

Subject: Re: Strada Peer Review Exhibits - Model Calibration Deficiencies

From: Garry Hunter <ghunter@hunter-gis.com>

Date: 2024-09-12, 6:15 p.m.

To: Alicia Kimberley <akimberley@tathameng.com>, Natalie Kotyck <nkotyck@gmail.com>

CC: Dirk Kassenaar <dirk@earthfx.com>, Gabriel Bacca Cortes <gabrielbc@earthfx.com>, James Newlands <jnewlands@mhbcplan.com>, Kevin Powers <kevinp@campbellstrategies.com>, Sydney Gilmour <sgilmour@nrsl.on.ca>, Ryan Archer <rarcher@nrsl.on.ca>

Alicia,

MY response to your email below.

Formal Comment Matrix

The formal comment circulation through the Matrix does not work for Text with integrated Figures. There also may be a time delay in Matrix compilation.

The comment Matrix is very inefficient when used as a parking lot and comments are not discussed based on factual evidence (as below) and not cleared in a reasonable time frame. The process becomes very cumbersome and inefficient when the great repetition in the applicant report text and figures propagates throughout the Matrix.

NRSI

Likely I should also have sent the more relevant Email 2 of 2 to NRSI.

Sooner or later we need to review the NRSI Report, Wetland Evaluations and Fisheries Habitat Assessments including stream water quality, fish spawning, fish rearing and stream reach groundwater upwelling locations. This is a form of groundwater model virtual baseline validation.

NRSI have had their feet on the local ground, and likely can assist with impact assessment, not just on wetlands but on residential lots within and adjacent to wet areas and on adjacent low lying farmers fields. I have had prior favourable contact with NRSI at Board Hearings and the ELS mapping I have seen for this project is very good. I would hope to rely on the NRSI Report as evidence.

I am not sure what you want me to discuss with NDACT. I have had an extended recent meeting.

Geotechnical Engineering Report

Your Soils Grading and Infiltration Figure are 'free floating' and need to be either included with the till characteristics determination in the updated Geotechnical Engineering Report or alternately provided with the likely Tatham undisclosed Stormwater / Quarry Pumped Effluent Management / Infiltration Pond or equivalent Report that provides context.

I have previously advised I expect to be relying on Strada's updated Geotechnical Engineering Report for the engineering assessment of on site till characteristics and other geotechnical issues. The 'draft' geotechnical report described the on site tills as 'Sandy Silt with some Gravel'. However better that the Geotechnical consultant has some actual on site data.

I have no issue with a fine textured Tavistock Till expert geotechnical determination in the south or south west of the Strada Pits. This is consistent with the local wetland landscapes in these areas. My issue is with Tavistock Till in the central parts of the pits and north of the Strada Pits. The basal tills may also be older.

With regard to my references, please check the Matrix in due course. My last page by page Peer Reviews of A/B, C and D were delivered to NDACT today. I am not sure how long it will take NDACT to update the Matrix with this and other recent Review communications.

Matrix Clearance

This is long overdue and will now take substantial time and likely substantial discussion and evidence exchange.

Scenario One Model Re-Run and New Model Scenarios

I am very sorry to have keep repeating this, but Strada must

improve the model calibration and validations before this Peer Review can have confidence in any new model runs.

The current model prediction of 0.0 L/s dry weather virtual base flow conditions at 3rd Line and 15th Sideroad (Newell / Funston MECP Permitted Commercial Aquaculture Centre), in my opinion, will not be credible with NDACT, the Approval Agencies or a Tribunal. What does NRSI say, they have also been there?

I am available for further discussions.

Yours truly,

Garry T. Hunter M.A.Sc. P.Eng.

President

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On 2024-09-11 9:59 p.m., Alicia Kimberley wrote:

Thank you Garry for your comments. We will look for these comments to be provided in a formal comment matrix as per the NDACT-Strada communication plan. As discussed in our recent Peer Review meeting these comments were to be sent to NDACT. NDACT is then to organize and distribute comments.

I see you have also included an NRSI representative on this email distribution. If you are not going to send the comments to NDACT as requested in last weeks meeting, please limit the distribution to only the appropriate parties, as this complicates the process - especially since the NRSI contact included is not the primary NRSI contact. I would suggest discussing this with NDACT.

In addition to the above, I would request that you provide the correspondence and/or geotechnical information you are referencing in your below statements. I have attached my correspondence where I provided you with gradation testing results completed by a CCIL lab. The gradation testing was carried out as part of a preliminary Guelph Permeameter testing program carried out locally in the southern portion of the site.

The gradation test results I provided do not show coarse grained soils were encountered but rather the opposite,

the gradation test indicates the soil tested in the southern portion of the site comprised silt to clayey silt deposits with between 89.5 to 96.7% silt and clay content (i.e. fine soils). Your comment implies that the geotech has provided confirmation of coarse grained tills on-site, however, the geotechnical consultant has not provided any comment on the till gradation on-site to date, and the lab results provided do not indicate coarse till soil in the southern portion of the site.

I would request that the below comments/statements be revised to reflect the information that was provided.

I see you have provided 2 additional emails today with further comments, please consider this confirmation of receipt and the technical team will review your comments. As you are aware, we are preparing a new model scenario and as such we may not immediately respond to your comments but we will review and ensure your comments are incorporated in our next steps where applicable.

Alicia



Alicia Kimberley P.Geo.
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From: Garry Hunter <ghunter@hunter-gis.com>

Sent: Wednesday, September 11, 2024 10:27 AM

To: Natalie Kotyck <nkotyck@gmail.com>

Cc: Alicia Kimberley <akimberley@tathameng.com>; Dirk Kassenaar <dirk@earthfx.com>; Gabriel Bacca Cortes <gabrielbc@earthfx.com>; James Newlands <jnewlands@mhbcpplan.com>; Kevin Powers <kevinp@campbellstrategies.com>; Sydney Gilmour <sgilmour@nrsi.on.ca>

Subject: Strada Peer Review Exhibits - Model Calibration Deficiencies in Melancthon Old Survey Email 1 of 2.

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Natalie,

We enclose exhibits related to the Strada modellers and hydrogeologist's incorrect assumption of 'Tavistock' Tills in the Melancthon Township Old Survey. The Matrix shows that this issue was identified from the earliest 2023 Peer Reviews. The presence of coarse textured versus fine textured glacial tills on the Strada site was recently confirmed by Strada's Geotechnical consultants. Genivar's (2011) early Mega Quarry work also reported coarse textured tills.

Strada modellers do not seem to have the agricultural experience to understand what all farmers in Melancthon and beyond (and the NDACT community) know about Old and New Survey external surface and internal soil drainage.

The Modelers Reports and the Peer Review Matrix is cluttered with this issue related to earlier Strada hydrogeologist's incorrect interpretation of 'drillers clay' water well terminology conflated to Tavistock Till.

Fig H.11

This Figure prepared for NDACT in 2010 shows the Specialty Crop and Agricultural Infrastructure in Melancthon and adjacent areas.

Fig H.16

This Mega Quarry Figure shows a Honeywood Soil Pit with well drained 86 cm of stone free loess (silt loam) over coarse textured glacial till. There are many angular stone fragments of likely Guelph Formation origin (similar to the Strada Pits) indicative of shallow bedrock influence. There is no lacustrine influence here.

This soil pit is located just up the 4th Line from the Strada Pit on Lot 19 Con 3 OS (Faucett / Butcher / Downey / Bonnefield Farms).

The Honeywood soils have very high moisture holding capacity and very high capillarity for supporting productive rain fed crops typically potato / wheat / corn rotation. These conditions offset the more rapid internal drainage of the underlying stony sandy silt tills overlying bedrock epikarst.

These Honeywood soils typically produce the equivalent of 2,500 10 lb bags of potatoes per acre on a three year rotation. This surface loess soil mantle, also on the undisturbed sand and gravels of the Prince Pit, also supported good rain fed potato and wheat crops in the 2023 and 2024 seasons. Is there really any difference in recharge in the undisturbed Prince Pit fields versus the fields to the north?

The modelers need to increase their Layer 1 hydraulic conductivities in the Melancthon Old survey, perhaps to weathered bedrock values.

Fig H.12

These Figures show the Strada's modellers Melancthon Old and New Survey undifferentiated Hydraulic Conductivity and Net Groundwater Recharge based on the modellers ill advised preference for legacy Surficial Geology evidence.

The Modellers need to revise their Groundwater Model to reflect the higher recharge in the Old Survey consistent with the recharge and surface runoff differences in the Pine River and Grand River upland catchments.

Resolution of the above issues will allow clearance of a number of Matrix items.

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Yours truly,

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