

**Moina Gold Pty. Ltd.**  
**Annual Report on Exploration**  
**EL 10/2016 “Mt Charter”**  
**Feb. 2023 to Feb. 2024**

## **Executive Summary**

Work in the reporting year consisted of the drilling of four diamond drillholes, MCD46 (113.2m), MCD47 (228.2m), MCD48 (311.8m) and MCD49 (149.6m) for a total of 802.8 metres.

Drillholes targeted the highly mineralised hyaloclastic dacite breccia in the stratigraphic footwall to the main dacite lava body.

MCD46 and MCD49 targeted the zone around the intersection in earlier hole MCD44 (69m @ 3.65g/t Au from surface including 13m @ 10g/t Au from 41m), whilst MCD47 and MCD48 targeted the down dip extent of this zone, aiming to intersect near to the intersection of this zone with the Barite Creek Fault.

Samples are being despatched for assaying and no results have been received at time of reporting, however, the presence of massive barite, bands of massive pyrite, and clots of honey brown sphalerite with galena in barite attest to the holes having intersected the mineralised zone.

An application for extension has been made and a revised 3D geological model and a new updated JORC resource will be completed as soon as assays have been received. Further drilling is also proposed including at the North Mt Charter prospect.

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## 1.0 Introduction

### 1.1 Introduction

This report details exploration activity carried on EL 10/2016 “Mt. Charter” during the period February 26<sup>th</sup> 2023 to February 26<sup>th</sup> 2024.

### 1.2 Location/Access/Land Usage

EL 10/2016 covers 4 sq. km, located 13km north-northeast of the township of Tullah, on the west coast of Tasmania. Access to the area is via the Murchison Highway and tracks which access the 220kv transmission line which traverses the area.

### 1.3 Tenure

EL 10/2016 “Mt Charter” was granted to Moina Gold Pty Ltd under the ERA system. The ERA 1035 resulted from the expiry of RL11/1997.

The licence was granted on 26<sup>th</sup> February 2017 and is in its seventh year of tenure.

### 1.4 Exploration Rationale

Moina Gold Pty Ltd is seeking to develop gold+/-polymetallic resources in the state of Tasmania. The Mt Charter deposit is a gold+silver+lead+zinc+barite deposit at an advanced stage of resource definition.

Moina Gold Pty Ltd is also aware of the geology of the Que-Hellyer Volcanics and the potential for further VHMS-style mineralisation at the base of the Mixed Sequence.

### 1.5 Geology

The base and precious metal deposits of the Hellyer - Que River - Mt Charter area lie above the main Central Volcanic Complex of the Mt Read Volcanics within a sequence of volcanics and sediments, known as the Mt Charter Group.

Within the Mt Charter Group is a volcanic package called the Que Hellyer Volcanics (QHV) comprising a group of andesitic to dacitic volcanics and sediments. The Que River, Hellyer and Mt Charter deposits are hosted by the highly variable ‘Mixed Sequence’, sandwiched between footwall andesitic and hangingwall basaltic volcanics. Volcanic-related and marine sediments cover the volcanics.

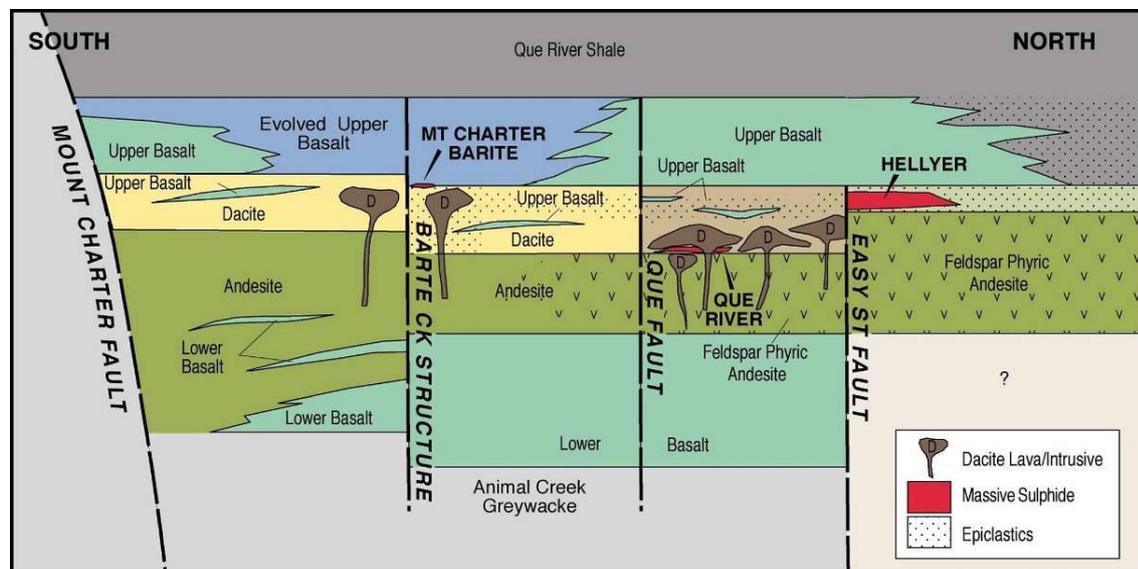


Figure 1.1: Schematic stratigraphic long-projection of the Que Hellyer Volcanics (Richardson, 2016)

The Que-Hellyer Volcanics are up to 1000m thick near Que and Hellyer, but wedge out to less than 50m to the northwest of Hellyer mine. The units of the QHV are summarized below:

- The Upper or Hellyer Basalt consists of massive to pillowed amygdaloidal basalt lava and volcanoclastic rocks.
- The Mixed Sequence host to the Que River, Hellyer and Mt Charter systems is comprised of epiclastics, dacitic lavas and breccias.
- The Feldspar Phyric Andesite, a porphyritic andesite lava which is the footwall unit to the Hellyer and Que River deposits and subsequently altered to Silica-Sericite-Pyrite mineralogy at these locations, which in turn is underlain by
- The Lower Basalt, a sequence of basaltic pillow lavas and volcanoclastics, which form the immediate footwall at Que River and Hellyer.

The Que-Hellyer Volcanics are overlain by the Que River Shale, which is in turn overlain by rhyolite, felsic volcanoclastics, greywacke and shale of the Southwell Subgroup. The Southwell Subgroup is overlain by the Mt Cripps Subgroup which is a sequence of volcanoclastics, siltstones and conglomerates only outcropping along the eastern boundary of the Hellyer area tenements.

Beneath the Que-Hellyer Volcanics are the Animal Creek Greywacke and Black Harry Beds, a sequence of sediments defining the base of the Mt Charter Group (Richardson, 2016).

## **2.0 Review of Previous Work**

### **2.1 Regional Work (Que-Hellyer Volcanics)**

Regional exploration of the Mt Charter/Que River/Hellyer area is detailed in MacDonald (2022) which in turn is taken from Denver and Bates (2011).

### **2.2 Mt Charter Prospect Exploration History**

The Mt Charter area was prospected in the late 19<sup>th</sup> century along with the whole of Tasmania's west coast. Evidence at Mt Charter in the form of a shallow shaft and adit on the southeastern side of the ridge attest to this. The low grade ore outcropping would not have been payable in those times.

The first exploration licences over the Mt Charter area EL 9/1967 was held by Pickands Mather and Company International but there are no reports and the tenements were relinquished in 1969.

The area was then pegged under EL 15/1973 by Cominco Exploration Pty Ltd, a company associated with what became Aberfoyle Exploration Pty Ltd and exploration carried out in conjunction with work on the adjacent EL 2/1970. The tenements EL 2/1970 and 15/1973 were relinquished in 1988 with the area now covered by new EL 103/1987 held under Aberfoyle Resources until 1998 by which stage the discovered Que River and Hellyer orebodies were held under ML68M/1984 and 103M/1987 respectively.

Regional mapping and stream sediment sampling programme covering west of the Mackintosh River was carried out. In early 1972 a combined airborne electromagnetic (EM) and magnetic survey was flown and one of the six anomalies recommended for follow up was coincident with anomalous stream sediment geochemistry. A follow up ground EM and soil sampling survey in 1973 discovered the outcropping S Lens mineralisation at Que River. The first diamond drill hole (QR1) in April 1974 intersected 11m of massive sulphide mineralisation and was followed by 25,000m of ore resource delineation drilling, which defined the main PQ lens and the P North, QR32 and S lenses. The Que River reserve was defined as containing 3.3Mt @ 13.6% Zn, 7.4% Pb, 0.7% Cu, 3.3 g/t Au and 195 g/t Ag.

In August 1983 UTEM had defined the target for the first hole into the Hellyer orebody intersecting 24m of massive sulphide.

Systematic exploration of the Mount Charter prospect has been in progress since the discovery of the Que River orebodies in the early 1970's.

Initial work was gridded geological mapping, C-horizon soil sampling and dipole-dipole IP surveying which was being progressively extended over the whole of the Que-Hellyer Volcanics after the success of the method in "seeing" the Que River deposit. Initial gridline spacings were 1,000m with 100m dipoles.

The Mt Charter deposit was covered by the Mt Charter line (nominally 4500mN mine grid) with subsequent infilling on 100m spaced lines and 25m dipoles (Skey and Webster, 1976; 76\_1168) which defined a zones of anomalous IP chargeability (frequency effect).

Two diamond drillholes MC1 (195.5m) and MC2 (187.4m) were drilled to test a north-south trending (chargeability) anomaly defined in this work but were not assayed at time of reporting (Skey and Webster, 1976; 76\_1168). Both holes intersected alteration and mineralisation similar to that in the footwall at Que River (McNeill, 1997).

In bulldozing a track to the MC1 drill site a massive barite lens was exposed on mine grid 4625mN.

In the 1977/78 a further three bulldozer trenches were dug at Mt Charter. Massive barite was exposed over a width of 10-12m in the trench on line 4650mN. Samples are shown as being assayed for Cu, Pb, Zn and Ba (Young, 1978; 78\_1276)

Diamond drill holes MC3 (260.4m) and MC4 ( ) were drilled in 1978 to further test the extension of the massive baryte-pyrite mineralisation exposed by this costeaning at Mount Charter. Drilling intersected

similar alteration and mineralisation to that in MC1 and MC2 (Young, 1979; 79\_1360). A UTEM survey was also conducted over the Mt Charter prospect with a large 1000m x 1500m loop read on 200m spaced lines. An anomaly was recorded over the massive barite+pyrite body but it was considered to have been tested by MC1, 2 and 3 (Young, 1979; 79\_1360).

In 1983 three trenches were dug targeting the massive barite+pyrite on lines 4000mN, 4500mN and 4570mN on the southern side of Mt Charter. These were sampled on 5m channels and assayed for Cu, Pb, Zn, As, Ag, Ba.

Re-interpretation of the geology at Mount Charter (Hespe, 1984) from the trenches and drilling to date indicated that the stratigraphy was striking dipping to the west with the barite+pyrite alteration stratiform and associated with a Kuroko type deposit (Hespe, 1984; 85\_2355). The implication of this interpretation was that down dip potential along the interpreted host horizon (andesite-dacite contact) existed to the west.

Three diamond drill holes MCS (299.8m), MC6 (319.1m) and MC8 (235.3m) were drilled in a north easterly direction to test this position during 1984. MC5 and MC8 intersected the interpreted host horizon which contained no significant mineralisation and were terminated in sericite-pyrite altered dacite. MC8 failed to reach the andesite-dacite contact and stopped in andesite. (McNeill, 1997)

Holes were also drilled at the SW Mt Charter (MC9 and MC10) and NW Mt Charter (MC11) prospects (Hespe, 1985; 85\_. Both prospects are defined by anomalous lead and zinc in soils associated with UTM anomalies. In both prospects the anomalies were shown to be black shales.

The holes were systematically assayed for Cu, Pb, Zn, Ag, As, Ba and Cr. Holes MC5, 6, 8 and 9 were surveyed by Sirotem DHEM with no anomalies due to massive sulphides detected.

In 1986/87 the core from drillholes MC1, 2, 3 and 4 were core-ground and assayed for Cu, Pb, Zn, As, Ba, Cr, Ti, Zr and Au. Selected intervals of MC3 were split and assayed by Classic Comlabs. "Results were of a similar tenor but lower (e.g. 228.1m to 233.1m assayed 0.983 g/t Au by split c.f. 0.58 by core grind) (McNeill, 1987) 81m to 131m of MC1 was split and assayed for Cu, Pb, Zn, Ag, Ba, Fe, Sb and Au with some of the material also used for metallurgical testwork which showed a recovery of 80% gold into sulphide concentrate by flotation (McNeill, 1987).

Channel samples from the 4500mN were reassayed for gold along with 41 outcrop samples also included.

Better results were;

- MC1 110m @ 0.9g/t Au and 16g/t Ag (71.0m to 181.0m)
- MC2 56.5m @ 0.3 g/t Au and 10g/t Ag (62.2m to 114.7m)
- MC3 91.3m @ 0.6g/t Au and 11g/t Ag (173.1m to 264.4m eoh)
- MC4 20m @ 0.4g/t Au and 2.5g/t Ag (20.0m to 40.0m) and 10m @ 0.4g/t Au and 0.5g/t Ag (170.0m to 180.0m).

C-horizon soil sampling on a 100m grid was also completed including assaying for gold (McNeill, 1987).

Recognition of the potential of the Mount Charter mineralised system to host a large tonnage low grade gold resource encouraged the drilling of MAC23 (280.0m) to test variations in gold grade with stratigraphic level in the mineralised system. The hole was drilled in 1989 and intersected similar mineralisation to that encountered in previous MC1, 2 and 3. The hole stayed in the mineralised zone for its full length (McNeill, 1990; 90\_3128).

In addition two costeans were dug. These and some sections of access tracks were sampled and assays including Au. A series of pits to bedrock were also dug northwards along the ridge and eastwards in an attempt to define the extent of surface outcropping mineralisation (McNeill, 1990; 90\_3128).

A further hole, MAC26 (850.7m), was drilled in 1990, to test the concept that base metal mineralisation in stringer veins at Mount Charter may have been remobilised from a massive sulphide

deposit at depth beneath the dacite. This position would be stratigraphically closer to the Que River and possibly Hellyer host positions. The hole was successful in intersecting host type lithologies, i.e. volcanoclastics and basalt, near the base of the dacite but no massive sulphides were intersected. Precious metal mineralisation was intersected in the dacite as in previous drill holes. (McNeill, 1997)

The barite+base metal+gold alteration zone was intersected strongly (massive barite between 29.7m and 49.3m) to 167.8m then intermittently from 167.8m to 360m below which non-mineralised but sericite+pyrite altered dacite is intersected to 528m.

Geological mapping, rock-chip sampling, and soil sampling by Aberfoyle Resources geologists over the Mt Charter area recognized several major structures in the area and interpreted these as growth faults due to changes in thickness of stratigraphic units across the structures. The barite-silica-pyrite alteration was interpreted as strongest at the intersection of these Cambrian faults. It was also recognized that the Mt Charter Au-Ag Barite associated mineralisation was located in the upper part of the Mixed Sequence as opposed to the Hellyer and Que River deposits which are located at the base of this unit.

Knowledge gained from the Hellyer drillout showed that a clear relationship exists between the orebody and the stratigraphic contact between footwall andesite and hangingwall basalt. This horizon, the Mixed Sequence, became a key target throughout the QHV. Comparison with Que River indicated the similar stratigraphic position of the Que River orebodies within a thicker Mixed Sequence. The Mt Charter mineralisation is also hosted by this unit. (Murphy in Bates, 2007).

In 1997 Aberfoyle estimated a resource for the Mt Charter deposit of 13 Mt at 0.3% Pb, 0.6% Zn, 16 g/t Ag and 0.9 g/t Au using a polygonal method. Assay data was taken from mostly core grind samples.

In 1997 Aberfoyle applied for a Retention Licence over the Mt Charter prospect on the basis that further development in the metallurgical study of the Hellyer tailings may lead to the optimal development of the Mt Charter resource.

Bass Metals recommenced exploration in the Mt Charter area in the mid 2000's.

A 362 sample infill soil-sampling program was undertaken over Mt Charter with results defining the broad geometry and orientation of the mineralized zone. The highest soil sample assay returned 4.67ppm Au and the defined soil anomaly is continuous at grades of ~1ppm Au.

Five diamond drill holes (MCD020 – MCD024) were drilled into the Mt Charter resource in late 2005 (totalling 541.9m) with better results including: 56.4m @ 1.6g/t Au, 38g/t Ag, 64m @ 0.8g/t Au, 7g/t Ag, and 22m @ 1.0g/t Au, 46g/t Ag.

In 2006 a further twelve holes were drilled into the resource (MCD025-036) to reduce the drill-hole spacing to approximately 50m x 50m.

Intersections obtained during this program included: 51m @ 1.1g/t Au, 32.9g/t Ag, and 1.25% Zn, 92m @ 1.3g/t Au, 32.8g/t Ag, 51.7m @ 1.1g/t Au, 22g/t Ag, and 78m @ 1.7g/t Au, 70g/t Ag

Results were interpreted to suggest that the gold and silver mineralisation occurs in a NNE-striking, sub-vertical package of en-echelon barite ± galena ± sphalerite veins that are not intrinsically related to the Mixed Sequence/Hellyer Basalt (equiv.) contact.

Veins generally in the order of 2cm to breccia zones of ~3m and are superimposed on a pre-existing sericite+pyrite altered "Mixed Sequence" dacite. This vein set was interpreted to host all Au, Ag, Zn, and Ba mineralisation at Mt Charter.

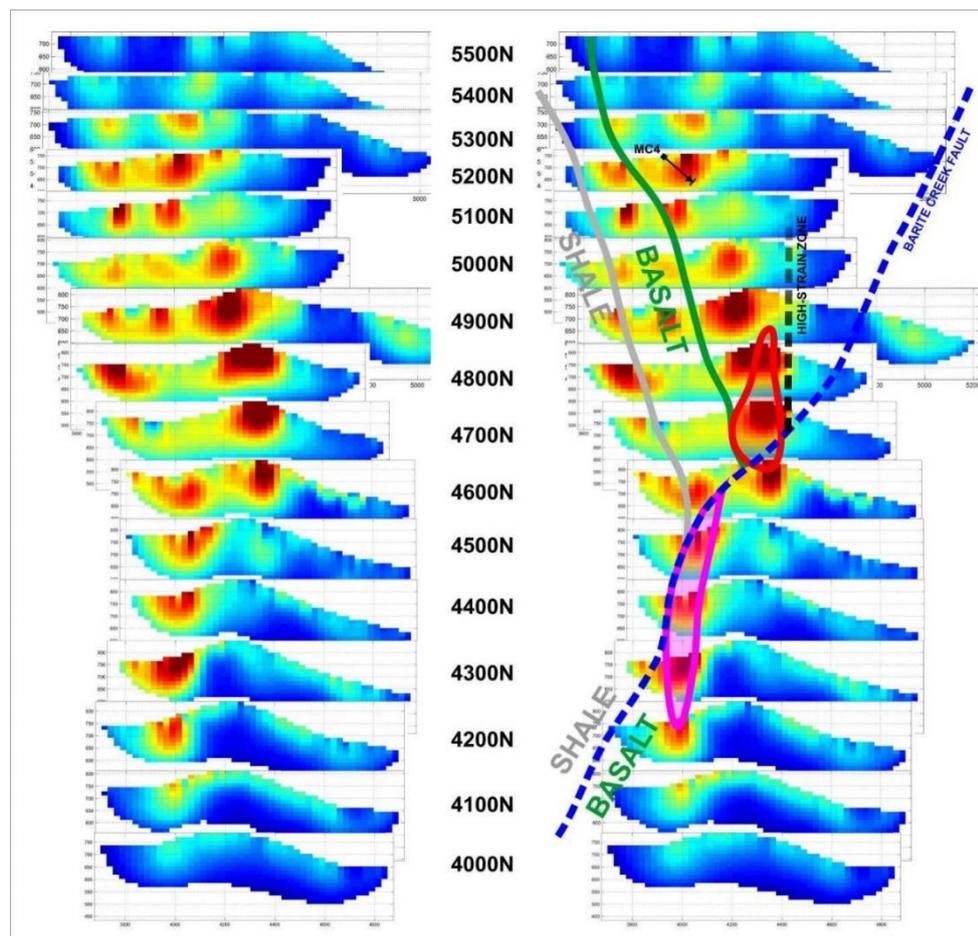
Drill-hole MCD025 was designed to test this contact at a deeper level to intersect contact-related mineralisation in MCD020 and 021. MCD025 intersected the pyrite-sericite-silica alteration but no veining was observed and no significant assay results were returned from the hole. This supports the interpretation that mineralisation is associated with the east-west and north-northeast faults, and particularly where these intersect.

Digitally captured historic dipole-dipole 2D IP was 3D modelled with data suggesting that the area immediately to the northwest of the Mt Charter deposit was sulphide altered.

Further a chargeability anomaly with characteristics similar to Mt Charter and totally covered by Hellyer Basalt equivalent rocks was defined approximately 400m SW of Mt Charter, the South Charter Prospect.

Re-evaluation of UTEM identified an anomaly lying to the west of the Mt Charter deposit considered similar in type to the existing Mt Charter UTEM anomaly which was tested by drillhole MCD037. The hole intersected a breccia unit with pyritic matrix (ca. 28-42m downhole) considered the most likely source of the UTEM anomaly. The mixed sequence stratigraphy at the end-of-hole position was largely unaltered.

Two soil programs designed to test the North Charter arsenic anomaly and South Charter IP anomaly were completed



**Figure 2.1: Inverted IP pseudo sections in the Mt Charter area. AGD84. Red polygon = Mt Charter resource, magenta polygon = South Charter IP anomaly.**

The work confirmed the presence of coincident Sb and Tl with the As anomaly in the Aberfoyle soil dataset.

Detailed mapping of the Mt Charter area was undertaken which shed further light on the controls on mineralisation in the deposit and indicated some areas where shallow drilling could increase the tonnage (~10%) and at the southern end, potentially add some higher grade material also.

In 2014-15 124 C-horizon soil samples were collected. While no new targets were identified the known Mt Charter "pathfinder" anomaly was better defined. This suggests that the Mt Charter hydrothermal

system is a major feature, extending well beyond the known gold-silver mineralisation at Mt Charter itself (Richardson, 2014b).

A single 400m diamond drill hole was proposed to explore the relatively poorly tested northern end of the anomaly (Richardson, 2015) but was never drilled.

In late 2019 four holes MCD38 to MCD41 totalling 555m were drilled by Moina Gold Pty Ltd into the body of the resource on infill sections in order to confirm the resource and provide material for metallurgical testwork. All four holes intersected barite+sulphide mineralisation. Assaying was delayed and final results for gold and base metals not received until the 2020/21 reporting year.

All four holes intersected broad consistently mineralised zones with MCD39 77m @ 1.13g/t Au from surface, MCD40 88.7m @ 1.84g/t Au from surface and MCD41 61m @ 1.3g/t Au from 1m. The highest grade zone was in MCD40 with 13.5m @ 3.27g/t Au.

Best individual assays were 73.5m to 74.5m, 1m at 4.93g/t Au in MCD40.

**Table 2.1: Better Intersections from MCD38 to MCD41**

Drill hole	from (m)	to (m)	interval (m)	gold (g/t)	silver (g/t)	lead (%)	zinc (%)	barium (%)
MCD38	0	27	27	0.99	28.5	0.06	0.12	11.4
inc.	0	4	4	2.49	138.9	0.12	0.65	47.3
also	36	69	33	0.93	8	0.17	0.45	7.5
inc.	48	60	12	1.1	12.3	0.33	1.01	10.6
also	92	133	41	1.02	16.7	0.2	0.48	7.7
inc.	99	112	13	1.06	24.4	0.31	0.67	13.2
and	125	129	4	2.55	24.2	0.23	0.68	10.5
MCD39	0	77	77	1.13	26	0.63	1.06	9.9
inc.	30	41	11	2.09	48	0.59	1.58	24
MCD40	0	88.7	88.7	1.84	34.6	0.44	0.99	17
inc.	4	26.7	22.7	1.58	21.5	0.38	0.58	15.5
inc.	5	13.5	8.5	1.84	13.3	0.28	0.02	7.6
also	37.5	52	14.5	2.06	28.2	0.64	1.45	13.1
inc.	47	52	5	2.51	32.4	0.64	1.4	14
also	65	88.7	23.7	2.81	58.3	0.35	1.07	25.4
inc.	65	78.5	13.5	3.27	67.5	0.43	1.16	31.7
MCD41	1	62	61	1.3	11.7	0.23	0.34	9.5
inc.	14	24	10	1.95	18.7	0.38	0.83	13.7
also inc.	33.9	42	8.1	2.14	14.2	0.35	0.43	20.4
also inc.	46	50	4	2.2	11.5	0.23	0.32	13

In late 2020/early 2021 Moina Gold Pty Ltd drilled a further 4 holes for 384.5m targeting the southern margin of the deposit with the intention of defining the southern bound to ore, determining this bounds relationship to the Barite Creek Fault, and exploring for any high grade development which may have occurred along this structure.

Delays due to COVID related issues meant assays were only received later in the 2021/22 year and so the drilling was reported in MacDonald (2022).

The assay results include an intersection of 13m @ 9.99g/t Au in MCD44, part of a broader zone of 69m (from surface) @ 3.65g/t Au.

**Table 2.2 Better Intersections from MCD42 to MCD45**

Drill hole	from (m)	to (m)	interval (m)	gold (g/t)	silver (g/t)	lead (%)	zinc (%)	barium (%)
MCD42	0	33.9	34	1.29	52	0.27	0.077	5.6
inc.	14	33.9	20	1.65	56	0.35	0.057	5.9
and	40	76	36	0.89	5	0.02	0.043	3.4
inc.	44	47	3	1.86	9	0.04	0.35	21.6
MCD43	17.2	79	61.8	1.08	17	0.24	0.33	8.4
inc.	19	46	27	1.38	17	0.27	0.16	9.2
MCD44	0	69	69	3.65	90	0.34	0.87	18.4
inc.	0	63	63	3.89	98	0.37	0.95	19.5
inc.	0	6	6	3.06	155	0.62	1.39	26.7
also inc.	10	18	8	3.56	123	0.65	1.5	20.5
also inc.	41	54	<b>13</b>	<b>9.99</b>	176	0.47	1.44	27.2
inc.	44	48	4	17	206.5	0.65	2.4	29.1
MCD45	0	81	80.2	1.19	19	0.14	0.18	6
inc.	8.6	21	12.4	1.69	41	0.21	0.04	2.8
also inc.	27	39	12	1.52	31	0.34	0.87	21.4
also inc.	52	57.9	5.9	1.41	26	0.23	0.013	1.97
also inc.	60.9	64	3.1	4.94	5	0.01	0.01	0.15

## 2.3 Mt Charter Resource Estimation

### 2.3.1 Introduction

The Mt Charter gold resource has been modelled and estimated a number of times with essentially two official reported estimates. These have been reviewed and remodelled by Moina Gold Pty Ltd (MacDonald, 2018).

### 2.3.2 Aberfoyle (McNeil, 1998)

In 1997 McNeil modelled the resource for Aberfoyle using a planar polygonal model. He modelled the resource as a Pb+Zn+Ag+Au deposit akin to Hellyer and Que River nearby, i.e. as a base metal resource with precious metal credits.

His cruder estimation methodology calculated a resource of approximately

**13 mt at 0.3% Pb, 0.6%Zn, 16 g/t Ag and 0.9 g/t Au** (with 10 m.t. at 0.3%Pb, 0.6% Zn, 19 g/t Ag and 1 g/t Au above 137m below the surface i.e. ~700 masl) (McNeil, 1998).

### 2.3.3 Bass Metals (Murphy, 2007)

In 2005-2007 Bass Metals carried out systematic grid based drilling in order to both extend and upgrade the knowledge of the resource. Bass were considering the deposit as a precious metal resource with base metal credits and a potential barite by product.

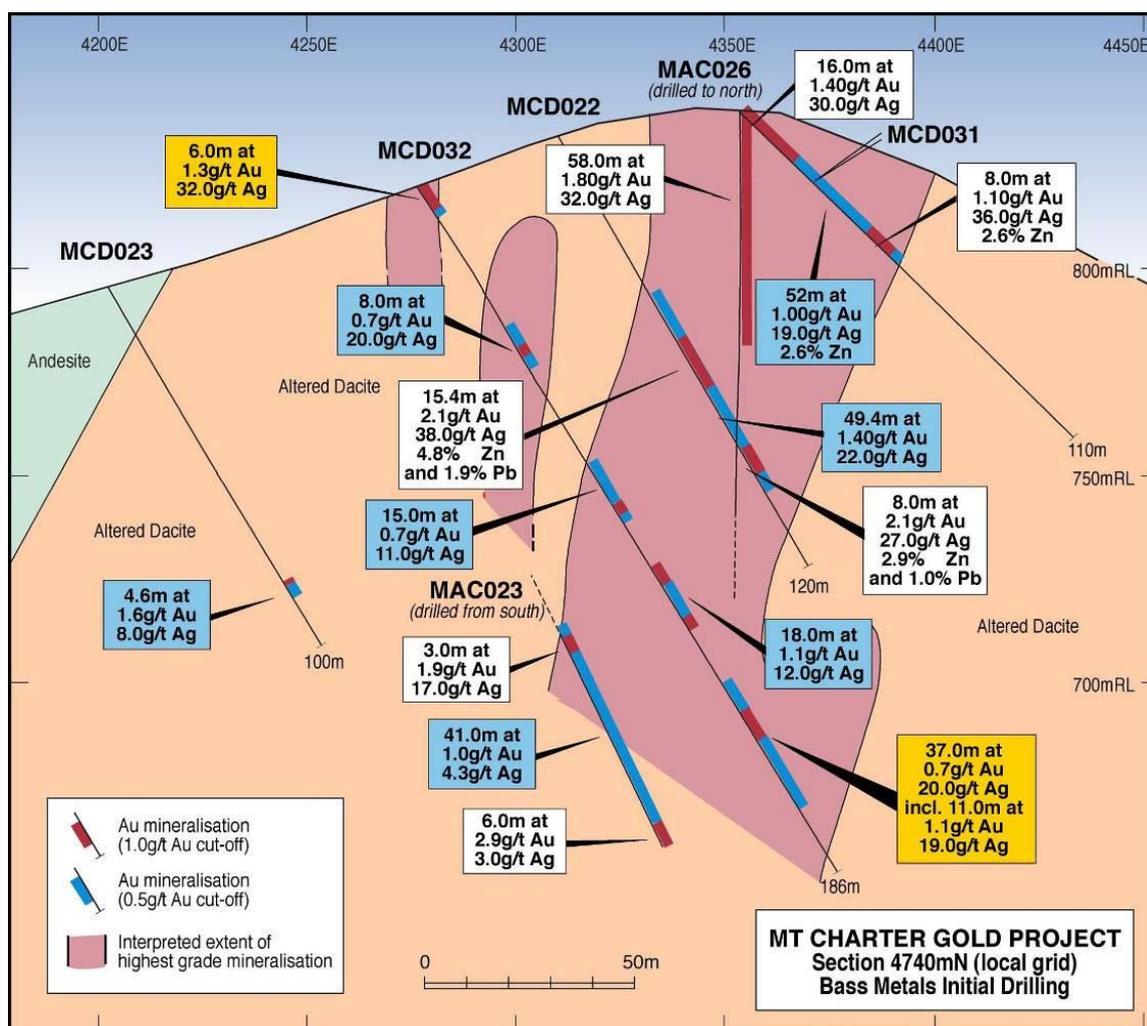
The current resource was determined by consultants from Snowden, in conjunction with Bass Metals Limited geologists, who modelled it as a Au+Ag+Ba+Zn resource. Snowden used ordinary kriging

having determined a steeply west-northwesterly dipping, north-northeasterly striking orientation to mineralisation. A 0.7g/t Au cut-off was employed.

The Mt Charter resource is based on 25 holes with a mixture of core grind and half core sampling. Drillholes are on a 50m x 50m pattern with most holes angled east-southeastwards.

**Table 2.3: Mt Charter Resource estimate – Snowden 2007:**

JORC Code Category	Tonnes Mt	Au g/t	Ag g/t	Ba %	Zn %	Au koz	Ag koz
Indicated	1.9	1.21	36.3	9.1	0.7	74	2,218
Inferred	4.2	1.22	35.2	10	0.4	165	4,754
<b>TOTAL</b>	<b>6.1</b>	<b>1.22</b>	<b>35.5</b>	<b>9.7</b>	<b>0.5</b>	<b>239</b>	<b>6,971</b>



**Figure 2.2: Mt Charter drill section 4740mN from Bass Metals resource drilling.**

### 2.3.4 Moina Gold Reassessment (MacDonald, 2018)

Moina Gold Pty Ltd carried out in-house estimation in order to confirm the Snowden’s estimate. That work is described in MacDonald (2018).

## 2.4 Metallurgy

### 2.4.1 Introduction

There have been four programmes of metallurgical testwork on Mt Charter ore to date.

### 2.4.2 Aberfoyle

In 1997 Aberfoyle carried out metallurgical testwork on a section of MC1 (81m to 131m) assaying 0.8g/t Au, 9g/t Ag, 225ppm Cu, 1800ppm Pb, 3500ppm Zn, 330ppm As and 5.7% Ba.

Only 50% gold was recovered by direct cyanidation at standard grids with 80% of gold recoverable by flotation to a sulphide concentrate. The gold is strongly sulphide associated as locked cyanide available, and occluded non-available particles and there is a strong association between gold and arsenic (McNeill, 1987).

### 2.4.3 Bass Metals

Metallurgical testwork was carried out on the Mt Charter ore by Bass Metals in the mid 2000's with gold recoveries determined by direct cyanidation, sulphide flotation followed by cyanidation, barite recovery by gravity and barite recovery by flotation. Bond ball mill work index was determined to be 14.7kW/tonne.

**Table 2.4: Bass Metals metallurgy testwork**

<b>Testwork</b>	<b>Elements</b>				
	<b>Au</b>	<b>Ag</b>	<b>Cu</b>	<b>Zn</b>	<b>Ba</b>
<b>Head Assay</b>	1.6 ppm	34.2 ppm	594 ppm	1.50%	17.60%
	Recovery (%)				
<b>Direct Cyanidation</b>	48	10	12	0.2	-
<b>Flotation</b>	86	92	93	98	2
<b>Cyanidation of Float Tails</b>	60	34	13	4	-
<b>Overall recovery for float followed by cyanidation</b>	95	95	-	-	-
<b>Barium Recovery by Flotation</b>					84

Preliminary results showed encouraging recoveries using the sulphide flotation followed by cyanidation process.

“The objective of the flotation testwork was to assess the flotation behaviour of Au, Cu, Ag, Pb and Zn mineral species and to float a bulk sulphide concentrate. These preliminary, bench scale test results show encouraging recoveries using a flotation stage followed by a cyanidation process route” (Murphy, 2007).

“Low recovery of precious metals by direct cyanidation are consistent with historic results and appear to be attributable to there being approximately 50% of the gold present within the sulphide mineral grains. Direct cyanide recovery was relatively insensitive to grind size over a 45 to 75 micron size range (Murphy, 2007).

A separate test was undertaken for barite to assess flotation as a possible process for upgrading barite into a potentially saleable product. The barite concentrate produced had a barium grade of 50.2 % which is equivalent to 85.3% barite which, at first pass, exceeds the 65% barite standard generally adopted in the drilling and chemical industries.

A geo-metallurgical study showed that there are two distinct types of pyrite in the paragenesis of the Mt Charter mineralisation, one Au-bearing and the other not. The barren pyrite would therefore dilute a sulphide-concentrate possibly to the detriment of the metallurgical evaluation of the deposit.

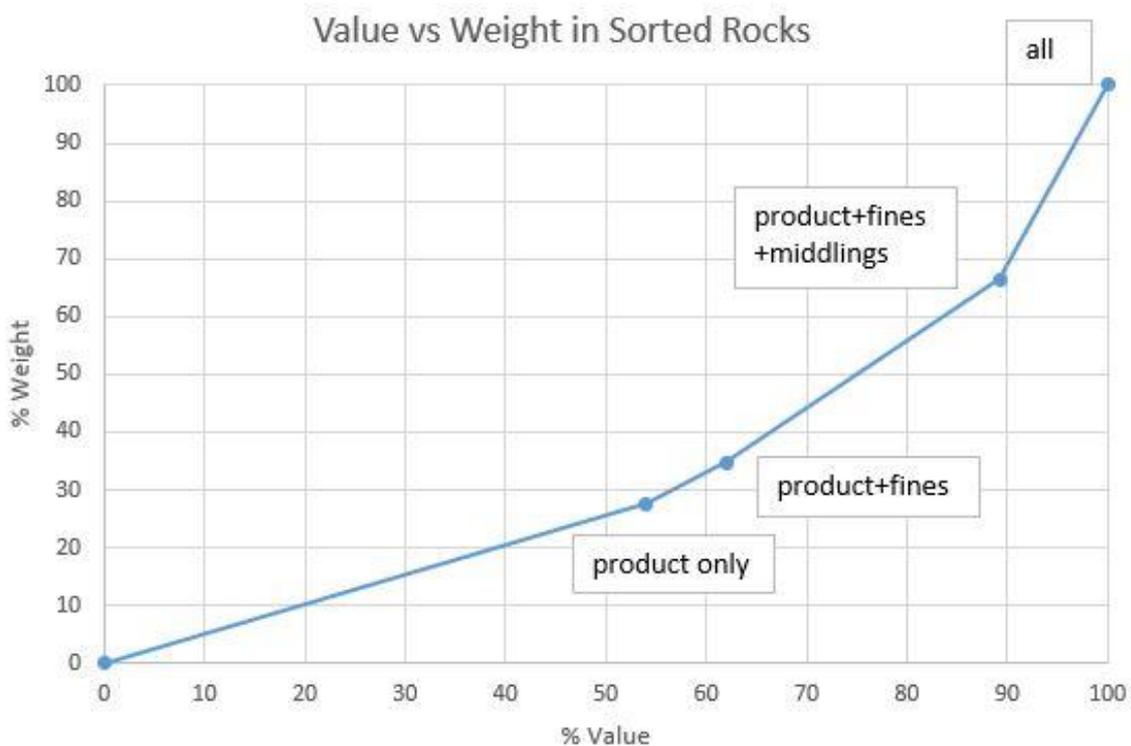
It was concluded that further, more detailed metallurgical testwork was warranted.

#### 2.4.4 Rock Sorting Testwork – Moina Gold Pty Ltd

In 2017/18 Moina Gold Pty Ltd sent representative sections of historic drill core to Tomra in Sydney for testwork utilising their patented rock sorting technology.

Drill core was crushed to 40mm and material screened into -8mm, 8 – 25mm and +25mm fractions. The coarser fractions were then run through the sorter in two separate runs. Material was sorted into waste, ore and middlings, as well as the -8mm fines.

The results of the sorting are summarised in figure 2.3.



**Figure 2.3: Graph of percentage value of sorted rocks versus weight**

Figure 2.3 shows that ~90% of the rocks value can be separated into ~67% of the total weight (taking product, fines and middlings as ore), or 62% of the value in 35% of the weight (taking product and fines as ore).

#### 2.4.5 Metallurgical Testwork AMMTEC Burnie for Moina Gold Pty Ltd 2022

Metallurgical testwork was completed on a bulk sample of 74.2kg of diamond drill core from DDH MCD39 from 31m to 60m (MacDonald, 2022). The composite had a head grade of 1.52g/t Au and 15.6% Ba. A sulphide+gold and barite concentrate was generated by flotation for with the concentrate and tails subject to sulphide+gold diagnostic leaches in order to determine the residence of the gold.

The concentrate generated contained 79.1% of the gold in 16.6% of the feed mass and graded 7.05g/t Au, 191g/t Ag, 0.23% Cu, 3.09% Pb, 5.9% Zn, 29% S, 6.1% Ba and 3940ppm As. Better recoveries to 85.2% were achieved but at lower con. grades.

The fact that most gold is not cyanide extractable means that a sulphide concentrate will need to be produced initially with further downstream processing required to liberate the gold from the pyrite.

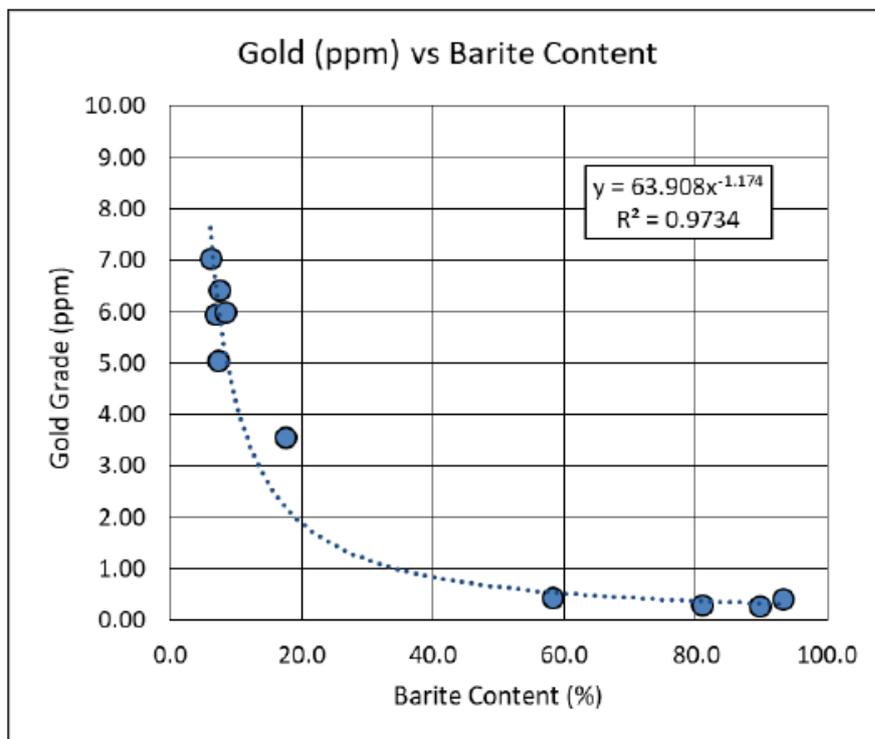
Fine grinding has been addressed and requires considerably more grind time. Some form of oxidation is likely required.

The barite con. still requires some testwork on its physical properties to confirm its utility as industrial grade barite suitable for drilling.

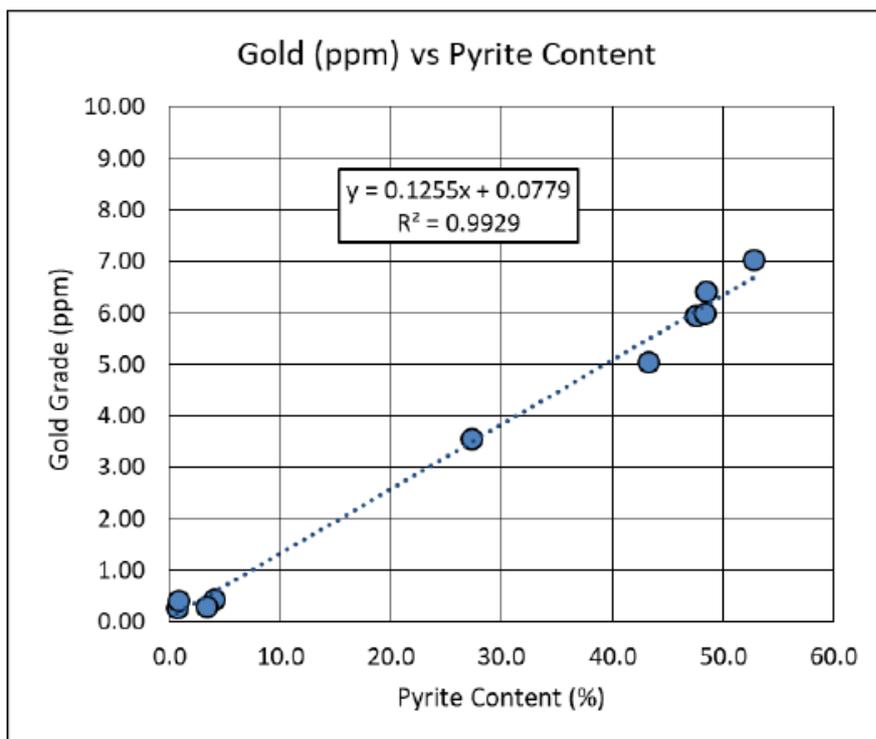
**Table 2.5: Summary of Diagnostic Leaches on T06 Tail and Con.**

T06 Bulk Sulphide Conc (79% of gold)	Dist (%)
LeachWell Liquor (Cyanide Soluble)	24.2
Aqua Regia Digest (Sulphide Locked)	59.7
Residue Fire Assay (NSG Locked)	16.1
Total	100.0

T06 Bulk Sulphide Tail (21% of gold)	Dist (%)
LeachWell Liquor (Cyanide Soluble)	23.0
Aqua Regia Digest (Sulphide Locked)	42.8
Residue Fire Assay (NSG Locked)	34.2
Total	100.0



**Figure 2.4: ‘Graph 1 plots gold grade vs barite content of concentrates and indicates that very little gold is present in the barite. This indicates that gold in “non-sulphides” will be in silicates.’ (see appendix A in MacDonald, 2022)**



**Figure 2.5:** ‘Graph 2 plots gold vs pyrite content (assuming all sulphur not in barite is present in pyrite) and indicates a strong relationship between pyrite and gold content.’ (see appendix A in MacDonald, 2022). Note that not all sulphur not in barite is in pyrite but it is still ~85% (rest is in sphalerite, galena, arsenopyrite).

Graphs of gold versus pyrite, using sulphur as a proxy for pyrite which is not quite the case but it still accounts for ~85% (rest is in sphalerite, galena, arsenopyrite) show a strong relationship between the two. In contrast barite and gold show very poor correlation. This may be taken to indicate that the gold which is non-sulphide gold (NSG) is locked in silicates and not in sulphates. It also supports recent selective sampling of drill core which shows the same relationship between gold and pyrite and not gold and barium.

### **3.0 Exploration Completed February 2023 to February 2024**

#### **3.1 2023 Drilling**

##### **3.1.1 Introduction**

Four diamond drillholes were drilled by Spauldings Drillers using an LF70 diamond drill rig. The holes were drilled between 8<sup>th</sup> August 2023 and 27<sup>th</sup> September 2023.

Holes were drilled by Ben Marshall and Tom Marshall (no relation) with Dayle Meeres supervising. Drilling was on day shift five days a week with the drillers travelling from Tullah each day.

Coring was done in HQ triple tube (HQ3) throughout. Of the 12 holes drilled to date by Moina Gold Pty Ltd all but one have been drilled in HQ2 or HQ3 with one drilled mostly in NQ. The difference in core quality, particularly maintaining coherent sticks, makes the relatively small increment in cost for the larger diameter core thoroughly warranted.

Core photographs are included as an appendix to this report.

At the time of reporting the drillholes were being cut on 1 metre samples ready for dispatch to ALS Burnie for assaying for Au, Ag, Cu, Pb, Zn and Ba.

##### **3.1.2 Targeting**

Drilling was primarily focused on the area of the high-grade intersection, i.e. 69m @ 3.65g/t Au (from surface) including 13m @ 10g/t Au (from 41m), made by MCD44 in the previous 4 hole programme.

This intersection lies immediately adjacent to the Barite Creek Fault structure, interpreted as a remobilized syn-mineralisation growth fault.

The first hole, MCD46, was drilled at a low angle (-40°) directly at the high grade section from a historical drillsite almost directly to the north in order to penetrate the high-grade zone and continue on to determine the position of a fault expected to exist between MCD44 and historic drillhole MC3 which intersected only discrete barite+sulphide veining only some metres to the south of MCD44. This hole established that the fabric to mineralization struck north-northeasterly and dipped to the south, rather than following the Barite Creek Fault.

MCD44's high-grade intersection occurs in hyaloclastically brecciated dacite. The particular breccia lies in the stratigraphic footwall to an apparent massive dacite lava body. A second, relatively thinner, zone of hyaloclastic breccia lies in the lavas stratigraphic hangingwall.

Subsequent drillholes MCD47 and MCD48 were both targeted on the down-plunge intersection between this steeply westerly dipping lower breccia zone and the north dipping Barite Creek Fault making progressively deeper intersections.

The final hole MCD49 was drilled from just south of MCD44's collar and targeted into the lower breccia zone passing through it and out into the footwall for the overall system.

Sampling is in progress with no assays received for any of the holes, making firm conclusions regarding the results of the drilling premature. However, massive barite, bands of massive pyrite, and coarse clots of honey brown sphalerite in barite, generally indicative of gold mineralisation attest to the likelihood of gold and silver, as well as zinc, lead and barite mineralization in all four holes.

Holes MCD47 and MCD48 were lined with PVC so that they might be surveyed by DHEM at some point.

### **3.2 Geological Modelling and Reinterpretation**

In the light of the results from the new drilling the geological model has been revised. As part of this process original survey data for holes MCD38 to MCD45 has been adjusted to accommodate some errors in excluding grid convergence between true and MGA94 grid north.

### **3.3 Unsuccessful EDGI Grant Application**

An application was made to drill a hole to the north of Mt Charter. The full application is included in the appendices. Figures 3.1 and 3.2 summarise the proposal.

The hole was designed to test a zone of anomalous pathfinder elements As, Sb and Tl determined from a regional study of hydrothermal alteration associated with the known VHMS deposits in the region.

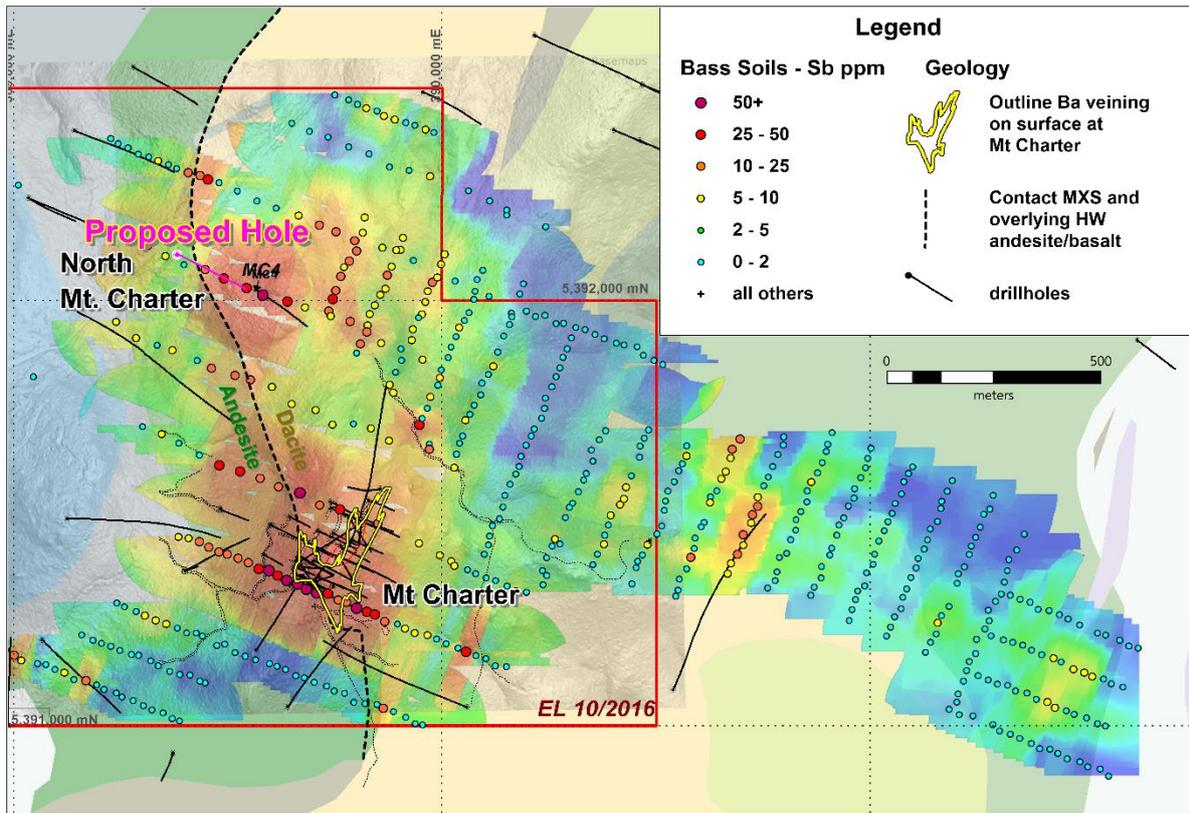
Soil samples analysed for these elements, as well as Ba and Au, define similar anomalies to those around the known mineralisation at Mt Charter, albeit at a somewhat lower tenor at North Mt Charter.

Geophysically the zone also corresponds to an IP chargeability anomaly of similar tenor to that seen at Mt Charter. Chargeability anomalies extend along the mixed sequence dacites upper margin to the north-northwest and south-southeast along strike.

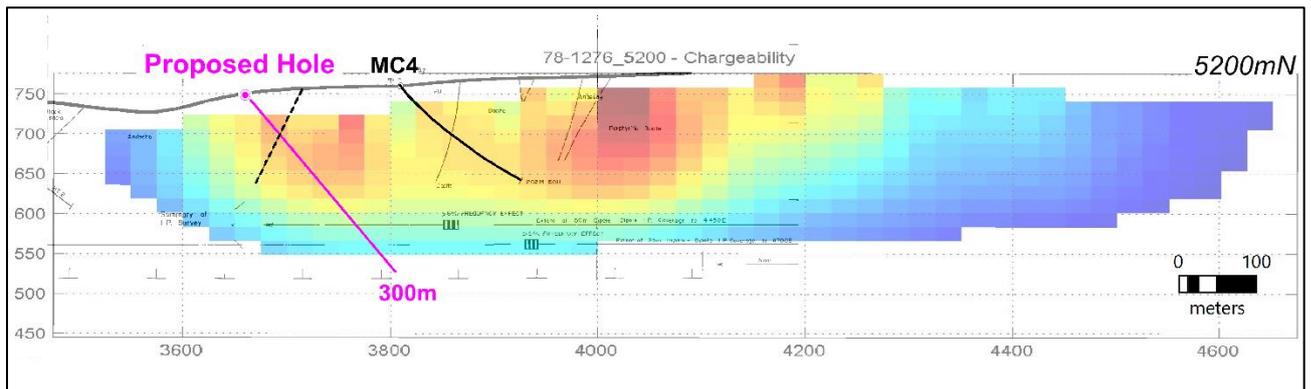
Historically only a single diamond drillhole MC4 had been drilled into the prospect (in 1978) and this hole was collared ~100m into the footwall and then drilled easterly i.e. down sequence. Core was not split but rather ground over broad intervals and the hole intersected two zones of 20m @ 0.4g/t Au, potentially hiding more discrete higher grade zones. Drill logs describe pyrite content decreasing downhole, a trend mirrored by the pathfinder elements.

No hole had tested the upper 100m of the dacite body for Mt Charter style gold+silver+base metal mineralisation in barite at the North Mt Charter prospect. MAC40, the nearest hole, did so ~ 500m away down-dip.

A single hole was proposed collared in the hangingwall andesite unit, drilled eastwards and passing through the upper 100m of the Mixed Sequence dacite until the end of the hole is at least downdip from the collar of MC4.



**Figure 3.1: Proposed hole (in pink) on Bass Metals ICP soil geochemical Sb image and points. Also showing historical drilling and extent of barite+sulphide veined zone on surface.**



**Figure 3.2: Proposed hole on section 5200mN with inverted dipole-dipole chargeability as background.**

## 4.0 Discussion of Results

### 4.1 2023 Drilling'

The results of the drilling will not be fully known until sampling is completed and assay results are received.

Summary logs follow with (slightly) more detailed logs in appendix A and core photos in appendix B.

#### MCD46 – Summary Log

0.0	17.2	Variably oxidised sericite+pyrite altered dacite proximal breccia with weak barite+base metal sulphide mineralisation
17.2	62.2	Moderately barite+sulphide (pyrite) mineralised dacite medial/proximal breccia with more discrete more strongly mineralized zones 34.3m to 36.2m, 38.9m to 42.6m, 45.1m to 48.4m, and 56.2m to 60.3m.
62.2	88.7	Strongly barite+sulphide mineralised dacite medial breccia with semi-massive pyrite zones 67.6m to 68.0m, 73.1m to 74.1m, and 75.5m to 75.9m.
88.7	88.9	Puggy milled fault ~25° to core axis
88.9	96.25	Moderate to strongly barite+pyrite mineralised dacite medial to proximal breccia
96.25	98.3	Massive barite+sulphide (sphalerite+galena) vein running ~5°-10° to core axis with open-spaced bladed barite.
98.3	103.7	Foliated sericite+pyrite altered dacite medial breccia.
103.7	104.2	Fault zone with 0.2m core loss and surfaces ~35° to core axis.
104.2	106.1	Weak to moderate pyrite altered dacite proximal/medial breccia
106.1	113.2	Dacite pillow lavas with discrete pyrite+/-barite veinlets to 10mm thick cross-cutting at variable angles
113.2		End of hole

#### MCD47 Summary Log

0.0	17.1	Weakly barite+pyrite mineralized dacite proximal breccia with distinct clasts with matrix/rims exploited by pyrite.
17.1	18.6	Minor fault, puggy at 10° to core axis.
18.6	21.1	Moderately pyrite>barite mineralized dacite proximal breccia with anastomosing pyrite veins sub-parallel to core axis.
21.1	25.0	Strongly barite+sulphide mineralised dacite proximal breccia with anastomosing pyrite veins as above, but now with barite+pyrite veining running ~10° to core axis.
25.0	30.0	Weak/moderately barite+sulphide mineralised foliated sericite+pyrite altered dacite medial breccia with yellowish clasts in foliation ~10° to core axis..
30.0	45.35	Moderately barite+sulphide mineralized foliated sericite+pyrite altered dacite medial breccia with yellowish elongate attenuated clasts and occasional barite+sulphide veining.
45.35	52.1	Massive barite+sulphide (sphalerite+galena, pyrite) vein with central open-spaced texture zone 48.55m to 50.1m, also massive pyrite banding 20mm thick.
52.1	68.25	Moderately barite+pyrite mineralized dacite breccia with attenuated foliated clasts elongate in foliation as for 25.0m to 30.0m.

- 68.25 71.15 Massive barite+sulphide (pyrite, sphalerite+galena) vein at ~ 15° to core axis.
- 71.15 79.2 Massive, unfoliated, dacite medial/proximal breccia with seams semi-massive pyrite also tension vein barite to 10mm ~20/m. Strain partitioned between mineralization uphole and downhole.
- 79.2 79.35 Barite+sulphide (sphalerite+galena) vein with sharp upper contact and lower contact at 30° to core axis
- 79.35 91.75 Weakly barite+sulphide mineralised foliated sericite+pyrite altered dacite medial breccia initially similar to 71.15m to 79.2m i.e. more massive and weakly foliated becoming more foliated downhole.
- 91.75 100.6 Strongly barite+sulphide mineralised dacite medial breccia with discrete barite+sulphide veins
- 100.6 113.6 Weakly barite+sulphide mineralised foliated sericite+pyrite altered dacite medial breccia. Yellowish attenuated clasts 5-80mm in foliation predominantly at low to moderate angles to core axis. Only occasional barite veins anastomosing in foliation.
- 113.6 115.3 Barite+sulphide (sphalerite+galena) vein.
- 115.3 118.75 More massive dacite medial breccia with barite+sulphide (sphalerite+galena) veins at low angles to core axis.
- 118.75 123.2 Massive barite+sulphide vein (sphalerite and galena) from 118.75m to 119.0m, and 122.5m to 123.2m.
- 123.2 127.75 Moderately/strongly barite+sulphide mineralised foliated sericite+pyrite altered dacite medial breccia.
- 127.75 136.6 Weakly barite+sulphide mineralised foliated sericite+pyrite altered dacite medial breccia. Yellowish attenuated clasts and only occasional barite veins anastomosing in foliation.
- 136.6 144.7 Massive barite+sulphide vein with honey brown sphalerite and galena with strong fabric ~20°-25° to core axis in upper part becoming ~10° to core axis below 139.0m. Open-spaced bladed textures.
- 144.7 146.4 Strongly barite+sulphide mineralised dacite breccia zone – part of preceding zone but now mineralization either pervasive alteration or as open-spaced veining at 10° to core axis with barite blades sub-perpendicular to wallrock.
- 146.4 153.4 Moderately pyrite mineralised foliated sericite+pyrite altered dacite medial breccia. Some zones almost semi-massive pyrite. Occasional barite veins anastomosing in foliation at low angles to core axis.
- 153.4 153.85 Dacite proximal breccia with minor barite mineralization.
- 153.85 154.35 Strong barite+sulphide mineralization with sphalerite and galena in vein at 10° to core axis.
- 154.35 159.9 Moderate/strongly mineralised dacite proximal breccia with barite+pyrite veining anastomosing at low angles to core axis.
- 159.9 162.75 Foliated sericite+pyrite altered dacite medial breccia with yellowish attenuated wispy clasts elongate in foliation with pyrite alteration of matrix.
- 162.75 183.0 Weak/moderately barite+pyrite mineralised foliated sericite+pyrite altered dacite medial breccia with yellowish attenuated wispy clasts elongate in foliation with pyrite alteration of matrix.

- 183.0 195.7 Weak/moderately pyrite altered dacite medial breccia with only very minor barite.
- 195.7`207.2 Weak/moderately pyrite altered dacite proximal/medial breccia throughout with pervasive barite flooding increasing downhole.
- 207.2 211.15 Leached and bleached dacite with thin chloritic surfaces 10°-15° to core axis.
- 211.15 212.4 Fault Puggy material 211.15m to 211.4m and 212.3m to 212.4m, else rubbly material with chloritic surfaces at low angles to cre axis.
- 212.4 228.2 Green and pale green chlorite and albite altered pseudoclastic feldspar phyrlic andesite.
- 228.2 End of hole

### MCD48 Summary Log

- 0.0 17.8 Weak/moderately pyrite+barite mineralised dacite lava, oxidized to 11.15m , with occasional oxidized zones below this. Pyrite in fracture fill veinlets <5mm thick, barite veining irregular margins running sub-parallel to core axis.
- 17.8 19.8 Weak/moderately pyrite+barite mineralised dacite proximal breccia with similar pyrite veinlets and barite veining as 0.0m to 17.8m
- 19.8 29.5 Strongly barite+sulphide (sphalerite+galena, pyrite) mineralised dacite proximal/medial breccia including 15-20mm thick massive pyrite vein running sub-parallel to core axis sub-parallel to core axis from 20.2m to 20.8m and massive barite+sulphide vein from 24.3m to 27.2m.
- 29.5 43.05 Moderately foliated dacite proximal breccia with occasional barite+sulphide veins i.e. 32.1m to 32.7m with sphalerite+galena 34.5m to 35.4m, 37.5m to 37.8m and 42.1m to 42.9m.
- 43.05 51.0 Weak/moderately pyrite and barite mineralised dacite pillow lava with pyrite+/-barite rimming infilling of matrix. Pyrite on margins with barite in centre.
- 51.0 58.35 Weak/moderately pyrite+barite mineralised dacite proximal breccia with mineralization as pervasive replacement and irregular veins at low angles to core axis.
- 58.35 78.0 Moderately barite+pyrite mineralised dacite medial breccia with clasts lenticular in the foliation. Mineralisation occurs as pervasive replacement and irregular veins anastomosing in foliation.
- 78.0 85.85 Weak/moderately pyrite+barite mineralised dacite medial breccia with pervasive pyrite alteration and occasional barite patches.
- 85.85 88.3 Strong barite+sulphide (sphalerite+galena) mineralised dacite medial breccia with banding in barite+sulphide veining up to 45° to core axis, upper contact 20° to core axis, lower contact 35° to core axis.
- 88.3 91.6 Moderately barite+sulphide mineralised proximal/medial breccia with mineralization as pervasive replacement and discrete barite rich patches.
- 91.6 100.7 Weak/moderately pyrite mineralised foliated dacite medial breccia with yellowish clasts elongate in the foliation at 10° to core axis with pyrite in thin seams in the foliation
- 100.7 122.85 Moderate/strong barite+pyrite mineralised proximal breccia with pyrite infilling matrix and barite in more discrete irregularly cross-cutting veins/patches.
- 122.85 126.8 Moderate/strong barite+pyrite mineralised dacite medial breccia with pervasive replacement of matrix by barite+pyrite.

- 126.8 129.65 Massive barite+sulphide (sphalerite+galena) vein with banding at 0°-30° to core axis, averaging 15° to core axis.
- 129.65 142.1 Moderate/strong barite+pyrite mineralised dacite medial breccia with pervasive replacement of matrix.
- 142.1 203.8 Weak/moderately pyrite>barite mineralised dacite pillow lava with pyrite in fractures and seams at low angles to core axis, also orthogonal. Pyrite pervades into wallrock for some mm's, barite occurs in centre of pyritic veins i.e. is later.
- 203.8 208.3 K-Feldspar? veined weak pyrite>barite mineralised dacite pillow lava with pale pink (K Spar?) and milky white quartz tension veins up to 150mm thick cross-cutting at high angles to core axis.
- 208.3 221.65 Strongly barite+sulphide mineralised dacite proximal/medial breccia with attenuated clasts (not the yellowish foliated type tho) with massive barite+sulphide veining in part, anastomosing veining elsewhere.
- 221.65 228.65 As for 203.8m to 208.3m but pink K-Spar and lesser white quartz now also associated with pyrite, and veining mostly not tensional but more similar to anastomosing barite type in foliation at 0°-20° to core axis.
- 228.65 275.0 Moderately pyrite>barite mineralized dacite lava as for 146.8m to 203.8m. Pyrite occurs in fractures 0°-25° to core axis averaging 15° to core axis, with barite in centre. Strongly pyritic zones 240.9m to 241.25, 249.7m to 250.5m, 253.8m to 255.0m and 261.7m to 263.9m.
- 275.0 278.7 Distinctive breccia, poorly sorted, matrix supported/dominant (20%-50% clasts) with quite angular lenticular clasts 1-100mm in grey ashy/silty matrix, some clasts more coherent, some clasts wispy pumiceous? Clasts aligned ~25° to core axis which may be S0.
- 278.7 282.0 Weakly pyrite mineralised dacite proximal breccia with flow banding of some clasts. Only minor pyrite in fractures
- 282.0 283.85 Fault with main puggy zone at 238.5m at 20° to core axis.
- 283.85 301.9 Silicified and weakly pyrite altered dacite proximal breccia with flow banding of almost in-situ clasts.
- 301.9 303.2 Major fault, milled puggy fault rock with sharp lower contact at 25° to core axis.
- 303.2 306.7 Weakly pyrite+barite mineralised feldspar phyric dacite proximal breccia. Creamy coloured feldspar phyric rock which has similarities with albitised feldspar phyric andesite but more likely feldspar phyric dacite based on finer matrix. Has weak/moderate pyrite in fractures also some minor barite with pyrite in anastomosing veining. Lower contact sharp but ranges from 35°-50° to core axis interpreted as stratigraphic contact.
- 306.7 311.8 Feldspar phyric andesite, green (chloritic) and pale green (albite) pseudoclastic domainal altered Feldspar phyric andesite with no sulphide or barite ineralisation.
- 311.8 End of hole

#### **MCD49 – Summary Log**

- 0.0 66.5 Strongly barite+pyrite mineralised dacite medial/proximal breccia type with stronger pervasive barite+pyrite alteration/mineralisation zones from 0m to 22.8m, 29.3m to 32.2m, 36.8m to 40.0m, 43.8m to 56.5m, and 59.05m to 66.5m.

66.5	71.0	More moderately barite>pyrite mineralised dacite medial breccia with predominantly finer barite>pyrite veinlets as well as more pervasive barite>pyrite replacement mineralization.
71.0	72.0	Strong barite+pyrite mineralization with minor sphalerite+galena as more discrete zone in dacite proximal breccia.
72.0	74.6	Moderately barite>pyrite mineralised dacite medial breccias with veining as well as infill/replacement mineralization.
74.6	77.2	Strongly barite+pyrite minor sphalerite+galena mineralised dacite medial breccia
77.2	83.4	More weakly mineralized dacite medial breccia with discrete barite+quartz tension veinlets with minor sphalerite+galena commonly <5mm thick in an orthogonal set each at moderate angles to core axis.
83.4	85.1	Barite+sphalerite+galena+pyrite vein in dacite medial breccia running sub-parallel to core axis.
85.1	129.6	Foliated sericite+pyrite altered dacite medial breccia with discrete barite+sulphide mineralised zones from 100.4m to 103.7m, 108.6m to 109.0m (with galena and sphalerite) and 110.2m to 112.3m.
129.6	134.3	Moderately barite+pyrite+minor sphalerite+galena mineralised dacite proximal breccia with pyrite>barite infilling/cross-cutting of clasts (pyrite>barite rimming/pyritic fractures style) with significant zones of massive barite+sulphide overprinting.
134.3	149.6	Dacite proximal breccia with pyrite>>barite matrix/fracture infill style mineralization. Yellowish kernels to clasts with pervasive pyrite flooding of selvages of clasts. This style can be pillow lava rimming or fracture infill and looks very similar.
149.6m		End of hole

#### **4.2 Geological Reinterpretation - Barite Creek Fault**

The following note are based on a summary geological logging without access to supporting assays and may be revised once these results are received.

As noted earlier drillholes MCD46, MCD47 and MCD48 targeted the high grade zone hosted in the dacite breccia in the stratigraphic footwall to the main central lava body, where the breccia is intersected by the main Barite Creek Fault.

As noted in last years annual report the interpretation of the Barite Creek Fault favoured in MacDonald (2021 and 2022) was not the correct one with the alternative proposed in MacDonald (2021) and favoured in MacDonald (2022) considered correct. This latter interpretation was confirmed by the results of MCD46, MCD47 and MCD48.

MCD46 intersected two fault structures, i.e. from 88.7m to 88.9m a puggy milled fault ~25° to core axis and from 103.7m to 104.2m a similar brittle structure with surfaces ~35° to core axis. The former structure is coplanar with earlier intersections modelled as the Barite Creek Fault and the mapped surface trace and is interpreted as the main Barite Creek Fault structure.

Variably barite+sulphide mineralized dacite breccia occurs between the two structures. On the downhole side of the second structure relatively weakly mineralized dacite breccia continues until 106.1m with dacite pillow lava cross-cut by thin discrete pyrite+barite veins to end of hole at 113.2m.

MCD47 intersected a single fault near the end of hole from 211.15m to 212.4m with two zones of puggy material 211.15m to 211.4m and 212.3m to 212.4m separated by rubbly dacite with chloritic

surfaces at low angles to core axis. Immediately downhole of this structure the rock is unmineralized chlorite+albite altered feldspar phyric andesite.

MCD48, drilled deeply below MCD46 (~240m) intersected two fault structures i.e. 282.0m to 283.85m with chloritic surfaces and puggy shears at ~20° to core axis, and 301.9m to 303.2m milled puggy fault rock with sharp lower contact at 25° to core axis, with mineralized dacite between. The intersection between 282.0m and 283.85m is co-planar with the shallower intersections and the intersection in MCD47 and is interpreted as the main Barite Creek Fault structure. It has maintained its planar form striking to 300° (AMG grid N) and dipping at -76° to the north-northeast.

The lower structure in MCD48 separates dacite uphole from a weakly but demonstrably pyrite+barite mineralized creamy coloured feldspar phyric rock interpreted as dacite (though possibly but less likely albitised andesite) from 303.2m to 306.7m, with unmineralised recognizably feldspar phyric andesite from 306.7m to end of hole at 311.8m.

The lower structure in MCD48 has a similar offset from the main Barite Creek Fault as the lower structure in MCD46, and is possibly the same structure. If this structure is sub-parallel to the main Barite Creek Fault structure it is also likely represented by the fault intercepted in historic drillhole MC2 between 25.4m and 32.0m. In which case the structure might be referred to as the South Barite Creek Fault, or the two collectively referred to as the Barite Creek Fault Zone. The former nomenclature is favoured at this point as whilst the rock between the two structures is weakly pyrite+barite mineralized, assays of this block from previous holes ie MC2, MCD36 and MCD43 are of significantly lower tenor. This will be confirmed by assaying MCD46 and MCD48.

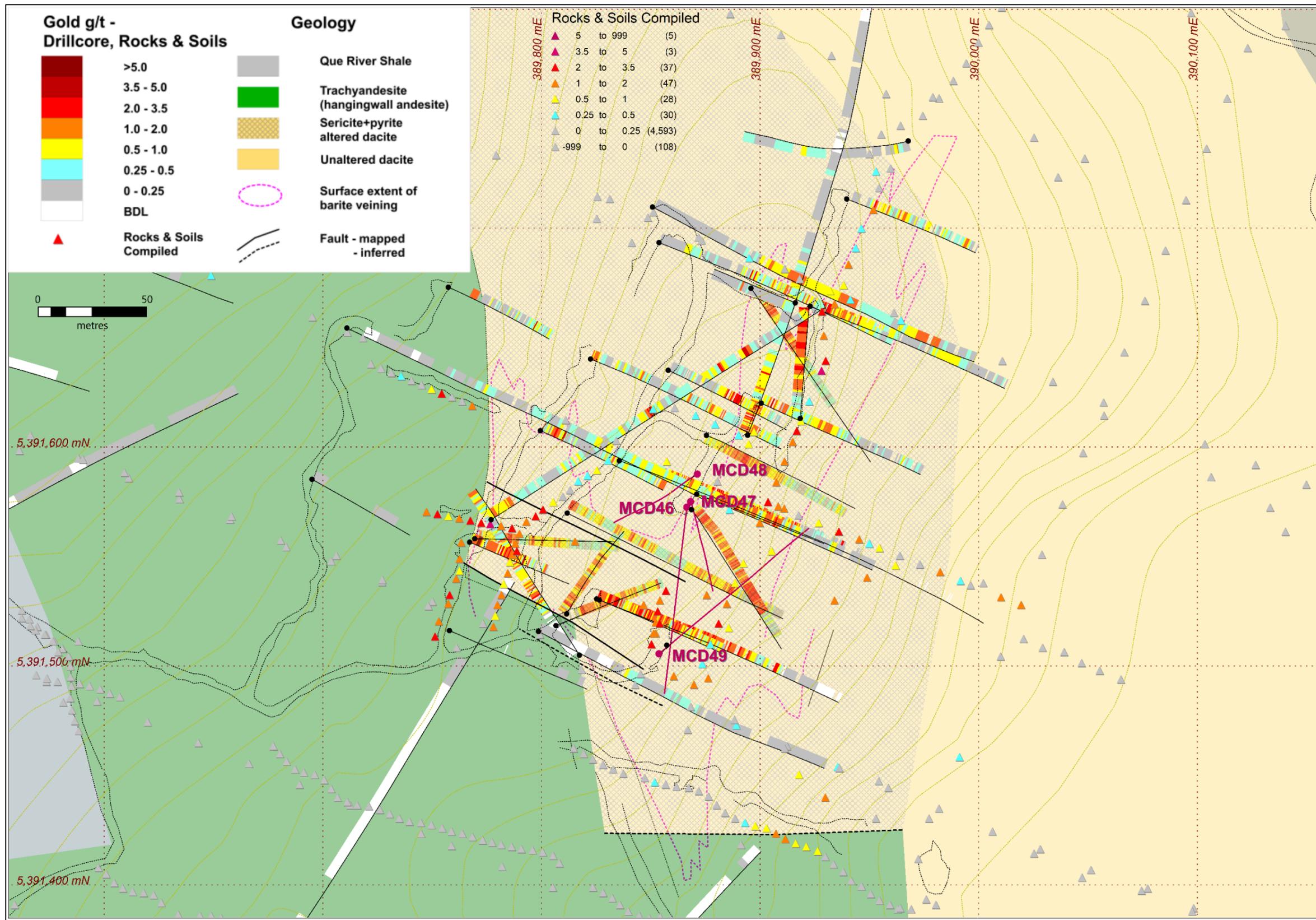


Figure 5.1: Mt Charter deposit plan showing geology and drilling with gold grades and traces of MCD46, MCD47, MCD48 and MCD49 drillholes as maroon lines.

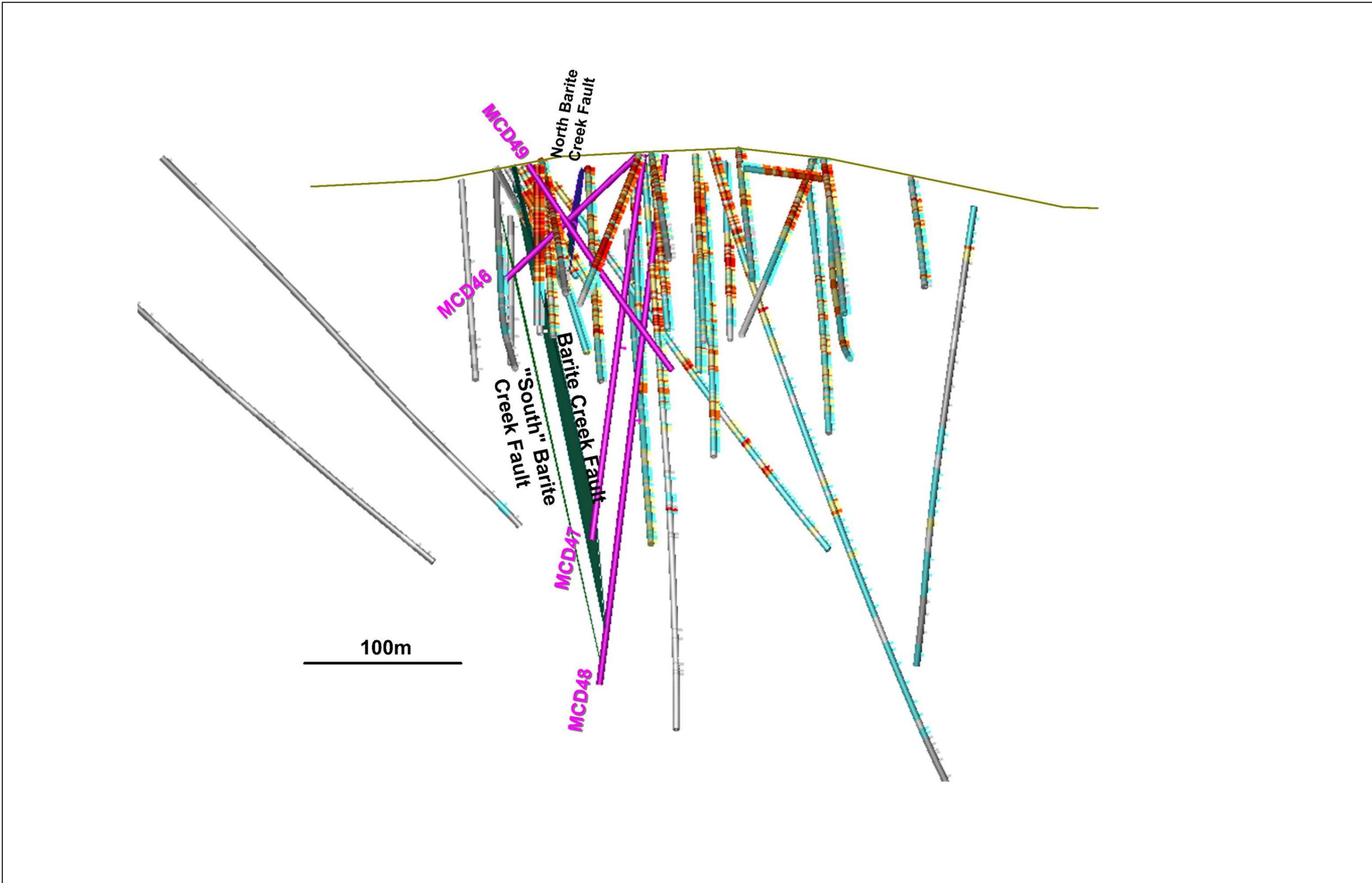


Figure 5.2: Mt Charter long section looking to 300° showing drilling to date with gold grades (legend in figure 5.1), fault structures (looking along their strike essentially), and the traces of MCD46, MCD47, MCD48 and MCD49 drillholes as pink lines.

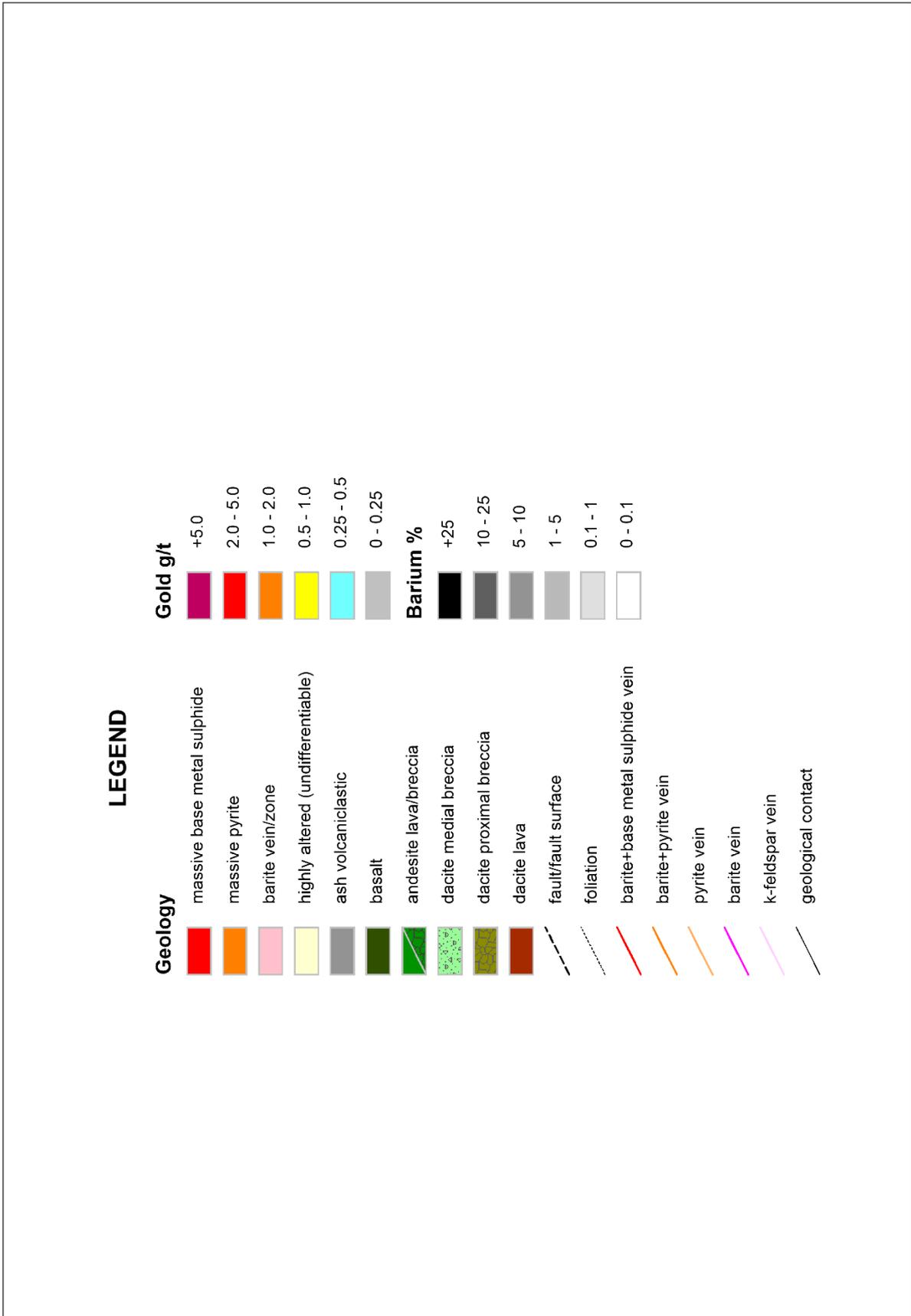


Figure 5.3: Legend for figures 5.4, 5.5, 5.6 and 5.7



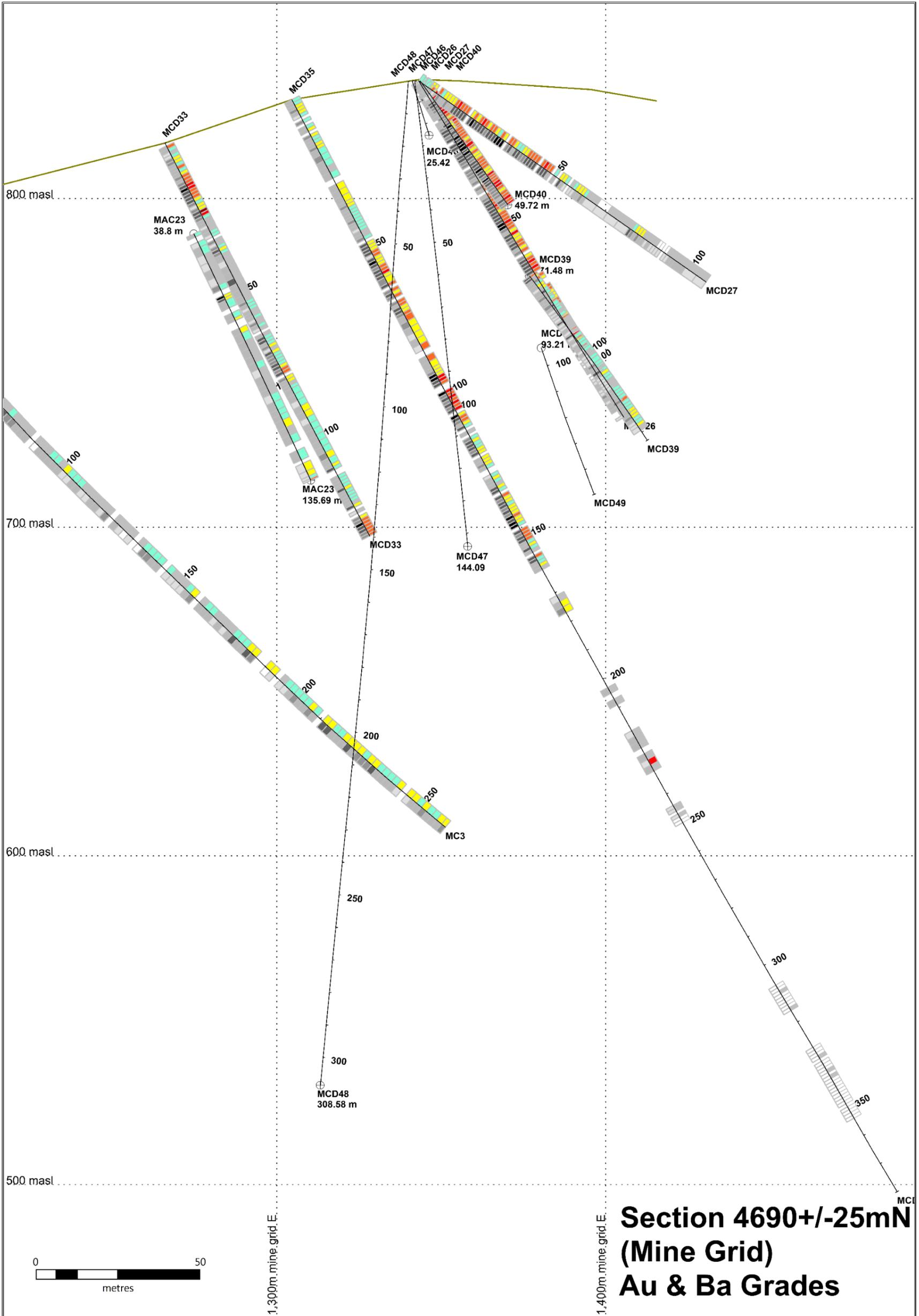


Figure 5.5: Mt Charter Mine Grid Section 4690mN (+/-25m) showing gold and barite assays by colour shade – legend as per figure 5.3

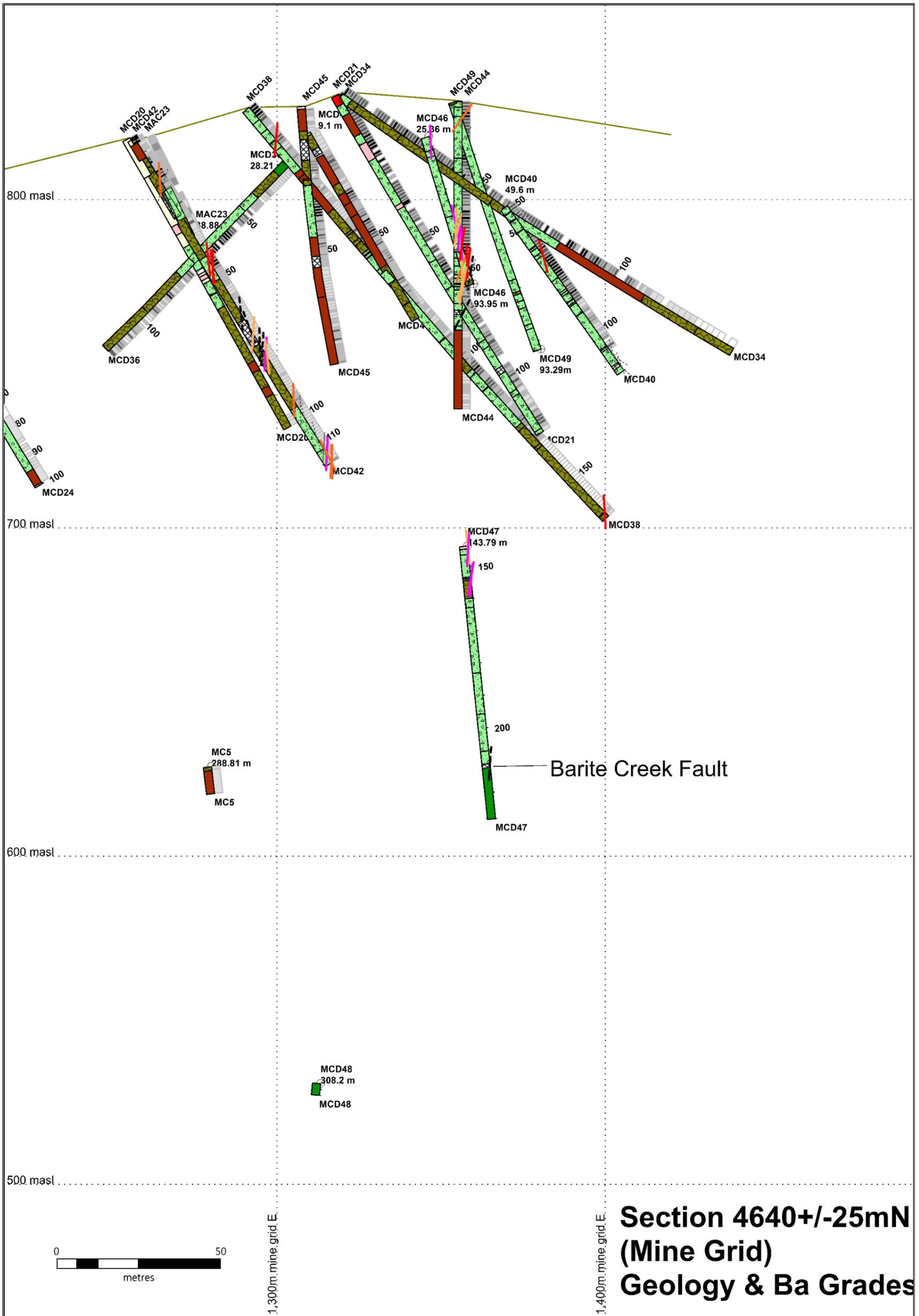


Figure 5.6: Mt Charter Mine Grid Section 4640mN (+/-25m) showing geology and barite assays by colour shade – legend as per figure 5.3.

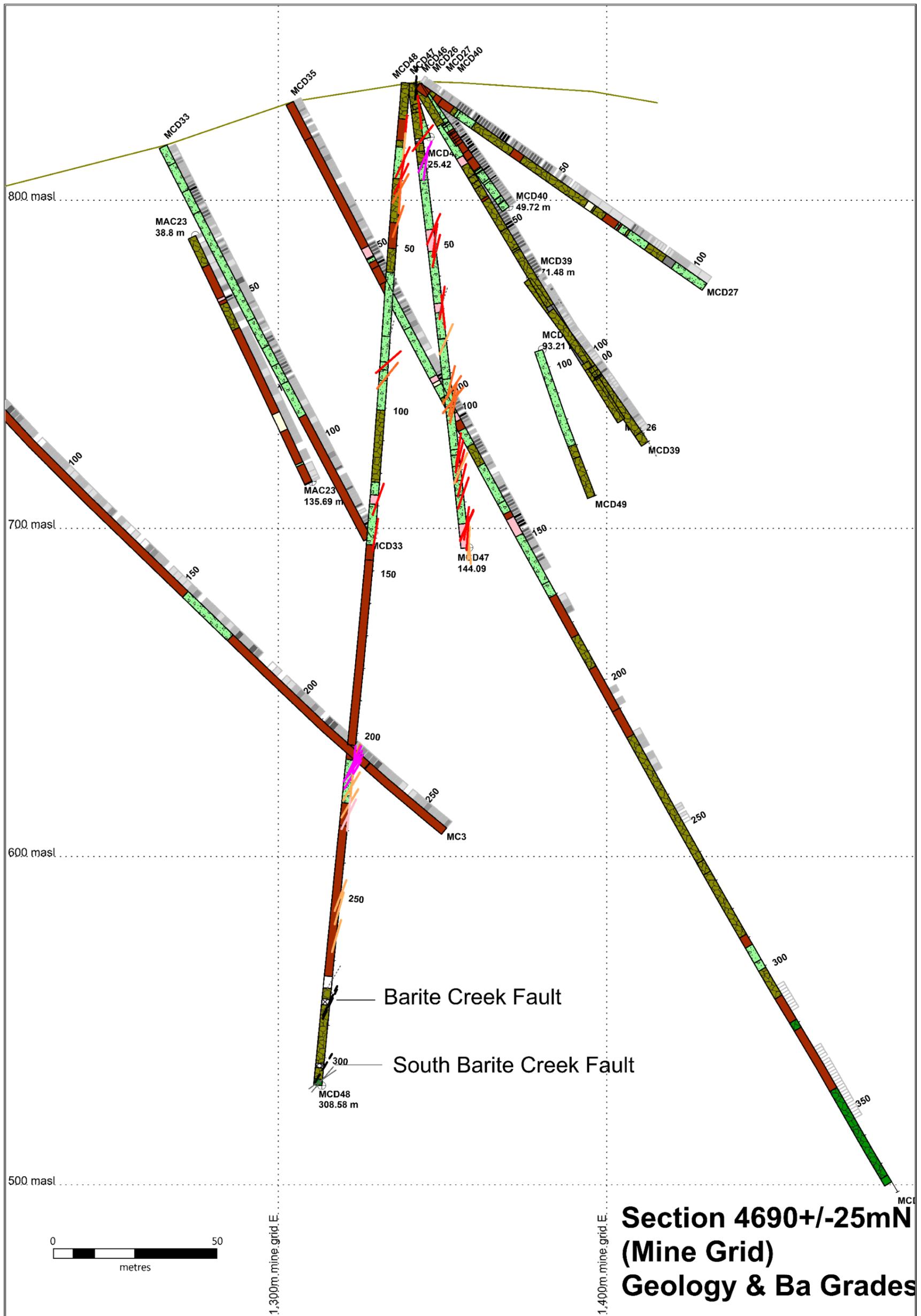


Figure 5.7: Mt Charter Mine Grid Section 4690mN (+/-25m) showing geology and barite assays by colour shade – legend as per figure 5.3.

## **5.0 Conclusions**

It is difficult to draw concrete conclusions regarding gold mineralisation without reference to assays.

Holes MCD46 and MCD49 intersected pervasive barite+pyrite+/-sphalerite+galena mineralisation in dacite breccias in the zone which reported high grades in MCD44.

Deeper hole MCD47 intersected variably mineralised dacite breccia before passing through the Barite Creek Fault.

Deepest hole MCD48 stayed within coherent dacite pillow lava for some time, and whilst showing mineralisation for most of its length, within the lava section the mineralisation was strongly pyritic with lesser barite and lower base metals.

Further conclusions await the return of gold, barite and base metal assays.

## **6.0 Proposed Work**

The following work is proposed for the next two years.

### *Sampling and Assaying MCD46, MCD47, MCD48 and MCD49*

The four drillholes MCD46, MCD47, MCD48 and MCD49 are yet to be assayed. At the time of writing MCD46 and MCD49 had been cut and despatched with MCD47 and MCD48 still to be cut and sampled. That work will be completed. The cost of assaying is expected to be approximately \$80,000

### *Updated Mineral Resource Estimate*

Following receipt of assays a new mineral resource estimate will be made. This is likely to be done by an independent external mining house.

### *Drilling*

Drilling is required to constrain the resource with holes needed along the western margin up-dip from MC3, MCD24 and MCD25.

Holes at the resources northern extremity north of MC1, MCD28 and MCD30 are warranted to extend the resource in this direction.

Another hole from the collar of MCD49 raking across the breccias intersected in MCD35 and MCD38 may intersect further higher grade mineralisation.

Further deeper drilling should also target to the immediate east of MCD47 where the breccia is better developed.

Separately, the North Mt Charter hole subject to the unsuccessful EDGI application should be drilled with a second hole to the immediate west is also warranted based upon anomalous pathfinder soil geochemistry.

## **7.0 Environmental Management**

Holes MCD46 has been cemented, however, MCD47, MCD48 and MCD49 require cementing according to the MECOP. That work will be completed in the coming weeks.

Tracks and drill sites remain open for further use.

## 8.0 Expenditure

	\$
Geology	58,000
Geochemistry	0
Geophysics	0
Remote Sensing	0
Drilling	201,143
Gridding	0
Land Access	0
Rehabilitation	0
Feasibility Studies	0
Other	1,458
Administration	18,000
Total	278,601

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## 10.0 Digital Files Accompanying the Report

Exploration Work Type	Filename	File format
<b>Report</b>	EL102016_022024_01_Annual_Report	<i>pdf</i>
<b>Drilling</b>	EL102016_022024_02_Drillhole_Collars_SL_1_ EL102016_022024_03_Downhole_Surveys_DS_1_ EL102016_022024_04_Drillhole_Lithology_DL_1_	xls xls xls xls
<b>Surface sampling</b>		xls
<b>Other (specify)</b>		
<b>File Verification Listing</b> ( <i>this file</i> )	EL102016_022024_05_FILELISTING.XLS	xls

**Appendix A – Drill Logs MCD46, MCD47, MCD48, MCD49**



## MCD46

- 0.0 5.0 Weakly Pyrite Mineralised Feldspar phyrac Dacite Proximal Breccia** Weakly pyrite mineralised Feldspar phyrac Dacite proximal breccia with pyrite in fractures.
- 5.0 9.3 Oxidised Weak/Moderately Pyrite Mineralised Feldspar phyrac Dacite Proximal Breccia** Oxidised weak/moderately pyrite mineralised Feldspar phyrac Dacite proximal breccia with cross-cutting quartz+barite? tension veinlets 5.0m to 7.1m and 9.0m to 9.3m, with massive quartz vein 7.1m to 9.0m.
- 9.3 11.5 Oxidised Weak/Moderately Pyrite+Barite Mineralised Feldspar phyrac Dacite Proximal Breccia** Oxidised weak/moderately pyrite+barite mineralised Feldspar phyrac Dacite proximal breccia with occasional patches unoxidized pyrite+barite altered Feldspar phyrac Dacite proximal breccia
- 11.5 17.2 Strongly Oxidised Feldspar phyrac Dacite Breccia** Strongly oxidised Feldspar phyrac Dacite breccia, unclear if mineralized (no significant veining)
- 17.2 31.6 Moderately Barite+Pyrite Mineralised Feldspar phyrac Dacite Medial/Proximal Breccia** Moderately barite+pyrite mineralised Feldspar phyrac Dacite medial/proximal breccia with both pervasive barite+pyrite alteration also occasional discrete cross-cutting irregular barite+pyrite veins with irregular margins
- 31.6 34.3 Feldspar phyrac Dacite Breccia** Feldspar phyrac Dacite breccia as above but leached and bleached
- 34.3 62.2 Moderate/Strongly Barite+Sulphide Mineralised Feldspar phyrac Dacite Medial Breccia** Moderate/strongly barite+sulphide mineralized Feldspar phyrac Dacite medial breccia. Foliation 35° to core axis. Stronger mineralized zones 34.3m to 36.2m, 38.9m to 42.6m, 45.1m to 48.4m, and 56.2m to 60.3m, else murky pyrite altered zones.
- 62.2 88.7 Strongly Barite+Sulphide Mineralised Feldspar phyrac Dacite Medial Breccia** Strongly barite+sulphide mineralized Feldspar phyrac Dacite medial breccia with wispy anastomosing barite+pyrite veining 5°-15° to core axis. Semi-massive pyrite zones 67.6m to 68.0m, 73.1m to 74.1m, and 75.5m to 75.9m.
- 88.7 88.9 Fault** Puggy milled fault ~25° to core axis
- 88.9 92.0 Moderate/Strong Barite+Pyrite Mineralised Feldspar phyrac Dacite Medial Breccia** Moderate/strong barite+pyrite mineralised Feldspar phyrac Dacite medial breccia.
- 92.0 96.25 Moderate/Strong Barite+Pyrite Mineralised Feldspar phyrac Dacite Proximal Breccia** Moderate/strong barite+pyrite mineralised Feldspar phyrac Dacite proximal breccia.
- 96.25 98.3 Massive Barite+Sulphide Vein** Massive barite+sulphide (phalerite+galena) vein running ~5°-10° to core axis Upper contact 10° to core axis, lower contact 10° to core axis. Bladed barite.
- 98.3 103.7 Foliated Sericite+Pyrite Altered Feldspar phyrac Dacite Medial Breccia** Foliated sericite+pyrite altered Feldspar phyrac Dacite medial breccia with pyrite in matrix. Elongate attenuated clasts in foliation.
- 103.7 104.2 Fault** Fault 0.2m core loss, surfaces ~35° to core axis.

**104.2 106.1 Weak/Moderate Pyrite Altered Feldspar phyric Dacite Proximal/Medial Breccia**

Weak/moderate pyrite altered Feldspar phyric Dacite proximal/medial breccia

**106.1 113.2 Feldspar phyric Dacite Pillow Lavas with Discrete Pyrite+/-Barite Veinlets**

Feldspar phyric Dacite pillow lavas with discrete pyrite+/-barite veinlets to 10mm thick cross-cutting at variable angles

**113.2 End of hole**



## MCD47

### **9.0 9.0 Oxidised Weakly Barite+Pyrite Mineralised Feldspar phyrlic Dacite Proximal Breccia**

Oxidised weakly barite+pyrite mineralised Feldspar phyrlic Dacite proximal breccia. Oxidized massive Feldspar phyrlic Dacite proximal breccia, orange where ferruginous, light grey where less oxidized. Minor barite+sulphide veining, also zones of quartz tension veins 4.0m to 5.8m and 7.5m to 9.1m generally at high angles to core axis.

### **9.0 17.1 Weakly Barite+Pyrite Mineralised Feldspar phyrlic Dacite Proximal Breccia**

Weakly barite+pyrite mineralized Feldspar phyrlic Dacite proximal breccia as above but now less oxidized. Some distinct clasts but more quench fractured with matrix/rims exploited by pyrite. Semi-massive pyrite in anastomosing bands between 16.0m and 17.0m.

**17.1 18.6 Puggy Zone – Minor Fault** Puggy zone associated with pyrite altered Feldspar phyrlic Dacite breccia. Surface 18.4m to 18.6m at 10° to core axis.

### **18.6 21.1 Moderately Pyrite+Barite Mineralized Feldspar phyrlic Dacite Proximal Breccia**

Moderately pyrite>barite mineralized Feldspar phyrlic Dacite proximal breccia with anastomosing pyrite veins sub-parallel to core axis.

### **21.1 25.0 Strongly Barite+Sulphide Mineralised Feldspar phyrlic Dacite Proximal Breccia**

Strongly barite+sulphide mineralised Feldspar phyrlic Dacite proximal breccia with anastomosing pyrite veins as above, but now with barite+pyrite veining running ~10° to core axis. Some semi-massive pyrite zones e.g. 23.5m to 24.2m. From 21.2m to 22.9m brecciated Feldspar phyrlic Dacite with barite in fracture infill, 22.9m to 25.0m semi-massive barite vein at 30° to core axis.

**25.0 30.0 Weak/Moderately Barite+Sulphide Mineralised Foliated Sericite+Pyrite Altered Feldspar phyrlic Dacite Medial Breccia** Weak/moderately barite+sulphide mineralised foliated sericite+pyrite altered Feldspar phyrlic Dacite medial breccia with yellowish clasts in foliation ~10° to core axis. Barite+sulphide vein running sub-parallel to core axis – at 29.8m 20° to core axis 65° to 240° (MN).

**30.0 45.35 Moderately Barite+Sulphide Foliated Sericite+Pyrite Altered Feldspar phyrlic Dacite Medial Breccia** Moderately barite+sulphide foliated sericite+pyrite altered Feldspar phyrlic Dacite medial breccia with yellowish elongate attenuated clasts. Murky pyrite altered matrix between clasts with occasional barite+sulphide veining. Clasts 5-80mm.

**45.35 52.1 Massive Barite+Sulphide (pyrite, sphalerite+galena) Vein** Massive barite+sulphide (sphalerite+galena, pyrite) vein with central open-spaced texture zone 48.55m to 50.1m, also massive pyrite banding 20mm thick. Rest of intersection pervasive barite+sulphide alteration. Upper contact sharp at 30° to core axis, lower contact sharp at 20° to core axis. Fabric at 48.8m 15° to core axis 70° to 250° (MN), at 49.1m 15° to core axis 60° to 250° (MN), at 50.5m 20° to core axis 70° to 170° (MN)

**52.1 68.25 Moderately Barite+Pyrite Mineralised Foliated Sericite+Pyrite Altered Feldspar phyrlic Dacite Medial Breccia** Moderately barite+pyrite mineralized Feldspar phyrlic Dacite breccia with attenuated foliated clasts elongate in foliation as for 25.0m to 30.0m. Foliation initially ~5° to core axis becoming up to 25° to core axis downhole. Barite alteration increases downhole.

**68.25 71.15 Massive Barite+Sulphide (pyrite, sphalerite+galena) Vein** Massive vein, similar to 45.35m to 71.15m but not interpreted to be same vein. Murky upper contact 15° to core axis, irregular lower contact. Coarse bladed barite and sphalerite. Fabric at 71m 0° to core axis ~90° to 255° (MN)

### **71.15 79.2 Moderately Pyrite>Barite Feldspar phyrlic Dacite Medial/Proximal Breccia**

Massive, unfoliated, Feldspar phyrlic Dacite medial/proximal breccia with seams semi-massive pyrite also tension vein barite to 10mm ~20/m. Strain partitioned between mineralization uphole and downhole.

**79.2 79.35 Massive Barite+Sulphide (sphalerite+galena) Vein** Massive barite+sulphide (sphalerite+galena) vein with sharp upper contact and lower contact at 30° to core axis 65° to 240° (MN)

**79.35 91.75 Weakly Barite+Sulphide Mineralised Foliated Sericite+Pyrite Altered Feldspar phyrlic Dacite Medial Breccia** Weakly barite+sulphide mineralised foliated sericite+pyrite altered Feldspar phyrlic Dacite medial breccia initially similar to 71.15m to 79.2m i.e. more massive and weakly foliated becoming more foliated downhole with foliation 30°-35° to core axis to 80m, ~15° to core axis below 90m.

**91.75 100.6 Strongly Barite+Sulphide Mineralised Feldspar phyrlic Dacite Medial Breccia** Strongly barite+sulphide mineralised medial breccia, clasts 5-30mm, foliation low angles to core axis. Discrete barite+sulphide veins in strongly altered Feldspar phyrlic Dacite breccia. Lower contact sharp 10° to core axis, upper contact irregular. Vein contact at 92.8m 20° to core axis 80° to 065° (MN), vein contact at 95.2m 40° to core axis 75° to 300° (MN), vein fabric at 98.0m 20° to core axis 70° to 270° (MN), 98.3m 20° to core axis 65° to 250° (MN), vein contact 98.5m 45° to core axis 55° to 300° (MN), fabric at 100.55m 20° to core axis 70° to 290° (MN)

**100.6 113.6 Weakly Barite+Sulphide Mineralised Foliated Sericite+Pyrite Altered Feldspar phyrlic Dacite Medial Breccia** Weakly barite+sulphide mineralised foliated sericite+pyrite altered Feldspar phyrlic Dacite medial breccia. Yellowish attenuated clasts 5-80mm in foliation predominantly at low to moderate angles to core axis. Only occasional barite veins anastomosing in foliation.

**113.6 115.3 Strongly Barite+Sulphide Mineralised Feldspar phyrlic Dacite Medial Breccia** Barite+sulphide (sphalerite+galena) vein. Upper part of mineralized zone. Vein fabric 20°-35° to core axis, Fabric at 113.7m 15° to core axis 60° to 290° (MN)

**115.3 118.75 Strongly Barite+Sulphide Mineralised Feldspar phyrlic Dacite Medial Breccia** Internal more massive Feldspar phyrlic Dacite medial breccia with barite+sulphide (sphalerite+galena) veins at low angles to core axis at 20° to core axis also cross-cutting. Sphalerite+galena rich vein 115.9m to 116.05m at 20° to core axis.

**118.75 123.2 Strongly Mineralised Barite+Sulphide Feldspar phyrlic Dacite Breccia** Massive barite+sulphide vein (sphalerite and galena) from 118.75m to 119.0m, upper contact at 20° to core axis, and 122.5m to 123.2m at 20° to core axis. Fabric at 15°-30° to core axis. Pyrite rich band at 119.5m 30° to core axis 70° to 230° (MN), lower contact at 123.2m 20° to core axis 65° to 245° (MN)

**123.2 127.75 Moderately/Strongly Barite+Sulphide Mineralised Foliated Sericite+Pyrite Altered Feldspar phyrlic Dacite Medial Breccia** Moderately/strongly barite+sulphide mineralised foliated sericite+pyrite altered Feldspar phyrlic Dacite medial breccia with clasts 5-50mm. Barite+sulphide veins anastomose in the cleavage. Some zones up to 25° barite e.g. 126.3m to 127.25m. Lower contact at 127/25m 25° to core axis 55° to 250° (MN)

**127.75 136.6 Weakly Barite+Sulphide Mineralised Foliated Sericite+Pyrite Altered Feldspar phyrlic Dacite Medial Breccia** Weakly barite+sulphide mineralised foliated sericite+pyrite altered Feldspar phyrlic Dacite medial breccia. Yellowish attenuated clasts 5-80mm in foliation predominantly at low to moderate angles to core axis. Only occasional barite veins anastomosing in foliation.

**136.6 144.7 Massive Barite+Sulphide Vein** Massive barite+sulphide vein with honey brown sphalerite and galena with strong fabric ~20°-25° to core axis in upper part becoming ~10° to core axis below 139.0m. Open-spaced bladed textures. Very pyritic 142.8m to 144.0m at 0°-10° to core axis. Sharp upper contact 25° to core axis, lower contact less distinct ~10° to core axis. Vein fabric at 137.1m 30° to core axis 70° to 250° (MN), 137.4m 30° to core axis 70° to 280° (MN), 139.8m 10° to core axis 80° to 330° (MN)

**144.7 146.4 Strongly Barite+Sulphide Mineralised Feldspar phyrlic Dacite Breccia** Strongly barite+sulphide mineralised Feldspar phyrlic Dacite breccia zone – part of preceding zone but now

mineralization either pervasive alteration or as open-spaced veining at 10° to core axis with barite blades sub-perpendicular to wallrock.

**146.4 153.4 Moderately Pyrite Mineralised Foliated Sericite+Pyrite Altered Feldspar phyrlic Dacite Medial Breccia** Moderately pyrite mineralised foliated sericite+pyrite altered Feldspar phyrlic Dacite medial breccia. Some zones almost semi-massive pyrite. Occasional barite veins anastomosing in foliation at low angles to core axis.

**153.4 153.85 Feldspar phyrlic Dacite Proximal Breccia** Feldspar phyrlic Dacite proximal breccia with clasts to 250mm, minor barite mineralization.

**153.85 154.35 Strong Barite+Sulphide Mineralisation** Strong barite+sulphide mineralization with sphalerite and galena in vein at 10° to core axis.

**154.35 159.9 Moderate/Strongly Mineralised Feldspar phyrlic Dacite Proximal Breccia**  
Moderate/strongly mineralised Feldspar phyrlic Dacite proximal breccia with barite+pyrite veining anastomosing at low angles to core axis.

**159.9 162.75 Foliated Sericite+Pyrite Altered Feldspar phyrlic Dacite Medial Breccia** Foliated sericite+pyrite altered Feldspar phyrlic Dacite medial breccia with yellowish attenuated wispy clasts alongate in foliation with pyrite alteration of matrix.

**162.75 183.0 Weak/Moderately Barite+Pyrite Mineralised Foliated Sericite+Pyrite Altered Feldspar phyrlic Dacite Medial Breccia** Weak/moderately barite+pyrite mineralised foliated sericite+pyrite altered Feldspar phyrlic Dacite medial breccia with yellowish attenuated wispy clasts alongate in foliation with pyrite alteration of matrix.

**183.0 195.7 Weak/Moderately Pyrite Altered Feldspar phyrlic Dacite Medial Breccia**  
Weak/moderately pyrite altered Feldspar phyrlic Dacite medial breccia with only very minor barite.

**195.7`207.2 Weak/Moderately Pyrite>Barite Mineralised Feldspar phyrlic Dacite Proximal/Medial Breccia** Weak/moderately pyrite altered Feldspar phyrlic Dacite proximal/medial breccia throughout with pervasive barite flooding increasing downhole.

**207.2 211.15 Feldspar phyrlic Dacite** Leached, bleached Feldspar phyrlic Dacite breccia, due to fault downhole. Thin chloritic surfaces 1°-15° to core axis.

**211.15 212.4 Fault** Puggy material 211.15m to 211.4m and 212.3m to 212.4m, else rubbly material with chloritic surfaces at low angles to cre axis.

**212.4 228.2 Feldspar phyrlic andesite** Green and pale green chlorite and albite altered (respectively) Feldspar phyrlic andesite. Pseudoclastic probably after coherent Feldspar phyrlic andesite lava but not certain. Broken core with chloritic surfaces at low angles to core axis. No obvious sulphide or barite mineralization.

**228.2 End of hole**

**Moina Gold - Drill Log****BHID****MCD48**

Project	BHID	MGA94 mE	MGA94 mN	RL	Depth	Date	Geologist
Mt Charter	MCD48	389871.3	5391588	835.7	311.8m	15th Sept 2023	GMacDonald

**Surveys**

Depth	Azm	Dip
0	234.91	-82
15	239.6	-81.5
45	234.39	-82.23
75	232.39	-82.5
105	234.8	-82.19
135	237.71	-82.15
165	242.57	-81.85
195	244.44	-81.56
225	245.17	-81.59
255	244.03	-81.53
285	242.4	-81.42

Project: Mt Charter

Prospect: Mt Charter

Datum: GDA94

Drill Date: Start: 29th Aug 2023

Finish: 15th Sept 2023

Drill

Company: Spauldings Drillers

Driller: Ben and Tom Marshall

EOH Depth: 311.8m

Hole Size:

From	Size
0	HQ3

**Collar Survey**

By: G MacDonald

Method: Tape and compass surveyed from differential GPS points &lt;10 away

To be surveyed accurately

**Down Hole Survey**

Method: n/a

Instrument: n/a

**Assay**

Analyses By:

Despatch #:

## MCD48

**0.0 11.15 Oxidised Weakly Pyrite Mineralised Feldspar phyric Dacite Lava or Proximal Breccia** Oxidised weakly pyrite mineralised Feldspar phyric Dacite lava or proximal breccia with fine pyrite filled fractures but no obvious barite, only occasional cross-cutting quartz tension veinlets at high angles to core axis.

**11.15 17.8 Weak/Moderately Pyrite+Barite Mineralised Feldspar phyric Dacite Lava**  
Weak/moderately pyrite+barite mineralised Feldspar phyric Dacite lava, some oxidized zones else relatively fresh, pyrite in fracture fill veinlets <5mm thick, barite veining irregular margins running sub-parallel to core axis.

**17.8 19.8 Weak/Moderately Pyrite+Barite Mineralised Feldspar phyric Dacite Proximal Breccia** Weak/moderately pyrite+barite mineralised Feldspar phyric Dacite proximal breccia with similar pyrite veinlets and barite veining as 11.15m to 17.8m

**19.8 29.5 Strongly Barite+Sulphide Mineralised Feldspar phyric Dacite Proximal/Medial Breccia** Strongly barite+sulphide (sphalerite+galena, pyrite) mineralised Feldspar phyric Dacite proximal/medial breccia. 19.83m to 24.3m discrete patches and irregular veins of barite+sulphide at 0°-20° to core axis including 15-20mm thick massive pyrite vein running sub-parallel to core axis sub-parallel to core axis from 20.2m to 20.8m; 24.3m to 27.2m massive barite+sulphide mineralized zone with clastic texture so pervasive replacement type; 27.2m to 29.5m barite+sulphide veining 5°-20° to core axis

**29.5 43.05 Foliated Weak/Moderately Pyrite+Barite Mineralised Feldspar phyric Dacite Proximal Breccia** Moderately foliated 25° to core axis Feldspar phyric Dacite proximal breccia with occasional barite+sulphide veins i.e. 32.1m to 32.7m with sphalerite+galena at 25° to core axis, 34.5m to 35.4m sub-parallel to core axis, 37.5m to 37.8m and 42.1m to 42.9m at ~15° to core axis

**43.05 51.0 Weak/Moderately Pyrite and Barite Mineralised Feldspar phyric Dacite Pillow Lava**  
Feldspar phyric Dacite pillow lava with pyrite+/-barite rimming infilling of matrix. Pyrite on margins with barite in centre.

**51.0 58.35 Weak/Moderately Pyrite+Barite Mineralised Feldspar phyric Dacite Proximal Breccia** Weak/moderately pyrite+barite mineralised Feldspar phyric Dacite proximal breccia with mineralization as pervasive replacement and irregular veins at low angles to core axis.

**58.35 78.0 Moderately Barite+Pyrite Mineralised Feldspar phyric Dacite Medial Breccia**  
Moderately barite+pyrite mineralised Feldspar phyric Dacite medial breccia with clasts lenticular in the foliation 5°-10° to core axis. Mineralisation as pervasive replacement and irregular veins anastomosing in foliation 5°-10° to core axis.

**78.0 85.85 Weak/Moderately Pyrite+Barite Mineralised Feldspar phyric Dacite Medial Breccia**  
Weak/moderately pyrite+barite mineralised Feldspar phyric Dacite medial breccia with pervasive pyrite alteration and occasional barite patches.

**85.85 88.3 Strong Barite+Sulphide Mineralised Feldspar phyric Dacite Medial Breccia**  
Strong barite+sulphide (sphalerite+galena) mineralised Feldspar phyric Dacite medial breccia with banding in barite+sulphide up to 45° to core axis, upper contact 20° to core axis, lower contact 35° to core axis.

**88.3 91.6 Moderate Barite+Sulphide Mineralised Proximal/Medial Breccia** Moderately barite+sulphide mineralised proximal/medial breccia with mineralization a pervasive replacement and discrete barite rich patches.

**91.6 100.7 Weak/Moderately Pyrite Mineralised Foliated Feldspar phyrlic Dacite Medial Breccia** Weak/moderately pyrite mineralised foliated Feldspar phyrlic Dacite medial breccia with yellowish clasts elongate in the foliation at 10° to core axis with pyrite in thin seams in the foliation

**100.7 122.85 Moderate/Strong Barite+Pyrite Mineralised Proximal Breccia** Moderate/strong barite+pyrite mineralised proximal breccia with pyrite infilling matrix and barite in more discrete irregularly cross-cutting veins/patches

**122.85 126.8 Moderate/Strong Barite+Pyrite Mineralised Feldspar phyrlic Dacite Medial Breccia** Moderate/strong barite+pyrite mineralised Feldspar phyrlic Dacite medial breccia with pervasive replacement of matrix.

**126.8 129.65 Massive Barite+Sulphide Mineralised Zone** Massive barite+sulphide (sphalerite+galena) vein with banding at 0°-30° to core axis, averaging 15° to core axis.

**129.65 142.1 Moderate/Strong Barite+Pyrite Mineralised Feldspar phyrlic Dacite Medial Breccia** Moderate/strong barite+pyrite mineralised Feldspar phyrlic Dacite medial breccia with pervasive replacement of matrix. Banding at 133.2m 20° to core axis, at 139.0m 5° to core axis.

**142.1 146.8 Weak/Moderately Barite+Pyrite Mineralised Feldspar phyrlic Dacite Pillow Lava** Weak/moderately barite+pyrite mineralised Feldspar phyrlic Dacite pillow lava? (possibly proximal breccia in upper part) with pyrite in irregular fractures and seams between pillows. Weak foliation 25° to core axis. Only occasional barite+sulphide veining.

**146.8 203.8 Weak/Moderately Pyrite>Barite Mineralised Feldspar phyrlic Dacite Pillow Lava** Feldspar phyrlic Dacite pillow lava with pyrite in fractures and seams at low angles to core axis, also orthogonal but not strapper contactural. Pyrite pervades into wallrock for some mm's, barite occurs in centre of pyritic veins i.e. is later.

**203.8 208.3 K-Feldspar? Veined Weak Pyrite>Barite Mineralised Feldspar phyrlic Dacite Pillow Lava** As for previous unit but more weakly mineralized now with pale pink (K Spar?) and milky white quartz tension veins up to 150mm thick cross-cutting at high angles to core axis.

**208.3 221.65 Strongly Barite+Sulphide Mineralised Feldspar phyrlic Dacite Proximal/Medial Breccia** Strongly barite+sulphide mineralised Feldspar phyrlic Dacite proximal/medial breccia with attenuated clasts (not the yellowish foliated type tho) with massive barite+sulphide veining in part, anastomosing veining elsewhere. 208.1m to 208.6m 15-25mm barite+pyrite vein ~15° to core axis; 208.6m to 209.8m semi-massive barite>>pyrite vein banded at 20°-0°-20° to core axis; 209.8m to 210.75m moderately mineralized zone; 210.75m to 212.8m semi-massive banded and breccia infill barite>pyrite at 30°-0°-25° to core axis; 212.8m to 216.4m moderate/strong barite>pyrite breccia infill and irregular veins at low angles to core axis; 216.4m to 221.65m strongly foliated with moderate/strong pyrite in foliation which varies from 25°-0°-25° to core axis with massive pyrite 219.2m to 220.0m.

**221.65 228.65 K-Feldspar? Quartz Veined Weakly Pyrite>Barite Mineralised Feldspar phyrlic Dacite Pillow Lava** As for 203.8m to 208.3m but pink K-Spar and lesser white quartz now also associated with pyrite, and veining mostly not tensional but more similar to anastomosing barite type in foliation at 0°-20° to core axis.

**228.65 275.0 Moderate Pyrite>Barite Mineralised Feldspar phyrlic Dacite Lava** Moderately pyrite>barite mineralized Feldspar phyrlic Dacite lava as for 146.8m to 203.8m. Pyrite occurs in fractures 0°-25° to core axis averaging 15° to core axis, with barite in centre. Strongly pyritic zones 240.9m to 241.25m at 15° to core axis, 249.7m to 250.5m at 15° to core axis, 253.8m to 255.0m at 10° to core axis and 261.7m to 263.9m at 10° to core axis.

**275.0 278.7 Distinct Weakly Pyrite Mineralised Feldspar phyrlic Dacite Distal Breccia – Arguably Polymictic** Distinctive breccia, poorly sorted, matrix supported/dominant (20%-50% clasts) with quite angular lenticular clasts 1-100mm in grey ashy/silty matrix, some clasts more coherent, some clasts wispy pumiceous? Clasts aligned ~25° to core axis which may be S0.

**278.7 282.0 Weakly Pyrite Mineralised Feldspar phyrlic Dacite Proximal Breccia** Weakly pyrite mineralised Feldspar phyrlic Dacite proximal breccia with flow banding of some clasts. Only minor pyrite in fractures

**282.0 283.85 Fault** Feldspar phyrlic Dacite proximal breccia with chloritic surfaces and puggy shears at ~20° to core axis. Main puggy zone at 238.5m at 20° to core axis. Illicified and weak/moderate pyrite altered as for rock below shear.

**283.85 301.9 Silicified and Weakly Pyrite Altered Feldspar phyrlic Dacite Proximal Breccia** Feldspar phyrlic Dacite proximal breccia with flow banding of almost in-situ clasts at 40°-45° to core axis, also 80° to core axis. Pervasive silicification with pyrite in fractures. Puggy sheared quartz vein 297.7m to 298.0m at 40° to core axis.

**301.9 303.2 Fault** Major fault, milled puggy fault rock with sharp lower contact at 25° to core axis.

**303.2 306.7 Weakly Pyrite+Barite Mineralised Feldspar phyrlic Dacite Proximal Breccia** Weakly pyrite+barite mineralised Feldspar phyrlic Dacite proximal breccia. Creamy coloured feldspar phyrlic rock which has similarities with albitised Feldspar phyrlic andesite but more likely Feldspar phyrlic Dacite based in finer matrix. Has weak/moderate pyrite in fractures also some minor barite with pyrite in anastomosing veining. Lower contact sharp but ranges from 35°-50° to core axis interpreted as stratigraphic contact.

**306.7 311.8 Unmineralised Feldspar phyrlic andesite** Feldspar phyrlic andesite, green (chloritic) and pale green (albite) pseudoclastic domainal altered Feldspar phyrlic andesite with no sulphide or barite ineralisation.

**311.8 End of hole**



## MCD49

**0 0.7 Oxidised Feldspar phyrlic Dacite with Barite+Pyrite Veining** Moderately oxidised Feldspar phyrlic Dacite after barite+pyrite with ferruginous boxwork. Fractures at 30dca. Rock same as below just oxidised.

**0.7 66.5 Strongly Barite+Pyrite Mineralised Feldspar phyrlic Dacite Medial/Proximal Breccia "high grade zone" type** Feldspar phyrlic Dacitebx with pervasive barite+pyrite veining with honey brown sph+gn in coarse clots and trails on margins of barite veins. Barite+pyrite veining infilling and pervasively replacing matrix. Barite+pyrite veins have irregular margins following clast margins. Banding of barite and sulphide in veins varies from 0°-40dca, commonly 5°-10dca. No obvious S0. Clast size coarsens downhole from 2-20mm to more proximal and blocky shapes. Lc to this zone arguable with similar mineralisation immediately downhole but now separated by increasing Feldspar phyrlic Dacite. More strongly pyritic zones 5.5m to 6.9m, 8.2m to 16.4m. Pervasive barite+pyrite alteration/mineralisation strong to 22.8m, moderate/strong predominantly pyrite>>barite 22.8m to 29.3m, strong barite 29.3m to 32.2m, moderate/strong pyrite>>barite alteration 32.2m to 36.8m, strong barite 36.8m to 40.0m, moderate/strong pyrite>>barite alteration 40.0m to 43.8m, strong barite 43.8m to 56.5m, moderate/strong pyrite>barite alteration 56.5m to 59.05m, strong barite 59.05m to 66.5m.

**66.5 71.0 Moderately Barite>Pyrite Mineralised Feldspar phyrlic Dacite Medial Breccia** Moderately barite and pyrite mineralized Feldspar phyrlic Dacite breccia with larger discrete clasts to 100mm. Predominantly finer barite>pyrite veinlets as well as more pervasive barite>pyrite replacement mineralization in banded zones 20°-30dca. Feldspar phyrlic Dacite moderately sericitized.

**71.0 72.0 Strong Barite+Pyrite minor Galena+Sphalerite Mineralisation in Feldspar phyrlic Dacite Proximal Breccia** Strong barite+pyrite mineralization with minor sphalerite+galena as more discrete zone in Feldspar phyrlic Dacite proximal breccia (clasts to 100mm). Banded at 30dca. Uc 20dca, lc irregular but low angles to core axis.

**72.0 74.55 Moderately Barite>Pyrite Mineralised Feldspar phyrlic Dacite Medial Breccia** Moderately barite and pyrite mineralized Feldspar phyrlic Dacite breccia with larger discrete clasts to 80mm. Banding in barite+pyrite veining at 40dca also as infill/replacement mineralization. 0.3m core loss probably in this zone so lower contact at 74.65m.

**74.55 74.6 Strongly Oxidized Barite+Pyrite Zone** Strongly oxidized barite+pyrite zone – not fault.

**74.6 77.2 Strongly Barite+Pyrite minor Sphalerite+Galena Mineralised Feldspar phyrlic Dacite Medial Breccia** Strongly barite+pyrite minor sphalerite+galena mineralised Feldspar phyrlic Dacite medial breccia. Clasts to 80mm. Uc in bc, lc irregular. Banding near us 0°-25dca.

**77.2 83.4 Weakly Mineralised Feldspar phyrlic Dacite Medial Breccia** More weakly mineralized Feldspar phyrlic Dacite medial breccia with discrete barite+quartz+sphalerite+galena tension veinlets commonly <5mm thick in an orthogonal set each at moderate angles to core axis. Feldspar phyrlic Dacite medial breccia with clasts generally 5-15mm up to 80mm. Murky pervasive pyrite alteration.

**83.4 85.1 Strongly Barite+Sphalerite+Galena+Pyrite Mineralised Feldspar phyrlic Dacite Medial Breccia** Single barite+sphalerite+galena+pyrite vein in Feldspar phyrlic Dacite medial breccia.

Serpentine vein running sub-parallel to core axis. Uc at 15°-25dca but with banding in vein showing opposite sense to core axis.

**85.1 129.6 Foliated Sericite+Pyrite Altered Feldspar phyrlic Dacite Medial Breccia with Some Discrete Barite+Sulphide Mineralised Zones** Foliated variably sericite+pyrite altered Feldspar phyrlic Dacite medial breccia consisting of wispy, lenticular, attenuated foliated Feldspar phyrlic Dacite clasts in a murky more weakly pyrite altered matrix. Clasts 5-30mm up to 80mm from 85.1m to 104.5m and 116.0m to 129.6m, with occasional larger blocky clasts to 250mm from 104.5m to 116.0m. Barite+sulphide veined zone as irregular patches in foliation from 100.4m to 103.7m, 108.6m to 109.0m (with galena and sphalerite) and 110.2m to 112.3m. Foliation 25°-30dca throughout.

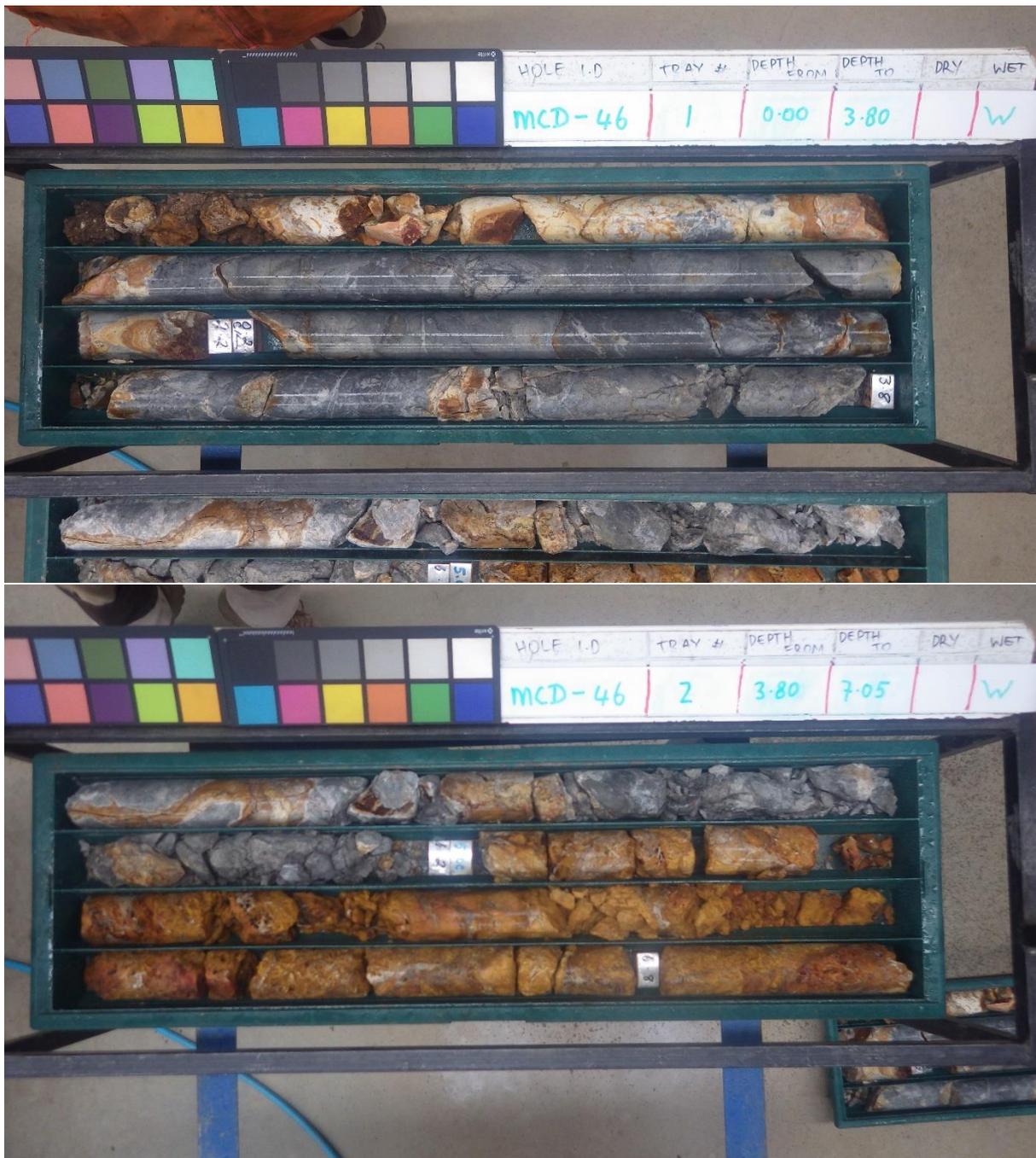
**129.6 134.3 Moderate Barite+Pyrite+minor Sphalerite+Galena Mineralised Feldspar phyrlic Dacite Proximal Breccia**Feldspar phyrlic Dacite proximal breccia with pyrite>barite infilling/cross-cutting of clasts (pyrite>barite rimming/pyritic fractures style) as for unit below but this zone contains significant zones of massive barite+sulphide overprinting.

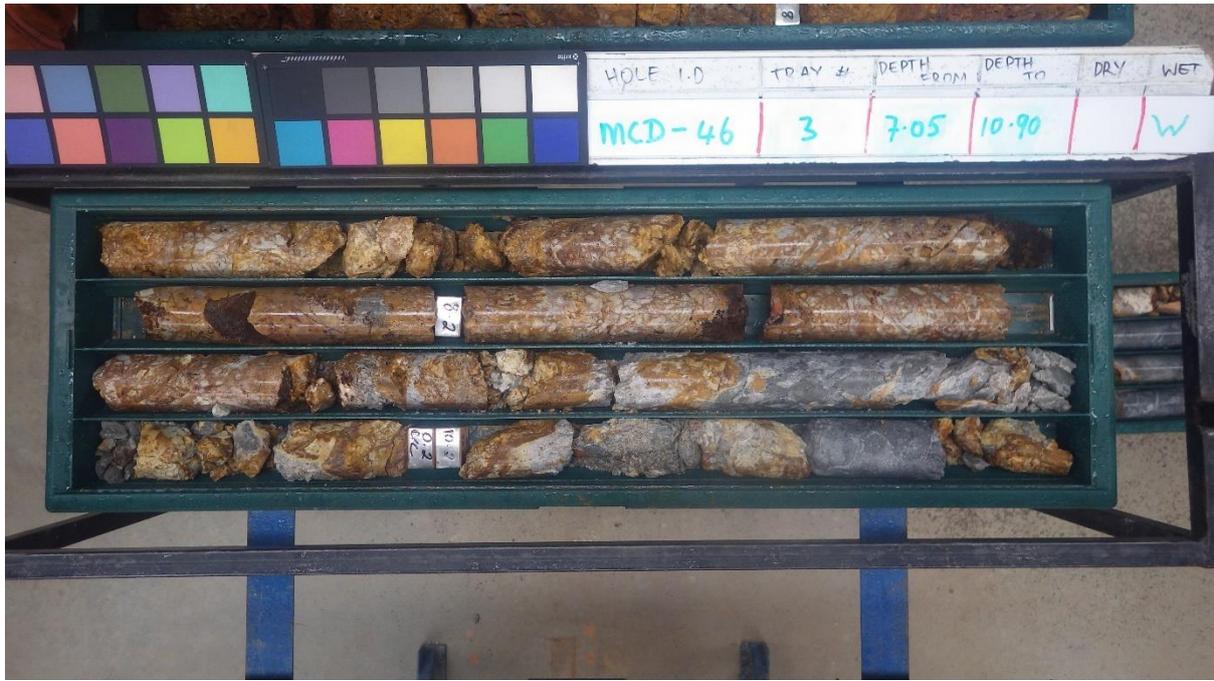
**134.3 149.6 Feldspar phyrlic Dacite Proximal Breccia with Pyrite>>Barite Matrix/Fracture Infill**  
Feldspar phyrlic Dacite proximal breccia with pyrite>>barite matrix/fracture infill style mineralization. Yellowish kernels to clasts with pervasive pyrite flooding of selvedges of clasts. This style can be pillow lava rimming or fracture infill and looks very similar, this is the latter but probably due to host competency/type.

**149.6m End of hole**

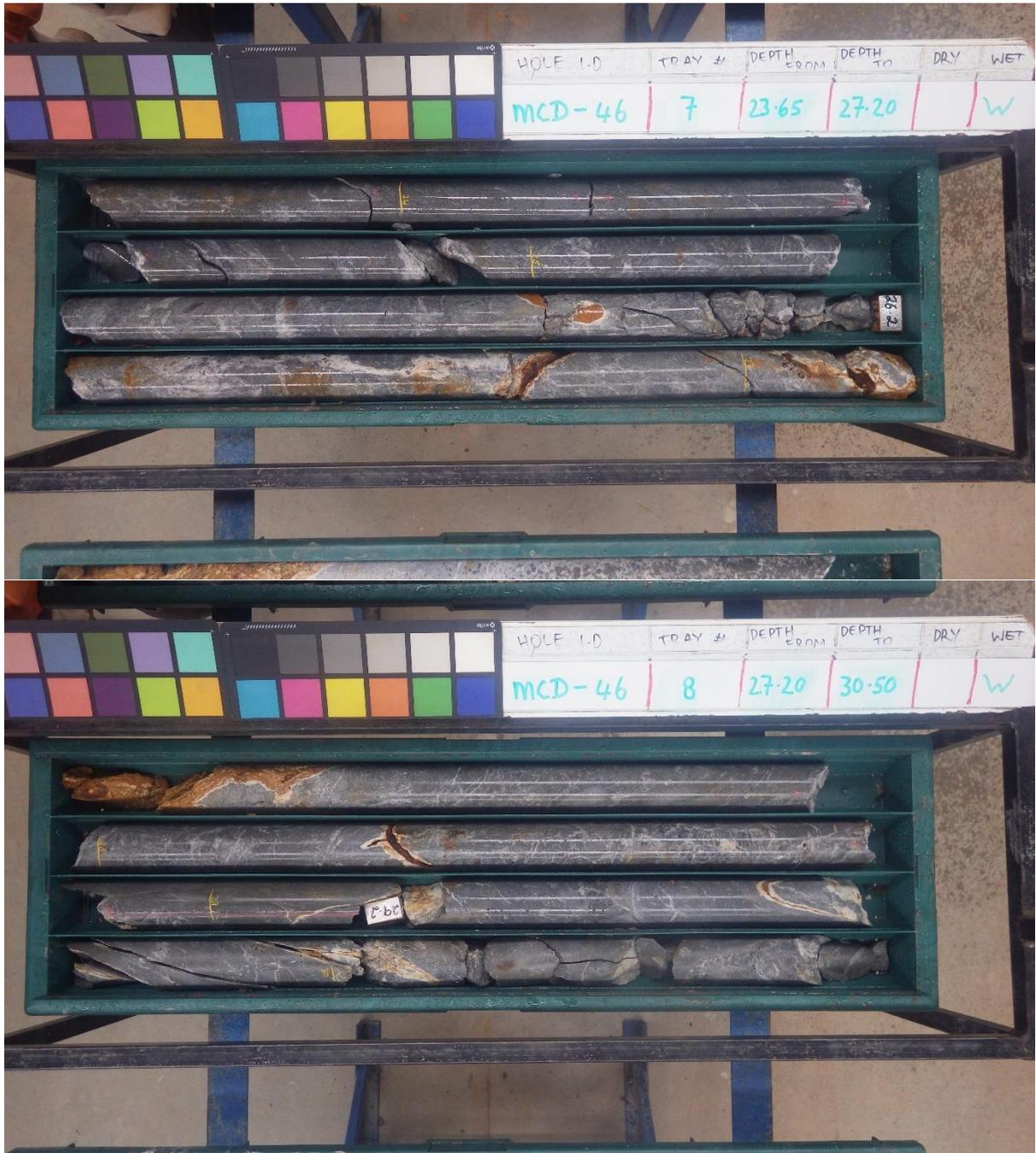
**Appendix B – Core Photos MCD46, MCD47, MCD48, MCD49**

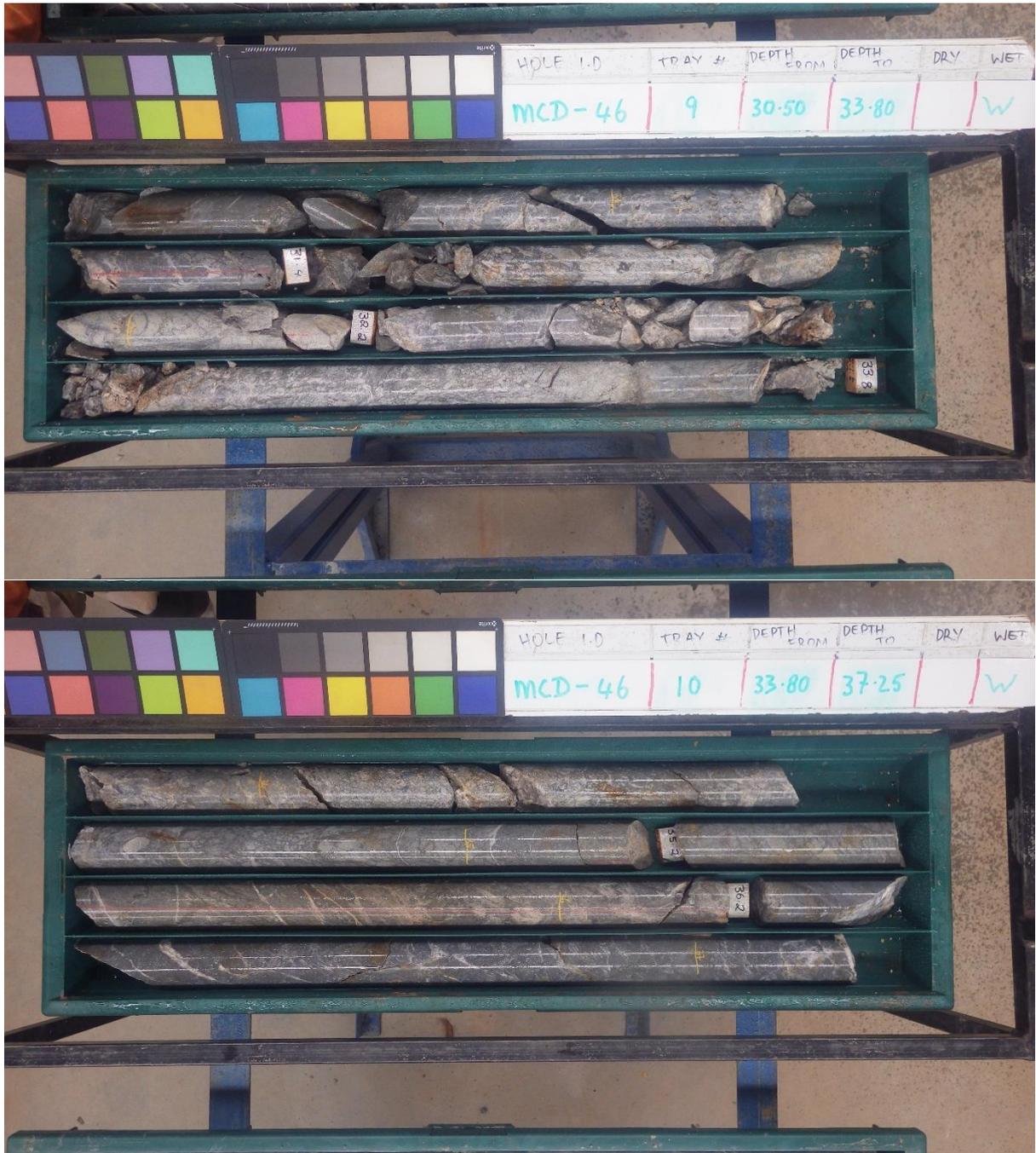
MCD46

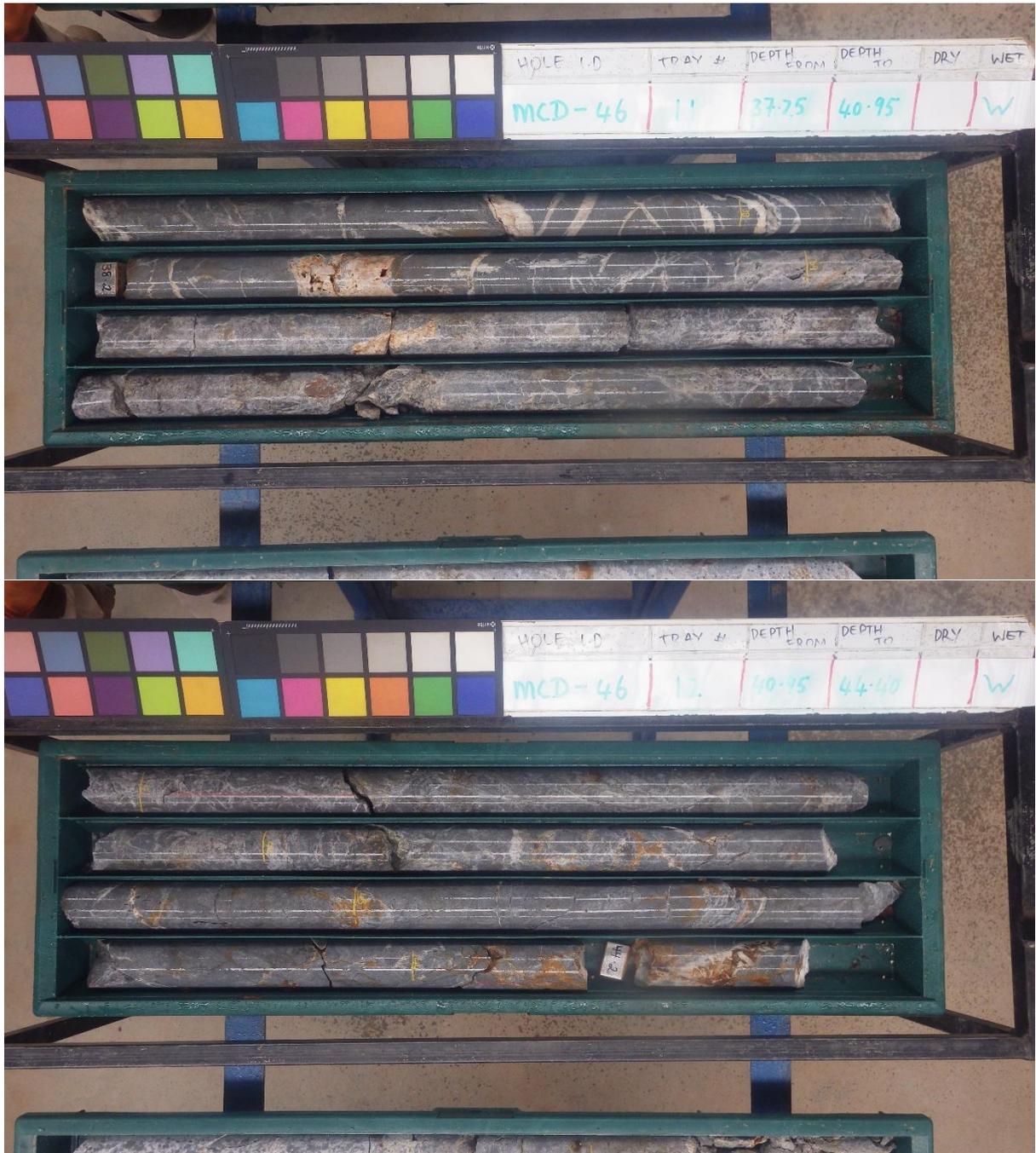


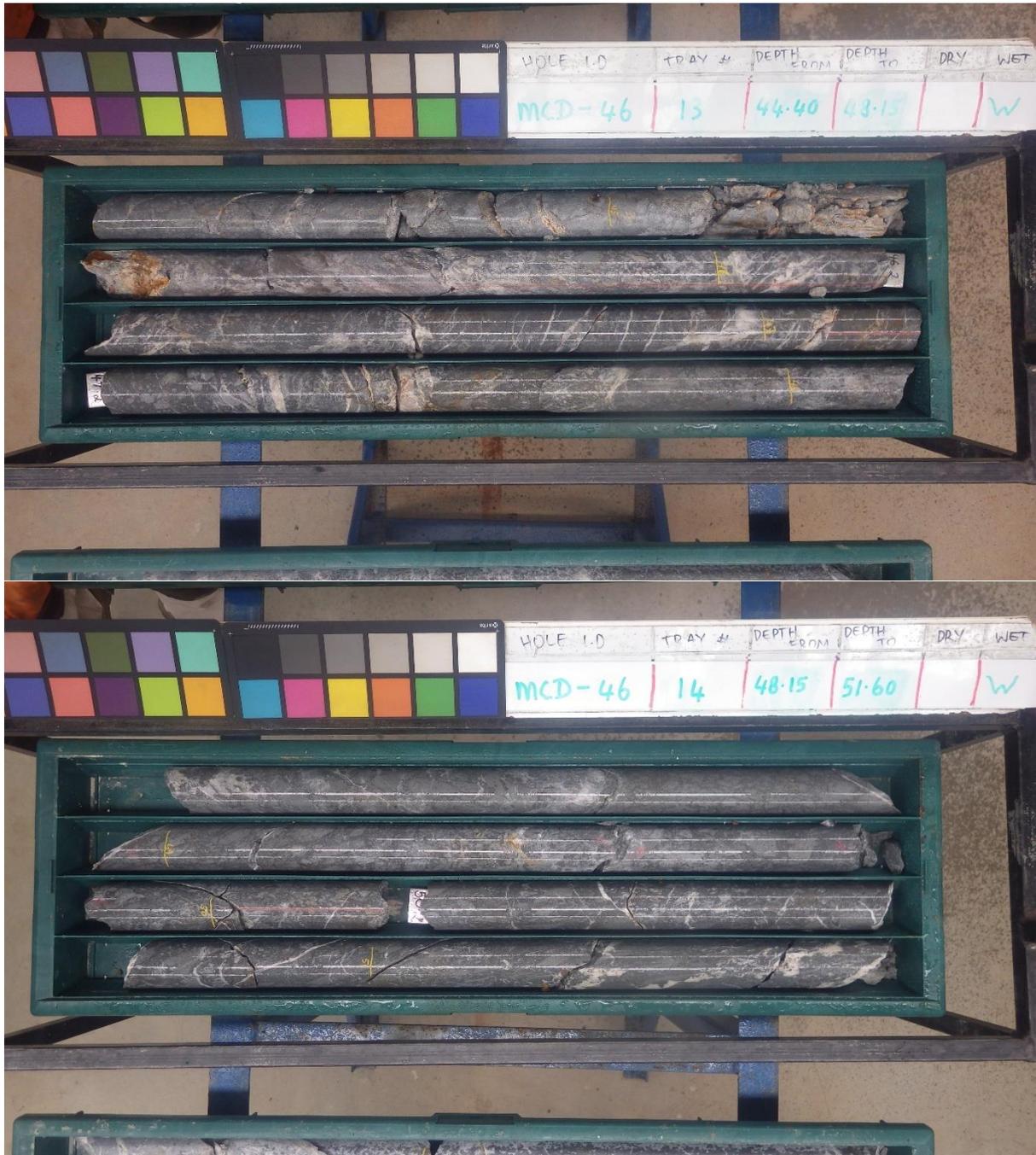


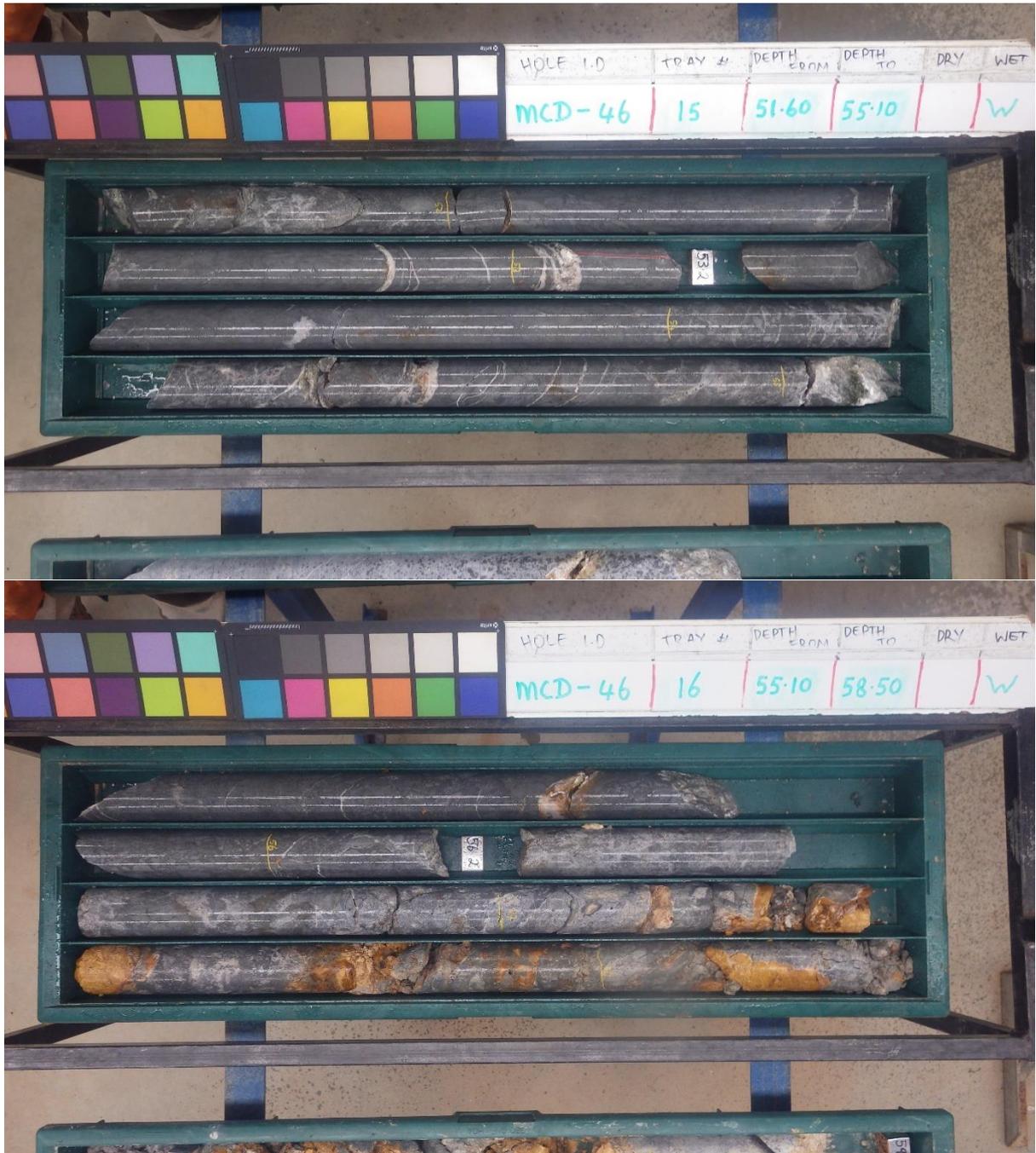


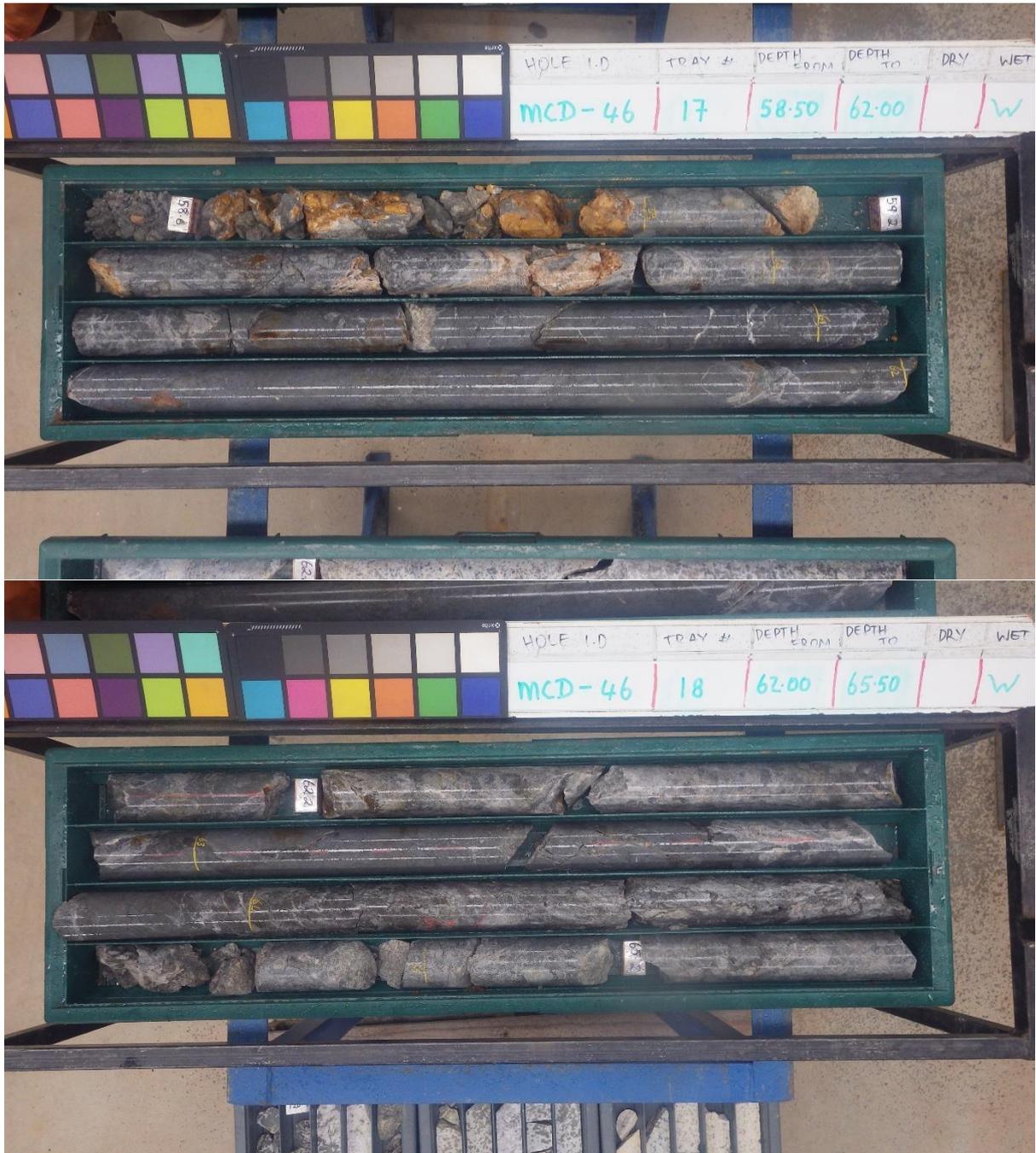


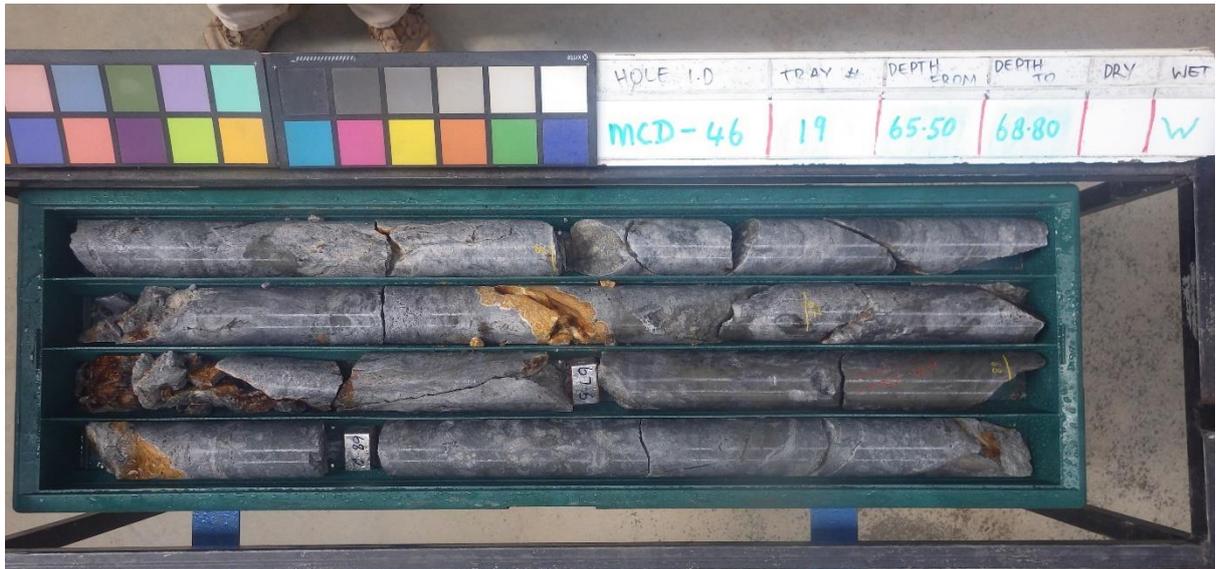








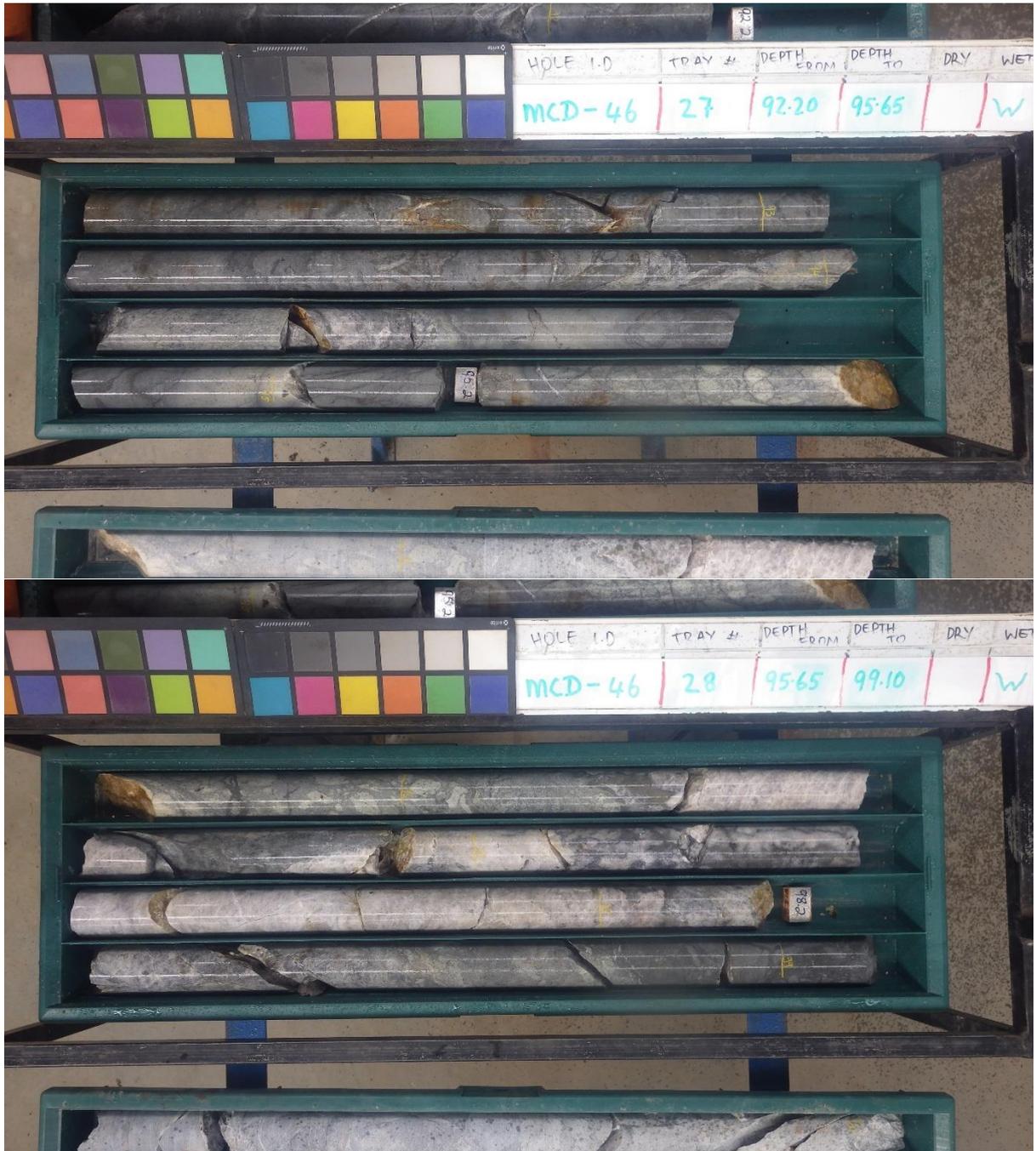




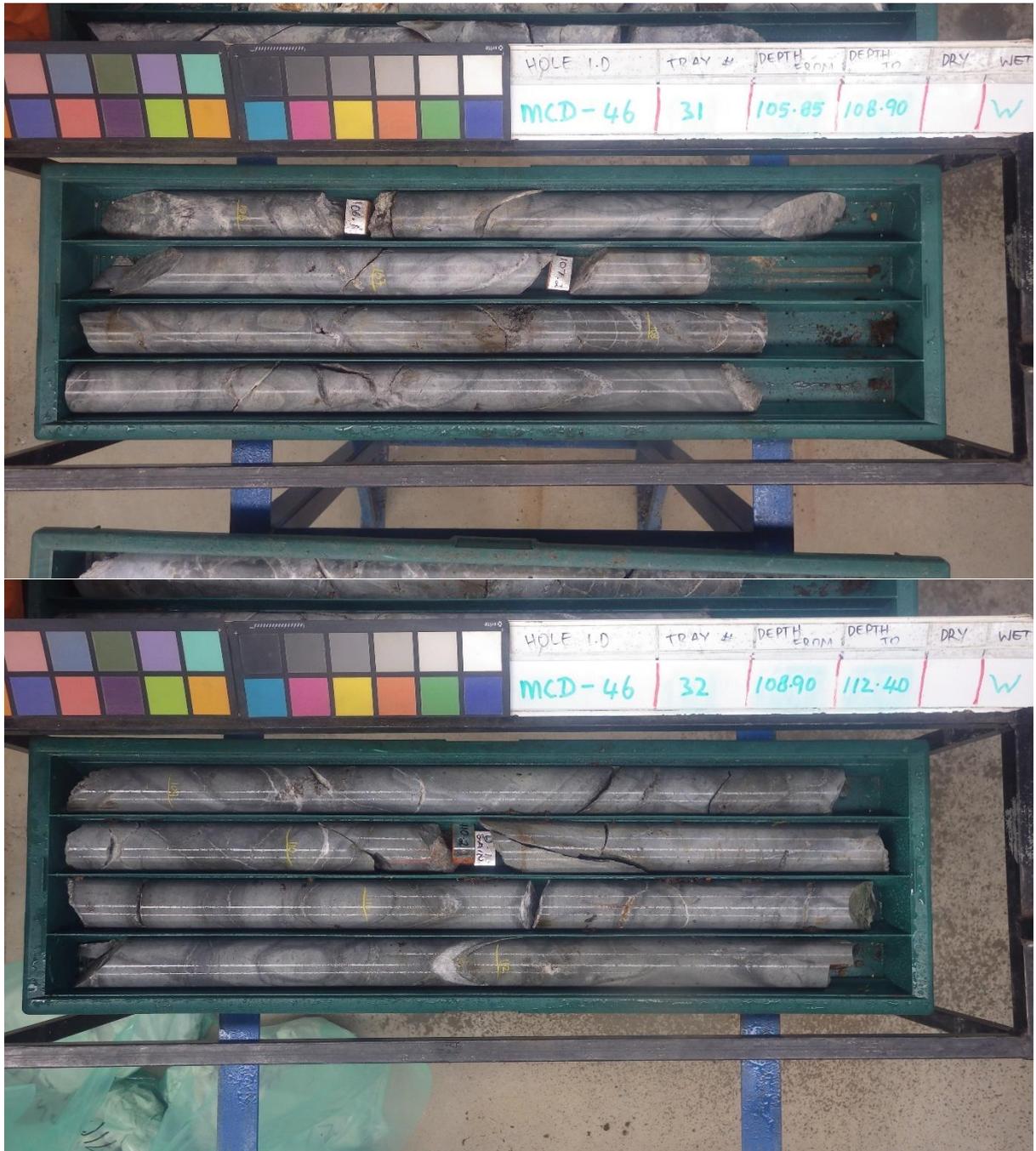














MCD47

















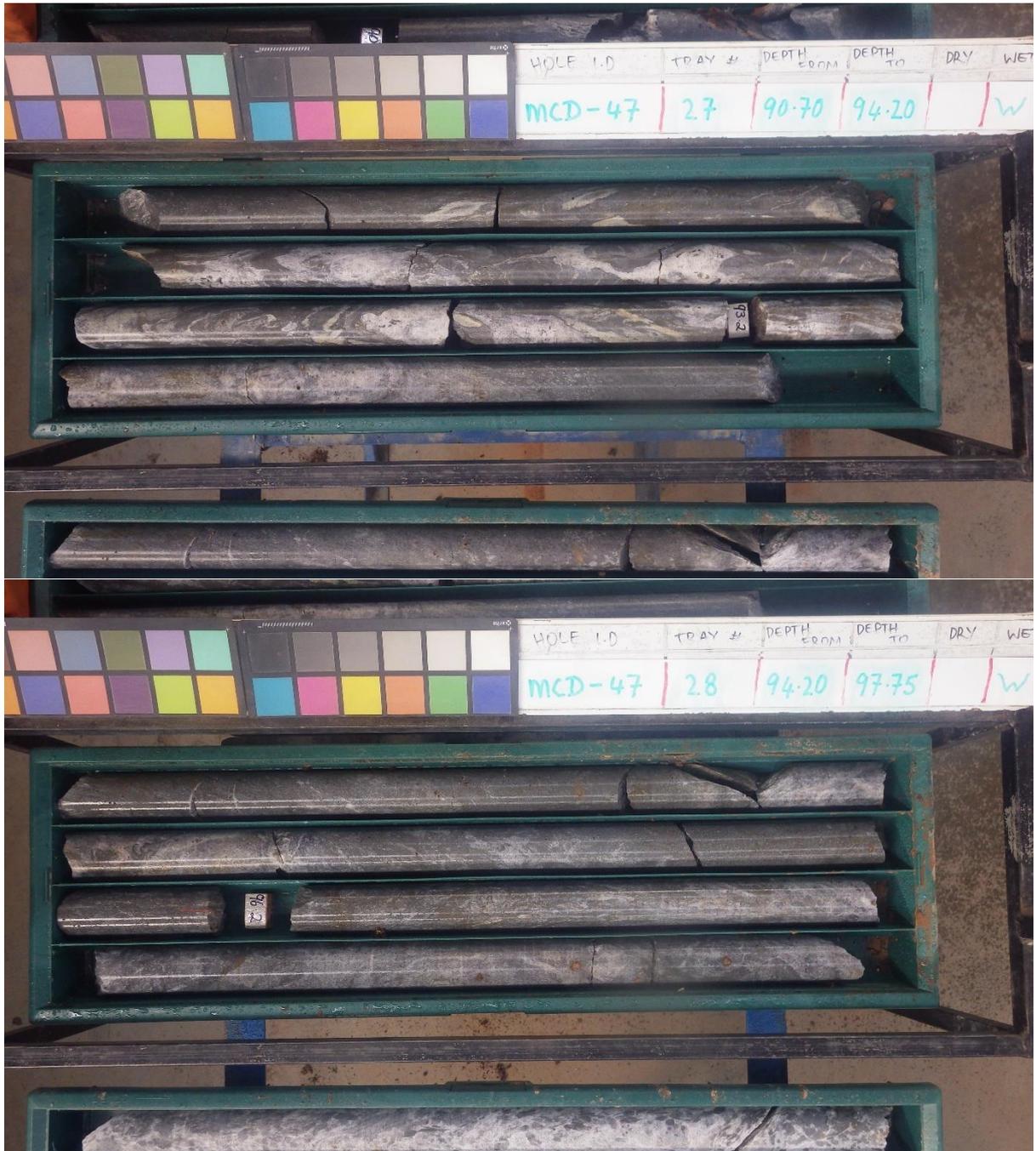














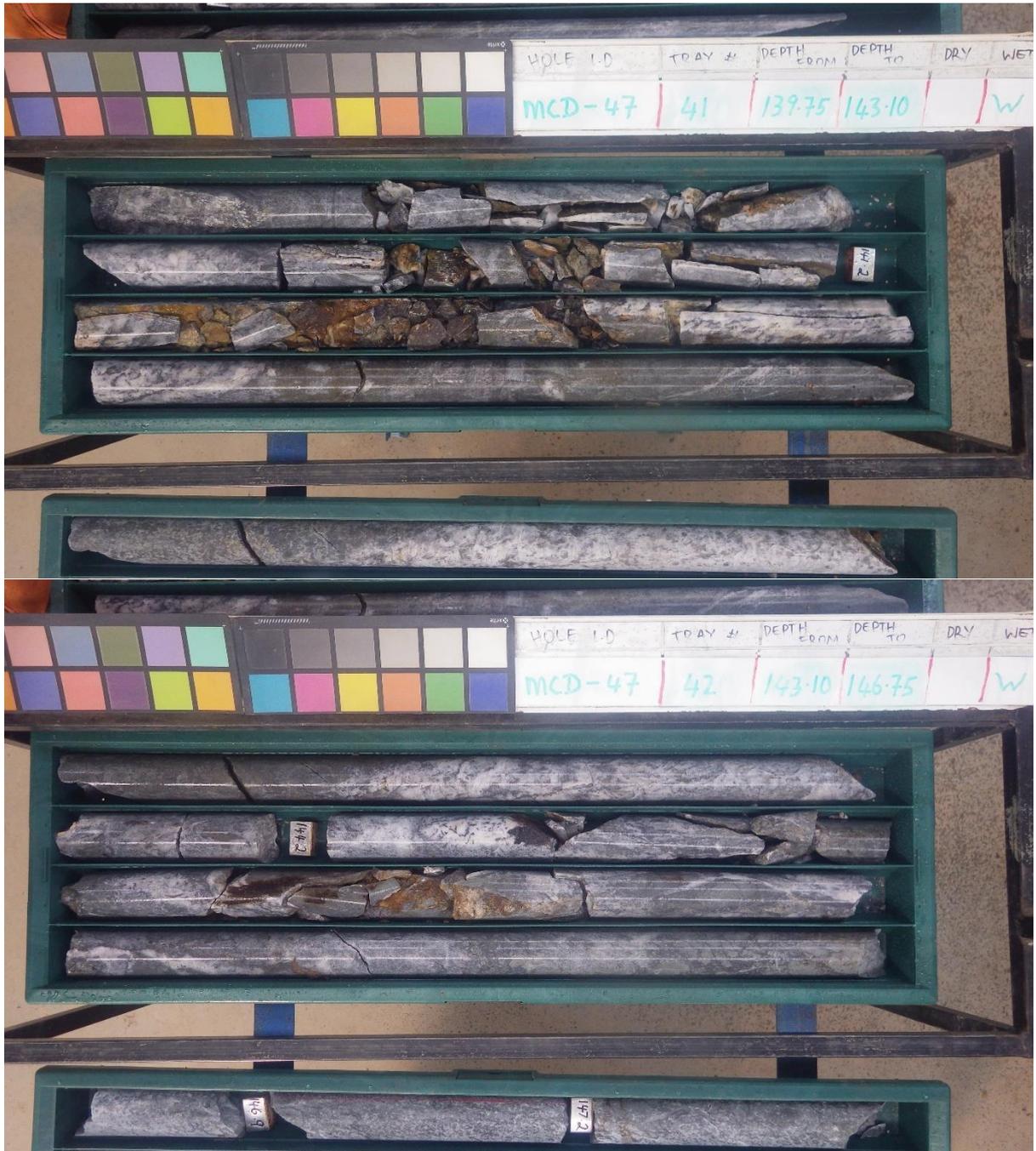


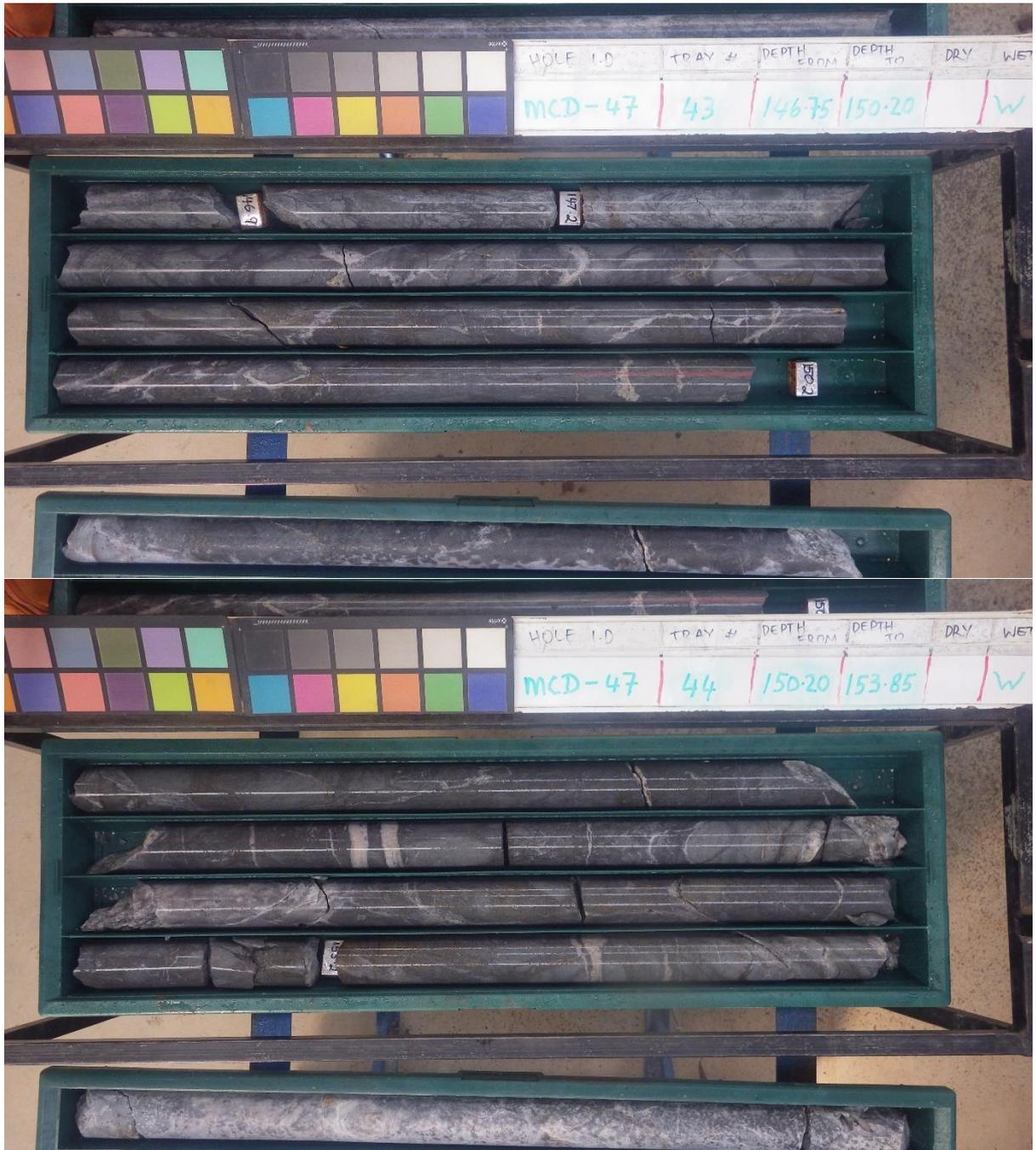










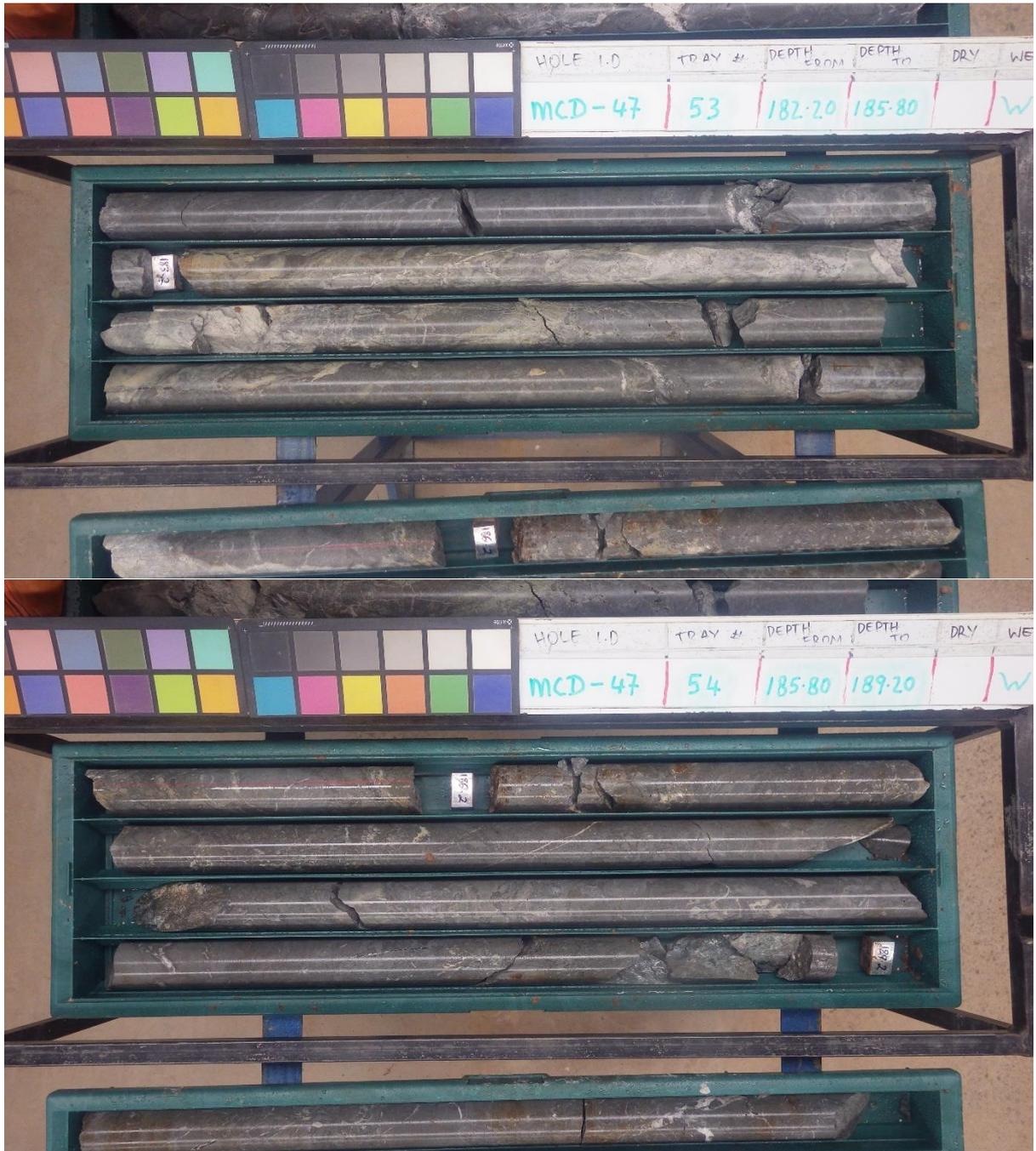




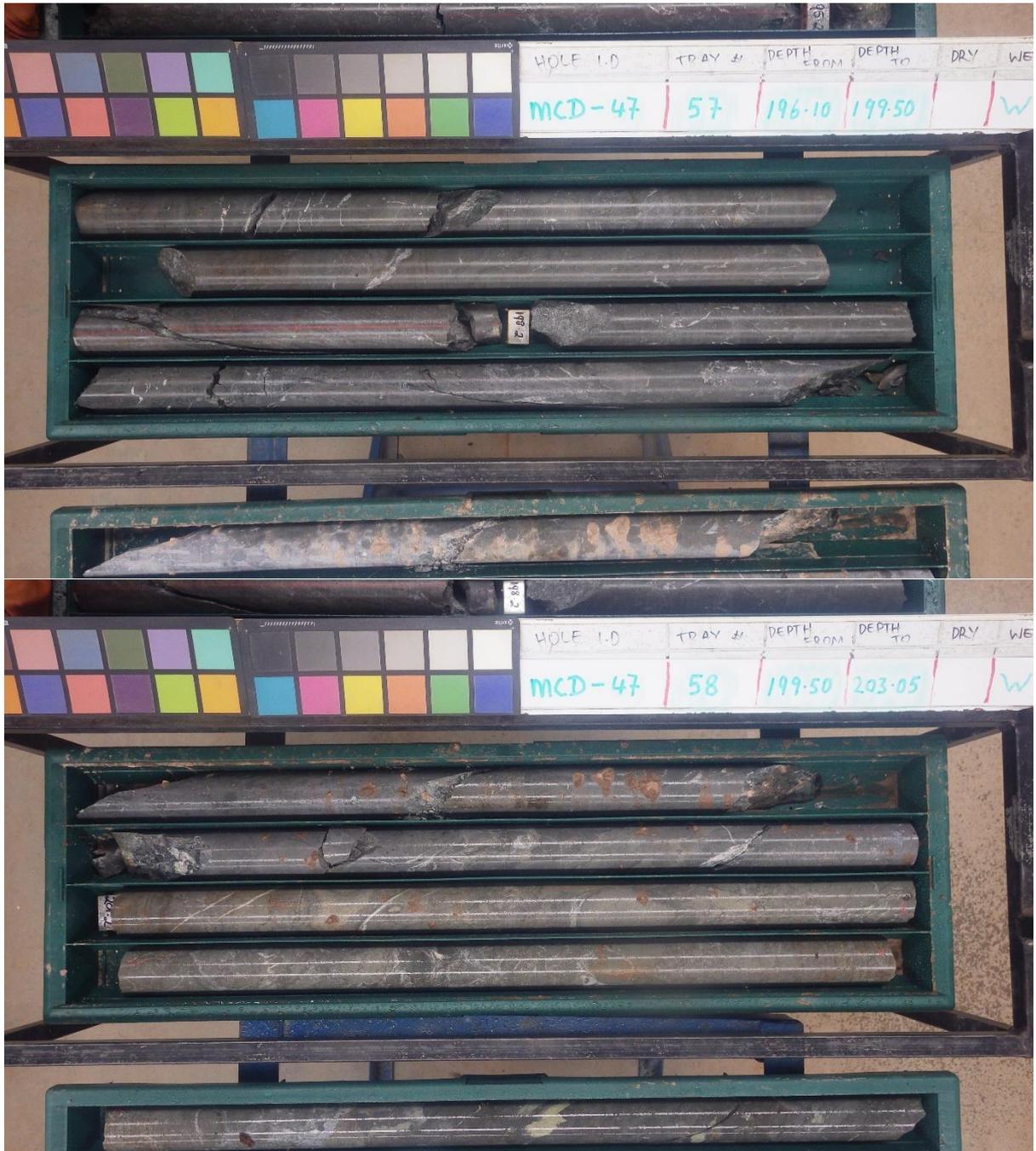


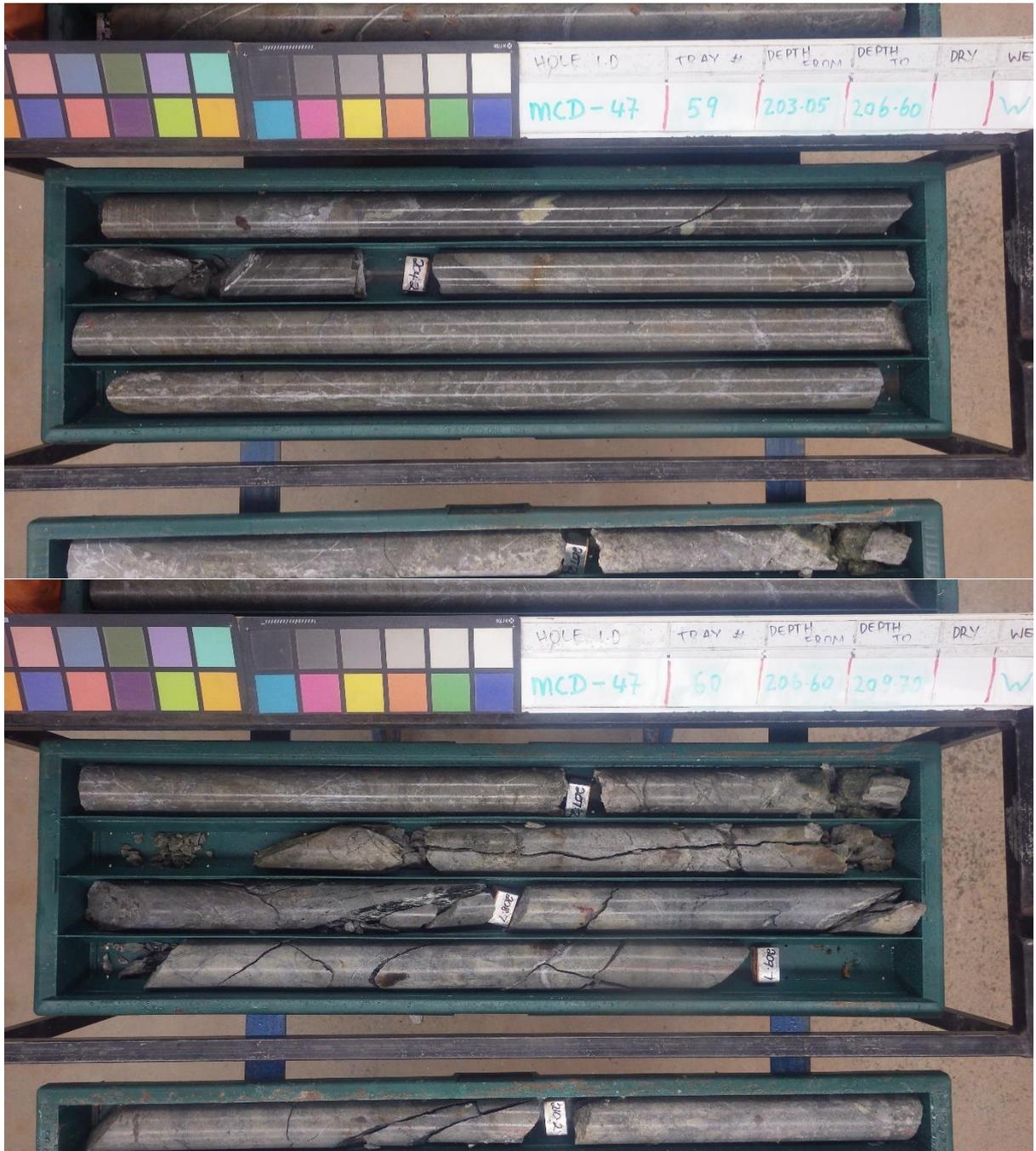


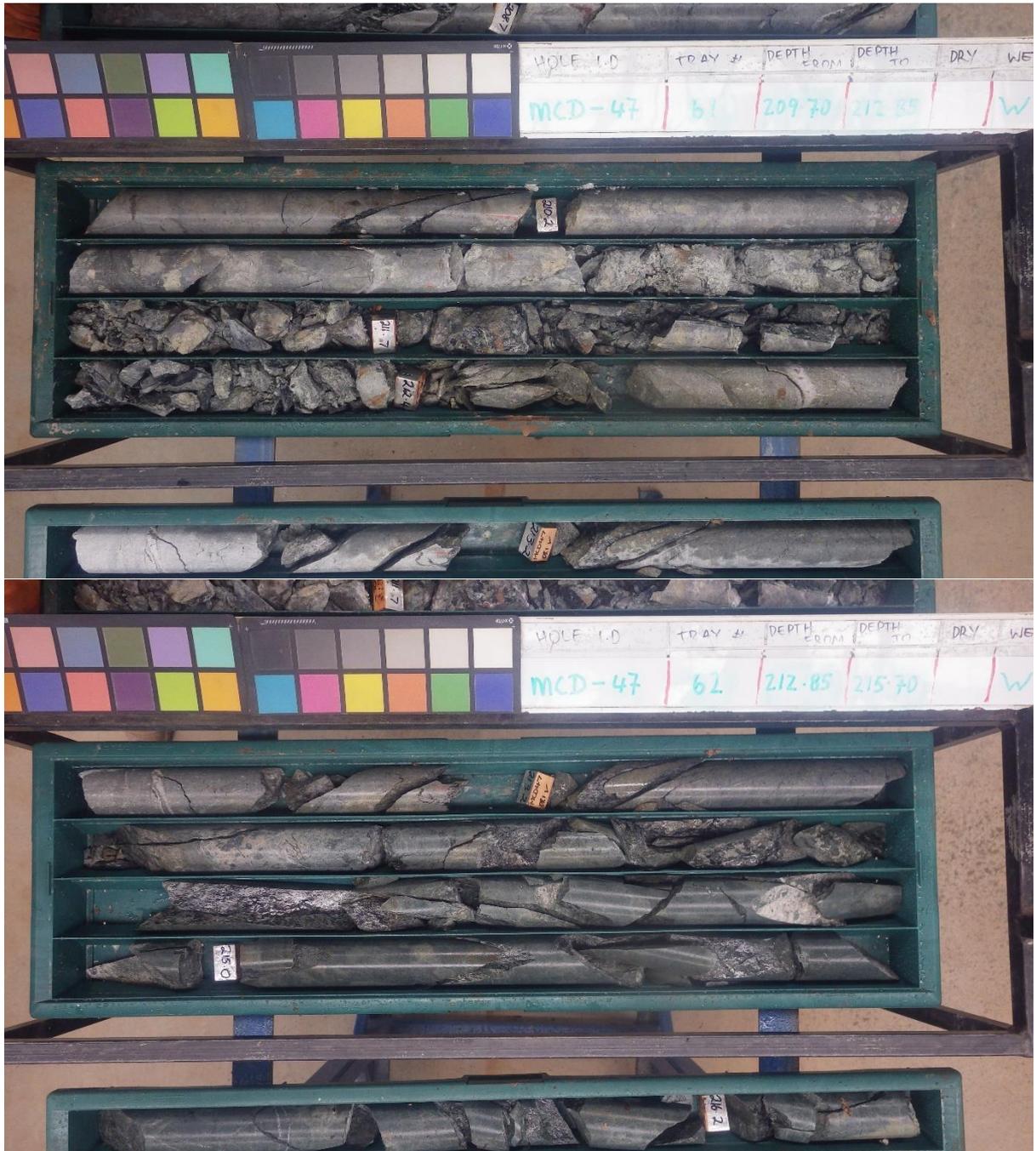


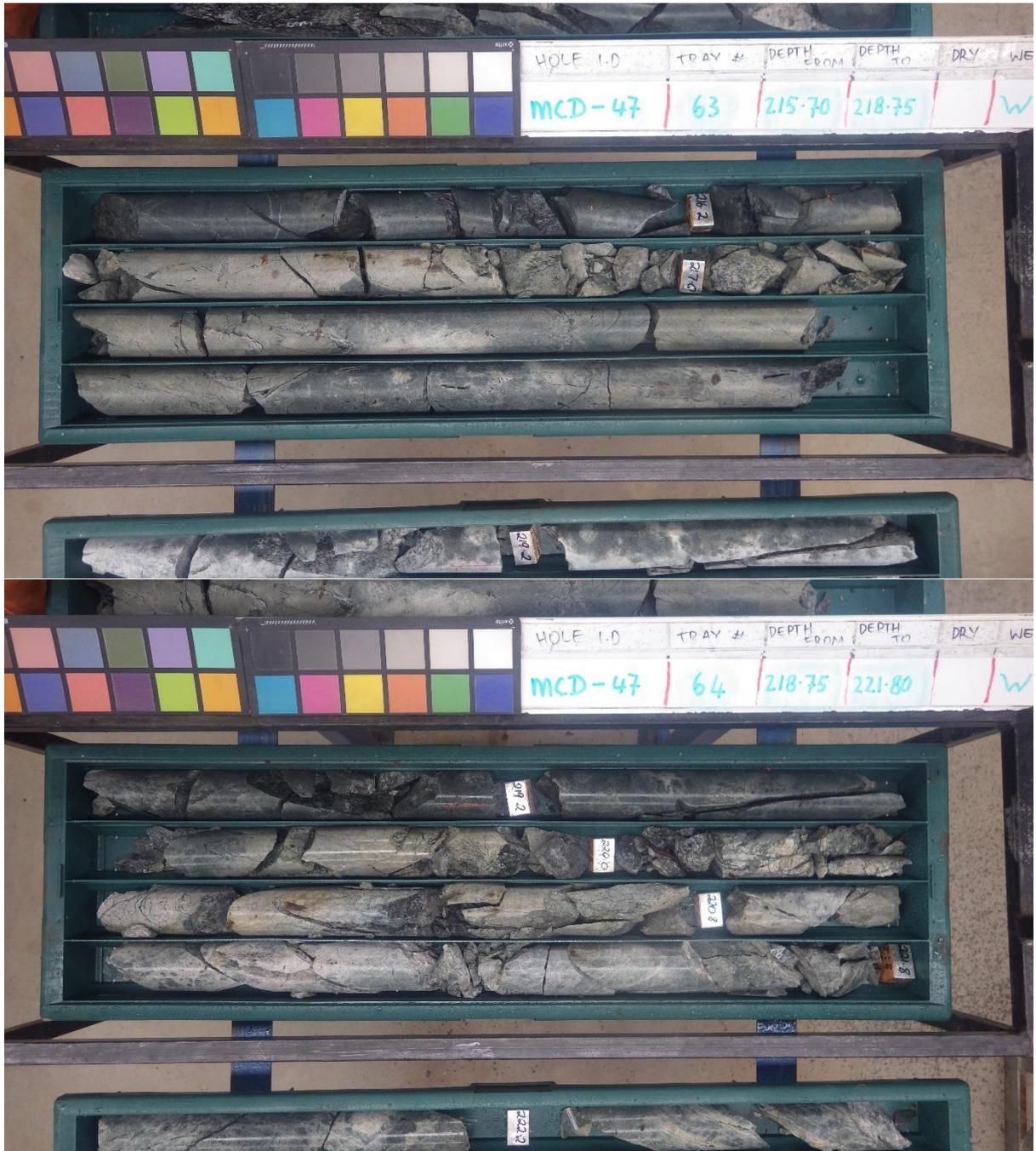


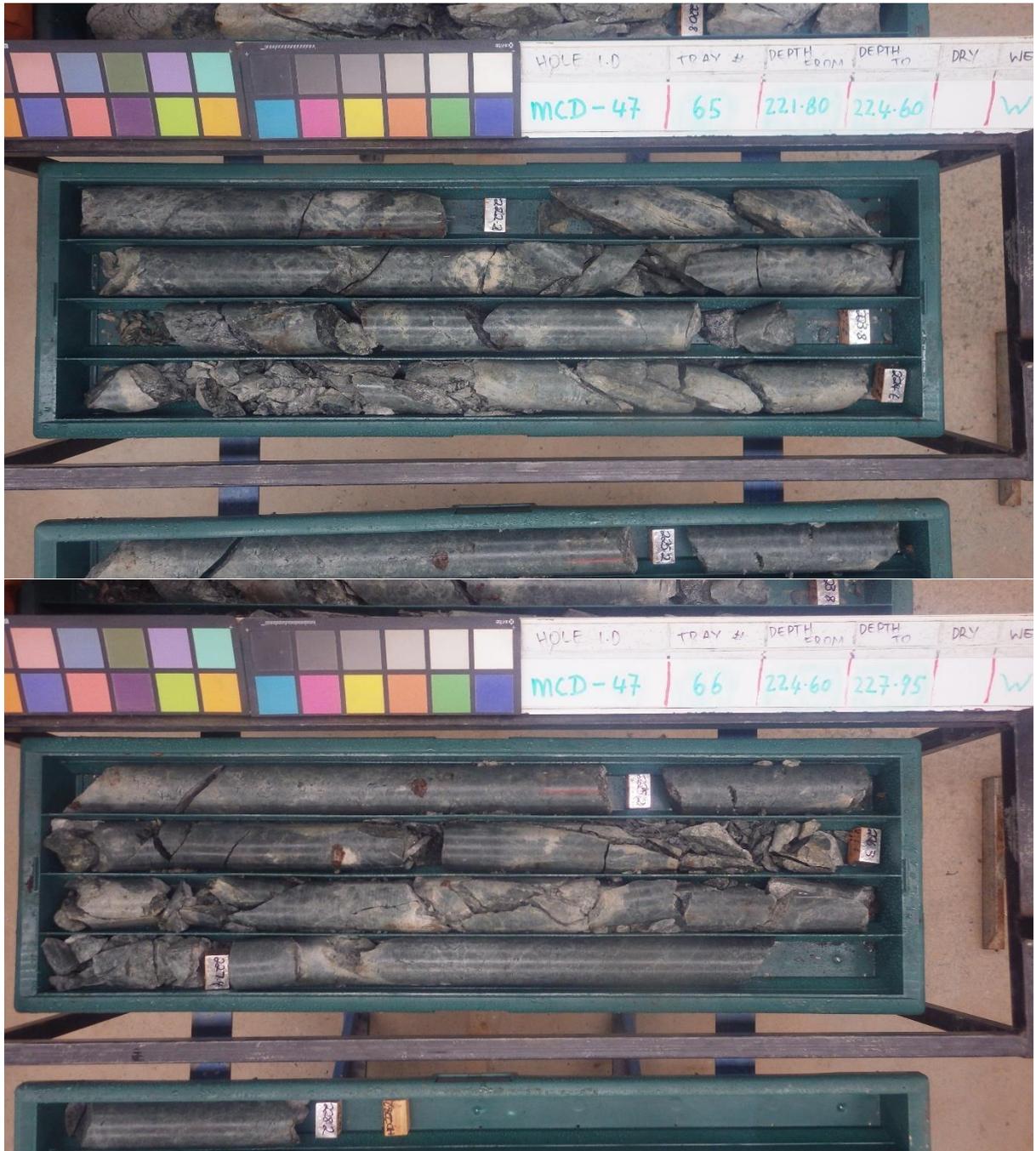












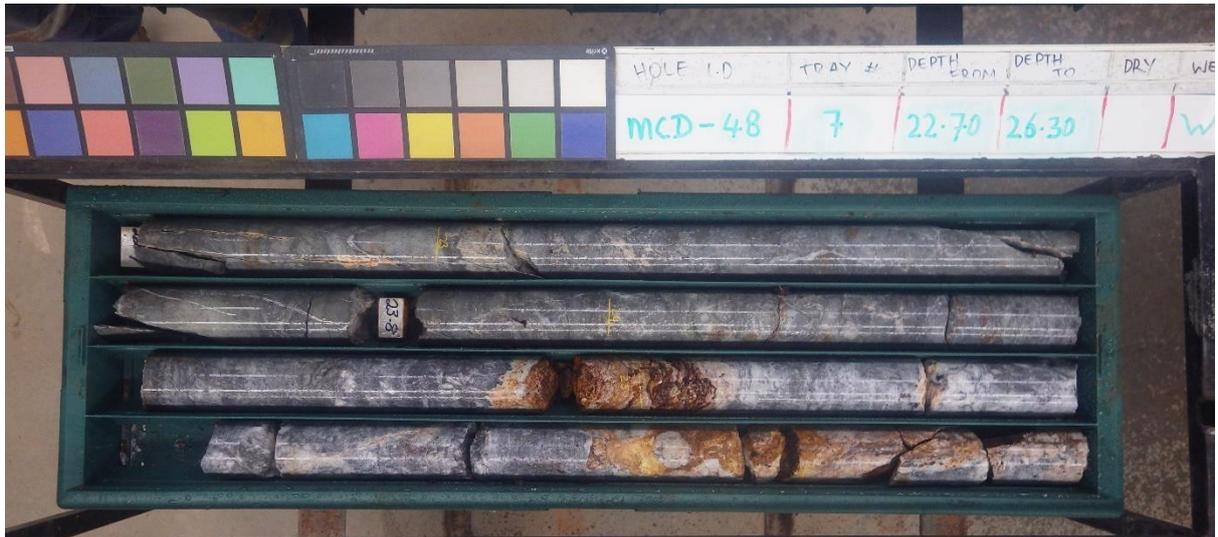


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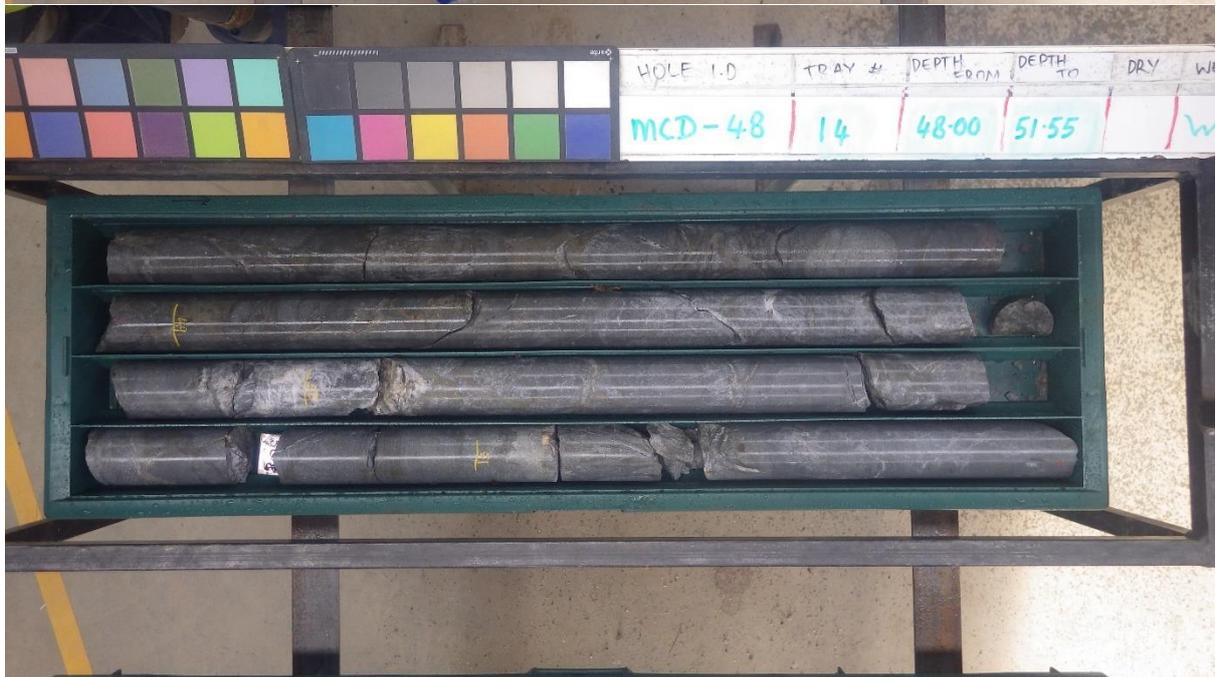








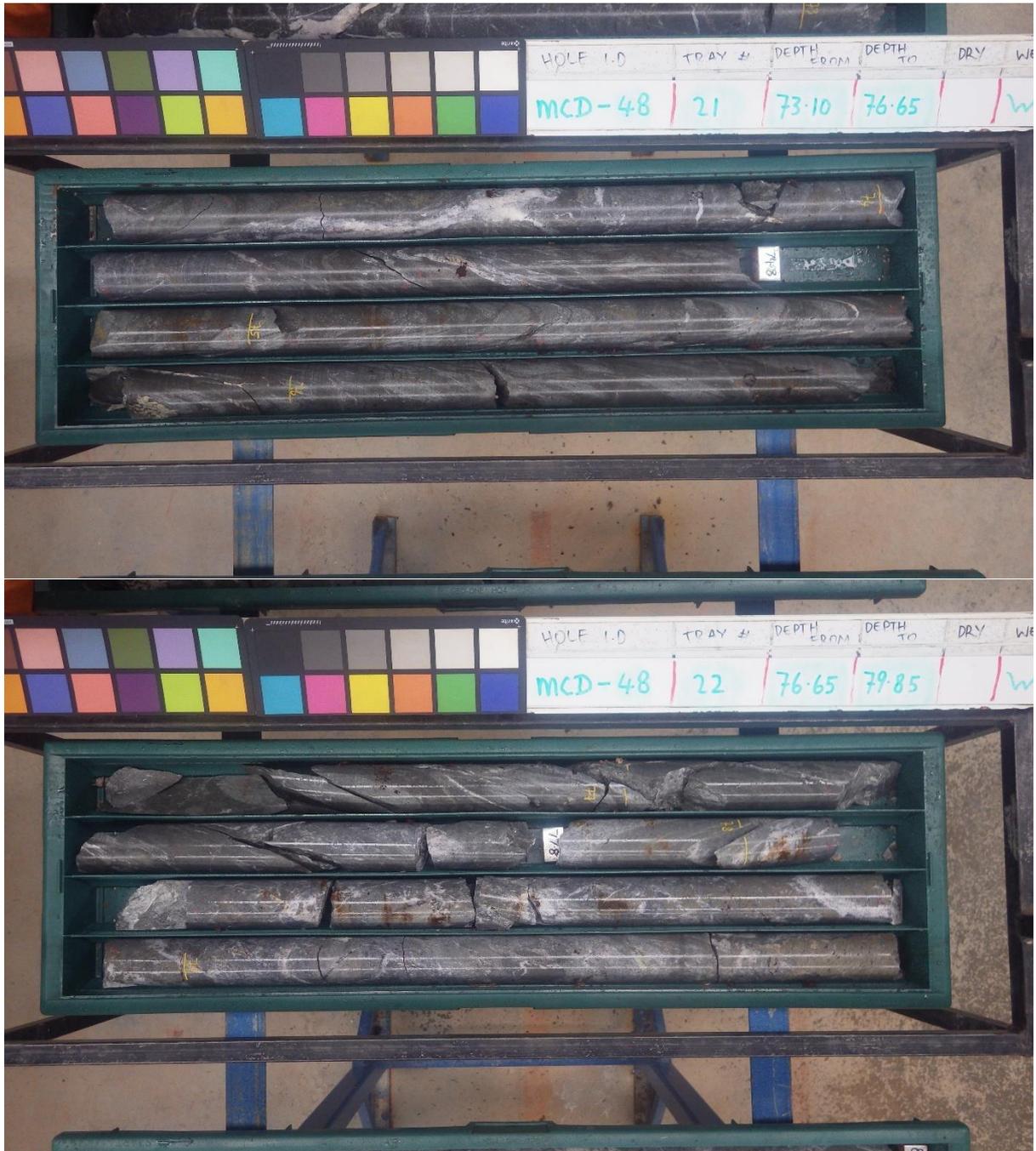






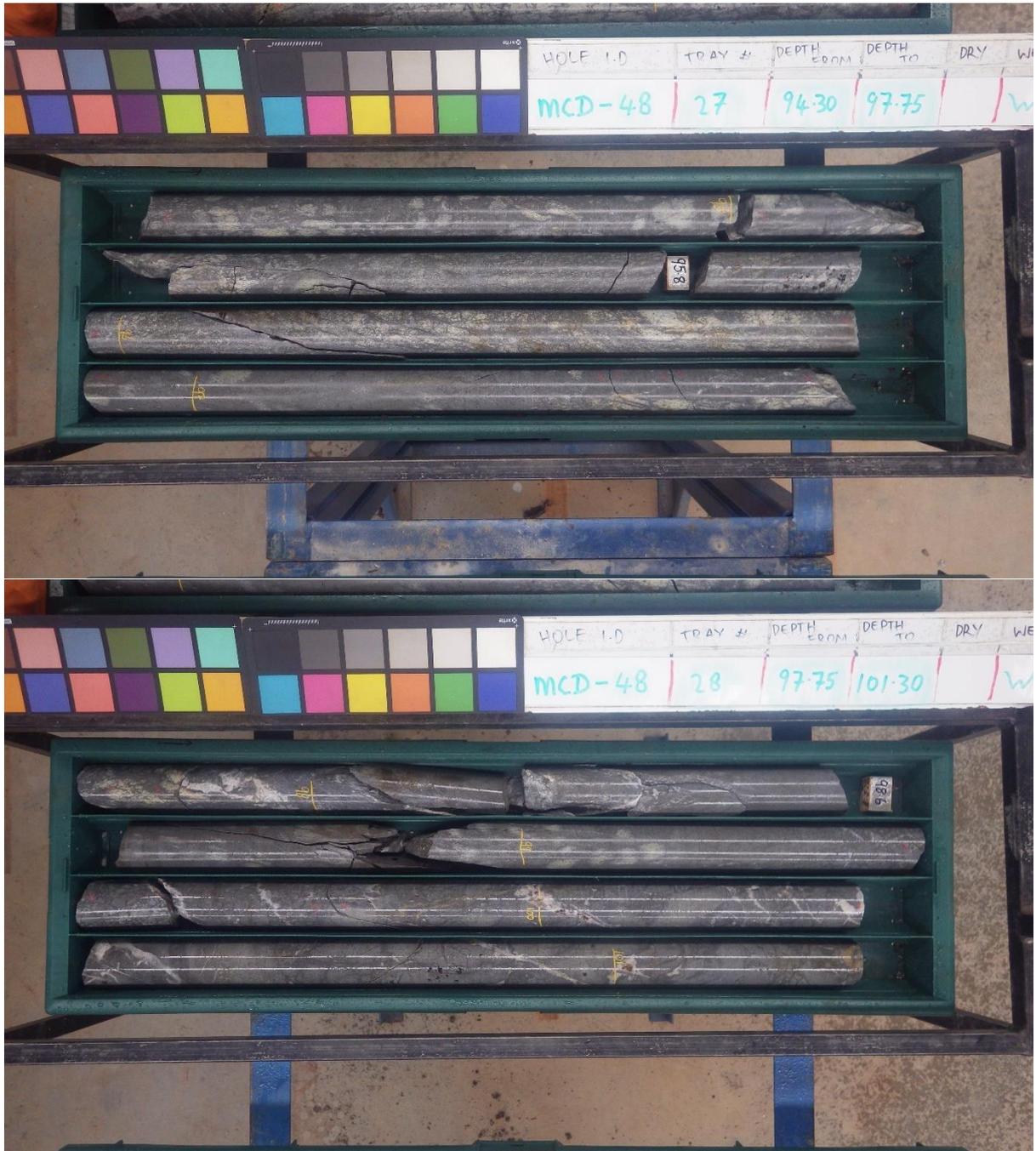








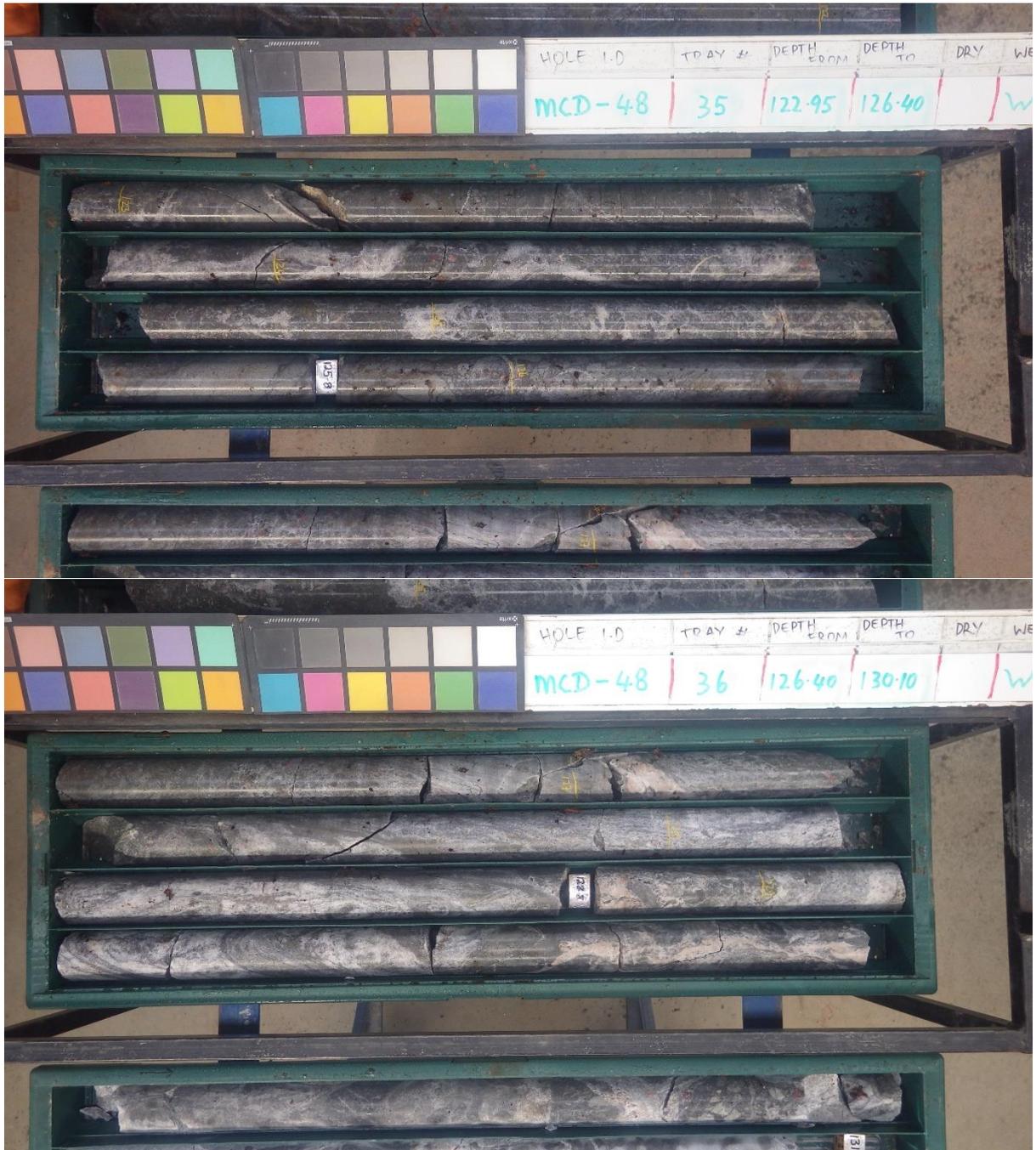
















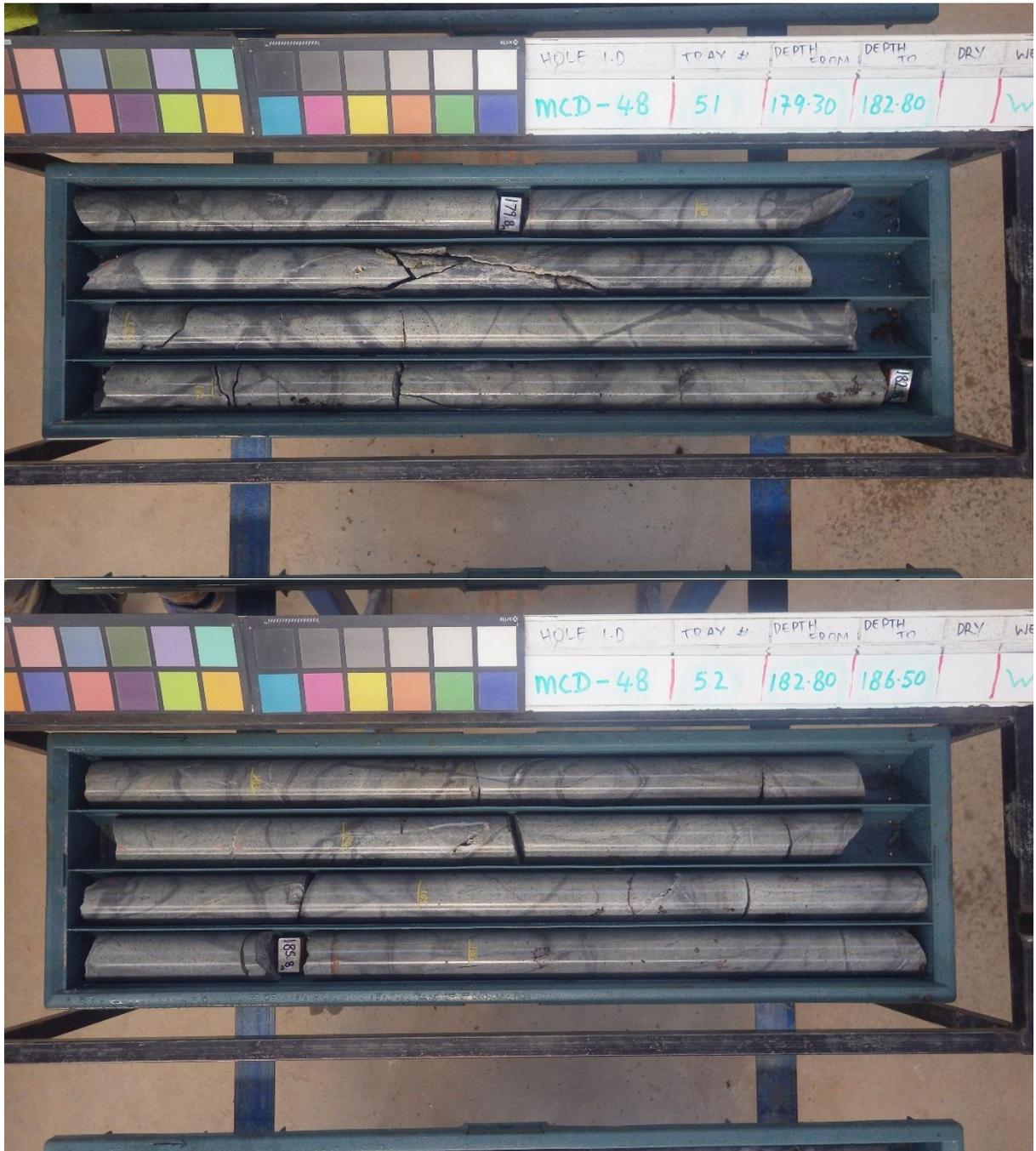










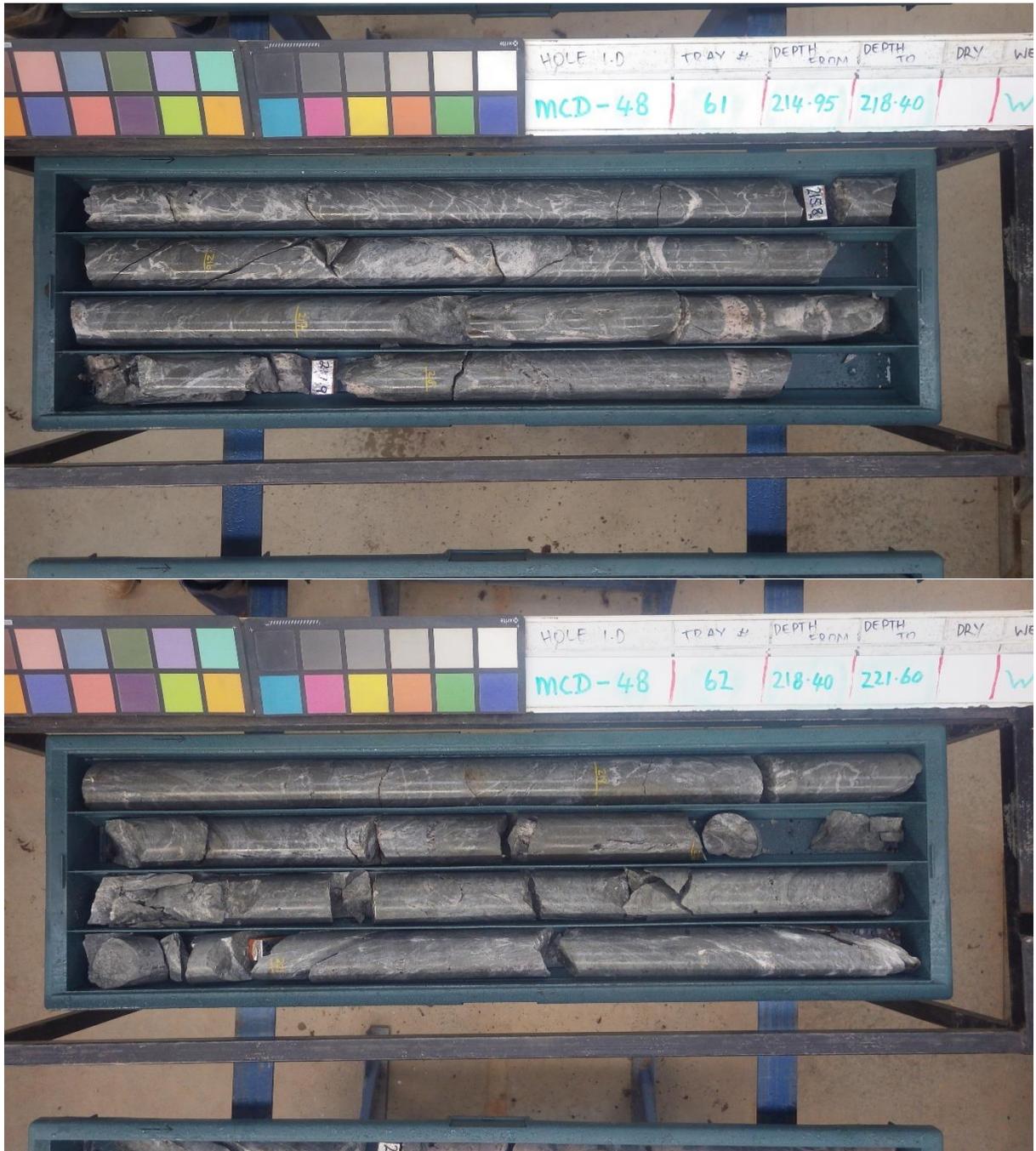


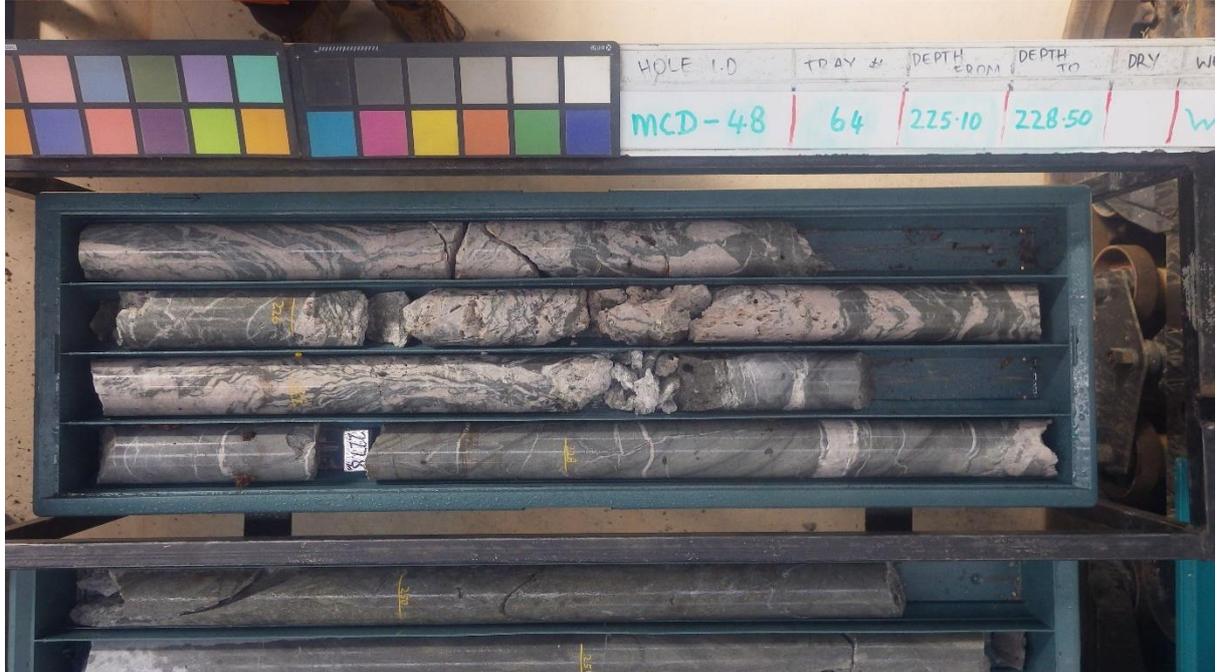
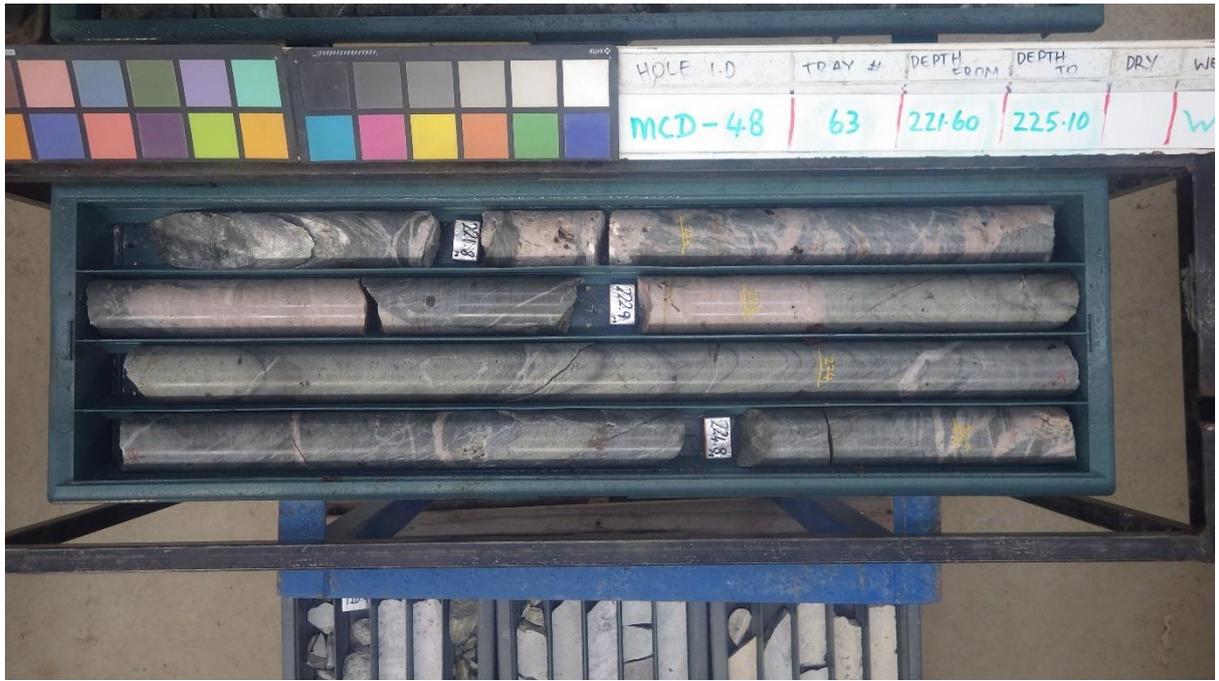


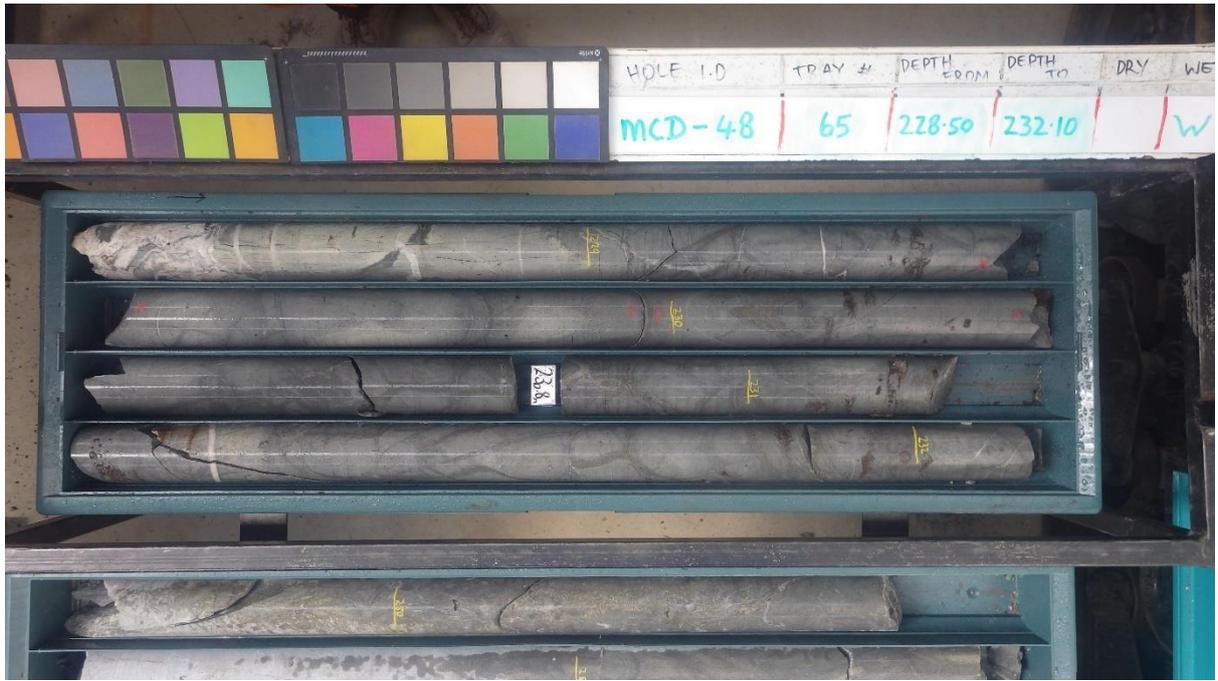


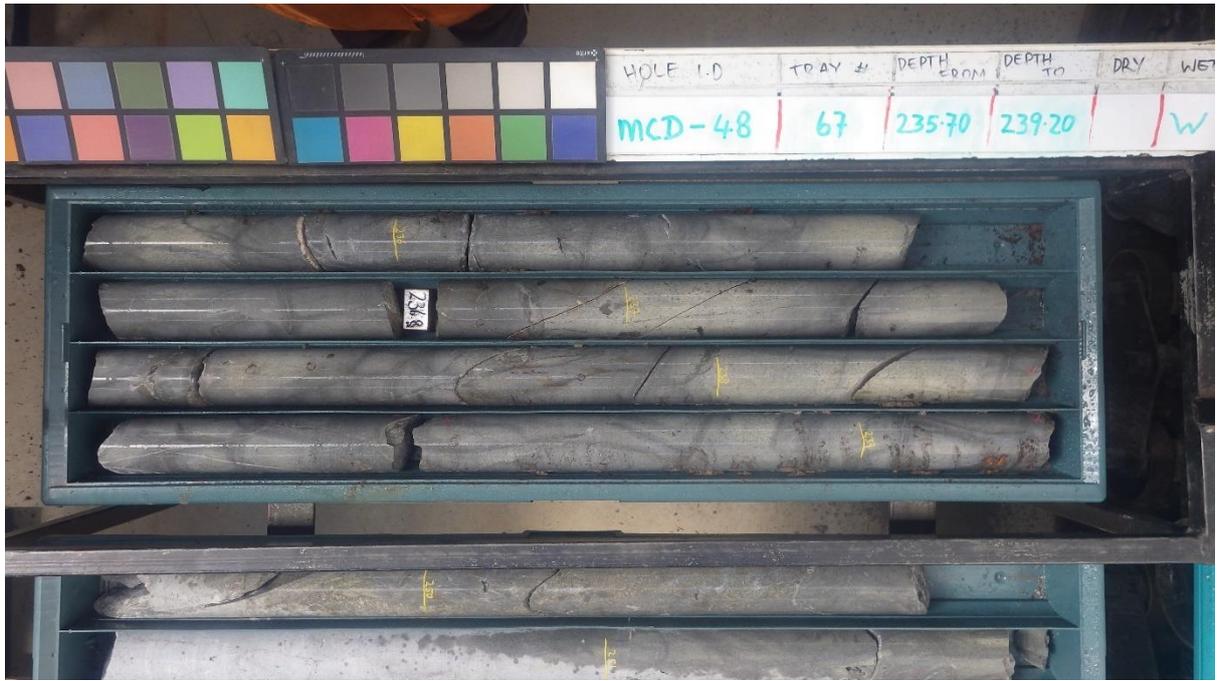


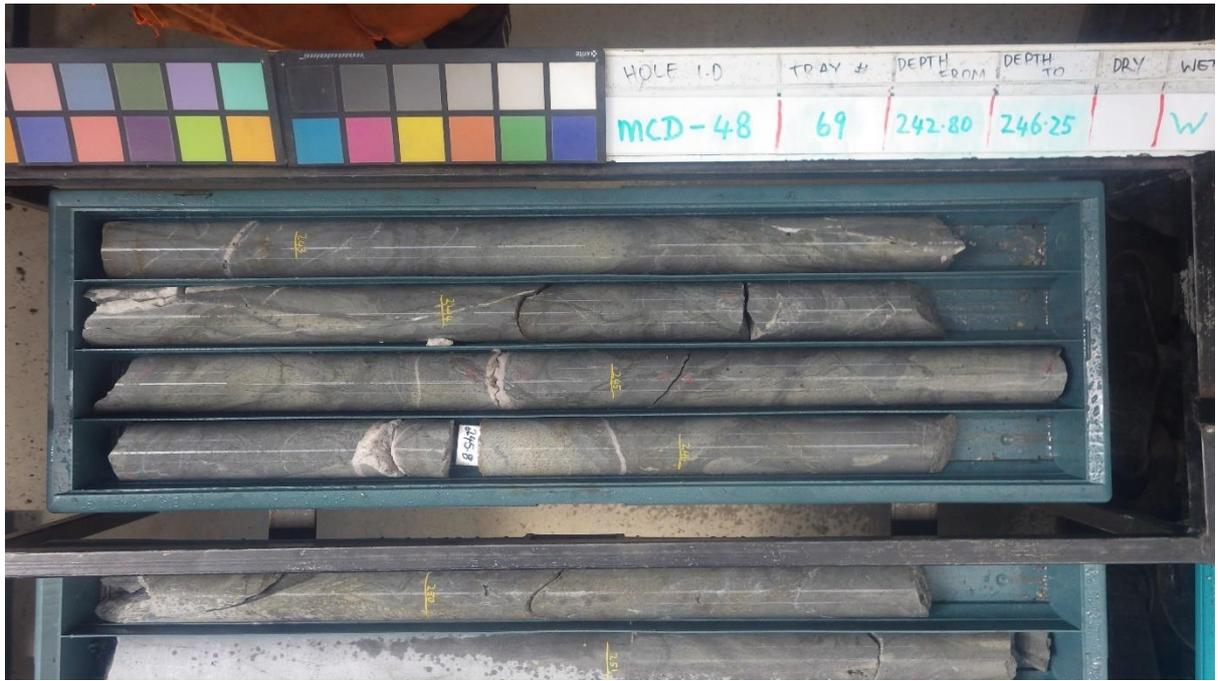


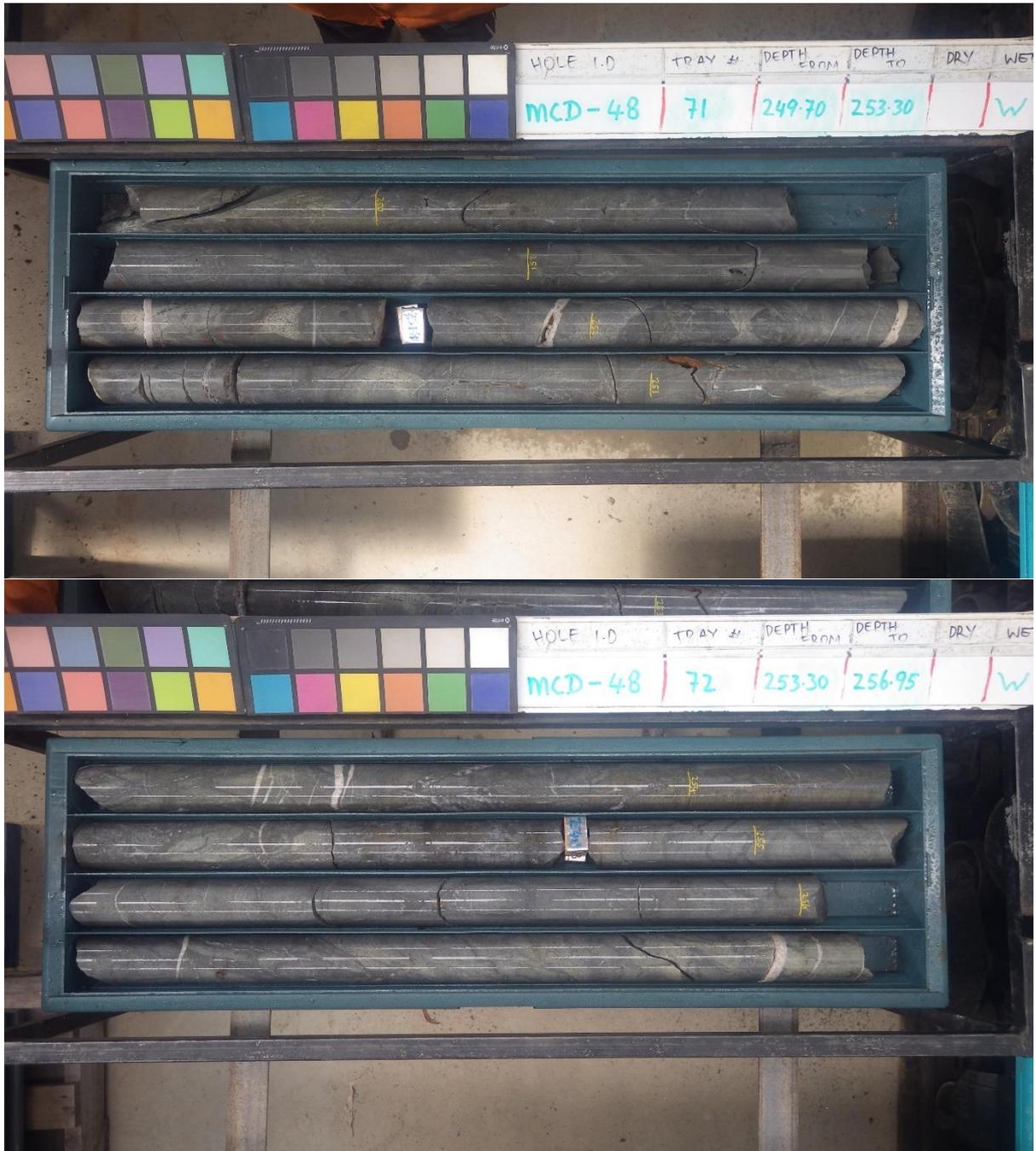












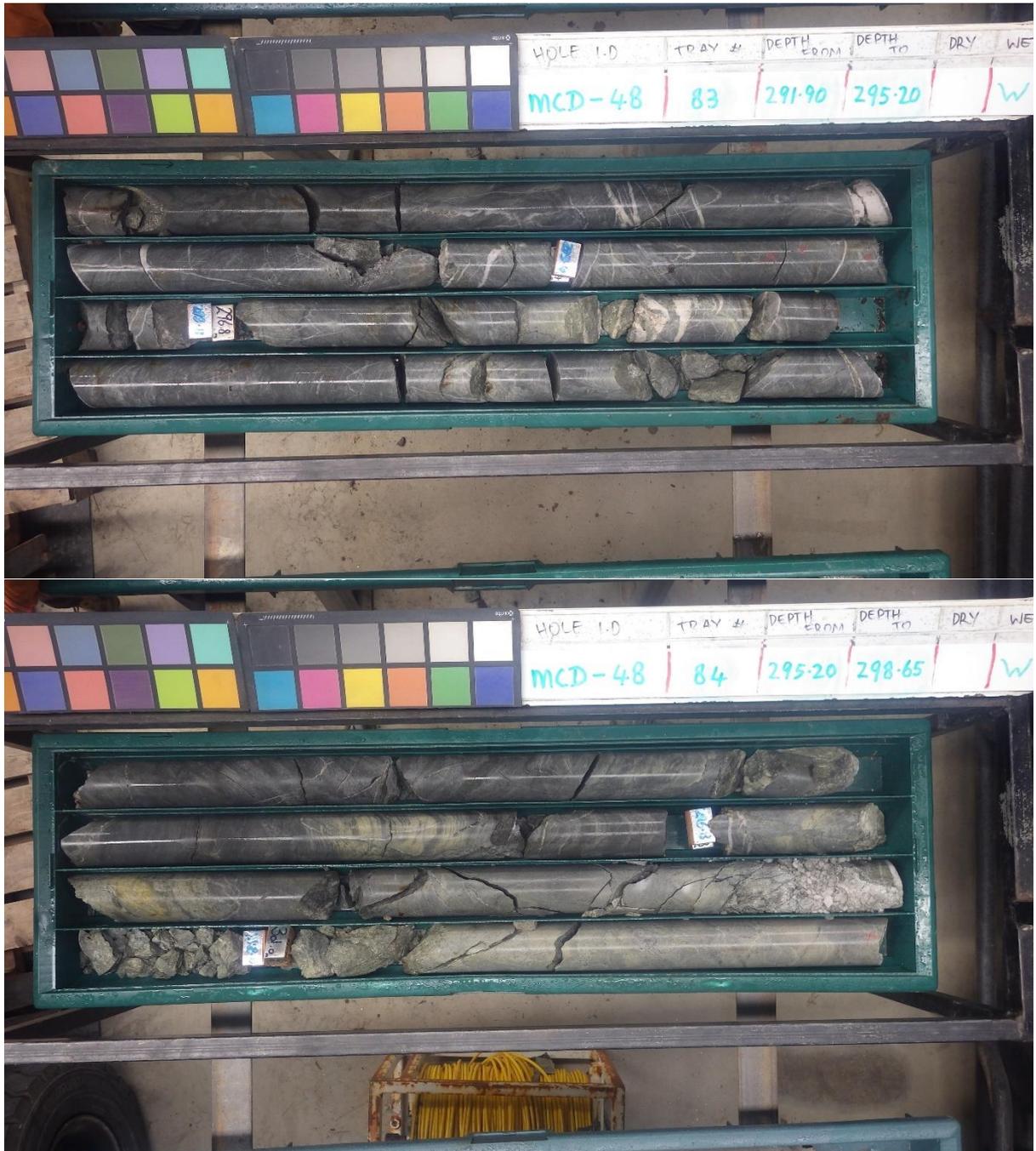








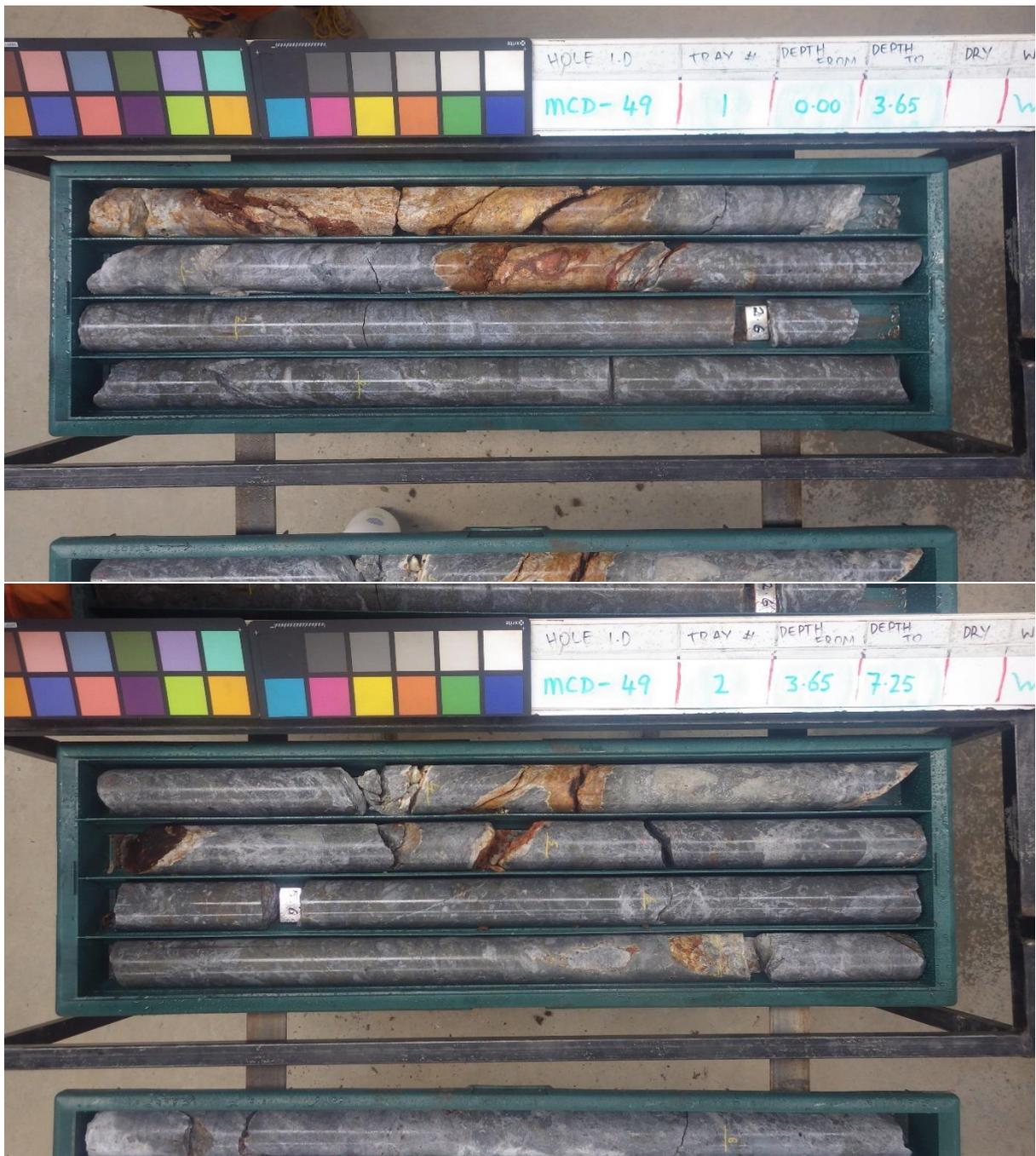


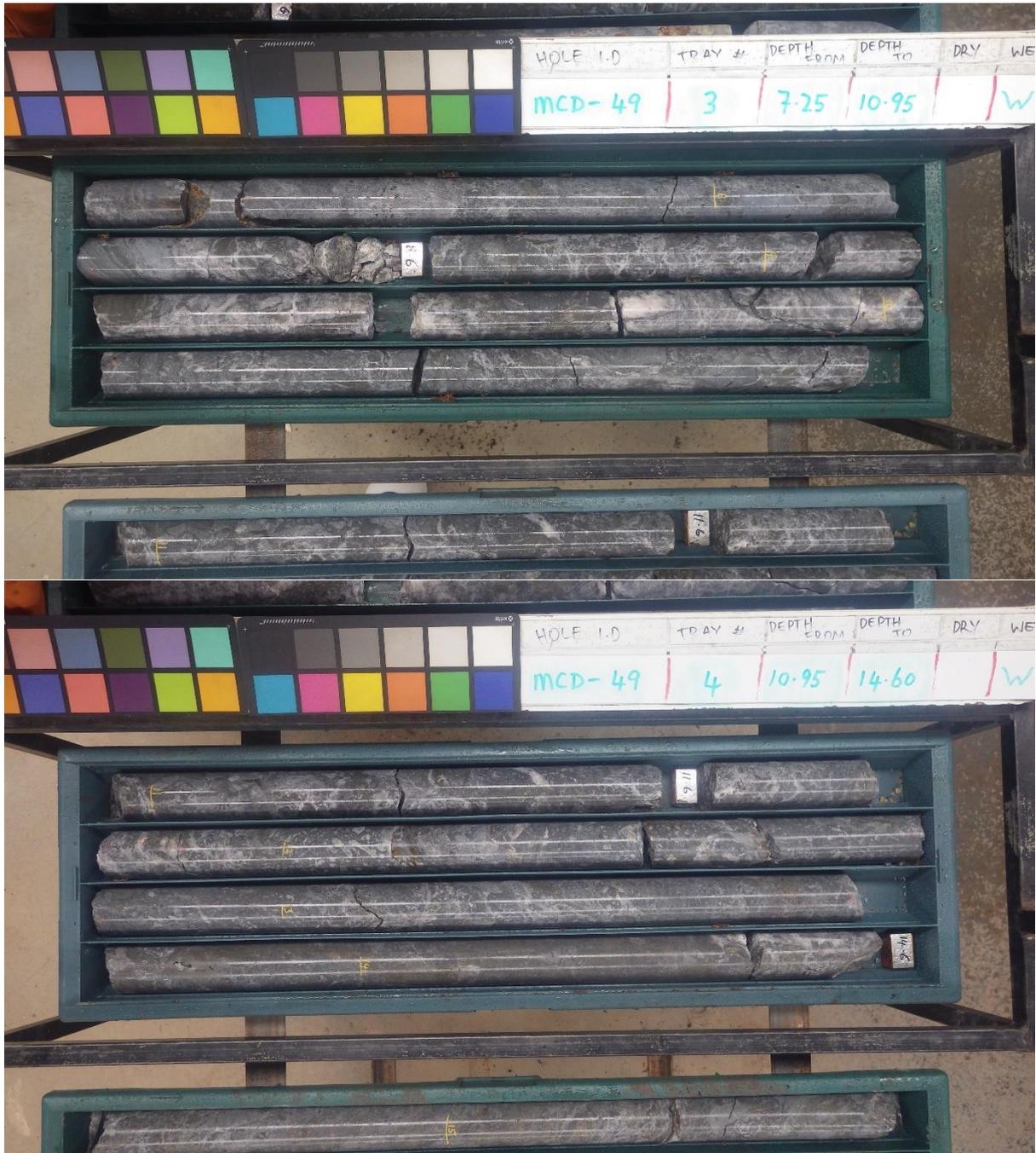


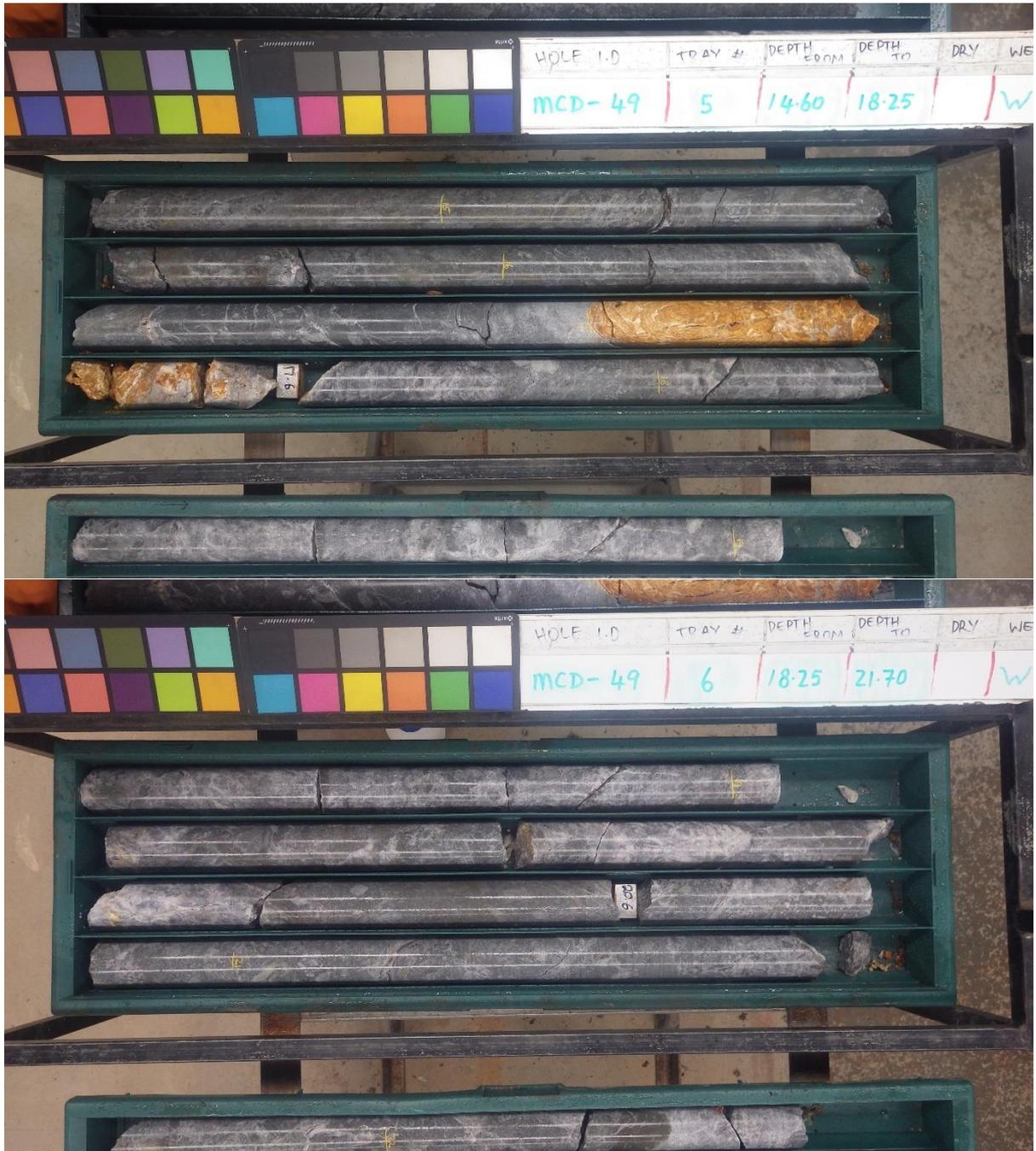


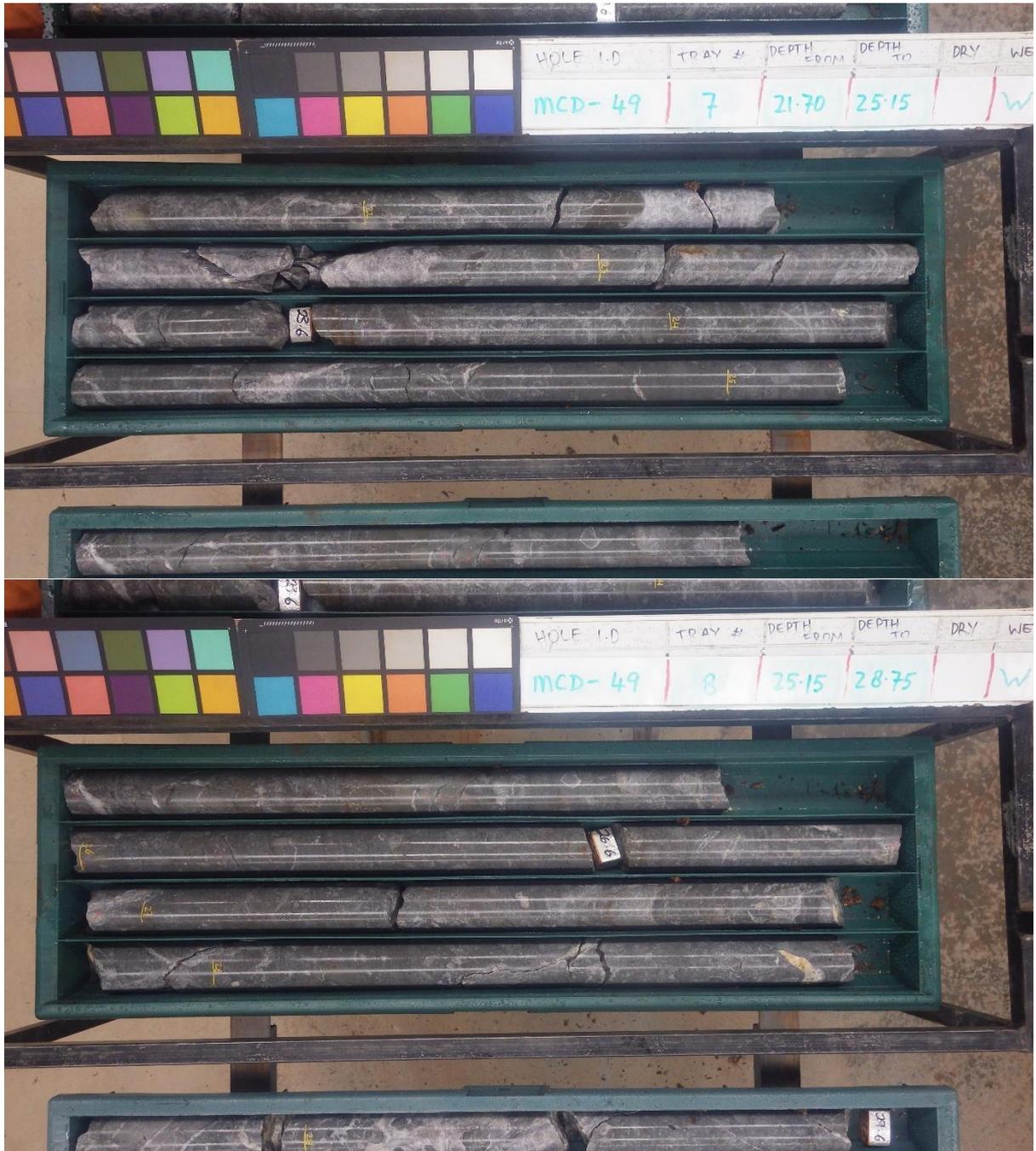


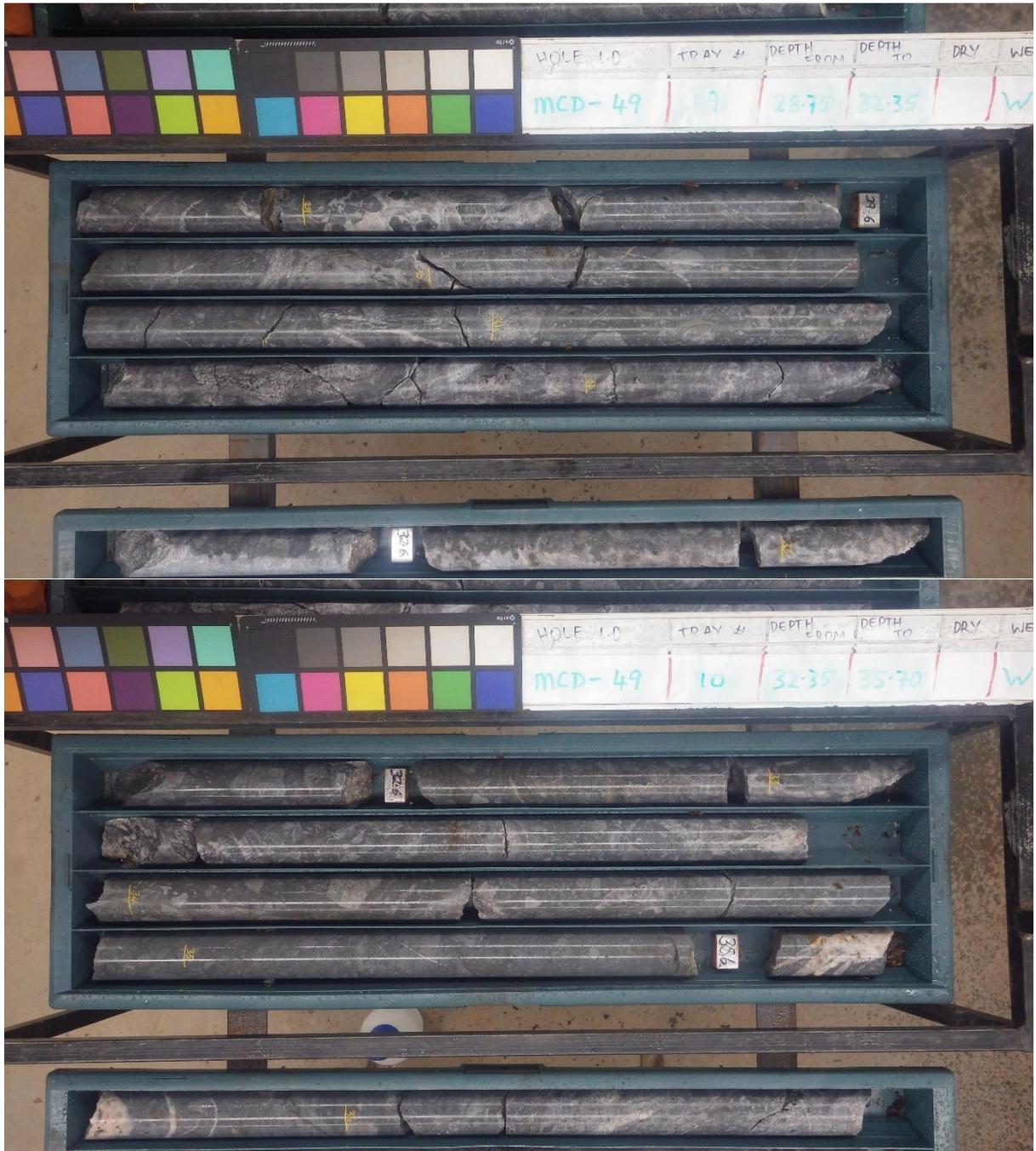
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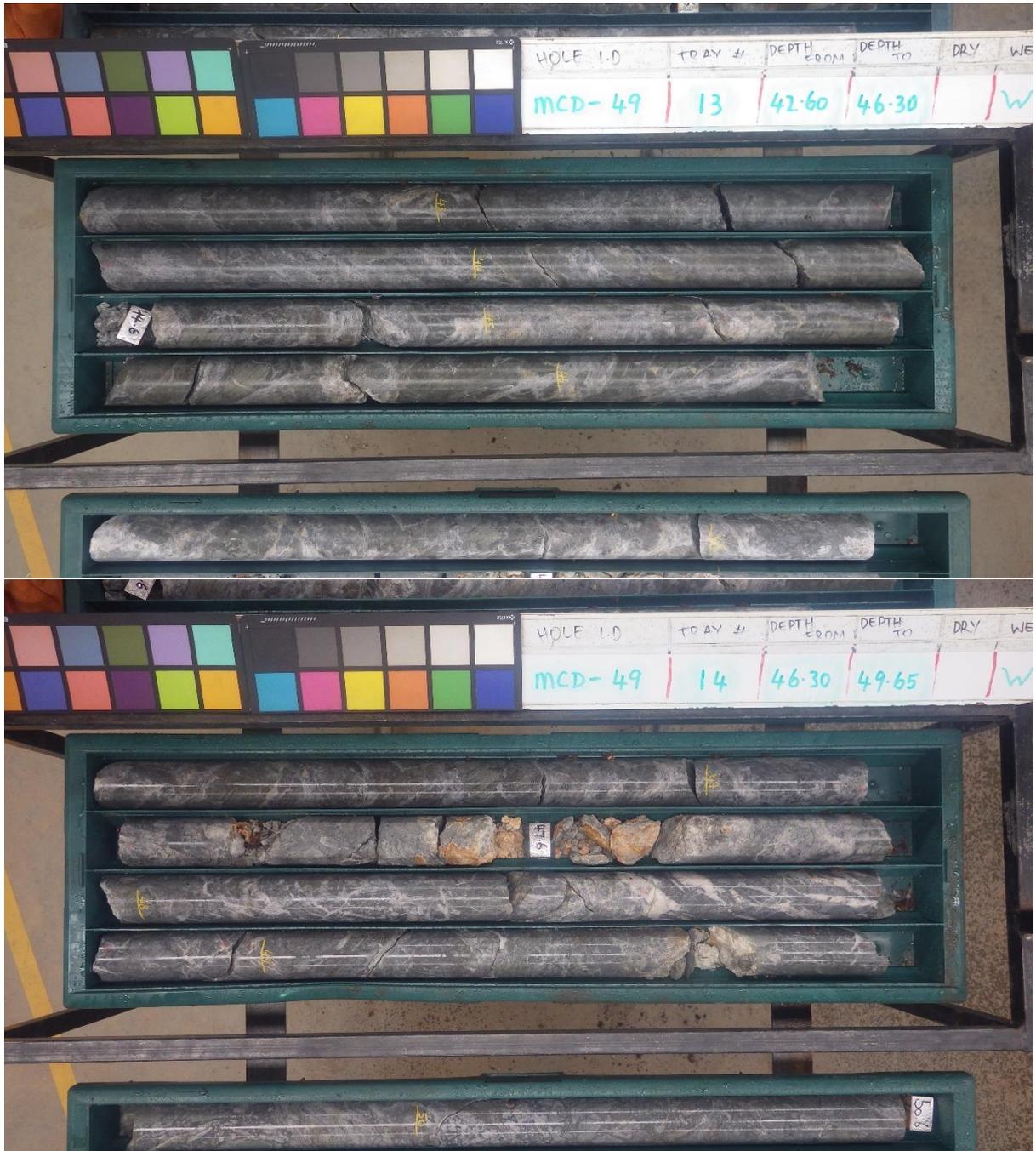


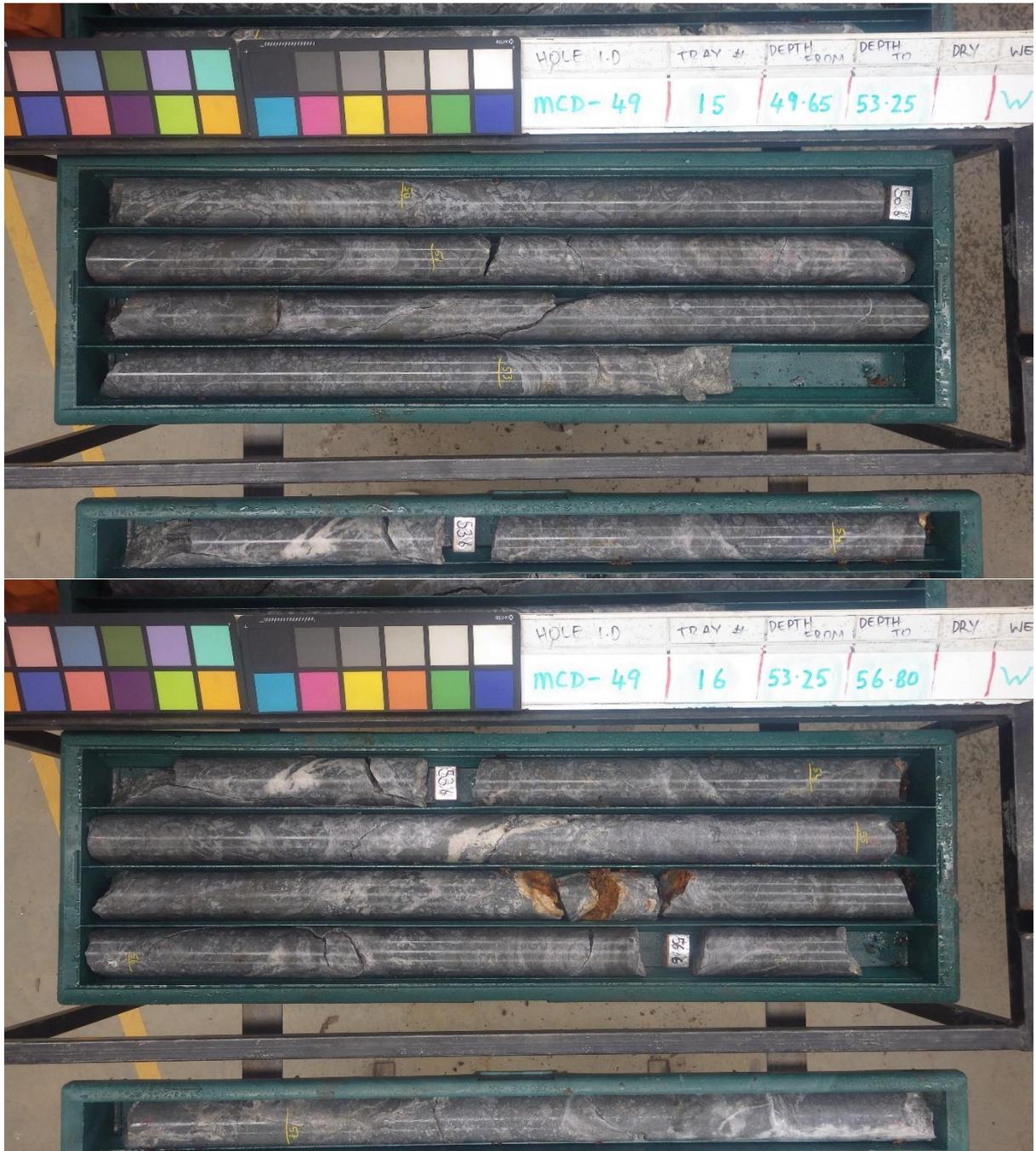






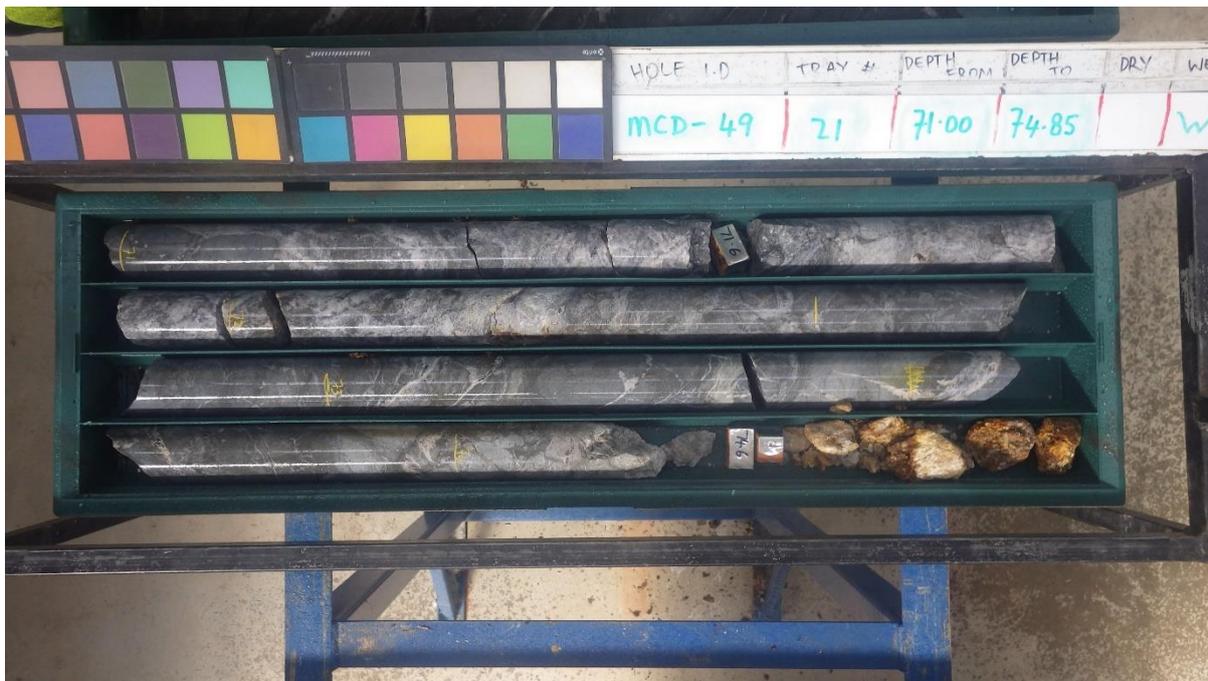






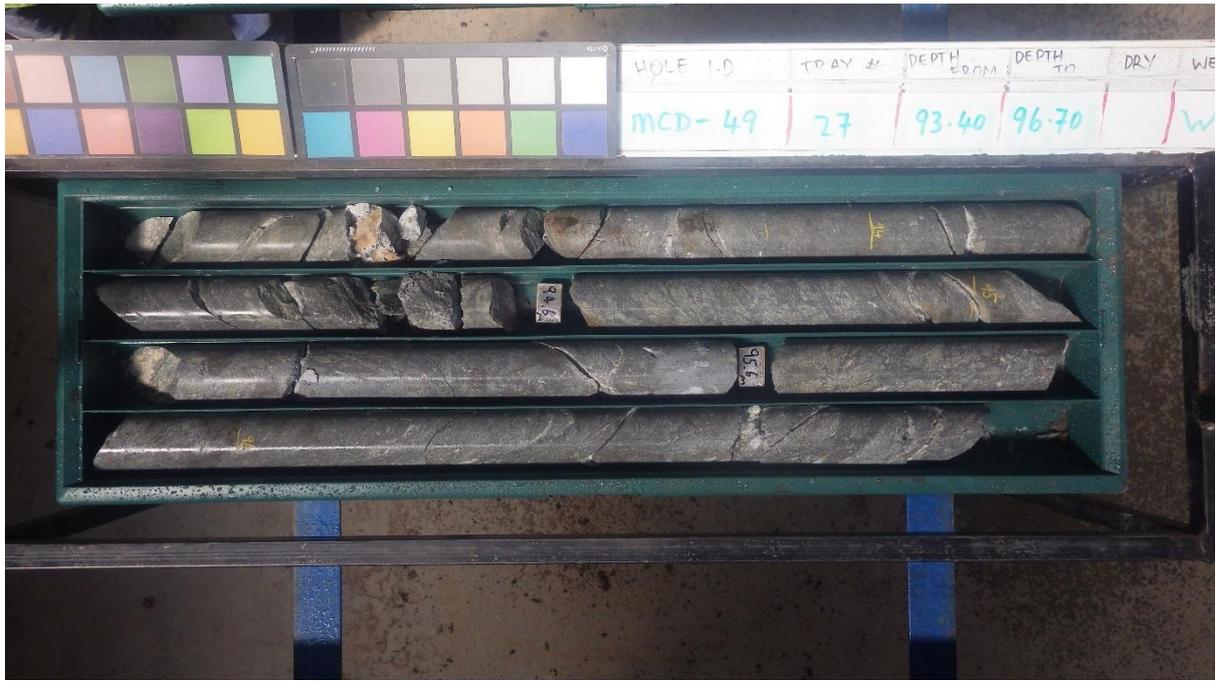












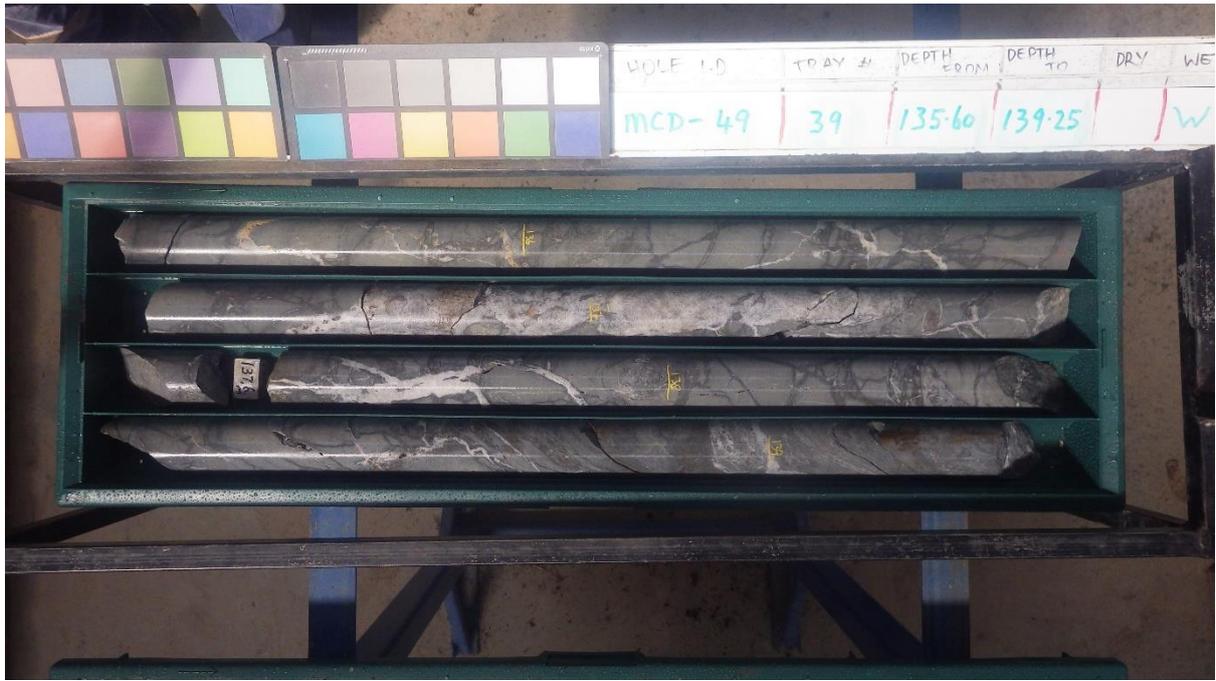


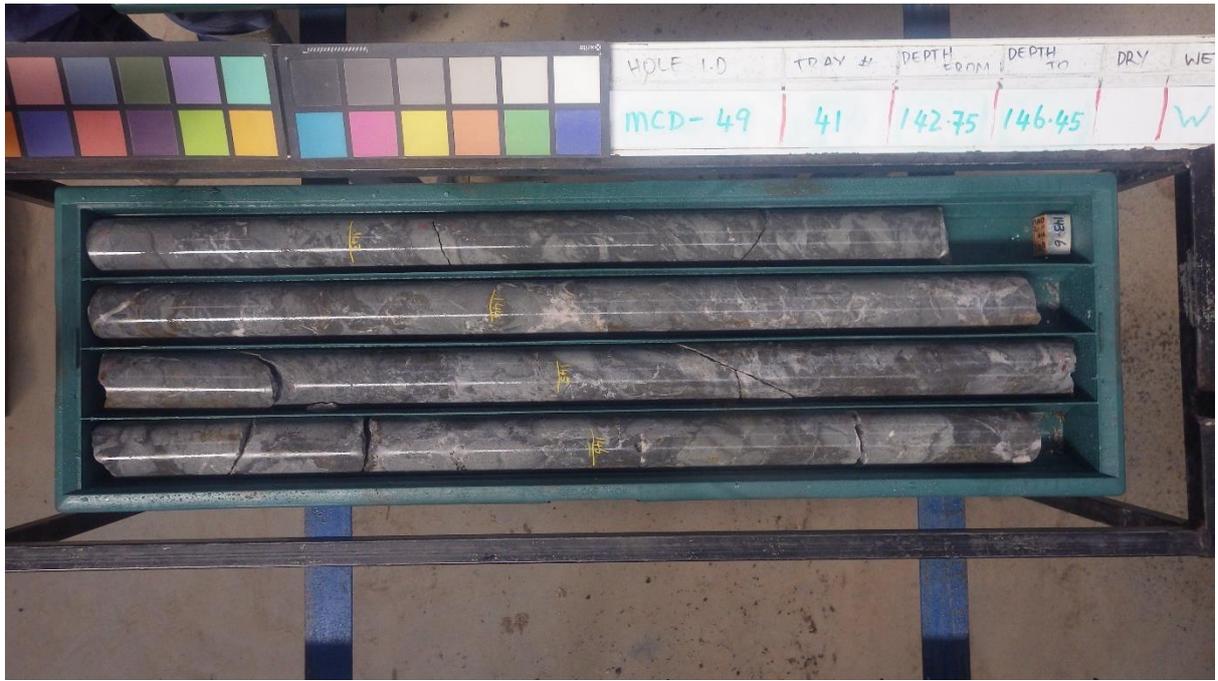












**Appendix C – North Mt Charter EDGI Application (Unsuccessful)**

## North Mt Charter prospect – EL 10/2016 “Mt Charter” Moina Gold Pty Ltd

### Summary Project Description

The North Mt Charter prospect is a zone of sericite+pyrite altered dacitic volcanics from the Mt Read Volcanics which outcrops on a hill to the north along strike from the Mt Charter gold+silver+base metals+barite deposit in EL 10/2016. Further along strike are the (now mined) VHMS deposits of Que River, Fossey and Hellyer.

The Mt Charter deposit is considered to have formed in a (Mixed Sequence) dacite mound in the footwall to the sea-floor with VHMS fluids, initially focussed on growth faults such as the Barite Creek structure, forming generally discrete barite+/-pyrite rich gold+silver+base metal bearing veins in more coherent dacite lavas and flooding the matrix of more clastic dacite volcanics. A historical resource of 6.1m @ 1.22g/t Au, 35.5g/t Ag, 0.5% Zn and 9.7% Ba has been defined for this resource and is due for updating with 12 new holes added).

A regional study of hydrothermal alteration associated with the known VHMS deposits in the region recognised that Sb, AS and TI were anomalous in proximity and thus acted as pathfinder elements.

Soil samples analysed for these elements, as well as Ba and Au, define similar anomalies around the known mineralisation at Mt Charter and at North Mt Charter, the latter albeit somewhat lower tenor.

Geophysically the zone corresponds to an IP chargeability anomaly of similar tenor to that seen at Mt Charter. Chargeability anomalies extend along the contact to the north-northwest and south-southeast along strike. Whilst EM surveys (UTEM, VTEM) have been undertaken the lack of conductors from EM surveys (UTEM, VTEM) is not seen as a negative as mineralisation is not expected to be conductive.

Historically only a single diamond drillhole MC4 drilled in 1978 has been drilled into the North Mt Charter anomaly and this hole was collared ~100m into the footwall and then drilled easterly i.e. down sequence. Core was not split but rather ground over broad intervals and the hole intersected two zones of 20m @ 0.4g/t Au, potentially hiding more discrete higher grade zones. Drill logs describe pyrite content decreasing downhole, a trend mirrored by the pathfinder elements.

No hole has tested the upper 100m of the dacite body for Mt Charter style gold+silver+base metal mineralisation in barite at the North Mt Charter prospect. MAC40, the nearest hole, did so ~ 500m away down-dip.

A single hole, collared in the hangingwall andesite unit, drilled eastwards and passing through the upper 100m of the Mixed Sequence dacite until the end of the hole is at least downdip from the collar of MC4.

The hole will provide a test for any mineralisation present in this zone. It will also provide additional information for vectoring within the alteration zone.

The hole should be drilled in HQ3 for as long as possible and should be lined with PVC for subsequent DHEM surveying.

## Exploration Model and Geological Context

The Mt Read Volcanics is demonstrably highly prospective for VHMS and associated mineral deposits. The Mt Charter and North Mt Charter prospects lie at the southern end of a line of VHMS deposits from Hellyer, Fossey, Que River and Mt Charter (figure 1). All have associated hydrothermal alteration, most have associated barite.

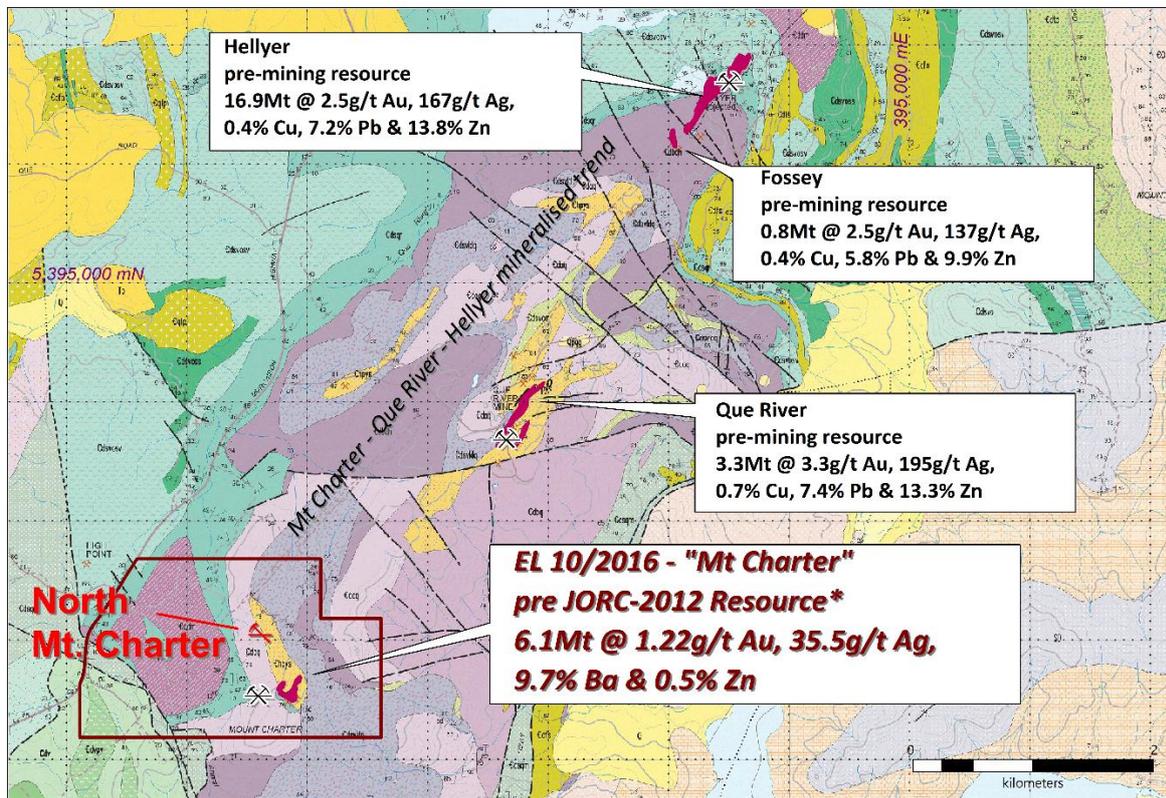


Figure 1: Location of North Mt Charter prospect with respect to Mt Charter, Que River, Fossey and Hellyer.

The following geological summary is after Richardson (2016): “The base and precious metal deposits of the Hellyer-Que River-Mt Charter area lie above the main Central Volcanic Complex of the Mt Read Volcanics within a sequence of volcanics and sediments, known as the Mt Charter Group (figure 2).

“Within the Mt Charter Group is a volcanic package called the Que Hellyer Volcanics (QHV) comprising a group of andesitic to dacitic volcanics and sediments. The Que River, Hellyer and Mt Charter deposits are hosted by the highly variable ‘Mixed Sequence’, sandwiched between footwall andesitic and hangingwall basaltic volcanics. Volcanic-related and marine sediments cover the volcanics.

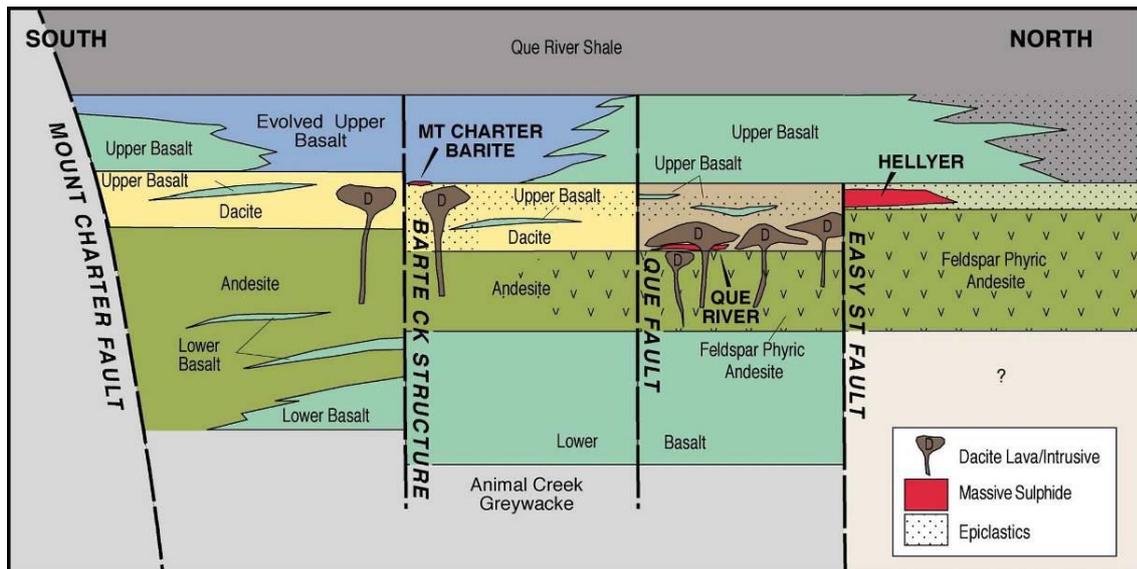


Figure 2: Schematic stratigraphic long-projection of the Que Hellyer Volcanics (Richardson, 2016)

“The Que-Hellyer Volcanics are up to 1000m thick near Que and Hellyer, but wedge out to less than 50m to the northwest of Hellyer mine. The units of the QHV are summarized below:

- The Upper or Hellyer Basalt consists of massive to pillowed amygdaloidal basalt lava and volcanoclastic rocks.
- The Mixed Sequence host to the Que River, Hellyer and Mt Charter systems is comprised of epiclastics, dacitic lavas and breccias.
- The Feldspar Phyric Andesite, a porphyritic andesite lava which is the footwall unit to the Hellyer and Que River deposits and subsequently altered to Silica-Sericite-Pyrite mineralogy at these locations, which in turn is underlain by
- The Lower Basalt, a sequence of basaltic pillow lavas and volcanoclastics, which form the immediate footwall at Que River and Hellyer.

“The Que-Hellyer Volcanics are overlain by the Que River Shale, which is in turn overlain by rhyolite, felsic volcanoclastics, greywacke and shale of the Southwell Subgroup. The Southwell Subgroup is overlain by the Mt Cripps Subgroup which is a sequence of volcanoclastics, siltstones and conglomerates only outcropping along the eastern boundary of the Hellyer area tenements.

“Beneath the Que-Hellyer Volcanics are the Animal Creek Greywacke and Black Harry Beds, a sequence of sediments defining the base of the Mt Charter Group (Richardson, 2016).

The Mt Charter deposit occurs within Mixed Sequence dacites and has been interpreted to have been a footwall stringer zone to a VHMS body on the upper margin of these dacites which has since eroded (or alternatively did not form in the first place).

At Mt Charter gold+silver+base metal mineralisation occurs in barite+/-pyrite veins, particularly in more coherent dacite lavas, and zones of pervasive replacement of the matrix to more clastic volcanics. Mineralisation is better developed in clastic zones which both overlie and underlie the more massive lava body where the more discrete veins define an overall lower grade zone.

Recent drilling, albeit down-dip, has returned grades of 69m @ 3.65g/t Au inc. 13m @ 10g/t Au in the matrix replacement style of mineralisation.

Recent drilling has also intersected the Barite Creek Fault along the southern margin of the deposit which appears to be a reactivated growth fault, active at the time, and the foci of hydrothermal fluid movement.

The ideal model for Mt Charter style gold+silver+base metal barite+/-pyrite mineralisation is within the upper Mixed Sequence dacites near to active growth faults with mineralisation focussed particularly into clastic zones. Higher grade more laterally extensively mineralised clastic hosted replacement type deposits may be obscured by less well mineralised coherent lavas.

A regional study of hydrothermal alteration in drill core associated with the known VHMS deposits in the Que-Hellyer region recognised that Sb, As and Tl were anomalous in proximity and thus acted as pathfinder elements. The Mt Charter prospect is anomalous in these three elements in drill core.

Of the three the historical regional soil geochemical data set only includes As (and Au, Ag and Ba). Bass Metals undertook soil sampling in the area with these three elements and a further 37 elements analysed by ICP-MS. Within EL 10/2016 this work clearly defines the Mt Charter mineralisation, as well as defining a separate zone further north in a similar stratigraphic position. Barite and to a lesser degree gold is also coincidentally anomalous. The lidar topography shows this northern zone as broadly corresponding with a moderate topographic high (lower than Mt Charter though).

Soil samples analysed for these elements, as well as Ba and Au, define similar anomalies around the known mineralisation at Mt Charter and at North Mt Charter (figures 3 to , the latter albeit somewhat lower tenor).

Geophysically the anomalous soil zone corresponds to an IP chargeability anomaly of similar tenor to that seen at Mt Charter (figure 7). Chargeability anomalies extend along the contact to the north-northwest and south-southeast along strike. Chargeability anomalies also occur to the east of the contact with the only drill hole to date targeting these.

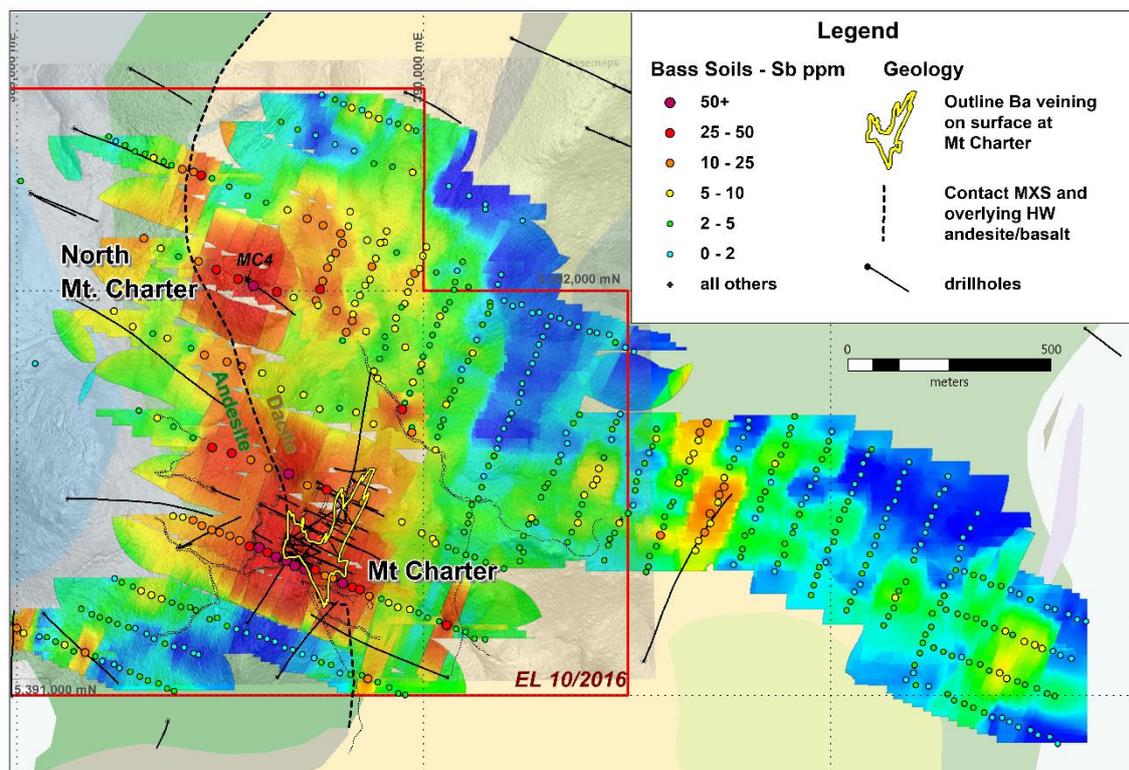


Figure 3: Bass Metals ICP soil geochemical results for Sb

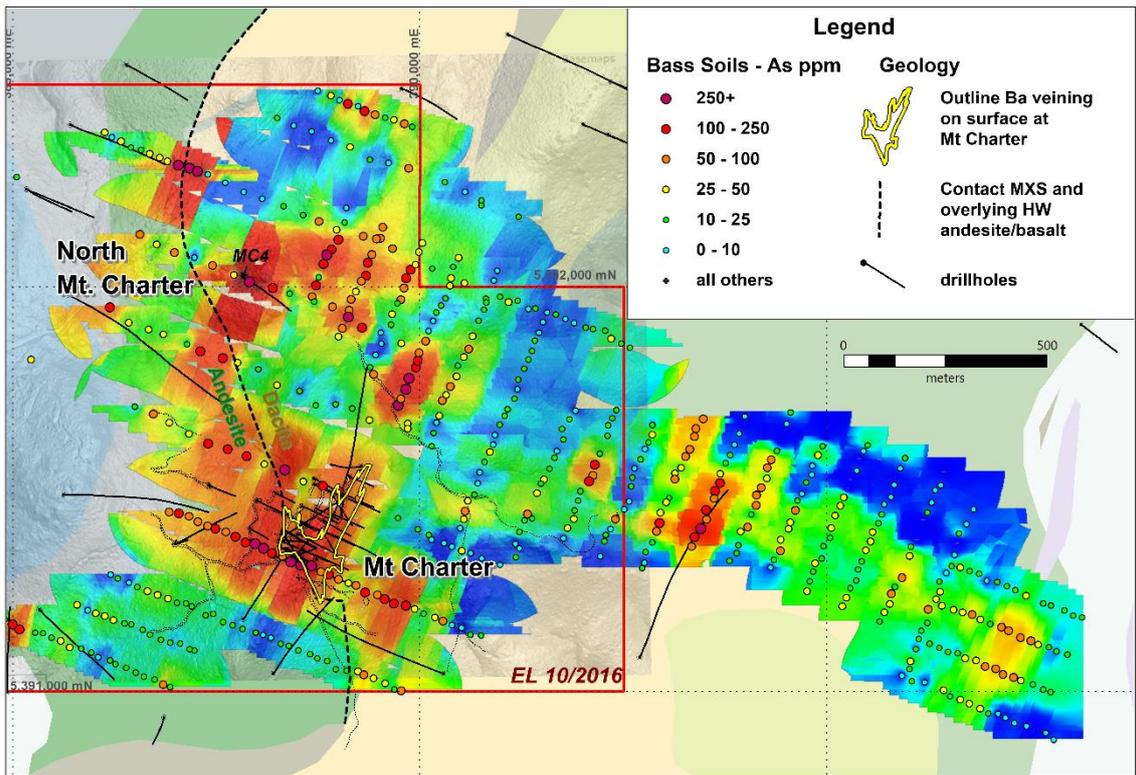


Figure 4: Bass Metals ICP soil geochemical results for As

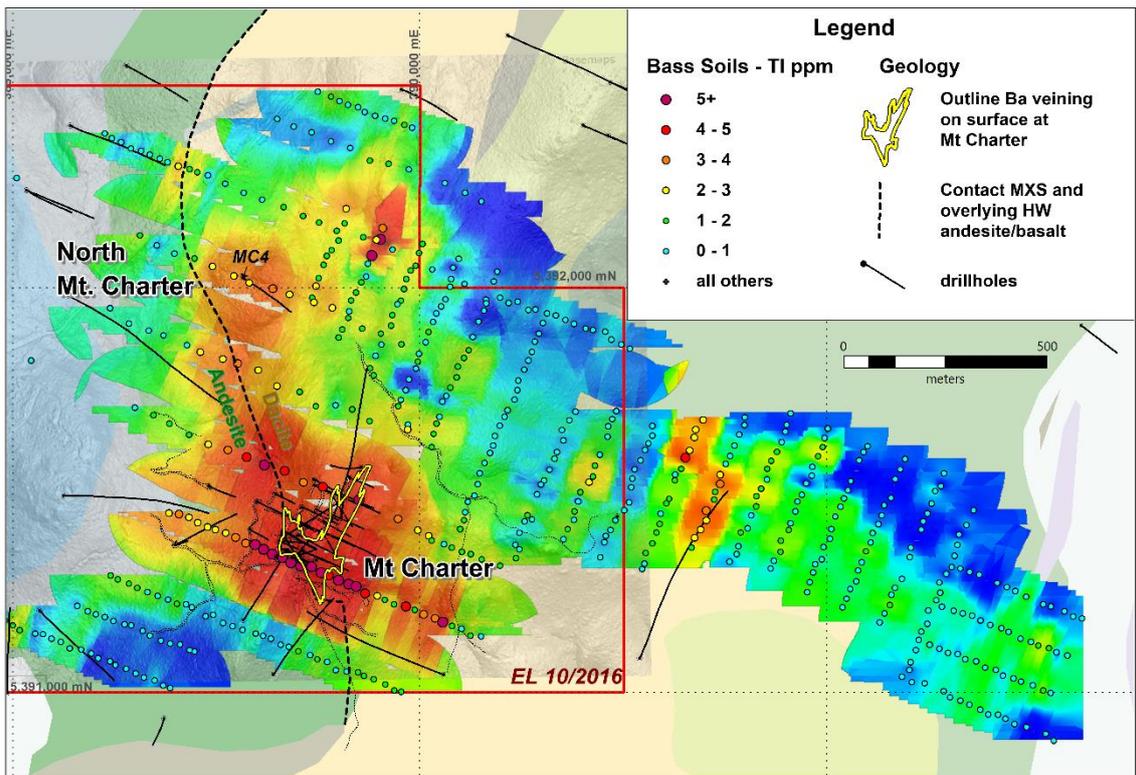


Figure 5: Bass Metals ICP soil geochemical results for Tl

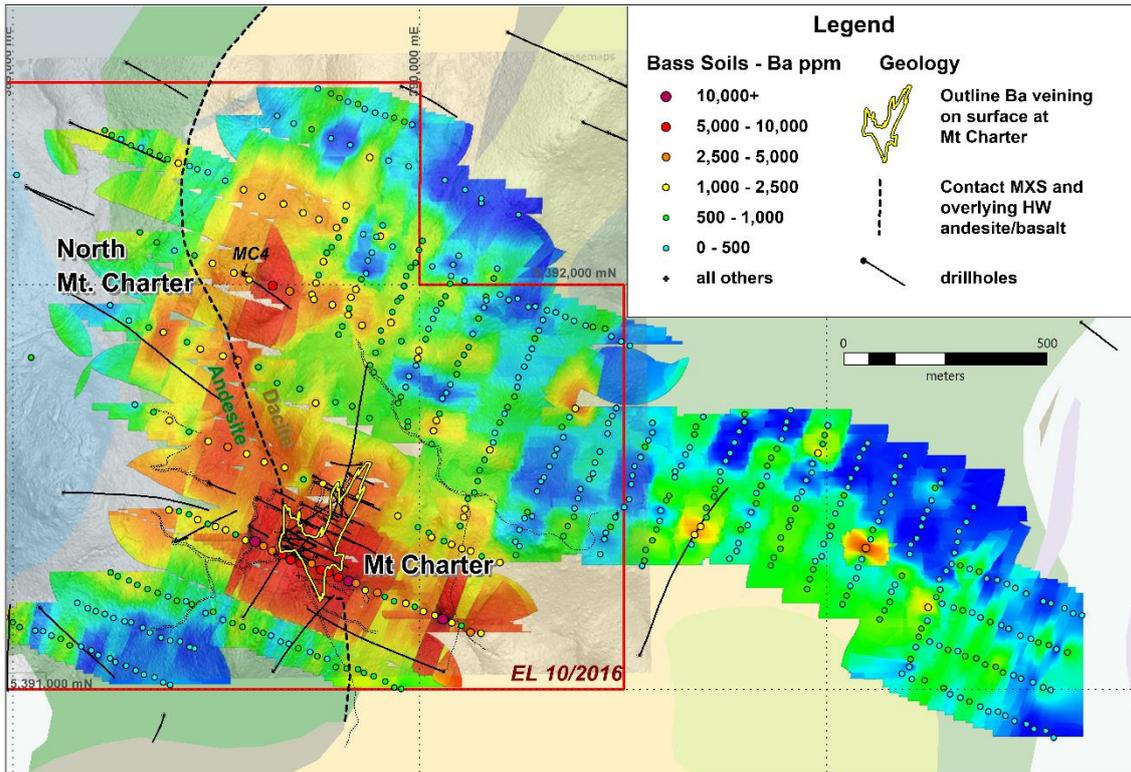


Figure 6: Bass Metals ICP soil geochemical results for Ba

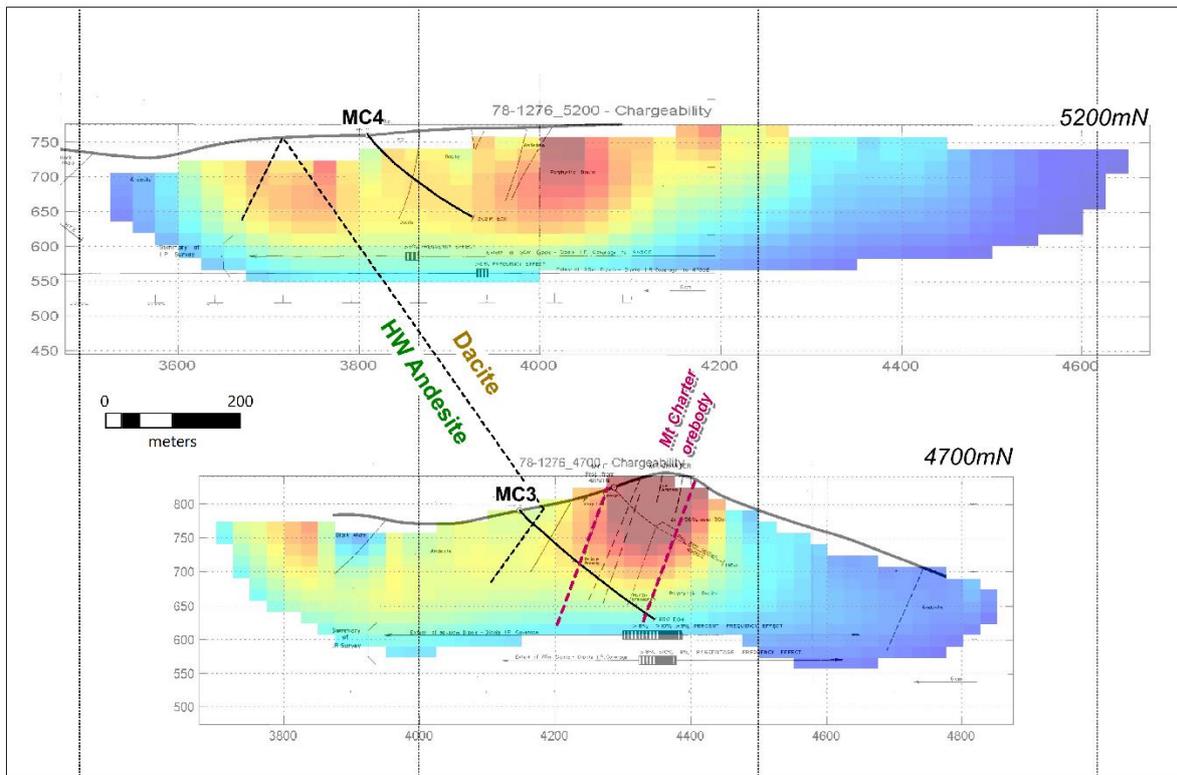


Figure 7: Inverted dipole-dipole IP survey sections for mine grid 4700mN through the Mt Charter deposit and 5200mN through the North Mt Charter prospect showing drilling and geology

Whilst EM surveys (UTEM, VTEM) have been undertaken the lack of conductors from EM surveys (UTEM, VTEM) is not seen as a negative as mineralisation is not expected to be conductive.

Historically only a single diamond drillhole MC4 drilled in 1978 has been drilled into the North Mt Charter anomaly and this hole was collared ~100m into the footwall and then drilled easterly i.e. down sequence.

Drill core was not split but rather ground with sampling over broad intervals. The hole intersected 20m @ 0.4g/t Au (5725ppm Ba) near the top of the hole potentially hiding more discrete higher grade zones. Drill logs describe pyrite content decreasing downhole, a trend mirrored by the pathfinder elements As, Sb and Tl as well as Ba.

No hole has tested the upper 100m of the dacite body for Mt Charter style gold+silver+base metal mineralisation in barite at the North Mt Charter prospect. MAC40, the nearest hole, did so ~ 500m away down-dip and HAT7 600m along strike.

## Previous Work

### Regionally

The general Mt Charter area was prospected in the late 19<sup>th</sup> century along with the whole of Tasmania's west coast. Evidence at Mt Charter in the form of a shallow shaft and adit on the southeastern side of the ridge attest to this. The low grade ore outcropping would not have been payable in those times.

The first exploration licences over the Mt Charter area EL 9/1967 was held by Pickands Mather and Company International but there are no reports and the tenements were relinquished in 1969.

The area was then pegged under EL 15/1973 by Cominco Exploration Pty Ltd, a company associated with what became Aberfoyle Exploration Pty Ltd and exploration carried out in conjunction with work on the adjacent EL 2/1970. The tenements EL 2/1970 and 15/1973 were relinquished in 1988 with the area now covered by new EL 103/1987 held under Aberfoyle Resources until 1998 by which stage the discovered Que River and Hellyer orebodies were held under ML68M/1984 and 103M/1987 respectively.

Regional mapping and stream sediment sampling programme covering west of the Mackintosh River was carried out. In early 1972 a combined airborne electromagnetic (EM) and magnetic survey was flown and one of the six anomalies recommended for follow up was coincident with anomalous stream sediment geochemistry. A follow up ground EM and soil sampling survey in 1973 discovered the outcropping S Lens mineralisation at Que River approximately 3km northeast from Mt Charter. The first diamond drill hole (QR1) in April 1974 intersected 11m of massive sulphide mineralisation and was followed by 25,000m of ore resource delineation drilling, which defined the main PQ lens and the P North, QR32 and S lenses. The Que River reserve was defined as containing 3.3Mt @ 13.6% Zn, 7.4% Pb, 0.7% Cu, 3.3 g/t Au and 195 g/t Ag.

Systematic exploration of the Mount Charter prospect has been in progress since the discovery of the Que River orebodies.

Initial work was gridded geological mapping, C-horizon soil sampling and dipole-dipole IP surveying which was being progressively extended over the whole of the Que-Hellyer Volcanics after the success of the method in "seeing" the Que River deposit. Initial gridline spacings were 1,000m with 100m dipoles.

In the 1980's newly developed University of Toronto EM system (UTEM) was

In August 1983 UTEM had defined the target for the first hole into the Hellyer orebody intersecting 24m of massive sulphide.

The Mt Charter deposit was covered by the Mt Charter line (nominally 4500mN mine grid) with subsequent infilling on 100m spaced lines and 25m dipoles (Skey and Webster, 1976; 76\_1168) which defined a zones of anomalous IP chargeability (frequency effect).

Two diamond drillholes MC1 (195.5m) and MC2 (187.4m) were drilled to test a north-south trending (chargeability) anomaly defined in this work but were not assayed at time of reporting (Skey and Webster, 1976; 76\_1168). Both holes intersected alteration and mineralisation similar to that in the footwall at Que River (McNeill, 1997).

In bulldozing a track to the MC1 drill site a massive barite lens was exposed on mine grid 4625mN.

In the 1977/78 a further three bulldozer trenches were dug at Mt Charter. Massive barite was exposed over a width of 10-12m in the trench on line 4650mN. Samples are shown as being assayed for Cu, Pb, Zn and Ba (Young, 1978; 78\_1276)

Diamond drill holes MC3 (260.4m) and MC4 ( ) were drilled in 1978 to further test the extension of the massive baryte-pyrite mineralisation exposed by this costeaning at Mount Charter. Drilling intersected

similar alteration and mineralisation to that in MC1 and MC2 (Young, 1979; 79\_1360) in MC3, more weakly altered dacite in MC4.

A UTEM survey was also conducted over the Mt Charter prospect with a large 1000m x 1500m loop read on 200m spaced lines. An anomaly was recorded over the massive barite+pyrite body but it was considered to have been tested by MC1, 2 and 3 (Young, 1979; 79\_1360).

In 1983 three trenches were dug targeting the massive barite+pyrite on lines 4000mN, 4500mN and 4570mN on the southern side of Mt Charter. These were sampled on 5m channels and assayed for Cu, Pb, Zn, As, Ag, Ba.

Re-interpretation of the geology at Mount Charter (Hespe, 1984) from the trenches and drilling to date indicated that the stratigraphy was striking dipping to the west with the barite+pyrite alteration stratiform and associated with a Kuroko type deposit (Hespe, 1984; 85\_2355). The implication of this interpretation was that down dip potential along the interpreted host horizon (andesite-dacite contact) existed to the west.

Three diamond drill holes MC5 (299.8m), MC6 (319.1m) and MC8 (235.3m) were drilled in a north easterly direction to test this position during 1984. MC5 and MC8 intersected the interpreted host horizon which contained no significant mineralisation and were terminated in sericite-pyrite altered dacite. MC8 failed to reach the andesite-dacite contact and stopped in andesite. (McNeill, 1997)

Holes were also drilled at the SW Mt Charter (MC9 and MC10) and NW Mt Charter (MC11) prospects (Hespe, 1985; 85\_. Both prospects are defined by anomalous lead and zinc in soils associated with UTM anomalies. In both prospects the anomalies were shown to be black shales.

The holes were systematically assayed for Cu, Pb, Zn, Ag, As, Ba and Cr. Holes MC5, 6, 8 and 9 were surveyed by Sirotem DHEM with no anomalies due to massive sulphides detected.

In 1986/87 the core from drillholes MC1, 2, 3 and 4 were core-ground and assayed for Cu, Pb, Zn, As, Ba, Cr, Ti, Zr and Au. Selected intervals of MC3 were split and assayed by Classic Comlabs. "Results were of a similar tenor but lower (e.g. 228.1m to 233.1m assayed 0.983 g/t Au by split c.f. 0.58 by core grind) (McNeill, 1987) 81m to 131m of MC1 was split and assayed for Cu, Pb, Zn, Ag, Ba, Fe, Sb and Au with some of the material also used for metallurgical testwork which showed a recovery of 80% gold into sulphide concentrate by flotation (McNeill, 1987).

Channel samples from the 4500mN were reassayed for gold along with 41 outcrop samples also included.

Better results were;

- MC1 110m @ 0.9g/t Au and 16g/t Ag (71.0m to 181.0m)
- MC2 56.5m @ 0.3 g/t Au and 10g/t Ag (62.2m to 114.7m)
- MC3 91.3m @ 0.6g/t Au and 11g/t Ag (173.1m to 264.4m eoh)
- MC4 20m @ 0.4g/t Au and 2.5g/t Ag (20.0m to 40.0m) and 10m @ 0.4g/t Au and 0.5g/t Ag (170.0m to 180.0m).

C-horizon soil sampling on a 100m grid was also completed including assaying for gold (McNeill, 1987).

Recognition of the potential of the Mount Charter mineralised system to host a large tonnage low grade gold resource encouraged the drilling of MAC23 (280.0m) to test variations in gold grade with stratigraphic level in the mineralised system. The hole was drilled in 1989 and intersected similar mineralisation to that encountered in previous MC1, 2 and 3. The hole stayed in the mineralised zone for its full length (McNeill, 1990; 90\_3128).

In addition two costeans were dug. These and some sections of access tracks were sampled and assays including Au. A series of pits to bedrock were also dug northwards along the ridge and eastwards in an attempt to define the extent of surface outcropping mineralisation (McNeill, 1990; 90\_3128).

A further hole, MAC26 (850.7m), was drilled in 1990, to test the concept that base metal mineralisation in stringer veins at Mount Charter may have been remobilised from a massive sulphide deposit at depth beneath the dacite. This position would be stratigraphically closer to the Que River and possibly Hellyer host positions. The hole was successful in intersecting host type lithologies, i.e. volcanoclastics and basalt, near the base of the dacite but no massive sulphides were intersected. Precious metal mineralisation was intersected in the dacite as in previous drill holes. (McNeill, 1997)

The barite+base metal+gold alteration zone was intersected strongly (massive barite between 29.7m and 49.3m) to 167.8m then intermittently from 167.8m to 360m below which non-mineralised but sericite+pyrite altered dacite is intersected to 528m.

Geological mapping, rock-chip sampling, and soil sampling by Aberfoyle Resources geologists over the Mt Charter area recognized several major structures in the area and interpreted these as growth faults due to changes in thickness of stratigraphic units across the structures. The barite-silica-pyrite alteration was interpreted as strongest at the intersection of these Cambrian faults. It was also recognized that the Mt Charter Au-Ag Barite associated mineralisation was located in the upper part of the Mixed Sequence as opposed to the Hellyer and Que River deposits which are located at the base of this unit.

Knowledge gained from the Hellyer drillout showed that a clear relationship exists between the orebody and the stratigraphic contact between footwall andesite and hangingwall basalt. This horizon, the Mixed Sequence, became a key target throughout the QHV. Comparison with Que River indicated the similar stratigraphic position of the Que River orebodies within a thicker Mixed Sequence. The Mt Charter mineralisation is also hosted by this unit. (Murphy in Bates, 2007).

In 1997 Aberfoyle estimated a resource for the Mt Charter deposit of 13 Mt at 0.3% Pb, 0.6% Zn, 16 g/t Ag and 0.9 g/t Au using a polygonal method. Assay data was taken from mostly core grind samples.

In 1997 Aberfoyle applied for a Retention Licence over the Mt Charter prospect on the basis that further development in the metallurgical study of the Hellyer tailings may lead to the optimal development of the Mt Charter resource.

Bass Metals recommenced exploration in the Mt Charter area in the mid 2000's.

A 362 sample infill soil-sampling program was undertaken over Mt Charter with results defining the broad geometry and orientation of the mineralized zone. The highest soil sample assay returned 4.67ppm Au and the defined soil anomaly is continuous at grades of ~1ppm Au.

Five diamond drill holes (MCD020 – MCD024) were drilled into the Mt Charter resource in late 2005 (totalling 541.9m) with better results including: 56.4m @ 1.6g/t Au, 38g/t Ag, 64m @ 0.8g/t Au, 7g/t Ag, and 22m @ 1.0g/t Au, 46g/t Ag.

In 2006 a further twelve holes were drilled into the resource (MCD025-036) to reduce the drill-hole spacing to approximately 50m x 50m.

Intersections obtained during this program included: 51m @ 1.1g/t Au, 32.9g/t Ag, and 1.25% Zn, 92m @ 1.3g/t Au, 32.8g/t Ag, 51.7m @ 1.1g/t Au, 22g/t Ag, and 78m @ 1.7g/t Au, 70g/t Ag

Results were interpreted to suggest that the gold and silver mineralisation occurs in a NNE-striking, sub-vertical package of en-echelon barite ± galena ± sphalerite veins that are not intrinsically related to the Mixed Sequence/Hellyer Basalt (equiv.) contact.

Veins generally in the order of 2cm to breccia zones of ~3m and are superimposed on a pre-existing sericite+pyrite altered "Mixed Sequence" dacite. This vein set was interpreted to host all Au, Ag, Zn, and Ba mineralisation at Mt Charter.

Bass Metals Limited calculated a resource for the Mt Charter deposit of 6.1 million tons @ 1.22g/t Au, 35.5g/t Ag, 0.5% Zn and 9.7% Ba.

Digitally captured historic dipole-dipole 2D IP was 3D modelled with data suggesting that the area immediately to the northwest of the Mt Charter deposit was sulphide altered.

Further a chargeability anomaly with characteristics similar to Mt Charter and totally covered by Hellyer Basalt equivalent rocks was defined approximately 400m SW of Mt Charter, the South Charter Prospect.

Re-evaluation of UTEM identified an anomaly lying to the west of the Mt Charter deposit considered similar in type to the existing Mt Charter UTEM anomaly which was tested by drillhole MCD037

Two soil programs designed to test the North Charter arsenic anomaly and South Charter IP anomaly were completed.

The work confirmed the presence of coincident Sb and Tl with the As anomaly in the Aberfoyle soil dataset.

Detailed mapping of the Mt Charter area was undertaken which shed further light on the controls on mineralisation in the deposit and indicated some areas where shallow drilling could increase the tonnage (~10%) and at the southern end, potentially add some higher grade material also.

In 2014-15 124 C-horizon soil samples were collected. While no new targets were identified the known Mt Charter "pathfinder" anomaly was better defined. This suggests that the Mt Charter hydrothermal system is a major feature, extending well beyond the known gold-silver mineralisation at Mt Charter itself (Richardson, 2014b).

A single 400m diamond drill hole was proposed to explore the relatively poorly tested northern end of the anomaly (Richardson, 2015) but was never drilled.

In late 2019 four holes MCD38 to MCD41 totalling 555m were drilled by Moina Gold Pty Ltd into the body of the resource on infill sections in order to confirm the resource and provide material for metallurgical testwork. All four holes intersected barite+sulphide mineralisation. Assaying was delayed and final results for gold and base metals not received until the 2020/21 reporting year.

All four holes intersected broad consistently mineralised zones with MCD39 77m @ 1.13g/t Au from surface, MCD40 88.7m @ 1.84g/t Au from surface and MCD41 61m @ 1.3g/t Au from 1m. The highest grade zone was in MCD40 with 13.5m @ 3.27g/t Au.

Best individual assays were 73.5m to 74.5m, 1m at 4.93g/t Au in MCD40.

In late 2020/early 2021 Moina Gold Pty Ltd drilled a further 4 holes for 384.5m targeting the southern margin of the deposit with the intention of defining the southern bound to ore, determining this bounds relationship to the Barite Creek Fault, and exploring for any high grade development which may have occurred along this structure.

Delays due to COVID related issues meant assays were only received later in the 2021/22 year and so the drilling was reported in MacDonald (2022).

The assay results include an intersection of 13m @ 9.99g/t Au in MCD44, part of a broader zone of 69m (from surface) @ 3.65g/t Au.

### **North Mt Charter**

Work specific to the North Mt Charter prospect appears to consist of the following,

- Gridding (100m spaced lines)
- Geological mapping
- Ground magnetics
- Dipole-dipole IP – 5m and 25m dipoles

- Regional C-horizon soil sampling with analysis for Au, Ag, As, Cu, Pb, Zn and Ba
- C-horizon soil sampling with ICP analyses for 40 elements

### Proposed Drilling Programme

A single hole of 300m length is proposed.

The hole should be collared from within the hangingwall andesite unit and pass through the upper contact of the Mixed Sequence dacites and continue until the end of the hole is down dip from the collar of MC4. An angle of -60 is proposed.

Access for optimal drill collar positions may be a little problematic. The proposed hole is shown drilled east-southeastrly on mine grid 5200mN, the same section as MC3, however, this azimuth is not perpendicular to the strike of the targeted contact which would require some access developed into rainforest. It is proposed to investigate more optimal collar positions but if not suitable revert to collaring the hole where shown.

Experience in the area suggests that HQ3 core diameter remains much more coherent than NQ for only an increment to metrage cost. The hole should be lined with PVC for subsequent DHEM surveying.

	<b>proposed North Mt Charter hole</b>
<b>Easting mE</b>	389,380mE
<b>Northing mN</b>	5,392,110mN
<b>RL</b>	~65masl
<b>Azimuth (true)</b>	115
<b>Dip</b>	-50
<b>Length</b>	300
<b>Datum</b>	MGA94 z55

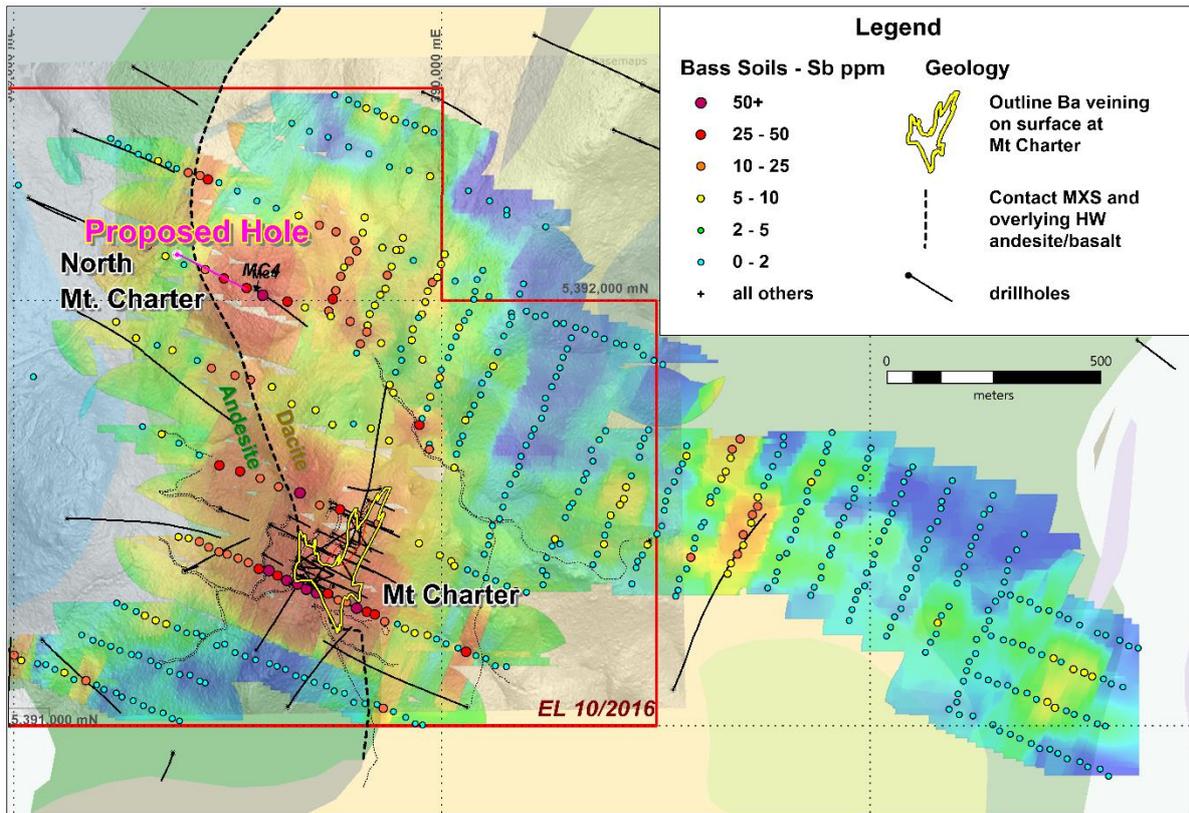


Figure 8: Proposed hole (in pink) on Bass Metals ICP soil geochemical Sb image and points. Also showing historical drilling and extent of barite+sulphide veined zone on surface.

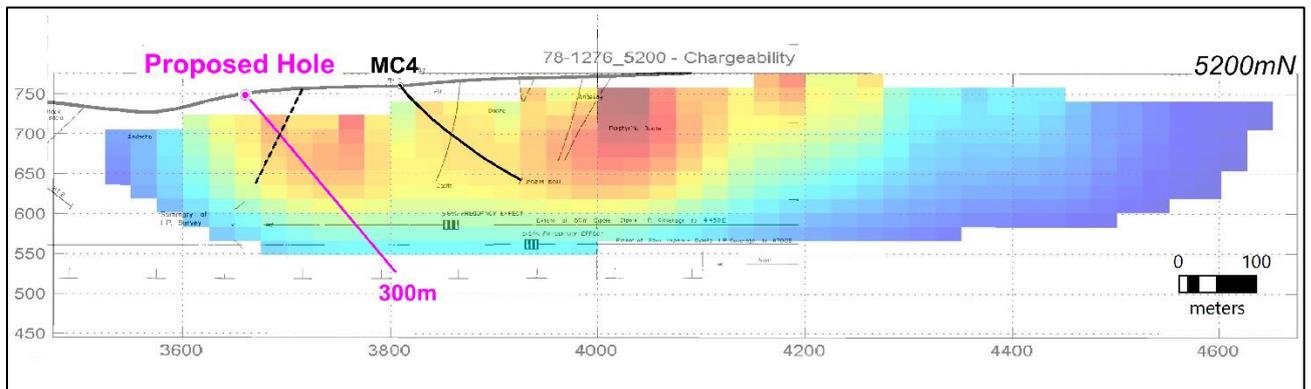


Figure 9: Proposed hole on section 5200mN with inverted dipole-dipole chargeability as background.

### **Programme Objectives and Results**

The hole will provide a test for any gold+silver+base metal+barite mineralisation in the ~100m immediately beneath the HW andesite/MXS dacite contact, as well as on the contact itself.

The hole will test the IP chargeability anomaly on and around this contact.

The hole will also provide additional information (trace elements, SWIR) for vectoring within the alteration zone.

### **Environmental Impact Information**

The current drill collar position utilises disturbed area of the old track leading eastwards from the powerline track. As noted this position is not optimal with respect to the strike of the target. More optimal positions occur in the rainforest just east of the cleared powerline corridor and will be investigated as possible collar sites with the site on the old rack shown the fall back position.

## **Project Risk Management**

The main risks are:

Drilling conditions don't allow drilling of hole - Not expected but HQ3 allows for reducing and casing off.

Hole swings and misses target - Broad target zone but HQ3 will reduce swing and lift.

Fires - Manage all heat sources away from any inflammable materials including plant material and oily rags etc.

Hydrocarbon spills - Use oil absorbent matting beneath all potential oil sources, oil absorbent sausages in sump, maintain spill kit on site.