Attachment G Minutes from public presentations at Council meetings (not part of planning process)

Moved by: Councillor C. Gordijk Seconded by: Councillor B. Fisher

THAT Council reconvene in open session.

CARRIED.

3. MOMENT OF SILENCE

4. LAND ACKNOWLEDGEMENT

4.1 Councillor J. Pfenning read the Land Acknowledgement.

5. ADDITIONS TO THE AGENDA

6. DISCLOSURE OF PECUNIARY INTEREST UNDER THE MUNICIPAL CONFLICT OF INTEREST ACT

6.1 Councillor C. Gordijk advised that although there are no decisions being made at this meeting relative to the Hallman Pit, she restated her conflict of interest and advised she would not be taking part in any conversations on the topic.

7. MINUTES OF PREVIOUS MEETINGS

7.1 Council Meetings Minutes Monday February 22, 2021

Resolution No. 2021-41

Moved by: Councillor C. Gordijk Seconded by: Councillor J. Gerber

THAT the minutes of the following meetings be adopted as presented:

Special Council Meeting February 22, 2021 and Regular Council Meeting February 22, 2021.

CARRIED.

8. PUBLIC MEETINGS

9. PRESENTATIONS/DELEGATIONS

The following persons appeared as delegations in relation to the proposed Hallman Pit. Prepared statements and / or presentations are attached as noted.

9.1 Mr. John Coulter, Appendix A

9.2 Mr. Franco DiGiovani, Appendix B

9.3 Ms. Patricia Chevalier, Appendix C

9.4 Ms. Ann Dupej, Appendix D

9.5 Ms. Stephanie Goertz appeared as a delegation in relation to the Hallman Pit. Ms. Goertz noted the increase in traffic in her neighbourhood, noting that the addition of sidewalks has made the community more walkable and the traffic increase has created health and safety concerns.

9.6 Ms. Linda Laepple, Appendix E

9.7 Ms. Rachel Rennie, Appendix F

9.8 Mr. Lavern Forwell appeared as a delegation in relation to the Hallman Pit. Mr. Forwell expressed his concerns with the proposed pit and potential impacts on quality of life, through potential increased noise and air pollution and the impacts on private well water. Mr. Forwell responded to questions from Council that the other pits in the area do cause noise problems. Mr. Forwell referenced photographs he provided to Council that are attached as Appendix G.

9.9 Ms. Christina Harnack, Appendix H

9.10 Mr. Kelvin Wood appeared as a delegation in relation to the Hallman Pit. Mr. Wood expressed his concerns over the proposed pit and his concerns over the change of the load restrictions on Witmer Road and the ground water protection area.

It was confirmed by Council that they have received all data that has been provided and asked Mr. Wood to share any information that he has regarding the history proposed pit. It was also confirmed that the proposed pit has not been pre-approved at this stage.

9.11 Mr. David Bricker appeared as a delegation in relation to the Hallman Pit. Mr. Bricker expressed his concerns over the proposed pit and the impacts of the trucks, noise and dust.

9.12 Ms. Samantha Lernout, Appendix I

Council expressed interest in the studies referenced by Mr. DiGiovani and Mr. Wood that include data to support the findings presented. Mr. DiGiovani and Mr. Wood were requested to forward the studies to the Director of Information and Legislative Services for distribution.

10. CONSENT AGENDA

11. REPORTS

11.1 Parks, Facilities and Recreation Services

11.1.1 REPORT NO. PFRS 2021-03

RFP Award HVAC Systems Engineering Consultation and Design Administration Building

Resolution No. 2021-42

Moved by: Councillor A. Hallman Seconded by: Councillor J. Gerber

THAT RFP 2021-007 be awarded to BMI Engineering Inc., for engineering consultation, HVAC equipment design, and project supervision, for the Wilmot Administration Complex, as per their proposal dated February 24, 2021, in the amount of $28,250 including HST.

CARRIED.

The Director of Parks, Facilities and Recreation Services outlined the report.

12. CORRESPONDENCE

13. BY-LAWS

13.1 By-law No. 2021-14 Execution of an Agreement with BMI Engineering Inc.

Resolution No. 2021-43

Moved by: Councillor B. Fisher Seconded by: Councillor J. Pfenning

Delegation – John Coulter

"Predictable worst case noise impact" (quoted from NPC 300)

means the noise impact associated with a planned and predictable mode of operation for stationary source(s), during the hour when the noise emissions from the stationary source(s) have the greatest impact at a point of reception, relative to the applicable limit. The acoustic assessment of stationary source noise impacts at a point of reception must address the predictable worst case noise impact.

The greatest noise impact at a point of reception may not occur when the noise emissions from the stationary source(s) are highest, since the applicable limit (the higher of either background sound level or exclusion limit) may vary throughout the operating time.

The predictable worst case noise impact addresses the following activities:

Regular, routine operation of equipment Operations of equipment are included in the predictable worst case scenario.

Infrequent operation of equipment Operations of equipment (stationary sources) that occur at least twice a month and emit noise for at least one half hour on each occasion are considered planned and predictable even if they are not occurring at precisely the same time on each occurrence, and are included in the predictable worst case scenario.

Operation of emergency equipment Activities related to the operation or testing of equipment used for emergency purposes, but in non-emergency situations, are addressed using separate sound level limits, described in Section B7.3 and Section C4.5.3.

Land Use Compatibility Assessments – air assessments – Halman Pit

Franco DiGiovanni, PhD LEL
Senior Project Manager – DiGiSci Environmental

Franco.digiovanni@digiscienvironmental.com
+1-905-467-4669

Dr Franco DiGiovanni LEL
Senior Project Manager
DiGiSci Environmental Consulting Inc.

- BSc(HONS) Geology – Royal School of Mines, Imperial College, UK
- PhD – Physical Geography – Dispersion Modelling – University of Hull, UK
- Post Doctorate – University of Guelph
- NSERC Visiting Scientist to a Canadian Government Laboratory – Environment Canada

- Lead Scientist in DiGiovanni Scientific Consulting
- Senior Air Quality Modeller at Airzone One Inc.
- Senior Project Manager with Hemmera EnviroChem Inc.
- Senior Project Manager with DiGiSci Environmental Consulting Inc.

Land Use Compatibility

Photo Credit: Ivan Wong Rodenas of Flickr

- Meant to ensure different land uses do not cause each other environmental problems
- Enshrined in PPS (p. 1.2.6.1)

Land Use Compatibility PPS (2020, p. 1.2.6.1)

"*Major facilities* and *sensitive land uses* shall be planned and developed to avoid, or if avoidance is not possible, minimize and mitigate any potential *adverse effects* from odour, noise and other contaminants, minimize risk to public health and safety, and to ensure the long-term operational and economic viability of *major facilities* in accordance with provincial guidelines, standards and procedures."

- *adverse effects* = EPA definition

Adverse effects and Air Quality

- Requires an air impact assessment
- Impact assessment should include cumulative effects

gemenacom/fotolia.com

www.digiscienvironmental.com

- Franco DiGiovanni, PhD LEL
- Senior Project Manager, DiGiSci Environmental Consulting Inc.
- Franco.digiovanni@digiscienvironmental.com
- +1-905-467-4669

The Danger of Fine Particulate Matter to Our Community

IMPACT OF THE HALLMAN PIT

Preconsultation Meeting Notes for the Hallman Pit Application

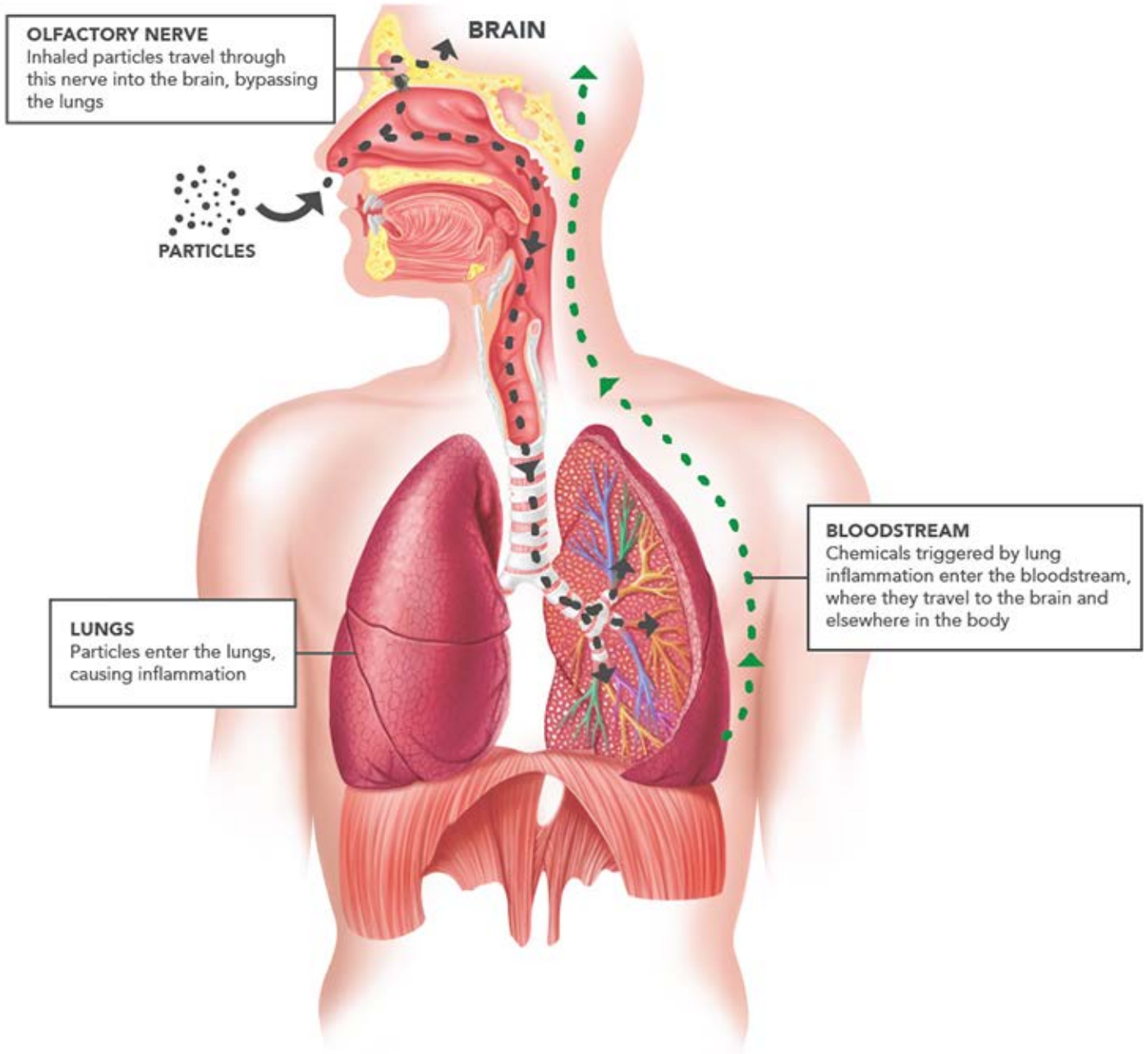
- "Mr. Martin asked about whether a dust study is being done or not. He indicated that the residents of Shingletown are fairly close to the site and that a dust study may be prudent. Mr. Sisco noted that berms and setbacks will be provided and that a dust study is typically not required through the ARA."
- No further discussion is noted on the topic

Diesel Emissions

- Contain toxic fine particulate matter – smaller than a red blood cell
- Diesel emissions enter your homes then your body
- Large diesel trucks on regional roads will increase
- Load of diesel emissions along haul routes will increase
- Inhaled fine particulate matter will increase

The International Agency for Research on Cancer (IARC) – Health Impact of Diesel Emission (part of the WHO)

- Diesel engine exhaust is "carcinogenic to humans"
- Diesel exhaust linked to lung cancer & bladder cancer


OLFACTORY NERVE
Inhaled particles travel through this nerve into the brain, bypassing the lungs
BRAIN
PARTICLES
LUNGS
Particles enter the lungs, causing inflammation
BLOODSTREAM
Chemicals triggered by lung inflammation enter the bloodstream, where they travel to the brain and elsewhere in the body

Current Information about Air Pollution 2021 Environmental Research Journal

- 1in 5 premature deaths can be attributed to air pollution from Fossil Fuels
- Researchers used a new way of measuring pollution that allowed the separation of fossil fuels from other air pollution

Lancet Planetary Health December 2020 (used data from U.S. & Ont)

- Impaired cognitive function
- Accelerated cognitive decline
- Parkinson's disease
- Alzheimer's disease
- Dementia

Global Burden of Disease, Injuries and Risk Factors Study 2016

Between1990 & 2016

- Prevalence of Parkinson's disease increased by 145%
- Alzheimer's disease and related dementias have increased by 117%
- In around 25 years these neurodegenerative diseases have more than doubled

Shingletown Residents

- Wind will blow fugitive dust & particles matter towards Shingletown
- Fine particulate matter can travel for miles
- Residents outside of Shingletown will suffer
- Berms will not stop this

Witmer Road Residents

- One or more diesel trucks every two minutes
- Trucks idle waiting for the pit to open
- High humidity traps diesel emission
- Wind blows diesel emission

March 1, 2021 Council Presentation

Submitted by:

Ann Dupej

2122 Bleams Road, Petersburg ON N0B 2H0

Shingletown

I have enjoyed living in Wilmot township in the rural community of Shingletown for almost 40 years and now I am dismayed over this potential gravel pit.

Tonight I am addressing my concerns about the harmful impacts of the noise pollution that this pit will generate.

Gravel pit operations cause a tremendous amount of noise pollution. "Sensitive receptors" the noise feasibility study refers to are the people that be will be subjected to this noise. Noise from construction and excavation equipment, noise from crushing equipment, noise from trucking. From the noise feasibility study provided by the developer: Noise that will last all day, 11 hours Monday to Friday and 12 hours including "shipping" which I take to mean trucks, and 4 hours on Saturday and 6 hours including "shipping" which I take to mean trucks from 6 in the morning. But guidelines apparently do not apply to the sound produced by road trucks on public roads so I guess we just have to live with it or should I say get sick with it. According to the Construction Equipment Noise Levels and Ranges Handbooks, dump trucks from 50 feet away produce an average of 76 dB, 8 times above the 45 safe range. (Every 10 dB, the sound is 2times as loud.) Many homes are way less than 50 feet away from roads. And what about the noise these trucks generate in and out of the pit which can be up to 100dB at source?

The increased number of trucks alone will create a substantial negative impact and not just for noise. According to the feasibility study, "The peak number of trucks to arrive and depart in a typical busy hour is 34." I believe it's more than that, but even that means every hour there will be 34 (that's more than 1 every 2 minutes) more loud, diesel fume emitting dump trucks on our roads. How can that not have an impact?

Finding highly credible sources all of which detail negative health impacts of environmental noise pollution is easy. I'm only barely scratching the surface with what I am sharing with you.

Heres the common thread of all this research:

Long term exposure to sounds that are not loud enough for us to give them a second thought can cause permanent damage to the hearing brain. Physical hearing can be fine but neural connections in the brain are compromised. From the Scientific American Journal, "Even a modest level of noise over a long period of time can cause damage to brain networks that extract meaning from sound. Most of us don't even realize our brains are being blunted and our thinking impeded by this invisible force." Constant low-level meaningless noise chips away at the brain's ability to make sense of meaningful sounds and may hasten cognitive decline (dementia) in old age.

Health Canada defines noise as unwanted sound and depending on the sound level and exposure it can cause annoyance, interference with communication, disturbance of rest, sleep or concentration, and may cause sufficient stress to risk developing stress-related illness. Have you not experience annoyance noise in the background of a conversation, it doesn't have to be loud to distract and cause irritability and blood pressure to rise. In the case of the gravel pit, constant exposure to truck traffic noise and production equipment noise produces a higher, long-lasting, cant-make- it stop annoyance level. Science warns us that there is an association between acute and chronic environmental noise and health impacts that include cardiovascular disease, cognitive impairment, sleep disturbance, mental health and a negative impact on behaviour in children.

The WHO in the Children's Health and the Environment section has Training for Health Care Providers that includes the adverse health effects of noise on children. That this topic is even included should be a flag to us. They conclude that children may be even more susceptible to noise effects which could lead to lifelong impairment of learning and education. Please note that this about constant environmental noise, not the going to a loud concert once in a while noise, the kind of constant environmental noise this gravel pit is going to generate. Long term exposure has adverse effects on physical health, psychological health and on cognition.

Toronto Public Health has also concluded that excessive environmental noise impacts quality of life and causes hearing loss and has cardiovascular effects, cognitive effects and mental health effects as well as sleep disturbance. In a 2016 study in Toronto the environmental noise was described as mostly car traffic and in our case the traffic will be gravel truck traffic, significantly louder that cars. Newer evidence confirmed that the previous benchmark levels for outdoors noise levels still cause health impacts.

Results of a study done in Stockholm Sweden suggest an association between exposure to traffic noise and hypertension which means road traffic may be a risk factor for cardiovascular health. That's just car traffic, not including pit equipment generated noise.

Our own Ministry of the Environment concedes that noise is a biological stressor, one of the determinants of health. Maintaining a quality outdoor noise environment will promote a more healthy lifestyle and reduce the risk of chronic disease and result in a healthier community.

Also let's not forget that the noise pollution from this gravel pit will not be the only noise pollution already present in our environment. A cumulative effect of all areas of concern has never been addressed. Common sense tells us that when there will be additional noise generated, the health impacts to our community will increase.

These highly credible sources with new bodies of research are warning us of the impending harm of environmental noise to healthy individuals. There is a significant harmful impact of noise that falls within allowable limits, noise that is consistent, noise that is annoying, noise that is distracting, noise that endangers our health. We can not simply dismiss this. Once we know, we have a responsibility to act. "We know better so we do better". Please stand up and protect me, my family, my community, my Wilmot. That's why I voted for you. Don't allow one more gravel pit that will bring harm to our community.

Its not just about lowering the noise level. The U.S. Center for Disease Control and Prevention states:" The effect of lower noise levels over long periods of time is the same as louder noise levels over a shorter period."

In the end, only you, council, will be held responsible for what the future holds for us all in Wilmot, our children and our grandchildren. Just because you have a right to do something, does not make it the right thing to do. I hope Council will do the right thing for us all.

The Scientific American Journal states: “If possible, choose where you live wisely, based on noise levels.” That is what we did here in Wilmot and we want to continue to enjoy that healthy lifestyle. It’s up to you, Council, if we do, or if we don’t.

Wilmot Council presentation March 1st 2021

Thank you for allowing me to speak today on the shortcomings of the original studies prepared for the Hallman pit application.

I am Linda Laepple and we farm across the road from the proposed Hallman pit site.
I am here to speak not only on my own behalf, but also on behalf of those older local residents who are not comfortable zooming but who have witnessed and told me about some of the environmental crimes that have happened at this proposed aggregate extraction site while it was operating as a showcase feedlot, probably the largest in Ontario.

> And I am here speaking on behalf of those citizens of Baden and New Hamburg and the KW area who trust me to keep their drinking water clean since I farm next to the Region's wells.

And I take this opportunity to give voice to all the consumers I grow certified organic food for. This is a multicultural community with roots around the globe. Some drive from Hamilton and Toronto and trust me that I provide them with clean food but wonder and ask me when they see the signs to stop a gravel pit.

Yes the threats are as simple as airborne dust loaded with agrichemicals at different stages of decay blowing over my fields of green peas, potatoes and specialty crops grown on my property.

The proposed site is no ordinary piece of real estate. At this location it is not only important to study what impact a gravel pit would have on future agricultural activities. No it is even more important to assess the impact of digging up the legacy of past farming activities.

There is paper, there are words and there is reality.

Papers get filed, words get forgotten but reality we hear, we breathe, we eat and we drink.

Reality is; wind carries noise, dust and smell. On my farm we predict the weather by the smell of donuts and bagels coming from the food recycling place 3 and half km away. That smell means east wind and rain coming.

So. Baden is 4 km from the proposed pit and therefore under certain wind conditions, the entire population of Baden could be exposed to dust stirred up in the pit and people, looking for fresh air when walking the Baden hill trail, for sure will be exposed.

The air caries noise; my residence is exactly 2.5 km from the entrance to the 1922 Wittmer road property. When in spring 2019or 2020 no sure, over a weeks' time, hundreds of trucks arrived at that site to unload topsoil to cover some of the old farmyard, we were woken up in the early mornings by the sound of the constant peep, peep, peep.

So imagine if you are living in one of the homes that are much closer and being exposed to such noise most of the year.

Reality is; that the Risks, when going ahead with this gravel pit, are assessed based on incomplete information.

But. Had those studies, and I mainly looked into the Agricultural and hydrological studies, not selectively left out information along with clear errors describing some observations and if peer reviews had made connections between the studies, it would have come to light that washing gravel at this site is like washing the stuff in your cats litterbox and offering this wash- water your kids to drink.

If facts had been note more correctly in the recent studies, <u>the Region would have never concluded</u> gravel extraction and washing at a contaminated site, a brown field near the public wells, <u>are an acceptable risk</u>.

Looking at these facts, the Township needs more time and therefore an interim control bylaw should be considered

We are all counting on our representatives on Wilmot council to draw a line on what is acceptable to the health and welfare of the residents of this Township,

Briefly two examples of information left out in the studies to demonstrate the risks resulting from it.

We all know fuel storage and water wells don't mix and there is a legal requirement to distance one from another.

The hydrological study shows 7 wells on or near the feedlot site on Wittmer road, with the deepest near the entrance road. But the reports fails to make note of the exact location, nor the condition or water quality found in it today.

Monitoring well #5 located near the roadway going passed the former cattle yard was noted for reading over the max nitrate levels along with almost all other chemistry readings elevated compared to the other 4 monitoring wells.

So once the project is approved, first thing needed is fuel.

In reality, and since no one knows, nothing would prevent a fueling station being placed right on top of an open well on just a concrete pad. (Subject to theft and vandalism.)

Issue 2: The agricultural study claimed there was no investments found like irrigation or land forming. Yet in the hydrological study one of the deepest wells was marked irrigation.

In reality, this well, rated 600 Gallon a minute, was used to flush liquid manure thru an extensive piping system thru out the property and across the road. Some of that investment can still been seen but was not mentioned.

The agricultural study claimed no land forming had taken place.

In reality a bermd area covering about 2,5 acres, was used as a manure lagoon for many years to let liquid manure from 5000 head of feeder cattle settle and seep into the ground with the solids left on top when the site was abandoned.

(This land forming and deposit of massive amounts of manure on top of a former pond, resulted in the removal of a wetland from the updated maps.) Save this info for later, not relevant for noise and dust)

The rest of the material, what didn't seep into the ground, was then distributed partly over what we call today the Nitrate contribution area of the Shingltown well field. Possibly thousands of liters of veterinary medication got over the years, deposited in those hills along with other AG chemicals.

DDT banned in 1972 has an afterlife of 50 years. Atrazine banned in Europe for good reasons since 2003 is still routinely applied as a herbicide by farmers here today, despite Health Canadas knowledge of it's adverse health effects and damage to groundwater.

So dust kicked up at this site potentially contains a brew of animal drugs and agrichemicals and will blow onto my crops that are being distributed in health food stores across Ontario.

The good thing is:

Nature, over time, has it's way to forgive and deal with pollution. **Please don't disturb the process.** Don't dig up nature's filters, shake them out and serve them for dinner.

Rezoning this site to aggregate is a license to allow another Walkerton to happen, but on a grand scale.

Thank you for letting me share just a few facts about this litterbox farm.

Rachel and Matt Rennie

2094 Bleams Rd

Thank you, Mayor and councillors, for taking the time to listen to the ongoing concerns tonight. Your time is greatly appreciated. My name is Rachel Rennie - I moved to Shingletown 5 years ago and was drawn in by the wonderful community and beautiful landscape. I am a wife to Matt, a mom to Paisley who is 5 and Nash who is 4. We also recently added a puppy to our family. As you can see in this picture the field just a few hundred meters behind us is the proposed home for the Hallman Gravel Pit.

This evening, I will be speaking on concerns I have regarding dust and emissions from the proposed gravel pit. As I read through my PowerPoint, I urge members of the counsel to put yourself in our shoes for a moment. Please think to yourself "what if this was my family, what if I was raising my young children in this town". The reality of this pit has a stark outcome.

The township of Wilmot population is projected to grow by 6,700 persons in the next 10 years. As you can see from this number our township is becoming increasingly popular. In fact, Wilmot Council recently approved two new subdivision plans – attracting people to work and live in Wilmot. As indicated in the press release – this expansion will emphasize the township's commitment to preservation and enhancement of the natural environment. My question is how can you consider allowing a gravel pit in the backyards of current residents when your objective is to enhance and protect the natural environment? If you cannot protect the residents you already have, how can you protect the ones to come?

Silica is a mineral made up of silicon and oxygen the most common form is crystalline silica. Found in almost every type of rock naturally. Silica in this form is essentially harmless as it is undisturbed. Much like asbestos, Silica becomes harmful and life threatening when it is disrupted by gravel

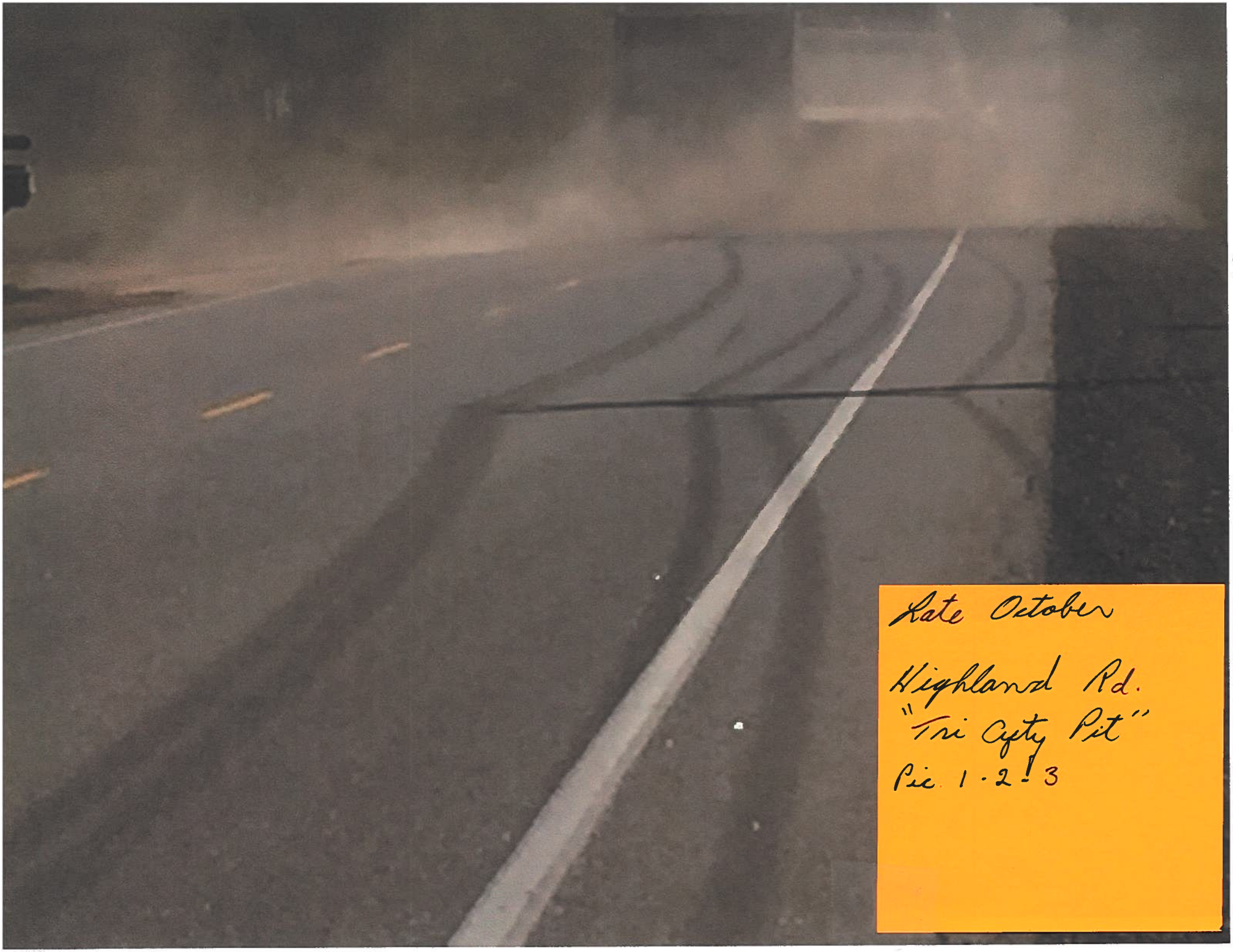
extraction as it becomes airborne. This airborne particle is classified as a chemical agent and is a regulated substance. According to Ontario's Occupational Health and Safety Act the agent requires any employee to have direct protection when dealing with the substance. If this is such a regulated substance consideration MUST be given to citizens living around gravel pit operations who will be exposed to elevated levels of silica. Several eye-opening studies prove the major health effects that arise from breathing in dust from these operations. These airborne particles can stay in the air and on surfaces for days and weeks. Over time, exposure has been proven to cause forms of cancers, COPD, autoimmune diseases and increasing susceptibility to infections. So, I am asking you – where are the dust studies? How will you monitor and mitigate the risks to your residents if this gravel pit is approved?

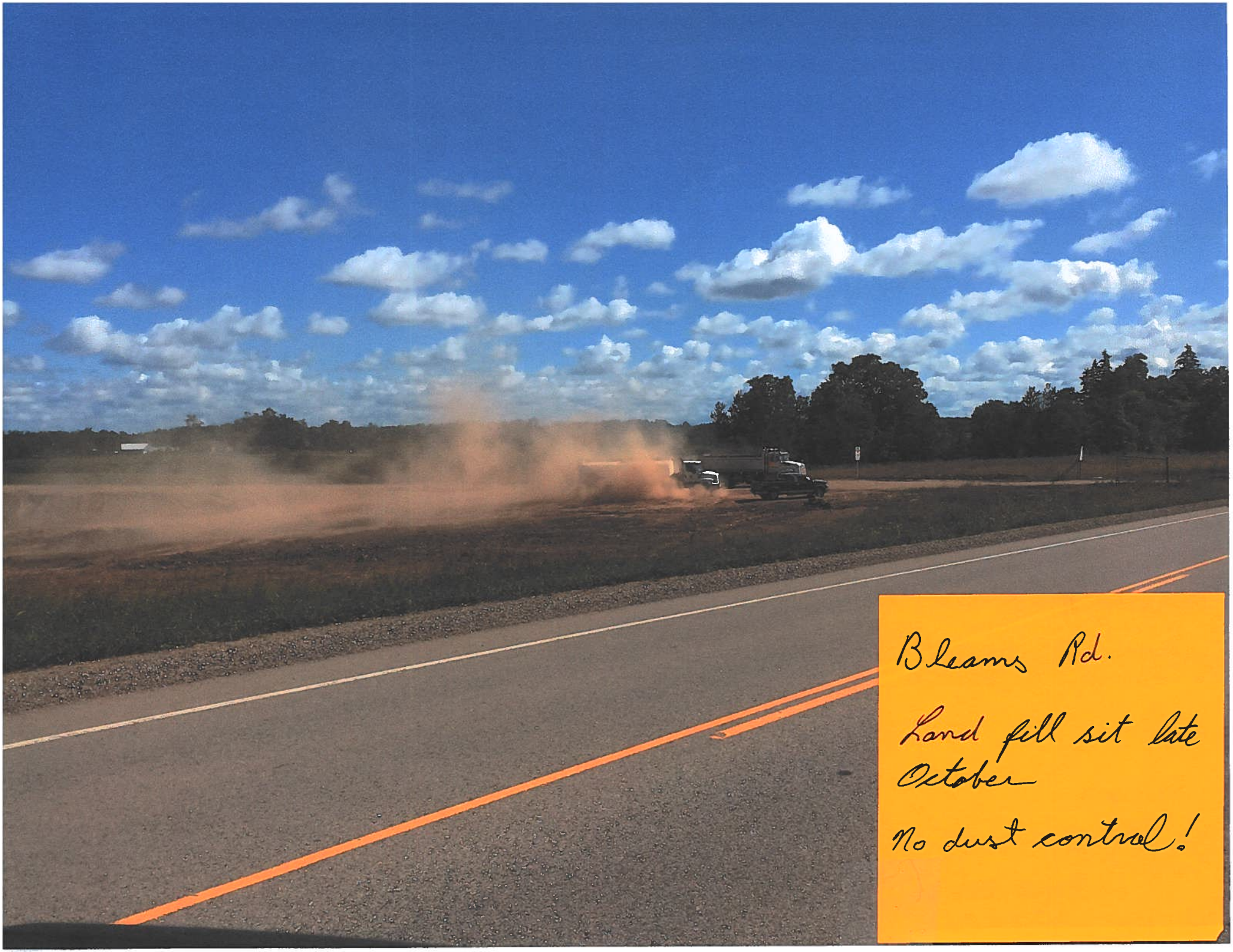
It is no surprise that these pits use a lot of heavy equipment to operate - this equipment is powered by diesel fuel. Use of this fuel creates diesel emissions which consist of both carbon dioxide and monoxide, nitrogen oxides, sulfur, formaldehyde, benzene, and other volatile organic compounds. As such these emissions have been classified as carcinogenic. Specifically, health studies noted by the Canadian Government and supporting evidence from work published provides sufficient evidence to prove that diesel emissions are associated with increased risk to lung and bladder cancer. There is also ample evidence to show that sensitive subpopulations, such as the elderly and children are at a greater risk of adverse respiratory issues due to the exposure of diesel emissions. Short-term exposure can also irritate your eyes, nose, throat, and lungs; it can cause coughs, bronchitis, headaches, light-headedness, and nausea. So, again I am asking you - how will you reduce and mitigate the adverse health effects of breathing diesel emissions to the roughly 200 residents living within the area of the prosed gravel pit? The real answer here is that you can not. At the end of the day this is not just about a gravel pit – this is about the health and safety of human beings.

Lastly, I would like to bring to your attention some information I found within the Wilmot Township website. As I am sure you are aware Wilmot's Strategic plan was recently updated to include 5 core values – responsible governance,

community engagement, economic prosperity, environmental protection, and quality of life. A direct quote from the documentation states “As a leadership group, we are committed to holding our teams accountable in ensuring we maintain focus on the core values of Wilmot, while achieving the various goals and strategies”. So, counsel, I am holding **YOU** accountable tonight. I am urging you to stand by your strategic plan, protect your residents, protect our environment. Protect us! Please remember that this decision will set a precedent. We do not want a gravel pit in our back yard, and I am assuming you would not either.

Thank you


Late October
Highland Rd.
"Tri City Pit"
Pic 1-2-3


Bleams Rd.
Land fill sit late October
No dust control!

Thank you Mayor Armstrong and councillors for allowing me to speak tonight. My name is Christina Harnack and I have lived in Shingletown for 6 years. It is important that you hear both data and the personal perspective. I am a mom of two young girls and I have concerns regarding the rezoning of the land for the proposed Hallman Pit. Tonight I will focus on the concerns I have in regards to dust as well as the precedent this will set for the rezoning of prime agricultural land in a source water protected area behind people's homes.

We are living in a pandemic where we are all too aware of the importance of health and the risks of respiratory diseases. The harm and adverse health effects caused by dust and noise are not something that can be washed away or prevented by a vaccination. We should know now, more than ever, the importance of protecting the health of the most vulnerable. Learning about the adverse health effects of dust and noise in my research has been alarming. Much of the data I wish I could unlearn because it puts into question if we can safely stay in our home with an operating gravel pit across the street.

I have protected my children from my own fears and worries but they inevitably know about the possible Gravel Pit. My oldest daughter actually sent Mr. Esbaugh a letter of objection that included two simple questions: "Will I be safe crossing the road? Will the noise from the trucks wake me up?". I was dismayed, though not surprised, by the 9 page legal jargon she received in response. I am asking Wilmot Council to do right by our children and to make this decision with the utmost care. I am not expecting Mr. Esbaugh to protect them.

If you lived in Shingletown you would know that residents used to be overwhelmed by the smell of silage from a feedlot operation. Other residents have told me they can always smell the rain coming from down the hill. On days with an east wind, we can all smell the sweet smell of bagels and donuts being recycled on the farm across from Meadow Acres more than 2km away. Many of us strategically time when we clean our windows in the spring after the pollen has fallen from the surrounding pine trees. These are anecdotes from ***people*** about how air moves. In this case, these ***people*** deserve more than just anecdotal evidence or predictions of how dust and air travels. We need to have baseline and cumulative conditions and an assessment of the impacts studied.

In a very simplistic explanation, Dust and Fine Particulate Matter is produced from the operations of a gravel pit. Fine particulate matter, 10 microns or less in diameter (PM 10) can be inhaled and is considered toxic under the Canadian Environmental Protection Act (CEPA). In this instance, evidence demonstrates that seniors and young children are the most at risk with increased exposure of PM 10. PM 10 is related to increases in cardiopulmonary disease, asthma, bronchitis, emphysema, and premature death in those with pre-existing conditions. Crystalline silica dust is common from processing sand and gravel and is a known carcinogen. Any dust report needs to include a specific analysis of crystalline silica content and dispersion. You have heard this evening examples of recent studies from medical journals that point to air pollution being the cause of neurodegenerative diseases like **Alzheimer's** and **Parkinson's,** and in premature deaths. It is not an exaggeration to say that your alarm bells should be ringing.

If you plan on approving this rezoning, there have not been adequate studies on dust and noise to ensure that mitigation measures for air pollution and PM standards will go far enough to protect the 200 citizens who live on the edge of this gravel pit. There needs to be studies that are comprehensive and that take into account the cummulative impacts. Where are the Air Impact Assessments? How have you communicated these findings to the people who will live around this proposed pit? What analysis will be completed *during* the operation of this proposed gravel pit to analyse the actual air pollution? If the answers to these questions are unknown and if Wilmot Council is not “prudent” to demand these studies and monitoring, the health of people like me and my children living in Wilmot will be compromised and this is not acceptable. I will be following up to ask each of you what information you have in regards to an Air Quality Assessment and it is your duty to understand this data before you move forward.

I want to share with you some examples of studies and data in regards to dust.

There are many studies that link air pollution to brain inflammation and cell damage. Connections have been researched in the area of fetal impacts leading to developmental challenges in children when the mothers were exposed to pollution; there are studies connecting exposure to air pollution to anxiety and depression in youth which is already on the rise according to SickKids. There is a frequently cited study from the US of 1400 women across the country that found

that, the more that these women were subjected to exposure to particulate matter the less white matter they had. It is important to understand that a decrease in white matter is strongly associated with dementia.

In 2017, UNICEF published a special paper on How Air Pollution Can Affect Brain Development in Young Children. “With every breath, children take in more air per unit of body weight than adults. By extension, when air is toxic, they take in more toxic air per unit of body weight than adults. Children in our community will be at risk because they live near the gravel pit and breathe and swallow its dust.”

Many experts feel that Ministry of the Environment and Climate Change allowable Particulate Matter standards do not go far enough to ensure clean safe air. If you support rezoning for the purposes of the gravel pit you are agreeing to standards that apparently have never been stringent enough and that do not take into account the recent research on resultant brain health concerns. A recent critical report ”The Air We Breathe”, by David Boyd (David Suzuki Foundation) recommends more stringent legally binding Canadian air quality standards. Please be a part of protecting the air that we breathe.

As you know, in Wilmot’s Strategic plan you have identified 6 Core Values that Wilmot embraces – **health and wellbeing,** community, **legacy**, accessibility and inclusivity, forward-thinking, and **balance**.

You have an important decision before you and one that will set a precedent. This is a decision that subsequent councillors will look to and point to, not only in our Township but beyond. Are you prepared for this responsibility? In an era where reducing GreenHouse Gasses is a commitment and Climate Change is an imminent threat, how might this rezoning have irreversible consequences and what pathways are being forged for the next applications to be approved more easily and less carefully? Rezoning this prime agricultural land in a groundwater source protected area, but more importantly, on land that backs onto 50 homes, is not acceptable and should be rejected.

Just last week the Township of Wilmot Council formally recommended the approval of two subdivisions plans, referred to as the Wilmot Employment Land. The goal, as stated in the press release on February 23rd, is to attract people to

work and live in this area “to maintain a healthy tax base and ensure Wilmot remains a balanced and complete community to make Wilmot a *preferred choice* in Waterloo Region”. What a stark contrast there is between the possibility of rezoning land for a gravel pit in the backyards of *current* Wilmot residents in Shingletown to the statement of the Township’s commitment to preservation and enhancement of the natural environment for new residents. What message does this send to new residents? You have a duty to protect ***current*** residents who already live here.

This new development will be surrounded by farmland. What will prevent this precedent decision of rezoning to allow for aggregate extraction beside this community? Would it be acceptable to have an operating gravel pit behind WO and Sir Adam Beck? I have a hard time imagining that approval for new homes to be built within 150meters of an existing gravel pit would be permitted. The opposite should also be unimaginable. This vibrant community and countryside could very well turn into a patchwork of pits, this does not sound like a “preferred choice” for our region.

Please reflect back to Wilmot’s 6 Core values. This is a responsibility to our **health** and **wellbeing** as a community. This is a **legacy** that you will be a part of determining in protecting the health of our community from drinking water to dust & noise pollution. **Balance** cannot be putting economic ventures before the health of *people*. You are making decisions because you were elected by ***us***, but your decisions are further reaching than that. This decision will impact my children and generations to come. They deserve to be protected. They deserve your utmost care and attention to do no harm. For this reason, I ask that you reject the application for the rezoning of the Hallman Pit.

In a recent Peer Reviewed article in PubMedCentral the findings indicate that it is women in leadership positions and in governmental organizations who are more likely to support efforts to improve health practices and the health of communities. I am calling on ***all*** of you as elected councillors and Mayor Armstrong to protect our health, our children, and our community in your decision.

Thank you.

CITIZENS FOR SAFE GROUND WATER

Noise and Air Quality

March 1st, 2021 - Wilmot Township Council Meeting, 7pm

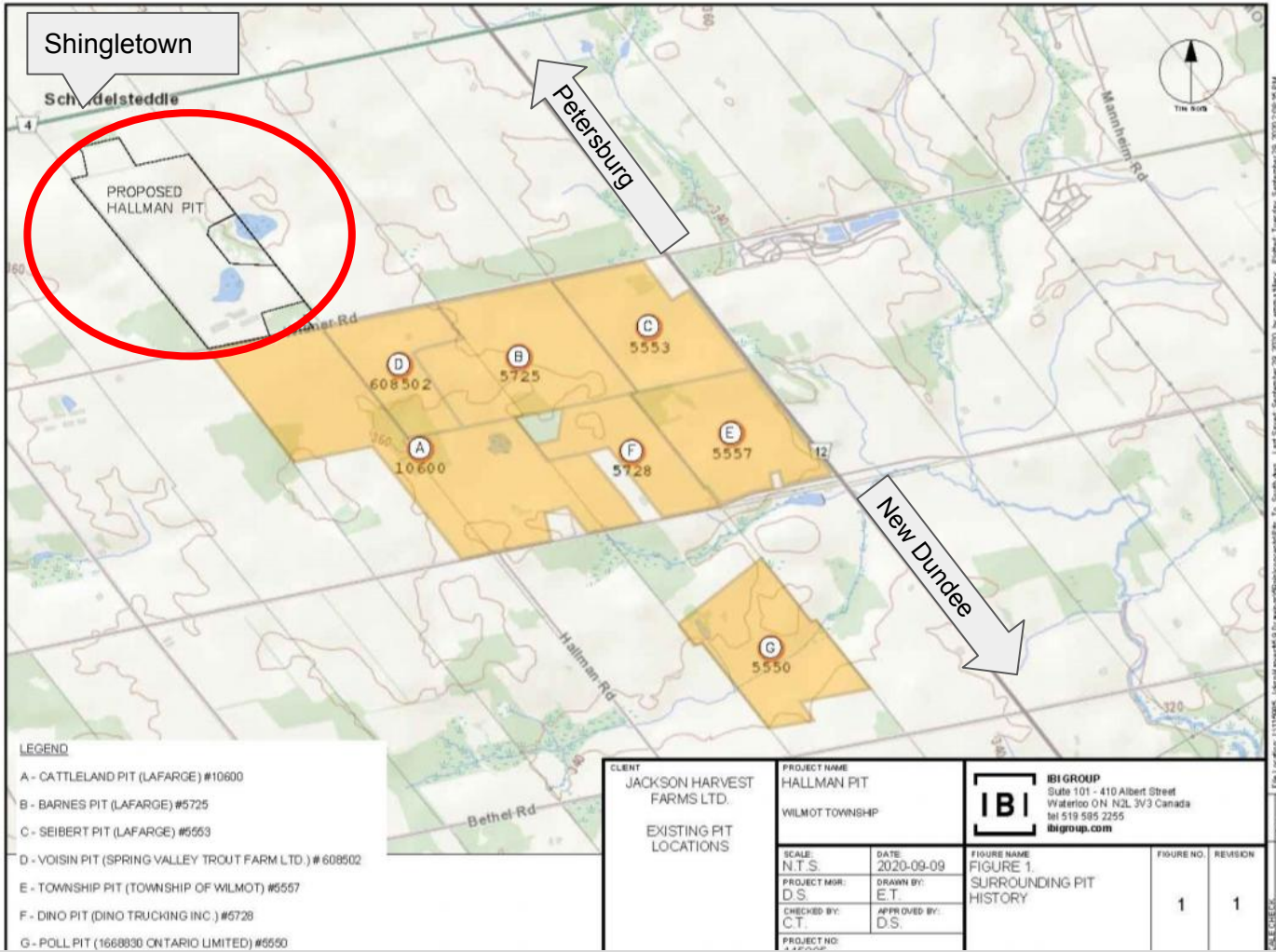


Figure 1 Existing Pit Locations

https://facility-admin.esolutionsgroup.ca/Uploads/Files/16E7D05A-FC42-4E34-A1EF-8C5C6858A2BF/zca-11-19/updates/PlanningReport_Addendum.pdf

statements made are based on expert reviews commissioned by the Region of Waterloo, Wilmot Township and Citizens for Safe Ground Water Inc., as well as the Grand River Conservation Authority, to date

POTENTIAL IMPACTS OF THE PROPOSED HALLMAN PIT

CITIZENS FOR SAFE GROUND WATER

CUMULATIVE IMPACTS The combined impact of all 'past, present and future' gravel pits

HEALTH IMPACTS

Increased noise levels due to truck activity, alarms and extraction

Health effects from exposure to harmful fine particulate matter (dust)

Potential for contamination of our drinking water in sensitive recharge areas

ECONOMIC IMPACTS

Traffic from dump trucks causes safety concerns and increased costs for municipalities

Loss of 200 acres of prime farmland. Financial viability of farming is decreased after land is used for aggregate extraction

ECOLOGICAL IMPACTS

Destruction and fragmentation of wetlands and habitats

Auxiliary activities, such as aggregate washing, increase potential for groundwater contamination

Operational practices, such as fuel storage and asphalt recycling, increase risk of pollution

Agenda

1. Issues with the Hallman Pit application
   a. Noise
   b. Air Quality

2. Cumulative Impacts

3. Precedent for Industrial Aggregate Applications in Wilmot Township

Experts Commissioned

Purpose	Organization
Acoustic Peer Review	J.E. Coulter and Associates
Air Quality Peer Review	Di GiSci Environmental Consulting Inc.
Traffic Impacts Review	True North Safety
Conformance to the Official Plans	Ramsay Planning Inc.
Legal Representation	Canadain Environmental Law Association

- The Region and Township have also commissioned reviews

Franco DiGiovanni

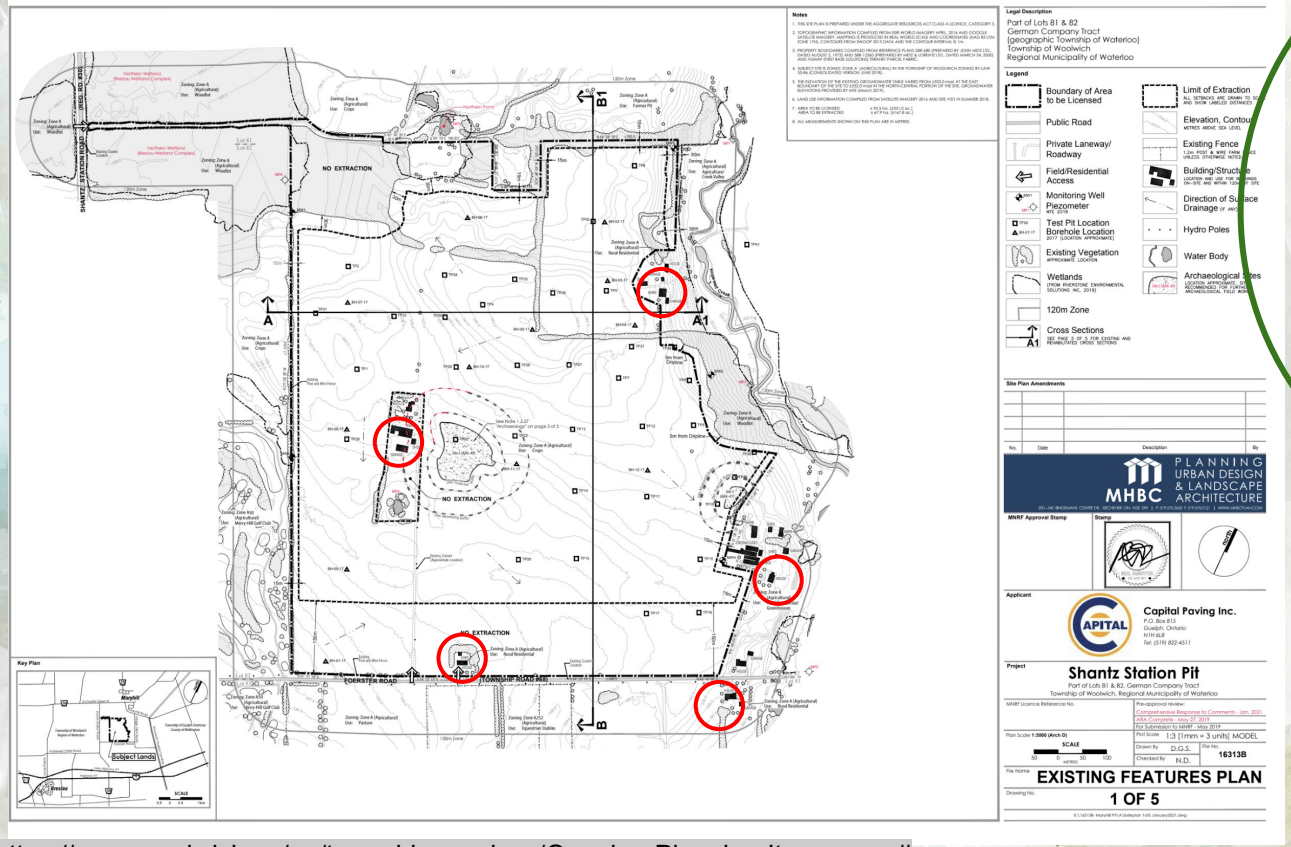
- Senior Project Manager with DiGiSci Environmental consulting.
- Author of the International Standard Guideline on Air Quality Impact Assessments

Health effects from exposure to harmful fine particulate matter (dust)

Air Quality

"Re-zoning applications under the Planning Act must conform to the Provincial Policy Statement, and especially s.1.2.6. This section requires potential adverse effects to be avoided. For air quality assessments adverse effects (e.g., harm to community health) can only be tested by accounting for pre-existing levels of air quality (imposed by current aggregate pits and other activities in the area) together with the incremental additions to air quality imposed by the proposed Hallman Pit. The resultant, cumulative air quality impacts are those that could affect the health of the community downwind of the Hallman and other pits in the area, if operating simultaneously" - Franco DiGiovani

Shantz Station Pit



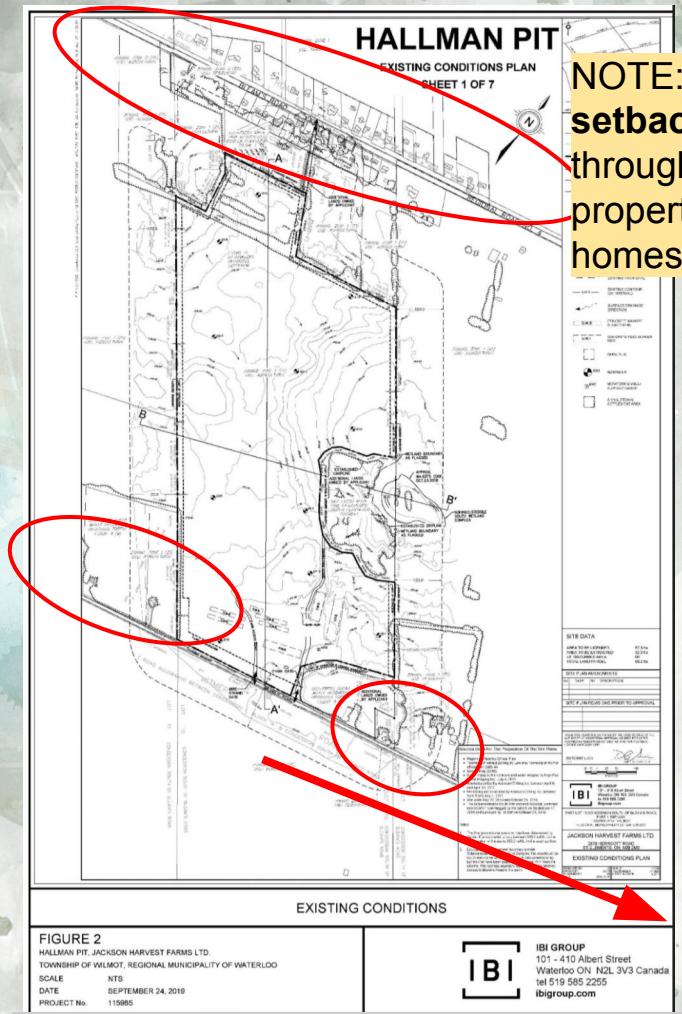
- **Noise Impact Analysis** - June 2020

Air Quality Assessment

- **Air Quality Peer Review** - December 2019
- **Response to Peer Review** - February 2020
- **Region of Waterloo Response to Peer Review** - April 2020
- **Response to Peer Review** - May 2020
- **Response to Peer Review** - June 2020
- **Response to Peer Review** - August 2020

Health effects from exposure to harmful fine particulate matter (dust)

https://www.woolwich.ca/en/township-services/Ongoing-Planning-Items.aspx#



NOTE: **120 m setback** goes through residents properties and homes

Proposed hours of operation:
Mon 6am-7pm
Tues 6am-7pm
Wed 6am-7pm
Thus 6am-7pm
Fri 6am-7pm
Sat 7am-5pm
Sun 7am-12pm
*night operations possible

Why no air quality assessment?

Health effects from exposure to harmful fine particulate matter (dust)

*https://developmentapplications.wilmot.ca/Home/Detail?Id=afea319e-c756-4d36-b1c5-05060c25d3ce

J.E. COULTER ASSOCIATES LIMITED

CONSULTING ENGINEERS in
ACOUSTICS, NOISE & VIBRATION

John. E. Coulter

- Graduate of the University of Toronto.
- Engineer with the Noise Pollution Control Section of the Ministry of Environment for a number of years -**wrote the book**
- Private consultant regarding noise pollution for over 30 years.
- President of J.E. Coulter Associates with the goal of helping with the environmental implications of noise pollution.

Increased noise levels due to truck activity, alarms and extraction

Summary

1. The backyards of the residences on Bleams Road north of the gravel pit have been incorrectly assumed to be located in a Class 2 area.
2. Noise monitoring at 2115 and 2183 Bleams Road showed that the ambient sound levels from the road traffic on Bleams Road were mostly 2 to 3 dB below the 50 dBA 1-Hour L_{eq} exclusion limit for a Class 2 area. The measured sound levels imply that the rear yards of the residences in the worst-case scenario are closer to Class 3 area.
3. The truck routes to/from the gravel pit and the recycling plant have not been considered in the report and no acoustical mapping for the haul routes has been provided as requested in *NPC-233*.
4. The report does not provide details about the recycling plant or an acoustic analysis and the necessary mitigation that might be required.

We trust the above will assist in your review of this project. Should there be any questions, please do not hesitate to contact the undersigned.

Yours truly,

J. E. COULTER ASSOCIATES LIMITED

John E. Coulter, B.A.Sc. P.Eng.

Brendon Colaco, B.A.Sc.

Increased noise levels due to truck activity, alarms and extraction

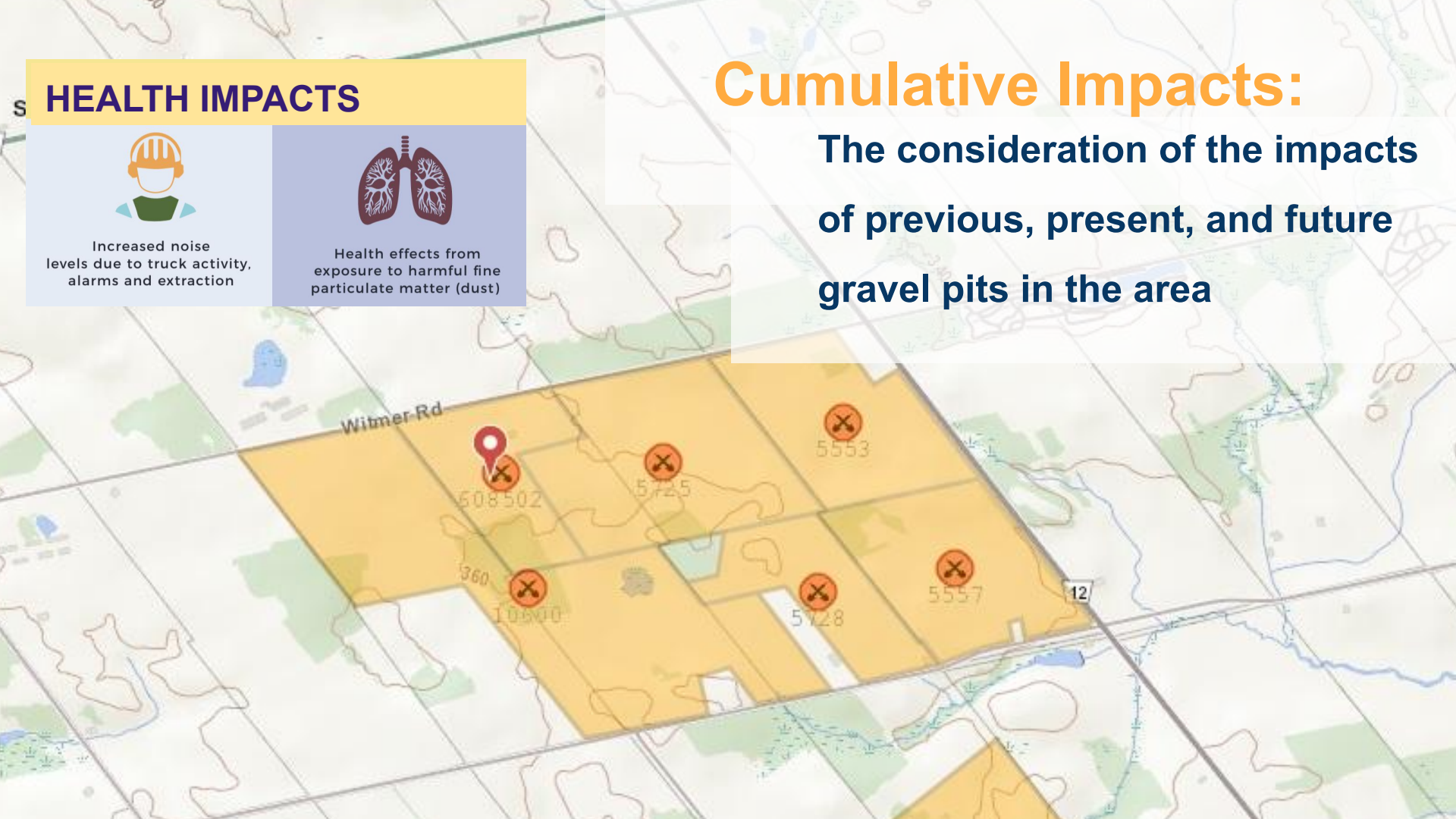
Cumulative Impacts:

The consideration of the impacts of previous, present, and future gravel pits in the area

HEALTH IMPACTS

Increased noise levels due to truck activity, alarms and extraction

Health effects from exposure to harmful fine particulate matter (dust)

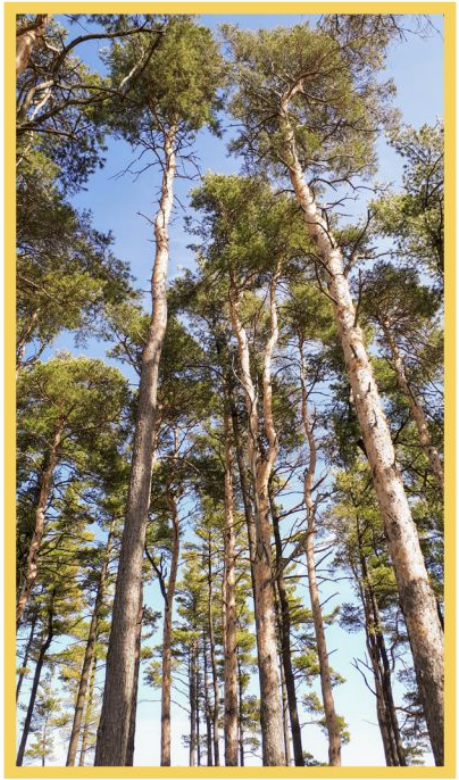


Impacts NOT addressed

- The Hallman Pit sets an Unacceptable precedent

There is a need for:

1. An **air quality assessment report**
2. Correct **noise** standards and modelling in **Shingletown**
3. Attention to noise and air quality impacts along the **Haul Route**
4. Cumulative impacts **(7.2.4.3)** must be reviewed by an expert third party



Snapshots of a Township Worth Protecting

Thank You

For more information to show your support please contact:

"Citizens for Safe Ground Water" on Facebook

www.safeH2O.ca

wilmotgroundwater@gmail.com

~~Mayor L. Armstrong declared the public meeting open and stated that Council would hear all interested parties who wished to speak. He indicated that if the decision of Council is appealed to the Local Planning Appeal Tribunal, the Tribunal has the power to dismiss an appeal if individuals do not speak at the public meeting or make written submissions before the by-law is passed.~~

~~Mayor L. Armstrong stated that persons attending as delegations at this meeting are required to leave their names and addresses which will become part of the public record and advised that this information may be posted on the Township's official website along with email addresses, if provided.~~

~~The Manager of Planning / EDO outlined the report.~~

~~Mayor L. Armstrong asked 3 times if anyone else wished to address Council on this matter. There were none and the public meeting was declared closed.~~

9. PRESENTATIONS/DELEGATIONS

The following persons appeared as delegations in relation to the proposed Hallman Pit. Prepared statements and / or presentations are attached as noted.

9.1 Mr. Russell Brownlee appeared as a delegation in relation to the Hallman Pit. Mr. Brownlee advised that he was retained by Citizens for Safe Groundwater to review road safety and the requirements of the transportation impact study provided by the Region of Waterloo. Mr. Brownlee advised the proponents had a safety impact study completed and that he is providing his findings of that review. He noted the report indicates capacity for additional traffic and impact on the road were acceptable; however, further safety measures were identified and specifically reviewed which Mr. Brownlee advised he is unaware that work has not been completed and no follow-up work has been provided to his clients.

9.2 Mr. Ed Dupej appeared as a delegation in relation to the Hallman Pit. Mr. Dupej commented on the road safety and geotechnical concerns he has, noting the need for reconstruction of roads. Mr. Dupej cited the number of trucks daily that would leave the site as approved by the Region and he noted that he questioned who would monitor this and was advised to contact the Ministry. He quoted traffic impact increases along Witmer Road as provided for in public documents. Mr. Dupej provided a document that suggests an alternate haul route as attached as Appendix A.

9.3 Mr. Rory Farnan, Citizens for Safe Ground Water, Appendix B.

9.4 Ms. Samantha Lernout, Appendix C.

9.5 Ms. Yvonne Zyma, appeared as a delegation in relation to the Hallman Pit. Ms. Zyma commented on her concerns for potential impacts on the natural environment. Ms. Zyma referenced the study area boundaries from the Dance Environmental Inc. document that outlines the site and environmental elements and the history of the site, noting it was mostly agricultural land. Ms. Zyma acknowledged the woodlands and the importance for animal protection. Ms. Zyma submitted documents are attached as Appendix D, Appendix D(1), Appendix D(2), Appendix D(3).

9.6 Ms. Linda Laepple, appeared as a delegation regarding the Hallman Pit. Ms. Laepple commented on her concerns for the potential impacts to the environment. Ms. Laepple noted the risks of economic changes are high. She provided an overview history of the property, noting the animal research history done on the site. Ms. Laepple noted the feedlot site was left to decay. She suggested that the geological study area be expanded and suggested consideration of an Interim By-law.

9.6 Ms. Paula Brown, appeared as a delegation regarding the Hallman Pit. Ms. Brown expressed her concerns for the residents of Shingletown and the potential impacts. Ms. Brown noted that the quality of life in the Township is important to all residents and advised that she drove Witmer Road and expressed her concerns for the increased truck traffic, poor site lines and increased safety concerns.

9.7 Mr. David Bricker appeared as a delegation regarding the Hallman Pit. Mr. Bricker expressed his opposition to the proposed pit due to the potential negative impacts on the environment and residents. He noted an agreement to not allow access on Witmer Road had been done and questioned why it has not been enforced. Mr. Bricker expressed his concern for the hours of operation and the effects on quality of life.

9.8 Ms. Stephanie Goertz, Appendix E.

9.9 Ms. Ruth Rosener, appeared as a delegation regarding the Hallman Pit. Ms. Rosner expressed her opposition to the proposed Hallman Pit due to the potential dangers of truck traffic and the environment and previously

presented concerns to Council. She spoke of the safety concerns to children, traffic, environment and the disturbance to the wildlife. She advised her main concern is the number of dump trucks that are proposed to travel along Witmer Road.

9.10 Ms. Martha Bricker, appeared as a delegation regarding the Hallman Pit. Ms. Bricker expressed her concerns for the proposal in relation to the environment. Ms. Bricker provided an overview of the area and showcased environmental features she has experienced on her daily walks, identifying wildlife and woodlot. Ms. Bricker provided several photos attached as Appendix F.

10. CONSENT AGENDA

10.1 DS 2021-010

Zone Change Application 04/21

Removal of H Symbol

Michelle Roth

Wilmot Street, New Hamburg

10.2 DS 2021-011

Lifting 1 foot reserve and open as Redford Drive

10.3 COR 2021-013

FCM Municipal Asset Management Program (MAMP)

Resolution No. 2021-52

Moved by: Councillor J. Pfenning Seconded by: Councillor C. Gordijk

THAT Report Nos. DS 2021-010, DS 2021-011 and COR 2021-013 Be approved.

CARRIED.

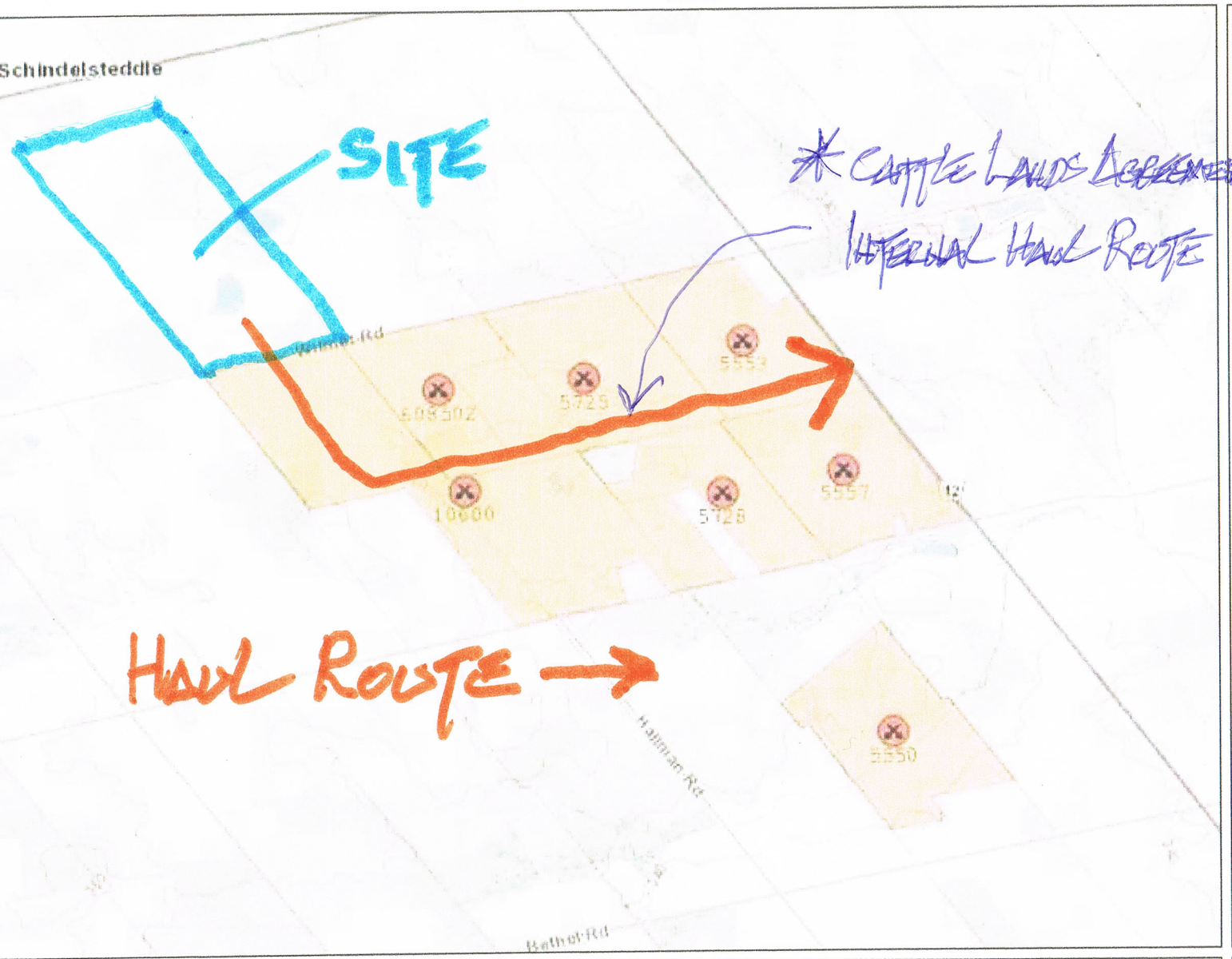
11. REPORTS

11.1 Chief Administrative Officer

ario

(map title)

Notes:
(map notes)



Legend

- Building as Symbol
- Building to Scale
- Runway
- Heliport \ Hospital Heliport
- Seaplane Base
- Ferry Route
- Trail Head \ Trail
- Railway \ Train Station
- Railway with Bridge
- Railway with Tunnel
- Road (Major → Minor)
- Winter Road
- Road with Bridge
- Road with Tunnel
- Primary, Kings or 400 Series Highway
- Secondary Highway
- Tertiary Highway
- District, County, Regional or Municipal Road
- Toll Highway
- One Way Road
- Road with Permanent Blocked Passage
- Road with Address Ranges
- Hydro Line, Communication Line or Unknown Transmission Line
- Natural Gas Pipeline, Water Pipeline or Unknown Pipeline
- Spot Height
- Index Contour
- Contour
- Wooded Area
- Wetland
- Waterbody
- Waterbody Elevation
- Watercourse
- Falls
- Rapids
- Rapids \ Falls
- Rapids
- Rocks
- Lock Gate
- Dam \ Hydro Wall
- Dam \ Hydro Wall
- Provincial \ State Boundary
- International Boundary
- Upper Tier \ District Municipal Boundary
- Lower Tier \ Single Tier Municipal Boundary
- Lot Line
- Indian Reserve
- Provincial Park
- National Park
- Conservation Reserve
- Military Lands

0.8 km

Projection: Web Mercator

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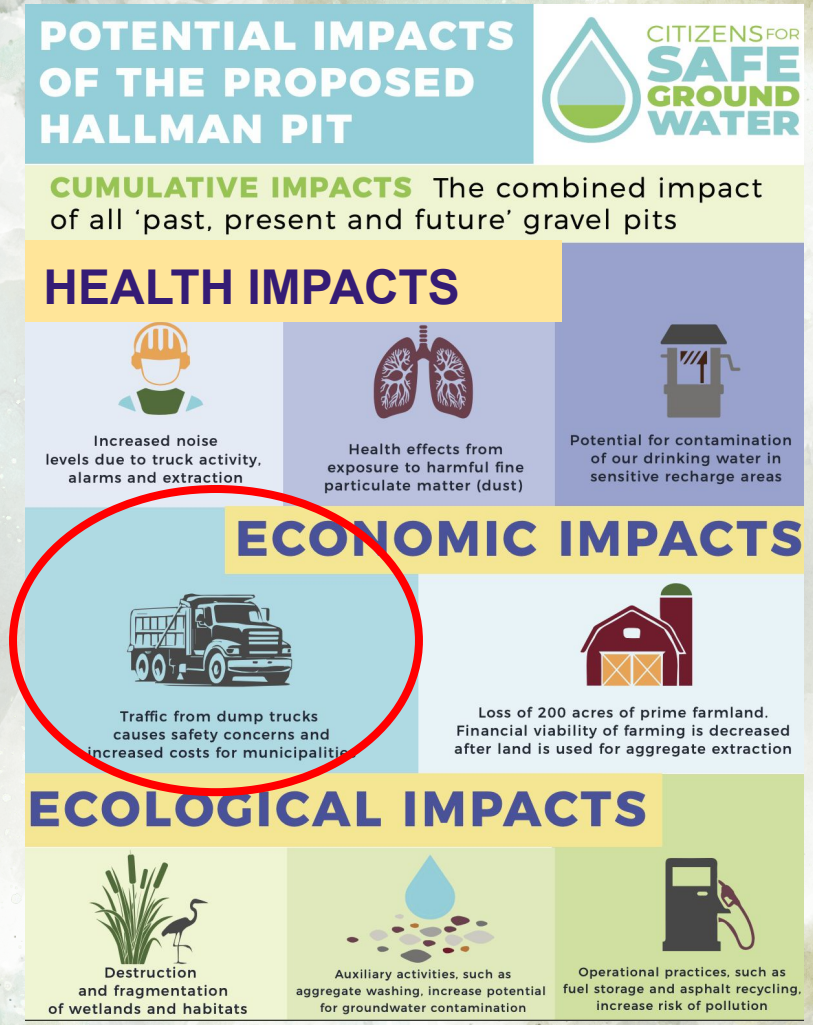
CITIZENS FOR SAFE GROUND WATER

Traffic Impacts Review

March 22st, 2021 - Wilmot Township Council, 7pm

Potential Hallman Pit Impacts



statements made are based on expert reviews commissioned by the Region of Waterloo, Wilmot Township and Citizens for Safe Ground Water Inc., as well as the Grand River Conservation Authority, to date

Traffic Impacts Review

Proposed "Haul Route" Using Wilmot Township Witmer Road

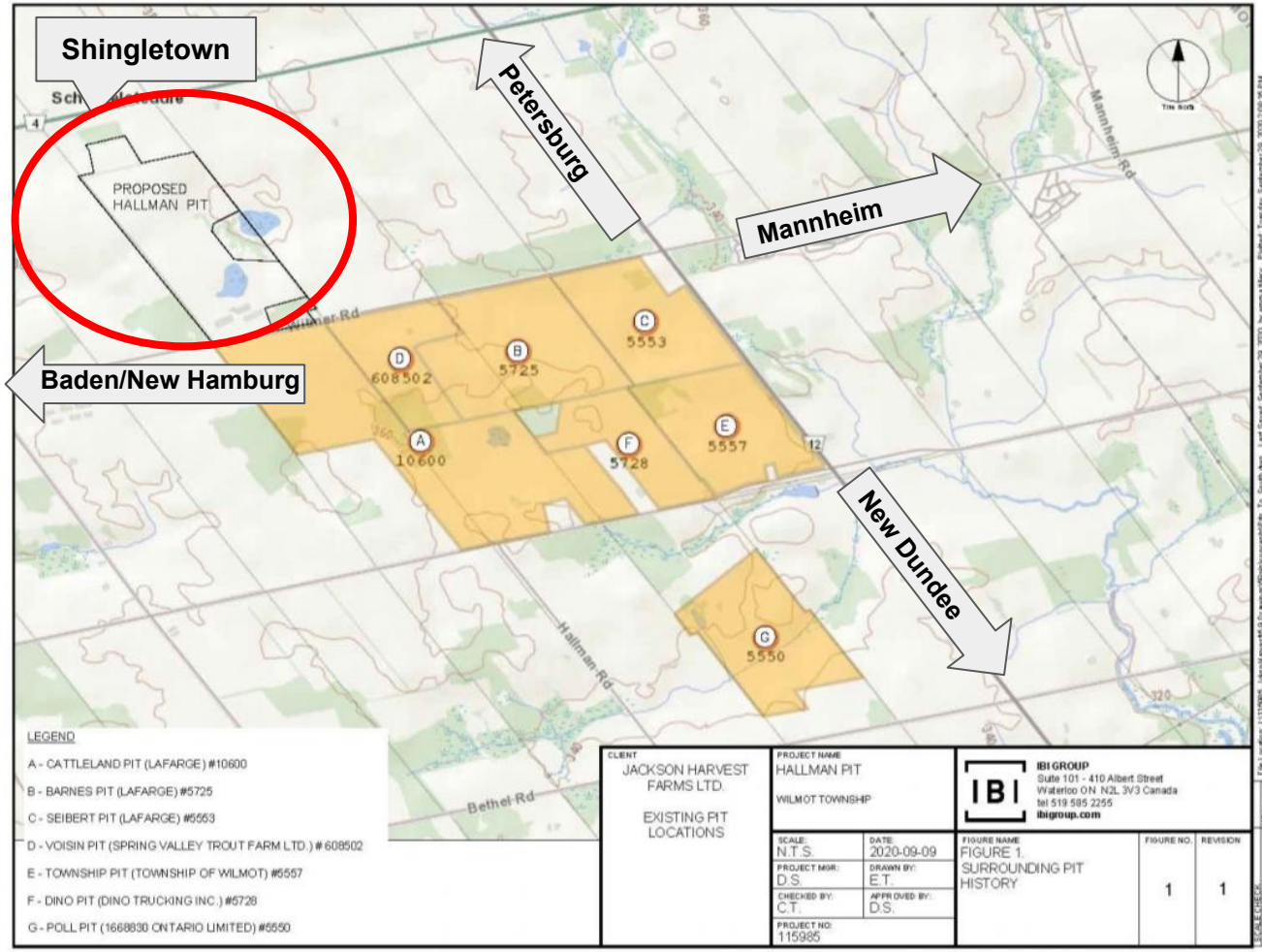


Figure 1 Existing Pit Locations

https://facility-admin.esolutionsgroup.ca/Uploads/Files/16E7D05A-FC42-4E34-A1EF-8C5C6858A2BF/zca-11-19/updates/PlanningReport_Addendum.pdf

CSGW Experts Commissioned

Purpose	Organization
Acoustic Peer Review	J.E. Coulter and Associates
Air Quality Peer Review	Di GiSci Environmental Consulting Inc.
Traffic Impacts Review	True North Safety
Conformance to the Official Plan	Ramsay Planning Inc.
Legal Representation	Canadain Environmental Law Association (CELA)

CSGW representation recognized as leaders in their field of expertise

Russell Brownlee, P.Eng.
True North Safety Group

- **25+ year experience** in transportation engineering.
- Academic background includes Master of Applied Science in Civil Engineering, **University of Waterloo**
- 2017 Transportation Safety Council award recipient for **leadership in the field of traffic safety**.
- Consulting Engineers of Ontario appointee to Ontario **Provincial Standards Traffic Safety** Committee.
- Recognized as a **qualified Road Safety Expert**, Superior Court of Justice, Ontario

"**Witmer Road** is currently a ***relatively low*** travelled roadway, which ***may not*** fully exhibit the effects of the ***geometric deficiencies*** at the **intersection** due to the ***low frequency*** of vehicle conflicts. The additional eastbound left turn ***heavy trucks*** from the pit activities ***may create safety issues*** at this stop-controlled intersection, due to the ***poor geometry*** and ***additional side street conflicts***."

True North Safety Peer Review

Concerns Identified:

- **Incomplete safety analysis** conducted.
- **Sight distance deficiencies** exiting pit, and Witmer/Queen intersection.
- "Peak hour" use **not consistent** with data collected.
- **Underestimated** travel demands.
- Intersection geometry **poorly designed**, side street **conflicts**.

"Incomplete safety review regarding available sight distance to and from the Pit site access and requirements for auxiliary turn lanes at the site access intersection, especially considering the impact of slow-moving heavily laden vehicles as they exit the property."

Based on our review of Google Streetview™ images, it appears that available sight distances are in excess of 200 or more metres in either direction from the pit access location shown in Figure 5.1 of the Paradigm report.

The AECOM report does not comment on the lack of safety analysis at the intersection of Queen Street and Witmer Road intersection.

Both the Region of Waterloo TIS guidelines and the Paradigm report suggest that sight lines should be reviewed at the study access and intersections. The Paradigm report provides a qualitative comment regarding the sight lines at the proposed pit access, and does not evaluate the sightlines at the intersection of Queen Street and Witmer Road.

Based on a cursory desktop review, it is likely that adequate approach site distances (i.e., sight triangles) are not available on the southwest quadrant of the intersection of Queen Street and Witmer Road. Departure sight distances from the eastbound stop bar may also be deficient to select a gap in vehicles approaching from the south on Queen Street.

Witmer Road is currently a relatively low travelled roadway, which may not fully exhibit the effects of the geometric deficiencies at the intersection due to the low frequency of vehicle conflicts. The additional eastbound left turn heavy trucks from the pit activities may create safety issues at this stop-controlled intersection, due to the poor geometry and additional side street conflicts.

I trust the above meets your needs at this time. If you would like to discuss the provided comments, please do not hesitate to contact me.

Sincerely,

Russell Brownlee, M.A. Sc., FITE, RSP$_1$, P. Eng.

Township Road Risk(s)

-Hidden drive/laneways
-School Buses (*children*)
-EMS service
-Waste management
-Lack of proper guard rails
-"Line-of-Sight" challenges
-Recreational use
-Agricultural use
-Road lighting
-Narrow road design
-Unique land formations
-Lack of sufficient shoulders
-Close homeowner proximity
-Steep ditches

Proposed hours of operation:

Mon 6am-7pm
Tues 6am-7pm
Wed 6am-7pm
Thus 6am-7pm
Fri 6am-7pm
Sat 6am-6pm

**potential for night operations.*

"We're the countryside, we can't make every road a superhighway." *Sue Foxton, Mayor of North Dumfries - "The Record" - Nov. 12, 2019*

Applicant's "Acknowledgement" of Road Use

6. You have raised a concern regarding the lack of shoulder space for cyclists and pedestrian traffic.

Response: First, to recognize that Witmer Road may be used by other users (pedestrians, cyclists, farm equipment), Jackson Harvest Farms Ltd. is prepared to erect an advisory sign at the pit exit for all truck drivers which will read:

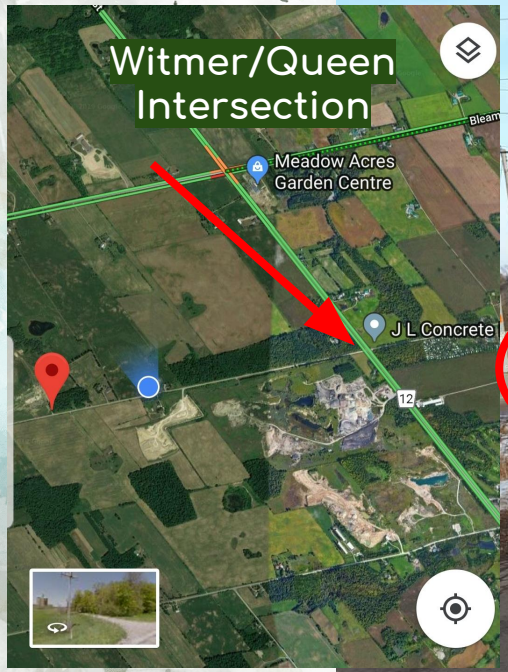
ATTENTION DRIVERS:

- Left turn exit only!
- CAUTION: Witmer Road is also used by pedestrians, cyclists, children and slow moving vehicles!

Jackson Harvest Farms Ltd.

In response to Witmer Road safety concerns, the applicants is "*prepared*" to erect a sign for drivers exiting the "Hallman Pit".

Witmer/Queen Intersection



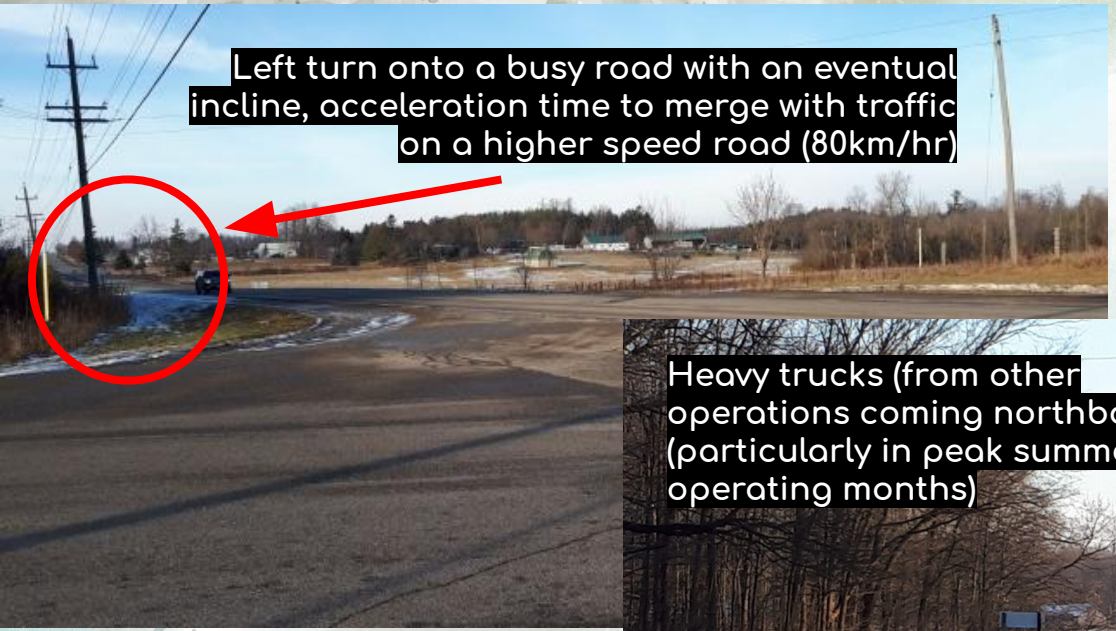
Roads do not intersect at a 90 degree angle, which offers a level of complexity

Witmer/Queen Intersection

Potential safety issues with ***slow acceleration*** onto Queen Street.

Significant ***sight obstruction*** to the right can require pulling into intersection to make a *"safe"* turn.

Witmer/Queen Intersection



Could heavy load vehicles (i.e. trucks) experience issues accelerating onto a busy Queen Street?

Built for Steady Heavy Truck Capacity?

Proposed hours of operation:
Mon 6am-7pm
Tues 6am-7pm
Wed 6am-7pm
Thus 6am-7pm
Fri 6am-7pm
Sat 6am-6pm

**night operations possible*

Estimated ***181 trucks (per day)***, potential for more intensity in "construction season" months...

Cumulative Impacts:

The consideration of the impacts of previous, present, and future gravel pits in the area

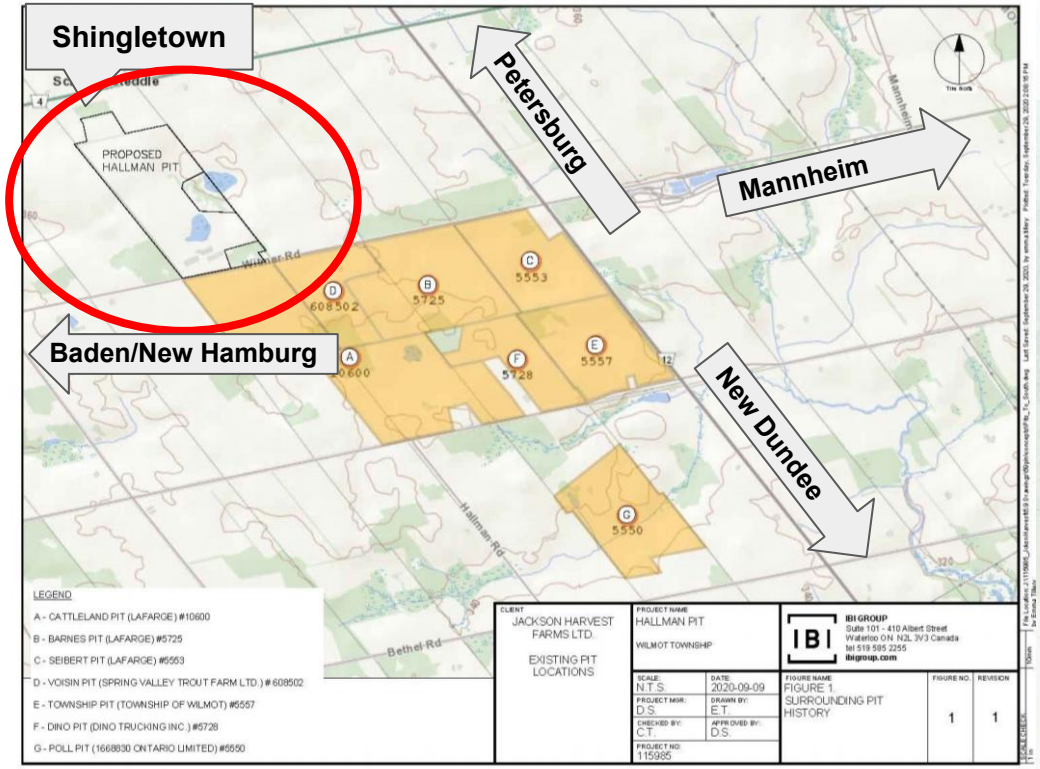


Figure 1 Existing Pit Locations

1. Coco Paving
2. Tri-City (Miller Group)
3. Steed and Evans
4. Lafarge
5. Township of Wilmot
6. Kieswetter Excavating
7. Dino Trucking
8. *Jackson Harvest Farms?*
9. And more…

All traveling throughout Wilmot Township…

https://facility-admin.esolutionsgroup.ca/Uploads/Files/16E7D05A-FC42-4E34-A1EF-8C5C6858A2BF/zca-11-19/updates/PlanningReport_Addendum.pdf

Impacts ***NOT*** addressed

The Hallman Pit can set a ***dangerous*** precedent

There is a need for:

1. Consideration of **safety/operations** at the Witmer Road intersection with Queen Street.
2. Consideration of the **safety** of recreational road users (cyclists, walkers, joggers, motorcyclists, etc.)
3. Consideration of the **SAFETY** (not just operations) of Witmer Road for school buses, waste management, EMS services, hidden driveways/laneways, etc.
4. **Cumulative impacts (7.2.4.3) study** of the Witmer/Queen intersection "*area*", reviewed by an expert third party.

Thank You

CITIZENS FOR SAFE GROUND WATER

For more information to show your support please contact:

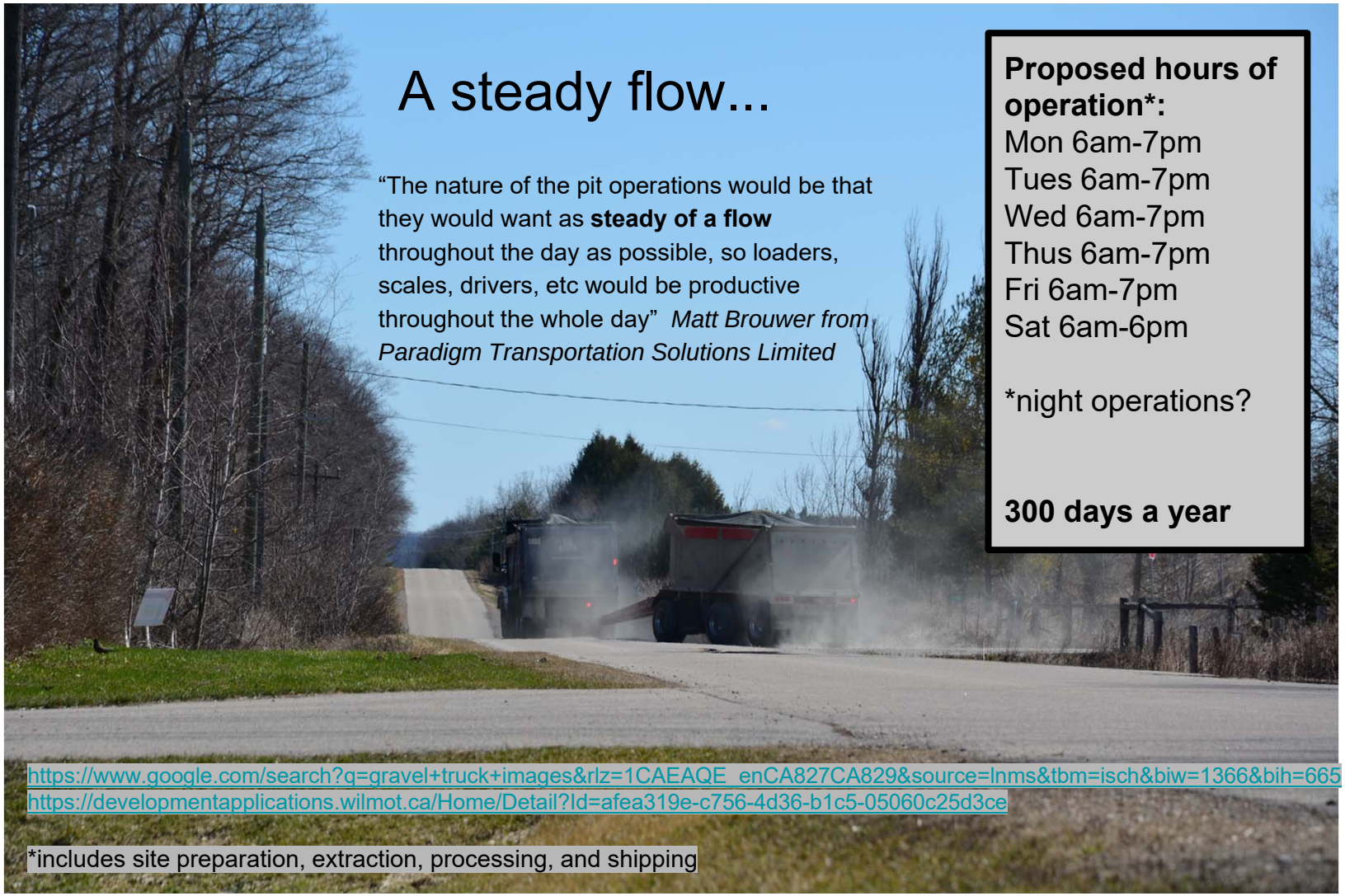
"Citizens for Safe Ground Water" on Facebook

www.safeH2O.ca

wilmotgroundwater@gmail.com

Living on Witmer Rd

March 22st, 2021 - Wilmot Township Council Meeting, 7pm



A steady flow...

"The nature of the pit operations would be that they would want as **steady of a flow** throughout the day as possible, so loaders, scales, drivers, etc would be productive throughout the whole day" *Matt Brouwer from Paradigm Transportation Solutions Limited*

Proposed hours of operation*:
Mon 6am-7pm
Tues 6am-7pm
Wed 6am-7pm
Thus 6am-7pm
Fri 6am-7pm
Sat 6am-6pm

*night operations?

300 days a year

https://www.google.com/search?q=gravel+truck+images&rlz=1CAEAQE_enCA827CA829&source=lnms&tbm=isch&biw=1366&bih=665
https://developmentapplications.wilmot.ca/Home/Detail?Id=afea319e-c756-4d36-b1c5-05060c25d3ce

*includes site preparation, extraction, processing, and shipping

Transportation Impact Study

384% traffic impact per day*

https://www.google.com/search?q=gravel+truck+images&rlz=1CAEAQE_enCA827CA829&source=lnms&tbm=isch&biw=1366&bih=665
https://developmentapplications.wilmot.ca/Home/Detail?Id=afea319e-c756-4d36-b1c5-05060c25d3ce

*calculated using information provided applicant's reports and township records

FINAL

JUSTIFICATION REPORT - ADDENDUM
) HALLMAN PIT
R ROAD, WILMOT TWP.

o Jackson Harvest Farms Ltd.

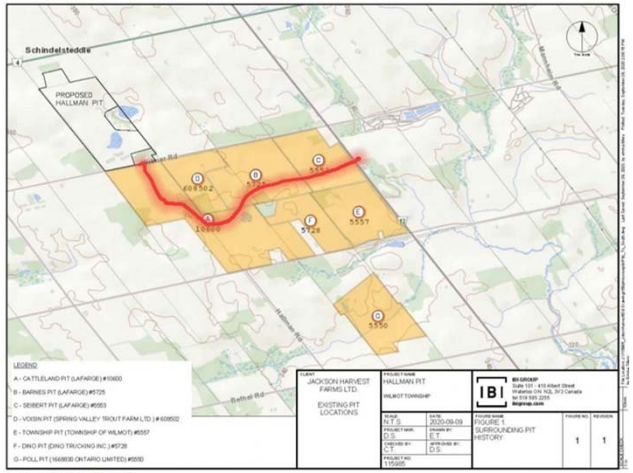


Figure 1 Existing Pit Locations

1020 2

IBI GROUP FINAL

PLANNING JUSTIFICATION REPORT - ADDENDUM
PROPOSED HALLMAN PIT
1894 WITMER ROAD, WILMOT TWP.

Submitted to Jackson Harvest Farms Ltd.

E. Township Pit
Corporation of the Township of Wilmot
ARA Licence # 5557
Licensed Area: 41.8 hectares
Class A, Category 2 (pit below water)
Annual Tonnage: 75,000 tonnes

F. Dino Pit
Dino Trucking Inc.
ARA Licence # 5728
Licensed Area: 25.2 hectares
Class A, Category 3 (pit above water)
Annual Tonnage: 250,000 Tonnes

G. Poll Pit
1668830 Ontario Limited
ARA License # 5550
Licensed Area: 45.7 hectares
Class A, Category 3 (pit above water)
Annual Tonnage: 50,000 Tonnes

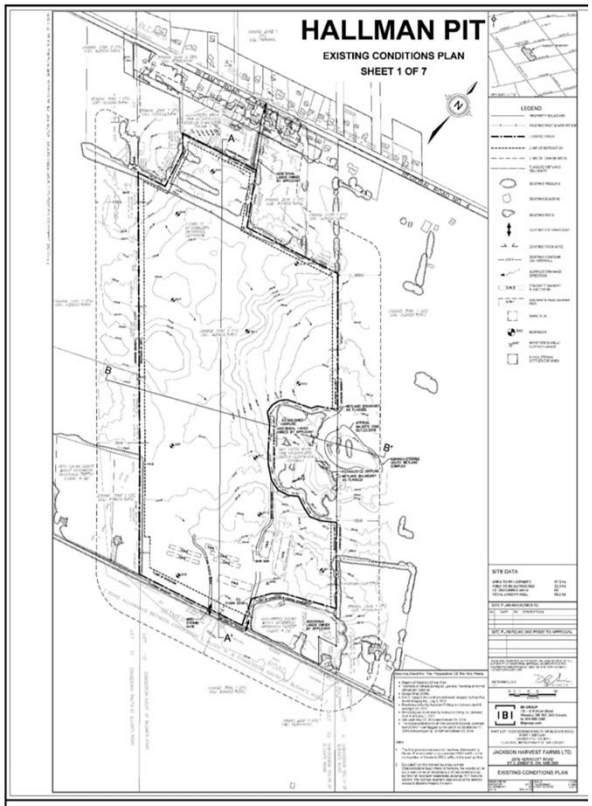
*Red line added to public document **

https://developmentapplications.wilmot.ca/Home/Detail?Id=afea319e-c756-4d36-b1c5-05060c25d3ce

ROUP FINAL

NING SUMMARY REPORT
POSED HALLMAN PIT
WITMER ROAD, WILMOT TWP.

red for Jackson Harvest Farms Ltd.



EXISTING CONDITIONS

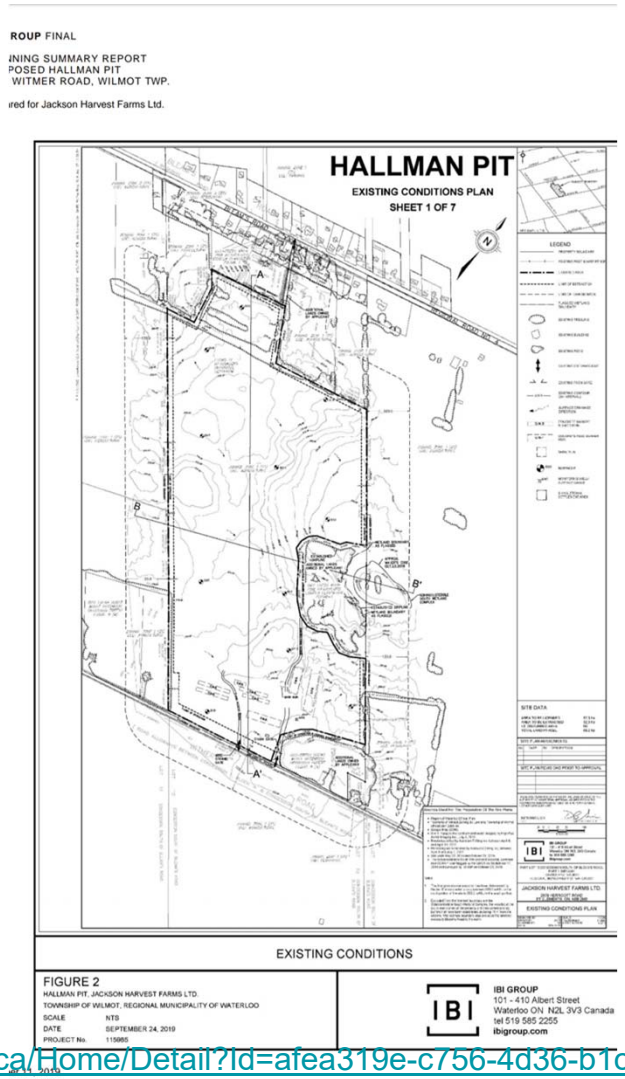
FIGURE 2
HALLMAN PIT, JACKSON HARVEST FARMS LTD.
TOWNSHIP OF WILMOT, REGIONAL MUNICIPALITY OF WATERLOO

SCALE	NTS
DATE	SEPTEMBER 24, 2019
PROJECT No.	115865

IBI GROUP
101 - 410 Albert Street
Waterloo ON N2L 3V3 Canada
tel 519 585 2255
ibigroup.com

https://developmentapplications.wilmot.ca/Home/Detail?Id=afea319e-c756-4d36-b1c5-05060c25d3ce

What’s Next?



https://developmentapplications.wilmot.ca/Home/Detail?Id=afea319e-c756-4d36-b1c5-05060c25d3ce

Natural Environment Level 1 & 2 Report and E.I.S.

For Aggregate Licence Application
Part Lot 10, German Block South of Bleams Road, Township of Wilmot
Regional Municipality of Waterloo.
Proposed Hallman Pit

Prepared for:
Jackson Harvest Farms
2879 Herrgott Road
St. Clements, ON.
N0B 2M0

Prepared by:
Dance Environmental Inc.
807566 Oxford Rd. 29
R.R. #1 Drumbo, Ontario.
N0J 1G0
519-463-6156

September 20, 2019.
DE-428

1.0 BACKGROUND

The applicant is applying for a Category 3 Aggregate Licence. The study area is shown on Figure 1. The licence is proposed to cover 57.27ha. The maximum annual tonnage is proposed to be 750,000 tonnes.

This Natural Environment Level 1 & 2 Technical Report and E.I.S., was prepared to accompany the licence application. Dance Environmental Inc. was retained by the applicant to prepare this report.

A Terms of Reference for the scoped EIS for the proposed aggregate pit was prepared at the request of the GRCA and Region of Waterloo staff. The Terms of Reference was provided to the Waterloo Region EACC for review and comment. The final approved Terms of Reference is provided in Appendix I.

Within the EIS the use of the term “site” refers to the licence area for the proposed pit. The use of the term “offsite” refers to the area within 120m of the licence area for the proposed pit. Within the EIS the term “study area” refers to the site and offsite areas combined.

2.0 STUDY OBJECTIVES

The objective of the Natural Environment Level 1 report under the Aggregate Resources Act, is to determine whether any of the following features exist on and within 120 metres of the site: significant wetland, habitat of endangered or threatened species, fish habitat, significant valleylands, significant wildlife habitat, significant woodlands, and Areas of Natural and Scientific Interest (ANSI).

3.0 STUDY METHODS

3.1 Existing Information

The following sources were contacted and researched to determine what was known about the study area. Tim Van Hinte at the Regional Municipality of Waterloo was contacted, as was Harold O’Krafka, Director of Development Services, the Township of Wilmot.

Tara McKenna at the MNRF Guelph District was sent an Information Request Form along with a request for information letter on May 1, 2018, and Management Biologist Graham Buck responded on June 1, 2018. The June 1, 2018 response letter included a list of SAR species known from Wilmot Township.

A request for information was sent to Kaitlyn Rosebrugh at the Grand River Conservation Authority (GRCA) by Dance Environmental Inc., on May 1, 2018. Beth Brown from the GRCA responded to the request for information on September 7, 2018.

An information request letter was sent on May 1, 2018 to Harold O’Krafka at the Township of Wilmot. An email response to the information request was provided

on May 7, 2018, suggesting that the questions from the information request would be best directed to GRCA and the Region of Waterloo.

Environmental mapping in the Region of Waterloo Official Plan (2015) was reviewed.

A search for historical records from the Ontario Herptofauna Atlas was completed on April 25, 2018 for square 17NJ30 (Ontario Herptofauna Atlas, 2018). The Ontario Butterfly Atlas was searched for historical records for square 17NJ30 on July 29, 2019 (OBA, 2019). Information from the second Ontario Breeding Bird Atlas (OBBA) was obtained on April 25, 2018 for historical bird records for square 17NJ30 (OBBA 2018).

The Alder Creek Watershed Study and Upper Strasburg Creek Subwatershed Plan update, 2008 (CH2MHILL and North-south Environmental Inc. 2008) was reviewed in relation to the proposed Hallman Pit.

Figure 1 shows the site location.

3.2 Field Work

An initial site visit in April 2018, along with a review of the historical records from the OBBA and Ontario Herptofauna Atlas for the 10x10 km square in which the study area is located (17NJ30), were used to determine the surveys to be conducted. The methodological approaches used to complete flora and wildlife surveys are provided in detail below.

3.2.1 Vegetation

Vascular Plant Inventory and ELC Community Identification

Detailed vascular plant surveys were conducted during Spring, Summer and Autumn (see Table 1 for dates) to develop a list of plant species present within the study area, see Appendix II. The plant surveys also focused on determining whether any regionally or provincially rare plants were present within the study area.

The findings of the vascular plant inventory conducted within the study area boundaries were used to assist with the determination of ELC polygons within the licence area and offsite. Vegetation community mapping was completed using the Ecological Land Classification (ELC) methods described in Lee et al. (1998), with vegetation community types being classified using Harold Lee's 2008 update to the ELC vegetation community types and community codes (Lee 2008).

Searches for Butternut trees occurred during both leaf on and leaf off seasons to confirm whether or not this SAR tree species was present on site or adjacent to the study site. The surveys were completed by a certified Butternut Health Assessor.

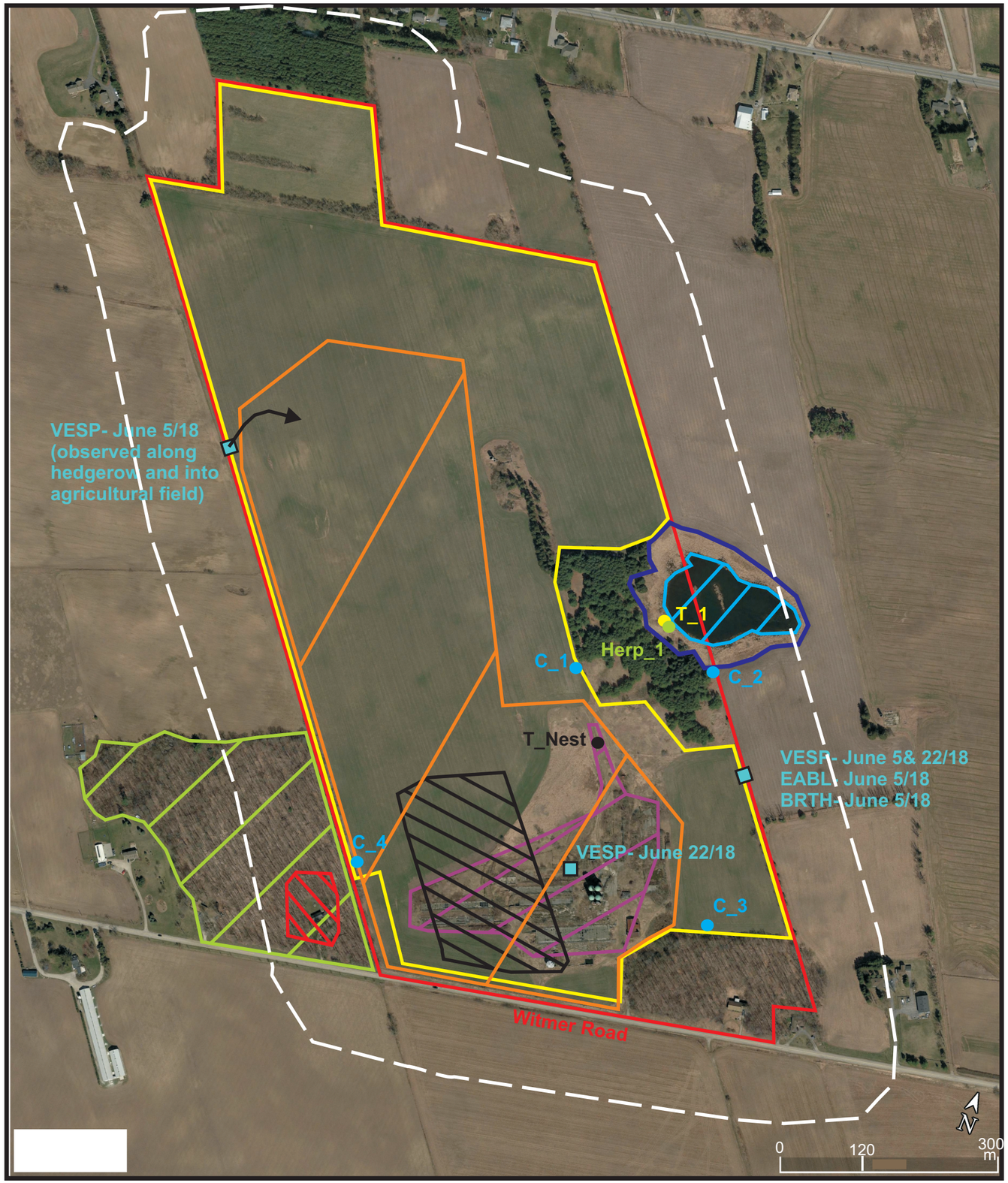


Figure 1. Study Area Boundaries, Locations of Survey Stations, SWH, and SAR Observations, Proposed Hallman Pit.

LEGEND

Approximate Proposed Limit of Extraction Boundary.

Approximate Site Boundary.

Limit of 120m Off Site Study Area

Significant Woodland(Core Env. Feature)/ Eastern Wood-pewee (SWH)

Wintering Turtle Habitat (SWH) & Fish Habitat.

Monarch (SWH) -Special Concern Species

Area Searched for Potential Snake Hibernacula.

T_Nest

Painted Turtle Nest.

Regionally Rare Birds
(VESP =Vesper Sparrow, BRTH =Brown Thrasher, EABL =Eastern Bluebird)

Areas within which SAR species were observed

Approximate Area Where Eastern Wood-Pewee Was Heard During Breeding Season 2018.

Approximate Area Where Barn Swallows Were Observed (foraging/perching).

Approximate Area Where a Bank Swallow Was Observed Foraging.

Survey Station Locations, 2018

T_1 — Turtle Count Location.

C_1 — Crepuscular Bird Survey Station Location.

Herp_1 — Herpetofauna Survey Station (MMP).

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Sept. 3, 2019

3.2.2 Wildlife

3.2.2.1 Breeding Birds

Breeding bird surveys conducted in 2018 were completed following the breeding bird survey protocol used for the Ontario Breeding Bird Atlas (OBBA 2001). The site study area is shown as the site on Figure 1. The off site study area was the off site area within 120m of the site boundary. The breeding bird surveys focused on assessing the breeding bird activity within the study area over two survey visits, at least 10 days apart. All visits were conducted during early morning hours between a half hour before sunrise and 09:00 hrs. The breeding bird surveys involved a Dance Environmental Inc. biologist conducting walking area searches throughout the various vegetation communities within the study area.

The benefits of conducting walking area searches over other methods include: being able to cover a greater amount of area within the study area; increased amount of time spent on site (compared with 5 or 10 minute point counts) and therefore a higher likelihood of observing more bird species; and allows for greater evidence of species presence to be observed such as active nests, used nests, and recently fledged young which are more likely to be observed by walking through various vegetation communities.

All bird species observed or heard within the study area during each breeding bird site visit were recorded. Any birds which were observed or heard outside of when the breeding birds surveys were being conducted, were recorded as incidental observations. If any Species at Risk were observed, their locations were to be mapped and any details of the observations recorded.

3.2.2.2 Insects

Habitats where suitable vegetation was growing were carefully searched for butterflies, Odonata and bumble bees. Insects were identified on the wing if possible, if not they were captured and were identified in the hand.

Insect inventory was undertaken during sunny, low wind periods.

3.2.2.3 Reptiles and Amphibians

Searches for snakes leaving hibernaculum were undertaken in the Spring due to the presence of old concrete manure pits and building foundations which were present centrally within the southern portion of the site. Searches for snakes leaving hibernaculum included searching under logs, boards, metal, mulch, debris and stones. Potential hibernation sites were checked with binoculars before they were approached. The sites were approached slowly and quietly, all the while watching for snakes. Debris near the potential hibernation sites was lifted to check for hidden snakes.

A total of six site visits were undertaken between April 22 and May 23 (April 22 & 30, May 1, 8, 15, & 23, 2018) specifically to identify any potential hibernation sites for snakes which would identify whether there was any significant wildlife

habitat present for snakes. The searches for snakes were undertaken on dates with suitable weather conditions including sunny, warm, with low wind conditions.

Amphibian surveys were undertaken using the Marsh Monitoring Protocol to identify breeding frogs within the study area.

Turtle counts were undertaken in early Spring to identify whether any turtles were present at the offsite pond. These counts were undertaken when vegetation was still low and turtles would be able to be seen in the water along the shallow pond edges or out on pond edges sunning. Binoculars were used to count individuals, identify the species present and then determine a maximum count of individuals present at one time during the count period (approximately a 15 minute survey).

Once turtles were confirmed to be present at the offsite pond, searches for turtle nests in any potential open sandy areas around the pond were undertaken. Open sandy areas were searched for evidence of recent digging and filling in of nest locations and any locations where nests were dug up by predators which are identifiable by a dug hole in the ground accompanied by turtle egg shells.

TABLE 1. Dates, Times and Weather, 2018 and 2019 Site Visits.

DATE	START (24hrs)	END (24hrs)	WEATHER	STAFF	PURPOSES OF VISIT
April 21/18	19:20	21:05	5.2^{0}C, <5% cloud, no precip.; Beauf. 0	KWD, JLD	Herp survey #1
April 22/18	11:50	13:56	16^{0}C, 30-40% cloud, no precip.; Beauf. 1	KSD	Snake surveys, incl. Birds, Turtle count
April 30/18	12:50	16:48	20^{0}C, 0% cloud, no precip.; Beauf. 2	KWD JLD	Snake surveys, incl. Birds,
May 1/18	13:36	15:29	25^{0}C, <5% cloud, no precip.; Beauf. 2	KSD	Snake surveys, incl. Birds, Turtle count
May 8/18	13:40	15:50	22^{0}C, <5% cloud, no precip.; Beauf. 1	KSD	Snake surveys, incl. Birds, Turtle count
	21:00	21:30	22^{0}C, <5% cloud, no precip.; Beauf. 0	KSD	Herp survey #2
May 15/18	13:55	15:30	18^{0}C, 60% cloud, no precip.; Beauf. 0	KWD	Snake surveys, incl. Birds, plants
May 23/18	11:34	13:02	20^{0}C, <5% cloud, no precip.; Beauf. 2	KSD	Snake surveys, incl. Birds, Turtle count & nesting area search
May 29/18	20:58	22:06	21.5^{0}C, 10% cloud, no precip.; Beauf. 2	KWD JLD	Herp survey #3, Crepuscular birds
June 5/18	06:30	09:20	14^{0}C, 30% cloud, no precip.; Beauf. 2	KSD	Breeding bird survey, turtle nesting area search, incidental wildlife & Butternut searches

June 22/18	05:12	07:42	23^{0}C, 20% cloud, no precip.; Beauf. 1	KSD	Breeding bird survey, turtle nesting area search, incidental wildlife& Butternut searches
June 26/18	22:09	22:55	16^{0}C, 50-80% cloud, no precip.; Beauf. 2	KSD	Crepuscular bird survey, turtle nesting area search
July 5/18	08:40	10:10	27^{0}C, 10% cloud, no precip.; Beauf. 1	KSD	Turtle nesting area search, incidental wildlife, insects, Butternut searches
Sept 17/18	09:48	14:48	19^{0}C, 10% cloud, no precip.; Beauf. 1	KSD	ELC polygon ID/vegetation list, Wetland boundary delineation, and confirmation with GRCA staff, Butternut searches
Sept 20/18	10:40	14:30	16^{0}C, 60% cloud, no precip.; Beauf. 1	KSD	ELC polygon ID/vegetation list, Butternut searches
Feb 5/19	19:40	21:10	-6^{0}C, 40% cloud, no precip.; Beauf. 1	KSD	Evening Owl Survey
Feb 19/19	14:10	16:10	-7^{0}C, 15% cloud, periodic light snow, Beauf. 1	KSD	Winter Wildlife
Mar 6/19	14:10	16:10	-15^{0}C, 30% cloud, no precip. Beauf. 3	KSD	Winter Wildlife
April 22/19	21:38	23:40	14^{0}C, 10% cloud, no precip. Beauf. 0-1	KSD	Evening Owl Survey
May 9/19	09:00	10:08	7^{0}C, 80% cloud, no precip. Beauf. 3	KSD	Vegetation and wildlife
May 23/19	11:40	13:58	17^{0}C, 85% cloud, no precip. Beauf. 2	KSD	Check for fish at pond

LEGEND

KWD = Ken Dance, M.Sc.
KSD = Kevin Dance, M.E.S.
JLD = Janet Dance

4.0 FINDINGS

4.1 Physical Conditions

4.1.1 Groundwater and Surface Water

Harden Environmental Services Ltd. (HESL) has prepared a Level 1 and Level 2 hydrological impact assessment for the proposed Hallman Pit (HESL 2019).

There is a wetland with a permanent open water pond located within the study area boundary, with approximately ¾ of the wetland being located on the adjacent neighbour's property (but within 120m of the licence area). The wetland is approximately 2.2ha in size, with a catchment of approximately 182 ha (HESL 2019). GRCA GRINNS mapping shows that there is estimated floodplain and a regulation limit area around the open water pond. There are no surface inflow or outflow features from the wetland feature, but it is permanently water filled. Approximately 36% of the site drains to the off site wetland (MAMM1-3) and open water aquatic habitat (OAO) (HESL 2019).

The offsite wetland is supported hydrologically from three sources including precipitation, overland runoff and groundwater (HESL 2019). The wetland is not considered to be isolated from the ground water system, rather the local water table supports the pond water levels during seasonal low periods (HESL 2019). Further details of this are discussed in the HESL report (2019).

Figure 2 shows the floodplain and regulation limits.

4.1.2 Ecological, Hydrological and hydrogeological, Economic and Social Functions

The site is located in an upland area of the Nith River and Alder Creek Subwatersheds which is an area of significant groundwater recharge. The underlying Kame sand deposits facilitate infiltration of precipitation and snow melt (HESL 2019). The Alder Creek Subwatershed Study (2008) indicates that the groundwater flow direction to be southerly to southeasterly. According to the HESL report (2019) groundwater flow direction on site in the northern portion was confirmed to be in a southerly direction.

The HESL report (2019) indicates that groundwater from the site supports the wetland for most of the year and the spring freshet or significant snow melt results in rapid rise of surface water levels causing bank storage (water level in the wetland being higher than surrounding groundwater for several months).

There are 52 private water wells located within five hundred metres of the site, with several wells which obtain water from the sand and gravel unit being extracted (HESL 2019). According to the HESL report (2019) the proposed above-water–table extraction will not interfere with the quality or quantity of the water available to those wells.

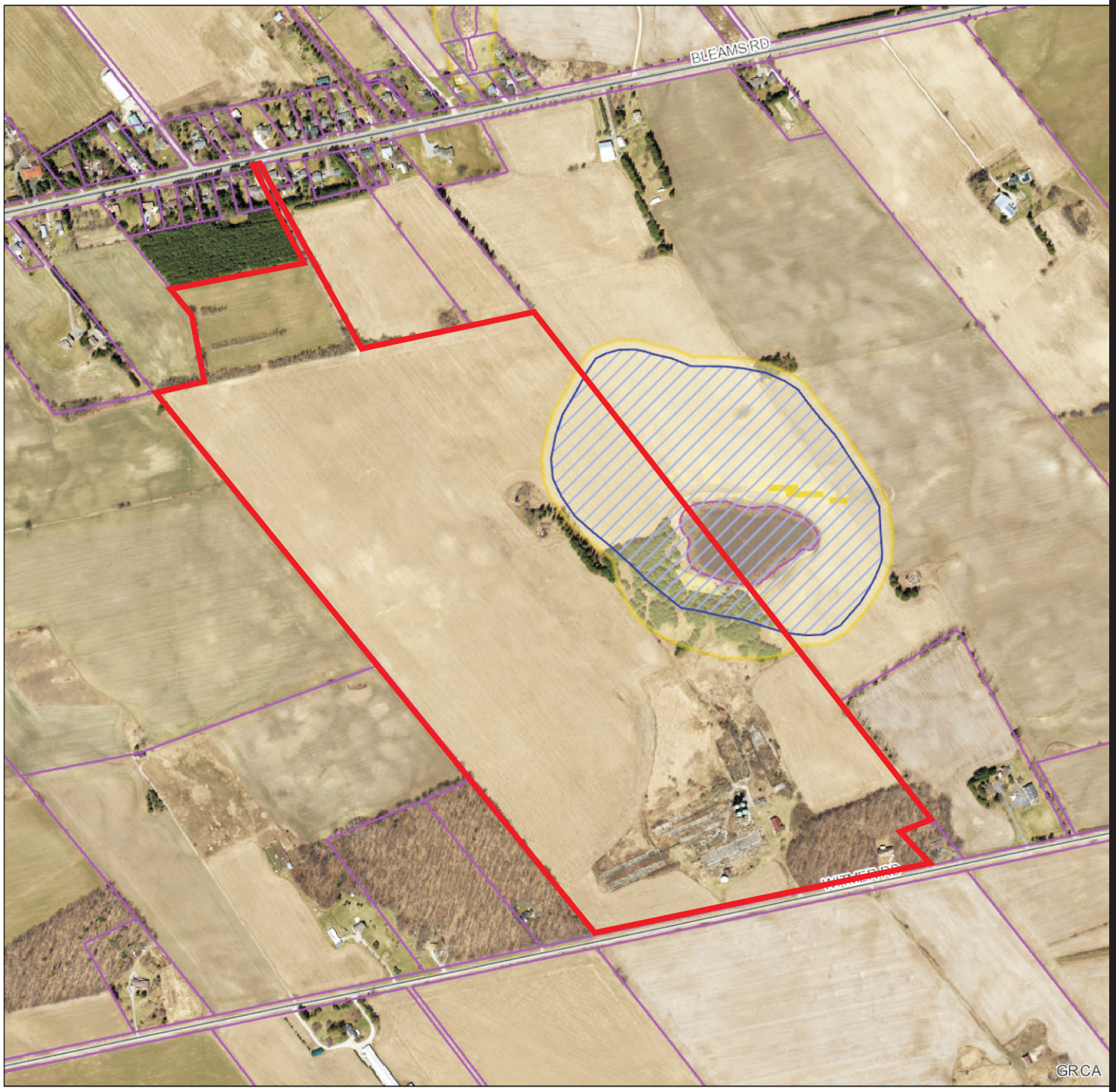

Figure 2. Wetland Regulation Mapping From GRCA (GRINs Mapping), Proposed Hallman Pit

Legend

- Regulation Limit (GRCA)
- Regulated Watercourse (GRCA)
- Regulated Waterbody (GRCA)
- Wetland (GRCA)
- Floodplain (GRCA)
  - Engineered
  - Estimated
  - Approximate
  - Special Policy Area
- Slope Valley (GRCA)
  - Steep
  - Oversteep
  - Steep
- Slope Erosion (GRCA)
  - Oversteep
  - Toe
- Lake Erie Flood (GRCA)
- Lake Erie Shoreline Reach (GRCA)
- Lake Erie Dynamic Beach (GRCA)
- Lake Erie Erosion (GRCA)
- Parcel - Assessment (MPAC/MNRF)

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Sept. 3, 2019

0 55 110 220 330 Metres

N

NAD 1983 UTM Zone 17N

Scale: 9,002

The hydrogeological report from HESL (2019) recommends that a certain progression of extraction of the aggregate take place in order to mitigate any potential impacts on the wetland and pond on the east side of the extraction boundary. The phasing approach recommended in the HESL report (2019) will result in three drainage areas being created on site post-construction. Post extraction drainage area 1 is to be designed to have a gradual slope to the off site wetland, increasing its catchment area from 24.8 ha to 32.3 ha (details of this are provided in the HESL report (2019). Through implementing the proposed approach the only change in hydrology for the wetland will be an increase in its onsite catchment area. The result is estimated to be a 4.4% increase in the surface water input to the wetland, and a 3.9% increase of infiltration to the wetland (HESL 2019).

Through implementing the recommended approach there is not anticipated to be a significant impact on hydrologic input into the wetland. If a similar hydrologic regime is maintained and the projected small change to the water input into the system it is anticipated that there will be no significant impact on the herpetofauna and fish which require the wetland for their survival.

Ground water monitoring is proposed to be continued at the site and in the wetland during the pit operation so that if any changes in hydrological inputs to the system occur they will be known, and can be dealt with.

4.1.3. Geology and Soils

The northern and western areas of the site have the highest elevations on the site. The elevations on the site range from 375m AMSL to 355m AMSL (Harden 2019). The lowest areas of elevation on site are located adjacent to the off site wetland (centrally along the eastern site boundary).

Chapman and Putnam (1986) was reviewed and indicated that the site is located within the Waterloo Hills physiographic region. The soils types on site are well drained and are identified as Lisbon Sand Loam, Fox Sandy Loam and Burford Gravel Loam (HESL 2019).

4.2 Regulated Area

As was noted previously there is regulated area around the open water pond located centrally on the eastern study site boundary.

The historical GRCA mapping (2018) showed a wetland with regulation limit in the central part of the southern portion of the site. This area was reviewed and examined on site by Tony Zammit with Dance Environmental Inc. staff on September 17, 2018. It was indicated by GRCA staff on that site visit that the GRCA mapping was not accurate regarding that feature (due to a lack of key wetland feature characteristics being present). It was therefore deemed appropriate that based on the on site review, the GRCA would remove inaccuracy from their mapping as no wetland was present. GRCA has since

updated their mapping and the current GRINNS Mapping for the site is shown on Figure 2.

The limits of the wetland vegetation associated with the on site portion of the pond were flagged by Dance Environmental Inc. and confirmed on site by Tony Zammit on September 17, 2018. The wetland limit was surveyed in and was plotted, see Figure 3. This wetland is part of the locally significant Schindelsteddle South Wetland Complex.

4.3 Vegetation

Figure 4 shows the pattern of vegetative cover and agricultural crop cover within the study area. The study area ELC polygons are shown and labelled on Figure 4.

The majority of the site (within the proposed licence boundary) is active farmland, with much of the proposed licence area boundary being against agricultural fencerows with limited tree cover. The remaining areas adjacent to the licence area boundary are woodland edges located to the east and west in the south end of the study area and along with some of the northern licence area boundary.

The majority of offsite habitat is also active farmland with crop fields being present to the north, east, south and west. In 2018 there was one hayfield to the northwest but within 120m of the proposed limit of extraction.

Within the offsite area (lands within 120m) there are woodland communities to the north, as well as in the southern portion there is woodland to the west and east. Within the 120m offsite area there is also a wetland community and a permanent open water pond. Appendix II lists the plant species present in the ELC vegetation units shown on Figure 4.

4.3.1 Vegetation Within the Proposed Licence Area

Annual Row Crops (OAGM1):

The majority of the area within the licence area boundary is in active agriculture and is classified as annual row crops (OAGM1) under the ELC classification system. In 2018 the onsite agricultural fields were planted in Soybean and Corn. Figure 4 shows the areas planted in annual row crops.

Agricultural Infrastructure (IAG):

A portion of the central part of the southern end of the site is classified as Agricultural Infrastructure as it comprises remnants of the old concrete manure bunkers and concrete pads from old farm buildings/structures which are no longer present on site. As a result of the concrete debris in this area it was not put into active agriculture in 2018 and as a result a variety of weedy groundcover species and others which are primary establishing species were recorded in this ELC polygon. A list of the species identified within this polygon are shown in Appendix II.

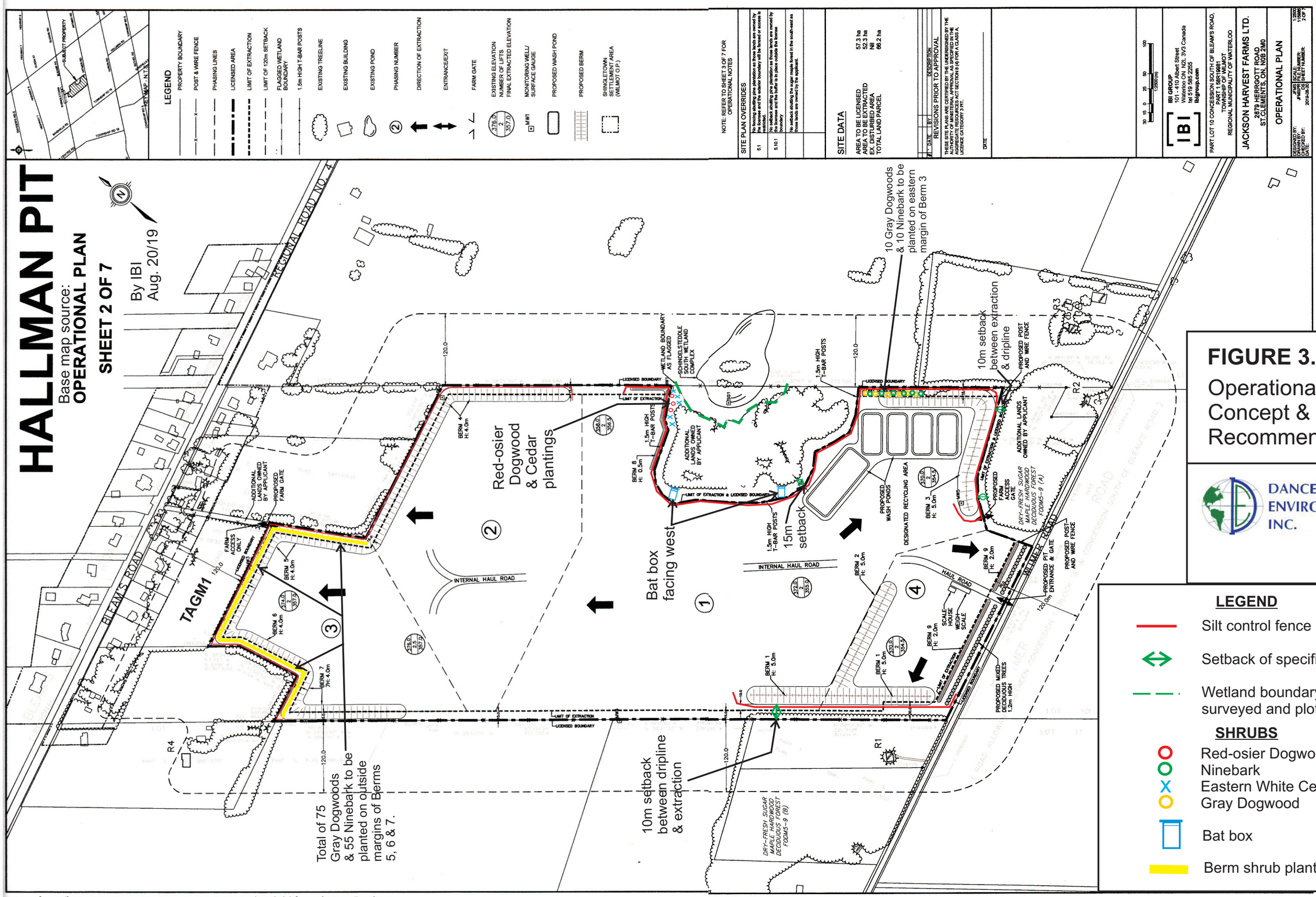

FIGURE 3.

Operational Plan Concept & Mitigation Recommendations.

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DE- 428
Sept. 4, 2019.

LEGEND

- Silt control fence
- Setback of specified width
- Wetland boundary as surveyed and plotted

SHRUBS

- Red-osier Dogwood
- Ninebark
- Eastern White Cedar
- Gray Dogwood
- Bat box
- Berm shrub planting area

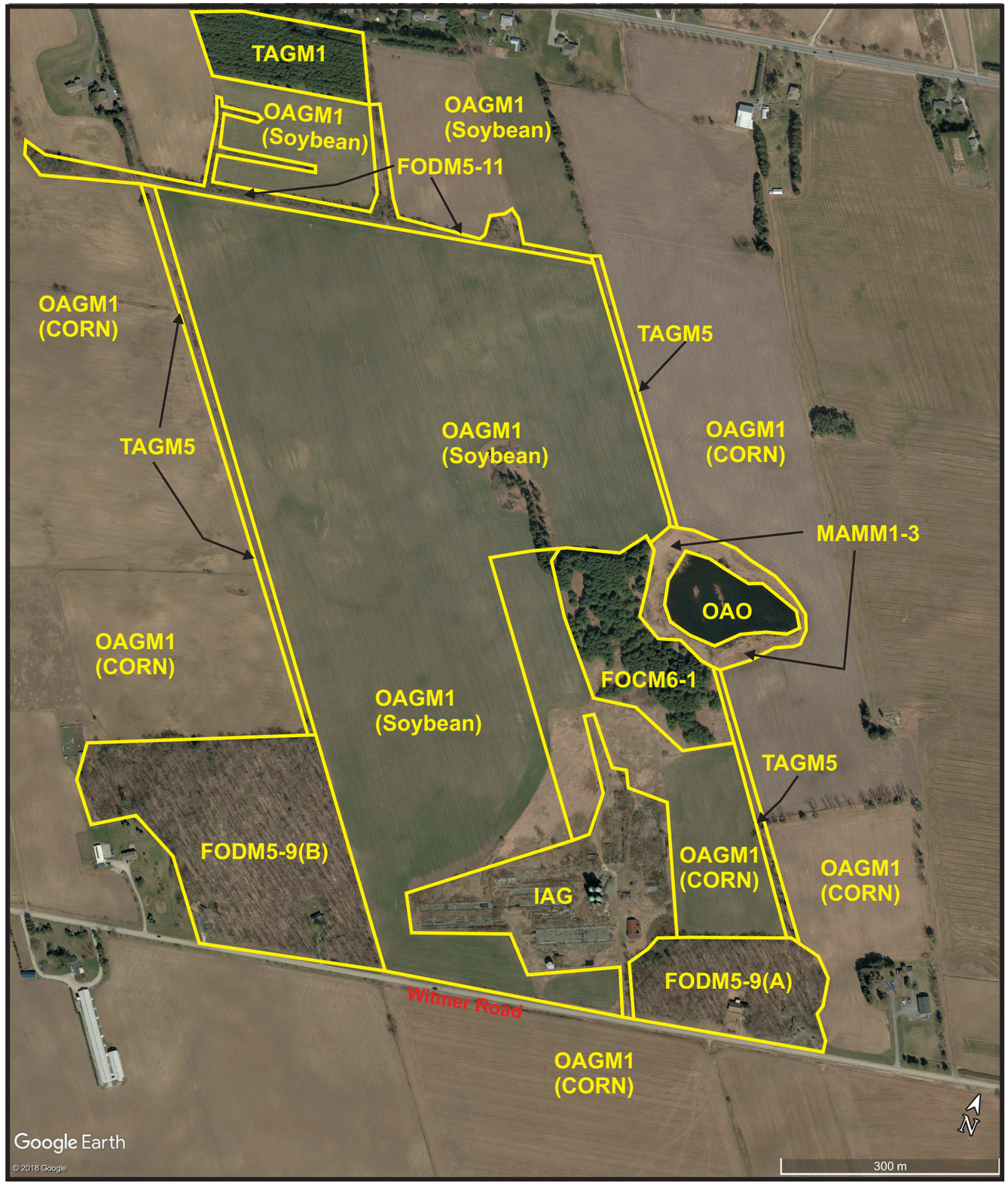

Figure 4. ELC Vegetation Community Polygons, Proposed Hallman Pit, Wilmot.

LEGEND

On Site

ELC Code	Name
OAGM1	Annual Row Crops (2018)
IAG	Agricultural Infrastructure
TAGM5	Fencerow
FODM5-11	Naturalized Deciduous Hedgerow

Off Site

FODM5-9	Dry-Fresh Sugar Maple -Hardwood Deciduous Forest
OAGM1	Annual Row Crops (2018)
FOCM6-1	Dry-Fresh White Pine Naturalized Conifer Plantation
MAMM1-3	Reed-Canary Grass Graminoid Mineral Meadow Marsh
OAO	Open Aquatic
TAGM1	Coniferous Plantation
	Approximate ELC Community Polygon Boundary

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DE-428

September 6, 2019.

Fencerow (TAGM5):
There are three sections along the licence area boundary which have been identified as Fencerow using the ELC classification system. One section of fencerow runs north-south along the majority of the western study area boundary, and two sections of fencerow are located along the eastern licence area boundary and are broken up by the open water pond. This community type is characterized by a narrow band of naturalized vegetation in line with post and wire fence which mark the property boundary. The TAGM5 community is dominated by Awnless Brome, along with abundant Canada Goldenrod, Green Foxtail and Common Ragweed. A list of the species identified within this polygon are shown in Appendix II.

Naturalized Deciduous Hedgerow (FODM5-11):
The Naturalized Deciduous Hedgerow runs east-west along the northern study area boundary and a small section also extends north -south. The FODM5-11 hedgerow is dominated by fast growing deciduous species, with Manitoba Maple being the dominant tree species in the hedgerow. White Ash is also present, particularly in the western portion of the hedgerow, however, most of the White Ash in the canopy were noted to be dead or dying due to the Emerald Ash Borer. Other canopy trees within the hedgerow include Eastern Cottonwood, Black Cherry, Wild Apple, Large-toothed Aspen and White Mulberry. The understory of the hedgerow is scattered with Manitoba Maple, Common Buckthorn, White Mulberry etc., many of which were covered with Woodbine. A full list of the species identified within this polygon are shown in Appendix II.

4.3.2 Vegetation Outside of Licence Area but Within 120m

Dry-Fresh White Pine Naturalized Conifer Plantation (FOCM6-1):
This treed ELC vegetation community is located centrally off site along the eastern edge of the licence area. This community is adjacent to annual row crop fields to the north, west and south and downslope to the east is the MAMM1-3 community. The FOCM6-1 community is dominated by White Pine in the canopy with the occasional White Spruce, and in the understory Common Buckthorn, White Ash, White Mulberry etc. have established naturally. The conifer plantation exhibited a rather limited ground layer with many of the species present being non-native species including Garlic Mustard, Dog-Strangling Vine, European Stinging Nettle, and Crown Vetch. A list of the species identified within this polygon are shown in Appendix II.

Reed-Canary Grass Graminoid Mineral Meadow Marsh (MAMM1-3):
This ELC vegetation community is located centrally along the eastern edge of the licence area boundary, offsite and downslope of the FOCM6-1 community surrounds the open water pond to the east.
Reed-Canary Grass dominates this ground layer community and comprises of a variety of wetland indicator plant species which are tolerant to temporary or long-term submersion in water. Other abundant ground layer species in this community include Broad-leaved Cattail, Purple-stemmed Aster, Canada Goldenrod, and Boneset. There is also Crack Willow in the canopy and

Red-osier Dogwood is the predominant shrub species scattered occasionally throughout the community. A list of the species identified within this polygon are shown in Appendix II.

Open Water Aquatic (OAO)

There is an open water aquatic community (Pond), located centrally along the eastern study area boundary which is surrounded by Reed-Canary Grass Graminoid Mineral Meadow Marsh (MAMM1-3). This feature is a permanent open water area, which has no inflow or outflow channels.

Dry-Fresh Sugar Maple –Hardwood Deciduous Forest Type (FODM5-9):

This vegetation community type was found offsite in two separate locations, one was adjacent to the southeast corner of the licence area boundary (FODM5-9A). There was once a house located in the center of the woodland, fronting on Witmer Road, but that residence has been removed and an open area of lawn grass in the forest is now all that remains of the house. The second FODM5-9 polygon (FODM5-9B) is located on the southern end of the western licence area boundary. There are two houses located within the southern edge of the woodland which fronts onto Witmer Road. The FODM5-9(B) woodland is designated by the Region as a Core Environmental Feature (Significant Woodland) due to meeting the Region's criterion for woodland size.

Both woodland polygons showed similar characteristics to each other including the herbaceous plant species identified at each location, as well as the tree species within the communities. The canopy of the two woodland communities was dominated by Sugar Maple, with other species being present but to a lesser degree, including American Basswood, Black Walnut, Black Cherry and Bur Oak. The understory of both communities had limited understory growth and the ground layer comprised of a mix of native woodland species such as Wild Ginger, White Trillium, Zig Zag Goldenrod and non-native invasive species such as Herb-Robert, Garlic Mustard and Dame's Rocket. A list of the species identified in this woodland type are shown in Appendix II.

Annual Row Crops (OAGM1):

The majority of the adjacent land use is planted in annual row crops, which in 2018 was predominantly corn. The cropping of the adjacent lands in 2018 is shown on Figure 4.

Coniferous Plantation (TAGM1):

Offsite to the north of the proposed limit of extraction there is a coniferous plantation which is comprised predominantly of White Pine. The ground layer of the plantation was characteristically sparse due to the high acidity of the fallen pine needles. Herbaceous species were therefore present mainly along the plantation edges adjacent to the agricultural fields. Herbaceous species were comprised of weed species such as Celandine, Velvet-leaf, Garlic Mustard, Common Dandelion and Kentucky Blue Grass.

4.3.3 Significance of Plant Species

In the June 1, 2018 response letter from MNRF the Wilmot SAR list was provided, it included three SAR plant species recorded within Wilmot, they included: American Ginseng, Butternut and Green Dragon.

Habitats required by these species are:

(a) for American Ginseng – rich, moist, undisturbed and relatively mature deciduous woods in area of neutral soils (such as over limestone or marble bedrock)

(b) for Butternut – rich moist and well-drained soils often along streams or also on well-drained gravel sites especially those made up of limestone.

(c) for Green Dragon- generally grows in damp deciduous forest along streams.

There isn't anywhere within the study area which would provide the necessary habitat conditions for either American Ginseng or Green Dragon. Neither of these two species were observed within the study area.

There was considered to be potential for Butternut to be present and so all areas of potentially suitable habitat were searched to see if any Butternut were present on site or in the offsite study area in June, July and September. No Butternut were found within the study area during the 2018 surveys. The surveys were completed by a Certified Butternut Health Assessor.

Regionally Significant Plants

A few Eastern Cottonwood (Populus deltoides) seedlings were found on the site. Although this tree is considered to be regionally significant, it is our experience that this species is widespread along the Grand River basin and its tributaries. Similarly White Spruce and Black Walnut are listed at regionally rare but only if they are present naturally and are not planted. The White Spruce on site were located in the plantation ELC community and are therefore not present naturally. Black Walnut is present in many areas of Waterloo region and its presence is not seen as being significant.

No other regionally significant plant species were found to be present on site or in the larger off site study area.

4.4 Wildlife

4.4.1 Birds

The bird species observed on the site and those present in off site locations are listed in Appendix III. Appendix III indicates in which ELC polygon they were observed and in what seasons they were observed (Spring, Breeding Season, and Post-breeding season). Most of the birds observed were common species which are typically present in rural habitats.

The SAR birds known from Wilmot were provided in the MNRF response letter, and indicated 13 different species. The 2018 breeding bird surveys which covered all habitats of the study area, provides suitable reference to confirm whether any of the listed SAR birds for Wilmot were present. Bank Swallow, Barn Swallow, Eastern Wood-Pewee were confirmed by the breeding bird surveys. There was no suitable breeding habitat on site for most of the other birds species on the Wilmot SAR bird list or from the Second OBBA data (see Appendix III).

Review of the bird species confirmed during the breeding bird surveys identified four regionally significant breeding birds species were present in 2018 including: Pied-billed Grebe, Eastern Bluebird, Brown Thrasher and Vesper Sparrow. The proposed setbacks from the wetland and the FOCM6-1 woodland will provide protection for the wetland habitat where the Pied-billed Grebe was found.

The Eastern Bluebird, Brown Thrasher and Vesper Sparrow were all observed along fencerows and the fencerows along the property boundaries are proposed to be retained. Retaining the fencerows will result in continued habitat for these species to be present, and with extraction to be done in phases there will continue to be areas suitable for foraging for all three species for much of the life of the proposed pit. As agricultural cropping is temporarily reduced on the site, there is also potential for increased insect populations due to a reduction in insecticide use, which will provide greater food sources for the three regionally rare birds which are all insectivorous.

Two additional species which are listed as regionally significant breeding birds were observed during the breeding season in 2018 but were only observed flying over the site and no suitable habitat for their breeding was present within the study area, they were Great Blue Heron and Turkey Vulture.

The Barn Swallow which is listed as Threatened on the ESA, was observed foraging over the site during the Spring, breeding season and the post-breeding season. There were no nests of Barn Swallow found on the site during the 2018 breeding season.

A single observation of a Bank Swallow foraging over the onsite crop fields, along with some Barn Swallows, was made during the spring, on May 23, 2018. No Bank Swallows were observed during either of the two breeding bird surveys and no suitable nesting locations for this species were found within the study area.

To confirm whether Common Nighthawk (and Eastern Whip-poor-will which was not on the Wilmot list) was present or absent, crepuscular bird surveys were conducted.

A crepuscular bird survey was conducted on May 29, 2018 during full moon conditions. Weather was favorable for the survey with air temperature at 23^{oC},

cloud cover was 5%, wind was 0, and no precipitation. Four locations were surveyed starting at 20:58 were completed by 22:06. A full moon also occurred in June and a second survey was conducted on June 26, 2018 around the time of the full moon (Temperature =16^{oC}, Wind=2 Beaufort, no precipitation and cloud was 50-80%). On June 26, 2018 the crepuscular survey started at 22:09 and ended at 22:55. No crepuscular birds which are listed as Species at Risk were heard or seen during either the May 29th or the June 26th survey dates.

As per the terms of reference and the requirements as outlined in the Region of Waterloo Greenlands Network Implementation Guide (2016) two evening surveys for owls were completed during suitable weather conditions. One survey was conducted on February 5, 2019 and the other on April 22, 2019. A single Eastern Screech Owl was heard calling from the FODM5-9 woodland in the southeastern corner of the study area during the February 5th survey. No owls were heard on the April 22, 2019 owl survey. It is also of note that Great Horned Owl was observed in Spring and Post-breeding season 2018.

4.4.2 Other Wildlife

Reptiles and amphibians

Based on site conditions three specific surveys were undertaken, they were: snake surveys to identify whether any hibernacula were present on site, turtle count surveys around the offsite wetland and thirdly amphibian call surveys at the offsite wetland to identify breeding amphibians. Otherwise reptiles and amphibians were recorded when observed or evidence of their presence was found incidentally during all site visits.

Searches for snakes around potential locations where hibernacula could exist were undertaken in the Spring when vegetation was limited and snakes would be out sunning after emerging from underground hibernacula. Searches were undertaken on 6 dates during spring 2018 under suitable search conditions (April 22, 30 and May1, 8, 15, and 23, 2018). Searches were focused in the south central portion of the study area where old concrete manure bunkers and farm structures had been, and debris piles in that area were also present.

No snakes were found during any of the six site visits when looking for emerging or sunning snakes. A single Eastern Garter Snake (approximately 40cm long) was observed incidentally in the Reed Canary Meadow adjacent to the on site pond. The Eastern Ribbonsnake was listed on the SAR list for Wilmot, potential habitat is present for this species around the pond area, however, no individuals were observed on any of the survey dates in 2018.

Turtle counts were undertaken in Spring while vegetation was low and turtles would be out sunning in the area of the pond. A central observation point was chosen to scan the pond and it edges with binoculars to count and identify what if any turtles were present. A total of six observation dates between April and May were made (April 22, 30 and May 1, 8, 15, and 23, 2018). Eastern Painted Turtle was observed on 4 of the 6 survey dates with a maximum of 19 individuals

counted on May 1, 2018. By May 23rd the vegetation around the pond had grown up so much that no turtles were able to be seen.

The turtles which were observed comprised of various size classes ranging from large adults to those a few years in age and small individuals (hatchlings from the previous year). Eastern Painted Turtle was the only turtle species observed at the offsite wetland. The Wilmot SAR list from MNRF included Blanding's Turtle and Snapping Turtle. Neither of these species were observed on any of the numerous turtle counts undertaken in 2018, and therefore are not believed to be present.

Confirmation of nesting by Eastern Painted Turtle was made when a nest which was dug up by a raccoon or other mammal species was found on June 26, 2018. The location of the confirmed nest is shown on Figure 1. On July 5, 2018 the field edges, area around the MAMM1-3 community, and roadway where the confirmed turtle nest was found were searched to find any additional nests, but none were found. There are no other nearby open water ponds for Eastern Painted Turtle and it is therefore anticipated that all of the individuals that were recorded overwinter in the pond.

Amphibian surveys were undertaken as per the Marsh Monitoring Program protocol, and surveys were undertaken on April 21, May 8, and May 29, 2018. The April 21, 2018 survey resulted in Spring Peeper being recorded at Call Code level 2(8-10 individuals). The May 8, 2018 survey resulted in Spring Peeper being recorded at Call Code Level 3 (>30 individuals). The May 29, 2018 survey represented the late survey date to capture late season breeding frogs and resulted in Green Frog at Call Code 1, Spring Peeper at Call Code 1, and Grey Treefrog at Call Code 1. Amphibians which were observed on site included Spring Peeper, Green Frog and Grey Treefrog, while off site a Grey Treefrog was heard in the FODM5-9 woodland to the southeast.

The Ontario Herpetofauna Atlas was reviewed for historical records, for the 17NJ30 10x10km square, within the last 20 years (1998 to 2008). Examination of the Atlas data indicated 15 different species with records for the square, with 7 frog species, 2 turtles, 2 snakes, and 4 salamanders being noted. The only provincially listed Species at Risk was Common Snapping Turtle which is listed as Special Concern. No other Species at Risk were noted to be in the Atlas square.

Mammals

Mammals which were observed or any evidence of their presence was recorded during each survey visit. Winter surveys on Feb 19, 2019 and March 6, 2019 allowed for mammal tracks to be observed and identified. A total of 7 mammal species were identified to be present on site including Eastern Cottontail, Eastern Chipmunk, Raccoon, Grey Squirrel, Coyote, Red Fox, and White-tailed Deer. There were 4 mammal species confirmed to be present offsite within 120m of the licence area boundary, they included: Eastern Chipmunk, White-tailed Deer,

Coyote, and Grey Squirrel. The Wilmot SAR list includes four bat species, which may potentially use trees as maternity roosts. None of the woodland communities offsite or adjacent to the study area are proposed for removal and therefore it is not anticipated that these species will be negatively impacted, so no bioacoustical surveys for bats were undertaken.

Winter wildlife surveys were conducted on February 19, 2019 and March 6, 2019, as per the Terms of Reference prepared for the ROW. The 2019 winter wildlife surveys indicated that there were no deer yards present anywhere on site and there were no deer tracks, scat, or evidence of winter deer browse, found within the licence area or offsite within 120m. The winter wildlife surveys resulted in tracks/evidence of Coyote, Eastern Cottontail Rabbit, Gray Squirrel and Red Fox being present within the study area.

The potential for bat habitat within the licenced area and with offsite within120m was assessed during 2018 and 2019 surveys, see discussion in report section 4.12.1 regarding potential for bat maternity colonies.

Insects

A total of 9 butterfly species were observed on site during the 2018 and 2019 surveys and two species were observed offsite. The butterflies observed on site included: Red Admiral, Black Swallowtail, Clouded Sulphur, Common Wood-nymph, Cabbage White, Mourning Cloak, Milbert's Tortoiseshell, Silver-spotted Skipper and Monarch.

The butterflies observed off-site were Cabbage White and Spring Azure. The SAR list for Wilmot includes two butterfly species: Monarch and West Virginia White. The Monarch was confirmed to be present, but no West Virginia White butterflies were observed in 2018. The West Virginia White requires moist deciduous woodlands and the presence of Two-leaved Toothwort, neither of which were found to be present in the on site or off site study area.
The Ontario Butterfly Atlas (OBA 2019) data was reviewed for observations within the 10x10km square, 17MJ30. Examination of the historical data for butterflies within the square showed 13 butterfly species records from the closer vicinity of the proposed Hallman Pit. The Monarch was the only provincially listed species from the historical records for the area.

A variety of *Odonata* (Dragonlies and Damselflies) were observed on site as a result of the permanent wetland located offsite. *Odonta* species which were identified during the 2018 and 2019 surveys include: Green Darner, Black Saddlebags, White-faced Meadowhawk, Eastern Pondhawk, Common Whitetail, Twelve spotted Skimmer, Marsh Bluet, and Common Spreadwing.

The Wilmot SAR list includes the Rusty-patched Bumble Bee, none were noted to be present within the study area during any of the surveys on site.

4.5 Fish Habitat

There is fish habitat in the off site study area due to the open water pond located centrally along the eastern study area boundary. There is no inflow or outflow from the open water pond and it provides permanent year-round aquatic habitat. On May 23, 2019 the open water pond edges were checked for fish species using a dip net and visual observations. No minnows or larger fish species were caught or observed during the nearly 2 hours of dip netting along the pond edges. Despite the negative results on May 23, 2019 it is expected that the pond contains difficult to observe small fish.

The MNRF list for known Species at Risk in Wilmot included two fish species: Black Redhorse and Silver Shiner (both Threatened species). Both of these species require streams with moderate to fast currents, and this habitat is not present on site or within the off site study area. Wavy-rayed Lampmussel was also listed on the Wilmot SAR list but there is no suitable habitat in the study area, since this species requires rivers with steady flow.

4.6 Species at Risk

The 2018 inventory visits revealed the presence of two Threatened swallow species and a species of Special Concern, the Monarch within the proposed licence boundary. Eastern Wood-Pewee (Special Concern) was the only other SAR species found to be present in 2018, but it was present outside of the proposed licence boundary, but within 120m of it (the FODM5-9B woodland).

4.6.1 Habitat of Endangered and Threatened Species

Barn Swallow

No nests were confirmed to be present on the site in 2018. Any potential nest sites would be located in off site barns 120m or more away, and are shown on Figure 1. Category 3 foraging habitat is present on the site as Barn Swallows were observed during Spring and the breeding season foraging over the onsite annual row crop fields.

Bank Swallow

No nests were present on the site as there were no areas of sandy vertical slopes which they require to create their nest burrows in. There are some sand and gravel pits in the vicinity which are more likely to be the locations where they would nest. Bank Swallow was observed on only one date, with one individual foraging over the annual row crop fields in the southern portion of the study site on May 23, 2018. The site at the most (due to only one observation over the study period) comprises of Category 3 foraging habitat for Bank Swallow.

4.6.2 Habitat of Species of Special Concern

Eastern Wood-Pewee

The Eastern Wood-Pewee was recorded on both breeding bird survey visits in 2018 within the FODM5-9 (B) woodland (designated as a Core Environmental Feature by the Region) which is located off site, but adjacent to the proposed pit. On both survey visits the Eastern Wood-Pewee was heard in the southeastern

corner of the woodland near the house in the woods, resulting in confirmed breeding, see Figure 1. No direct impact on the Core Environmental Feature woodland is anticipated, as no trees are proposed to be removed as a result of the proposed aggregate pit. The Level 2 report will indicate proposed setbacks from the Core Environmental Feature, and will consider the mitigation value of the sound berm that is proposed due to the presence of the house in the woodland.

Monarch

Monarch butterflies were observed on site during the 2018 study period in various locations. The Monarch butterfly was seen foraging in openings in the FOCM6-1 community, the TAGM5 fencerows between annual row crop fields, and the MAMM1-3 community. Common Milkweed was present in all three of the communities where the Monarch butterfly was observed in 2018. Monarchs were observed on July 5, Sept 17 and 20, 2018 which was later in the season suggesting they may have been migrants. The woodland edges and fencerows where Common Milkweed and a variety of flowering plants were seen are proposed to be left intact, as setback areas. Some of those areas will in fact be expanded as a result of implementing setbacks around various natural features which are to remain (ie. FOCM6-1, FODM5-9, TAGM5, and the MAMM1-3 communities). This means more potential areas for Milkweed and flowering plants, which are important to the Monarch's life cycle.

4.7 Significant Wetlands

No Provincially Significant Wetlands are present on the site or within 120m. The pond area located along the eastern proposed licence boundary is part of the Schindelsteddle South Wetland Complex, which is locally significant (GRCA 2018). The small portion of the locally significant wetland present in the off site study area, is surrounded by the coniferous plantation community which will remain intact. The coniferous plantation and a recommended buffer around it will provide a vegetated protection zone around the wetland. Details of the recommended buffer from the wetland and coniferous plantation are discussed in the Level 2 report.

The Alder Creek Watershed Study and Upper Strasburg Creek Subwatershed Plan Update report (CH2MHILL and North-South Environmental Inc. 2008), was reviewed in relation to the proposed undertaking, as 80% of the watershed is located within Wilmot Township. This EIS, therefore, has considered the studies' goals and recommendations and the EIS provides recommendations to help meet these goals to the greatest extent possible. This EIS speaks to the proposed undertakings potential to impact water quantity and quality, how wetlands, woodlands, linkages and wildlife are proposed to be protected, as well as protecting ground water from contamination through implementation of the EIS recommendations. The recommendations and conclusions of the EIS will help to meet the goals and objectives of the Alder Creek Watershed study.

4.8 GRCA Regulated Areas

GRCA staff confirmed in their September 7, 2018 response letter to the request for information from Dance Environmental Inc. that there is regulated area surrounding the pond along the eastern proposed licence boundary. A second location of regulated area and wetland was shown on GRCA GRINS mapping located centrally in the southern end of the study area. During the September 17, 2018 site visit with GRCA staff (Tony Zammit) this area was examined (in 2018 it was corn field) and was determined by GRCA staff to be inaccurately mapped and it would not be considered wetland. The GRCA subsequently updated their mapping to remove wetland and regulated area in this location. Figure 2 in the present document illustrates the current extent of regulated area.

4.9 Significant Woodlands

Region of Waterloo mapping of the Greenlands Network (Map 4 of Waterloo Region O.P., 2015) indicates that there are no Core Environmental Features (Significant Woodlands) within the proposed licence area.

The Dry-Fresh Sugar Maple –Hardwood Deciduous Forest (FODM5-9B) located adjacent to the southwestern study area boundary (within 120m) is considered a Core Environmental Feature (Significant Woodland). The designation of that woodland was confirmed by Tim Van Hinte, from the Region of Waterloo, in his response letter to our background information request. This woodland is considered a significant woodland as a result of it meeting the woodland size criterion, as set out in the Region of Waterloo O.P. (2015). The presence of the Eastern Wood-Pewee in 2018 also contributes to its designation due the presence of a Species at Risk.

A second Dry-Fresh Sugar Maple –Hardwood Deciduous Forest (FODM5-9A) is located adjacent to the southeastern study area boundary, however, it is not designated as a Core Environmental Feature in the Regional O.P. (Map 4 of Waterloo Region O.P., 2015). The southeastern FODM5-9 woodland was not designated a Core Environmental Feature due to the woodland not being large enough to meet the size criterion for designation. The presence of Species at Risk within a woodland can also contribute to a woodland being designated as a Core Environmental Feature in Waterloo Region. The 2018 surveys which were conducted did not result in any Species at Risk being confirmed to be present in the southeastern FODM5-9 (A) woodland. Based on the Region's designation criteria and the results of the 2018 surveys the woodland is not considered a Significant Woodland, nor a Core Environmental Feature.

The Level 2 report will provide recommendations for setbacks from extraction for each of the FODM5-9 woodlands.

4.10 Significant Valleylands

The Region of Waterloo mapping of the Greenlands Network (Map 4 of Waterloo Region O.P., 2015) confirms that there are no significant valleylands within the study area.

4.11 Greenlands Network

The Region of Waterloo mapping of the Greenlands Network (Map 4 of Waterloo Region O.P., 2015) indicates that none of the following systems or features are present within the study area: Significant Valley or Environmentally Sensitive Landscape. Within 120m of the present study area boundary, however, the Region Waterloo mapping of the Greenlands Network (Map 4 of Waterloo Region O.P., 2015) indicates there is Core Environmental Features, namely the FODM5-9 (B) woodland located adjacent to the site to the west, and is considered to be a Significant Woodland. The significant woodland is not owned by Jackson Harvest Farms, and as such there is no intention to enter or disturb the significant woodland due to the proposed undertaking. With the FODM5-9 (B) woodland being a significant environmental feature, buffers will be recommended to be implemented to reduce any potential impacts. Also due to the proximity of a residential dwelling within the significant woodland a berm will be required to be put in place between the woodland and the proposed extraction boundary. Details on recommendations for buffers and berms will be provided in the Level 2 report.

4.12 Significant Wildlife Habitat

A review of existing data was used along with site investigations to determine if Significant Wildlife Habitat exists in the study area. Analysis was completed using the Significant Wildlife Habitat Technical Guide (SWHTG) created by ONMR (2000).

Wildlife habitat was investigated in the study area to identify candidate Significant Wildlife Habitat (SWH). The ELC community mapping was used as the basis for determining the presence (or absence) of candidate SWH.

In accordance with the SWHTG (2000) the Ecoregion 6E (OMNRF 2015) Significant Wildlife Habitat Criteria Schedules were used to guide the SWH evaluation.

4.12.1 Seasonal Concentration Areas of Animals

- Waterfowl Stopover and Staging Areas (Terrestrial and Aquatic) and Shorebird Migrating Stopover Area: the required ELC Ecosites are not present, so no candidate nor confirmed SWH. Waterfowl were observed on the pond but not in the numbers of individuals required.

- Raptor Wintering Area: the required ELC Ecosites are not present, so no candidate nor confirmed SWH.

- Bat Hibernacula: no caves, mine shafts, underground foundations or Karst, no candidate nor confirmed SWH.

- Bat Maternity Colonies: There are no woodlands within the site (licence area) boundary. A section of one hedgerow in the north end of the site is proposed to be removed which contains some mature Manitoba Maples a few Black Cherry (not preferred bat roost trees). There are approximately 22 standing dead White Ash trees at the west end of the hedgerow which is not proposed for removal, and which provides the best potential habitat for bats. Other recommendations such as timing of removal of the middle part of the hedgerow, placement of bat boxes, timing of season to build proposed berms are all anticipated to address the loss of the small area of potential bat roost habitat. Through the use of the proposed mitigation measures it is anticipated that no significant impacts on any low potential maternity colony trees will occur during the maternity season for bats.

- Turtle Wintering Areas: the required ELC Ecosite is present, the pond is permanent and suitable for overwintering so there is candidate SWH. With 19 Eastern Painted Turtles being observed at one time, it is logical that there is confirmed SWH for wintering turtles.

- Reptile Hibernaculum: candidate SWH was found in the form of old concrete foundations and debris piles. Detailed searches for congregations of snakes on sunny days in Spring 2018 did not confirm the presence of a hibernaculum – no snakes were found, therefore there is no confirmed SWH.

- Colonially – Nesting Bird Breeding Habitat (Bank and Cliff): A single Bank Swallow was observed in Spring 2018,and since no vertically sloped banks for nesting habitat exist on site or within 120m candidate SWH is not present.

- Colonially – Nesting Bird Breeding Habitat (Tree/Shrubs): none of the specified Ecosite types are present, so there is no candidate SWH.

- Colonially – Nesting Bird Breeding Habitat (Ground): no rocky island or peninsula or watercourses nor field or shrub habitat is present, so there is no candidate SWH.

- Migratory Butterfly Stopover Areas: There is forest on site (FOCM6-1) but no field habitats, and the site is not within 5km of Lake Ontario; therefore there is no candidate SWH nor confirmed SWH.

- Landbird Migratory Stopover Areas: The study site is not near Lake Ontario and there are no woodlots >10ha, so no candidate SWH or confirmed SWH.

- Deer Yarding and Deer Winter Congregation Areas: The study site contains a small area of ELC community type FOC (significantly less than the >100ha size that the SWTHTG indicates is prefered by yarding deer), however, the presence of forest means there is candidate SWH. There is no confirmed SWH as OMNRF did not identify any deer yards being present in their response to the request for information, the snow depths required as per the SWHTG outlines would not be met and the FOC community is well below 100ha in size. During the winter wildlife surveys no signs such as heavy deer browse, scat, deer bedding, or observations of numerous individuals were made. No confirmed SWH.

4.12.2 Rare Vegetation Communities or Specialized Habitat for Wildlife

4.12.2.1 Rare Vegetation Communities

All of the rare community types were considered, namely: cliffs and talus slopes, sand barren, alvar, old growth forest, savannah, tallgrass prairie, and other rare vegetation communities. None of the pertinent ELC Ecosite types were found on the site or within 120m. No candidate or confirmed SWH is present in the study area for rare vegetation communities.

4.12.2.2 Specialized Habitat for Wildlife

All of the specialized habitat for types were considered, namely: waterfowl nesting area; Bald Eagle and Osprey nesting, foraging and perching habitat; woodland raptor nesting habitat; turtle nesting areas; seeps and springs; amphibian breeding habitat – woodland and wetlands; and area – sensitive bird breeding habitat.

Candidate SWH is present on site for waterfowl nesting area as MAM2 habitat surrounds the pond, however, it is not 120m wide. Mallard Duck is the only species listed in the SWHTG, which was observed but based on the breeding bird surveys undertaken and the number of Mallards pairs breeding (2) means that there is no confirmed SWH.

Candidate SWH was confirmed for turtle nesting area as a Painted Turtle nest that was dug up by a raccoon or other mammal was found on an old sand/gravel farm lane on site (within 100m from the on site pond). Searches for turtle nests did not result in 5 or more nesting Painted Turtles being found in 2018, therefore, there is no confirmed SWH for turtle nesting in the study area.

Candidate SWH was found for Amphibian Breeding Habitat (Woodland) due to the FOC community (FOCM6-1) along with the off site pond being an appropriate size and permanent. Monitoring in 2018 using the Marsh Monitoring Program protocol did not result in two frog species on the list being heard at Call Level Code 3, and no other criteria were met. Therefore, there is no confirmed SWH for Amphibian Breeding Habitat (Woodland).

Candidate SWH was confirmed for Amphibian Breeding habitat (wetland) due to the presence of ELC ecosite class OAO (off site pond) but the pond has limited shrub and log structure present. None of the criteria to confirm SWH for Amphibian Breeding habitat (Wetland) were met, therefore there is not confirmed SWH for this specialized habitat type.

None of the pertinent ELC Ecosites types were found on the site or within 120m for all other specialized habitat for wildlife types. No candidate or confirmed SWH is present in the study area for all of the other specialized habitat for wildlife types.

4.12.3 Habitat for Species of Conservation Concern (not including Endangered or Threatened Species)

- Marsh Breeding Bird Habitat: There is candidate SWH due to the ELC Ecosite MAM2 being present (MAMM1-3) and Pied-billed Grebe was confirmed breeding in the pond/wetland communities. None of the confirmed SWH criteria were met. Therefore there is no confirmed SWH for Marsh Breeding Bird Habitat.

- Open Country Bird Breeding Habitat: no large grasslands are present in the study area; off site occurrences of Savannah Sparrow and Vesper Sparrow during the breeding season were along Fencerows. There is no candidate SWH as no ELC community types or habitat criteria are present. There is therefore no candidate or confirmed SWH for this factor.

- Shrub/Early Successional Bird Breeding Habitat: no large shrub areas present and only one of the indicator or common species confirmed nesting (Brown Thrasher), so evaluation of needed criteria are not met for candidate or confirmed SWH for this factor.

- Terrestrial Crayfish: There is MAM2 habitat within the study area (MAMM1-3) but no crayfish burrows or chimneys were observed on any of the numerous site visits which occurred in 2018, therefore, there is candidate SWH but there is not confirmed SWH for terrestrial crayfish.

- Special Concern and Rare Wildlife Species:
  The 2018 surveys resulted in two special concern species being confirmed to be present on site or adjacent to the study area, they include: Eastern Wood-Pewee and Monarch.

  Eastern Wood-Pewee was confirmed to be present within the off site FODM5-9 (B) woodland in the southern part of the western study area boundary. Breeding bird surveys confirmed there was a single pair of this species, breeding within the woodland, therefore, there is confirmed SWH for Eastern Wood-Pewee as an important life stage (nesting) for this species was confirmed. This area of SWH is shown on Figure 1.

Only adult Monarch butterflies were observed foraging in openings in the FOCM6-1 community, the TAGM3 fencerows between annual row crop fields, and mainly in the MAMM1-3 community. Common Milkweed was present only in small numbers in the FOCM6-1 and TAGM3 communities where the Monarch was observed. The MAMM1-3 community contains the contiguous habitat and amount of Common Milkweed and flowering plants which Monarchs were seen using (approximately half of this habitat is located on the adjacent property). The MAMM1-3 vegetation community is therefore considered the confirmed SWH for Monarch, see Figure 1.

4.12.4 Animal Movement Corridors

Amphibian breeding habitat was present within the study area but it was determined not to be SWH, based on the criteria outlined in the SWHTG. No deer wintering habitat was found to be present within the study area so there is no candidate or confirmed SWH for deer movement corridors in the study area.

SUMMARY

Review of the SWHTG criteria schedules identified one seasonal concentration area for animals was present within the study area, wintering turtle area. The wintering turtle area is restricted to the pond located centrally along the eastern study area boundary. The only area for the Painted Turtles which live in the pond to overwinter is the bottom of the pond itself as it is an isolated pond with no inlets or outlets.

4.13 Areas of Natural or Scientific Interest

No Areas of Natural or Scientific Interest (ANSI) are present within the proposed licence area or within 120m of it.

4.14 Nuisance/Problem species

Phragmites:

A small patch of Phragmites was found to be present in the south central portion of the study site at the base of the slope for the laneway in the middle of the site that leads towards the coniferous plantation. Phragmites in such a location is suggestive of it being the non-native species which can be highly invasive. It is believed that the Phragmites is there because its at the base of a slope where surface flow may accumulate periodically. When site alteration occurs due to extraction the area with Phragmites would be removed along with the laneway with is >2m in height above the adjacent fields.

Garlic Mustard:

Garlic mustard is a non-native herbaceous plant species which is highly invasive and was found in the naturalized conifer plantation on site, within the hedgerows which border the proposed extraction area and both of the off site Sugar Maple – Hardwood deciduous forests (FODM5-9) including the significant woodland to the southwest. Garlic Mustard was found in these locations but was not so abundant that it was the predominant ground layer species in those ELC communities.

4.15 Impacts of Previous Development or Site Alterations

The site is currently in agricultural use, as it has been for decades. Unused sites and manure pits have been removed over the past few years as mandated by the Township for safety reason.

These minor site alterations have not impacted the significant environmental features in the study area.

4.16 Anticipated Direct and Indirect Impacts

The details of the impact assessment are contained in the Level 2 Study report section, Chapter 7.0.

5.0 CONCLUSIONS OF LEVEL1 STUDY

Natural Environment Level 1 elements that have been confirmed on the site or within 120m are:

- Habitat of Endangered or Threatened Species –Category 3 habitat for Barn Swallow and Bank Swallow;
- Fish Habitat;
- Seasonal Concentration Area for Animals- turtle wintering area (Midland Painted Turtle);
- Special Concern Species –Eastern Wood-Pewee and Monarch; and
- Within 120m of the site there is a Core Environmental Feature, namely Significant Woodland (FODM5-9 (B) community adjacent to the southwestern study area boundary).

6.0 LEVEL 2 STUDY

A Level 2 impact analysis is required by the Aggregate Resources Act if any of the Level 1 features are present on or within 120m of the study site.

The impact assessment will also address features of interest to the Region of Waterloo and EEAC namely:

(1) wetland and pond feature;
(2) upland woodland located in the southeastern portion of the study area; and
(3) regionally significant breeding birds.

6.1 Proposed Site Alterations

As shown on Figure 3, aggregate will be extracted from an area of 52.3ha, during 3 phases. The annual extraction limit will be 750,000 tonnes.

Topsoil will be scrapped from the surface of each phase in sequence and it will be stored, for use during progressive rehabilitation.

There will be a wash plant which will consume approximately 89L of water per tonne of aggregate that is washed. The wash water ponds will be internal to the pit with no flow of water off site.

The Consulting Hydrologist has completed an analysis of the wash water use impact on the Regional Middle Nith River Groundwater Assessment area. HESL (2019) has concluded that the proposed wash water use for the Hallman Pit will not change the low stress level which currently exists for the Middle Nith River.

Noise berms are required in several locations, see Figure 4. These berms will be placed outside of setbacks from woodland.

The Consulting Hydrogeologist for this application has addressed equipment fueling and maintenance in the Spills Mitigation and Contingency Plan that is part of the Hydrogeological Evaluation (Harden Environment Services Limited 2009).

Pit phasing and final grading has been designed to ensure that there is not a reduction in volumes of water recharging the wetland/pond feature located along the central eastern margin of the study area.

The HESL (2019) report describes this grading and the predicted results as follows: "There is a "hinge" line along the final pit floor. All lands north of the "hinge" line will drain towards the on-site wetland, thus maintaining its surface water catchment area. The slope is somewhat less, thus promoting infiltration in the lands upgradient of the pond.

It is predicted that infiltration at the site will be greater than presently occurs, thereby maintaining the water table position in the vicinity of the wetland. There is a small potential increase in runoff to the wetland, however, no change in the hydroperiod of the wetland is anticipated."

In order to monitor water levels during the site development HESL (2019) has recommended that hourly water levels be recorded at MW1 and SG1. These two monitoring locations are located near the wetland/pond feature.

All woodlands present on site and around the site margins will be retained. Setbacks from the driplines of these woodlands are addressed on a case by case basis in the Impact Assessment section of this report.

Routine dust control operations in the pit should protect vegetation and wildlife from dust imparts.

6.2 Mitigation

The following recommendations are made which will contribute to minimizing the potential for impact on the natural environment.

Mitigation recommendations are as follows:

1. Clearing of any vegetation within the limit of extraction should occur between September 1 and April 15 to prevent any destruction of birds, eggs or nests.

2. Effective dust control should be maintained along the access road and in the pit so that dust does not impact adjacent vegetation and wildlife.

3. Adequate undisturbed setbacks should be established between the limit of extraction and the Level 1 features. Rationale for setback widths, locations, management and maintenance should be determined through the impact assessment process, report section 6.2.

4. Setback areas should be allowed to naturalize to wild vegetation cover, be seeded to a grass/legume mix or planted with shrubs, as specified.

5. Progressive rehabilitation should be undertaken.

6. Equipment fueling, maintenance and fuel storage should be located on the portion of the site recommended by the hydrogeologist, away from the wetland/pond feature.

7. Extraction should be kept 1.5m above the shallow ground water elevation so that there are no impacts on the wetland/pond feature.

8. Silt control fence should be installed to protect the wetland/pond to the east. See Figure 3 for where conceptually silt fence should be installed.

9. The limits of extraction should be fenced with post and wire fencing or other posts to prevent equipment from impacting the significant natural features.

10. If Bank Swallows begin to nest in the new pit margins, pertinent regulatory requirements should be followed to avoid impacts on this species.

7.0 IMPACT ASSESSMENT

Each Level 1 feature and other regionally significant features are assessed for potential impact, taking into account the mitigation recommended in report section 6.1.

7.1 Habitat of Threatened and Endangered Species

A. Bank Swallow

A single Bank Swallow was seen foraging over the proposed extraction area on a single date, May 23, 2018. No nesting sites are present on the site where flat farmland is present. No June or July breeding season occurrences were observed so there probably is no nesting of this species within 120m.

A small portion of the foraging area of Bank Swallows would be disturbed temporarily during extraction, but would be replaced as the lands are progressively rehabilitated to agriculture.

If Bank Swallows begin to nest in the new pit, pertinent regulations at the time will be followed to avoid impacts on nesting Bank Swallows.

In our opinion the proposed extraction will not negatively impact Bank Swallows.

B. Barn Swallow

During the breeding season and post-breeding Barn Swallows were observed foraging over the proposed extraction area. There were no Barn Swallow nests on the site, nor immediately adjacent.

Figure 1 shows where off site barns and sheds are located relative to the study area. All of these barns are more than 120m away from proposed extraction. This means that the present study site is a Habitat Category 3 area: habitat used for rearing, feeding and resting.

The Barn Swallows present in the study area currently contend with agricultural activity. It is our opinion that the undertaking will not negatively impact foraging Barn Swallows.

7.2 Fish Habitat

The pond located along the eastern central margin of the off site study area is permanent and has wetland and aquatic vegetative cover present. It is reasonable to assume that sticklebacks and minnows are present in this water body.

The extent of wetland and aquatic vegetation present will be protected by the presence of a coniferous plantation growing between the wetland/ pond and the eastern extent of the extraction. Extraction will be 60m or more away from the closest margin of the pond.

Water quality in the pond will be protected by silt control fence, an earth berm, and the wetland vegetation fringe would function to filter any silty runoff.

The hydrogeological study has predicted that water quality will not decline but rather the volume of surface water input reaching the wetland/pond will increase by approximately 4.4 %. This will have a positive impact by potentially increasing the areal extent of habitat.

Based on the foregoing it is concluded that there will be no negative impacts of fish habitat and that the aggregate operation may impact fish habitat positively.

7.3 Turtle Wintering Habitat

It is expected that the pond located along the eastern central margin of the off site study area provides wintering habitat for the Midland Painted Turtle population that is present.

As was described in 7.2 (the fish habitat impact analysis) the quality and quantity of water in the pond is protected, so no negative impacts on turtle wintering habitat are expected.

7.4 Special Concern Species

7.4.1 Eastern Wood-Pewee

This species was heard calling in the off site southwestern woodland during both 2018 breeding bird inventory visits.

Figure 1 shows the location and extent of the inferred territory of the Eastern Wood-Pewee present in the off site southwestern woodland. The habitat of the entire woodland will be protected by the perimeter fence placed around the pit. A 10m wide extraction setback from the southeastern edge of the woodland will result in a 65m± setback between extraction and the eastern margin of the wood-Pewee inferred territory.

A sound berm which will be constructed to the east of the woodland margin will function to reduce extraction noise within the FODM5-9 (B) woodland. This berm will be constructed between September 1 and April 15, outside the of the breeding bird season. The sound berm should mitigate any potential for noise impacts on the Eastern Wood-Pewee and other woodland nesting birds.

Once extraction proceeds below grade any noise and motion effects would be reduced considerably.

The aggregate pit is not expected to have a negative impact on the use of the FODM5-9 (B) woodland by breeding Eastern Wood-Pewees.

7.4.2 Monarch

Adult Monarchs were present in at least 3 of the wild vegetation polygons within the study area: FOCM6-1, TAGM5, MAMM1-3. These areas are woodland edges and site margin fencerows. These habitats will be protected by setbacks from the property boundary and setbacks from woodlands. Some of the area within these setbacks is currently in row crop production. Naturalization of the entire setback area will increase the area available for Common Milkweed and nectar plant growth, thus increasing the area of Monarch habitat around the margins.

Silt fence will protect some of these new wild vegetation patches from machinery intrusion and siltation, see Figure 3. This figure also shows where perimeter fencing and other fence posts will be placed whi will protect wild vegetation patches.

The increase in habitat for Common Milkweed and other flowering plants should be a positive benefit to Monarch populations in the study area.

7.5 Significant Woodland

Figure 1 shows the location of the off site woodland which is adjacent to the southwestern corner of the proposed licence. This woodland meets the size criterion for designation as a Significant Woodland.

Figure 3, which is based on the Operational Plan, shows a setback between extraction and the dripline of the Significant Woodland.

Recommendations to protect the eastern margin of this woodland are as follows:

(a) the western margin of the noise berm should be 10m or more from the dripline of the woodland;

(b) before the berm is constructed the paige wire fence which marks the licence boundary in this location should be installed, since the existing boundary fence is in disrepair. This paige wire fence will protect the core of the woodland from machinery intrusion;

(c) before the berm is constructed a silt fence should be installed 10m from the dripline of the Significant Woodland – this silt fence would mark the western margin of the noise berm and will prevent sediment from washing into the woodland;

(d) this silt fence should be inspected at weekly intervals and should be repaired as soon as is practical, as needed, until such time as the ground cover vegetation is established;

(e) the noise berm should be vegetated with a legume/grass mix to stabilize the berm surface;

(f) extraction should occur no closer than 10m from the eastern dripline of the Significant Woodland; and

(g) dust control should occur on a regular, on-going basis to ensure that dust does not leave the pit and accumulate in the Significant Woodland.

If all of the foregoing recommendations are implemented successfully no impact is expected on the features and functions of the Significant Woodland which is a Core Environmental Feature of the Greenlands Network.

7.6 Meadow Marsh and Pond

This wetland and pond are located centrally off site to the east of the proposed licence area. Figure 3 shows the plotted margin of the staked wetland edge.

Figure 3 shows mitigation elements recommended to protect the wetland and pond, namely:

(a) the entire conifer plantation, which is located upslope of the wetland and pond, is to be retained and extraction is to remain 15m away from the edge of the plantation;

(b) T-bar fence posts will define the licence boundary and extraction limit 15m away from the conifer plantation.

(c) silt fence is to be installed along the outside of the fence posts before any topsoil stripping occurs;

(d) the silt fence is to be inspected and maintained for one year and thereafter until such time as the ground cover vegetation is established;

(e) routine dust control is to occur so that the plantation, wetland vegetation and pond are not impacted by dust;

(f) as shown on Figure 3, three Red-osier Dogwoods and 5 Eastern White Cedars will be planted to provide a visual barrier between the pit and the pond where there is currently a gap in vegetation between the pond edge and the extraction, these shrubs should be 1m tall when planted; and

(g) a 0.5m high earthen berm is to be constructed to the north of the northwestern corner of the pond to intercept any runoff and to filter runoff before it flows towards the pond – this berm should be seeded with a grass – legume mix.

The hydrogeologist has predicted that there will not be any negative impacts from the aggregate operation on the surface water nor shallow groundwater quality and water quantity associated with the wetland and pond (HESL 2019).

If all of the foregoing recommendations are successfully implemented no impact is expected to the features and functions of the Meadow Marsh and pond complex.

7.7 Southeastern Woodland (FODM5-9 (A))

The upland deciduous woodland (FODM5-9 (A)) that is located off site and adjacent to the southeastern corner of the proposed licence boundary is not a Significant Woodland, however, we have included this feature in the impact analysis.

As can be seen from Figure 3 the woodland will be protected from impact by a paige wire fence along the licence boundary placed 15m from the dripline of the woodland.

A noise berm located to the north of the woodland within the licenced area would function to minimize the impact for noise and motion impacts on wildlife within the woodland.

Figure 3 shows a number of mitigation components that are recommended in this area:

(a) silt fence should be placed along the southern margin of the berm to prevent sediment transport from the berm toward the woodland;

(b) it is recommended that the 15m setback between the woodland and the licence boundary be allowed to naturalize – woodland herbs, shrubs and trees will quickly colonize this area;

(c) the berm should be planted with a legume/grass mix to prevent erosion of the berm surface;

(d) routine dust control is to occur so that the woodland is not impacted by dust; and

(e) vegetation in the existing hedgerow which connects this woodland to the marsh/pond to the north will remain along the property boundary so that this corridor is maintained.

If all of the foregoing recommendations are implemented successfully no impact is expected on this woodland.

7.8 Regionally Significant Bird Breeding Habitat

Four Regionally Significant bird species were encountered during breeding season inventories. Each species is addressed in the present impact assessment.

Pied-billed Grebe

A single adult was present from late Spring and during the 2018 breeding season. It was heard calling and seen swimming on the pond located in the central, eastern margin area. Although neither a pair nor young were seen it is probable that nesting occurred here.

This species' habitat is confined to the wetland/pond area, with no specific expected use of the adjacent upland buffer area nor the site lands.

In order to minimize the potential for motion, noise and sedimentation impacts on the Pied-billed Grebe habitat the following mitigation measures are recommended:

(a) a 50m wide undisturbed wild vegetation buffer will separate the extraction limit from the closest margin of the pond habitat;

(b) paige wire fence and/or fence posts and silt control fence will be placed at the limit of extraction to prevent machinery and sedimentation damage to the conifer plantation and other buffer vegetation;

(c) a 0.5m high earth berm will be constructed to the north of the northwestern corner of the pond to intercept runoff and to filter runoff before it flows toward the pond;

(d) as described in 7.6, above, dogwoods and cedars will be planted between the margin of the conifer plantation and the eastern property boundary; and

(e) the conifer plantation, wetland, pond and associated buffer lands should be zoned Open Space Z.11.

The hydrogeologist has predicted that there will be no negative impact on the surface water/groundwater system of the wetland/pond. With the foregoing recommendations successfully implemented we do not expect any negative impacts to occur to Pied-billed Grebe habitat nor to the population of this species at this off site location.

Eastern Bluebird, Brown Thrasher and Vesper Sparrow

These three Regionally Significant breeding birds were observed along the fencerow at the eastern property boundary, east of where the wash ponds and a noise berm are proposed. A Vesper Sparrow was present on both June 5 and 22, which suggests that a breeding territory was present.

The Eastern Bluebird and Brown Thrasher were both present only on June 5 but not on June 22, so, a breeding territory may not have been present. Also, Eastern Bluebird breeding is only considered significant when a natural cavity is being used, this was not observed. We are aware of nest boxes along the southern margin of Witmer Road, approximately 340m away. It may have been the case that the Bluebird observed, nested off site in a box along Witmer Road, if so, this would not be a breeding of Regional Significance.

Noise berms are proposed across the entire northern portion of the Phase 2 and 3 extraction areas. These berms are to be built adjacent to existing vegetated hedgerows, see FODM5-11 on Figure 3. Based on existing habitat conditions these hedgerows may provide cover and/or nesting sites for shrub nesting species.

In order to enhance habitat for the 3 Regionally Significant grassland/shrub habitat breeding bird species the following recommendations are made:

(a) construction of the noise berms located east of the wash ponds and in the northern sector of the pit should occur between September 1 and April 15 to avoid impacts on nesting birds;

(b) silt fence will be installed along the outer margins of the berm footprints before berm construction begins, so that adjacent natural features including the fencerow vegetation are protected from sedimentation;

(c) the berms will be seeded with a grass/legume mix to stabilize the berm surface against erosion; and

(d) Gray Dogwoods and Ninebark shrubs will be planted in clumps on 3m centres along the eastern half of Noise Berm 3, which has a north-south axis, to the east of the wash ponds. Similarly, Gray Dogwood and Ninebark shrubs should be planted in clumps on 3m centres along the outside slopes of Noise Berms 5, 6 and 7.

    Numbers of shrubs to be planted are shown on Figure 3. These shrubs will provide habitat for the 3 Regionally Significant breeding bird species and will reinforce and enhance the fencerow habitat and north-south/east-west linkages.

With the foregoing recommendations successfully implemented we do not expect any negative impacts to occur to grassland/shrub habitat nesting birds.

7.9 Regionally Significant Plant Species

A few Eastern Cottonwood seedlings are found scattered around the site. Several would be preserved by the setbacks from fencerows and the berms and retained fencerows will provide habitat for Eastern Cottonwood during the life of the pit.

The White Spruce present in the study area have been planted and will be protected by setbacks and fencing to be placed around the margins of the conifer plantation.

Black Walnut is widespread in the Region and in our opinion should not be considered to be a Regionally Significant species. The retained fencerows and the two upland deciduous forest polygons will protect most specimens of Black Walnut that are present in the study area.

Mitigation to protect certain fencerows, hedgerows and both upland deciduous forest blocks will provide habitat for specimens of all three Regionally Significant tree species that have been identified in the study area.

7.10 Possible Bat Habitat Trees

As noted in report section 4.12.2.1, a section of one hedgerow at the north end of the site is proposed for removal to accommodate noise berm construction and some Phase 3 extraction. The trees in this hedgerow were checked for potential as bat roost maternity colony habitat. The trees present are primarily Manitoba Maple, with a few scattered Black Cherry. No large diameter hollow trees were seen.

In order to minimize the potential for negative impact from removing this hedgerow and building a noise berm near other northern hedgerow areas (Berms 4, 5, 6 and 7) the following recommendations are made:

(1) Removal of any hedgerow trees and building of any sound berm 4, 5, 6, and 7 sections adjacent to hedgerows will occur between September 1 and April 15;

(2) Two bat boxes will be erected on the western margins of the conifer plantation, as shown on Figure 3.

With the foregoing recommendations successfully implemented we do not expect any negative impacts to occur to any bat populations that may be present.

7.11 GRCA Regulated Area

The key natural environment elements of the wetland/pond feature which the Regulated Area is meant to preserve are protected from pit activities by the following:

(a) an undisturbed setback of 50m or more from the pond margin and 30m from the flagged wetland;

(b) 1.5m T-bar posts and silt fence;

(c) new shrub plantings;

(d) extraction 1.5m or more above the water table to any existing groundwater contributions;

(e) Open Space Z.11 zoning on the buffer/wetland/pond lands for long-term protection of the area; and

(f) a 0.5m high Berm 8.

With the foregoing mitigation measures successfully implemented we do not expect any negative impacts to the wetland/pond feature within the Regulated Area.

8.0 OPPORTUNITIES FOR ECOLOGICAL ENHANCEMENT, RESTORATION, LONG TERM CONSERVATION OF ECOLOGICAL LINKAGES AND ENVIRONMENTAL FEATURES.

8.1 Ecological Enhancement

During the life of the pit new setbacks from woodland and some hedgerows present in the study area will be established on lands which currently have intensive row crop agriculture occurring. The cessation of tillage and chemical spraying on the setbacks will be an improvement over current conditions. In addition, naturalization of some setbacks, grass/legume plantings on berms and new shrub plantings on some berms will enhance conditions for grassland and shrub habitat bird species and will also enhance conditions for insect pollinators.

8.2 Restoration

Post-extraction, the lands will be returned to agriculture, so much of the top soil stored in the noise berms will be placed on the pit floor to re-create a substrate for farming. The berm margins along the outer edges of the licence could be left intact.

The setbacks along the outer margins of the former pit could be left in the naturalized condition or in the grass-legume mix that was planted on any berm margins that are left intact.

8.3 Long Term Conservation of Ecological Linkages and Environmental Features

8.3.1 Ecological Linkages

The key existing linkages are the fence rows/hedgerows which run north-south along both sides of the proposed pit. Also the east-west hedgerow present in the northern sector of the licence area connects to the two north-south pit margin linkages.

All of these linkages will benefit from naturalized site margin setbacks and/or berm plantings.

These new vegetated areas are expected to preserve and/or add to the width of the linkage polygons from the time of pit establishment onward.

8.3.2 Environmental Features

The two off site woodlands, the conifer plantation and the wetland/pond complex are the key environmental features.

The cessation of intensive row cropping and establishment of naturalized and/or planted grass/legume/shrub berms and setbacks will be a benefit during the life of the pit and into the more distant future, when these areas will probably remain untilled because of the topography of the rehabilitated agricultural lands.

In the case of the conifer plantation, the wetland/pond and adjacent buffers, these will be protected by the Open Space Z.11 zoning.

8.4 Ecologically Appropriate Boundary of the Significant Woodland

We recommend that the eastern dripline of the woodland be considered the boundary of the significant woodland adjacent to the proposed pit.

This recommendation is based on the following considerations:

1) The eastern drip line falls within lands that the proponent owns;
2) The edge is obvious and clearly defined because agricultural cropping is present up to, and along most of the interface, beneath the drip line;
3) The dripline is the functional outer edge of the woodland vegetation and the associated wildlife habitat; and
4) Given the flat topography and soils present there are no significant hydrologic contributions to the woodland from outside the drip line.

8.5 Delineation and Design of a Suitable Buffer Between the Significant Woodland and the Proposed Aggregate Operation

We recommend that a 10m wide undisturbed, ungraded buffer be established to the eastern margin of the drip line of the Regionally Significant Woodland. This width is consistent with the GNIG (2016).

We recommend that once the NETR/EIS report is accepted by all of the pertinent agencies, Dance Environmental Inc. staff should flag or stake the edge of the drip line and this demarcation should be checked in the field by Region of Waterloo staff. The final placement of the drip line that is agreed upon in the field should be surveyed by a professional third party and this line should be plotted. The plotted line will be circulated to the Regional staff person who checked the line in the field. Following agreement on the plotted drip line it should be drafted onto the Operational Plan by IBI.

Other elements of the buffer design include the following implementation recommendations:

a) Before any earthmoving occurs adjacent to the eastern margin of the buffer, silt control fence should be installed, it should be inspected at weekly intervals and repaired as soon as it is practical if repairs are necessary;
b) The 10m wide buffer should be allowed to naturalize with wild species which invade it from the Significant Woodland.
c) The closest toe of the noise berm should be located east of the silt fence, and as berm construction occurs the silt fence inspections and repairs should continue.
d) The noise berm should be seeded with a grass/legume restoration mix as soon as is practical, the germination of the seeding should be monitored and any follow up action required to achieve complete vegetation cover should be implemented; and
e) Removal of stored top soil in the berm and aggregate extraction shall occur only up to the eastern margin of the naturalized buffer, which will be 10m from the drip line of the Significant Woodland.

9.0 ECOLOGICAL MONITORING PROGRAM

The terrestrial features will be protected by buffers, setbacks, and fencing and no impacts are expected.

Although the wetland/pond features are expected to be protected by the range of mitigation measures recommended, there is a concentration of features in this location which will benefit from monitoring to ensure that impacts are not occurring. These features include:

- a Regionally Significant breeding bird;
- fish habitat;
- Significant Wildlife Habitat in the form of turtle overwintering habitat; and
- a Midland Painted Turtle population – a species which is pending status under the Ontario Species at Risk Act.

The proposal for ecological monitoring is as follows: implement the Marsh Monitoring Protocol to document the strength of amphibian choruses at one station adjacent to the pond on three nights during the breeding season. It is recommended that this monitoring occur for 5 consecutive years, to begin once extraction has begun in Phase 1.

Additional factors that will be documented will include:

- any sediment transport into the wetland;
- width and health of the wetland vegetation; and
- any other pertinent facts about wetland and pond conditions that are observed.

An annual report on monitoring results will be provided to the Region of Waterloo, GRCA, and MNRF. The amphibian chorus results will be interpreted relative to the 2018 baseline results and the water table monitoring results from the hydrogeologist at stations MW1 and SG1 will also be considered.

After 5 years, the need for continuing the monitoring will be reviewed.

10.0 SUMMARY AND RECOMMENDATIONS

10.1 Summary

Assuming that the recommended mitigation measures are successfully implemented no negative impacts on any significant natural environment features or functions are expected, this includes Level 1 factors under the ARA and significant elements of the Natural Heritage System under the Waterloo ROPP.

10.2 Recommendations

Specific recommendations are found in report sections 6.2 and 7, and the locations where many of the recommendations are to be implemented are illustrated on Figure 3.

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Report prepared by:
Dance Environmental Inc.

K.W. Dance, M.Sc.
President

K.S. Dance, M.E.S.
Senior Terrestrial Ecologist
And Partner

APPENDIX I

Final Terms of Reference
Prepared for
EACC.
March 6, 2019.

DANCE ENVIRONMENTAL INC.

March 6, 2019

Terms of Reference
for an EIS
for the Proposed Hallman Pit
Located at 1894 Witmer Road
Township of Wilmot, Regional Municipality of Waterloo.

Prepared by:
Dance Environmental Inc.
807566 Oxford Rd. 29
R.R. #1 Drumbo, ON
N0J 1G0
519-463-6156
Attn: Kevin Dance

A. BACKGROUND

At a Pre-consultation Meeting held on November 29, 2018, GRCA and Region of Waterloo staff requested that a Terms of Reference for the Scoped EIS for the proposed aggregate pit be prepared and submitted for review by the GRCA and the Region of Waterloo.

The content of the Final Draft Region of Waterloo Greenlands Network Implementation Guideline (GNIG) dated May 18, 2016 was referred to while preparing the EIS Terms of Reference.

The requirements of the Aggregate Resources Act will also be consulted to guide the content of the Natural Environment Technical Study Level 1 and Level 2 reports. Where applicable other important documents will be consulted in the completion of the EIS including the Provincial Policy Statement, 2014 (PPS); Growth Plan for the Greater Golden Horseshoe, 2017 (and specifically within it the Mineral Aggregate Resources Section 4.2.8).

The attached Figure 2 shows the site location and certain environmental features that are present in the study area.

B. EIS TERMS OF REFERENCE

1. Purpose and Rationale

The purpose and rationale of the above water table, proposed aggregate extraction would be described.

2. **Maps**, recent air photos and the Operational Plan will be provided to illustrate the location of the Greenlands Network; GRCA wetlands and regulated areas; and features and functions mapped by or administered by OMNRF as they pertain to the site and an off site study area of 120m.

Features and functions to be mapped will include all of those listed in 2.1.1 through 2.1.13, inclusive from the Scoped EIS guidelines in the GNIG.

3. The **EIS Terms of Reference** will be included as an Appendix to the EIS.

4. Existing Conditions

4.1 Environmental features and ecological communities will be mapped on a recent air photo base using ELC vegetation type descriptors.

4.2 An assessment of on site and adjacent vegetation quality will be provided.

4.3 Ecological Inventory

Biophysical surveys are to be undertaken in order to identify natural habitat and/or populations of Regionally significant plant and animal species in the natural areas on the subject lands that might be adversely affected by the proposed aggregate operation. The following sections indicate the types of inventories and the approaches which will be taken to complete the biophysical surveys.

4.3.1 Vegetation

Spring, Summer and Autumn inventory of natural habitats will occur.

4.3.2 Breeding Birds

OBBA methods will be used for 2 visits. Crepuscular birds will also be inventoried.

4.3.3 Herpetofauna

Marsh Monitoring Program methods will be used for frog chorus inventories on three dates.

Turtle basking and nesting surveys will be conducted.

Given the presence of former barn foundations on the site, visits will be made to detect basking snakes on warm, sunny days in Spring, to determine if a snake hibernaculum is present.

4.3.4 Fish

The pond that is present on the margin of the site will be evaluated for potential as fish habitat.

4.3.5 Insects

Surveys for Lepidoptera, Odonata and Bumble bees will be conducted during appropriate weather conditions.

4.3.6 Mammals

Mammal observations will be recorded based on sightings, tracks and scat occurrence.

4.3.7 Significant Wildlife Habitat

The SWH Technical Guide and the Ecoregion 6E SWH Criteria Schedule will be used to determine which SWH criteria are confirmed to be present on site and/or in the adjacent off site study area. This section will also address the offsite Significant Woodland which is considered a Core Environmental Feature by the Region.

4.3.8 Nuisance/Problem Species

Any pertinent species will be noted.

4.3.9 Other Species at Risk

Any other SAR will be addressed.

4.3.10 Wetland

The on site wetland margin will be flagged and confirmed with GRCA staff during a site visit before the boundary is surveyed in. The wetland boundary will be plotted on the Existing Conditions Plan of the ARA application and will be shown on Figures contained in the EIS. There is no Provincially Significant Wetlands (PPSW) on the subject lands or adjacent to the subject lands. The on site wetland which extends to the adjacent property, to the east, is part of the Schindelsteddle South Wetland Complex which is locally significant. The EIS will address the locally significant wetland which is present.

4.4 Ecological, Hydrological and Hydrogeological, Economic and Social Functions.

These will be addressed for the environmental features identified in 4.3, above. The EIS will discuss maintaining quantitative and qualitative aspects of the hydrological and hydrogeological regimes sustaining the wetlands on the subject lands, based on the findings and information from the hydrogeology report produced for the proposed undertaking.

4.5 Groundwater and Surface Water

Results of groundwater monitoring and interpretation of groundwater/surface water interactions will be summarized from reporting prepared by the water resource specialist Harden Environmental.

This discussion will address implications for wetland habitat and the pond located along the eastern margin of the site.

4.6 Sub-watershed Study

Findings of the Alder Creek Sub-watershed Study will be summarized as they relate to the present study area.

4.7 Impacts of Previous Development or Site Alternations

A description of the effects of any past site alterations on the environmental features and functions will be provided.

5.0 Proposed Site Alterations

The Operational Plan will illustrate proposed grading, extraction and berming limits and sequencing.

The proposed annual extraction quantities, haul routes, dust and noise control methods will be described.

The estimated duration of extraction at the pit in years will be indicated, as will the rehabilitation proposed.

The extent and timing of grading and any vegetation clearing will be described.

6.0 Anticipated Direct and Indirect Impacts

Text descriptions of expected direct and indirect impacts on site and off site natural environmental features and functions will be prepared. The analysis will include the likelihood of occurrence, areal extent, duration and potential for reversibility of impacts.

7.0 Prevention, Minimization and Mitigation of Impacts

This chapter will indicate how potential impacts are to be prevented, minimized and mitigated. This will include descriptions of setbacks, buffers and timing of activities to reduce the potential for and duration of impacts.

An ecologically appropriate boundary of the Significant Woodland at the western boundary of the area proposed to be licensed for extraction will be identified through the EIS.

The EIS will identify and show the design of a suitable buffer between the Significant Woodland and the other woodland features and the proposed aggregate extraction operation within the subject lands.

8.0 Opportunities for Ecological Enhancement, Restoration, Long Term Conservation of Ecological Linkages and Environmental Features

The EIS will identify opportunities for ecological enhancement, restoration and long-term stewardship on the subject lands which can be incorporated into the site rehabilitation plan.

9.0 Summary, Including Recommendations

The summary will discuss any predicted adverse environmental impacts and recommended measures that will be taken to prevent, minimize and mitigate any impacts.

Recommended conditions of development will be provided.

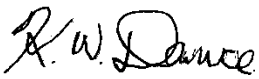
Recommendations will be made for long term management, conservation, enhancement or restoration of significant environmental features and functions on site and adjoining lands.

Recommended content of ecological monitoring will be described in terms of parameters, locations, timing, frequency and reporting. The content of a groundwater monitoring program for the proposed aggregate operation.

10.0 Appendices

Species lists including plants, ELC communities, breeding birds, Species at Risk, study methods, agencies contacted, bibliography and CV's of the EIS authors will be provided in appendices or text chapters, depending on which seems most effective to communicate the technical information.

Submitted by:



K.W. Dance, M.Sc.
President
Dance Environmental Inc.
March 6, 2019.

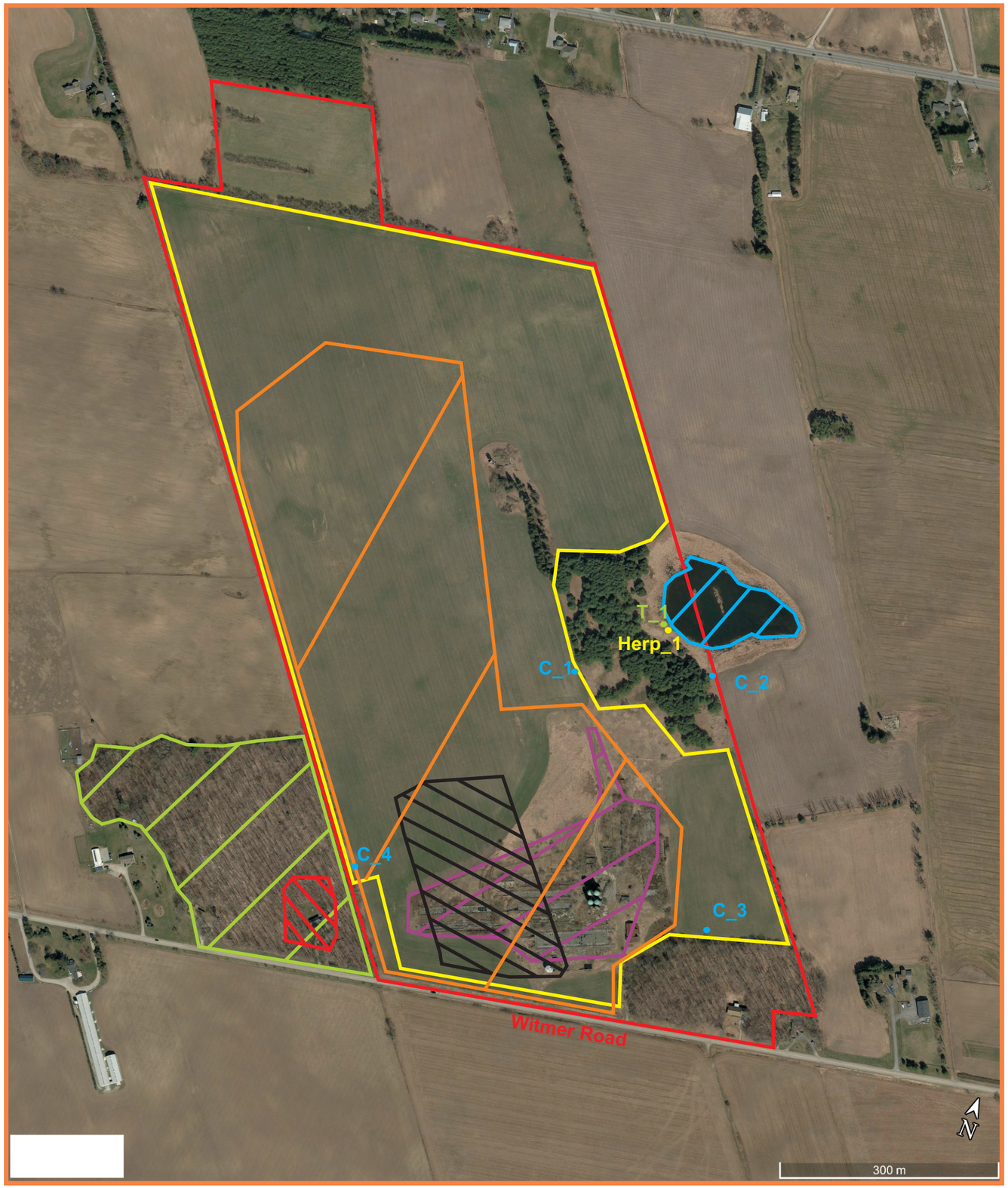


Figure 2. Study Area Boundaries and Survey Station Locations, Proposed Pit, Wilmot.

LEGEND

- Approximate Proposed Limit of Extraction Boundary
- Approximate Study Area Boundary
- Significant Woodland (Waterloo Region O.P., 20-15)
- Wintering Turtle Habitat
- Area Searched for Potential Snake Hibernacula

Areas within which SAR species were observed

- Approximate area where Eastern Wood-pewee were heard during Breeding season 2018.
- Approximate area where Barn Swallows were observed (foraging/perching).
- Approximate area where Bank Swallow were observed foraging.

Survey Station Locations, 2018

- T_1 — Turtle count location.
- C_1 — Crepuscular bird survey station location.
- Herp_1 — Herpetofauna survey station (MMP).

DANCE ENVIRONMENTAL INC.

DE-428
Nov. 21, 2018

APPENDIX II

Plant Species List
for
Study Area.

Appendix I. Herbaceous Plant Species List, Hallman Pit

BOTANICAL NAME	COMMON NAME	Off Site	Off Site	On Site	On Site	On Site	Off Site	COEFFICIENT OF CONSERVATISM	WETNESS INDEX	WEEDINESS INDEX	PROVINCIAL STATUS	OMNR STATUS	COSEWIC STATUS	LOCAL STATUS WATE
	SOURCE:	FOCM6-1	MAMM1-3	IAG	FODM5-11	TAGM5	FODM5-9 A& B	OLDHAM ET AL	OLDHAM ET AL	OLDHAM ET AL	MNR RARE 4th Ed. 2009	SARO List	SARA Registry	
PTERIDOPHYTES	**FERNS & ALLIES**													
Dryopteridaceae	**Wood Fern Family**													
Dryopteris carthusiana	Spinulose Wood Fern						X	5	-2		S5			
Equisetaceae	**Horsetail Family**													
Equisetum arvense	Field Horsetail		X					0	0		S5			
Pinaceae	**Pine Family**													
Picea glauca	White Spruce	X				X		6	3		S5			R+
Pinus strobus	Eastern White Pine	X				X		4	3		S5			
DICOTYLEDONS	**DICOTS**													
Aceraceae	**Maple Family**													
Acer negundo	Manitoba Maple	X			X	X		0	-2		S5			
Acer saccharum ssp. saccharum	Sugar Maple	X				X	X	4	3		S5			
Anacardiaceae	**Sumac or Cashew Family**													
Rhus hirta	Staghorn Sumac	X		X	X	X	X	1	5		S5			
Apiaceae	**Carrot or Parsley Family**													
Daucus carota	Wild Carrot			X		X			5	-2	SE5			
Aristolochiaceae	**Duchman's-pipe Family**													
Asarum canadense	Wild Ginger						X	6	5		S5			
Asclepiadaceae	**Milkweed Family**													
Asclepias syriaca	Common Milkweed	X	X	X		X		0	5		S5			
Cynanchum rossicum	Swallow-wort	X									SE5			
Asteraceae	**Composite or Aster Family**													
Achillea millefolium ssp. millefolium	Common Yarrow			X					3	-1	SE?			
Ambrosia artemisiifolia	Common Ragweed			X		X	X	0	3		S5			
Arctium minus ssp. minus	Common Burdock	X	X		X	X	X		5	-2	SE5			
Carduus nutans ssp. nutans	Musk Thistle	X	X	X					5	-1	SE?			
Cichorium intybus	Chicory			X					5	-1	SE5			
Cirsium arvense	Canada Thistle	X	X			X			3	-1	SE5			
Erigeron annuus	Daisy Fleabane		X	X				0	1		S5			
Eupatorium perfoliatum	Perfoliate Thoroughwort		X					2	-4		S5			
Euthamia graminifolia	Flat-topped Bushy Goldenrod	X						2	-2		S5			
Solidago altissima var. altissima	Tall Goldenrod		X					1	3		S5			
Solidago canadensis	Canada Goldenrod	X	X		X	X		1	3		S5			

BOTANICAL NAME	COMMON NAME	Off Site	Off Site	On Site	On Site	On Site	Off Site	COEFFICIENT OF CONSERVATISM	WETNESS INDEX	WEEDINESS INDEX	PROVINCIAL STATUS	OMNR STATUS	COSEWIC STATUS	LOCAL STATUS WATE
	SOURCE:	FOCM6-1	MAMM1-3	IAG	FODM5-1.1	TAGM5	FODM5-9 A& B	OLDHAM ET AL	OLDHAM ET AL	OLDHAM ET AL	MNR RARE 4th Ed. 2009	SARO List	SARA Registry	
Solidago flexicaulis	Zig-zag Goldenrod						X	6	3		S5			
Solidago juncea	Early Goldenrod						X	3	5		S5			
Sonchus arvensis ssp. arvensis	Field Sow-thistle	X				X					SE5			
Symphyotrichum lanceolatum	Panicled Aster	X			X			3	-3		S5			
Symphyotrichum lateriflorum var. lateriflorum	Calico Aster		X	X		X	X	3	-2		S5			
Symphyotrichum puniceum var. puniceum	Purple-stemmed Aster		X								S5			
Taraxacum officinale	Common Dandelion	X		X	X	X			3	-2	SE5			
Berberidaceae	**Barberry Family**													
Caulophyllum thalictroides	Blue Cohosh						X	6	5		S5			
Boraginaceae	**Borage Family**													
Echium vulgare	Blueweed			X					5	-2	SE5			
Brassicaceae	**Mustard Family**													
Alliaria petiolata	Garlic Mustard	X			X	X	X		0	-3	SE5			
Hesperis matronalis	Dame's Rocket	X					X		5	-3	SE5			
Caprifoliaceae	**Honeysuckle Family**													
Lonicera tatarica	Tartarian Honeysuckle				X				3	-3	SE5			
Sambucus racemosa ssp. pubens	Red-berried Elderberry	X						5	2		S5			
Caryophyllaceae	**Pink Family**													
Saponaria officinalis	Bouncing-bet					X			3	-3	SE5			
Silene latifolia	Bladder Campion			X							SE5			
Chenopodiaceae	**Goosefoot Family**													
Chenopodium album var. album	Lamb's Quarters	X	X	X	X	X	X		1	-1	SE5			
Convolvulaceae	**Morning-glory Family**													
Convolvulus arvensis	Field Bindweed			X			X		5	-1	SE5			
Cornaceae	**Dogwood Family**													
Cornus alternifolia	Alternate-leaved Dogwood						X	6	5		S5			
Cornus stolonifera	Red-osier Dogwood		X	X				2	-3		S5			
Cucurbitaceae	**Gourd Family**													
Echinocystis lobata	Prickly Cucumber	X	X		X	X	X	3	-2		S5			

BOTANICAL NAME	COMMON NAME	Off Site	Off Site	On Site	On Site	On Site	Off Site	COEFFICIENT OF CONSERVATISM	WETNESS INDEX	WEEDINESS INDEX	PROVINCIAL STATUS	OMNR STATUS	COSEWIC STATUS	LOCAL STATUS WATE
	SOURCE:	FOCM6-1	MAMM1-3	IAG	FODM5-11	TAGM5	FODM5-9 A& B	OLDHAM ET AL	OLDHAM ET AL	OLDHAM ET AL	MNR RARE 4th Ed. 2009	SARO List	SARA Registry	
Dipsacaceae	**Teasel Family**													
Dipsacus fullonum ssp. sylvestris	Wild Teasel					X			5	-1	SE5			
Fabaceae	**Pea Family**													
Coronilla varia	Variable Crown-vetch	X	X						5	-2	SE5			
Lotus corniculatus	Bird's-foot Trefoil			X					1	-2	SE5			
Medicago sativa ssp. sativa	Alfalfa	X		X	X				5	-1	SE5			
Melilotus altissima	Tall Sweet-clover			X					5	-1	SE1			
Robinia pseudo-acacia	Black Locust			X					4	-3	SE5			
Trifolium pratense	Red Clover			X					2	-2	SE5			
Trifolium repens	White Clover			X					2	-1	SE5			
Fagaceae	**Beech Family**													
Fagus grandifolia	American Beech						X	6	3		S5			
Quercus macrocarpa	Bur Oak						X	5	1		S5			
Quercus rubra	Red Oak						X	6	3		S5			
Geraniaceae	**Geranium Family**													
Geranium robertianum	Herb-robert	X					X		5	-2	SE5			
Hydrophyllaceae	**Water-leaf Family**													
Hydrophyllum canadense	Broad-leaved Water-leaf						X	8	-2		S4			
Hydrophyllum virginianum	Virginia Water-leaf						X	6	-2		S5			
Juglandaceae	**Walnut Family**													
Carya cordiformis	Bitternut hickory	X		X			X	6	0		S5			
Juglans nigra	Black Walnut				X		X	5	3		S4			R+*
Lamiaceae	**Mint Family**													
Glechoma hederacea	Creeping Charlie						X		5	-2	SE5			
Leonurus cardiaca ssp. cardiaca	Common Motherwort		X		X	X	X		5	-2	SE5			
Lycopus uniflorus	Northern Water-horehound		X					5	-5		S5			
Mentha arvensis ssp. borealis	American Wild Mint	X	X					3	-3		S5			
Nepeta cataria	Catnip			X	X		X		1	-2	SE5			
Malvaceae	**Mallow Family**													
Abutilon theophrasti	Velvet-leaf		X	X		X			4	-1	SE5			
Moraceae	**Mulberry Family**													
Morus alba	White Mulberry	X		X	X	X	X		0	-3	SE5			
Oleaceae	**Olive Family**													
Fraxinus americana	White Ash	X			X		X	4	3		S5			
Fraxinus pennsylvanica	Green Ash					X		3	-3		S5			
Syringa vulgaris	Common Lilac					X			5	-2	SE5			

BOTANICAL NAME	COMMON NAME	Off Site	Off Site	On Site	On Site	On Site	Off Site	COEFFICIENT OF CONSERVATISM	WETNESS INDEX	WEEDINESS INDEX	PROVINCIAL STATUS	OMNR STATUS	COSEWIC STATUS	LOCAL STATUS WATE
	SOURCE:	FOCM6-1	MAMM1-3	IAG	FODM5-1.1	TAGM5	FODM5-9 A& B	OLDHAM ET AL	OLDHAM ET AL	OLDHAM ET AL	MNR RARE 4th Ed. 2009	SARO List	SARA Registry	
Onagraceae	**Evening-primrose Family**													
Circaea alpina	Smaller Enchanter's Nightshade	x					x	6	-3		S5			
Oenothera biennis	Common Evening-primrose					X		0	3		S5			
Oxalidaceae	**Wood Sorrel Family**													
Oxalis stricta	Upright Yellow Wood-sorrel				X			0	3		S5			
Papaveraceae	**Poppy Family**													
Chelidonium majus	Celandine	X					X		5	-3	SE5			
Sanguinaria canadensis	Bloodroot	X					X	5	4		S5			
Plantaginaceae	**Plantain Family**													
Plantago major	Common Plantain			X					-1	-1	SE5			
Polygonaceae	**Smartweed Family**													
Polygonum persicaria	Lady's-thumb			X					-3	-1	SE5			
Rumex crispus	Curly-leaf Dock	X		X			X		-1	-2	SE5			
Rumex obtusifolius ssp. obtusifolius	Bitter Dock			X					-3	-1	SE5			
Ranunculaceae	**Buttercup Family**													
Actaea pachypoda	White Baneberry						X	6	5		S5			
Actaea rubra	Red Baneberry						X	5	5		S5			
Anemone acutiloba	Sharp-lobed Hepatica						X	6	5		S5			
Aquilegia canadensis	Wild Columbine						X	5	1		S5			
Rhamnaceae	**Buckthorn Family**													
Rhamnus cathartica	Common Buckthorn	X		X	X	X	X		3	-3	SE5			
Rhamnus frangula	Glossy Buckthorn			X					-1	-3	SE5			
Rosaceae	**Rose Family**													
Fragaria virginiana	Wild Strawberry	X									S5			
Geum aleppicum	Yellow Avens		X					2	-1		S5			
Malus pumila	Common Apple				X				5	-1	SE5			
Potentilla argentea	Silvery Cinquefoil			X					3	-2	SE5			
Prunus serotina	Black Cherry					X	X	3	3		S5			
Prunus virginiana ssp. virginiana	Choke Cherry	X				X		2	1		S5			
Pyrus communis	Common Pear					X			5	-1	SE4			
Rubus idaeus ssp. idaeus	Red Raspberry		X		X	X	X				SE1			
Rubus parviflorus	Sparse-flowered Thimbleberry	X	X				X	7	2		S4			
Rubiaceae	**Madder Family**													
Galium triflorum	Sweet-scented Bedstraw	X	X	X		X		4	2		S5			

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	SOURCE:	FOCM6-1	MAMM1-3	IAG	FODM5-11	TAGM5	FODM5-9 A& B	OLDHAM ET AL	OLDHAM ET AL	OLDHAM ET AL	MNR RARE 4th Ed. 2009	SARO List	SARA Registry	
Salicaceae	**Willow Family**													
Populus deltoides	Eastern Cottonwood			X	X						S5			
Populus deltoides ssp. deltoides	Eastern Cottonwood							4	-1		SU			R+
Populus grandidentata	Large-tooth Aspen				X			5	3		S5			
Salix fragilis	Crack Willow		X						-1	-3	SE5			
Salix petiolaris	Slender Willow			X				3	-4		S5			
Scrophulariaceae	**Figwort Family**													
Verbascum thapsus	Common Mullein	X	X	X	X				5	-2	SE5			
Solanaceae	**Nightshade Family**													
Solanum dulcamara	Bitter Nightshade	X		X	X		X		0	-2	SE5			
Tiliaceae	**Linden Family**													
Tilia americana	American Basswood						X	4	3		S5			
Ulmaceae	**Elm Family**													
Ulmus americana	White Elm						X	3	-2		S5			
Urticaceae	**Nettle Family**													
Urtica dioica ssp. dioica	European Stinging Nettle	X	X	X		X	X		-1	-1	SE2			
Violaceae	**Violet Family**													
Viola pubescens	Downy Yellow Violet						X	5	4		S5			
Viola sororia	Woolly Blue Violet						X	4	1		S5			
Vitaceae	**Grape Family**													
Parthenocissus inserta (or P. vitacea)	Woodbine			X	X	X	X	3	3		S5			
Vitis riparia	Riverbank Grape	X		X	X	X	X	0	-2		S5			
Araceae	**Arum Family**													
Arisaema triphyllum ssp. triphyllum	Small Jack-in-the-pulpit						X	5	-2		S5			
Cyperaceae	**Sedge Family**													
Schoenoplectus tabernaemontani	American Great Bulrush	X						5	-5		S5			
Liliaceae	**Lily Family**													
Allium tricoccum	Wild Leek						X	7	2		S5			
Asparagus officinalis	Garden Asparagus				X				3	-1	SE5			
Maianthemum racemosum ssp. racemosum	False Solomon's Seal						X	4	3		S5			
Trillium erectum	Purple Trillium						X	6	1		S5			

BOTANICAL NAME	COMMON NAME	Off Site	Off Site	On Site	On Site	On Site	Off Site	COEFFICIENT OF CONSERVATISM	WETNESS INDEX	WEEDINESS INDEX	PROVINCIAL STATUS	OMNR STATUS	COSEWIC STATUS	LOCAL STATUS WATE
	SOURCE:	FOCM6-1	MAMM1-3	IAG	FODM5-11	TAGM5	FODM5-9 A& B	OLDHAM ET AL	OLDHAM ET AL	OLDHAM ET AL	MNR RARE 4th Ed. 2009	SARO List	SARA Registry	
Trillium grandiflorum	White Trillium						X	5	5		S5			
Poaceae	**Grass Family**													
Agrostis stolonifera	Redtop			X					-3		S5			
Bromus inermis ssp. inermis	Awnless Brome	X			X	X	X		5	-3	SE5			
Dactylis glomerata	Orchard Grass	X		X	X	X	X		3	-1	SE5			
Digitaria ischaemum	Small Crabgrass			X					3	-1	SE5			
Echinochloa crusgalli	Common Barnyard Grass			X					-3	-1	SE5			
Glyceria striata	Fowl Meadow Grass						X	3	-5		S5			
Panicum capillare	Witch Grass			X		X		0	0		S5			
Phalaris arundinacea	Reed Canary Grass		X					0	-4		S5			
Phleum pratense	Timothy			X					3	-1	SE5			
Poa pratensis ssp. pratensis	Kentucky Bluegrass	X		X	X			0	1		S5			
Setaria faberi	Giant Foxtail	X			X				2	-1	SE4			
Setaria viridis	Green Foxtail	X		X	X	X	X			-1	SE5			
Typhaceae	**Cattail Family**													
Typha latifolia	Broad-leaved Cattail		X					3	-5		S5			

LEGEND

Floral Quality Index and Coefficient of Conservatism Values

General habitat values associated with the CC values are:

0-3: species found in a wide variety of communities, including disturbed sites

4-6: species associated with a specific community, but tolerate moderate disturbance

7-8: species associated with a community in an advanced successional stage, tolerant of minor disturbances

9-10: species with a high degree of fidelity to a narrow range of synecological parameters

Weediness Index

-1: little or no impact on natural areas (most non-native plants are in this category)

-2: occasional impacts on natural areas, generally infrequent or localized

-3: major potential impacts on natural areas

Wetness Index

OBL (Obligate Wetland): occurs almost always in wetlands under natural conditions (estimated >99% probability)

FACW (Facultative Wetland): usually occurs in wetlands, but occasionally found in non-wetlands (estimated 67-99% probability)

FAC (Facultative): equally likely to occur in wetlands or non-wetlands (estimated 34-66% probability)

FACU (Facultative Upland): occasionally occurs in wetlands, but usually occurs in non-wetlands (estimated 1-33% probability)

UPL (Upland): occurs almost never in wetlands under natural conditions (estimated <1% probability)

Each wetland category has been assigned a numerical value to facilitate the quantification of the wetness index. The wetland categories and their corresponding values are as follows:

OBL : -5	FACW-: -2	FAC-: 1	FACU-: 4
FACW+: -4	FAC+: -1	FACU+: 2	UPL: 5
FACW: -3	FAC: 0	FACU: 3	

Provincial Status

S4: Apparantly Secure; uncommon but not rare; some cause for long-term concern due to decline or other factors; usually more than 100 occurrences.

S5: Secure in Ontario; common, widespread and abundant in the province

SNR: Unranked in Ontario; conservation status not yet assessed

SU: Unrankable; currently unrankable due to lack of information or due to substantially conflicting information about staus or trends

SNA: Not Applicable - a conservation status rank is not applicable because the species is not a suitable target for conservation

SE: Exotic; not believed to be a native component of Ontario's flora. Numerical rankings after SE follow designations described above

APPENDIX III

Bird Species List
For
Study Area,
2018

Appendix II. Hallamn Pit, Wilmot

Avian Species Observed and Known from Study Area

Scientific Name	Common Name	CODE	Dance Environmental Biologist Observations						GRANK	SRANK	COSEWIC	SARO	Region of Waterloo Significant Breeding Birds
			(FOCM6-1)	(IAG)	(MAMM1-3 & OAO)	(FODM5-11)	(TAGM5)	(FODM5-9 A & B)					
	Ducks, Geese & Swans												
Branta canadensis	Canada Goose	CAGO		B(o)	S, B, P				G5	S5			
Aix sponsa	Wood Duck	WODU			S				G5	S5			√*
Anas americana	American Wigeon	AMWI			S				G5	S4			√
Anas platyrhynchos	Mallard	MALL		B(o)	S, B, P				G5	S5			
Aythya collaris	Ring-necked Duck	RNDU			S				G5	S5			√
Bucephala albeola	Bufflehead	BUFF			S				G5	S4			
	Partridges, Grouse & Turkeys												
Meleagris gallopavo	Wild Turkey	WITU	S	S					G5	S5			
	GREBES												
Podilymbus podiceps	Pied-billed Grebe	PBGR			S, B, P				G5	S4B, S4N			√
	HERONS & BITTERNS												
Ardea herodias	Great Blue Heron	GBHE	B(o)	B(o)			B(o)		G5	S4B			√
	VULTURES												
Cathartes aura	Turkey Vulture	TUVU		S, B(o), P(o)		P(o)		S(o)	G5	S5B			√
	HAWKS, KITES & EAGLES												
Accipiter striatus	Sharp-shinned Hawk	SSHA		P(o)					G5	S5		NAR	√
Accipiter cooperii	Cooper's Hawk	COHA		W(o)					G5	S4	NAR	NAR	√
Buteo jamaicensis	Red-tailed Hawk	RTHA		S(o), B(o), W(o)			B(o)	S, B	G5	S5	NAR	NAR	
	CARACARAS & FALCONS												
Falco sparverius	American Kestrel	AMKE		S					G5	S4			
	PLOVERS												
Charadrius vociferus	Killdeer	KILL		S	S(o)		B		G5	S5B, S5N			
	SANDPIPERS & PHALAROPES												
Actitis macularia	Spotted Sandpiper	SPSA			B				G5	S5			
	GULLS, TERNS & SKIMMERS												
Larus delawarensis	Ring-billed Gull	RBGU			S				G5	S5B, S4N			
Hydroprogne caspia	Caspian Tern	CATE			P				G5	S3B	NAR	NAR	√
	PIGEONS & DOVES												
Columba livia	Rock Pigeon	ROPI		S, B					G5	SNA			
Zenaida macroura	Mourning Dove	MODO		B(o), P		B, P	P		G5	S5			
	TYPICAL OWLS												
Otus asio	Eastern Screech-Owl	EASO						W	G5	S4	NAR	NAR	
Bubo virgianus	Great Horned Owl	GHOW	S, P	S(o)				S	G5	S4			
	WOODPECKERS												
Melanerpes carolinus	Red-bellied Woodpecker	RBWO						S, P	G5	S4			√
Picoides pubescens	Downy Woodpecker	DOWO	P				B	S, B, P, W	G5	S5			
Picoides villosus	Hairy Woodpecker	HAWO	B						G5	S5			
Colaptes auratus	Northern Flicker	NOFL		S				S, B, P	G5	S4B			
	TYRANT FLYCATCHERS												
Contopus virens	Eastern Wood-Pewee	EAWP						B	G5	S4B	SC	SC	
Sayornis phoebe	Eastern Phoebe	EAPH		S, B					G5	S5B			
Myiarchus crinitus	Great Crested Flycatcher	GCFL						S, B	G5	S4B			
Tyrannus tyrannus	Eastern Kingbird	EAKI	B		S, B		B	B	G5	S4B			
	VIREOS												
Vireo olivaceus	Red-eyed Vireo	REVI						S, B, P	G5	S5B			
	CROWS & JAYS												
Cyanocitta cristata	Blue Jay	BLJA	P	B(o), P(o)		P		S, B, P, W	G5	S5			
Corvus brachyrhynchos	American Crow	AMCR	B, P, W(o)	, B(o), P(o), W(	S	B, P	B, P(o)	S, B, W	G5	S5B			
	LARKS												
Eremophila alpestris	Horned Lark	HOLA		S, B			B		G5	S5B			
	SWALLOWS												
Tachycineta bicolor	Tree Swallow	TRES		S(o)	S, B				G5	S4B			
Riparia riparia	Bank Swallow	BANS		S					G5	S4B			
Hirundo rustica	Barn Swallow	BARS	S(o)	S(o), B(o), P			B(o)		G5	S4B	T	**THR**	
	CHICKADEES & TITMICE												
Poecile atricapillus	Black-capped Chickadee	BCCH	S, B, P, W		S			S, B	G5	S5			
	NUTHATCHES												
Sitta carolinensis	White-breasted Nuthatch	WBNU						S	G5	S5			
	WRENS												
Troglodytes aedon	House Wren	HOWR		B		B		S, B, P	G5	S5B			
	KINGLETS												
Regulus satrapa	Golden-crowned Kinglet	GCKI	S					S	G5	S5B			√
Regulus calendula	Ruby-crowned Kinglet	RCKI	S						G5	S4B			√
	THRUSHES												
Sialia sialis	Eastern Bluebird	EABL					B		G5	S5B	NAR	NAR	√
Catharus guttatus	Hermit Thrush	HETH						S	G5	S5B			
Turdus migratorius	American Robin	AMRO	S	S, B		B, P	P	B	G5	S5B			

Scientific Name	Common Name	CODE	(FOCM6-1)	(IAG)	(MAMM1-3 & OAO)	(FODM5-11)	(TAGM5)	(FODM5-9 A & B)	GRANK	SRANK	COSEWIC	SARO	Region of Waterloo Significant Breeding Bir
	MOCKINGBIRDS & THRASHERS												
Dumetella carolinensis	Gray Catbird	GRCA						B	G5	S4B			
Toxostoma rufum	Brown Thrasher	BRTH					B		G5	S4B			√
	STARLINGS												
Sturnus vulgaris	European Starling	EUST		S, B		P	P	S, B	G5	SNA			
	WAXWINGS												
Bombycilla cedrorum	Cedar Waxwing	CEDW	B						G5	S5B			
	WOOD-WARBLERS												
Dendroica petechia	Yellow Warbler	YWAR	B						G5	S5B			
Dendroica pinus	Pine Warbler	PIWA	S						G5	S5B			√
	SPARROWS												
Spizella arborea	American Tree Sparrow	ATSP		W					G5	S4B			
Spizella passerina	Chipping Sparrow	CHSP	S, B, P	B	S		B	B	G5	S5B			
Pooecetes gramineus	Vesper Sparrow	VESP		B, P			B, P		G5	S4B			√
Passerculus Sandwichensis	Savannah Sparrow	SAVS		B		B			G5	S4B			
Melospiza melodia	Song Sparrow	SOSP	S, B, P	S, B, P	S, P	B	B	S, B, P	G5	S5B			
Zonotrichia albicollis	White-throated Sparrow	WTSP	S, P				P	P	G5	S5B			√
Junco hyemalis	Dark-eyed Junco	DEJU		W					G5	S5B			
	CARDINALS & ALLIES												
Cardinalis cardinalis	Northern Cardinal	NOCA	S, B, P			B	B	S, B	G5	S5			
Passerina cyanea	Indigo Bunting	INBU	B	B		B	B	S, B	G5	S4B			
	BLACKBIRDS												
Agelaius phoeniceus	Red-winged Blackbird	RWBL	S, B	S, B	S, B, P		B, P		G5	S4			
Quiscalus quiscula	Common Grackle	COGR		S, B(o), P(o)	S	B		S, P	G5	S5B			
Molothrus ater	Brown-headed Cowbird	BHCO		S, B	S		B	B	G5	S4B			
Icterus galbula	Baltimore Oriole	BAOR		B(o)		B		S, B	G5	S4B			
	FINCHES												
Carduelis flammea	Common Redpoll	CORE		W					G5	S4B			
Carduelis tristis	American Goldfinch	AMGO	S, B	B(o), P(o)	S	B	B, P	S, B, P	G5	S5B			
	OLD WORLD SPARROWS												
Passer domesticus	House Sparrow	HOSP						S	G5	SNA			

LEGEND

Season of Observion

S= Spring 2018 (April 21, 22, 30; May 1, 8, 15, 23, 29)
B= Breeding season 2018 (June 5 and 22)
P= Post-breeding season 2018 (July 5; Sept 17, 20)
W=Winter 2019 (Feb 5, 19, March 6)

G-Rank (Global Rank)

G4- Apparently Secure	Uncommon but not rare; some cause for long-term concern due to declines or other factors.
G5- Secure	Common; widespread and abundant.

S-Rank (Provincial Rank)

S3- Vunerable	Vulnerable in the nation or state/province due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors making it vulnerable to extirpation.
S4- Apparently Secure	Uncommon but not rare; some cause for long-term concern due to declines or other factors.
S5- Secure	Common, widespread, and abundant in the nation or state/province.
SNA- Not Applicable	A conservation status rank is not applicable because the species is not a suitable target for conservation activities.

COSEWIC (National Status)

T (Threatened)	A wildlife species that is likely to become endangered if nothing is done to reverse the factors leading to its extirpation or extinction.
SC (Special Concern)	A wildlife species that may become threatened or endangered because of a combination of biological characteristics and identified threats.
NAR (Not at Risk)	A wildlife species that has been evaluated and found to be not at risk of extinction given the current circumstances.

SARO (Provincial Status)

THR =Threatened	A species that is at risk of becoming endangered in Ontario if limiting factors are not reversed.
SC =Special Concern	A species with characteristics that make it sensitive to human activities or natural events.

Waterloo Region:
√ Regionally Significant
√* Significant only when nesting in natural circumstances

APPENDIX IV

Second OBBA
Breeding Bird Data
For
Square 17NJ30

Hallman Pit: 2nd OBBA Summary, Square 17NJ30

Species list for square 17NJ30 (number of entries returned: 101)

Region	Square	Species	Breeding Evidence				Point Counts			
			Max BE	Categ	#Sq	Atlasser Name	#PC	%PC	Abun	#Sq
7	17NJ30	Canada Goose	NE	CONF	1	Fraser Gibson				
7	17NJ30	Wood Duck	FY	CONF	1	Fraser Gibson				
7	17NJ30	Mallard	FY	CONF	1	Fraser Gibson	3	11.11	0.5556	1
7	17NJ30	Blue-winged Teal	A	PROB	1	Fraser Gibson				
7	17NJ30	Hooded Merganser	V	PROB	1					
7	17NJ30	Ruffed Grouse	H	POSS	1	Fraser Gibson				
7	17NJ30	Wild Turkey	FY	CONF	1	Fraser Gibson				
7	17NJ30	Pied-billed Grebe	T	PROB	1	Fraser Gibson				
7	17NJ30	Green Heron	T	PROB	1	Fraser Gibson				
7	17NJ30	Turkey Vulture	FY	CONF	1	Fraser Gibson				
7	17NJ30	Northern Harrier	H	POSS	1	Fraser Gibson				
7	17NJ30	Sharp-shinned Hawk	FY	CONF	1	Fraser Gibson				
7	17NJ30	Cooper's Hawk	NY	CONF	1	Fraser Gibson				
7	17NJ30	Red-tailed Hawk	NY	CONF	1	Fraser Gibson				
7	17NJ30	American Kestrel	CF	CONF	1	Fraser Gibson				
7	17NJ30	Virginia Rail	T	PROB	1	Fraser Gibson				
7	17NJ30	Sora	T	PROB	1	Fraser Gibson				
7	17NJ30	Common Gallinule	T	PROB	1					
7	17NJ30	Killdeer	FY	CONF	1		4	14.81	0.1481	1
7	17NJ30	Rock Pigeon	NU	CONF	1	Fraser Gibson	4	14.81	0.6667	1
7	17NJ30	Spotted Sandpiper	FY	CONF	1	Fraser Gibson				
7	17NJ30	American Woodcock	DD	CONF	1					
7	17NJ30	Mourning Dove	AE	CONF	1	Fraser Gibson	13	48.15	0.8889	1
7	17NJ30	Yellow-billed Cuckoo	S	POSS	1	Fraser Gibson				
7	17NJ30	Black-billed Cuckoo	S	POSS	1	Fraser Gibson				
7	17NJ30	Eastern Screech-Owl	T	PROB	1	Fraser Gibson				
7	17NJ30	Great Horned Owl	NY	CONF	1	2 atlassers				
7	17NJ30	Long-eared Owl	T	PROB	1	Fraser Gibson				
7	17NJ30	Common Nighthawk	P	PROB	1	Fraser Gibson				
7	17NJ30	Chimney Swift	V	PROB	1	Fraser Gibson				
7	17NJ30	Ruby-throated Hummingbird	T	PROB	1					
7	17NJ30	Belted Kingfisher	T	PROB	1	Fraser Gibson	1	3.7	0.037	1
7	17NJ30	Red-headed Woodpecker	CF	CONF	1	Fraser Gibson				
7	17NJ30	Red-bellied Woodpecker	CF	CONF	1	Fraser Gibson				

7	17NJ30	Yellow-bellied Sapsucker	S	POSS	1	Fraser Gibson				
7	17NJ30	Downy Woodpecker	NY	CONF	1	Fraser Gibson				
7	17NJ30	Hairy Woodpecker	NY	CONF	1	Fraser Gibson				
7	17NJ30	Northern Flicker	AE	CONF	1	Fraser Gibson	1	3.7	0.037	1
7	17NJ30	Pileated Woodpecker	V	PROB	1					
7	17NJ30	Eastern Wood-Pewee	NY	CONF	1	Fraser Gibson	2	7.41	0.1481	1
7	17NJ30	Willow Flycatcher	CF	CONF	1	Fraser Gibson				
7	17NJ30	Least Flycatcher	T	PROB	1	Fraser Gibson				
7	17NJ30	Eastern Phoebe	T	PROB	1	Fraser Gibson				
7	17NJ30	Great Crested Flycatcher	AE	CONF	1		1	3.7	0.037	1
7	17NJ30	Eastern Kingbird	CF	CONF	1	Fraser Gibson	3	11.11	0.1481	1
7	17NJ30	Yellow-throated Vireo	S	POSS	1	Fraser Gibson				
7	17NJ30	Blue-headed Vireo	S	POSS	1	Fraser Gibson				
7	17NJ30	Warbling Vireo	AE	CONF	1	Fraser Gibson				
7	17NJ30	Red-eyed Vireo	T	PROB	1		1	3.7	0.0741	1
7	17NJ30	Blue Jay	AE	CONF	1	Fraser Gibson	4	14.81	0.1852	1
7	17NJ30	American Crow	CF	CONF	1	Fraser Gibson	16	59.26	1.5556	1
7	17NJ30	Horned Lark	CF	CONF	1		11	40.74	0.8148	1
7	17NJ30	Tree Swallow	NY	CONF	1	Fraser Gibson	4	14.81	0.3704	1
7	17NJ30	Northern Rough-winged Swallow	FY	CONF	1		1	3.7	0.0741	1
7	17NJ30	Bank Swallow	AE	CONF	1	Fraser Gibson				
7	17NJ30	Cliff Swallow	NU	CONF	1	Fraser Gibson				
7	17NJ30	Barn Swallow	AE	CONF	1	Fraser Gibson	4	14.81	0.2222	1
7	17NJ30	Black-capped Chickadee	NY	CONF	1		4	14.81	0.2593	1
7	17NJ30	Red-breasted Nuthatch	P	PROB	1	Fraser Gibson				
7	17NJ30	White-breasted Nuthatch	CF	CONF	1	Fraser Gibson	1	3.7	0.0741	1
7	17NJ30	Brown Creeper	P	PROB	1	Fraser Gibson				
7	17NJ30	House Wren	NY	CONF	1	Fraser Gibson				
7	17NJ30	Winter Wren	H	POSS	1	Fraser Gibson				
7	17NJ30	Blue-gray Gnatcatcher	P	PROB	1	Fraser Gibson				
7	17NJ30	Eastern Bluebird	NE	CONF	1	Fraser Gibson	3	11.11	0.1111	1
7	17NJ30	Wood Thrush	NY	CONF	1	Lyle Friesen	1	3.7	0.0741	1
7	17NJ30	American Robin	NY	CONF	1	Fraser Gibson	18	66.67	1.5556	1
7	17NJ30	Gray Catbird	CF	CONF	1	Fraser Gibson	1	3.7	0.037	1
7	17NJ30	Brown Thrasher	CF	CONF	1	Fraser Gibson				
7	17NJ30	European Starling	NY	CONF	1	Fraser Gibson	23	85.19	5.6296	1
7	17NJ30	Cedar Waxwing	T	PROB	1	Fraser Gibson	5	18.52	0.2963	1
7	17NJ30	Yellow Warbler	NE	CONF	1	Fraser Gibson	2	7.41	0.0741	1
7	17NJ30	Chestnut-sided Warbler	T	PROB	1					

7	17NJ30	Black-throated Green Warbler	P	PROB	1	Fraser Gibson				
7	17NJ30	Black-and-white Warbler	S	POSS	1	Fraser Gibson				
7	17NJ30	American Redstart	FY	CONF	1	Fraser Gibson				
7	17NJ30	Ovenbird	S	POSS	1					
7	17NJ30	Mourning Warbler	T	PROB	1					
7	17NJ30	Common Yellowthroat	CF	CONF	1	Fraser Gibson	1	3.7	0.037	1
7	17NJ30	Chipping Sparrow	CF	CONF	1	Fraser Gibson	13	48.15	0.6296	1
7	17NJ30	Clay-colored Sparrow	T	PROB	1	Fraser Gibson				
7	17NJ30	Field Sparrow	FY	CONF	1		1	3.7	0.037	1
7	17NJ30	Vesper Sparrow	P	PROB	1	Fraser Gibson				
7	17NJ30	Savannah Sparrow	NY	CONF	1	Fraser Gibson	10	37.04	0.7407	1
7	17NJ30	Grasshopper Sparrow	T	PROB	1	Fraser Gibson				
7	17NJ30	Song Sparrow	NE	CONF	1	Fraser Gibson	21	77.78	1.3704	1
7	17NJ30	Swamp Sparrow	T	PROB	1					
7	17NJ30	Scarlet Tanager	S	POSS	1	Fraser Gibson				
7	17NJ30	Northern Cardinal	CF	CONF	1	Fraser Gibson	5	18.52	0.3333	1
7	17NJ30	Rose-breasted Grosbeak	AE	CONF	1					
7	17NJ30	Indigo Bunting	CF	CONF	1	Fraser Gibson	4	14.81	0.1852	1
7	17NJ30	Bobolink	CF	CONF	1	Fraser Gibson	2	7.41	0.1111	1
7	17NJ30	Red-winged Blackbird	NY	CONF	1		19	70.37	2.9259	1
7	17NJ30	Eastern Meadowlark	T	PROB	1	Fraser Gibson	2	7.41	0.0741	1
7	17NJ30	Common Grackle	NE	CONF	1	Fraser Gibson	17	62.96	2.6667	1
7	17NJ30	Brown-headed Cowbird	NE	CONF	1	Fraser Gibson	8	29.63	0.4815	1
7	17NJ30	Baltimore Oriole	NY	CONF	1		2	7.41	0.1111	1
7	17NJ30	Purple Finch	S	POSS	1					
7	17NJ30	House Finch	FY	CONF	1		6	22.22	0.2222	1
7	17NJ30	American Goldfinch	NY	CONF	1	Fraser Gibson	16	59.26	0.963	1
7	17NJ30	House Sparrow	NY	CONF	1	Fraser Gibson	16	59.26	1.8889	1

Dow nload results

Disclaimer: If you wish to use the data in a publication, research or for any purpose, or would like information concerning the accuracy and appropriate uses of these data, read the data use policy and request form. **These data are current as of 25 Apr 2018 .**

LEGEND	
Breeding Evidence **Max BE:** Highest Breeding Evidence recorded **Categ:** Highest Breeding Category recorded (OBS=observed, POSS=possible, PROB=probable, CONF=confirmed) **#Sq:** Number of squares with species (Breeding Evidence) **Atlasser name:** Name of atlasser who reported the highest breeding evidence (if they accepted that their name be displayed). If more than one person provided the same breeding evidence code, then only the number of atlassers is listed.	**Point Counts** **#PC:** Number of Point Counts with species **%PC:** Percent of Point Counts with species **Abun:** Average number of birds per Point Count **#Sq:** Number of squares with species (Point Counts)

APPENDIX V

C.V.'s of E.I.S.
Authors:
K.W. Dance, M.Sc.
K.S. Dance, M.E.S.

DANCE ENVIRONMENTAL INC.

KEN DANCE, M.Sc.
CONSULTING BIOLOGIST

EDUCATION

- M.Sc., Biology, 1977; University of Waterloo
- B.Sc., Honours Biology, 1975; University of Waterloo

COURSES

- Butternut Health Assessment Workshop & Update – OMNR, 2010 & 2013
- Preparation of E.I.S. Reports – OMNR, 1995
- Bioassessments & Biological Criteria for Warmwater Streams – AFS 1993
- Ontario Wetland Evaluation System, 3rd Edition – OMNR, 1993
- Creating and Using Wetlands – University of Wisconsin, 1992
- Fluvial Geomorphology – University of Guelph and AFS, 1992

PROFESSIONAL EXPERIENCE

1991 to date. Consulting Biologist and President, Dance Environmental Inc.
The firm has completed over 425 assignments.

Mr. Dance has been consulting for 41 years and has gained extensive experience on the following types of studies: ecological inventory, biological monitoring, environmental planning, Species at Risk Overall Benefit and Management Plans, watershed management, no net loss of fish habitat, tree saving plans, vegetation management, wetland Environmental Impact Studies, non-game wildlife and environmental assessments.

He also has experience in biological resource inventory, impact prediction, management option development and comparison, attendance at public information centres and as an expert witness before boards and tribunals.

1988-1991 Senior Biologist, Ecologistics Limited. As Senior Biologist, Ken was responsible for review of all biological projects. He consulted to private and public sector clients on management of fish, vegetation, and wildlife resources. Including projects for First Nations.

1985-1988 Associate and Manager of Biological Services, Gartner Lee Limited. Mr. Dance consulted to industrial and government clients.

1982-1985 Senior Biologist and Project Manager, Gartner Lee Limited.

1977-1982 Biologist and Project Manager, Ecologistics Limited. Including projects for First Nations Bands.

1975-1976 Research Technician, University of Waterloo. Mr. Dance acted as a research technician on a PLUARG contract study of two streams.

PROJECT EXAMPLES

E.I.S. Reports

Undertook inventory, site assessments and reporting for over one thousand sites relating to residential, industrial, aggregate and waste management proposals.

Highways and Roads

Examples of Environmental Assessment and highway construction projects, which Mr. Dance has worked on follow.

- Parkhill Road and Bridge, Cambridge – inspection of in-water construction to minimize erosion and sedimentation and construction of fish pool habitat.
- Highway 60 at Huntsville – inspection of in-water work during replacement of 4 culverts, including trout habitat; inspection of tree and shrub plantings.
- Highway 35 Minden – inspection of stream habitat restoration construction and inspection of tree and shrub plantings.
- Wellington County Roads – fisheries assessments for 3 culvert replacements.

Aggregate NETR and EIS Projects

Several aggregate studies in Bruce, Huron and Grey Counties. Detailed snake hibernaculum and snake population monitoring study of three snake species at an old quarry.

Wastewater Management

- Thunder Bay Water Pollution Prevention Study – biological consultant addressing fish, wildlife, forests, wetlands and Lake Superior near shore habitat.
- Cincinnati and Cleveland, Ohio – CSO Review Studies: biological consultant addressing existing impacts on aquatic ecosystems and advice regarding solution options.
- Wastewater Treatment Plant Class E.A.s: biological consultant for Ayr, Flesherton, Ingersoll, Keswick, Lambeth, Tavistock and Wellesley plant upgrades/expansions.

Water Supply

Biological/fisheries assessment regarding water taking and/or facility siting for projects in Elmira, Georgetown, Acton, Cambridge, Caledon and Brampton.

Publications

Published chapters in three books. Over forty papers on fish, wildlife, wetland and vegetation management, as well as water quality and fisheries. Articles in publications such as Ontario Birds, Ontario Field Biologist, Newsletter of the Field Botanists of Ontario, Recreation Canada, Landscape Architectural Review and the Water Research Journal of Canada.

03/18

DANCE ENVIRONMENTAL INC.

KEVIN DANCE, M.E.S.
TERRESTRIAL BIOLOGIST AND PROJECT MANAGER

EDUCATION

- M.E.S., Masters of Environment and Resource Studies, 2011; University of Waterloo.
  Thesis Title: "Raptor Mortality and Behavior at Wind Turbines Along the North Shore of Lake Erie During Autumn Migration 2006-2007"
- B.E.S., Honours Bachelor of Environment and Resource Studies with Parks Option, 2006; University of Waterloo.

CERTIFICATIONS & PROFESSIONAL ASSOCIATIONS

Workshops/Certifications:

- Bat Survey Solutions LLC. Bat Acoustic Fieldwork and Data Management Workshop. Instructors: Janet D. Tyburec and Joseph M. Szewezak (creator of SonoBat and Professor at Humbolt State University, California). February 2016, Punta Gorda, Florida.
- Wildlife Acoustics: Bat Acoustics Training with Dr. Lori Lausen, February 2015, Miami, Florida
- Butternut Health Assessment Workshop, BHA #486, July 16, 2014.
- Dragonfly and Damselfly Identification Workshop, 2013, Guelph Arboretum.
- OMNR, Ontario Wetland Evaluation System, Northern Manual and Southern Manual. North Bay, 2012
- OMNR Ecological Land Classification for Southern Ontario, Lindsay, 2010
- Diploma of Environmental Assessment, University of Waterloo, 2006
- Transportation of Dangerous Goods, Safety Services Canada, 2008
- Member, Bird Studies Canada (BSC)
- Member, Ontario Field Ornithologists (OFO)
- Member, Kitchener-Waterloo Field Naturalist Club (KWFN)

AREAS OF PROFESSIONAL EXPERIENCE

Kevin Dance has over 10 years of consulting experience on a wide range of projects throughout Ontario. Kevin specializes in inventories, evaluations, research, and impact studies of natural resources. He is experienced in identifying important natural features and evaluating the significance and sensitivity of these features. Kevin regularly works with multidisciplinary study teams focusing on the management of terrestrial and wetland ecosystems.

Terrestrial Vegetation and Wildlife Studies

Kevin has worked on various studies investigating a variety of wildlife habitats, determining wildlife populations including numbers and seasonal trends and monitoring of long-term impacts of developments on species. Kevin has conducted a wide range of monitoring surveys and inventories to identify the presence of wildlife on study sites as well as species specific guided surveys for Species at Risk and Species of Conservation Concern including:
Bobolink, Barn Swallow, Bank Swallow, Eastern Meadowlark, American Badger, Eastern Milksnake, Blanding's Turtle, Wood Turtle, Jefferson Salamander, Common Nighthawk, Whip-poor-will, Henslow's Sparrow, Short-eared Owl, Least Bittern, Eastern Milksnake, and all Endangered *Myotis* bat species.
He has completed numerous detailed vegetation community mapping inventories and conducted vegetation monitoring at permanent sample plots, as well as transects and random sample

Address: #807566 Oxford Rd. 29, R.R. #1 Drumbo, ON N0J 1G0
Tel. (519) 463-6156 Email: kevin_dancenv@rogers.com

quadrats to assess short-term and long-term impacts of developments on vegetation. Kevin is trained and experienced in applying the Ecological Land Classification System in projects in Southern Ontario to delineate, describe and map vegetation communities.

Kevin's specific terrestrial expertise includes:

- wildlife and vegetation habitat mapping, evaluations, and research.
- surveys of plants, birds, mammals: including bats, reptiles, amphibians, dragonflies and butterflies.
- identification of rare and sensitive species and habitats.
- bat acoustic monitoring and data analysis for Ontario bat species
- development of monitoring methodologies for Species at Risk
- preparing Overall Benefit Plans and Management Plans for Species at Risk
- obtaining permitting from MNR to conduct Jefferson Salamander trapping surveys, and snake coverboard surveys
- over 15 years of bird identification experience
- identification and analysis of potential wildlife corridors.
- short-term and long-term monitoring techniques for flora and fauna

Wetland Studies

Kevin is certified to conduct Ontario Wetland Evaluations and has worked in habitats throughout Ontario using the Ontario Wetland Evaluation System for Wetlands in Southern and Northern Ontario. Kevin has also participated in numerous studies focusing on the impact of development on wetland ecology and function.

Kevin's specific wetland expertise includes:

- inventories and mapping of wetland flora and fauna.
- wetland evaluations using the Ontario Wetland Evaluation System (OWES).
- wetland boundary delineation, and regularly working with relevant Conservation Authority staff to obtain approval of boundaries
- wetland Environmental Impact Studies (EISs).

Aquatic Studies

Kevin has assisted with numerous long-term fish monitoring programs using electrofishing to sample reaches of streams to assess and monitor development impacts to cold water streams. Kevin has experience collecting fish during electrofishing sampling, fish identification, marking and measuring. He also has experience identifying aquatic and wetland vegetation as well as collection of aquatic habitat data including stream depth, temperature, stream bed composition, flow speed and invertebrate sampling. Kevin has assisted with electrofishing surveys and aquatic habitat assessments within Wellington County and the Region of Waterloo.

Renewable Energy Projects:

Kevin has extensive experience conducting and organizing both pre-construction and post-construction studies at wind farms in Ontario, Manitoba and Alberta. Kevin has been developed monitoring methodologies for mortality searches, scavenger removal trials and searcher efficiency studies. Kevin has been involved in post-construction studies at four large scale wind farms and has conducted pre-construction studies at over a fifteen wind farms throughout Ontario, Manitoba and Alberta.

Kevin's specific renewable energy expertise includes:

- development of mortality search methodologies and conducting mortality searches, organizing and conducting scavenger removal studies and searcher efficiency trials
- identification of bird and bat fatalities
- developing study methods for pre-construction wind farm studies, including: migration surveys (dawn and dusk), daytime soaring surveys, waterfowl surveys, shorebird surveys, winter raptor and diurnal owl surveys, walking transect surveys, and driving transect surveys.

EMPLOYMENT HISTORY

Terrestrial Biologist and Project Manager
Dance Environmental Inc., Drumbo, Ontario. 2011 to present

Terrestrial and Wetland Biologist
Natural Resource Solutions Inc., Waterloo, Ontario. 2008 to 2011

Environmental Scientist
Stantec Ltd., Guelph, Ontario. 2006 to 2007

Avian Field Technician –Breeding ecology and impacts of urban development on Wood Thrush in the Region of Waterloo. Bird banding crew leader, nest searcher, nest monitoring.
Canadian Wildlife Service and University of Waterloo, Waterloo, Ontario 2003 to 2005

Terrestrial Biologist
Dance Environmental Inc., Drumbo, Ontario 2001 to 2003

PUBLICATIONS, PRESENTATIONS, AWARDS

Dance, K.S. 2017. Bats in Urban Natural Areas: A case Study of Kitchener Natural Areas. Oral Presentation. Nature in the City Speaker Series, Kitchener Public Library. November 15, 2017.

Dance, K.W., K.S. Dance, & M.B. Dance. 2012. Giant Ragweed (*Ambrosia trifida*) as a Food Source for Autumn Migrants and Winter Birds in the Grand River Basin. Ontario Birds 30(3):148-164.

Dance, K.S. 2012. Manipulation of Caterpillars for Consumption by Eastern Bluebirds. Ontario Birds 30(2):102-108.

Dance, K.W., K.S. Dance. 2012. Wetlands: What are they Good For? Oral Presentation. Princeton Historical Society. Princeton, Ontario. September 24, 2012.

Dance, K.S. 2011. “Raptors and Wind Farms”. Oral Presentation. Ruthven Park 2nd Annual For The Birds Festival. September 17, 2011.

Dance, K. S. 2010. On the Wind: A Discussion of Raptors and the Wind Industry. Oral Presentation. Owen Sound Field Naturalist Club (OSFN). September 9, 2010.

Dance, K. S., Dance, K. W. 2010. “Raptors on the Wind“. Oral Presentation. Kitchener-Waterloo Field Naturalist Club (KWFN). March 22, 2010.

Dance, K. S., Dance, K. W. 2010. Review of Raptor and Turbine Interaction Literature: the Case of the Erie Shores Wind Farm. Oral Presentation. RARE Charitable Research Reserve, Cambridge, ON. January 23, 2010.

Dance, K. S., R. James, L. Friesen, S. Murphy. 2009. “Raptor Behavior and Mortality (Erie Shores Wind Farm)”. Poster Presentation. Canadian Wind Energy Association Annual Conference & Exhibition. September 20-23, 2009.

Dance, K. S., R. James, L. Friesen, S. Murphy. 2009. “Migrant Raptor Behavior and Mortality (at the Erie Shores Wind Farm)”. Poster Presentation, 3rd place winner. A.D. Latornell Conservation Symposium. Nottawasaga, Ontario.

Do We Need Another Pit?
Are There Better Alternatives to Concrete/Asphalt

Residents Aren't Saying There is No Need for Aggregate.

Scrutinize every application with strict focus on public and environmental risks.

Do not allow aggregate licenses to be approved in areas with a specific density of homes within a 3-kilometre radius.

Expect that new technology is used to monitor air, water, dust, noise and blasting. Monitored by the MNRF, paid by aggregate operators, with oversite from all other government agencies.

No Need to Show Need

The Provincial Policy Statement 2020 retains the controversial statement that the "aggregate industry has "no need to show need" when applying for new aggregate licenses or expansions"

"enough quarries had been already opened to supply Ontario long into the future, somewhere above the 100-year mark"

"measuring the use from licensed pits, active and dormant, against more current and accurate predictions of need for virgin aggregate" GravelWatch Ontario

Eco-Friendly Alternatives To Traditional Concrete

ASHCRETE

BLAST FURNACE SLAG

PAPERCRETE OR FIBROUS CONCRETE

CONCRETE DEBRIS

POST-CONSUMER GLASS

PLASTIC WASTE

New Innovations that Positively Impact our Environment

Permeable Pavement

Mass Timber

Local Solutions in St. Thomas and Ayr

Supported by FedDev

Yerni Icon my iPhone

Image Scanned with CamScanner

15. NOTICE OF MOTIONS

16. ANNOUNCEMENTS

16.1 Councillor C. Gordijk acknowledge Volunteer Week starts April 19 and thanked all the volunteers in the Township for their dedication.

16.2 Councillor A. Hallman noted that Earth Day is April 22, 2021 and encouraged families to participate.

16.3 Councillor A. Hallman thanked everyone that has been eligible for vaccinations and the continued cooperation.

16.4 Councillor A. Hallman acknowledged the Provincial announcement that following the Spring Break, students will again transition to online learning and encouraged those that require support to reach out.

16.5 Councillor J. Pfenning advised that the Sustainability Committee is preparing activities on social media for Earth Day / Week.

16.6 Councillor B. Fisher congratulated Erb Transport on their recent award from the Truckload Carriers Association as the Best Fleets to Drive For 2021.

17. DELEGATIONS

The following persons appeared as delegations in relation to the proposed Hallman Pit. Prepared statements and / or presentations are attached as noted.

17.1 Rory Farnan, Appendix A

17.2 Robert Cgebotys, Appendix B

17.3 Linda Laepple, Appendix C

17.4 Anne Ehrlich, Appendix D

17.5 Alisa McClurg, Appendix E

17.6 Jennifer Lauzon appeared as a delegation and expressed her concerns for the proposed Hallman pit, and the worry on the affects to the established community, noisy trucks and potential environmental

destruction that could be had as a result, and also noted the stress and discomfort this has caused including appearing before Council in a virtual environment.

The Deputy Clerk confirmed for Council that several efforts were made to ensure that the delegation was able to present to Council in a virtual environment.

The Director of Development Services advised that the Special Objector is in relation to the Ministry of Natural Resources process and is not subject to involvement from Council.

17.7 Stephanie Goertz, Appendix F

17.8 Clarke Rieck, Appendix G

17. BUSINESS ARISING FROM CLOSED SESSION

18. CONFIRMATORY BY-LAW

18.1 By-law No. 2021-22

Resolution No. 2021-77

Moved by: Councillor C. Gordijk Seconded by: Councillor A. Hallman

THAT By-law No. 2021-22 to Confirm the Proceedings of Council at its Meeting held on April 12, 2021 be introduced, read a first, second, and third time and finally passed in Open Council.

CARRIED.

19. ADJOURNMENT (10:10 PM)

Resolution No. 2021-78

Moved by: Councillor C. Gordijk Seconded by: Councillor J. Pfenning

THAT we do now adjourn to meet again at the call of the Mayor.

CARRIED.

CITIZENS FOR SAFE GROUND WATER

safeh2o.ca

FOOD & WATER FIRST©

foodandwaterfirst.com

Agriculture and Rehabilitation April 12th, 2021 - Wilmot Township Council

Agenda

Agriculture in our Region, Prime Farmland Provincially

NFU/OFA Position on Prime Farmland

Rehabilitation of Gravel Pits in Waterloo Region

Issues with Hallman Pit Agricultural Impact Study

Cumulative Impacts

Conclusion

The statements made are based in expert reviews commissioned by the Region, Township and CSGW as well as GRCA to date

Agriculture in Wilmot Township and Waterloo Region

82% 2:16 PM

www.regionofwaterloo.ca

Region of Waterloo

A+ A-

Home / Regional Government / Reports, Plans and Data / Agriculture

In 2016, there were 1,374 farms in Waterloo Region, covering 214,975 acres of land. Of these, 69 per cent raised livestock, while the remaining 31 per cent grew crops. In 2015, farms in Waterloo Region generated $563.6 million in revenue, up $90.7 million from 2010. For more information, please see the Census Bulletin on Agriculture.

Back Forward Home Bookmarks Tabs

82% 2:18 PM

Independent.

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"Proudly rooted in agriculture"

PUBLISHED DATE

February 9, 2021

Learn More, Click Here.

AD TEXT ›

FOOD & WATER FIRST ©

Source: Region of Waterloo, Statistics Canada Data 2016

Agriculture in Waterloo Region

Wilmot the ***only*** Township to show **positive growth** in number of farms.

Net **decrease** of 6,112 acres of farmland.

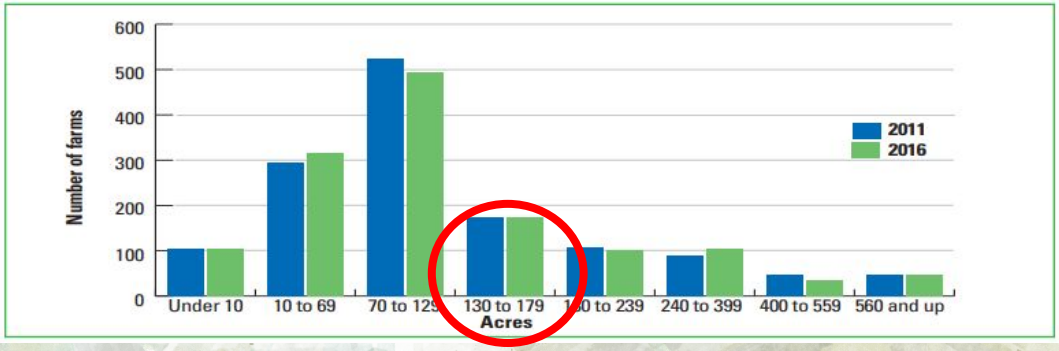
Proposed Hallman Pit (141.51 acres) **significant** size.

Our Farmland *must be protected!*

Name	Total number of farms headquartered in the region			Absolute change 2011-2016	Per cent change 2011-2016
	2006	2011	2016		
Waterloo Region	**1,444**	**1,389**	**1,374**	**-15**	**-1%**
Cambridge	31	21	42	21	100%
Kitchener-Waterloo*	35	16	33	17	106%
North Dumfries	117	124	108	-16	-13%
Wellesley	518	502	486	-16	-3%
Wilmot	247	234	255	21	9%
Woolwich	496	492	450	-42	-9%
Ontario	57,211	51,950	49,600	-2,350	-5%
Canada	229,373	205,730	193,492	-12,238	-6%

**To ensure confidentiality, data for the small number of farms located in the City of Waterloo and the City of Kitchener have been combined*

Source: Statistics Canada, Census of Agriculture, 2006-2016



FOOD & WATER FIRST©

Prime Farmland in Ontario

Ministry of Agriculture,
Food and Rural Affairs

Ontario

1.2 Ontario's Prime Agricultural Areas

Ontario's *prime agricultural land* is a finite, non-renewable resource comprising less than 5% of Ontario's land base. It is the foundation for food, fibre and fur production, the local food economy, agri-food exports, economic prosperity and the growing bio-based economy.

The PPS states that Ontario's *prime agricultural areas* shall be protected for long-term use for agriculture and defines *prime agricultural areas* as areas where *prime agricultural lands* predominate. Planning authorities (e.g., municipalities) are required to designate[2] *prime agricultural areas* in their official plans, including *specialty*

Prime Farmland comprises *less than 5%* of Ontario's land base

Source: OMAFRA Guidelines on Permitted Uses in Ontario's Prime Agricultural Areas Publication 851
http://www.omafra.gov.on.ca/english/landuse/facts/permitteduseguide.pdf

National Farmers Union Position on Prime Farmland

"**Immediate freeze** on urban and industrial development located on prime agricultural land"

"Preservation of farmland requires close co-operation between **all levels of government**. It is also imperative that **local communities** be involved"

"**Objection** to ***any*** mineral aggregate resource extraction from Class 1, 2, and 3 farmland. It is **not** possible to return gravel pits and quarries back to their original condition"

Source: NFU-O submission to Ontario Ministry of Agriculture, Food, and Rural Affairs, July 2018.

NFU Waterloo-Wellington Position on Hallman Pit

The National Farmers Union – Ontario (NFU-O) is an accredited farm organization representing thousands of sustainable family farmers in Ontario and has advocated for farm families across Ontario and Canada since 1969. Members work together to achieve agricultural policies that ensure dignity and income security for farm families while protecting and enhancing rural environments for future generations. The NFU-O collaborates locally, nationally, and internationally to research, educate and share effective solutions that lead to a better world for farm families and their local communities.

Dear: To Whom it May Concern. Date: 2020-02-28

RE: ZCA-11-19 Zone Change Application at 1894-1922 Witmer Road Wilmot

This is a letter from the NFU Local 340 in support of the position held by the Citizens for Safe Ground Water regarding this issue; that is, to deny the proposed zone change of this property.

"We advise that the zone change be **denied**"

Mike Roth, President NFU Local 340, Waterloo-Wellington

Ontario Federation of Agriculture Position on Prime Farmland

Ontario Federation of Agriculture

"Once land is disturbed to extract aggregates, it is **rarely rehabilitated** to the level necessary to become productive agricultural land again"

"Alternative uses on our prime agricultural lands will **limit our ability** to continue to produce food"

"OFA recommends that aggregate extraction be **prohibited** on prime agricultural land"

Source: OFA.on.ca/issues/aggregate

Rehabilitation of Gravel Pits in Waterloo Region

Staggering ***80%*** of aggregate sites have ***NOT*** been rehabilitated within Waterloo Region (Source: Region of Waterloo, 2019)

GIS data identified Waterloo Region as a area where Prime Farmland is **conflicting** with aggregate
(Source: *Ontario Farmers Magazine Article, March 2021)*

"The 20% rehabilitation rate documented by the Region is a real eye-opener"

Michael Frind, MSc, Hydrogeology (Groundwater Modelling); University of Waterloo

Experts Commissioned

CSGW is exploring retention of an expert to review the Agricultural Impacts Assessment (AIS)

Purpose	Organization
Acoustic Peer Review	J.E. Coulter and Associates
Air Quality Peer Review	Di GiSci Environmental Consulting Inc.
Traffic Impacts Review	True North Safety
Conformance to the Official Plans	Ramsay Planning Inc.
Legal Representation	Canadain Environmental Law Association

Region of Waterloo Planning commissioned a **3rd party peer review** of the applicants **Agricultural Impact Study** (Michael Hoffman, AgPlan Limited)

Expert Peer Review of Hallman Pit Agricultural Impact Study

- "**No** scientific evidence has been presented"
- "Such evidence, either **does not exist**, or is proprietary (and therefore not available)"
- "The **missing** information/limitation is **not** described within the DBH Harvest Farms AIA."

Dear Mr. Welwood,

Re: Review of the DBH Soil Services Inc. Agricultural Impact Assessment (AIA), which is dated January 11, 2021, and has the title *Jackson Harvest Farms 1894 Witmer Rd. Part of Lot 10 German Block South of Bleams Road Wilmot Township Regional Municipality of Waterloo.*

I reviewed the AIA described above and which resulted after a peer review by AgPlan Limited as well as a video conference concerning the AIA and the peer review. For the most part, the January 11, 2021 DBH AIA reflects the discussions and the conclusions of the video conference. However, there is one matter of evidence not reflected in the January 11, 2021 DBH AIA.

In the PPS (2020, section 2.5.4.1), rehabilitation of an aggregate pit, located in a *prime agricultural area*, has, as a requirement, site rehabilitation back to an *agricultural condition.* Given that the proposed Harvest Farms pit is not part of a *specialty crop area, agricultural condition* means *a condition in which substantially the same areas and same average soil capability for agriculture are restored.*

Soil capability class is defined within the *Canada Land Inventory Soil Capability Classification for Agriculture* as:

> *mineral soils… grouped into seven classes according to their potentialities and limitations for agricultural use. The class, the broadest category in this classification, is a grouping of subclasses that have the same relative degree of limitation or hazard. The limitation or hazard becomes progressively greater from class 1 to class 7.*

The capability classification, from class1 through 7, has an ordinal scale and has been converted into an interval scale based on four index methods - including a productivity index derived using common field crop yields.

1

DBH Soil Services discusses a soil rehabilitation process which correctly is characterized as "state-of-the-art". However, the objectives outlined in policy (summarized previously) do not reference the state-of-the-art for soil rehabilitation, but instead, require a measure of the restoration of soils to *substantially the same areas and same average soil capability for agriculture.* No scientific evidence has been presented that the state-of-the-art rehabilitation process will probably result in meeting the test for soil capability outlined in the PPS (2020). Our discussions concerning this missing information resulted in the agreement that such evidence, either does not exist, or is proprietary (and therefore not available).

The missing information/limitation is not described within the DBH Harvest Farms AIA.

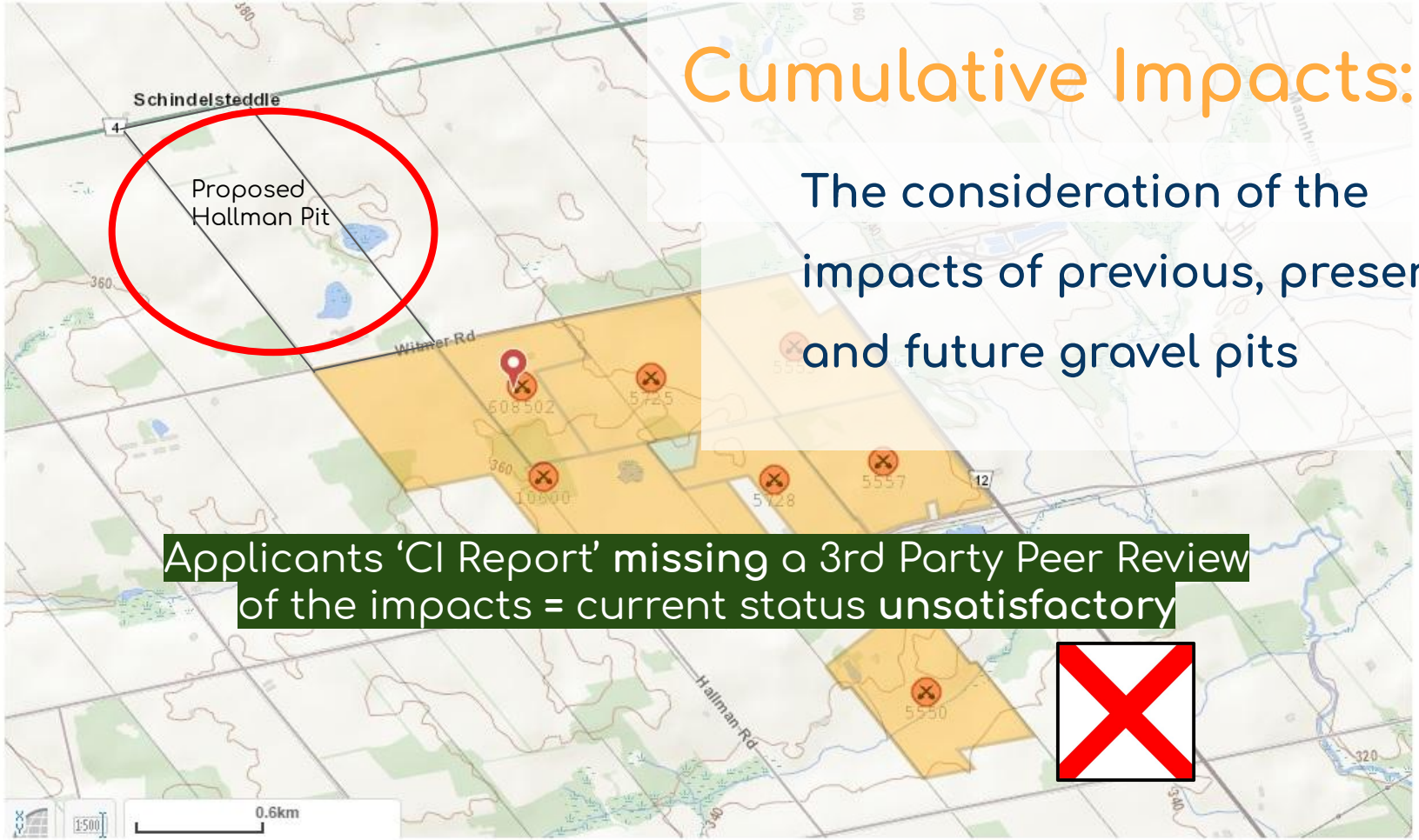
AgPlan Limited

Michael K. Hoffman

https://facility-admin.esolutionsgroup.ca/Uploads/Files/16E7D05A-FC42-4E34-A1EF-8C5C6858A2BF/zca-11-19/updates/PlanningReport_Addendum.pdf

Cumulative Impacts:

The consideration of the impacts of previous, present, and future gravel pits



Applicants 'CI Report' **missing** a 3rd Party Peer Review of the impacts = current status **unsatisfactory**

Cumulative Impacts:
A Startling Visual

To provide a perspective to the cumulative impact of all licensed gravel pits in the area, let's look at a comparable visual using our largest community in Wilmot...

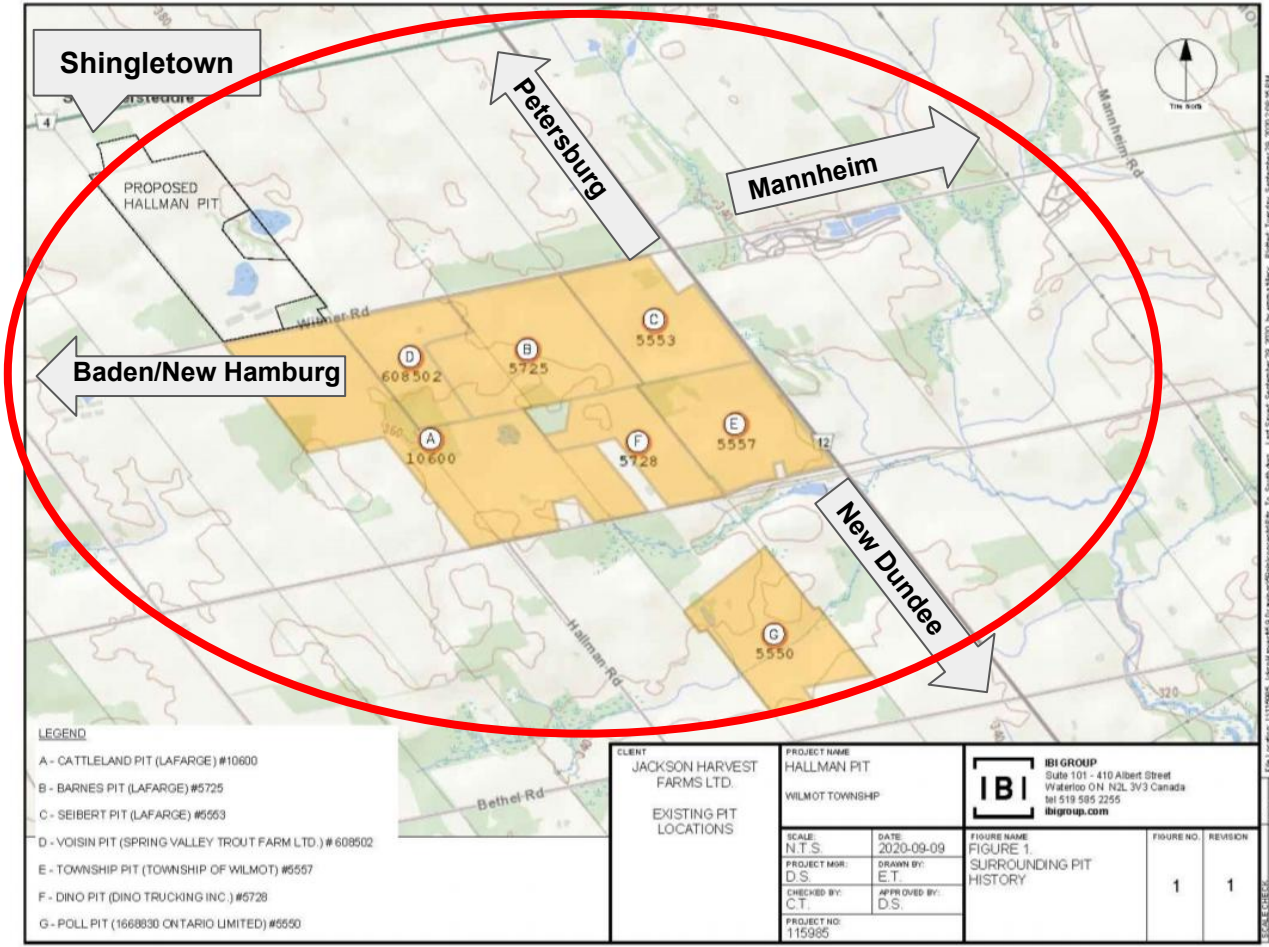
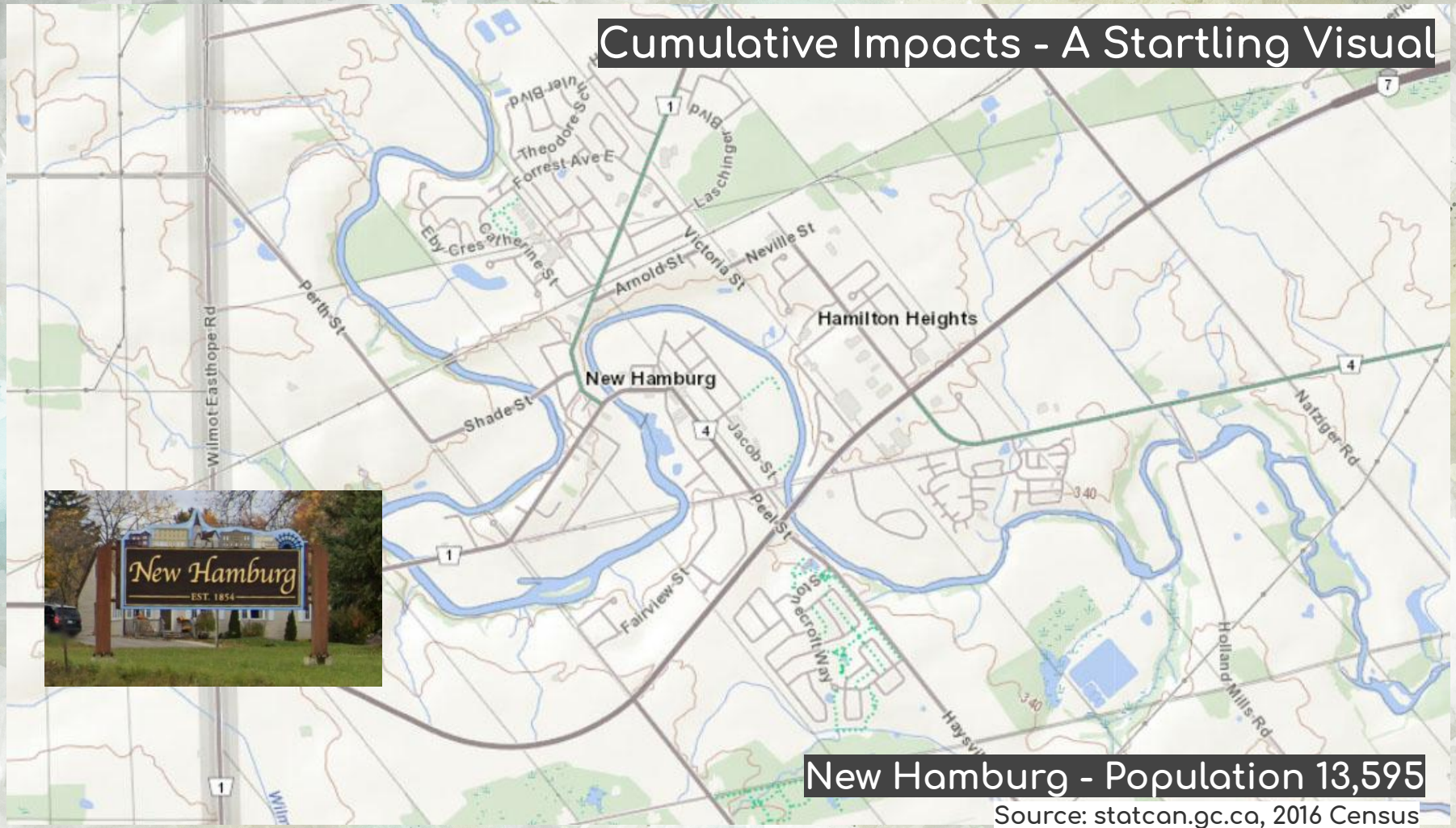


Figure 1 Existing Pit Locations

https://facility-admin.esolutionsgroup.ca/Uploads/Files/16E7D05A-FC42-4E34-A1EF-8C5C6858A2BF/zca-11-19/updates/PlanningReport_Addendum.pdf

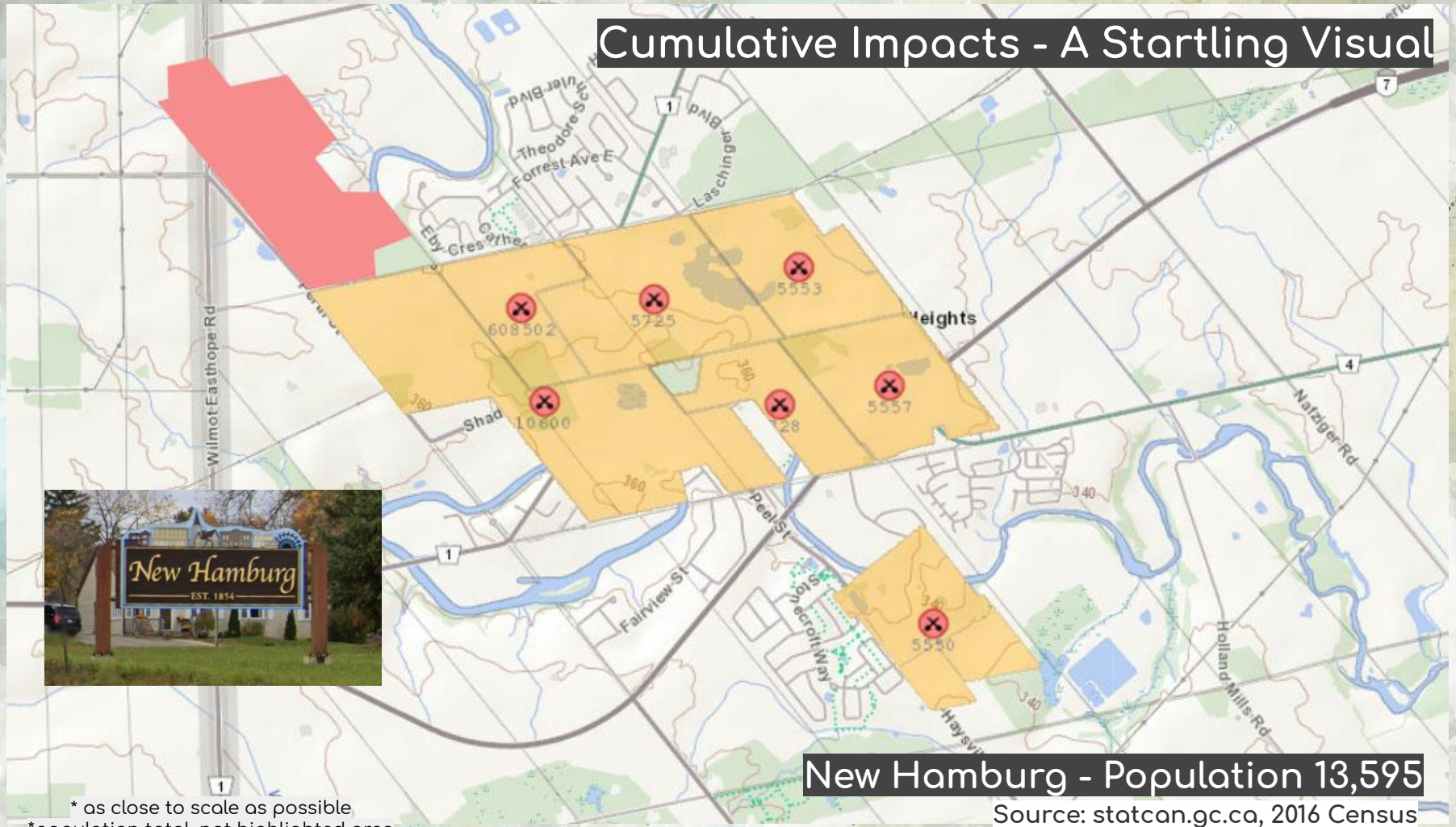
Cumulative Impacts - A Startling Visual



New Hamburg - Population 13,595

Source: statcan.gc.ca, 2016 Census

Cumulative Impacts - A Startling Visual



New Hamburg - Population 13,595

Source: statcan.gc.ca, 2016 Census

* as close to scale as possible
*population total, not highlighted area

Conclusion

Regional Peer Review of the Hallman Pit AIS ***conflicting*** with Applicant, acceptance **not** provided

Prime Farmland is a **vital** asset to Wilmot's continued economic prosperity.

Strong support exists for **protection** of prime farmland against aggregate extraction

APPENDIX B

ROBERT CGEBOTYS

StopTheGravelPit - YouTube

April 12 Council presentation

Title picture

Mayor Armstrong, Council, thank you for listening to us here, again, as you will be asked soon **to weigh food and water for all of us against sand and gravel** (for a few).

Picture2 St. Clements pit in Mennonite Country.

My name is Linda Laepple, known by thousands in the Region as the host of Shingletown's annual potatofest over a 12 year period till 2015. My family farms within the 1 km study area on exactly the same soil type and conditions.

Next Picture 3 Areal picture

Why do I care today?

- I care because it must be realized this is not an ordinary piece of farm real estate that can be assessed using common templates. For the safety of the community, it's history needs to be fully investigated and then the entire property assessed and treated accordingly. Not just the residential portion as stated in the side condition report filed with the Ministry.

- I care because, Jackson Harvest Farm and my farm, we operate both in the same source water protected area. Should anything go wrong in the gravel pit when it comes to groundwater contamination, it is very likely that things will first be blamed on me since my family farms next to the Regional wells.

- **I care because the soil in this area allows us to grow almost any crop, it's like gardening on a raised bed. I know after extraction and rehabilitation of the gravel pit it will be like trying to grow something in a leaking bathtub.**

While missing or ignoring relevant information The Hallman pit AIA concluded:

….. minimal impact on the surrounding agricultural activities within the Study Area.
.

Next Picture 4 Land use picture

This where the problem starts:
The Radius of study area is limited to 1 km from the proposed site which leads to false representation of the area and technical errors in the following:

4.2 Land use

4.3.3 Irrigation

4.4 Land fragmentation

5.2 Traffic

Specialty crops

Investments

I like to start with the impact on traffic

- Traffic impact doesn't stop after 1km. We farmers need to use Regional Roads too and so do the added trucks from the pit. About 15 years ago we felt trucking traffic impact first hand. My husband was driving on Queen street between Wittmer and Bleams coming home with 2 loaded hay wagons when a over tired Transport truck driver rear ended him. The impact ripped the tongue off the rear wagon and send the full it flying across the road and ditch into a field. The other wagon on the tractor had its tongue bend to a u shape. It was shear luck the impact was not fatal. Needless to say ever since we avoid driving evenings and plan trips with equipment carefully. The impact of additional truck traffic will be felt far beyond the 1 km radius and should be considered in the study. On Wittmer Road I can not imagine a tractor with duals and or equipment 12 feed wide getting passed oncoming trucks without causing damage to property.

Under 4.2 Land use it reads: .. but for the Study Area only winter wheat was observed.
Showing the entire front of our farm as one field of winter wheat when in fact there were 5 different fields, is a blatant error or false statement.

<u>Next Picture 5 areal crop map</u>

In 2018 multible crops grown along Bleams Road including green peas.

If there was an actual windshield survey done they would have also noted the sign for potatoes on Bleams road, which we grow since over 20 years for farm gate sale and wholesale distribution. Was this specialty crop overlooked on purpose?

4.2.2
Land use
The study reads:
Neither the Subject Lands nor the Study Area is zoned an agricultural special area.

Giving the impression that there are no special crops grown in the area, just common field crops or even the assumption the land is not suited of producing special crops.

If the consultants had treated each property within the 1 km radius as a unit and not just looked at the land fraction within the radius, they would have found very special, specialty crops.

<u>Next 3 Picture 6 to 9 Hmong people's garden</u>

Plus they would have seen a firsthand demonstration of living culture in the word agriculture. They would have seen 2 fields of Asian vegetables grown by Hmong people for their community in town. Vegetables, foreign to me, but grown on the same type of soils as found in the proposed gravel pit, just across the road, on our farm.

4.4 Land Fragmentation –

Agricultural properties in the range of 10.0 – 69.9 acres and 70.0 – 128.9 acres were noted in the surrounding areas.

Next Picture 10 land size:

- Again the strict 1 km radius used, only considers the full size of a parcel when completely inside the study area. It doesn't record the actual size of a parcel that are partially in the study area. Our farm for example is 187 acres in size and my neighbors to the east also in that range. But both our properties are recorded as less than 65 acres.

The study also gives the impression that small parcels are not worth investigation and therefore failed to notice that the 16 acre parcel mentioned as facility numbers 4 to 9, is in fact a research site custom feeding 300 plus head of cattle. The owner having won twice an Premier's Award for Agri-Food Innovation Excellence, for developing a high-temperature composting system that turns manure into garden fertilizer.

Investments
4.3.3 Irrigation, no investment in irrigation on the subject land or the study area.
First of all, these observations were made late August and October when irrigation equipment generally is already packed away and in storage.
In 4.3.4 it is stated that historically a bermed area existed to hold water for mixing and distributing manure but no irrigation equipment was observed. When in fact the hydrological study had an irrigation well recorded that has not been decommissioned to date.

Rehabilitation:

Next Picture 11 soil cross section

The idea of shaving off soil layer by layer and storing it separately and replying it quickly elsewhere sounds good on paper but in reality soil horizons cannot be pealed in layers like an onion. Specially in this area where you have in some areas very little topsoil and often a topsoil subsoil mix as deep as the farmer's equipment worked the land, followed by almost pure sand. The promise to put 50 cm topsoil back when there is only 15 to 30 at its best to begin with, would require massive soil imports and is just not realistic.

- Soil is what sustains us and is the only thing on Earth that actually produces.
- **Everything else on the planet is processing, value adding, shipping, business**. But truly producing are the microbes in the soil. In one handful healthy soil there are more microbes then there are people on this planet. But in the aggregate industry this very base of life on our planet, mother earth, is just part of something called "overburden."

When you compare Canadas Landmass with a table set for 28 people. Only two plates would represent farmable areas. And only one of them would represent crop growing areas, the other marginal pasture lands.

But only a small rim of the crop growing plate would represent the area of soil classes as good as we find in Wilmot. With every rezoning from agricultural to another use we are concisely chipping away on the best part of the dinner plate.

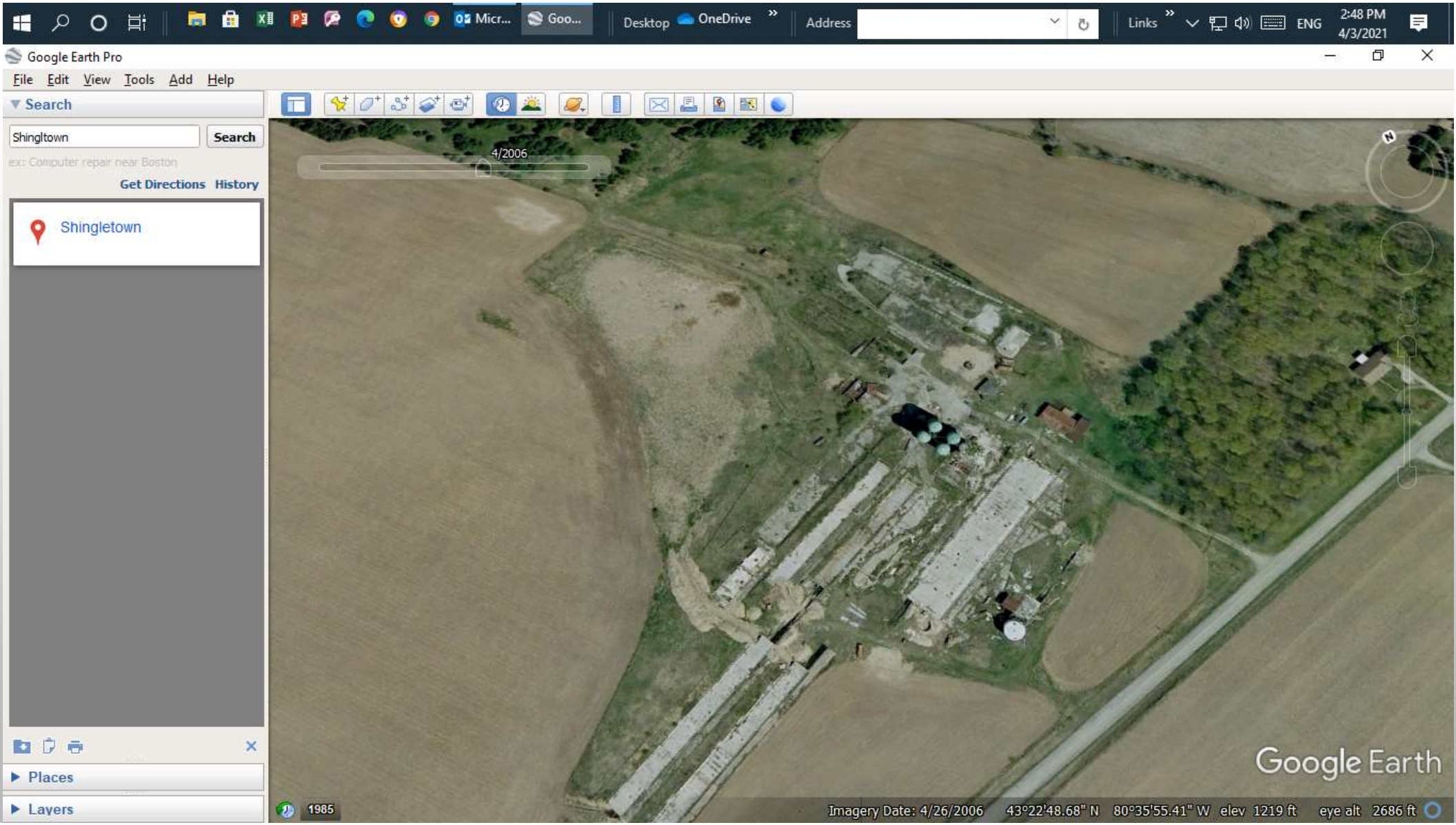
Don't sacrifice another chip and assume there will still always be someone out there to feed you.

Mankind has in it's history done without a lot of things and times are changing fast, but we have never done without food and water. Please look at facts not just paper.

Last picture; Praying Manta

AGRICULTURAL IMPACT ASSESSMENT REVIEW

BY LINDA LAEPPLE


Google Earth Pro
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ex: Computer repair near Boston
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Shingletown
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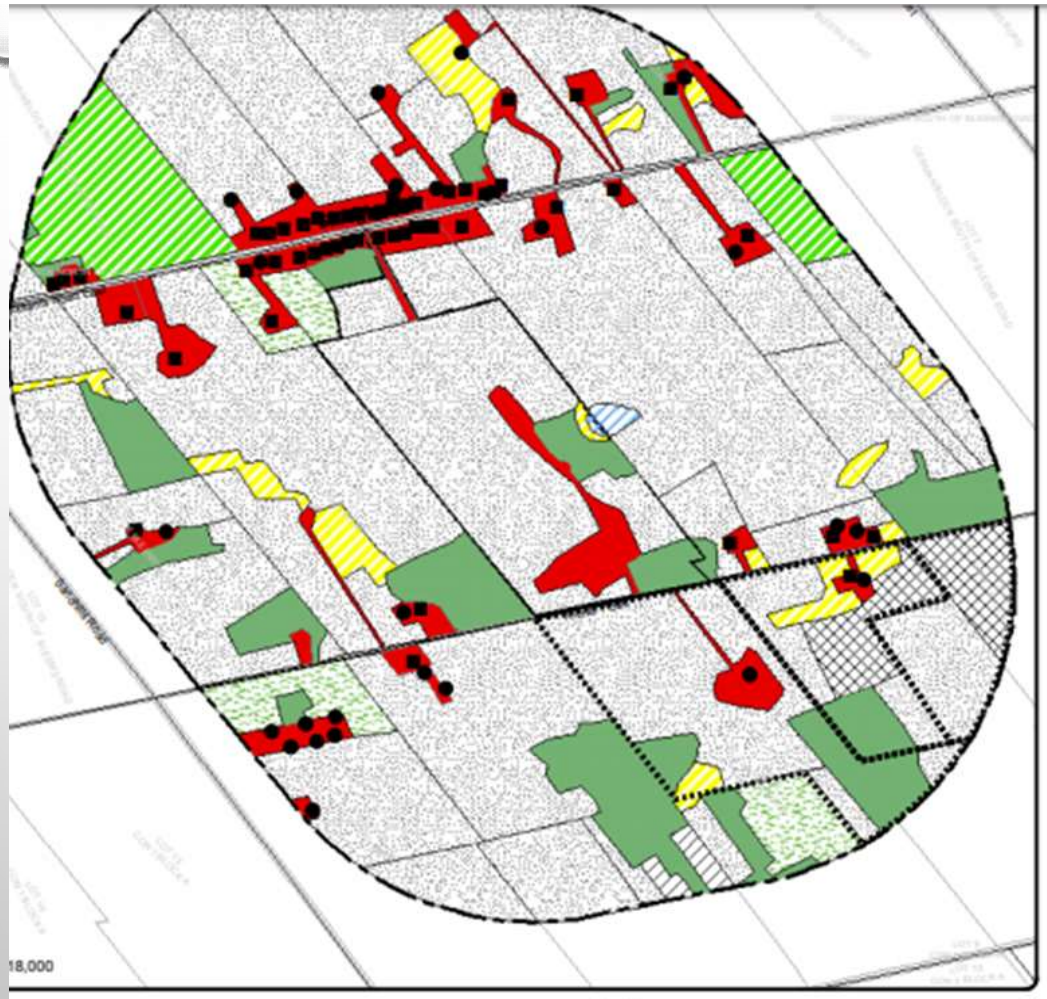
1985
Imagery Date: 4/26/2006 43°22'48.68" N 80°35'55.41" W elev 1219 ft eye alt 2686 ft



gend

- Barns
- Residence
- Roads (MNR)
- Aggregate Site Authorized (MNR)
- Lot Lines (MNR)
- Study Area (1000 m buffer)

Land Use

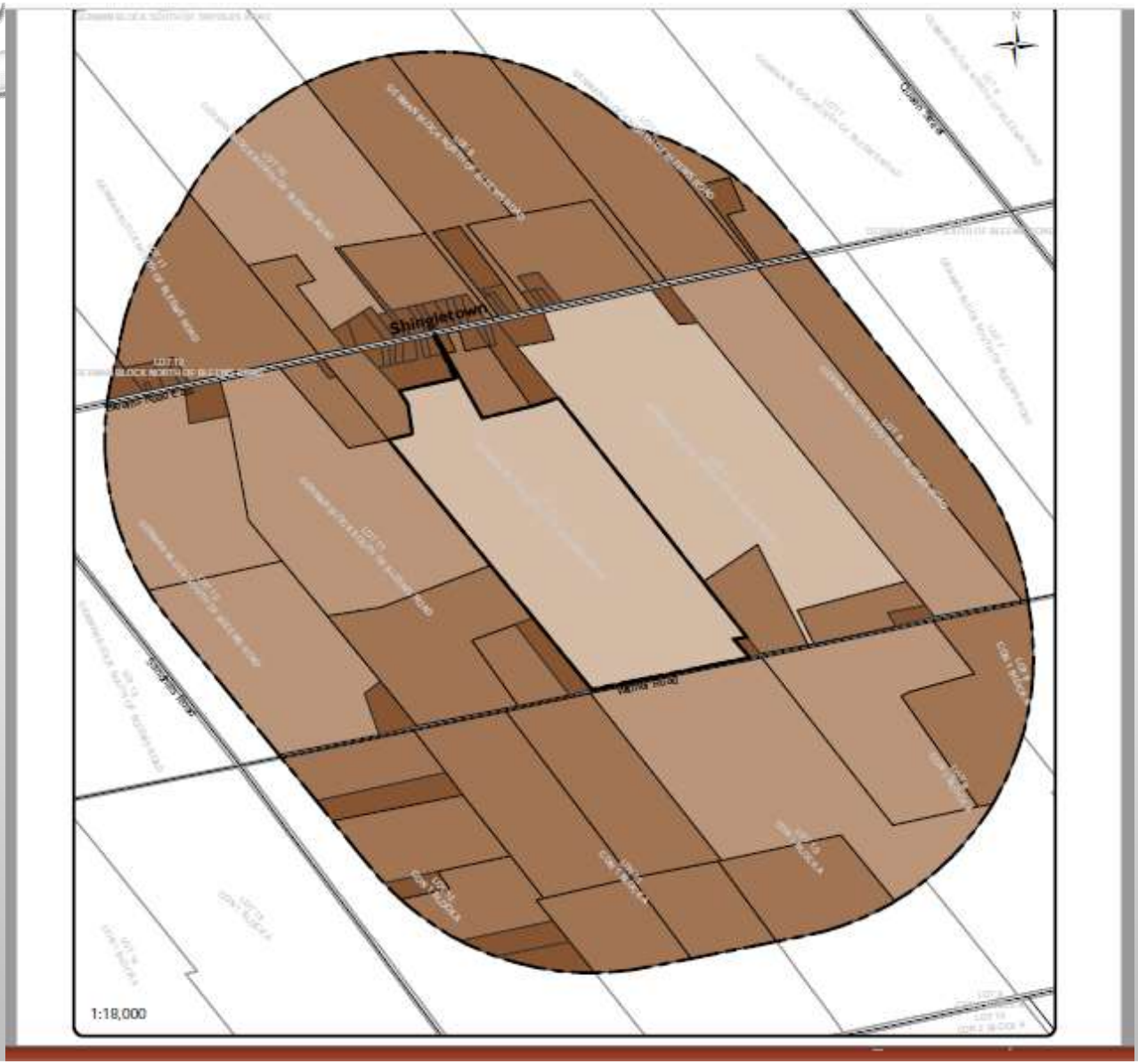
- Built Up/Disturbed Areas
- Common Field Crop
- Forage/Pasture
- Gravel Pit
- Market Garden
- Pond
- Scrubland
- Winter Wheat
- Woods

Figure 2

Land Use

DBH Soil Services Inc.

33042275....ics


Shinglestown
1:18,000

SUSTAINABLE FOOD SYSTEMS: RISKS WITH AGGREGATE EXTRACTION

IN WILMOT TOWNSHIP and BEYOND?

Wilmot Township Council

April 12, 2021

A. Ehrlich, McMaster University, NFU and Gravel Watch

The Changing Landscapes and Sustainability?

- "I felt as if we were flying over a garden of Eden with all the fruitful land and carefully tended farms below us when suddenly a deep wound in the landscape appeared, a gravel pit" L. Laepple on a flight approx. 2017 reminded her of Carl Hiebert's description of his flight over similar landscape nearby approx. 14 years earlier.

- "The upward sweep from the complexity and heaviness of the stones, the serendipity of the ethereal clouds, feels surrealistic, more than I can take in. It is so intensely charged with contrast and metaphor that I almost forget to lift my camera and capture this serendipitous moment to film." pg. 91. C. Hiebert The Grand River: An Aerieal Journey, 2003.

Is this Sustainable?
For whom and how long?

- South Western Ontario and the GGH has some of the most productive agricultural land in Canada

- Wilmot Township Municipal Area = 65,167 acres

- Prime Agricultural Land (Class 1-3) in Wilmot Township = 60,660 acres

- 93% of Wilmot Township is Prime Agricultural Land
- How do we balance our local agricultural resources and needs with aggregate and other resources needed ‘close to market’?

Calls for Sustainable Aggregate Management

"Aggregate is an important resource in the development of infrastructure and construction.

It is also a non-renewable resource and it's excavation and utilization need to be sustainable." (Gravel Pit Study, Municipal District of Peace, Alberta. No. 135 2011).

"Sand and gravel are the unrecognised foundational material of our economies. They are mined the world over…At the same time these materials cannot be produced from our terrestrial, riverine an marine environments in quantities needed to meet demand from a world of 10 billion people without effective policy, planning, regulation and management. Such actions remain largely unaddressed by decision-makers in pubic or private sectors. It is time to challenge this paradigm of infinite resources..." (Gallagher, L. (May 2019) Sand and Sustainability: Finding new solutions for environmental governance of global sand resources. University of Geneva in affiliation with UNEP)

SUSTAINABILITY

UN Definition

"meeting the needs of the present without compromising the ability of future generations to meet their own needs."

UN Brundtland Commission, 1987

Sustainability: Global to Local?

Global to Wilmot Township Commitment to the SDGs?

- Canada a signatory to the UN Sustainable Development Goals (SDGs) in 2015 along with 192 other countries
- 17 Goals to Sustainable Development based on five pillars:
  - People: end poverty and hunger to ensure a just and healthy environment for all;
  - Planet: sustainable management of all resources and protection for future generations;
  - Prosperity
  - Peace
  - Partnership: mobilize and protect resources at all levels: locally, provincially, nationally and globally
- Are local Woolwich targets for food security and sustainability aligned with provincial, national and global commitments to SDGs?
- Do you have accountability structures and processes with processes/data to ensure local inter-sectoral planning and evidence-based decision-making?

Gravel and Agricultural Resources

Preliminary provincial government sources researching ‘evidence’ of agricultural and aggregate resources found:

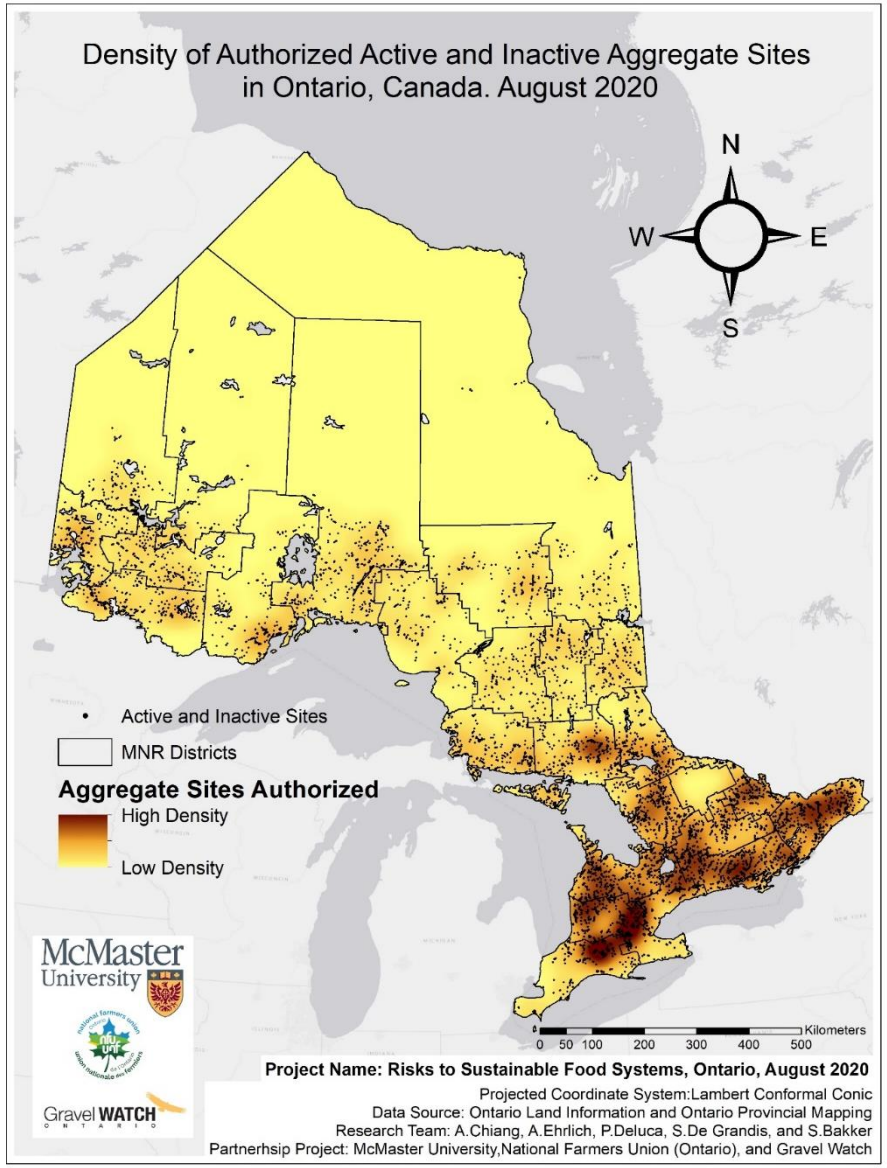
- Total Acres of Sand and Gravel Resources in Ontario = 5,110,505.64 acres

- Total Acres of Prime Farmland = 2,257,761.04 acres

Agriculture in the satellite age - Canada.ca (asc-csa.gc.ca) →

Confidential Not For Distribution

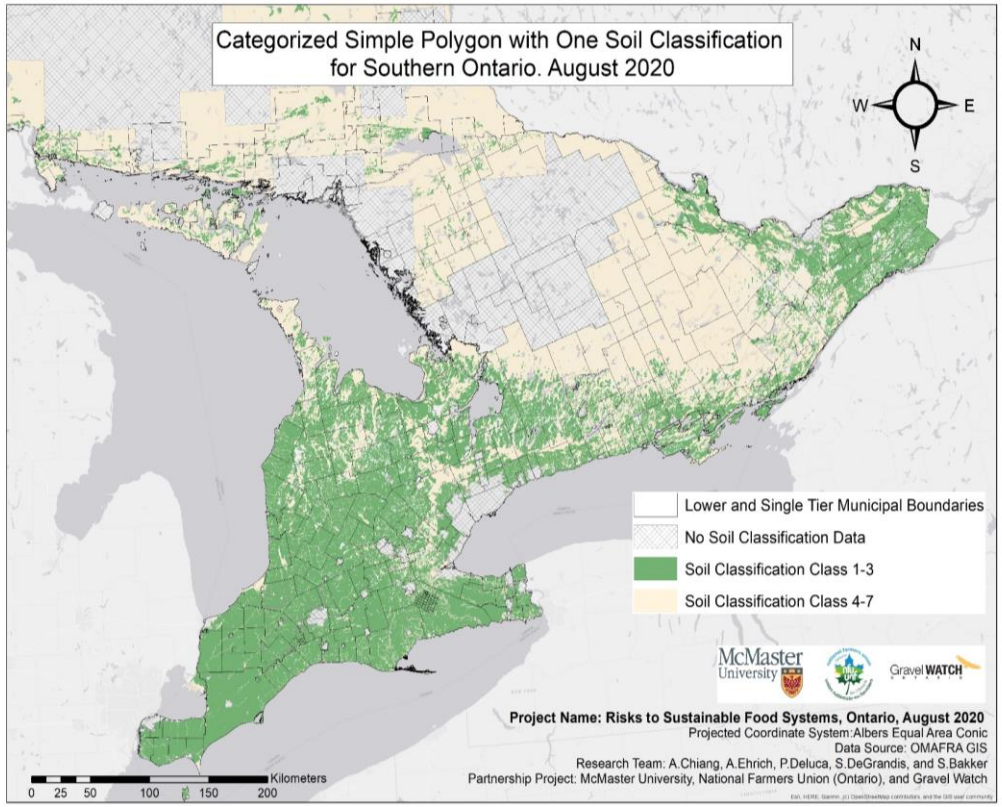
Results:
Ontario Aggregate and Agricultural Resources

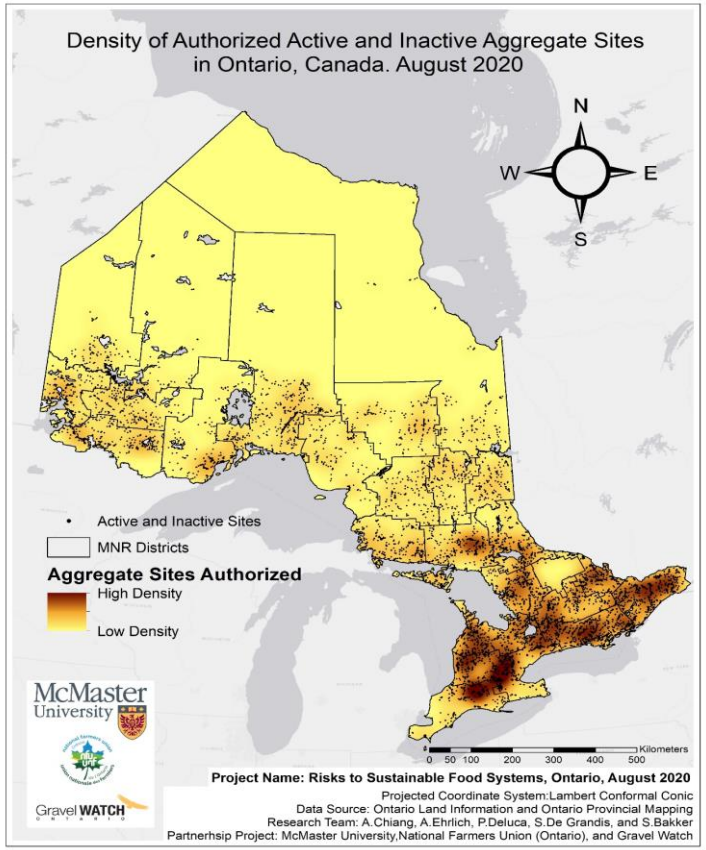


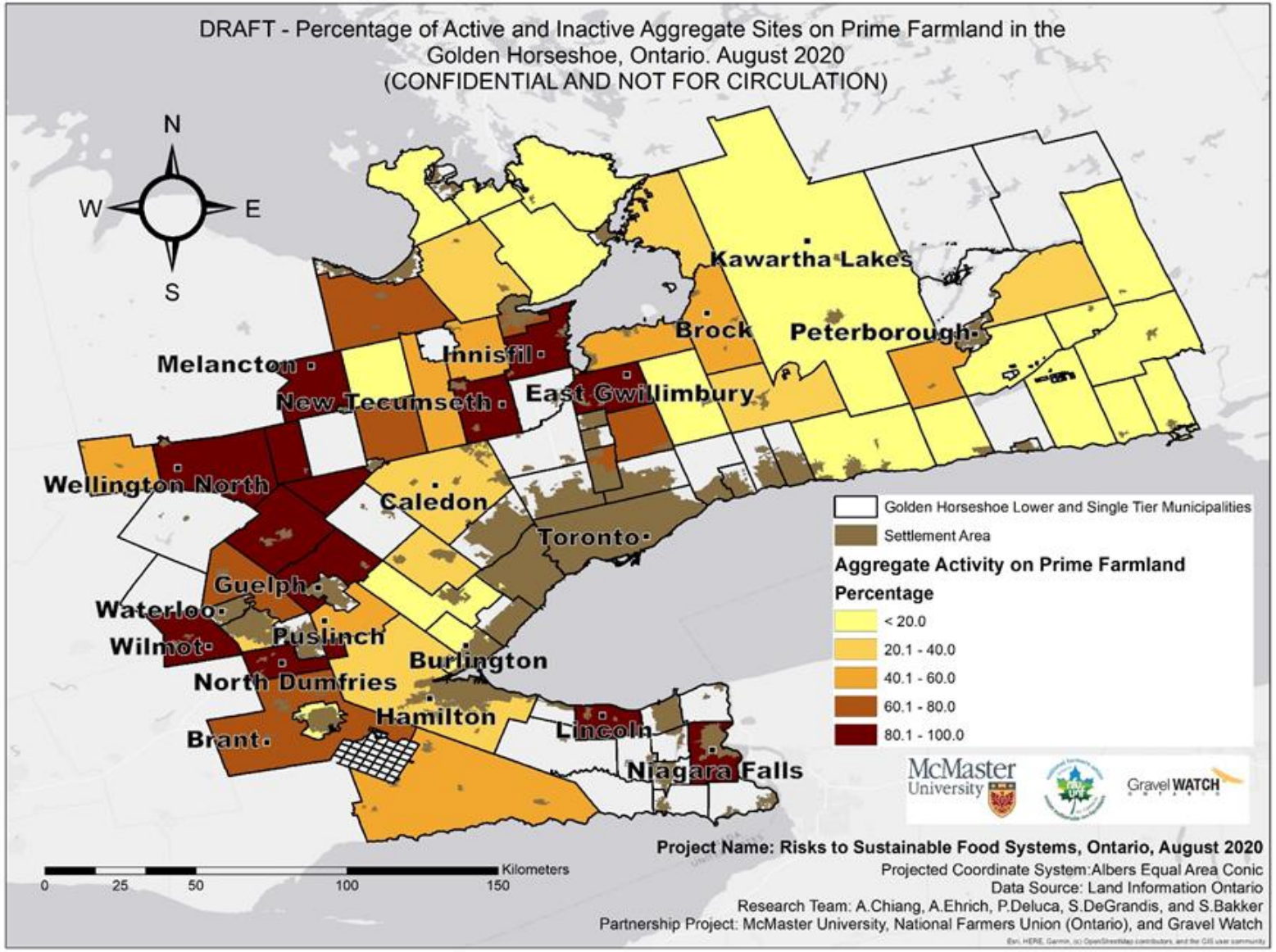
Confidential Not For Distribution

Distribution of Prime Farmland and Aggregate Activity Sites in Ontario

CONFIDENTIAL not for Sharing






DRAFT - Percentage of Active and Inactive Aggregate Sites on Prime Farmland in the Golden Horseshoe, Ontario. August 2020
(CONFIDENTIAL AND NOT FOR CIRCULATION)
N
W
E
S
Kawartha Lakes
Brock
Peterborough
Innisfil
Melancton
New Tecumseth
East Gwillimbury
Wellington North
Caledon
Toronto
Guelph
Waterloo
Wilmot
Puslinch
Burlington
North Dumfries
Hamilton
Brant
Lincoln
Niagara Falls
Golden Horseshoe Lower and Single Tier Municipalities
Settlement Area
Aggregate Activity on Prime Farmland
Percentage
< 20.0
20.1 - 40.0
40.1 - 60.0
60.1 - 80.0
80.1 - 100.0
McMaster University
Gravel WATCH
Kilometers
0
25
50
100
150
Project Name: Risks to Sustainable Food Systems, Ontario, August 2020
Projected Coordinate System:Albers Equal Area Conic
Data Source: Land Information Ontario
Research Team: A.Chiang, A.Ehrich, P.Deluca, S.DeGrandis, and S.Bakker
Partnership Project: McMaster University, National Farmers Union (Ontario), and Gravel Watch

Summary

- 77.3% of aggregate activities are located on prime farmland comparable to some recent work by government agencies
- Provides strong evidence of the urgent need to protect farmland to sustain food security
- Impact on Soil Classes 4-7 needs to be considered as part of sustainable food systems
- Growing evidence of the fragility of local and global food system

| Food Systems Thinking

Confidential Not For Distribution

Added Risks to Health

- What precautionary measures/policies are in place given health risks associated with soil and water contaminants ie. Sludge and agri-chemicals used on lands on Well-head Protection Areas (WHPAs)?
- By whom and how are ‘contaminants of concern’ tested and monitored for local decision-making ?
- What monitoring data is required of the industry?
- Will it be openly available for local municipal decision-making with inter-sectoral collaboration ie. Health, agriculture, water, environmental committees sharing data?
- Ensure that detection limits for contaminants meet standards based on current research evidence ie. risks to women and children’s health basis for bans 20+ years ago for agri-chemical contaminants such as atrazine found in drinking water.

Growing Risks and Opportunities: Food Systems Sustainability with Climate Crisis and COVID Pandemic?

COVID pandemic amplified call for sustainability:

> "The systemic weaknesses exposed by the virus will be compounded by climate change in the years to come. In other words, COVID-19 is a wake-up call for food systems that need to be heeded."
>
> IPES –International Panel of Experts on Sustainable Food Systems, April 2020)

THANK YOU and Q&A

Hallman Pit Application - Agricultural Impacts

Alisa McClurg

April 12, 2021

EcoVoca.com

Food System Roundtable of Waterloo Region

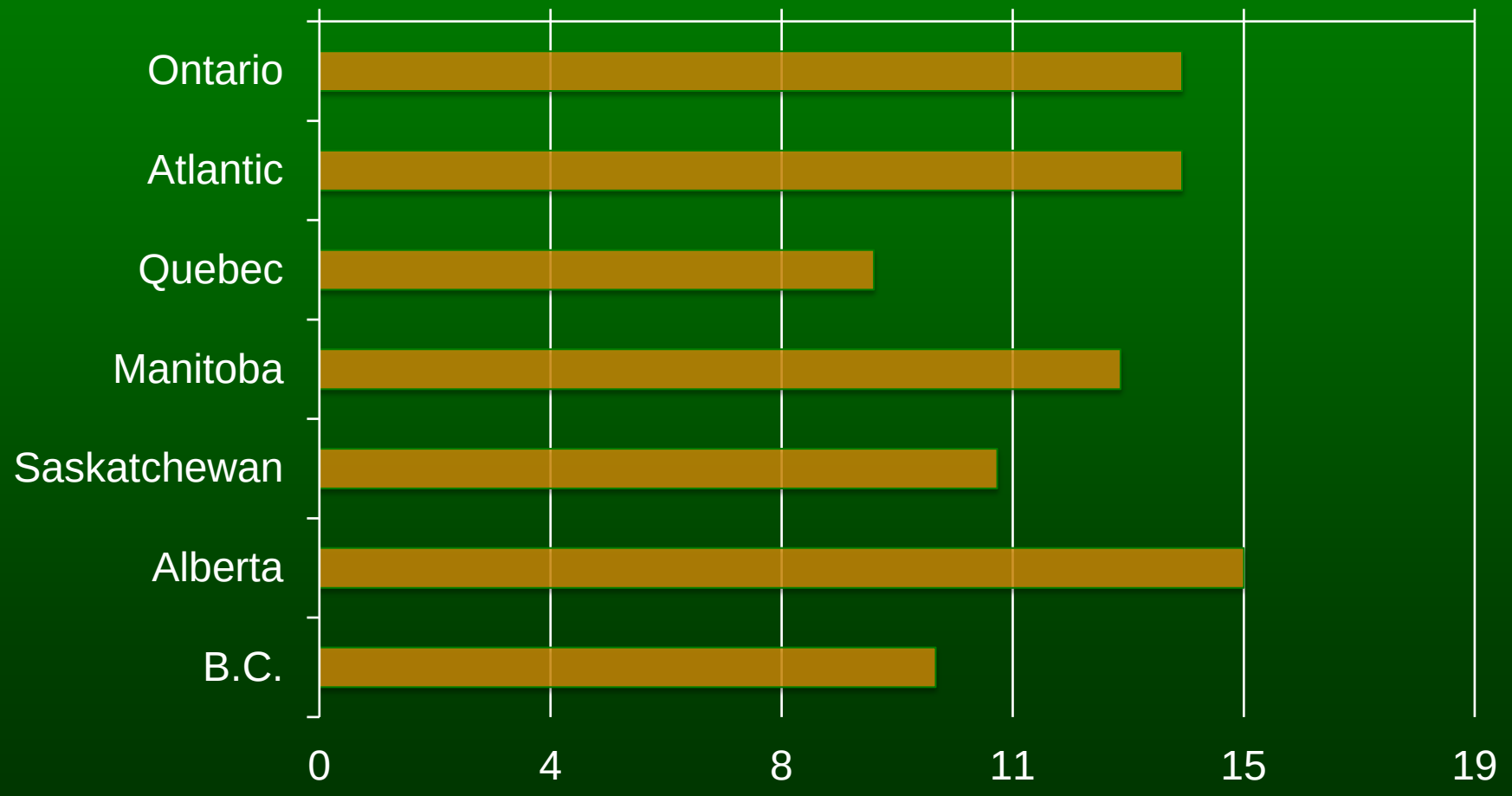
CITIZENS FOR SAFE GROUND WATER

KW URBAN HARVESTER

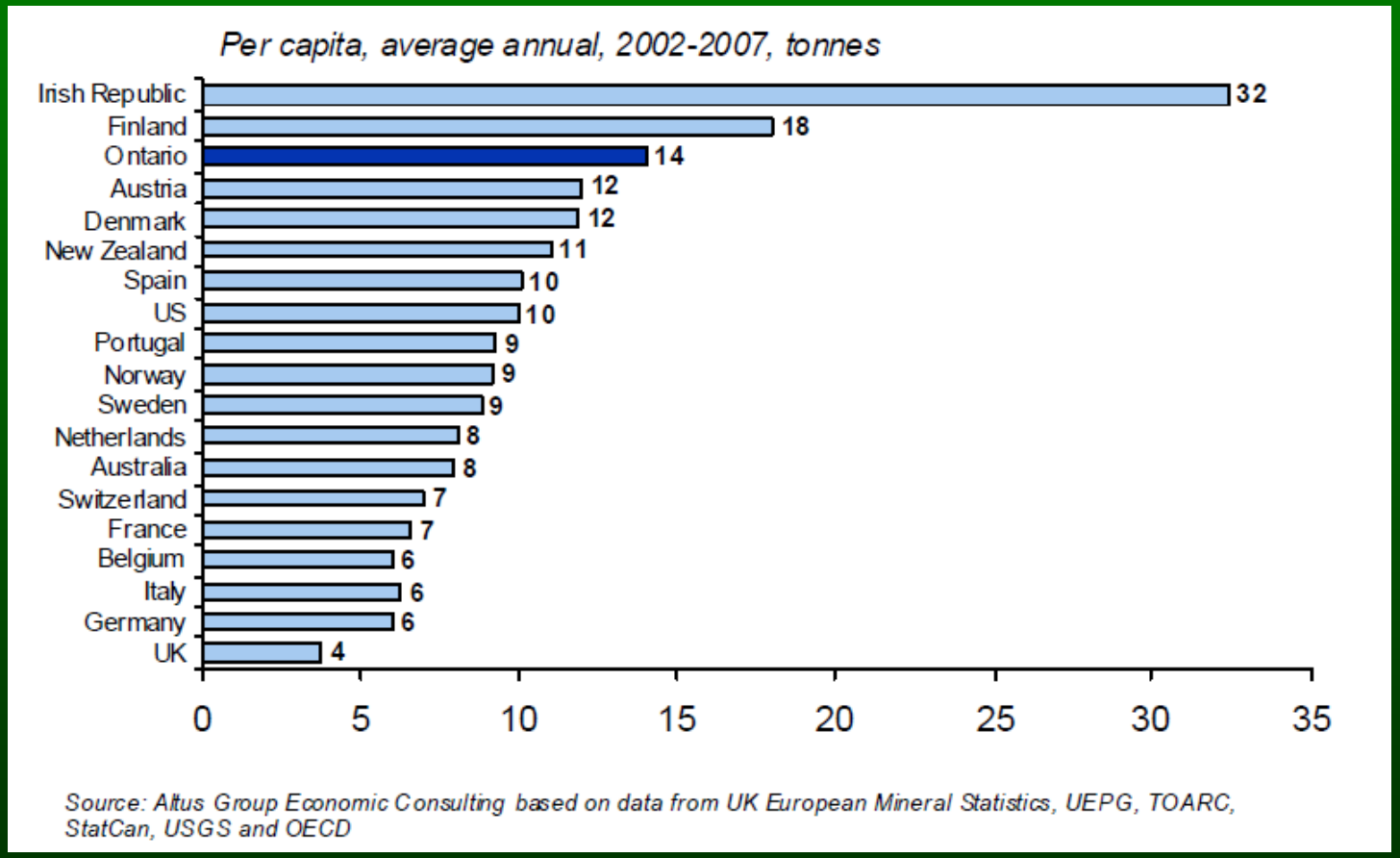
TransitionKW

Provincial consumption high!

- Per capita primary aggregate consumption (tonnes 2002-2007)



High compared to other countries!



Have Regard to Agricultural Resources:

"In considering whether a licence should be issued or refused, the Minister or the Local Planning Appeal Tribunal, as the case may be, shall have regard to…(f) <u>any possible effects of the operation of the pit or quarry on agricultural resources</u>"

Aggregate Resources Act, s. 12(1)

Lands Prime Agricultural

LEGEND

- Protected Countryside
- Prime Agricultural Area
- Rural Areas
- Area subject to Policy 6.H.1 (Municipal Park)
- Southwest Kitchener Policy Area
- Countryside Line
- Exact location of Countryside Line yet to be determined

Map 7 – The Countyside (2015) – Region of Waterloo – Regional Official Plan

Waterloo Region needs rural food production

- In 2019, 10% of households in Waterloo Region were food insecure
- With pandemic, 40% increase in food distribution (*Waterloo Region Food Bank*)
- Even harder for marginalized groups

Strong Demand for Grow-a-Row

Last year we provided/created*:

- 125 gardeners with soil,
- seedlings to 216 gardeners,
- two yard shares & 4 garden plots

- *kwurbanharvester.org/grow

Recommendations

- Protect agricultural land!
- Disallow this zoning change!
- Push for assessment of aggregate needs
- Discourage prime aggregate use

Food System Roundtable of Waterloo Region

A healthy, just, and sustainable food system is one in which all residents have access to, and can afford to buy, safe, nutritious, and culturally acceptable food that has been produced in an environmentally sustainable way, and that supports our rural communities.

We need need to carry out food system planning, and to establish principles that govern food-related decisions.

Our Food Charter

2

... we support **community economic development**

- by building the processing and distribution infrastructure required to make local foods available for local residents and global trade.
  This includes:
  - prioritizing local processing, distribution, and retailing opportunities for small- and medium-sized businesses
  - encouraging public institutions to buy local and environmentally sustainable food
- by encouraging policies and other initiatives which enable profitable livelihoods for local farmers for generations to come.

3

… we support **access to healthy food**

- by protecting farmland from urban development
- by supporting policies and other initiatives that ensure that everyone has access to enough nutritious food. This includes:

  - championing adequate incomes for everyone, so that all residents can afford to buy healthy food
  - encouraging the local production and processing of foods that contribute to the nutritional health of citizens
  - ensuring walkable access to venues that sell healthy foods
  - ensuring the widespread availability of, and access to, locally produced and culturally appropriate food
  - ensuring the availability of healthy, affordable food choices in workplaces and public institutions

4

… we support **ecological health**

- by promoting and supporting food production and processing methods that reduce greenhouse gas emissions; use less fossil-fuel energy; sustain or enhance wildlife habitats, watersheds, biological and seed diversity, and soil health; and that optimize or reduce the use of local natural resources to ensure long-term ecological sustainability
- by ensuring access to a safe and sustainable water supply for all residents of Waterloo Region
- by encouraging the reduction of food waste and excessive food packaging, and supporting initiatives that strive to reduce or reuse food waste, such as composting

5

… we support **integrated food policies at all levels of government**

- by encouraging joined-up policies across local, provincial, and federal levels of government that aim to ensure that healthy, environmentally sustainable food is available to everyone
- by recognizing the importance of comprehensive food strategies and policies that promote a profitable, viable and ecologically sustainable food system

Growing Community Awareness of Food Sustainability Challenges

- This is important to the whole Region not just Wilmot Township

Looking to you to ensure that you protect and increase accessibility to local food for our children, grandchild, and all the children to come.

We can not afford to lose an acre of farmland

Which argument sounds right?

Aggregate needs to be close to market

(while also potentially negatively impacting local food and water resources)

Local food needs to be close to market

(Focus is being put on building local distribution and processing facilities and more farm to table options)

9 March 2021 “The world's food systems are responsible for more than one-third of global greenhouse gas emissions”- Nature Food.

“The data is clear that agriculture supply chains are major contributors to climate change,” said Julie Nash, director of food and capital markets at Ceres

Farms Forever Discussion Paper

Feb 12, 2021

The Ontario government recognizes that our agri-food sector is the foundation of our province and that it will play a critical role in our future.

The four policy objectives of Farms Forever are the following:

- Help preserve the productive capacity of agricultural land close to major urban centres
- Support the local sourcing of food
- Strengthen Ontario's agri-food sector
- Support young farmers and new entrants

“Ensuring that Ontario's farmland is protected for future generations is an important aspect of the province's growth and development.”

http://www.omafra.gov.on.ca/english/policy/farmsforever.htm

Ontario Strengthens the Protection of Water Resources

Changes to water taking program ensuring sustainability of surface and groundwater

Priority 1 – Environment, drinking water, and farm animal production (equally)

Priority 2 - Agricultural

Priority 3 – Industrial and commercial and other

For example: aggregates

https://www.ontario.ca/page/guidance-support-priorities-water-use

Additional Municipal By-laws to Consider

- Conduct robust soil mapping studies.
- Formation of Agricultural Advisory Committees working with local farmers
- Revise policies on the development of mining for aggregates addressing where it is most appropriately located and the need for more recycling of minerals
- Create permanent agricultural districts
- Places limits on the quantity of farmland that can be owned by individuals or entities located outside of Ontario

https://sustainontario.com/custom/uploads/2016/12/Farming-and-Farmland-Network-Research-Farmland-Preservation-2017-.pdf

Our Food Future Waterloo is a joint project from the University of Waterloo and the Food Systems Roundtable of Waterloo Region to bring the best from research and the community to inform our path towards Food Justice in the region.

We welcome a conversation from Wilmot Township about helping to create

- a food, agriculture, land use committee/council
- a Wilmot Food Charter

From:
To: Tracey Murray
Cc:
Subject: Statement Regarding the Hallman Pit
Date: Monday, April 12, 2021 12:43:59 PM
Attachments: image001.png
image002.png

CAUTION: This email originated from outside of the organization. Do not click links or open any attachments unless you recognize the sender and know the content is safe.

Good afternoon,
I was made aware that there is a meeting this evening regarding the proposed Hallman Gravel Pit.
I do not have a significant amount that I would like to present…I am available to be involved in the call but would prefer to make a statement vs have a presentation.

As owner of Lyndon Fish Hatcheries located at in New Dundee. We are concerned about the potential impact of the Hallman pit on our livelihood as well as the impacts on the greater industry that we support. Every year we hatch 4 million rainbow trout per year at these two facilities which our customers grow out to turn into 24 Million meals. We are investing heavily in ways to best use the water resource available to us and steward it in a sustainable way out of respect for future generations.
This pit has the potential to not only impact the water table, but more importantly due to the absence of an aquitard, the aquifer is highly exposed to contamination spread.
For clarity -An aquitard is a zone within the Earth that restricts the flow of groundwater from one aquifer to another. Aquitards comprise layers of either clay or non-porous rock with low hydraulic conductivity.
This contamination would have little chance of being managed or maintained in the event of a spill. We view this as a significant area of concern and have had our insurance policies amended to reflect this added coverage. Other water users (including the region) may not have this option and once the damage has been done, reversing impact is unlikely at best.

Please call me at at your earliest convenience to discuss if you would like this statement read or if you would like it simply in written form.

Regards,

Clarke Rieck

Nathan Riedel appeared as a delegation and expressed concerns with the proximity of the development to his property and requested that the development be reduced to a two-story structure. Mr. Riedel also expressed concerns for the parking allocations for the development.

Sam Head, Dryden, Smith & Head Planning Consultants, provided an overview of the status of the development project, noting that any concerns from delegations will be discussed with Township staff. Mr. Head advised Council that the project is designed for seniors, noting that the drainage report has been submitted to the Township and the final site plan process will address any issues. He advised that in terms of the building height, he would have further discussions with the applicant.

The Manager of Planning / EDO advised that the zoning regulates the height of the buildings, noting that the zoning allows for 10.5 meters.

12. CORRESPONDENCE

13. BY-LAWS

13.1 By-law No. 2021-27 Zone Change Application 04/20

Resolution No. 2021-104

Moved by: Councillor A. Hallman Seconded by: Councillor J. Gerber

THAT By-law Nos. 2021-27 be introduced, read a first, second and third time and finally passed in Open Council.

CARRIED.

14. NOTICE OF MOTIONS

15. ANNOUNCEMENTS

15.1 Councillor A. Hallman congratulated Marilyn Saurus of New Dundee was recognized for her continued volunteering in the Township.

15.2 Councillor J. Pfenning reminded everyone to do one small thing everyday for themselves to recharge and help get through these challenging times.

16. DELEGATIONS

The following persons appeared as delegations in relation to the proposed Hallman Pit. Any prewritten statements provided will be included in the appendices as noted.

16.1 Rory Farnan and Samantha Lernout, Citizens for Safe Ground Water, Appendix C.

16.2 Dorothy Wilson, Appendix D.

16.3 Linda Laepple, Appendix E.

16.4 Dave Prong, appeared as a delegation and expressed his concerns for the proposed Hallman Pit, noting objections to the proposal and the need to protect the farmland that would be lost. He noted concerns for the ground water, wetlands and animal habitat impacts that could result from the development.

16.5 Mark Gordon appeared as a delegation and expressed his concerns on the climate change impacts and the potential health impacts on the residents in the surrounding area.

16.6 Christina Harnack, Appendix F.

16.7 David Bricker appeared as a delegation, expressing concerns for noise, nature and health impacts as a result of the operations of the proposed gravel pit.

16.8 Laverne Forwell appeared as a delegation and expressed his concerns on the impacts the proposed Hallman Pit could have on the natural area.

~~17. BUSINESS ARISING FROM CLOSED SESSION~~

Resolution No. 2021-105

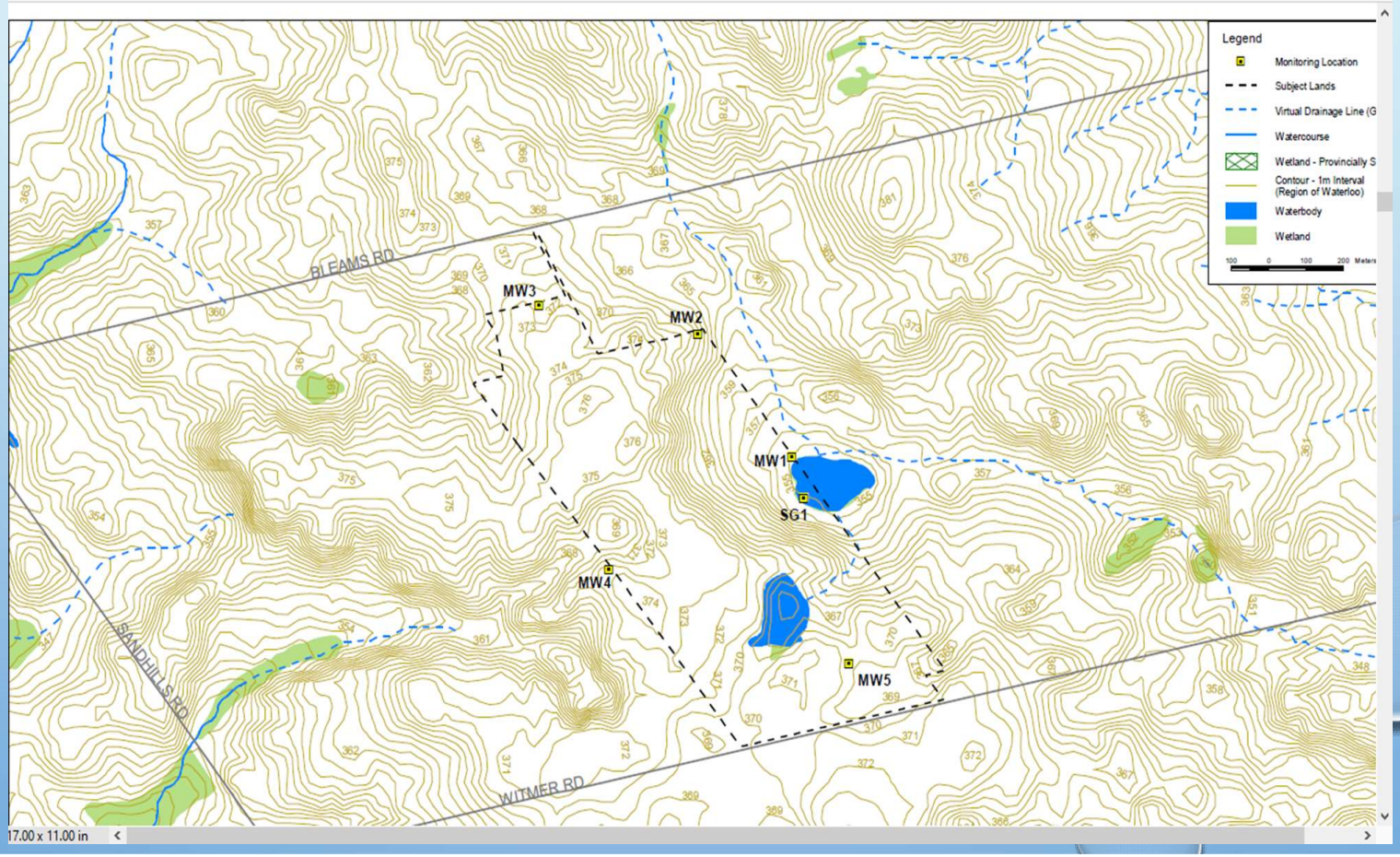
Moved by: Councillor A. Hallman **Seconded by: Councillor C. Gordijk**

THAT Confidential Report PFRS 2021-09 be received for information; and further,

THAT Council accepts the generous donation of land from Wolfgang, Regina, Ekk and Jenn Pfenning, for passive recreational use, and that this natural area be named in memory of Andreas Pfenning; and further,

THAT the Township assume all surveying and legal costs associated with the transfer; and

REVIEW OF HYDROGEOLOGICAL ASSESSMENT AND OPERATIONAL PLAN



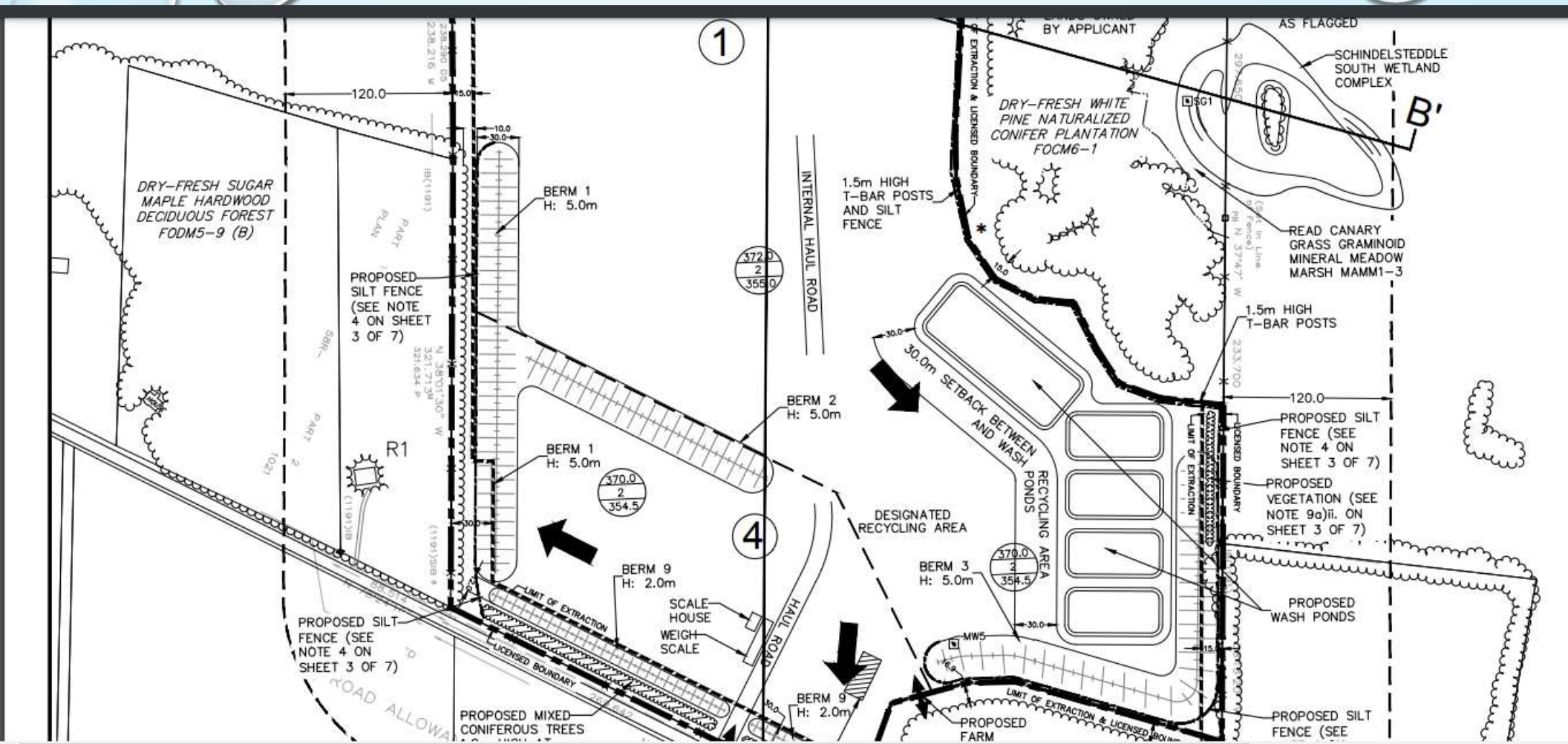
LEVEL 1 AND LEVEL 2 HYDROGEOLOGICAL EVALUATION FOR ABOVE WATER TABLE AGGREGATE EXTRACTION

- THE CATEGORY 3 LICENSE WILL ONLY PERMIT THE EXTRACTION OF AGGREGATE FROM ABOVE THE WATER TABLE.
- ONE POND WILL BE CREATED IN THE WATER TABLE AS A WATER SOURCE FOR THE AGGREGATE PROCESSING PLANT.
- A PERMIT TO TAKE WATER WILL BE REQUIRED TO SUPPLY THE AGGREGATE PROCESSING PLANT.

THE SITE PLAN SHEET 2, OPERATIONAL NOTES

- SECTION 18. AGGREGATE WASHING:

THE WASH PLANT WILL BE LOCATED WITHIN PHASE 1 WITH WATER DERIVED FROM THE WASH PONDS CONSTRUCTED INTO THE WATER TABLE; SUBJECT TO APPROVAL BY MECP, INCLUDING (IF NECESSARY) A PERMIT TO TAKE WATER.



WW_Reports (3).zip
Verified

ENVIRONMENTAL SITE ASSESSMENT
AND RECORD OF SITE CONDITION
(USED AS BACKGROUND INFORMATION IN THE HYDROLOGICAL STUDY)

- MAY 23 2017 PHASE ONE ENVIRONMENTAL SITE ASSESSMENT
- DONE FOR DUE DILIGENT FOR A REAL ESTATE TRANSACTION **AND NOT FOR A RECORD OF SITE CONDITION**.
- THE PHASE II ENVIRONMENTAL SITE ASSESSMENT PAGE 136; THE STATEMENT OF LIMITATIONS:

IT SHOULD BE NOTED THAT THE OBSERVATIONS AND RECOMMENDATIONS PRESENTED IN THIS REPORT ARE LIMITED TO THE ACTUAL LOCATIONS EXPLORED.

- THE SITE CONDITION RECORD FOR 1922 AND 1894 WITMER ROAD.
- TOTAL AREA OF RECORD OF SITE CONDITION PROPERTY (IN HECTARES) 66.15700
- CURRENT PROPERTY USE : **RESIDENTIAL**
- INTENDED PROPERTY USE: **INDUSTRIAL**

23 / 71 — 75%

LEGEND

- Approximate Site Boundary
- APEC-1
- APEC-2

CHUNG & VANDER DOELEN
ENGINEERING LTD.
311 Victoria Street North
Kitchener / Ontario / N2H 5E1
519-742-8979

N W E S

SITE PLAN	Date:	MAY 2017
	Scale:	NTS
1894 & 1922 WITMER ROAD	File No.:	E17413

er - CVD — 118 / 138 — 75%

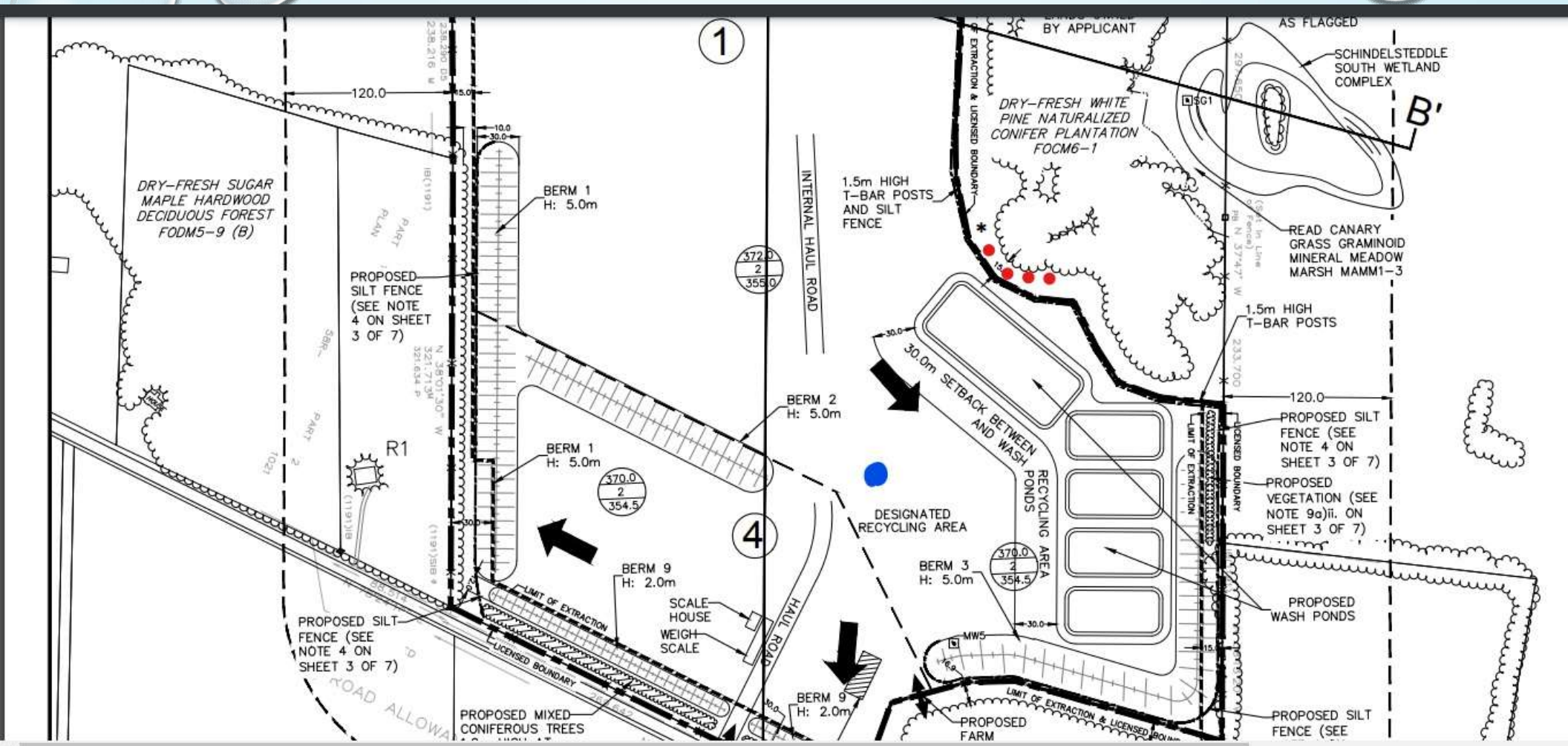
LEGEND

- Test Pit Locations
- Approximate Fill Area

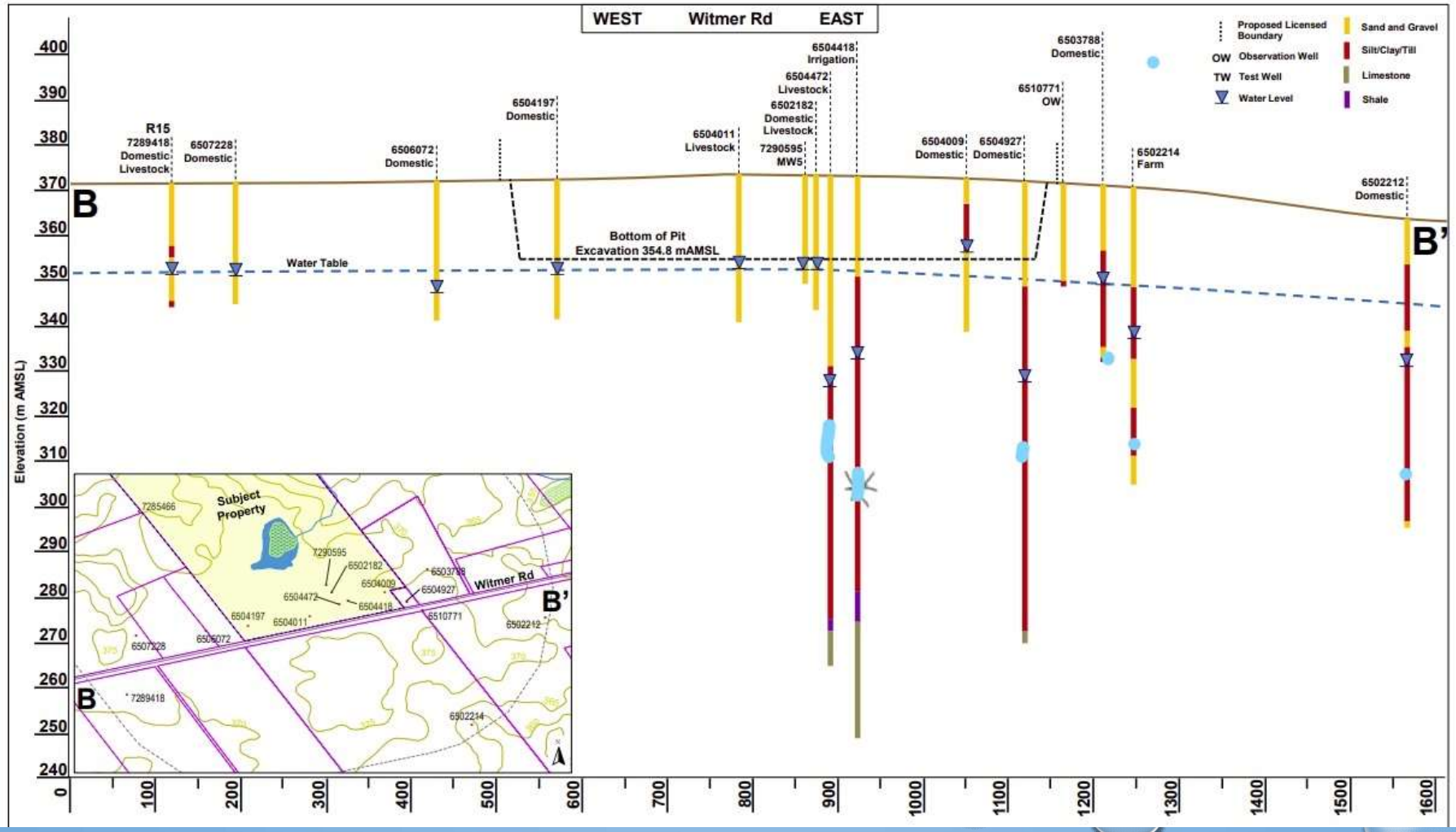
CHUNG & VANDER DOELEN
ENGINEERING LTD.
311 Victoria Street North
Kitchener / Ontario / N2H 5E1
519-742-8979

N W E S

SITE PLAN	Date:	MAY 2017
	Scale:	NTS
1894 & 1922 WITMER ROAD PETERSBURG, ONTARIO	File No.:	E17413



WW_Reports (3).zip
Verified


WEST
Witmer Rd
EAST
Proposed Licensed Boundary
OW Observation Well
TW Test Well
Water Level
Sand and Gravel
Silt/Clay/Till
Limestone
Shale
R15
7289418
Domestic
Livestock
6507228
Domestic
6506072
Domestic
6504197
Domestic
6504011
Livestock
6504418
Irrigation
6504472
Livestock
6502182
Domestic
Livestock
7290595
MW5
6504009
Domestic
6504927
Domestic
6510771
OW
6503788
Domestic
6502214
Farm
6502212
Domestic
B
B'
Bottom of Pit
Excavation 354.8 mAMSL
Water Table
Elevation (m AMSL)
Subject Property
Witmer Rd

WELLS DRILLED ON OR NEAR CATTLE YARD

6502182	PDF|HTML	N/A	N/A	3106	27.1	05/15/1963

Rated 18 GPM

6504011	PDF|HTML	N/A	N/A	3134	32.0	09/18/1973

Near biogas digester 30GPM

6504009	PDF|HTML	N/A	N/A	3134	32.3	10/03/1973

Domestic 8 GPM House 1843 in bush lot

6504197	PDF|HTML	N/A	N/A	3134	30.8	09/16/1974

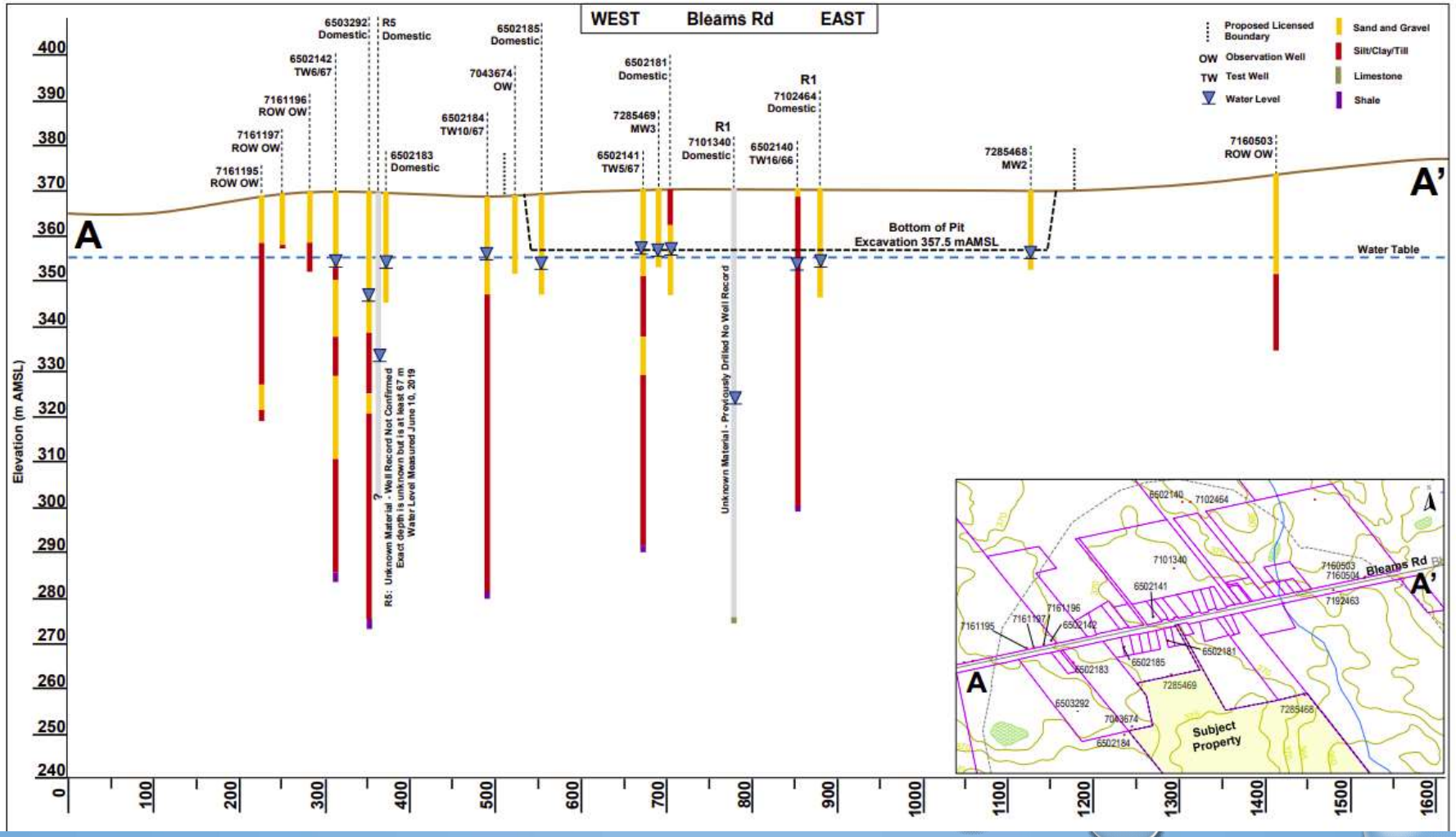
Center barns 8 GPM

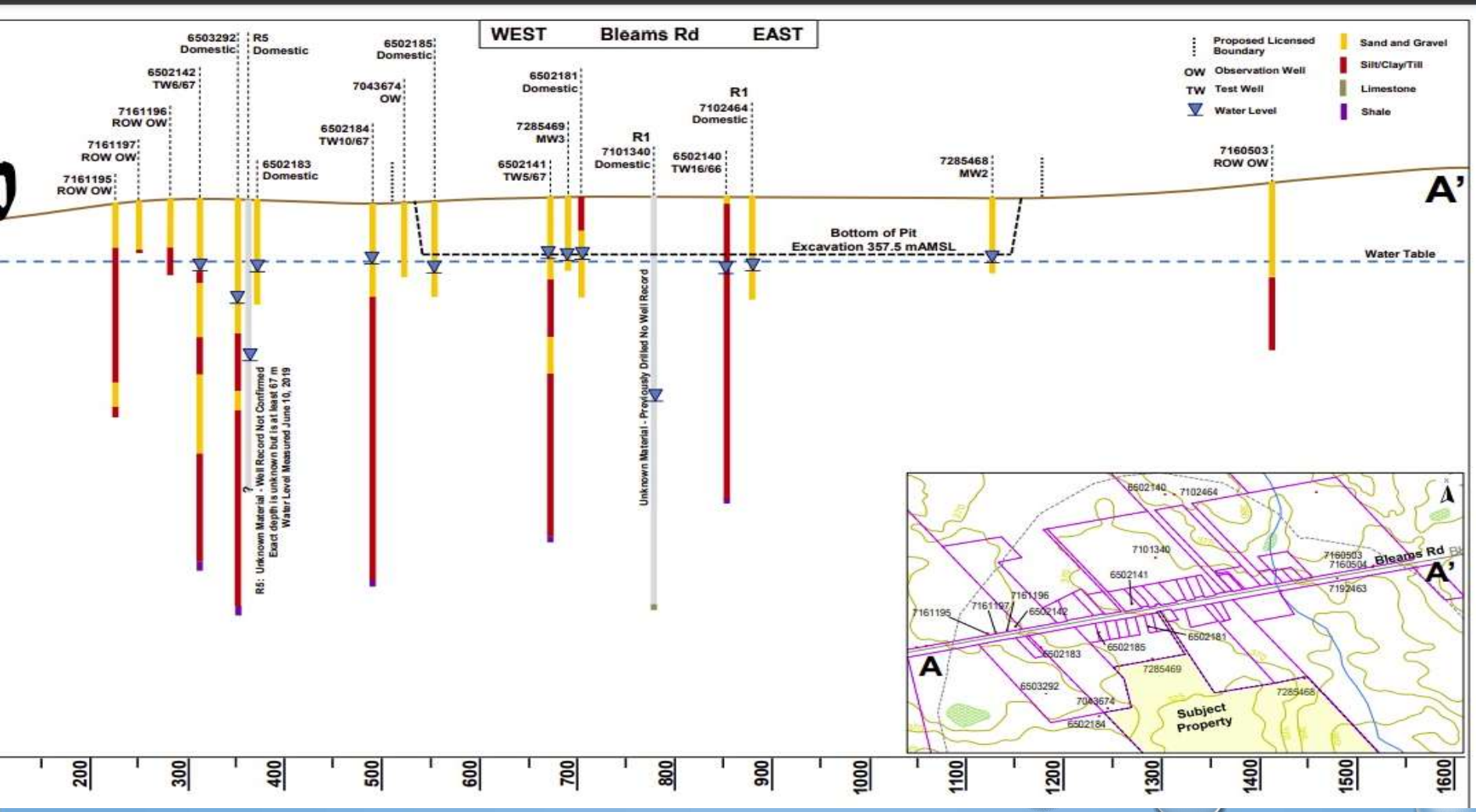
6504418	PDF|HTML	N/A	N/A	3134	121.9	02/21/1976

Irrigation well eastside of lane 600 GPM pump set at 70 m. Water quality: Mineral

6504472	PDF|HTML	N/A	N/A	3134	106.1	06/03/1976

Water supply Livestock 60 GPM pump set at 60m


WEST
Bleams Rd
EAST
Proposed Licensed Boundary
OW Observation Well
TW Test Well
Water Level
Sand and Gravel
Silt/Clay/Till
Limestone
Shale
7161195 ROW OW
7161197 ROW OW
7161196 ROW OW
6502142 TW6/67
6503292 Domestic
R5 Domestic
6502183 Domestic
6502184 TW10/67
7043674 OW
6502185 Domestic
6502141 TW5/67
7285469 MW3
6502181 Domestic
R1 7101340 Domestic
6502140 TW16/66
R1 7102464 Domestic
7285468 MW2
7160503 ROW OW
A
A'
Bottom of Pit Excavation 357.5 mAMSL
Water Table
Elevation (m AMSL)
R5: Unknown Material - Well Record Not Confirmed Exact depth is unknown but is at least 67 m Water Level Measured June 10, 2019
Unknown Material - Previously Drilled No Well Record
Bleams Rd
Subject Property


WEST Bleams Rd EAST
Proposed Licensed Boundary
OW Observation Well
TW Test Well
Water Level
Sand and Gravel
Silt/Clay/Till
Limestone
Shale
7161195 ROW OW
7161197 ROW OW
7161196 ROW OW
6502142 TW6/67
6503292 Domestic
R5 Domestic
6502183 Domestic
6502184 TW10/67
7043674 OW
6502185 Domestic
6502141 TW5/67
7285469 MW3
6502181 Domestic
R1 7101340 Domestic
6502140 TW16/66
R1 7102464 Domestic
7285468 MW2
7160503 ROW OW
A'
Bottom of Pit Excavation 357.5 mAMSL
Water Table
R5: Unknown Material - Well Record Not Confirmed Exact depth is unknown but is at least 67 m Water Level Measured June 10, 2019
Unknown Material - Previously Drilled No Well Record
Bleams Rd
Subject Property
200 300 400 500 600 700 800 900 1000 1100 1200 1300 1400 1500 1600

Ministry of the Environment

Ontario

The Ontario Water Resources Act

WATER WELL RECORD

40P/7h.

1. PRINT ONLY IN SPACES PROVIDED
2. CHECK ☒ CORRECT BOX WHERE APPLICABLE

11 6504927 MUNICIP. 65004 CON. BR 3

COUNTY OR DISTRICT: [redacted]

TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE: Wilmot

CON., BLOCK, TRACT, SURVEY, ETC.: South Of Bleams Road

LOT: 010

DATE COMPLETED: DAY 18 MO. July YR. 79

[redacted] R. 2 Petersburg

ELEVATION: 1120

BASIN CODE: 23

LOG OF OVERBURDEN AND BEDROCK MATERIALS (SEE INSTRUCTIONS)

GENERAL COLOUR	MOST COMMON MATERIAL	OTHER MATERIALS	GENERAL DESCRIPTION	DEPTH - FEET FROM	TO
Brown	Sand		Loose	I	I8
" "	Gravel	Clay	" "	I8	78
" "	Clay	Stones	Hard	78	I08
" "	Clay		" "	I08	I38
" "	Clay	Gravel	" "	I38	I66
Gray	Clay		" "	I66	248
Brown	Clay	Stones	" "	248	330
" "	Limestone		" "	330	338

31 0001 01 0105 24 0130 61 20577 0172 60528 77 0296 60573 0321 26058 773 1

32 0323 31773 0348 61573

41 WATER RECORD

WATER FOUND AT - FEET	KIND OF WATER
0336	1 ☒ FRESH 3 ☐ SULPHUR 2 ☐ SALTY 4 ☐ MINERAL
	1 ☐ FRESH 3 ☐ SULPHUR 2 ☐ SALTY 4 ☐ MINERAL
	1 ☐ FRESH 3 ☐ SULPHUR 2 ☐ SALTY 4 ☐ MINERAL
	1 ☐ FRESH 3 ☐ SULPHUR 2 ☐ SALTY 4 ☐ MINERAL
	1 ☐ FRESH 3 ☐ SULPHUR 2 ☐ SALTY 4 ☐ MINERAL

51 CASING & OPEN HOLE RECORD

INSIDE DIAM. INCHES	MATERIAL	WALL THICKNESS INCHES	DEPTH - FEET FROM	TO
05	1 ☒ STEEL 2 ☐ GALVANIZED 3 ☐ CONCRETE 4 ☐ OPEN HOLE	244	I	0330
	1 ☐ STEEL 2 ☐ GALVANIZED 3 ☐ CONCRETE 4 ☐ OPEN HOLE			
	1 ☐ STEEL 2 ☐ GALVANIZED 3 ☐ CONCRETE 4 ☐ OPEN HOLE			

SCREEN: SIZE(S) OF OPENING (SLOT NO.) DIAMETER LENGTH; MATERIAL AND TYPE; DEPTH TO TOP OF SCREEN

61 PLUGGING & SEALING RECORD

DEPTH SET AT - FEET FROM	TO	MATERIAL AND TYPE (CEMENT GROUT, LEAD PACKER, ETC.)

71 PUMPING TEST

PUMPING TEST METHOD: 1 ☒ PUMP 2 ☐ BAILER

PUMPING RATE: 00I2 GPM

DURATION OF PUMPING: 05 HOURS 00 MINS.

WATER LEVELS DURING: 1 ☒ PUMPING 2 ☐ RECOVERY

STATIC LEVEL	15 MINUTES	30 MINUTES	45 MINUTES	60 MINUTES
I48 FEET	I52 FEET	FEET	FEET	I52 FEET

IF FLOWING, GIVE RATE: GPM

PUMP INTAKE SET AT: I70 FEET

WATER AT END OF TEST: 1 ☒ CLEAR 2 ☐ CLOUDY

RECOMMENDED PUMP TYPE: ☐ SHALLOW ☒ DEEP

RECOMMENDED PUMP SETTING: I70 FEET

RECOMMENDED PUMPING RATE: 00I0 GPM

LOCATION OF WELL

IN DIAGRAM BELOW SHOW DISTANCES OF WELL FROM ROAD AND LOT LINE. INDICATE NORTH BY ARROW.

Bleams Road

house

well

MOE VF-15

FINAL STATUS OF WELL: 1 ☒ WATER SUPPLY 2 ☐ OBSERVATION WELL 3 ☐ TEST HOLE 4 ☐ RECHARGE WELL 5 ☐ ABANDONED, INSUFFICIENT SUPPLY 6 ☐ ABANDONED, POOR QUALITY 7 ☐ UNFINISHED

WATER USE: 1 ☐ DOMESTIC 2 ☒ STOCK 3 ☐ IRRIGATION 4 ☐ INDUSTRIAL 5 ☐ COMMERCIAL 6 ☐ MUNICIPAL 7 ☐ PUBLIC SUPPLY

The Ontario Water Resources Commission Act

WATER WELL RECORD

40P/7E

Water management in Ontario

1. PRINT ONLY IN SPACES PROVIDED
2. CHECK ☒ CORRECT BOX WHERE APPLICABLE

11 6504472 MUNICIP. 65004 CON. BR 3

COUNTY OR DISTRICT: Waterloo

TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE: Wilmot

CON., BLOCK, TRACT, SURVEY, ETC.: Bleams Rd. South

LOT: 010

OWNER (SURNAME FIRST): Roslyn Park Farm Ltd.

ADDRESS: R. R. 2 Petersburg

DATE COMPLETED: DAY 03 MO. June YR. 76

21 ZONE 17 EASTING 532650 NORTHING 4802710 ELEVATION 1210 BASIN CODE 23

LOG OF OVERBURDEN AND BEDROCK MATERIALS (SEE INSTRUCTIONS)

GENERAL COLOUR	MOST COMMON MATERIAL	OTHER MATERIALS	GENERAL DESCRIPTION	DEPTH - FEET FROM	TO
	Drilled Well Sept. I8/73			I	I05
Brown	Stones	Clay	Loose	I05	I30
" "	Clay	Sand	" "	I30	I72
" "	Clay		Hard	I72	296
" "	Clay	Stoney	" "	296	3I2
Blue	Shale		" "	3I2	323
Brown	Limestone		" "	323	348

31 0001 01 0105 24 0130 61 20577 0172 60528 77 0296 60573 0321 26058 773 1

32 0323 31773 0348 61573

41 WATER RECORD

WATER FOUND AT - FEET	KIND OF WATER
0323-348	1 ☐ FRESH 3 ☐ SULPHUR 2 ☐ SALTY 4 ☒ MINERAL
	1 ☐ FRESH 3 ☐ SULPHUR 2 ☐ SALTY 4 ☐ MINERAL
	1 ☐ FRESH 3 ☐ SULPHUR 2 ☐ SALTY 4 ☐ MINERAL
	1 ☐ FRESH 3 ☐ SULPHUR 2 ☐ SALTY 4 ☐ MINERAL
	1 ☐ FRESH 3 ☐ SULPHUR 2 ☐ SALTY 4 ☐ MINERAL

51 CASING & OPEN HOLE RECORD

INSIDE DIAM. INCHES	MATERIAL	WALL THICKNESS INCHES	DEPTH - FEET FROM	TO
05	1 ☒ STEEL 2 ☐ GALVANIZED 3 ☐ CONCRETE 4 ☐ OPEN HOLE	244	I	0323
	1 ☐ STEEL 2 ☐ GALVANIZED 3 ☐ CONCRETE 4 ☐ OPEN HOLE			
	1 ☐ STEEL 2 ☐ GALVANIZED 3 ☐ CONCRETE 4 ☐ OPEN HOLE			

SCREEN: SIZE(S) OF OPENING (SLOT NO.) DIAMETER LENGTH; MATERIAL AND TYPE; DEPTH TO TOP OF SCREEN

61 PLUGGING & SEALING RECORD

DEPTH SET AT - FEET FROM	TO	MATERIAL AND TYPE (CEMENT GROUT, LEAD PACKER, ETC.)

71 PUMPING TEST

PUMPING TEST METHOD: 1 ☒ PUMP 2 ☐ BAILER

PUMPING RATE: 0065 GPM

DURATION OF PUMPING: I2 HOURS 00 MINS.

WATER LEVELS DURING: 1 ☒ PUMPING 2 ☐ RECOVERY

STATIC LEVEL	15 MINUTES	30 MINUTES	45 MINUTES	60 MINUTES
I45 FEET	I49 FEET	I49 FEET	FEET	I49 FEET

IF FLOWING, GIVE RATE: GPM

PUMP INTAKE SET AT: I80 FEET

WATER AT END OF TEST: 1 ☒ CLEAR 2 ☐ CLOUDY

RECOMMENDED PUMP TYPE: ☐ SHALLOW ☒ DEEP

RECOMMENDED PUMP SETTING: I80 FEET

RECOMMENDED PUMPING RATE: 0060 GPM

GPM/FT. SPECIFIC CAPACITY

LOCATION OF WELL

IN DIAGRAM BELOW SHOW DISTANCES OF WELL FROM ROAD AND LOT LINE. INDICATE NORTH BY ARROW.

Petersburg

Bleams Road

house

9 mile to Smith

North

DRILLERS REMARKS:

FINAL STATUS OF WELL: 1 ☒ WATER SUPPLY 2 ☐ OBSERVATION WELL 3 ☐ TEST HOLE 4 ☐ RECHARGE WELL 5 ☐ ABANDONED, INSUFFICIENT SUPPLY 6 ☐ ABANDONED, POOR QUALITY 7 ☐ UNFINISHED

WATER USE: 02 1 ☐ DOMESTIC 2 ☒ STOCK 3 ☐ IRRIGATION 4 ☐ INDUSTRIAL 5 ☐ COMMERCIAL 6 ☐ MUNICIPAL 7 ☐ PUBLIC SUPPLY 8 ☐ COOLING OR AIR CONDITIONING 9 ☐ NOT USED ☐ OTHER

METHOD OF DRILLING: 1 1 ☒ CABLE TOOL 2 ☐ ROTARY (CONVENTIONAL) 3 ☐ ROTARY (REVERSE) 4 ☐ ROTARY (AIR) 5 ☐ AIR PERCUSSION 6 ☐ BORING 7 ☐ DIAMOND 8 ☐ JETTING 9 ☐ DRIVING

CONTRACTOR: NAME OF WELL CONTRACTOR: C. A. Kerr Well Drilling — LICENCE NUMBER 3I34

ADDRESS: Box 28I Baden

NAME OF DRILLER OR BORER: Charles A. Kerr — LICENCE NUMBER 3I34

SIGNATURE OF CONTRACTOR — SUBMISSION DATE DAY 7 MO. June YR. 76

OFFICE USE ONLY: DATA SOURCE 1 CONTRACTOR 3I34 DATE RECEIVED 200776

DATE OF INSPECTION June 27/77 INSPECTOR EG

REMARKS

CSS.SS

OWRC COPY

Monitoring wells and bore holes Jackson Harvest Farm

7285467	HTML	A222270	Z253880	7238	6.1	04/06/2017

MW 1 edge of pond

7285468	HTML	A222269	Z253881	7238	15.2	04/07/2017

MW 2 eastern fence line towards Shingltown

7285469	HTML	A222272	Z253882	7238	18.3	04/10/2016

MW 3 near Shingltown

7285466	HTML	A222271	Z253883	7238	22.9	04/10/2017

MW 4 eastern fence line, central

7290595	HTML	A225897	Z253991	7238	19.8	07/04/2017

MW 5 farm yard / lane

Bore holes / Well records with little info

7359729	HTML	A289807	Z336628	7675	N/A	04/01/2020

7359731	HTML	A289086	Z336627	7675	N/A	04/02/2020

7359732	HTML	A289805	Z336626	7675	N/A	04/07/2020

BH6 26m

7359733	HTML	A289804	Z336625	7675	N/A	04/20/2020

7359734	HTML	A289803	Z336624	7675	N/A	04/22/2020

BH 7D – 47 m North west property corner, no records

7359728	HTML	A289808	Z336629	7675	N/A	04/02/2020

BH barn area east south

7359730	HTML	A289809	Z336630	7675	N/A	04/03/2020

WELLS EAST AND WEST OF PROPERTY

6504927	PDF|HTML	N/A	N/A	3134	103.0	07/18/1979

Next door neighbor 1874domestic well east of farm entrance 12 GPM used to supply 1843

6503788	PDF|HTML	N/A	N/A	5469	36.9	04/04/1973

First property east on Witmer

6506072	PDF|HTML	N/A	NA	3518	30.5	10/21/1986

First neighbor to the west on Witmer Rd . Rated 10GPM **Water not meeting ODWS**

7298020	PDF|HTML	N/A	Z250092	6231	N/A	09/25/2017

2215 Bleams closed

6502184	PDF|HTML	N/A	N/A	2801	87.2	04/07/1967

Regional monitoring well OW- 10 -67 (decommissioned in Dec 2018)

Table 8-6: Aquifers Applicable to Wellfields for ISI Mapping

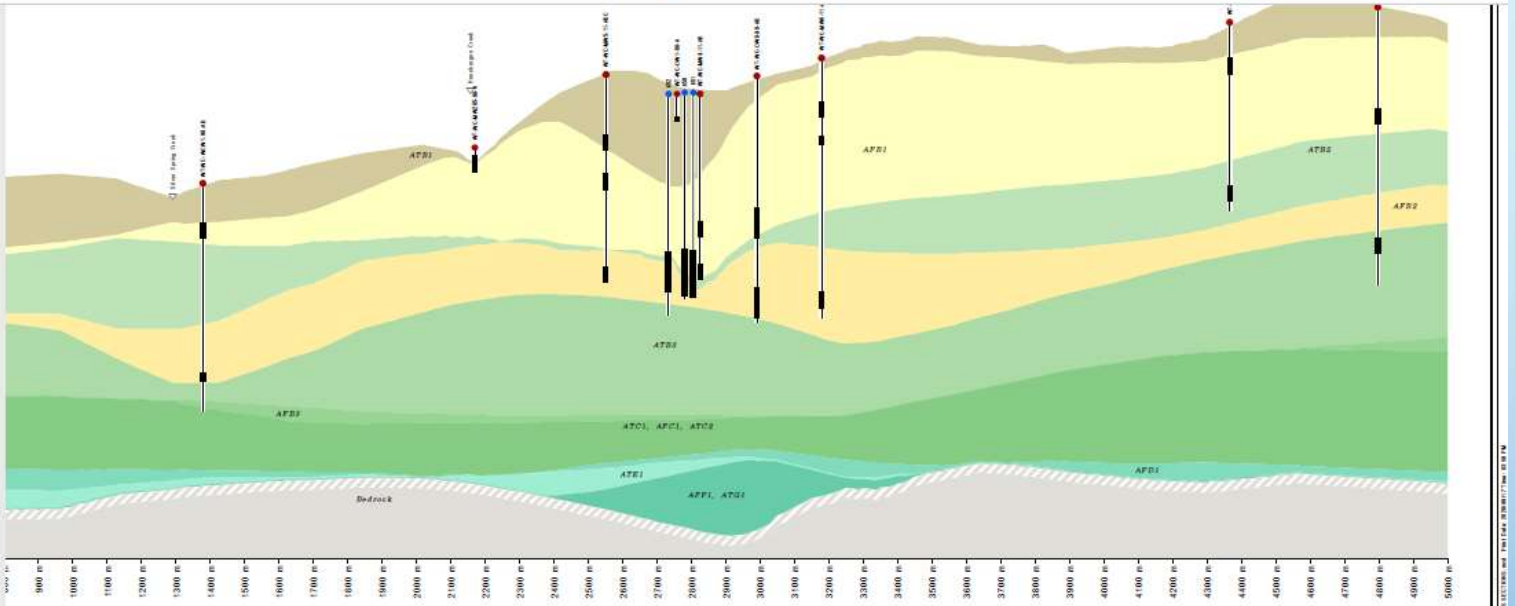
Wellfield	Production Wells	Screened Aquifer for ISI Mapping	Overlying Aquifer
Waterloo Area Wellfields			
Erb Street	W6A/W6C[c], W6B, W7, W8	Middle Waterloo Moraine Sands (AFB2)	Upper Waterloo Moraine Sands (AFB1)
William Street	W1B, W1C, W2	Middle Waterloo Moraine Sands (AFB2)	Upper Waterloo Moraine Sands (AFB1)
Waterloo North	W5A, W25 (Laurel Tank)	Pre-Catfish Creek Aquifer (AFD1)	Lower Waterloo Moraine or Catfish Creek Till Outwash Aquifer (AFB3)
Waterloo North	W10[a]	Upper Waterloo Moraine Sands (AFB1)	n/a
Kitchener Area Wellfields			
Strange Street	K10A, K11A, K13/K13A[c], K18, K19	Middle Waterloo Moraine Sands (AFB2)	Upper Waterloo Moraine Sands (AFB1)
Mannheim ASR	ASR1, ASR2, ASR3, ASR4, RCW1, RCW2	Middle Waterloo Moraine Sands (AFB2)	Upper Waterloo Moraine Sands (AFB1)
Mannheim East	K21/K21A[c], K25, K29	Middle Waterloo Moraine Sands (AFB2)	Upper Waterloo Moraine Sands (AFB1)
Mannheim West	K23, K24, K26	Upper Waterloo Moraine Sands (AFB1)	n/a
Mannheim Peaking	K91, K92, K93, K94	Middle Waterloo Moraine Sands (AFB2)	Upper Waterloo Moraine Sands (AFB1)
Greenbrook	K1A[a], K2A[a], K4B[a]/K4C[a,c], K5A[a], K8[a]	Pre-Catfish Creek Aquifer (AFD1)	Lower Waterloo Moraine or Catfish Creek Till Outwash Aquifer (AFB3)
Parkway	K31, K32, K33	Pre-Catfish Creek Aquifer (AFD1)	Lower Waterloo Moraine or Catfish Creek Till Outwash Aquifer (AFB3)
Strasburg	K34, K36	Pre-Catfish Creek Aquifer (AFD1)	Lower Waterloo Moraine or Catfish Creek Till Outwash Aquifer (AFB3)
Pompeii	K72[b], K73[b], K74[b], K75[b]	Pre-Catfish Creek Aquifer (AFD1)	n/a
Woolner	K80[a], K81[a], K82[a]	Pre-Catfish Creek Aquifer (AFD1)	n/a
Wilmot Centre	K50, K51, K52	Upper Waterloo Moraine Sands (AFB1)	n/a
Cambridge Area Wellfields			
Fountain Street	P16, P18 (Maple Grove)	Pre-Catfish Creek Aquifer (AFD1)	Lower Waterloo Moraine or Catfish Creek Till Outwash Aquifer (AFB3)
Hespeler	H3, H3A, H4A, H5, H5A	Contact Zone	Middle Waterloo Moraine Sands (AFB2)

_Wilmot_Centre_Monitoring_Report.pdf (SECURED) - Adobe Acrobat Reader DC (32-bit)

dit View Sign Window Help

ne Tools 2019_Wilmot_Cent... ×

55 / 146 75%



nitoring Well

Till and Stratified Deposits (ATC1, AFC1, ATC2)

Glaciolacustrine Deposits, Fine Grained (ATE1)

Glaciolacustrine Deposits, Coarse Grained (AFD1)

Glaciofluvial / Glaciolacustrine Deposits, Coarse Grained Over Coarse Till (AFF1, ATG1)

Contact Zone

Bedrock

Wellhead

Well

Screen or Open Hole

BURNSIDE

Client

REGION OF WATERLOO
WILMOT CENTRE MONITORING PROGRAM

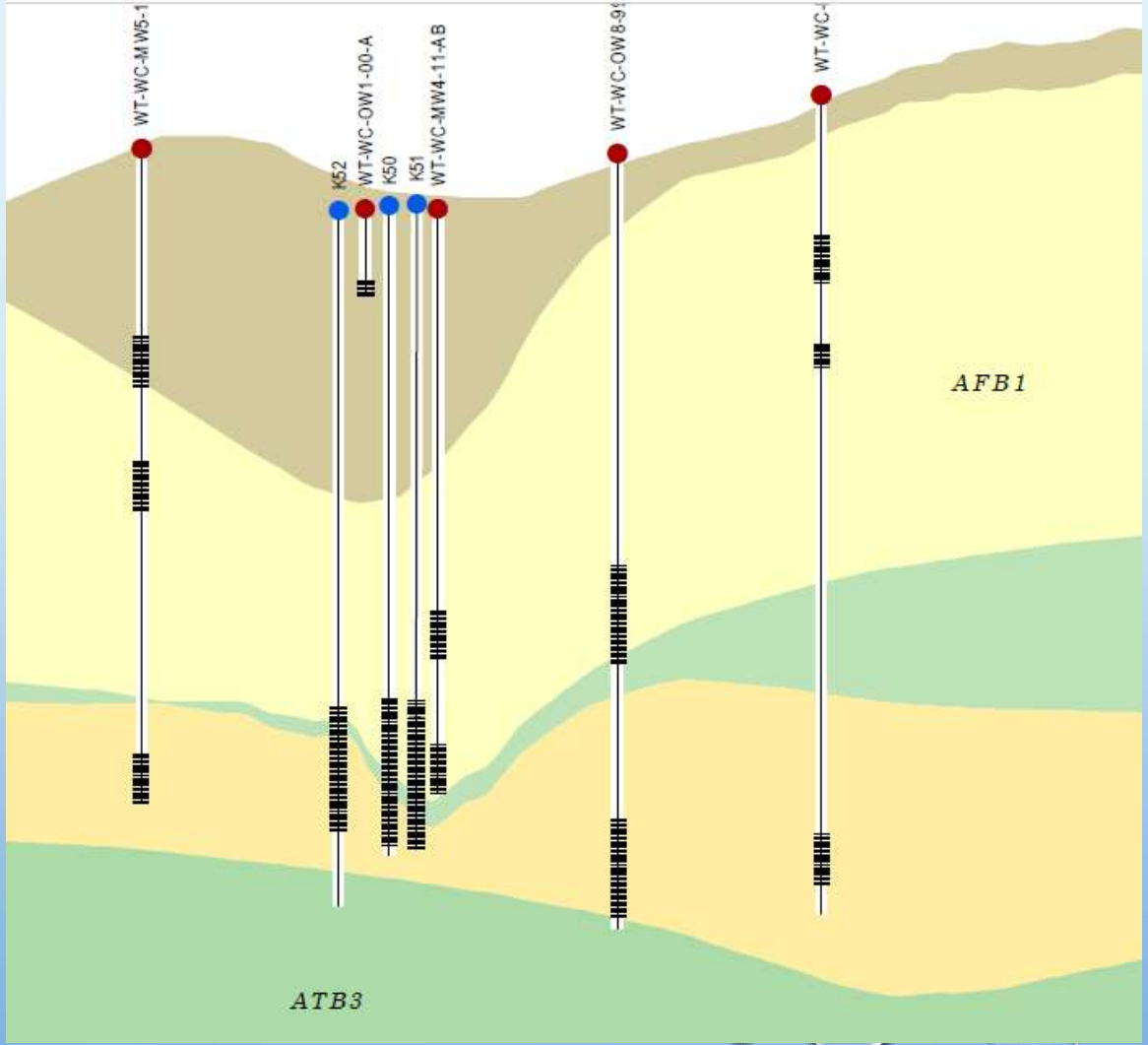
Figure Title

ANNUAL MONITORING REPORT

CROSS SECTION A - A'

Drawn	Checked	Date	Figure No.
PS	DH	September 2020	6
Horizontal Scale 1:13,000		Project No.	
Vertical Ex.: 15x		HA046402	

17.00 x 11.00 in


WT-WC-MW5-1
K52
WT-WC-OW1-00-A
K50
K51
WT-WC-MW4-11-AB
WT-WC-OW8-9
WT-WC-
AFB1
ATB3

In response to your email below. We offer the following clarification with respect to the Record of Site Condition (RSC) filing referenced in your email :

1. The RSC filed was not a mandatory RSC filing required by provincial legislation, as land use is not changing to something more sensitive. The RSC needs to examine the existing site conditions and it's suitability for the intended future use of the property. It is important to note that the RSC process does not evaluate the future implications of a change in use of a particular property on the surrounding properties. It is a record of the environmental condition of the property itself at a point in time and determines whether or not the property is protective of human health and the environment specifically in regard to its intended future use.

2. The RSC was filed for a change in land use from residential use to industrial use. In terms of O.Reg 153, agriculture use is the most sensitive use under the regulation. As such, you do not need an RSC to go from agriculture to residential use nor an industrial use as the use is not moving to something more sensitive. Further to this, the site specific generic standards for the identified contaminates of concern would be greater for industrial use as compared to residential and or agriculture use since the use is considered less sensitive.

3. The Phase One and Two that were provided in your email below are outdated (2017) and were not prepared for the purposes of filing an RSC but for due diligence purposes as clearly stated on page 1 of both documents. These documents were included as reference documents for the RSC, however, the Phase One (2020) and Phase Two (2020) would have had to be completed in accordance with the detailed requirement of O.Reg. 153. Please note that we do not automatically received these documents as part of the RSC review purpose so they would not be on file. That said, supporting documentation is provided on the Ministry's publicly accessible website and link is provided below:

https://www.lrcsde.lrc.gov.on.ca/BFISWebPublic/pub/viewDetail?submissionId=227095

Of note:

- Past land uses (pre 1835) were considered as part of the Phase One and Phase Two up to it's most recent use (residential and farmland)
- All areas of potential environmental concern were investigated on the property as part of the Phase Two and as required by the regulation. These areas appear to be limited to the southern portion of the property as identified in the Phase Two Conceptual Site Model, which can be accessed using the link above.

I hope you find the information above clarifies the nature of the RSC filing.

Regards,

Dana Mohammed
Senior Environmental Officer
Ministry of the Environment, Conservation and Parks
Drinking Water and Environmental Compliance Division
Guelph District Office
Mobile Phone: 519.820.3083
Fax: 519.826.4286

ANNUAL REPORT
Drinking-Water System Number: 260002707
Shingletown Water Supply System: Well K50

Drinking-Water System Owner: Region of Waterloo
Drinking-Water System Category: Large Municipal Residential
Period being reported: January 1 to December 31, 2020

2020 Nitrate Well K50

1/13/20	3.38 mg/L
4/08/20	3.00 mg/L
7/14/20	2.96 mg/L
10/13/20	2.87 mg/L

Shingletown Water Supply System: Well K51

Drinking-Water System Owner: Region of Waterloo
Drinking-Water System Category: Large Municipal Residential
Period being reported: January 1 to December 31, 2020

2020 Nitrate Well K51

1/13/20	<0.010 mg/L
4/08/20	<0.010 mg/L
7/14/20	<0.010 mg/L
10/13/20	<0.010 mg/L

Presentation to Wilmot Council May 17, 2021

Mayor Armstrong, Wilmot Councillors and staff, members of the public. My name is Dorothy Wilson and I am here this evening on behalf of the Nith Valley EcoBoosters, a local organization that is committed to achieving and supporting a long-term healthy environment in Wilmot and Wellesley Townships through education, action and collaboration. One action our group has decided to take is to support the Citizens for Safe Ground Water. We feel that the work that Citizens for Safe Ground Water is doing to oppose the proposed Hallman Pit directly aligns with the mandate of the Nith Valley EcoBoosters.

The focus of a number of presentations this evening is Water, Wetlands, Woodlots and Wildlife in relation to the proposed Hallman Pit. I would like to start off my presentation by talking about water. The Nith Valley EcoBoosters has a history of providing education to the public about how to protect and conserve water. In 2017 we developed a board game for this purpose, The Water Game. It has been used at the Living Well Festival and other community events, in schools, at presentations to community groups and to summer day camps run by the Wilmot Family Resource Centre. One key fact that players learn when playing the game is that most of our drinking water in Waterloo Region comes from ground water that is accessed by over 120 wells throughout the region. It makes sense to do everything possible to protect ground water. In fact, the Region of Waterloo has a Source Protection Plan that is intended to protect municipal wells from activities that could contaminate our drinking water. In addition, according to its website, the Township of Wilmot is committed to providing safe drinking water to its residents. Local citizens are encouraged to conserve water and adopt behaviours that protect water from contamination. It follows then, that our municipalities should not allow any activities that could jeopardize our water sources such as

permitting a gravel pit that is very close to municipal wells, as the proposed Hallman Pit would be.

Another fact that is introduced in our board game is that wetlands are important for a large number of reasons. Wetlands provide habitat for birds, fish and other wildlife; they filter pollutants from the water before it soaks into the ground; they store carbon which is important for mitigating climate change; and they help to control flooding. Many wetlands have been destroyed in order to have land for agricultural or development purposes. Things are rapidly changing though, as our planet is facing a far-reaching climate crisis. In some communities a new movement is growing where natural assets are given a monetary value. This results in town officials being responsible to maintain natural infrastructures just like they do with traditional brick and mortar assets. It also leads to nature-based solutions when considering how to deal with climate change. The International Union for the Conservation of Nature launched a set of global standards for nature-based solutions last year that could sequester a significant amount of carbon. Wilmot Council must join other communities in recognizing the value of natural areas in their jurisdictions. The Nith Valley EcoBoosters group urges Wilmot Council to take into consideration not only the health, but also the value of the wetlands that would possibly be adversely affected by proposed the Hallman Pit.

In 2020 the Nith Valley EcoBoosters began a collaboration with the Wilmot Horticultural Society and Rotary Wilmot, called Let's Tree Wilmot. Its mission is to increase the tree canopy cover in rural and urban areas of Wilmot. Trees do matter. They provide oxygen; absorb carbon; cool the environment; capture, store and filter rain water; provide habitat for insects, birds and other wildlife, among other things. Trees are very valuable and need to be protected. More trees need to planted. Trees are vital for the long -term environmental health of our community, the country and, indeed, the entire planet. If

the proposed Hallman Pit is allowed to proceed, the trees in the woodlot, on the property in question, would be threatened. For the reasons stated above, those trees need protecting.

I have mentioned how wetlands and trees provide habitat for wildlife. Why should we care about the wildlife? For many of us with birdfeeders, we know how much pleasure we can derive from watching different birds visit our backyards. But more importantly, according to the Canadian Wildlife Federation, wildlife plays a vital role in the ecological and biological processes that are essential to life. The health of the environment is dependent on interactions among plants, animals and microorganisms. Some of the biological processes in which wildlife play a key role are pollinization, seed dispersal, soil generation, habitat maintenance and pest control. If you want to see a great example of the beneficial effects of wildlife, check out the video about the reintroduction of wolves into Yellowstone National Park. Also, I'm sure you are familiar with recent concern about declining bee populations that is linked to certain pesticides. Consider what I said earlier about the value of natural assets. Wildlife habitat is another important natural asset that needs protection for our health and the health of the planet. Wildlife habitat could certainly be compromised if the proposed Hallman Pit is approved.

In March of 2020, the Nith Valley EcoBoosters wrote a letter to the Township of Wilmot outlining our concerns about the proposed Hallman Pit. In that letter we stated that approving the development of the aggregate operation was in direct conflict with the Climate Emergency that had recently been declared by the township. Our opinion has not changed. All decisions that the township council make related to the management of Wilmot need to be guided by the fact that a Climate Emergency has been declared. Water, wetlands, woodlots and wildlife are all natural assets that must be protected. The Nith Valley EcoBoosters urges the Wilmot Council to prevent the

construction of the proposed Hallman Pit for the sake of a long-term healthy environment in our community.

Thank you for the opportunity to speak this evening.

Linda Laepple: Hydrogeological review May 17 2021 Presentation

Title: Slide 1

Wilmot is a caring community. We care local and we care globally. A good number of Wilmot citizens have been over the years with volunteer organizations to Africa, to help drill wells so women don't have to walk for hours caring water. We are aware how privileged we are to turn the tap and clean safe water comes out, any time of the day. We are also aware of the struggles of local provincial and federal government departments in Canada to put an end to water boil advisory's and to clean up after corporations contaminated the ground water and left. We don't want to be added one day to this list. Elmira is enough.

Offices face paper, reports prepared by stakeholders. But we the community, incl staff and council, we will face reality for many years to come.

The Ministry approving the application is going by the checkpoints marked off in the application. Now, if there are only half of the facts presented in the Hallman pit application, that need to be considered in this unique case, it's not the Ministry's role to research if paper actually matches reality.

A good example the second wetland shown on most maps of the subject lands, that came and went. It wasn't shown in areal maps prior 1950 and since 3 years it is part of the row crop field again. Yet it served for many years as a manure lagoon, settling pond and extreme high levels of potassium in one of the soil tests of that area should have been red flags to the experts.

Slide 2

The Hydrological study reads:

- The Category 3 license will only permit the extraction of aggregate from above the water table.

- One pond will be created in the water table as a water source for the aggregate processing plant.

- A permit to take water will be required to supply the aggregate processing plant.

Slide 3

Operational plan notes read:

The Site plan sheet 2, operational notes read:

Section 18. Aggregate Washing: The wash plant (which is a machine by the way) will be located within Phase 1 with water derived from the **wash ponds** constructed into the water table; subject to approval by MECP, including (if necessary) a Permit to Take Water.

While all papers promises to keep a minimum of 1,5 meters above the water table one study talks about 1 pond into the water table as a water source and a water permit needed. Another planning paper clearly describes the intention to start operating wash ponds, no mention how many, into the water table right from the start or seek a permit to go into the water table once general approval is given.

Slide 4

Map of Operational plan

19. Aggregate Recycling: The Licensee **is permitted** to import concrete and asphalt for recycling and resale and/or blending purposes.

Recycling shall occur within the 'Recycling Area' as noted on Sheet 2 of 7.

To support the impression everything was done to remove any hazards from the site, an environmental assessment was done and a record of site condition filed.

Slide 5

Environmental site assessment and Record of site condition

May 23 2017 Phase one environmental site assessment

The assessment done for due diligent for a real estate transaction and not for a Record of Site condition.

The Phase II Environmental site assessment Page 136 of the Statement of limitations:

It should be noted that the observations and recommendations presented in this report are limited to the actual locations explored.

Slide 6

Areas of environmental concerns investigated

The environmental assessment used as back ground information for all studies is in reality valid only for these exact locations. The blue green and yellow where oil and air condition fluid stained soil and in ground fuel tanks were found and removed. These locations where used by the previous owner for private vehicle maintenance, the covered area by the silo where oil drums and stained concrete was removed for sure was not a farm equipment most likely not by the farming operation farm equipment maintenance.

The location chosen by the trees was to meet a requirement of investigating 30 meters from a waterbody. But there isn't any, yet.

Slide 7

Operational plan with irrigation well location

The red dots by the trees mark the test pits where construction waste were found and other litter. And now we see the waterbody. The planned wash pond in the water table, to supply the wash plant.

Waterloo Region Report / Burnside report describes the Shingltown / Witzels pond as the exposed Aquifer 1.

The blue dot marks the irrigation well, the location and condition or plans for future use **not mentioned in any reports same as another half dozen well on the property.** The well is so

deep it affects aquifer one and 2 passing thru an aquitard the consultants had calculated a 500 year travel time.

Since this well is located right under the proposed asphalt recycling area and we know storm water from our roads is contaminated, this opening could affect 2 aquafers.

On the other hand this well was used to mix manure and if the water is untested and used for aggregate washing, potentially contaminated water could be brought up from a lower aquafer and released into the upper aquafer many people depend on.

Slide 8

Witmer road well cross section

These are the wells found on and near the cattle yard including said irrigation well. Listed in the report but not investigated.

The blue area the recommended pump setting at the time of drilling.

Slide 9

Well records on cattle Yard

Note the dates and depths as they kept running out of water.

Slide 10

Bleams Rd Wells

These are Regional test wells and private wells along Bleams Road . Left out are the Reginal production wells.

Slide 11 Bleams Rd

wells incl K50 -51

This is the screen setting of the Wells K50 and 51. In reality intake screens start just 22 meters under the water table.

Slide12 Deep well records

These deep well record for old deep wells were used to establish the theory of a 500 year travel zone aquitard along with the bore hole and test well drilling information.

Slide 13 Monitoring wells and bore holes 1 to 5

These records are from the wells drilled prior to purchase and are fairly shallow

Slide 14 Bore holes no records

The Region had asked for additional wells. They are also listed in the public well records website but no information in regards of depth or type of soils encountered.

Slide 15

Wells east and west on Witmer Road referenced in the study.

Slide 16

Aquifers applicable to Wellfields

This is from a recent Regional Report confirming were the wells draw the water from.

Slide 17

Same report Wellnest cross section

Slide18

Close up cross section. We, farming next to the Reginal wells have always had a close eye over the years on nitrate levels. Oddly enough the 2 wells only 10 or 15 meters apart, drawing water from the same depth measured very different nitrate levels. K50 up to 8 and K51a more constant 2. This tells us the water comes from 2 different directions to the wells.

The fact that pump tests at the wells influenced the water table as far as Hallman lake in the west and test wells on Sandhills near Witmer support the concept of an interconnected underground lake that needs to be protected from any spills or intentional deposited wash water.

Reality is the hydraulic system of one piece of heavy equipment holds 500 to 600l of oil. It takes a few liters to spill till its noticed and then the 15 liter buckets in the emergency kit at the scale house need to safe us.

(In case time is short)

Go to last slide.

But I have some good news to celebrate;

Slide 20 Nitrate levels in K50 and 51 continually reduced over the past years.

Farmers in the intake area near the Shingltown wellfield must have done something right over the last 10 or 15 years as for the very first time for all of 2020 the Nitrate in K 51 showed zero.

So please look at facts and reality and not just boxes ticked off in applications.

Slide 19 to 21 Ministry's responds to the Record of Site condition that missleadingdescribes rezoning from residential to industrial, not agriculture to aggregate.

In response to your email below. We offer the following clarification with respect to the Record of Site Condition (RSC) filing referenced in your email :

1. The RSC filed was not a mandatory RSC filing required by provincial legislation, as land use is not changing to something more sensitive. The RSC needs to examine the existing site conditions and it's suitability for the intended future use of the property. It is important to note that the RSC process does not evaluate the future implications of a change in use of a particular property on the surrounding properties. It is a record of the environmental condition of the property itself at a point in time and determines whether or not the property is protective of human health and the environment specifically in regard to its intended future use.

The RSC was filed for a change in land use from residential use to industrial use. In terms of O.Reg 153, agriculture use is the most sensitive use under the regulation. As such, you do not need an RSC to go from agriculture to residential use nor an industrial use as the use is not moving to something more sensitive. Further to this, the site specific generic standards for the identified contaminates of concern would be greater for industrial use as compared to residential and or agriculture use since the use is considered less sensitive.
The Phase One and Two that were provided in your email below are outdated (2017) and were not prepared for the purposes of filing an RSC but for due diligence purposes as clearly stated on page 1 of both documents. These documents were included as reference documents for the RSC, however, the Phase One (2020) and Phase Two (2020) would have had to be completed in accordance with the detailed requirement of O.Reg. 153. Please note that we do not automatically received these documents as part of the RSC review purpose so they would not be on file. That said, supporting documentation is provided on the Ministry's publicly accessible website and link is provided below:
https://www.lrcsde.lrc.gov.on.ca/BFISWebPublic/pub/viewDetail?submissionId=227095
Of note:
- Past land uses (pre 1835) were considered as part of the Phase One and Phase Two up to it's most recent use (residential and farmland)
- All areas of potential environmental concern were investigated on the property as part of the Phase Two and as required by the regulation. These areas appear to be limited to the southern portion of the property as identified in the Phase Two Conceptual Site Model, which can be accessed using the link above.

I hope you find the information above clarifies the nature of the RSC filing.
Regards,
Dana Mohammed
Senior Environmental Officer
Ministry of the Environment, Conservation and Parks
Drinking Water and Environmental Compliance Division
Guelph District Office
Mobile Phone: 519.820.3083
Fax: 519.826.4286

May 17 Wilmot Township Delegation: Preservation and Recreation

Thank you for giving me time to speak tonight. My name is Christina Harnack and I live in Shingletown on Bleams Road.

As we heard tonight, Wilmot Council reads a Land Acknowledgement statement at the beginning of each meeting.

In a video post by Lindsay Brant, from the Centre for Teaching at Queen's University, she speaks to the importance of authentic and Meaningful Land Acknowledgements. The first time I heard Wilmot's Land Acknowledgment is when hundreds of concerned citizens gathered in person at Wilmot council to present our concerns about the proposed Jackson Harvest Farm Gravel Pit.

I was struck by several parallels the land acknowledgement has with the concerns we are presenting in regards to our health, safety, community and environment. I want to re-read this for you tonight. Here is the **Land Acknowledgement** from your website:

We have gathered in Wilmot Township on the traditional territory of the Neutral, Anishnaabeg (u-nish-a-nah-bey) Haudenosaunee (ho-din-a-son-ni) and Mississauga peoples.

We also want to acknowledge the importance of The Dish with One Spoon Covenant - a peace agreement made between Indigenous nations before the Europeans arrived. It characterizes our collective responsibility to each other and Mother Earth ***- we should take only what we need, leave enough for others and keep the dish clean.***

By acknowledging this covenant and the First Nations, Métis and Inuit peoples, we are reminded of our important connection to this land where we live, learn and work together as a community.

As a non Indigenous person, I have a lot of work to do to better understand the importance of Land Acknowledgements and issues facing Indigigenous members of our communities and harm done in the past. It is not my intention to use this Land Acknowledgment for my benefit, but I do want to genuinely ask, how do you, as members of Council and as Mayor, let this land acknowledgement guide and direct your decision making? What impact does this Land Acknowledgement have on your responsibility to each other and each member of the community? How does the statement, **“we should take only what we need, leave enough for others and keep the dish clean " inform** your decisions in matters of land and re-zoning in Wilmot region? What stakeholders do you consult? Whose interests are you promoting and protecting? As Lindsay Brant references, land acknowledgments are not a check-box nor should they be lip service at the beginning of meetings.

Something that has been clearly presented by several delegations and Citizens for Safe Ground Water is that the need for aggregate is not something that a proposed gravel pit is required to demonstrate to the Ministry. You have the ability to still have some control in this process and in protecting this land and community by not granting this zone change application.

In the case of the proposed Hallman Pit, I want to respectfully ask, in making this zone changing decision, are the values of our community being represented here or are the values and hopes of the developer being prioritised? We all have a role to play in protecting our environment and our community. As councillors and Mayor, you have been elected and entrusted by us to make decisions and provide directions based on the needs and voices of the community. Over the last few years, you have heard clear opposition to the Hallman Pit from hundreds of people who live in the area through formal delegations, letters, e-mails, signed petitions, and conversations in regards to environmental concerns, protections of water, wildlife and wetlands but also for safety and well-being, from both a mental health and physical health perspective.

In speaking with a neighbour the other night, they reminded me that people in this neighbourhood have varied experiences and history with this area, some going back generations as far as their parents and grandparents. Some have enjoyed the area with their children visiting the natural habitat, and wooded area on the proposed property. Some still visit regularly and have seen coyotes, nesting ducks, muskrat dens, owls, deer, and currently fox. In presentations, those representing Jackson Harvest Farms and Mr. Esbaugh have said that the wetlands, in itself, will be untouched and preserved. That may be true. But it would be naive to not acknowledge that in reality, when the surrounding area is disturbed to the proposed extent – the safe habitat for wildlife provided by the pond, wooded area and wetlands WILL be destroyed. This is very upsetting, and quite a crime that an already overdeveloped and locally available commodity, takes precedence over protecting this natural habitat.

We and our neighbours continue to be concerned regarding the watershed issues. There are still different opinions and conflicting reports about what the risk is to destroying the water source and it would be a disaster if water had to be piped back to Shingletown from Kitchener and the strain this places on Kitchener's groundwater. Not to be forgotten is the reality that whatever the promises made and regulations in place there is literally no enforcement by the province. As a council, by allowing this rezoning, are you really comfortable with this risk? Does this project seek to take only what is needed and leave safe drinking water for all?

It is clear that Wilmot Council values the physical health and well-being of our community. My family and I have truly enjoyed the new additions of trails and the efforts of the Wilmot Trails Advisory Committee. In the recent Wilmot Employment Lands Press Release, connecting communities through new recreational trails is one of the features highlighted to entice new Wilmot residents. Through these 58 kilometers of existing trails you have connected communities, provided a well needed and critical way for people to connect with each other and with nature, especially during the time of this pandemic. With mental health crises on the rise and numerous studies, including reports from the World Health Organisation and Sick Kids, indicating that depression and anxiety are on the rise, especially in the midst of a pandemic, getting outside is more important than ever.

One does not need to look far for research that supports getting outside in nature as a significant way for people to improve their mental health; nature is healing and restaurative. With the beautiful spring weather, people are taking advantage of the trails and the green spaces in our communities. Living on Bleams Road, the cyclists are also taking full advantage and a very used cycling route includes Witmer road and surrounding concessions. The WHO provides detailed resources about how to manage stress as well as mental health resources for the public. There are countless documents they provide about the benefits of being active in one's community, both through physical activity and by being connected to other people in improving mental health. In one of their documents #healthyathome, they state that:

"Regular physical activity can help give our days a routine and be a way to stay in contact with family and friends. It's also good for our mental health - reducing the risk of depression, cognitive decline and delay the onset of dementia - and improve overall feelings". -WHO https://www.who.int/news-room/campaigns/connecting-the-world-to-combat-coronavirus/healthyathome/healthyathome---physical-activity

In our community in Shingletown, getting out and being active in our community includes being able to walk out of our homes along our property lines, being able to walk safely down to the Laepple Organic Farm, walking dogs, running or cycling along the road, and walking to crown land. Many have benefitted from the generosity of neighbours who share their laneways to walk or wetlands to explore. Being able to do this safely without driving to another community to do so is vital to our mental & physical health and well-being. Increased noise, dust, and most importantly volume of gravel truck traffic will negatively affect our ability to be active in our community.

Finally, please consider the cultural heritage surrounding the community in Shingletown. When we first moved here it was interesting to learn that the name derived from parcels of land divided and seemingly looking like roofing shingles overlapping, different from long linear property divisions. People's land was not always necessarily connected as they owned different "shingles" of land. Generations of farmers and people have lived and formed the community of Shingletown and the surrounding rolling hills, wildlife, woodlots, and wetlands are a part of that. The Hallman Pit would change all of that.

It is of note that The Region of Waterloo, in collaboration with the Heritage Resources Centre of the University of Waterloo and the Township of Wilmot, is undertaking a study of Cultural Heritage Landscapes in the townships of Wilmot and North Dumfries. Identifying and conserving cultural heritage resources, including landscapes or larger areas that retain cultural heritage value, is an important part of planning for and managing change in our communities. I am glad this study is taking place as making changes to zoning, community development, and environment has an impact not only on our future communities but on the heritage of our communities as well.

Please be courageous when you make a decision for this re-zoning proposal. Please remember the many people who have voiced their concerns and please make this decision with the values of our community at heart and not for the goals and projects of an individual developer.

Thank you for your time this evening.

Christina Harnack
Shingletown, Wilmot