October 31, 2025
Project No. 2402309

GSS Engineering Consultants Ltd.
945 3rd Avenue East, Suite 230
Owen Sound, ON
N4K 2K8

Attention: W. Brad Benson

Re: Peer Review Comments
Maximum Predicted Water Table and Hydrogeological Assessment Report
Proposed Class 'A' Pit Above Water (Watson Pit), Teeswater Concrete Ltd.
311804 Highway 6, Mt. Forest
Municipality of West Grey, Grey County

Dear Brad:

GEI Consultants Canada Inc (GEI) has been retained by Teeswater Concrete Ltd. (the Client) to provide a response to the Peer Review comments issued to the Municipality of West Grey by GSS Consultants Ltd, dated May 9, 2025.

It is noted that comments 2, 3, and 4 below are related to maximum groundwater table. We have addressed these comments individually, however, to resolve the overall concern we propose the following note to be added to the site plan.

> Groundwater elevations will continue to be monitored manually as well as with the installation of dataloggers throughout the duration of extraction and overseen by a qualified professional. Groundwater elevations will be compared to proposed bottom contours and bottom contours will be adjusted to maintain a 1.5 separation above the maximum expected groundwater table as necessary.

We are pleased to provide you with the following responses to your comments on the Maximum Predicted Water Table and Hydrogeological Assessment Report:

GSS Consultants Limited Comment

1. Section 2.2.1 of the report indicated that ten monitoring wells were installed to depths between 7 and 18.8 meters at six locations March 9, 10, and 21, 2023 by London Soil Test Limited. The borehole logs were reportedly provided in Appendix B. In the report provided to GSS, Appendix B contained logs for eight test holes advances at the site by Choice Sonic Drilling on February 2 and 3, 2023 and logs for twenty-two (22) test holes excavated at the site on February 2 and 3, 2023. No associated monitoring well installations were shown on those logs. Borehole logs for the

monitoring wells utilized for the hydrogeological assessment were not included. Copies of those logs should be provided to GSS for us to properly complete our review.

GEI Response

Borehole logs for the monitoring wells utilized for the hydrogeological assessment have been enclosed as an appendix to this response letter. GEI confirms that 10 monitoring wells were installed on the property as noted in the hydrogeological report.

GSS Consultants Limited Comment

2. Groundwater levels at the site were reportedly measured on three occasions: March 22, July 18 and October 23, 2023. The report indicated that the high groundwater table elevation was expected to be consistent with the water levels measured on March 22, 2023 which were made following a period of significant snow melt and precipitation. The report recommended that the monitoring wells continue to be monitored during the pit application process so that the direct measurement of the high water level could be made and the pit floor elevation updated accordingly. No additional water level data were provided. The high water elevations shown of the April 2024 site plans (revised March 2025) were based on the March 2023 groundwater level data. For reference, the MNRF August 2020 Aggregate resources of Ontario (ARO) standards for a maximum predicted water table report (updated in August 2023) indicated that the maximum predicted water table shall be determined by monitoring the groundwater table at the site for a minimum of one (1) year to account for seasonal variations and influences from precipitation, unless alternative information already exists (e.g. previous studies, existing well data) to support a determination of the maximum predicted water table by a qualified person. As no supporting alternative information was provided, the monitoring data presented were less than what was specified in the ARO standards. For the purpose of our peer review for the Municipality, we would not consider one year of data to be necessary provided that it could be demonstrated that the data obtained reasonably represented the typical high water conditions for the site.

GEI Response:

Groundwater levels have been monitored since 2023 and continue to be monitored at the pit property, with dataloggers being installed in the fall of 2025. The most recent water level data that has been obtained is enclosed with this letter. The results of the groundwater level monitoring noted that the highest water levels were observed in June of 2024 for all wells with the exception of MW2, MW3 and MW6s. These monitoring wells experienced their highest water levels in March of 2023.

Continued discussion regarding the maximum groundwater elevations and bottom contours are provided in the following responses.

GSS Consultants Limited Comment

3. Table 2 in the report indicated that the groundwater elevations measured on March 22, 2023 were considered to be the annual maximum groundwater table elevation for the site. However, the water level data presented in Table 2 indicated that the groundwater levels measured in MW-1S, MW-4S and MW-5S on July 18, 2023 were approximately 0.5 m higher than the recorded water levels on March 22. Conversely, the recorded water level in MW-2 declined by 2.7 m over the same period. The recorded October 2023 water levels for MW-1S, MW-4S and MW-5S were also higher than the March 2023 levels. The data indicated that the annual high water table elevation identified in the report and shown on the site plans were not consistent with the conditions at the site. Additional data should be provided as necessary to adequately demonstrate the typical seasonal high water table for the site has been identified.

GEI Response

To provide more certainty regarding maximum groundwater elevations, groundwater levels continue to be monitored at the pit property, with dataloggers being installed in the fall of 2025.

GSS Consultants Limited Comment

4. Available water level data for the Environment Canada gauge on the Beatty-Saugeen River at Holstein, approximately 3 km east-northeast of the site, suggested that the shallow groundwater levels on the Site on March 22, 2023 were less than average for that month and that the seasonal high levels for shallow groundwater likely occurred in the first week of April 2023. Additional information should be provided to support the finding that the seasonal high water table identified for the site is reasonably representative of typical site conditions. That information is commonly obtained from placement of data loggers in selected monitors to continuously record the water level and/or reference to relevant provincial or federal data for the vicinity of the site.

GEI Response

While surface water gauges can provide an indicator of local groundwater levels there is often a delayed response, and direct correlation is site dependent. Our experience for this type of site is that the highest groundwater elevations are most typically associated with the spring freshet.

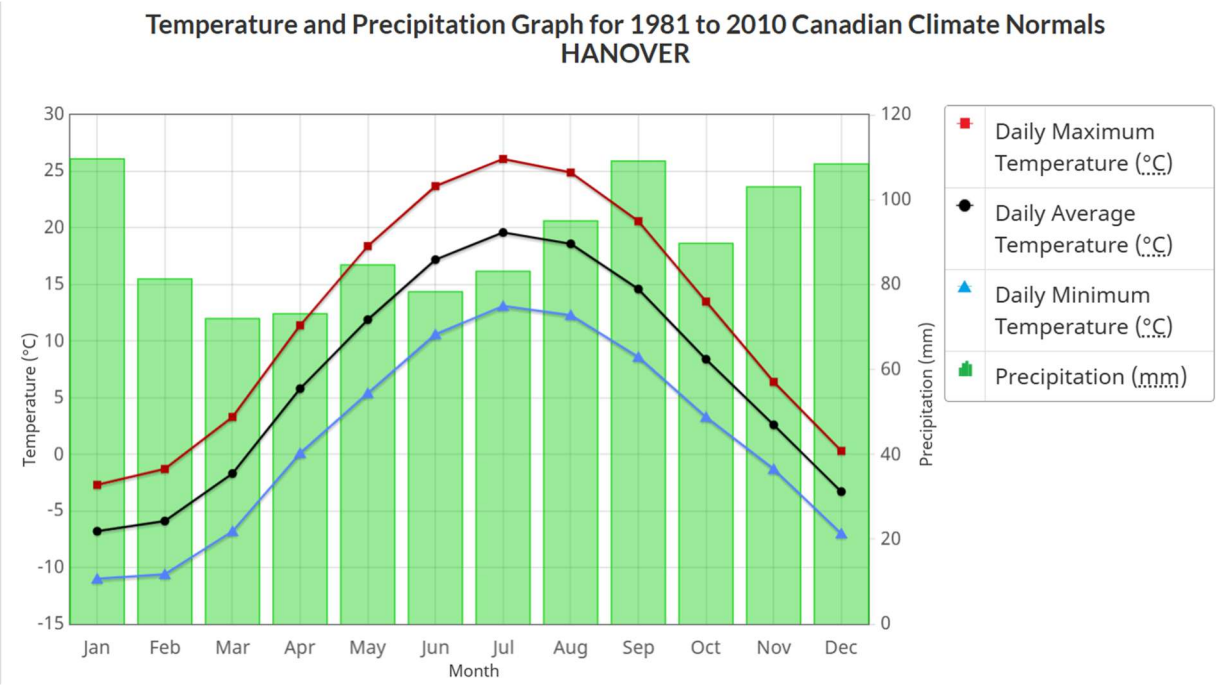
Regardless, to provide direct measurement of onsite groundwater elevations, groundwater levels continue to be monitored at the pit property, with dataloggers being installed in the fall of 2025. This groundwater monitoring program is proposed to continue during pit operations. Consequently, spring water levels will be captured every year.

GSS Consultants Limited Comment

5. There was no comparison between available precipitation data for the period of monitoring and typical precipitation levels for the area of the site. The August 2020 ARO standards (updated in August 2023) defined the maximum predicated water table as the maximum groundwater elevation predicated by a qualified person who has considered conditions at the site and mean annual precipitation levels. Local Environment Canada precipitation data and available 30-year normal suggested that 2022 and the beginning of 2023 through March 22 were drier than normal. Conditions for the water level monitoring period should be compared to relevant precipitation data to support the finding that the identified seasonal high water table is reasonably representative of typical conditions.

GEI Response

GEI has reviewed the climate normal data from a nearby weather station which is available through the Environment Canada website. A copy of the Temperature and Precipitation Graph for 1981 to 2010 Canadian Climate Normals for the Hanover weather station is provided below.



The cumulative effect of melting snow and precipitation in the form of rainfall would result in the seasonal high groundwater level typically in the spring. Through many decades of experience and documentation, it is known that the spring condition yields the “high” groundwater elevation.

Therefore, it is expected that the high groundwater elevations that were observed in most monitoring wells in June 2024 would be indicative of seasonal high groundwater.

As discussed previously, we are proposing to provide groundwater level monitoring over the life of the pit which will provide certainty regarding the maximum groundwater table.

GSS Consultants Limited Comment

6. Although it is seemingly subject to change, Drawings 2A and 2B Operations Plan showed an excavation elevation of 393.00 m at the location of MW-6S in the proposed extraction area, where the high water table was shown at elevation 391.69 m, indicating a separation distance of 1.3 m. GMBP should confirm that the design pit floor elevations are consistent with the ARO standard for an above water pit.

GEI Response

The updated plans, which include an adjustment for the most recent water level information will follow in the days after this submission.

More importantly, and as noted previously, to maintain the 1.5 m separation, groundwater elevations will continue to be monitored throughout the duration of extraction and overseen by a qualified professional. Groundwater elevations will be compared to proposed bottom contours and bottom contours will be adjusted to maintain a 1.5 separation above to the maximum expected groundwater table, as necessary.

GSS Consultants Limited Comment

7. The report noted that the seasonal ponding areas in the central portion of the site were inferred to be associated with the shallow water table elevation. The report further noted that the estimated high water table on the site was consistent with the topography, water level elevations from the monitoring wells, and surface water elevations measured on the site. The surface water level data obtained for the site should be provided. It would be useful to also show that data with the groundwater elevation data on the figure(s) depicting the estimated water table contours for the site. It was not apparent that the surface water levels were monitored in the provincially significant Letterbreen Bog in the south portion of the site, as the report noted that it was inferred that the surface water elevation in the bog was generally consistent with the water table elevation. Surface water and shallow groundwater level monitoring with a piezometer(s) in the on-site bog for comparison to nearby groundwater level data would confirm that. If representative surface water level data for the bog were not collected and can't be obtained within the timeframe of the application process, then a suitable recommendation should be included on the site plans for shallow piezometer(s) to be installed in the bog and monitored for a period of at least one year, with the data reviewed by GMBP for consistency with the conclusions presented in the report.

GEI Response

The wording of the note to be added to the site plan with respect to surface water monitoring is as follows:

> Surface water and shallow groundwater level will be monitored with a piezometer(s) in the on-site bog for comparison to nearby groundwater level data. A shallow piezometer will be installed (within one year of issuance of the pit license) in the on-site bog water feature to measure surface water and groundwater levels, coincident with groundwater levels in the existing monitoring wells. Water levels will be monitored on at least three occasions, at least 2 weeks apart during the period of seasonal high-water levels. The data will be reviewed by a qualified consultant for consistency with the conclusions presented in the hydrogeological report.

GSS Consultants Limited Comment

8. MNRF mapping showed an unevaluated wetland in the wooded area in the northwest corner of the proposed extraction area and MNRF and Grey County mapping and imagery showed a small pond in the north-central portion of the extraction area. A comment should be provided on why those were not shown in the report as existing surface water features and were not considered to be indicative of the seasonal water table elevation at those locations. The summary statement indicated that the area of the property proposed for licensing was the elevated portion of the property set back from ponds/seasonally wet areas.

GEI Response

Air photos taken by GEI on September 1, 2023, included below show that the pond that is noted in the peer review comments now appears to be a small depression that is currently farmed as part of the agricultural operations. This area appears to have been filled as part of agricultural operations and does not appear to be consistent with an unevaluated wetland.

Photo 1

Photo 2

Dance Environmental Inc, completed an EIS in February 2024 and after reviewing the EIS report, it is noted that neither an unevaluated wetland nor a pond is not identified as a surface water feature in this area. A figure indicating the features found on the pit property has been enclosed as an appendix to this letter.

Monitoring wells MW4s and MW4d are in close proximity to the area and are at a depth that would intersect the bottom of this wet area. These monitoring wells monitor the actual groundwater elevation at the pit property in this area.

Based on this information, GEI is of the opinion that the historic depression was likely surface water fed and that the local nested monitoring wells provide a more certain elevation for the water table elevation.

GSS Consultants Limited Comment

9. The report noted that since there are no proposed interactions with the water table or surface water features, the overall water budget, pre- to post-, is expected to remain unchanged and stated that equal infiltration to the subsurface will continue post-development. A water budget for the site was not presented. The main components of a water budget are precipitation, losses from evapotranspiration, runoff and infiltration. The progressive rehabilitation plan (Drawing 3) indicated that the completed pit floor will slope towards the north and be 9 m below the existing ground at the north limit of extraction. The notes on that plan indicated that the surface water drainage will be by percolation or evaporation. Under those conditions, the expected run off from the completed area of extraction would be zero. From the information provided in the report and site plans, it was not apparent that there is currently no runoff from that area. A reduction in the existing runoff would change the water budget and result in a corresponding increase in infiltration. GMBP should provide additional information to support the conclusion that the water budget for the site will not be changed by the proposed development. If there is a potential for a change in the water budget, then the associated implications should be evaluated. It is not apparent that increased infiltration would negatively affect the on-set wetland to the south, but there would be a potential for an increase in the elevation of the seasonal high water table on the site.

GEI Response

A technical memo has been prepared (enclosed) outlining the impact to infiltration from the pit property.

GSS Consultants Limited Comment

10. The report and site plan notes indicated that to maintain surface water flows to the same low-lying locations, the restored grades shall be sloped to maintain similar pre- and post- development catchment areas. The pre-development catchment areas were not identified, and it was not apparent how similar post-development catchment area would be maintained for the proposed area of extraction. Additional information should be provided to indicated how that recommendation would be implemented.

GEI Response

A technical memo has been prepared (enclosed) outlining the impact to infiltration from the pit property.

Any revisions that are required to the hydrogeological assessment as a result of these comments and responses will be completed once the peer review process is concluded satisfactorily. If you have any questions, please feel free to contact me via email at kpickett@geiconsultants.com.

Sincerely,

GEI Consultants Canada Ltd.

Kim Pickett, C.E.T, LET, QP_{ESA}
Project Geoscientist

Matthew Nelson, P. Eng., P. Geo
Vice President, Senior Project Manager, ENV
Practice Lead

Enclosures:

Appendix A: Borehole Logs
Appendix B: Table 2 Water Level Summary Table
Appendix C: Figure from EIS
Appendix D: Technical Memo

Appendix A

Borehole ID: MW-1D

CLIENT Teeswater Concrete Ltd.
PROJECT NAME Aggregate Resource Assessment
PROJECT NUMBER 2402308
PROJECT LOCATION 311804 Highway 6, Mount Forest
DATE COMPLETED 2023/03/08
CONTRACTOR London Soil Test
LOGGED BY Corbin Sweet
METHOD Hollow Stem Auger
WELL CONSTRUCTION 2-inch nominal flush joint sched. 40 PVC
NOTES

DEPTH (m)	DEPTH (ft)	ELEVATION (m)	SAMPLE TYPE NUMBER	GRAPHIC LOG	MATERIAL DESCRIPTION		WELL DIAGRAM
	-2						
0	0	402			0.00 Ground Surface	402.10	Concrete
	2				TOPSOIL, dark brown		
					0.61	401.49	
	4				Fine to medium, SAND and GRAVEL with some COBBLES, brown, dry		
2	6	400			1.98	400.12	
	8				Fine to medium, SAND with trace SILT, light brown, dry		
	10						
4	12	398					
	14						
	16						
	18						
6	20	396					
	22				6.55	395.55	
	24				SILTY SAND, light brown, saturated		Bentonite Seal
8	26	394					
	28						
	30						2" PVC Riser
	32						
10	34	392					
	36				11.27	390.83	
	38				Coarse SAND and GRAVEL with some COBBLES, saturated		
12	40	390					
	42						
	44						
14	46	388					
	48						
	50				15.24	386.86	Sand Filter
	52				SILT and CLAY TILL, light brown, saturated, stiff		10 Slot PVC Screen
16	54	386					

Testhole Terminated at 16.80 m.

Borehole ID: MW-1S

CLIENT Teeswater Concrete Ltd.
PROJECT NAME Aggregate Resource Assessment
PROJECT NUMBER 2402308
PROJECT LOCATION 311804 Highway 6, Mount Forest
DATE COMPLETED 2023/03/08
CONTRACTOR London Soil Test
LOGGED BY Corbin Sweet
METHOD Hollow Stem Auger
WELL CONSTRUCTION 2-inch nominal flush joint sched. 40 PVC
NOTES

DEPTH (m)	DEPTH (ft)	ELEVATION (m)	SAMPLE TYPE NUMBER	GRAPHIC LOG	MATERIAL DESCRIPTION		WELL DIAGRAM
	-2						
0	0				0.00 Ground Surface	402.15	
		402			TOPSOIL, dark brown		Concrete
	2				0.61	401.54	
	4				Fine to medium, SAND and GRAVEL with some COBBLES, brown, dry		
	6				1.98	400.17	
2		400			Fine to medium, SAND with trace SILT, light brown, dry		Bentonite Seal
	8						
	10						
	12						
4		398					
	14						
	16						2" PVC Riser
	18						
6	20	396					
					6.55	395.60	
	22				SILTY SAND, light brown, saturated		Sand Filter
	24						10 Slot PVC Screen
8	26	394					
	28						

Testhole Terminated at 9.00 m.

Borehole ID: MW-2

CLIENT Teeswater Concrete Ltd.
PROJECT NAME Aggregate Resource Assessment
PROJECT NUMBER 2402308
PROJECT LOCATION 311804 Highway 6, Mount Forest
DATE COMPLETED 2023/03/08
CONTRACTOR London Soil Test
LOGGED BY Corbin Sweet
METHOD Hollow Stem Auger
WELL CONSTRUCTION 2-inch nominal flush joint sched. 40 PVC
NOTES

DEPTH (m)	DEPTH (ft)	ELEVATION (m)	SAMPLE TYPE NUMBER	GRAPHIC LOG	MATERIAL DESCRIPTION		WELL DIAGRAM
	-2						
	-1						
0	0				0.00 Ground Surface	399.12	
		399			TOPSOIL, dark brown		Concrete
	1				0.45	398.67	
	2				Fine to medium, SAND with some SILT and GRAVEL		
1	3	398			1.06	398.06	
	4				Fine to medium, SAND and GRAVEL with some COBBLES, brown, dry		
	5				1.52	397.60	Bentonite Seal
	6				Gravelly SILT with trace COBBLES and some SAND, brown, moist		
2	7	397					2" PVC Riser
	8						
	9						
3	10	396					
	11						
	12						
4	13	395					
	14						
	15						
	16				4.87	394.25	
5	17	394			SILT TILL with trace SAND and GRAVEL, light brown, saturated		10 Slot PVC Screen
	18						
	19						
6	20	393					Sand Filter
	21						

Testhole Terminated at 6.70 m.

Borehole ID: MW-3

CLIENT Teeswater Concrete Ltd.
PROJECT NAME Aggregate Resource Assessment
PROJECT NUMBER 2402308
PROJECT LOCATION 311804 Highway 6, Mount Forest
DATE COMPLETED 2023/03/08
CONTRACTOR London Soil Test
LOGGED BY Corbin Sweet
METHOD Hollow Stem Auger
WELL CONSTRUCTION 2-inch nominal flush joint sched. 40 PVC
NOTES

DEPTH (m)	DEPTH (ft)	ELEVATION (m)	SAMPLE TYPE NUMBER	GRAPHIC LOG	MATERIAL DESCRIPTION		WELL DIAGRAM
	-2	397					
	-1						
0	0				0.00 Ground Surface	396.15	
		396			TOPSOIL, dark brown		Concrete
	1				0.20 SILT with SAND and GRAVEL, yellowish brown, saturated	395.95	2" PVC Riser
1	2						
	3	395					Bentonite Seal
	4						
	5						
	6						
2					1.98 Coarse SAND and GRAVEL, brownish grey, saturated	394.17	
	7	394					
	8						
	9						
3	10	393					
	11						
	12				3.65 Coarse SAND, grey, saturated	392.50	10 Slot PVC Screen
4	13						Sand Filter
	14	392					

Testhole Terminated at 4.52 m.

Borehole ID: MW-4D

CLIENT Teeswater Concrete Ltd.
PROJECT NAME Aggregate Resource Assessment
PROJECT NUMBER 2402308
PROJECT LOCATION 311804 Highway 6, Mount Forest
DATE COMPLETED 2023/03/08
CONTRACTOR London Soil Test
LOGGED BY Corbin Sweet
METHOD Hollow Stem Auger
WELL CONSTRUCTION 2-inch nominal flush joint sched. 40 PVC
NOTES

DEPTH (m)	DEPTH (ft)	ELEVATION (m)	SAMPLE TYPE NUMBER	GRAPHIC LOG	MATERIAL DESCRIPTION		WELL DIAGRAM
	-2						
0	0	400			0.00 Ground Surface	399.83	
					0.30 TOPSOIL, dark brown	399.53	Concrete
	2				Fine to medium, SAND and GRAVEL with some COBBLES and BOULDERS, brown, dry		
2	6	398					
	8						
	10				3.04	396.79	
	12	396			Fine to medium, SAND and GRAVEL with COBBLES, light brown, dry -Minor silty sand interbeds		
4	14						
	16						
	18						
6	20	394			6.09	393.74	
	22				Medium to coarse SAND and SILT, light brown, dry		
	24						Bentonite Seal
8	26	392					
	28						
	30				9.14	390.69	2" PVC Riser
10	32	390			Coarse SAND and GRAVEL with some SILT - Inferred wet/saturated at 10.66 mbgs		
	34						
	36						
12	38	388					
	40						
	42						
	44						
14	46	386					
	48						
	50						Sand Filter
16	52	384					10 Slot PVC Screen
	54						
	56						
	58	382					

Testhole Terminated at 17.87 m.

Borehole ID: MW-4S

CLIENT Teeswater Concrete Ltd.
PROJECT NAME Aggregate Resource Assessment
PROJECT NUMBER 2402308
PROJECT LOCATION 311804 Highway 6, Mount Forest
DATE COMPLETED 2023/03/08
CONTRACTOR London Soil Test
LOGGED BY Corbin Sweet
METHOD Hollow Stem Auger
WELL CONSTRUCTION 2-inch nominal flush joint sched. 40 PVC
NOTES

DEPTH (m)	DEPTH (ft)	ELEVATION (m)	SAMPLE TYPE NUMBER	GRAPHIC LOG	MATERIAL DESCRIPTION		WELL DIAGRAM
	-2	400					
0	0				0.00 Ground Surface	399.75	
					0.30 TOPSOIL, dark brown	399.45	Concrete
	2				Fine to medium, SAND and GRAVEL with some COBBLES and BOULDERS, brown, dry		
	4						
2	6	398					
	8						
	10				3.04	396.71	
	12	396			Fine to medium, SAND and GRAVEL with COBBLES, light brown, dry -Minor silty sand interbeds		Bentonite Seal
4	14						
	16						
	18	394					
6	20				6.09	393.66	
	22				Medium to coarse SAND and SILT, light brown, dry		
	24						2" PVC Riser
	26	392					
8	28						
	30				9.14	390.61	
	32	390			Coarse SAND and GRAVEL with some SILT - Inferred wet/saturated at 10.66 mbgs		10 Slot PVC Screen
10	34						
	36						Sand Filter
	38	388					
12							

Testhole Terminated at 12.13 m.

Borehole ID: MW-5D

CLIENT Teeswater Concrete Ltd.
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CONTRACTOR London Soil Test
LOGGED BY Corbin Sweet
METHOD Hollow Stem Auger
WELL CONSTRUCTION 2-inch nominal flush joint sched. 40 PVC
NOTES

DEPTH (m)	DEPTH (ft)	ELEVATION (m)	SAMPLE TYPE NUMBER	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
	-2					
0	0				0.00 Ground Surface 402.94	
					0.15 TOPSOIL, dark brown 402.79	Concrete
	2	402			Fine to medium, SAND and GRAVEL with some COBBLES and BOULDERS, brown, dry	
2	6					
	8					
	10	400				
4	12					
	14				4.57 398.37	
	16	398			Fine to medium, SAND and GRAVEL with COBBLES, light brown, dry -Minor silty sand interbeds	
6	20					
	22	396				
	24					
8	26				8.07 394.87	Bentonite Seal
	28				Medium to coarse SAND and GRAVEL with trace SILT, light brown, dry	
	30	394				2" PVC Riser
10	32					
	34					
	36	392				
	38					
12	40					
	42	390				
	44					
14	46					
	48					
	50	388				
16	52					Sand Filter
	54					
	56	386				10 Slot PVC Screen
	58					

Testhole Terminated at 17.70 m.

Borehole ID: MW-5S

CLIENT Teeswater Concrete Ltd.
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LOGGED BY Corbin Sweet
METHOD Hollow Stem Auger
WELL CONSTRUCTION 2-inch nominal flush joint sched. 40 PVC
NOTES

DEPTH (m)	DEPTH (ft)	ELEVATION (m)	SAMPLE TYPE NUMBER	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
	-2					
0	0				0.00 Ground Surface 402.96	
					0.15 TOPSOIL, dark brown 402.81	Concrete
	2	402			Fine to medium, SAND and GRAVEL with some COBBLES and BOULDERS, brown, dry	
2	6					
	8	400				
	10					
	12					
4	14					
					4.57 398.39	
	16	398			Fine to medium, SAND and GRAVEL with COBBLES, light brown, dry -Minor silty sand interbeds	
	18					
6	20					Bentonite Seal
	22	396				
	24					
8	26				8.07 394.89	
	28				Medium to coarse SAND and GRAVEL with trace SILT, light brown, dry	
	30	394				2" PVC Riser
	32					
10	34					
	36	392				
	38					
12	40					
	42	390				Sand Filter
	44					10 Slot PVC Screen
14	46					
	48					
		388				

Testhole Terminated at 15.07 m.

Borehole ID: MW-6D

CLIENT Teeswater Concrete Ltd.
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CONTRACTOR London Soil Test
LOGGED BY Corbin Sweet
METHOD Hollow Stem Auger
WELL CONSTRUCTION 2-inch nominal flush joint sched. 40 PVC
NOTES

DEPTH (m)	DEPTH (ft)	ELEVATION (m)	SAMPLE TYPE NUMBER	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
	-2	400				
0	0				0.00 Ground Surface 399.63	
					0.05 TOPSOIL, dark brown 399.58	Concrete
	2				Fine to medium, SAND and GRAVEL with some SILT brown, moist to	
	4	398				
2	6					
	8					
	10					
	12	396				
4	14					
	16					
	18	394				
6	20					
	22				6.70 392.93	Bentonite Seal
	24				Fine to medium, SAND with some GRAVEL, light brown, saturated	
		392				
8	26					
	28					
	30					2" PVC Riser
	32	390				
10	34					
	36					
	38	388				
12	40				12.19 387.44	
	42				Silty SAND with some GRAVEL	
	44	386				Sand Filter
14	46					10 Slot PVC Screen
	48					

Testhole Terminated at 14.84 m.

Borehole ID: MW-6S

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DEPTH (m)	DEPTH (ft)	ELEVATION (m)	SAMPLE TYPE NUMBER	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
	-2	400				
0	0				0.00 Ground Surface 399.64	
					0.05 TOPSOIL, dark brown 399.59	Concrete
	2				Fine to medium, SAND and GRAVEL with some SILT brown, moist to	
	4	398				
2	6					
	8					
	10					
	12	396				Bentonite Seal
4	14					
	16					
	18	394				
6	20					2" PVC Riser
	22				6.70 392.94	
	24				Fine to medium, SAND with some GRAVEL, light brown, saturated	
		392				
8	26					
	28					
	30					Sand Filter
		390				10 Slot PVC Screen
10	32					
	34					

Testhole Terminated at 10.77 m.

Appendix B

Well ID	Ground Surface [GS] Elevation	Top of Pipe [TOP] Elevation	22-Mar-23		18-Jul-23		23-Oct-23		21-Jun-24		30-Aug-24		10-Dec-24		Maximum Elevation
	(masl)	(masl)	(mbTOP)	(masl)	(mbTOP)	(masl)	(mbTOP)	(masl)	(mbTOP)	(masl)	(mbTOP)	(masl)	(mbTOP)	(masl)	
MW-1S	402.15	402.94	7.74	395.20	7.28	395.66	7.6	395.34	6.67	396.27	7.44	395.5	7.83	395.11	396.27
MW-1D	402.1	402.95	13.24	389.71	12.74	390.21	13.15	389.8	12.48	390.47	12.79	390.16	13.3	389.65	390.47
MW-2	399.12	399.87	2.63	397.24	5.36	394.51	5.60	394.27	4.43	395.44	5.70	394.17	6.71	393.16	397.24
MW-3	396.15	396.96	2.25	394.71	2.27	394.69	2.58	394.38	2.3	394.66	2.48	394.48	2.75	394.21	394.71
MW-4S	399.75	400.56	11.17	389.39	10.63	389.93	11.05	389.51	10.42	390.14	10.7	389.86	11.24	389.32	390.14
MW-4D	399.83	400.64	11.24	389.4	10.69	389.95	11.11	389.53	10.47	390.17	10.78	389.86	11.3	389.34	390.17
MW-5S	402.96	403.8	14.62	389.18	14.07	389.73	14.42	389.38	13.90	389.90	14.10	389.7	14.61	389.19	389.90
MW-5D	402.94	403.72	14.56	389.16	Broken / Well Collapsed @ 8.8 mbgs										389.16
MW-6S	399.64	400.49	8.80	391.69	9.19	391.3	9.58	390.91	8.99	391.50	9.26	391.23	9.64	390.85	391.69
MW-6D	399.63	400.42	10.47	389.95	10.03	390.39	10.4	390.02	9.81	390.61	10.1	390.32	10.55	389.87	390.61

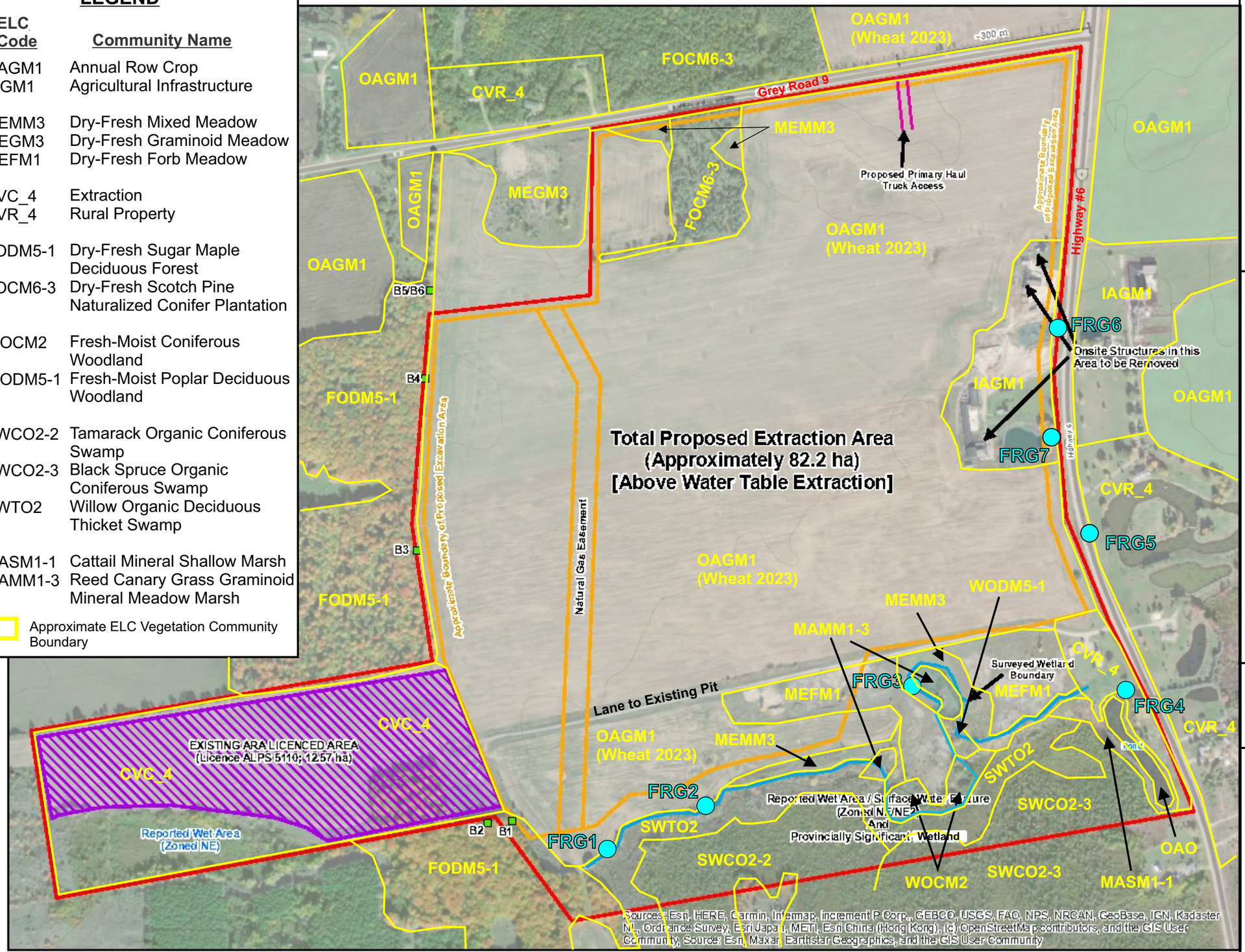
Appendix C

Figure 2. ELC Vegetation Communities and Amphibian Monitoring Station Locations, Watson Pit, 311804 Highway 6, Mount Forest, ON.

LEGEND

ELC Code	Community Name
OAGM1	Annual Row Crop
IAGM1	Agricultural Infrastructure
MEMM3	Dry-Fresh Mixed Meadow
MEGM3	Dry-Fresh Graminoid Meadow
MEFM1	Dry-Fresh Forb Meadow
CVC_4	Extraction
CVR_4	Rural Property
FODM5-1	Dry-Fresh Sugar Maple Deciduous Forest
FOCM6-3	Dry-Fresh Scotch Pine Naturalized Conifer Plantation
WOCM2	Fresh-Moist Coniferous Woodland
WODM5-1	Fresh-Moist Poplar Deciduous Woodland
SWCO2-2	Tamarack Organic Coniferous Swamp
SWCO2-3	Black Spruce Organic Coniferous Swamp
SWTO2	Willow Organic Deciduous Thicket Swamp
MASM1-1	Cattail Mineral Shallow Marsh
MAMM1-3	Reed Canary Grass Graminoid Mineral Meadow Marsh

Approximate ELC Vegetation Community Boundary



Note: Proposed extraction area is set back 15 metres from property boundaries and treelines, 30 metres from the boundaries adjacent to Highway 6, and 30 metres from onsite water features (i.e. southern wetland area).

N
W E
S

LEGEND

- Approximate Property Boundary and Proposed Licenced Boundary
- Existing ARA Licenced Area (Licence ALPS 5110; 12.37 ha)
- Total Proposed Above the Water Table Extraction Boundary (Approximately 82.2 ha)
- Surveyed Wetland Boundary Delineated by Dance Environmental
- Surveyed Butternut Tree Identified by Dance Environmental
- FRG1 — Approximate Location of Amphibian Call Survey Station

Scale

0 50 100 200 300 400 Meters

1:6,000

DANCE ENVIRONMENTAL INC.

DE-475
Feb. 5, 2024

PRELIMINARY SITE PLAN

Normanby Con 1, Divisions 1 to 3,
Part Lots 19 and 20, Con 2, Part Lot 46
Municipality of West Grey

Basemap Source: BluePlan ENGINEERING

Dec. 4, 2023

Appendix D

Technical Memo

To: Brad Benson, P.Eng. Senior Hydrogeologist
GSS Engineering Consultants Ltd

From: Chaodong Sheng, M.Sc., P.Eng.
Senior Engineer and Project Manager, GEI Consultants Ltd.

Date: October 28th, 2025

Re: Hydrogeology Assessment of Proposed Class "A" Pit
311804 Highway 6, Mt. Forest
Municipality of West Grey, Grey County
GEI Project No. 2401284

1.0 – Background

Based on the Peer Review letter provided by GSS Engineering Consultants Ltd. (GSS) dated **May 9, 2025**, we understand that a pre and post water balance assessment is required to determine the potential impacts to the water budget for the proposed Class "A" Pit above water in the Municipality of West Grey.

To address the above requirement, this Technical Memorandum (Tech Memo) has been prepared to outline the **Terms of Reference** for completing this required water balance assessment. This Memo summarizes the overall water balance assessment approach, including methodology and parameters.

2.0 – Water Balance Assessment Approach

The Thornthwaite and Mather (1957) method defined in the Ministry of the Environment Ontario (MOE) "Stormwater Management Planning and Design Manual" (Manual 2003) was applied for this analysis. Given that this study focuses on comparing pre-development and post-development conditions—specifically the runoff volume changes resulting from the installation of the two pits—generic parameters were used instead of site-specific data. These include annual average precipitation, evapotranspiration, runoff, and infiltration depths for different land uses, land covers, and soil types, as recommended in Table 3.1 of the 2003 Manual. Table 3.1 provides not only annual rainfall depth but also the corresponding evapotranspiration and surplus depths for various combinations of soil types, land uses, and land covers, based on a comprehensive scientific investigation. As site-specific data could not feasibly be generated within the limited timeframe of this project, these generic parameters are considered appropriate for pre and post comparison purposes.

With this approach, the annual average surface runoff volume and infiltration for the environmental feature north (North Feature) of the proposed basin under both pre-development and post-development conditions, were calculated and compared.

With the proposed drainage alteration due to the proposed basin, the drainage area draining to north feature will

be reduced. However, as per the groundwater contour map, the groundwater is flowing from south to north, which will not be impacted by the surface drainage alteration due to the proposed basin. Furthermore, the proposed basin will promote the annual infiltration capacity significantly. The increased filtration volume to the North Feature will compensate for the decrease of the surface runoff volume. The calculations will quantify the overall annual surplus volume, which is the sum of surface runoff plus infiltration, under both pre-dev and post-dev conditions and compare these differences.

As the ecology data is not available for the North Feature at this moment, it is not feasible to determine the sensitivity of these features. However, based on the TRCA approach, 10% decrease is the threshold for the water features categorized as "sensitive", meaning if the overall reduction for surface runoff volume is less than 10%, the ecological functions for these water features, even the most sensitive ones, can be maintained. In this case, we focus on the annual surplus volume, meaning, if the annual surplus will not decrease by more than 10%, the ecological function for the North Feature will not be impacted.

As mentioned above, the groundwater contour map indicates that the site groundwater flow is from south to north, so conceptually, as the proposed within the basin will be increased significantly, the impacts to the south area due to the proposed basin should be minor and negligible.

3.0 – Summary of the Calculation Results

As mentioned previously, the average annual precipitation, evapotranspiration, runoff and infiltration depth for different land uses and covers and soil types are based on Table 3.1 in the Manual 2003. The results shown in **Table 3.1** were computed using average annual monthly values per the Thornthwaite and Mather (1957) method.

The drainage areas of the site draining north to the Saugeen, and the drainage areas draining south to the Letterbreen Bog, were delineated for pre-and post- conditions. The water balance assessment was conducted for each drainage area to determine the difference between pre- and post- runoff and infiltration levels for each feature. Land use and land cover was determined from the Site survey data and Google Earth. The majority of the drainage areas consist of agriculture and sparse woodlands, with a small existing farmhouse classified as low-density residential. The Slope of the existing land was determined from existing survey data of the site and from Ontario GeoHub Contour open data. The soil of the site and surrounding areas was referenced from Ontario Soil Survey and the majority of the site was determined to be well-draining loam, which is classified as a hydrologic soil type 'A'. The soil at the southeastern section of the site located at the bog was determined to be poorly draining clay, which is classified as hydrologic soil type 'B'.

In the post-development condition, the proposed pit areas were assumed to act as infiltration pits which will infiltrate all surplus precipitation without any runoff to the nearby features. The existing farmhouse area is replaced with 'lawn' land use. All other parameters remained consistent in the post-development condition. Please see the documents attached to the back of this memo for the pre-development and post-development figures and detailed calculations.

According to Figure No. 3 from the Hydrogeological Study, dated November 2023, the shallow groundwater is flowing in a general northerly direction. The additional infiltration from the extracted pits in the post-development condition are added to the total surplus of volume contributing to the north. With this approach, the annual average surplus volume, consisting of both surface and groundwater flow, draining north under both pre-development and post-development conditions, were calculated and compared. The results are shown in **Table 1** below.

Table 1 Pre- and Post- annual surplus volume draining north

Condition	Infiltration Volume (m^3/yr)	Runoff to North (m^3/yr)	Total Surplus to North (m^3/yr)
Pre-Development	348,071	38,087	386,158
Post-Development	518,991	27,127	546,118

As shown in **Table 1**, there is an increase of 41% in surplus volume to the north, from 386,156 m^3 to 546,118 m^3 to the north.

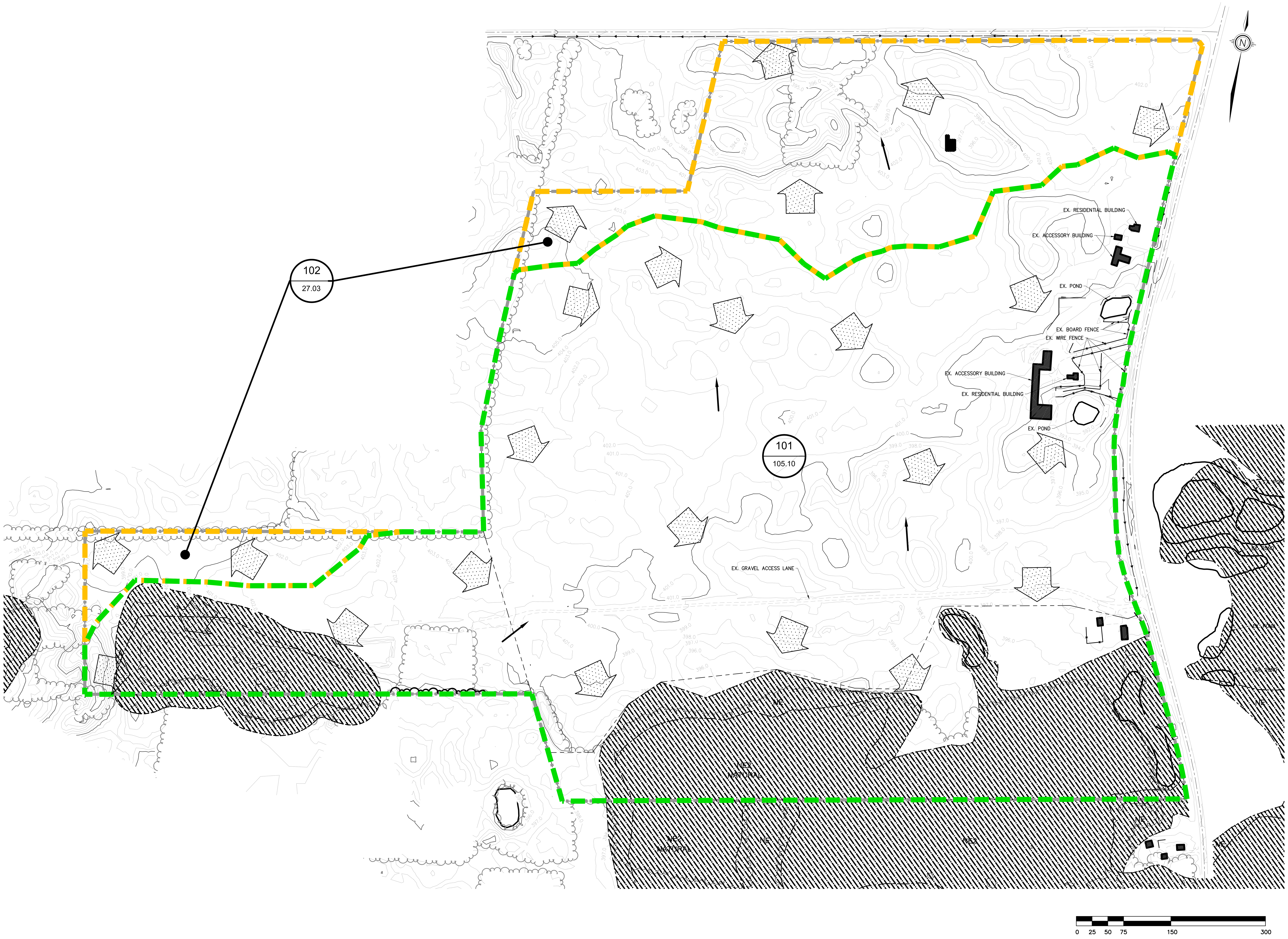
Based on the analysis above, the average annual surplus is expected to increase by 41% due to the enhanced infiltration capacity of the proposed basin, even though the surface runoff volume will be slightly reduced due to drainage alterations. The increased surface surplus will not affect the ecological functions of the North Feature.

4.0 – Conclusions and Recommendations

Per the calculations summarized above, it is concluded that:

- The proposed basin functions to promote infiltration, so the overall annual average infiltration capacity has been increased.
- The annual average surplus volume in the northerly direction to the Saugeen River has increased by 41% due to the overall increase in infiltration. The increased annual base flow to the features were found to increase the total annual surplus volume from 386,156 m^3 to 546,118 m^3.
- As the results, the proposed Class ‘A’ Pits will increase the overall surplus volume and will not pose a significant adverse impact on the North Feature ecology functions.

Attachments



PROPOSED AGGREGATE PIT MUNICIPALITY OF WEST GREY

LEGEND

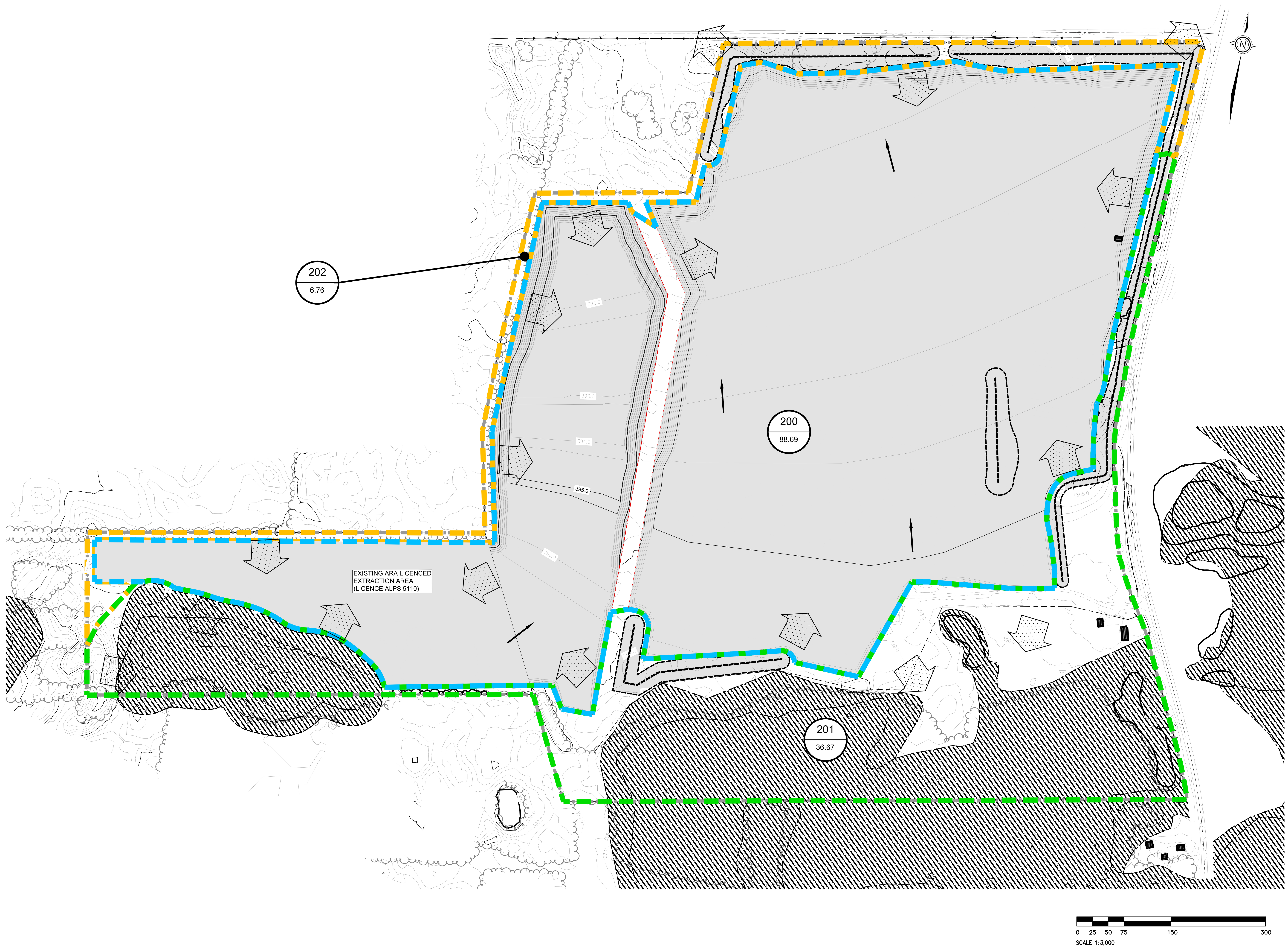
- SITE BOUNDARY
- 100 / 105.10 — CATCHMENT NUMBER / CATCHMENT AREA (ha)
- OVERLAND FLOW DIRECTION
- DIRECTION OF GROUNDWATER FLOW
- DRAINAGE AREA NORTH TO SAUGEEN RIVER
- DRAINAGE AREA SOUTH TO LETTERBREEN BOG
- SAUGEEN VALLEY CONSERVATION AUTHORITY REGULATED AREA

PRE - DEVELOPMENT DRAINAGE PLAN

Figure No. 1

GEI Consultants

2402308
OCTOBER 2025
Scale: 1:3000



PROPOSED AGGREGATE PIT MUNICIPALITY OF WEST GREY

LEGEND

- SITE BOUNDARY
- 100 / 105.10 — CATCHMENT NUMBER / CATCHMENT AREA (ha)
- OVERLAND FLOW DIRECTION
- DIRECTION OF GROUNDWATER FLOW
- DRAINAGE AREA NORTH TO SAUGEEN RIVER
- DRAINAGE AREA SOUTH TO LETTERBREEN BOG
- PROPOSED PIT DRAINAGE AREA
- SAUGEEN VALLEY CONSERVATION AUTHORITY REGULATED AREA

POST - DEVELOPMENT DRAINAGE PLAN

Figure No. 2

GEI Consultants

2402308
OCTOBER 2025
Scale: 1:3000

Project Info	
Project Number:	2402308
Project Name:	ARA Pit Application
Date:	10/28/2025
Project Location (Municipality):	Ontario
Project Location (UTM Coordinates):	m N m E
Closest Climate Station:	
Latitude	44 degrees N
Closest Weather Station:	
Type of Water Balance:	Preliminary Pre-to-Post D((No FBWB)
Quaternary Watershed:	
Tertiary Watershed:	
Secondary Watershed:	
Overall Pre-Dev Soil Type	Well-draining Loam (Hydrologic Type A)
Overall Pre-Dev Vegetation Cover	Moderately Rooted Crops

Pre-Development Conditions

Catchment	Land Cover	Land Use Type	Area (ha)	% Impervious	Soil Type	IF	Cover	IF	Slope %	IF	Overall Infiltration Factor
Letterbreen Bog Drainage Area (Catchment 100)	Agriculture fields	Agriculture	78.0	0%	Open Sandy Loam	0.40	Cultivated Land/AGR/ANTH/CGL	0.10	Steeply Rolling Land - Average Slope 3.8 m/km to 28 m/	0.15	0.65
	Woodland	Woodland/Forest	1.1	0%	Open Sandy Loam	0.40	Woodland/FOM/FOD/FOC/SWM/SV	0.20	Steeply Rolling Land - Average Slope 3.8 m/km to 28 m/	0.15	0.75
	Farmhouse	Single / Semi	2.2	64%	Open Sandy Loam	0.40	Cultivated Land/AGR/ANTH/CGL	0.10	Steeply Rolling Land - Average Slope 3.8 m/km to 28 m/	0.15	0.65
	Wetland	Woodland/Forest	8.7	0%	Open Sandy Loam	0.40	Woodland/FOM/FOD/FOC/SWM/SV	0.20	Steeply Rolling Land - Average Slope 3.8 m/km to 28 m/	0.15	0.75
	Wetland	Wetland	15.2	0%	Tight Impervious Clay	0.10	Wetland/Meadow/MAS/MEM/CUM	0.15	Flat Land - Average Slope Less Than 0.6 m/km	0.3	0.55
North and West Drainage Areas to Saugeen River (Catchment 103)	Agriculture fields	Agriculture	24.5	0%	Open Sandy Loam	0.40	Cultivated Land/AGR/ANTH/CGL	0.10	Steeply Rolling Land - Average Slope 3.8 m/km to 28 m/	0.15	0.65
	Naturalized treed and vegetated areas	Woodland/Forest	2.50	0%	Open Sandy Loam	0.40	Woodland/FOM/FOD/FOC/SWM/SV	0.20	Steeply Rolling Land - Average Slope 3.8 m/km to 28 m/	0.15	0.75

Post-Development Conditions

Catchment	Land Cover	Land Use Type	Area (ha)	% Impervious	Soil Type	IF	Cover	IF	Slope %	IF	Overall Infiltration Factor
Letterbreen Bog Drainage Area (Catchment 201)	Lawn	Lawn	12.8	0%	Open Sandy Loam	0.40	Cultivated Land/AGR/ANTH/CGL	0.10	Steeply Rolling Land - Average Slope 3.8 m/km to 28 m/	0.15	0.65
	Wetland	Woodland/Forest	8.7	0%	Open Sandy Loam	0.40	Woodland/FOM/FOD/FOC/SWM/SV	0.20	Steeply Rolling Land - Average Slope 3.8 m/km to 28 m/	0.15	0.75
	Wetland	Wetland	15.2	0%	Tight Impervious Clay	0.10	Wetland/Meadow/MAS/MEM/CUM	0.15	Flat Land - Average Slope Less Than 0.6 m/km	0.3	0.55
North and West Drainage Areas to Saugeen River (Catchment 203)	Lawn	Lawn	5.8	0%	Open Sandy Loam	0.40	Cultivated Land/AGR/ANTH/CGL	0.10	Steeply Rolling Land - Average Slope 3.8 m/km to 28 m/	0.15	0.65
	Naturalized treed and vegetated areas	Woodland/Forest	0.99	0%	Open Sandy Loam	0.40	Woodland/FOM/FOD/FOC/SWM/SV	0.20	Steeply Rolling Land - Average Slope 3.8 m/km to 28 m/	0.15	0.75
Extraction Basin Catchments (200)	Basin	Lawn	87.1	0%	Open Sandy Loam	0.40	Cultivated Land/AGR/ANTH/CGL	0.10	Flat Land - Average Slope Less Than 0.6 m/km	0.3	0.80
	Lawn	Lawn	1.6	0%	Open Sandy Loam	0.40	Cultivated Land/AGR/ANTH/CGL	0.10	Steeply Rolling Land - Average Slope 3.8 m/km to 28 m/	0.15	0.65

PRE-DEVELOPMENT WATER BALANCE															
		Total Land Area (m^2)	Impervious Factor	Pervious Area (m^2)	Impervious Area (m2)	Infiltration Factor	Precipitation* (mm)	Hydrologic Soil Group	Evapo-Transpiration* (mm)	Surplus (mm)	Infiltration of Pervious Area (mm)	Runoff From Pervious Area (mm/annum)	Runoff from Impervious Area (mm/annum)	Total Infiltration (m^3/annum)	Total Runoff (m3/annum)
Letterbreen Bog Drainage Area (Catchment 100)	Agriculture fields	779553.0	0%	779553.00	0.00	0.65	940	A	525	415	269.8	145.3	0.0	210284.4	113230.1
	Woodland	10900.0	0%	10900.00	0.00	0.75	940	A	546	394	295.5	98.5	0.0	3221.0	1073.7
	Farmhouse	21624.0	64%	7784.64	13839.36	0.65	940	A	515	425	276.3	148.8	425.0	2150.5	7039.7
	Wetland	86929.0	0%	86929.00	0.00	0.75	940	A	546	394	295.5	98.5	0.0	25687.5	8562.5
	Wetland	151950.0	0%	151950.00	0.00	0.55	940	D	543	397	218.4	178.7	0.0	33178.3	27145.9
	TOTAL	1050956.0	1%	1,037,117	13,839	0.64	940	A	529	411	265	146	8.7	**274,522**	157,052
North and West Drainage Areas to Saugeen River (Catchment 103)	Agriculture fields	245249.0	0%	245249.00	0.00	0.65	940	A	525	415	269.8	145.3	0.0	66155.9	35622.4
	Naturalized treed and vegetated areas	25020.0	0%	25020.00	0.00	0.75	940	A	546	394	295.5	98.5	0.0	7393.4	2464.5
	TOTAL	270,269	0%	270,269	0	0.66	940	A	527	413	272	141	0.0	**73,549**	**38,087**

POST-DEVELOPMENT WATER BALANCE															
		Total Land Area (m^2)	Impervious Factor	Pervious Area (m^2)	Impervious Area (m2)	Infiltration Factor	Precipitation* (mm)	Hydrologic Soil Group	Evapo-Transpiration* (mm)	Surplus (mm)	Infiltration of Pervious Area (mm)	Runoff From Pervious Area (mm/annum)	Runoff from Impervious Area (mm/annum)	Total Infiltration (m^3/annum)	Total Runoff (m3/annum)
Letterbreen Bog Drainage Area (Catchment 201)	Lawn	127,813	0%	127813	0	0.65	940	A	525	415	269.8	145.3	0.0	34477.6	18564.8
	Wetland	86,929	0%	86929	0	0.75	940	A	546	394	295.5	98.5	0.0	25687.5	8562.5
	Wetland	151,950	0%	151950	0	0.55	941	D	547	394	216.7	177.3	0.0	32927.6	26940.7
	TOTAL	366,692	0%	366692	0	0.63	940	A	539	401	254	147	0.0	**93,093**	54,068
North and West Drainage Areas to Saugeen River (Catchment 203)	Lawn	127,813	0%	127813	0	0.65	940	A	525	415	269.8	145.3	0.0	34477.6	18564.8
	Naturalized treed and vegetat	86,929	0%	86929	0	0.75	940	A	546	394	295.5	98.5	0.0	25687.5	8562.5
	TOTAL	214,742	0%	214742	0	0.69	940	A	534	406	280	126	0.0	**60,165**	**27,127**
Extraction Basin Catchments (200)	Basin (Lawn)	870813.0	0%	870813	0	1.00	940	A	525	415	415.0	0.0	0.0	361387.4	0.0
	Lawn	16111.0	0%	16111	0	0.65	940	A	525	415	269.8	145.3	0.0	4345.9	2340.1
	TOTAL	886,924	0%	886924	0	0.99	940	A	525	415	412	3	0.0	**365,733**	2,340

*Based on MOE Table 3.1

Post-to-Pre Summary

Catchment	Pre-Development Runoff (m3)	Pre-Development Site Infiltration (m3)	Total Pre-Development Surplus Volume (m3)	Post-Development Runoff (m3)	Post Development Infiltration (m3)	Total Post-Development Surplus Volume (m3)	% Difference
North and West Drainage Areas to Saugeen River (Catchment 103)	38,087	348,071	**386,158**	27,127	518,991	**546,118**	41.4%