole No.: BH16-001
Drill Type: B15 Diamond Drill
Total Length: 30.8 m
Elevation: 492.2 m
Azimuth, Inclination: 0 , -90

Page: 3 of 4
Date Started: Aug 13, 16
Date Completed: Aug 14, 16
Logged by: CAG/MEA
Reviewed by: JEF

DEPTH - (m)	ELEVATION - (m)	GRAPHIC LOG	MATERIAL DESCRIPTION	RUN RECOVERY (%)	SAMPLE NO.	SAMPLE REC. (%)	SAMPLE TYPE	UCS (MPa) / BLOW COUNTS (PER 6")	SPT 'N' VALUE	KEY ROCK MASS PARAMETERS / SPT TEST 'N' VALUES	INSTRUMENTATION / WELL DETAILS	DRILLING NOTES
21	472		**GREYWACKE** (12.89 to 30.8 m) Dark grey; fine grained; weakly bedded, some beds look convoluted, small offsets by microfaults; strong to very strong; moderately fractured, joints generally dipping approx. 50° relative to core axis; fresh to slightly weathered; trace iron oxide staining on most joint surfaces; few calcite veins cross-cutting bedding. **BROKEN ZONE** (18.8 to 20.3 m) Broken Zone within Greywacke unit	99				60				
22	471			100				100				
23	470			100				60				
24	469			99				60				
25	468			100				50				
26	467			94	UCS-03			50				
27	466											
28	465											
29	464											
	463											

RQD
RMR
SPT TEST 'N' VALUES - 20 40 60 80

GENERAL REMARKS:
Bedrock lithology and detailed geology logs provided by IDM. Elevations and coordinates are surveyed coordinates provided by IDM.

IDM Mining Ltd.
Red Mountain Project

Knight Piésold CONSULTING

Project No.	Ref. No.	Rev.
VA101-594/02	1	A

FIGURE B1-1

Logging conducted according to the ASTM 2488 standard and the Canadian Foundation Engineering Manual, 4th Edition, 2006.

File:M:\1\01\00594\02\A\DATA\300 - SITE INVESTIGATION PROGRAM\GINT\PROJECTS\RED MOUNTAIN 2016 GEOTECHNICAL SI.GPJ
Library: M:\1\01\00594\02\A\DATA\300 - SITE INVESTIGATION PROGRAM\GINT\LIBRARY\2016 KP CANADA GINT LIBRARY - REV A.GLB, GEOTECHNICAL DRILLHOLE LOG, 2016 KP CANADA GINT DATA TEMPLATE (RMR INPUT) - REV A.GDT, Dec 8, 16

Contractor: More Core Diamond Drilling Service Ltd.
Location: Process Plant Site
Coordinates: 452,728 E , 6,204,160 N
Coordinate System: UTM NAD83 Zone 9N
Hole Size HWT to 1.41 m; HQ3 to 30.80 m

Drillhole No.: BH16-001
Drill Type: B15 Diamond Drill
Total Length: 30.8 m
Elevation: 492.2 m
Azimuth, Inclination: 0 , -90

Page: 4 of 4
Date Started: Aug 13, 16
Date Completed: Aug 14, 16
Logged by: CAG/MEA
Reviewed by: JEF

DEPTH - (m)	ELEVATION - (m)	GRAPHIC LOG	MATERIAL DESCRIPTION	RUN RECOVERY (%)	SAMPLE NO.	SAMPLE REC. (%)	SAMPLE TYPE	UCS (MPa) / BLOW COUNTS (PER 6")	SPT 'N' VALUE	KEY ROCK MASS PARAMETERS / SPT TEST 'N' VALUES	INSTRUMENTATION / WELL DETAILS	DRILLING NOTES
	462			100				50		RQD, RMR; 20 40 60 80		
31	461		End of Drillhole: 30.8 m Target Depth Reached									
32	460											
33	459											
34	458											
35	457											
36	456											
37	455											
38	454											
39	453											

GENERAL REMARKS:
Bedrock lithology and detailed geology logs provided by IDM. Elevations and coordinates are surveyed coordinates provided by IDM.

IDM Mining Ltd.
Red Mountain Project

Knight Piésold CONSULTING

Project No.	Ref. No.	Rev.
VA101-594/02	1	A

FIGURE B1-1

Logging conducted according to the ASTM 2488 standard and the Canadian Foundation Engineering Manual, 4th Edition, 2006.

Contractor: More Core Diamond Drilling Service Ltd.
Location: Process Plant Site
Coordinates: 452,774 E , 6,204,277 N
Coordinate System: UTM NAD83 Zone 9N
Hole Size HWT to 1.30 m; HQ3 to 30.80 m

Drillhole No.: BH16-002
Drill Type: B15 Diamond Drill
Total Length: 30.8 m
Elevation: 507.9 m
Azimuth, Inclination: 0 , -90

Date Started: Aug 14, 16
Date Completed: Aug 15, 16
Logged by: CAG/MEA
Reviewed by: JEF

DEPTH - (m)	ELEVATION - (m)	GRAPHIC LOG	MATERIAL DESCRIPTION	RUN RECOVERY (%)	SAMPLE NO.	SAMPLE REC. (%)	SAMPLE TYPE	UCS (MPa) / BLOW COUNTS (PER 6")	SPT 'N' VALUE	KEY ROCK MASS PARAMETERS / SPT TEST 'N' VALUES	INSTRUMENTATION / WELL DETAILS	DRILLING NOTES
1	507		**GREYWACKE** (0 to 10.65 m) Black; fine grained; weakly bedded; medium to very strong; highly fractured, joints dipping at 30°-60° relative to core axis; fresh to slightly weathered; iron oxide staining on some joint surfaces; 1-2mm quartz-calcite veinlets following bedding, some local sections with <5 mm quartz-calcite veinlets convoluting.	59				40				No hydraulic conductivity testing completed.
2	506			100				60				
3	505			100				100				
4	504			98				100				
5	503			100				70				
6	502			100	UCS-01			35				
7	501			100				35				
8	500											
9	499			87				50				
	498											

RQD
RMR
SPT TEST 'N' VALUES - ×
20 40 60 80

GENERAL REMARKS:
Bedrock lithology and detailed geology logs provided by IDM. Elevations and coordinates are surveyed coordinates provided by IDM.

IDM Mining Ltd.
Red Mountain Project

Knight Piésold CONSULTING

Project No.	Ref. No.	Rev.
VA101-594/02	1	A

FIGURE B1-2

Logging conducted according to the ASTM 2488 standard and the Canadian Foundation Engineering Manual, 4th Edition, 2006.

Contractor: More Core Diamond Drilling Service Ltd.
Location: Process Plant Site
Coordinates: 452,774 E , 6,204,277 N
Coordinate System: UTM NAD83 Zone 9N
Hole Size HWT to 1.30 m; HQ3 to 30.80 m

Drillhole No.: BH16-002
Drill Type: B15 Diamond Drill
Total Length: 30.8 m
Elevation: 507.9 m
Azimuth, Inclination: 0 , -90

Date Started: Aug 14, 16
Date Completed: Aug 15, 16
Logged by: CAG/MEA
Reviewed by: JEF

DEPTH - (m)	ELEVATION - (m)	GRAPHIC LOG	MATERIAL DESCRIPTION	RUN RECOVERY (%)	SAMPLE NO.	SAMPLE REC. (%)	SAMPLE TYPE	UCS (MPa) / BLOW COUNTS (PER 6")	SPT 'N' VALUE	KEY ROCK MASS PARAMETERS / SPT TEST 'N' VALUES	INSTRUMENTATION / WELL DETAILS	DRILLING NOTES
11	497		**MAFIC DYKE** (10.65 to 11.46 m) Light beige; medium grained; massive with black and white phenocrysts; strong to very strong; moderately fractured; fresh to slightly weathered; sericite alteration in the groundmass and mafics altered to chlorite with patchy carbonate alteration.	100				50		RQD / RMR; SPT TEST 'N' VALUES - 20 40 60 80		
				94	UCS-02			75				
12	496		**GREYWACKE** (11.46 to 13.57 m) Black; fine grained; weakly bedded; strong to very strong; highly fractured, joints dipping at 30°-60° relative to core axis; fresh to slightly weathered; iron oxide staining on some joint surfaces; 1-2mm quartz-calcite veinlets following bedding, some local sections with <5 mm quartz-calcite veinlets convoluting.	100				120				
13	495		**RUBBLE ZONE** (11.5 to 11.65 m) Rubble Zone within Greywacke unit	100				75				
14	494		**RUBBLE ZONE** (12.8 to 12.95 m) Rubble Zone within Greywacke unit	100				50				
15	493		**MAFIC DYKE** (13.57 to 15.13 m) Light beige; medium grained; weakly foliated with black and white phenocrysts; strong; slightly to moderately fractured; fresh; sericite alteration (less pervasive) in the groundmass and mafics altered to chlorite with patchy carbonate alteration.	100				75				
			GREYWACKE (15.13 to 30.8 m) Black; fine grained; weakly bedded; medium to very strong; highly fractured, joints dipping at 30°-60° relative to core axis; fresh to slightly weathered; iron oxide staining on some joint surfaces; 1-2mm quartz-calcite veinlets following bedding, some local sections with <5 mm quartz-calcite veinlets convoluting; microfaulting with meteoritic water alteration in the fracture plane.	95				35				
16	492			100				35				
17	491											
18	490			100				35				
19	489			95				50				
	488											

GENERAL REMARKS:
Bedrock lithology and detailed geology logs provided by IDM. Elevations and coordinates are surveyed coordinates provided by IDM.

IDM Mining Ltd.
Red Mountain Project

Knight Piésold CONSULTING

Project No.	Ref. No.	Rev.
VA101-594/02	1	A

FIGURE B1-2

Logging conducted according to the ASTM 2488 standard and the Canadian Foundation Engineering Manual, 4th Edition, 2006.

Contractor: More Core Diamond Drilling Service Ltd.
Location: Process Plant Site
Coordinates: 452,774 E , 6,204,277 N
Coordinate System: UTM NAD83 Zone 9N
Hole Size HWT to 1.30 m; HQ3 to 30.80 m

Drillhole No.: BH16-002
Drill Type: B15 Diamond Drill
Total Length: 30.8 m
Elevation: 507.9 m
Azimuth, Inclination: 0 , -90

Page: 3 of 4
Date Started: Aug 14, 16
Date Completed: Aug 15, 16
Logged by: CAG/MEA
Reviewed by: JEF

DEPTH - (m)	ELEVATION - (m)	GRAPHIC LOG	MATERIAL DESCRIPTION	RUN RECOVERY (%)	SAMPLE NO.	SAMPLE REC. (%)	SAMPLE TYPE	UCS (MPa) / BLOW COUNTS (PER 6")	SPT 'N' VALUE	KEY ROCK MASS PARAMETERS / SPT TEST 'N' VALUES	INSTRUMENTATION / WELL DETAILS	DRILLING NOTES
21	487		**GREYWACKE** (15.13 to 30.8 m) Black; fine grained; weakly bedded; medium to very strong; highly fractured, joints dipping at 30°-60° relative to core axis; fresh to slightly weathered; iron oxide staining on some joint surfaces; 1-2mm quartz-calcite veinlets following bedding, some local sections with <5 mm quartz-calcite veinlets convoluting; microfaulting with meteoritic water alteration in the fracture plane.	98				150		RQD / RMR; 20 40 60 80		
22	486			87				150				
23	485			100				75				
24	484		**BROKEN ZONE** (23.3 to 23.6 m) Broken Zone within Greywacke unit	100				50				
25	483		**BROKEN ZONE** (24.8 to 26.1 m) Broken Zone within Greywacke unit	75				50				
26	482			89				35				
27	481			92				20				
28	480			100				50				
29	479		**RUBBLE ZONE** (28.7 to 29.3 m) Rubble Zone within Greywacke unit	100				35				
	478			88				25				
				100				25				

Mini-Diver Pressure Transducer - S/N: SNV1146 - Installation Depth: 27.06 mbgs
GWL measured after standpipe piezometer installation. Confirmed during Pressure Transducer Installation.

GENERAL REMARKS:
Bedrock lithology and detailed geology logs provided by IDM. Elevations and coordinates are surveyed coordinates provided by IDM.

IDM Mining Ltd.
Red Mountain Project

Knight Piésold CONSULTING

Project No.	Ref. No.	Rev.
VA101-594/02	1	A

FIGURE B1-2

Logging conducted according to the ASTM 2488 standard and the Canadian Foundation Engineering Manual, 4th Edition, 2006.

File:M:\1\01\00594\02\A\DATA\300 - SITE INVESTIGATION PROGRAM\GINT\PROJECTS\RED MOUNTAIN 2016 GEOTECHNICAL SI.GPJ
Library: M:\1\01\00594\02\A\DATA\300 - SITE INVESTIGATION PROGRAM\GINT\LIBRARY\2016 KP CANADA GINT LIBRARY - REV A.GLB, GEOTECHNICAL DRILLHOLE LOG, 2016 KP CANADA GINT DATA TEMPLATE (RMR INPUT) - REV A.GDT, Dec 8, 16

Contractor: More Core Diamond Drilling Service Ltd.
Location: Process Plant Site
Coordinates: 452,774 E , 6,204,277 N
Coordinate System: UTM NAD83 Zone 9N
Hole Size HWT to 1.30 m; HQ3 to 30.80 m

Drillhole No.: BH16-002
Drill Type: B15 Diamond Drill
Total Length: 30.8 m
Elevation: 507.9 m
Azimuth, Inclination: 0 , -90

Page: 4 of 4
Date Started: Aug 14, 16
Date Completed: Aug 15, 16
Logged by: CAG/MEA
Reviewed by: JEF

DEPTH - (m)	ELEVATION - (m)	GRAPHIC LOG	MATERIAL DESCRIPTION	RUN RECOVERY (%)	SAMPLE NO.	SAMPLE REC. (%)	SAMPLE TYPE	UCS (MPa) / BLOW COUNTS (PER 6")	SPT 'N' VALUE	KEY ROCK MASS PARAMETERS / SPT TEST 'N' VALUES	INSTRUMENTATION / WELL DETAILS	DRILLING NOTES
				100				25		RQD, RMR; 20 40 60 80		
31	477		End of Drillhole: 30.8 m Target Depth Reached									
32	476											
33	475											
34	474											
35	473											
36	472											
37	471											
38	470											
39	469											
	468											

GENERAL REMARKS:
Bedrock lithology and detailed geology logs provided by IDM. Elevations and coordinates are surveyed coordinates provided by IDM.

IDM Mining Ltd.
Red Mountain Project

Knight Piésold CONSULTING

Project No.	Ref. No.	Rev.
VA101-594/02	1	A

FIGURE B1-2

Logging conducted according to the ASTM 2488 standard and the Canadian Foundation Engineering Manual, 4th Edition, 2006.

Contractor: More Core Diamond Drilling Service Ltd.
Location: North TMF Embankment - Upstream Toe
Coordinates: 452,442 E , 6,204,918 N
Coordinate System: UTM NAD83 Zone 9N
Hole Size HWT to 1.27 m; HQ3 to 31.02 m

Drillhole No.: BH16-003
Drill Type: B15 Diamond Drill
Total Length: 31.0 m
Elevation: 434.6 m
Azimuth, Inclination: 0 , -90

Page: 1 of 4
Date Started: Aug 16, 16
Date Completed: Aug 18, 16
Logged by: CAG/MEA
Reviewed by: JEF

DEPTH - (m)	ELEVATION - (m)	GRAPHIC LOG	MATERIAL DESCRIPTION	RUN RECOVERY (%)	SAMPLE NO.	SAMPLE REC. (%)	SAMPLE TYPE	UCS (MPa) / BLOW COUNTS (PER 6")	SPT 'N' VALUE	KEY ROCK MASS PARAMETERS / SPT TEST 'N' VALUES	INSTRUMENTATION / WELL DETAILS	DRILLING NOTES
0	434		**BOULDER** (0 to 1 m) Subrounded; uniformly graded; mottled grey to dark grey; loose; iron oxide staining, visible quartz veinlets; finer materials washed away during drilling process.	10								
1	433		**GOLDSLIDE PORPHYRY SUITE** (1 to 7.93 m) Light pink; medium to coarse grained; aphanitic, massive; strong; moderately to highly fractured; fresh to slightly weathered; clay infill on one joint at 4.39 m; chlorite, calcite and iron oxide staining on joint surfaces; 2-3 mm diameter phenocrysts (approx. 70% of groundmass) with 1 mm diameter hornblende laths; chlorite alterating mafics; grades into sheared zone below.	97	UCS-01			50		RQD / RMR		Zone of Lost Circulation - 1.90-2.24 m
2	432		**BROKEN ZONE** (1.4 to 1.8 m) Broken Zone within Goldslide Porphyry unit	100				50				
3	431											
4	430			100				50				
5	429											
6	428			100				50				
7	427											
8	426		**SHEARED GABBRO** (7.93 to 11.64 m) Grey to dark grey; fine to medium grained; massive; medium strong; moderately to highly fractured, occasional small broken zones; slightly weathered; abundant calcite; coarse brown biotite (non-magnetic); shear fabric at a low angle to core axis; large quartz vein at lower contact.	100	UCS-02			50				Packer Test #1 - 4.98-11.24 m - 1E-07 m/s
9	425			98				25				

GENERAL REMARKS:
Bedrock lithology and detailed geology logs provided by IDM. Elevations and coordinates are surveyed coordinates provided by IDM.

IDM Mining Ltd.
Red Mountain Project

Knight Piésold CONSULTING

Project No.	Ref. No.	Rev.
VA101-594/02	1	A

FIGURE B1-3

Logging conducted according to the ASTM 2488 standard and the Canadian Foundation Engineering Manual, 4th Edition, 2006.

Contractor: More Core Diamond Drilling Service Ltd.
Location: North TMF Embankment - Upstream Toe
Coordinates: 452,442 E , 6,204,918 N
Coordinate System: UTM NAD83 Zone 9N
Hole Size HWT to 1.27 m; HQ3 to 31.02 m

Drillhole No.: BH16-003
Drill Type: B15 Diamond Drill
Total Length: 31.0 m
Elevation: 434.6 m
Azimuth, Inclination: 0 , -90

Date Started: Aug 16, 16
Date Completed: Aug 18, 16
Logged by: CAG/MEA
Reviewed by: JEF

DEPTH - (m)	ELEVATION - (m)	GRAPHIC LOG	MATERIAL DESCRIPTION	RUN RECOVERY (%)	SAMPLE NO.	SAMPLE REC. (%)	SAMPLE TYPE	UCS (MPa) / BLOW COUNTS (PER 6")	SPT 'N' VALUE	KEY ROCK MASS PARAMETERS / SPT TEST 'N' VALUES	INSTRUMENTATION / WELL DETAILS	DRILLING NOTES
11	424		**SHEARED GABBRO** (7.93 to 11.64 m) Grey to dark grey; fine to medium grained; massive; medium strong; moderately to highly fractured, occasional small broken zones; slightly weathered; abundant calcite; coarse brown biotite (non-magnetic); shear fabric at a low angle to core axis; large quartz vein at lower contact.	100				25				
12	423		**QUARTZ VEIN** (11.64 to 11.75 m)	98				35				
	422		**SHEARED GABBRO** (11.75 to 12.63 m) Grey to dark grey; fine to medium grained; massive; medium strong; moderately to highly fractured, occasional small broken zones; slightly weathered; abundant calcite; coarse brown biotite (non-magnetic); shear fabric at a low angle to core axis; large quartz vein at upper contact.									
13	421		**GOLDSLIDE PORPHYRY SUITE** (12.63 to 15.5 m) Light green grey; fine grained; aphanitic, massive; strong to very strong; moderately to highly fractured; fresh; iron oxide staining on some joint surfaces; calcite veining throughout; quartz veinlets with halos (sometimes with pyrite or chlorite); 2-3 mm diameter phenocrysts mostly masked by silica.	100				150				
14	420											Packer Test #2 - 11.12-17.20 m - 3E-06 m/s
15				100				50				
16	419		**TUFF (WELDED)** (15.5 to 22.22 m) Grey; fine to medium grained; weakly bedded (barely visible); strong; moderately to highly fractured; fresh; iron oxide infill on some joints; trace quartz veinlets; 1-2 mm diameter feldspar phenocrysts scattered throughout; 2-4 mm dark mafics/lithic fragments, angular to rounded throughout with a couple of dark, rounded fragments up to 2 mm in diameter around 19.6 m.	100				35				
17	418											
18	417			100				60				
19	416											
	415			100				60				Packer Test #3 - 16.30-23.20

GENERAL REMARKS:
Bedrock lithology and detailed geology logs provided by IDM. Elevations and coordinates are surveyed coordinates provided by IDM.

IDM Mining Ltd.
Red Mountain Project

Knight Piésold CONSULTING

Project No.	Ref. No.	Rev.
VA101-594/02	1	A

FIGURE B1-3

Logging conducted according to the ASTM 2488 standard and the Canadian Foundation Engineering Manual, 4th Edition, 2006.

Contractor: More Core Diamond Drilling Service Ltd.
Location: North TMF Embankment - Upstream Toe
Coordinates: 452,442 E , 6,204,918 N
Coordinate System: UTM NAD83 Zone 9N
Hole Size HWT to 1.27 m; HQ3 to 31.02 m

Drillhole No.: BH16-003
Drill Type: B15 Diamond Drill
Total Length: 31.0 m
Elevation: 434.6 m
Azimuth, Inclination: 0 , -90

Page: 3 of 4
Date Started: Aug 16, 16
Date Completed: Aug 18, 16
Logged by: CAG/MEA
Reviewed by: JEF

DEPTH - (m)	ELEVATION - (m)	GRAPHIC LOG	MATERIAL DESCRIPTION	RUN RECOVERY (%)	SAMPLE NO.	SAMPLE REC. (%)	SAMPLE TYPE	UCS (MPa) / BLOW COUNTS (PER 6")	SPT 'N' VALUE	KEY ROCK MASS PARAMETERS / SPT TEST 'N' VALUES	INSTRUMENTATION / WELL DETAILS	DRILLING NOTES
21	414		**TUFF (WELDED)** (15.5 to 22.22 m) Grey; fine to medium grained; weakly bedded (barely visible); strong; moderately to highly fractured; fresh; iron oxide infill on some joints; trace quartz veinlets; 1-2 mm diameter feldspar phenocrysts scattered throughout; 2-4 mm dark mafics/lithic fragments, angular to rounded throughout with a couple of dark, rounded fragments up to 2 mm in diameter around 19.6 m.	100	UCS-03			60				m - 2E-06 m/s
22	413											
23	412		**SHEARED GABBRO** (22.22 to 24.22 m) Grey to dark grey; fine grained; massive; medium strong; intensely fractured; slightly to moderately weathered; clay, chlorite and iron oxide infill; abundant quartz-calcite; fracture spacing increasing with depth; quartz-calcite sometimes fractured and surrounded by a chlorite matrix.	86				50				
24	411		**BROKEN ZONE** (23.35 to 23.5 m) Broken Zone within Sheared Gabbro unit; heavy calcite infill.	100				50				
25	410		**RUBBLE ZONE** (23.66 to 24 m) Rubble Zone within Sheared Gabbro unit; light green oxidized gouge infill between rubble fragments.	99				25				Zone of Lost Circulation - 23.66-24.37 m
26	409		**TUFF (WELDED)** (24.22 to 31.02 m) Grey; fine to medium grained; weakly bedded (barely visible); strong; slightly to moderately fractured, becoming more competent with depth; slightly weathered; chlorite staining on joint surfaces; minor iron oxide staining; 1-2 mm diameter quartz and feldspar phenocrysts scattered throughout; some 2-4 mm dark mafics/lithic fragments, angular to rounded; dark light purple vein halos, approx. 1-3 mm wide; circulation loss up to 24.37 m.	100				25				Groundwater Level measured during Pressure Transducer Installation. Mini-Diver Pressure Transducer - S/N: SNV1150 - Installation Depth: 24.51 mbgs
27	408		**BROKEN ZONE** (24.37 to 25 m) Broken Zone within Welded Tuff unit	100				50				Packer Test #4 - 22.83-27.17 m - 5E-06 m/s
28	407			100				50				
29	406			97				50				Packer Test #5 - 26.13-31.02 m - 5E-07 m/s
	405											

GENERAL REMARKS:
Bedrock lithology and detailed geology logs provided by IDM. Elevations and coordinates are surveyed coordinates provided by IDM.

IDM Mining Ltd.
Red Mountain Project

Knight Piésold CONSULTING

Project No.	Ref. No.	Rev.
VA101-594/02	1	A

FIGURE B1-3

Logging conducted according to the ASTM 2488 standard and the Canadian Foundation Engineering Manual, 4th Edition, 2006.

Contractor: More Core Diamond Drilling Service Ltd.	**Drillhole No.:** BH16-003	**Page:** 4 of 4
Location: North TMF Embankment - Upstream Toe	Drill Type: B15 Diamond Drill	Date Started: Aug 16, 16
Coordinates: 452,442 E , 6,204,918 N	Total Length: 31.0 m	Date Completed: Aug 18, 16
Coordinate System: UTM NAD83 Zone 9N	Elevation: 434.6 m	Logged by: CAG/MEA
Hole Size HWT to 1.27 m; HQ3 to 31.02 m	Azimuth, Inclination: 0 , -90	Reviewed by: JEF

DEPTH - (m)	ELEVATION - (m)	GRAPHIC LOG	MATERIAL DESCRIPTION	RUN RECOVERY (%)	SAMPLE NO.	SAMPLE REC. (%)	SAMPLE TYPE	UCS (MPa) / BLOW COUNTS (PER 6")	SPT 'N' VALUE	KEY ROCK MASS PARAMETERS (RQD, RMR) / SPT TEST 'N' VALUES - × (20 40 60 80)	INSTRUMENTATION / WELL DETAILS	DRILLING NOTES
	404			100				50				
31				100				50				
			End of Drillhole: 31.02 m Target Depth Reached									
	403											
32												
	402											
33												
	401											
34												
	400											
35												
	399											
36												
	398											
37												
	397											
38												
	396											
39												
	395											

GENERAL REMARKS:
Bedrock lithology and detailed geology logs provided by IDM. Elevations and coordinates are surveyed coordinates provided by IDM.

IDM Mining Ltd.
Red Mountain Project

Knight Piésold CONSULTING

Project No.	Ref. No.	Rev.
VA101-594/02	1	A

FIGURE B1-3

Logging conducted according to the ASTM 2488 standard and the Canadian Foundation Engineering Manual, 4th Edition, 2006.

Contractor: More Core Diamond Drilling Service Ltd.
Location: North TMF Embankment - East Abutment
Coordinates: 452,451 E , 6,205,121 N
Coordinate System: UTM NAD83 Zone 9N
Hole Size HWT to 1.24 m; HQ3 to 30.50 m

Drillhole No.: BH16-004
Drill Type: B15 Diamond Drill
Total Length: 30.5 m
Elevation: 465.6 m
Azimuth, Inclination: 0 , -90

Page: 1 of 4
Date Started: Aug 23, 16
Date Completed: Aug 25, 16
Logged by: CAG/MEA
Reviewed by: JEF

DEPTH - (m)	ELEVATION - (m)	GRAPHIC LOG	MATERIAL DESCRIPTION	RUN RECOVERY (%)	SAMPLE NO.	SAMPLE REC. (%)	SAMPLE TYPE	UCS (MPa) / BLOW COUNTS (PER 6")	SPT 'N' VALUE	KEY ROCK MASS PARAMETERS / SPT TEST 'N' VALUES	INSTRUMENTATION / WELL DETAILS	DRILLING NOTES
0	465		**FORREST DUFF & TOPSOIL** (0 to 0.1 m) Some gravel, angular; some silt; well graded; dark brown; very dense; moist; visible rootmat. From SPT recovery.	42	SPT-01	42		7/5/50+	R			
1			**SILTY SAND** (0.1 to 0.18 m) Fine to coarse grained; some gravel, fine to coarse grained, subangular to subrounded; some clay; well graded; non plastic; very dense; grey; moist. From SPT recovery.	100	UCS-01			25				
2	464		**COBBLES & BOULDERS** (0.18 to 0.5 m) Subrounded; some gravel, coarse grained, subangular to subrounded; poorly graded; grey; loose; moist; finer materials washed away during drilling process.	42	UCS-02			25				
3	463		**MAFIC DYKE** (0.5 to 1.5 m) Grey green; fine grained; massive; medium strong; slightly to moderately fractured; moderately weathered; iron oxide, calcite and chlorite infill; carbonate veinlets <1mm wide, increasing in frequency closer to contact; serpentinite-talc veinlets <3mm thick, light green coloured; sericite-chlorite alteration; minor pyroxene <1-2mm thick, biotite altered; contact with gabbro possibly faulted.	100				25				
4	462		**RUBBLE ZONE** (0.91 to 1.5 m) Rubble Zone within Mafic Dyke unit									
5	461		**GABBRO** (1.5 to 4.15 m) Light grey-green; medium grained; foliated; medium strong; slightly to moderately fractured; slightly weathered; chlorite, serpentinite and calcite infill; iron oxide staining on joint surfaces; undulating black chlorite veinlets <5mm thick; magnetic with coarse brown biotite and pyroxene <2mm thick; sharp undulating lower contact ~80° to core axis.	100				50				
6	460			100				35				Packer Test #1 - 3.28-9.28 m - No Take
7	459		**MAFIC DYKE** (4.15 to 6.35 m) Grey green; fine grained; massive; medium strong to strong; slightly to moderately fractured; slightly weathered; chlorite, calcite and graphite infill; iron oxide staining on joint surfaces close to top contact; carbonate veinlets <1mm wide; sericite-chlorite alteration; minor pyroxene <1-2mm thick, biotite altered; sharp, low-angle lower contact, ~12° to core axis with black chlorite veinlet. Possibly fresher gabbro unit.	100				25				
8	458											
9	457		**GABBRO** (6.35 to 11.9 m) Light grey-green; medium grained; foliated; medium strong; slightly to moderately fractured with one highly fractured section in middle of zone; slightly weathered; chlorite, calcite, graphite and serpentinite-talc infill in fractures; magnetic with coarse brown biotite and pyroxene <2mm thick.	100				25				
	456											

GENERAL REMARKS:
Bedrock lithology and detailed geology logs provided by IDM. Elevations and coordinates are surveyed coordinates provided by IDM.

IDM Mining Ltd.
Red Mountain Project

Knight Piésold CONSULTING

Project No.	Ref. No.	Rev.
VA101-594/02	1	A

FIGURE B1-4

Logging conducted according to the ASTM 2488 standard and the Canadian Foundation Engineering Manual, 4th Edition, 2006.

Contractor: More Core Diamond Drilling Service Ltd.
Location: North TMF Embankment - East Abutment
Coordinates: 452,451 E , 6,205,121 N
Coordinate System: UTM NAD83 Zone 9N
Hole Size HWT to 1.24 m; HQ3 to 30.50 m

Drillhole No.: BH16-004
Drill Type: B15 Diamond Drill
Total Length: 30.5 m
Elevation: 465.6 m
Azimuth, Inclination: 0 , -90

Page: 2 of 4
Date Started: Aug 23, 16
Date Completed: Aug 25, 16
Logged by: CAG/MEA
Reviewed by: JEF

DEPTH - (m)	ELEVATION - (m)	GRAPHIC LOG	MATERIAL DESCRIPTION	RUN RECOVERY (%)	SAMPLE NO.	SAMPLE REC. (%)	SAMPLE TYPE	UCS (MPa) / BLOW COUNTS (PER 6")	SPT 'N' VALUE	KEY ROCK MASS PARAMETERS / SPT TEST 'N' VALUES	INSTRUMENTATION / WELL DETAILS	DRILLING NOTES
10	455		**GABBRO** (6.35 to 11.9 m) Light grey-green; medium grained; foliated; medium strong; slightly to moderately fractured with one highly fractured section in middle of zone; slightly weathered; chlorite, calcite, graphite and serpentinite-talc infill in fractures; magnetic with coarse brown biotite and pyroxene <2mm thick.	100				50		RQD / RMR / SPT 'N' 20 40 60 80		
11				100				60				Groundwater level measured prior to grouting during VWP installation.
	454											
12			**MAFIC DYKE** (11.9 to 16.3 m) Grey green; coarse grained; porphyritic; strong; slightly to moderately fractured; trace quartz phenocrysts; iron oxide staining on joint surfaces; accicular hornblende laths <2-3mm thick with accicular diamond shape pyroxene <5mm thick; minor fps with vuggy hedge, possibly bleached xenolith, <5 mm, subrounded; trace pyrrhotite in veinlet selvage; silicified-sericitic at the contact margin; sharp lower contact.									Packer Test #2 - 8.86-15.50 m - 3E-07 m/s
	453			100				60				
13												
	452											
14			**BROKEN ZONE** (13.78 to 14.03 m) Broken Zone in Gabbro Unit. Broken fragments have iron oxide staining.	88				5				
	451			97	UCS-03			75				
15												
	450			100				40				
16												
	449		**GABBRO** (16.3 to 30.5 m) Light grey-green; medium grained; foliated; medium strong to strong; slightly to moderately fractured; slightly weathered; serpentinite and black chlorite infill in fractures; black chlorite veinlets <5mm thick; magnetic with coarse brown biotite and pyroxene <2mm thick.	100				45				
17												
	448			94	UCS-04			70				
18												Packer Test #3 - 14.86-21.50 m - 5E-07 m/s
	447											
19				93				70				
	446											

GENERAL REMARKS:
Bedrock lithology and detailed geology logs provided by IDM. Elevations and coordinates are surveyed coordinates provided by IDM.

IDM Mining Ltd.
Red Mountain Project

Knight Piésold CONSULTING

Project No.	Ref. No.	Rev.
VA101-594/02	1	A

FIGURE B1-4

Logging conducted according to the ASTM 2488 standard and the Canadian Foundation Engineering Manual, 4th Edition, 2006.

Contractor: More Core Diamond Drilling Service Ltd.
Location: North TMF Embankment - East Abutment
Coordinates: 452,451 E , 6,205,121 N
Coordinate System: UTM NAD83 Zone 9N
Hole Size HWT to 1.24 m; HQ3 to 30.50 m

Drillhole No.: BH16-004
Drill Type: B15 Diamond Drill
Total Length: 30.5 m
Elevation: 465.6 m
Azimuth, Inclination: 0 , -90

Page: 3 of 4
Date Started: Aug 23, 16
Date Completed: Aug 25, 16
Logged by: CAG/MEA
Reviewed by: JEF

DEPTH - (m)	ELEVATION - (m)	GRAPHIC LOG	MATERIAL DESCRIPTION	RUN RECOVERY (%)	SAMPLE NO.	SAMPLE REC. (%)	SAMPLE TYPE	UCS (MPa) / BLOW COUNTS (PER 6")	SPT 'N' VALUE	KEY ROCK MASS PARAMETERS / SPT TEST 'N' VALUES	INSTRUMENTATION / WELL DETAILS	DRILLING NOTES
21	445		**GABBRO** (16.3 to 30.5 m) Light grey-green; medium grained; foliated; medium strong to strong; slightly to moderately fractured; slightly weathered; serpentinite and black chlorite infill in fractures; black chlorite veinlets <5mm thick; magnetic with coarse brown biotite and pyroxene <2mm thick.	99				70		RQD / RMR; SPT TEST 'N' VALUES - 20 40 60 80		
				100				70				
22	444			101				60				
23	443											
24	442			99				60				Packer Test #4 - 20.86-27.50 m - 2E-07 m/s
25	441			100				60				
26	440											
27	439			100				45				
28	438			100				30				
29	437			95				25				Vibrating Wire Piezometer Serial Number: VW38233 Data Logger Serial Number: DT11289 Packer Test #5 - 27.35-30.50 m - 3E-08 m/s
	436			100				25				

GENERAL REMARKS:
Bedrock lithology and detailed geology logs provided by IDM. Elevations and coordinates are surveyed coordinates provided by IDM.

IDM Mining Ltd.
Red Mountain Project

Knight Piésold CONSULTING

Project No.	Ref. No.	Rev.
VA101-594/02	1	A

FIGURE B1-4

Logging conducted according to the ASTM 2488 standard and the Canadian Foundation Engineering Manual, 4th Edition, 2006.

Contractor: More Core Diamond Drilling Service Ltd.
Location: North TMF Embankment - East Abutment
Coordinates: 452,451 E , 6,205,121 N
Coordinate System: UTM NAD83 Zone 9N
Hole Size HWT to 1.24 m; HQ3 to 30.50 m

Drillhole No.: BH16-004
Drill Type: B15 Diamond Drill
Total Length: 30.5 m
Elevation: 465.6 m
Azimuth, Inclination: 0 , -90

Page: 4 of 4
Date Started: Aug 23, 16
Date Completed: Aug 25, 16
Logged by: CAG/MEA
Reviewed by: JEF

DEPTH - (m)	ELEVATION - (m)	GRAPHIC LOG	MATERIAL DESCRIPTION	RUN RECOVERY (%)	SAMPLE NO.	SAMPLE REC. (%)	SAMPLE TYPE	UCS (MPa) / BLOW COUNTS (PER 6")	SPT 'N' VALUE	KEY ROCK MASS PARAMETERS / SPT TEST 'N' VALUES	INSTRUMENTATION / WELL DETAILS	DRILLING NOTES
										RQD, RMR; 20 40 60 80		
	435		End of Drillhole: 30.5 m Target Depth Reached									
31	434											
32	433											
33	432											
34	431											
35	430											
36	429											
37	428											
38	427											
39	426											

GENERAL REMARKS:
Bedrock lithology and detailed geology logs provided by IDM. Elevations and coordinates are surveyed coordinates provided by IDM.

IDM Mining Ltd.
Red Mountain Project

Knight Piésold CONSULTING

Project No.	Ref. No.	Rev.
VA101-594/02	1	A

FIGURE B1-4

Logging conducted according to the ASTM 2488 standard and the Canadian Foundation Engineering Manual, 4th Edition, 2006.

Contractor: More Core Diamond Drilling Service Ltd.
Location: North TMF Embankment - Centrepoint of Dam Crest
Coordinates: 452,384 E , 6,204,956 N
Coordinate System: UTM NAD83 Zone 9N
Hole Size HQ3 to 45.00 m

Drillhole No.: BH16-005
Drill Type: B15 Diamond Drill
Total Length: 45.0 m
Elevation: 427.5 m
Azimuth, Inclination: 64 , -60

Page: 1 of 5
Date Started: Aug 26, 16
Date Completed: Aug 29, 16
Logged by: CAG/MEA
Reviewed by: JEF

DEPTH - (m)	ELEVATION - (m)	GRAPHIC LOG	MATERIAL DESCRIPTION	RUN RECOVERY (%)	SAMPLE NO.	SAMPLE REC. (%)	SAMPLE TYPE	UCS (MPa) / BLOW COUNTS (PER 6")	SPT 'N' VALUE	KEY ROCK MASS PARAMETERS / SPT TEST 'N' VALUES	INSTRUMENTATION / WELL DETAILS	DRILLING NOTES
0	427		**FOREST DUFF & TOPSOIL** (0 to 0.1 m) Some sand; trace gravel, coarse, angular; poorly graded; dark brown; dense; moist; visible rootmat. From SPT recovery.	0	SPT-01 GS-01	59 23	G B	8/21/43	64	RQD RMR SPT TEST 'N' VALUES - 20 40 60 80		
					SPT-02	25		50+	R			
1			**SAND** (0.1 to 0.36 m) Medium to coarse grained; some gravel, fine to coarse, subangular to subrounded; poorly graded; brown to grey; dense. From SPT recovery.	68	GS-02	64	G B					
2	426		**COBBLES** (0.36 to 3.1 m) Rounded; some gravel, fine to coarse, rounded, varying lithologies; poorly graded; grey to dark grey; very dense; finer material washed away during drilling process.	31								
3	425			15								
4	424		**NO RECOVERY** (3.1 to 4.4 m) No Recovery - Drill recovery washed away through drilling process	0								
5	423		**COBBLES** (4.4 to 5.5 m) Purplish grey (possibly highly weathered gabbro); fine to medium grained; massive; slightly weathered; pyrite infill on fracture surfaces; some gravel, subangular to subrounded; grey to dark grey; finer material washed away during drilling process.	72								
				100								
6	422		**GRAVEL** (5.5 to 6.84 m) Subrounded; uniformly graded; grey to dark grey; loose; finer material washed away during drilling process..	20								
				91								
7	421		**DIORITE** (6.84 to 19.27 m) Light grey-green; coarse grained; massive; medium strong to strong; moderately to highly fractured; fresh to slightly weathered; clay and calcite infill; calcite veins; felsic with minimal quartz; well developed plagioclase phenocrsysts, <3mm in diameter, with local plagioclase blebs; fine accicular hornblende, <1mm thick; local mafic xenolith with chlorite alteration; lower gradational contact is more mafic and dark-grey coloured.	86				50				
8	420			100				50				Groundwater level measured prior to grouting during VWP installation.
9				99				70				
	419											

GENERAL REMARKS:
Bedrock lithology and detailed geology logs provided by IDM. Elevations and coordinates are surveyed coordinates provided by IDM.

IDM Mining Ltd.
Red Mountain Project

Knight Piésold CONSULTING

Project No.	Ref. No.	Rev.
VA101-594/02	1	A

FIGURE B1-5

Logging conducted according to the ASTM 2488 standard and the Canadian Foundation Engineering Manual, 4th Edition, 2006.

Contractor: More Core Diamond Drilling Service Ltd.
Location: North TMF Embankment - Centrepoint of Dam Crest
Coordinates: 452,384 E , 6,204,956 N
Coordinate System: UTM NAD83 Zone 9N
Hole Size HQ3 to 45.00 m

Drillhole No.: BH16-005
Drill Type: B15 Diamond Drill
Total Length: 45.0 m
Elevation: 427.5 m
Azimuth, Inclination: 64 , -60

Page: 2 of 5
Date Started: Aug 26, 16
Date Completed: Aug 29, 16
Logged by: CAG/MEA
Reviewed by: JEF

DEPTH - (m)	ELEVATION - (m)	GRAPHIC LOG	MATERIAL DESCRIPTION	RUN RECOVERY (%)	SAMPLE NO.	SAMPLE REC. (%)	SAMPLE TYPE	UCS (MPa) / BLOW COUNTS (PER 6")	SPT 'N' VALUE	KEY ROCK MASS PARAMETERS / SPT TEST 'N' VALUES	INSTRUMENTATION / WELL DETAILS	DRILLING NOTES
11	418		**DIORITE** (6.84 to 19.27 m) Light grey-green; coarse grained; massive; medium strong to strong; moderately to highly fractured; fresh to slightly weathered; clay and calcite infill; calcite veins; felsic with minimal quartz; well developed plagioclase phenocrsysts, <3mm in diameter, with local plagioclase blebs; fine accicular hornblende, <1mm thick; local mafic xenolith with chlorite alteration; lower gradational contact is more mafic and dark-grey coloured.	100				60		RQD / RMR; SPT TEST 'N' VALUES - 20 40 60 80		
12	417		**BROKEN ZONE** (11.3 to 11.44 m) Broken Zone within Diorite unit	100	UCS-01			50				Packer Test #1 - 8.43-14.43 m - No Take
13	416		**BROKEN ZONE** (13.37 to 13.75 m) Broken Zone within Diorite unit	100				35				
14	415			100				50				
15				100				25				
16	414		**BROKEN ZONE** (15.56 to 15.78 m) Broken Zone within Diorite unit	93				25				
17	413											
18	412			97				35				Packer Test #2 - 14.28-20.28 m - 6E-07 m/s
19	411			97				25				

GENERAL REMARKS:
Bedrock lithology and detailed geology logs provided by IDM. Elevations and coordinates are surveyed coordinates provided by IDM.

IDM Mining Ltd.
Red Mountain Project

Knight Piésold CONSULTING

Project No.	Ref. No.	Rev.
VA101-594/02	1	A

FIGURE B1-5

Logging conducted according to the ASTM 2488 standard and the Canadian Foundation Engineering Manual, 4th Edition, 2006.

Contractor: More Core Diamond Drilling Service Ltd.
Location: North TMF Embankment - Centrepoint of Dam Crest
Coordinates: 452,384 E , 6,204,956 N
Coordinate System: UTM NAD83 Zone 9N
Hole Size HQ3 to 45.00 m

Drillhole No.: BH16-005
Drill Type: B15 Diamond Drill
Total Length: 45.0 m
Elevation: 427.5 m
Azimuth, Inclination: 64 , -60

Page: 3 of 5
Date Started: Aug 26, 16
Date Completed: Aug 29, 16
Logged by: CAG/MEA
Reviewed by: JEF

DEPTH - (m)	ELEVATION - (m)	GRAPHIC LOG	MATERIAL DESCRIPTION	RUN RECOVERY (%)	SAMPLE NO.	SAMPLE REC. (%)	SAMPLE TYPE	UCS (MPa) / BLOW COUNTS (PER 6")	SPT 'N' VALUE	KEY ROCK MASS PARAMETERS / SPT TEST 'N' VALUES	INSTRUMENTATION / WELL DETAILS	DRILLING NOTES
21	410		**GABBRO** (19.27 to 21 m) Dark grey; fine grained; strongly foliated; strong; highly fractured; slightly to moderately fractured; graphite, chlorite and quartz-calcite infill, trace pyrite blebs in selvage; sheared with pyroxenite altered to biotite (phlogopite); obscured upper contact is broken up; cross-cut by fine-grained, dark green-grey, silica-chlorite sills. **RUBBLE ZONE** (20.28 to 20.98 m) Rubble Zone within Gabbro unit.	99	UCS-02			50		RQD / RMR; SPT TEST 'N' VALUES - 20 40 60 80		
22	409		**MAFIC DYKE** (21 to 24.46 m) Light grey-green; medium grained; porphyritic; strong; moderately to highly fractured; fresh; intermediate intrusive unit with minimal quartz; well developed plagioclase phenocrysts, <1-2mm in diameter; fine grained mafic with chloritized hornblended in groundmass, and 1-2% pyroxenite veinlets, <2mm thick; strongly silicified; plagioclase is rimmed by alteration; more mafic, dark grey-black coloured at contact.	96				50				
23	408			96				60				Packer Test #3 - 19.64-26.28 m - 3E-06 m/s
24	407		**BROKEN ZONE** (23.69 to 24.46 m) Broken Zone at contact between Gabbro and Mafic Dyke units. Iron oxide staining on most fracture surfaces.	92				60				
25	406		**GABBRO** (24.46 to 25 m) Dark grey-black; fine grained; porphyritic, strongly foliated with brown biotite grain stretch; medium strong; highly fractured; fresh to slightly weathered; serpentinte-chlorite with local talc in joint surfaces; completely sheared with quartz-calcite veins; crenulation and boudinage of gabbro and veins. **RUBBLE ZONE** (24.78 to 25 m) Rubble Zone within Gabbro unit.	100				45				
26	405			97				45				
27	404		**MAFIC DYKE** (25 to 30.18 m) Dark grey-green; medium grained; medium strong to strong; slightly fractured; fresh to slightly weathered; intermediate intrusive unit with more mafic and minimal quartz; obscured plagioclase phenocryst rims; well developed pyroxenite, <4mm thick; local chlorite altered hornblende; strong silica alteration; more mafic, dark-grey coloured at contact.	94				60				
28	403		**BROKEN ZONE** (27.99 to 30.58 m) Broken Zone surrounding contact between Gabbro and Mafic Dyke units. Iron oxide staining on most fracture surfaces, gouge infill. 6 cm thick quartz vein at 30.23 m.	100				45				
29	402			99	UCS-03			45				Packer Test #4 - 25.86-32.00 m - 2E-06 m/s
				100				5				
				98				45				

GENERAL REMARKS:
Bedrock lithology and detailed geology logs provided by IDM. Elevations and coordinates are surveyed coordinates provided by IDM.

IDM Mining Ltd.
Red Mountain Project

Knight Piésold CONSULTING

Project No.	Ref. No.	Rev.
VA101-594/02	1	A

FIGURE B1-5

Logging conducted according to the ASTM 2488 standard and the Canadian Foundation Engineering Manual, 4th Edition, 2006.

Contractor: More Core Diamond Drilling Service Ltd.
Location: North TMF Embankment - Centrepoint of Dam Crest
Coordinates: 452,384 E , 6,204,956 N
Coordinate System: UTM NAD83 Zone 9N
Hole Size HQ3 to 45.00 m

Drillhole No.: BH16-005
Drill Type: B15 Diamond Drill
Total Length: 45.0 m
Elevation: 427.5 m
Azimuth, Inclination: 64 , -60

Page: 4 of 5
Date Started: Aug 26, 16
Date Completed: Aug 29, 16
Logged by: CAG/MEA
Reviewed by: JEF

DEPTH - (m)	ELEVATION - (m)	GRAPHIC LOG	MATERIAL DESCRIPTION	RUN RECOVERY (%)	SAMPLE NO.	SAMPLE REC. (%)	SAMPLE TYPE	UCS (MPa) / BLOW COUNTS (PER 6")	SPT 'N' VALUE	KEY ROCK MASS PARAMETERS / SPT TEST 'N' VALUES	INSTRUMENTATION / WELL DETAILS	DRILLING NOTES
31	401		**GABBRO** (30.18 to 32.24 m) Dark grey-black; fine grained; massive; weak to medium strong; highly fractured, multiple healed fractures with quartz infill; slightly to moderately weathered; some chlorite, calcite and graphite infill; iron oxide staining on joint surfaces; sheared with quartz-calcite veins; crenulation and boudinage of gabbro and veins; sheared zone obliterated by silica altered gabbro unit with quartz-calcite veins, <5mm thick; local boudinage around veins; serpentinite-chlorite with local talc in vein selvage; fault gouge marking lower contact.	100				5		RQD / RMR; SPT TEST 'N' VALUES - 20 40 60 80		
32	400			100				35				
33	399		**GABBRO** (32.24 to 44.4 m) Dark grey-purple; medium grained; local strong foliation; massive; weak; highly fractured; moderately weathered; serpentinite-talc in joint infill; local fault gouge within unit; pyroxenite altered to brown biotite (phlogopite) from 37.91 m to 38.38 m, circulation loss throughout altered section.	100				15				
34	398			100				15				
35	397			100				15				Packer Test #5 - 31.85-37.85 m - 4E-07 m/s
36	396			100				20				
37	395		**BROKEN ZONE** (37.41 to 38.38 m) Broken Zone within major Gabbro unit. Heavy chlorite alteration.	100				10				Vibrating Wire Piezometer Serial Number: VW38231 Data Logger Serial Number: DT11288 Zone of Lost Circulation - 37.85-38.38 m
38	394											
39	393											

GENERAL REMARKS:
Bedrock lithology and detailed geology logs provided by IDM. Elevations and coordinates are surveyed coordinates provided by IDM.

IDM Mining Ltd.
Red Mountain Project

Knight Piésold CONSULTING

Project No.	Ref. No.	Rev.
VA101-594/02	1	A

FIGURE B1-5

Logging conducted according to the ASTM 2488 standard and the Canadian Foundation Engineering Manual, 4th Edition, 2006.

Contractor: More Core Diamond Drilling Service Ltd.
Location: North TMF Embankment - Centrepoint of Dam Crest
Coordinates: 452,384 E , 6,204,956 N
Coordinate System: UTM NAD83 Zone 9N
Hole Size HQ3 to 45.00 m

Drillhole No.: BH16-005
Drill Type: B15 Diamond Drill
Total Length: 45.0 m
Elevation: 427.5 m
Azimuth, Inclination: 64 , -60

Page: 5 of 5
Date Started: Aug 26, 16
Date Completed: Aug 29, 16
Logged by: CAG/MEA
Reviewed by: JEF

DEPTH - (m)	ELEVATION - (m)	GRAPHIC LOG	MATERIAL DESCRIPTION	RUN RECOVERY (%)	SAMPLE NO.	SAMPLE REC. (%)	SAMPLE TYPE	UCS (MPa) / BLOW COUNTS (PER 6")	SPT 'N' VALUE	KEY ROCK MASS PARAMETERS / SPT TEST 'N' VALUES	INSTRUMENTATION / WELL DETAILS	DRILLING NOTES
41	392		**GABBRO** (32.24 to 44.4 m) Dark grey-purple; medium grained; local strong foliation; massive; weak; highly fractured; moderately weathered; serpentinite-talc in joint infill; local fault gouge within unit; pyroxenite altered to brown biotite (phlogopite) from 37.91 m to 38.38 m, circulation loss throughout altered section. **RUBBLE ZONE** (40.12 to 40.28 m) Rubble Zone within Gabbro unit.	100				15		RQD / RMR; SPT TEST 'N' VALUES - 20 40 60 80		
42	391			100				20				Packer Test #6 - 37.70-43.70 m - 1E-08 m/s
43	390			100				25				
44					UCS-04							
45	389			100				35				Packer Test #7 - 43.55-45.00 m - No Take
46	388		**GABBRO** (44.4 to 45 m) Dark greenish grey; fine to medium grained, inequigranular; massive; slightly fractured; slightly weathered; graphite infill; sheared gabbro unit with black overprint groundmass; black chlorite and gabbro boudinage to rounded clasts. End of Drillhole: 45 m Target Depth Reached									
47	387											
48	386											
49	385											

GENERAL REMARKS:
Bedrock lithology and detailed geology logs provided by IDM. Elevations and coordinates are surveyed coordinates provided by IDM.

IDM Mining Ltd.
Red Mountain Project

Knight Piésold CONSULTING

Project No.	Ref. No.	Rev.
VA101-594/02	1	A

FIGURE B1-5

Logging conducted according to the ASTM 2488 standard and the Canadian Foundation Engineering Manual, 4th Edition, 2006.

Contractor: More Core Diamond Drilling Service Ltd.
Location: South TMF Embankment - Upstream Toe
Coordinates: 452,525 E , 6,204,589 N
Coordinate System: UTM NAD83 Zone 9N
Hole Size HWT to 5.00 m; HQ3 to 34.90 m

Drillhole No.: BH16-006
Drill Type: B15 Diamond Drill
Total Length: 34.9 m
Elevation: 442.6 m
Azimuth, Inclination: 0 , -90

Page: 1 of 4
Date Started: Aug 29, 16
Date Completed: Aug 31, 16
Logged by: CAG/MEA
Reviewed by: JEF

DEPTH - (m)	ELEVATION - (m)	GRAPHIC LOG	MATERIAL DESCRIPTION	RUN RECOVERY (%)	SAMPLE NO.	SAMPLE REC. (%)	SAMPLE TYPE	UCS (MPa) / BLOW COUNTS (PER 6")	SPT 'N' VALUE	KEY ROCK MASS PARAMETERS / SPT TEST 'N' VALUES	INSTRUMENTATION / WELL DETAILS	DRILLING NOTES
0	442		**FOREST DUFF & TOPSOIL** (0 to 0.07 m) Some sand; trace gravel, coarse, angular; gap graded; dark brown; very dense; moist; visible rootmat. From SPT recovery.	36	SPT-01	29		13/50+	R			
1			**NO RECOVERY** (0.07 to 0.93 m) No recovery from advancing HWT casing.									
	441		**COBBLES** (0.93 to 4.31 m) Subangular to subrounded, fine grained, massive, slightly weathered; uniformly graded; dark grey to light greenish grey; loose; wet; finer material washed away during drilling process.	65								
2				57								
	440			100								
3				69								
	439			82								
4				100								
	438		**GRAVEL** (4.31 to 4.83 m) Subangular to subrounded; uniformly graded; dark grey & purple; loose; wet; finer material washed away during drilling process.	100								
5				100				45				
			MAFIC DYKE (4.83 to 14.39 m) Light grey; medium grained; massive; strong; moderately to highly fractured; fresh to slightly weathered; biotization with epidote-carbonate alteration on joint surfaces; trace quartz veinlets; intrusive unit with fine grained brown biotite (phlogopite) and chlorite altered mafic; 1-2% pyroxenite and trace quartz; specs of pyrite blebs; light purple bands.	100				25				
	437											
6								70				
	436				UCS-01							
7			**BROKEN ZONE** (5.52 to 5.63 m) Broken Zone within Mafic Dyke unit.	100				75				
	435											
8				100				55				
	434											
9				100				55				
	433											

Groundwater level measured prior to grouting during VWP installation.

Packer Test #1 - 6.56-12.70 m - 3E-07 m/s

GENERAL REMARKS:
Bedrock lithology and detailed geology logs provided by IDM. Elevations and coordinates are surveyed coordinates provided by IDM.

IDM Mining Ltd.
Red Mountain Project

Knight Piésold CONSULTING

Project No.	Ref. No.	Rev.
VA101-594/02	1	A

FIGURE B1-6

Logging conducted according to the ASTM 2488 standard and the Canadian Foundation Engineering Manual, 4th Edition, 2006.

Contractor: More Core Diamond Drilling Service Ltd.
Location: South TMF Embankment - Upstream Toe
Coordinates: 452,525 E , 6,204,589 N
Coordinate System: UTM NAD83 Zone 9N
Hole Size HWT to 5.00 m; HQ3 to 34.90 m

Drillhole No.: BH16-006
Drill Type: B15 Diamond Drill
Total Length: 34.9 m
Elevation: 442.6 m
Azimuth, Inclination: 0 , -90

Page: 2 of 4
Date Started: Aug 29, 16
Date Completed: Aug 31, 16
Logged by: CAG/MEA
Reviewed by: JEF

DEPTH - (m)	ELEVATION - (m)	GRAPHIC LOG	MATERIAL DESCRIPTION	RUN RECOVERY (%)	SAMPLE NO.	SAMPLE REC. (%)	SAMPLE TYPE	UCS (MPa) / BLOW COUNTS (PER 6")	SPT 'N' VALUE	KEY ROCK MASS PARAMETERS / SPT TEST 'N' VALUES	INSTRUMENTATION / WELL DETAILS	DRILLING NOTES
11	432		**MAFIC DYKE** (4.83 to 14.39 m) Light grey; medium grained; massive; strong; moderately to highly fractured; fresh to slightly weathered; biotization with epidote-carbonate alteration on joint surfaces; trace quartz veinlets; intrusive unit with fine grained brown biotite (phlogopite) and chlorite altered mafic; 1-2% pyroxenite and trace quartz; specs of pyrite blebs; light purple bands.	100				75				
12	431			100				80				
	430			100				60				
13				100				80				
	429			100				80				
14												
	428		**GABBRO** (14.39 to 25.12 m) Dark grey-green; coarse grained; massive; medium strong; slightly to moderately fractured; slightly weathered; clay and chlorite infill in joints; iron oxide and manganese oxide staining on joint surfaces; some quartz-calcite veinlets; black biotite presence; pyroxenite, <3mm thick; 1% quartz; strong light green-beige serpentinite stockwork; high grade metamorphism.	100				40				
15												
	427											Packer Test #2 - 12.06-18.70 m - 1E-06 m/s
16				98	UCS-02			50				
	426											
17												
	425			98				50				
18												
	424											
19				100				35				
	423											

GENERAL REMARKS:
Bedrock lithology and detailed geology logs provided by IDM. Elevations and coordinates are surveyed coordinates provided by IDM.

IDM Mining Ltd.
Red Mountain Project

Knight Piésold CONSULTING

Project No.	Ref. No.	Rev.
VA101-594/02	1	A

FIGURE B1-6

Logging conducted according to the ASTM 2488 standard and the Canadian Foundation Engineering Manual, 4th Edition, 2006.

Contractor: More Core Diamond Drilling Service Ltd.
Location: South TMF Embankment - Upstream Toe
Coordinates: 452,525 E , 6,204,589 N
Coordinate System: UTM NAD83 Zone 9N
Hole Size HWT to 5.00 m; HQ3 to 34.90 m

Drillhole No.: BH16-006
Drill Type: B15 Diamond Drill
Total Length: 34.9 m
Elevation: 442.6 m
Azimuth, Inclination: 0 , -90

Page: 3 of 4
Date Started: Aug 29, 16
Date Completed: Aug 31, 16
Logged by: CAG/MEA
Reviewed by: JEF

DEPTH - (m)	ELEVATION - (m)	GRAPHIC LOG	MATERIAL DESCRIPTION	RUN RECOVERY (%)	SAMPLE NO.	SAMPLE REC. (%)	SAMPLE TYPE	UCS (MPa) / BLOW COUNTS (PER 6")	SPT 'N' VALUE	KEY ROCK MASS PARAMETERS / SPT TEST 'N' VALUES	INSTRUMENTATION / WELL DETAILS	DRILLING NOTES
21	422		**GABBRO** (14.39 to 25.12 m) Dark grey-green; coarse grained; massive; medium strong; slightly to moderately fractured; slightly weathered; clay and chlorite infill in joints; iron oxide and manganese oxide staining on joint surfaces; some quartz-calcite veinlets; black biotite presence; pyroxenite, <3mm thick; 1% quartz; strong light green-beige serpentinite stockwork; high grade metamorphism.	99				35		RQD / RMR; SPT TEST 'N' VALUES - 20 40 60 80		
22	421											Packer Test #3 - 18.55-24.55 m - 7E-06 m/s
23	420		**RUBBLE ZONE** (22.37 to 22.87 m) Broken/Rubble Zone within major Gabbro unit. Clay infill and iron oxide staining on rubble fragments.	100				15				
24	419			100				25				
25	418											
26	417		**MAFIC DYKE** (25.12 to 26.33 m) Dark grey-purple; medium grained; massive; medium strong; highly fractured; slightly weathered; chlorite & calcite infill on joint surfaces; iron oxide and manganese oxide staining on joint surfaces; calcite veins; mafic intrusive with fine grained biotite and chlorite alteration; 1-2% pyroxenite and trace quartz; specs of pyrite blebs; light purple bands; biotization with epidote-carbonate replacement alteration. **BROKEN ZONE** (26.05 to 26.3 m) Broken Zone within Mafic Dyke unit.	98				30				
27	416			100				20				
28	415		**GABBRO** (26.33 to 27.75 m) Dark grey-green; coarse grained; massive; weak to medium strong; highly fractured; moderately weathered; chlorite and calcite infill on joint surfaces; iron oxide and manganese oxide staining on joint surfaces; black biotite presence; pyroxenite, <3mm thick; 1% quartz; strong light green-beige serpentinite stockwork; high grade metamorphism.	100				5				Packer Test #4 - 24.40-30.40 m - 5E-06 m/s
29	414			100				5				Vibrating Wire Piezometer Serial Number: VW38232 Data Logger Serial Number: DT11286
	413		**RUBBLE ZONE** (27.35 to 28.6 m) Broken/Rubble zone at contact between Mafic Dyke and Gabbro units.	100				25				
								15				

GENERAL REMARKS:
Bedrock lithology and detailed geology logs provided by IDM. Elevations and coordinates are surveyed coordinates provided by IDM.

IDM Mining Ltd.
Red Mountain Project

Knight Piésold CONSULTING

Project No.	Ref. No.	Rev.
VA101-594/02	1	A

FIGURE B1-6

Logging conducted according to the ASTM 2488 standard and the Canadian Foundation Engineering Manual, 4th Edition, 2006.

Contractor: More Core Diamond Drilling Service Ltd.
Location: South TMF Embankment - Upstream Toe
Coordinates: 452,525 E , 6,204,589 N
Coordinate System: UTM NAD83 Zone 9N
Hole Size HWT to 5.00 m; HQ3 to 34.90 m

Drillhole No.: BH16-006
Drill Type: B15 Diamond Drill
Total Length: 34.9 m
Elevation: 442.6 m
Azimuth, Inclination: 0 , -90

Page: 4 of 4
Date Started: Aug 29, 16
Date Completed: Aug 31, 16
Logged by: CAG/MEA
Reviewed by: JEF

DEPTH - (m)	ELEVATION - (m)	GRAPHIC LOG	MATERIAL DESCRIPTION	RUN RECOVERY (%)	SAMPLE NO.	SAMPLE REC. (%)	SAMPLE TYPE	UCS (MPa) / BLOW COUNTS (PER 6")	SPT 'N' VALUE	KEY ROCK MASS PARAMETERS / SPT TEST 'N' VALUES	INSTRUMENTATION / WELL DETAILS	DRILLING NOTES
31	412		**MAFIC DYKE** (27.75 to 32.34 m) Light grey; medium grained; weak to strong; moderately to highly fractured; slightly to moderately weathered; iron oxide staining on joint surfaces; some calcite veining; intrusive unit with fine grained brown biotite (phlogopite) and chlorite altered mafic; 1-2% pyroxenite and trace quartz; specs of pyrite blebs; light purple bands; biotization with epidote-carbonate alteration on joint surfaces. **BROKEN ZONE** (29 to 30.4 m) Broken Zone within Mafic Dyke unit.	100	UCS-03			75		RQD, RMR; SPT TEST 'N' VALUES - 20 40 60 80		
32	411											Packer Test #5 - 28.76-34.90 m - 1E-06 m/s
33	410		**GABBRO** (32.34 to 33.36 m) Dark grey-green; coarse grained; massive; strong; moderately to highly fractured; slightly weathered; trace quartz veinlets; weak iron oxide staining on joint surfaces; black biotite presence; pyroxenite, <3mm thick; 1% quartz; strong light green-beige serpentinite stockwork; high grade metamorphism.	100				55				
34	409		**MAFIC DYKE** (33.36 to 34.9 m) Light grey; medium grained; massive; medium strong; heavily fractured; slightly weathered; iron oxide staining on joint surfaces; intrusive unit with fine grained brown biotite and chlorite altered mafic; 1-2% pyroxenite and trace quartz; specs of pyrite blebs; light purple bands; biotization with epidote-carbonate alteration on joint surfaces.	97				70				
35	408		End of Drillhole: 34.9 m Target Depth Reached	99				35				
36	407											
37	406											
38	405											
39	404											
	403											

GENERAL REMARKS:
Bedrock lithology and detailed geology logs provided by IDM. Elevations and coordinates are surveyed coordinates provided by IDM.

IDM Mining Ltd.
Red Mountain Project

Knight Piésold CONSULTING

Project No.	Ref. No.	Rev.
VA101-594/02	1	A

FIGURE B1-6

Logging conducted according to the ASTM 2488 standard and the Canadian Foundation Engineering Manual, 4th Edition, 2006.

Contractor: More Core Diamond Drilling Service Ltd.
Location: South TMF Embankment - Centrepoint of Dam Crest
Coordinates: 452,493 E , 6,204,535 N
Coordinate System: UTM NAD83 Zone 9N
Hole Size HWT to 2.40 m; HQ3 to 34.75 m

Drillhole No.: BH16-007
Drill Type: B15 Diamond Drill
Total Length: 34.8 m
Elevation: 443.6 m
Azimuth, Inclination: 0 , -90

Page: 1 of 4
Date Started: Sep 2, 16
Date Completed: Sep 4, 16
Logged by: CAG/MEA
Reviewed by: JEF

DEPTH - (m)	ELEVATION - (m)	GRAPHIC LOG	MATERIAL DESCRIPTION	RUN RECOVERY (%)	SAMPLE NO.	SAMPLE REC. (%)	SAMPLE TYPE	UCS (MPa) / BLOW COUNTS (PER 6")	SPT 'N' VALUE	KEY ROCK MASS PARAMETERS / SPT TEST 'N' VALUES	INSTRUMENTATION / WELL DETAILS	DRILLING NOTES
0	443		**FOREST DUFF & TOPSOIL** (0 to 0.04 m) Spongy; some sand, medium to coarse; trace gravel, fine, subrounded to platy; brown and dark grey; loose, moist. From SPT recovery.	0	SPT-01	7		3/2/4	6			
			NO RECOVERY (0.04 to 2.4 m) No Recovery - Drill recovery washed away through drilling process.	0								
1	442											
2												
	441		**GABBRO** (2.4 to 34.75 m) Dark green; coarse grained; phaneritic with some foliation; strong to medium strong; slightly to moderately fractured; graphite, chlorite and calcite infill; few quartz-calcite veins; biotite and hornblende phenocrysts, ~3-4mm in diameter; brecciated section from 8.46-8.82 m.	100				55				
3												Groundwater level measured prior to grouting during VWP installation.
	440				UCS-01							
4				100				55				
	439											
5				100				45				
	438											
6				100				65				
	437											
7				100				55				
	436											
8												Packer Test #1 - 4.86-11.20 m - 2E-06 m/s
	435		**BRECCIATED SECTION** (8.46 to 8.82 m) Brecciated Section	100				50				
9												
	434											

GENERAL REMARKS:
Bedrock lithology and detailed geology logs provided by IDM. Elevations and coordinates are surveyed coordinates provided by IDM.

IDM Mining Ltd.
Red Mountain Project

Knight Piésold CONSULTING

Project No.	Ref. No.	Rev.
VA101-594/02	1	A

FIGURE B1-7

Logging conducted according to the ASTM 2488 standard and the Canadian Foundation Engineering Manual, 4th Edition, 2006.

Contractor: More Core Diamond Drilling Service Ltd.
Location: South TMF Embankment - Centrepoint of Dam Crest
Coordinates: 452,493 E , 6,204,535 N
Coordinate System: UTM NAD83 Zone 9N
Hole Size HWT to 2.40 m; HQ3 to 34.75 m

Drillhole No.: BH16-007
Drill Type: B15 Diamond Drill
Total Length: 34.8 m
Elevation: 443.6 m
Azimuth, Inclination: 0 , -90

Page: 2 of 4
Date Started: Sep 2, 16
Date Completed: Sep 4, 16
Logged by: CAG/MEA
Reviewed by: JEF

DEPTH - (m)	ELEVATION - (m)	GRAPHIC LOG	MATERIAL DESCRIPTION	RUN RECOVERY (%)	SAMPLE NO.	SAMPLE REC. (%)	SAMPLE TYPE	UCS (MPa) / BLOW COUNTS (PER 6")	SPT 'N' VALUE	KEY ROCK MASS PARAMETERS / SPT TEST 'N' VALUES	INSTRUMENTATION / WELL DETAILS	DRILLING NOTES
11	433		**GABBRO** (2.4 to 34.75 m) Dark green; coarse grained; phaneritic with some foliation; strong to medium strong; slightly to moderately fractured; graphite, chlorite and calcite infill; few quartz-calcite veins; biotite and hornblende phenocrysts, ~3-4mm in diameter; brecciated section from 8.46-8.82 m.	100				60		RQD, RMR; SPT TEST 'N' VALUES - 20 40 60 80		Zone of Lost Circulation - 3.20-17.20 m
12	432			101				50				
13	431			101				50				
14	430			101				50				Packer Test #2 - 11.06-17.20 m - 2E-06 m/s
15	429			101				50				
16	428			101				60				
17	427			101				60				
18	426			101				35				
19	425			101				35				
	424											

GENERAL REMARKS:
Bedrock lithology and detailed geology logs provided by IDM. Elevations and coordinates are surveyed coordinates provided by IDM.

IDM Mining Ltd.
Red Mountain Project

Knight Piésold CONSULTING

Project No.	Ref. No.	Rev.
VA101-594/02	1	A

FIGURE B1-7

Logging conducted according to the ASTM 2488 standard and the Canadian Foundation Engineering Manual, 4th Edition, 2006.

Contractor: More Core Diamond Drilling Service Ltd.
Location: South TMF Embankment - Centrepoint of Dam Crest
Coordinates: 452,493 E , 6,204,535 N
Coordinate System: UTM NAD83 Zone 9N
Hole Size HWT to 2.40 m; HQ3 to 34.75 m

Drillhole No.: BH16-007
Drill Type: B15 Diamond Drill
Total Length: 34.8 m
Elevation: 443.6 m
Azimuth, Inclination: 0 , -90

Page: 3 of 4
Date Started: Sep 2, 16
Date Completed: Sep 4, 16
Logged by: CAG/MEA
Reviewed by: JEF

DEPTH - (m)	ELEVATION - (m)	GRAPHIC LOG	MATERIAL DESCRIPTION	RUN RECOVERY (%)	SAMPLE NO.	SAMPLE REC. (%)	SAMPLE TYPE	UCS (MPa) / BLOW COUNTS (PER 6")	SPT 'N' VALUE	KEY ROCK MASS PARAMETERS / SPT TEST 'N' VALUES	INSTRUMENTATION / WELL DETAILS	DRILLING NOTES
21	423		**GABBRO** (2.4 to 34.75 m) Dark green; coarse grained; phaneritic with some foliation; strong to medium strong; slightly to moderately fractured; graphite, chlorite and calcite infill; few quartz-calcite veins; biotite and hornblende phenocrysts, ~3-4mm in diameter; brecciated section from 8.46-8.82 m.	101				35		RQD, RMR; SPT TEST 'N' VALUES - 20 40 60 80		Packer Test #3 - 17.05-23.05 m - No Take
22	422			100				35				
23	421			101				35				
24	420			101				35				
25	419			101				35				
26	418				UCS-02							Packer Test #4 - 22.90-28.90 m - 3E-08 m/s
27	417			100				35				
28	416			100				35				
29	415			100				20				
	414											

GENERAL REMARKS:
Bedrock lithology and detailed geology logs provided by IDM. Elevations and coordinates are surveyed coordinates provided by IDM.

IDM Mining Ltd.
Red Mountain Project

Knight Piésold CONSULTING

Project No.	Ref. No.	Rev.
VA101-594/02	1	A

FIGURE B1-7

Logging conducted according to the ASTM 2488 standard and the Canadian Foundation Engineering Manual, 4th Edition, 2006.

Contractor: More Core Diamond Drilling Service Ltd.
Location: South TMF Embankment - Centrepoint of Dam Crest
Coordinates: 452,493 E , 6,204,535 N
Coordinate System: UTM NAD83 Zone 9N
Hole Size HWT to 2.40 m; HQ3 to 34.75 m

Drillhole No.: BH16-007
Drill Type: B15 Diamond Drill
Total Length: 34.8 m
Elevation: 443.6 m
Azimuth, Inclination: 0 , -90

Page: 4 of 4
Date Started: Sep 2, 16
Date Completed: Sep 4, 16
Logged by: CAG/MEA
Reviewed by: JEF

DEPTH - (m)	ELEVATION - (m)	GRAPHIC LOG	MATERIAL DESCRIPTION	RUN RECOVERY (%)	SAMPLE NO.	SAMPLE REC. (%)	SAMPLE TYPE	UCS (MPa) / BLOW COUNTS (PER 6")	SPT 'N' VALUE	KEY ROCK MASS PARAMETERS / SPT TEST 'N' VALUES	INSTRUMENTATION / WELL DETAILS	DRILLING NOTES
31	413		**GABBRO** (2.4 to 34.75 m) Dark green; coarse grained; phaneritic with some foliation; strong to medium strong; slightly to moderately fractured; graphite, chlorite and calcite infill; few quartz-calcite veins; biotite and hornblende phenocrysts, ~3-4mm in diameter; brecciated section from 8.46-8.82 m. **BROKEN ZONE** (29.87 to 30.05 m) Broken Zone within Gabbro unit.	100				35		RQD / RMR; SPT TEST 'N' VALUES - 20 40 60 80		
32	412			100	UCS-03			35				Vibrating Wire Piezometer Serial Number: VW38236 Data Logger Serial Number: DT11296 Packer Test #5 - 28.75-34.75 m - 2E-07 m/s
33	411			100				35				
34	410			100				35				
35	409		End of Drillhole: 34.75 m Target Depth Reached									
36	408											
37	407											
38	406											
39	405											
	404											

GENERAL REMARKS:
Bedrock lithology and detailed geology logs provided by IDM. Elevations and coordinates are surveyed coordinates provided by IDM.

IDM Mining Ltd.
Red Mountain Project

Knight Piésold CONSULTING

Project No.	Ref. No.	Rev.
VA101-594/02	1	A

FIGURE B1-7

Logging conducted according to the ASTM 2488 standard and the Canadian Foundation Engineering Manual, 4th Edition, 2006.

Contractor: More Core Diamond Drilling Service Ltd.
Location: South TMF Embankment - South Abutment
Coordinates: 452,550 E , 6,204,409 N
Coordinate System: UTM NAD83 Zone 9N
Hole Size HWT to 0.85 m; HQ3 to 31.52 m

Drillhole No.: BH16-008
Drill Type: B15 Diamond Drill
Total Length: 31.5 m
Elevation: 470.3 m
Azimuth, Inclination: 0 , -90

Page: 1 of 4
Date Started: Sep 4, 16
Date Completed: Sep 6, 16
Logged by: CAG/MEA
Reviewed by: JEF

DEPTH - (m)	ELEVATION - (m)	GRAPHIC LOG	MATERIAL DESCRIPTION	RUN RECOVERY (%)	SAMPLE NO.	SAMPLE REC. (%)	SAMPLE TYPE	UCS (MPa) / BLOW COUNTS (PER 6")	SPT 'N' VALUE	KEY ROCK MASS PARAMETERS / SPT TEST 'N' VALUES	INSTRUMENTATION / WELL DETAILS	DRILLING NOTES
0	470		**COBBLES** (0 to 0.85 m) Subangular; uniformly graded; grey to dark grey, fine grained, massive, highly weathered; loose; wet; recovered from HWT Casing; finer material washed away during drilling process.	0								
1	469		**BROKEN ZONE** (0.85 to 3.3 m) Light grey-green; fine grained; brecciated in places with argillite in the matrix (may be soft sediment breccia); slightly weathered; strong iron oxide staining on joint surfaces; 60% Argillite; black; and 40% Siltstone.	56				5				
2	468											
3	467		**SILTSTONE** (3.3 to 11.7 m) Light grey-green; fine grained; laminated; weakly banded & foliated, occasional darker silty argillite bands, mottled texture; strong to medium strong; heavily fractured; fresh to slightly weathered; gouge infill on some joints; weak iron oxide staining on some joint surfaces.	96				25				
4	466			92				25				
5	465			96				55				During VWP Installation, a structure at 4.80 m was taking high quantities of grout mix. Hole was backfilled from 4.80 m to surface using bentonite pellets as a seal.
6	464			92	UCS-01			65				
7	463			95				35				
8	462			100				55				
9	461			100				45				Packer Test #1 - 5.81-11.95 m - 1E-05 m/s

KEY ROCK MASS PARAMETERS: RQD, RMR
SPT TEST 'N' VALUES - 20 40 60 80

GENERAL REMARKS:
Bedrock lithology and detailed geology logs provided by IDM. Elevations and coordinates are surveyed coordinates provided by IDM.

IDM Mining Ltd.
Red Mountain Project

Knight Piésold CONSULTING

Project No.	Ref. No.	Rev.
VA101-594/02	1	A

FIGURE B1-8

Logging conducted according to the ASTM 2488 standard and the Canadian Foundation Engineering Manual, 4th Edition, 2006.

Contractor: More Core Diamond Drilling Service Ltd.
Location: South TMF Embankment - South Abutment
Coordinates: 452,550 E , 6,204,409 N
Coordinate System: UTM NAD83 Zone 9N
Hole Size HWT to 0.85 m; HQ3 to 31.52 m

Drillhole No.: BH16-008
Drill Type: B15 Diamond Drill
Total Length: 31.5 m
Elevation: 470.3 m
Azimuth, Inclination: 0 , -90

Page: 2 of 4
Date Started: Sep 4, 16
Date Completed: Sep 6, 16
Logged by: CAG/MEA
Reviewed by: JEF

DEPTH - (m)	ELEVATION - (m)	GRAPHIC LOG	MATERIAL DESCRIPTION	RUN RECOVERY (%)	SAMPLE NO.	SAMPLE REC. (%)	SAMPLE TYPE	UCS (MPa) / BLOW COUNTS (PER 6")	SPT 'N' VALUE	KEY ROCK MASS PARAMETERS / SPT TEST 'N' VALUES	INSTRUMENTATION / WELL DETAILS	DRILLING NOTES
11	459		**SILTSTONE** (3.3 to 11.7 m) Light grey-green; fine grained; laminated; weakly banded & foliated, occasional darker silty argillite bands, mottled texture; strong to medium strong; heavily fractured; fresh to slightly weathered; gouge infill on some joints; weak iron oxide staining on some joint surfaces.	100				45		RQD / RMR; SPT TEST 'N' VALUES - 20 40 60 80		
12	458		**SILTSTONE** (11.7 to 19.5 m) Light grey-green; fine grained; foliated and weakly laminated, massive; medium strong; slightly to moderately fractured; fresh to slightly weathered; quartz-calcite infill on joint surfaces; moderate iron oxide staining on some joints; many healed fractures on quartz-calcite veinlets.	100				40				
13	457			100				50				
14	456											Groundwater level measured prior to grouting during VWP installation.
15	455			100				50				Packer Test #2 - 11.38-17.62 m - No Take
16	454											
17	453			2				35				
18	452			99				35				
19	451		**BROKEN ZONE** (19.25 to 19.75 m) Broken Zone at contact between Siltstone and Mudstone units	100				35				
				100				15				Packer Test #3 - 16.67-22.67 m - 8E-08 m/s

GENERAL REMARKS:
Bedrock lithology and detailed geology logs provided by IDM. Elevations and coordinates are surveyed coordinates provided by IDM.

IDM Mining Ltd.
Red Mountain Project

Knight Piésold CONSULTING

Project No.	Ref. No.	Rev.
VA101-594/02	1	A

FIGURE B1-8

Logging conducted according to the ASTM 2488 standard and the Canadian Foundation Engineering Manual, 4th Edition, 2006.

Contractor: More Core Diamond Drilling Service Ltd.
Location: South TMF Embankment - South Abutment
Coordinates: 452,550 E , 6,204,409 N
Coordinate System: UTM NAD83 Zone 9N
Hole Size HWT to 0.85 m; HQ3 to 31.52 m

Drillhole No.: BH16-008
Drill Type: B15 Diamond Drill
Total Length: 31.5 m
Elevation: 470.3 m
Azimuth, Inclination: 0 , -90

Page: 3 of 4
Date Started: Sep 4, 16
Date Completed: Sep 6, 16
Logged by: CAG/MEA
Reviewed by: JEF

DEPTH - (m)	ELEVATION - (m)	GRAPHIC LOG	MATERIAL DESCRIPTION	RUN RECOVERY (%)	SAMPLE NO.	SAMPLE REC. (%)	SAMPLE TYPE	UCS (MPa) / BLOW COUNTS (PER 6")	SPT 'N' VALUE	KEY ROCK MASS PARAMETERS / SPT TEST 'N' VALUES	INSTRUMENTATION / WELL DETAILS	DRILLING NOTES
21	450		**MUDSTONE** (19.5 to 29.82 m) Grey to dark grey; foliated; slightly mottled; weak to medium strong; moderately to highly fractured with frequent broken zones; predominantly slightly weathered with occasional fresher and more moderately weathered zones; iron oxide staining and clay infill on joint surfaces; interbedded silty argillite and siltstone.	100				15		RQD, RMR; 20 40 60 80		
22	449		**BROKEN ZONE** (20.6 to 21.27 m) Broken Zone within Mudstone unit	100				35				
23	448		**BROKEN ZONE** (22.77 to 22.88 m) Broken Zone within Mudstone unit	100				15				
24	447		**BROKEN ZONE** (23.12 to 23.82 m) Broken Zone within Mudstone unit	100				15				
25	446			100				15				
26	445		**BROKEN ZONE** (25.49 to 25.7 m) Broken Zone within Mudstone unit	100				15				Packer Test #4 - 22.52-28.52 m - 2E-07 m/s
27	444		**BROKEN ZONE** (26.18 to 27.04 m) Broken Zone within Mudstone unit	100				15				Vibrating Wire Piezometer Serial Number: VW38234 Data Logger Serial Number: DT11295
28	443			100				15				
29	442		**BROKEN ZONE** (28.6 to 28.75 m) Broken Zone within Mudstone unit	100	UCS-02			25				Packer Test #5 - 25.52-31.52 m - 1E-07 m/s
	441		**QUARTZ VEIN**									

GENERAL REMARKS:
Bedrock lithology and detailed geology logs provided by IDM. Elevations and coordinates are surveyed coordinates provided by IDM.

IDM Mining Ltd.
Red Mountain Project

Knight Piésold CONSULTING

Project No.	Ref. No.	Rev.
VA101-594/02	1	A

FIGURE B1-8

Logging conducted according to the ASTM 2488 standard and the Canadian Foundation Engineering Manual, 4th Edition, 2006.

Contractor: More Core Diamond Drilling Service Ltd.
Location: South TMF Embankment - South Abutment
Coordinates: 452,550 E , 6,204,409 N
Coordinate System: UTM NAD83 Zone 9N
Hole Size HWT to 0.85 m; HQ3 to 31.52 m

Drillhole No.: BH16-008
Drill Type: B15 Diamond Drill
Total Length: 31.5 m
Elevation: 470.3 m
Azimuth, Inclination: 0 , -90

Page: 4 of 4
Date Started: Sep 4, 16
Date Completed: Sep 6, 16
Logged by: CAG/MEA
Reviewed by: JEF

DEPTH - (m)	ELEVATION - (m)	GRAPHIC LOG	MATERIAL DESCRIPTION	RUN RECOVERY (%)	SAMPLE NO.	SAMPLE REC. (%)	SAMPLE TYPE	UCS (MPa) / BLOW COUNTS (PER 6")	SPT 'N' VALUE	KEY ROCK MASS PARAMETERS / SPT TEST 'N' VALUES	INSTRUMENTATION / WELL DETAILS	DRILLING NOTES
30	440		(29.82 to 29.95 m) Grey-white to white quartz and albite anhedral vein marking contact between Mudstone and Wacke units; minor carbonate. **WACKE** (29.95 to 31.52 m) Grey to light grey; fine grained; massive; medium strong; highly fractured; slightly to moderately weathered; clay infill on joint surfaces; iron oxide, chlorite and manganese oxide staining on joint surfaces; quartz-calcite micro-veining; biotite phenocrysts. **BROKEN ZONE** (30.02 to 30.22 m) Broken Zone within Wacke unit (31.42 to 31.52 m) Gradational contact into more porcelain and siliceaous wacke. End of Drillhole: 31.52 m Target Depth Reached	100				15		RQD / RMR / SPT TEST 'N' VALUES - 20 40 60 80		
31	439			100				25				
32	438											
33	437											
34	436											
35	435											
36	434											
37	433											
38	432											
39	431											

GENERAL REMARKS:
Bedrock lithology and detailed geology logs provided by IDM. Elevations and coordinates are surveyed coordinates provided by IDM.

IDM Mining Ltd.
Red Mountain Project

Knight Piésold CONSULTING

Project No.	Ref. No.	Rev.
VA101-594/02	1	A

FIGURE B1-8

Logging conducted according to the ASTM 2488 standard and the Canadian Foundation Engineering Manual, 4th Edition, 2006.

Contractor: More Core Diamond Drilling Service Ltd.
Location: North TMF Embankment - West Abutment
Coordinates: 452,362 E , 6,204,903 N
Coordinate System: UTM NAD83 Zone 9N
Hole Size HWT to 1.43 m; HQ3 to 111.50 m

Drillhole No.: BH16-009
Drill Type: B15 Diamond Drill
Total Length: 111.5 m
Elevation: 463.9 m
Azimuth, Inclination: 45 , -50

Page: 1 of 12
Date Started: Sep 7, 16
Date Completed: Sep 14, 16
Logged by: CAG/MEA
Reviewed by: JEF

DEPTH - (m)	ELEVATION - (m)	GRAPHIC LOG	MATERIAL DESCRIPTION	RUN RECOVERY (%)	SAMPLE NO.	SAMPLE REC. (%)	SAMPLE TYPE	UCS (MPa) / BLOW COUNTS (PER 6")	SPT 'N' VALUE	KEY ROCK MASS PARAMETERS / SPT TEST 'N' VALUES	INSTRUMENTATION / WELL DETAILS	DRILLING NOTES
0			**BOULDERS & COBBLES** (0 to 1.04 m) Subrounded; uniformly graded; light greenish grey; loose; wet; finer material washed away during drilling process.	0								
1	463		**GABBRO** (1.04 to 8.09 m) Grey to light greenish-grey; coarse grained; massive; weak to medium strong; highly broken, most fractures parallel to core axis; moderately weathered; iron oxide, clay, calcite and chlorite infill in joints; manganese oxide staining on joint surfaces; large quartz-carbonate veins; slightly altered hornblende-pyroxenite altering to chlorite; biotite phenocrysts approx. 2-3 mm in diameter.	98				15				
2	462		**RUBBLE ZONE** (1.09 to 1.21 m) Rubble Zone within Gabbro unit	100				20				
3			**BROKEN ZONE** (1.42 to 2.1 m) Broken Zone within Gabbro unit									
4	461		**BROKEN/RUBBLE ZONE** (2.48 to 3.9 m) Broken Zone within Gabbro unit	100				5				
5	460			100				35				
6			**RUBBLE ZONE** (5.34 to 5.54 m) Rubble Zone within Gabbro unit	100				35				
7	459			100				45				
8	458		**LATE STAGE GABBRO DYKE** (8.09 to 18.1 m) Tan coloured; fine grained; occasional fabric; medium strong to strong; moderately to highly fractured; slightly to moderately weathered; some chlorite infill; some iron oxide staining on joint surfaces; heavy black veinlets giving spiderweb like texture; trace calcite veining; fibrous look (serpentine or mica alteration) with some brown biotite alteration also; hornblende/pyroxenite phenocrysts approx. 1-4 mm in diameter througout.	100	UCS-01			45				
9	457											

GENERAL REMARKS:
Bedrock lithology and detailed geology logs provided by IDM. Elevations and coordinates are surveyed coordinates provided by IDM. VWP installation failed due to structure at 55 m taking high grout quantities. Standpipe piezometer installed in place.

IDM Mining Ltd.
Red Mountain Project

Knight Piésold CONSULTING

Project No.	Ref. No.	Rev.
VA101-594/02	1	A

FIGURE B1-9

Logging conducted according to the ASTM 2488 standard and the Canadian Foundation Engineering Manual, 4th Edition, 2006.

Contractor: More Core Diamond Drilling Service Ltd.
Location: North TMF Embankment - West Abutment
Coordinates: 452,362 E , 6,204,903 N
Coordinate System: UTM NAD83 Zone 9N
Hole Size HWT to 1.43 m; HQ3 to 111.50 m

Drillhole No.: BH16-009
Drill Type: B15 Diamond Drill
Total Length: 111.5 m
Elevation: 463.9 m
Azimuth, Inclination: 45 , -50

Page: 2 of 12
Date Started: Sep 7, 16
Date Completed: Sep 14, 16
Logged by: CAG/MEA
Reviewed by: JEF

DEPTH - (m)	ELEVATION - (m)	GRAPHIC LOG	MATERIAL DESCRIPTION	RUN RECOVERY (%)	SAMPLE NO.	SAMPLE REC. (%)	SAMPLE TYPE	UCS (MPa) / BLOW COUNTS (PER 6")	SPT 'N' VALUE	KEY ROCK MASS PARAMETERS / SPT TEST 'N' VALUES	INSTRUMENTATION / WELL DETAILS	DRILLING NOTES
11	456		**LATE STAGE GABBRO DYKE** (8.09 to 18.1 m) Tan coloured; fine grained; occasional fabric; medium strong to strong; moderately to highly fractured; slightly to moderately weathered; some chlorite infill; some iron oxide staining on joint surfaces; heavy black veinlets giving spiderweb like texture; trace calcite veining; fibrous look (serpentine or mica alteration) with some brown biotite alteration also; hornblende/pyroxenite phenocrysts approx. 1-4 mm in diameter througout.	100				50		RQD / RMR; SPT TEST 'N' VALUES - 20 40 60 80		
12	455			100				60				Packer Test #1 - 7.96-15.60 m - 2E-06 m/s
13	454		**BROKEN ZONE** (12.6 to 13 m) Broken Zone within Gabbro Dyke	100				50				
14	453			100				50				
15	452			100				35				
16			**BROKEN ZONE** (16 to 16.9 m) Broken Zone within Gabbro Dyke	100				35				
17	451			100				5				
18	450		**GABBRO** (18.1 to 20.35 m) Grey; coarse grained; massive; medium strong to strong; slightly fractured; slightly weathered; weak iron oxide staining on joint surfaces; trace quartz veinlets; large quartz-carbonate veins; slightly altered hornblende-pyroxenite altering to chlorite; biotite phenocrysts approx. 2-3 mm in diameter.	100				25				Lost Circulation at 16.90 m and did not recover for remainder of drillhole.
19	449		**BROKEN ZONE** (18.2 to 18.6 m) Broken Zone within Gabbro unit	100	UCS-02			40				
				100				40				Packer Test #2 - 15.45-23.28 m - 6E-06 m/s

GENERAL REMARKS:

Bedrock lithology and detailed geology logs provided by IDM. Elevations and coordinates are surveyed coordinates provided by IDM. VWP installation failed due to structure at 55 m taking high grout quantities. Standpipe piezometer installed in place.

IDM Mining Ltd.
Red Mountain Project

Knight Piésold CONSULTING

Project No.	Ref. No.	Rev.
VA101-594/02	1	A

FIGURE B1-9

Logging conducted according to the ASTM 2488 standard and the Canadian Foundation Engineering Manual, 4th Edition, 2006.

Contractor: More Core Diamond Drilling Service Ltd.
Location: North TMF Embankment - West Abutment
Coordinates: 452,362 E , 6,204,903 N
Coordinate System: UTM NAD83 Zone 9N
Hole Size HWT to 1.43 m; HQ3 to 111.50 m

Drillhole No.: BH16-009
Drill Type: B15 Diamond Drill
Total Length: 111.5 m
Elevation: 463.9 m
Azimuth, Inclination: 45 , -50

Page: 3 of 12
Date Started: Sep 7, 16
Date Completed: Sep 14, 16
Logged by: CAG/MEA
Reviewed by: JEF

DEPTH - (m)	ELEVATION - (m)	GRAPHIC LOG	MATERIAL DESCRIPTION	RUN RECOVERY (%)	SAMPLE NO.	SAMPLE REC. (%)	SAMPLE TYPE	UCS (MPa) / BLOW COUNTS (PER 6")	SPT 'N' VALUE	KEY ROCK MASS PARAMETERS / SPT TEST 'N' VALUES	INSTRUMENTATION / WELL DETAILS	DRILLING NOTES
21	448		**FELDSPAR-HORNBLENDE PORPHYRY DYKE** (20.35 to 22.05 m) Grey; fine to medium grained; massive; weak to medium strong; intensely fractured; moderately weathered; clay and chlorite infill; iron oxide and manganese oxide staining on joint surfaces; 1 mm diameter hornblende phenocrysts with 1-2 mm diameter, subrounded feldspar phenocrysts; minor fine grained biotite alteration.	100				55		RQD / RMR; SPT TEST 'N' VALUES - 20 40 60 80		
				82				10				
				100				15				
22	447		**BROKEN/RUBBLE ZONE** (20.45 to 21.05 m) Broken Zone within Feldspar-Hornblende Porphyry Dyke	100				25				
			BROKEN ZONE (21.6 to 22.05 m) Broken Zone at contact between Feldspar-Hornblende Porphyry Dyke and major Gabbro unit	96				25				
23	446		**GABBRO** (22.05 to 30.12 m) Greenish grey; fine grained; massive; weak to medium strong; highly fractured; moderately weathered; clay, chlorite, manganese oxide, hematite and iron oxide infill on joint surfaces; pyrite and calcite veins; biotite phenocrysts; weakly altered.	100				15				
24	445		**BROKEN/RUBBLE ZONE** (23.81 to 24.38 m) Broken Zone within Gabbro unit	100				25				
25												
26	444											
			RUBBLE ZONE (26.4 to 26.98 m) Rubble Zone within Gabbro unit	100				10				
27	443			63				5				Packer Test #3 - 23.13-30.96 m - 3E-06 m/s
28			**RUBBLE ZONE** (27.68 to 27.78 m) Rubble Zone within Gabbro unit	100	UCS-03			25				
	442											Groundwater level measured after standpipe piezometer installation.
29				100				25				
	441											

GENERAL REMARKS:

Bedrock lithology and detailed geology logs provided by IDM. Elevations and coordinates are surveyed coordinates provided by IDM. VWP installation failed due to structure at 55 m taking high grout quantities. Standpipe piezometer installed in place.

IDM Mining Ltd.
Red Mountain Project

Knight Piésold CONSULTING

Project No.	Ref. No.	Rev.
VA101-594/02	1	A

FIGURE B1-9

Logging conducted according to the ASTM 2488 standard and the Canadian Foundation Engineering Manual, 4th Edition, 2006.

Contractor: More Core Diamond Drilling Service Ltd.
Location: North TMF Embankment - West Abutment
Coordinates: 452,362 E , 6,204,903 N
Coordinate System: UTM NAD83 Zone 9N
Hole Size HWT to 1.43 m; HQ3 to 111.50 m

Drillhole No.: BH16-009
Drill Type: B15 Diamond Drill
Total Length: 111.5 m
Elevation: 463.9 m
Azimuth, Inclination: 45 , -50

Page: 4 of 12
Date Started: Sep 7, 16
Date Completed: Sep 14, 16
Logged by: CAG/MEA
Reviewed by: JEF

DEPTH - (m)	ELEVATION - (m)	GRAPHIC LOG	MATERIAL DESCRIPTION	RUN RECOVERY (%)	SAMPLE NO.	SAMPLE REC. (%)	SAMPLE TYPE	UCS (MPa) / BLOW COUNTS (PER 6")	SPT 'N' VALUE	KEY ROCK MASS PARAMETERS / SPT TEST 'N' VALUES	INSTRUMENTATION / WELL DETAILS	DRILLING NOTES
31	440		**BROKEN ZONE** (29.72 to 30.72 m) Broken Zone within Gabbro unit	100				15				
			GABBRO (30.12 to 35.47 m) Grey; fine grained but becomes coarser near lower contact; massive; strong; slightly fractured; fresh to slightly weathered; chlorite infill on some joints; chlorite altered with some hornblende-pyroxenite alteration; hornblende, pyroxenite, biotite and plagioclase phenocrysts; minor disseminated pyrite. **BROKEN ZONE** (30.13 to 30.72 m) Broken Zone within Gabbro unit	87				60				
32	439			100				60				
33	438			97				75				Packer Test #4 - 30.82-38.46 m - 1E-06 m/s
34	437		**FELSIC DYKE** (35.47 to 43.74 m) Light grey; fine to medium grained; massive & porphyritic; strong to very strong; moderately fractured; moderately to slightly weathered; moderate iron oxide staining on joint surfaces; few quartz-calcite veinlets; 2-3 mm diameter feldspar phenocrysts; silica rich; gradational upper contact.	100				100				
35	436			100				100				
36	435			100				100				
37	434			100				50				
38												
39												

KEY ROCK MASS PARAMETERS: RQD, RMR
SPT TEST 'N' VALUES - 20 40 60 80

GENERAL REMARKS:
Bedrock lithology and detailed geology logs provided by IDM. Elevations and coordinates are surveyed coordinates provided by IDM. VWP installation failed due to structure at 55 m taking high grout quantities. Standpipe piezometer installed in place.

IDM Mining Ltd.
Red Mountain Project

Knight Piésold CONSULTING

Project No.	Ref. No.	Rev.
VA101-594/02	1	A

FIGURE B1-9

Logging conducted according to the ASTM 2488 standard and the Canadian Foundation Engineering Manual, 4th Edition, 2006.

Contractor: More Core Diamond Drilling Service Ltd.
Location: North TMF Embankment - West Abutment
Coordinates: 452,362 E , 6,204,903 N
Coordinate System: UTM NAD83 Zone 9N
Hole Size HWT to 1.43 m; HQ3 to 111.50 m

Drillhole No.: BH16-009
Drill Type: B15 Diamond Drill
Total Length: 111.5 m
Elevation: 463.9 m
Azimuth, Inclination: 45 , -50

Page: 5 of 12
Date Started: Sep 7, 16
Date Completed: Sep 14, 16
Logged by: CAG/MEA
Reviewed by: JEF

DEPTH - (m)	ELEVATION - (m)	GRAPHIC LOG	MATERIAL DESCRIPTION	RUN RECOVERY (%)	SAMPLE NO.	SAMPLE REC. (%)	SAMPLE TYPE	UCS (MPa) / BLOW COUNTS (PER 6")	SPT 'N' VALUE	KEY ROCK MASS PARAMETERS / SPT TEST 'N' VALUES	INSTRUMENTATION / WELL DETAILS	DRILLING NOTES
41	433		**FELSIC DYKE** (35.47 to 43.74 m) Light grey; fine to medium grained; massive & porphyritic; strong to very strong; moderately fractured; moderately to slightly weathered; moderate iron oxide staining on joint surfaces; few quartz-calcite veinlets; 2-3 mm diameter feldspar phenocrysts; silica rich; gradational upper contact. **BROKEN ZONE** (40.47 to 40.6 m) Broken Zone within Gabbro unit	100	UCS-04			50		RQD / RMR; SPT TEST 'N' VALUES - 20 40 60 80		
42	432			100				50				Packer Test #5 - 38.32-45.96 m - 1E-06 m/s
43	431		**BROKEN ZONE** (42.4 to 43.36 m) Broken Zone within Felsic Dyke	100				45				
44	430		**GABBRO** (43.74 to 44.95 m) Grey; coarse grained; massive; medium strong; highly fractured; fresh; clay and chlorite infill; strong iron oxide staining on joint surfaces; some quartz veining; few serpentine veins.	100				45				
45	429		**FELDSPAR-HORNBLENDE PORPHYRY DYKE** (44.95 to 45.8 m) Green; fine grained; massive; medium strong; slightly to moderately fractured; slightly weathered; quartz veining; 1 mm diameter hornblende phenocrysts with 1-2 mm diameter, subrounded feldspar phenocrysts; minor fine grained biotite alteration.	100				45				
46	428		**GABBRO** (45.8 to 71.95 m) Grey; coarse grained; massive; weak to medium strong; moderately to highly fractured, multiple broken zones; chlorite, calcite and graphite infill; iron oxide and manganese oxide staining on joint surfaces; few serpentine veins. **RUBBLE ZONE** (47.21 to 47.78 m) Rubble Zone within Gabbro unit	100				15				
47	427			100				15				
48	426		**BROKEN ZONE** (48.51 to 48.61 m) Broken Zone within Gabbro unit	100				15				
49				100				35				Packer Test #6 - 45.81-53.64 m - 3E-08 m/s

GENERAL REMARKS:

Bedrock lithology and detailed geology logs provided by IDM. Elevations and coordinates are surveyed coordinates provided by IDM. VWP installation failed due to structure at 55 m taking high grout quantities. Standpipe piezometer installed in place.

IDM Mining Ltd.
Red Mountain Project

Knight Piésold CONSULTING

Project No.	Ref. No.	Rev.
VA101-594/02	1	A

FIGURE B1-9

Logging conducted according to the ASTM 2488 standard and the Canadian Foundation Engineering Manual, 4th Edition, 2006.

Contractor: More Core Diamond Drilling Service Ltd.
Location: North TMF Embankment - West Abutment
Coordinates: 452,362 E , 6,204,903 N
Coordinate System: UTM NAD83 Zone 9N
Hole Size HWT to 1.43 m; HQ3 to 111.50 m

Drillhole No.: BH16-009
Drill Type: B15 Diamond Drill
Total Length: 111.5 m
Elevation: 463.9 m
Azimuth, Inclination: 45 , -50

Page: 6 of 12
Date Started: Sep 7, 16
Date Completed: Sep 14, 16
Logged by: CAG/MEA
Reviewed by: JEF

DEPTH - (m)	ELEVATION - (m)	GRAPHIC LOG	MATERIAL DESCRIPTION	RUN RECOVERY (%)	SAMPLE NO.	SAMPLE REC. (%)	SAMPLE TYPE	UCS (MPa) / BLOW COUNTS (PER 6")	SPT 'N' VALUE	KEY ROCK MASS PARAMETERS / SPT TEST 'N' VALUES	INSTRUMENTATION / WELL DETAILS	DRILLING NOTES
51	425		**GABBRO** (45.8 to 71.95 m) Grey; coarse grained; massive; weak to medium strong; moderately to highly fractured, multiple broken zones; chlorite, calcite and graphite infill; iron oxide and manganese oxide staining on joint surfaces; few serpentine veins.	100				35		RQD, RMR; SPT TEST 'N' VALUES - 20 40 60 80		
52	424			100				35				
53	423			100				35				
54	422			100				35				
55				97				35				
56	421											
57	420			99				45				
58												
59	419			98				45				
	418											

GENERAL REMARKS:
Bedrock lithology and detailed geology logs provided by IDM. Elevations and coordinates are surveyed coordinates provided by IDM. VWP installation failed due to structure at 55 m taking high grout quantities. Standpipe piezometer installed in place.

IDM Mining Ltd.
Red Mountain Project

Knight Piésold CONSULTING

Project No.	Ref. No.	Rev.
VA101-594/02	1	A

FIGURE B1-9

Logging conducted according to the ASTM 2488 standard and the Canadian Foundation Engineering Manual, 4th Edition, 2006.

Contractor: More Core Diamond Drilling Service Ltd.
Location: North TMF Embankment - West Abutment
Coordinates: 452,362 E , 6,204,903 N
Coordinate System: UTM NAD83 Zone 9N
Hole Size HWT to 1.43 m; HQ3 to 111.50 m

Drillhole No.: BH16-009
Drill Type: B15 Diamond Drill
Total Length: 111.5 m
Elevation: 463.9 m
Azimuth, Inclination: 45 , -50

Page: 7 of 12
Date Started: Sep 7, 16
Date Completed: Sep 14, 16
Logged by: CAG/MEA
Reviewed by: JEF

DEPTH - (m)	ELEVATION - (m)	GRAPHIC LOG	MATERIAL DESCRIPTION	RUN RECOVERY (%)	SAMPLE NO.	SAMPLE REC. (%)	SAMPLE TYPE	UCS (MPa) / BLOW COUNTS (PER 6")	SPT 'N' VALUE	KEY ROCK MASS PARAMETERS / SPT TEST 'N' VALUES	INSTRUMENTATION / WELL DETAILS	DRILLING NOTES
61	417		**GABBRO** (45.8 to 71.95 m) Grey; coarse grained; massive; weak to medium strong; moderately to highly fractured, multiple broken zones; chlorite, calcite and graphite infill; iron oxide and manganese oxide staining on joint surfaces; few serpentine veins.	97				45		RQD, RMR; SPT TEST 'N' VALUES - 20 40 60 80		Packer Test #7 - 53.50-67.14 m - 9E-08 m/s
62	416			100				55				
63	415			100				55				
64												
65	414			99				60				
66	413			100				60				
67				94				60				
68	412			102				60				
69	411			92				35				

GENERAL REMARKS:

Bedrock lithology and detailed geology logs provided by IDM. Elevations and coordinates are surveyed coordinates provided by IDM. VWP installation failed due to structure at 55 m taking high grout quantities. Standpipe piezometer installed in place.

IDM Mining Ltd.
Red Mountain Project

Knight Piésold CONSULTING

Project No.	Ref. No.	Rev.
VA101-594/02	1	A

FIGURE B1-9

Logging conducted according to the ASTM 2488 standard and the Canadian Foundation Engineering Manual, 4th Edition, 2006.

Contractor: More Core Diamond Drilling Service Ltd.
Location: North TMF Embankment - West Abutment
Coordinates: 452,362 E , 6,204,903 N
Coordinate System: UTM NAD83 Zone 9N
Hole Size HWT to 1.43 m; HQ3 to 111.50 m

Drillhole No.: BH16-009
Drill Type: B15 Diamond Drill
Total Length: 111.5 m
Elevation: 463.9 m
Azimuth, Inclination: 45 , -50

Page: 8 of 12
Date Started: Sep 7, 16
Date Completed: Sep 14, 16
Logged by: CAG/MEA
Reviewed by: JEF

DEPTH - (m)	ELEVATION - (m)	GRAPHIC LOG	MATERIAL DESCRIPTION	RUN RECOVERY (%)	SAMPLE NO.	SAMPLE REC. (%)	SAMPLE TYPE	UCS (MPa) / BLOW COUNTS (PER 6")	SPT 'N' VALUE	KEY ROCK MASS PARAMETERS / SPT TEST 'N' VALUES	INSTRUMENTATION / WELL DETAILS	DRILLING NOTES
71	410		**GABBRO** (45.8 to 71.95 m) Grey; coarse grained; massive; weak to medium strong; moderately to highly fractured, multiple broken zones; chlorite, calcite and graphite infill; iron oxide and manganese oxide staining on joint surfaces; few serpentine veins. **BROKEN ZONE** (59.64 to 60.04 m) Broken Zone within Gabbro unit	101				35		RQD, RMR; SPT 'N' 20 40 60 80		Packer Test #8 - 66.99-74.82 m - No Take
72	409		**BROKEN ZONE** (71.85 to 72.02 m) Broken Zone at contact between major Gabbro unit and Strained Fault Zone	99				50				
73	408		**STRAINED FAULT ZONE** (71.95 to 76.33 m) Grey, dark grey, black, dark greenish grey; fine to coarse grained; massive with occasional flow banded sections; weak to strong; moderately to highly fractured; slightly weathered; chlorite and clay infill; heavy quartz and calcite veining; fairly competent with strong fabric perpendicular to core axis; mixing zone of gabbro, argillite and felsic dykes.	96				40				
74	407			89				5				
75			**RUBBLE ZONE** (74.64 to 74.82 m) Rubble Zone within Strained Fault Zone	100				35				
76	406			100				30				
77	405		**DIORITE** (76.33 to 89.1 m) Grey; medium grained; massive; medium strong to strong; moderately fractured; fresh; epidote staining on joint surfaces; some rubble infill on some joints; no veining; 2-4 mm diameter feldspar phenocrysts, 1 mm diameter mafic phenocrysts.	100	UCS-05			50				
78	404		**BROKEN ZONE** (78.18 to 79.4 m) Broken Zone within Diorite unit	100				25				
79	403			64				45				

GENERAL REMARKS:

Bedrock lithology and detailed geology logs provided by IDM. Elevations and coordinates are surveyed coordinates provided by IDM. VWP installation failed due to structure at 55 m taking high grout quantities. Standpipe piezometer installed in place.

IDM Mining Ltd.
Red Mountain Project

Knight Piésold CONSULTING

Project No.	Ref. No.	Rev.
VA101-594/02	1	A

FIGURE B1-9

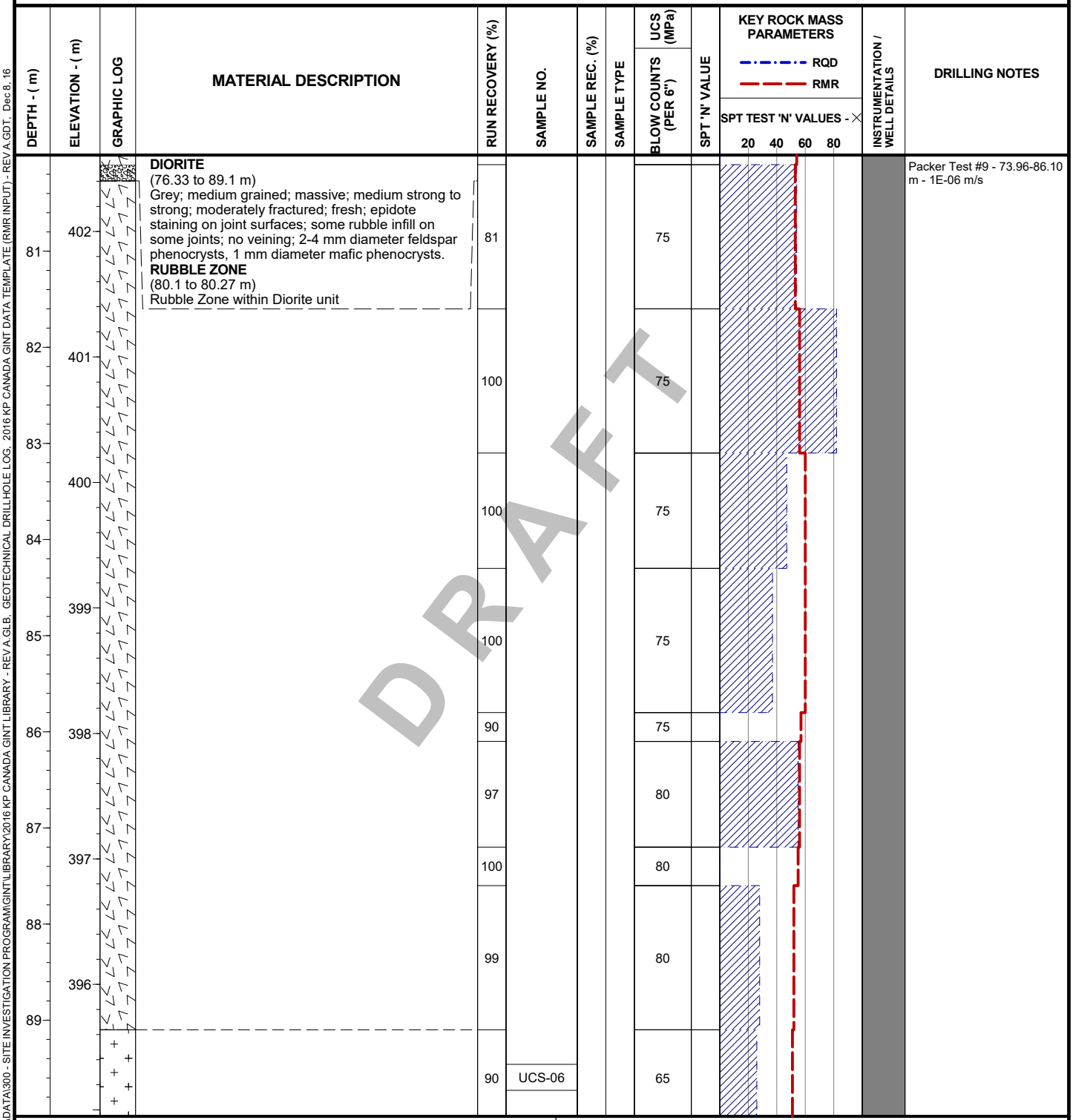
Logging conducted according to the ASTM 2488 standard and the Canadian Foundation Engineering Manual, 4th Edition, 2006.

File:M:\1\01\00594\02\A\DATA\300 - SITE INVESTIGATION PROGRAM\GINT\PROJECTS\RED MOUNTAIN 2016 GEOTECHNICAL SI.GPJ
Library: M:\1\01\00594\02\A\DATA\300 - SITE INVESTIGATION PROGRAM\GINT\LIBRARY\2016 KP CANADA GINT LIBRARY - REV A.GLB, GEOTECHNICAL DRILLHOLE LOG, 2016 KP CANADA GINT DATA TEMPLATE (RMR INPUT) - REV A.GDT, Dec 8, 16

Contractor: More Core Diamond Drilling Service Ltd.
Location: North TMF Embankment - West Abutment
Coordinates: 452,362 E , 6,204,903 N
Coordinate System: UTM NAD83 Zone 9N
Hole Size HWT to 1.43 m; HQ3 to 111.50 m

Drillhole No.: BH16-009
Drill Type: B15 Diamond Drill
Total Length: 111.5 m
Elevation: 463.9 m
Azimuth, Inclination: 45 , -50

Page: 9 of 12
Date Started: Sep 7, 16
Date Completed: Sep 14, 16
Logged by: CAG/MEA
Reviewed by: JEF



GENERAL REMARKS:

Bedrock lithology and detailed geology logs provided by IDM. Elevations and coordinates are surveyed coordinates provided by IDM. VWP installation failed due to structure at 55 m taking high grout quantities. Standpipe piezometer installed in place.

IDM Mining Ltd.
Red Mountain Project

Knight Piésold CONSULTING

Project No.	Ref. No.	Rev.
VA101-594/02	1	A

FIGURE B1-9

Logging conducted according to the ASTM 2488 standard and the Canadian Foundation Engineering Manual, 4th Edition, 2006.

Contractor: More Core Diamond Drilling Service Ltd.
Location: North TMF Embankment - West Abutment
Coordinates: 452,362 E , 6,204,903 N
Coordinate System: UTM NAD83 Zone 9N
Hole Size HWT to 1.43 m; HQ3 to 111.50 m

Drillhole No.: BH16-009
Drill Type: B15 Diamond Drill
Total Length: 111.5 m
Elevation: 463.9 m
Azimuth, Inclination: 45 , -50

Page: 10 of 12
Date Started: Sep 7, 16
Date Completed: Sep 14, 16
Logged by: CAG/MEA
Reviewed by: JEF

DEPTH - (m)	ELEVATION - (m)	GRAPHIC LOG	MATERIAL DESCRIPTION	RUN RECOVERY (%)	SAMPLE NO.	SAMPLE REC. (%)	SAMPLE TYPE	UCS (MPa) / BLOW COUNTS (PER 6")	SPT 'N' VALUE	KEY ROCK MASS PARAMETERS / SPT TEST 'N' VALUES	INSTRUMENTATION / WELL DETAILS	DRILLING NOTES
91	394		**FELDSPAR-HORNBLENDE PORPHYRY DYKE** (89.1 to 100.68 m) Light green-grey; fine grained; massive; weak to strong; moderately to highly fractured, frequently broken; fresh to slightly weathered; chlorite and calcite infill; iron oxide staining on joint surfaces; very few calcite and quartz veining; intruding gabbro; 1-2 mm hornblende and plagioclase phenocrysts.	100				45		RQD / RMR; SPT TEST 'N' VALUES - 20 40 60 80		Packer Test #10 - 85.95-93.78 m - 2E-06 m/s
92	393		**BROKEN ZONE** (91.53 to 91.72 m) Broken Zone within Feldspar-Hornblende Porphyry Dyke	100				25				
93				100				50				
94	392			100				50				
95			**BROKEN/RUBBLE ZONE** (94.28 to 94.98 m) Broken Zone within Feldspar-Hornblende Porphyry Dyke	93				20				
96	391		**RUBBLE ZONE** (95.28 to 95.46 m) Broken Zone within Feldspar-Hornblende Porphyry Dyke	100				15				
97	390		**BROKEN/RUBBLE ZONE** (96.92 to 97.32 m) Broken Zone within Feldspar-Hornblende Porphyry Dyke	100				20				Packer Test #11 - 93.63-101.46 m - 2E-06 m/s
98	389											
99	388			100				50				

GENERAL REMARKS:

Bedrock lithology and detailed geology logs provided by IDM. Elevations and coordinates are surveyed coordinates provided by IDM. VWP installation failed due to structure at 55 m taking high grout quantities. Standpipe piezometer installed in place.

IDM Mining Ltd.
Red Mountain Project

Knight Piésold CONSULTING

Project No.	Ref. No.	Rev.
VA101-594/02	1	A

FIGURE B1-9

Logging conducted according to the ASTM 2488 standard and the Canadian Foundation Engineering Manual, 4th Edition, 2006.

Contractor: More Core Diamond Drilling Service Ltd.
Location: North TMF Embankment - West Abutment
Coordinates: 452,362 E , 6,204,903 N
Coordinate System: UTM NAD83 Zone 9N
Hole Size HWT to 1.43 m; HQ3 to 111.50 m

Drillhole No.: BH16-009
Drill Type: B15 Diamond Drill
Total Length: 111.5 m
Elevation: 463.9 m
Azimuth, Inclination: 45 , -50

Page: 11 of 12
Date Started: Sep 7, 16
Date Completed: Sep 14, 16
Logged by: CAG/MEA
Reviewed by: JEF

DEPTH - (m)	ELEVATION - (m)	GRAPHIC LOG	MATERIAL DESCRIPTION	RUN RECOVERY (%)	SAMPLE NO.	SAMPLE REC. (%)	SAMPLE TYPE	UCS (MPa) / BLOW COUNTS (PER 6")	SPT 'N' VALUE	KEY ROCK MASS PARAMETERS / SPT TEST 'N' VALUES	INSTRUMENTATION / WELL DETAILS	DRILLING NOTES
101	387		**BROKEN ZONE** (100.38 to 100.68 m) Broken Zone at contact between Feldspar-Hornblende Porphyry Dyke and major Gabbro unit	100				25		RQD, RMR; SPT TEST 'N' VALUES - 20 40 60 80		
102	386		**GABBRO** (100.68 to 103.68 m) Grey; coarse grained; massive; medium strong; slightly fractured; slightly weathered; trace iron oxide infill, calcite infill; moderate to strong calcite veining; biotite alteration; fabric roughly perpendicular to core axis.	100				35				
103	385			100				45				
104	384		**GABBRO** (103.68 to 107.06 m) Grey; coarse grained; flow banded; strong; moderately to highly fractured; slightly weathered; chlorite infill; abundant calcite veining; sheared gabbro and mudstone; high strain appearance perpendicular to core axis; potentially contact zone.	100				50				
105	383			97				50				Packer Test #12 - 99.36-111.50 m - 7E-07 m/s
106	382			100				50				
107			**GABBRO** (107.06 to 111.16 m) Grey; coarse grained; massive; strong; moderately to highly fractured; slightly weathered; chlorite and calcite infill; heavy quartz veining; moderate calcite veining; disseminated sulphides; biotite alteration; fabric roughly perpendicular to core axis.	100				50				
108	381											
109	380			97				50				

GENERAL REMARKS:
Bedrock lithology and detailed geology logs provided by IDM. Elevations and coordinates are surveyed coordinates provided by IDM. VWP installation failed due to structure at 55 m taking high grout quantities. Standpipe piezometer installed in place.

IDM Mining Ltd.
Red Mountain Project

Knight Piésold CONSULTING

Project No.	Ref. No.	Rev.
VA101-594/02	1	A

FIGURE B1-9

Logging conducted according to the ASTM 2488 standard and the Canadian Foundation Engineering Manual, 4th Edition, 2006.

Contractor: More Core Diamond Drilling Service Ltd.
Location: North TMF Embankment - West Abutment
Coordinates: 452,362 E , 6,204,903 N
Coordinate System: UTM NAD83 Zone 9N
Hole Size HWT to 1.43 m; HQ3 to 111.50 m

Drillhole No.: BH16-009
Drill Type: B15 Diamond Drill
Total Length: 111.5 m
Elevation: 463.9 m
Azimuth, Inclination: 45 , -50

Page: 12 of 12
Date Started: Sep 7, 16
Date Completed: Sep 14, 16
Logged by: CAG/MEA
Reviewed by: JEF

DEPTH - (m)	ELEVATION - (m)	GRAPHIC LOG	MATERIAL DESCRIPTION	RUN RECOVERY (%)	SAMPLE NO.	SAMPLE REC. (%)	SAMPLE TYPE	UCS (MPa) / BLOW COUNTS (PER 6")	SPT 'N' VALUE	KEY ROCK MASS PARAMETERS / SPT TEST 'N' VALUES	INSTRUMENTATION / WELL DETAILS	DRILLING NOTES
111	379		**GABBRO** (107.06 to 111.16 m) Grey; coarse grained; massive; strong; moderately to highly fractured; slightly weathered; chlorite and calcite infill; heavy quartz veining; moderate calcite veining; disseminated sulphides; biotite alteration; fabric roughly perpendicular to core axis.	100				50		RQD, RMR; SPT TEST 'N' VALUES - 20 40 60 80		
			FELDSPAR-HORNBLENDE PORPHYRY DYKE (111.16 to 111.5 m) Green-grey; fine grained; massive; strong; moderately fractured; slightly weathered; very few veins; trace disseminated sulphides; intruding gabbro; 1-2 mm hornblende and plagioclase phenocrysts.									
112	378		End of Drillhole: 111.5 m Target Depth Reached									
113	377											
114												
115	376											
116	375											
117												
118	374											
119	373											

GENERAL REMARKS:

Bedrock lithology and detailed geology logs provided by IDM. Elevations and coordinates are surveyed coordinates provided by IDM. VWP installation failed due to structure at 55 m taking high grout quantities. Standpipe piezometer installed in place.

IDM Mining Ltd.
Red Mountain Project

Knight Piésold CONSULTING

Project No.	Ref. No.	Rev.
VA101-594/02	1	A

FIGURE B1-9

Logging conducted according to the ASTM 2488 standard and the Canadian Foundation Engineering Manual, 4th Edition, 2006.

Contractor: More Core Diamond Drilling Service Ltd.
Location: South TMF Embankment - North Abutment
Coordinates: 452,435 E , 6,204,669 N
Coordinate System: UTM NAD83 Zone 9N
Hole Size HWT to 1.20 m; HQ3 to 95.60 m

Drillhole No.: BH16-010
Drill Type: B15 Diamond Drill
Total Length: 95.6 m
Elevation: 463.1 m
Azimuth, Inclination: 160 , -50

Page: 1 of 10
Date Started: Sep 14, 16
Date Completed: Sep 17, 16
Logged by: CAG/MEA
Reviewed by: JEF

DEPTH - (m)	ELEVATION - (m)	GRAPHIC LOG	MATERIAL DESCRIPTION	RUN RECOVERY (%)	SAMPLE NO.	SAMPLE REC. (%)	SAMPLE TYPE	UCS (MPa) / BLOW COUNTS (PER 6")	SPT 'N' VALUE	KEY ROCK MASS PARAMETERS / SPT TEST 'N' VALUES	INSTRUMENTATION / WELL DETAILS	DRILLING NOTES
0	463		**COBBLES** (0 to 0.6 m) Angular; uniformly graded; light grey to tan; loose; wet; potentially weathered bedrock; finer material washed away during drilling process.	43								
1	462		**GABBRO** (0.6 to 13.08 m) Dark grey-green; coarse grained; massive; medium strong to strong; highly fractured; moderately to slightly weathered; chlorite, rubble & gouge infill in some joints; epidote and chlorite staining on joint surfaces; trace calcite veinlets; 5 cm thick quartz-calcite veins at 3.35 m and 4.84 m; black biotite presence; unaltered pyroxenite, <3 mm thick; approximately 1% quartz content; light green-beige talc-serpentinite stockwork.	100				60				
2				100	UCS-01			60				
3	461											
4	460			99				35				
5												
6	459			100				45				
7	458			100				45				
8	457			100				45				Vibrating Wire Piezometer Serial Number: VW38230 Data Logger Serial Number: DT11285
9	456		**BROKEN ZONE** (8.6 to 9.89 m) Broken Zone within major Gabbro unit	86				45				
				100				5				
				100				45				

KEY ROCK MASS PARAMETERS: RQD, RMR
SPT TEST 'N' VALUES - 20 40 60 80

GENERAL REMARKS:
Bedrock lithology and detailed geology logs provided by IDM. Elevations and coordinates are surveyed coordinates provided by IDM.

IDM Mining Ltd.
Red Mountain Project

Knight Piésold CONSULTING

Project No.	Ref. No.	Rev.
VA101-594/02	1	A

FIGURE B1-10

Logging conducted according to the ASTM 2488 standard and the Canadian Foundation Engineering Manual, 4th Edition, 2006.

File:M:\1\01\00594\02\A\DATA\300 - SITE INVESTIGATION PROGRAM\GINT\PROJECTS\RED MOUNTAIN 2016 GEOTECHNICAL SI.GPJ
Library: M:\1\01\00594\02\A\DATA\300 - SITE INVESTIGATION PROGRAM\GINT\LIBRARY\2016 KP CANADA GINT LIBRARY - REV A.GLB, GEOTECHNICAL DRILLHOLE LOG, 2016 KP CANADA GINT DATA TEMPLATE (RMR INPUT) - REV A.GDT, Dec 8, 16

Contractor: More Core Diamond Drilling Service Ltd.
Location: South TMF Embankment - North Abutment
Coordinates: 452,435 E , 6,204,669 N
Coordinate System: UTM NAD83 Zone 9N
Hole Size HWT to 1.20 m; HQ3 to 95.60 m

Drillhole No.: BH16-010
Drill Type: B15 Diamond Drill
Total Length: 95.6 m
Elevation: 463.1 m
Azimuth, Inclination: 160 , -50

Page: 2 of 10
Date Started: Sep 14, 16
Date Completed: Sep 17, 16
Logged by: CAG/MEA
Reviewed by: JEF

DEPTH - (m)	ELEVATION - (m)	GRAPHIC LOG	MATERIAL DESCRIPTION	RUN RECOVERY (%)	SAMPLE NO.	SAMPLE REC. (%)	SAMPLE TYPE	UCS (MPa) / BLOW COUNTS (PER 6")	SPT 'N' VALUE	KEY ROCK MASS PARAMETERS / SPT TEST 'N' VALUES	INSTRUMENTATION / WELL DETAILS	DRILLING NOTES
11	455		**GABBRO** (0.6 to 13.08 m) Dark grey-green; coarse grained; massive; medium strong to strong; highly fractured; moderately to slightly weathered; chlorite, rubble & gouge infill in some joints; epidote and chlorite staining on joint surfaces; trace calcite veinlets; 5 cm thick quartz-calcite veins at 3.35 m and 4.84 m; black biotite presence; unaltered pyroxenite, <3 mm thick; approximately 1% quartz content; light green-beige talc-serpentinite stockwork.	97				45		RQD / RMR / SPT 20 40 60 80		
12	454			100				45				Packer Test #1 - 7.96-14.10 m - 1E-06 m/s
13	453		**FAULT ZONE** (13.08 to 17.1 m) Grey-green; fine to coarse grained; massive; medium strong; rubbleized and broken; moderately to highly weathered; quartz and gouge infill between rubble fragments; iron oxide staining on rubble fragments; rubble fragments are angular, 2-5 cm in diameter; strong sericite alteration on hedges of the fault zone.	92				45				
14	452			90				45				
15				90				5				
16	451			75				5				Groundwater level measured prior to grouting during VWP installation.
17	450		**GABBRO** (17.1 to 44.14 m) Dark grey-green; coarse grained; massive; strong; slightly to moderately fractured; slightly weathered; graphite and calcite infill; manganese oxide and iron oxide staining on joint surfaces; calcite and graphite veining; black biotite presence; unaltered pyroxenite, <3 mm thick; approximately 1% quartz content; light green-beige talc-serpentinite stockwork.	100				15				Packer Test #2 - 12.50-20.33 m - 8E-07 m/s
18	449		**BROKEN ZONE** (18 to 18.15 m) Broken Zone within major Gabbro unit	100				35				
19			**BROKEN ZONE** (18.6 to 19.05 m) Broken Zone within major Gabbro unit	100				5				
	448		**BROKEN ZONE** (19.4 to 19.55 m)	100				35				

GENERAL REMARKS:
Bedrock lithology and detailed geology logs provided by IDM. Elevations and coordinates are surveyed coordinates provided by IDM.

IDM Mining Ltd.
Red Mountain Project

Knight Piésold CONSULTING

Project No.	Ref. No.	Rev.
VA101-594/02	1	A

FIGURE B1-10

Logging conducted according to the ASTM 2488 standard and the Canadian Foundation Engineering Manual, 4th Edition, 2006.

Contractor: More Core Diamond Drilling Service Ltd.
Location: South TMF Embankment - North Abutment
Coordinates: 452,435 E , 6,204,669 N
Coordinate System: UTM NAD83 Zone 9N
Hole Size HWT to 1.20 m; HQ3 to 95.60 m

Drillhole No.: BH16-010
Drill Type: B15 Diamond Drill
Total Length: 95.6 m
Elevation: 463.1 m
Azimuth, Inclination: 160 , -50

Page: 3 of 10
Date Started: Sep 14, 16
Date Completed: Sep 17, 16
Logged by: CAG/MEA
Reviewed by: JEF

DEPTH - (m)	ELEVATION - (m)	GRAPHIC LOG	MATERIAL DESCRIPTION	RUN RECOVERY (%)	SAMPLE NO.	SAMPLE REC. (%)	SAMPLE TYPE	UCS (MPa) / BLOW COUNTS (PER 6")	SPT 'N' VALUE	KEY ROCK MASS PARAMETERS / SPT TEST 'N' VALUES	INSTRUMENTATION / WELL DETAILS	DRILLING NOTES
21	447		Broken Zone within major Gabbro unit **GABBRO** (17.1 to 44.14 m) Dark grey-green; coarse grained; massive; strong; slightly to moderately fractured; slightly weathered; graphite and calcite infill; manganese oxide and iron oxide staining on joint surfaces; calcite and graphite veining; black biotite presence; unaltered pyroxenite, <3 mm thick; approximately 1% quartz content; light green-beige talc-serpentinite stockwork.	100				35		RQD / RMR; SPT TEST 'N' VALUES - 20 40 60 80		
22	446			100				35				
23	445			99				35				Packer Test #3 - 19.96-28.13 m - 2E-06 m/s
24												
25	444			100				35				
26	443											
27				100				35				Zone of Lost Circulation - 26.10-27.60 m
28	442			100				35				
29	441			100				35				Vibrating Wire Piezometer Serial Number: VW38235 Data Logger Serial Number: DT11287
				100				35				

GENERAL REMARKS:
Bedrock lithology and detailed geology logs provided by IDM. Elevations and coordinates are surveyed coordinates provided by IDM.

IDM Mining Ltd.
Red Mountain Project

Knight Piésold CONSULTING

Project No.	Ref. No.	Rev.
VA101-594/02	1	A

FIGURE B1-10

Logging conducted according to the ASTM 2488 standard and the Canadian Foundation Engineering Manual, 4th Edition, 2006.

Contractor: More Core Diamond Drilling Service Ltd.
Location: South TMF Embankment - North Abutment
Coordinates: 452,435 E , 6,204,669 N
Coordinate System: UTM NAD83 Zone 9N
Hole Size HWT to 1.20 m; HQ3 to 95.60 m

Drillhole No.: BH16-010
Drill Type: B15 Diamond Drill
Total Length: 95.6 m
Elevation: 463.1 m
Azimuth, Inclination: 160 , -50

Page: 4 of 10
Date Started: Sep 14, 16
Date Completed: Sep 17, 16
Logged by: CAG/MEA
Reviewed by: JEF

DEPTH - (m)	ELEVATION - (m)	GRAPHIC LOG	MATERIAL DESCRIPTION	RUN RECOVERY (%)	SAMPLE NO.	SAMPLE REC. (%)	SAMPLE TYPE	UCS (MPa) / BLOW COUNTS (PER 6")	SPT 'N' VALUE	KEY ROCK MASS PARAMETERS / SPT TEST 'N' VALUES	INSTRUMENTATION / WELL DETAILS	DRILLING NOTES
30	440		**GABBRO** (17.1 to 44.14 m) Dark grey-green; coarse grained; massive; strong; slightly to moderately fractured; slightly weathered; graphite and calcite infill; manganese oxide and iron oxide staining on joint surfaces; calcite and graphite veining; black biotite presence; unaltered pyroxenite, <3 mm thick; approximately 1% quartz content; light green-beige talc-serpentinite stockwork.							RQD, RMR; SPT TEST 'N' VALUES - 20 40 60 80		
31	439			100				55				
32			**BROKEN ZONE** (32.1 to 32.5 m) Broken Zone within major Gabbro unit; heavily veined; clay altered.	93				5				Packer Test #4 - 27.46-36.60 m - 9E-09 m/s
	438			98				55				
33												
34	437			100				55				
35												
36	436			100	UCS-02			55				
	435											
37				100				50				
38	434											
39				98				50				
	433											

GENERAL REMARKS:
Bedrock lithology and detailed geology logs provided by IDM. Elevations and coordinates are surveyed coordinates provided by IDM.

IDM Mining Ltd.
Red Mountain Project

Knight Piésold CONSULTING

Project No.	Ref. No.	Rev.
VA101-594/02	1	A

FIGURE B1-10

Logging conducted according to the ASTM 2488 standard and the Canadian Foundation Engineering Manual, 4th Edition, 2006.

Contractor: More Core Diamond Drilling Service Ltd.
Location: South TMF Embankment - North Abutment
Coordinates: 452,435 E , 6,204,669 N
Coordinate System: UTM NAD83 Zone 9N
Hole Size HWT to 1.20 m; HQ3 to 95.60 m

Drillhole No.: BH16-010
Drill Type: B15 Diamond Drill
Total Length: 95.6 m
Elevation: 463.1 m
Azimuth, Inclination: 160 , -50

Date Started: Sep 14, 16
Date Completed: Sep 17, 16
Logged by: CAG/MEA
Reviewed by: JEF

DEPTH - (m)	ELEVATION - (m)	GRAPHIC LOG	MATERIAL DESCRIPTION	RUN RECOVERY (%)	SAMPLE NO.	SAMPLE REC. (%)	SAMPLE TYPE	UCS (MPa) / BLOW COUNTS (PER 6")	SPT 'N' VALUE	KEY ROCK MASS PARAMETERS / SPT TEST 'N' VALUES	INSTRUMENTATION / WELL DETAILS	DRILLING NOTES
41	432		**GABBRO** (17.1 to 44.14 m) Dark grey-green; coarse grained; massive; strong; slightly to moderately fractured; slightly weathered; graphite and calcite infill; manganese oxide and iron oxide staining on joint surfaces; calcite and graphite veining; black biotite presence; unaltered pyroxenite, <3 mm thick; approximately 1% quartz content; light green-beige talc-serpentinite stockwork.	100				50		RQD / RMR; SPT 'N' VALUES - 20 40 60 80		Packer Test #5 - 36.46-45.60 m - 9E-09 m/s
42	431			99				50				
43	430			100				50				
44	429		**MAFIC DYKE** (44.14 to 44.68 m) Black; fine grained; brecciated with 10 cm diameter, subrounded breccia fragments with diffused hedges; medium strong; slightly fractured; slightly weathered.	99				40				
45			**GABBRO** (44.68 to 87.28 m) Dark grey-green; coarse grained; massive; medium strong to strong; slightly to moderately fractured; slightly weathered; graphite, chlorite and calcite infill; graphite and calcite veining; black biotite presence; unaltered pyroxenite, <3 mm thick; approximately 1% quartz content; light green-beige talc-serpentinite stockwork.									
46	428			97				40				
47	427											
48	426			100				40				
49	425			100				35				

GENERAL REMARKS:
Bedrock lithology and detailed geology logs provided by IDM. Elevations and coordinates are surveyed coordinates provided by IDM.

IDM Mining Ltd.
Red Mountain Project

Knight Piésold CONSULTING

Project No.	Ref. No.	Rev.
VA101-594/02	1	A

FIGURE B1-10

Logging conducted according to the ASTM 2488 standard and the Canadian Foundation Engineering Manual, 4th Edition, 2006.

Contractor: More Core Diamond Drilling Service Ltd.
Location: South TMF Embankment - North Abutment
Coordinates: 452,435 E , 6,204,669 N
Coordinate System: UTM NAD83 Zone 9N
Hole Size HWT to 1.20 m; HQ3 to 95.60 m

Drillhole No.: BH16-010
Drill Type: B15 Diamond Drill
Total Length: 95.6 m
Elevation: 463.1 m
Azimuth, Inclination: 160 , -50

Page: 6 of 10
Date Started: Sep 14, 16
Date Completed: Sep 17, 16
Logged by: CAG/MEA
Reviewed by: JEF

DEPTH - (m)	ELEVATION - (m)	GRAPHIC LOG	MATERIAL DESCRIPTION	RUN RECOVERY (%)	SAMPLE NO.	SAMPLE REC. (%)	SAMPLE TYPE	UCS (MPa) / BLOW COUNTS (PER 6")	SPT 'N' VALUE	KEY ROCK MASS PARAMETERS / SPT TEST 'N' VALUES	INSTRUMENTATION / WELL DETAILS	DRILLING NOTES
51	424		**GABBRO** (44.68 to 87.28 m) Dark grey-green; coarse grained; massive; medium strong to strong; slightly to moderately fractured; slightly weathered; graphite, chlorite and calcite infill; graphite and calcite veining; black biotite presence; unaltered pyroxenite, <3 mm thick; approximately 1% quartz content; light green-beige talc-serpentinite stockwork.	100				35		RQD / RMR; SPT TEST 'N' VALUES - 20 40 60 80		
52	423			100				35				
53	422			100				35				Packer Test #6 - 45.45-60.60 m - 3E-09 m/s
54												
55	421			100				35				
56	420			100				35				
57	419			100				35				
58												
59	418			98				35				

GENERAL REMARKS:
Bedrock lithology and detailed geology logs provided by IDM. Elevations and coordinates are surveyed coordinates provided by IDM.

IDM Mining Ltd.
Red Mountain Project

Knight Piésold CONSULTING

Project No.	Ref. No.	Rev.
VA101-594/02	1	A

FIGURE B1-10

Logging conducted according to the ASTM 2488 standard and the Canadian Foundation Engineering Manual, 4th Edition, 2006.

Contractor: More Core Diamond Drilling Service Ltd.
Location: South TMF Embankment - North Abutment
Coordinates: 452,435 E , 6,204,669 N
Coordinate System: UTM NAD83 Zone 9N
Hole Size HWT to 1.20 m; HQ3 to 95.60 m

Drillhole No.: BH16-010
Drill Type: B15 Diamond Drill
Total Length: 95.6 m
Elevation: 463.1 m
Azimuth, Inclination: 160 , -50

Page: 7 of 10
Date Started: Sep 14, 16
Date Completed: Sep 17, 16
Logged by: CAG/MEA
Reviewed by: JEF

DEPTH - (m)	ELEVATION - (m)	GRAPHIC LOG	MATERIAL DESCRIPTION	RUN RECOVERY (%)	SAMPLE NO.	SAMPLE REC. (%)	SAMPLE TYPE	UCS (MPa) / BLOW COUNTS (PER 6")	SPT 'N' VALUE	KEY ROCK MASS PARAMETERS / SPT TEST 'N' VALUES	INSTRUMENTATION / WELL DETAILS	DRILLING NOTES
61	417		**GABBRO** (44.68 to 87.28 m) Dark grey-green; coarse grained; massive; medium strong to strong; slightly to moderately fractured; slightly weathered; graphite, chlorite and calcite infill; graphite and calcite veining; black biotite presence; unaltered pyroxenite, <3 mm thick; approximately 1% quartz content; light green-beige talc-serpentinite stockwork.							RQD, RMR; SPT TEST 'N' VALUES - 20 40 60 80		
62	416			100				35				
63	415			100				35				
64	414			100				35				
65	413			98				35				
66	412			100				35				Packer Test #7 - 60.45-72.60 m - 3E-08 m/s
67	411			98				35				
68	410											
69												

GENERAL REMARKS:
Bedrock lithology and detailed geology logs provided by IDM. Elevations and coordinates are surveyed coordinates provided by IDM.

IDM Mining Ltd.
Red Mountain Project

Knight Piésold CONSULTING

Project No.	Ref. No.	Rev.
VA101-594/02	1	A

FIGURE B1-10

Logging conducted according to the ASTM 2488 standard and the Canadian Foundation Engineering Manual, 4th Edition, 2006.

Contractor: More Core Diamond Drilling Service Ltd.
Location: South TMF Embankment - North Abutment
Coordinates: 452,435 E , 6,204,669 N
Coordinate System: UTM NAD83 Zone 9N
Hole Size HWT to 1.20 m; HQ3 to 95.60 m

Drillhole No.: BH16-010
Drill Type: B15 Diamond Drill
Total Length: 95.6 m
Elevation: 463.1 m
Azimuth, Inclination: 160 , -50

Page: 8 of 10
Date Started: Sep 14, 16
Date Completed: Sep 17, 16
Logged by: CAG/MEA
Reviewed by: JEF

DEPTH - (m)	ELEVATION - (m)	GRAPHIC LOG	MATERIAL DESCRIPTION	RUN RECOVERY (%)	SAMPLE NO.	SAMPLE REC. (%)	SAMPLE TYPE	UCS (MPa) / BLOW COUNTS (PER 6")	SPT 'N' VALUE	KEY ROCK MASS PARAMETERS / SPT TEST 'N' VALUES	INSTRUMENTATION / WELL DETAILS	DRILLING NOTES
71	409		**GABBRO** (44.68 to 87.28 m) Dark grey-green; coarse grained; massive; medium strong to strong; slightly to moderately fractured; slightly weathered; graphite, chlorite and calcite infill; graphite and calcite veining; black biotite presence; unaltered pyroxenite, <3 mm thick; approximately 1% quartz content; light green-beige talc-serpentinite stockwork. **BROKEN ZONE** (70.58 to 70.97 m) Broken Zone within major Gabbro unit	100				15		RQD / RMR; SPT TEST 'N' VALUES - 20 40 60 80		
72	408			99				35				
73	407			100				40				
74	406			98				40				
75	405			100				30				
76	404			100				60				
77	403			100				60				Packer Test #8 - 72.46-84.60 m - 1E-08 m/s
78	402											
79												

GENERAL REMARKS:
Bedrock lithology and detailed geology logs provided by IDM. Elevations and coordinates are surveyed coordinates provided by IDM.

IDM Mining Ltd.
Red Mountain Project

Knight Piésold CONSULTING

Project No.	Ref. No.	Rev.
VA101-594/02	1	A

FIGURE B1-10

Logging conducted according to the ASTM 2488 standard and the Canadian Foundation Engineering Manual, 4th Edition, 2006.

Contractor: More Core Diamond Drilling Service Ltd.
Location: South TMF Embankment - North Abutment
Coordinates: 452,435 E , 6,204,669 N
Coordinate System: UTM NAD83 Zone 9N
Hole Size HWT to 1.20 m; HQ3 to 95.60 m

Drillhole No.: BH16-010
Drill Type: B15 Diamond Drill
Total Length: 95.6 m
Elevation: 463.1 m
Azimuth, Inclination: 160 , -50

Page: 9 of 10
Date Started: Sep 14, 16
Date Completed: Sep 17, 16
Logged by: CAG/MEA
Reviewed by: JEF

DEPTH - (m)	ELEVATION - (m)	GRAPHIC LOG	MATERIAL DESCRIPTION	RUN RECOVERY (%)	SAMPLE NO.	SAMPLE REC. (%)	SAMPLE TYPE	UCS (MPa) / BLOW COUNTS (PER 6")	SPT 'N' VALUE	KEY ROCK MASS PARAMETERS / SPT TEST 'N' VALUES	INSTRUMENTATION / WELL DETAILS	DRILLING NOTES
81	401		**GABBRO** (44.68 to 87.28 m) Dark grey-green; coarse grained; massive; medium strong to strong; slightly to moderately fractured; slightly weathered; graphite, chlorite and calcite infill; graphite and calcite veining; black biotite presence; unaltered pyroxenite, <3 mm thick; approximately 1% quartz content; light green-beige talc-serpentinite stockwork.	100				30		RQD, RMR; 20 40 60 80		
82	400			100				35				
83	399			100				25				
84												
85	398			100				40				
86												
87	397			97				50				
88	396		**MAFIC DYKE** (87.28 to 89.72 m) Black; fine grained; brecciated with 10 cm diameter, subrounded breccia fragments with diffused hedges; medium strong; slightly fractured; slightly weathered.	100				40				
89	395				UCS-03							
				100				40				

GENERAL REMARKS:
Bedrock lithology and detailed geology logs provided by IDM. Elevations and coordinates are surveyed coordinates provided by IDM.

IDM Mining Ltd.
Red Mountain Project

Knight Piésold CONSULTING

Project No.	Ref. No.	Rev.
VA101-594/02	1	A

FIGURE B1-10

Logging conducted according to the ASTM 2488 standard and the Canadian Foundation Engineering Manual, 4th Edition, 2006.

Contractor: More Core Diamond Drilling Service Ltd.
Location: South TMF Embankment - North Abutment
Coordinates: 452,435 E , 6,204,669 N
Coordinate System: UTM NAD83 Zone 9N
Hole Size HWT to 1.20 m; HQ3 to 95.60 m

Drillhole No.: BH16-010
Drill Type: B15 Diamond Drill
Total Length: 95.6 m
Elevation: 463.1 m
Azimuth, Inclination: 160 , -50

Page: 10 of 10
Date Started: Sep 14, 16
Date Completed: Sep 17, 16
Logged by: CAG/MEA
Reviewed by: JEF

DEPTH - (m)	ELEVATION - (m)	GRAPHIC LOG	MATERIAL DESCRIPTION	RUN RECOVERY (%)	SAMPLE NO.	SAMPLE REC. (%)	SAMPLE TYPE	UCS (MPa) / BLOW COUNTS (PER 6")	SPT 'N' VALUE	KEY ROCK MASS PARAMETERS / SPT TEST 'N' VALUES	INSTRUMENTATION / WELL DETAILS	DRILLING NOTES
90	394		**GABBRO** (89.72 to 95.6 m) Dark grey-green; coarse grained; massive; medium strong; slightly to moderately fractured; slightly weathered; chlorite, sericite and quartz infill; heavy quartz and calcite veining; black biotite presence; unaltered pyroxenite, <3 mm thick; approximately 1% quartz content; light green-beige talc-serpentinite stockwork.							RQD, RMR; SPT TEST 'N' VALUES - 20 40 60 80		Packer Test #9 - 84.46-95.60 m - 5E-09 m/s
91	393			100				40				
92	392			99				40				
93	391			100				45				
94	390		**BROKEN ZONE** (95.1 to 95.24 m) Broken Zone within major Gabbro unit	100				35				
95	389		End of Drillhole: 95.6 m Target Depth Reached									
96	388											
97	387											
98												
99												

GENERAL REMARKS:
Bedrock lithology and detailed geology logs provided by IDM. Elevations and coordinates are surveyed coordinates provided by IDM.

IDM Mining Ltd.
Red Mountain Project

Knight Piésold CONSULTING

Project No.	Ref. No.	Rev.
VA101-594/02	1	A

FIGURE B1-10

Logging conducted according to the ASTM 2488 standard and the Canadian Foundation Engineering Manual, 4th Edition, 2006.

Contractor: More Core Diamond Drilling Service Ltd.
Location: Downgradient of proposed North TMF Embankment
Coordinates: 452,283 E , 6,205,109 N
Coordinate System: UTM NAD83 Zone 9N
Hole Size HWT to 1.20 m; HQ3 to 30.80 m

Drillhole No.: MW16-001
Drill Type: B15 Diamond Drill
Total Length: 30.8 m
Elevation: 410.1 m
Azimuth, Inclination: 0 , -90

Page: 1 of 4
Date Started: Aug 18, 16
Date Completed: Aug 20, 16
Logged by: CAG/MEA
Reviewed by: JEF

DEPTH - (m)	ELEVATION - (m)	GRAPHIC LOG	MATERIAL DESCRIPTION	RUN RECOVERY (%)	SAMPLE NO.	SAMPLE REC. (%)	SAMPLE TYPE	UCS (MPa) / BLOW COUNTS (PER 6")	SPT 'N' VALUE	KEY ROCK MASS PARAMETERS / SPT TEST 'N' VALUES	INSTRUMENTATION / WELL DETAILS	DRILLING NOTES
0	410		**FOREST DUFF/TOPSOIL** (0 to 0.36 m) Spongy, organic material present; some cobbles, subrounded to rounded; grey & dark brown; loose. From SPT recovery.	42 100				50				Monitoring well recorded as dry on September 7, 2016.
1	409		**GABBRO** (0.36 to 1.06 m) Light grey-green; medium grained; foliated; strong to medium strong; intensely fractured; moderately weathered to fresh; light green to beige serpentinite infill on some fractures; multiple spun joints; slickenslide observed on multiple joint surfaces; magnetic response with coarse brown biotite and pyroxene plebs (<2 mm in diameter). **BROKEN ZONE** (0.37 to 0.8 m) Broken Zone within Gabbro unit.	91				45				
2	408											
3	407		**GOLDSLIDE PORPHYRY SUITE** (1.06 to 2.78 m) Light grey; fine grained; porphyritic; medium strong; moderately fractured; fresh; intermixed gabbro and goldslide porphyry intrusive; strongly overprinted by carbonate-sericite alteration; fragments subangular and <5cm in diamater; locally magnetic.	100	UCS-01			35				
4	406		**GABBRO** (2.78 to 4.34 m) Light grey-green; medium grained; foliated; medium strong to strong; highly fractured; light green to beige serpentinite infill on some fractures; iron oxide staining on some joints; some quartz veinlets; slickenside observed on multiple joint surfaces; magnetic response with coarse brown biotite and pyroxene plebs (<2 mm in diameter). **BROKEN ZONE** (3.8 to 5.3 m) Broken Zone at contact between Gabbro and Goldslide Porphyry units.	96				75				
5	405											Zone of Lost Circulation - 4.80-5.30 m
6	404		**GOLDSLIDE PORPHYRY SUITE** (4.34 to 6.02 m) Light green; fine grained; porphyritic; strong to very strong; moderately to highly fractured; moderately to slightly weathered; clay and chlorite infill on joint surfaces; trace quartz veinlets; 35% phenocrysts; hornblende laths <2-5 mm in diameter, locally twinned; plagioclase phenocrysts <2 mm in diameter; strong chlorite alteration throughout with local carbonate alteration and epidote representation; chill margin contact with lower gabbro unit; mineral alignment, mostly pyroxenite with strong light beige-green serpentinite alteration.	100				100				
7	403			96				35				
8	402			97				45				Packer Test #1 - 5.14-11.20 m - 3E-07 m/s
9	401		**GABBRO** (6.02 to 16.41 m) Light grey-green; medium grained; foliated; strong to very strong; moderately to highly fractured; slightly weathered; chlorite and trace gouge infill on most joint surfaces; slickenslide observed on multiple joint surfaces; magnetic response with coarse brown biotite and pyroxene plebs (<2 mm in diameter).	94				70				

GENERAL REMARKS:

Bedrock lithology and detailed geology logs provided by IDM. Elevations and coordinates are surveyed coordinates provided by IDM. Monitoring Well specifications provided by SRK Consulting (VA16-01091).

IDM Mining Ltd.
Red Mountain Project

Knight Piésold CONSULTING

Project No.	Ref. No.	Rev.
VA101-594/02	1	A

FIGURE B2-1

Logging conducted according to the ASTM 2488 standard and the Canadian Foundation Engineering Manual, 4th Edition, 2006.

Contractor: More Core Diamond Drilling Service Ltd.
Location: Downgradient of proposed North TMF Embankment
Coordinates: 452,283 E , 6,205,109 N
Coordinate System: UTM NAD83 Zone 9N
Hole Size HWT to 1.20 m; HQ3 to 30.80 m

Drillhole No.: MW16-001
Drill Type: B15 Diamond Drill
Total Length: 30.8 m
Elevation: 410.1 m
Azimuth, Inclination: 0 , -90

Page: 2 of 4
Date Started: Aug 18, 16
Date Completed: Aug 20, 16
Logged by: CAG/MEA
Reviewed by: JEF

DEPTH - (m)	ELEVATION - (m)	GRAPHIC LOG	MATERIAL DESCRIPTION	RUN RECOVERY (%)	SAMPLE NO.	SAMPLE REC. (%)	SAMPLE TYPE	UCS (MPa) / BLOW COUNTS (PER 6")	SPT 'N' VALUE	KEY ROCK MASS PARAMETERS / SPT TEST 'N' VALUES	INSTRUMENTATION / WELL DETAILS	DRILLING NOTES
10	400		**GABBRO** (6.02 to 16.41 m) Light grey-green; medium grained; foliated; strong to very strong; moderately to highly fractured; slightly weathered; chlorite and trace gouge infill on most joint surfaces; slickenslide observed on multiple joint surfaces; magnetic response with coarse brown biotite and pyroxene plebs (<2 mm in diameter).	100				75		RQD / RMR; 20 40 60 80		
11	399			92				125				
12	398			100				125				
				100				85				
13	397			100				75				
14	396			100				50				Packer Test #2 - 11.12-17.30 m - No Take
15	395			93				175				
16	394			97				175				
17	393		**GOLDSLIDE PORPHYRY SUITE** (16.41 to 17.72 m) Grey; fine grained; porphyritic; very strong; moderately to highly fractured; fresh; some quartz & calcite-serpentinite veinlets; 25% phenocrysts, mainly hornblende laths (<7 mm diameter) and non-altered plagioclase phenocrysts (<3 mm); low angle undulating contact; crosscut by gabbro sections (approx. 10 cm wide) with strong calcite-serpentinite veins.	94				150				
18	392			100				40				
19	391			97				25				

GENERAL REMARKS:
Bedrock lithology and detailed geology logs provided by IDM. Elevations and coordinates are surveyed coordinates provided by IDM. Monitoring Well specifications provided by SRK Consulting (VA16-01091).

IDM Mining Ltd.
Red Mountain Project

Knight Piésold CONSULTING

Project No.	Ref. No.	Rev.
VA101-594/02	1	A

FIGURE B2-1

Logging conducted according to the ASTM 2488 standard and the Canadian Foundation Engineering Manual, 4th Edition, 2006.

Contractor: More Core Diamond Drilling Service Ltd.
Location: Downgradient of proposed North TMF Embankment
Coordinates: 452,283 E , 6,205,109 N
Coordinate System: UTM NAD83 Zone 9N
Hole Size HWT to 1.20 m; HQ3 to 30.80 m

Drillhole No.: MW16-001
Drill Type: B15 Diamond Drill
Total Length: 30.8 m
Elevation: 410.1 m
Azimuth, Inclination: 0 , -90

Page: 3 of 4
Date Started: Aug 18, 16
Date Completed: Aug 20, 16
Logged by: CAG/MEA
Reviewed by: JEF

DEPTH - (m)	ELEVATION - (m)	GRAPHIC LOG	MATERIAL DESCRIPTION	RUN RECOVERY (%)	SAMPLE NO.	SAMPLE REC. (%)	SAMPLE TYPE	UCS (MPa) / BLOW COUNTS (PER 6")	SPT 'N' VALUE	KEY ROCK MASS PARAMETERS / SPT TEST 'N' VALUES	INSTRUMENTATION / WELL DETAILS	DRILLING NOTES
21	389		**DIORITE** (17.72 to 30.8 m) Grey to dark grey; coarse grained with grain size increasing with depth; grenue texture; medium strong; moderately to highly fractured; fresh to slightly weathered; chlorite infill and epidote staining on joint surfaces; calcite-epidote veinlets (<1 mm thick) throughout; minor undulating upper contact with melanocrate presence at contact; mildly magnetic with well developed plagioclase phenocrysts (approx. 70% of total phenos) <2-5 mm in diameter; quartz eyes (approx. 2% of total phenos) <5 mm in diameter; fine grained chloritized mafic intrusions with hornblende laths (<0.5-1 mm in diameter).	100				25		RQD / RMR		Packer Test #3 - 17.20-23.20 m - 2E-07 m/s GWL measured after groundwater quality monitoring well installation.
22	388		**BROKEN ZONE** (20.3 to 21 m) Broken Zone within Diorite unit.	100				30				
23	387		**BROKEN ZONE** (21.78 to 21.95 m) Broken Zone within Diorite unit.	100				25				
			BROKEN ZONE (22.51 to 22.61 m) Broken Zone within Diorite unit.	100				50				
24	386			97				50				
25	385			94				50				
26	384			97				50				Packer Test #4 - 22.84-28.84 m - 2E-06 m/s
27	383			100				50				
28	382		**BROKEN ZONE** (27.62 to 27.72 m) Broken Zone within Diorite unit.	100				40				Packer Test #5 - 24.66-30.80 m - 4E-07 m/s
29	381		**BROKEN ZONE** (28.74 to 28.84 m) Broken Zone within Diorite unit.	100	UCS-02			175				

GENERAL REMARKS:

Bedrock lithology and detailed geology logs provided by IDM. Elevations and coordinates are surveyed coordinates provided by IDM. Monitoring Well specifications provided by SRK Consulting (VA16-01091).

IDM Mining Ltd.
Red Mountain Project

Knight Piésold CONSULTING

Project No.	Ref. No.	Rev.
VA101-594/02	1	A

FIGURE B2-1

Logging conducted according to the ASTM 2488 standard and the Canadian Foundation Engineering Manual, 4th Edition, 2006.

Contractor: More Core Diamond Drilling Service Ltd.
Location: Downgradient of proposed North TMF Embankment
Coordinates: 452,283 E , 6,205,109 N
Coordinate System: UTM NAD83 Zone 9N
Hole Size HWT to 1.20 m; HQ3 to 30.80 m

Drillhole No.: MW16-001
Drill Type: B15 Diamond Drill
Total Length: 30.8 m
Elevation: 410.1 m
Azimuth, Inclination: 0 , -90

Page: 4 of 4
Date Started: Aug 18, 16
Date Completed: Aug 20, 16
Logged by: CAG/MEA
Reviewed by: JEF

DEPTH - (m)	ELEVATION - (m)	GRAPHIC LOG	MATERIAL DESCRIPTION	RUN RECOVERY (%)	SAMPLE NO.	SAMPLE REC. (%)	SAMPLE TYPE	UCS (MPa) / BLOW COUNTS (PER 6")	SPT 'N' VALUE	KEY ROCK MASS PARAMETERS / SPT TEST 'N' VALUES	INSTRUMENTATION / WELL DETAILS	DRILLING NOTES
30	380			100				75		RQD, RMR; SPT TEST 'N' VALUES - 20 40 60 80		
			End of Drillhole: 30.8 m Target Depth Reached									
31	379											
32	378											
33	377											
34	376											
35	375											
36	374											
37	373											
38	372											
39	371											

GENERAL REMARKS:

Bedrock lithology and detailed geology logs provided by IDM. Elevations and coordinates are surveyed coordinates provided by IDM. Monitoring Well specifications provided by SRK Consulting (VA16-01091).

IDM Mining Ltd.
Red Mountain Project

Knight Piésold CONSULTING

Project No.	Ref. No.	Rev.
VA101-594/02	1	A

FIGURE B2-1

Logging conducted according to the ASTM 2488 standard and the Canadian Foundation Engineering Manual, 4th Edition, 2006.

Contractor: More Core Diamond Drilling Service Ltd.
Location: Downgradient of proposed South TMF Embankment
Coordinates: 452,332 E , 6,204,615 N
Coordinate System: UTM NAD83 Zone 9N
Hole Size HWT to 2.90 m; HQ3 to 32.80 m

Drillhole No.: MW16-002
Drill Type: B15 Diamond Drill
Total Length: 32.8 m
Elevation: 412.3 m
Azimuth, Inclination: 0 , -90

Page: 1 of 4
Date Started: Aug 20, 16
Date Completed: Aug 22, 16
Logged by: CAG/MEA
Reviewed by: JEF

DEPTH - (m)	ELEVATION - (m)	GRAPHIC LOG	MATERIAL DESCRIPTION	RUN RECOVERY (%)	SAMPLE NO.	SAMPLE REC. (%)	SAMPLE TYPE	UCS (MPa) / BLOW COUNTS (PER 6")	SPT 'N' VALUE	KEY ROCK MASS PARAMETERS / SPT TEST 'N' VALUES	INSTRUMENTATION / WELL DETAILS	DRILLING NOTES
0	412		**COBBLES** (0 to 2.8 m) Rounded to subrounded; uniformly graded; grey; loose; wet; finer material washed away during drilling process.	4						RQD, RMR; SPT TEST 'N' VALUES - 20 40 60 80		
1	411											
2	410											
3	409		**GABBRO** (2.8 to 13.46 m) Light grey-green; coarse grained; foliated with medium grained foliations; medium strong to strong; moderately fractured; fresh to slightly weathered; chlorite and calcite infill on most; serpentinite infill on some fractures, light green to beige in colour; slickenside observed on multiple joint surfaces; calcite veining and veinlets throughout with intense quartz-calcite veining on the hedges of the fault zone; magnetic response with coarse brown biotite and pyroxene plebs (<2 mm in diameter).	100				35				
4	408			88				50				
5	407		**BROKEN ZONE** (2.81 to 3.1 m) Broken Zone within Gabbro unit **RUBBLE ZONE** (3.1 to 3.7 m) Rubble Zone within Gabbro unit **BROKEN ZONE** (4.3 to 4.53 m) Broken Zone within Gabbro unit	100				60				
6	406			98				60				
7	405			99				50				
8	404			93				60				
9	403			100				60				Packer Test #1 - 5.40-11.20 m - 4E-06 m/s

GENERAL REMARKS:

Bedrock lithology and detailed geology logs provided by IDM. Elevations and coordinates are surveyed coordinates provided by IDM. Monitoring Well specifications provided by SRK Consulting (VA16-01091).

IDM Mining Ltd.
Red Mountain Project

Knight Piésold CONSULTING

Project No.	Ref. No.	Rev.
VA101-594/02	1	A

FIGURE B2-2

Logging conducted according to the ASTM 2488 standard and the Canadian Foundation Engineering Manual, 4th Edition, 2006.

Contractor: More Core Diamond Drilling Service Ltd.
Location: Downgradient of proposed South TMF Embankment
Coordinates: 452,332 E , 6,204,615 N
Coordinate System: UTM NAD83 Zone 9N
Hole Size HWT to 2.90 m; HQ3 to 32.80 m

Drillhole No.: MW16-002
Drill Type: B15 Diamond Drill
Total Length: 32.8 m
Elevation: 412.3 m
Azimuth, Inclination: 0 , -90

Page: 2 of 4
Date Started: Aug 20, 16
Date Completed: Aug 22, 16
Logged by: CAG/MEA
Reviewed by: JEF

DEPTH - (m)	ELEVATION - (m)	GRAPHIC LOG	MATERIAL DESCRIPTION	RUN RECOVERY (%)	SAMPLE NO.	SAMPLE REC. (%)	SAMPLE TYPE	UCS (MPa) / BLOW COUNTS (PER 6")	SPT 'N' VALUE	KEY ROCK MASS PARAMETERS / SPT TEST 'N' VALUES	INSTRUMENTATION / WELL DETAILS	DRILLING NOTES
10	402		**GABBRO** (2.8 to 13.46 m) Light grey-green; coarse grained; foliated with medium grained foliations; medium strong to strong; moderately fractured; fresh to slightly weathered; chlorite and calcite infill on most; serpentinite infill on some fractures, light green to beige in colour; slickenside observed on multiple joint surfaces; calcite veining and veinlets throughout with intense quartz-calcite veining on the hedges of the fault zone; magnetic response with coarse brown biotite and pyroxene plebs (<2 mm in diameter).	100	UCS-01			60		RQD / RMR / SPT 'N' (20 40 60 80)		
11	401			90				60				
12	400			79				35				Groundwater Level measured during Pressure Transducer Installation.
13	399			87				70				
14	398		**FAULT ZONE** (13.46 to 15.83 m) Fault Zone within Gabbro unit	97				5				
				90				5				
				90				5				Packer Test #2 - 11.16-17.20 m - 7E-07 m/s
15	397			98				35				
16	396		**GABBRO** (15.83 to 32.8 m) Light grey-green; coarse grained; medium grained foliations; medium strong; slightly to moderately fractured; fresh to slightly weathered; chlorite and calcite infill on most joints; serpentinite infill on some fractures, light green to beige in colour; trace iron oxide staining on some joint surfaces; slickenside observed on multiple joint surfaces; calcite veining and veinlets throughout with intense quartz-calcite veining on the hedges of the fault zone; magnetic response with coarse brown biotite and pyroxene plebs (<2 mm in diameter).	97				35				
17	395			100				35				
18	394											Mini-Diver Pressure Transducer - S/N: SNV1160 - Installation Depth: 18.24 mbgs
19	393			100				35				

GENERAL REMARKS:

Bedrock lithology and detailed geology logs provided by IDM. Elevations and coordinates are surveyed coordinates provided by IDM. Monitoring Well specifications provided by SRK Consulting (VA16-01091).

IDM Mining Ltd.
Red Mountain Project

Knight Piésold CONSULTING

Project No.	Ref. No.	Rev.
VA101-594/02	1	A

FIGURE B2-2

Logging conducted according to the ASTM 2488 standard and the Canadian Foundation Engineering Manual, 4th Edition, 2006.

Contractor: More Core Diamond Drilling Service Ltd.
Location: Downgradient of proposed South TMF Embankment
Coordinates: 452,332 E , 6,204,615 N
Coordinate System: UTM NAD83 Zone 9N
Hole Size HWT to 2.90 m; HQ3 to 32.80 m

Drillhole No.: MW16-002
Drill Type: B15 Diamond Drill
Total Length: 32.8 m
Elevation: 412.3 m
Azimuth, Inclination: 0 , -90

Page: 3 of 4
Date Started: Aug 20, 16
Date Completed: Aug 22, 16
Logged by: CAG/MEA
Reviewed by: JEF

DEPTH - (m)	ELEVATION - (m)	GRAPHIC LOG	MATERIAL DESCRIPTION	RUN RECOVERY (%)	SAMPLE NO.	SAMPLE REC. (%)	SAMPLE TYPE	UCS (MPa) / BLOW COUNTS (PER 6")	SPT 'N' VALUE	KEY ROCK MASS PARAMETERS / SPT TEST 'N' VALUES	INSTRUMENTATION / WELL DETAILS	DRILLING NOTES
21	392		**GABBRO** (15.83 to 32.8 m) Light grey-green; coarse grained; medium grained foliations; medium strong; slightly to moderately fractured; fresh to slightly weathered; chlorite and calcite infill on most joints; serpentinite infill on some fractures, light green to beige in colour; trace iron oxide staining on some joint surfaces; slickenside observed on multiple joint surfaces; calcite veining and veinlets throughout with intense quartz-calcite veining on the hedges of the fault zone; magnetic response with coarse brown biotite and pyroxene plebs (<2 mm in diameter).	100				35		RQD / RMR; SPT TEST 'N' VALUES - 20 40 60 80		Packer Test #3 - 17.05-23.05 m - No Take
22	391			100				35				
23	390			95				35				
24	389			100				35				
25	388			99				35				Packer Test #4 - 22.90-28.90 m - No Take
26	387			100				35				
27	386			97				35				
28	385											
29	384											
	383											

GENERAL REMARKS:
Bedrock lithology and detailed geology logs provided by IDM. Elevations and coordinates are surveyed coordinates provided by IDM. Monitoring Well specifications provided by SRK Consulting (VA16-01091).

IDM Mining Ltd.
Red Mountain Project

Knight Piésold CONSULTING

Project No.	Ref. No.	Rev.
VA101-594/02	1	A

FIGURE B2-2

Logging conducted according to the ASTM 2488 standard and the Canadian Foundation Engineering Manual, 4th Edition, 2006.

Contractor: More Core Diamond Drilling Service Ltd.
Location: Downgradient of proposed South TMF Embankment
Coordinates: 452,332 E , 6,204,615 N
Coordinate System: UTM NAD83 Zone 9N
Hole Size HWT to 2.90 m; HQ3 to 32.80 m

Drillhole No.: MW16-002
Drill Type: B15 Diamond Drill
Total Length: 32.8 m
Elevation: 412.3 m
Azimuth, Inclination: 0 , -90

Page: 4 of 4
Date Started: Aug 20, 16
Date Completed: Aug 22, 16
Logged by: CAG/MEA
Reviewed by: JEF

DEPTH - (m)	ELEVATION - (m)	GRAPHIC LOG	MATERIAL DESCRIPTION	RUN RECOVERY (%)	SAMPLE NO.	SAMPLE REC. (%)	SAMPLE TYPE	UCS (MPa) / BLOW COUNTS (PER 6")	SPT 'N' VALUE	KEY ROCK MASS PARAMETERS / SPT TEST 'N' VALUES	INSTRUMENTATION / WELL DETAILS	DRILLING NOTES
31	382		**GABBRO** (15.83 to 32.8 m) Light grey-green; coarse grained; medium grained foliations; medium strong; slightly to moderately fractured; fresh to slightly weathered; chlorite and calcite infill on most joints; serpentinite infill on some fractures, light green to beige in colour; trace iron oxide staining on some joint surfaces; slickenside observed on multiple joint surfaces; calcite veining and veinlets throughout with intense quartz-calcite veining on the hedges of the fault zone; magnetic response with coarse brown biotite and pyroxene plebs (<2 mm in diameter).	100	UCS-02			35		RQD / RMR; SPT TEST 'N' VALUES - 20 40 60 80		Packer Test #5 - 28.75-32.80 m - No Take
32	381											
33	380			100				35				
34	379		End of Drillhole: 32.8 m Target Depth Reached									
35	378											
36	377											
37	376											
38	375											
39	374											
	373											

GENERAL REMARKS:
Bedrock lithology and detailed geology logs provided by IDM. Elevations and coordinates are surveyed coordinates provided by IDM. Monitoring Well specifications provided by SRK Consulting (VA16-01091).

IDM Mining Ltd.
Red Mountain Project

Knight Piésold CONSULTING

Project No.	Ref. No.	Rev.
VA101-594/02	1	A

FIGURE B2-2

Logging conducted according to the ASTM 2488 standard and the Canadian Foundation Engineering Manual, 4th Edition, 2006.

Contractor: More Core Diamond Drilling Service Ltd.
Location: Downgradient of proposed South TMF Embankment
Coordinates: 452,415 E , 6,204,434 N
Coordinate System: UTM NAD83 Zone 9N
Hole Size HWT to 1.34 m; HQ3 to 31.22 m

Drillhole No.: MW16-003
Drill Type: B15 Diamond Drill
Total Length: 31.2 m
Elevation: 426.3 m
Azimuth, Inclination: 0 , -90

Page: 1 of 4
Date Started: Aug 22, 16
Date Completed: Aug 23, 16
Logged by: CAG/MEA
Reviewed by: JEF

DEPTH - (m)	ELEVATION - (m)	GRAPHIC LOG	MATERIAL DESCRIPTION	RUN RECOVERY (%)	SAMPLE NO.	SAMPLE REC. (%)	SAMPLE TYPE	UCS (MPa) / BLOW COUNTS (PER 6")	SPT 'N' VALUE	KEY ROCK MASS PARAMETERS / SPT TEST 'N' VALUES	INSTRUMENTATION / WELL DETAILS	DRILLING NOTES
0	426		**FOREST DUFF/TOPSOIL** (0 to 0.1 m) Spongy; organics; some gravel, fine to coarse grained, subangular to subrounded; some sand, fine to coarse grained; some silt; visible rootlets; dark brown; moist. From SPT recovery.	0	SPT-01	33		25/50/36	86			
					SPT-02	83		39/50+	R			
1	425		**SILTY GRAVEL** (0.1 to 0.2 m) Coarse, subangular to subrounded; some sand, fine to coarse grained; grey; dense; wet. From SPT recovery.	67								
				100	GS-01	18	G B	5				
2	424		**COBBLES** (0.2 to 0.61 m) Subangular to subrounded; uniformly graded; mottled grey and brown; loose; wet; finer material washed away through drilling process.	97				5				
				90				5				
3	423		**SILTY SANDY GRAVEL** (0.61 to 0.81 m) Medium to coarse, getting coarser with depth, subangular to subrounded; fine to medium grained sand; trace clay; well graded; grey; very dense; wet. From SPT recovery.	95				15				
				100				25				
4	422		**COBBLES** (0.81 to 1.22 m) Subangular to subrounded; uniformly graded; mottled grey and brown; loose; wet; finer material washed away through drilling process.		UCS-01							
			GREYWACKE (1.22 to 2.96 m) Grey; coarse grained and fine grained; bedded; weak; completely rubbleized; highly weathered; chlorite and iron oxide staining on rubble fragments; chlorite matrix; calcite veins and alteration; possible intrusions of dyke.	100				15				
5	421				UCS-02							
6	420		**DYKE** (2.96 to 4.9 m) Light tan; fine grained; massive; medium strong; moderately fractured; fresh to slightly weathered; chlorite and calcite infill; calcite micro-veining; 1-2 mm diameter phenocrysts; shreddy looking brown biotite; sericite alteration.	100				5				
7	419		**GREYWACKE** (4.9 to 7.47 m) Grey; fine grained, equigranular; finely bedded; weak; intensely fractured; fresh to slightly weathered; 1-2mm thick quartz-calcite veinlets cross-cutting the bedding; bedded at low angle to core axis. **RUBBLE ZONE** (5.48 to 5.57 m) Rubble Zone within Greywacke unit	98				15				
8	418		**CONGLOMERATES** (7.47 to 11.75 m) Grey to dark grey; fine to medium grained; foliated; strong; highly fractured; fresh; pyrite infill on some joints; white and black clasts up to 4cm in diameter; mostly clast supported; stretched look to clasts and are all oriented in same direction; becoming more sand rich with depth; patchy pyrite (possibly clast related); chert and argillite clasts present.	99				60				Packer Test #1 - 5.23-11.37 m - No Take
9	417											

KEY ROCK MASS PARAMETERS: RQD, RMR
SPT TEST 'N' VALUES - 20 40 60 80

GENERAL REMARKS:

Bedrock lithology and detailed geology logs provided by IDM. Elevations and coordinates are surveyed coordinates provided by IDM. Monitoring Well specifications provided by SRK Consulting (VA16-01091).

IDM Mining Ltd.
Red Mountain Project

Knight Piésold CONSULTING

Project No.	Ref. No.	Rev.
VA101-594/02	1	A

FIGURE B2-3

Logging conducted according to the ASTM 2488 standard and the Canadian Foundation Engineering Manual, 4th Edition, 2006.

Contractor: More Core Diamond Drilling Service Ltd.
Location: Downgradient of proposed South TMF Embankment
Coordinates: 452,415 E , 6,204,434 N
Coordinate System: UTM NAD83 Zone 9N
Hole Size HWT to 1.34 m; HQ3 to 31.22 m

Drillhole No.: MW16-003
Drill Type: B15 Diamond Drill
Total Length: 31.2 m
Elevation: 426.3 m
Azimuth, Inclination: 0 , -90

Date Started: Aug 22, 16
Date Completed: Aug 23, 16
Logged by: CAG/MEA
Reviewed by: JEF

DEPTH - (m)	ELEVATION - (m)	GRAPHIC LOG	MATERIAL DESCRIPTION	RUN RECOVERY (%)	SAMPLE NO.	SAMPLE REC. (%)	SAMPLE TYPE	UCS (MPa) / BLOW COUNTS (PER 6")	SPT 'N' VALUE	KEY ROCK MASS PARAMETERS / SPT TEST 'N' VALUES	INSTRUMENTATION / WELL DETAILS	DRILLING NOTES
10	416		**CONGLOMERATES** (7.47 to 11.75 m) Grey to dark grey; fine to medium grained; foliated; strong; highly fractured; fresh; pyrite infill on some joints; white and black clasts up to 4cm in diameter; mostly clast supported; stretched look to clasts and are all oriented in same direction; becoming more sand rich with depth; patchy pyrite (possibly clast related); chert and argillite clasts present.	100				60				
11	415			98				60				
12	414		**GREYWACKE** (11.75 to 25.25 m) Grey; fine grained; finely bedded; strong to medium strong; highly fractured; fresh; trace iron oxide staining on joint surfaces; trace calcite and pyrite infill; trace 1-2 mm thick quartz-calcite veinlets cross-cutting the bedding; microfaults offsetting bedding by a few mm.	85				50				
13	413			100				35				
14	412											Packer Test #2 - 11.06-17.18 m - 4E-08 m/s
15	411		**BROKEN ZONE** (14.87 to 14.97 m) Broken Zone within Greywacke unit.	100				75				
			BROKEN ZONE (15.47 to 15.87 m) Broken Zone within Greywacke unit.	93				25				
16	410			100				75				
17	409			94				75				
18	408			100				50				
19	407			100				25				
				94				50				

GENERAL REMARKS:
Bedrock lithology and detailed geology logs provided by IDM. Elevations and coordinates are surveyed coordinates provided by IDM. Monitoring Well specifications provided by SRK Consulting (VA16-01091).

IDM Mining Ltd.
Red Mountain Project

Knight Piésold CONSULTING

Project No.	Ref. No.	Rev.
VA101-594/02	1	A

FIGURE B2-3

Logging conducted according to the ASTM 2488 standard and the Canadian Foundation Engineering Manual, 4th Edition, 2006.

Contractor: More Core Diamond Drilling Service Ltd.
Location: Downgradient of proposed South TMF Embankment
Coordinates: 452,415 E , 6,204,434 N
Coordinate System: UTM NAD83 Zone 9N
Hole Size HWT to 1.34 m; HQ3 to 31.22 m

Drillhole No.: MW16-003
Drill Type: B15 Diamond Drill
Total Length: 31.2 m
Elevation: 426.3 m
Azimuth, Inclination: 0 , -90

Page: 3 of 4
Date Started: Aug 22, 16
Date Completed: Aug 23, 16
Logged by: CAG/MEA
Reviewed by: JEF

DEPTH - (m)	ELEVATION - (m)	GRAPHIC LOG	MATERIAL DESCRIPTION	RUN RECOVERY (%)	SAMPLE NO.	SAMPLE REC. (%)	SAMPLE TYPE	UCS (MPa) / BLOW COUNTS (PER 6")	SPT 'N' VALUE	KEY ROCK MASS PARAMETERS / SPT TEST 'N' VALUES	INSTRUMENTATION / WELL DETAILS	DRILLING NOTES
20	406		**GREYWACKE** (11.75 to 25.25 m) Grey; fine grained; finely bedded; strong to medium strong; highly fractured; fresh; trace iron oxide staining on joint surfaces; trace calcite and pyrite infill; trace 1-2 mm thick quartz-calcite veinlets cross-cutting the bedding; microfaults offsetting bedding by a few mm.	100				35		RQD / RMR / 20 40 60 80		Packer Test #3 - 17.06-23.29 m - 4E-08 m/s
21	405			100				45				
22	404			96				60				
23	403		**BROKEN ZONE** (23.29 to 23.39 m) Broken Zone within Greywacke unit.	91				60				
24	402		**BROKEN ZONE** (24.09 to 24.19 m) Broken Zone within Greywacke unit.	97				45				
25	401		**DYKE** (25.25 to 27.07 m) Light tan; fine grained; porphyritic; strong; highly fractured; fresh to slightly weathered; mainly fresh joint surfaces with iron oxide staining on some joint surfaces; trace quartz veinlets; some grey veinlets cross-cutting core axis; 1-2 mm phenocrysts; shreddy looking brown biotite; sericite alteration.	90				35				
26	400			99				25				Packer Test #4 - 21.79-27.79 m - 1E-07 m/s
27	399		**GREYWACKE** (27.07 to 31.22 m) Grey; fine grained, equigranular; finely bedded; weak to medium strong; highly to intensely fractured; moderately to slightly weathered; chlorite and calcite infill; iron oxide staining on joint surfaces; calcite veining (~5 mm thick); becoming lighter grey towards bottom of hole.	100				70				
28	398		**BROKEN/RUBBLE ZONE** (27.79 to 29.97 m) Broken & Rubble Zone within Greywacke unit.	100				70				Groundwater Level measured during Pressure Transducer installation.
29	397			93				15				
				97				15				
				100				15				
				100				5				
				100				15				Packer Test #5 - 26.95-31.22 m - 7E-08 m/s
				100				10				Mini-Diver Pressure

GENERAL REMARKS:

Bedrock lithology and detailed geology logs provided by IDM. Elevations and coordinates are surveyed coordinates provided by IDM. Monitoring Well specifications provided by SRK Consulting (VA16-01091).

IDM Mining Ltd.
Red Mountain Project

Knight Piésold CONSULTING

Project No.	Ref. No.	Rev.
VA101-594/02	1	A

FIGURE B2-3

Logging conducted according to the ASTM 2488 standard and the Canadian Foundation Engineering Manual, 4th Edition, 2006.

Contractor: More Core Diamond Drilling Service Ltd.
Location: Downgradient of proposed South TMF Embankment
Coordinates: 452,415 E , 6,204,434 N
Coordinate System: UTM NAD83 Zone 9N
Hole Size HWT to 1.34 m; HQ3 to 31.22 m

Drillhole No.: MW16-003
Drill Type: B15 Diamond Drill
Total Length: 31.2 m
Elevation: 426.3 m
Azimuth, Inclination: 0 , -90

Page: 4 of 4
Date Started: Aug 22, 16
Date Completed: Aug 23, 16
Logged by: CAG/MEA
Reviewed by: JEF

DEPTH - (m)	ELEVATION - (m)	GRAPHIC LOG	MATERIAL DESCRIPTION	RUN RECOVERY (%)	SAMPLE NO.	SAMPLE REC. (%)	SAMPLE TYPE	UCS (MPa) / BLOW COUNTS (PER 6")	SPT 'N' VALUE	KEY ROCK MASS PARAMETERS / SPT TEST 'N' VALUES	INSTRUMENTATION / WELL DETAILS	DRILLING NOTES
31	396			100				25		RQD, RMR; SPT 'N' 20 40 60 80	Transducer - S/N: SNV1143 - Installation Depth: 29.78 mbgs	
				100				25				
	395		End of Drillhole: 31.22 m Target Depth Reached									
32	394											
33	393											
34	392											
35	391											
36	390											
37	389											
38	388											
39	387											

GENERAL REMARKS:
Bedrock lithology and detailed geology logs provided by IDM. Elevations and coordinates are surveyed coordinates provided by IDM. Monitoring Well specifications provided by SRK Consulting (VA16-01091).

IDM Mining Ltd.
Red Mountain Project

Knight Piésold CONSULTING

Project No.	Ref. No.	Rev.
VA101-594/02	1	A

FIGURE B2-3

Logging conducted according to the ASTM 2488 standard and the Canadian Foundation Engineering Manual, 4th Edition, 2006.

Contractor: More Core Diamond Drilling Service Ltd.
Location: Downgradient of proposed North TMF Embankment
Coordinates: 452,281 E , 6,205,112 N
Coordinate System: UTM NAD83 Zone 9N
Hole Size HWT to 1.41 m; HQ3 to 45.60 m

Drillhole No.: MW16-004
Drill Type: B15 Diamond Drill
Total Length: 45.6 m
Elevation: 410.0 m
Azimuth, Inclination: 0 , -90

Page: 1 of 5
Date Started: Aug 31, 16
Date Completed: Sep 2, 16
Logged by: CAG/MEA
Reviewed by: JEF

DEPTH - (m)	ELEVATION - (m)	GRAPHIC LOG	MATERIAL DESCRIPTION	RUN RECOVERY (%)	SAMPLE NO.	SAMPLE REC. (%)	SAMPLE TYPE	UCS (MPa) / BLOW COUNTS (PER 6")	SPT 'N' VALUE	KEY ROCK MASS PARAMETERS / SPT TEST 'N' VALUES	INSTRUMENTATION / WELL DETAILS	DRILLING NOTES
0			**BOULDER** (0 to 0.41 m) Rounded; uniformly graded; hard; moist; boulder is greenish grey; fine to medium grained; highly weathered; calcite and biotite phenocrysts; calcite and chlorite infill on fracture surfaces.	100	GS-01	100	G B			RQD, RMR; SPT TEST 'N' VALUES - 20 40 60 80		
				61	GS-02	100	G B					
				100	GS-03	100	G B					
1	409		**BOULDERS & COBBLES** (0.41 to 1.49 m) Rounded; some gravel, coarse, angular to subangular; poorly graded; mottled greenish grey; loose; moist; iron oxide staining on fracture surfaces in boulder; finer materials washed out during drilling process.	22	GS-04	100	G B					
				100				25				
2	408		**GABBRO** (1.49 to 3.59 m) Light grey-green; medium grained; massive; weak to medium strong; highly fractured; moderately weathered; calcite, chlorite and graphite infill; manganese oxide and iron oxide staining on joint surfaces; calcite veins; magnetic response with coarse brown biotite and pyroxene plebs (<2 mm in diameter); biotite, hornblende and plagioclase phenocrysts.									Mini Baro-Diver Pressure Transducer - S/N: SNU8507 - Installation Depth: 1.97 mbgs
				100				15				
3	407		**BROKEN ZONE** (3.11 to 3.36 m) Broken Zone within Gabbro unit									
				100				20				
4	406		**GOLDSLIDE PORPHYRY SUITE** (3.59 to 4.95 m) Light green; medium grained; massive; weak; highly to intensely fractured; slightly weathered; chlorite and biotite infill; some calcite veins; biotite and hornblende phenocrysts, 1-3 mm in diameter; some plagioclase phenocrysts, 1-2 mm in diameter.		UCS-01							
				100				15				
5	405		**GABBRO** (4.95 to 6.29 m) Light grey-green; medium grained; massive; weak; moderately to highly fractured; slightly weathered; calcite and chlorite infill; iron oxide staining on joint surfaces; calcite veins; chlorite matrix; magnetic response with coarse brown biotite and pyroxene plebs (<2 mm in diameter); biotite, hornblende and plagioclase phenocrysts.		UCS-02							Zone of Lost Circulation - 5.05-5.78 m
				100				20				
6	404		**GOLDSLIDE PORPHYRY SUITE** (6.29 to 7.88 m) Light green; medium grained; massive; weak to medium strong; moderately to highly fractured; slightly weathered; chlorite, calcite and pyrite infill; iron oxide & manganese oxide staining on joint surfaces; calcite veining; trace quartz-calcite veins cross-cutting core axis; hornblende phenocrysts, 1-3 mm in diameter; some plagioclase phenocrysts, 1-2 mm in diameter.		UCS-03							
				100				35				
7	403		**BROKEN ZONE** (8.18 to 8.73 m) Broken Zone within Gabbro unit									
				100				15				
8	402		**BROKEN ZONE** (9.18 to 9.53 m) Broken Zone within Gabbro unit									Groundwater Level measured during Pressure Transducer installation.
				100				15				
9	401											

GENERAL REMARKS:

Bedrock lithology and detailed geology logs provided by IDM. Elevations and coordinates are surveyed coordinates provided by IDM. Monitoring Well specifications provided by SRK Consulting (VA16-01091).

IDM Mining Ltd.
Red Mountain Project

Knight Piésold CONSULTING

Project No.	Ref. No.	Rev.
VA101-594/02	1	A

FIGURE B2-4

Logging conducted according to the ASTM 2488 standard and the Canadian Foundation Engineering Manual, 4th Edition, 2006.

Contractor: More Core Diamond Drilling Service Ltd.
Location: Downgradient of proposed North TMF Embankment
Coordinates: 452,281 E , 6,205,112 N
Coordinate System: UTM NAD83 Zone 9N
Hole Size HWT to 1.41 m; HQ3 to 45.60 m

Drillhole No.: MW16-004
Drill Type: B15 Diamond Drill
Total Length: 45.6 m
Elevation: 410.0 m
Azimuth, Inclination: 0 , -90

Date Started: Aug 31, 16
Date Completed: Sep 2, 16
Logged by: CAG/MEA
Reviewed by: JEF

DEPTH - (m)	ELEVATION - (m)	GRAPHIC LOG	MATERIAL DESCRIPTION	RUN RECOVERY (%)	SAMPLE NO.	SAMPLE REC. (%)	SAMPLE TYPE	UCS (MPa) / BLOW COUNTS (PER 6")	SPT 'N' VALUE	KEY ROCK MASS PARAMETERS / SPT TEST 'N' VALUES	INSTRUMENTATION / WELL DETAILS	DRILLING NOTES
11	399		**GABBRO** (7.88 to 18.65 m) Light grey-green; medium grained; massive; weak to strong; moderately to highly fractured; slightly to moderately weathered; chlorite and biotite infill; quartz veinlets; magnetic response with coarse brown biotite and pyroxene plebs (<2 mm in diameter); biotite, hornblende and plagioclase phenocrysts; lower contact marked by fibrous serpentine vein, approx. 5 cm thick. **BROKEN ZONE** (10.48 to 10.69 m) Broken Zone within Gabbro unit	100				15		RQD / RMR; SPT TEST 'N' VALUES - 20 40 60 80		
12	398			100				60				
13	397			100				50				
14	396			100				25				
15	395			100				15				
16	394			100				25				
17	393			100				25				
18	392			100				15				
19	391			100				50				
				100				35				
				100	UCS-04			35				Mini-Diver Pressure Transducer - S/N: SNV1159 - Installation Depth: 14.47 mbgs

GENERAL REMARKS:
Bedrock lithology and detailed geology logs provided by IDM. Elevations and coordinates are surveyed coordinates provided by IDM. Monitoring Well specifications provided by SRK Consulting (VA16-01091).

IDM Mining Ltd.
Red Mountain Project

Knight Piésold CONSULTING

Project No.	Ref. No.	Rev.
VA101-594/02	1	A

FIGURE B2-4

Logging conducted according to the ASTM 2488 standard and the Canadian Foundation Engineering Manual, 4th Edition, 2006.

Contractor: More Core Diamond Drilling Service Ltd.
Location: Downgradient of proposed North TMF Embankment
Coordinates: 452,281 E , 6,205,112 N
Coordinate System: UTM NAD83 Zone 9N
Hole Size HWT to 1.41 m; HQ3 to 45.60 m

Drillhole No.: MW16-004
Drill Type: B15 Diamond Drill
Total Length: 45.6 m
Elevation: 410.0 m
Azimuth, Inclination: 0 , -90

Page: 3 of 5
Date Started: Aug 31, 16
Date Completed: Sep 2, 16
Logged by: CAG/MEA
Reviewed by: JEF

DEPTH - (m)	ELEVATION - (m)	GRAPHIC LOG	MATERIAL DESCRIPTION	RUN RECOVERY (%)	SAMPLE NO.	SAMPLE REC. (%)	SAMPLE TYPE	UCS (MPa) / BLOW COUNTS (PER 6")	SPT 'N' VALUE	KEY ROCK MASS PARAMETERS / SPT TEST 'N' VALUES	INSTRUMENTATION / WELL DETAILS	DRILLING NOTES
21	389		**DIORITE** (18.65 to 30 m) Green-grey; medium grained; massive and phaneritic; medium strong to strong; moderately to highly fractured; fresh; sericite infill; trace weak iron oxide staining on joint surfaces; trace quartz-epidote veinlets; bladed hornblende phenocrysts, ~1 mm in diameter; feldspar phenocrysts, 1-3 mm in diameter.	100				5		RQD / RMR		
22	388		**BROKEN ZONE** (20.1 to 20.75 m) Broken Zone within Diorite unit	100				45				
23	387			100				50				
24	386			100				50				
25	385			100				75				
26	384			100				75				
27	383			100				100				
28	382			100				100				
29	381			100				50				

KEY ROCK MASS PARAMETERS: RQD, RMR
SPT TEST 'N' VALUES - 20 40 60 80

GENERAL REMARKS:
Bedrock lithology and detailed geology logs provided by IDM. Elevations and coordinates are surveyed coordinates provided by IDM. Monitoring Well specifications provided by SRK Consulting (VA16-01091).

IDM Mining Ltd.
Red Mountain Project

Knight Piésold CONSULTING

Project No.	Ref. No.	Rev.
VA101-594/02	1	A

FIGURE B2-4

Logging conducted according to the ASTM 2488 standard and the Canadian Foundation Engineering Manual, 4th Edition, 2006.

File:M:\1\01\00594\02\A\DATA\300 - SITE INVESTIGATION PROGRAM\GINT\PROJECTS\RED MOUNTAIN 2016 GEOTECHNICAL SI.GPJ
Library: M:\1\01\00594\02\A\DATA\300 - SITE INVESTIGATION PROGRAM\GINT\LIBRARY\2016 KP CANADA GINT LIBRARY - REV A.GLB, GEOTECHNICAL DRILLHOLE LOG, 2016 KP CANADA GINT DATA TEMPLATE (RMR INPUT) - REV A.GDT, Dec 9, 16

Contractor: More Core Diamond Drilling Service Ltd.
Location: Downgradient of proposed North TMF Embankment
Coordinates: 452,281 E , 6,205,112 N
Coordinate System: UTM NAD83 Zone 9N
Hole Size HWT to 1.41 m; HQ3 to 45.60 m

Drillhole No.: MW16-004
Drill Type: B15 Diamond Drill
Total Length: 45.6 m
Elevation: 410.0 m
Azimuth, Inclination: 0 , -90

Date Started: Aug 31, 16
Date Completed: Sep 2, 16
Logged by: CAG/MEA
Reviewed by: JEF

DEPTH - (m)	ELEVATION - (m)	GRAPHIC LOG	MATERIAL DESCRIPTION	RUN RECOVERY (%)	SAMPLE NO.	SAMPLE REC. (%)	SAMPLE TYPE	UCS (MPa) / BLOW COUNTS (PER 6")	SPT 'N' VALUE	KEY ROCK MASS PARAMETERS / SPT TEST 'N' VALUES	INSTRUMENTATION / WELL DETAILS	DRILLING NOTES
31	379		**GABBRO** (30 to 45.6 m) Light grey-green; medium grained; massive; medium strong to strong; highly fractured; slightly weathered; some chlorite & calcite infill; trace iron oxide and manganese oxide staining on some joint surfaces; several serpentine veins, 10-20 mm thick; chlorite matrix; magnetic response with coarse brown biotite and pyroxene plebs (<2 mm in diameter); biotite, hornblende and plagioclase phenocrysts; intrusive dykes at 40 m and 42 m depth.	100				60		RQD, RMR; SPT TEST 'N' VALUES - 20 40 60 80		
32	378			100				35				
33	377		**BROKEN ZONE** (32.78 to 33.09 m) Broken Zone within Gabbro unit	100				35				
				100				35				Packer Test #1 - 30.52-36.52 m - 6E-07 m/s
34	376		**BROKEN ZONE** (33.92 to 37.02 m) Broken Zone within Gabbro unit	100				35				
				100				15				
35	375			100				5				
36	374			100				5				
37	373			100				3				Packer Test #2 - 34.31-40.45 m - No Take
38	372			100				5				
39	371			100	UCS-05			45				

GENERAL REMARKS:
Bedrock lithology and detailed geology logs provided by IDM. Elevations and coordinates are surveyed coordinates provided by IDM. Monitoring Well specifications provided by SRK Consulting (VA16-01091).

IDM Mining Ltd.
Red Mountain Project

Knight Piésold CONSULTING

Project No.	Ref. No.	Rev.
VA101-594/02	1	A

FIGURE B2-4

Logging conducted according to the ASTM 2488 standard and the Canadian Foundation Engineering Manual, 4th Edition, 2006.

Contractor: More Core Diamond Drilling Service Ltd.
Location: Downgradient of proposed North TMF Embankment
Coordinates: 452,281 E , 6,205,112 N
Coordinate System: UTM NAD83 Zone 9N
Hole Size HWT to 1.41 m; HQ3 to 45.60 m

Drillhole No.: MW16-004
Drill Type: B15 Diamond Drill
Total Length: 45.6 m
Elevation: 410.0 m
Azimuth, Inclination: 0 , -90

Page: 5 of 5
Date Started: Aug 31, 16
Date Completed: Sep 2, 16
Logged by: CAG/MEA
Reviewed by: JEF

DEPTH - (m)	ELEVATION - (m)	GRAPHIC LOG	MATERIAL DESCRIPTION	RUN RECOVERY (%)	SAMPLE NO.	SAMPLE REC. (%)	SAMPLE TYPE	UCS (MPa) / BLOW COUNTS (PER 6")	SPT 'N' VALUE	KEY ROCK MASS PARAMETERS / SPT TEST 'N' VALUES	INSTRUMENTATION / WELL DETAILS	DRILLING NOTES
41	369		**GABBRO** (30 to 45.6 m) Light grey-green; medium grained; massive; medium strong to strong; highly fractured; slightly weathered; some chlorite & calcite infill; trace iron oxide and manganese oxide staining on some joint surfaces; several serpentine veins, 10-20 mm thick; chlorite matrix; magnetic response with coarse brown biotite and pyroxene plebs (<2 mm in diameter); biotite, hornblende and plagioclase phenocrysts; intrusive dykes at 40 m and 42 m depth.	100				45		RQD / RMR; SPT TEST 'N' VALUES - 20 40 60 80		
42	368			100				60				Packer Test #3 - 39.46-45.60 m - No Take
43	367											
44	366			100				50				
45	365			100				50				
46	364		End of Drillhole: 45.6 m Target Depth Reached									
47	363											
48	362											
49	361											

GENERAL REMARKS:
Bedrock lithology and detailed geology logs provided by IDM. Elevations and coordinates are surveyed coordinates provided by IDM. Monitoring Well specifications provided by SRK Consulting (VA16-01091).

IDM Mining Ltd.
Red Mountain Project

Knight Piésold CONSULTING

Project No.	Ref. No.	Rev.
VA101-594/02	1	A

FIGURE B2-4

Logging conducted according to the ASTM 2488 standard and the Canadian Foundation Engineering Manual, 4th Edition, 2006.

Contractor: N/A
Location: North TMF Embankment - Upstream Toe
Coordinates: 452,429 E , 6,204,937 N
Coordinate System: UTM NAD83 Zone 9N
Hole Size BW to 1.50 m; BQ to 82.30 m

Drillhole No.: DT-273
Drill Type: N/A
Total Length: 82.3 m
Elevation: 436.3 m
Azimuth, Inclination: 0 , -90

Page: 1 of 9
Date Started: Jul 30, 96
Date Completed: Aug 30, 96
Logged by: JBC
Reviewed by: JEF

DEPTH - (m)	ELEVATION - (m)	GRAPHIC LOG	MATERIAL DESCRIPTION	RUN RECOVERY (%)	SAMPLE NO.	SAMPLE REC. (%)	SAMPLE TYPE	UCS (MPa) / BLOW COUNTS (PER 6")	SPT 'N' VALUE	KEY ROCK MASS PARAMETERS / SPT TEST 'N' VALUES	INSTRUMENTATION / WELL DETAILS	DRILLING NOTES
0	436		**OVERBURDEN** (0 to 0.29 m) Inferred overburden from adjacent drillholes.									
			GOLDSLIDE PORPHYRY SUITE (0.29 to 13.26 m) Light grey to pale white; medium to coarse grained; porphyritic, massive; strong; moderately fractured; fresh to slightly weathered; chlorite and calcite infill; iron oxide staining on joint surfaces; 2-3 mm diameter phenocrysts with 1 mm hornblende laths; chlorite altering mafics.	97				50				
3	433			92				50				
6	430			100				60				
9	427											

RQD
RMR
SPT TEST 'N' VALUES - 20 40 60 80

GENERAL REMARKS:

Elevations and coordinates are surveyed coordinates provided by IDM. Relog of historic drillhole from 1996 geotechnical site investigation program. Lithological units inferred from adjacent drillholes and similar descriptions.

IDM Mining Ltd.
Red Mountain Project

Knight Piésold CONSULTING

Project No.	Ref. No.	Rev.
VA101-594/02	1	A

FIGURE B3-1

Logging conducted according to the ASTM 2488 standard and the Canadian Foundation Engineering Manual, 4th Edition, 2006.

Contractor: N/A
Location: North TMF Embankment - Upstream Toe
Coordinates: 452,429 E , 6,204,937 N
Coordinate System: UTM NAD83 Zone 9N
Hole Size BW to 1.50 m; BQ to 82.30 m

Drillhole No.: DT-273
Drill Type: N/A
Total Length: 82.3 m
Elevation: 436.3 m
Azimuth, Inclination: 0 , -90

Page: 2 of 9
Date Started: Jul 30, 96
Date Completed: Aug 30, 96
Logged by: JBC
Reviewed by: JEF

DEPTH - (m)	ELEVATION - (m)	GRAPHIC LOG	MATERIAL DESCRIPTION	RUN RECOVERY (%)	SAMPLE NO.	SAMPLE REC. (%)	SAMPLE TYPE	UCS (MPa) / BLOW COUNTS (PER 6")	SPT 'N' VALUE	KEY ROCK MASS PARAMETERS / SPT TEST 'N' VALUES	INSTRUMENTATION / WELL DETAILS	DRILLING NOTES
11	426		**GOLDSLIDE PORPHYRY SUITE** (0.29 to 13.26 m) Light grey to pale white; medium to coarse grained; porphyritic, massive; strong; moderately fractured; fresh to slightly weathered; chlorite and calcite infill; iron oxide staining on joint surfaces; 2-3 mm diameter phenocrysts with 1 mm hornblende laths; chlorite altering mafics.	92				60		RQD, RMR; 20 40 60 80		
12	425											
13	424			97				50				
14	423		**SHEARED GABBRO** (13.26 to 15.24 m) Grey to dark grey; fine grained; aphanitic, massive; strong; moderately to highly fractured; fresh to slightly weathered; quartz veining at top of zone.	93				80				
15	422											
16	421		**GOLDSLIDE PORPHYRY SUITE** (15.24 to 19.6 m) Light grey to pale white; medium to coarse grained; porphyritic, massive; strong; moderately fractured; fresh to slightly weathered; iron oxide staining on joint surfaces; 2-3 mm diameter phenocrysts with 1 mm hornblende laths; chlorite altering mafics; some calcite inclusions. **BROKEN ZONE** (15.89 to 15.99 m) Broken Zone within Goldslide Porphyry Suite unit									
17	420											
18	419			96				75				
19	418											
	417											

GENERAL REMARKS:

Elevations and coordinates are surveyed coordinates provided by IDM. Relog of historic drillhole from 1996 geotechnical site investigation program. Lithological units inferred from adjacent drillholes and similar descriptions.

IDM Mining Ltd.
Red Mountain Project

Knight Piésold CONSULTING

Project No.	Ref. No.	Rev.
VA101-594/02	1	A

FIGURE B3-1

Logging conducted according to the ASTM 2488 standard and the Canadian Foundation Engineering Manual, 4th Edition, 2006.

Contractor: N/A
Location: North TMF Embankment - Upstream Toe
Coordinates: 452,429 E , 6,204,937 N
Coordinate System: UTM NAD83 Zone 9N
Hole Size: BW to 1.50 m; BQ to 82.30 m

Drillhole No.: DT-273
Drill Type: N/A
Total Length: 82.3 m
Elevation: 436.3 m
Azimuth, Inclination: 0 , -90

Page: 3 of 9
Date Started: Jul 30, 96
Date Completed: Aug 30, 96
Logged by: JBC
Reviewed by: JEF

DEPTH - (m)	ELEVATION - (m)	GRAPHIC LOG	MATERIAL DESCRIPTION	RUN RECOVERY (%)	SAMPLE NO.	SAMPLE REC. (%)	SAMPLE TYPE	UCS (MPa) / BLOW COUNTS (PER 6")	SPT 'N' VALUE	KEY ROCK MASS PARAMETERS / SPT TEST 'N' VALUES	INSTRUMENTATION / WELL DETAILS	DRILLING NOTES
21	416		**SHEARED GABBRO** (19.6 to 22.65 m) Grey to dark grey; fine grained; aphanitic, massive; strong; moderately to highly fractured; fresh to slightly weathered; calcite banding; chlorite alteration.	99				50				
22	415											
23	414		**GOLDSLIDE PORPHYRY SUITE** (22.65 to 28.96 m) Light grey; medium to coarse grained; massive; strong; highly fractured with multiple broken zones; fresh to slightly weathered; iron oxide staining on joint surfaces and broken zone fragments. **BROKEN ZONE** (22.97 to 23.07 m) Broken Zone within Goldslide Porphyry Suite unit	93				75				
24	413											
25	412											
26	411		**BROKEN ZONE** (25.45 to 26.15 m) Broken Zone within Goldslide Porphyry Suite unit	100				65				
27	410											
28	409			97				70				
29	408		**BROKEN ZONE** (28.63 to 28.88 m) Broken Zone within Goldslide Porphyry Suite unit									
	407											

KEY ROCK MASS PARAMETERS: RQD, RMR
SPT TEST 'N' VALUES - 20 40 60 80

GENERAL REMARKS:

Elevations and coordinates are surveyed coordinates provided by IDM. Relog of historic drillhole from 1996 geotechnical site investigation program. Lithological units inferred from adjacent drillholes and similar descriptions.

IDM Mining Ltd.
Red Mountain Project

Knight Piésold CONSULTING

Project No.	Ref. No.	Rev.
VA101-594/02	1	A

FIGURE B3-1

Logging conducted according to the ASTM 2488 standard and the Canadian Foundation Engineering Manual, 4th Edition, 2006.

Contractor: N/A
Location: North TMF Embankment - Upstream Toe
Coordinates: 452,429 E , 6,204,937 N
Coordinate System: UTM NAD83 Zone 9N
Hole Size BW to 1.50 m; BQ to 82.30 m

Drillhole No.: DT-273
Drill Type: N/A
Total Length: 82.3 m
Elevation: 436.3 m
Azimuth, Inclination: 0 , -90

Page: 4 of 9
Date Started: Jul 30, 96
Date Completed: Aug 30, 96
Logged by: JBC
Reviewed by: JEF

DEPTH - (m)	ELEVATION - (m)	GRAPHIC LOG	MATERIAL DESCRIPTION	RUN RECOVERY (%)	SAMPLE NO.	SAMPLE REC. (%)	SAMPLE TYPE	UCS (MPa) / BLOW COUNTS (PER 6")	SPT 'N' VALUE	KEY ROCK MASS PARAMETERS / SPT TEST 'N' VALUES	INSTRUMENTATION / WELL DETAILS	DRILLING NOTES
31	406		**TUFF (WELDED)** (28.96 to 33.53 m) Grey to dark grey; fine to medium grained; massive; strong; slightly to moderately fractured; fresh to slightly weathered; calcite veins and veinlets throughout; chlorite alteration.	100				50		RQD, RMR; SPT TEST 'N' VALUES - 20 40 60 80		
32	405											
33	404											
34	403											
35	402		**GOLDSLIDE PORPHYRY SUITE** (33.53 to 36.58 m) Grey to light green grey; fine grained; porphyritic, massive; strong; slightly fractured; fresh to slightly weathered; calcite banding and phenocrysts.	100				60				
36	401											
37	400		**TUFF (WELDED)** (36.58 to 39.01 m) Grey to dark grey; fine to medium grained; massive; medium strong; slightly to moderately fractured; fresh to slightly weathered; calcite inclusions and bands; chlorite alteration.	94				40				
38	399											
39	398											
	397											

GENERAL REMARKS:

Elevations and coordinates are surveyed coordinates provided by IDM. Relog of historic drillhole from 1996 geotechnical site investigation program. Lithological units inferred from adjacent drillholes and similar descriptions.

IDM Mining Ltd.
Red Mountain Project

Knight Piésold CONSULTING

Project No.	Ref. No.	Rev.
VA101-594/02	1	A

FIGURE B3-1

Logging conducted according to the ASTM 2488 standard and the Canadian Foundation Engineering Manual, 4th Edition, 2006.

Contractor: N/A
Location: North TMF Embankment - Upstream Toe
Coordinates: 452,429 E , 6,204,937 N
Coordinate System: UTM NAD83 Zone 9N
Hole Size: BW to 1.50 m; BQ to 82.30 m

Drillhole No.: DT-273
Drill Type: N/A
Total Length: 82.3 m
Elevation: 436.3 m
Azimuth, Inclination: 0 , -90

Page: 5 of 9
Date Started: Jul 30, 96
Date Completed: Aug 30, 96
Logged by: JBC
Reviewed by: JEF

DEPTH - (m)	ELEVATION - (m)	GRAPHIC LOG	MATERIAL DESCRIPTION	RUN RECOVERY (%)	SAMPLE NO.	SAMPLE REC. (%)	SAMPLE TYPE	UCS (MPa) / BLOW COUNTS (PER 6")	SPT 'N' VALUE	KEY ROCK MASS PARAMETERS / SPT TEST 'N' VALUES	INSTRUMENTATION / WELL DETAILS	DRILLING NOTES
41	396		**GOLDSLIDE PORPHYRY SUITE** (39.01 to 48.16 m) Light greenish grey; fine grained; silicified, massive; strong to medium strong; highly fractured with multiple broken zones; slightly to moderately weathered; calcite veinlets and veins throughout; iron oxide staining on joint surfaces and broken zone fragments.	90				55		RQD, RMR; SPT TEST 'N' VALUES - 20 40 60 80		
42	395		**BROKEN ZONE** (39.91 to 40.81 m) Broken Zone within Goldslide Porphyry Suite unit									
43	394											
44	393											
45	392		**BROKEN ZONE** (43.87 to 44.17 m) Broken Zone within Goldslide Porphyry Suite unit	94				25				
46	391		**BROKEN ZONE** (44.57 to 45.52 m) Broken Zone within Goldslide Porphyry Suite unit									
47	390			100				30				
48	389											
49	388		**TUFF (WELDED)** (48.16 to 64.01 m) Grey to dark grey; fine to medium grained; massive; weak to strong; slightly fractured with few broken and rubble zones; fresh to moderately weathered; clay infill in rubbleized sections.	100				25				
	387		**RUBBLE ZONE** (48.17 to 48.26 m) Rubble Zone within Welded Tuff unit									
			BROKEN ZONE (48.41 to 49.37 m)									

GENERAL REMARKS:

Elevations and coordinates are surveyed coordinates provided by IDM. Relog of historic drillhole from 1996 geotechnical site investigation program. Lithological units inferred from adjacent drillholes and similar descriptions.

IDM Mining Ltd.
Red Mountain Project

Knight Piésold CONSULTING

Project No.	Ref. No.	Rev.
VA101-594/02	1	A

FIGURE B3-1

Logging conducted according to the ASTM 2488 standard and the Canadian Foundation Engineering Manual, 4th Edition, 2006.

Contractor: N/A
Location: North TMF Embankment - Upstream Toe
Coordinates: 452,429 E , 6,204,937 N
Coordinate System: UTM NAD83 Zone 9N
Hole Size: BW to 1.50 m; BQ to 82.30 m

Drillhole No.: DT-273
Drill Type: N/A
Total Length: 82.3 m
Elevation: 436.3 m
Azimuth, Inclination: 0 , -90

Page: 6 of 9
Date Started: Jul 30, 96
Date Completed: Aug 30, 96
Logged by: JBC
Reviewed by: JEF

DEPTH - (m)	ELEVATION - (m)	GRAPHIC LOG	MATERIAL DESCRIPTION	RUN RECOVERY (%)	SAMPLE NO.	SAMPLE REC. (%)	SAMPLE TYPE	UCS (MPa) / BLOW COUNTS (PER 6")	SPT 'N' VALUE	KEY ROCK MASS PARAMETERS / SPT TEST 'N' VALUES	INSTRUMENTATION / WELL DETAILS	DRILLING NOTES
50	386		Broken Zone within Welded Tuff unit **TUFF (WELDED)** (48.16 to 64.01 m) Grey to dark grey; fine to medium grained; massive; weak to strong; slightly fractured with few broken and rubble zones; fresh to moderately weathered; clay infill in rubbleized sections.	96				40		RQD / RMR; SPT TEST 'N' VALUES - 20 40 60 80		
51	385											
52	384			97				50				
53	383											
54	382		**RUBBLE ZONE** (54.25 to 54.37 m) Rubble Zone within Welded Tuff unit **BROKEN ZONE** (54.45 to 54.65 m) Broken Zone within Welded Tuff unit	100				20				
55	381											
56	380			95				60				
57	379											
58	378											
59	377			99				60				

GENERAL REMARKS:

Elevations and coordinates are surveyed coordinates provided by IDM. Relog of historic drillhole from 1996 geotechnical site investigation program. Lithological units inferred from adjacent drillholes and similar descriptions.

IDM Mining Ltd.
Red Mountain Project

Knight Piésold CONSULTING

Project No.	Ref. No.	Rev.
VA101-594/02	1	A

FIGURE B3-1

Logging conducted according to the ASTM 2488 standard and the Canadian Foundation Engineering Manual, 4th Edition, 2006.

Contractor: N/A
Location: North TMF Embankment - Upstream Toe
Coordinates: 452,429 E , 6,204,937 N
Coordinate System: UTM NAD83 Zone 9N
Hole Size: BW to 1.50 m; BQ to 82.30 m

Drillhole No.: DT-273
Drill Type: N/A
Total Length: 82.3 m
Elevation: 436.3 m
Azimuth, Inclination: 0 , -90

Page: 7 of 9
Date Started: Jul 30, 96
Date Completed: Aug 30, 96
Logged by: JBC
Reviewed by: JEF

DEPTH - (m)	ELEVATION - (m)	GRAPHIC LOG	MATERIAL DESCRIPTION	RUN RECOVERY (%)	SAMPLE NO.	SAMPLE REC. (%)	SAMPLE TYPE	UCS (MPa) / BLOW COUNTS (PER 6")	SPT 'N' VALUE	KEY ROCK MASS PARAMETERS / SPT TEST 'N' VALUES	INSTRUMENTATION / WELL DETAILS	DRILLING NOTES
61	376		**TUFF (WELDED)** (48.16 to 64.01 m) Grey to dark grey; fine to medium grained; massive; weak to strong; slightly fractured with few broken and rubble zones; fresh to moderately weathered; clay infill in rubbleized sections.							RQD, RMR; SPT TEST 'N' VALUES - 20 40 60 80		
	375		**BROKEN ZONE** (60.96 to 61.31 m) Broken Zone within Welded Tuff unit									
62	374			100				60				
63	373		**BROKEN ZONE** (63.06 to 63.16 m) Broken Zone within Welded Tuff unit									
64	372		**GOLDSLIDE PORPHYRY SUITE** (64.01 to 70.1 m) Light greenish grey; fine to medium grained; porphyritic, massive; highly fractured with multiple broken zones; slightly weathered; clay altered in broken areas.									
65	371			98				35				
66	370											
67	369											
68	368		**BROKEN ZONE** (68.06 to 68.76 m) Broken Zone within Goldslide Porphyry Suite unit	100				45				Constant Head Test #1 - 56.60-80.00 m - 3E-07 m/s
69	367											

GENERAL REMARKS:

Elevations and coordinates are surveyed coordinates provided by IDM. Relog of historic drillhole from 1996 geotechnical site investigation program. Lithological units inferred from adjacent drillholes and similar descriptions.

IDM Mining Ltd.
Red Mountain Project

Knight Piésold CONSULTING

Project No.	Ref. No.	Rev.
VA101-594/02	1	A

FIGURE B3-1

Logging conducted according to the ASTM 2488 standard and the Canadian Foundation Engineering Manual, 4th Edition, 2006.

Contractor: N/A
Location: North TMF Embankment - Upstream Toe
Coordinates: 452,429 E , 6,204,937 N
Coordinate System: UTM NAD83 Zone 9N
Hole Size: BW to 1.50 m; BQ to 82.30 m

Drillhole No.: DT-273
Drill Type: N/A
Total Length: 82.3 m
Elevation: 436.3 m
Azimuth, Inclination: 0 , -90

Page: 8 of 9
Date Started: Jul 30, 96
Date Completed: Aug 30, 96
Logged by: JBC
Reviewed by: JEF

DEPTH - (m)	ELEVATION - (m)	GRAPHIC LOG	MATERIAL DESCRIPTION	RUN RECOVERY (%)	SAMPLE NO.	SAMPLE REC. (%)	SAMPLE TYPE	UCS (MPa) / BLOW COUNTS (PER 6")	SPT 'N' VALUE	KEY ROCK MASS PARAMETERS / SPT TEST 'N' VALUES	INSTRUMENTATION / WELL DETAILS	DRILLING NOTES
71	366		**TUFF (WELDED)** (70.1 to 82.3 m) Dark grey to grey; fine to coarse grained; foliated to massive; medium strong to strong; moderately fractured with broken sections near the top; slightly weathered; banded quartz-calcite near top of zone; calcite inclusions throughout; chlorite altered with occasional clay altered sections; black xenoliths and calcite veinlets near bottom of hole.	89				50		RQD, RMR; SPT TEST 'N' VALUES - 20 40 60 80		
72	365											
73	364											
74	363			100				75				Falling Head Test #1 - 68.80-80.00 m - 2E-09 m/s
75	362											
76	361											
77	360			100				75				
78	359											
79	358			93				25				
	357											

GENERAL REMARKS:

Elevations and coordinates are surveyed coordinates provided by IDM. Relog of historic drillhole from 1996 geotechnical site investigation program. Lithological units inferred from adjacent drillholes and similar descriptions.

IDM Mining Ltd.
Red Mountain Project

Knight Piésold CONSULTING

Project No.	Ref. No.	Rev.
VA101-594/02	1	A

FIGURE B3-1

Logging conducted according to the ASTM 2488 standard and the Canadian Foundation Engineering Manual, 4th Edition, 2006.

Contractor: N/A
Location: North TMF Embankment - Upstream Toe
Coordinates: 452,429 E , 6,204,937 N
Coordinate System: UTM NAD83 Zone 9N
Hole Size: BW to 1.50 m; BQ to 82.30 m

Drillhole No.: DT-273
Drill Type: N/A
Total Length: 82.3 m
Elevation: 436.3 m
Azimuth, Inclination: 0 , -90

Page: 9 of 9
Date Started: Jul 30, 96
Date Completed: Aug 30, 96
Logged by: JBC
Reviewed by: JEF

DEPTH - (m)	ELEVATION - (m)	GRAPHIC LOG	MATERIAL DESCRIPTION	RUN RECOVERY (%)	SAMPLE NO.	SAMPLE REC. (%)	SAMPLE TYPE	UCS (MPa) / BLOW COUNTS (PER 6")	SPT 'N' VALUE	KEY ROCK MASS PARAMETERS / SPT TEST 'N' VALUES	INSTRUMENTATION / WELL DETAILS	DRILLING NOTES
81	356		**TUFF (WELDED)** (70.1 to 82.3 m) Dark grey to grey; fine to coarse grained; foliated to massive; medium strong to strong; moderately fractured with broken sections near the top; slightly weathered; banded quartz-calcite near top of zone; calcite inclusions throughout; chlorite altered with occasional clay altered sections; black xenoliths and calcite veinlets near bottom of hole.	100				50		RQD, RMR; SPT TEST 'N' VALUES - 20 40 60 80		
82	355											
	354		End of Drillhole: 82.3 m Target Depth Reached									
83	353											
84	352											
85	351											
86	350											
87	349											
88	348											
89	347											

GENERAL REMARKS:

Elevations and coordinates are surveyed coordinates provided by IDM. Relog of historic drillhole from 1996 geotechnical site investigation program. Lithological units inferred from adjacent drillholes and similar descriptions.

IDM Mining Ltd.
Red Mountain Project

Knight Piésold CONSULTING

Project No.	Ref. No.	Rev.
VA101-594/02	1	A

FIGURE B3-1

Logging conducted according to the ASTM 2488 standard and the Canadian Foundation Engineering Manual, 4th Edition, 2006.

Contractor: N/A
Location: South TMF Embankment - Upstream Embankment Face
Coordinates: 452,489 E , 6,204,553 N
Coordinate System: UTM NAD83 Zone 9N
Hole Size BW to 0.95 m; BQ to 90.83 m

Drillhole No.: DT-277
Drill Type: N/A
Total Length: 90.8 m
Elevation: 445.2 m
Azimuth, Inclination: 156 , -50

Page: 1 of 10
Date Started: Jul 30, 96
Date Completed: Aug 30, 96
Logged by: JBC
Reviewed by: JEF

DEPTH - (m)	ELEVATION - (m)	GRAPHIC LOG	MATERIAL DESCRIPTION	RUN RECOVERY (%)	SAMPLE NO.	SAMPLE REC. (%)	SAMPLE TYPE	UCS (MPa) / BLOW COUNTS (PER 6")	SPT 'N' VALUE	KEY ROCK MASS PARAMETERS / SPT TEST 'N' VALUES	INSTRUMENTATION / WELL DETAILS	DRILLING NOTES
0	445		**TOPSOIL** (0 to 0.1 m) Inferred topsoil thickness from adjacent drillholes **OVERBURDEN** (0.1 to 2.44 m) Inferred overburden from adjacent drillholes.							RQD, RMR; SPT TEST 'N' VALUES - 20 40 60 80		
1												
2	444											
3	443		**GABBRO** (2.44 to 20.73 m) Greenish grey; fine to coarse grained; porphyritic, massive; very strong; slightly to moderately fractured; fresh to slightly weathered; iron oxide staining on joint surfaces; biotite phenocrysts towards lower half of zone; chlorite altered. **BROKEN ZONE** (2.87 to 3.12 m) Broken Zone within Gabbro unit	52				100				
4	442											
5												
6	441											
7	440			97				100				
8	439											
9												
	438											

GENERAL REMARKS:

Elevations and coordinates are surveyed coordinates provided by IDM. Relog of historic drillhole from 1996 geotechnical site investigation program. Lithological units inferred from adjacent drillholes and similar descriptions.

IDM Mining Ltd.
Red Mountain Project

Knight Piésold CONSULTING

Project No.	Ref. No.	Rev.
VA101-594/02	1	A

FIGURE B3-2

Logging conducted according to the ASTM 2488 standard and the Canadian Foundation Engineering Manual, 4th Edition, 2006.

Contractor: N/A
Location: South TMF Embankment - Upstream Embankment Face
Coordinates: 452,489 E , 6,204,553 N
Coordinate System: UTM NAD83 Zone 9N
Hole Size BW to 0.95 m; BQ to 90.83 m

Drillhole No.: DT-277
Drill Type: N/A
Total Length: 90.8 m
Elevation: 445.2 m
Azimuth, Inclination: 156 , -50

Page: 2 of 10
Date Started: Jul 30, 96
Date Completed: Aug 30, 96
Logged by: JBC
Reviewed by: JEF

DEPTH - (m)	ELEVATION - (m)	GRAPHIC LOG	MATERIAL DESCRIPTION	RUN RECOVERY (%)	SAMPLE NO.	SAMPLE REC. (%)	SAMPLE TYPE	UCS (MPa) / BLOW COUNTS (PER 6")	SPT 'N' VALUE	KEY ROCK MASS PARAMETERS / SPT TEST 'N' VALUES	INSTRUMENTATION / WELL DETAILS	DRILLING NOTES
11	437		**GABBRO** (2.44 to 20.73 m) Greenish grey; fine to coarse grained; porphyritic, massive; very strong; slightly to moderately fractured; fresh to slightly weathered; iron oxide staining on joint surfaces; biotite phenocrysts towards lower half of zone; chlorite altered.	100				100		RQD, RMR; SPT TEST 'N' VALUES - 20 40 60 80		Falling Head Test #1 - 6.20-20.70 m - 1E-07m/s
12	436											
13	435			100				100				
14	434											
15												
16	433			92				100				Constant Head Test #1 - 6.20-20.70 m - 5E-07 m/s
17	432		**BROKEN ZONE** (16.45 to 16.65 m) Broken Zone within Gabbro unit									
18												
19	431			100				100				
	430											

GENERAL REMARKS:

Elevations and coordinates are surveyed coordinates provided by IDM. Relog of historic drillhole from 1996 geotechnical site investigation program. Lithological units inferred from adjacent drillholes and similar descriptions.

IDM Mining Ltd.
Red Mountain Project

Knight Piésold CONSULTING

Project No.	Ref. No.	Rev.
VA101-594/02	1	A

FIGURE B3-2

Logging conducted according to the ASTM 2488 standard and the Canadian Foundation Engineering Manual, 4th Edition, 2006.

Contractor: N/A
Location: South TMF Embankment - Upstream Embankment Face
Coordinates: 452,489 E , 6,204,553 N
Coordinate System: UTM NAD83 Zone 9N
Hole Size: BW to 0.95 m; BQ to 90.83 m

Drillhole No.: DT-277
Drill Type: N/A
Total Length: 90.8 m
Elevation: 445.2 m
Azimuth, Inclination: 156 , -50

Page: 3 of 10
Date Started: Jul 30, 96
Date Completed: Aug 30, 96
Logged by: JBC
Reviewed by: JEF

DEPTH - (m)	ELEVATION - (m)	GRAPHIC LOG	MATERIAL DESCRIPTION	RUN RECOVERY (%)	SAMPLE NO.	SAMPLE REC. (%)	SAMPLE TYPE	UCS (MPa) / BLOW COUNTS (PER 6")	SPT 'N' VALUE	KEY ROCK MASS PARAMETERS / SPT TEST 'N' VALUES	INSTRUMENTATION / WELL DETAILS	DRILLING NOTES
21	429		**MAFIC DYKE** (20.73 to 39.01 m) Light greenish grey to light grey; fine to coarse grained; porphyritic, massive; very strong; moderately fractured; fresh to slightly weathered; iron oxide staining on joint surfaces; quartz and calcite veinlets throughout; biotite phenocrysts throughout.							RQD, RMR; SPT TEST 'N' VALUES - 20 40 60 80		
22	428			98				100				
23												
24	427											
25	426			100				100				
26												
27	425											Falling Head Test #2 - 18.70-42.10 m - 5E-07 m/s
28	424			97				100				
29	423											

GENERAL REMARKS:

Elevations and coordinates are surveyed coordinates provided by IDM. Relog of historic drillhole from 1996 geotechnical site investigation program. Lithological units inferred from adjacent drillholes and similar descriptions.

IDM Mining Ltd.
Red Mountain Project

Knight Piésold CONSULTING

Project No.	Ref. No.	Rev.
VA101-594/02	1	A

FIGURE B3-2

Logging conducted according to the ASTM 2488 standard and the Canadian Foundation Engineering Manual, 4th Edition, 2006.

Contractor: N/A
Location: South TMF Embankment - Upstream Embankment Face
Coordinates: 452,489 E , 6,204,553 N
Coordinate System: UTM NAD83 Zone 9N
Hole Size BW to 0.95 m; BQ to 90.83 m

Drillhole No.: DT-277
Drill Type: N/A
Total Length: 90.8 m
Elevation: 445.2 m
Azimuth, Inclination: 156 , -50

Page: 4 of 10
Date Started: Jul 30, 96
Date Completed: Aug 30, 96
Logged by: JBC
Reviewed by: JEF

DEPTH - (m)	ELEVATION - (m)	GRAPHIC LOG	MATERIAL DESCRIPTION	RUN RECOVERY (%)	SAMPLE NO.	SAMPLE REC. (%)	SAMPLE TYPE	UCS (MPa) / BLOW COUNTS (PER 6")	SPT 'N' VALUE	KEY ROCK MASS PARAMETERS / SPT TEST 'N' VALUES	INSTRUMENTATION / WELL DETAILS	DRILLING NOTES
31	422		**MAFIC DYKE** (20.73 to 39.01 m) Light greenish grey to light grey; fine to coarse grained; porphyritic, massive; very strong; moderately fractured; fresh to slightly weathered; iron oxide staining on joint surfaces; quartz and calcite veinlets throughout; biotite phenocrysts throughout.	97				100		RQD, RMR; SPT TEST 'N' VALUES - 20 40 60 80		
32	421											
33	420											
34	419			95				100				Constant Head Test #2 - 18.70-42.10 m - 3E-07 m/s
35												
36	418											
37	417			100				100				
38	416											
39												
	415		**FELSIC DYKE** (39.01 to 51.21 m) Light grey to grey; fine to coarse grained; porphyritic, massive; strong; slightly fractured; fresh to slightly weathered; iron oxide staining on joint surfaces; some clay infill in places.									

GENERAL REMARKS:

Elevations and coordinates are surveyed coordinates provided by IDM. Relog of historic drillhole from 1996 geotechnical site investigation program. Lithological units inferred from adjacent drillholes and similar descriptions.

IDM Mining Ltd.
Red Mountain Project

Knight Piésold CONSULTING

Project No.	Ref. No.	Rev.
VA101-594/02	1	A

FIGURE B3-2

Logging conducted according to the ASTM 2488 standard and the Canadian Foundation Engineering Manual, 4th Edition, 2006.

Contractor: N/A
Location: South TMF Embankment - Upstream Embankment Face
Coordinates: 452,489 E , 6,204,553 N
Coordinate System: UTM NAD83 Zone 9N
Hole Size BW to 0.95 m; BQ to 90.83 m

Drillhole No.: DT-277
Drill Type: N/A
Total Length: 90.8 m
Elevation: 445.2 m
Azimuth, Inclination: 156 , -50

Page: 5 of 10
Date Started: Jul 30, 96
Date Completed: Aug 30, 96
Logged by: JBC
Reviewed by: JEF

DEPTH - (m)	ELEVATION - (m)	GRAPHIC LOG	MATERIAL DESCRIPTION	RUN RECOVERY (%)	SAMPLE NO.	SAMPLE REC. (%)	SAMPLE TYPE	UCS (MPa) / BLOW COUNTS (PER 6")	SPT 'N' VALUE	KEY ROCK MASS PARAMETERS / SPT TEST 'N' VALUES	INSTRUMENTATION / WELL DETAILS	DRILLING NOTES
41	414		**FELSIC DYKE** (39.01 to 51.21 m) Light grey to grey; fine to coarse grained; porphyritic, massive; strong; slightly fractured; fresh to slightly weathered; iron oxide staining on joint surfaces; some clay infill in places.	98				85				
42	413											
43	412			90				75				
44			**BROKEN ZONE** (43.77 to 43.97 m) Broken Zone within Felsic Dyke unit									
45	411											
46	410			98				125				
47	409											
48	408											
49				98				125				
	407											

KEY ROCK MASS PARAMETERS: RQD, RMR
SPT TEST 'N' VALUES - 20 40 60 80

GENERAL REMARKS:

Elevations and coordinates are surveyed coordinates provided by IDM. Relog of historic drillhole from 1996 geotechnical site investigation program. Lithological units inferred from adjacent drillholes and similar descriptions.

IDM Mining Ltd.
Red Mountain Project

Knight Piésold CONSULTING

Project No.	Ref. No.	Rev.
VA101-594/02	1	A

FIGURE B3-2

Logging conducted according to the ASTM 2488 standard and the Canadian Foundation Engineering Manual, 4th Edition, 2006.

Contractor: N/A
Location: South TMF Embankment - Upstream Embankment Face
Coordinates: 452,489 E , 6,204,553 N
Coordinate System: UTM NAD83 Zone 9N
Hole Size: BW to 0.95 m; BQ to 90.83 m

Drillhole No.: DT-277
Drill Type: N/A
Total Length: 90.8 m
Elevation: 445.2 m
Azimuth, Inclination: 156 , -50

Page: 6 of 10
Date Started: Jul 30, 96
Date Completed: Aug 30, 96
Logged by: JBC
Reviewed by: JEF

DEPTH - (m)	ELEVATION - (m)	GRAPHIC LOG	MATERIAL DESCRIPTION	RUN RECOVERY (%)	SAMPLE NO.	SAMPLE REC. (%)	SAMPLE TYPE	UCS (MPa) / BLOW COUNTS (PER 6")	SPT 'N' VALUE	KEY ROCK MASS PARAMETERS / SPT TEST 'N' VALUES	INSTRUMENTATION / WELL DETAILS	DRILLING NOTES
51	406		**FELSIC DYKE** (39.01 to 51.21 m) Light grey to grey; fine to coarse grained; porphyritic, massive; strong; slightly fractured; fresh to slightly weathered; iron oxide staining on joint surfaces; some clay infill in places.									Falling Head Test #3 - 39.40-60.40 m - 1E-06 m/s
52	405		**MAFIC DYKE** (51.21 to 69.49 m) Light grey to pale grey; coarse grained; porphyritic to equigranular, massive; very strong; moderately fractured; fresh; calcite infill and inclusions.	94				125				
53												
54	404											
55												
56	403			89				125				
57	402											
58	401											
59				97				100				
	400											

KEY ROCK MASS PARAMETERS: RQD, RMR
SPT TEST 'N' VALUES - 20 40 60 80

GENERAL REMARKS:
Elevations and coordinates are surveyed coordinates provided by IDM. Relog of historic drillhole from 1996 geotechnical site investigation program. Lithological units inferred from adjacent drillholes and similar descriptions.

IDM Mining Ltd.
Red Mountain Project

Knight Piésold CONSULTING

Project No.	Ref. No.	Rev.
VA101-594/02	1	A

FIGURE B3-2

Logging conducted according to the ASTM 2488 standard and the Canadian Foundation Engineering Manual, 4th Edition, 2006.

Contractor: N/A
Location: South TMF Embankment - Upstream Embankment Face
Coordinates: 452,489 E , 6,204,553 N
Coordinate System: UTM NAD83 Zone 9N
Hole Size BW to 0.95 m; BQ to 90.83 m

Drillhole No.: DT-277
Drill Type: N/A
Total Length: 90.8 m
Elevation: 445.2 m
Azimuth, Inclination: 156 , -50

Page: 7 of 10
Date Started: Jul 30, 96
Date Completed: Aug 30, 96
Logged by: JBC
Reviewed by: JEF

DEPTH - (m)	ELEVATION - (m)	GRAPHIC LOG	MATERIAL DESCRIPTION	RUN RECOVERY (%)	SAMPLE NO.	SAMPLE REC. (%)	SAMPLE TYPE	UCS (MPa) / BLOW COUNTS (PER 6")	SPT 'N' VALUE	KEY ROCK MASS PARAMETERS / SPT TEST 'N' VALUES	INSTRUMENTATION / WELL DETAILS	DRILLING NOTES
61	399		**MAFIC DYKE** (51.21 to 69.49 m) Light grey to pale grey; coarse grained; porphyritic to equigranular, massive; very strong; moderately fractured; fresh; calcite infill and inclusions.							RQD, RMR; SPT TEST 'N' VALUES - 20 40 60 80		
62	398			100				100				
63	397											
64	396											
65	395			100				100				
66												
67	394		**BROKEN ZONE** (66.45 to 67.06 m) Broken Zone within Mafic Dyke unit									
68	393			95				100				
69	392											

GENERAL REMARKS:

Elevations and coordinates are surveyed coordinates provided by IDM. Relog of historic drillhole from 1996 geotechnical site investigation program. Lithological units inferred from adjacent drillholes and similar descriptions.

IDM Mining Ltd.
Red Mountain Project

Knight Piésold CONSULTING

Project No.	Ref. No.	Rev.
VA101-594/02	1	A

FIGURE B3-2

Logging conducted according to the ASTM 2488 standard and the Canadian Foundation Engineering Manual, 4th Edition, 2006.

Contractor: N/A
Location: South TMF Embankment - Upstream Embankment Face
Coordinates: 452,489 E , 6,204,553 N
Coordinate System: UTM NAD83 Zone 9N
Hole Size BW to 0.95 m; BQ to 90.83 m

Drillhole No.: DT-277
Drill Type: N/A
Total Length: 90.8 m
Elevation: 445.2 m
Azimuth, Inclination: 156 , -50

Page: 8 of 10
Date Started: Jul 30, 96
Date Completed: Aug 30, 96
Logged by: JBC
Reviewed by: JEF

DEPTH - (m)	ELEVATION - (m)	GRAPHIC LOG	MATERIAL DESCRIPTION	RUN RECOVERY (%)	SAMPLE NO.	SAMPLE REC. (%)	SAMPLE TYPE	UCS (MPa) / BLOW COUNTS (PER 6")	SPT 'N' VALUE	KEY ROCK MASS PARAMETERS / SPT TEST 'N' VALUES	INSTRUMENTATION / WELL DETAILS	DRILLING NOTES
71	391		**GABBRO** (69.49 to 75.59 m) Green grey; fine to coarse grained; massive; strong; slightly fractured; fresh to slightly weathered; calcite veinlets; black biotite phenocrysts; chlorite altered.	100				85		RQD / RMR; SPT TEST 'N' VALUES - 20 40 60 80		Falling Head Test #4 - 61.40-81.10 m - 5E-07 m/s
72	390											
73	389											
74	388			99				85				
75												
76	387		**BRECCIATED FAULT ZONE** (75.59 to 78.49 m) Dark grey to light greenish grey; fine to coarse grained; porphyritic, brecciated; weak to very weak; intensely fractured and broken; moderately weathered; clay infill in broken sections; highly altered and sheared; chlorite rich.									
77			**BROKEN ZONE** (76.09 to 76.56 m) Broken Zone within Brecciated unit	99				5				
78	386		**BROKEN ZONE** (76.99 to 77.19 m) Broken Zone within Brecciated unit **BROKEN ZONE** (77.54 to 78.7 m) Broken Zone within Brecciated unit									
79	385		**FELSIC DYKE** (78.49 to 90.83 m) Grey to light grey; fine to coarse grained; porphyritic, massive; strong to very strong; slightly fractured; fresh; calcite veinlets throughout; chlorite altered; calcite and biotite phenocrysts throughout.									
	384											

GENERAL REMARKS:

Elevations and coordinates are surveyed coordinates provided by IDM. Relog of historic drillhole from 1996 geotechnical site investigation program. Lithological units inferred from adjacent drillholes and similar descriptions.

IDM Mining Ltd.
Red Mountain Project

Knight Piésold CONSULTING

Project No.	Ref. No.	Rev.
VA101-594/02	1	A

FIGURE B3-2

Logging conducted according to the ASTM 2488 standard and the Canadian Foundation Engineering Manual, 4th Edition, 2006.

Contractor: N/A
Location: South TMF Embankment - Upstream Embankment Face
Coordinates: 452,489 E , 6,204,553 N
Coordinate System: UTM NAD83 Zone 9N
Hole Size BW to 0.95 m; BQ to 90.83 m

Drillhole No.: DT-277
Drill Type: N/A
Total Length: 90.8 m
Elevation: 445.2 m
Azimuth, Inclination: 156 , -50

Page: 9 of 10
Date Started: Jul 30, 96
Date Completed: Aug 30, 96
Logged by: JBC
Reviewed by: JEF

DEPTH - (m)	ELEVATION - (m)	GRAPHIC LOG	MATERIAL DESCRIPTION	RUN RECOVERY (%)	SAMPLE NO.	SAMPLE REC. (%)	SAMPLE TYPE	UCS (MPa) / BLOW COUNTS (PER 6")	SPT 'N' VALUE	KEY ROCK MASS PARAMETERS / SPT TEST 'N' VALUES	INSTRUMENTATION / WELL DETAILS	DRILLING NOTES
81	383		**FELSIC DYKE** (78.49 to 90.83 m) Grey to light grey; fine to coarse grained; porphyritic, massive; strong to very strong; slightly fractured; fresh; calcite veinlets throughout; chlorite altered; calcite and biotite phenocrysts throughout.	98				50		RQD, RMR; SPT TEST 'N' VALUES - 20 40 60 80		
82			**BROKEN ZONE** (81.64 to 82.24 m) Broken Zone within Felsic Dyke unit									
83	382			100				75				
84	381											
85	380											
86				100				100				
87	379											Falling Head Test #5 - 83.60-90.80 m - 1E-06 m/s
88	378											
89	377			97				100				

GENERAL REMARKS:

Elevations and coordinates are surveyed coordinates provided by IDM. Relog of historic drillhole from 1996 geotechnical site investigation program. Lithological units inferred from adjacent drillholes and similar descriptions.

IDM Mining Ltd.
Red Mountain Project

Knight Piésold CONSULTING

Project No.	Ref. No.	Rev.
VA101-594/02	1	A

FIGURE B3-2

Logging conducted according to the ASTM 2488 standard and the Canadian Foundation Engineering Manual, 4th Edition, 2006.

Contractor: N/A
Location: South TMF Embankment - Upstream Embankment Face
Coordinates: 452,489 E , 6,204,553 N
Coordinate System: UTM NAD83 Zone 9N
Hole Size BW to 0.95 m; BQ to 90.83 m

Drillhole No.: DT-277
Drill Type: N/A
Total Length: 90.8 m
Elevation: 445.2 m
Azimuth, Inclination: 156 , -50

Page: 10 of 10
Date Started: Jul 30, 96
Date Completed: Aug 30, 96
Logged by: JBC
Reviewed by: JEF

DEPTH - (m)	ELEVATION - (m)	GRAPHIC LOG	MATERIAL DESCRIPTION	RUN RECOVERY (%)	SAMPLE NO.	SAMPLE REC. (%)	SAMPLE TYPE	UCS (MPa) / BLOW COUNTS (PER 6")	SPT 'N' VALUE	KEY ROCK MASS PARAMETERS: RQD, RMR; SPT TEST 'N' VALUES - 20 40 60 80	INSTRUMENTATION / WELL DETAILS	DRILLING NOTES
	376											
91			End of Drillhole: 90.83 m Target Depth Reached									
	375											
92												
93	374											
94												
	373											
95												
	372											
96												
	371											
97												
98	370											
99												
	369											

GENERAL REMARKS:

Elevations and coordinates are surveyed coordinates provided by IDM. Relog of historic drillhole from 1996 geotechnical site investigation program. Lithological units inferred from adjacent drillholes and similar descriptions.

IDM Mining Ltd.
Red Mountain Project

Knight Piésold CONSULTING

Project No.	Ref. No.	Rev.
VA101-594/02	1	A

FIGURE B3-2

Logging conducted according to the ASTM 2488 standard and the Canadian Foundation Engineering Manual, 4th Edition, 2006.

Contractor: N/A
Location: South TMF Embankment - South Abutment
Coordinates: 452,527 E , 6,204,447 N
Coordinate System: UTM NAD83 Zone 9N
Hole Size NW to 1.50 m; NQ to 85.04 m

Drillhole No.: DT-280
Drill Type: N/A
Total Length: 85.0 m
Elevation: 454.4 m
Azimuth, Inclination: 328 , -47

Page: 1 of 9
Date Started: Jul 30, 96
Date Completed: Aug 30, 96
Logged by: JBC
Reviewed by: JEF

DEPTH - (m)	ELEVATION - (m)	GRAPHIC LOG	MATERIAL DESCRIPTION	RUN RECOVERY (%)	SAMPLE NO.	SAMPLE REC. (%)	SAMPLE TYPE	UCS (MPa) / BLOW COUNTS (PER 6")	SPT 'N' VALUE	KEY ROCK MASS PARAMETERS / SPT TEST 'N' VALUES	INSTRUMENTATION / WELL DETAILS	DRILLING NOTES
0	454		**OVERBURDEN** (0 to 8.64 m) Inferred overburden from adjacent drillholes. Depth to Bedrock unknown, Core Box 1 missing from Core Yard when logging core.									
1												
2	453											
3												
4	452											
5												
6	451											
7												
8	450											
9	449											
	448		**WACKE** (8.64 to 14.94 m) Grey to light grey; fine to medium grained; porphyritic, massive; strong; slightly to moderately fractured; fresh to slightly weathered; minor iron oxide staining on joint surfaces; calcite veinlets throughout; minor chlorite alteration. **BROKEN ZONE**									

KEY ROCK MASS PARAMETERS: RQD, RMR
SPT TEST 'N' VALUES - 20 40 60 80

GENERAL REMARKS:

Elevations and coordinates are surveyed coordinates provided by IDM. Relog of historic drillhole from 1996 geotechnical site investigation program. Lithological units inferred from adjacent drillholes and similar descriptions.

IDM Mining Ltd.
Red Mountain Project

Knight Piésold CONSULTING

Project No.	Ref. No.	Rev.
VA101-594/02	1	A

FIGURE B3-3

Logging conducted according to the ASTM 2488 standard and the Canadian Foundation Engineering Manual, 4th Edition, 2006.

Contractor: N/A
Location: South TMF Embankment - South Abutment
Coordinates: 452,527 E , 6,204,447 N
Coordinate System: UTM NAD83 Zone 9N
Hole Size NW to 1.50 m; NQ to 85.04 m

Drillhole No.: DT-280
Drill Type: N/A
Total Length: 85.0 m
Elevation: 454.4 m
Azimuth, Inclination: 328 , -47

Page: 2 of 9
Date Started: Jul 30, 96
Date Completed: Aug 30, 96
Logged by: JBC
Reviewed by: JEF

DEPTH - (m)	ELEVATION - (m)	GRAPHIC LOG	MATERIAL DESCRIPTION	RUN RECOVERY (%)	SAMPLE NO.	SAMPLE REC. (%)	SAMPLE TYPE	UCS (MPa) / BLOW COUNTS (PER 6")	SPT 'N' VALUE	KEY ROCK MASS PARAMETERS / SPT TEST 'N' VALUES	INSTRUMENTATION / WELL DETAILS	DRILLING NOTES
11	447		(9.04 to 9.34 m) Broken Zone within Wacke unit	89				70		RQD, RMR; SPT TEST 'N' VALUES - 20 40 60 80		
			WACKE (8.64 to 14.94 m) Grey to light grey; fine to medium grained; porphyritic, massive; strong; slightly to moderately fractured; fresh to slightly weathered; minor iron oxide staining on joint surfaces; calcite veinlets throughout; minor chlorite alteration.									
12	446											
13	445			97				75				
14	444											
15			**GABBRO** (14.94 to 17.98 m) Light grey to green grey; medium to coarse grained; equigranular, massive; strong; moderately fractured; fresh; chlorite altered with some intensely altered sections.									
16	443			94				50				
17	442											Falling Head Test #1 - 12.90-21.00 m - 2E-06 m/s
18			**MAFIC DYKE** (17.98 to 39.32 m) Greyish white to white; fine to coarse grained; porphyritic to equigranular and massive; strong to very strong; fresh to slightly weathered; calcite phenocrysts; trace iron oxide staining.									
19	441			77				85				
	440											

GENERAL REMARKS:

Elevations and coordinates are surveyed coordinates provided by IDM. Relog of historic drillhole from 1996 geotechnical site investigation program. Lithological units inferred from adjacent drillholes and similar descriptions.

IDM Mining Ltd.
Red Mountain Project

Knight Piésold CONSULTING

Project No.	Ref. No.	Rev.
VA101-594/02	1	A

FIGURE B3-3

Logging conducted according to the ASTM 2488 standard and the Canadian Foundation Engineering Manual, 4th Edition, 2006.

Contractor: N/A
Location: South TMF Embankment - South Abutment
Coordinates: 452,527 E , 6,204,447 N
Coordinate System: UTM NAD83 Zone 9N
Hole Size NW to 1.50 m; NQ to 85.04 m

Drillhole No.: DT-280
Drill Type: N/A
Total Length: 85.0 m
Elevation: 454.4 m
Azimuth, Inclination: 328 , -47

Page: 3 of 9
Date Started: Jul 30, 96
Date Completed: Aug 30, 96
Logged by: JBC
Reviewed by: JEF

DEPTH - (m)	ELEVATION - (m)	GRAPHIC LOG	MATERIAL DESCRIPTION	RUN RECOVERY (%)	SAMPLE NO.	SAMPLE REC. (%)	SAMPLE TYPE	UCS (MPa) / BLOW COUNTS (PER 6")	SPT 'N' VALUE	KEY ROCK MASS PARAMETERS / SPT TEST 'N' VALUES	INSTRUMENTATION / WELL DETAILS	DRILLING NOTES
21	439		**MAFIC DYKE** (17.98 to 39.32 m) Greyish white to white; fine to coarse grained; porphyritic to equigranular and massive; strong to very strong; fresh to slightly weathered; calcite phenocrysts; trace iron oxide staining.							RQD, RMR; SPT TEST 'N' VALUES - 20 40 60 80		
22	438			79				90				
23												
24	437											
25	436			96				100				
26												
27	435											
28	434			100				100				
29	433											

GENERAL REMARKS:

Elevations and coordinates are surveyed coordinates provided by IDM. Relog of historic drillhole from 1996 geotechnical site investigation program. Lithological units inferred from adjacent drillholes and similar descriptions.

IDM Mining Ltd.
Red Mountain Project

Knight Piésold CONSULTING

Project No.	Ref. No.	Rev.
VA101-594/02	1	A

FIGURE B3-3

Logging conducted according to the ASTM 2488 standard and the Canadian Foundation Engineering Manual, 4th Edition, 2006.

Contractor: N/A
Location: South TMF Embankment - South Abutment
Coordinates: 452,527 E , 6,204,447 N
Coordinate System: UTM NAD83 Zone 9N
Hole Size NW to 1.50 m; NQ to 85.04 m

Drillhole No.: DT-280
Drill Type: N/A
Total Length: 85.0 m
Elevation: 454.4 m
Azimuth, Inclination: 328 , -47

Page: 4 of 9
Date Started: Jul 30, 96
Date Completed: Aug 30, 96
Logged by: JBC
Reviewed by: JEF

DEPTH - (m)	ELEVATION - (m)	GRAPHIC LOG	MATERIAL DESCRIPTION	RUN RECOVERY (%)	SAMPLE NO.	SAMPLE REC. (%)	SAMPLE TYPE	UCS (MPa) / BLOW COUNTS (PER 6")	SPT 'N' VALUE	KEY ROCK MASS PARAMETERS / SPT TEST 'N' VALUES	INSTRUMENTATION / WELL DETAILS	DRILLING NOTES
31	432		**MAFIC DYKE** (17.98 to 39.32 m) Greyish white to white; fine to coarse grained; porphyritic to equigranular and massive; strong to very strong; fresh to slightly weathered; calcite phenocrysts; trace iron oxide staining.	100				110		RQD, RMR; SPT TEST 'N' VALUES - 20 40 60 80		Falling Head Test #2 - 19.30-42.40 m - 4E-07 m/s
32	431											
33	430			91				110				
34												
35	429											
36	428											
37				60				110				
38	427											
39	426											

GENERAL REMARKS:

Elevations and coordinates are surveyed coordinates provided by IDM. Relog of historic drillhole from 1996 geotechnical site investigation program. Lithological units inferred from adjacent drillholes and similar descriptions.

IDM Mining Ltd.
Red Mountain Project

Knight Piésold CONSULTING

Project No.	Ref. No.	Rev.
VA101-594/02	1	A

FIGURE B3-3

Logging conducted according to the ASTM 2488 standard and the Canadian Foundation Engineering Manual, 4th Edition, 2006.

Contractor: N/A
Location: South TMF Embankment - South Abutment
Coordinates: 452,527 E , 6,204,447 N
Coordinate System: UTM NAD83 Zone 9N
Hole Size NW to 1.50 m; NQ to 85.04 m

Drillhole No.: DT-280
Drill Type: N/A
Total Length: 85.0 m
Elevation: 454.4 m
Azimuth, Inclination: 328 , -47

Page: 5 of 9
Date Started: Jul 30, 96
Date Completed: Aug 30, 96
Logged by: JBC
Reviewed by: JEF

DEPTH - (m)	ELEVATION - (m)	GRAPHIC LOG	MATERIAL DESCRIPTION	RUN RECOVERY (%)	SAMPLE NO.	SAMPLE REC. (%)	SAMPLE TYPE	UCS (MPa) / BLOW COUNTS (PER 6")	SPT 'N' VALUE	KEY ROCK MASS PARAMETERS / SPT TEST 'N' VALUES	INSTRUMENTATION / WELL DETAILS	DRILLING NOTES
41	425		**MAFIC DYKE** (39.32 to 54.56 m) Grey to light grey; medium to coarse grained; equigranular, massive, porphyritic; strong to very strong; moderately fractured; fresh to slightly weathered; iron oxide staining on joint surfaces; calcite veinlets throughout; chlorite altered; calcite phenocrysts throughout.	95				100		RQD, RMR; SPT TEST 'N' VALUES - 20 40 60 80		
42	424											
43	423			98				85				
44	422											
45	421											
46	420			100				85				Falling Head Test #3 - 37.60-60.70 m - 6E-08 m/s
47	419											
48	418											
49												

GENERAL REMARKS:

Elevations and coordinates are surveyed coordinates provided by IDM. Relog of historic drillhole from 1996 geotechnical site investigation program. Lithological units inferred from adjacent drillholes and similar descriptions.

IDM Mining Ltd.
Red Mountain Project

Knight Piésold CONSULTING

Project No.	Ref. No.	Rev.
VA101-594/02	1	A

FIGURE B3-3

Logging conducted according to the ASTM 2488 standard and the Canadian Foundation Engineering Manual, 4th Edition, 2006.

Contractor: N/A
Location: South TMF Embankment - South Abutment
Coordinates: 452,527 E , 6,204,447 N
Coordinate System: UTM NAD83 Zone 9N
Hole Size NW to 1.50 m; NQ to 85.04 m

Drillhole No.: DT-280
Drill Type: N/A
Total Length: 85.0 m
Elevation: 454.4 m
Azimuth, Inclination: 328 , -47

Page: 6 of 9
Date Started: Jul 30, 96
Date Completed: Aug 30, 96
Logged by: JBC
Reviewed by: JEF

DEPTH - (m)	ELEVATION - (m)	GRAPHIC LOG	MATERIAL DESCRIPTION	RUN RECOVERY (%)	SAMPLE NO.	SAMPLE REC. (%)	SAMPLE TYPE	UCS (MPa) / BLOW COUNTS (PER 6")	SPT 'N' VALUE	KEY ROCK MASS PARAMETERS / SPT TEST 'N' VALUES	INSTRUMENTATION / WELL DETAILS	DRILLING NOTES
51	417		**MAFIC DYKE** (39.32 to 54.56 m) Grey to light grey; medium to coarse grained; equigranular, massive, porphyritic; strong to very strong; moderately fractured; fresh to slightly weathered; iron oxide staining on joint surfaces; calcite veinlets throughout; chlorite altered; calcite phenocrysts throughout.	100				100		RQD, RMR; SPT TEST 'N' VALUES - 20 40 60 80		
52	416											
53				84				100				
54	415											
55			**GABBRO** (54.56 to 57.61 m) Light grey to greenish grey; fine to coarse grained; porphyritic, massive; very strong; slightly to moderately fractured; fresh; calcite veinlets throughout.									
56	414			100				100				
57	413											
58	412		**MAFIC DYKE** (57.61 to 60.66 m) Grey; fine to medium grained; equigranular, massive; very strong; slightly to moderately fracturedl fresh; calcite and quartz veinlets throughout.									
59	411			100				150				

GENERAL REMARKS:

Elevations and coordinates are surveyed coordinates provided by IDM. Relog of historic drillhole from 1996 geotechnical site investigation program. Lithological units inferred from adjacent drillholes and similar descriptions.

IDM Mining Ltd.
Red Mountain Project

Knight Piésold CONSULTING

Project No.	Ref. No.	Rev.
VA101-594/02	1	A

FIGURE B3-3

Logging conducted according to the ASTM 2488 standard and the Canadian Foundation Engineering Manual, 4th Edition, 2006.

Contractor: N/A
Location: South TMF Embankment - South Abutment
Coordinates: 452,527 E , 6,204,447 N
Coordinate System: UTM NAD83 Zone 9N
Hole Size NW to 1.50 m; NQ to 85.04 m

Drillhole No.: DT-280
Drill Type: N/A
Total Length: 85.0 m
Elevation: 454.4 m
Azimuth, Inclination: 328 , -47

Page: 7 of 9
Date Started: Jul 30, 96
Date Completed: Aug 30, 96
Logged by: JBC
Reviewed by: JEF

DEPTH - (m)	ELEVATION - (m)	GRAPHIC LOG	MATERIAL DESCRIPTION	RUN RECOVERY (%)	SAMPLE NO.	SAMPLE REC. (%)	SAMPLE TYPE	UCS (MPa) / BLOW COUNTS (PER 6")	SPT 'N' VALUE	KEY ROCK MASS PARAMETERS / SPT TEST 'N' VALUES	INSTRUMENTATION / WELL DETAILS	DRILLING NOTES
60	410		**GABBRO** (60.66 to 75.59 m) Dark green to greenish grey; fine to coarse grained; porphyritic, massive; very strong; slightly to moderately fractured; fresh; calcite veinlets throughout; heavily chloritized.	100				150		RQD, RMR; SPT TEST 'N' VALUES - 20 40 60 80		
61												
62	409											
63												
64	408			100				150				
65												
66	407											
67												
68	406											
69				100				175				
	405											
	404											

GENERAL REMARKS:

Elevations and coordinates are surveyed coordinates provided by IDM. Relog of historic drillhole from 1996 geotechnical site investigation program. Lithological units inferred from adjacent drillholes and similar descriptions.

IDM Mining Ltd.
Red Mountain Project

Knight Piésold CONSULTING

Project No.	Ref. No.	Rev.
VA101-594/02	1	A

FIGURE B3-3

Logging conducted according to the ASTM 2488 standard and the Canadian Foundation Engineering Manual, 4th Edition, 2006.

Contractor: N/A
Location: South TMF Embankment - South Abutment
Coordinates: 452,527 E , 6,204,447 N
Coordinate System: UTM NAD83 Zone 9N
Hole Size: NW to 1.50 m; NQ to 85.04 m

Drillhole No.: DT-280
Drill Type: N/A
Total Length: 85.0 m
Elevation: 454.4 m
Azimuth, Inclination: 328 , -47

Page: 8 of 9
Date Started: Jul 30, 96
Date Completed: Aug 30, 96
Logged by: JBC
Reviewed by: JEF

DEPTH - (m)	ELEVATION - (m)	GRAPHIC LOG	MATERIAL DESCRIPTION	RUN RECOVERY (%)	SAMPLE NO.	SAMPLE REC. (%)	SAMPLE TYPE	UCS (MPa) / BLOW COUNTS (PER 6")	SPT 'N' VALUE	KEY ROCK MASS PARAMETERS / SPT TEST 'N' VALUES	INSTRUMENTATION / WELL DETAILS	DRILLING NOTES
71	403		**GABBRO** (60.66 to 75.59 m) Dark green to greenish grey; fine to coarse grained; porphyritic, massive; very strong; slightly to moderately fractured; fresh; calcite veinlets throughout; heavily chloritized.	99				175		RQD, RMR; SPT TEST 'N' VALUES - 20 40 60 80		Falling Head Test #4 - 58.90-85.00 m - 4E-07 m/s
72	402											
73	401											
74	400			100				175				
75												
76	399		**FELSIC DYKE** (75.59 to 78.94 m) Grey; fine grained; porphyritic, massive; very strong; moderately fractured; fresh; calcite phenocrysts throughout.									
77	398			92				100				
78												
79	397											
	396		**GABBRO** (78.94 to 85.04 m) Dark green to greenish grey; fine to coarse grained; equigranular, massive; very strong; slightly to moderately fractured; fresh; calcite veinlets throughout; heavily chloritized.									

GENERAL REMARKS:

Elevations and coordinates are surveyed coordinates provided by IDM. Relog of historic drillhole from 1996 geotechnical site investigation program. Lithological units inferred from adjacent drillholes and similar descriptions.

IDM Mining Ltd.
Red Mountain Project

Knight Piésold CONSULTING

Project No.	Ref. No.	Rev.
VA101-594/02	1	A

FIGURE B3-3

Logging conducted according to the ASTM 2488 standard and the Canadian Foundation Engineering Manual, 4th Edition, 2006.

Contractor: N/A
Location: South TMF Embankment - South Abutment
Coordinates: 452,527 E , 6,204,447 N
Coordinate System: UTM NAD83 Zone 9N
Hole Size NW to 1.50 m; NQ to 85.04 m

Drillhole No.: DT-280
Drill Type: N/A
Total Length: 85.0 m
Elevation: 454.4 m
Azimuth, Inclination: 328 , -47

Page: 9 of 9
Date Started: Jul 30, 96
Date Completed: Aug 30, 96
Logged by: JBC
Reviewed by: JEF

DEPTH - (m)	ELEVATION - (m)	GRAPHIC LOG	MATERIAL DESCRIPTION	RUN RECOVERY (%)	SAMPLE NO.	SAMPLE REC. (%)	SAMPLE TYPE	UCS (MPa) / BLOW COUNTS (PER 6")	SPT 'N' VALUE	KEY ROCK MASS PARAMETERS / SPT TEST 'N' VALUES	INSTRUMENTATION / WELL DETAILS	DRILLING NOTES
81	395		**GABBRO** (78.94 to 85.04 m) Dark green to greenish grey; fine to coarse grained; equigranular, massive; very strong; slightly to moderately fractured; fresh; calcite veinlets throughout; heavily chloritized.	100				150		RQD, RMR; SPT TEST 'N' VALUES - 20 40 60 80		
82	394											
83	393			95				150				
84												
85	392		End of Drillhole: 85.04 m Target Depth Reached									
86	391											
87												
88	390											
89	389											

GENERAL REMARKS:

Elevations and coordinates are surveyed coordinates provided by IDM. Relog of historic drillhole from 1996 geotechnical site investigation program. Lithological units inferred from adjacent drillholes and similar descriptions.

IDM Mining Ltd.
Red Mountain Project

Knight Piésold CONSULTING

Project No.	Ref. No.	Rev.
VA101-594/02	1	A

FIGURE B3-3

Logging conducted according to the ASTM 2488 standard and the Canadian Foundation Engineering Manual, 4th Edition, 2006.

Contractor: N/A
Location: North TMF Embankment - West Abutment
Coordinates: 452,491 E , 6,204,700 N
Coordinate System: UTM NAD83 Zone 9N
Hole Size NW to 3.00 m; NQ to 114.00 m

Drillhole No.: DT-282
Drill Type: N/A
Total Length: 114.0 m
Elevation: 463.9 m
Azimuth, Inclination: 51 , -60

Page: 1 of 12
Date Started: Jul 30, 96
Date Completed: Aug 30, 96
Logged by: JBC
Reviewed by: JEF

DEPTH - (m)	ELEVATION - (m)	GRAPHIC LOG	MATERIAL DESCRIPTION	RUN RECOVERY (%)	SAMPLE NO.	SAMPLE REC. (%)	SAMPLE TYPE	UCS (MPa) / BLOW COUNTS (PER 6")	SPT 'N' VALUE	KEY ROCK MASS PARAMETERS / SPT TEST 'N' VALUES	INSTRUMENTATION / WELL DETAILS	DRILLING NOTES
1	463		**OVERBURDEN** (0 to 2.83 m) Inferred overburden from adjacent drillholes.									
2	462											
3	461		**MAFIC DYKE** (2.83 to 11.89 m) Dark grey to black; fine to medium grained; massive; strong; moderately to highly fractured with highly broken section in middle of zone; fresh to slightly weathered.	100				60		RQD / RMR / SPT 'N' 20 40 60 80		
4	460											
5	459											
6	458		**BROKEN ZONE** (5.89 to 6.69 m) Broken Zone within Mafic Dyke unit	89				60				
7	457											
8	456											
9												

GENERAL REMARKS:

Elevations and coordinates are surveyed coordinates provided by IDM. Relog of historic drillhole from 1996 geotechnical site investigation program. Lithological units inferred from adjacent drillholes and similar descriptions.

IDM Mining Ltd.
Red Mountain Project

Knight Piésold CONSULTING

Project No.	Ref. No.	Rev.
VA101-594/02	1	A

FIGURE B3-4

Logging conducted according to the ASTM 2488 standard and the Canadian Foundation Engineering Manual, 4th Edition, 2006.

Contractor: N/A
Location: North TMF Embankment - West Abutment
Coordinates: 452,491 E , 6,204,700 N
Coordinate System: UTM NAD83 Zone 9N
Hole Size NW to 3.00 m; NQ to 114.00 m

Drillhole No.: DT-282
Drill Type: N/A
Total Length: 114.0 m
Elevation: 463.9 m
Azimuth, Inclination: 51 , -60

Page: 2 of 12
Date Started: Jul 30, 96
Date Completed: Aug 30, 96
Logged by: JBC
Reviewed by: JEF

DEPTH - (m)	ELEVATION - (m)	GRAPHIC LOG	MATERIAL DESCRIPTION	RUN RECOVERY (%)	SAMPLE NO.	SAMPLE REC. (%)	SAMPLE TYPE	UCS (MPa) / BLOW COUNTS (PER 6")	SPT 'N' VALUE	KEY ROCK MASS PARAMETERS / SPT TEST 'N' VALUES	INSTRUMENTATION / WELL DETAILS	DRILLING NOTES
11	455		**MAFIC DYKE** (2.83 to 11.89 m) Dark grey to black; fine to medium grained; massive; strong; moderately to highly fractured with highly broken section in middle of zone; fresh to slightly weathered.	92				60		RQD / RMR; SPT TEST 'N' VALUES - 20 40 60 80		
12	454		**GOLDSLIDE PORPHYRY SUITE** (11.89 to 21.03 m) Grey to light grey; fine to medium grained; massive; strong; moderately fractured; fresh to slightly weathered; calcite veinlets; black (biotite) phenocrysts. **BROKEN ZONE** (11.9 to 12 m) Broken Zone withing Goldslide Porphyry unit									
13	453			86				75				
14	452											
15	451											
16	450			94				75				Falling Head Test #1 - 10.10-22.90 m - 2E-06 m/s
17	449											
18	448											
19	447			95				75				

GENERAL REMARKS:
Elevations and coordinates are surveyed coordinates provided by IDM. Relog of historic drillhole from 1996 geotechnical site investigation program. Lithological units inferred from adjacent drillholes and similar descriptions.

IDM Mining Ltd.
Red Mountain Project

Knight Piésold CONSULTING

Project No.	Ref. No.	Rev.
VA101-594/02	1	A

FIGURE B3-4

Logging conducted according to the ASTM 2488 standard and the Canadian Foundation Engineering Manual, 4th Edition, 2006.

Contractor: N/A
Location: North TMF Embankment - West Abutment
Coordinates: 452,491 E , 6,204,700 N
Coordinate System: UTM NAD83 Zone 9N
Hole Size NW to 3.00 m; NQ to 114.00 m

Drillhole No.: DT-282
Drill Type: N/A
Total Length: 114.0 m
Elevation: 463.9 m
Azimuth, Inclination: 51 , -60

Page: 3 of 12
Date Started: Jul 30, 96
Date Completed: Aug 30, 96
Logged by: JBC
Reviewed by: JEF

DEPTH - (m)	ELEVATION - (m)	GRAPHIC LOG	MATERIAL DESCRIPTION	RUN RECOVERY (%)	SAMPLE NO.	SAMPLE REC. (%)	SAMPLE TYPE	UCS (MPa) / BLOW COUNTS (PER 6")	SPT 'N' VALUE	KEY ROCK MASS PARAMETERS / SPT TEST 'N' VALUES	INSTRUMENTATION / WELL DETAILS	DRILLING NOTES
21	446		**GOLDSLIDE PORPHYRY SUITE** (11.89 to 21.03 m) Grey to light grey; fine to medium grained; massive; strong; moderately fractured; fresh to slightly weathered; calcite veinlets; black (biotite) phenocrysts.									
22	445		**GABBRO** (21.03 to 24.84 m) Dark grey to greenish grey; fine to coarse grained; massive; strong; intensely fractured and broken; moderately to slightly weathered; chlorite infill in fractured sections; iron oxide staining on broken zone fragments; calcite and quartz veining throughout. **BROKEN ZONE** (21.65 to 21.85 m) Broken Zone within Gabbro unit	100				75		RQD / RMR; 20 40 60 80		
23	444											
24	443		**BROKEN ZONE** (24.08 to 24.86 m) Broken Zone within Gabbro unit	100				75				
25	442		**GOLDSLIDE PORPHYRY SUITE** (24.84 to 36.27 m) Greyish white to light grey; fine to medium grained; porphyritic with some aphanitic and silicified sections, massive; strong; highly fractured; fresh; some calcite and chlorite alteration.	95				75				
26	441											
27	440											
28	439		**BROKEN ZONE** (27.83 to 28.73 m) Broken Zone withing Goldslide Porphyry unit	99				75				
29	438											

GENERAL REMARKS:

Elevations and coordinates are surveyed coordinates provided by IDM. Relog of historic drillhole from 1996 geotechnical site investigation program. Lithological units inferred from adjacent drillholes and similar descriptions.

IDM Mining Ltd.
Red Mountain Project

Knight Piésold CONSULTING

Project No.	Ref. No.	Rev.
VA101-594/02	1	A

FIGURE B3-4

Logging conducted according to the ASTM 2488 standard and the Canadian Foundation Engineering Manual, 4th Edition, 2006.

Contractor: N/A
Location: North TMF Embankment - West Abutment
Coordinates: 452,491 E , 6,204,700 N
Coordinate System: UTM NAD83 Zone 9N
Hole Size NW to 3.00 m; NQ to 114.00 m

Drillhole No.: DT-282
Drill Type: N/A
Total Length: 114.0 m
Elevation: 463.9 m
Azimuth, Inclination: 51 , -60

Page: 4 of 12
Date Started: Jul 30, 96
Date Completed: Aug 30, 96
Logged by: JBC
Reviewed by: JEF

DEPTH - (m)	ELEVATION - (m)	GRAPHIC LOG	MATERIAL DESCRIPTION	RUN RECOVERY (%)	SAMPLE NO.	SAMPLE REC. (%)	SAMPLE TYPE	UCS (MPa) / BLOW COUNTS (PER 6")	SPT 'N' VALUE	KEY ROCK MASS PARAMETERS / SPT TEST 'N' VALUES	INSTRUMENTATION / WELL DETAILS	DRILLING NOTES
31	437		**GOLDSLIDE PORPHYRY SUITE** (24.84 to 36.27 m) Greyish white to light grey; fine to medium grained; porphyritic with some aphanitic and silicified sections, massive; strong; highly fractured; fresh; some calcite and chlorite alteration.	54				60		RQD, RMR; SPT TEST 'N' VALUES - 20 40 60 80		
32	436											
33	435											
34	434		**BROKEN ZONE** (33.82 to 34.72 m) Broken Zone withing Goldslide Porphyry unit	59				60				
35												Falling Head Test #2 - 22.30-48.50 m - 4E-07 m/s
36	433											
37	432		**SHEARED GABBRO** (36.27 to 48.46 m) Grey to green grey; fine to medium grained; massive; strong; highly fractured with multiple broken sections; chlorite alteration; black (biotite) phenocrysts.	95				75				
38	431											
39	430											

GENERAL REMARKS:

Elevations and coordinates are surveyed coordinates provided by IDM. Relog of historic drillhole from 1996 geotechnical site investigation program. Lithological units inferred from adjacent drillholes and similar descriptions.

IDM Mining Ltd.
Red Mountain Project

Knight Piésold CONSULTING

Project No.	Ref. No.	Rev.
VA101-594/02	1	A

FIGURE B3-4

Logging conducted according to the ASTM 2488 standard and the Canadian Foundation Engineering Manual, 4th Edition, 2006.

Contractor: N/A
Location: North TMF Embankment - West Abutment
Coordinates: 452,491 E , 6,204,700 N
Coordinate System: UTM NAD83 Zone 9N
Hole Size NW to 3.00 m; NQ to 114.00 m

Drillhole No.: DT-282
Drill Type: N/A
Total Length: 114.0 m
Elevation: 463.9 m
Azimuth, Inclination: 51 , -60

Page: 5 of 12
Date Started: Jul 30, 96
Date Completed: Aug 30, 96
Logged by: JBC
Reviewed by: JEF

DEPTH - (m)	ELEVATION - (m)	GRAPHIC LOG	MATERIAL DESCRIPTION	RUN RECOVERY (%)	SAMPLE NO.	SAMPLE REC. (%)	SAMPLE TYPE	UCS (MPa) / BLOW COUNTS (PER 6")	SPT 'N' VALUE	KEY ROCK MASS PARAMETERS / SPT TEST 'N' VALUES	INSTRUMENTATION / WELL DETAILS	DRILLING NOTES
41	429		**SHEARED GABBRO** (36.27 to 48.46 m) Grey to green grey; fine to medium grained; massive; strong; highly fractured with multiple broken sections; chlorite alteration; black (biotite) phenocrysts.	97				60		RQD, RMR; SPT TEST 'N' VALUES - 20 40 60 80		
42	428											
43	427		**BROKEN ZONE** (42.97 to 43.07 m) Broken Zone within Gabbro unit									
44	426		**BROKEN ZONE** (43.77 to 43.97 m) Broken Zone within Gabbro unit	99				65				
45	425		**BROKEN ZONE** (45.07 to 45.17 m) Broken Zone within Gabbro unit									
46	424											
47	423			100				75				
48	422		**GABBRO** (48.46 to 63.7 m) Dark grey to greenish grey; fine to coarse grained; massive; strong; moderately fractured with occasional broken sections; moderately to slightly weathered; chlorite infill in fractured sections; iron oxide staining on broken zone fragments; calcite and quartz veining throughout; chlorite altered.									
49	421											

GENERAL REMARKS:

Elevations and coordinates are surveyed coordinates provided by IDM. Relog of historic drillhole from 1996 geotechnical site investigation program. Lithological units inferred from adjacent drillholes and similar descriptions.

IDM Mining Ltd.
Red Mountain Project

Knight Piésold CONSULTING

Project No.	Ref. No.	Rev.
VA101-594/02	1	A

FIGURE B3-4

Logging conducted according to the ASTM 2488 standard and the Canadian Foundation Engineering Manual, 4th Edition, 2006.

Contractor: N/A
Location: North TMF Embankment - West Abutment
Coordinates: 452,491 E , 6,204,700 N
Coordinate System: UTM NAD83 Zone 9N
Hole Size NW to 3.00 m; NQ to 114.00 m

Drillhole No.: DT-282
Drill Type: N/A
Total Length: 114.0 m
Elevation: 463.9 m
Azimuth, Inclination: 51 , -60

Page: 6 of 12
Date Started: Jul 30, 96
Date Completed: Aug 30, 96
Logged by: JBC
Reviewed by: JEF

DEPTH - (m)	ELEVATION - (m)	GRAPHIC LOG	MATERIAL DESCRIPTION	RUN RECOVERY (%)	SAMPLE NO.	SAMPLE REC. (%)	SAMPLE TYPE	UCS (MPa) / BLOW COUNTS (PER 6")	SPT 'N' VALUE	KEY ROCK MASS PARAMETERS / SPT TEST 'N' VALUES	INSTRUMENTATION / WELL DETAILS	DRILLING NOTES
51	420		**GABBRO** (48.46 to 63.7 m) Dark grey to greenish grey; fine to coarse grained; massive; strong; moderately fractured with occasional broken sections; moderately to slightly weathered; chlorite infill in fractured sections; iron oxide staining on broken zone fragments; calcite and quartz veining throughout; chlorite altered.	92				80		RQD / RMR 20 40 60 80		
52	419		**BROKEN ZONE** (52.05 to 52.2 m) Broken Zone within Gabbro unit									
53	418			94				75				
54	417											
55	416			90				75				Falling Head Test #3 - 46.70-63.80 m - 1E-07 m/s
56	415											
57	414			100				75				
58	413											
59	412											

GENERAL REMARKS:

Elevations and coordinates are surveyed coordinates provided by IDM. Relog of historic drillhole from 1996 geotechnical site investigation program. Lithological units inferred from adjacent drillholes and similar descriptions.

IDM Mining Ltd.
Red Mountain Project

Knight Piésold CONSULTING

Project No.	Ref. No.	Rev.
VA101-594/02	1	A

FIGURE B3-4

Logging conducted according to the ASTM 2488 standard and the Canadian Foundation Engineering Manual, 4th Edition, 2006.

Contractor: N/A
Location: North TMF Embankment - West Abutment
Coordinates: 452,491 E , 6,204,700 N
Coordinate System: UTM NAD83 Zone 9N
Hole Size NW to 3.00 m; NQ to 114.00 m

Drillhole No.: DT-282
Drill Type: N/A
Total Length: 114.0 m
Elevation: 463.9 m
Azimuth, Inclination: 51 , -60

Page: 7 of 12
Date Started: Jul 30, 96
Date Completed: Aug 30, 96
Logged by: JBC
Reviewed by: JEF

DEPTH - (m)	ELEVATION - (m)	GRAPHIC LOG	MATERIAL DESCRIPTION	RUN RECOVERY (%)	SAMPLE NO.	SAMPLE REC. (%)	SAMPLE TYPE	UCS (MPa) / BLOW COUNTS (PER 6")	SPT 'N' VALUE	KEY ROCK MASS PARAMETERS / SPT TEST 'N' VALUES	INSTRUMENTATION / WELL DETAILS	DRILLING NOTES
61	411		**GABBRO** (48.46 to 63.7 m) Dark grey to greenish grey; fine to coarse grained; massive; strong; moderately fractured with occasional broken sections; moderately to slightly weathered; chlorite infill in fractured sections; iron oxide staining on broken zone fragments; calcite and quartz veining throughout; chlorite altered.							RQD, RMR; SPT TEST 'N' VALUES - 20 40 60 80		
62	410			100				75				
63	409											
64	408		**MAFIC DYKE** (63.7 to 80.77 m) Grey to dark grey; fine to coarse grained; massive; strong; moderately fractured; fresh to slightly weathered; calcite veins; black (biotite) phenocrysts; calcite and quartz inclusions; chlorite alteration.									
65	407			100				75				
66												
67	406											
68	405			100				75				
69	404											

GENERAL REMARKS:

Elevations and coordinates are surveyed coordinates provided by IDM. Relog of historic drillhole from 1996 geotechnical site investigation program. Lithological units inferred from adjacent drillholes and similar descriptions.

IDM Mining Ltd.
Red Mountain Project

Knight Piésold CONSULTING

Project No.	Ref. No.	Rev.
VA101-594/02	1	A

FIGURE B3-4

Logging conducted according to the ASTM 2488 standard and the Canadian Foundation Engineering Manual, 4th Edition, 2006.

Contractor: N/A
Location: North TMF Embankment - West Abutment
Coordinates: 452,491 E , 6,204,700 N
Coordinate System: UTM NAD83 Zone 9N
Hole Size NW to 3.00 m; NQ to 114.00 m

Drillhole No.: DT-282
Drill Type: N/A
Total Length: 114.0 m
Elevation: 463.9 m
Azimuth, Inclination: 51 , -60

Page: 8 of 12
Date Started: Jul 30, 96
Date Completed: Aug 30, 96
Logged by: JBC
Reviewed by: JEF

DEPTH - (m)	ELEVATION - (m)	GRAPHIC LOG	MATERIAL DESCRIPTION	RUN RECOVERY (%)	SAMPLE NO.	SAMPLE REC. (%)	SAMPLE TYPE	UCS (MPa) / BLOW COUNTS (PER 6")	SPT 'N' VALUE	KEY ROCK MASS PARAMETERS / SPT TEST 'N' VALUES	INSTRUMENTATION / WELL DETAILS	DRILLING NOTES
71	403		**MAFIC DYKE** (63.7 to 80.77 m) Grey to dark grey; fine to coarse grained; massive; strong; moderately fractured; fresh to slightly weathered; calcite veins; black (biotite) phenocrysts; calcite and quartz inclusions; chlorite alteration.	94				80		RQD, RMR; SPT TEST 'N' VALUES - 20 40 60 80		
72	402											
73	401			85				75				Constant Head Test #1 - 65.00-82.00 m - 3E-07 m/s
74	400											
75	399											
76	398			93				75				
77	397											
78	396											
79	395			98				75				

GENERAL REMARKS:

Elevations and coordinates are surveyed coordinates provided by IDM. Relog of historic drillhole from 1996 geotechnical site investigation program. Lithological units inferred from adjacent drillholes and similar descriptions.

IDM Mining Ltd.
Red Mountain Project

Knight Piésold CONSULTING

Project No.	Ref. No.	Rev.
VA101-594/02	1	A

FIGURE B3-4

Logging conducted according to the ASTM 2488 standard and the Canadian Foundation Engineering Manual, 4th Edition, 2006.

Contractor: N/A
Location: North TMF Embankment - West Abutment
Coordinates: 452,491 E , 6,204,700 N
Coordinate System: UTM NAD83 Zone 9N
Hole Size NW to 3.00 m; NQ to 114.00 m

Drillhole No.: DT-282
Drill Type: N/A
Total Length: 114.0 m
Elevation: 463.9 m
Azimuth, Inclination: 51 , -60

Page: 9 of 12
Date Started: Jul 30, 96
Date Completed: Aug 30, 96
Logged by: JBC
Reviewed by: JEF

DEPTH - (m)	ELEVATION - (m)	GRAPHIC LOG	MATERIAL DESCRIPTION	RUN RECOVERY (%)	SAMPLE NO.	SAMPLE REC. (%)	SAMPLE TYPE	UCS (MPa) / BLOW COUNTS (PER 6")	SPT 'N' VALUE	KEY ROCK MASS PARAMETERS / SPT TEST 'N' VALUES	INSTRUMENTATION / WELL DETAILS	DRILLING NOTES
81	394		**BROKEN ZONE** (80.34 to 80.44 m) Broken Zone within Mafic Dyke unit **GOLDSLIDE PORPHYRY SUITE** (80.77 to 94.18 m) Greyish white to pale grey; medium to coarse grained; porphyritic, equigranular, and massive; very strong; slightly fractured with highly fractured section near top of zone; fresh.							RQD, RMR; SPT TEST 'N' VALUES - 20 40 60 80		
82	393											
83	392			98				100				
84	391											
85	390											
86	389			98				125				
87	388											
88	387											
89				99				125				

GENERAL REMARKS:

Elevations and coordinates are surveyed coordinates provided by IDM. Relog of historic drillhole from 1996 geotechnical site investigation program. Lithological units inferred from adjacent drillholes and similar descriptions.

IDM Mining Ltd.
Red Mountain Project

Knight Piésold CONSULTING

Project No.	Ref. No.	Rev.
VA101-594/02	1	A

FIGURE B3-4

Logging conducted according to the ASTM 2488 standard and the Canadian Foundation Engineering Manual, 4th Edition, 2006.

Contractor: N/A
Location: North TMF Embankment - West Abutment
Coordinates: 452,491 E , 6,204,700 N
Coordinate System: UTM NAD83 Zone 9N
Hole Size NW to 3.00 m; NQ to 114.00 m

Drillhole No.: DT-282
Drill Type: N/A
Total Length: 114.0 m
Elevation: 463.9 m
Azimuth, Inclination: 51 , -60

Page: 10 of 12
Date Started: Jul 30, 96
Date Completed: Aug 30, 96
Logged by: JBC
Reviewed by: JEF

DEPTH - (m)	ELEVATION - (m)	GRAPHIC LOG	MATERIAL DESCRIPTION	RUN RECOVERY (%)	SAMPLE NO.	SAMPLE REC. (%)	SAMPLE TYPE	UCS (MPa) / BLOW COUNTS (PER 6")	SPT 'N' VALUE	KEY ROCK MASS PARAMETERS / SPT TEST 'N' VALUES	INSTRUMENTATION / WELL DETAILS	DRILLING NOTES
91	385		**GOLDSLIDE PORPHYRY SUITE** (80.77 to 94.18 m) Greyish white to pale grey; medium to coarse grained; porphyritic, equigranular, and massive; very strong; slightly fractured with highly fractured section near top of zone; fresh.							RQD, RMR; SPT TEST 'N' VALUES - 20 40 60 80		
92	384			96				125				
93	383											Constant Head Test #2 - 86.30-100.30 m - 6E-07 m/s
94	382		**SHEARED GABBRO** (94.18 to 100.28 m) Grey to light grey; fine grained; massive, porphyritic and silicified; very strong; intensely fractured; fresh to slightly weathered; iron oxide staining on fracture surfaces; calcite phenocrysts.									
95	381		**BROKEN ZONE** (95.18 to 96.18 m) Broken Zone within Gabbro unit	94				100				
96	380											
97	379			100				100				
98	378											
99												

GENERAL REMARKS:

Elevations and coordinates are surveyed coordinates provided by IDM. Relog of historic drillhole from 1996 geotechnical site investigation program. Lithological units inferred from adjacent drillholes and similar descriptions.

IDM Mining Ltd.
Red Mountain Project

Knight Piésold CONSULTING

Project No.	Ref. No.	Rev.
VA101-594/02	1	A

FIGURE B3-4

Logging conducted according to the ASTM 2488 standard and the Canadian Foundation Engineering Manual, 4th Edition, 2006.

Contractor: N/A
Location: North TMF Embankment - West Abutment
Coordinates: 452,491 E , 6,204,700 N
Coordinate System: UTM NAD83 Zone 9N
Hole Size NW to 3.00 m; NQ to 114.00 m

Drillhole No.: DT-282
Drill Type: N/A
Total Length: 114.0 m
Elevation: 463.9 m
Azimuth, Inclination: 51 , -60

Page: 11 of 12
Date Started: Jul 30, 96
Date Completed: Aug 30, 96
Logged by: JBC
Reviewed by: JEF

DEPTH - (m)	ELEVATION - (m)	GRAPHIC LOG	MATERIAL DESCRIPTION	RUN RECOVERY (%)	SAMPLE NO.	SAMPLE REC. (%)	SAMPLE TYPE	UCS (MPa) / BLOW COUNTS (PER 6")	SPT 'N' VALUE	KEY ROCK MASS PARAMETERS / SPT TEST 'N' VALUES	INSTRUMENTATION / WELL DETAILS	DRILLING NOTES
101	377		**GABBRO** (100.28 to 105.46 m) Dark grey to greenish grey; fine to medium grained; massive; strong; moderately fractured; fresh to slightly weathered; calcite veinlets; chlorite alteration.	100				70		RQD, RMR; SPT TEST 'N' VALUES - 20 40 60 80		
102	376		**BROKEN ZONE** (101.88 to 102.18 m) Broken Zone within Gabbro unit									
103	375			100				75				
104	374											Falling Head Test #4 - 98.50-114.00 m - 8E-07 m/s
105	373											
106	372		**GOLDSLIDE PORPHYRY SUITE** (105.46 to 110.55 m) Greyish white to pale grey; fine to coarse grained; equigranular, and massive; very strong; slightly fractured; fresh; some black (biotite) phenocrysts.									
107	371											
108	370			100				125				
109	369											Constant Head Test #3 - 98.50-114.00 m - 5E-07 m/s

GENERAL REMARKS:

Elevations and coordinates are surveyed coordinates provided by IDM. Relog of historic drillhole from 1996 geotechnical site investigation program. Lithological units inferred from adjacent drillholes and similar descriptions.

IDM Mining Ltd.
Red Mountain Project

Knight Piésold CONSULTING

Project No.	Ref. No.	Rev.
VA101-594/02	1	A

FIGURE B3-4

Logging conducted according to the ASTM 2488 standard and the Canadian Foundation Engineering Manual, 4th Edition, 2006.

Contractor: N/A
Location: North TMF Embankment - West Abutment
Coordinates: 452,491 E , 6,204,700 N
Coordinate System: UTM NAD83 Zone 9N
Hole Size NW to 3.00 m; NQ to 114.00 m

Drillhole No.: DT-282
Drill Type: N/A
Total Length: 114.0 m
Elevation: 463.9 m
Azimuth, Inclination: 51 , -60

Page: 12 of 12
Date Started: Jul 30, 96
Date Completed: Aug 30, 96
Logged by: JBC
Reviewed by: JEF

DEPTH - (m)	ELEVATION - (m)	GRAPHIC LOG	MATERIAL DESCRIPTION	RUN RECOVERY (%)	SAMPLE NO.	SAMPLE REC. (%)	SAMPLE TYPE	UCS (MPa) / BLOW COUNTS (PER 6")	SPT 'N' VALUE	KEY ROCK MASS PARAMETERS / SPT TEST 'N' VALUES	INSTRUMENTATION / WELL DETAILS	DRILLING NOTES
111	368		**MAFIC DYKE** (110.55 to 111.47 m) Dark grey; fine grained; massive; strong; slightly fractured; fresh to slightly weathered; calcite veins and banding; chlorite alteration.	100				70				
112	367		**GOLDSLIDE PORPHYRY SUITE** (111.47 to 114 m) Greyish white to light greenish grey; fine grained; aphanitic, silicified and massive; very strong; slightly fractured; fresh to slightly weathered; some calcite veinlets.	100				125				
113	366											
114	365		End of Drillhole: 114 m Target Depth Reached									
115	364											
116	363											
117	362											
118	361											
119												

KEY ROCK MASS PARAMETERS: RQD, RMR
SPT TEST 'N' VALUES - 20 40 60 80

GENERAL REMARKS:

Elevations and coordinates are surveyed coordinates provided by IDM. Relog of historic drillhole from 1996 geotechnical site investigation program. Lithological units inferred from adjacent drillholes and similar descriptions.

IDM Mining Ltd.
Red Mountain Project

Knight Piésold CONSULTING

Project No.	Ref. No.	Rev.
VA101-594/02	1	A

FIGURE B3-4

Logging conducted according to the ASTM 2488 standard and the Canadian Foundation Engineering Manual, 4th Edition, 2006.

APPENDIX A2

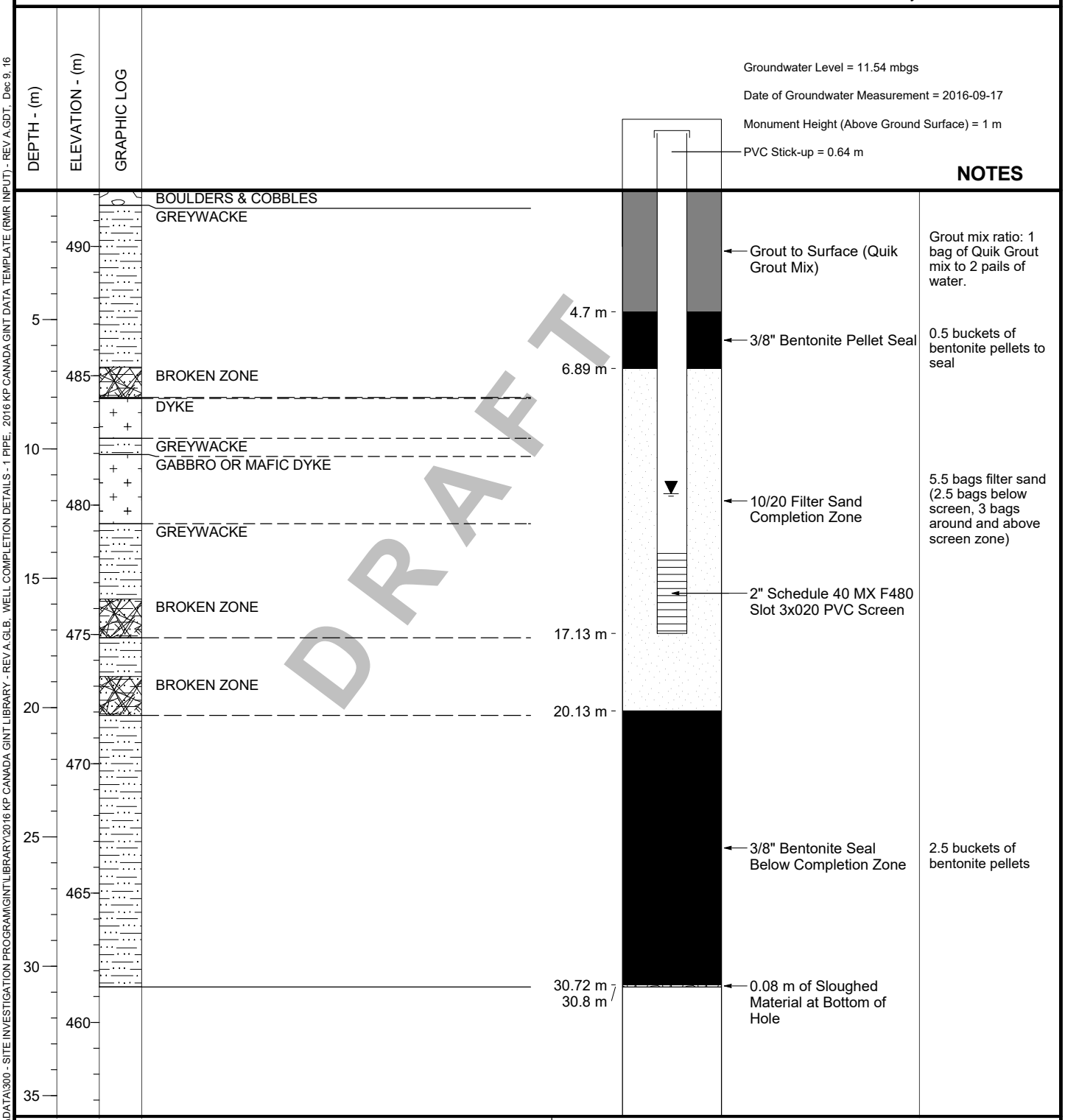
INSTALLATION COMPLETION LOGS

(Pages A2-1 to A2-18)

Contractor: More Core Diamond Drilling Service Ltd.
Location: Process Plant Site
Coordinates: 452,728 E , 6,204,160 N
Coordinate System: UTM NAD83 Zone 9N

Drillhole No.: BH16-001
Drill Type: B15 Diamond Drill
Total Depth: 30.8 m
Elevation: 492.171 m
Azimuth , Inclination: 0 , -90

Page: 1 of 1
Date Started: Aug 13, 16
Date Completed: Aug 14, 16
Logged by: CAG/MEA
Reviewed by: JEF



GENERAL REMARKS:
Bedrock lithology and detailed geology logs provided by IDM. Elevations and coordinates are surveyed coordinates provided by IDM.

IDM Mining Ltd.
Red Mountain Project

Knight Piésold CONSULTING

Project No.	Ref. No.	Rev.
VA101-594/02	1	A

FIGURE C1-1

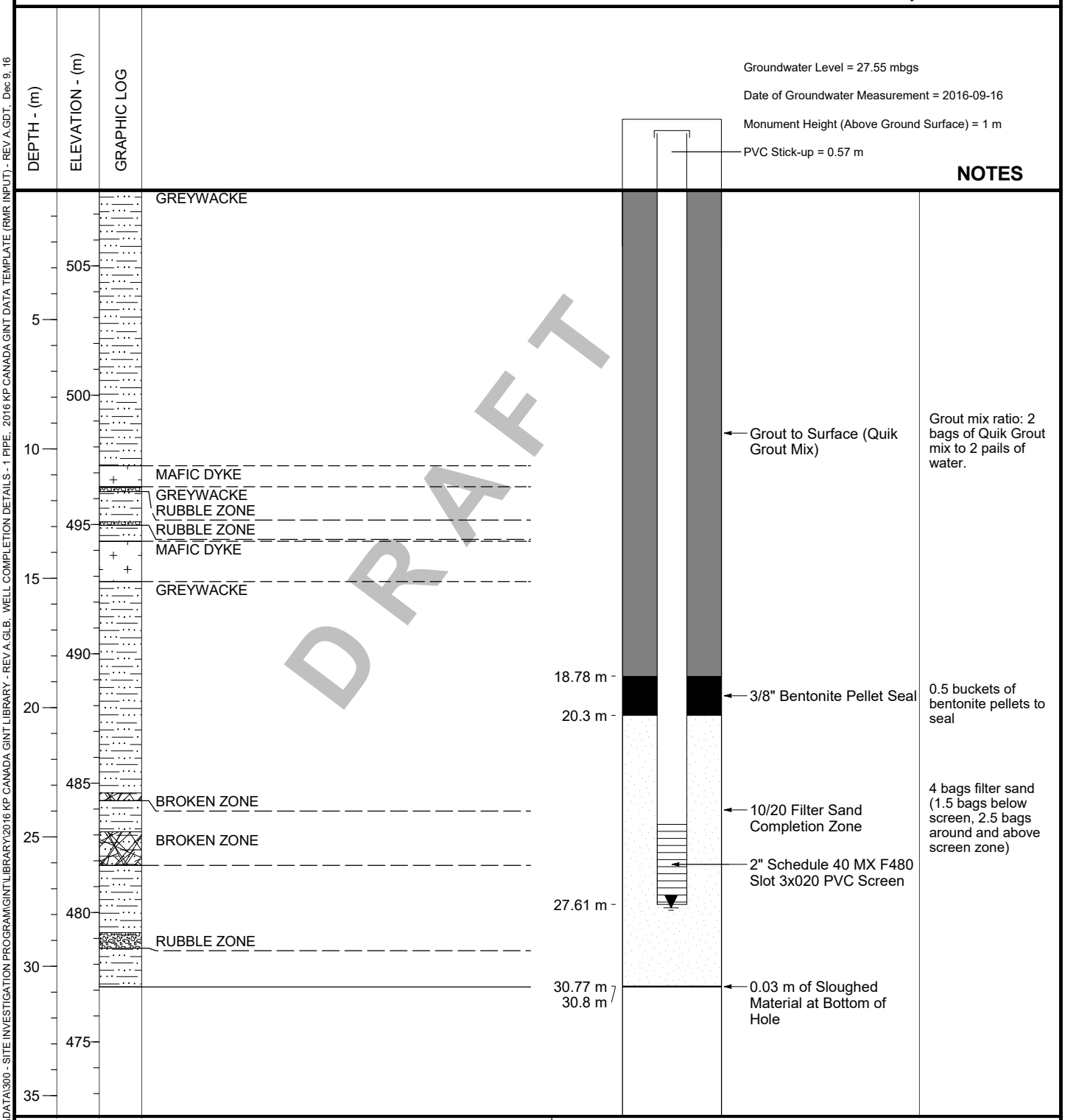
File:M:\1\01\00594\02\A\DATA\300 - SITE INVESTIGATION PROGRAM\GINT\PROJECTS\RED MOUNTAIN 2016 GEOTECHNICAL SI.GPJ
Library: M:\1\01\00594\02\A\DATA\300 - SITE INVESTIGATION PROGRAM\GINT\LIBRARY\2016 KP CANADA GINT LIBRARY - REV A.GLB, WELL COMPLETION DETAILS - 1 PIPE, 2016 KP CANADA GINT DATA TEMPLATE (RMR INPUT) - REV A.GDT, Dec 9, 16

Logging conducted according to the ASTM 2488 standard and the Canadian Foundation Engineering Manual, 4th Edition, 2006.

Contractor: More Core Diamond Drilling Service Ltd.
Location: Process Plant Site
Coordinates: 452,774 E , 6,204,277 N
Coordinate System: UTM NAD83 Zone 9N

Drillhole No.: BH16-002
Drill Type: B15 Diamond Drill
Total Depth: 30.8 m
Elevation: 507.922 m
Azimuth , Inclination: 0 , -90

Page: 1 of 1
Date Started: Aug 14, 16
Date Completed: Aug 15, 16
Logged by: CAG/MEA
Reviewed by: JEF



GENERAL REMARKS:
Bedrock lithology and detailed geology logs provided by IDM. Elevations and coordinates are surveyed coordinates provided by IDM.

IDM Mining Ltd.
Red Mountain Project

Knight Piésold CONSULTING

Project No.	Ref. No.	Rev.
VA101-594/02	1	A

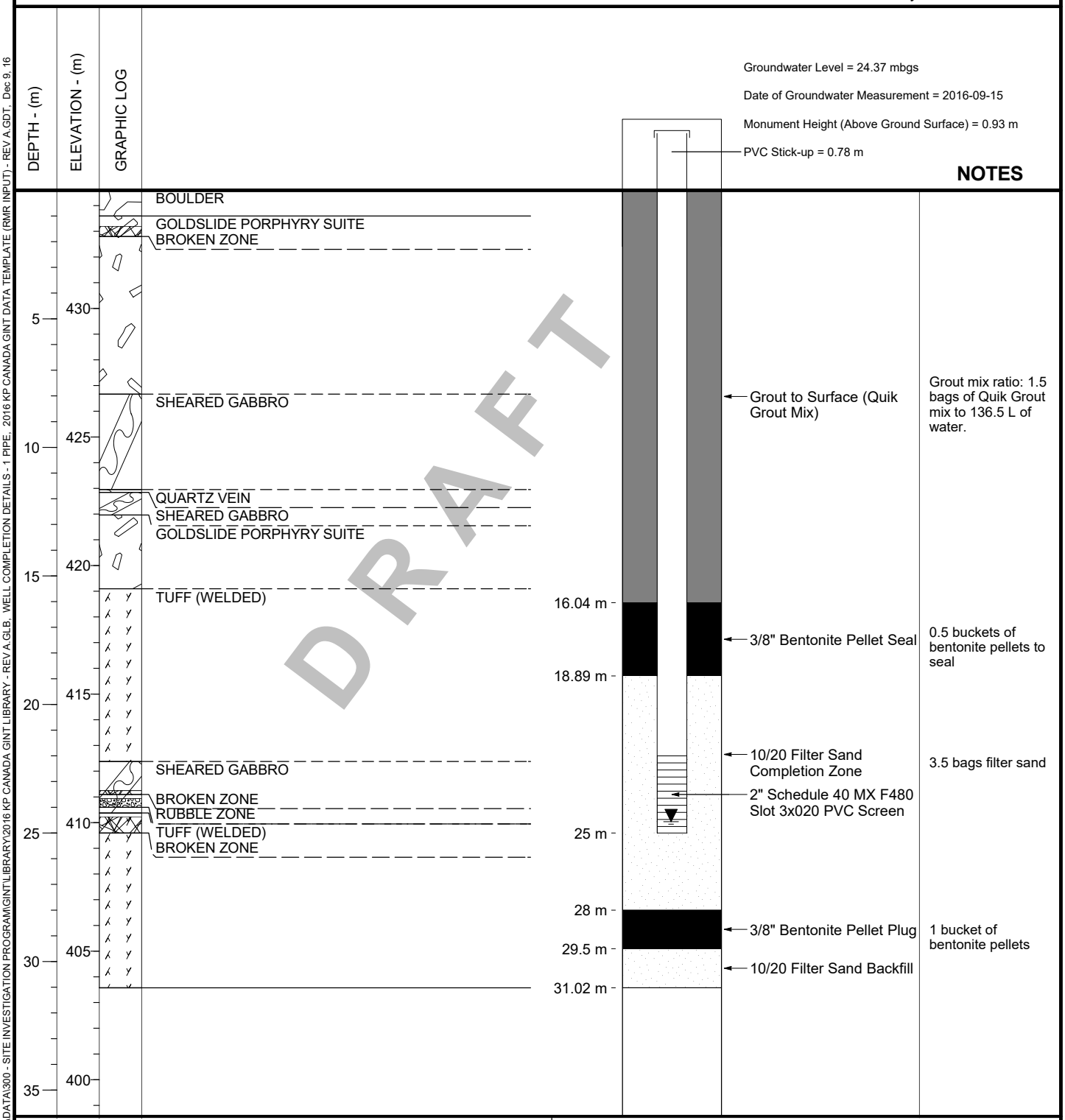
FIGURE C1-2

Logging conducted according to the ASTM 2488 standard and the Canadian Foundation Engineering Manual, 4th Edition, 2006.

Contractor: More Core Diamond Drilling Service Ltd.
Location: North TMF Embankment - Upstream Toe
Coordinates: 452,442 E , 6,204,918 N
Coordinate System: UTM NAD83 Zone 9N

Drillhole No.: BH16-003
Drill Type: B15 Diamond Drill
Total Depth: 31.0 m
Elevation: 434.596 m
Azimuth , Inclination: 0 , -90

Page: 1 of 1
Date Started: Aug 16, 16
Date Completed: Aug 18, 16
Logged by: CAG/MEA
Reviewed by: JEF



GENERAL REMARKS:
Bedrock lithology and detailed geology logs provided by IDM. Elevations and coordinates are surveyed coordinates provided by IDM.

IDM Mining Ltd.
Red Mountain Project

Knight Piésold CONSULTING

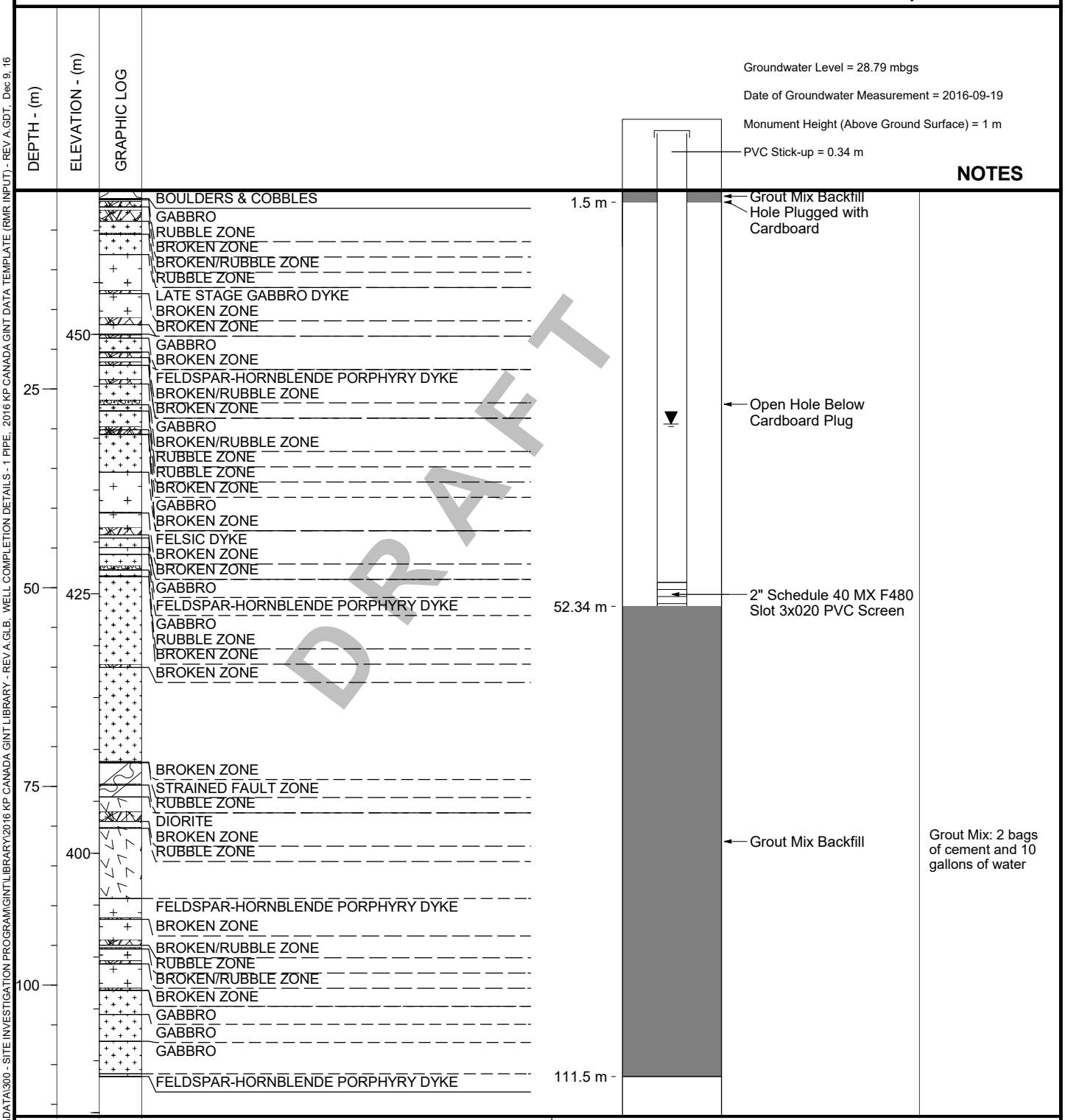
Project No.	Ref. No.	Rev.
VA101-594/02	1	A

FIGURE C1-3

Contractor: More Core Diamond Drilling Service Ltd.
Location: North TMF Embankment - West Abutment
Coordinates: 452,362 E , 6,204,903 N
Coordinate System: UTM NAD83 Zone 9N

Drillhole No.: BH16-009
Drill Type: B15 Diamond Drill
Total Depth: 111.5 m
Elevation: 463.893 m
Azimuth , Inclination: 45 , -50

Page: 1 of 1
Date Started: Sep 7, 16
Date Completed: Sep 14, 16
Logged by: CAG/MEA
Reviewed by: JEF



GENERAL REMARKS:

Bedrock lithology and detailed geology logs provided by IDM. Elevations and coordinates are surveyed coordinates provided by IDM. VWP installation failed due to structure at 55 m taking high grout quantities. Standpipe piezometer installed in place.

IDM Mining Ltd.
Red Mountain Project

Knight Piésold CONSULTING

Project No.	Ref. No.	Rev.
VA101-594/02	1	A

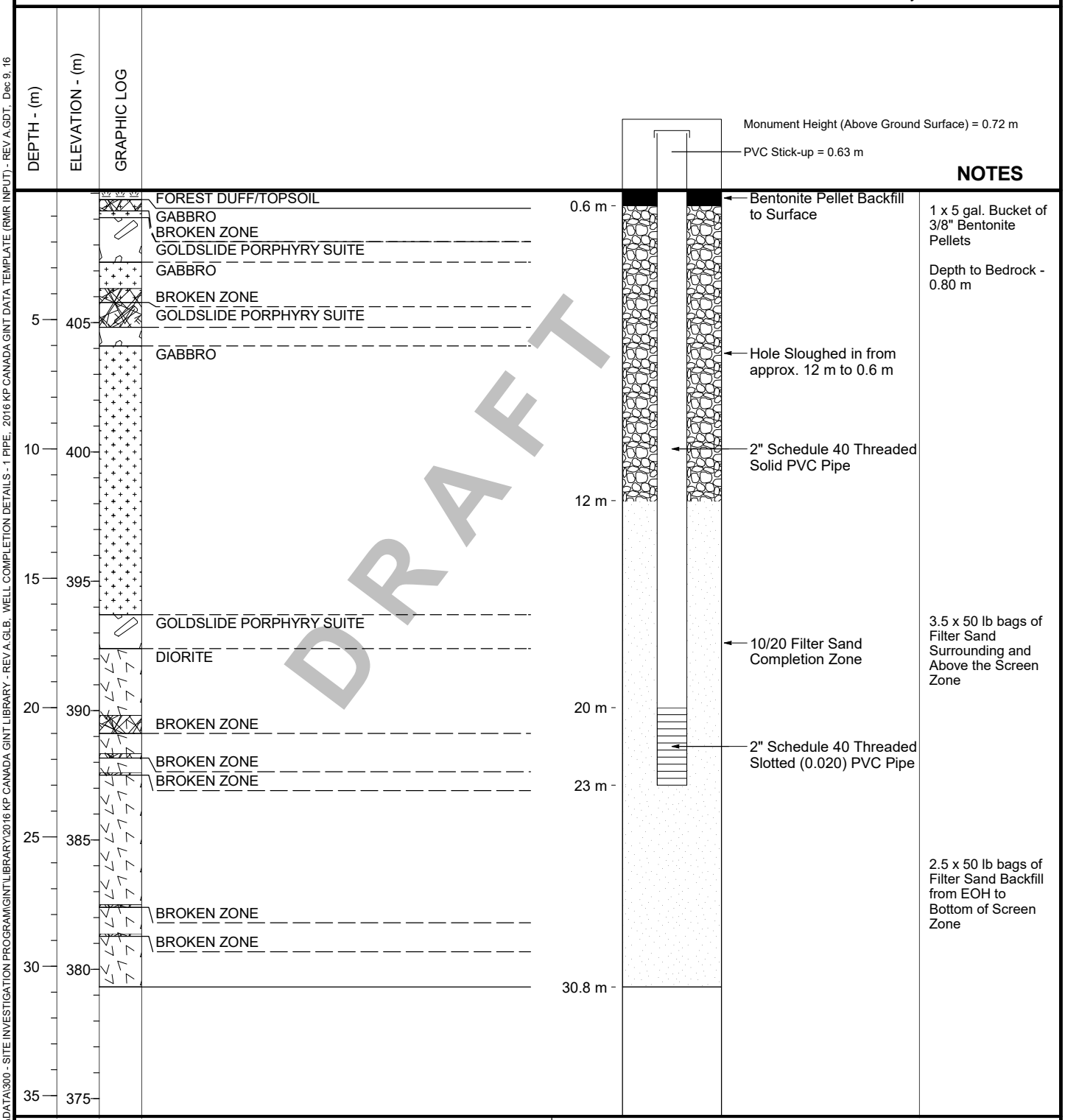
FIGURE C1-4

Logging conducted according to the ASTM 2488 standard and the Canadian Foundation Engineering Manual, 4th Edition, 2006.

Contractor: More Core Diamond Drilling Service Ltd.
Location: Downgradient of proposed North TMF Embankment
Coordinates: 452,283 E , 6,205,109 N
Coordinate System: UTM NAD83 Zone 9N

Drillhole No.: MW16-001
Drill Type: B15 Diamond Drill
Total Depth: 30.8 m
Elevation: 410.116 m
Azimuth , Inclination: 0 , -90

Page: 1 of 1
Date Started: Aug 18, 16
Date Completed: Aug 20, 16
Logged by: CAG/MEA
Reviewed by: JEF



GENERAL REMARKS:

Bedrock lithology and detailed geology logs provided by IDM. Elevations and coordinates are surveyed coordinates provided by IDM. Monitoring Well specifications provided by SRK Consulting (VA16-01091).

IDM Mining Ltd.
Red Mountain Project

Knight Piésold CONSULTING

Project No.	Ref. No.	Rev.
VA101-594/02	1	A

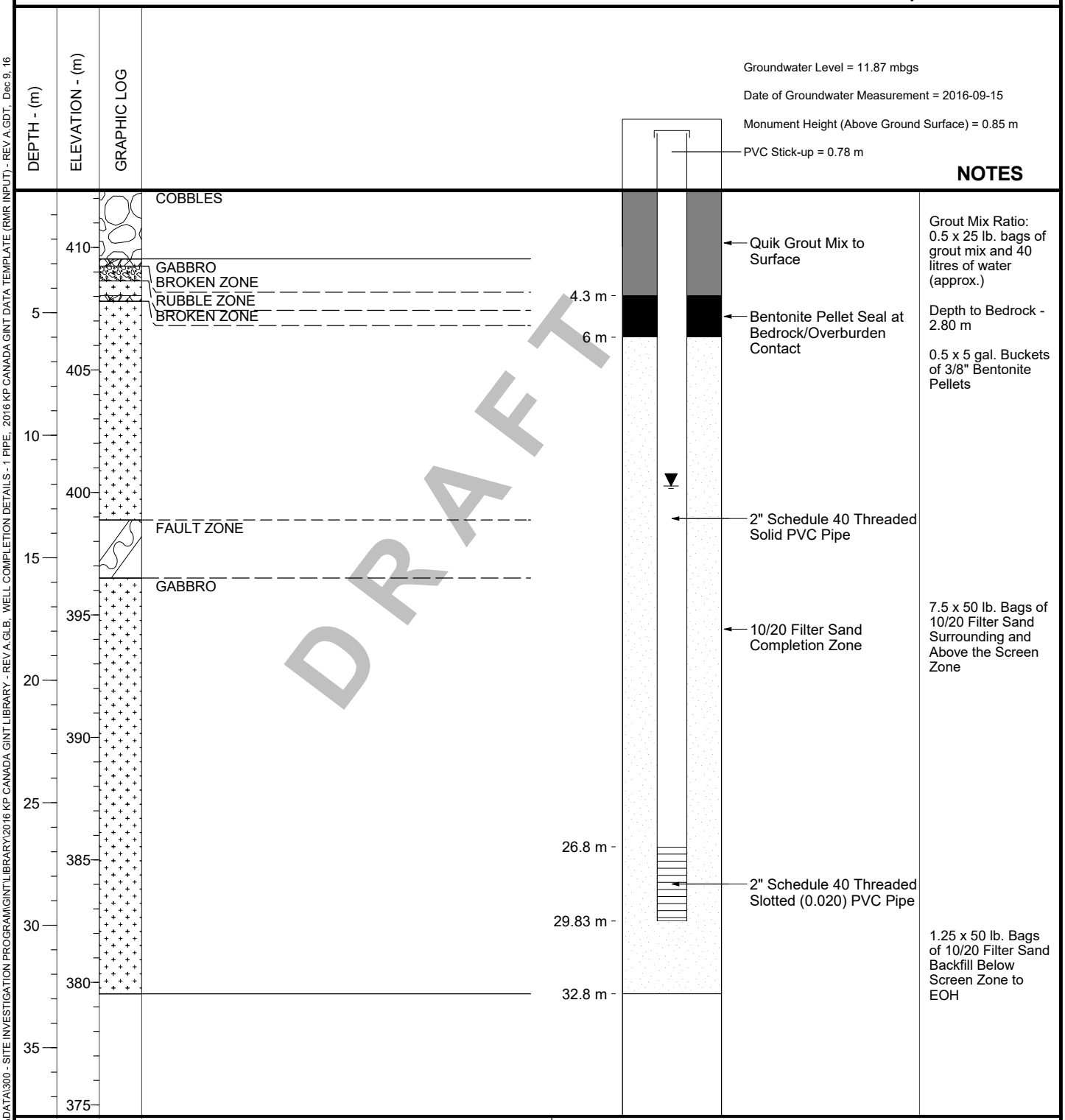
FIGURE C2-1

Logging conducted according to the ASTM 2488 standard and the Canadian Foundation Engineering Manual, 4th Edition, 2006.

Contractor: More Core Diamond Drilling Service Ltd.
Location: Downgradient of proposed South TMF Embankment
Coordinates: 452,332 E , 6,204,615 N
Coordinate System: UTM NAD83 Zone 9N

Drillhole No.: MW16-002
Drill Type: B15 Diamond Drill
Total Depth: 32.8 m
Elevation: 412.334 m
Azimuth , Inclination: 0 , -90

Page: 1 of 1
Date Started: Aug 20, 16
Date Completed: Aug 22, 16
Logged by: CAG/MEA
Reviewed by: JEF



GENERAL REMARKS:
Bedrock lithology and detailed geology logs provided by IDM. Elevations and coordinates are surveyed coordinates provided by IDM. Monitoring Well specifications provided by SRK Consulting (VA16-01091).

IDM Mining Ltd.
Red Mountain Project

Knight Piésold CONSULTING

Project No.	Ref. No.	Rev.
VA101-594/02	1	A

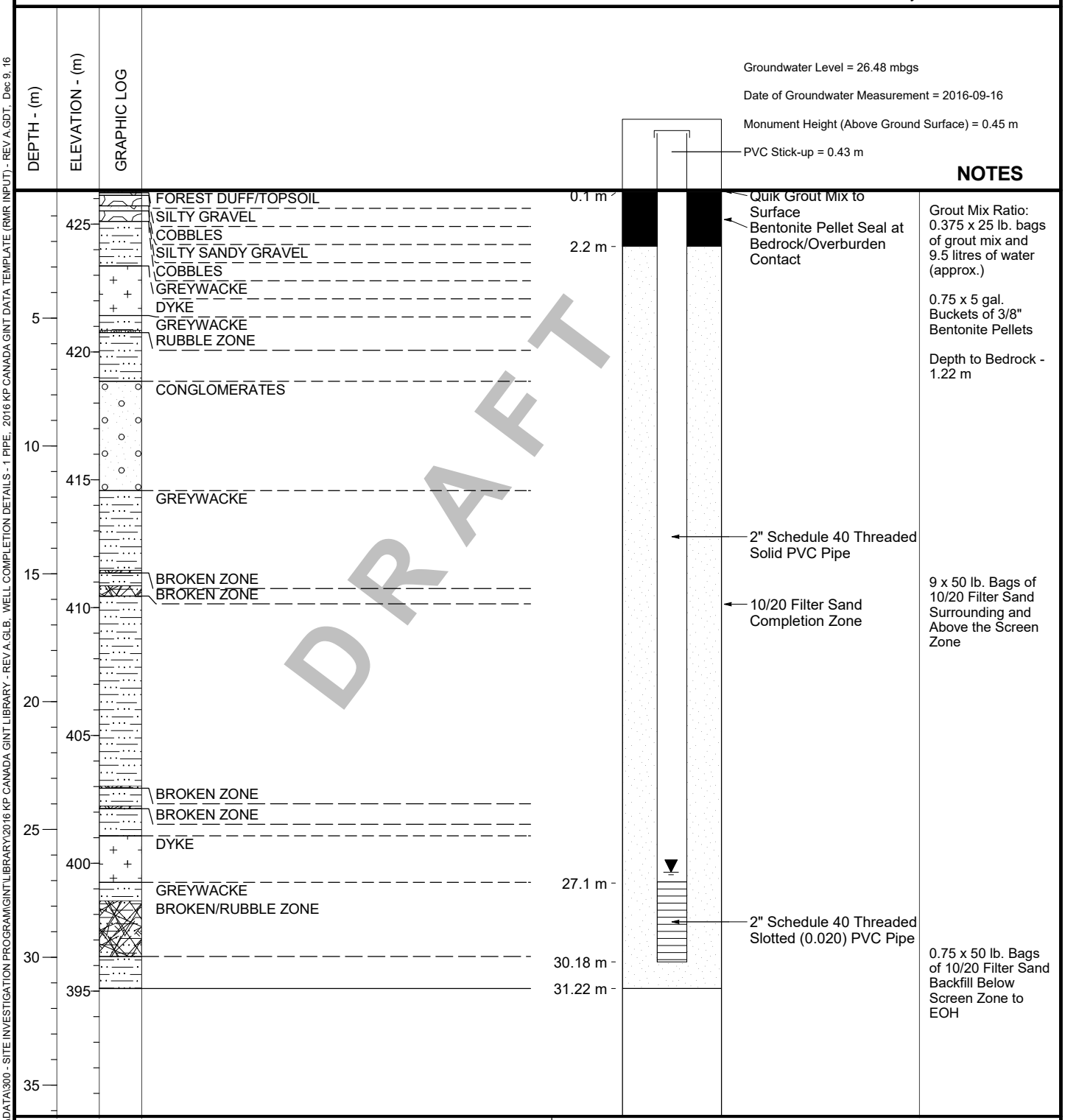
FIGURE C2-2

Logging conducted according to the ASTM 2488 standard and the Canadian Foundation Engineering Manual, 4th Edition, 2006.

Contractor: More Core Diamond Drilling Service Ltd.
Location: Downgradient of proposed South TMF Embankment
Coordinates: 452,415 E , 6,204,434 N
Coordinate System: UTM NAD83 Zone 9N

Drillhole No.: MW16-003
Drill Type: B15 Diamond Drill
Total Depth: 31.2 m
Elevation: 426.325 m
Azimuth , Inclination: 0 , -90

Page: 1 of 1
Date Started: Aug 22, 16
Date Completed: Aug 23, 16
Logged by: CAG/MEA
Reviewed by: JEF



GENERAL REMARKS:

Bedrock lithology and detailed geology logs provided by IDM. Elevations and coordinates are surveyed coordinates provided by IDM. Monitoring Well specifications provided by SRK Consulting (VA16-01091).

IDM Mining Ltd.
Red Mountain Project

Knight Piésold CONSULTING

Project No.	Ref. No.	Rev.
VA101-594/02	1	A

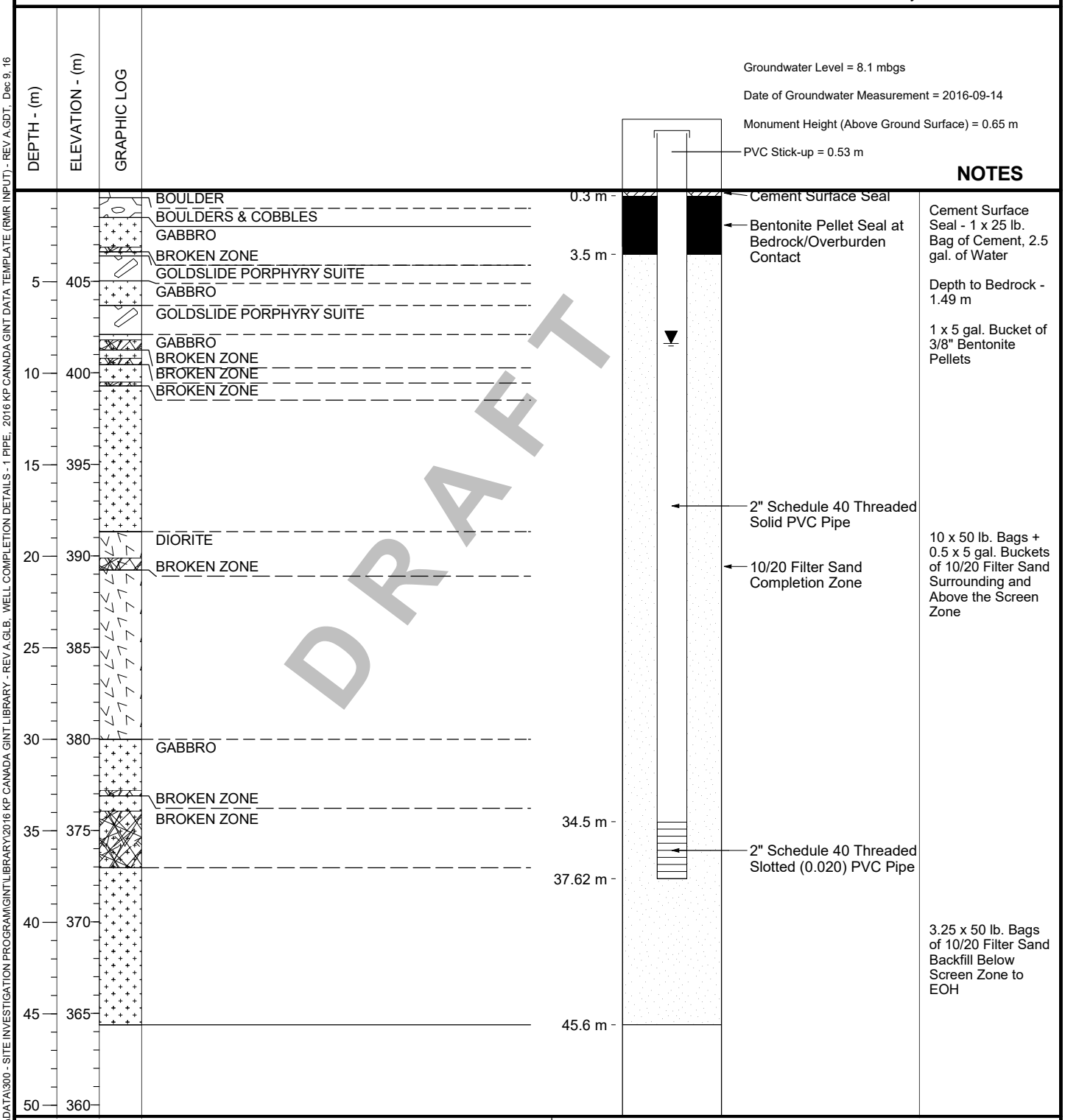
FIGURE C2-3

Logging conducted according to the ASTM 2488 standard and the Canadian Foundation Engineering Manual, 4th Edition, 2006.

Contractor: More Core Diamond Drilling Service Ltd.
Location: Downgradient of proposed North TMF Embankment
Coordinates: 452,281 E , 6,205,112 N
Coordinate System: UTM NAD83 Zone 9N

Drillhole No.: MW16-004
Drill Type: B15 Diamond Drill
Total Depth: 45.6 m
Elevation: 409.976 m
Azimuth , Inclination: 0 , -90

Page: 1 of 1
Date Started: Aug 31, 16
Date Completed: Sep 2, 16
Logged by: CAG/MEA
Reviewed by: JEF



GENERAL REMARKS:

Bedrock lithology and detailed geology logs provided by IDM. Elevations and coordinates are surveyed coordinates provided by IDM. Monitoring Well specifications provided by SRK Consulting (VA16-01091).

IDM Mining Ltd.
Red Mountain Project

Knight Piésold CONSULTING

Project No.	Ref. No.	Rev.
VA101-594/02	1	A

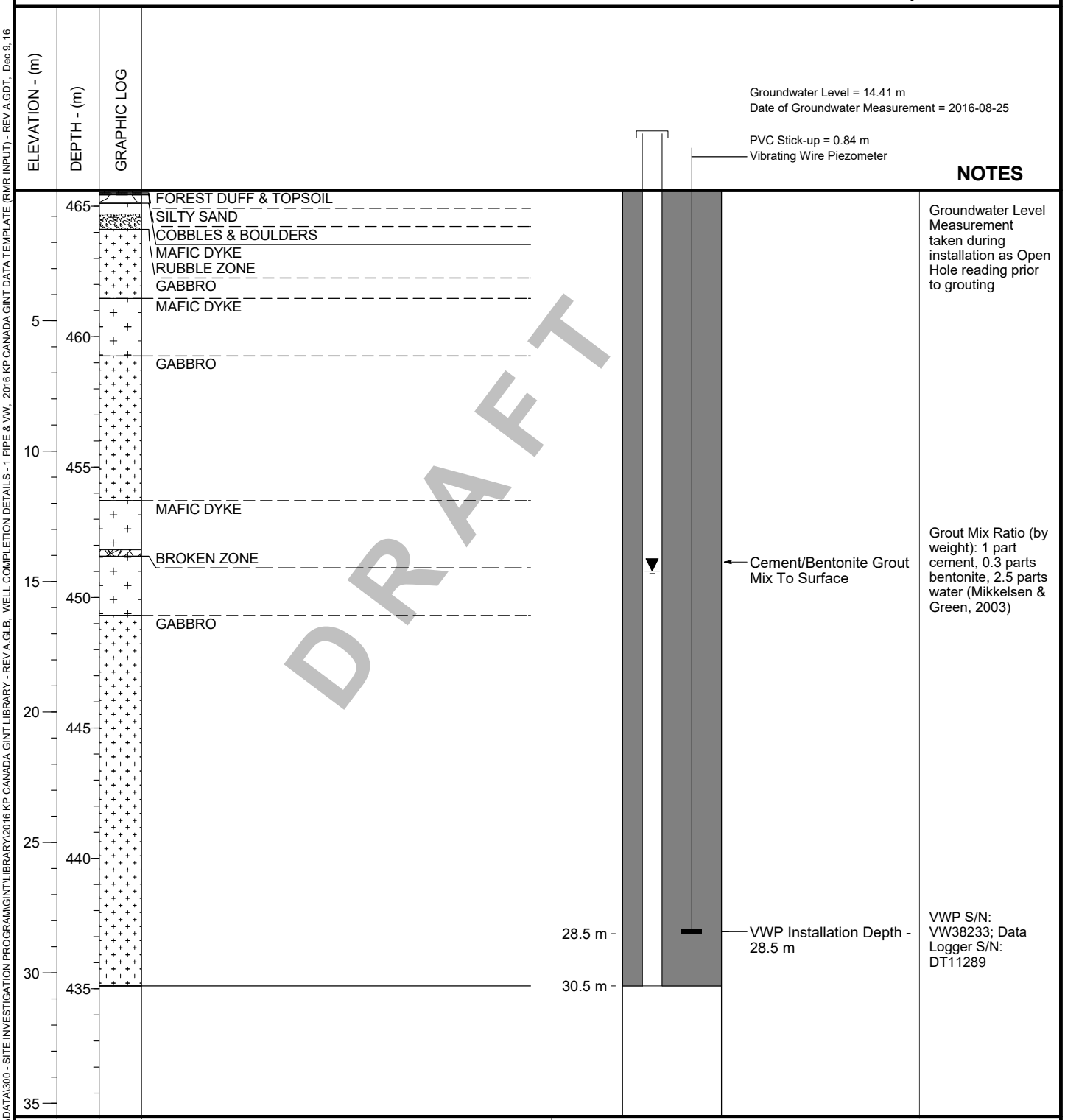
FIGURE C2-4

Logging conducted according to the ASTM 2488 standard and the Canadian Foundation Engineering Manual, 4th Edition, 2006.

Contractor: More Core Diamond Drilling Service Ltd.
Location: North TMF Embankment - East Abutment
Coordinates: 452,451 E , 6,205,121 N
Coordinate System: UTM NAD83 Zone 9N

Drillhole No.: BH16-004
Drill Type: B15 Diamond Drill
Total Depth: 30.5 m
Elevation: 465.612 m
Azimuth , Inclination: 0 , -90

Page: 1 of 1
Date Started: Aug 23, 16
Date Completed: Aug 25, 16
Logged by: CAG/MEA
Reviewed by: JEF



GENERAL REMARKS:
Bedrock lithology and detailed geology logs provided by IDM. Elevations and coordinates are surveyed coordinates provided by IDM.

IDM Mining Ltd.
Red Mountain Project

Knight Piésold CONSULTING

Project No.	Ref. No.	Rev.
VA101-594/02	1	A

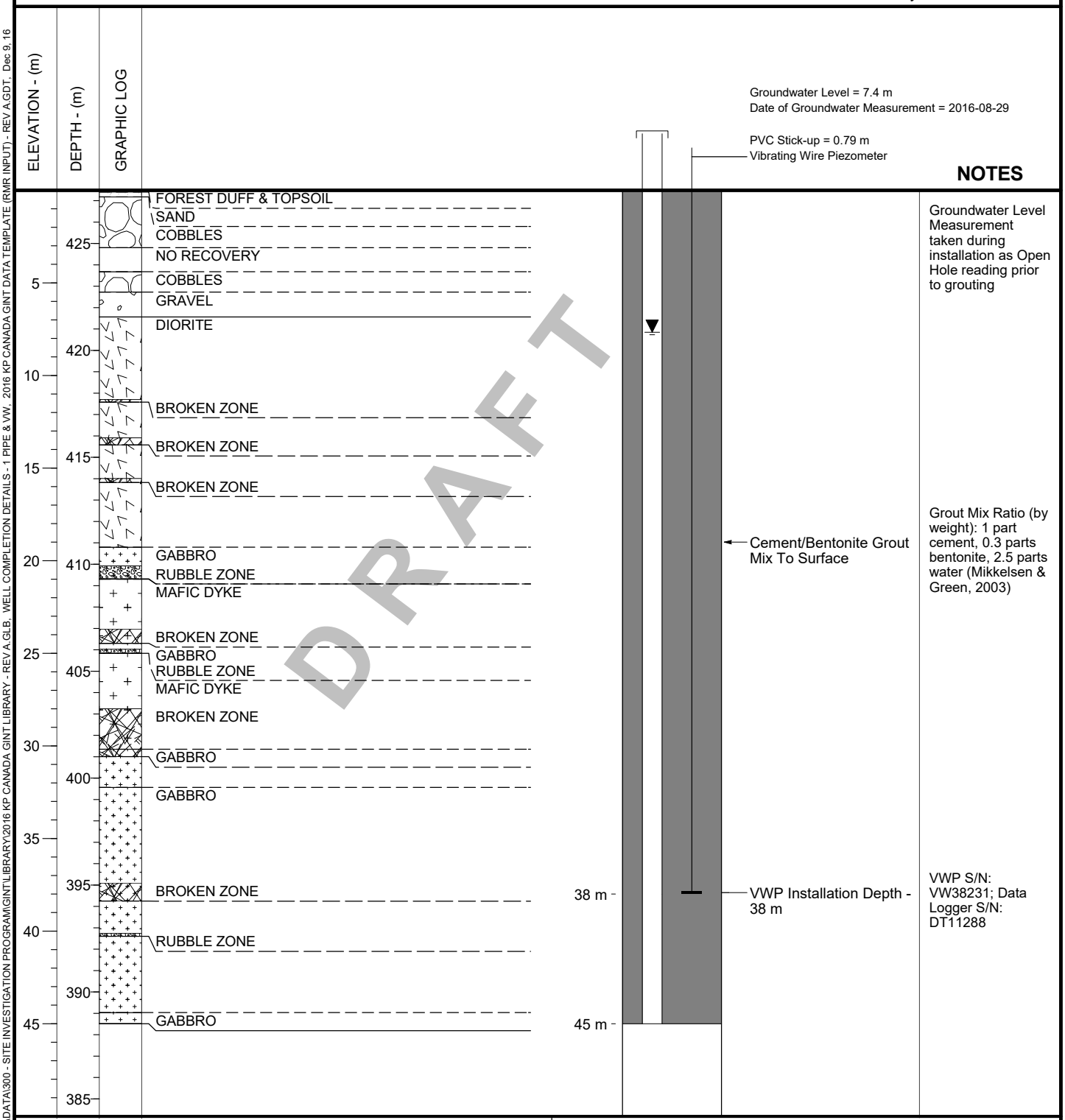
FIGURE C3-1

Logging conducted according to the ASTM 2488 standard and the Canadian Foundation Engineering Manual, 4th Edition, 2006.

Contractor: More Core Diamond Drilling Service Ltd.
Location: North TMF Embankment - Centrepoint of Dam Crest
Coordinates: 452,384 E , 6,204,956 N
Coordinate System: UTM NAD83 Zone 9N

Drillhole No.: BH16-005
Drill Type: B15 Diamond Drill
Total Depth: 45.0 m
Elevation: 427.488 m
Azimuth , Inclination: 64 , -60

Page: 1 of 1
Date Started: Aug 26, 16
Date Completed: Aug 29, 16
Logged by: CAG/MEA
Reviewed by: JEF



GENERAL REMARKS:
Bedrock lithology and detailed geology logs provided by IDM. Elevations and coordinates are surveyed coordinates provided by IDM.

IDM Mining Ltd.
Red Mountain Project

Knight Piésold CONSULTING

Project No.	Ref. No.	Rev.
VA101-594/02	1	A

FIGURE C3-2

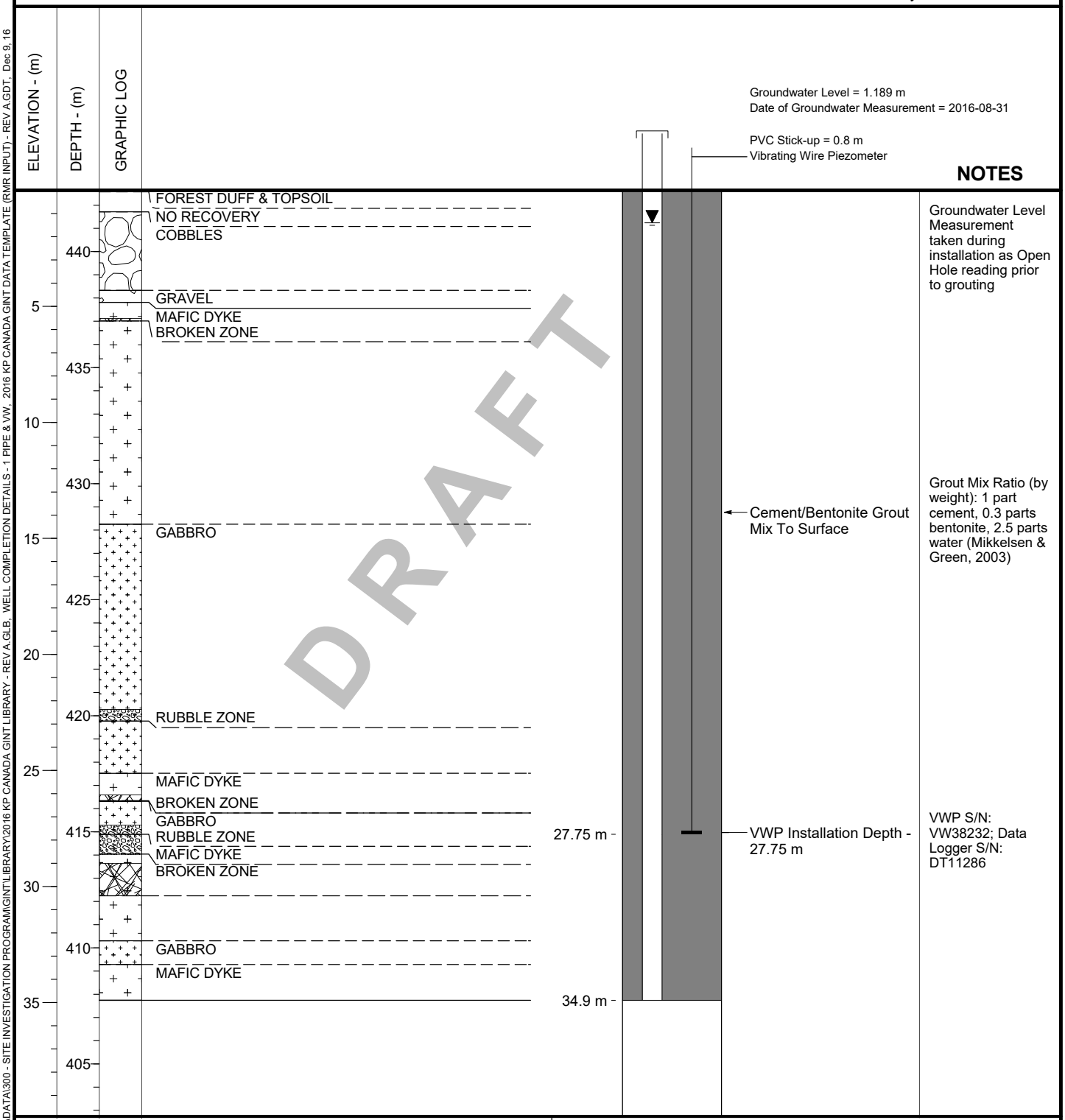
File:M:\1\01\00594\02\A\DATA\300 - SITE INVESTIGATION PROGRAM\GINT\PROJECTS\RED MOUNTAIN 2016 GEOTECHNICAL SI.GPJ
Library: M:\1\01\00594\02\A\DATA\300 - SITE INVESTIGATION PROGRAM\GINT\LIBRARY\2016 KP CANADA GINT LIBRARY - REV A.GLB, WELL COMPLETION DETAILS - 1 PIPE & VW, 2016 KP CANADA GINT DATA TEMPLATE (RMR INPUT) - REV A.GDT, Dec 9, 16

Logging conducted according to the ASTM 2488 standard and the Canadian Foundation Engineering Manual, 4th Edition, 2006.

Contractor: More Core Diamond Drilling Service Ltd.
Location: South TMF Embankment - Upstream Toe
Coordinates: 452,525 E , 6,204,589 N
Coordinate System: UTM NAD83 Zone 9N

Drillhole No.: BH16-006
Drill Type: B15 Diamond Drill
Total Depth: 34.9 m
Elevation: 442.641 m
Azimuth , Inclination: 0 , -90

Page: 1 of 1
Date Started: Aug 29, 16
Date Completed: Aug 31, 16
Logged by: CAG/MEA
Reviewed by: JEF



NOTES

Groundwater Level Measurement taken during installation as Open Hole reading prior to grouting

Grout Mix Ratio (by weight): 1 part cement, 0.3 parts bentonite, 2.5 parts water (Mikkelsen & Green, 2003)

VWP S/N: VW38232; Data Logger S/N: DT11286

GENERAL REMARKS:
Bedrock lithology and detailed geology logs provided by IDM. Elevations and coordinates are surveyed coordinates provided by IDM.

IDM Mining Ltd.
Red Mountain Project

Knight Piésold CONSULTING

Project No.	Ref. No.	Rev.
VA101-594/02	1	A

FIGURE C3-3

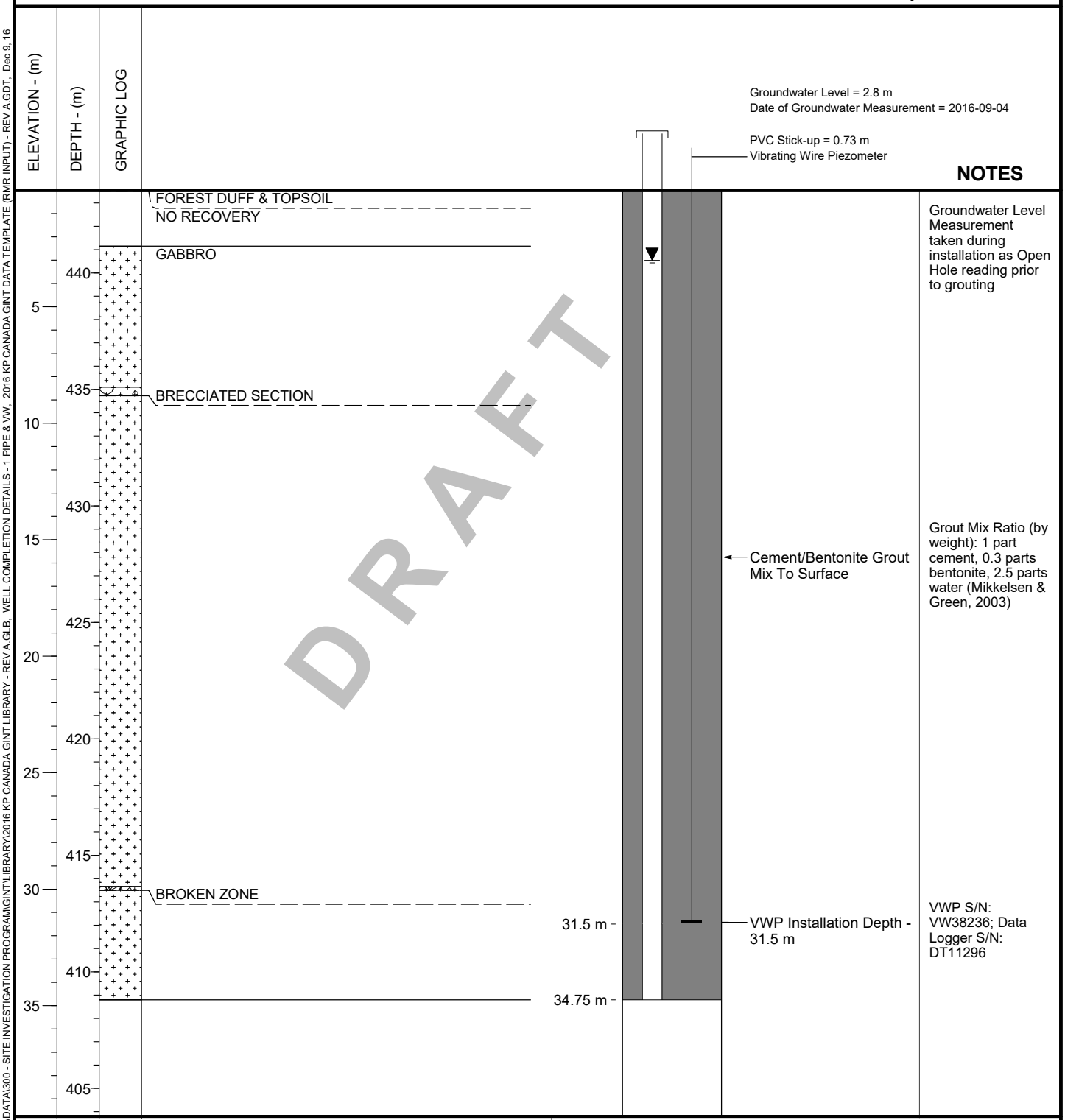
File:M:\1\01\00594\02\A\DATA\300 - SITE INVESTIGATION PROGRAM\GINT\PROJECTS\RED MOUNTAIN 2016 GEOTECHNICAL SI.GPJ
Library: M:\1\01\00594\02\A\DATA\300 - SITE INVESTIGATION PROGRAM\GINT\LIBRARY\2016 KP CANADA GINT LIBRARY - REV A.GLB, WELL COMPLETION DETAILS - 1 PIPE & VW, 2016 KP CANADA GINT DATA TEMPLATE (RMR INPUT) - REV A.GDT, Dec 9, 16

Logging conducted according to the ASTM 2488 standard and the Canadian Foundation Engineering Manual, 4th Edition, 2006.

Contractor: More Core Diamond Drilling Service Ltd.
Location: South TMF Embankment - Centrepoint of Dam Crest
Coordinates: 452,493 E , 6,204,535 N
Coordinate System: UTM NAD83 Zone 9N

Drillhole No.: BH16-007
Drill Type: B15 Diamond Drill
Total Depth: 34.8 m
Elevation: 443.55 m
Azimuth , Inclination: 0 , -90

Page: 1 of 1
Date Started: Sep 2, 16
Date Completed: Sep 4, 16
Logged by: CAG/MEA
Reviewed by: JEF



GENERAL REMARKS:
Bedrock lithology and detailed geology logs provided by IDM. Elevations and coordinates are surveyed coordinates provided by IDM.

IDM Mining Ltd.
Red Mountain Project

Knight Piésold CONSULTING

Project No.	Ref. No.	Rev.
VA101-594/02	1	A

FIGURE C3-4

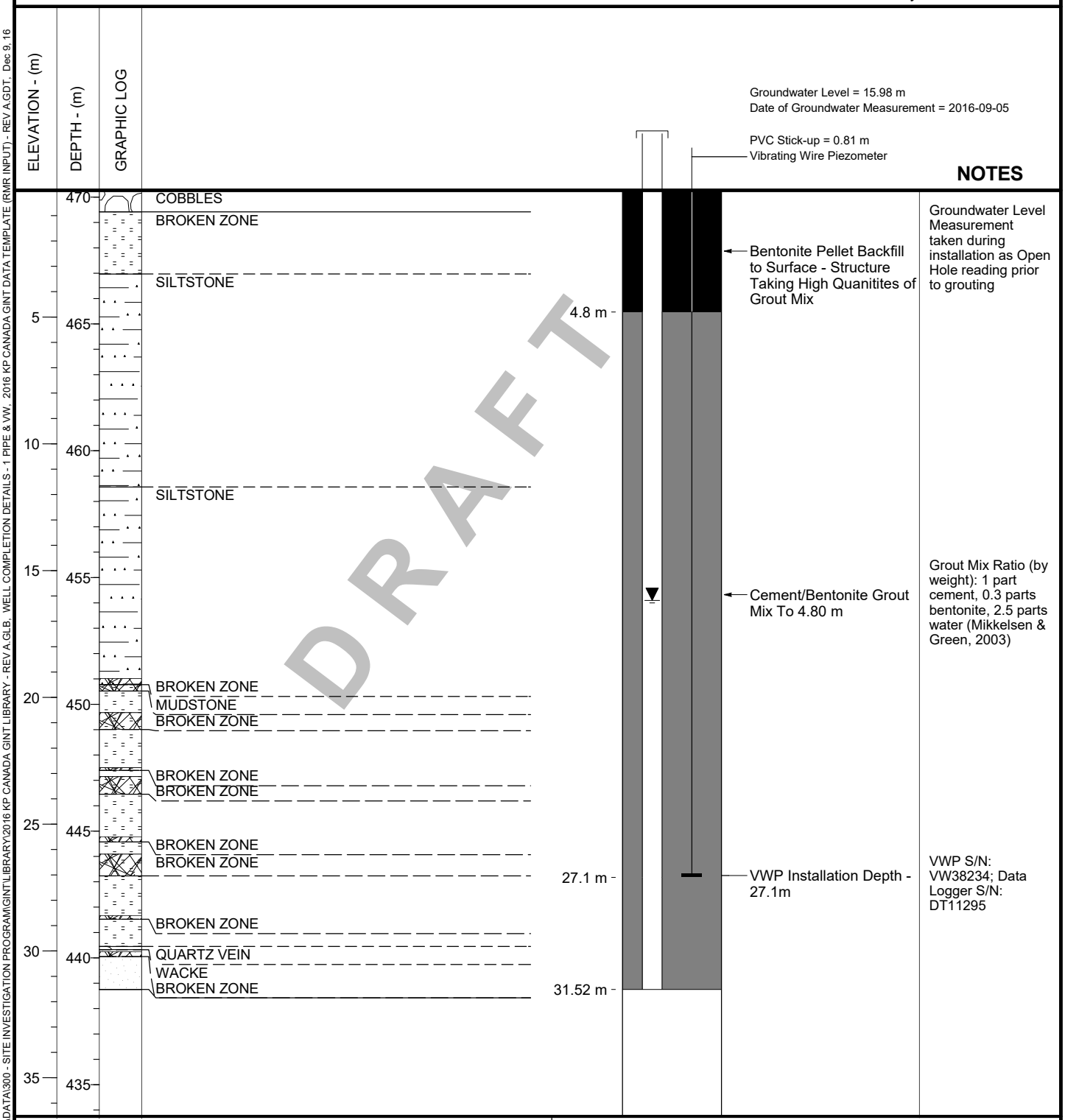
File:M:\1\01\00594\02\A\DATA\300 - SITE INVESTIGATION PROGRAM\GINT\PROJECTS\RED MOUNTAIN 2016 GEOTECHNICAL SI.GPJ
Library: M:\1\01\00594\02\A\DATA\300 - SITE INVESTIGATION PROGRAM\GINT\LIBRARY\2016 KP CANADA GINT LIBRARY - REV A.GLB, WELL COMPLETION DETAILS - 1 PIPE & VW, 2016 KP CANADA GINT DATA TEMPLATE (RMR INPUT) - REV A.GDT, Dec 9, 16

Logging conducted according to the ASTM 2488 standard and the Canadian Foundation Engineering Manual, 4th Edition, 2006.

Contractor: More Core Diamond Drilling Service Ltd.
Location: South TMF Embankment - South Abutment
Coordinates: 452,550 E , 6,204,409 N
Coordinate System: UTM NAD83 Zone 9N

Drillhole No.: BH16-008
Drill Type: B15 Diamond Drill
Total Depth: 31.5 m
Elevation: 470.272 m
Azimuth , Inclination: 0 , -90

Page: 1 of 1
Date Started: Sep 4, 16
Date Completed: Sep 6, 16
Logged by: CAG/MEA
Reviewed by: JEF



GENERAL REMARKS:
Bedrock lithology and detailed geology logs provided by IDM. Elevations and coordinates are surveyed coordinates provided by IDM.

IDM Mining Ltd.
Red Mountain Project

Knight Piésold CONSULTING

Project No.	Ref. No.	Rev.
VA101-594/02	1	A

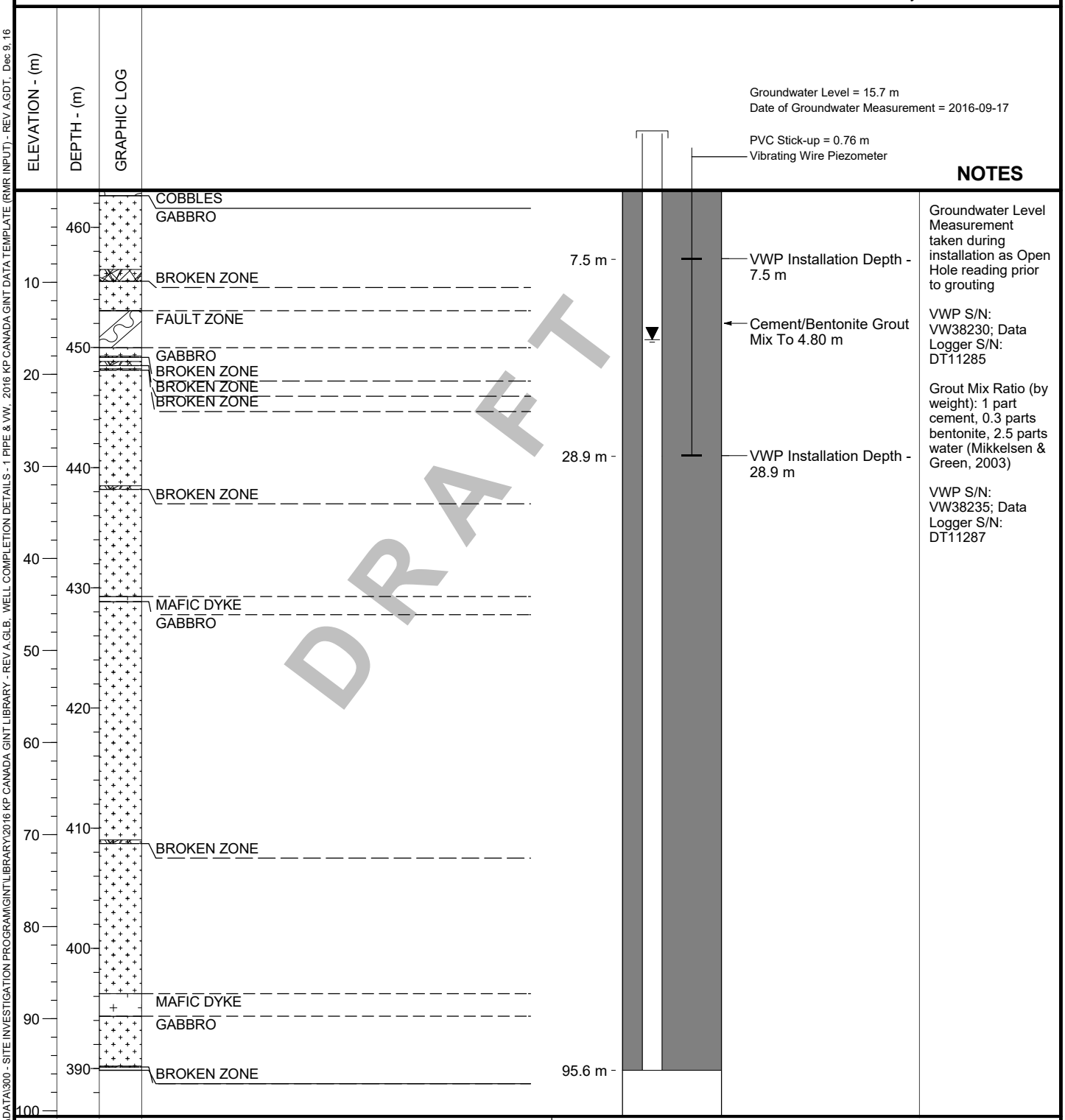
FIGURE C3-5

File:M:\1\01\00594\02\A\DATA\300 - SITE INVESTIGATION PROGRAM\GINT\PROJECTS\RED MOUNTAIN 2016 GEOTECHNICAL SI.GPJ
Library: M:\1\01\00594\02\A\DATA\300 - SITE INVESTIGATION PROGRAM\GINT\LIBRARY\2016 KP CANADA GINT LIBRARY - REV A.GLB, WELL COMPLETION DETAILS - 1 PIPE & VW, 2016 KP CANADA GINT DATA TEMPLATE (RMR INPUT) - REV A.GDT, Dec 9, 16

Contractor: More Core Diamond Drilling Service Ltd.
Location: South TMF Embankment - North Abutment
Coordinates: 452,435 E , 6,204,669 N
Coordinate System: UTM NAD83 Zone 9N

Drillhole No.: BH16-010
Drill Type: B15 Diamond Drill
Total Depth: 95.6 m
Elevation: 463.084 m
Azimuth , Inclination: 160 , -50

Page: 1 of 1
Date Started: Sep 14, 16
Date Completed: Sep 17, 16
Logged by: CAG/MEA
Reviewed by: JEF



NOTES

Groundwater Level Measurement taken during installation as Open Hole reading prior to grouting

VWP S/N: VW38230; Data Logger S/N: DT11285

Grout Mix Ratio (by weight): 1 part cement, 0.3 parts bentonite, 2.5 parts water (Mikkelsen & Green, 2003)

VWP S/N: VW38235; Data Logger S/N: DT11287

GENERAL REMARKS:

Bedrock lithology and detailed geology logs provided by IDM. Elevations and coordinates are surveyed coordinates provided by IDM.

IDM Mining Ltd.
Red Mountain Project

Knight Piésold CONSULTING

Project No.	Ref. No.	Rev.
VA101-594/02	1	A

FIGURE C3-6

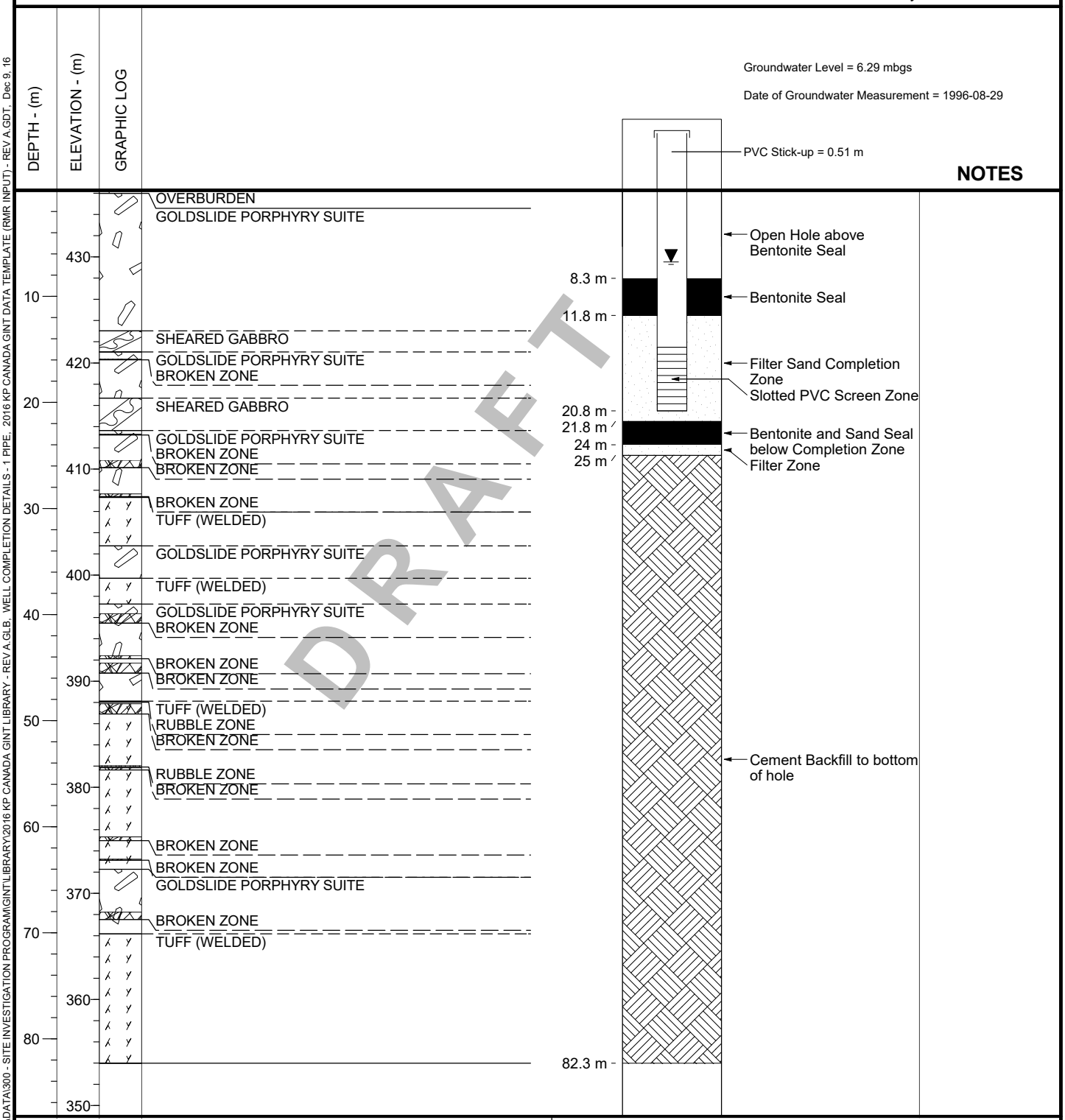
File:M:\1\01\00594\02\A\DATA\300 - SITE INVESTIGATION PROGRAM\GINT\PROJECTS\RED MOUNTAIN 2016 GEOTECHNICAL SI.GPJ
Library: M:\1\01\00594\02\A\DATA\300 - SITE INVESTIGATION PROGRAM\GINT\LIBRARY\2016 KP CANADA GINT LIBRARY - REV A.GLB, WELL COMPLETION DETAILS - 1 PIPE & VW, 2016 KP CANADA GINT DATA TEMPLATE (RMR INPUT) - REV A.GDT, Dec 9, 16

Logging conducted according to the ASTM 2488 standard and the Canadian Foundation Engineering Manual, 4th Edition, 2006.

Contractor: N/A
Location: North TMF Embankment - Upstream Toe
Coordinates: 452,429 E , 6,204,937 N
Coordinate System: UTM NAD83 Zone 9N

Drillhole No.: DT-273
Drill Type: N/A
Total Depth: 82.3 m
Elevation: 436.282 m
Azimuth , Inclination: 0 , -90

Page: 1 of 1
Date Started: Jul 30, 96
Date Completed: Aug 30, 96
Logged by: JBC
Reviewed by: JEF



GENERAL REMARKS:

Elevations and coordinates are surveyed coordinates provided by IDM. Relog of historic drillhole from 1996 geotechnical site investigation program. Lithological units inferred from adjacent drillholes and similar descriptions.

IDM Mining Ltd.
Red Mountain Project

Knight Piésold CONSULTING

Project No.	Ref. No.	Rev.
VA101-594/02	1	A

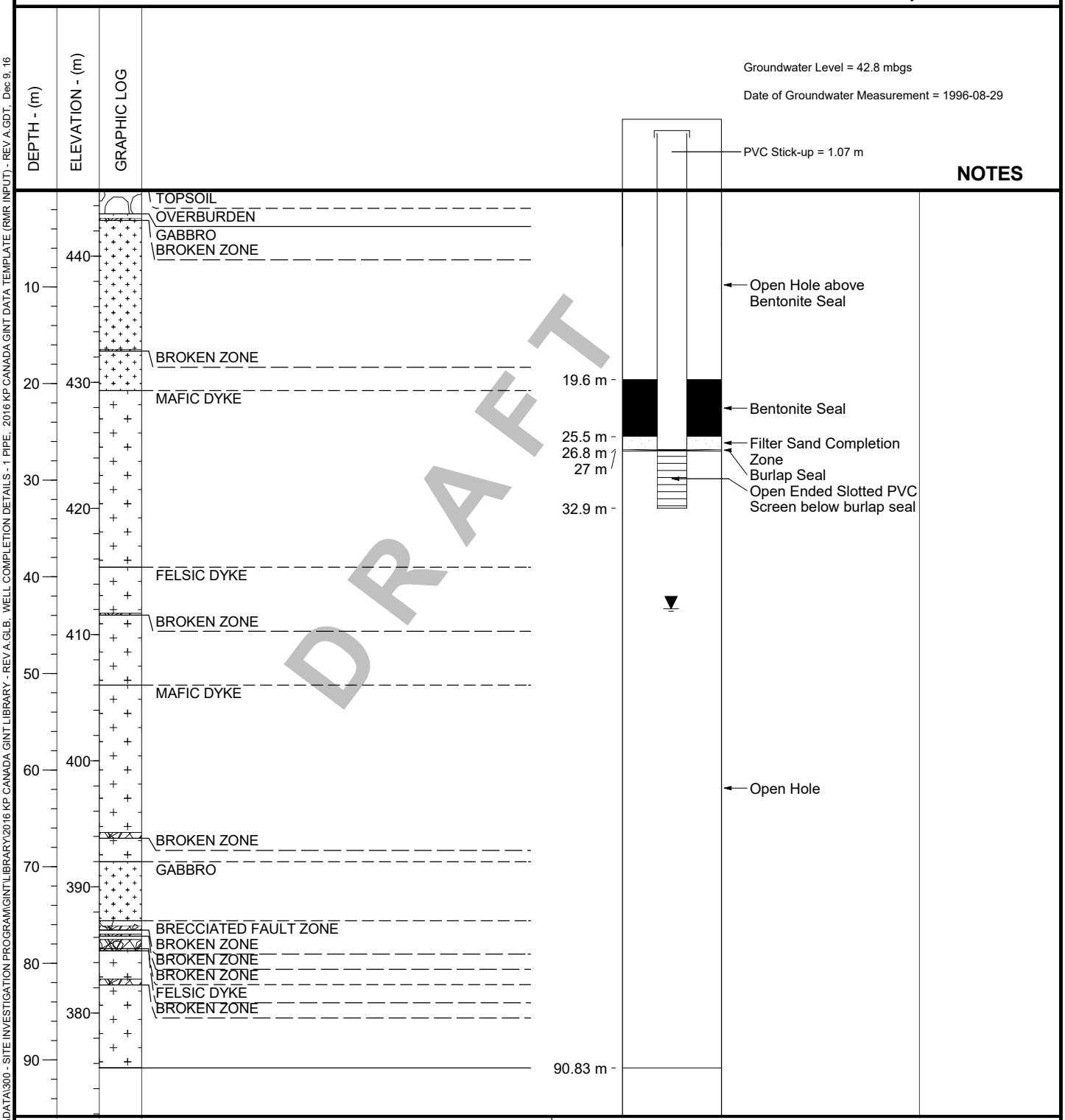
FIGURE C4-1

Logging conducted according to the ASTM 2488 standard and the Canadian Foundation Engineering Manual, 4th Edition, 2006.

Contractor: N/A
Location: South TMF Embankment - Upstream Embankment Face
Coordinates: 452,489 E , 6,204,553 N
Coordinate System: UTM NAD83 Zone 9N

Drillhole No.: DT-277
Drill Type: N/A
Total Depth: 90.8 m
Elevation: 445.223 m
Azimuth , Inclination: 156 , -50

Page: 1 of 1
Date Started: Jul 30, 96
Date Completed: Aug 30, 96
Logged by: JBC
Reviewed by: JEF



GENERAL REMARKS:

Elevations and coordinates are surveyed coordinates provided by IDM. Relog of historic drillhole from 1996 geotechnical site investigation program. Lithological units inferred from adjacent drillholes and similar descriptions.

IDM Mining Ltd.
Red Mountain Project

Knight Piésold CONSULTING

Project No.	Ref. No.	Rev.
VA101-594/02	1	A

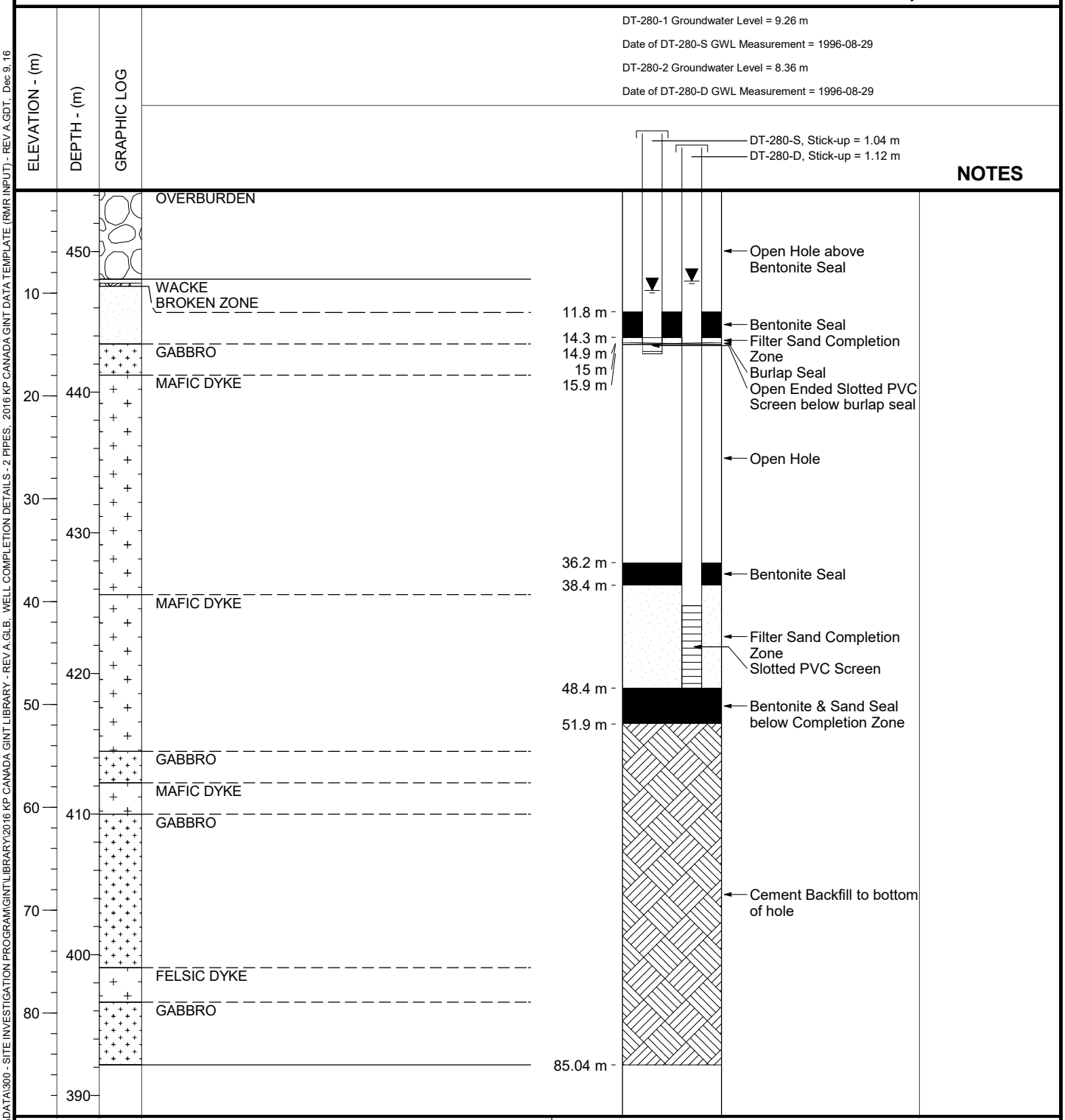
FIGURE C4-2

Logging conducted according to the ASTM 2488 standard and the Canadian Foundation Engineering Manual, 4th Edition, 2006.

Contractor: N/A
Location: South TMF Embankment - South Abutment
Coordinates: 452,527 E , 6,204,447 N
Coordinate System: UTM NAD83 Zone 9N

Drillhole No.: DT-280
Drill Type: N/A
Total Depth: 85.0 m
Elevation: 454.359 m
Azimuth , Inclination: 328 , -47

Page: 1 of 1
Date Started: Jul 30, 96
Date Completed: Aug 30, 96
Logged by: JBC
Reviewed by: JEF



GENERAL REMARKS:

Elevations and coordinates are surveyed coordinates provided by IDM. Relog of historic drillhole from 1996 geotechnical site investigation program. Lithological units inferred from adjacent drillholes and similar descriptions.

IDM Mining Ltd.
Red Mountain Project

Knight Piésold CONSULTING

Project No.	Ref. No.	Rev.
VA101-594/02	1	A

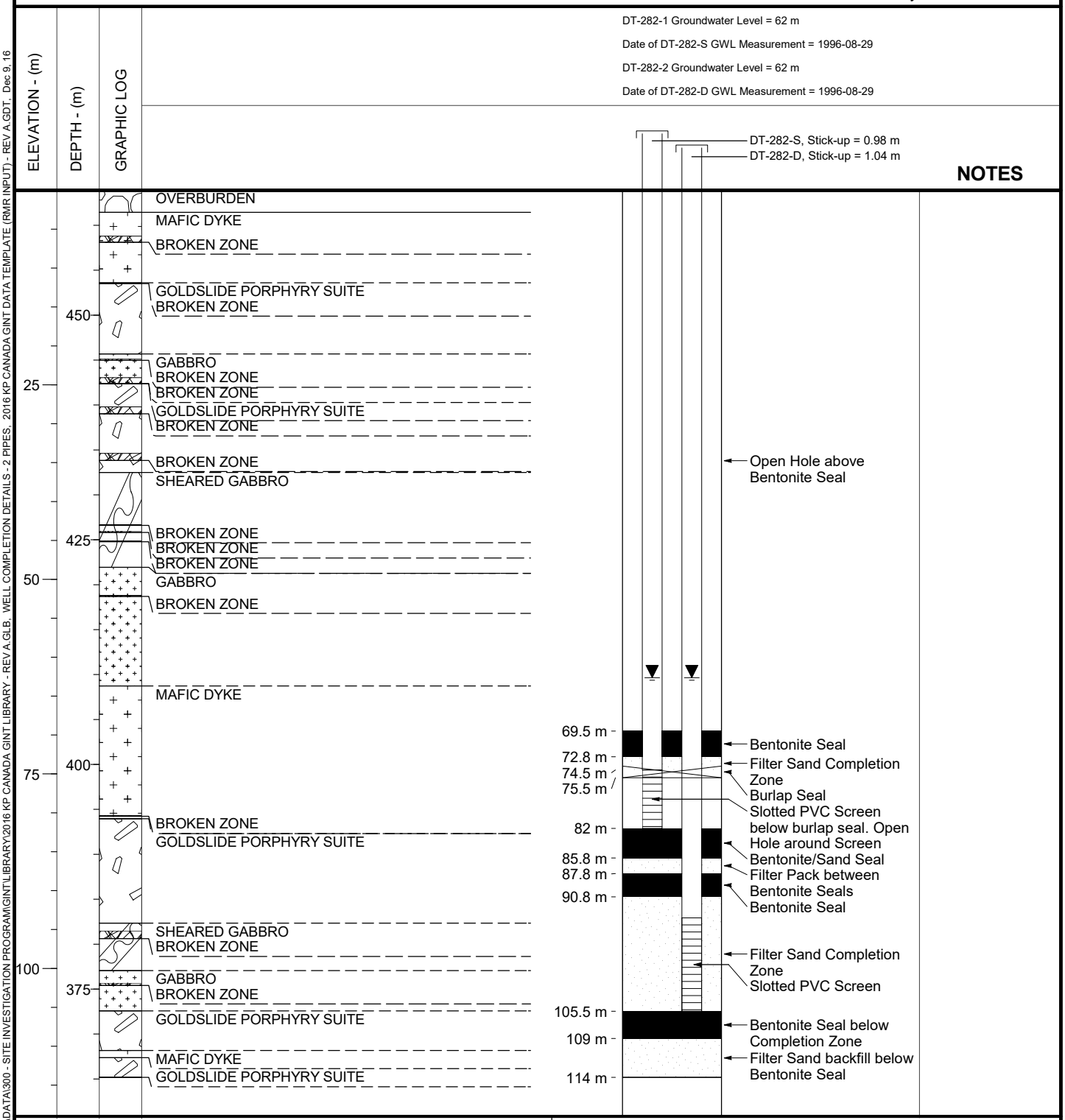
FIGURE C4-3

Logging conducted according to the ASTM 2488 standard and the Canadian Foundation Engineering Manual, 4th Edition, 2006.

Contractor: N/A
Location: North TMF Embankment - West Abutment
Coordinates: 452,491 E , 6,204,700 N
Coordinate System: UTM NAD83 Zone 9N

Drillhole No.: DT-282
Drill Type: N/A
Total Depth: 114.0 m
Elevation: 463.9 m
Azimuth , Inclination: 51 , -60

Page: 1 of 1
Date Started: Jul 30, 96
Date Completed: Aug 30, 96
Logged by: JBC
Reviewed by: JEF



GENERAL REMARKS:

Elevations and coordinates are surveyed coordinates provided by IDM. Relog of historic drillhole from 1996 geotechnical site investigation program. Lithological units inferred from adjacent drillholes and similar descriptions.

IDM Mining Ltd.
Red Mountain Project

Knight Piésold CONSULTING

Project No.	Ref. No.	Rev.
VA101-594/02	1	A

FIGURE C4-4

Logging conducted according to the ASTM 2488 standard and the Canadian Foundation Engineering Manual, 4th Edition, 2006.

APPENDIX B

HYDRAULIC CONDUCTIVITIY TESTS (BEDROCK)

Appendix B1 1996 Hydraulic Conductivity Testing at Bromley Humps
Appendix B2 2016 Hydraulic Conductivity Testing at Bromley Humps

APPENDIX B1

1996 HYDRAULIC CONDUCTIVITY TESTING AT BROMLEY HUMPS

(Table B1)

Knight Piésold CONSULTING

TABLE B1

IDM MINING LTD.
RED MOUNTAIN UNDERGROUND GOLD PROJECT

SUMMARY OF 1996 HYDRAULIC CONDUCTIVITY TESTING AT BROMLEY HUMPS (PACKER TESTING WITHIN BEDROCK)

Print May-30-17 10:03:41

Drillhole ID	Hydraulic Conductivity Testing						
	Test #	Test Interval (along hole below ground)		Test Interval (vertical below ground)		Hydraulic Conductivity	Type of Test
		From (m)	To (m)	From (m)	To (m)	(m/s)	
DT-272	1	40.0	80.0	28.3	56.6	4E-08	Falling Head Test
DT-273	1	56.6	80.0	56.6	80.0	3E-07	Constant Head Test
	2	68.8	80.0	68.8	80.0	2E-09	Falling Head Test
DT-274	1	14.1	23.8	10.8	18.2	1E-08	Falling Head Test
	2	22.6	40.0	17.3	30.6	9E-07	Falling Head Test
	3	40.3	60.0	30.9	46.0	2E-06	Falling Head Test
	4	40.3	60.0	30.9	46.0	2E-06	Falling Head Test
	5	57.7	80.2	44.2	61.4	4E-09	Falling Head Test
DT-275	1	8.6	20.7	6.6	15.9	5E-07	Falling Head Test
	2	18.7	40.2	14.3	30.8	1E-08	Constant Head Test
	3	18.7	40.2	14.3	30.8	3E-07	Falling Head Test
	4	39.7	60.4	30.4	46.3	3E-07	Constant Head Test
	5	39.7	60.4	30.4	46.3	3E-07	Falling Head Test
	6	61.4	80.2	47.0	61.4	2E-08	Falling Head Test
DT-276	1	9.5	24.1	9.2	23.3	1E-07	Falling Head Test
	2	22.3	39.3	21.5	38.0	1E-08	Falling Head Test
	3	37.6	60.4	36.3	58.3	4E-08	Falling Head Test
	4	58.7	81.7	56.7	78.9	4E-09	Falling Head Test
DT-277	1	6.2	20.7	4.7	15.9	1E-06	Falling Head Test
	2	6.2	20.7	4.7	15.9	5E-07	Constant Head Test
	3	18.7	42.1	14.3	32.3	5E-07	Falling Head Test
	4	18.7	42.1	14.3	32.3	3E-07	Constant Head Test
	5	39.4	60.4	30.2	46.3	1E-06	Falling Head Test
	6	61.4	81.1	47.0	62.1	5E-07	Falling Head Test
	7	83.6	90.8	64.0	69.6	1E-06	Falling Head Test
DT-278	1	9.8	23.2	6.9	16.4	9E-08	Falling Head Test
	2	22.0	41.5	15.6	29.3	5E-07	Falling Head Test
	3	43.4	60.4	30.7	42.7	3E-09	Falling Head Test
	4	58.6	75.6	41.4	53.5	2E-08	Falling Head Test
DT-279	1	10.1	21.0	9.1	18.9	2E-07	Falling Head Test
	2	21.7	39.3	19.5	35.3	3E-07	Falling Head Test
	3	37.6	60.6	33.8	54.5	1E-06	Falling Head Test
	4	62.0	82.0	55.7	73.7	1E-06	Falling Head Test
DT-280	1	12.9	21.0	9.4	15.4	2E-06	Falling Head Test
	2	19.3	42.4	14.1	31.0	4E-07	Falling Head Test
	3	37.6	60.7	27.5	44.4	6E-08	Falling Head Test
	4	58.9	85.0	43.1	62.2	4E-07	Falling Head Test
DT-281	1	8.9	20.4	6.2	14.2	8E-08	Falling Head Test
	2	18.7	38.7	13.0	26.9	4E-07	Falling Head Test
	3	39.4	60.5	27.4	42.0	2E-06	Falling Head Test
	4	58.3	81.4	40.5	56.5	1E-06	Falling Head Test
DT-282	1	10.1	22.9	8.7	19.8	2E-06	Falling Head Test
	2	22.3	48.5	19.3	42.0	4E-07	Falling Head Test
	3	46.7	63.8	40.4	55.3	1E-07	Falling Head Test
	4	65.0	82.0	56.3	71.0	3E-07	Constant Head Test
	5	86.3	100.3	74.7	86.9	6E-07	Constant Head Test
	6	98.5	114.0	85.3	98.7	8E-07	Falling Head Test
	7	98.5	114.0	85.3	98.7	5E-07	Constant Head Test

M:\1\01\00594\04\A\Data\400 - Bromley Humps Hydrogeology\3-Hydraulic Conductivity\[Fig_3.3-1 to 3.3-3_K_Data_Rev0.xlsx]Table B2 2016 K Data

NOTES:

1. SOURCE: MODIFIED TABLE 2 FROM GOLDER (1996).

REV	DATE	DESCRIPTION	PREP'D	RVW'D
0	02JUN'17	ISSUED WITH REPORT VA101-594/04-5	JZ	CHS

APPENDIX B2

2016 HYDRAULIC CONDUCTIVITY TESTING AT BROMLEY HUMPS

(Table B2)

Knight Piésold CONSULTING

TABLE B2

IDM MINING LTD.
RED MOUNTAIN UNDERGROUND GOLD PROJECT

SUMMARY OF 2016 HYDRAULIC CONDUCTIVITY TESTING AT BROMLEY HUMPS
(PACKER TESTING WITHIN BEDROCK)

Print May-30-17 10:03:41

Drill Hole ID	Hydraulic Conductivity Testing							
	Test #	Test Interval (along hole below ground)		Test Interval (vertical below ground)		Hydraulic Conductivity	Notes
		From (m)	To (m)	From (m)	To (m)	(m/s)	
BH16-001	No Tests Conducted						
BH16-002	No Tests Conducted						
BH16-003	1	4.98	11.24	4.98	11.24	1E-07	
	2	11.12	17.2	11.12	17.20	3E-06	
	3	16.3	23.2	16.30	23.20	2E-06	
	4	22.83	27.17	22.83	27.17	5E-06	
	5	26.13	31.02	26.13	31.02	5E-07	
BH16-004	1	3.28	9.28	3.28	9.28	No Take	2
	2	8.86	15.5	8.86	15.50	3E-07	2
	3	14.86	21.5	14.86	21.50	5E-07	
	4	20.86	27.5	20.86	27.50	2E-07	
	5	27.35	30.5	27.35	30.50	3E-08	
BH16-005	1	8.43	14.43	7.30	12.50	No Take	
	2	14.28	20.28	12.37	17.56	6E-07	2
	3	19.64	26.28	17.01	22.76	3E-06	2
	4	25.86	32	22.40	27.71	2E-06	
	5	31.85	37.85	27.58	32.78	4E-07	
	6	37.7	43.7	32.65	37.85	1E-08	
	7	43.55	45	37.72	38.97	No Take	
BH16-006	1	6.56	12.7	6.56	12.70	3E-07	
	2	12.06	18.7	12.06	18.70	1E-06	
	3	18.55	24.55	18.55	24.55	7E-06	4
	4	24.4	30.4	24.40	30.40	5E-06	3
	5	28.76	34.9	28.76	34.90	1E-06	
BH16-007	1	4.86	11.2	4.86	11.20	2E-06	2
	2	11.06	17.2	11.06	17.20	2E-06	2
	3	17.05	23.05	17.05	23.05	No Take	
	4	22.9	28.9	22.90	28.90	3E-08	
	5	28.75	34.75	28.75	34.75	2E-07	
BH16-008	1	5.81	11.95	5.81	11.95	1E-05	2,3
	2	11.38	17.62	11.38	17.62	No Take	
	3	16.67	22.67	16.67	22.67	8E-08	
	4	22.52	28.52	22.52	28.52	2E-07	
	5	25.52	31.52	25.52	31.52	1E-07	
BH16-009	1	7.96	15.6	6.10	11.95	2E-06	2
	2	15.45	23.28	11.84	17.83	6E-06	2,3
	3	23.13	30.96	17.72	23.72	3E-06	2
	4	30.82	38.46	23.61	29.46	1E-06	2
	5	38.32	45.96	29.35	35.21	1E-06	
	6	45.81	53.64	35.09	41.09	3E-08	
	7	53.5	67.14	40.98	51.43	9E-08	
	8	66.99	74.82	51.32	57.32	No Take	
	9	73.96	86.1	56.66	65.96	1E-06	2
	10	85.95	93.78	65.84	71.84	2E-06	2,3
	11	93.63	101.46	71.72	77.72	2E-06	2,3
	12	99.36	111.5	76.11	85.41	7E-07	2,3
BH16-010	1	7.96	14.1	6.10	10.80	1E-06	
	2	12.5	20.33	9.58	15.57	8E-07	2,5
	3	19.96	28.13	15.29	21.55	2E-06	2,5
	4	27.46	36.6	21.04	28.04	9E-09	
	5	36.46	45.6	27.93	34.93	9E-09	
	6	45.45	60.6	34.82	46.42	3E-09	
	7	60.45	72.6	46.31	55.61	3E-08	
	8	72.46	84.6	55.51	64.81	1E-08	
	9	84.46	95.6	64.70	73.23	5E-09	
MW16-001	1	5.14	11.2	5.14	11.2	3E-07	
	2	11.12	17.3	11.12	17.3	No Take	
	3	17.2	23.2	17.2	23.2	2E-07	
	4	22.84	28.84	22.84	28.84	2E-06	
	5	24.66	30.8	24.66	30.8	4E-07	
MW16-002	1	5.4	11.2	5.4	11.2	4E-06	
	2	11.16	17.2	11.16	17.2	7E-07	
	3	17.05	23.05	17.05	23.05	No Take	
	4	22.9	28.9	22.9	28.9	No Take	
	5	28.75	32.8	28.75	32.8	No Take	
MW16-003	1	5.23	11.37	5.23	11.37	No Take	
	2	11.06	17.18	11.06	17.18	4E-08	
	3	17.06	23.29	17.06	23.29	4E-08	
	4	21.79	27.79	21.79	27.79	1E-07	
	5	26.95	31.22	26.95	31.22	7E-08	
MW16-004	1	30.52	36.52	30.52	36.52	6E-07	
	2	34.31	40.45	34.31	40.45	No Take	
	3	39.46	45.6	39.46	45.6	No Take	

M:\1\01\00594\04\A\Data\400 - Bromley Humps Hydrogeology\3-Hydraulic Conductivity\[Fig_3.3-1 to 3.3-3_K_Data_Rev0.xlsx]Table B2 2016 K Data

NOTES:

1. SOURCE: MODIFIED TABLE A1.2 FROM KP (2016).
2. WATER LEVEL BELOW TOP PACKER AFTER PACKER INFLATION. MIDDLE OF TEST INTERVAL USED FOR ANALYSIS. HYDRAULIC CONDUCTIVITY VALUE FOR QUALITATIVE PURPOSES ONLY AS TEST METHODOLOGY BASED ON SATURATED CONDITIONS.
3. HIGH TAKE DURING TESTING EMPTIED THE WATER TANK. NEEDED TO WAIT TO REFILL WATER TANK BETWEEN ONE OR MULTIPLE PRESSURE STAGES DURING TESTING.
4. LEAKAGE OBSERVED BETWEEN DRILL CASING AND DRILL RODS DURING TESTING.
5. APPLIED G STOP AFTER PACKER TEST TO TESTED INTERVAL TO MINIMIZE CIRCULATION LOSS IN THE DRILL HOLE.

REV	DATE	DESCRIPTION	PREP'D	RVW'D
0	02JUN'17	ISSUED WITH REPORT VA101-594/04-5	JZ	CHS

APPENDIX C

GROUNDWATER LEVELS

Appendix C1 Manual Water Levels (1996)
Appendix C2 Time Series Data Plotted as mbgs (2016 To 2017)
Appendix C3 Time Series Data Plotted as masl (2016 to 2017)

APPENDIX C1

MANUAL WATER LEVELS (1996)

(Table C1)

Knight Piésold CONSULTING

TABLE C1

IDM MINING LTD.
RED MOUNTAIN UNDERGROUND GOLD PROJECT

MANUAL WATER LEVELS (1996)
MEASURED BY GOLDER ASSOCIATES ON AUGUST 29, 1996

2017-05-30 10:20

Drill Hole ID	Completion Zone[2,3] (m along drill hole below drill floor)	Water Level[4] (mbgs)	Notes
DT-272	1.7 - 4.0	1.2	No sand pack completion (open interval)
DT-273	11.8 - 21.8	5.8	Sand pack completion
DT-274	3.0 - 9.0	4.3	Sand pack completion
DT-275	50.5 - 57.5	36.3	Sand pack completion
DT-276	8.8 - 81.7	13.5	No sand pack completion (open interval)
DT-277	25.5 - 90.8	dry to 32.5	No sand pack completion (open interval)
DT-278	34.5 - 45.7	dry to 31.6	Sand pack completion
	9.8 - 32.5	dry to 11.9	No sand pack completion (open interval)
DT-279	61.9 - 82.0	3.2	Sand pack completion
	35.6 - 60.0	3.7	No sand pack completion (open interval)
	14.0 - 33.8	3.7	No sand pack completion (open interval)
DT-280	38.4 - 48.4	5.3	Sand pack completion
	14.3 - 36.2	6.0	No sand pack completion (open interval)
DT-281	49.5 - 66.1	2.5	Sand pack completion
DT-282	90.8 - 105.5	dry to 52.8	Sand pack completion
	72.8 - 82.0	dry 50 52.8	No sand pack completion (open interval)

M:\1\01\00594\04\A\Data\400 - Bromley Humps Hydrogeology\2-Water Levels\4-Golder\[Appendix_C1_Golder1996_SpotWL_Rev0.xlsx]Table C.1

NOTES:

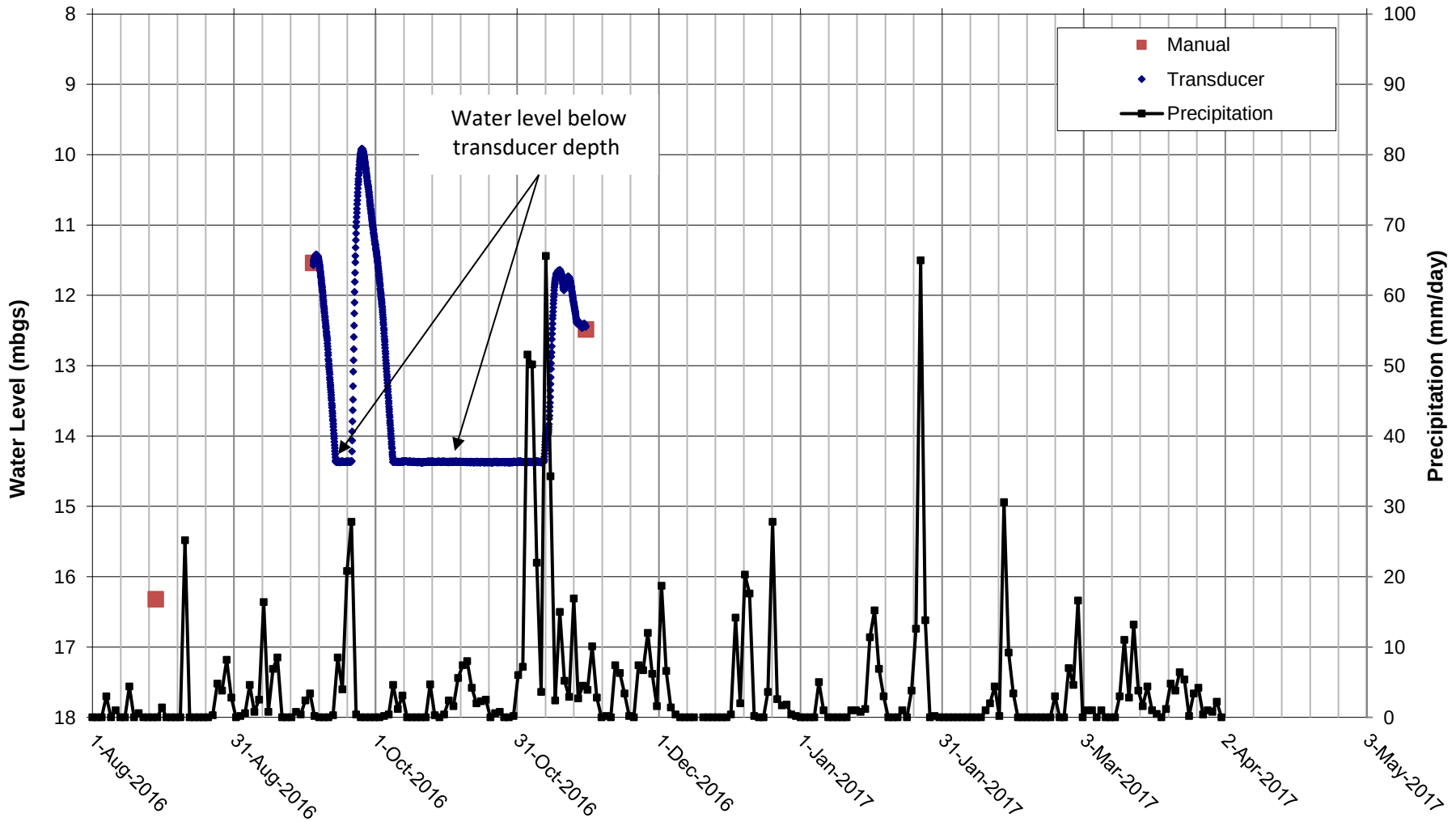
1. SOURCE: MODIFIED TABLE 3 FROM GOLDER (1996)
2. COMPLETION ZONE MEASURED FROM THE DRILL FLOOR ALONG THE DIP OF HOLE. DRILL FLOOR HEIGHT VARIED FROM 0.34 m TO 1.1 m.
3. COMPLETION ZONE INCLUDES SAND PACK OR OPEN INTERVAL BELOW AND ABOVE THE SCREENED (SLOTTED PVC PIPE) INTERVAL.
4. WATER LEVELS CORRECTED FOR PVC STICK UP AND DRILL HOLE INCLINATION AND SHOWN AS VERTICAL DEPTHS BELOW GROUND SURFACE.

REV	DATE	DESCRIPTION	PREP'D	RVW'D
0	02JUN'17	ISSUED WITH REPORT VA101-594/4-5	JZ	CHS

APPENDIX C2

TIME SERIES DATA PLOTTED AS MBGS (2016 TO 2017)

(Pages C2-1 to C2-15)



NOTES:

1. GROUND ELEVATION IS 492.171 m.
2. WELL DEPTH IS 17.1 mbgs.
3. DAILY PRECIPITATION DATA PLOTTED FROM THE REGIONAL CLIMATE STATION AT THE TERRACE AIRPORT (ENVIRONMENT CANADA, 2017).
4. MANUAL WATER LEVEL PLOTTED ON AUGUST 14, 2016 WAS MEASURED IMMEDIATELY AFTER INSTALLATION AND THEREFORE MAY BE AFFECTED BY DRILLING ACTIVITIES.

REV	DATE	DESCRIPTION	PREP'D	RVW'D
0	02JUN'17	ISSUED WITH REPORT	JZ	CHS

IDM MINING LTD.

RED MOUNTAIN UNDERGROUND GOLD PROJECT

BH16-001
GROUNDWATER LEVELS

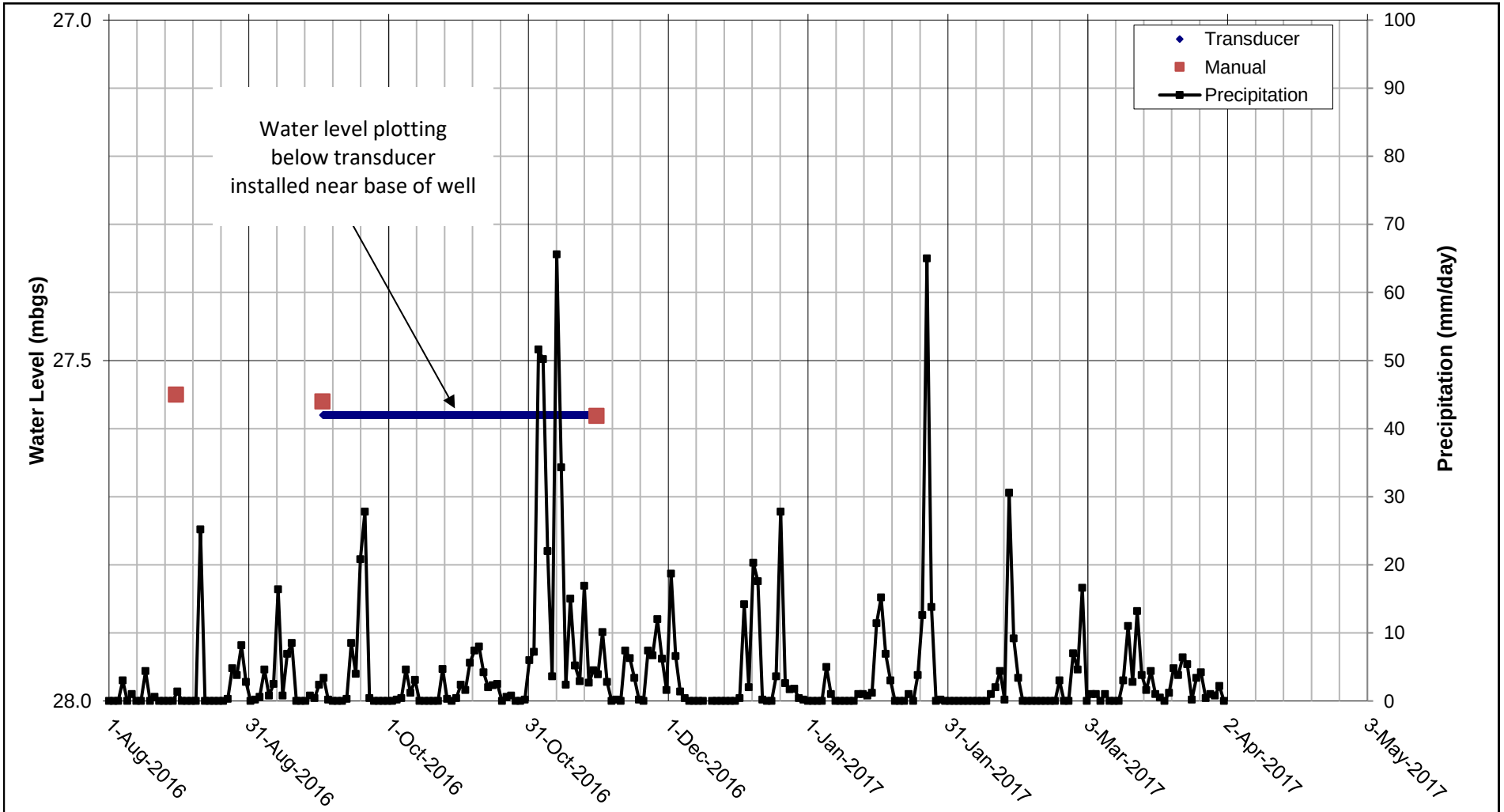
Knight Piésold CONSULTING

P/A NO. VA101-594/04

REF. NO. 5

FIGURE C2.1

REV 0



NOTES:

1. GROUND ELEVATION IS 507.922 m.
2. WELL DEPTH IS 27.6 mbgs.
3. DAILY PRECIPITATION DATA PLOTTED FROM THE REGIONAL CLIMATE STATION AT THE TERRACE AIRPORT (ENVIRONMENT CANADA, 2017).
4. MANUAL WATER LEVEL PLOTTED ON AUGUST 15, 2016 WAS MEASURE IMMEDIATELY AFTER INSTALLATION AND THEREFORE MAY BE AFFECTED BY DRILLING ACTIVITIES.
5. MANUAL WATER LEVEL MEASUREMENTS RECORDED AS DRY ARE PLOTTED AT THE WELL DEPTH (27.6 mbgs).

REV	DATE	DESCRIPTION	PREP'D	RVW'D
0	02JUN'17	ISSUED WITH REPORT	JZ	CHS

IDM MINING LTD.

RED MOUNTAIN UNDERGROUND GOLD PROJECT

BH16-002
GROUNDWATER LEVELS

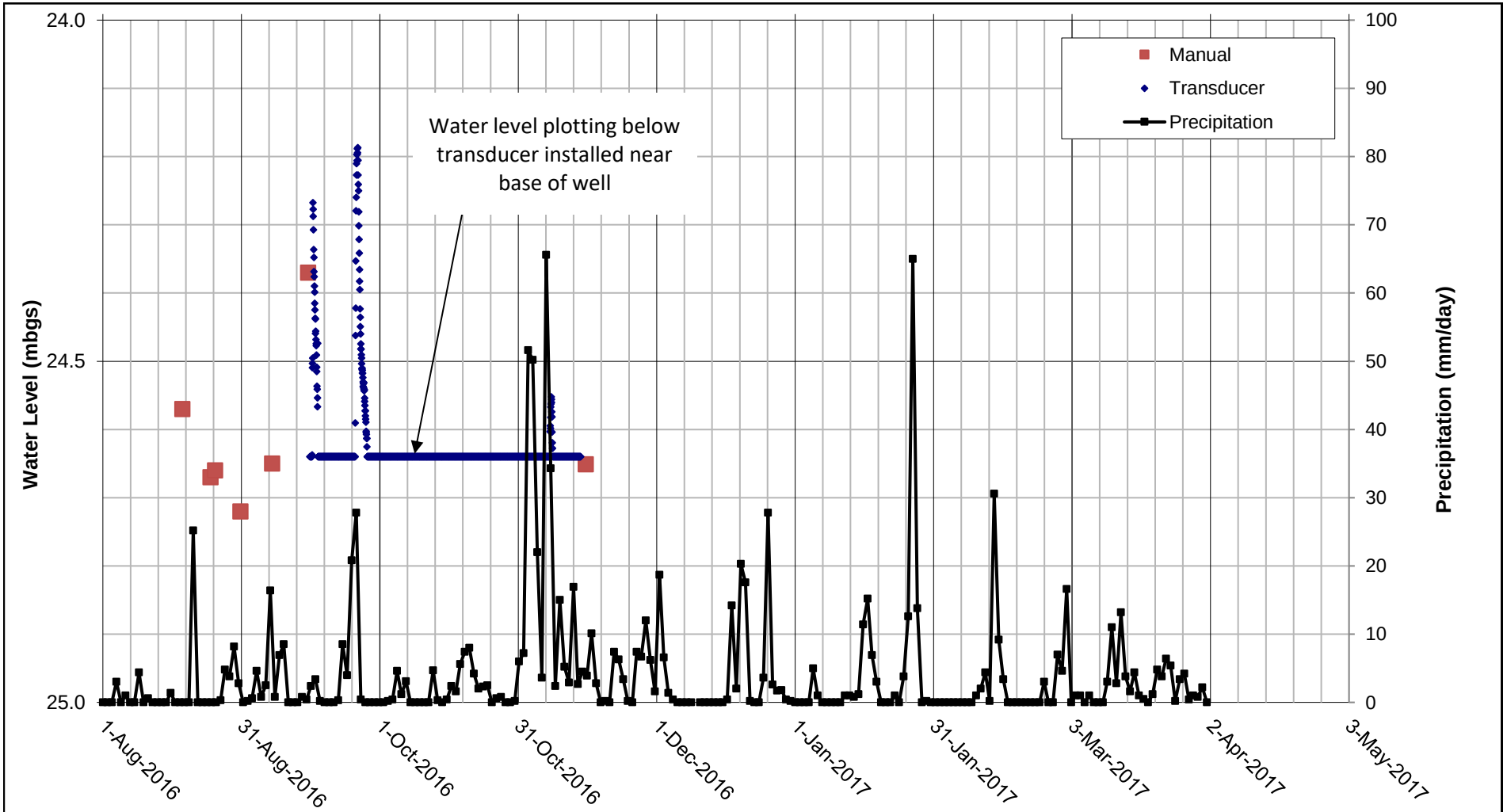
Knight Piésold CONSULTING

P/A NO. VA101-594/04

REF. NO. 5

FIGURE C2.2

REV 0



NOTES:

1. GROUND ELEVATION IS 434.596 m.
2. WELL DEPTH IS 25 mbgs.
3. DAILY PRECIPITATION DATA PLOTTED FROM THE REGIONAL CLIMATE STATION AT THE TERRACE AIRPORT (ENVIRONMENT CANADA, 2017).
4. MANUAL WATER LEVEL PLOTTED ON AUGUST 18, 2016 WAS MEASURE IMMEDIATELY AFTER INSTALLATION AND THEREFORE MAY BE AFFECTED BY DRILLING ACTIVITIES.
5. MEASUREMENTS INDICATE STANDPIPE PIEZOMETER IS ESSENTIALLY DRY.

REV	DATE	DESCRIPTION	PREP'D	RVW'D
0	02JUN'17	ISSUED WITH REPORT	JZ	CHS

IDM MINING LTD.

RED MOUNTAIN UNDERGROUND GOLD PROJECT

BH16-003
GROUNDWATER LEVELS

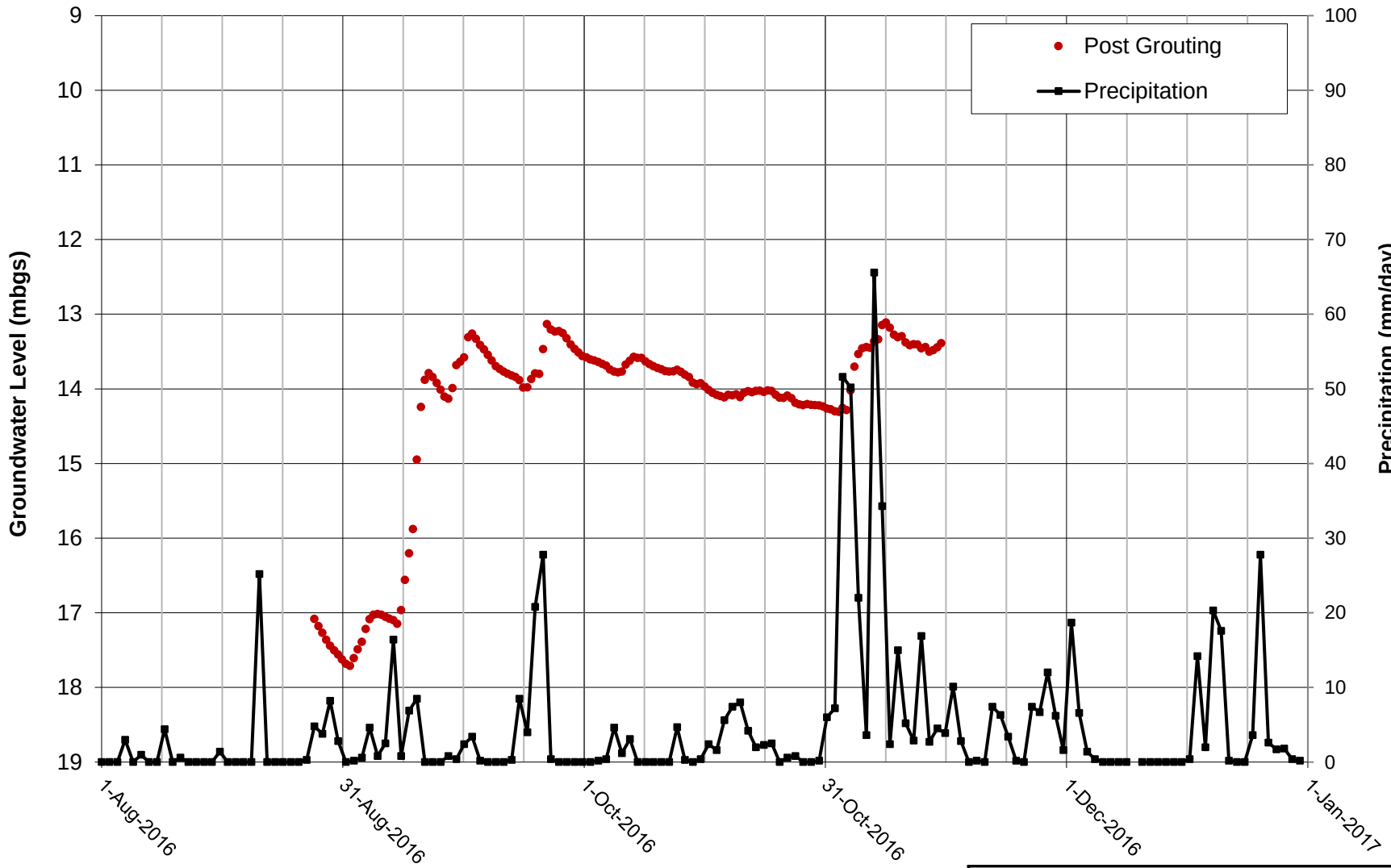
Knight Piésold CONSULTING

P/A NO. VA101-594/04

REF. NO. 5

FIGURE C2.3

REV 0



NOTES:

1. GROUND ELEVATION IS 465.61 masl.
2. VIBRATING WIRE PIEZOMETER (VWP) ELEVATION 437.1 masl (28.5 mbgs)
3. DAILY PRECIPITATION DATA PLOTTED FROM REGIONAL CLIMATE STATION AT TERRACE AIRPORT (ENVIRONMENT CANADA, 2017).
4. SEE APPENDIX C3 FOR GROUTING AND TEMPERATURE DATA PLOT.

IDM MINING LTD.

RED MOUNTAIN UNDERGROUND GOLD PROJECT

BH16-004
GROUNDWATER LEVELS (VWP)
POST GROUTING ONLY

Knight Piésold CONSULTING

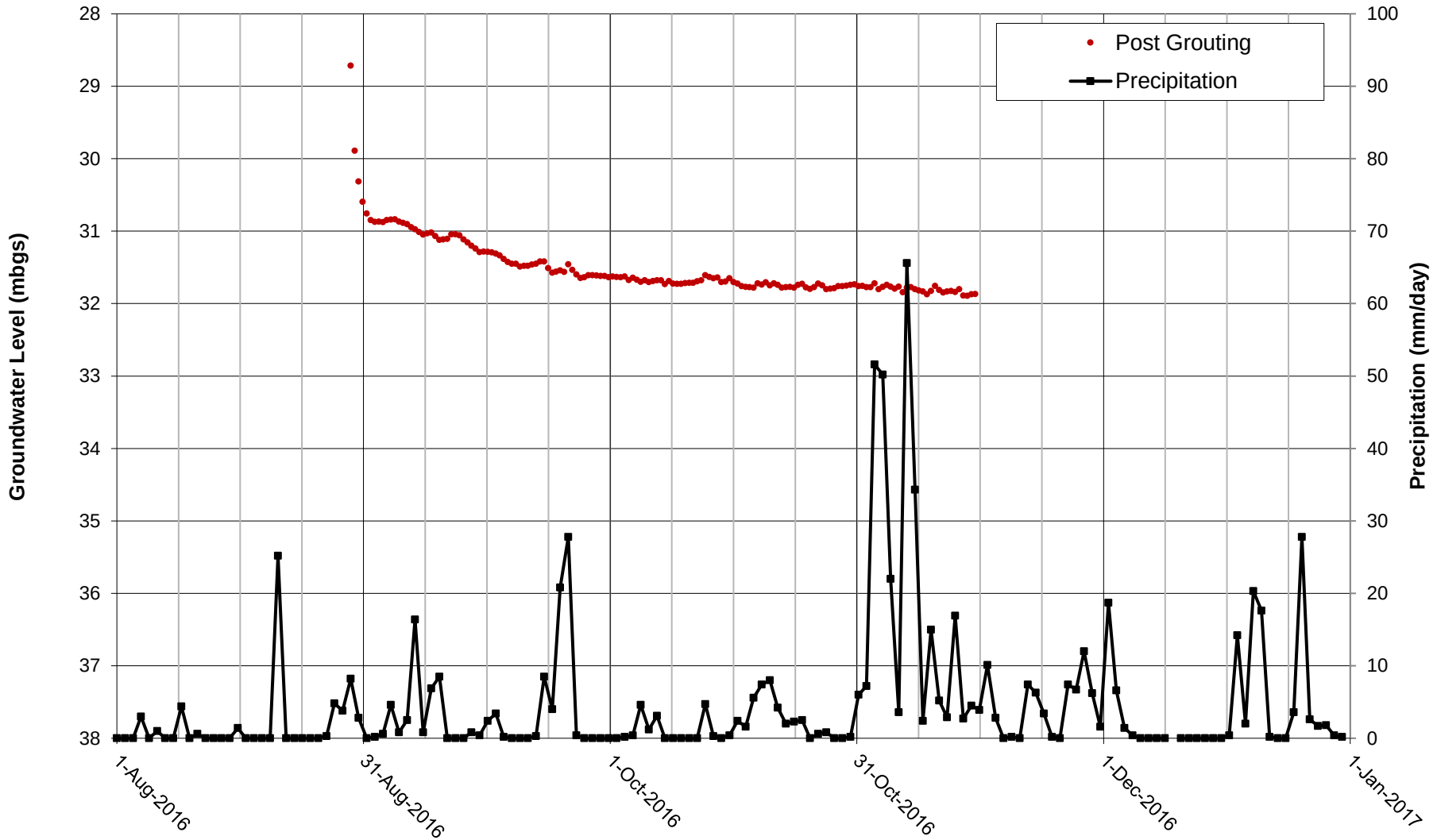
P/A NO. VA101-594/04

REF. NO. 5

FIGURE C2.4

REV 0

REV	DATE	DESCRIPTION	PREP'D	RVW'D
0	2017-06-02	ISSUED WITH REPORT	MCW	CHS



NOTES:

1. GROUND ELEVATION IS 427.49 masl.
2. VIBRATING WIRE PIEZOMETER (VWP) ELEVATION IS 394.6 masl (33 mbgs)
3. DAILY PRECIPITATION DATA PLOTTED FROM REGIONAL CLIMATE STATION AT TERRACE AIRPORT (ENVIRONMENT CANADA, 2017).
4. SEE APPENDIX C3 GROUTING AND TEMPERATURE DATA PLOT.

IDM MINING LTD.

RED MOUNTAIN UNDERGROUND GOLD PROJECT

BH16-005
GROUNDWATER LEVELS (VWP)
POST GROUTING ONLY

Knight Piésold CONSULTING

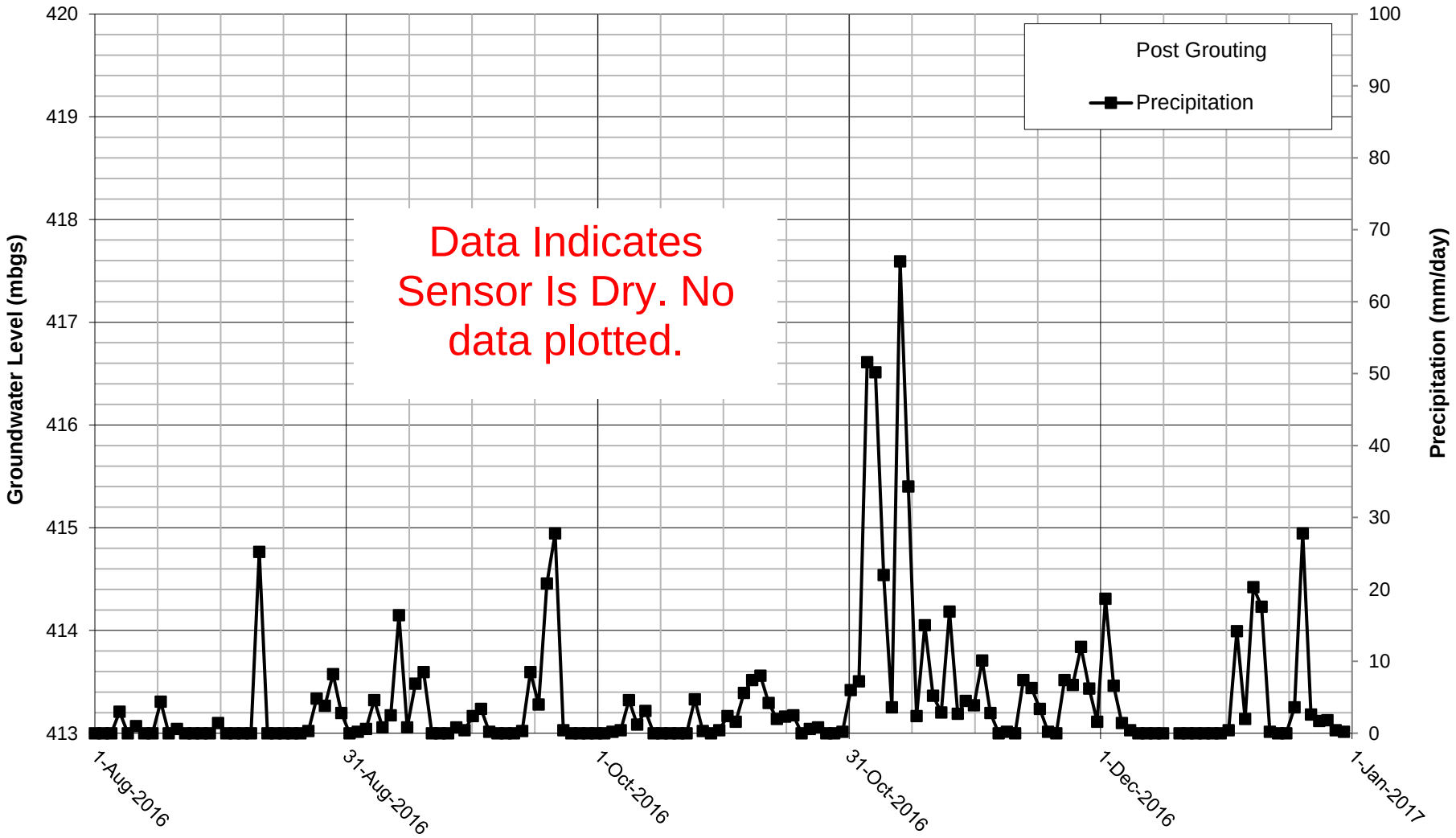
P/A NO. VA101-594/04

REF. NO. 5

FIGURE C2.5

REV 0

REV	DATE	DESCRIPTION	PREP'D	RVW'D
0	02JUN'17	ISSUED WITH REPORT	MCW	CHS



NOTES:

1. GROUND ELEVATION IS 442.641 masl.
2. VIBRATING WIRE PIEZOMETER (VWP) ELEVATION IS 414.9 masl (27.75 mbgs).
3. DAILY PRECIPITATION DATA PLOTTED FROM REGIONAL CLIMATE STATION AT TERRACE AIRPORT (ENVIRONMENT CANADA, 2017).
4. VIBRATING WIRE PIEZOMETER DATA INDICATES SENSOR IS DRY. NO DATA PLOTTED.

REV	DATE	DESCRIPTION	PREP'D	RVW'D
0	02JUN'17	ISSUED WITH REPORT	MCW	CHS

IDM MINING LTD.

RED MOUNTAIN UNDERGROUND GOLD PROJECT

BH16-06
GROUNDWATER LEVELS (VWP)
POST GROUTING ONLY

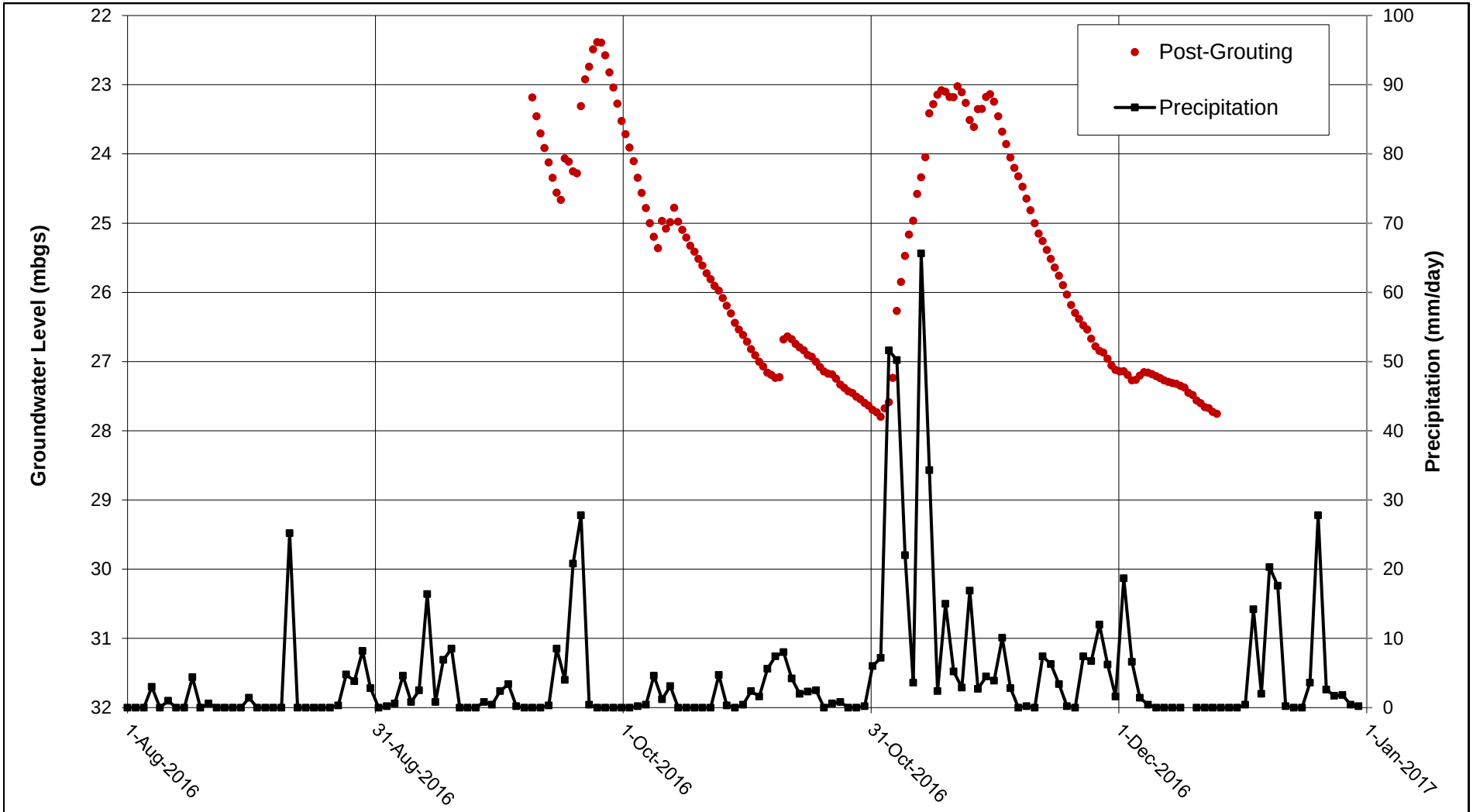
Knight Piésold CONSULTING

P/A NO. VA101-594/04

REF. NO. 5

FIGURE C2.6

REV 0



NOTES:

1. GROUND ELEVATION IS 443.55 masl.
2. VIBRATING WIRE PIEZOMETER (VWP) ELEVATION 412.1 masl (31.5 mbgs).
3. DAILY PRECIPITATION DATA PLOTTED FROM REGIONAL CLIMATE STATION AT TERRACE AIRPORT (ENVIRONMENT CANADA, 2017).
4. DATA NOT RECORDED PRIOR TO SEPT 20, 2016, VWP SUSPECTED TO BE NOT CONNECTED TO DATALOGGER.
5. SEE APPENDIX C3 FOR GROUTING AND TEMPERATURE DATA PLOT.

REV	DATE	DESCRIPTION	PREP'D	RVW'D
0	02JUN'17	ISSUED WITH REPORT	MCW	CHS

IDM MINING LTD.

RED MOUNTAIN UNDERGROUND GOLD PROJECT

BH16-007
GROUNDWATER LEVELS (VWP)
POST GROUTING ONLY

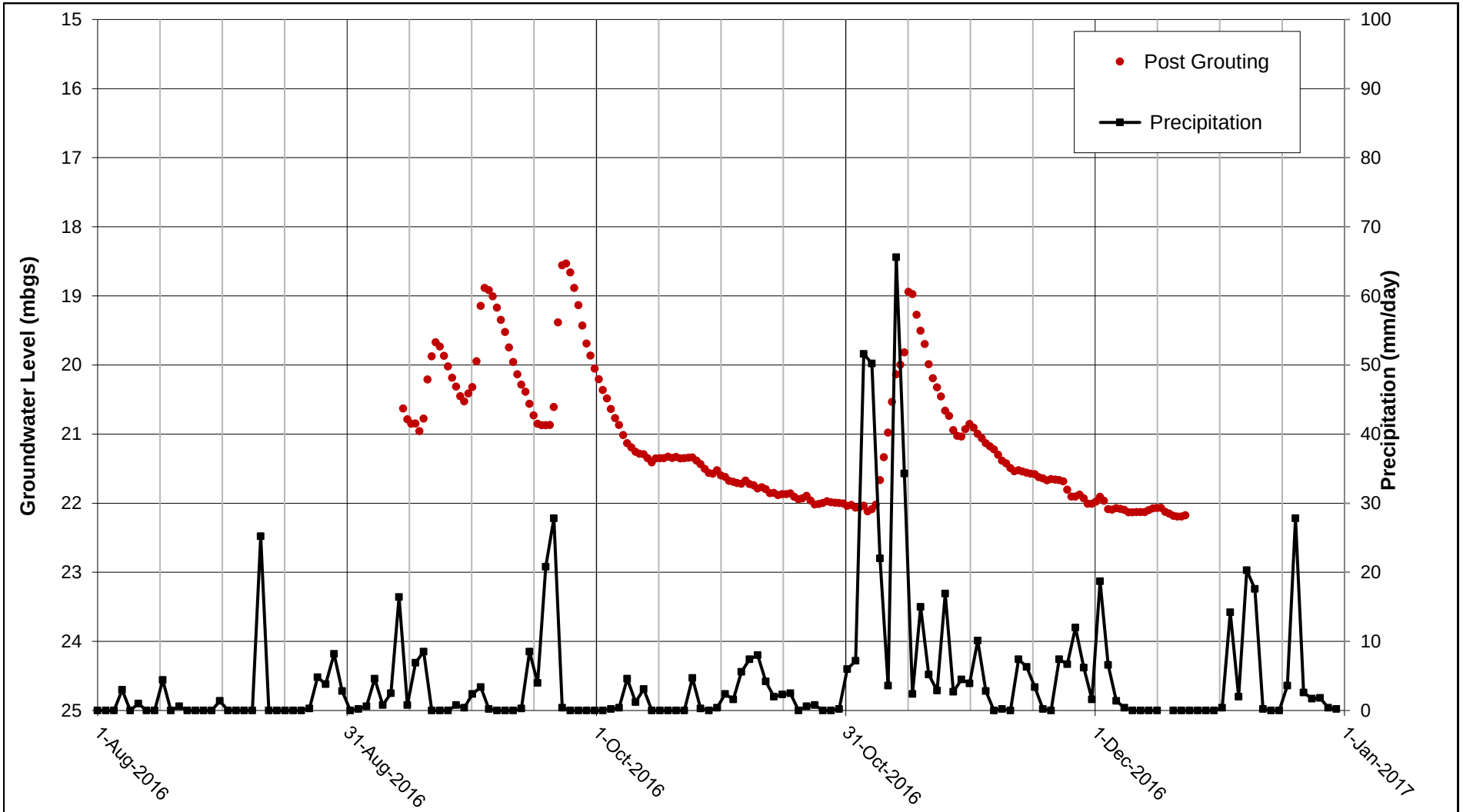
Knight Piésold CONSULTING

P/A NO. VA101-594/04

REF. NO. 5

FIGURE C2.7

REV 0



NOTES:

1. GROUND ELEVATION IS 470.27 masl.
2. VIBRATING WIRE PIEZOMETER (VWP) ELEVATION IS 443.2 masl (27.1 mbgs)
3. DAILY PRECIPITATION DATA PLOTTED FROM REGIONAL CLIMATE STATION AT TERRACE AIRPORT (ENVIRONMENT CANADA, 2017).
4. SEE APPENDIX C3 FOR GROUTING AND TEMPERATURE DATA PLOT.

IDM MINING LTD.

RED MOUNTAIN UNDERGROUND GOLD PROJECT

BH16-008
GROUNDWATER LEVELS (VWP)
POST GROUTING ONLY

Knight Piésold CONSULTING

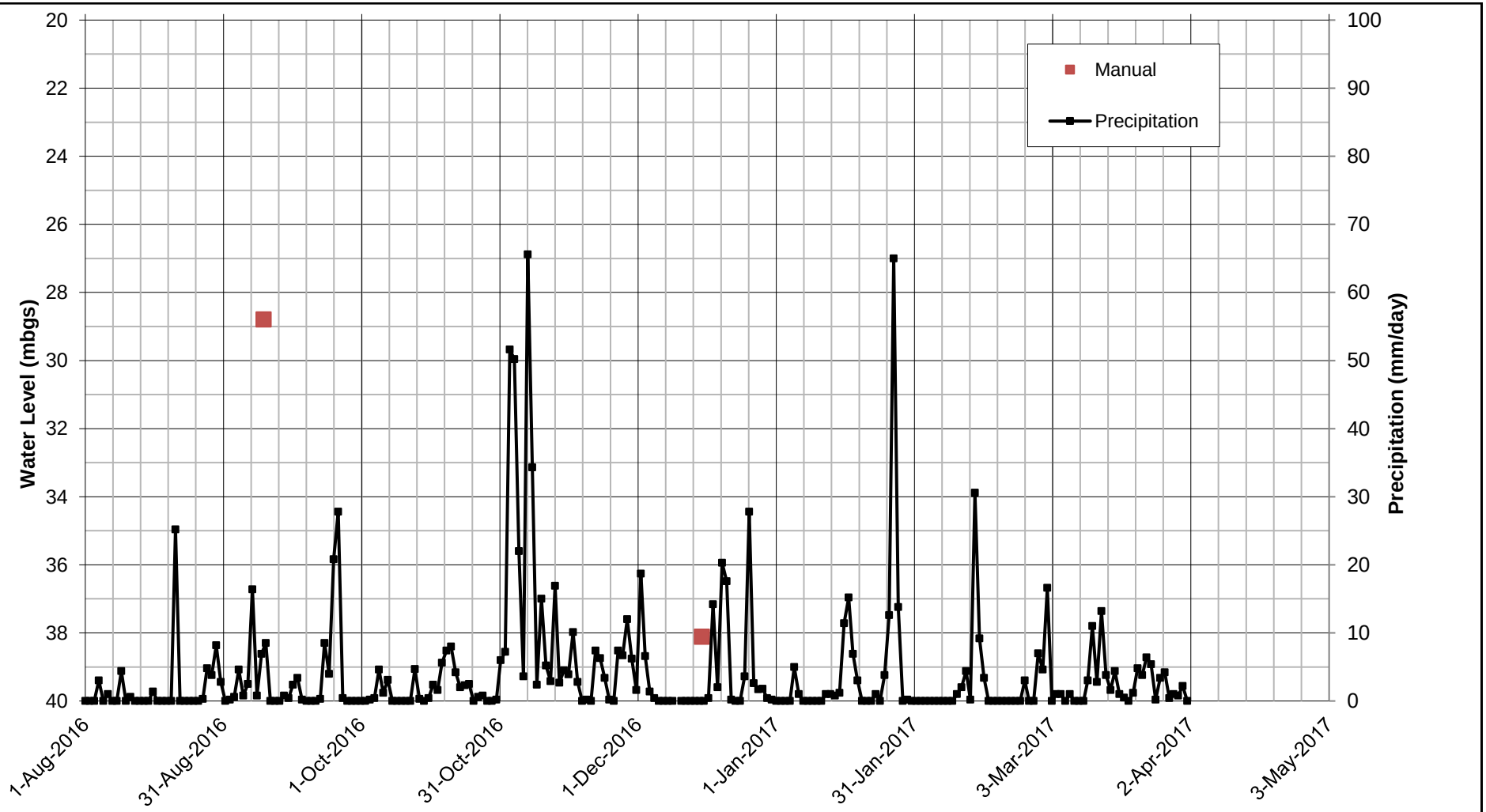
P/A NO. VA101-594/04

REF. NO. 5

FIGURE C2.8

REV 0

REV	DATE	DESCRIPTION	PREP'D	RVW'D
0	02JUN'17	ISSUED WITH REPORT	MCW	CHS



NOTES:
1. GROUND ELEVATION IS 463.893 m.
2. WELL DEPTH IS 52.3 mbgs
3.DAILY PRECIPITATION DATA PLOTTED FROM THE REGIONAL CLIMATE STATION AT THE TERRACE AIRPORT (ENVIRONMENT CANADA, 2017).
4. MANUAL WATER LEVEL PLOTTED ON SEPTEMBER 9, 2016 WAS MEASURE IMMEDIATELY AFTER INSTALLATION AND THEREFORE MAY BE AFFECTED BY DRILLING ACTIVITIES.
5. TRANSDUCER INSTALLED IN DECEMBER 2016. NO DATA YET COLLECTED.

REV	DATE	DESCRIPTION	PREP'D	RVW'D
0	02JUN'17	ISSUED WITH REPORT	JZ	CHS

IDM MINING LTD.

RED MOUNTAIN UNDERGROUND GOLD PROJECT

BH16-009
GROUNDWATER LEVELS

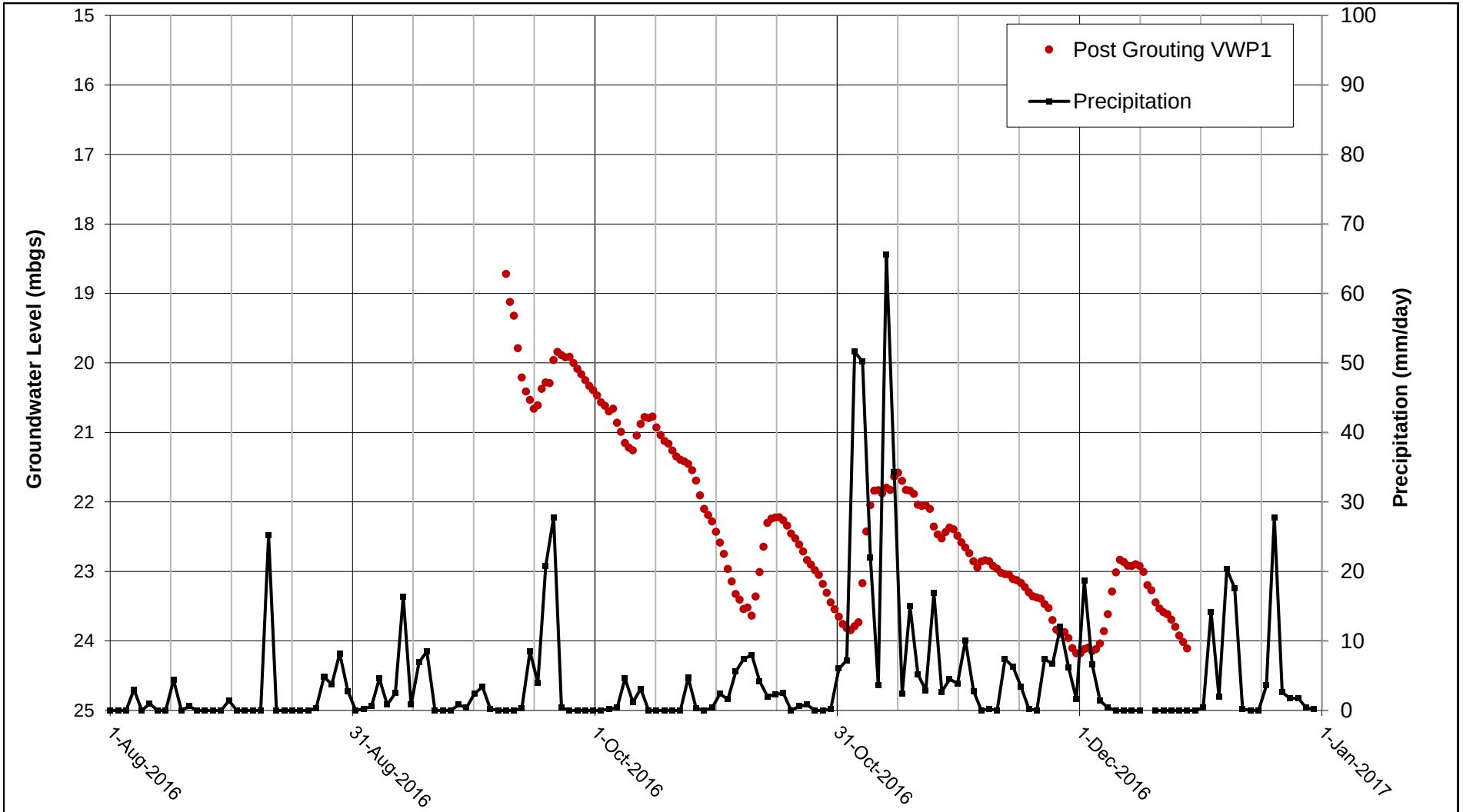
Knight Piésold CONSULTING

P/A NO. VA101-594/04

REF. NO. 5

FIGURE C2.9

REV 0



NOTES:

1. GROUND ELEVATION IS 463.08 masl.
2. VIBRATING WIRE PIEZOMETER (VWP) ELEVATIONS ARE: VWP1 440.9 masl (22.2 mbgs) AND VWP2 457.3 masl (5.7 mbgs)
3. DAILY PRECIPITATION DATA PLOTTED FROM REGIONAL CLIMATE STATION AT TERRACE AIRPORT (ENVIRONMENT CANADA, 2017).
4. SEE APPENDIX C3 FOR GROUTING AND TEMPERATURE DATA PLOT.

REV	DATE	DESCRIPTION	PREP'D	RVW'D
0	02JUN'17	ISSUED WITH REPORT	MCW	CHS

IDM MINING LTD.

RED MOUNTAIN UNDERGROUND GOLD PROJECT

BH16-010 VWP1
GROUNDWATER LEVELS (VWP)
POST GROUTING ONLY

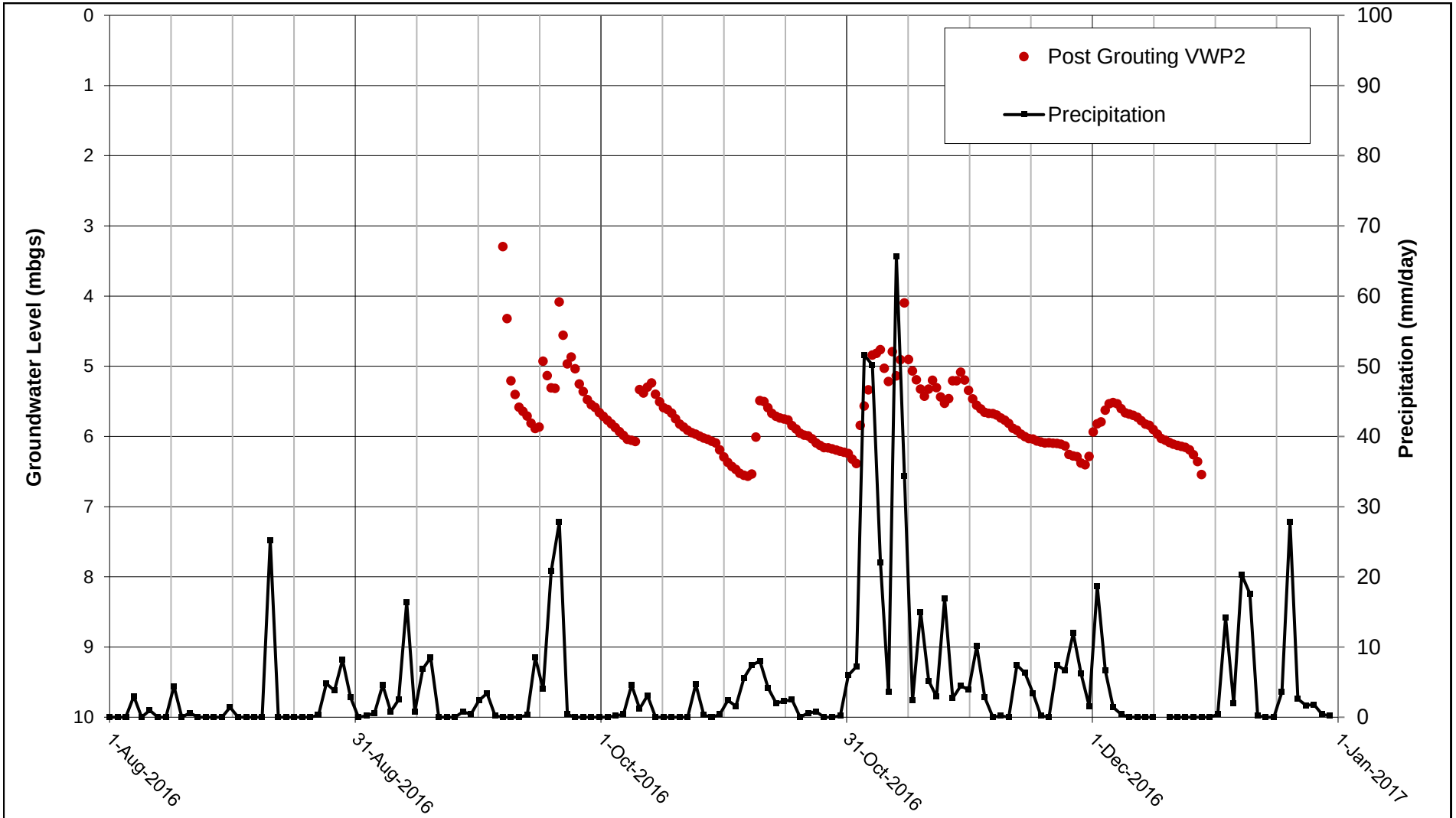
Knight Piésold CONSULTING

P/A NO. VA101-594/04

REF. NO. 5

FIGURE C2.10A

REV 0



NOTES:

1. GROUND ELEVATION IS 463.08 masl.
2. VIBRATING WIRE PIEZOMETER (VWP) ELEVATIONS ARE: VWP1 440.9 masl (22.2 mbgs) AND VWP2 457.3 masl (5.7 mbgs)
3. DAILY PRECIPITATION DATA PLOTTED FROM REGIONAL CLIMATE STATION AT TERRACE AIRPORT (ENVIRONMENT CANADA, 2017).
4. SEE APPENDIX C3 FOR GROUTING AND TEMPERATURE DATA PLOT.

REV	DATE	DESCRIPTION	PREP'D	RVW'D
0	02JUN'17	ISSUED WITH REPORT	MCW	CHS

IDM MINING LTD.

RED MOUNTAIN UNDERGROUND GOLD PROJECT

BH16-010 VWP2
GROUNDWATER LEVELS (VWP)
POST GROUTING ONLY

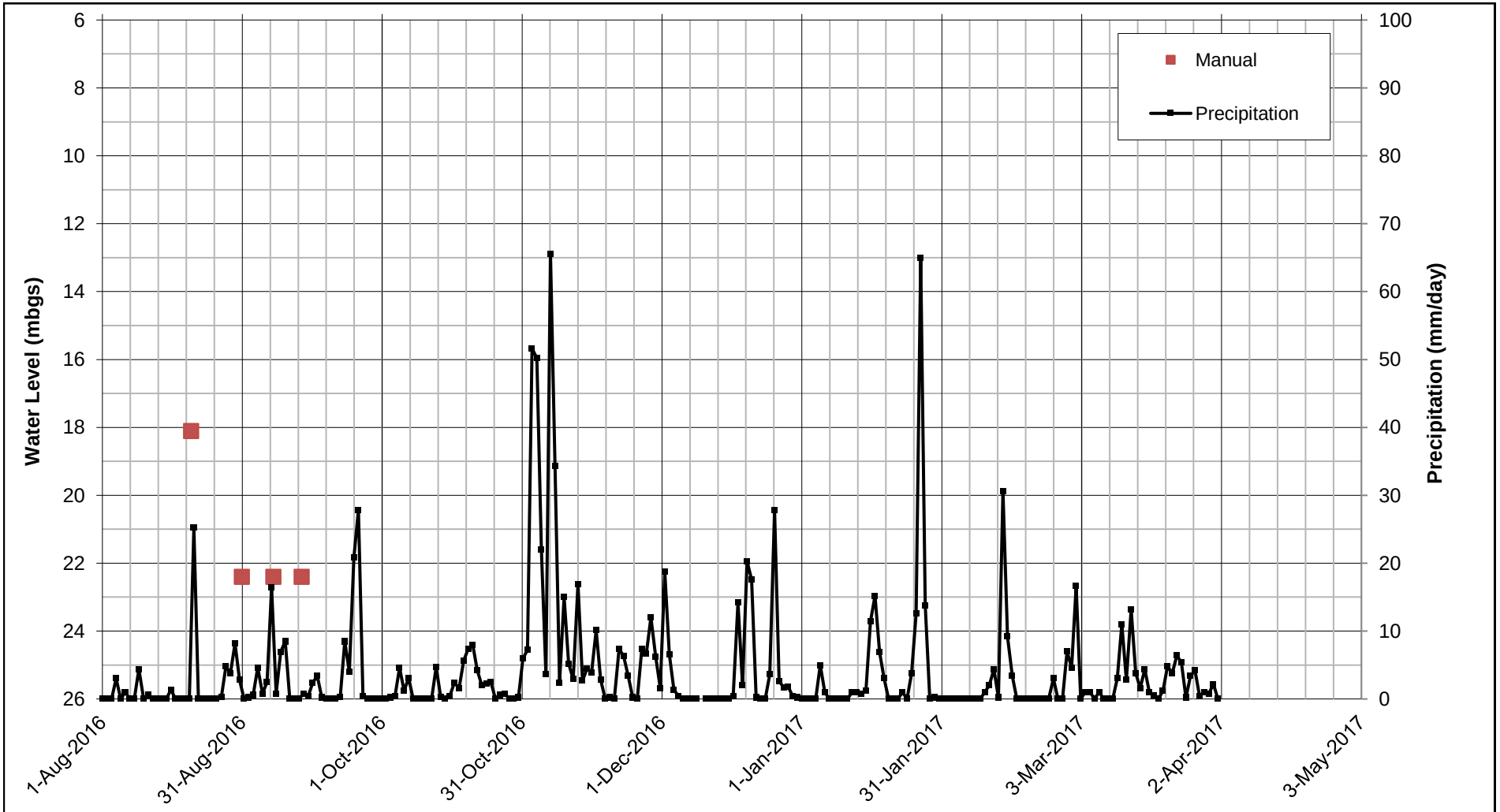
Knight Piésold CONSULTING

P/A NO. VA101-594/04

REF. NO. 5

FIGURE C2.10B

REV 0



NOTES:

1. GROUND ELEVATION IS 410.116 m.
2. WELL DEPTH IS 23 mbgs.
3. DAILY PRECIPITATION DATA PLOTTED FROM THE REGIONAL CLIMATE STATION AT THE TERRACE AIRPORT (ENVIRONMENT CANADA, 2017).
4. NO TRANSDUCER INSTALLED IN WELL. MANUAL MEASUREMENTS ONLY.
4. MANUAL WATER LEVEL PLOTTED ON AUGUST 20, 2016 WAS MEASURED IMMEDIATELY AFTER INSTALLATION AND THEREFORE MAY BE AFFECTED BY DRILLING ACTIVITIES.
5. MANUAL WATER LEVELS RECORDED AS DRY ARE PLOTTED AT THE WELL DEPTH.

REV	DATE	DESCRIPTION	PREP'D	RVW'D
0	02JUN'17	ISSUED WITH REPORT	JZ	CHS

IDM MINING LTD.

RED MOUNTAIN UNDERGROUND GOLD PROJECT

MW16-001
GROUNDWATER LEVELS

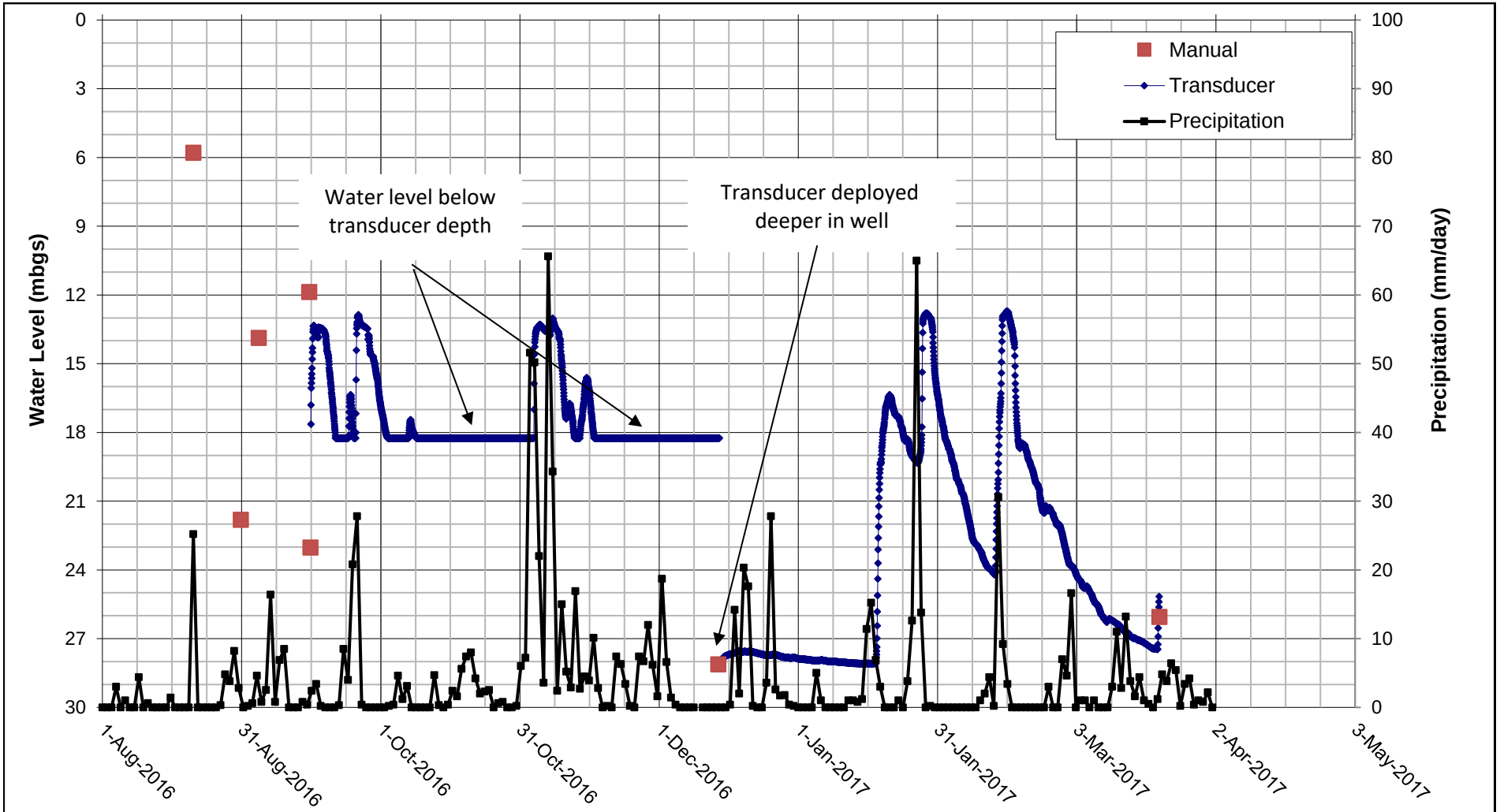
Knight Piésold CONSULTING

P/A NO. VA101-594/04

REF. NO. 5

FIGURE C2.11

REV 0



NOTES:

1. GROUND ELEVATION IS 412.334 m.
2. WELL DEPTH IS 29.8 mbgs.
3. DAILY PRECIPITATION DATA PLOTTED FROM THE REGIONAL CLIMATE STATION AT THE TERRACE AIRPORT (ENVIRONMENT CANADA, 2017).
4. MANUAL WATER LEVEL PLOTTED ON AUG 21, 2016 WAS MEASURED IMMEDIATELY AFTER INSTALLATION AND THEREFORE MAY BE AFFECTED BY DRILLING ACTIVITIES.
5. MANUAL WATER LEVELS MEASURED ON SEPT 15, 2016 (AT 23.0 mbgs) MEASURED BEFORE AND AFTER WELL DEVELOPMENT. TRANSDUCER INSTALLED FOLLOWING DEVELOPMENT.

REV	DATE	DESCRIPTION	PREP'D	RVW'D
0	02JUN'17	ISSUED WITH REPORT	JZ	CHS

IDM MINING LTD.

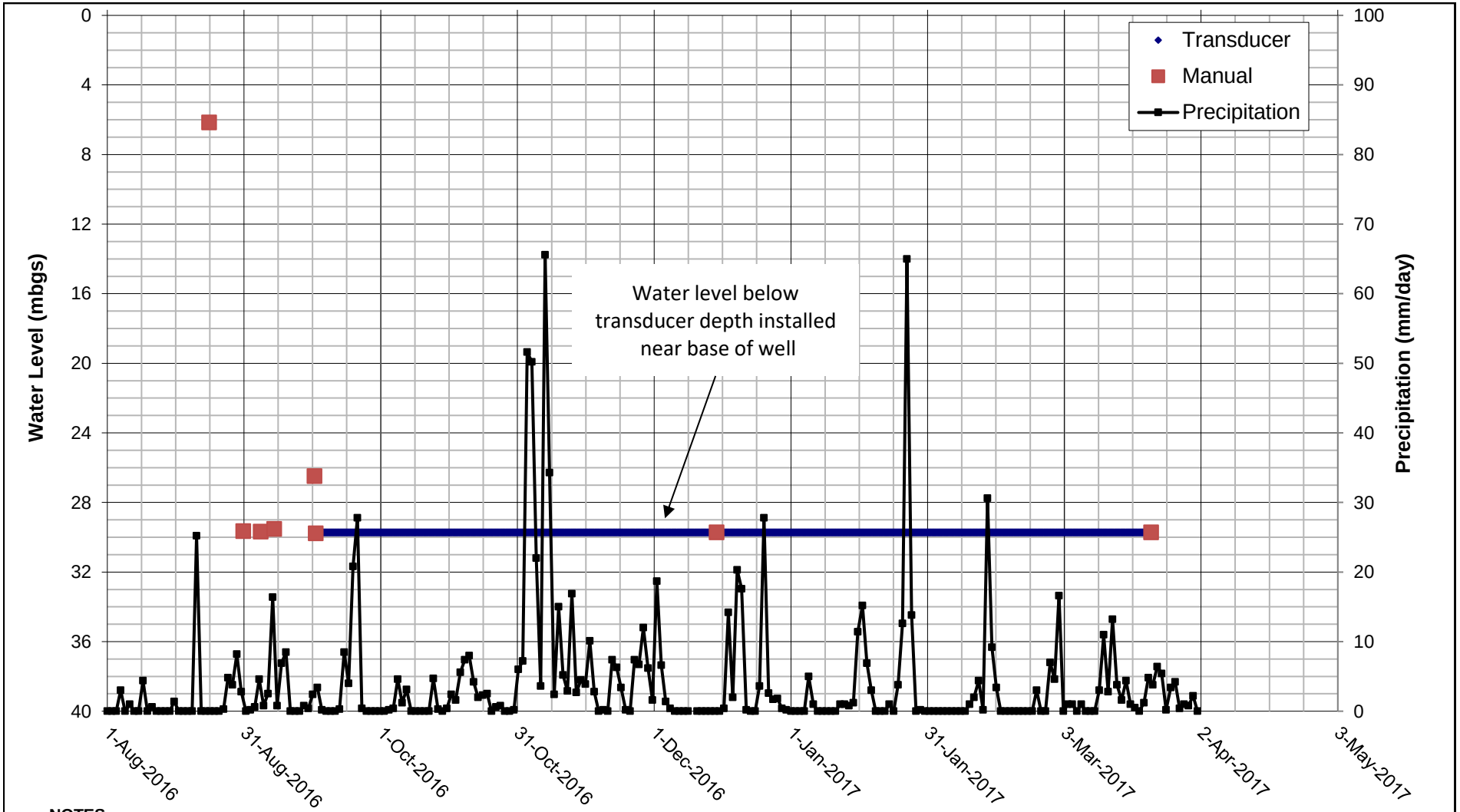
RED MOUNTAIN UNDERGROUND GOLD PROJECT

MW16-002
GROUNDWATER LEVELS

Knight Piésold CONSULTING

P/A NO.	REF. NO.
VA101-594/04	5

FIGURE C2.12 REV 0



NOTES:

1. GROUND ELEVATION IS 426.325 m.
2. WELL DEPTH IS 30.1 mbgs
3. DAILY PRECIPITATION DATA PLOTTED FROM THE REGIONAL CLIMATE STATION AT THE TERRACE AIRPORT (ENVIRONMENT CANADA, 2017).
4. MANUAL WATER LEVEL PLOTTED ON AUG 23, 2016 WAS MEASURED IMMEDIATELY AFTER INSTALLATION AND THEREFORE MAY BE AFFECTED BY DRILLING ACTIVITIES.
5. MANUAL WATER LEVELS MEASURED ON SEPT 16, 2016 MEASURED BEFORE AND AFTER WELL DEVELOPMENT. TRANSDUCER INSTALLED FOLLOWING DEVELOPMENT.

.

REV	DATE	DESCRIPTION	PREP'D	RVW'D
0	02JUN'17	ISSUED WITH REPORT	JZ	CHS

IDM MINING LTD.

RED MOUNTAIN UNDERGROUND GOLD PROJECT

MW16-003
GROUNDWATER LEVELS

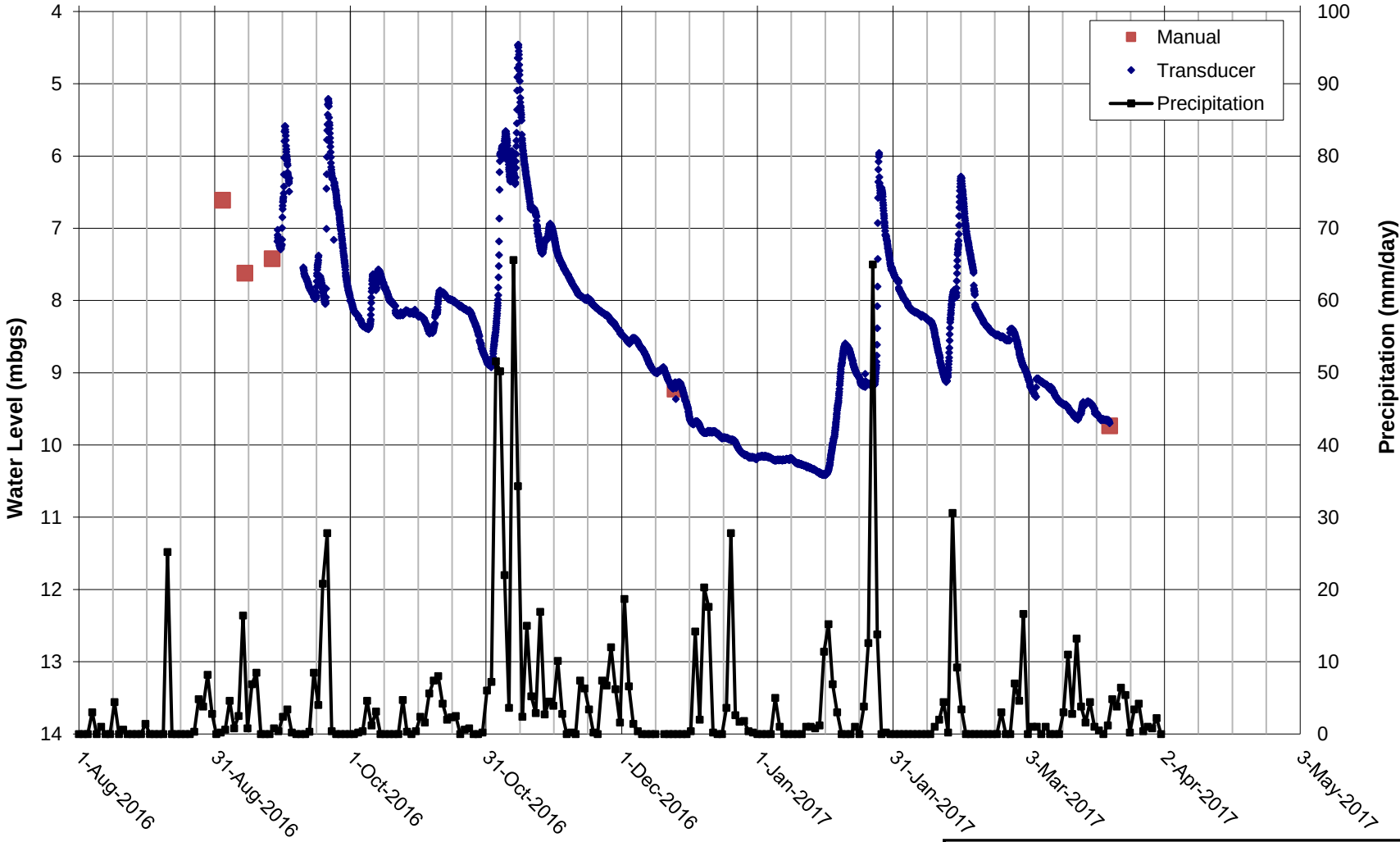
Knight Piésold CONSULTING

P/A NO. VA101-548/04

REF. NO. 5

FIGURE C2.13

REV 0



NOTES:

1. GROUND ELEVATION IS 409.976 m.
2. WELL DEPTH IS 37.6 mbgs.
3. DAILY PRECIPITATION DATA PLOTTED FROM THE REGIONAL CLIMATE STATION AT THE TERRACE AIRPORT (ENVIRONMENT CANADA, 2017).
4. MANUAL WATER LEVEL PLOTTED ON SEPT 2, 2016 WAS MEASURED IMMEDIATELY AFTER INSTALLATION AND THEREFORE LIKELY AFFECTED BY DRILLING ACTIVITIES.

REV	DATE	DESCRIPTION	PREP'D	RVW'D
0	02JUN'17	ISSUED WITH REPORT	JZ	CHS

IDM MINING LTD.

RED MOUNTAIN UNDERGROUND GOLD PROJECT

MW16-004
GROUNDWATER LEVELS

Knight Piésold CONSULTING

P/A NO. VA101-548/04

REF. NO. 5

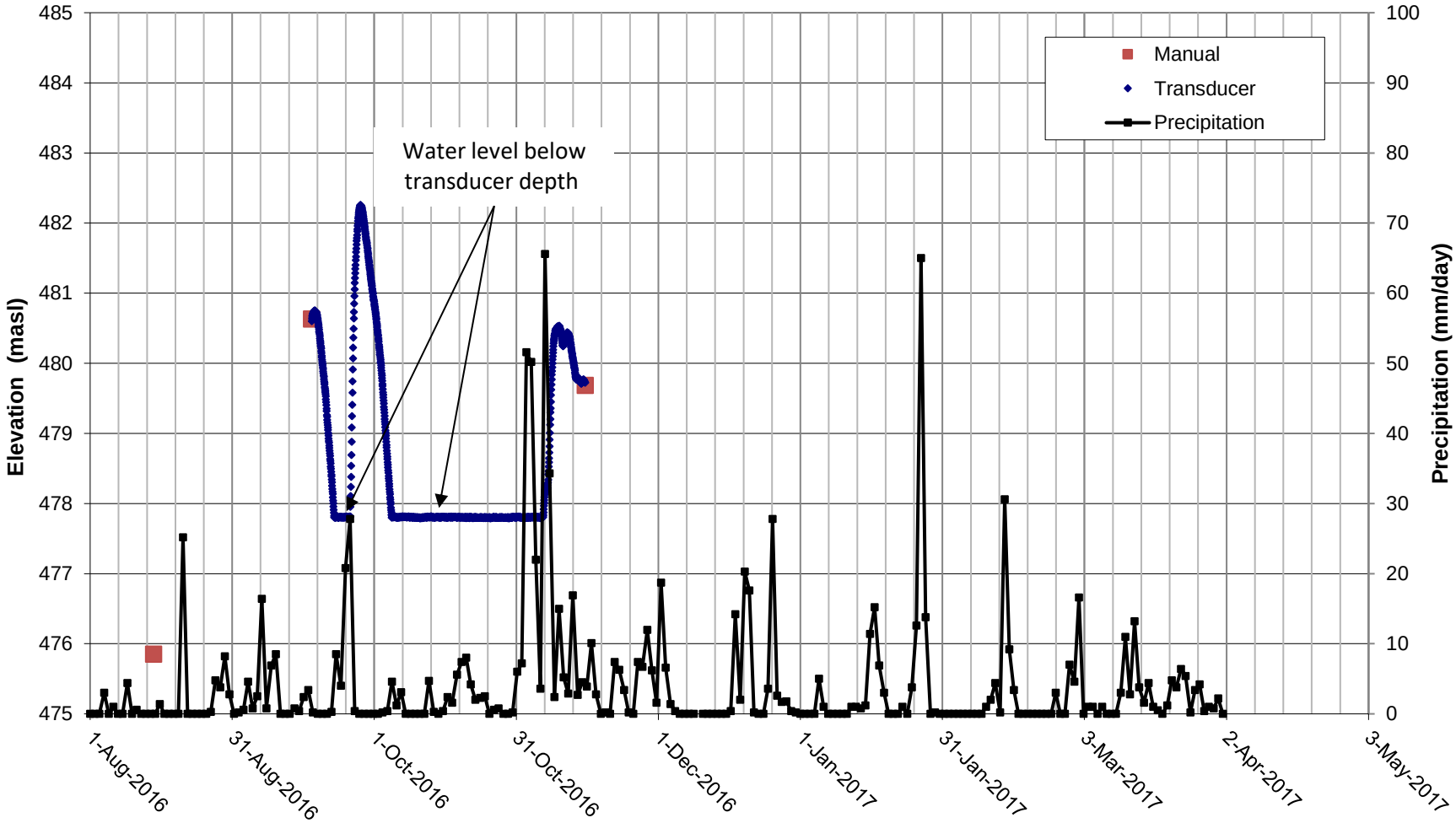
FIGURE C2.14

REV 0

APPENDIX C3

TIME SERIES DATA PLOTTED AS MASL (2016 TO 2017)

(Pages C3-1 to C3-26)



NOTES:

1. GROUND ELEVATION IS 492.171 m.
2. WELL DEPTH IS 17.1 mbgs.
3. DAILY PRECIPITATION DATA PLOTTED FROM THE REGIONAL CLIMATE STATION AT THE TERRACE AIRPORT (ENVIRONMENT CANADA, 2017).
4. MANUAL WATER LEVEL PLOTTED ON AUGUST 14, 2016 WAS MEASURED IMMEDIATELY AFTER INSTALLATION AND THEREFORE MAY BE AFFECTED BY DRILLING ACTIVITIES.

REV	DATE	DESCRIPTION	PREP'D	RVW'D
0	02JUN'17	ISSUED WITH REPORT	JZ	CHS

IDM MINING LTD.

RED MOUNTAIN UNDERGROUND GOLD PROJECT

BH16-001
GROUNDWATER LEVELS

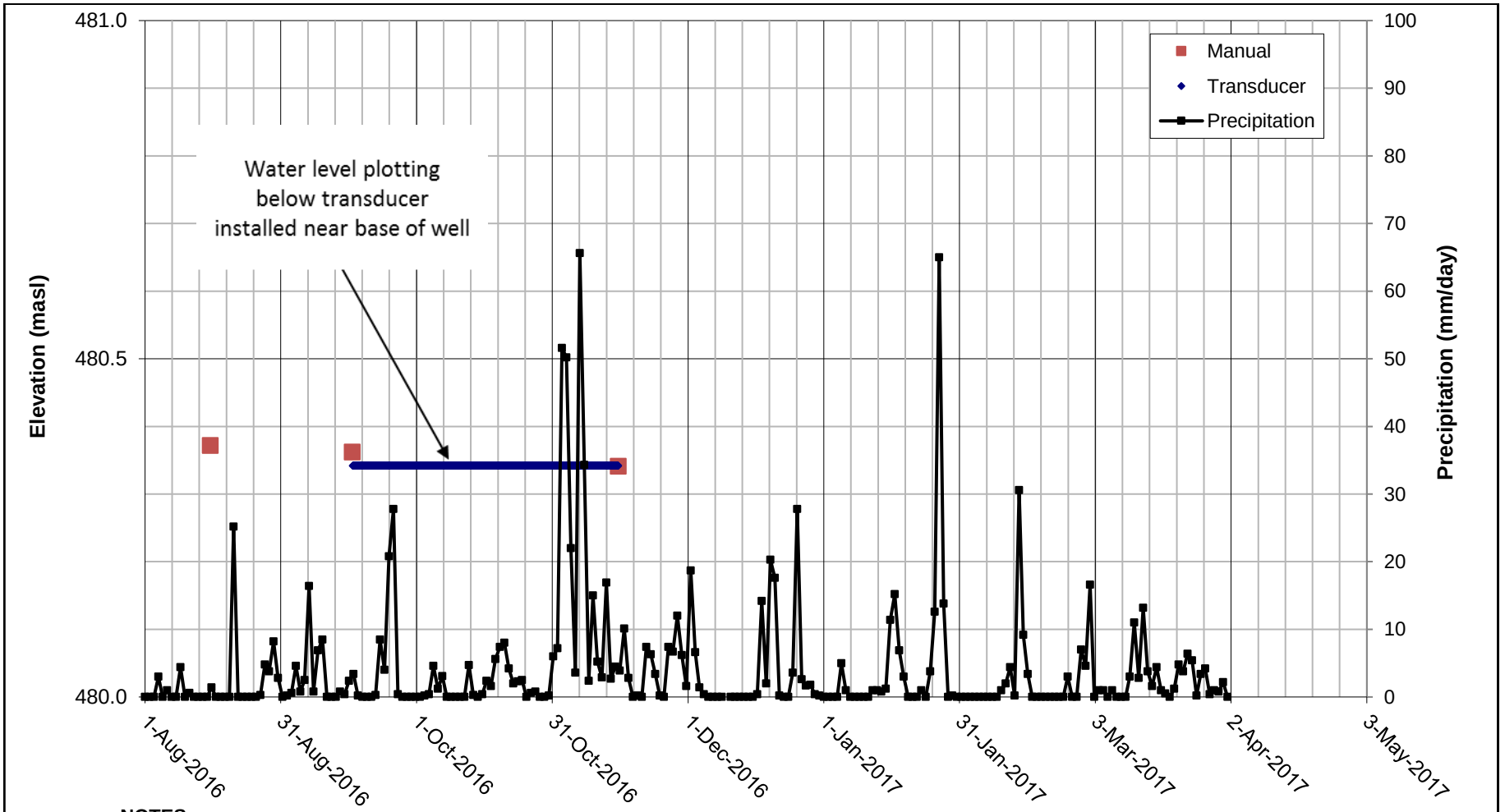
Knight Piésold CONSULTING

P/A NO. VA101-594/04

REF. NO. 5

FIGURE C3.1

REV 0



NOTES:

1. GROUND ELEVATION IS 507.922 m.
2. WELL DEPTH IS 27.6 mbgs.
3. DAILY PRECIPITATION DATA PLOTTED FROM THE REGIONAL CLIMATE STATION AT THE TERRACE AIRPORT (ENVIRONMENT CANADA, 2017).
4. MANUAL WATER LEVEL PLOTTED ON AUGUST 15, 2016 WAS MEASURE IMMEDIATELY AFTER INSTALLATION AND THEREFORE MAY BE AFFECTED BY DRILLING ACTIVITIES.
5. MANUAL WATER LEVEL MEASUREMENTS RECORDED AS DRY ARE PLOTTED AT THE WELL DEPTH (27.6 mbgs).

REV	DATE	DESCRIPTION	PREP'D	RVW'D
0	02JUN'17	ISSUED WITH REPORT	JZ	CHS

IDM MINING LTD.

RED MOUNTAIN UNDERGROUND GOLD PROJECT

BH16-002
GROUNDWATER LEVELS

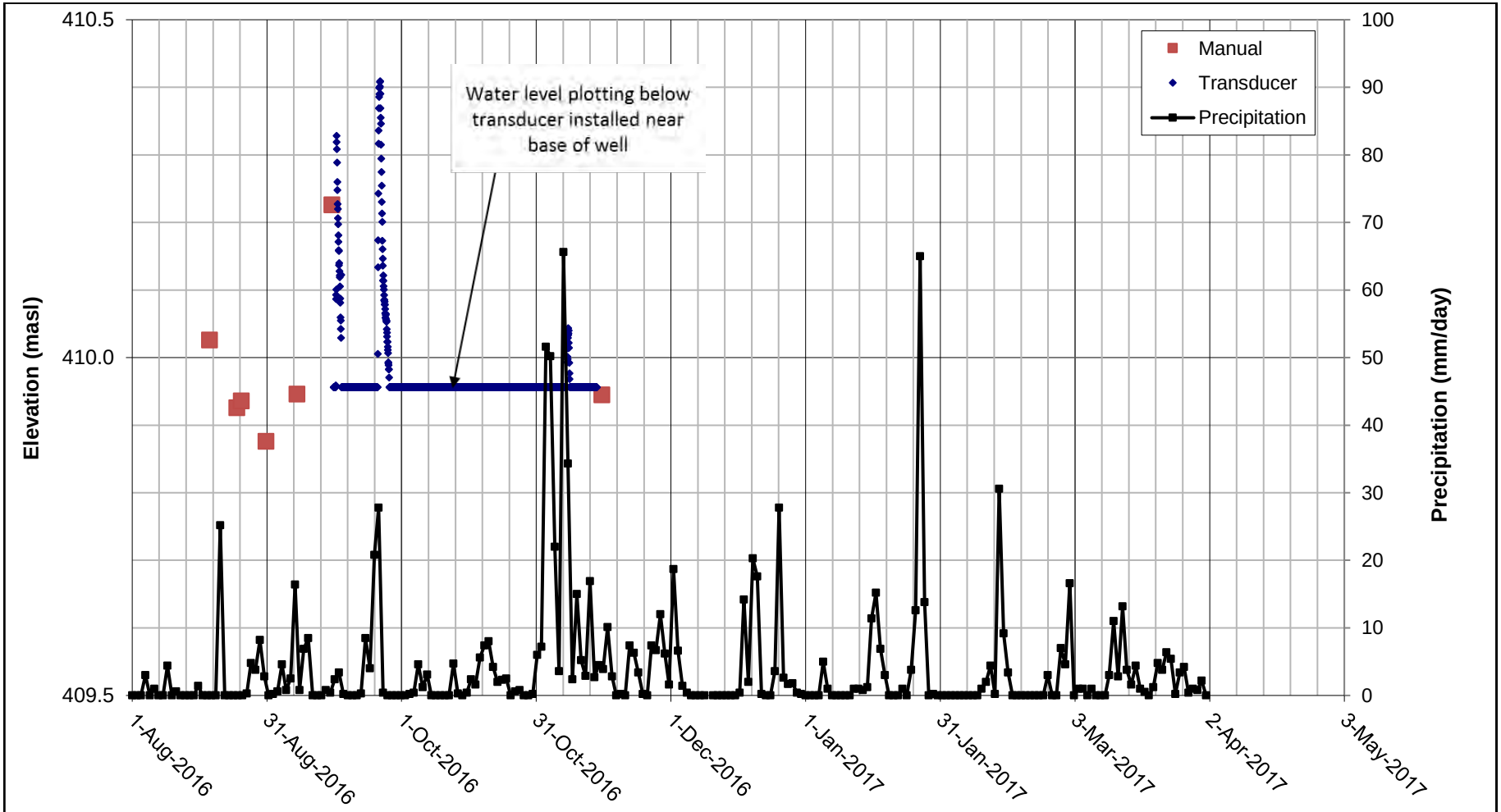
Knight Piésold CONSULTING

P/A NO. VA101-594/04

REF. NO. 5

FIGURE C3.2

REV 0



NOTES:

1. GROUND ELEVATION IS 434.596 m.
2. WELL DEPTH IS 25 mbgs.
3. DAILY PRECIPITATION DATA PLOTTED FROM THE REGIONAL CLIMATE STATION AT THE TERRACE AIRPORT (ENVIRONMENT CANADA, 2017).
4. MANUAL WATER LEVEL PLOTTED ON AUGUST 18, 2016 WAS MEASURE IMMEDIATELY AFTER INSTALLATION AND THEREFORE MAY BE AFFECTED BY DRILLING ACTIVITIES.
5. MEASUREMENTS INDICATE STANDPIPE PIEZOMETER IS ESSENTIALLY DRY.

REV	DATE	DESCRIPTION	PREP'D	RVW'D
0	02JUN'17	ISSUED WITH REPORT	JZ	CHS

IDM MINING LTD.

RED MOUNTAIN UNDERGROUND GOLD PROJECT

BH16-003
GROUNDWATER LEVELS

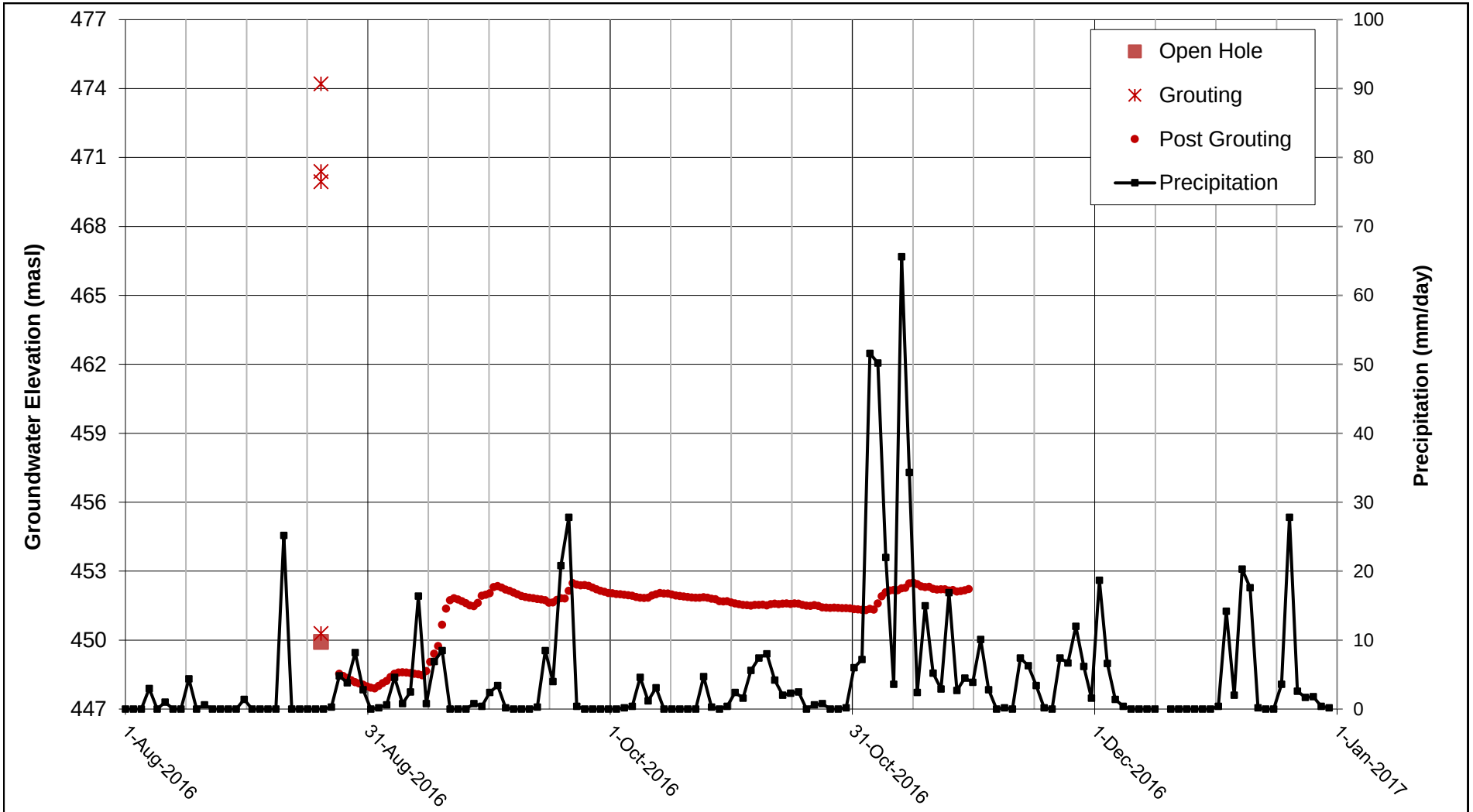
Knight Piésold CONSULTING

P/A NO. VA101-594/04

REF. NO. 5

FIGURE C3.3

REV 0



NOTES:

1. GROUND ELEVATION IS 465.61 masl.
2. VIBRATING WIRE PIEZOMETER (VWP) ELEVATION 437.1 masl (28.5 mbgs)
3. DAILY PRECIPITATION DATA PLOTTED FROM REGIONAL CLIMATE STATION AT TERRACE AIRPORT (ENVIRONMENT CANADA, 2017).

REV	DATE	DESCRIPTION	PREP'D	RVW'D
0	2017-06-02	ISSUED WITH REPORT	MCW	CHS

IDM MINING LTD.

RED MOUNTAIN UNDERGROUND GOLD PROJECT

BH16-004
GROUNDWATER LEVELS (VWP)

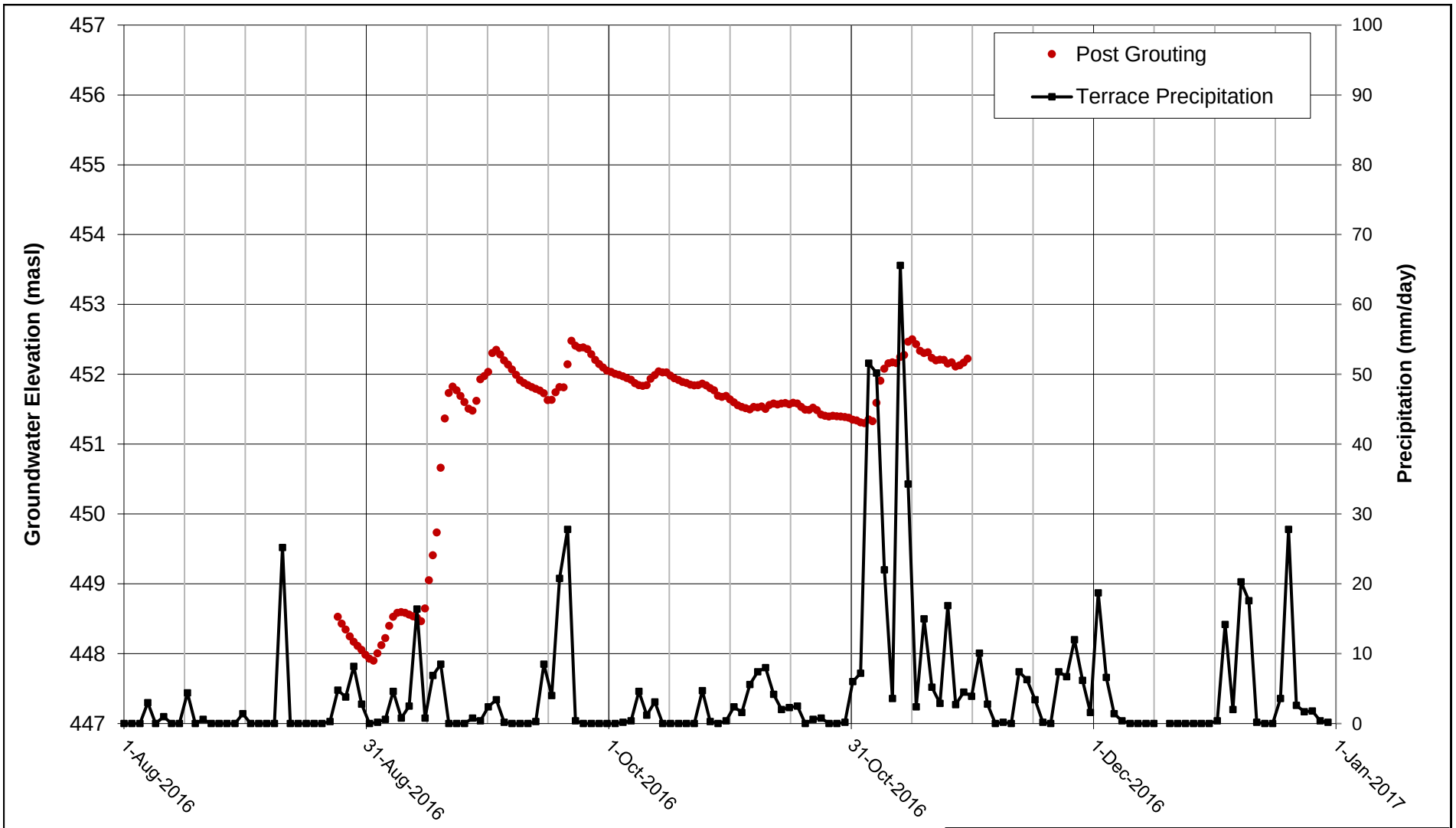
Knight Piésold CONSULTING

P/A NO. VA101-594/04

REF. NO. 5

FIGURE C3.4A

REV 0



NOTES:

1. GROUND ELEVATION IS 465.61 masl.
2. VIBRATING WIRE PIEZOMETER (VWP) ELEVATION 437.1 masl (28.5 mbgs)
3. DAILY PRECIPITATION DATA PLOTTED FROM REGIONAL CLIMATE STATION AT TERRACE AIRPORT (ENVIRONMENT CANADA, 2017).

IDM MINING LTD.

RED MOUNTAIN UNDERGROUND GOLD PROJECT

BH16-004
GROUNDWATER LEVELS (VWP)
SCALED TO SHOW ONLY POST GROUTING DATA

Knight Piésold CONSULTING

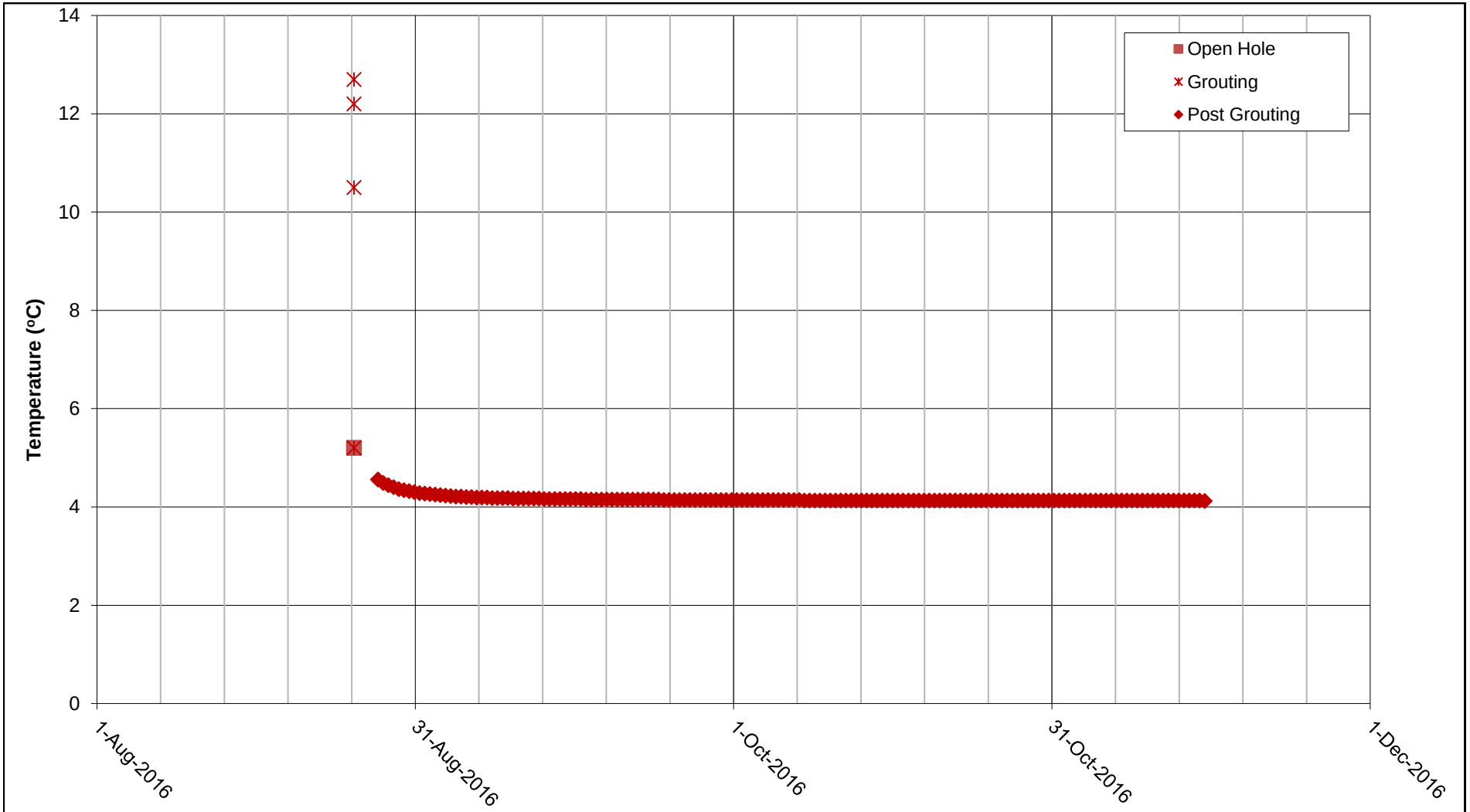
P/A NO. VA101-594/04

REF. NO. 5

FIGURE C3.4B

REV 0

REV	DATE	DESCRIPTION	PREP'D	RVW'D
0	2017-06-02	ISSUED WITH REPORT	MCW	CHS



NOTES:
1. GROUND ELEVATION IS 465.612 m.
2. VIBRATING WIRE PIEZOMETER (VWP) ELEVATION IS 437.1 masl.

REV	DATE	DESCRIPTION	PREP'D	RVW'D
0	2017-06-02	ISSUED WITH REPORT	MCW	CHS

IDM MINING LTD.

RED MOUNTAIN UNDERGROUND GOLD PROJECT

BH16-004
TEMPERATURE (VWP)

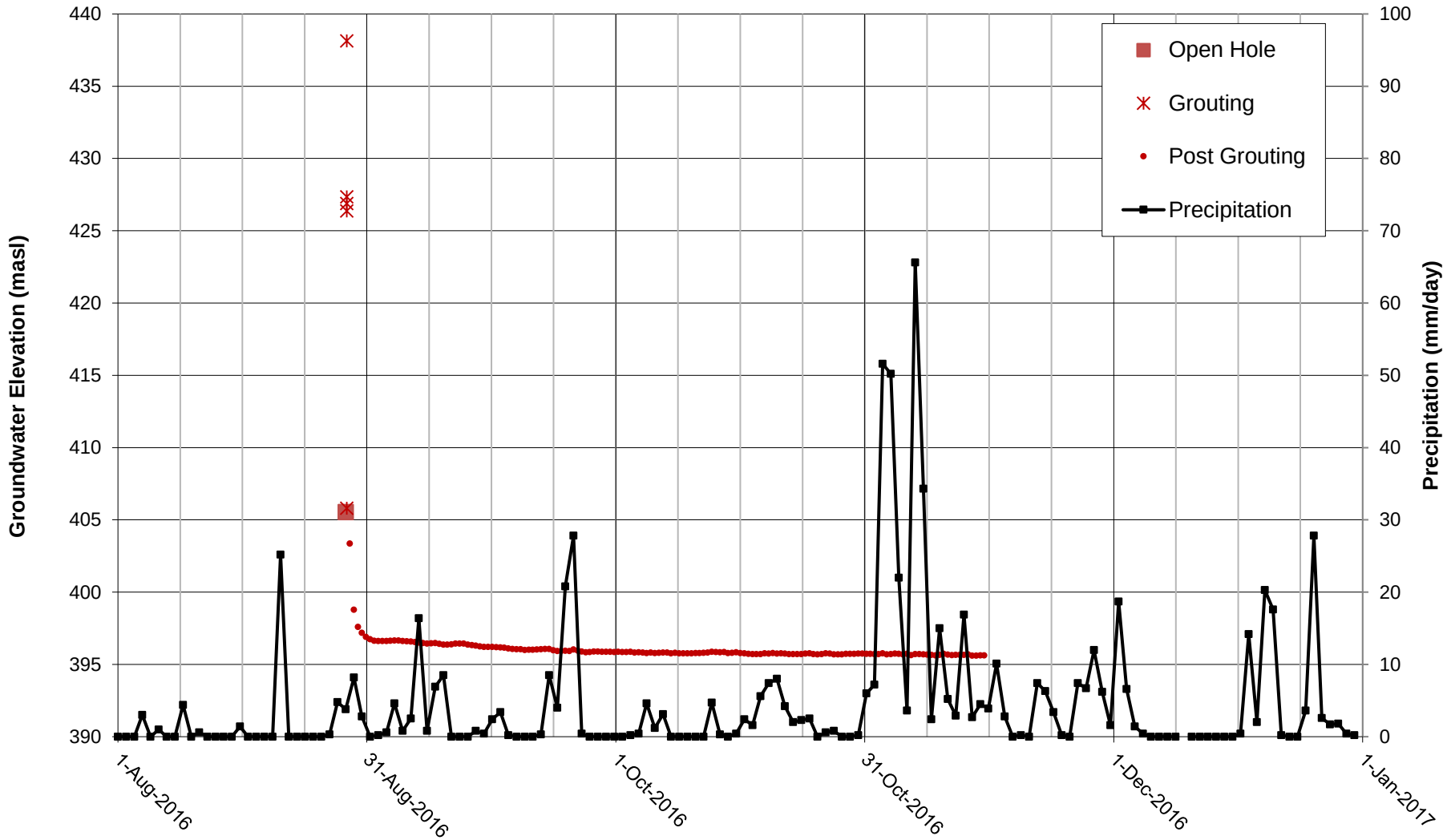
Knight Piésold CONSULTING

P/A NO. VA101-594/04

REF. NO. 5

FIGURE C3.4C

REV 0



NOTES:

1. GROUND ELEVATION IS 427.49 masl.
2. VIBRATING WIRE PIEZOMETER (VWP) ELEVATION IS 394.6 masl (33 mbgs)
3. DAILY PRECIPITATION DATA PLOTTED FROM REGIONAL CLIMATE STATION AT TERRACE AIRPORT (ENVIRONMENT CANADA, 2017).

REV	DATE	DESCRIPTION	PREP'D	RVW'D
0	02JUN'17	ISSUED WITH REPORT	MCW	CHS

IDM MINING LTD.

RED MOUNTAIN UNDERGROUND GOLD PROJECT

BH16-005
GROUNDWATER LEVELS (VWP)

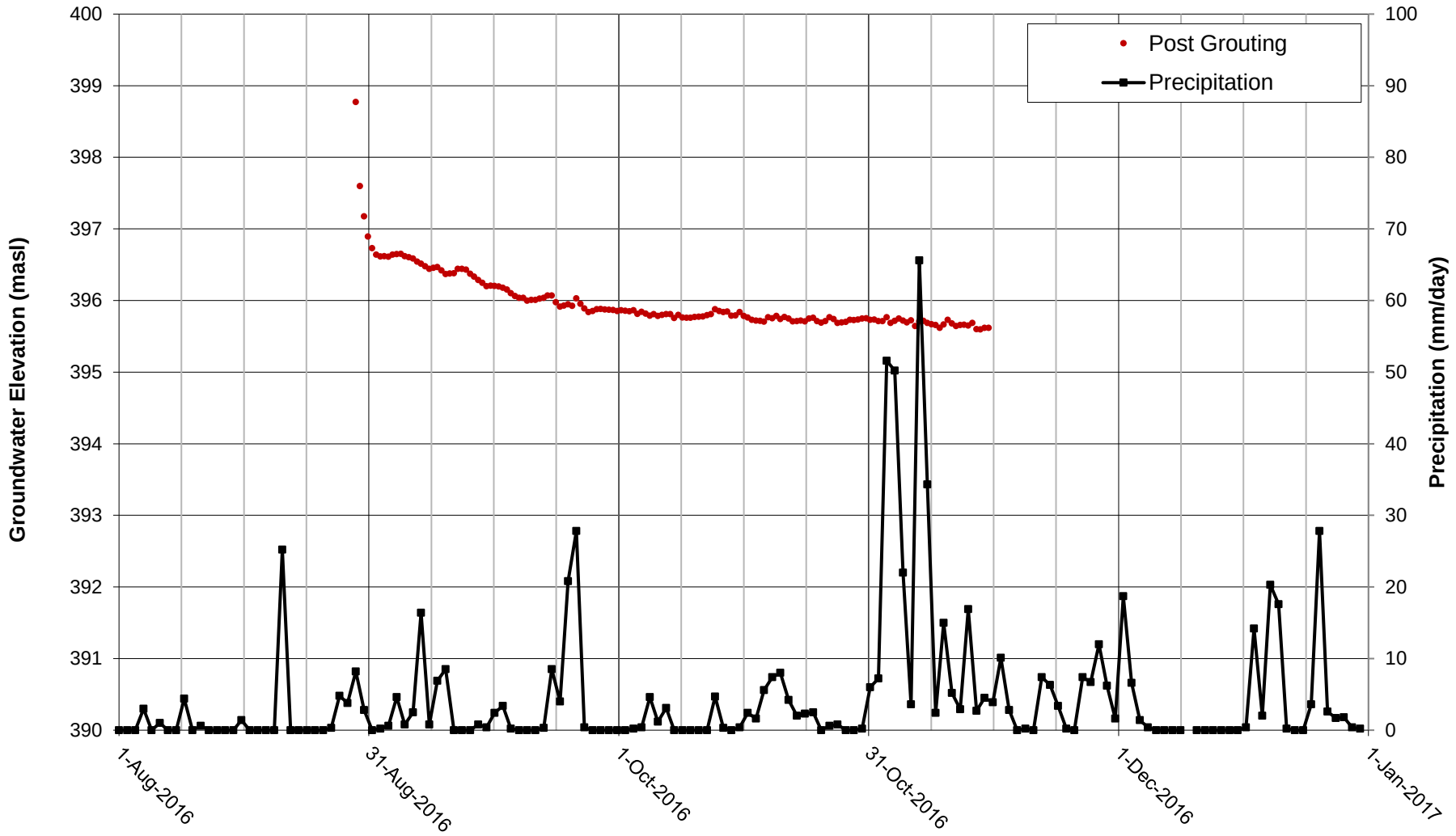
Knight Piésold CONSULTING

P/A NO. VA101-594/04

REF. NO. 5

FIGURE C3.5A

REV 0



NOTES:

1. GROUND ELEVATION IS 427.49 masl.
2. VIBRATING WIRE PIEZOMETER (VWP) ELEVATION IS 394.6 masl (33 mbgs)
3. DAILY PRECIPITATION DATA PLOTTED FROM REGIONAL CLIMATE STATION AT TERRACE AIRPORT (ENVIRONMENT CANADA, 2017).

REV	DATE	DESCRIPTION	PREP'D	RVW'D
0	02JUN'17	ISSUED WITH REPORT	MCW	CHS

IDM MINING LTD.

RED MOUNTAIN UNDERGROUND GOLD PROJECT

BH16-005
GROUNDWATER LEVELS (VWP)
SCALED TO SHOW ONLY POST GROUTING DATA

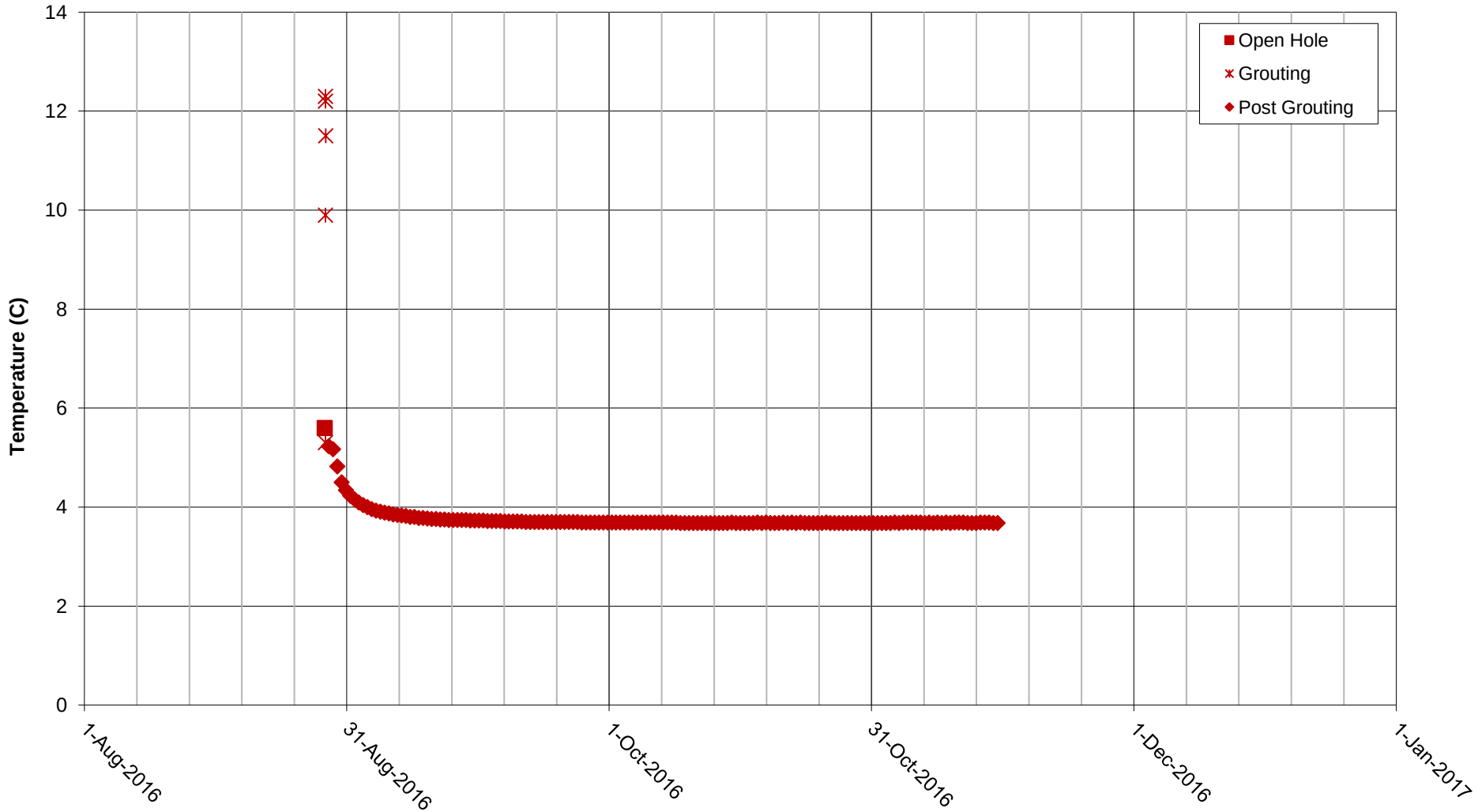
Knight Piésold CONSULTING

P/A NO. VA101-594/04

REF. NO. 5

FIGURE C3.5B

REV 0



NOTES:
1. GROUND ELEVATION IS 427.49 m.
2. VIBRATING WIRE PIEZOMETER (VWP) ELEVATION IS 394.6 m.

REV	DATE	DESCRIPTION	PREP'D	RVW'D
0	02JUN'17	ISSUED WITH REPORT	MCW	CHS

IDM MINING LTD.

RED MOUNTAIN UNDERGROUND GOLD PROJECT

BH16-005
TEMPERATURE (VWP)

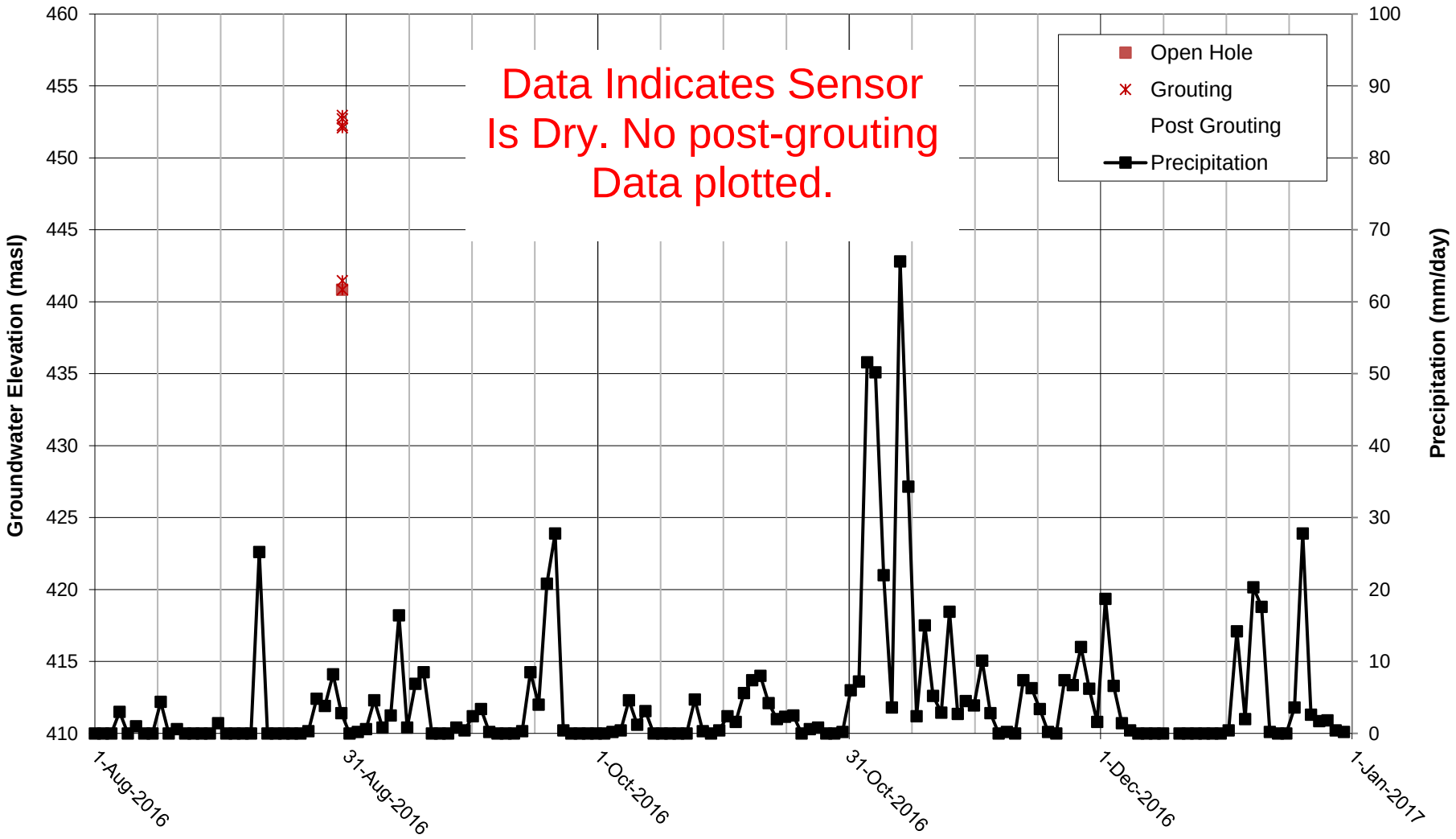
Knight Piésold CONSULTING

P/A NO. VA101-594/04

REF. NO. 5

FIGURE C3.5C

REV 0



NOTES:

1. GROUND ELEVATION IS 442.641 masl.
2. VIBRATING WIRE PIEZOMETER (VWP) ELEVATION IS 414.9 masl (27.75 mbgs).
3. DAILY PRECIPITATION DATA PLOTTED FROM REGIONAL CLIMATE STATION AT TERRACE AIRPORT (ENVIRONMENT CANADA, 2017).
4. VIBRATING WIRE PIEZOMETER DATA INDICATES SENSOR IS DRY.NO POST-GROUTING DATA PLOTTED.

IDM MINING LTD.

RED MOUNTAIN UNDERGROUND GOLD PROJECT

BH16-06
GROUNDWATER LEVELS (VWP)

Knight Piésold CONSULTING

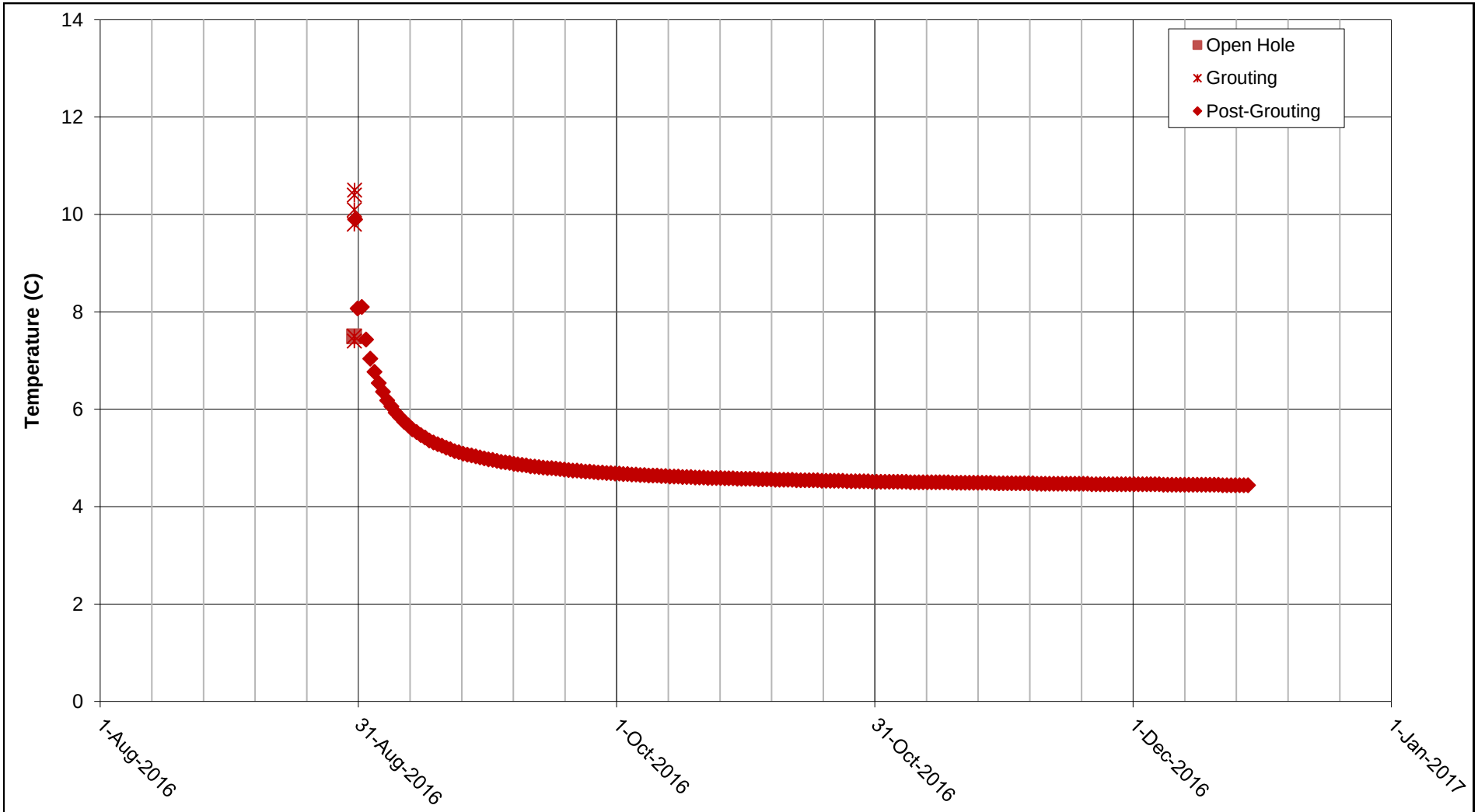
P/A NO. VA101-594/04

REF. NO. 5

FIGURE C3.6A

REV 0

REV	DATE	DESCRIPTION	PREP'D	RVW'D
0	02JUN'17	ISSUED WITH REPORT	MCW	CHS



NOTES:

1. GROUND ELEVATION IS 444.641 m.
2. VIBRATING WIRE PIEZOMETER (VWP) ELEVATION IS 414.9 m.

REV	DATE	DESCRIPTION	PREP'D	RVW'D
0	02JUN'17	ISSUED WITH REPORT	MCW	CHS

IDM MINING LTD.

RED MOUNTAIN UNDERGROUND GOLD PROJECT

BH16-006
TEMPERATURE (VWP)

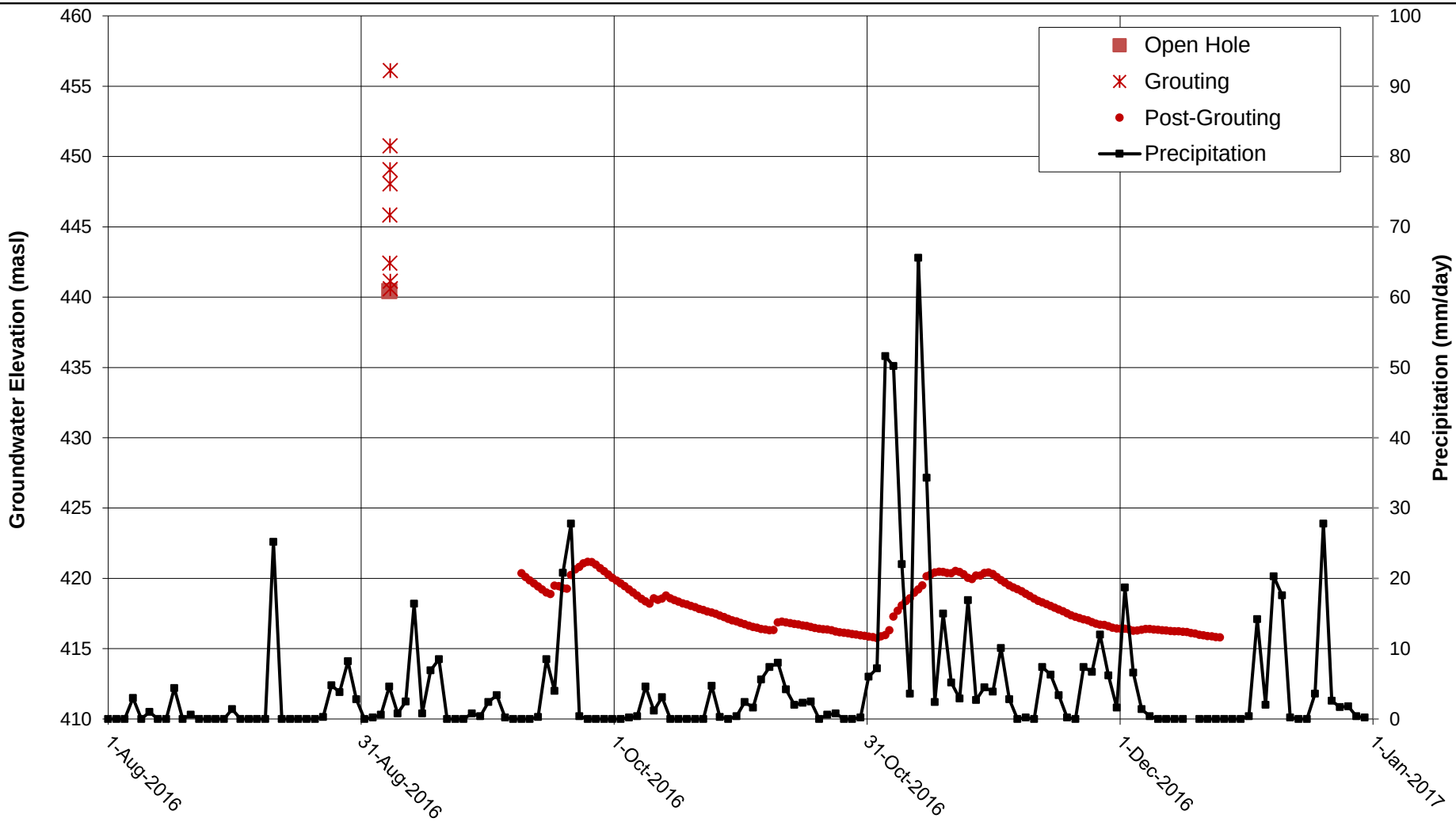
Knight Piésold CONSULTING

P/A NO. VA101-594/04

REF. NO. 5

FIGURE C3.6B

REV 0



NOTES:

1. GROUND ELEVATION IS 443.55 masl.
2. VIBRATING WIRE PIEZOMETER (VWP) ELEVATION 412.1 masl (31.5 mbgs).
3. DAILY PRECIPITATION DATA PLOTTED FROM REGIONAL CLIMATE STATION AT TERRACE AIRPORT (ENVIRONMENT CANADA, 2017).
4. DATA NOT RECORDED PRIOR TO SEPT 20, 2016, VWP SUSPECTED TO BE NOT CONNECTED TO DATALOGGER.

REV	DATE	DESCRIPTION	PREP'D	RVW'D
0	02JUN'17	ISSUED WITH REPORT	MCW	CHS

IDM MINING LTD.

RED MOUNTAIN UNDERGROUND GOLD PROJECT

BH16-007
GROUNDWATER LEVELS (VWP)

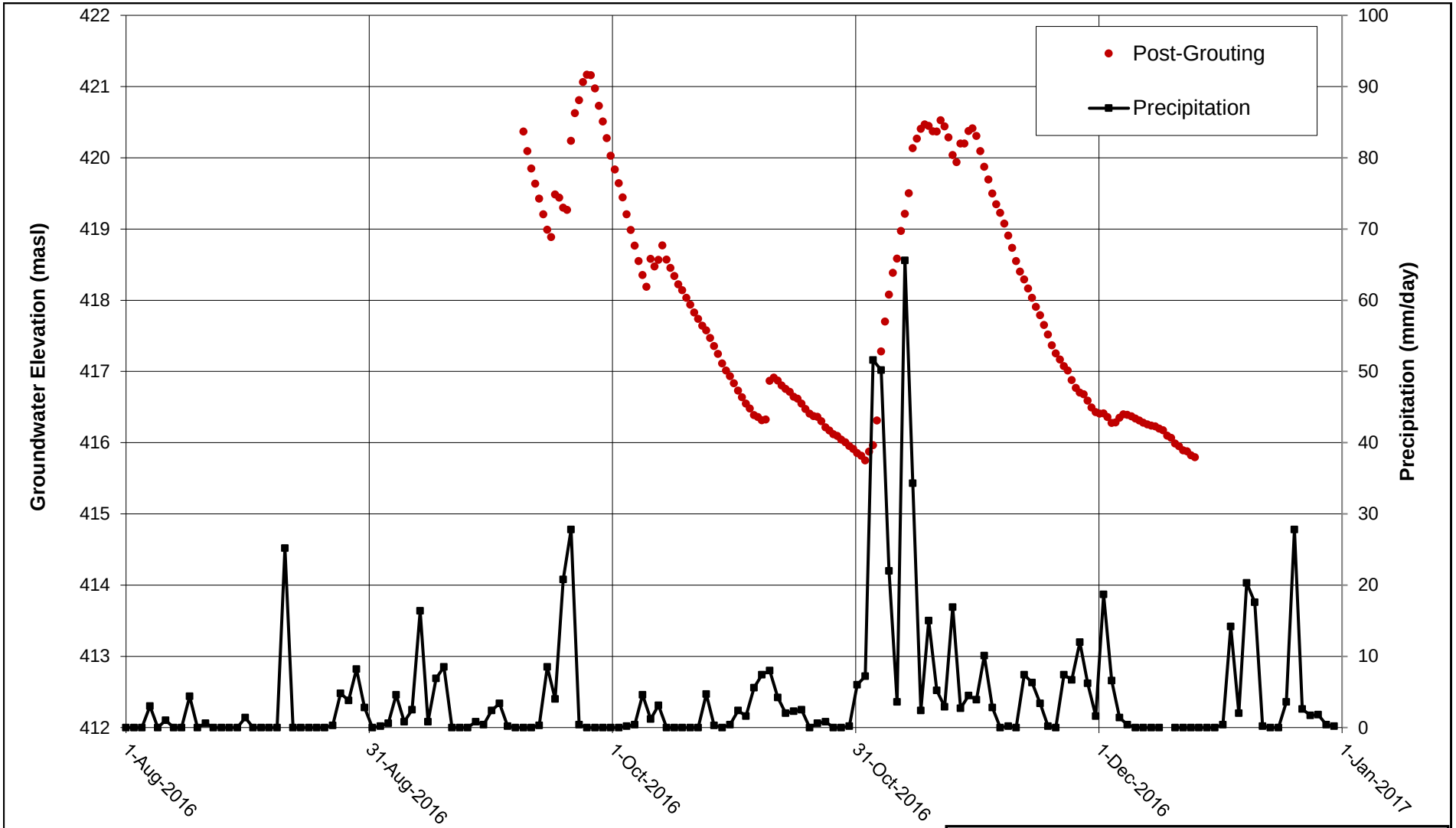
Knight Piésold CONSULTING

P/A NO. VA101-594/04

REF. NO. 5

FIGURE C3.7A

REV 0



NOTES:

1. GROUND ELEVATION IS 443.55 masl.
2. VIBRATING WIRE PIEZOMETER (VWP) ELEVATION 412.1 masl (31.5 mbgs).
3. DAILY PRECIPITATION DATA PLOTTED FROM REGIONAL CLIMATE STATION AT TERRACE AIRPORT (ENVIRONMENT CANADA, 2017).
4. DATA NOT RECORDED PRIOR TO SEPT 20, 2016, VWP SUSPECTED TO BE NOT CONNECTED TO DATALOGGER.

REV	DATE	DESCRIPTION	PREP'D	RVW'D
0	02JUN'17	ISSUED WITH REPORT	MCW	CHS

IDM MINING LTD.

RED MOUNTAIN UNDERGROUND GOLD PROJECT

BH16-007
GROUNDWATER LEVELS (VWP)
SCALED TO SHOW ONLY POST GROUTING DATA

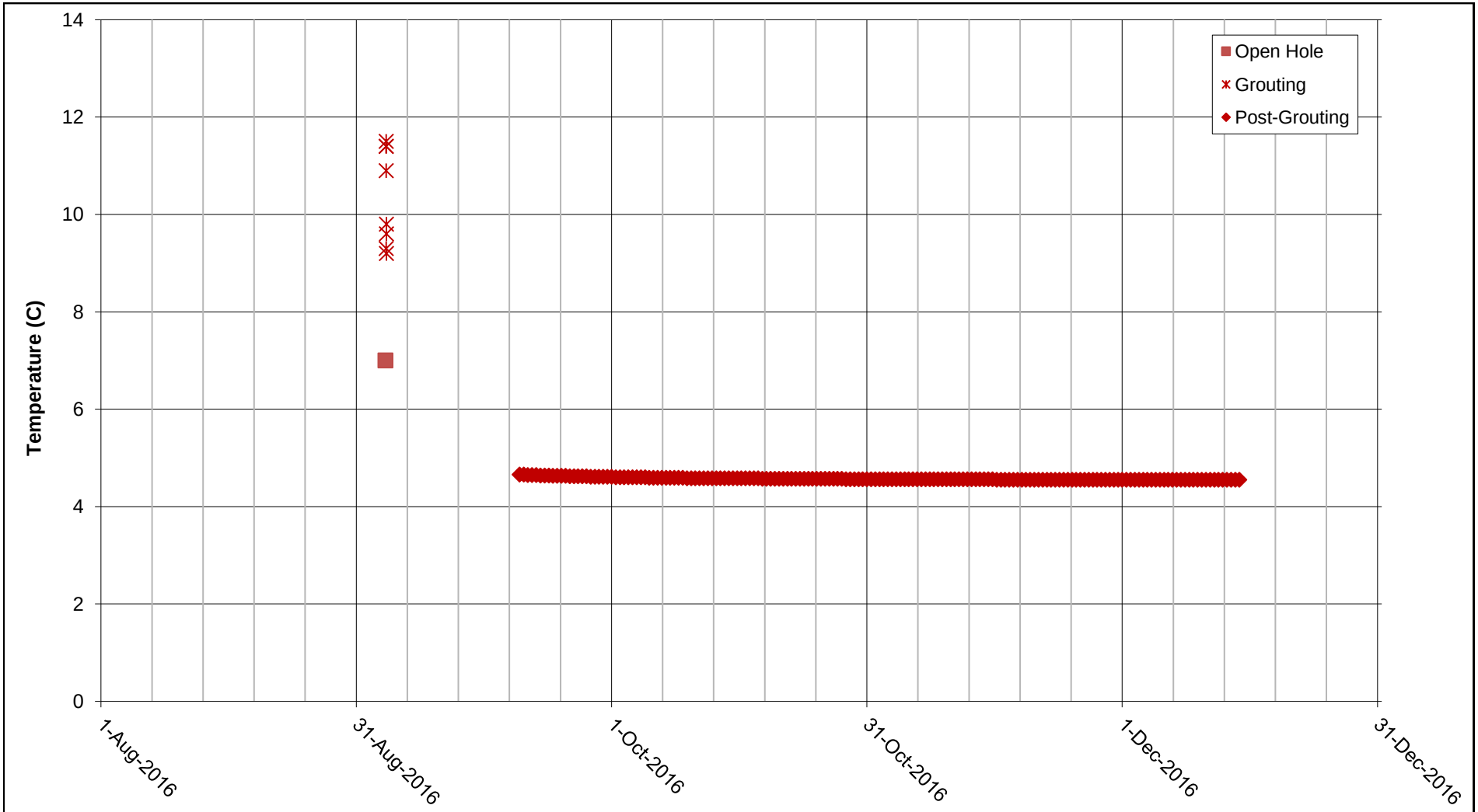
Knight Piésold CONSULTING

P/A NO. VA101-594/04

REF. NO. 5

FIGURE C3.7B

REV 0



NOTES:

1. GROUND ELEVATION IS 443.55 m.
2. VIBRATING WIRE PIEZOMETER (VWP) ELEVATION 412.1 m
3. DATA NOT RECORDED PRIOR TO SEPT 20, 2016, VWP SUSPECTED TO BE NOT CONNECTED TO DATALOGGER.

REV	DATE	DESCRIPTION	PREP'D	RVW'D
0	02JUN'17	ISSUED WITH REPORT	MCW	CHS

IDM MINING LTD.

RED MOUNTAIN UNDERGROUND GOLD PROJECT

BH16-007
TEMPERATURE (VWP)

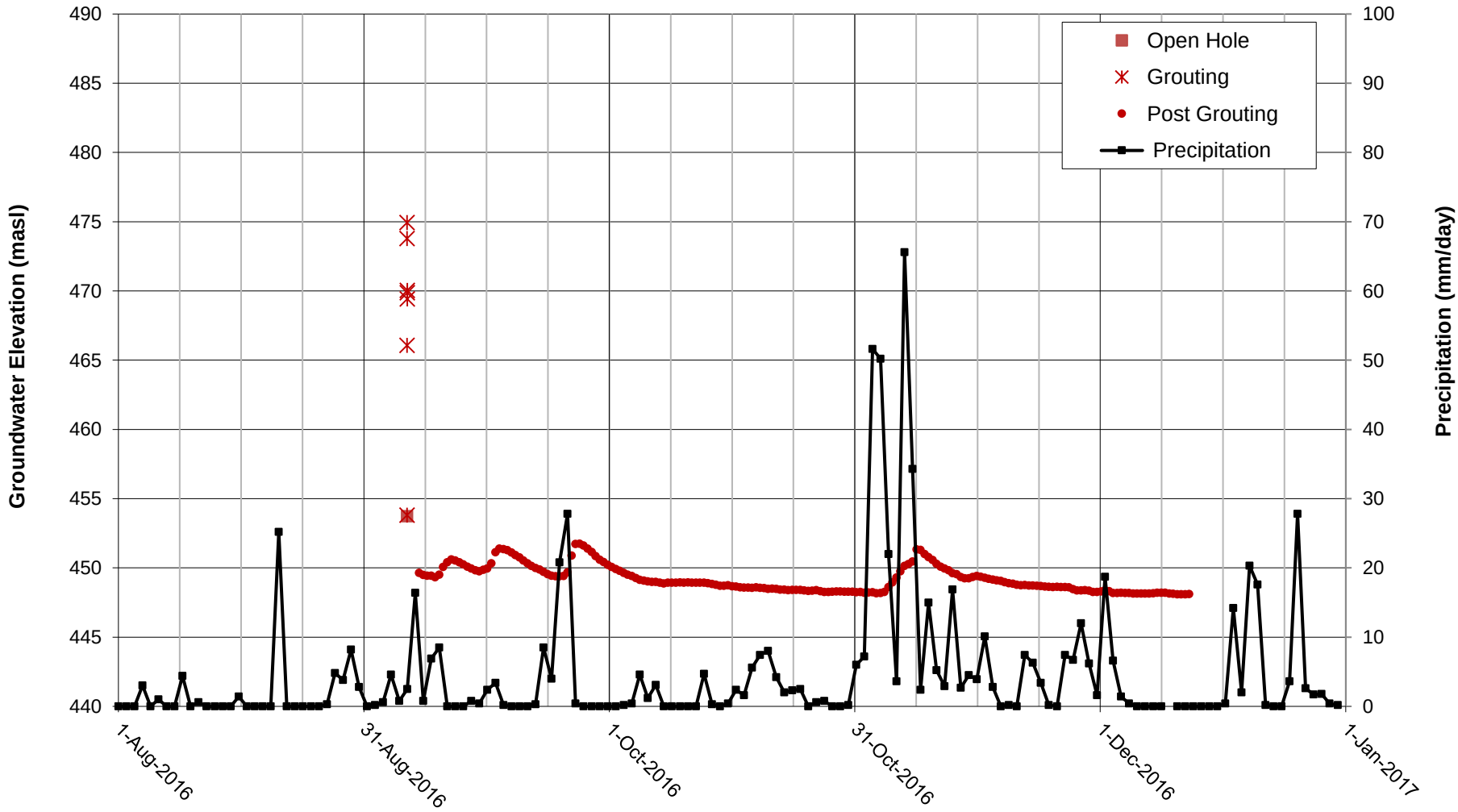
Knight Piésold CONSULTING

P/A NO. VA101-594/04

REF. NO. 5

FIGURE C3.7C

REV 0



NOTES:

1. GROUND ELEVATION IS 470.27 masl.
2. VIBRATING WIRE PIEZOMETER (VWP) ELEVATION IS 443.2 masl (27.1 mbgs)
3. DAILY PRECIPITATION DATA PLOTTED FROM REGIONAL CLIMATE STATION AT TERRACE AIRPORT (ENVIRONMENT CANADA, 2017).

REV	DATE	DESCRIPTION	PREP'D	RVW'D
0	02JUN'17	ISSUED WITH REPORT	MCW	CHS

IDM MINING LTD.

RED MOUNTAIN UNDERGROUND GOLD PROJECT

BH16-008
GROUNDWATER LEVELS (VWP)

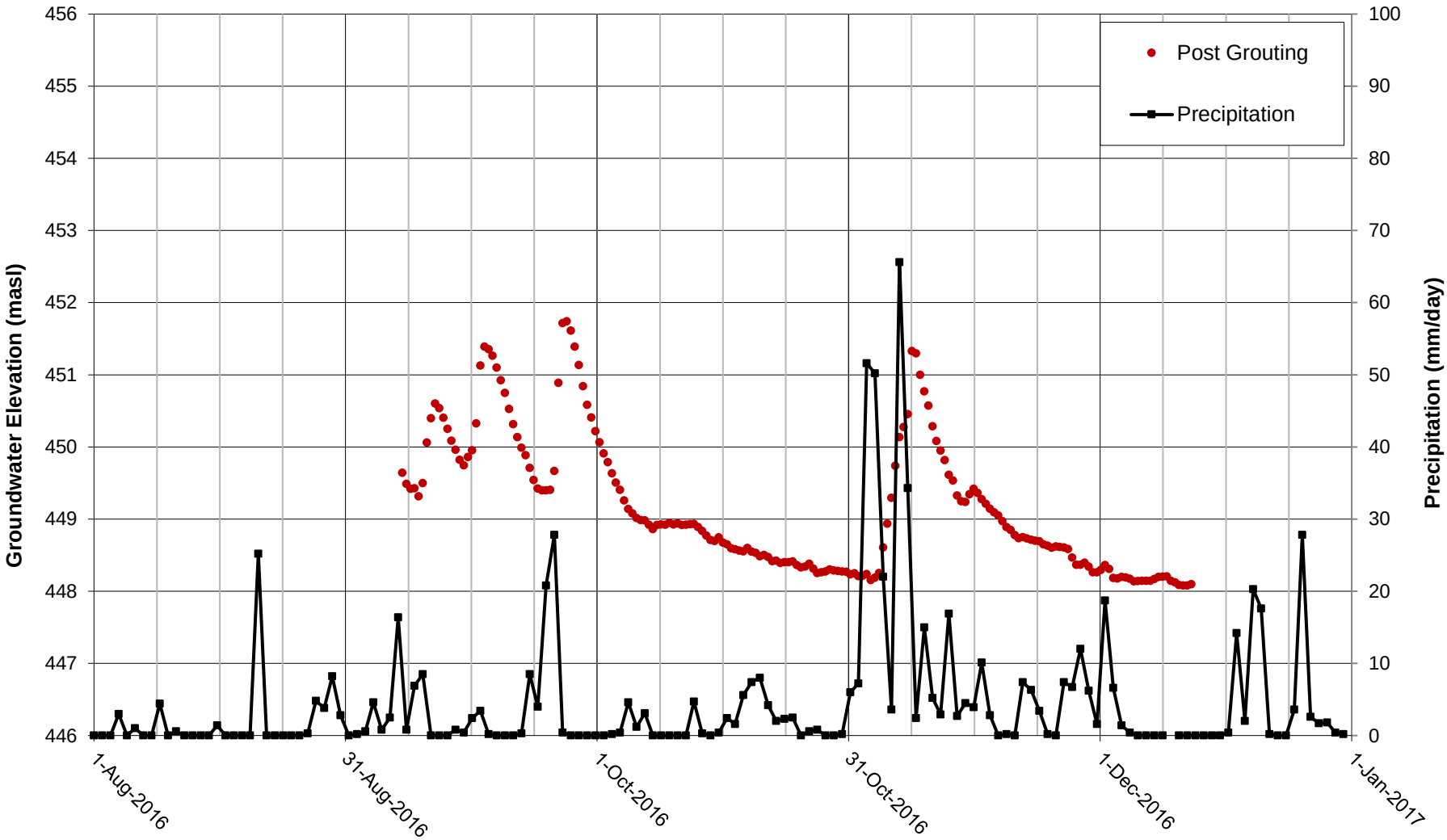
Knight Piésold CONSULTING

P/A NO. VA101-594/04

REF. NO. 5

FIGURE C3.8A

REV 0



NOTES:

1. GROUND ELEVATION IS 470.27 masl.
2. VIBRATING WIRE PIEZOMETER (VWP) ELEVATION IS 443.2 masl (27.1 mbgs)
3. DAILY PRECIPITATION DATA PLOTTED FROM REGIONAL CLIMATE STATION AT TERRACE AIRPORT (ENVIRONMENT CANADA, 2017).

IDM MINING LTD.

RED MOUNTAIN UNDERGROUND GOLD PROJECT

BH16-008
GROUNDWATER LEVELS (VWP)
SCALED TO SHOW ONLY POST GROUTING DATA

Knight Piésold CONSULTING

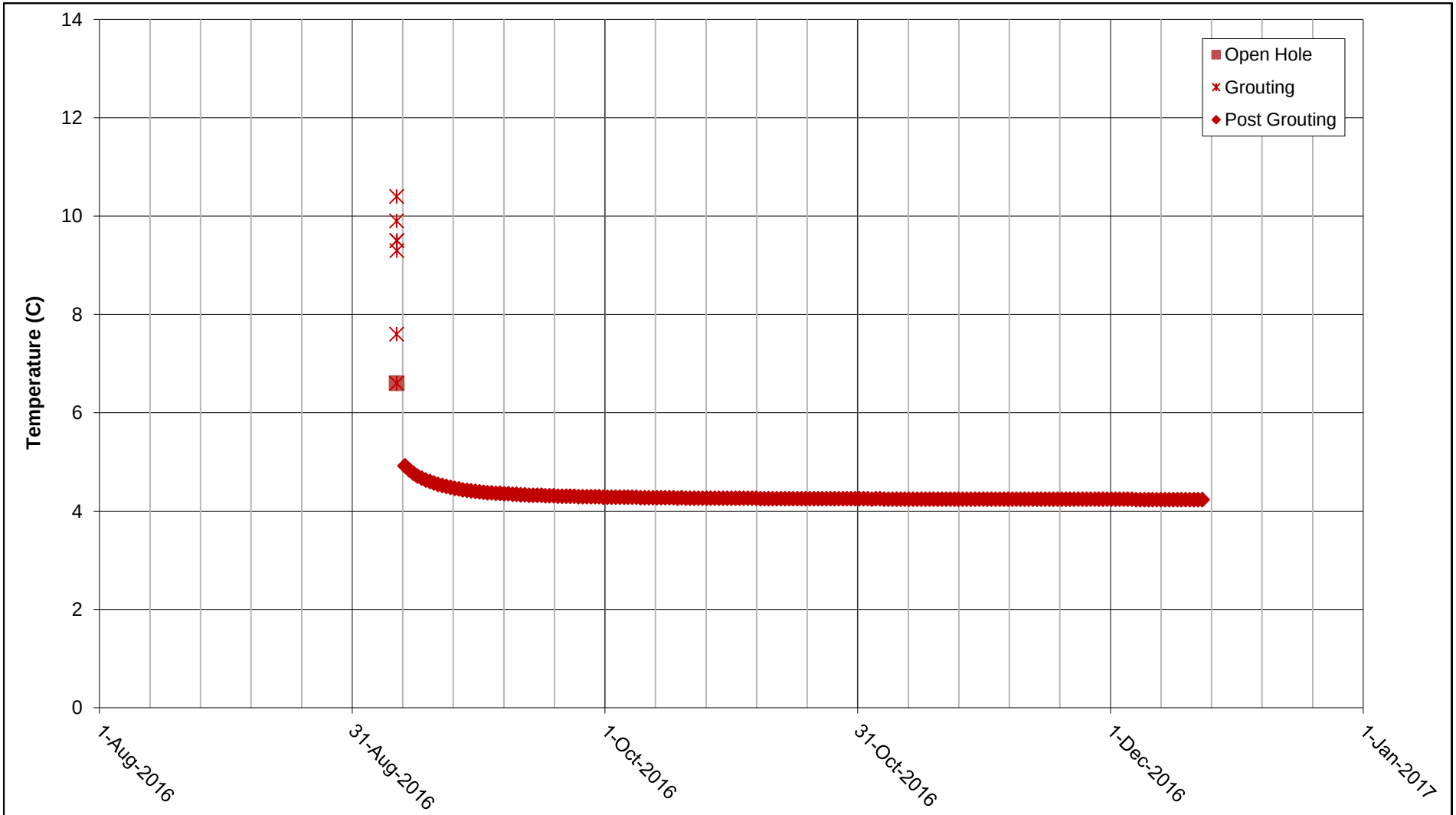
P/A NO. VA101-594/04

REF. NO. 5

FIGURE C3.8B

REV 0

REV	DATE	DESCRIPTION	PREP'D	RVW'D
0	02JUN'17	ISSUED WITH REPORT	MCW	CHS



NOTES:

1. GROUND ELEVATION IS 470.272 m.
2. VIBRATING WIRE PIEZOMETER (VWP) ELEVATION IS 443.2 m.

REV	DATE	DESCRIPTION	PREP'D	RVW'D
0	02JUN'17	ISSUED WITH REPORT	MCW	CHS

IDM MINING LTD.

RED MOUNTAIN UNDERGROUND GOLD PROJECT

BH16-008
TEMPERATURE (VWP)

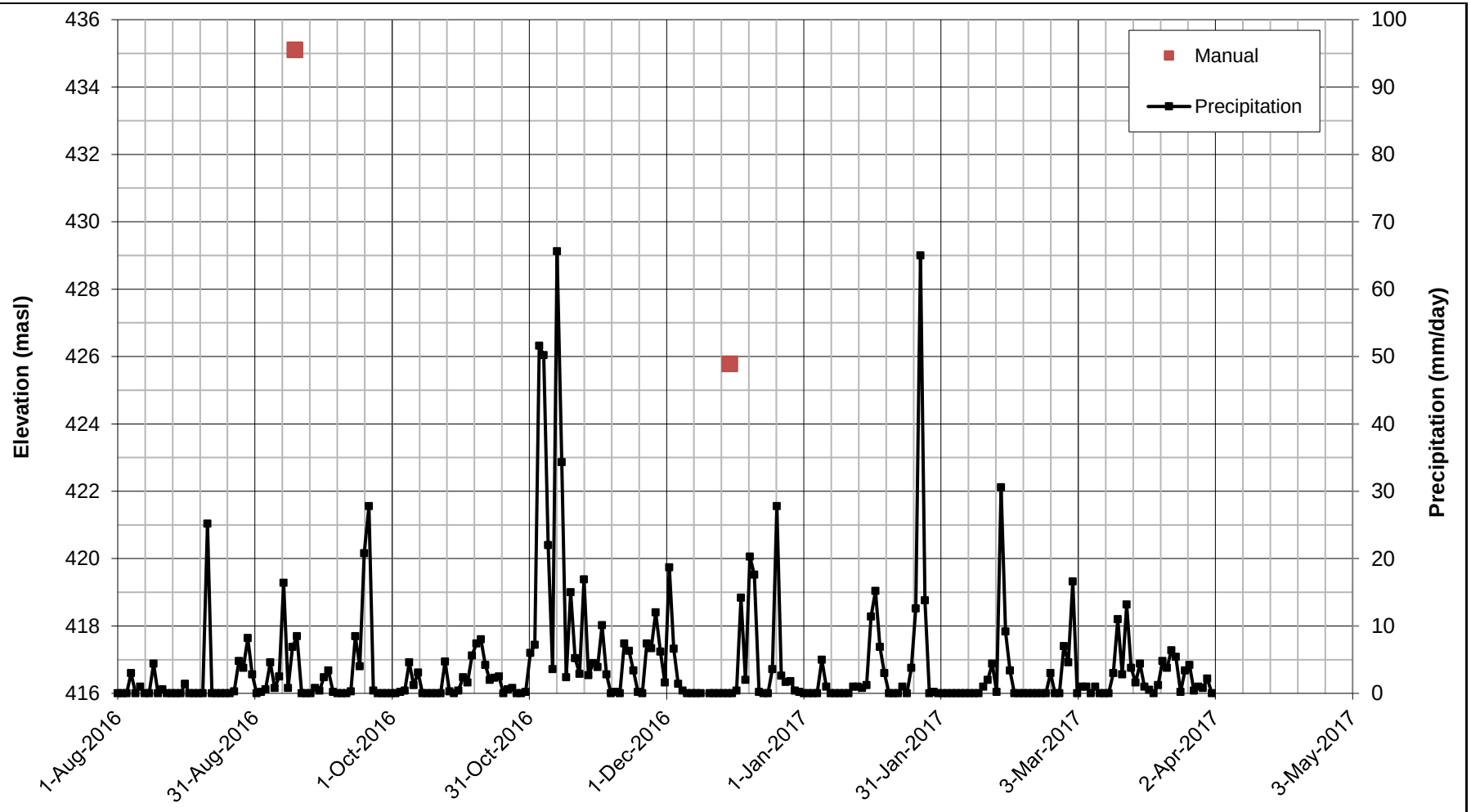
Knight Piésold CONSULTING

P/A NO. VA101-594/04

REF. NO. 5

FIGURE C3.8C

REV 0



NOTES:
1. GROUND ELEVATION IS 463.893 m.
2. WELL DEPTH IS 52.3 mbgs.
3.DAILY PRECIPITATION DATA PLOTTED FROM THE REGIONAL CLIMATE STATION AT THE TERRACE AIRPORT (ENVIRONMENT CANADA, 2017).
4. MANUAL WATER LEVEL PLOTTED ON SEPTEMBER 9, 2016 WAS MEASURE IMMEDIATELY AFTER INSTALLATION AND THEREFORE MAY BE AFFECTED BY DRILLING ACTIVITIES.
5. TRANSDUCER INSTALLED IN DECEMBER 2016. NO DATA YET COLLECTED.

REV	DATE	DESCRIPTION	PREP'D	RVW'D
0	02JUN'17	ISSUED WITH REPORT	JZ	CHS

IDM MINING LTD.

RED MOUNTAIN UNDERGROUND GOLD PROJECT

BH16-009
GROUNDWATER LEVELS

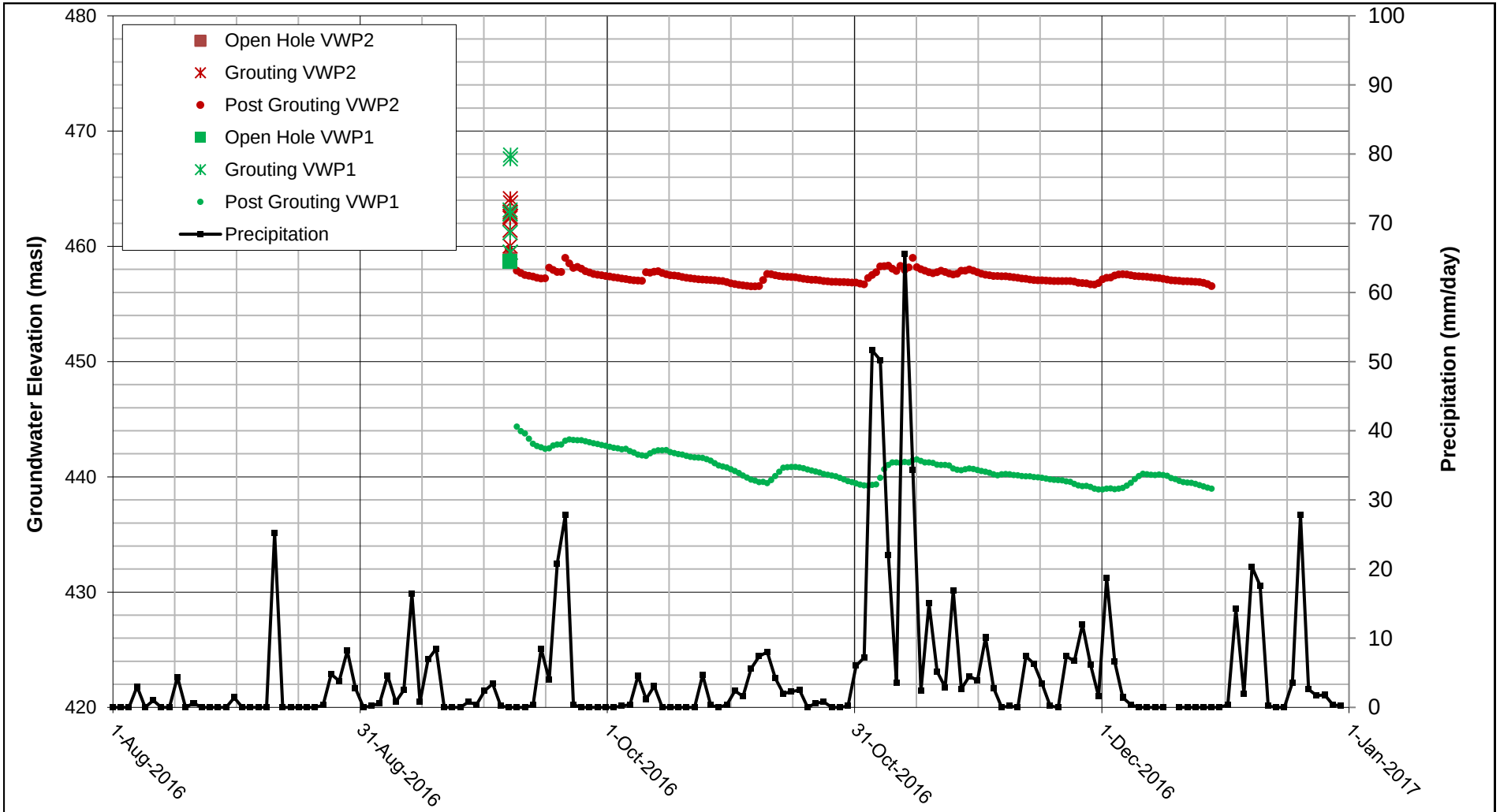
Knight Piésold CONSULTING

P/A NO. VA101-594/04

REF. NO. 5

FIGURE C3.9

REV 0



NOTES:

1. GROUND ELEVATION IS 463.08 masl.
2. VIBRATING WIRE PIEZOMETER (VWP) ELEVATIONS ARE: VWP1 440.9 masl (22.2 mbgs) AND VWP2 457.3 masl (5.7 mbgs)
3. DAILY PRECIPITATION DATA PLOTTED FROM REGIONAL CLIMATE STATION AT TERRACE AIRPORT (ENVIRONMENT CANADA, 2017).

REV	DATE	DESCRIPTION	PREP'D	RVW'D
0	02JUN'17	ISSUED WITH REPORT	MCW	CHS

IDM MINING LTD.

RED MOUNTAIN UNDERGROUND GOLD PROJECT

BH16-010
GROUNDWATER LEVELS (VWP)

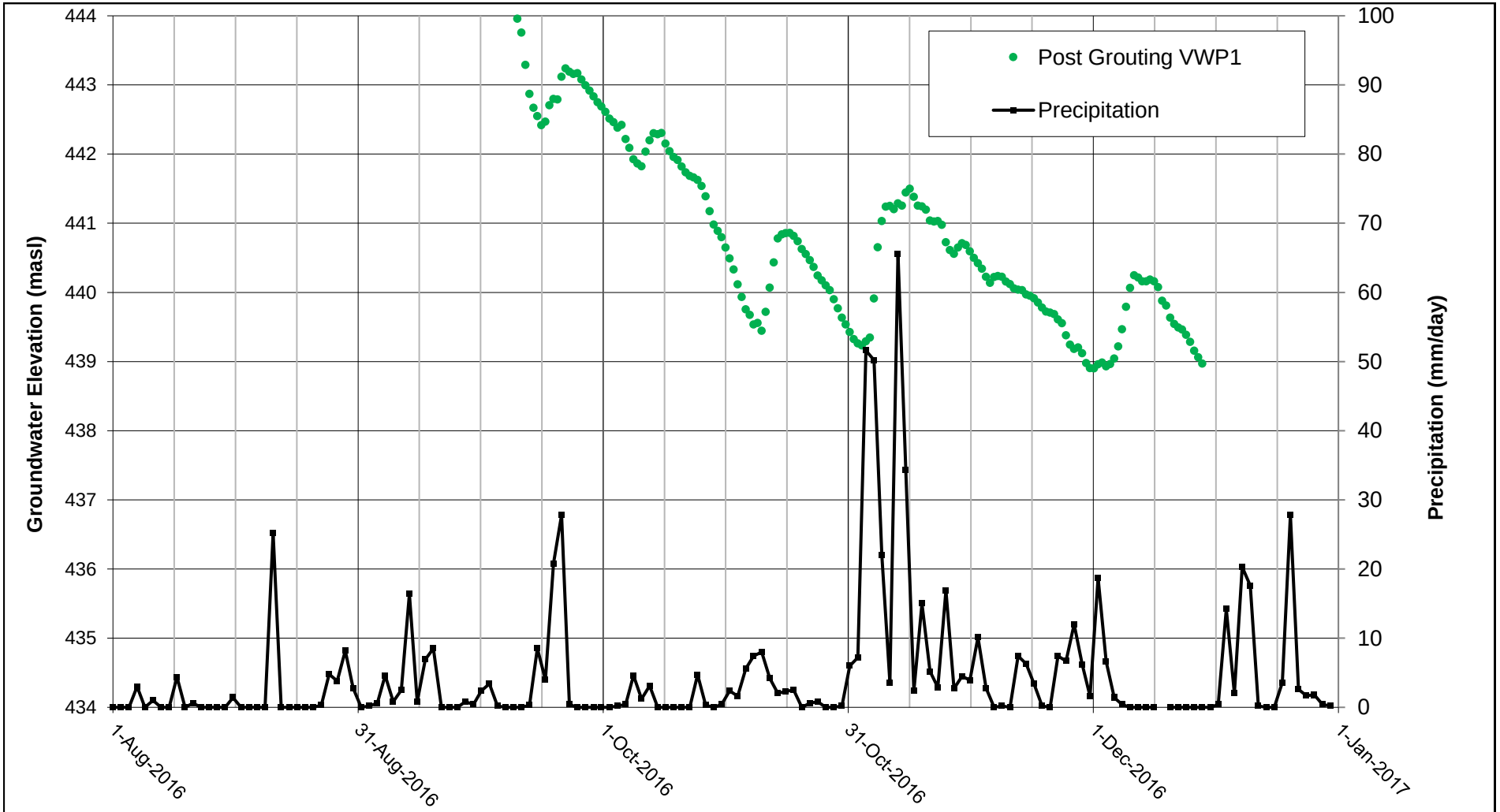
Knight Piésold CONSULTING

P/A NO. VA101-594/04

REF. NO. 5

FIGURE C3.10A

REV 0



NOTES:

1. GROUND ELEVATION IS 463.08 masl.
2. VIBRATING WIRE PIEZOMETER (VWP) ELEVATIONS ARE: VWP1 440.9 masl (22.2 mbgs) AND VWP2 457.3 masl (5.7 mbgs)
3. DAILY PRECIPITATION DATA PLOTTED FROM REGIONAL CLIMATE STATION AT TERRACE AIRPORT (ENVIRONMENT CANADA, 2017).

REV	DATE	DESCRIPTION	PREP'D	RVW'D
0	02JUN'17	ISSUED WITH REPORT	MCW	CHS

IDM MINING LTD.

RED MOUNTAIN UNDERGROUND GOLD PROJECT

BH16-010 VWP1
GROUNDWATER LEVELS (VWP)
SCALED TO SHOW ONLY POST GROUTING DATA

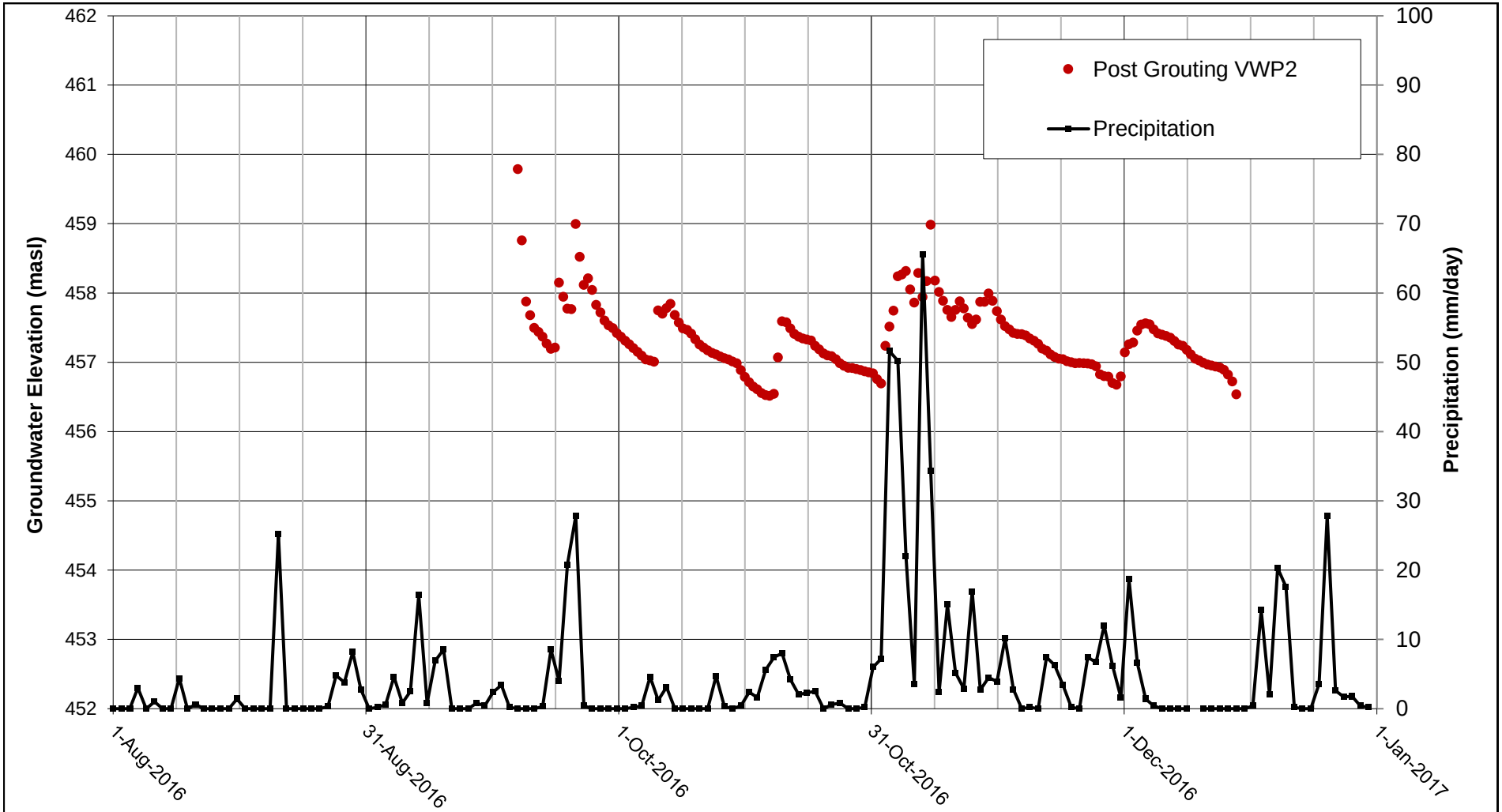
Knight Piésold CONSULTING

P/A NO. VA101-594/04

REF. NO. 5

FIGURE C3.10B

REV 0



NOTES:

1. GROUND ELEVATION IS 463.08 masl.
2. VIBRATING WIRE PIEZOMETER (VWP) ELEVATIONS ARE: VWP1 440.9 masl (22.2 mbgs) AND VWP2 457.3 masl (5.7 mbgs)
3. DAILY PRECIPITATION DATA PLOTTED FROM REGIONAL CLIMATE STATION AT TERRACE AIRPORT (ENVIRONMENT CANADA, 2017).

REV	DATE	DESCRIPTION	PREP'D	RVW'D
0	02JUN'17	ISSUED WITH REPORT	MCW	CHS

IDM MINING LTD.

RED MOUNTAIN UNDERGROUND GOLD PROJECT

BH16-010 VWP2
GROUNDWATER LEVELS (VWP)
SCALED TO SHOW ONLY POST GROUTING DATA

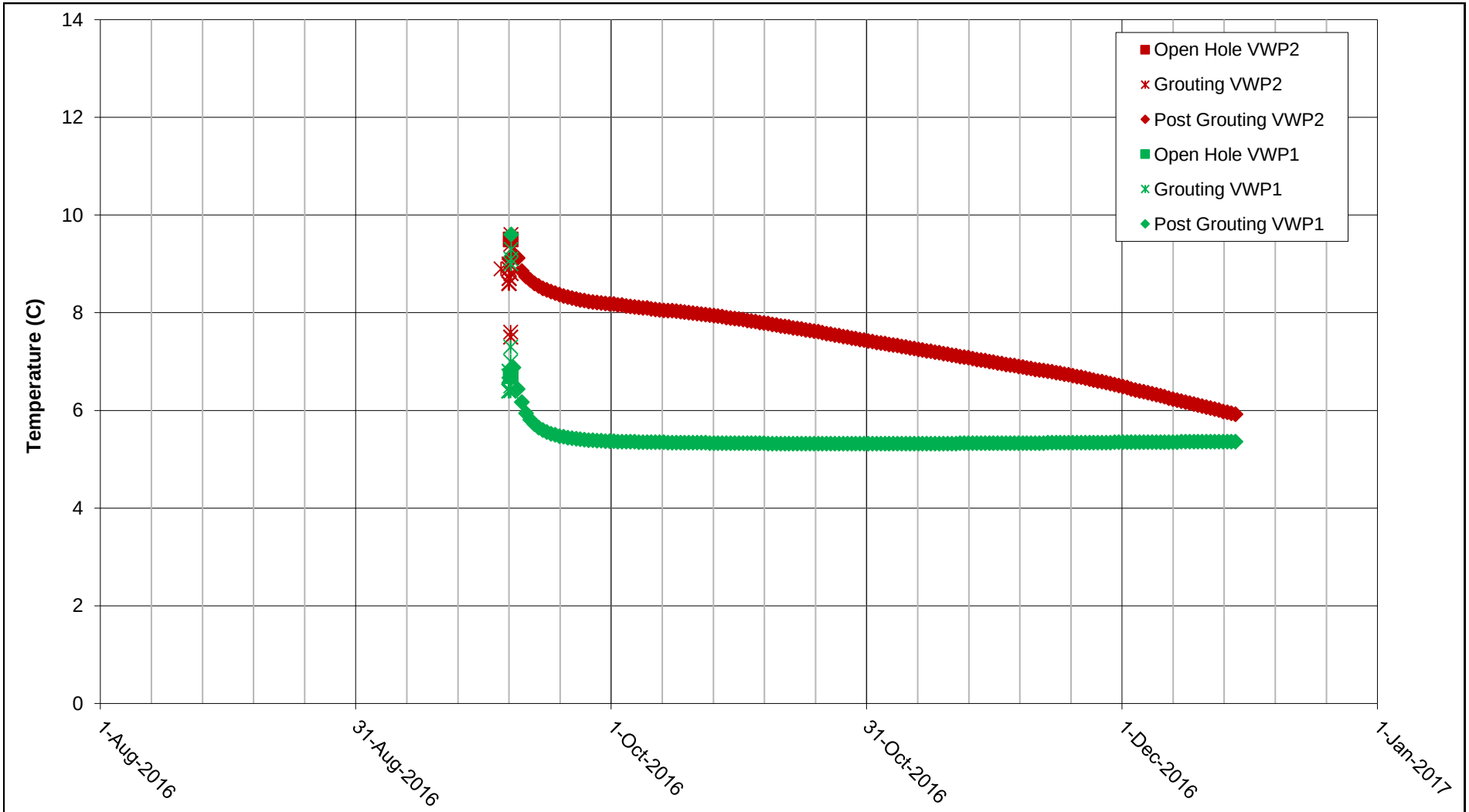
Knight Piésold CONSULTING

P/A NO. VA101-594/04

REF. NO. 5

FIGURE C3.10C

REV 0



NOTES:

1. GROUND ELEVATION IS 463.08 m.
2. VIBRATING WIRE PIEZOMETER (VWP) ELEVATIONS ARE: VWP1 440.9 masl (22.2 mbgs) AND VWP2 457.3 masl (5.7 mbgs)

REV	DATE	DESCRIPTION	PREP'D	RVW'D
0	02JUN'17	ISSUED WITH REPORT	MCW	CHS

IDM MINING LTD.

RED MOUNTAIN UNDERGROUND GOLD PROJECT

BH16-010
VWP TEMPERATURE

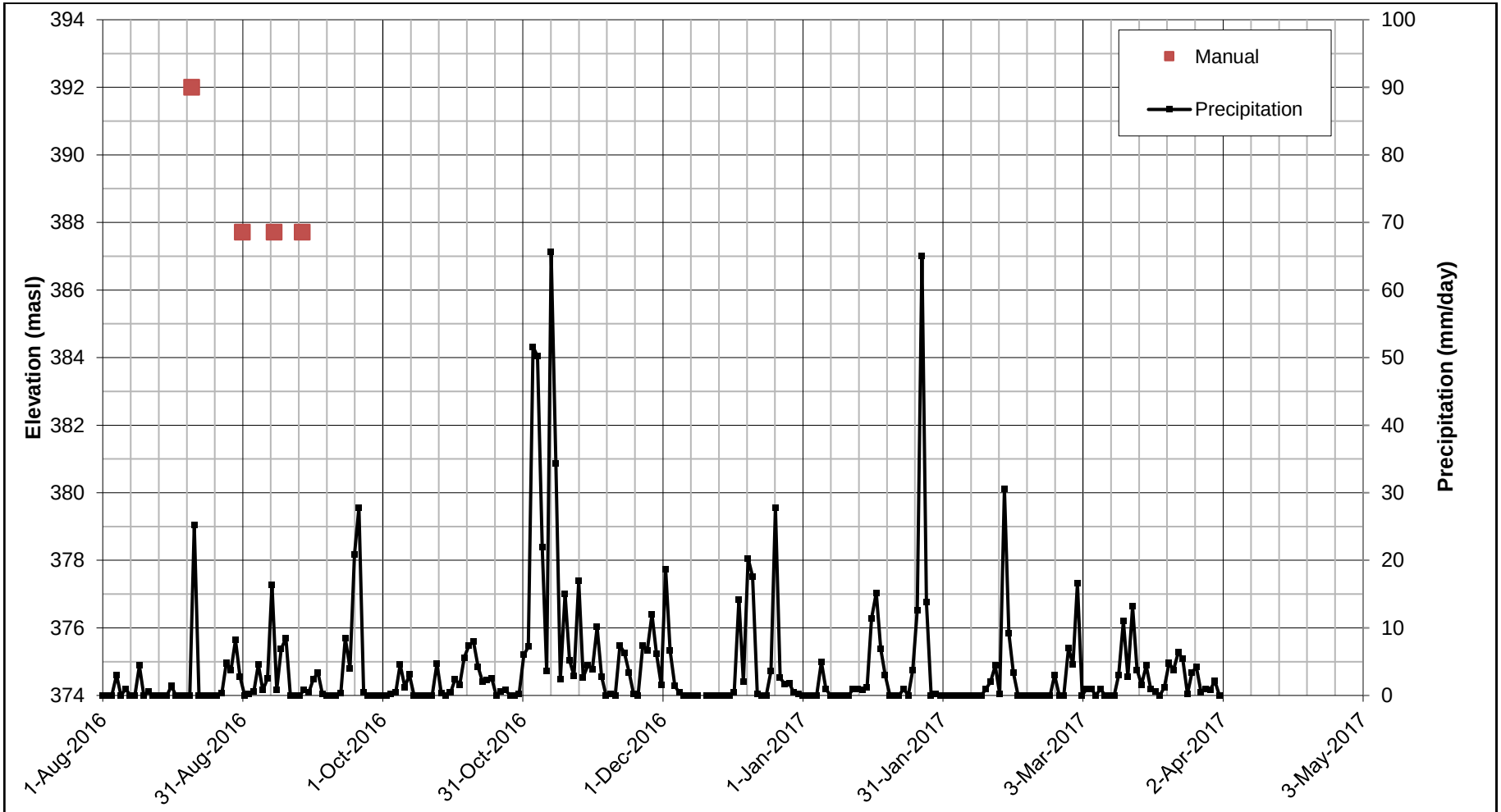
Knight Piésold CONSULTING

P/A NO. VA101-594/04

REF. NO. 5

FIGURE C3.10D

REV 0



NOTES:

1. GROUND ELEVATION IS 410.116 m.
2. WELL DEPTH IS 23 mbgs.
3. DAILY PRECIPITATION DATA PLOTTED FROM THE REGIONAL CLIMATE STATION AT THE TERRACE AIRPORT (ENVIRONMENT CANADA, 2017).
4. NO TRANSDUCER INSTALLED IN WELL. MANUAL MEASUREMENTS ONLY.
4. MANUAL WATER LEVEL PLOTTED ON AUGUST 20, 2016 WAS MEASURED IMMEDIATELY AFTER INSTALLATION AND THEREFORE MAY BE AFFECTED BY DRILLING ACTIVITIES.
5. MANUAL WATER LEVELS RECORDED AS DRY ARE PLOTTED AT THE WELL DEPTH.

REV	DATE	DESCRIPTION	PREP'D	RVW'D
0	02JUN'17	ISSUED WITH REPORT	JZ	CHS

IDM MINING LTD.

RED MOUNTAIN UNDERGROUND GOLD PROJECT

MW16-001
GROUNDWATER LEVELS

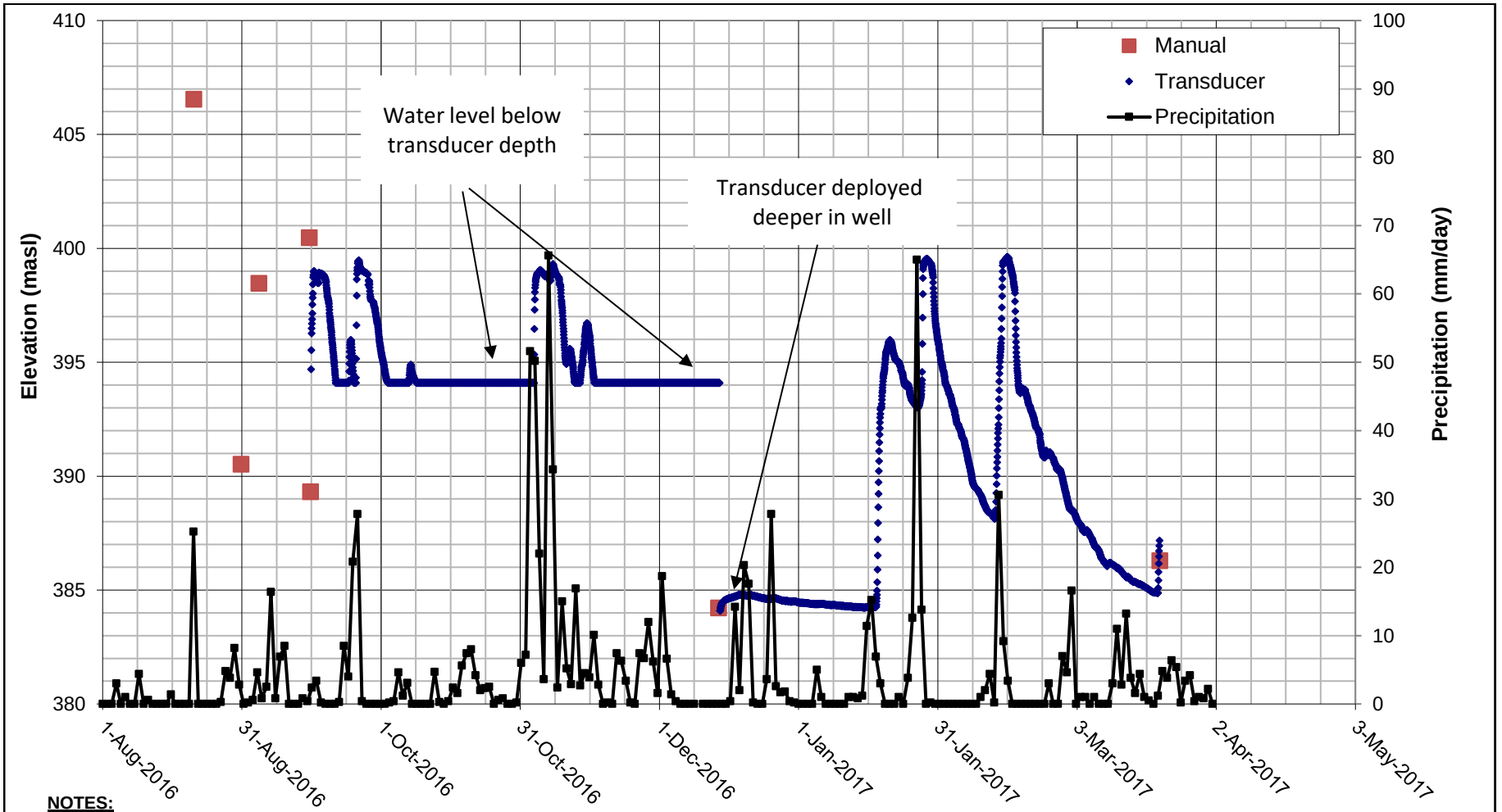
Knight Piésold CONSULTING

P/A NO. VA101-594/04

REF. NO. 5

FIGURE C3.11

REV 0



NOTES:

1. GROUND ELEVATION IS 412.334 m.
2. WELL DEPTH IS 29.8 mbgs.
3. DAILY PRECIPITATION DATA PLOTTED FROM THE REGIONAL CLIMATE STATION AT THE TERRACE AIRPORT (ENVIRONMENT CANADA, 2017).
4. MANUAL WATER LEVEL PLOTTED ON AUG 21, 2016 WAS MEASURED IMMEDIATELY AFTER INSTALLATION AND THEREFORE MAY BE AFFECTED BY DRILLING ACTIVITIES.
5. MANUAL WATER LEVELS MEASURED ON SEPT 15, 2016 (AT 23.0 mbgs OR 389.3 masl) MEASURED BEFORE AND AFTER WELL DEVELOPMENT. TRANSDUCER INSTALLED FOLLOWING DEVELOPMENT.

REV	DATE	DESCRIPTION	PREP'D	RVW'D
0	02JUN'17	ISSUED WITH REPORT	JZ	CHS

IDM MINING LTD.

RED MOUNTAIN UNDERGROUND GOLD PROJECT

MW16-002
GROUNDWATER LEVELS

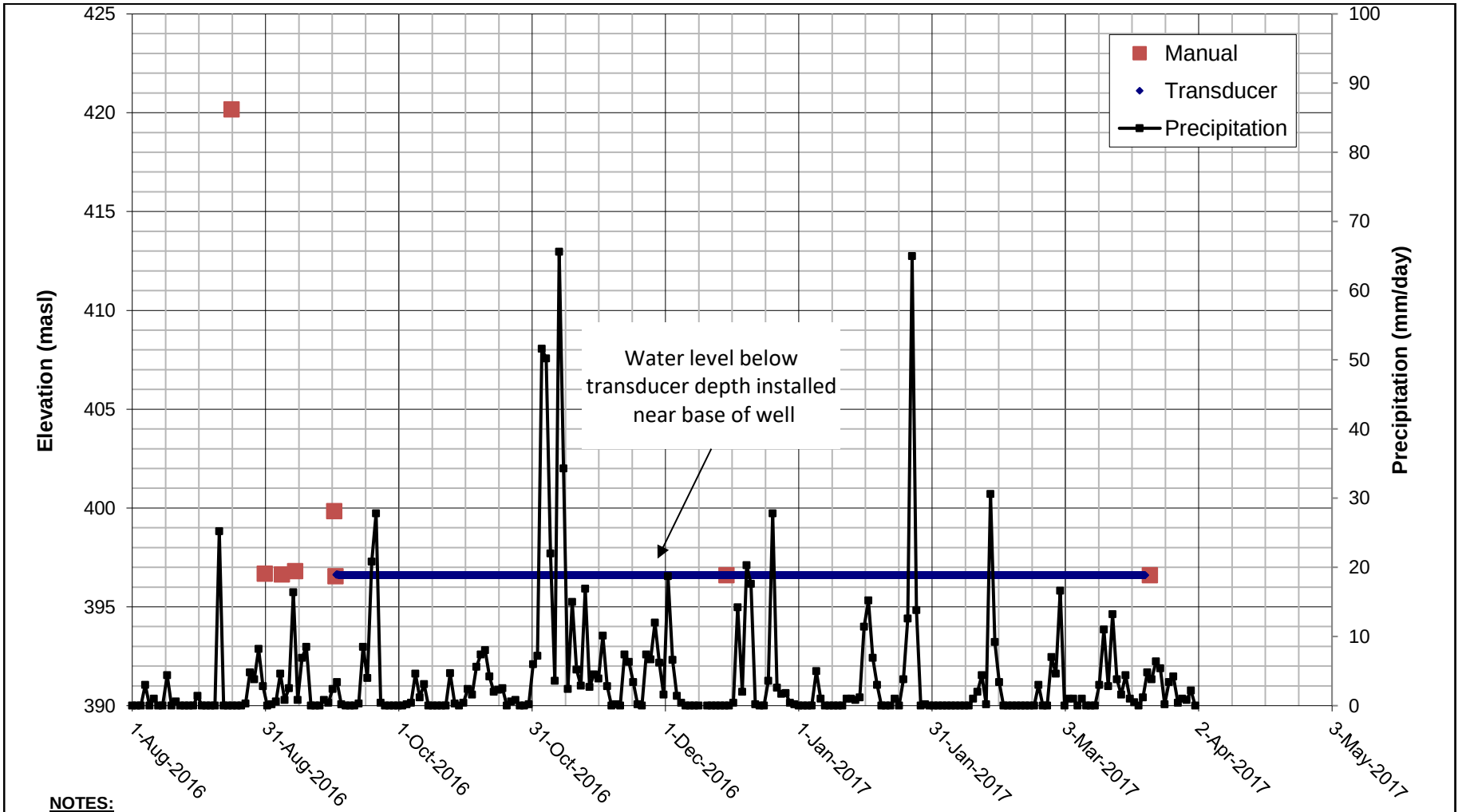
Knight Piésold CONSULTING

P/A NO. VA101-594/04

REF. NO. 5

FIGURE C3.12

REV 0



NOTES:

1. GROUND ELEVATION IS 426.325 m.
2. WELL DEPTH IS 30.1 mbgs
3. DAILY PRECIPITATION DATA PLOTTED FROM THE REGIONAL CLIMATE STATION AT THE TERRACE AIRPORT (ENVIRONMENT CANADA, 2017).
4. MANUAL WATER LEVEL PLOTTED ON AUG 23, 2016 WAS MEASURED IMMEDIATELY AFTER INSTALLATION AND THEREFORE MAY BE AFFECTED BY DRILLING ACTIVITIES.
5. MANUAL WATER LEVELS MEASURED ON SEPT 16, 2016 MEASURED BEFORE AND AFTER WELL DEVELOPMENT. TRANSDUCER INSTALLED FOLLOWING DEVELOPMENT.

REV	DATE	DESCRIPTION	PREP'D	RVW'D
0	02JUN'17	ISSUED WITH REPORT	JZ	CHS

IDM MINING LTD.

RED MOUNTAIN UNDERGROUND GOLD PROJECT

MW16-003
GROUNDWATER LEVELS

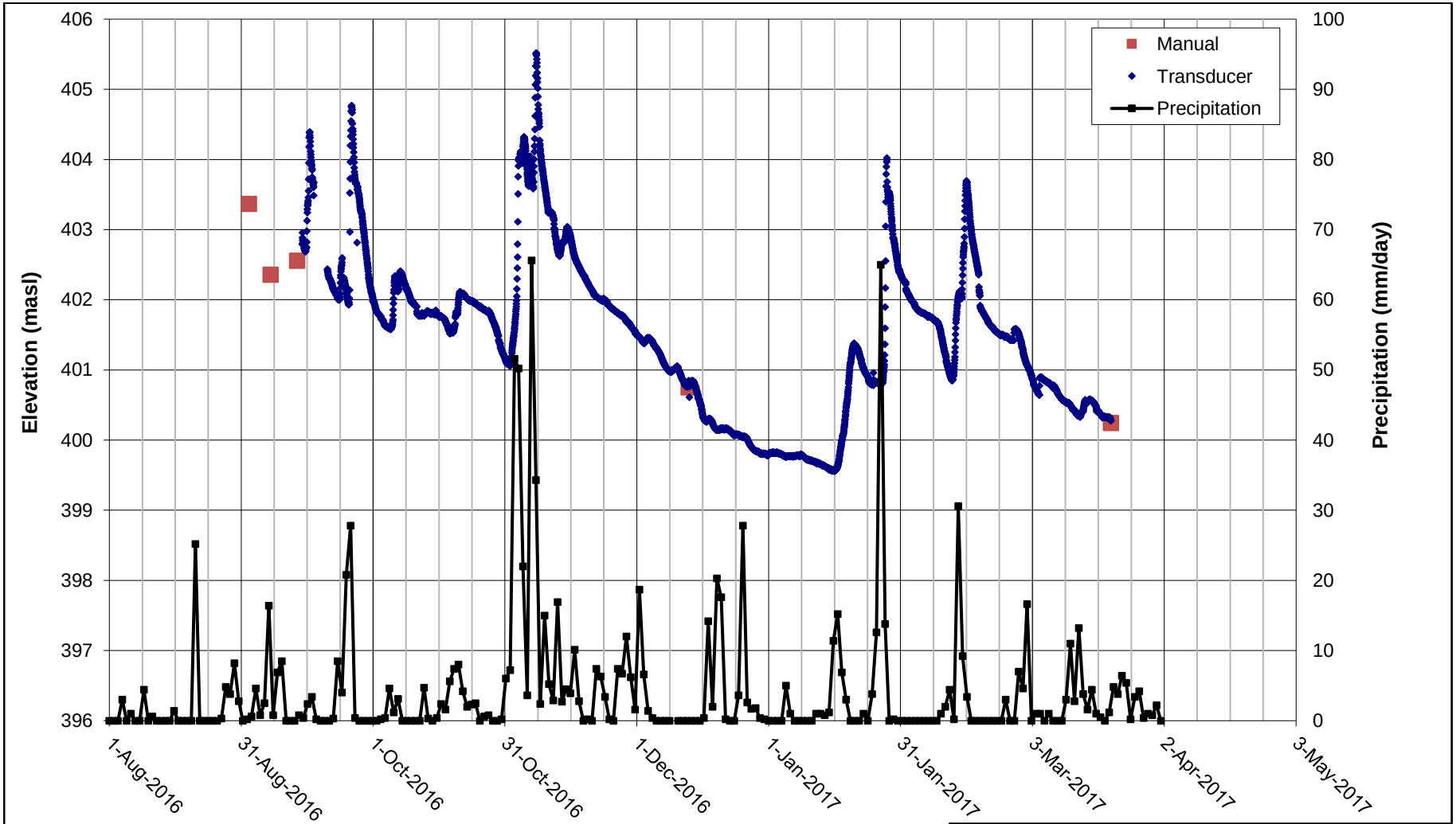
Knight Piésold CONSULTING

P/A NO. VA101-548/04

REF. NO. 5

FIGURE C3.13

REV 0



NOTES:

1. GROUND ELEVATION IS 409.976 m.
2. WELL DEPTH IS 37.6 mbgs.
3. DAILY PRECIPITATION DATA PLOTTED FROM THE REGIONAL CLIMATE STATION AT THE TERRACE AIRPORT (ENVIRONMENT CANADA, 2017).
4. MANUAL WATER LEVEL PLOTTED ON SEPT 2, 2016 WAS MEASURED IMMEDIATELY AFTER INSTALLATION AND THEREFORE LIKELY AFFECTED BY DRILLING ACTIVITIES.

REV	DATE	DESCRIPTION	PREP'D	RVW'D
0	02JUN'17	ISSUED WITH REPORT	JZ	CHS

IDM MINING LTD.

RED MOUNTAIN UNDERGROUND GOLD PROJECT

MW16-004
GROUNDWATER LEVELS

Knight Piésold CONSULTING

P/A NO. VA101-548/04

REF. NO. 5

FIGURE C3.14

REV 0