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Ramara Quarry

MAXIMUM PREDICTED WATER TABLE REPORT

Brand X Materials and Supply Inc.

File 424371 | April 6, 2026

Document Control

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Date:

April 6, 2026

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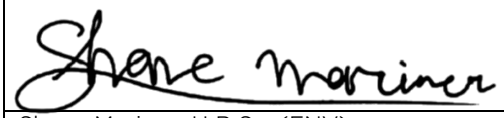	 
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Issue	Date	Description
1	April 6, 2026	Final Report

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1 Introduction

Tatham Engineering Limited (Tatham) has been retained by the Brand X Materials Supply Inc. to prepare this Maximum Predicted Water Table report in support of an Aggregate Resources Act (ARA) Class A Quarry Below Water licence application for the proposed Ramara Quarry, located at 6059 Pearl Carrick Road in Ramara, Simcoe County, hereafter referred to as the 'site' or 'Proposed Quarry'. A Site Location Plan is presented as Figure 1.

The site consists of approximately 72.0 ha (177.9 acres) of undeveloped lands consisting of shallow bedrock, woodlands and/or wetlands (Wu-1 through Wu-4) as shown on Figure 1. It is noted towards the northwestern portion of the property, there is a small area of exposed bedrock where the thin topsoil has been scraped away.

The site is bounded by Donald Carrick Lane undeveloped wooded/wetland areas to the north, Pearl Carrick Road followed by an existing aggregate operation (ARA Licence No. 3601) to the west, an existing aggregate operation (ARA Licence No. 608542) to the east, and existing residential property and Concession Road B-C followed by undeveloped wooded/wetland areas to the south and an existing aggregate operation (ARA Licence No. 104616) to the southwest.

The area surrounding the site primarily comprise other aggregate operations, and a few rural residential properties. The landscape is primarily shallow bedrock with a thin overburden layer including scattered wetland and woodland areas. The Sweetwater Nature Reserve, which is maintained by the Couchiching Conservancy, is located immediately north of the property.

The purpose of this report is to identify the maximum predicted water table elevation, in metres above seas level (m asl), relative to the proposed depth of excavation.

This report outlines the field program conducted at the site to determine the maximum predicted water table elevation. Additional details and results from field investigations and monitoring programs are summarized in the Level 1 and 2 Hydrogeological Assessment (Tatham, 2025).

2 Proposed Site Development

2.1 PROPOSED SITE OPERATIONS

It is expected all overburden material will be removed prior to initiating quarrying operations. The overburden material will be used for berm construction.

The proposed license boundary includes 43.3 hectares of the site with the proposed area of extraction area covering 34.4 hectares.

Extraction will be completed in three phases to a maximum depth of 15 m in 1 or 2 benches as shown on Figure 2. The benching will be dependent on the geology and quality of rock units encountered. Based on the field investigations to date, the Upper Gull River Formation is present at elevations of 238.1 to 235.0 m asl, with the Lower Gull River Formation extending to the shadow lake formation at an elevation of approximately 233.6 m asl. Both formations will be taken in a single lift, where possible. The underlying unit consists of the Shadow Lake Formation, which will not be extracted.

As the proposed quarry is located between three existing quarrying operations, two of which are licensed to extract below the water table it is anticipated there will be groundwater lowering across the site as a result of the neighboring approved aggregate operations. Further, with the exception of the upper weathered bedrock, which can periodically convey surface water flows, the underlying more competent bedrock has a fairly low permeability which will ultimately limit the amount of groundwater inflow into the quarry. As such, it is not expected significant groundwater inflow will occur at the site, and therefore conventional groundwater management is expected through quarry operation. The focus for water management will be the control and maintenance of the surface water inflow from the surrounding external drainage areas currently conveyed through the site from the wetland located in the south half via a shallow fracture system within the upper weathered bedrock unit. This flow in the shallow weathered bedrock is a contributor to the Head River tributary system originating just north of the site. A water management strategy on-site will be implemented to ensure this surface water system is maintained and continues to function as per existing conditions both during and post quarry activity.

2.1.1 Water Management Features

The primary water management required for the site will be to ensure the external surface water flows currently are conveyed through the site from the existing wetland area on the south half of the site will continue both during and post quarry activity. As described above, under existing conditions this surface flow is primarily conveyed from south to north seasonally through the site

via the shallow bedrock system. To maintain dry operating conditions within the footprint of the proposed quarry, the surface water flowing towards the extraction area from the wetland on the south half of the site is proposed to be collected at the south boundary of the extraction limit and diverted around the extraction area via gravity drainage and a pumping system if necessary. This water will be discharged to an infiltration feature to be constructed along the north limit of the site where it will be connected into the shallow fracture network within the upper weathered bedrock unit. This will ensure surface water will continue to feed the shallow bedrock system contributing flow to the Head River tributary downstream of the site. To ensure the rate of discharge to the shallow bedrock system matches existing conditions, storage of water will be provided on-site via storage pond areas sized to allow for the control and steady release of flows to the downstream system to match existing conditions.

It is also expected some groundwater seepage will occur into the quarry footprint from the deeper aquifers through the exposed bedrock faces. This inflow will be collected in the quarry sump and filtered in the on-site storage ponds then discharged to the same infiltration system proposed along the north boundary for connection to the shallow fracture network within the upper weathered bedrock unit.

The Head River tributary downstream of the site is recognized as a Cool-Water Stream in accordance with the Ontario Stream Assessment Protocol. As such, baseline temperatures (± allowing for seasonal variability, etc.) and turbidity are selected to be parameters of note to be maintained throughout the life of the quarry. To achieve this, surface water control structures such as covered culverts/piping and filtering through cooler shallow rock structures will be utilized to strategically re-route the tributary waters in a manner limiting the potential for temperature increases while allowing natural groundwater replenishment to continue.

Phase 1

The Phase 1 extraction area is not expected to intercept the shallow fracture network within the weathered bedrock unit which conveys runoff from the wetland to the south across the site. An earth berm will be constructed along the western limit of the Phase 1 extraction area to ensure no intrusion of surface water flow into the active quarry occurs. For the duration of the Phase 1 extraction, it is expected the conveyance of the external drainage through the site will continue in the same manner as it currently does under existing conditions.

Groundwater seepage from the deeper aquifer into the Phase 1 quarry footprint and surface runoff from direct precipitation falling on the Phase 1 extraction area, will be collected in the quarry sump and discharged to an existing depression storage referred to as WU-01 feature located on-site to allow for the recharge to the shallow bedrock system feeding the Head River tributary.

Phase 2/3

For the Phase 2 and 3 of extraction an engineered linear infiltration feature will be constructed along the north limit of the Phase 2 and 3 extraction areas. This feature will consist of a stone filled infiltration trench constructed at a depth sufficient ensure the trench intersects the existing upper shallow fractured bedrock system allowing for the addition of surface water to it for the continued connection to the upper weather bedrock unit which conveys water north off-site to the Head River tributary. The design of this feature will include consideration to line the south limit of the infiltration feature with low permeability soil to prevent water from flowing back into the extraction area.

During these extraction phases the existing shallow bedrock system currently conveying water through the site will be disrupted, therefore, to prevent external flows from the south from entering the Phase 2 and 3 areas a naturalized cutoff swale will be constructed along the south limit of the Phase 2 and 3 extraction areas to redirect external runoff from the upstream wetland and tributaries west towards Pearl Carrick Road. From this location, water will be pumped north to the proposed infiltration feature to be constructed along the north property boundary.

The cutoff swale will be designed with an overflow to allow excess runoff (greater than the volume proposed to be pumped around) to enter the quarry where it will be conveyed to a surface storage feature to be located on the quarry floor. This will allow for the storing and controlled release of surface flow into the infiltration feature which may be needed during periods where surface water flow enters the system in excess of the conveyance capacity of the existing shallow rock fracture system (i.e. during spring freshet and after major storm events).

2.1.2 Site Rehabilitation

Pits and quarries are temporary land use types. Once aggregate extraction has been concluded, the ARA demands pits/quarries undergo rehabilitation. This process involves restoring the land to a safe and stable condition which facilitates the post-extraction use of the land for a variety of needs such as wildlife habitats, wetlands, recreational parks, forestry, agriculture, etc. Following extraction, it is proposed the quarry will be gradually filled with excess soil to allow for progressive naturalization including forested areas, meadow/grassland areas, and a wetland in order to provide similar wildlife habitats and connectivity to the communities to the north of the property.

The Proposed Quarry will be progressively rehabilitated to achieve pre-extraction grades across the Site. Given the limited overburden on-site, clean off-site materials will be utilized throughout rehabilitation to supplement on-site overburden. Rehabilitation will initiate on the Phase 1 lands once extraction in this Phase is complete. Grades will be returned to pre-extraction grades along the eastern site limits continuing to the west as subsequent Phases are extracted. The phasing

of the rehabilitation will recognize some of the quarry area will be used during the later phases of quarrying for interim water storage.

As part of final rehabilitation, the grades will be such that overland flow of surface water will continue through the center of the site from south to the north property line as per existing conditions. This will include the use of select material of appropriate permeability and a rock lined conveyance channel mimicking the current flow of surface water through the shallow fracture network within the weather bedrock unit. The infiltration feature along the north boundary will remain in perpetuity to maintain the connection from the surface water to the shallow bedrock system.

All equipment and structures will be removed, and all groundwater control features will be modified and/or removed to allow groundwater and surface water to return to near baseline conditions without any active long-term water management. To return the site back to existing conditions, the proposed grades will be designed to allow for water to pond seasonally similar to existing conditions. This along with the proposed infiltration trench will maintain flows to the tributary downstream while minimizing the increase in water temperature and potential impacts to the Head River tributary.

3 Field Program

3.1 BOREHOLE DRILLING AND MONITORING WELL INSTALLATION

The borehole drilling and monitoring well installation program was designed to allow for a detailed characterization of the groundwater regime.

Five boreholes, designated BH24-1 through BH24-5, were advanced by Pontil Drilling between April 8 and 10, 2024, to depths of 10.1 to 10.6 m below existing grade. Monitoring wells, designated MW24-1 through MW24-5, were installed in all boreholes upon completion and were constructed with 50 mm PVC riser pipe and 3.0 m long slotted screens. Annular space was filled with filter sand surrounding the well screen and 0.3 m above the well screen. The remaining annular space was backfilled with bentonite holeplug. All monitoring wells were finished with monument casings.

An additional borehole designated MW6 was advanced by Walker Drilling Ltd. on March 25, 2025 to a depth of 16.8 m. A PVC monitoring well, designated MW6, was installed with a 3.0-meter-long screen on March 28, 2025.

Monitoring wells MW24-1 through MW24-5 and MW6 using a Trimble R12i GNSS receiver connected to the CANNET GNSS network via built in GNSS integrated antenna. The receiver is connected to a TSC7 controller using Trimble Access software for data collection. This equipment provides an accuracy of 8 mm horizontally and 15 mm vertically. Elevations provided reference the CGVD28 datum.

The monitoring well locations are presented in Figure 3, construction details are summarized in Table 1, and borehole logs are provided in Appendix A.

Table 1: Groundwater Monitoring Well Construction Details

MONITORING WELL ID	GROUND SURFACE ELEVATION (m asl)	CORE DEPTH (m bgs)	WELL DEPTH (m bgs)	SCREENED INTERVAL (m asl)
MW24-1	247.55	10.1	10.1	237.5 – 240.5
MW24-2	247.58	10.3	9.0	238.6 – 241.6
MW24-3	245.25	10.5	9.7	235.6 – 238.6
MW24-4	246.56	10.6	10.0	236.6 – 239.6
MW24-5	245.43	10.6	10.0	235.4 - 238.4
MW6	245.69	16.8	12.1	233.6 – 236.6

3.2 WATER LEVEL MEASUREMENTS

Beginning in May 2024, Tatham representatives installed continuously recording data loggers to facilitate continue groundwater level monitoring and collected monthly manual water level measurements from all monitoring wells. A barometric pressure transducer was installed on-site to correct the groundwater level monitoring dataloggers for changes due to fluctuations in atmospheric pressure. The dataloggers were set to a 4-hour sampling frequency. The results of the continuous water level monitoring are provided on individual hydrographs for each monitoring well presented in Appendix B.

Seasonal fluctuations were noted at all monitoring wells illustrating higher groundwater levels during the Spring and Fall months and lower groundwater levels during the Summer and Winter months.

The maximum groundwater elevations for each monitoring well is presented in Table 2 and shown on Figure 4.

Table 2: Highest Groundwater Elevation

MONITORING WELL ID	HIGHEST GROUNDWATER ELEVATION (m asl)
MW24-1	244.3
MW24-2	245.3
MW24-3	245.5
MW24-4	245.8
MW24-5	245.4
MW6	243.7

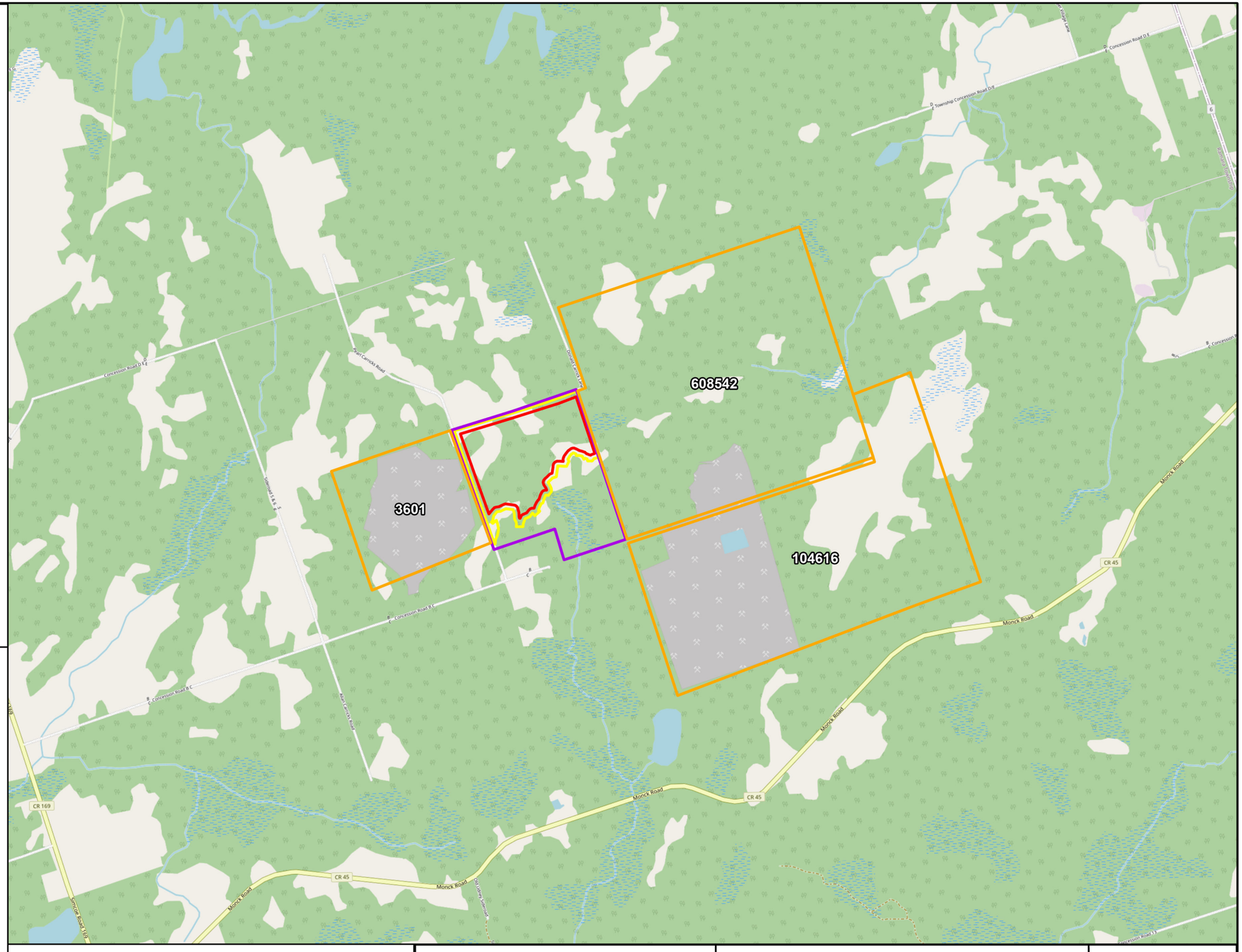
The maximum groundwater table elevation ranged from 243.7 to 245.8 m asl.

N

NOTES:
1. COORDINATE SYSTEM: NAD 1983 UTM ZONE 17N
2.CONTAINS INFORMATION LICENSED UNDER THE OPEN GOVERNMENT LICENSE – ONTARIO.

LEGEND

- PROPOSED LICENCE BOUNDARY
- PROPOSED LIMIT OF EXTRACTION
- PROPERTY BOUNDARY
- NEIGHBORING AGGREGATE PROPERTIES



0 500 1,000 2,000 METERS

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RAMARA QUARRY
MAXIMUM PREDICTED WATER TABLE REPORT
SITE LOCATION PLAN

DWG. No. **FIG-1**

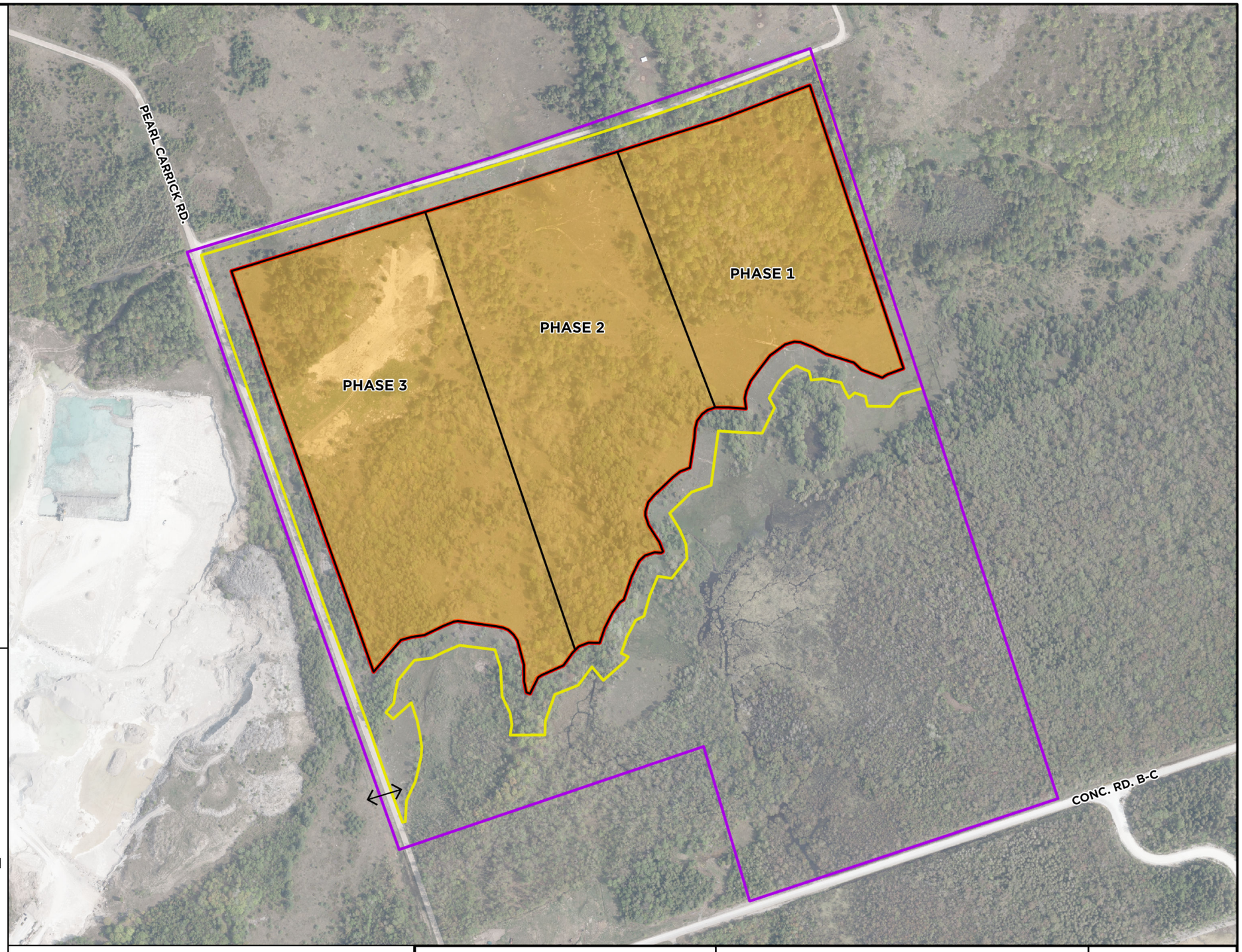
SCALE: 1:25,000 | DRAWN: CW | DATE: JAN. 2026 | JOB NO. 424371

N

NOTES:
1. COORDINATE SYSTEM: NAD 1983 UTM ZONE 17N
2.CONTAINS INFORMATION LICENSED UNDER THE OPEN GOVERNMENT LICENSE – ONTARIO.

LEGEND

- PROPOSED LICENCE BOUNDARY
- PROPOSED LIMIT OF EXTRACTION
- PROPERTY BOUNDARY
- EXTRACTION PHASING
- PROPOSED ENTRANCE/EXIT LOCATION



0 100 200 400 METERS

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RAMARA QUARRY
MAXIMUM PREDICTED WATER TABLE REPORT
MINING PHASING PLAN

DWG. No. **FIG-2**

SCALE: 1:5,000 | DRAWN: CW | DATE: JAN. 2026 | JOB NO. 424371

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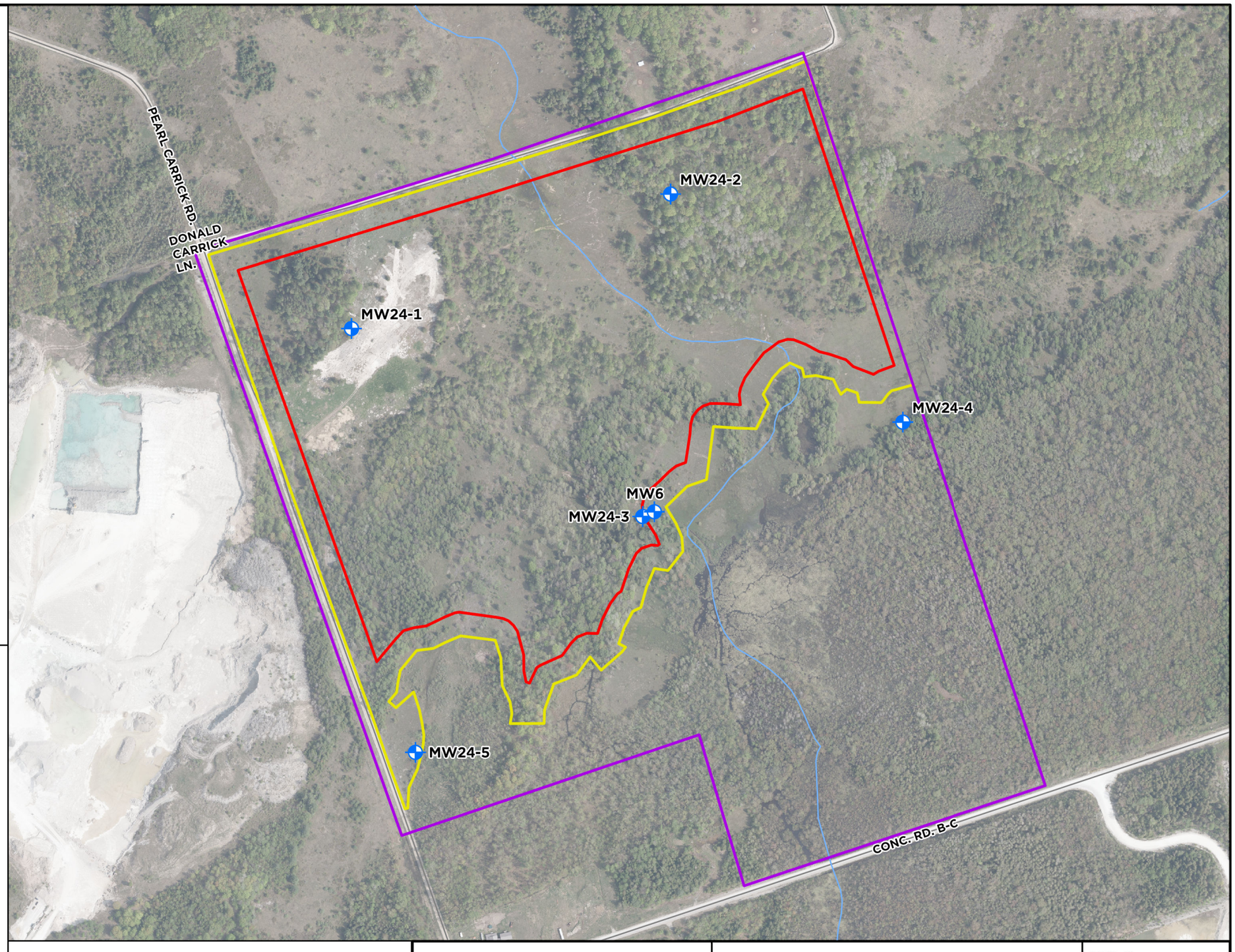
N

NOTES:
1. COORDINATE SYSTEM: NAD 1983 UTM ZONE 17N
2.CONTAINS INFORMATION LICENSED UNDER THE OPEN GOVERNMENT LICENSE – ONTARIO.

LEGEND

- PROPOSED LICENCE BOUNDARY
- PROPOSED LIMIT OF EXTRACTION
- PROPERTY BOUNDARY
- MONITORING WELLS
- WATERBODY
- WATERCOURSE
- ROAD



0 100 200 400 METERS

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RAMARA QUARRY
MAXIMUM PREDICTED WATER TABLE REPORT
GROUNDWATER MONITORING LOCATION PLAN

DWG. No. **FIG-3**

SCALE: 1:5,091 | DRAWN: CW | DATE: JAN. 2026 | JOB NO. 424371

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N

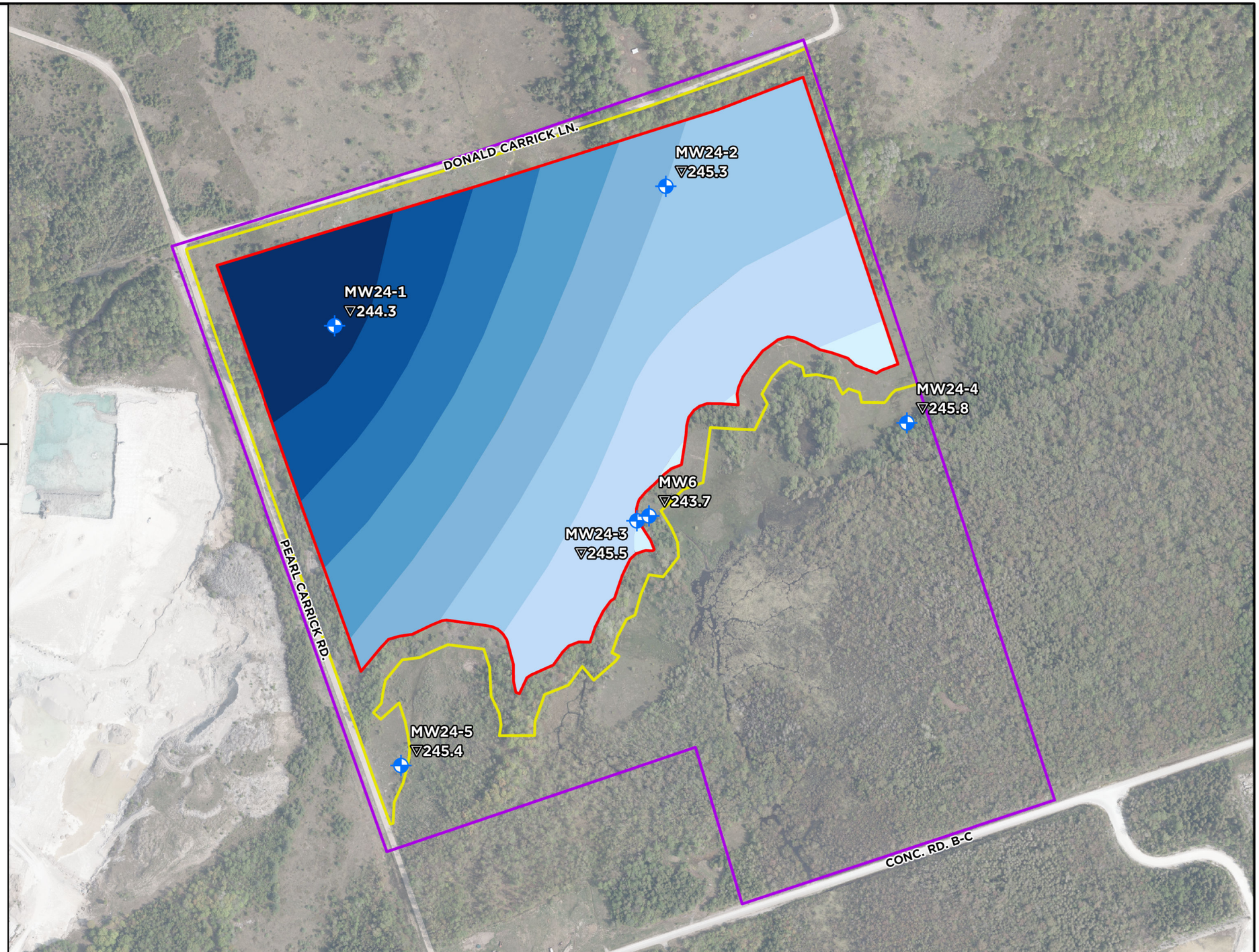
NOTES:
1. COORDINATE SYSTEM: NAD 1983 UTM ZONE 17N
2.CONTAINS INFORMATION LICENSED UNDER THE OPEN GOVERNMENT LICENSE – ONTARIO.

LEGEND

- PROPOSED LICENCE BOUNDARY
- PROPOSED LIMIT OF EXTRACTION
- PROPERTY BOUNDARY
- MONITORING WELLS

GROUNDWATER ELEVATION (m asl)

- < 244.4
- 244.4-244.6
- 244.6- 244.8
- 244.8-245.0
- 245.0-245.2
- 245.2-245.4
- 245.4-245.6
- > 245.6



0 100 200 400 METERS

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RAMARA QUARRY
MAXIMUM PREDICTED WATER TABLE REPORT
MAXIMUM GROUNDWATER CONTOURS

DWG. No. **FIG-4**

SCALE: 1:5,000 | DRAWN: AO | DATE: JAN. 2026 | JOB NO. 424371

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Appendix A:
Borehole Logs

Tatham Engineering Ltd
645 Veterans Drive
L4N 9H8
Telephone: 7057339037

WELL NUMBER MW24-1

PROJECT NAME Proposed Ramara Quarry
CLIENT Brand X Materials and Supply Inc.
PROJECT LOCATION 6059 Pearl Carrick Road, Ramara, Ontario
PROJECT NUMBER 424371
UTM COORDINATES: 4950285 m N, 640471.3 m E
DATE STARTED 4/8/24 **COMPLETED** 4/8/24
GROUND ELEVATION 247.55 m **HOLE SIZE** 3.78"
DRILLING CONTRACTOR Pontil Drilling
GROUND WATER LEVELS:
DRILLING METHOD Coring
AT TIME OF DRILLING Water used in drilling
LOGGED BY SDP **CHECKED BY** AK
AT END OF DRILLING Water used in drilling
NOTES Stick-up = 0.74 m
AFTER DRILLING 7.22 m / Elev 240.34 m

DEPTH (m)	SAMPLE TYPE NUMBER	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
				Monument Casing	
				0.38 (247.18) SAND: Brown, sand, some silt, trace organics, moist	
	RC 1	Upper Gull River Formation		GULL RIVER FORMATION: Grey to brown, fine grained dolostone, moist The Gull River Formation is a variably dolomitized, predominantly muddy limestone. This formation is subdivided into two informal members, lower and upper. The upper unit is characterized by a distinctive dolomitic, fossiliferous lime mudstone and is characterized by the abundance of chert nodules. The lower part of the Formation consists primarily of green-grey to tan, argillaceous dolostone, and dolomitic limestones. Fossils are sparse suggesting a sabkha to supra- / upper intertidal depositional environment.	
2	RC 2				Bentonite holeplug
4	RC 3				
	RC 4				
6	RC 5				
8	RC 6				Filter sand and 50 mm diameter slotted screen
	RC 7	Lower Gull River Formation		9.52 (238.03) Layers of green shale observed 10.14 (237.41)	
10				Bottom of hole at 10.14 m.	

Tatham Engineering Ltd
645 Veterans Drive
L4N 9H8
Telephone: 7057339037

WELL NUMBER MW24-2

PROJECT NAME Proposed Ramara Quarry
CLIENT Brand X Materials and Supply Inc.
PROJECT LOCATION 6059 Pearl Carrick Road, Ramara, Ontario
PROJECT NUMBER 424371
UTM COORDINATES: 4950458.6 m N, 640883.9 m E
DATE STARTED 4/8/24 **COMPLETED** 4/8/24
GROUND ELEVATION 247.58 m **HOLE SIZE** 3.78"
DRILLING CONTRACTOR Pontil Drilling
GROUND WATER LEVELS:
DRILLING METHOD Coring
AT TIME OF DRILLING Water used in drilling
LOGGED BY SDP **CHECKED BY** AK
AT TIME OF DRILLING Water used in drilling
NOTES Stick-up = 0.92 m
AFTER DRILLING 7.50 m / Elev 240.08 m

DEPTH (m)	SAMPLE TYPE NUMBER	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
					Monument Casing
				SILTY SAND: Brown, silty sand, wet	
				0.90 246.68	
	RC 1	Upper Gull River Formation		GULL RIVER FORMATION: Grey, fine grained dolostone, wet The Gull River Formation is a variably dolomitized, predominantly muddy limestone. This formation is subdivided into two informal members, lower and upper.	
2	RC 2			The upper unit is characterized by a distinctive dolomitic, fossiliferous lime mudstone and is characterized by the abundance of chert nodules.	
	RC 3				
	RC 4			The lower part of the Formation consists primarily of green-grey to tan, argillaceous dolostone, and dolomitic limestones. Fossils are sparse suggesting a sabkha to supra- / upper intertidal depositional environment.	Bentonite holeplug
4					
	RC 5				
6					
	RC 6				
					Filter sand and 50 mm diameter slotted screen
8	RC 7			8.50 239.08	
		Lower Gull River Formation		Layers of green shale observed	
	RC 8				
10				10.25 237.33	
				Bottom of hole at 10.25 m.	

Tatham Engineering Ltd
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L4N 9H8
Telephone: 7057339037

WELL NUMBER MW24-3

PROJECT NAME Proposed Ramara Quarry

CLIENT Brand X Materials and Supply Inc.

PROJECT LOCATION 6059 Pearl Carrick Road, Ramara, Ontario

PROJECT NUMBER 424371

UTM COORDINATES: 4950041.9 m N, 640847.9 m E

DATE STARTED 4/9/24 **COMPLETED** 4/9/24

GROUND ELEVATION 245.25 m **HOLE SIZE** 3.78"

DRILLING CONTRACTOR Pontil Drilling

GROUND WATER LEVELS:

DRILLING METHOD Coring

AT TIME OF DRILLING Water used in drilling

LOGGED BY SDP **CHECKED BY** AK

AT END OF DRILLING Water used in drilling

NOTES Stick-up = 0.95 m

AFTER DRILLING 0.91 m / Elev 244.34 m

DEPTH (m)	SAMPLE TYPE NUMBER	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
				Monument Casing	
	RC 1	Upper Gull River Formation		0.15 SAND: Brown, sand, trace organics, moist 245.10 GULL RIVER FORMATION: Grey, fine grained dolostone, wet	
	RC 2			The Gull River Formation is a variably dolomitized, predominantly muddy limestone. This formation is subdivided into two informal members, lower and upper.	
2	RC 3			The upper unit is characterized by a distinctive dolomitic, fossiliferous lime mudstone and is characterized by the abundance of chert nodules.	
				The lower part of the Formation consists primarily of green-grey to tan, argillaceous dolostone, and dolomitic limestones. Fossils are sparse suggesting a sabkha to supra- / upper intertidal depositional environment.	Bentonite holeplug
4	RC 4				
	RC 5				
6				6.60 238.65 Layers of green shale observed	
	RC 6	Lower Gull River Formation			
8	RC 7				Filter sand and 50 mm diameter slotted screen
	RC 8				
10				10.54 234.71 Bottom of hole at 10.54 m.	

Tatham Engineering Ltd
645 Veterans Drive
L4N 9H8
Telephone: 7057339037

WELL NUMBER MW24-4

PROJECT NAME Proposed Ramara Quarry

CLIENT Brand X Materials and Supply Inc.

PROJECT LOCATION 6059 Pearl Carrick Road, Ramara, Ontario

PROJECT NUMBER 424371

UTM COORDINATES: 4950163.9 m N, 641184.5 m E

DATE STARTED 4/10/24 **COMPLETED** 4/10/24

GROUND ELEVATION 246.56 m **HOLE SIZE** 3.78"

DRILLING CONTRACTOR Pontil Drilling

GROUND WATER LEVELS:

DRILLING METHOD Coring

AT TIME OF DRILLING Water used in drilling

LOGGED BY SDP **CHECKED BY** AK

AT END OF DRILLING Water used in drilling

NOTES Stick-up = 1.04 m

AFTER DRILLING 3.97 m / Elev 242.59 m

DEPTH (m)	SAMPLE TYPE NUMBER	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
				Monument Casing	
				0.33 SAND: Brown, sand, some silt, wet 246.23	
	RC 1	Upper Gull River Formation		GULL RIVER FORMATION: Fine grained dolostone, wet	
	RC 2			The Gull River Formation is a variably dolomitized, predominantly muddy limestone. This formation is subdivided into two informal members, lower and upper.	
2	RC 3			The upper unit is characterized by a distinctive dolomitic, fossiliferous lime mudstone and is characterized by the abundance of chert nodules.	
4	RC 4			The lower part of the Formation consists primarily of green-grey to tan, argillaceous dolostone, and dolomitic limestones. Fossils are sparse suggesting a sabkha to supra- / upper intertidal depositional environment.	Bentonite holeplug
6	RC 5				
	RC 6				
8	RC 7				Filter sand and 50 mm diamter slotted screen
10	RC 8			10.59 235.97	

Bottom of hole at 10.59 m.

Tatham Engineering Ltd
645 Veterans Drive
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WELL NUMBER MW24-5

PROJECT NAME Proposed Ramara Quarry

CLIENT Brand X Materials and Supply Inc.

PROJECT LOCATION 6059 Pearl Carrick Road, Ramara, Ontario

PROJECT NUMBER 424371

UTM COORDINATES: 4949736.8 m N, 640553.9 m E

DATE STARTED 4/11/24 **COMPLETED** 4/11/24

GROUND ELEVATION 245.43 m **HOLE SIZE** 3.78"

DRILLING CONTRACTOR Pontil Drilling

GROUND WATER LEVELS:

DRILLING METHOD Coring

AT TIME OF DRILLING Water used in drilling

LOGGED BY SDP **CHECKED BY** AK

AT END OF DRILLING Water used in drilling

NOTES Stick-up = 0.93 m

AFTER DRILLING 0.81 m / Elev 244.62 m

DEPTH (m)	SAMPLE TYPE NUMBER	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
					Monument Casing
	RC 1	Upper Gull River Formation		0.05 SAND: Brown, sand, some silt, trace organics, moist 245.38 GULL RIVER FORMATION: Grey, fine grained dolostone, moist	
	RC 2			The Gull River Formation is a variably dolomitized, predominantly muddy limestone. This formation is subdivided into two informal members, lower and upper.	
2	RC 3			The upper unit is characterized by a distinctive dolomitic, fossiliferous lime mudstone and is characterized by the abundance of chert nodules.	
4	RC 4			The lower part of the Formation consists primarily of green-grey to tan, argillaceous dolostone, and dolomitic limestones. Fossils are sparse suggesting a sabkha to supra- / upper intertidal depositional environment.	Bentonite holeplug
	RC 5				
6	RC 6	Lower Gull River Formation		6.80 238.63 Layers of green shale observed	Filter sand and 50 mm diameter slotted screen
8	RC 7				
10	RC 8			10.60 234.83	

Bottom of hole at 10.60 m.

Tatham Engineering Ltd
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Telephone: 7057339037

WELL NUMBER MW6

PROJECT NAME Proposed Ramara Quarry

CLIENT Brand X Materials and Supply Inc.

PROJECT LOCATION 6059 Pearl Carrick Road, Ramara, Ontario

PROJECT NUMBER 424371

UTM COORDINATES: 4950047.7 m N, 640862.9 m E

DATE STARTED 3/25/25 **COMPLETED** 3/28/25

GROUND ELEVATION 245.69 m **HOLE SIZE** 4.8"

DRILLING CONTRACTOR Walker Driling

GROUND WATER LEVELS:

DRILLING METHOD Coring

AT TIME OF DRILLING Water used in drilling

LOGGED BY SDP **CHECKED BY** AK

AT END OF DRILLING Water used in drilling

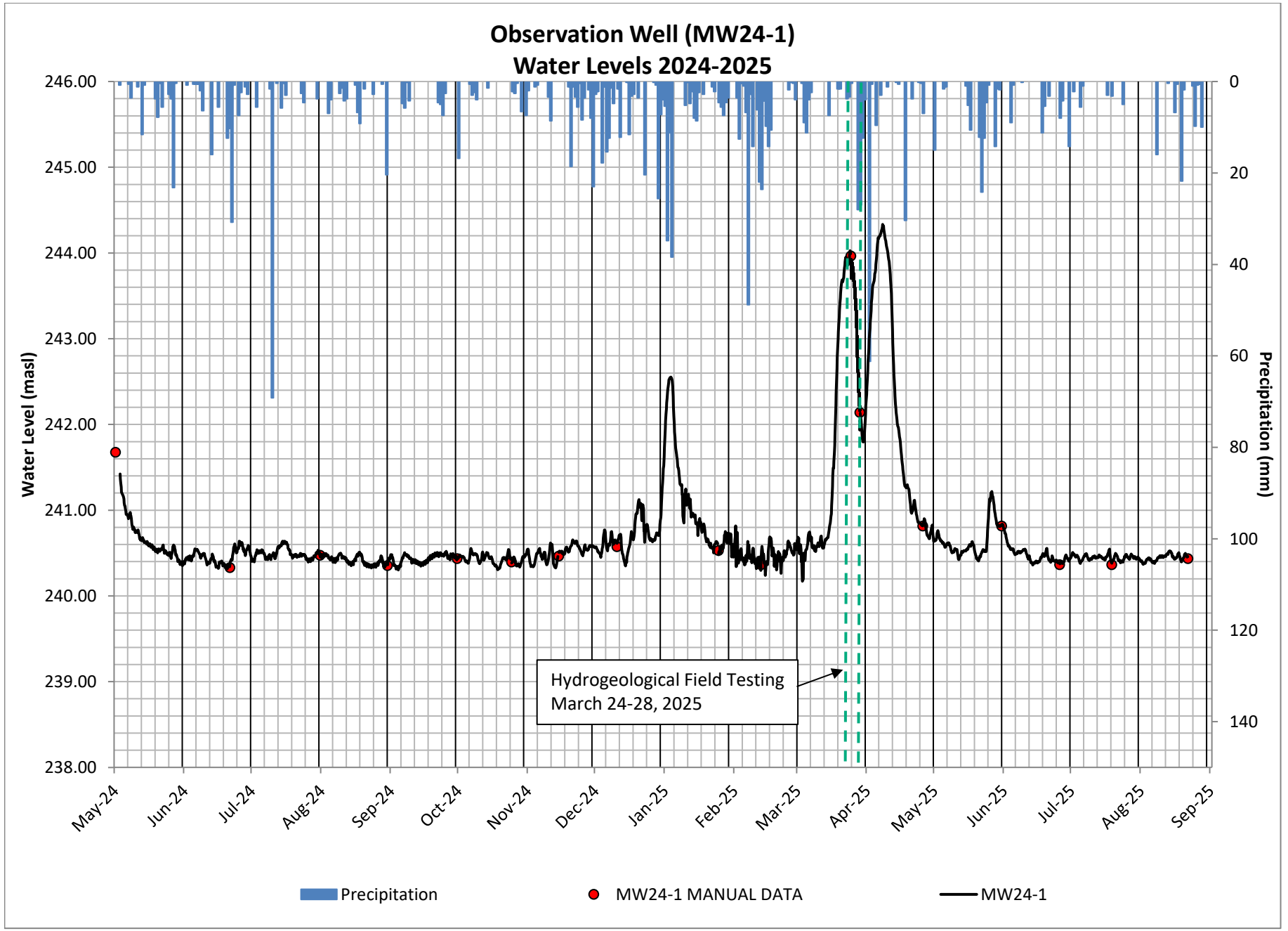
NOTES Stick-up = 0.77 m

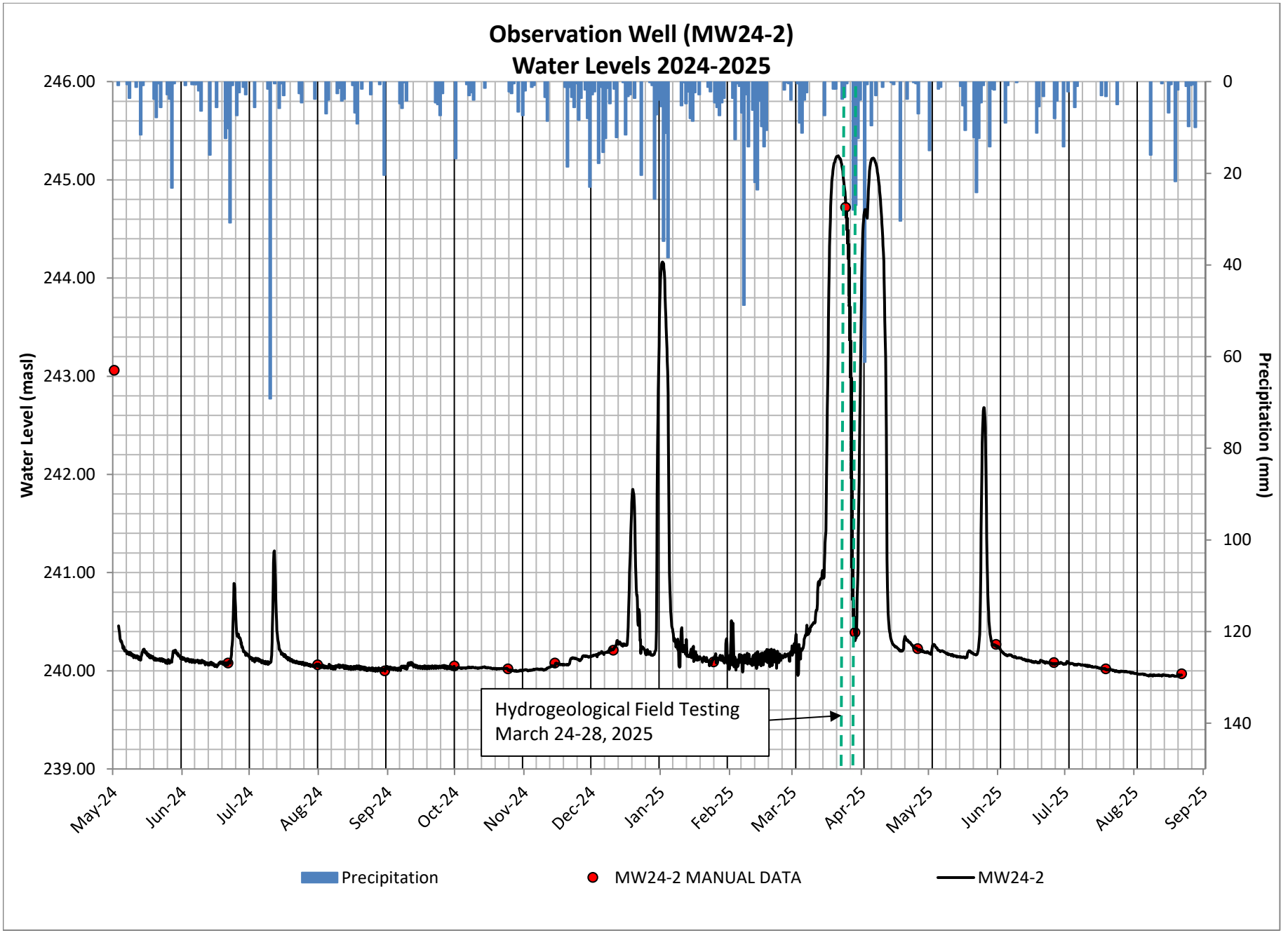
AFTER DRILLING 1.15 m / Elev 244.54 m

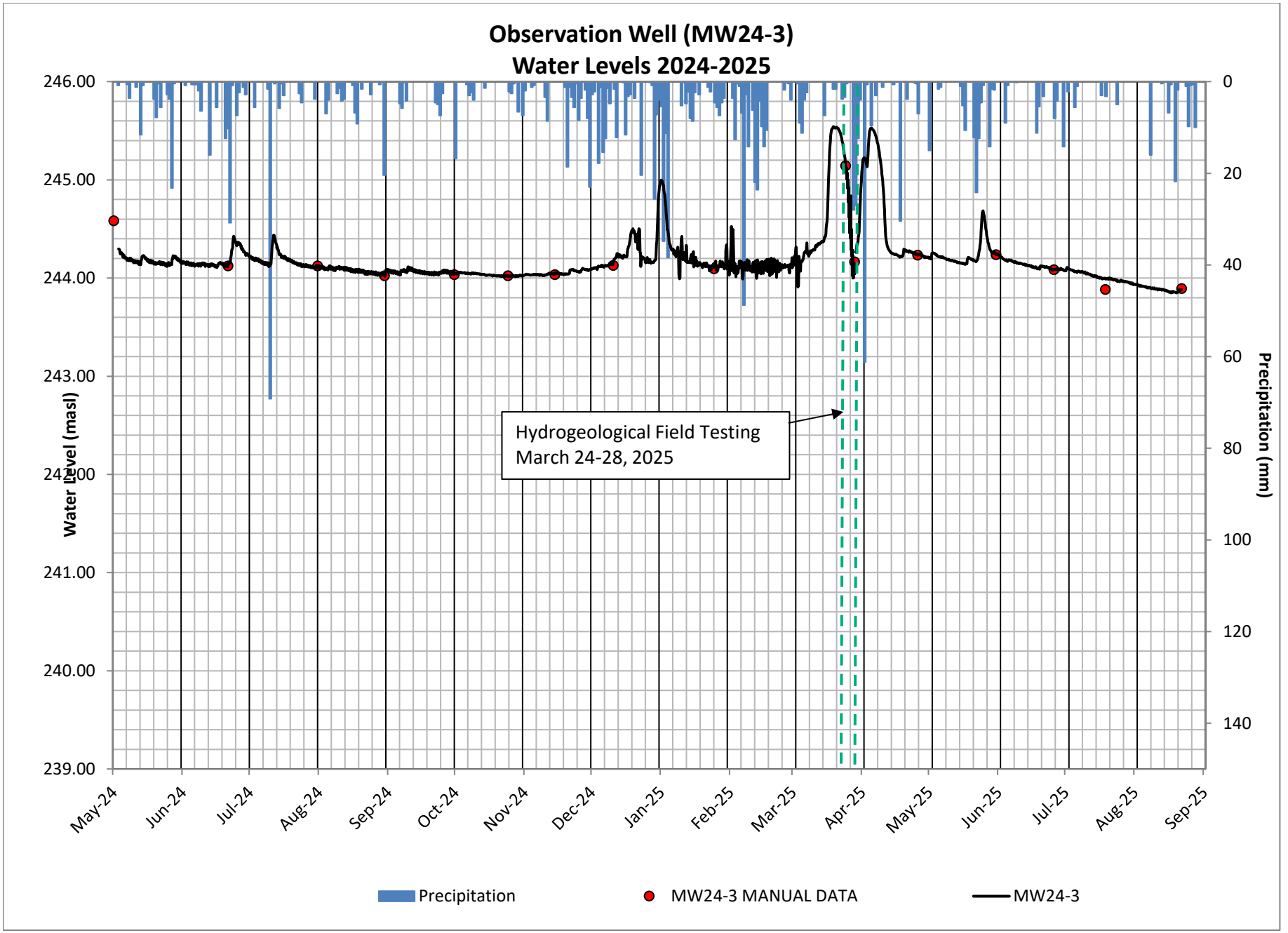
DEPTH (m)	SAMPLE TYPE NUMBER	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
					Monument Casing
	RC 1	Upper Gull River Formation		0.20 SAND: Brown, sand, trace organics, moist 245.49 GULL RIVER FORMATION: Grey, fine grained dolostone, wet The Gull River Formation is a variably dolomitized, predominantly muddy limestone. This formation is subdivided into two informal members, lower and upper. The upper unit is characterized by a distinctive dolomitic, fossiliferous lime mudstone and is characterized by the abundance of chert nodules. The lower part of the Formation consists primarily of green-grey to tan, argillaceous dolostone, and dolomitic limestones. Fossils are sparse suggesting a sabkha to supra- / upper intertidal depositional environment.	
2	RC 2				
	RC 3				Bentonite holeplug
4					
	RC 4				
6					
	RC 5			6.80 239.09 Layers of green shale observed	
		Lower Gull River Formation			
8	RC 6				
	RC 7				
10					Filter sand and 50 mm diameter slotted screen
	RC 8				
12				12.33 233.36	
	RC 9	Shadow Lake Formation		SHADOW LAKE FORMATION: Red, arkosic calcitic sandstone, occassional green shale layers, wet	
14					
	RC 10				Pel Plug seal
16	RC 11			16.77 228.92	

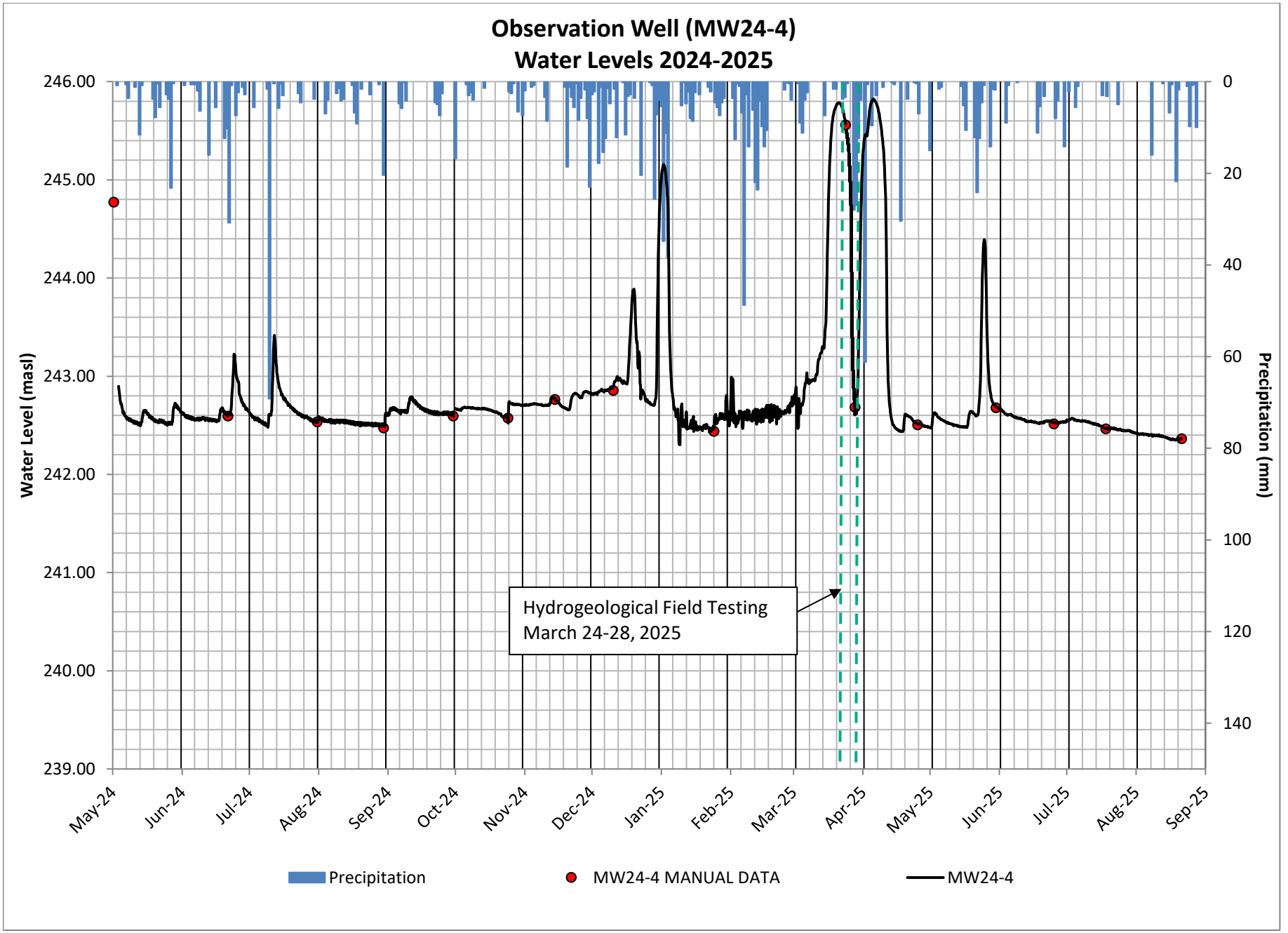
Bottom of hole at 16.77 m.

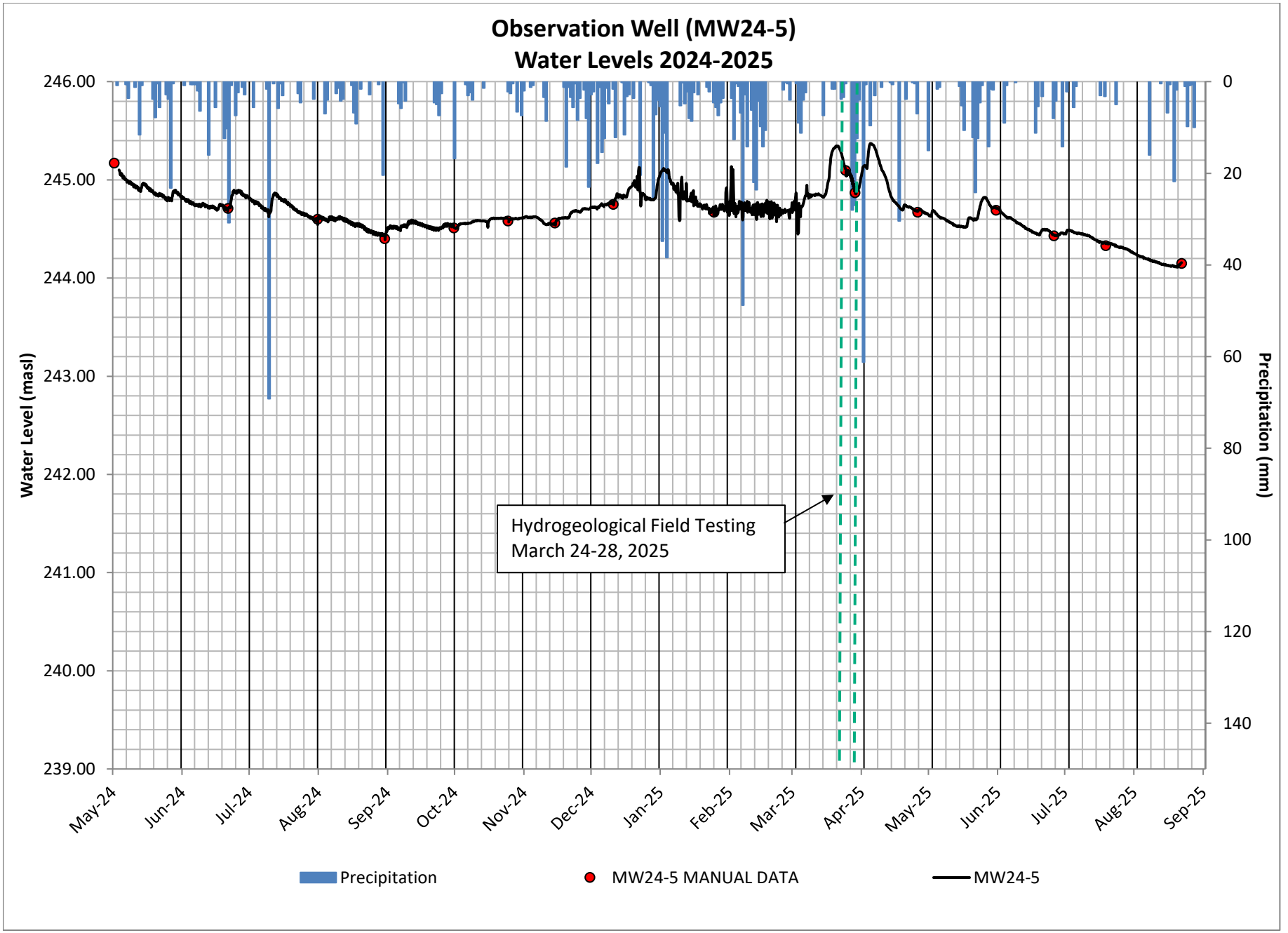
Appendix B: Individual Monitoring Well Hydrographs

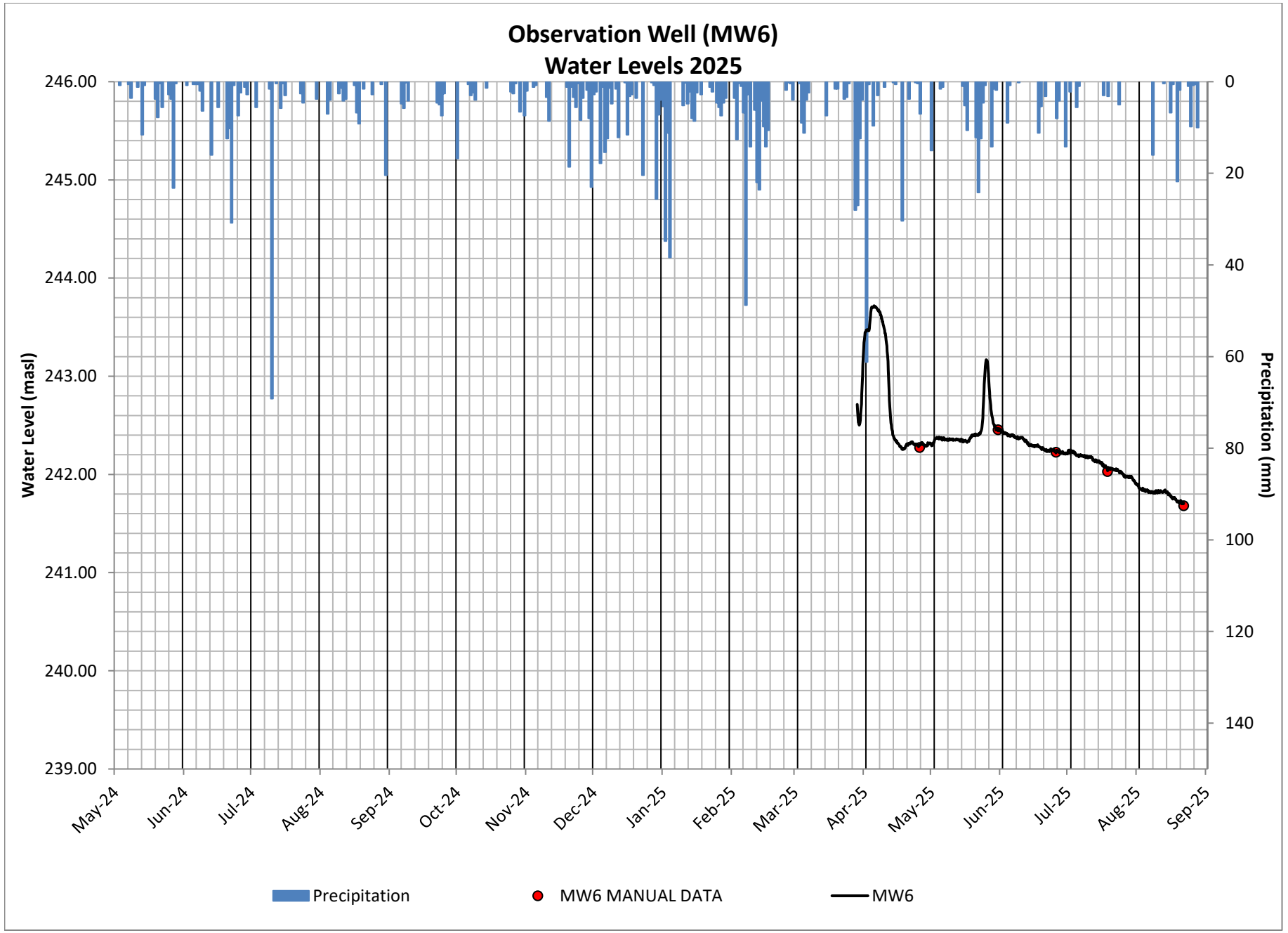

Observation Well (MW24-1)
Water Levels 2024-2025
Water Level (masl)
Precipitation (mm)
246.00
245.00
244.00
243.00
242.00
241.00
240.00
239.00
238.00
0
20
40
60
80
100
120
140
May-24
Jun-24
Jul-24
Aug-24
Sep-24
Oct-24
Nov-24
Dec-24
Jan-25
Feb-25
Mar-25
Apr-25
May-25
Jun-25
Jul-25
Aug-25
Sep-25
Hydrogeological Field Testing
March 24-28, 2025
Precipitation
MW24-1 MANUAL DATA
MW24-1


Observation Well (MW24-2)
Water Levels 2024-2025
Water Level (masl)
Precipitation (mm)
246.00
245.00
244.00
243.00
242.00
241.00
240.00
239.00
0
20
40
60
80
100
120
140
May-24
Jun-24
Jul-24
Aug-24
Sep-24
Oct-24
Nov-24
Dec-24
Jan-25
Feb-25
Mar-25
Apr-25
May-25
Jun-25
Jul-25
Aug-25
Sep-25
Hydrogeological Field Testing
March 24-28, 2025
Precipitation
MW24-2 MANUAL DATA
MW24-2


Observation Well (MW24-3)
Water Levels 2024-2025
246.00
245.00
244.00
243.00
242.00
241.00
240.00
239.00
Water Level (masl)
0
20
40
60
80
100
120
140
Precipitation (mm)
May-24
Jun-24
Jul-24
Aug-24
Sep-24
Oct-24
Nov-24
Dec-24
Jan-25
Feb-25
Mar-25
Apr-25
May-25
Jun-25
Jul-25
Aug-25
Sep-25
Hydrogeological Field Testing
March 24-28, 2025
Precipitation
MW24-3 MANUAL DATA
MW24-3


Observation Well (MW24-4)
Water Levels 2024-2025
Water Level (masl)
Precipitation (mm)
246.00
245.00
244.00
243.00
242.00
241.00
240.00
239.00
0
20
40
60
80
100
120
140
May-24
Jun-24
Jul-24
Aug-24
Sep-24
Oct-24
Nov-24
Dec-24
Jan-25
Feb-25
Mar-25
Apr-25
May-25
Jun-25
Jul-25
Aug-25
Sep-25
Hydrogeological Field Testing
March 24-28, 2025
Precipitation
MW24-4 MANUAL DATA
MW24-4


Observation Well (MW24-5)
Water Levels 2024-2025
246.00
245.00
244.00
243.00
242.00
241.00
240.00
239.00
Water Level (masl)
0
20
40
60
80
100
120
140
Precipitation (mm)
May-24
Jun-24
Jul-24
Aug-24
Sep-24
Oct-24
Nov-24
Dec-24
Jan-25
Feb-25
Mar-25
Apr-25
May-25
Jun-25
Jul-25
Aug-25
Sep-25
Hydrogeological Field Testing
March 24-28, 2025
Precipitation
MW24-5 MANUAL DATA
MW24-5


Observation Well (MW6)
Water Levels 2025
Water Level (masl)
Precipitation (mm)
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245.00
244.00
243.00
242.00
241.00
240.00
239.00
0
20
40
60
80
100
120
140
May-24
Jun-24
Jul-24
Aug-24
Sep-24
Oct-24
Nov-24
Dec-24
Jan-25
Feb-25
Mar-25
Apr-25
May-25
Jun-25
Jul-25
Aug-25
Sep-25
Precipitation
MW6 MANUAL DATA
MW6