May 21 , 2009

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F O R C E
Friends of Rural Communities and the Environment

Dear Sir/Madam,

Re: St Marys Cement ARA license application

Please accept this letter and enclosures as the objection to the St Marys Cement ARA license application of Friends of Rural Communities and the Environment (FORCE), on behalf of our Communities. FORCE is a federally registered not-for-profit corporation. It is a citizen-based advocacy group with hundreds of supporters in Campbellville, Kilbride, rural Milton, Mountsberg, Freelton, and Carlisle. Our communities have been consistent in our substantive objections and reasons why, supported by expert reports, to this proposed development since it was first raised in 2004. We continue to oppose a massive open pit mine amongst our communities and are pursuing the end goal of stopping the quarry with the City of Hamilton through the land use planning process and the Provincial Government through its relevant approvals.

Below, we present a non-exhaustive summary of our objections, rooted in scientific, legal and policy frameworks, which we believe support a decision to refuse the aggregate license.

We lead with our objection related to the risk of adverse impacts on the hydrologic and hydro-geological systems in our area, including risk of impacts to drinking water. In our area, groundwater is the only source of potable water. The Carlisle municipal drinking water system, which serves some 3,000 people, has had documented quantity and quality challenges for years. Work is underway to better understand the capture zone for the wellhead protection area in Campbellville. Private individual and communal wells for homes, schools, farms and businesses, on both sides of the Hamilton/Halton border, all use groundwater as the source for drinking water and other uses.

The *Clean Water Act* promises protection for Wellhead Protection (WHPA) and recharge areas, among other key areas. The law is based on the principle of prevention first and it is designed to address existing and *future* proposed activities.

The Minister of the Environment's (MOE) Technical Experts Committee established a Threats Assessment Framework as part of its November 2004 report, advising on the implementation of source protection planning. It identified land use activities that threaten drinking water sources and are sufficiently serious to be of provincial concern (Table 3.1). Pits, quarries, and mines were listed as human-made pathways to the aquifer in this category. Their primary issue is "vulnerability" as direct pathways are made to current or future potential drinking water systems. The Committee provided examples of Risk Management approaches for threats of provincial concern (Table 6.2). It recommended that pits/quarries and their final land disposition be assessed according to new municipal well standards and be restricted within the 5 year Time of Travel (TOT). The Committee also recommended that two pathogen management zones should be delineated within the WHPA (recommendation 46). A 100 metre pathogen security area and a 2 year Time of Travel (TOT) zone

should be considered as the area of concern with respect to bacteriological/pathogenic contaminants.

We note that the proposed St Marys Cement Flamborough quarry is an example of a human-made pathway to the aquifer that falls within the 2 year TOT to the Carlisle municipal drinking water system. It is closer than the 5 year TOT recommended by the Technical Expert Committee. It also falls within one of the key areas recommended as a bacteriological and pathogen management zone.

More recently, in the Technical Rules for preparation of Assessment Reports, under the source protection planning process, issued in December 2008, transport pathways that are anthropogenic in origin, such as quarries, are, indeed, highlighted for the vulnerability that they create to the aquifer and drinking water systems. Part IV.1 on Groundwater Vulnerability Assessment, sections 39 – 41, indicate that transport pathways can be used, in part, to identify areas of vulnerability and to increase the vulnerability ranking based on such factors as hydro-geological conditions, type and design of the transport pathway, cumulative impact of transport pathways, and the extent of assumptions used in the assessment of the vulnerability of the groundwater. The Technical Rules also speak to threats to water quantity (in the form of water takings and the reduction of recharge) and threats to water quality. The latter includes a table of activities involving chemicals (Table 1 – Drinking Water Threats – Chemicals) and a table of activities involving pathogens (Table 2 – Drinking Water Threats – Pathogens). Some activities, which one would expect at the proposed quarry operation, can be found on these lists, including the handling, storage and application of road salt, the handling and storage of fuel, and the application, handling and storage of organic solvents.

The Carlisle drinking water system is a Type 1 system, under the source protection planning rubric, as defined by the Technical Rules. The proposed quarry site falls within its WHPA – B (2 year TOT). At this point in time, we understand the City of Hamilton is refining its groundwater characterization and modeling with Earthfx, as opposed to recasting its findings, for the areas surrounding its four groundwater-based communities, including Carlisle, and, as noted, work is also underway with respect to the groundwater supply for Campbellville. These pieces of work will be shared with the Halton-Hamilton Source Protection Agency and Committee and used in its source protection plan development. The Carlisle wells are also identified for Tier 2 watershed analysis, as part of the Bronte Creek watershed, and the Flamborough Creek sub-watershed.

This contextual information is relevant because the land base of many of our communities fall within the Greenbelt Plan, as does the proposed development in question. The Greenbelt Plan includes a number of permissive and protective policies. For example, it permits consideration of aggregate developments, under certain conditions, and it promises increased protections for water resources. What is particularly relevant in this case, however, is that the Greenbelt Plan prohibits new or extensions to existing lake-based water systems. This means that there is no Plan B for the City of Hamilton or this community, if its groundwater based drinking water system is adversely impacted, in terms of quantity and/or quality.

We remind the MNR and the proponent, that in October 2007, Hamilton Public Health Services used a rare notification section under the *Health Protection and Promotion Act* to ensure its significant concerns with testing of a proposed mitigation system, let alone the full quarry development, would be addressed by MOE during a Permit to Take Water (PTTW) application review. On February 27, 2008, Hamilton City Council unanimously approved a motion moved by Councillor McCarthy, signed off by the relevant staff departments, during this same PTTW review, which called on Hamilton City Council to:

- bring to the attention of the provincial government its concerns regarding potential adverse impacts on the Carlisle groundwater based municipal drinking water system

- request the provincial government, through the Premier and the Ontario Minister of the Environment, to fully consider the potential ramifications of the proposed development and
- before any provincial permits or approvals are issued, the province should require a formal review by the Halton-Hamilton Source Protection Authority, as part of the local source protection planning process.

Testing was commenced by the proponent under the PTTW, during the summer of 2008. The MOE indicated in October 2008 that the data resulting from the phase 1 test was unacceptable, and requested the company to redo its testing to better understand the aquifer and provide appropriate baseline data for future testing phases. In January 2009, the proponent indicated that it did not intend to repeat the first phase test. In March 2009, MOE reiterated its decision regarding the acceptability of data and rationale and indicated that if the company did not intend to carry out further testing under the PTTW, that the permit would be revoked. In April 2009, the company requested that the PTTW not be revoked, that MOE review its final report, and that discussion between the two parties, regarding what specific purpose and nature of testing might be appropriate on site, follow review of the ARA objections received. As of the writing of this letter, we understand that the difference of opinion between the MOE and the company remains unresolved.

The Hamilton Medical Officer of Health and the Halton Medical Officer of Health reiterated their concerns about significant risk to public health, due to the potential risk for adverse effects upon groundwater quantity and quality from the proposed development, in correspondence dated February 2009. In particular, the medical officers spoke to concerns about the level of hydro-geological characterization, impact risk assessment, and feasibility of the mitigation system and Adaptive Management Plan (AMP) that could accompany the ARA application, in the absence of completion of the PTTW testing and the hydro-geological work plan.

St Marys Cement and Gartner Lee/AECOM have been clear from the outset that the unmitigated impact scenario on our communities would not be acceptable. As such, the onus should be placed on the proponent to quantify that scenario and to demonstrate to regulatory agencies that the level of understanding of the site and surroundings within the potential impact zone is sufficient to provide reasonable assurance that the mitigation measures will function as intended, that the monitoring will be sensitive enough to detect changes resulting from the operation, and that there are appropriate contingencies available to address unforeseen conditions that may be encountered.

More detailed analysis of the hydrologic and hydro-geological reports accompanying the ARA and land use applications were completed for our communities by INTERA Engineering Ltd. and its principal, Ken Raven. Raven's analysis (enclosed) points to issues surrounding the characterization and subsequent modeling of the Amabel aquifer. He disagrees with the simple characterization of the aquifer as homogeneous and points to discrepancies in the data and with the now preferred GRS system, along with other literature, that speaks to complex heterogeneity and a wide range of changes within hydraulic properties over a few meters. These issues are central to the reasonableness of the groundwater modeling to simulate existing pre-quarry conditions, and then the predicted future impacts due to quarrying, and mitigation. He also notes that the GRS system remains unproven and has not been evaluated for viability on the site. A range of operational issues exist, such as the significant volumes of water involved with dewatering and operation of the GRS, winter seasonal issues, side wall stability, pump failure scenarios, and long term plugging, among others. The AMP, while including some suggested trigger points, as the backstop for the monitoring/mitigation system for the site, is a "try it and see" approach that is to be relied upon for protection of the water resource system and the natural environment. No real definition has been provided as a basis for initiating discussions with municipalities and regulatory agencies. In our words, the AMP is essentially a "get out of jail free card", that is to be relied upon as a linear mechanism for engineering an approval.

Water is one of the key reasons this proposed development makes no sense here, but it is clearly not the only one. This massive development is the first Greenfield quarry proposed in Ontario's Greenbelt. The development is situated completely within the Natural Heritage System, the area afforded the highest protection within the Greenbelt. The Natural Heritage System, in our communities, is linked to environmentally sensitive areas important to both Hamilton and Halton. In a series of natural environment and aquatic biology reports, previously submitted to the City of Hamilton, our ecologist, Dr. Tegler and our Aquatic Biologist Brian Hindley concluded that the proposed quarry property contains numerous significant provincially, regionally and municipally designated natural features that contribute to the biological diversity and ecological integrity of the site and of the broader region. Few remaining areas in southern Ontario have this combination of natural attributes.

In reviewing the ARA supporting materials, Tegler's and Hindley's analysis (enclosed) notes that the proponent has conceded the abundance of highly functioning diverse communities and features on and adjacent to the site. Again, without mitigation, the effects on the natural environment would be unacceptable. Of significant concern is that the protection of natural features relies predominantly on the success of the proposed GRS system and AMP. The confidence intervals for the impact assessments and the range of failure scenarios for the GRS and their impacts become critical to the understanding of the effect on our natural systems. Further, while these site specific impacts are not well understood, and their assessments have documented limitations, broader and more far reaching risk assessments, such as modeling the impacts of future climate change on the area, have not even been contemplated.

While considerable additional field work has been done since the original land use planning documents were submitted, methodological issues, their analysis, interpretation and conclusions drawn remain. Illustrative, the significance of some aquatic species may not have been characterized and the locally rare, uncommon, and area demanding significance of others is downplayed, in contrast to federal and provincial designations. Failure to adequately protect species locally and regionally, inevitably leads to increased status of concern.

Use of language such as "may", "likely", "estimated" and "minimized" indicates only a partial understanding of impacts. The features and functions cited are also sensitive to change. It is unclear whether some of these systems can sustain any more impacts. Examples include Flamborough and Mountsberg Creeks, where it may not be viable to lose anymore cool groundwater recharge.

Both Tegler and Hindley also find that while the proponent acknowledges that some species may have "sensitivities or be disturbed", impacts are not fully detailed or addressed. The cumulative impacts of the excavation, operation, dust, noise, lights, and truck traffic can be expected to create probable loss of breeding and probable permanent loss of habitat, due to displacement by quarrying, or size reductions below minimum thresholds for these species, for some area birds, amphibians, and mammals.

Even key natural heritage features, and their connectivity to one another, and to other ecological linkages on and off-site, which are alleged to be afforded protection, remain vulnerable. Illustrative, the approach to delineation of Significant Woodlands excludes areas determined to be "Peripheral Forest Edge Habitat". The latter is not a defined term or approach approved by the MNR. The woodlands and Provincially Significant Wetlands are also vulnerable to placement of the GRS and to internal access roads to service the related wells and system components. Finally, off-site structural road alterations may expand onto environmentally sensitive lands and features, further impacting this unique area.

All of these issues raise compliance considerations with respect to official plans, Provincial Policy Statements, the Greenbelt Plan, and other regulatory frameworks.

Safe, plentiful drinking water and a strong, vibrant watershed and broader eco-system are important foundations for any community and are clearly fundamental to us, as we consider the proposed quarry development. There are, however, a multitude of other important issues, many of which would have day to day impacts and which would affect how we live, work, and play in our communities.

Reflective of these matters, our communities also submitted a Community Issues Report to the City of Hamilton, in November 2005. Many of these objections remain unaddressed in spring 2009. We enclose an updated May 2009 document, and note that it details our objections to issues such as:

- the lack of acceptable haul routes
- the significant volume of truck traffic and its impacts for regular community drivers, including school bus routes and designated cycling routes, and the Reid Sideroad EMS location
- pedestrian (walker, jogger, cross country skier, snow shoe, etc.), equestrian, bicycle, motorcycle, snowmobile, car and other vehicular safety
- time travel/delay from truck traffic, compounding the existing railway crossings
- infrastructure improvements which would urbanize our rural communities and associated capital and operating/maintenance financing, with implications for municipal taxpayers
- the limitations of the haul route analysis undertaken and its transparency
- the permanent loss of agricultural land
- impacts on agricultural critical mass
- conflicts with city and regional policies to target growth in the agriculture, food and beverage sector and to promote buy local programs
- impacts on agricultural operations including livestock stress and reproductive breeding operations, airborne particulate (including dust) impacts on crops and workers, and interference with the movement of farm machinery
- incompatible land use with local residences, schools and businesses
- social impacts on people and how they live, work and recreate in our communities and economic impacts, including on real estate values and municipal tax base implications
- noise impacts from on-site operations and off-site haul routes
- vibration and blasting impacts on people and their built environments, such as homes, pools, and more
- health impacts from air particulate and emissions
- nuisance impacts from dust on people's homes, outdoor furniture, cars, and more
- rehabilitation issues,
- the manner in which the ARA and land use approvals processes run the risk of losing sight of the 'big picture' question as to whether this proposed development is appropriate in this location, especially in light of no cumulative consideration of the operation and the proposed expansion on the adjacent property owned by the same proponent, and
- St Marys Cements' failure to earn a social license to operate, among others.

For reasons pertaining to water, because there are no appropriate haul routes, because of the significant and varied impacts on our communities, because of the health implications, and because we should be protecting the fragile natural features and agricultural lands of the Greenbelt, we call on the Minister of Natural Resources to refuse the ARA license.

Our communities are not alone in our concerns about this proposed development. Our legal case is supported by Environmental Defence, who has also objected to this ARA application. The proposed development is one of the hotspots for the Ontario Greenbelt Alliance. The Water Guardians Network is monitoring this situation, both as a hotspot and as a precedent for how the

provincial and municipal governments demonstrate their commitment to clean water laws and source protection planning.

We have noted that this is the first Greenfield, below the water table, aggregate extraction proposal in the Greenbelt. It sits completely within the Natural Heritage System. The Ontario government, itself, has demonstrated some concern, since the overall development was proposed. The provincial government acted by regulation to transition this proposal into the Greenbelt Plan, in February 2005. The MOE took more than 20 months to review and issue a Permit to Take Water for a series of tests, and it recently ordered St Marys Cement to redo Phase 1 of the tests due to unacceptable results, as noted earlier.

The 2006-2007 Annual Report of the Environment Commissioner of Ontario (ECO) cites this proposed development as a case example of the flaws within the aggregate planning process for its proximity to hydrologic resources, Provincially Significant Wetland complexes, significant woodlands and species habit, as well as source protection reasons. The ECO called on the provincial government to reconcile its conflicting priorities between aggregate extraction and environmental protection. Specifically, the ECO calls for screening out proposals conflicting with identified natural heritage or source water protection values (recommendation 3, p49). The ECO extended its concerns in the 2007-2008 Annual Report, documenting that approvals processes, in cases such as this, need to be able to get to a no decision, and it reiterated that aggregate proposals conflicting with identified natural heritage or source protection values need to be screened out (section 6.3 Screening for Aggregate Extraction Proposals, p173).

The City of Hamilton, the City of Burlington, the Town of Milton, the Region of Halton, and Conservation Halton, have all approved motions and/or staff reports during the 45 day public notification and consultation period objecting to the ARA license application. Objections have also been registered by other stakeholders such as school boards, private schools, federations of agriculture, and the general public, en masse.

The body of evidence and opinion against St Marys proposed Flamborough quarry continues to grow and to be overwhelming. The magnitude of the proposed operation on-site and the breadth of its off-site haul route reach would result in very significant impacts for our natural and built communities. We submit that the Minister of Natural Resources should recognize our collective objections and should refuse to grant the license.

Respectfully submitted,

Graham Flint BASc, P. Eng
Chair & Spokesperson

Enclosures:
FORCE - ARA Objections Community Report
Ken Raven – Intera Review
Brent Tegler – North-South Environmental Review
Brian Hindley – Aquafor Beech Review