

BOOK #1

1. DESCRIPTION LETTER TO M.N.R. LICENCE 103717 OF UNLAWFUL, UNLEGISLATED M.N.R. ENFORCEMENT.
2. APPLICATION FOR QUARRY LICENCE AND SUPPORTING DOCUMENTATION.
3. DOCUMENTATION INDEX 1998 – 2005.

Welcome to Canada's dirty little secret, the Province of Ontario manipulated corrupted cover up dysfunctional Justice System. Now confirmed by 23 years of Abuse of Process to a Miscarriage of Justice to this business, *Nichols Gravel Limited* and family under direction of the Ontario Crown Law Office in this effort to Defeat Justice by both the present Federal and Provincial unresponsive Liberal Governments and all associated Government patronizing entities including Solicitors, Crown Prosecutors, and the Law Society of Upper Canada, as well as, certain named Government corrupted Patronizing Justices of the Courts.

Read on for confirmation of Truth and Fact to a broken Canadian cover up administration of Justice that doesn't work except when directed to protect Government Misfeasance.

WELCOME TO CORRUPTION ONTARIO

**AND THE WORST ABUSE OF PROCESS AND
FABRICATION
TO DEFEAT RULE OF LAW AND THE
ADMINISTRATION OF JUSTICE IN THE HISTORY OF
THIS PROVINCE.**

**15 YEARS OF UNLAWFUL ENFORCEMENT OF THE
AGGREGATE RESOURCES ACT BY THE MINISTRY
OF NATURAL RESOURCES AND MINISTRY OF THE
ATTORNEY GENERAL**

**IN TOTAL DISREGARD AND CONTEMPT OF
ONTARIO MUNICIPAL BOARD ORDER 1194
OF JULY 25, 2001**

AND SUPERIOR COURT COMPLIANCE ORDER 148/07

**AND THE JUNE 15, 2006 SUPERIOR COURT JUDICIAL
REVIEW DECLATORY ORDERS
AS TO CONDITIONS OF LICENCE 103717,
NICHOLS GRAVEL LIMITED**

NOT APPEALED OR COMPLIED WITH BY THE CROWN

**TO PROVOKE THE TOTAL WASTE AND
MISAPPROPRIATION OF THOUSANDS OF DOLLARS
OF PUBLIC FUNDS ON THIS UNLAWFUL FIASCO
ENFORCEMENT**

THE REST OF THE STORY AT www.injusticecanada.com

REFERENCE BOOKS #1 AND #2 1998 - 2017

X 105 LETTERS TO M.P.P. DELIVERED EXPRESS POST APRIL 24/18 WITHHELD BY
QUEENS PARK MAIL ROOM. STILL NO DELIVERY APRIL 26/18. April 18, 2018

****NOTICE****

NO RESPONSE!

**TO ALL ELECTED MEMBERS OF THE ONTARIO LEGISLATURE
AND
THE TAXPAYER OF ONTARIO.**

GOVERNMENT OF ONTARIO CORRUPTION AND COVER UP TO:

**THE MISAPPROPRIATION OF PUBLIC FUNDS WITH FAILURE TO COMPLY WITH
O.M.B. ORDER 1194 AND THE SUPERIOR COURT JUDICIAL REVIEW DECLATORY
ORDERS OF JUNE 15, 2006.**

**NOT APPEALED AND OVERRULED BY THE CROWN AND LOWER COURT
DECISIONS "STARE DESISIS" UNLAWFULLY AND WITHOUT JURISDICTIONAL
AUTHORITY IN LAW TO HEAR FALSE PRETENSE M.N.R. CHARGES, TO RENDER
CROWN AND COURT CORRUPTED PROSECUTIONS.**

TO JUSTICE DENIED

****THIS NOTICE DIRECTED TO ALL MEMBERS OF THE ONTARIO
LEGISLATURE APRIL 23, 2018***

CLICK www.injusticecanada.com

BOOKS #1 AND #2

FAST TRACK INDEX: 1998 - 2017

- **SCROLL TO YEAR AND ASTERISK**
- **INFORMATION OF INTEREST AND CLICK**

**15 YEARS OF ABUSE OF PROCESS TO DEFEAT THE RULE OF LAW CONSPIRED BY THE
MINISTRY OF NATURAL RESOURCES, THE MINISTRY OF THE ENVIRONMENT, THE
MINISTRY OF THE ATTORNEY GENERAL AND AS DIRECTED BY THE CROWN LAW
OFFICE TO THE UNLEGISLATED ENFORCEMENTS OF THE AGGREGATE RESOURCES
ACT, TO REVOKE M.N.R. LICENCE 103717 TO PUT NICHOLS QUARRY BUSINESS OUT
OF BUSINESS, CERTIFIED AS BONAFIDE BY GOVERNMENT MANIPULATED,
PATRONIZING, DYSFUNCTIONAL, TRIBUNALS AND COURTS WHO ACCEPTED
FABRICATION, FALSE PRETENCE CROWN SUBMISSIONS AND FRAUD, TO THE FINAL
OBSTRUCTION OF JUSTICE, THE CROWN ABUSE OF DISCRETIONAL AUTHORITY, TO
WITHDRAW CRIMINAL CHARGES TO CROWN EMPLOYEES AND SOLICITORS AS
FILED BEFORE THE COURTS, WITH REQUESTS TO INVESTIGATE DISREGARDED BY
THE LAW SOCIETY OF UPPER CANADA ON NUMEROUS OCCASIONS SINCE 2007 TO
THIS DATE.**

**APPLICATION TO M.N.R.F. FOR REINSTATEMENT OF LICENCE 103717
REFUSED FOR THE SECOND TIME, FEBRUARY 22, 2018.**

REF: APPLICATION FOR LICENCE LETTER, JANUARY 26, 2018.

GARY NICHOLS

EQUALITY BEFORE THE LAW? JUSTICE? NO! NOT IN CANADA!



Nichols Gravel Limited
P.O. Box 172 - Delhi, Ontario N4B 2W9
Phone (519) 582-3354 Fax (519) 582-2143

April 25, 2018

Province of Ontario
Minister of the Attorney General

Honourable Yasir Naqvi

Dear Sir:

Please find enclosed my letter dated April 18, 2018 directed to every member of the Legislature and also a copy of your responsibilities as Minister of the Attorney General. I further advise that all information concerning the M.N.R. unlawful, unlegislated Suspension of Licence and Revoke of Licence 103717 as issued under Final O.M.B. Order 1194 and the corruption of Rule of Law, which has continued for the past 15 years 2003 – 2018, has now been placed on our Website:

www.injusticecanada.com.

I now request your immediate review, and the following suggested course of action:

1. A Direction to the Ontario Provincial Police Criminal Investigation Branch, Orillia to immediately investigate this matter.
2. A direction to the Minister of the Natural Resources to immediately reinstate and reissue Licence 103717 to Nichols Gravel Limited or as applied for February 5, 2018 to North Star Aggregates Inc. subject to the conditions of O.M.B Order 1194, and Revised Site Plans.
3. A direction to the Ministry of the Environment to issue a Permit To Take Water, without Pre Conditions for pumping of 2,500 Gallons Per Minute with monitoring at the existing wells and at the sump.
4. A direction to Haldimand County to cancel all Provincial Court Fines assessed against Nichols Gravel Limited and Lots 10, 11, and 12, Concession 12, Walpole Township, with a further direction to the County to direct the Drainage Engineer to make the land assessment for Quarry outlet for water to the Harrop Drain.
5. A direction for cancellation of all Court Fines and Cost Assessment made to Nichols Gravel Limited and Shareholders Gary, Margaret and Dwayne Nichols from 2003 to this date.

Should there be no appropriate response to this request, as of May 11, 2018, we shall advertise our Website and this Corrupted Enforcement on the News Media.

Thank you for your immediate attention to this matter.

Yours sincerely

Gary Nichols

NO RESPONSE!

H.I.N.

c.c. Premier Hon. Kathleen Wynne
c.c. M.N.R.F. Minister Hon. Nathalie Des Rosiers

NORTH STAR AGGREGATES INC.
P.O. BOX 325
DELHI, ON. N4B 2W9

January 26, 2018

Ministry of Natural Resources and Forestry,
Guelph District

Attention: Aggregate Technical Specialist
M.N.R.F Inspector, Diane Schwier
M.N.R.F Minister Hon. Nathalie Des Rosiers
Premier of Ontario Hon. Kathleen Wynne

Application for Reinstatement and Reissuance of

Licence 103717 to North Star Aggregates Inc.

Subject to Final Ontario Municipal Board Order 1194, July 25, 2001

Dear Madam: Inspector Diane Schwier

Dear Madam: Minister Hon. Nathalie Des Rosiers

Dear Madam: Premier Hon. Kathleen Wynne

Please be aware of this Review and previous reference to previous unlawful events with supporting Documentation included with this letter as Book #1 and Book #2 to Issuance and Revoke of M.N.R. Licence 103717, as provided from the files of Nichols Gravel Limited.

This Application for Licence is directed to M.N.R.F subject to this request for Reinstatement of Licence 103717 and Reissuance to North Star Aggregates Inc., and all subject to the **July 25, 2001, O.M.B. Final Decision Order 1194**, and the remaining uncompleted **operational conditions** of this Order subject to the following reasons and grounds:

This Licence 103717 issued, April 1, 2003, to Nichols Gravel Limited, was **unlawfully** suspended by M.N.R., April 14, 2003, for non compliance to **"23 Specific Pre Operational Conditions"** as directed in the M.N.R. March 31, 2003 letter, **"Pre Conditions"** **not** in fact, supported by any Legislative Authority whatsoever, and **not** supported, ordered, or directed under Final O.M.B. Order 1194. And further, **not** supported by the ***Licence Conditions as signed by the M.N.R. Minister, March 25, 2003***, where the words **"Pre Operational"** cannot be found or identified in the Attached 56 Conditions of Licence.

This also was an unlawful contravention of the Aggregate Resources Act at the point of Enforcement to Suspension of Licence and M.N.R Charges, April 14, 2003, just 9 working days after delivery of Licence and later Revoke of Licence Order, September 30, 2004, both for non compliance to **"23 Pre Operational Conditions"** where any change or Review of O.M.B. Order 1194 is subject to ***A.R.A. s-11 sub (15)***, which **prohibits any "Petition or Review" or change to the O.M.B. Order**. The M.N.R. possessed **no** Legislative Authority whatsoever to change Conditions of O.M.B. Final Decision Order 1194 into **"Specific Pre Operational Conditions"**, or to change **M.N.R. Provincial Standards Prescribed Conditions** into **"Pre Operational Conditions"**, or also the Operational Conditions of A.R.A. Site Plans, M.N.R. Amended May 25, 2001 under O.M.B. Order 0485, April 3, 2001, also

with Site Plan conditions changed into "Pre Operational Conditions", without regard to *A.R.A. Legislation s. 13-1-11, to change of Site Plan Conditions which Site Plans M.N.R. Approved and Accepted without change, Date Stamped, February 14, 2003.*

REF: Index 2003 #2

REF: *A.R.A. s.11-15 and s. 13-1-11 and Provincial Standards Prescribed Conditions.*

REF: *Index 2004 #10, M.N.R. Inspector Kuisma Falsified Documents prepared for Ministers Revoke of Licence Order to 103717, September 30, 2004.*

REF: *Quarry Site Plans M.N.R. Date Stamped, as February 14, 2003.*

REF: *Book #2 Legislation and Law A.R.A. #1*

There is no M.N.R. record of Enforcement of "Pre Operational Conditions" to any other M.N.R. licence except Nichols Gravel Limited. This unlawful M.N.R. Enforcement was confirmed January 28, 2005 with the Decision of Her Worship, J.P. Wendy Casey, who Stayed all charges, and cited M.N.R. for Abuse of Process, and Infringement of Shareholders Charter Rights, and later confirmed as unlawful by the Superior Court Judicial Review and Declaratory Orders Decision, June 15, 2006, of the Honourable Justice David Reilly, not Appealed or Crown complied with.

REF: Index 2005 #2 Justice of the Peace, Her Worship Wendy Casey Decision, January 28, 2005.

All M.N.R. charges, Enforcements, and Court prosecution Decisions thereafter, June 15, 2006, are in fact and Law, Stare Decisis, Res Judicata, and Ultra Vires and further, also in Contempt of Court and without Authority of Enforcement in Law, as the matter concerning Pre Conditions to Revoke of Licence 103717 had been decided, June 15, 2006, with Prerogative Relief provided to past and to any further Enforcement of "Pre Operational Conditions" by the Crown as declared by this remaining bonafide Superior Court Judicial Review Decision. Not Crown Appealed or Complied with in contempt of Court to this date.

REF: Index Year 2015, #10, #4, Honourable Justice David Reilly Decision, June 15, 2006.

In respect to the M.N.R. Enforcements of the Aggregate Resources Act Legislation to Nichols Gravel Limited and Licence 103717, please review a Freedom of Information request dated, October 19, 2015 to M.N.R.F. to provide the Legislated Documentation in support of M.N.R. Enforcements as listed 1 to 4

REF: Index Year 2015 #10 1- 4.

In particular, please note the response from M.N.R.F. dated, November 17, 2015, Page 2, quote: "Access cannot be provided because there are no records that contain the requested information." Unquote.

What this M.N.R. response clearly confirms without question, is that no Legislation exists and that there has been no jurisdictional legislative authority whatsoever, in support of the Unlawful Enforcements inflicted by M.N.R. and M.N.R.F. and M.A.G. upon Nichols Gravel Limited and Shareholders from, April 1, 2003 to date of M.N.R.F. , Freedom of Information response, November 17, 2015 inclusive.

We further stress that this Property was subjected to a severe O.M.,B. Public Planning Process that continued throughout the year 2000 with 67 objectors, with peer reviews of Consultant Reports that studied this property to death, at a cost in excess of \$250,000. The 55 Conditions of Approval suggested by the Solicitor and Planner for Nichols Gravel Limited at the O.M.B. Hearing was considered as adequate mitigation, by the O.M.B. Hearing Chairman and the Application was

approved under Final O.M.B. Order 1194, which Order directed M.N.R. to Issue a Licence subject to the 55 Operational Conditions of Approval, as directed under Attachment "2" of O.M.B. Final Decision Order 1194.

REF: Index 2001 #4

This property has been O.M.B. and M.N.R. approved previously as a Quarry subject to the Operational Conditions as ordered under Final Decision Order 1194 as of, July 25, 2001, and upon issuance of M.N.R. Licence 103717, was an active Quarry Business from April 1, 2003 until the Min. of the Attorney General Court Injunction Order, served November 30, 2006, which Crown Application contained M.N.R. Falsified Affidavit Evidence provided to the Court and accepted, to unlawfully shut down all operations through Enforcement of "Pre Operational Conditions" to the Revoke of Licence 103717 in total Crown disregard and Contempt of Court to the Superior Court June 15, 2006 Declaratory Orders, not Appealed.

This Final O.M.B. Decision Order 1194 remains not subject to Review by the M.N.R.F., and recent Amendments to A.R.A. have no bearing on the Approvals received July 25, 2001 under this Order, otherwise M.N.R.F. is attempting to review, add and change the Conditions of this O.M.B. Order 1194 and Licence 103717, which by A.R.A. Legislation, s.11, Sub.15 is Prohibited.

REF: A.R.A. Book #2, Last section. Legislation and Law.

A.R.A. Legislation:

Any Review or Change of an O.M.B. Order is prohibited under A.R.A. Legislation s 11, Sub 15. Further confirmed and clarified in the O.M.B. Letter dated, October 10, 2002 to Inspector Paul Cutmore upon request for further O.M.B. review of water concerns after the O.M.B. July 25, 2001 Decision Order.

REF: 2002 Index #8, M.N.R. request for further Hearings O.M.B. refused. s.11, Sub.15

Had this Licence not been unlawfully Revoked, this Quarry would still be operating under the **Operational Conditions of Final O.M.B. Order 1194 and Licence 103717 under the direction of this O.M.B. Order.**

REF: Year 2015, Index #10, 1 - 4, October 19, 2015, M.N.R. Freedom of Information Request, #4, June 15, 2006, Superior Court Judicial Review and Declaratory Orders, and M.N.R.F. Response, November 17, 2015.

In Conclusion:

In view of the facts and this horrendous Abuse of Process and Miscarriage of Justice that has been promoted and Enforced by (Provincial Ministries), the Crown Law Office and Government patronizing Court Decisions, We suggest that, after 15 years of unlawful Enforcement, it is now time to resolve this matter and lay it to rest once and for all, prior to any further Government Misappropriation of Public Funds and Breach of Trust by Ontario Ministries, and Government Administrated Courts, which clearly have served not the Public Interest, but served only to cover-up for the misfeasance of Crown Solicitors and Government Employees with this Unlegislated, Unlawful Enforcement now herein confirmed by the November 17, 2015 M.N.R.F. Freedom of Information response, and the refusal to investigate cover-up by the Law Society of Upper Canada from 2007 – 2016 inclusive, specifically December 15, 2016.

REF: Index 2015, #6, 7, 9, 16

REF: Index 2016, Dec. 15, 2016, #8 Letter from Law Society of Upper Canada. To confirm no further investigation.

In the event that this Application is again rejected, this matter shall be directed to the Superior Court of Justice by the Applicant for a complete Judicial Review, under *Provincial Offences Act, s. 140 (1), (2), (3), (4)* of this Criminal, Corrupted Enforcement, and what has transpired with Licence 103717, with application to the Court for an Order to M.N.R.F to Reissue Licence 103717 to North Star Aggregates Inc. or in the alternative to Nichols Gravel Limited subject to the remaining to be completed Operational Conditions of O.M.B. Order 1194, July 25, 2001 with an order to Crown compliance to Superior Court O.M.B. Compliance Order Cayuga File 148/07, July 27, 2007, and the Superior Court Judicial Review, June 15, 2006 Declaratory Orders as to conditions of Licence 103717.

Both Court Orders not Crown Appealed!

We further suggest that, in this case P.O.A, s.-140, Sub. (4), does not apply, as the M.N.R. Enforcements were without Legislated Jurisdictional Authority in Law, Falsely provided by the Crown to provide a Fraud on the Courts to provide a Miscarriage of Justice to Defeat Justice to this Company and Shareholders.

REF: Index 2015, #6,7,9,10,14,16.

Superior Court Application and Judicial Review P.O.A s-140 and Orders Requested:

1. That all Court Decisions and cost awards in favour of the Crown and the Provincial Offences Court which disregarded the conditions of Licence 103717 and which also disregarded the O.M.B. Final Order 1194, and the June 15, 2006 Superior Court Declaratory Orders, not Appealed, be declared Res Judicata and Ultra Vires and therefore, Quashed and expunged from all of the Court Records.
2. That the Discriminatory Legislation of the Aggregate Resources Act Suspension Order, s. 22 Sub. 1-4 and Revoke of Licence Order, s. 20 Sub. 1 – 9 and A.R.A. s. 12, J & K, which provided M.N.R. Staff with this outrageous authority to impose extended unlawful mischief and extortion to pit and quarry operators as described in the misfeasance directed to Nichols Gravel Limited in 2003, 2004, to 2017 inclusive, be severed out of the A.R.A. Legislation to prevent any further Discrimination and Infringement of Charter Rights 6 (2), (b), 7, 15(1) in order to avoid any further Miscarriage of Justice to any and all other Pit and Quarry operators, through the unlawful enforcement of this Legislation which serves to freeze use of property and investments to put businesses out of business, while serving to discriminate to disemploy people in contravention of Charter Rights 6 (2)(b) and the United Nations Declaration of Human Rights. The right to pursue the gaining of livelihood.

REF: Application for Pit Licence 2013, and M.N.R. unlawful interference with business relations without Legislative Authority to withhold Application for New Pit Licence, Burford Twp. The Minister must issue the Licence, or refuse to issue the Licence, which provides for Appeal to the O.M.B. under A.R.A. s.11, Sub 9,10,11,12,13.

The Aggregate Resources Act directs no Legislative Authority to “withhold” any Application for Licence, as unlawfully signed and approved by M.N.R.F. Minister, David Oraziatti, June 25, 2013.

REF: Year 2013 # 1 – 10.

REF: A.R.A. s. 11, Sub 9 – 13.

3. To M.N.R.F to reinstate and reissue Licence 103717 to the (Quarry Operator) North Star Aggregates Inc. or in the alternative to Nichols Gravel Limited explicitly subject only to conditions of Final O.M.B. Order 1194, and the Conditions of Licence 103717, under Superior Court Judicial Review Declaratory Orders and O.M.B. Compliance order 148/07, not Appealed or complied with by the Crown.

Please find Amended Site Plans and Summary Report of February 23, 1999 with Supplementary Peer Review Reports as provided at the O.M.B. Hearing Year 2000, as salvaged from the Office fire of December 2013, with supporting documentation from 1998 – 2017.

AGREEMENT MEMORANDUM OF UNDERSTANDING APPENDIX "A"

In the event of no appropriate Government response within, prior to March 16, 2018. please be advised of this Agreement between North Star Aggregates Inc. and Nichols Gravel Limited, the quarry owner, who hereby reserves the right to immediately circulate all documentation publically herein enclosed in order to Expose the Corrupted, unlawful Enforcements of this Government , its Ministries, Officials, Solicitors and the Courts Prior to North Star Aggregates Inc. filing for any application for Review and Direction from the Superior Court under P.O.A. s. – 140.

REF: Appendix "A", attached to this letter.

Book #2 Legislation and Law

Please be advised that we are aware of the death of Dennis Watson Brown, Q.C. of the Crown Law Office September 1, 2016, who promoted this Unlawful, Manipulation and Miscarriage of Justice through Misrepresentation and Fraud on the Courts for the past 15 years, by ignoring a claim for damages, which placed the Crown in Default 2006, Failure to Comply with, and in Contempt of Valid Superior Court Orders not Appealed, to Abuse of Process and Abuse of Discretionary Authority on numerous occasions to withdraw Private Information charges to Obstruct the Rule of Law to Defeat Justice, all covered up by this Government and Government Patronizing Courts and Justices, the Law Society of Upper Canada, as well as every other useless Federal and Provincial Entity appealed to for Justice.

Previous Conspiracy to Defeat Justice 1994 – 2000.

REF: #9 (1) (12)

- Previously 1994 - 2000, Mr. Brown and Crown Attorney John Ayre became involved with the Nichols Lawsuit for damages with the Township of Delhi, Frank Gelinas, David Anderson and Min. Transportation Senior Supervisor, Winston Oostenbrug, which became a Court Administrative dysfunctional farce with the totally unlawful biased decision of Justice John Carvarzan which Decision on Appeal had been properly filed with the Ontario Court of Appeal and then manipulated by Township of Delhi Lawyers Thomas Cline and Insurance Solicitor Peter Haney to convince Nichols Solicitor Paul Amey to bring the Appeal back to Divisional Court which was unlawfully approved by Justice Osborne to a Hearing at Divisional Court in Hamilton, a Court without jurisdiction to hear the Appeal for a claim of 3 million dollar. On June 3, 1999 when Court convened, the first announcement was that the

Justices did not receive the Transcripts from the Trial, and rather than adjourn to locate the missing Transcripts, proceeded to Dismiss our Appeal without any review or reference to the evidence of the Transcripts from the Trial.

REF: 9:10 – 9:15

- On June 9, 1999, Township of Delhi Solicitor Thomas Cline Q.C. sent a copy of the Divisional Court Decision to Haldimand-Norfolk Regional Chairman John Harrison.

Note: This Decision on plain paper and not on Divisional Court Letterhead and unsigned by the 3 Justices H.J. Keenan, P.A. Cuming and W.P. Somers, which appeared as attempting to cover up and fly under the radar in the event of a kickback of hearing this Appeal and rendering a Decision without Jurisdiction and without reference to the Transcripts from the Justice Carvarzan Trial.

This action would seem to confirm that, yes, these Justices knew exactly what they had done to protect the Carvarzan Decision and the Government.

No doubt, these Justices were all well aware that this Appeal had been transferred back from Ontario Court of Appeal where it had previously been properly filed to Appeal.

The Court later admitted to losing Nichols Gravel Limited Transcripts of \$3,500.00 and agreed to reproduce the Transcripts while the Appeals continued under Solicitor Julian Falconer to Ontario Court of Appeal for Dismissal by Justices Finlayson, Weiler and O'Conner and all the way up to the Supreme Court of Canada for Leave to Appeal Denied by L'Heureux-Dub, Bastarach and Lebel with no Court ever having received and reviewed the Transcript of Evidence from the biased Law perverted Trial and Decision of Justice John Carvarzan, and this Law perverted Miscarriage of Justice episode was over and done.

REF: 9 – 13

REF: 9 - 15

When all of these disputes were all set aside, Crown Attorney John Ayre was promoted up to the Crown Law Office, Toronto and retired shortly after the death of Dennis W. Brown Q.C. 2016.

REF: Book #2, Legislation and Law, #9 - 9:15 Lawsuit Township of Delhi 1994 - 2000.

REF: #10

- Other Lawsuits for damages were filed, when the Region of Haldimand-Norfolk , Township of Delhi and Township of Norfolk Officials and M.T.O. Senior Supervisor Winston Oostenbrug all conspired to bankrupt Nichols Gravel Limited. These Lawsuit were withdrawn upon Solicitor advise after the Crown had run up costs of over \$300,000.00, by Crown Solicitors Ansaro and Stieber.

REF: #11, March 15, 2002, Description Private Information.

REF: #12, July 30, 2002, Brush Off, J.P. Mitchel H. Baker.

- Mr. Brown and the Crown Law Office again interfered and intervened to defer a hearing before the Professional Engineers Association for Professional Misconduct to Haldimand-Norfolk Regional Engineer, Eric D'Hondt, who assisted M.N.R. Enforcement to cancel Nichols Gravel Limited Contract for Quarry Stone, Yin Subdivision, Waterford, Ontario and Cayuga Quarries - Dufferin was hauling stone to the project the next day. Just prior to the Hearing, the Professional Engineers Solicitor, Aviva R. Harrari was Crown intimidated and withdrew the Application for Hearing.

REF: #13, P.E.O. Letters, May 16, 2005 - May 10, 2010.

We suggest that Mr. Brown in his 40 years of Employment with the Province, no doubt saved Ontario millions of dollars through his expertise in manipulation and deferral of Rule of Law to Defeat the Administration of Justice as now described and confirmed herein with this submission.

REF: www.injusticecanada.com for supporting Documentation to this letter. As provided from the files of Nichols Gravel Limited – Gary Nichols

Yours sincerely

Darryl Nichols
Signing Officer
North Star Aggregates Inc.

c.c. Hon. Kathleen Wynne, Premier of Ontario,
c.c. Hon. Nathalie Des Rosiers, M.N.R.F Minister,
c.c. Federal Justice Minister Hon. Jody Wilson Raybould
c.c. Law Society of Upper Canada

Covering Letter and
Full Documentation 1998 -2017
as directed to M.N.R.F..
Inspector Diane Schwier and
Hon. Natalie Des Rosiers
Minister M.N.R.F.
Premier Kathleen Wynne
Law Society of Upper Canada

P.S. Please direct responses to:

Solicitor John R. Hanselman
138 Eagle St.
DELHI, On. N4B 1S5

Phone: 519-582-0770

AGREEMENT Appendix "A"

MEMORANDUM OF UNDERSTANDING

BETWEEN

NICHOLS GRAVEL LIMITED

AND

NORTH STAR AGGREGATES INC

It is Hereby Resolved and Agreed that, Nichols Gravel Limited shall reserve the right in its absolute discretion to distribute and circulate all of the documentation herein described in Book #1 and Book #2 prior to North Star Aggregate Inc. filing Application to the Superior Court of Justice under P.O.A. s. 140 for Review and Direction for Reinstatement of Licence 103717, unlawfully Revoked by M.N.R., September 30, 2004.

Subject to receiving no appropriate response to this Application all Documentation of Book 1 and Book 2 will be placed on Website www.injusticecanada.com and immediately directed to the New Leader of the P.C. Party, Andrea Horwath, N.D.P. Leader, the News Media and then to a book publisher.

Nichols Gravel Limited
President, Gary Nichols

North Star Aggregates Inc.
Signing Officer, Darryl S. Nichols

Ministry of Natural
Resources and Forestry

Ministère des ressources
naturelles et des forêts

Guelph District
1 Stone Road West
Guelph, Ontario
N1G 4Y2

Telephone: (519) 826-4955
Facsimile: (519) 826-4929



February 22, 2018

North Star Aggregates Inc.
P.O. Box 325
Delhi ON N4B 2W9

Dear Mr. Darryl Nichols:

**RE: Application for a Class A, Category 2 (Quarry Below Water)
North Star Aggregates Inc.
Part Lot 10-12, Concession 12
County of Haldimand, Geographical Township of Walpole**

On February 8, 2018 the Ministry of Natural Resources and Forestry (MNRF), Guelph District office, received an application for an aggregate licence for the property noted above. In support of your application you provided technical reports prepared for a former application (Nichols Gravel – Hagersville Quarry) which dates back to 1999 and a site plan for aggregate licence 103717 which has since been revoked. Please be advised that there is no provision in the Aggregate Resources Act (ARA) to reinstate or reissue a revoked licence.

As stated in our letter of April 20, 2017, the reports prepared for the Nichols Gravel application were prepared approximately 20 years ago and as such predate legislation now administered by the MNRF. If North Star Aggregates Inc wishes to licence the subject property under the ARA they must submit a new application with technical reports and a site plan that reflect current conditions at the site and the surrounding area. Given some of the information from the former application may be relevant to today; addendums to the technical reports may be useful in providing the required updated information. **For a complete list of technical reports required for a Category 2 licence, please see attached.** All technical reports must be prepared by a qualified person with sufficient experience and training and a CV must accompany each report. Two copies of each report are required with your submission.

Two copies of the Class A site plan are also required. The site plans should reflect current conditions at the site and the surrounding area. Any recommendations derived from the technical reports prepared in support of the application must be placed on the site plan. **For a complete list of site plan requirements, please see attached.** Please note that conditions resulting from the previous licence application process or the Ontario Municipal Board hearing may not necessarily apply to the new application.

Finally, the MNRF requires you to provide confirmation of the current land designation (i.e. copy of zoning approval).

Given the deficiencies in your application, the MNRF is returning all of the documentation to you including the application form and the \$1000.00 cheque.

Should you require any further information concerning this matter please contact the undersigned at this office.

Yours truly,

A handwritten signature in black ink, appearing to read "Diane Schwier". The signature is fluid and cursive, with a large initial "D" and a long, sweeping underline.

Diane Schwier
Aggregates Technical Specialist
Guelph District Office
519 826-4930

Introduction-Category 2

These Standards¹ have been developed to support the Aggregate Resources Act as amended by Bill 52, the Aggregate and Petroleum Resources Statute Law Amendment Act, 1996. There are three main headings:

- 1) Licences - subdivided into eight categories with respect to Class 'A'. Class 'A' licence is to remove more than 20,000 tonnes of aggregate annually and a Class 'B' is to remove 20,000 tonnes or less of aggregate annually;
- 2) Aggregate permits - subdivided into six categories; and
- 3) Wayside Permits - one category.

These categories were developed to provide more concise, user friendly and understandable minimum requirements for the delivery of the Aggregate Resources Act.

Each category has a template of six major topics and all categories are developed to be proponent driven. The proponent will refer to the appropriate categories depending on the type of undertaking being contemplated. The reason for 15 categories is to reflect the numerous types of applications that can be applied for. In order to accomplish an easy-to-follow format, the standards and categories are repetitive in some cases or have slight modifications between categories based on whether the application is for a pit or quarry, and whether extraction will occur above or below the water table.

The enabling authority in Bill 52 allows for six major topic areas to be reflected in the standards. They are:

- ◆ Site Plan Standards;
- ◆ Report Standards;
- ◆ Prescribed Conditions;
- ◆ Notification and Consultation;
- ◆ Operational Standards; and
- ◆ Annual Compliance Reporting.

Each category includes Site Plan Standards, Report Standards, Prescribed Conditions and Notification and Consultation. Operational and Compliance Standards for all categories are found at the back of this document.

Site Plan Standards

These standards have been developed to reflect the type of undertaking: application for a licence (pit vs. quarry) or aggregate permit (pit vs. quarry). The site plan requirements are all encompassing for each category and no additional information will be required.

¹ These standards will apply only to sites which go through the licensing or permitting process subsequent to the proclamation of Bill 52. The exceptions are the Annual Compliance Report requirement and compliance with Operational Standards which will apply to existing licences and permits.

Report Standards

The report standards have two components: a summary statement and technical reports. All categories of applications are required to submit these reports. The author of these reports may be:

- 1) the applicant for summary statements where the applicant possesses the qualifications or experience; and
- 2) qualified individuals for the technical reports.

For very unique issues on a site specific basis, additional information to that identified in the Report Standards may be requested.

Prescribed Conditions

The prescribed conditions are conditions that pertain to the individual category and cannot be varied or rescinded by either the Minister or the Ontario Municipal Board. However, on a site-by-site basis, additional conditions can be attached to the licence or site plan at the discretion of the Board or Minister, however, these conditions do not form part of the prescribed conditions.

Notification and Consultation

These standards identify the required steps for a proponent to process an application once an application has been accepted by the Ministry. It will be a requirement of the applicant to ensure that all aspects of the standards have been met. Ministry staff will no longer be facilitating and guiding proponents through the process.

Operational Standards

These standards identify the day-to-day operational requirements that are not part of an existing site plan. If the site plan requirements already deal with the same factors but in a different way, the site plan provision prevails over these operational standards.

Annual Compliance Reporting

These standards place the responsibility of reporting non-compliance items and remedial work on the licensee and permittee to self-assess their operation on a yearly basis. The information gathered will be evaluated by the Ministry of Natural Resources to ensure compliance is being achieved. Although the "Guide to Completion of the Assessment Report" is not part of the standards, it is advisable to read this guide in order to assist in the completion of the assessment report.

Terminology & Definitions

For the purpose of these standards reference should be made to the Provincial Policy Statement (Revised February 1, 1997) issued under Section 3 of the Planning Act for definitions and terms used in the Natural Environment Level 1 and 2 and Archaeology Resources Stage 1, 2 and 3.

Established Groundwater Table For unconsolidated surficial deposits, the groundwater table is the surface of an unconfined water-bearing zone at which the fluid pressure in the unconsolidated medium is atmospheric. Generally the groundwater table is the top of the saturated zone.

For confined water bearing zones or consolidated bedrock materials, the groundwater table, or potentiometric surface, is a level that represents the fluid pressure in the water bearing zone and is generally defined by the level to which water will rise in a well.

Sensitive Receptor Includes residences or facilities where people sleep (nursing homes, hospitals, trailer parks, camping grounds, etc.); schools; day-care centres.

Mitigate To alleviate, moderate or reduce the severity of impacts.

Recommended References

When applying for a licence or aggregate permit and depending on the location of the proposed site, the applicant may wish to pre-consult with the affected agencies that will be involved.

In searching and/or preparing reports to accompany an application, reference should be made to the following documents and agencies:

- a) Provincial Policy Statement and Associated Training Manuals;
 - b) Zoning by-law(s);
 - c) Official Plan(s);
 - d) Environmental Protection Act;
 - e) Ontario Water Resources Act;
 - f) Conservation Authorities Act;
 - g) Niagara Escarpment Commission;
 - h) Guide to Completion of the Compliance Assessment Report for licences and aggregate permits;
 - i) Flow chart for the Notification and Consultation Standards for licences, aggregate permits, wayside permits, Category 13 and the annual compliance reporting;
 - j) MOEE Guidelines including:
 - MOEE Guideline NPC-205, Sound Level Limits for Stationary Sources in Class 1 & 2 Areas (Urban);
 - MOEE Guideline NPC-232, Sound Level Limits for Stationary Sources in Class 3 Areas (Rural);
 - MOEE Guideline NPC-233, Information to be Submitted for Approval of Stationary Sources of Sound;
 - MOEE Guideline NPC-119, Blasting.
- The above list serves only as a guide and should not be interpreted as all-inclusive.
- k) Provincial and Federal references to endangered species;
 - l) Federal Fisheries Act and Associated Guidelines;
 - m) Environmental Assessment Act and Exemptions.

For further enquiries, please contact:

Ministry of Natural Resources
Aggregate and Petroleum Resources Section
P.O. Box 7000
Peterborough, Ontario K9J 8M5
Telephone: (705) 755-1258
Fax: (705) 755-1206

Application Standards for

Category 2: Class "A" licence for a quarry operation which intends to extract aggregate material from below the established groundwater table.

- ◆ Application Standards
 - ✧ Site Plan Standards
 - ✧ Report Standards
- ◆ Prescribed Conditions
- ◆ Notification and Consultation Standards

Category 2

1.0 Site Plan Standards for Below Groundwater Extraction of Quarry Operations

The site plan accompanying an application for a Class A quarry licence which intends to extract aggregate material from below the established groundwater table must show the following information on at least three separate drawings using a combination of the headings identified. Two (2) copies of the site plan and reports must be submitted with the application:

1.1 Existing Features

- 1.1.1 each drawing must be numbered and indicate the total number of drawings submitted (e.g. 1 of 4);
- 1.1.2 a key map showing the location of the quarry site;
- 1.1.3 a general description of the site by lot and concession, if any, and the municipality, county or the region where the quarry is located;
- 1.1.4 a scale reference using both ratio and graphic methods between a scale of 1:1000 and 1:5000;
- 1.1.5 applicant's name and address;
- 1.1.6 a statement that "this site plan is prepared under the Aggregate Resources Act for a Class A licence, Category 2";
- 1.1.7 a stamp and signature of a Professional Engineer, Ontario Land Surveyor, Landscape Architect or signature of other qualified person as approved under subsection 8(4) of the Aggregate Resources Act under whose direction this plan was prepared and certified;
- 1.1.8 north arrow, normally pointing towards the top of the page;
- 1.1.9 a section for recording site plan amendments, including approval dates;
- 1.1.10 a list of references which apply specifically to the preparation of the site plan;
- 1.1.11 a legend;
- 1.1.12 the boundary of the area to be licensed, including the dimensions and hectarage of the site;
- 1.1.13 demarcation of lot and concession lines;

- 1.1.14 the use and existing zoning of land on and within 120 metres of the site;
- 1.1.15 the topography of the site illustrated by a one or two metre contour interval, expressed as metres above mean sea level;
- 1.1.16 the location and use of all buildings and other structures existing on and within 120 metres of the site;
- 1.1.17 the location of every existing entrance to and exit from the site;
- 1.1.18 main internal haul roads on the site;
- 1.1.19 the elevation of the established groundwater table on site;
- 1.1.20 existing surface water drainage and drainage facilities on and within 120 metres of the site;
- 1.1.21 the location and type of existing fences on the site;
- 1.1.22 the location of existing tree cover (i.e. wood lots and hedgerows) on the site and within 120 metres of the site;
- 1.1.23 the location of existing stockpiles of topsoil and overburden on the site;
- 1.1.24 the location of existing aggregate stockpiles, including any recyclable materials on the site;
- 1.1.25 existing scrap location(s) on the site;
- 1.1.26 existing fuel storage area(s) on the site;
- 1.1.27 significant natural features on and within 120 metres of the site;
- 1.1.28 significant man-made features on and within 120 metres of the site;
- 1.1.29 all existing excavation faces and rehabilitated areas;
- 1.1.30 the location of existing processing area(s) and whether or not the equipment is stationary and/or portable;
- 1.1.31 the location of existing berms and their height; and
- 1.1.32 location of cross-section(s).

1.2 Operations

- 1.2.1 the sequence and direction of the proposed quarry development;
- 1.2.2 details of how the stripping and stockpiling of the topsoil and overburden will be dealt with;
- 1.2.3 the maximum number of lifts and the maximum height of the lifts;
- 1.2.4 main internal haul roads on the site;
- 1.2.5 the location of every proposed entrance to and exit from the site;
- 1.2.6 the elevation of the established groundwater table on the site;
- 1.2.7 any proposed water diversion and points of discharge to surface water;
- 1.2.8 the location, type and installation schedule or phasing for any proposed fencing around the licensed boundary of the site;
- 1.2.9 the location of any proposed buildings and other structures to be erected on the site;
- 1.2.10 the location of any proposed stockpiles of topsoil and overburden on the site;
- 1.2.11 the location of any proposed aggregate stockpile area(s), including any recyclable materials on the site;
- 1.2.12 any proposed scrap location(s) on the site;
- 1.2.13 the location of any proposed fuel storage area(s) on the site;
- 1.2.14 the area in hectares to be extracted;
- 1.2.15 the location and labelling of all excavation setbacks from the licensed boundary;
- 1.2.16 the final extraction elevation of the site using spot elevations;
- 1.2.17 the location of any proposed permanent and/or temporary processing area(s) on the site;
- 1.2.18 the location of any proposed berms and the minimum height;
- 1.2.19 details on how berms will be vegetated and maintained;
- 1.2.20 the general types of equipment that will normally be used on site;
- 1.2.21 the location, design and phasing of any proposed tree screens and identify whether deciduous, coniferous or both;

- 1.2.22 details on the hours of operation of the site taking into account all facets of the operation which involve the actual physical movement of aggregate;
- 1.2.23 details of how trees and stumps shall be disposed of or utilized;
- 1.2.24 location of cross-section(s);
- 1.2.25 a section to record any variations from the operational standards that relate to the site;
- 1.2.26 details of frequency and timing of blasts; and
- 1.2.27 a statement to indicate the maximum number of tonnes of aggregate to be removed from the site in any calendar year. This may be expressed as unlimited, and;
- 1.2.28 any recommendations and/or monitoring program(s) identified in the technical reports.

1.3 Progressive Rehabilitation

- 1.3.1 the sequence and direction of progressive rehabilitation;
- 1.3.2 details on how the overburden and topsoil will be used to facilitate progressive rehabilitation;
- 1.3.3 the location, design and type of vegetation (e.g. grasses, legumes, shrubs and trees, etc.) that will be established on the site during progressive rehabilitation;
- 1.3.4 how the slopes will be established on the excavation faces and the quarry floor;
- 1.3.5 details on how progressive rehabilitation will be conducted in relation to the operational sequences; and
- 1.3.6 if proposed, details on the importation of topsoil or inert material to facilitate rehabilitation of the site.

1.4 Final Rehabilitation

- 1.4.1 if proposed, details on the importation of topsoil or inert material to facilitate rehabilitation of the site;
- 1.4.2 how the final slopes will be established on all excavation faces and the quarry floor;
- 1.4.3 the location, design and type of vegetation (e.g. grasses, legumes, shrubs, and trees, etc.) that will be established on the site during final rehabilitation;
- 1.4.4 any building(s) or structure(s) to remain on the site;
- 1.4.5 anticipated elevation of the groundwater table;

- 1.4.6 any internal haul roads that will remain on the site;
- 1.4.7 final surface water drainage and drainage facilities on the site;
- 1.4.8 the final elevations of the rehabilitated areas of the site illustrated by a one or two meter contour interval, expressed as metres above mean sea level, and;
- 1.4.9 location of cross-section(s).

1.5 Cross-Sections

- 1.5.1 one or more cross-sections of existing conditions, rehabilitation and the anticipated final elevation of the groundwater table, within the licensed boundary;
- 1.5.2 the final slope gradients that will be established
- 1.5.3 the cross-section of a typical berm design that will be constructed on the site; and
- 1.5.4 appropriate horizontal and vertical scales.

2.0 Report Standards for Category 2 Applications

2.1 Summary Statement

A summary statement accompanying an application for a licence must be signed by the author and provide information on the following:

- 2.1.1 any planning and land use considerations;
- 2.1.2 the agricultural classification of the proposed site, using the Canada Land Inventory classes. For the land being returned to agriculture, the proposed rehabilitation techniques must be identified.
- 2.1.3 the quality and quantity of aggregate on site;
- 2.1.4 the main haulage routes and proposed truck traffic to and from the site, and necessary entrance permits; and
- 2.1.5 the progressive and final rehabilitation and the suitability of the proposed rehabilitation having regard to the adjacent lands.

The summary statement may be prepared by the applicant.

2.2 Technical Reports

Technical reports accompanying an application for a licence must provide information on the following:

- 2.2.1 Hydrogeological Level 1: Preliminary hydrogeologic evaluation to determine the final extraction elevation relative to the established groundwater table(s) in both unconsolidated surficial materials (if present) and the consolidated bedrock strata, and the potential for adverse effects to groundwater and surface water resources and their uses (e.g. waterwells, groundwater aquifers, surface water courses and bodies, discharge areas, etc.);

NB: A Permit to Take Water may be required if any part of the operation utilizes, ponds by flow restriction, or diverts ground and/or surface water on, or from the site.

- 2.2.2 Hydrogeological Level 2: Where the results of Level 1 have identified a potential for adverse effects of the operation on ground water and surface water resources and their uses, an impact assessment is required to determine the significance of the effect and feasibility of mitigation. The assessment should address the potential effects of the operation on the following features if located within the zone of influence for extraction below the established groundwater table, where applicable;

A technical report must be prepared by a person with appropriate training and/or experience in hydrogeology to include the following items;

- (a) water wells;
- (b) springs;
- (c) groundwater aquifers;
- (d) surface water courses and bodies;
- (e) discharge to surface water;
- (f) proposed water diversion, storage and drainage facilities on site;
- (g) methodology;
- (h) description of the physical setting including local geology, hydrogeology, and surface water systems;
- (i) water budget;
- (j) impact assessment;
- (k) mitigation measures including trigger mechanisms;
- (l) contingency plan;
- (m) monitoring plan; and
- (n) technical support data in the form of tables, graphs and figures, usually appended to the report.

- 2.2.3 Natural Environment Level 1: determine whether any of the following features exist on and within 120 metres of the site: significant wetland, significant portions of the habitat of endangered or threatened species, fish habitat, significant woodlands (south and east of the Canadian Shield), significant valley lands (south and east of the Canadian Shield), significant wildlife habitat and significant areas of natural and scientific interest;
- 2.2.4 Natural Environment Level 2: impact assessment where the level 1 identified any features on and within 120 metres of the site in order to determine any negative impacts on the natural features or ecological functions for which the area is identified and any proposed preventative, mitigative or remedial measures;
- 2.2.5 Cultural Heritage Resource Stage 1: determine if there are any known significant archaeological resources on the subject property and the potential of the site to have heritage resources;
- 2.2.6 Cultural Heritage Resource Stage 2: property survey by a licenced archaeologist if stage 1 identifies known resources or a medium to high potential for heritage resources on the site and mitigation, if recommended;
- 2.2.7 Cultural Heritage Resource Stage 3 and 4: detailed site investigation by a licensed archaeologist (e.g. test pits, plowing fields and survey) when recommended by stage 2 and mitigation through excavation, documentation or avoidance, if recommended;
- 2.2.8 If extraction and/or processing facilities are within 500 metres of a sensitive receptor, a noise assessment report is required to determine whether or not provincial guidelines can be satisfied;

2.2.9 A Blast Design report is required if a sensitive receptor is within 500 metres of the limit(s) of extraction to demonstrate that provincial guidelines can be satisfied; and

2.2.10 Each report shall state the qualifications and experience of the individual(s) that have prepared the report(s).

The technical report(s) must be prepared by a person with appropriate training and/or experience.

3.0 Prescribed Conditions that Apply to Category 2 Licences

The licence is subject to the following conditions:

- 3.1 Dust will be mitigated on site.
- 3.2 Water or another provincially approved dust suppressant will be applied to internal haul roads and processing areas as often as required to mitigate dust.
- 3.3 Processing equipment will be equipped with dust suppressing or collection devices, where the equipment creates dust and is being operated within 300 metres of a sensitive receptor.
- 3.4 Any recommendations and/or recommended monitoring program identified in the technical reports will be described on the site plan and all records will be retained by the licensee and made available upon request by the Ministry of Natural Resources for audit purposes.
- 3.5 A Spills Contingency Program will be developed prior to site preparation.
- 3.6 Fuel storage tanks will be installed and maintained in accordance with the Gasoline Handling Act.
- 3.7 If required, a Certificate of Approval will be obtained for the discharge system should water be discharged off site.
- 3.8 If required, a Certificate of Approval will be obtained for processing equipment to be used on site.
- 3.9 If required, a Permit To Take water will be obtained for utilizing ground and/or surface water.
- 3.10 The licensee will monitor all blasts for ground vibrations and blast overpressure and will operate to ensure compliance with current provincial guidelines.
- 3.11 Blasting will not occur on a holiday or between the hours of 6 p.m. on any day and 8 a.m. on the following day.
- 3.12 All blast monitoring reports must be retained by the licensee and made available upon request by the Ministry of Natural Resources for audit purposes.

4.0 Notification and Consultation Standards for Category 2 Applications

The applicant shall submit all required documentation to the Ministry of Natural Resources. Within twenty (20) days, the Ministry of Natural Resources shall determine if the application is complete. Once the application is determined to be complete, the applicant may proceed with the following Notification and Consultation Standards.

4.1 Notification

- 4.1.1 The applicant must provide public notice as identified in 4.1.2. The 45 day notification period will begin with publication in the local newspaper as described in 4.1.2.3.
- 4.1.2 Public notice must be completed concurrently in the following manner:
 - 4.1.2.1 by written notice delivered personally or by registered mail, which must include a copy of Form 1 (Notice of Application for a licence), and Form 2 (Notice of Information Session), to landowners within 120 metres of the licensed boundary according to the most recent assessment available at the time of application;
 - 4.1.2.2 by signage (1 metre by 1 metre) posted on the boundary of the site to be clearly seen from adjoining areas to which the public has access. The sign(s) must be placed on site on or before the notification appears in the newspaper and must be maintained during the 45 day notification period. The sign(s) will contain the following information:
 - (a) Notice of Application under the Aggregate Resources Act.
 - (b) Category 2, Class 'A' Quarry Below Water.
 - (c) Applicant: Name, Address and telephone number.
 - (d) Lot, concession, upper & lower tier municipality, geographic township (if applicable) and the size of the site in hectares;
 - (e) Application is on file at the local Ministry of Natural Resources office;
and
 - (f) Date, time and location of the information session.
 - 4.1.2.3 by publication of Form 1 and Form 2 concurrently, in one issue of one local newspaper having general circulation in the locality in which the site is located.
- 4.1.3 The applicant must circulate on or before the date of publication of Form One in the newspaper, the complete application package and Form 2 to the agencies identified below for comments. It is the applicant's responsibility to determine the appropriate contact office and person prior to notification.

- 4.1.3.1 the local Ministry of Natural Resources office;
- 4.1.3.2 the local municipality in which the site is located;
- 4.1.3.3 the Region/County in which the site is located;
- 4.1.3.4 the local Conservation Authority (if within their jurisdiction)
- 4.1.3.5 Ministry of Agriculture, Food & Rural Affairs (OMAFRA)(only if prime agricultural land is not being restored to the same average soil quality)
- 4.1.3.6 Niagara Escarpment Commission (NEC)(if within their jurisdiction);
- 4.1.3.7 utility corporations (if an easement exists on site or within 120 metres of the boundary); and
- 4.1.3.8 Ministry of Environment and Energy.

4.2 Consultation

- 4.2.1 Consultation by the applicant with the public is required by hosting a presentation to the public, in the locality of the application, outlining all details of the proposal (information session, open house, community meeting, etc.) Within the 45 day notification period
 - 4.2.1.1 Timing of the information session must provide at least;
 - a) 20 days notice from publication as in 4.1.2.3 prior to the session; and
 - b) 10 days for comments after the information session, prior to the closing of the 45 day comment/notification period.
- 4.2.2 Any person or agency objecting to the application must serve upon the applicant and District Manager of the Ministry of Natural Resources, a written notice of objection to the issuance of the licence applied for and the reasons therefore, within the 45 day notification period, after which it will be deemed there are no objections.

4.3 Resolution of Objections

- 4.3.1 During the consultation process, the applicant shall attempt to resolve all the objections.
- 4.3.2 If all objections have been resolved, the applicant shall:
 - 4.3.2.1 amend the licence application, site plans or reports, if required, in consultation with the Ministry of Natural Resources to reflect the resolution of the objections;
 - 4.3.2.2 obtain written confirmation (withdrawal) from all objectors indicating that their objections have been addressed and submit to the Ministry of Natural Resources; and
 - 4.3.2.3 submit documentation to the Ministry of Natural Resources of landowner and stakeholder contacts and agencies circulation.

4.3.3 If all objections are not resolved;

4.3.3.1 the applicant shall submit to the Ministry of Natural Resources and the remaining objector(s) by written notice delivered personally or by registered mail;

- (a) list of unresolved objections;
- (b) documentation of attempts to resolve objections;
- (c) applicant's recommendations for resolving objections; and
- (d) a notice of a 20 day response period as per section 4.3.3.2.

4.3.3.2 the objector(s) shall submit to the Ministry of Natural Resources and the applicant within 20 days of receiving the information from the applicant as identified in Section 4.3.3.1 recommendations that may resolve the objections. The recommendations shall be delivered personally or by registered mail within the 20 days or, it will be deemed that there is no longer an objection; and

4.3.3.3 the applicant shall submit documentation to the Ministry of Natural Resources of landowner and stakeholder contacts and agencies circulation.

4.3.4 Once the Ministry of Natural Resources has received:

- 4.3.4.1** agency comments under section 4.2.2, if any;
- 4.3.4.2** applicant's recommendation and documentation under section 4.3.3.1;
- 4.3.4.3** objector's withdrawal under section 4.3.2.2 or recommendations under section 4.3.3.2, if any; and
- 4.3.4.4** documentation of landowner and stakeholder contacts and agencies circulation.

the application shall be processed in accordance with Section 11 of the Aggregate Resources Act.

4.3.5 Within 30 days of receiving information as noted in section 4.3.4, the Ministry of Natural Resources will make a recommendation to the Minister in accordance with Section 11 of the Aggregate Resources Act.

4.3.6 If the applicant does not submit the required information as noted in sections 4.3.2 and 4.3.3 within 2 years of public notification as per section 4.1.1, the application is considered withdrawn and all documentation will be returned.

All registered mail shall be deemed to be made on the fifth day after the day of mailing. In provincial government designated bilingual areas, notification in both a French and English local newspaper is required.

5.0 Operational Standards that Apply to Licences

Unless the site plan provides otherwise through variations from these operational standards identified on the site plan, the licensee must comply with the following:

- 5.1 a fence, at least 1.2 metres in height, is erected and maintained along the licensed boundary of the site;
- 5.2 a gate is erected and maintained at each entrance to, and exit from, the site and that all such gates are kept closed when the site is not in operation;
- 5.3 each entrance to, and exit from, the site is located so as to provide, at the point of intersection with any highway, a clear view of the highway in both directions;
- 5.4 topsoil must be stripped sequentially prior to aggregate extraction;
- 5.5 within the area to be extracted, all trees within 5 metres of the excavation face must be removed;
- 5.6 all topsoil or overburden that is stripped during the operation of the site will be stored separately with vegetated stable slopes;
- 5.7 adequate vegetation is established and maintained to control erosion of any berm or stockpile of topsoil or overburden;
- 5.8 the site is kept in an orderly condition;
- 5.9 all scrap is removed on an ongoing basis, and scrap shall include refuse, debris, scrap metal or lumber, discarded machinery, equipment and motor vehicles. Scrap cannot be located within 30 metres of any body of water and 30 metres from the boundary of the site;
- 5.10 "excavation setback areas" means the area within:
 - 5.10.1 fifteen metres from the boundary of the site;
 - 5.10.2 thirty metres from any part of the boundary of the site that abuts:
 - 5.10.2.1 a highway,
 - 5.10.2.2 land in use for residential purposes at the time the licence was issued, or
 - 5.10.2.3 land restricted to residential use by a zoning by-law when the licence was issued; or
 - 5.10.3 thirty metres from any body of water that is not the result of excavation below the water table;
- 5.11 no excavation can occur within the excavation setback area of the site;

- 5.12 all excavation faces are to be stabilized in so far as is necessary to prevent erosion into the excavation setback area;
- 5.13 no person shall pile aggregate, topsoil or overburden, locate any processing plant or place, build or extend any building or structure:
- 5.13.1 within thirty metres from the boundary of the site; or
 - 5.13.2 within ninety metres from any part of the boundary of the site that abuts:
 - 5.13.2.1 land in use for residential purposes at the time the licence was issued, or
 - 5.13.2.2 land restricted to residential use by a zoning by-law when the licence was issued;
- 5.14 berms that are intended to screen the adjoining lands from the operation on the site are exempt from section 5.13;
- 5.15 all berms shall be located at least three metres away from the boundary of the site;
- 5.16 removal of topsoil from the site shall not occur;
- 5.17 all topsoil or overburden stripped in the operation of the site is used in the rehabilitation of the site;
- 5.18 adequate vegetation is established and maintained to control erosion of any topsoil or overburden replaced on the site for rehabilitation purposes;
- 5.19 when the site is finally rehabilitated, all excavation faces:
- 5.19.1 of any pit has a slope that is at least three (3) horizontal metres for every vertical metre;
 - 5.19.2 of any quarry has a slope that is at least two (2) horizontal metres for every vertical metre;
- 5.20 no aggregate or overburden, except material in a berm, may be moved from the excavation setback area;
- 5.21 rehabilitation of the site shall ensure that:
- 5.21.1 adequate drainage and vegetation of the site is provided; and
 - 5.21.2 any compaction of the site is alleviated;
- 5.22 erect and maintain a sign, indicating that "this site is licensed under the Aggregate Resources Act licence ref # _____", at the main entrance and exit to and from the site; the signs must be at least .5 metres by .5 metres in size.
- 5.23 no person may denote any explosives on the site on a holiday or between 6 p.m. on any day and 8 a.m. on the following day;

5.24 with respect to licences issued under section 71 of the Act

- (a) section 5.13 does not apply with respect to any stockpile, processing plant, building or structure the location of which was in accordance with the laws and by-laws in force before the 1st day of May, 1997, except in so far as that section applies to the extension of any building or structure; and
- (b) section 5.19 does not apply with respect to any excavation face that was rehabilitated to a state which satisfied the requirements of the laws and by-laws in force at the time for the final rehabilitation of that excavation face.

5.25 every licensee shall ensure that, on the site, no person contravenes sections 5.10, 5.11, 5.12, 5.13, 5.14, 5.15, 5.16 or 5.23; and

5.26 a response to emergencies is not limited by the hours of operation shown on the site plan.

6.0 Annual Compliance Reporting for Licences

- 6.1 every licensee must annually complete Form #591 known as the Compliance Assessment Report with respect to their compliance with the Act, regulations, operational standards, site plan and the conditions of the licence;
- 6.2 every licensed site must be assessed pursuant to section 15.1(1) of the Aggregate Resources Act once during the period May 1 to September 15 of each year;
- 6.3 the licensee shall ensure a copy of the Compliance Assessment Report Form #591 is received by the local office of the Ministry of Natural Resources, and the clerk of each regional municipality or county and the local municipality in which the site is located, no later than September 30 of each year;
- 6.4 non-compliance with the Act, regulations, operational standards, site plan and the conditions of the licence must be noted on page 1 and 2 of the Report;
- 6.5 documentation of the action for non-compliance must be recorded on page 3 with the appropriate remedial action deadline date;
- 6.6 all remedial action documented on page 3 must be completed within a 90-day period from the date of filing, or such further period as may be allowed under subsection 15.1(4) of the Act;
- 6.7 the licensee must receive prior approval from the inspector to have the 90 day period extended before filing the report with the Ministry of Natural Resources;
- 6.8 every licensee must provide a sketch of the licensed site, with the Compliance Assessment Report documenting such standards as fencing, gates, berms, tree screens, and setback requirements that require remedial corrective action as documented on page 3 of the Report;
- 6.9 the licensee must provide a sketch showing areas that have been progressively rehabilitated; and
- 6.10 pursuant to subsection 57(4) of the Aggregate Resources Act, it is an offence to furnish false information.

* PREVIOUS 2017 APPLICATION MNRF REJECTED.
REF: MNRF RESPONSE APRIL 20/2017.



Ontario

Ministry of
Natural
Resources

Ministère des
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naturelles

APPLICATION FOR A LICENCE
under the Aggregate Resources Act

X

- Application requirements as outlined in the Aggregate Resources of Ontario Provincial Standards must accompany this application form.
- Questions about this information should be directed to the Aggregate Inspector at the Ministry of Natural Resources District in which the site is located.
- All information in respect to this application including written concerns/comments, the names and address of any objector(s) is available for public review for the purpose of this application under the Aggregate Resources Act. In submitting a written concern/comment an individual consents under the Freedom of Information and Protection of Privacy Act to its disclosure for purposes of the application.

Type of Application: ☒ Class 'A' Licence (> 20,000 tonnes per year) ☐ Class 'B' Licence (20,000 tonnes or less per year) 2 Category

Type of Operation: ☐ Pit ☒ Quarry ☐ Both Pit and Quarry

Type of material to be removed: ☐ Sand and Gravel ☒ Crushed Stone ☐ Dimensional Stone
☒ Clay ☐ Other _____

Licence Area: 93.97 hectares Quantity of material to be removed: 750,000 tonnes/yr

Applicant: Name NORTH STAR AGGREGATES INC.
Address P.O. Box 325
City DETH Prov. ON Postal Code N4B 2L9
Phone No. () - Cell No. (519) 427-4437

Location:

UTM Zone: 17 Easting: 574,863 Northing: 4,755,951 Datum: Google Earth.

Lot:	Concession:	Geographic Twp.	Local Municipality	County/Region/ District
<u>PT 10, 11, 12</u>	<u>12</u>	<u>WALPOLE</u>	<u>HALDIMAND</u>	<u>COUNTY</u>

Signature of Applicant: Darryl Nichols Date: Mar 31-17 *
Name and Title of Signing Officer: Secretary Treasurer

For Office Use Only:

Application Fee: \$ _____ Receipt No.: _____ Date: _____

CHEQUE RETURNED

005

NORTH STAR ACCQUATES

DATE 2017-04-18
Y Y Y Y M M D D

CO. NAME

ADDRESS

CITY, PROVINCE, POSTAL CODE

PAY to
the order of

MINISTER OF FINANCE

\$ 1000 ⁵⁴/₁₀₀

One Thousand and

⁵⁴/₁₀₀

DOLLARS

Security
features
included.



Canada Trust

128 KING STREET
P.O. BOX 276
BURFORD, ONTARIO N0E 1A0

PER *[Signature]*

RE APP FEE QUARRY LICENSE

PER

⑈005⑈ ⑆22002⑈004⑆ 0317⑈5213438⑈

APR 24 2017

Ministry of Natural
Resources and Forestry

Ministère des ressources
naturelles et des forêts



Guelph District
1 Stone Road West
Guelph, Ontario
N1G 4Y2

Telephone: (519) 826-4955
Facsimile: (519) 826-4929

April 20, 2017

John R Hanselman
Barrister Solicitor & Notary
138 Eagle Street
Delhi ON N4B 1S5

Dear Mr. Hanselman:

**RE: Application for a Class A, Category 2 (Quarry Below Water)
North Star Aggregates Inc.
Part Lot 10-12, Concession 12
County of Haldimand, Geographical Township of Walpole**

Please be advised that the Ministry of Natural Resources and Forestry (MNRF) has reviewed the information provided by your law office in support of licensing the property noted above. Given the deficiencies in your submission, MNRF does not consider this a complete application and as a result, we are returning all of the documentation to you including the application form and the fee.

The following is a list of documents/items required should you decide to reapply. The items marked with a checkmark were included in your earlier submission.

- ✓ Application form
- ✓ Licence application fee
- ✓ Proof that the applicant has the right to extract by ownership (copy of deed), lease, or lease extraction agreement.
- ✓ If a company/corporation, proof verifying the legal company name (i.e. Articles of Incorporation)
- ? • Two copies of the Class A site plan prepared under the direction of and certified by a Professional Engineer, Ontario Land Surveyor, Landscape Architect or any other qualified person approved, in writing, by the Minister and signed by the applicant. Please note that the Existing Features Page should reflect current conditions at the site and any recommendations derived from the Technical Reports prepared in support of the application must be placed on the site plan. For a complete list of site plan requirements, please see attached.

- Two copies of each report as required under Section 2.0 of the Provincial Standards (including summary statement and all applicable technical reports). **For a complete list of technical reports, please see attached.**
- Information as to the current land designation (i.e. copy of zoning approval)

In your letter of April 11, 2017 you indicate that Nichols Gravel Limited authorizes North Star Aggregates Inc. to use and possess the previously approved site plan and related consultant reports for licence 103717. The MNRF notes that the reports prepared for licence 103717 (now revoked) would have been prepared approximately 20 years ago and as such predate legislation now administered by the MNRF (i.e. Endangered Species Act). Given the amount of time that has passed since the original reports were prepared, the applicant will be required to complete an updated Natural Environment Report (Level 1 and/or 2), a Hydrogeological Assessment Level 2 and potentially a new noise and blasting report if there are new sensitive receptors within 500 metres of the site.

In addition, it may be in the best interest of the applicant to conduct a pre-consultation meeting with the MNRF and the other review agencies to ensure all of the required reports are prepared in support of the application.

We also note that you reference Bill 39 in your letter and that you believe this new licence application would be supported under amendments to Section 71 (5) of the Aggregate Resource Act (ARA). Please note that Section 71 only applies to newly designated area within the province. The subject site is located within Halidmand-Norfolk and that part of the province, was designated under the Pits and Quarries Control Act in the early 70s.

We look forward to reviewing the complete application by North Star Aggregates Inc. when in becomes available.

Should you require any further information concerning this matter please contact the undersigned at this office.

Yours truly,



Diane Schwier
Aggregates Technical Specialist
Guelph District Office
519 826-4930

cc: North Star Aggregates Inc. – P.O. Box 325 Delhi ON N4B 2W9

Application for Quarry Licence, Class A, Category 2

1. Licence Application and Fee \$1000.00.
2. Certificate of Incorporation, North Star Aggregates Inc.
3. Lease Agreement Quarry Property to North Star Aggregates Inc.
4. Resolution of the Board of Directors to Lease Agreement.
5. Revised Site Plans, October 5, 2017, from February 14, 2003 as previously M.N.R
Approved and accepted.
6. Summary Report of February 23, 1999.
7. Agreement by North Star Aggregates Inc. to comply with the Operational Conditions of
O.M.B. Decision/Order 1194 and Quarry Licence 103717 as signed by the Minister
March 25, 2003.
8. Permission granted to all previous related Nichols Quarry Information and
Documentation as per
Index 1998 to 2017



Ministry of
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Richesses
naturelles

APPLICATION FOR A LICENCE under the Aggregate Resources Act

X

- Application requirements as outlined in the Aggregate Resources of Ontario Provincial Standards must accompany this application form.
- Questions about this information should be directed to the Aggregate Inspector at the Ministry of Natural Resources District in which the site is located.
- All information in respect to this application including written concerns/comments, the names and address of any objector(s) is available for public review for the purpose of this application under the *Aggregate Resources Act*. In submitting a written concern/comment an individual consents under the *Freedom of Information and Protection of Privacy Act* to its disclosure for purposes of the application.

Type of Application: ☒ Class 'A' Licence (> 20,000 tonnes per year) ☐ Class 'B' Licence (20,000 tonnes or less per year) 2 Category

Type of Operation: ☐ Pit ☒ Quarry ☐ Both Pit and Quarry

Type of material to be removed: ☐ Sand and Gravel ☒ Crushed Stone ☐ Dimensional Stone
☒ Clay ☐ Other _____

Licence Area: 93.97 hectares Quantity of material to be removed: 750,000 tonnes/yr

Applicant: Name NORTH STAR AGGREGATES INC.
Address P.O. Box 325
City DETHI Prov. ON Postal Code N4B 2L9
Phone No. () - Cell No. (519) 427-4437

Location:

UTM Zone: 17 Easting: 574,863 Northing: 4,755,951 Datum: Google Earth

Lot:	Concession:	Geographic Twp.	Local Municipality	County/Region/ District
<u>PT 10, 11, 12</u>	<u>12</u>	<u>WALPOLE</u>	<u>HALDIMAND</u>	<u>COUNTY</u>

Signature of Applicant: Danny Nichols Date: Mar 31-17

Name and Title of Signing Officer: Secretary Treasurer

For Office Use Only:

Application Fee: \$ _____ Receipt No.: _____ Date: _____

- Two copies of each report as required under Section 2.0 of the Provincial Standards (including summary statement and all applicable technical reports). **For a complete list of technical reports, please see attached.**
- Information as to the current land designation (i.e. copy of zoning approval)

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Yours truly,



Diane Schwier
Aggregates Technical Specialist
Guelph District Office
519 826-4930

cc: North Star Aggregates Inc. – P.O. Box 325 Delhi ON N4B 2W9

APR 26 2017

Ministry of Natural
Resources and Forestry

Ministère des ressources
naturelles et des forêts

Guelph District
1 Stone Road West
Guelph, Ontario
N1G 4Y2

Telephone: (519) 826-4955
Facsimile: (519) 826-4929



April 20, 2017

John R Hanselman
Barrister Solicitor & Notary
138 Eagle Street
Delhi ON N4B 1S5

Dear Mr. Hanselman:

**RE: Application for a Class A, Category 2 (Quarry Below Water)
North Star Aggregates Inc.
Part Lot 10-12, Concession 12
County of Haldimand, Geographical Township of Walpole**

Please be advised that the Ministry of Natural Resources and Forestry (MNRF) has reviewed the information provided by your law office in support of licensing the property noted above. Given the deficiencies in your submission, MNRF does not consider this a complete application and as a result, we are returning all of the documentation to you including the application form and the fee.

The following is a list of documents/items required should you decide to reapply. The items marked with a checkmark were included in your earlier submission.

- ✓ Application form
- ✓ Licence application fee
- ✓ Proof that the applicant has the right to extract by ownership (copy of deed), lease, or lease extraction agreement.
- ✓ If a company/corporation, proof verifying the legal company name (i.e. Articles of Incorporation)
- ? • Two copies of the Class A site plan prepared under the direction of and certified by a Professional Engineer, Ontario Land Surveyor, Landscape Architect or any other qualified person approved, in writing, by the Minister and signed by the applicant. Please note that the Existing Features Page should reflect current conditions at the site and any recommendations derived from the Technical Reports prepared in support of the application must be placed on the site plan. For a complete list of site plan requirements, please see attached.



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APPLICATION FOR A LICENCE under the Aggregate Resources Act

- Application requirements as outlined in the Aggregate Resources of Ontario Provincial Standards must accompany this application form.
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- All information in respect to this application including written concerns/comments, the names and address of any objector(s) is available for public review for the purpose of this application under the *Aggregate Resources Act*. In submitting a written concern/comment an individual consents under the *Freedom of Information and Protection of Privacy Act* to its disclosure for purposes of the application.

Type of Application: ☒ Class 'A' Licence (> 20,000 tonnes per year) ☐ Class 'B' Licence (20,000 tonnes or less per year) 2 Category

Type of Operation: ☐ Pit ☒ Quarry ☐ Both Pit and Quarry

Type of material to be removed: ☐ Sand and Gravel ☒ Crushed Stone ☐ Dimensional Stone
☒ Clay ☐ Other _____

Licence Area: 93.97 hectares Quantity of material to be removed: 750,000 tonnes/yr

Applicant: Name NORTH STAR AGGREGATES INC.
Address P.O. Box 325
City DELHI Prov. ON. Postal Code N4B 2W9
Phone No. (5) _____ Cell No. (519) 427-4437

Location:

UTM Zone: 17 Easting: 574,863 Northing: 4,755,951 Datum: GOOGLE EART

Lot:	Concession:	Geographic Twp.	Local Municipality	County/Region/ District
PT. <u>10,11,12</u>	<u>12</u>	<u>WALPOLE</u>	<u>HALDIMAND</u>	<u>COUNTY</u>

Signature of Applicant: Dan H. H. H.

Date: Feb 5/18

Name and Title of Signing Officer: Secretary Treasurer

For Office Use Only:

Application Fee: \$ _____

Receipt No.: _____

Date: _____

Request ID: 017528751
Demande n°:
Transaction ID: 057328026
Transaction n°:
Category ID: CT
Catégorie:

Province of Ontario
Province de l'Ontario
Ministry of Government Services
Ministère des Services gouvernementaux

Date Report Produced: 2015/04/16
Document produit le:
Time Report Produced: 10:19:28
Imprimé à:

2

Certificate of Incorporation Certificat de constitution

This is to certify that

Ceci certifie que

NORTH STAR AGGREGATES INC.

Ontario Corporation No.

Numéro matricule de la personne morale en
Ontario

002462405

is a corporation incorporated,
under the laws of the Province of Ontario.

est une société constituée aux termes
des lois de la province de l'Ontario.

These articles of incorporation
are effective on

Les présents statuts constitutifs
entrent en vigueur le

APRIL 16 AVRIL, 2015



Director/Directeur
Business Corporations Act/Loi sur les sociétés par actions

Request ID / Demande n°

17528751

Ontario Corporation Number
Numéro de la compagnie en Ontario

2462405

FORM 1

FORMULE NUMÉRO 1

BUSINESS CORPORATIONS ACT

LOI SUR LES SOCIÉTÉS PAR ACTIONS

ARTICLES OF INCORPORATION
STATUTS CONSTITUTIFS

1. The name of the corporation is: *Dénomination sociale de la compagnie:*
NORTH STAR AGGREGATES INC.

2. The address of the registered office is: *Adresse du siège social:*

c/o DWAYNE E. NICHOLS
P.O. BOX 325

(Street & Number, or R.R. Number & if Multi-Office Building give Room No.)
(Rue et numéro, ou numéro de la R.R. et, s'il s'agit d'édifice à bureau, numéro du bureau)

DELHI
CANADA

(Name of Municipality or Post Office)
(Nom de la municipalité ou du bureau de poste)

ONTARIO
N4B 2W9

(Postal Code/Code postal)

3. Number (or minimum and maximum
number) of directors is:
Minimum 1

*Nombre (ou nombres minimal et maximal)
d'administrateurs:*
Maximum 10

4. The first director(s) is/are:

Premier(s) administrateur(s):

First name, initials and surname
Prénom, initiales et nom de famille

Resident Canadian State Yes or No
Résident Canadien Oui/Non

Address for service, giving Street & No.
or R.R. No., Municipality and Postal Code

*Domicile élu, y compris la rue et le
numéro, le numéro de la R.R., ou le nom
de la municipalité et le code postal*

* DWAYNE E.
NICHOLS

YES

3158 SWIMMINGPOOL ROAD
R. R. #1
LASALETTE ONTARIO
CANADA N0E 1H0

Request ID / Demande n°

Ontario Corporation Number
Numéro de la compagnie en Ontario

17528751

2462405

* DARRYL S.
NICHOLS

YES

1069 WINDHAM ROAD 10
R. R. #1
WINDHAM CENTRE ONTARIO
CANADA N0E 2A0

Request ID / Demande n°

Ontario Corporation Number
Numéro de la compagnie en Ontario

17528751

2462405

5. Restrictions, if any, on business the corporation may carry on or on powers the corporation may exercise.
Limites, s'il y a lieu, imposées aux activités commerciales ou aux pouvoirs de la compagnie.

There are no such restrictions on the business the Corporation may carry on or on the powers the Corporation may exercise.

6. The classes and any maximum number of shares that the corporation is authorized to issue:

Catégories et nombre maximal, s'il y a lieu, d'actions que la compagnie est autorisée à émettre:

1. An unlimited number of voting common shares without par value;
2. An unlimited number of voting Class "A" special shares without par value;
3. An unlimited number of non-voting Class "B" special shares without par value.

Request ID / Demande n°

Ontario Corporation Number
Numéro de la compagnie en Ontario

17528751

2462405

7. Rights, privileges, restrictions and conditions (if any) attaching to each class of shares and directors authority with respect to any class of shares which may be issued in series: *Droits, privilèges, restrictions et conditions, s'il y a lieu, rattachés à chaque catégorie d'actions et pouvoirs des administrateurs relatifs à chaque catégorie d'actions que peut être émise en série:*

(1) Class A Special Shares

(a) Subject to the provisions of the Business Corporations Act, a holder of Class A special shares shall be entitled to require the Corporation to redeem at any time, all or any of the Class A special shares registered in the name of such holder on the books of the Corporation by tendering to the Corporation at its registered office a share certificate representing the Class A special shares which the registered holder desires to have the Corporation redeem together with a request in writing specifying (i) that the registered holder desires to have the Class A special shares represented by such certificate redeemed by the Corporation and (ii) the business day (in this paragraph referred to as the "Redemption Date") on which the holder desires to have the Corporation redeem such Class A special shares. Requests in writing shall specify a Redemption Date which shall be not less than 5 days after the day on which the request in writing is given to the Corporation unless the Corporation consents in writing to an earlier redemption date. Upon receipt of a share certificate representing the Class A special shares which the registered holder desires to have the Corporation redeem together with such a request, the Corporation shall on the Redemption Date redeem such Class A special shares by paying to such registered holder an amount equal to the Redemption Amount or Adjusted Redemption Amount, as applicable, of the Class A special shares being redeemed together with all dividends declared thereon and unpaid (the "Redemption Price"). Such payment shall be made by cheque payable at par at any branch of the Corporation's bankers for the time being in Canada. The said Class A special shares shall be redeemed on the Redemption Date and from and after the Redemption Date such shares shall cease to be entitled to dividends and the holders thereof shall not be entitled to exercise any of the rights of holders of Class A special shares in respect thereof unless payment of the Redemption Price is not made on the Redemption Date, in which event the rights of the holders of the said shares shall remain unaffected.

(b) Subject to the provisions of the Business Corporations Act, the Corporation may redeem, upon giving notice as hereinafter provided, the whole or any part of the Class A special shares on payment for each such share to be redeemed of the Redemption Price. In case a part only of the then outstanding Class A special shares is at any time to be redeemed, the shares so to be redeemed shall be selected by lot in such manner as the directors in their discretion shall decide or, if the directors so determine, may be redeemed pro rata, disregarding fractions, and the directors may make such adjustments as may be necessary to avoid the redemption of fractional parts of shares. The Corporation shall at least 5 days before the date specified for redemption send to each person who at the date of sending is a registered holder of Class A special shares to be redeemed, a notice in writing of the intention of the Corporation to redeem such Class A special shares, which notice requirement may be waived in writing by a

Request ID / Demande n°

Ontario Corporation Number
Numéro de la compagnie en Ontario

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2462405

7. Rights, privileges, restrictions and conditions (if any) attaching to each class of shares and directors authority with respect to any class of shares which may be issued in series:
Droits, privilèges, restrictions et conditions, s'il y a lieu, rattachés à chaque catégorie d'actions et pouvoirs des administrateurs relatifs à chaque catégorie d'actions que peut être émise en série:

holder of Class A special shares whose shares are being redeemed. Such notice may be mailed in a prepaid envelope addressed to each such shareholder at the address for such shareholder as it appears on the records of the Corporation or its transfer agent, or alternatively, such notice may be delivered personally to such shareholder; provided, however, that accidental failure to give any such notice to one or more of such shareholders shall not affect the validity of the redemption. Such notice shall set out the Redemption Price and the date and place or places of redemption and on or after the date so specified for redemption the Corporation shall pay or cause to be paid to the holders of the Class A special shares to be redeemed the Redemption Price on such redemption date on presentation and surrender at the registered office of the Corporation or at any other place or places within Canada designated by such notice of the certificate or certificates for such Class A special shares so called for redemption. From and after the redemption date specified in such notice the Class A special shares called for redemption shall cease to be entitled to dividends and the holders thereof shall not be entitled to exercise any of the rights of shareholders in respect thereof unless payment of the Redemption Price shall not be duly made by the Corporation upon presentation and surrender of the certificates in accordance with the foregoing provisions. If notice of any such redemption is given by the Corporation in the manner aforesaid and an amount sufficient to redeem the shares is deposited with any trust company or chartered bank in Canada as specified in the notice on or before the date fixed for redemption, dividends on the Class A special shares to be redeemed shall cease after the date so fixed for redemption and such Class A special shares shall be deemed to be redeemed and the holders thereof shall thereafter have no rights against the Corporation in respect thereof except, upon the surrender of certificates for such shares, to receive payment therefor out of the moneys so deposited. After the Redemption Price of such shares has been deposited with any trust company or chartered bank in Canada, as aforesaid, notice shall be given to the holders of any Class A special shares called for redemption who have failed to present the certificates representing such shares within 2 months of the date specified for redemption that the money has been so deposited and may be obtained by the holders of the said Class A special shares upon presentation of the certificates representing such shares called for redemption at the said trust company or chartered bank.

(c) The "Redemption Amount" for the Class A special shares shall, subject to paragraph (d), be \$1.00 per Class A special share.

(d) The provisions in respect of the Redemption Amount set out in paragraph (c) shall be subject to the provisions of this paragraph. In the event that the Canada Revenue Agency or any other taxing authority asserts that any property or an aliquot portion thereof for which any such Class A special share was issued or any share of the Corporation or aliquot portion thereof which was changed

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into any such Class A special share, had a fair market value at the time of such issuance or change of other than the Redemption Amount, then the Board of Directors of the Corporation shall confer and may by resolution determine an adjusted redemption amount for the Class A special shares. Upon such determination being confirmed by resolution of a majority of the holders of Class A special shares, the Redemption Amount shall automatically be adjusted nunc pro tunc to be such adjusted redemption amount (the "Adjusted Redemption Amount") so determined and confirmed. If any Class A special share is redeemed under subparagraph (a) or (b) prior to any such adjustment as described above resulting in the Adjusted Redemption Amount of such class A special share being in excess of the Redemption Amount, the amount of such excess, together with interest thereon calculated from the date of redemption of such Class A special shares at a rate per annum which is equal to the prime rate from time to time charged by the Corporation's bank, in respect of each Class A special share so redeemed shall be a debt of the Corporation payable on demand to the former holder of each such Class A special share so redeemed. If any Class A special share is redeemed under subparagraph (a) or (b) prior to any such adjustment as described above resulting in the Adjusted Redemption Amount of such Class A special share being less than the Redemption Amount, the amount of such difference together with interest thereon calculated from the date of redemption at a rate per annum which is equal to the prime rate from time to time charged by the Corporation's bank, in respect of each Class A special share so redeemed shall be a debt of the former holder of each such Class A special share so redeemed payable on demand to the Corporation.

(e) The holders of the Class A special shares shall in each fiscal year of the Corporation in the discretion of the Board of Directors be entitled, out of the moneys of the Corporation properly available for the payment of dividends, to non-cumulative dividends at a rate as declared by the directors from time to time, but in any event not exceeding 6% per annum of the Redemption Amount or Adjusted Redemption Amount, if applicable, for such shares. The holders of the Class A special shares shall not be entitled to any dividends other than or in excess of the non-cumulative dividends at a rate as declared by the Board of Directors from time to time as set forth above.

(f) In the event of the liquidation, dissolution or winding-up of the Corporation, whether voluntary or involuntary, before any distribution of any part of the assets of the Corporation among the holders of the Class B special shares or the common shares, the holders of the Class A special shares shall be entitled to receive an amount equal to the Redemption Amount or Adjusted Redemption Amount, if applicable, together with any dividends declared thereon and unpaid and no more but shall not be entitled to participate any further in the property or assets of the Corporation.

Request ID / Demande n°

Ontario Corporation Number
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7. Rights, privileges, restrictions and conditions (if any) attaching to each class of shares and directors authority with respect to any class of shares which may be issued in series: *Droits, privilèges, restrictions et conditions, s'il y a lieu, rattachés à chaque catégorie d'actions et pouvoirs des administrateurs relatifs à chaque catégorie d'actions que peut être émise en série:*

(g) The holders of the Class A special shares shall be entitled to receive notice of, to attend shareholders meetings and to vote at such meetings on the basis of one vote per Class A special share.

(h) Subject to the provisions of the Business Corporations Act, and the terms hereof, any of the foregoing paragraphs may be altered, amended or repealed or the application thereof suspended in any particular case or changes may be made in the rights, privileges, restrictions and conditions attaching to the said Class A special shares by articles of amendment, but no such alteration, amendment, repeal, suspension or change shall be adopted until approved by special resolution submitted to a special meeting of the holders of the Class A special shares of the Corporation duly called for the purpose of considering the resolution and passed, with or without amendment, at the meeting by at least two-thirds (2/3) of the votes cast, or consented to in writing by each holder of Class A special shares of the Corporation entitled to vote at such a meeting or by such holder's attorney authorized in writing.

(2) Class B Special Shares

(a) Subject to the provisions of the Business Corporations Act, a holder of Class B special shares shall be entitled to require the Corporation to redeem at any time, all or any of the Class B special shares registered in the name of such holder on the books of the Corporation by tendering to the Corporation at its registered office a share certificate representing the Class B special shares which the registered holder desires to have the Corporation redeem together with a request in writing specifying (i) that the registered holder desires to have the Class B special shares represented by such certificate redeemed by the Corporation and (ii) the business day (in this paragraph referred to as the "Redemption Date") on which the holder desires to have the Corporation redeem such Class B special shares. Requests in writing shall specify a Redemption Date which shall be not less than 5 days after the day on which the request in writing is given to the Corporation unless the Corporation consents in writing to an earlier redemption date. Upon receipt of a share certificate representing the Class B special shares which the registered holder desires to have the Corporation redeem together with such a request, the Corporation shall on the Redemption Date redeem such Class B special shares by paying to such registered holder an amount equal to the Redemption Amount or Adjusted Redemption Amount, as applicable, of the Class B special shares being redeemed together with all dividends declared thereon and unpaid (the "Redemption Price"). Such payment shall be made by cheque payable at par at any branch of the Corporation's bankers for the time being in Canada. The said Class B special shares shall be redeemed on the Redemption Date and from and after the Redemption Date such shares shall cease to be entitled to dividends and the holders thereof shall not be entitled to exercise any of the rights of holders

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17528751

2462405

7. Rights, privileges, restrictions and conditions (if any) attaching to each class of shares and directors authority with respect to any class of shares which may be issued in series: *Droits, privilèges, restrictions et conditions, s'il y a lieu, rattachés à chaque catégorie d'actions et pouvoirs des administrateurs relatifs à chaque catégorie d'actions que peut être émise en série:*

of Class B special shares in respect thereof unless payment of the Redemption Price is not made on the Redemption Date, in which event the rights of the holders of the said shares shall remain unaffected.

(b) Subject to the provisions of the Business Corporations Act, the Corporation may redeem, upon giving notice as hereinafter provided, the whole or any part of the Class B special shares on payment for each such share to be redeemed of the Redemption Price. In case a part only of the then outstanding Class B special shares is at any time to be redeemed, the shares so to be redeemed shall be selected by lot in such manner as the directors in their discretion shall decide or, if the directors so determine, may be redeemed pro rata, disregarding fractions, and the directors may make such adjustments as may be necessary to avoid the redemption of fractional parts of shares. The Corporation shall at least 5 days before the date specified for redemption send to each person who at the date of sending is a registered holder of Class B special shares to be redeemed, a notice in writing of the intention of the Corporation to redeem such Class B special shares, which notice requirement may be waived in writing by a holder of Class B special shares whose shares are being redeemed. Such notice may be mailed in a prepaid envelope addressed to each such shareholder at the address for such shareholder as it appears on the records of the Corporation or its transfer agent, or alternatively, such notice may be delivered personally to such shareholder; provided, however, that accidental failure to give any such notice to one or more of such shareholders shall not affect the validity of the redemption. Such notice shall set out the Redemption Price and the date and place or places of redemption and on or after the date so specified for redemption the Corporation shall pay or cause to be paid to the holders of the Class B special shares to be redeemed the Redemption Price on such redemption date on presentation and surrender at the registered office of the Corporation or at any other place or places within Canada designated by such notice of the certificate or certificates for such Class B special shares so called for redemption. From and after the redemption date specified in such notice the Class B special shares called for redemption shall cease to be entitled to dividends and the holders thereof shall not be entitled to exercise any of the rights of shareholders in respect thereof unless payment of the Redemption Price shall not be duly made by the Corporation upon presentation and surrender of the certificates in accordance with the foregoing provisions. If notice of any such redemption is given by the Corporation in the manner aforesaid and an amount sufficient to redeem the shares is deposited with any trust company or chartered bank in Canada as specified in the notice on or before the date fixed for redemption, dividends on the Class B special shares to be redeemed shall cease after the date so fixed for redemption and such Class B special shares shall be deemed to be redeemed and the holders thereof shall thereafter have no rights against the Corporation in respect thereof except, upon the surrender of certificates for such shares, to receive payment therefor out of the moneys so

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7. Rights, privileges, restrictions and conditions (if any) attaching to each class of shares and directors authority with respect to any class of shares which may be issued in series: *Droits, privilèges, restrictions et conditions, s'il y a lieu, rattachés à chaque catégorie d'actions et pouvoirs des administrateurs relatifs à chaque catégorie d'actions que peut être émise en série:*

deposited. After the Redemption Price of such shares has been deposited with any trust company or chartered bank in Canada, as aforesaid, notice shall be given to the holders of any Class B special shares called for redemption who have failed to present the certificates representing such shares within 2 months of the date specified for redemption that the money has been so deposited and may be obtained by the holders of the said Class B special shares upon presentation of the certificates representing such shares called for redemption at the said trust company or chartered bank.

(c) The "Redemption Amount" for the Class B special shares shall, subject to paragraph (d), be \$1.00 per Class B special share.

(d) The provisions in respect of the Redemption Amount set out in paragraph (c) shall be subject to the provisions of this paragraph. In the event that the Canada Revenue Agency or any other taxing authority asserts that any property or an aliquot portion thereof for which any such Class B special share was issued or any share of the Corporation or aliquot portion thereof which was changed into any such Class B special share, had a fair market value at the time of such issuance or change of other than the Redemption Amount, then the Board of Directors of the Corporation shall confer and may by resolution determine an adjusted redemption amount for the Class B special shares. Upon such determination being confirmed by resolution of a majority of the holders of Class B special shares, the Redemption Amount shall automatically be adjusted nunc pro tunc to be such adjusted redemption amount (the "Adjusted Redemption Amount") so determined and confirmed. If any Class B special share is redeemed under subparagraph (a) or (b) prior to any such adjustment as described above resulting in the Adjusted Redemption Amount of such Class B special share being in excess of the Redemption Amount, the amount of such excess, together with interest thereon calculated from the date of redemption of such Class B special shares at a rate per annum which is equal to the prime rate from time to time charged by the Corporation's bank, in respect of each Class B special share so redeemed shall be a debt of the Corporation payable on demand to the former holder of each such Class B special share so redeemed. If any Class B special share is redeemed under subparagraph (a) or (b) prior to any such adjustment as described above resulting in the Adjusted Redemption Amount of such Class B special share being less than the Redemption Amount, the amount of such difference together with interest thereon calculated from the date of redemption at a rate per annum which is equal to the prime rate from time to time charged by the Corporation's bank, in respect of each Class B special share so redeemed shall be a debt of the former holder of each such Class B special share so redeemed payable on demand to the Corporation.

(e) The holders of the Class B special shares shall in each fiscal year of the Corporation in the discretion of the Board of Directors be entitled, out of the

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7. Rights, privileges, restrictions and conditions (if any) attaching to each class of shares and directors authority with respect to any class of shares which may be issued in series:
Droits, privilèges, restrictions et conditions, s'il y a lieu, rattachés à chaque catégorie d'actions et pouvoirs des administrateurs relatifs à chaque catégorie d'actions que peut être émise en série:

moneys of the Corporation properly available for the payment of dividends, to non-cumulative dividends at a rate as declared by the directors from time to time, but in any event not exceeding 6% per annum of the Redemption Amount or Adjusted Redemption Amount, if applicable, for such shares. The holders of the Class B special shares shall not be entitled to any dividends other than or in excess of the non-cumulative dividends at a rate as declared by the Board of Directors from time to time as set forth above.

(f) In the event of the liquidation, dissolution or winding-up of the Corporation, whether voluntary or involuntary, after payment in full of the Redemption Amount or Adjusted Redemption Amount for the Class A special shares together with all dividends declared thereon and unpaid, and before any distribution of any part of the assets of the Corporation among the holders of the common shares, the holders of the Class B special shares shall be entitled to receive an amount equal to the Redemption Amount or Adjusted Redemption Amount, if applicable, together with any dividends declared thereon and unpaid and no more but shall not be entitled to participate any further in the property or assets of the Corporation.

(g) The holders of the Class B special shares shall not be entitled to receive notice of or to attend any meeting of the shareholders of the Corporation unless the meeting is called to consider any matter in respect of which the holders of the Class B special shares would be entitled to vote separately as a class or for the purpose of authorizing the dissolution of the Corporation or the sale, lease or exchange of all or substantially all of the property of the Corporation other than in the ordinary course of business of the Corporation in which case the holders of the Class B special shares shall be entitled to receive notice of such meeting. The holders of the Class B special shares shall not be entitled to either vote at any meeting of the shareholders of the Corporation or to sign a resolution in writing, except a meeting called to consider, or a resolution in writing in respect of, any amendment to these articles in respect of which the holders of the Class B special shares would be entitled to vote separately as a class pursuant to the Act.

(h) Subject to the provisions of the Business Corporations Act, and the terms hereof, any of the foregoing paragraphs may be altered, amended or repealed or the application thereof suspended in any particular case or changes may be made in the rights, privileges, restrictions and conditions attaching to the said Class B special shares by articles of amendment, but no such alteration, amendment, repeal, suspension or change shall be adopted until approved by special resolution submitted to a special meeting of the holders of the Class B special shares of the Corporation duly called for the purpose of considering the resolution and passed, with or without amendment, at the meeting by at least two-thirds (2/3) of the votes cast, or consented to in writing by each holder of

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-
7. Rights, privileges, restrictions and conditions (if any) attaching to each class of shares and directors authority with respect to any class of shares which may be issued in series:
Droits, privilèges, restrictions et conditions, s'il y a lieu, rattachés à chaque catégorie d'actions et pouvoirs des administrateurs relatifs à chaque catégorie d'actions que peut être émise en série:

Class B special shares of the Corporation entitled to vote at such a meeting or by such holder's attorney authorized in writing.

(3) Common Shares

The holders of the Common shares are entitled to vote at all meetings of shareholders, to receive dividends declared by the board of directors and, subject to the prior rights of the holders of the Class A Special shares and the Class B Special shares to receive the remaining property of the Corporation upon dissolution.

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8. The issue, transfer or ownership of shares is/is not restricted and the restrictions (if any) are as follows:

L'émission, le transfert ou la propriété d'actions est/n'est pas restreinte. Les restrictions, s'il y a lieu, sont les suivantes:

No shares shall be transferred without the consent of the board of directors evidenced by a resolution or by their consent in writing.

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9. Other provisions, (if any, are):

Autres dispositions, s'il y a lieu:

(a) The number of shareholders of the Corporation, exclusive of persons who are in its employment and exclusive of persons who, having been formerly in the employment of the Corporation, where, while in that employment, and have continued after termination of that employment to be, shareholders of the Corporation, is limited to not more than fifty, two or more persons who are the joint registered owners of one or more shares being counted as one shareholder.

(b) Any invitation to the public to subscribe for securities of the Corporation is prohibited.

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10. The names and addresses of the incorporators are
Nom et adresse des fondateurs

First name, initials and last name
or corporate name

*Prénom, initiale et nom de
famille ou dénomination sociale*

Full address for service or address of registered office or of principal place of business
giving street & No. or R.R. No., municipality and postal code
*Domicile élu, adresse du siège social au adresse de l'établissement principal, y compris
la rue et le numéro, le numéro de la R.R., le nom de la municipalité et le code postal*

- * DWAYNE E. NICHOLS

3158 SWIMMINGPOOL ROAD
R. R. #1
LASALETTE ONTARIO
CANADA N0E 1H0

- * DARRYL S. NICHOLS

1069 WINDHAM ROAD 10
R. R. #1
WINDHAM CENTRE ONTARIO
CANADA N0E 2A0

#3

LEASE

THIS INDENTURE made in pursuance of the *Short Forms of Leases Act* of Ontario and amendments thereto.

BETWEEN

NICHOLS GRAVEL LIMITED
hereinafter called "the Lessor"

AND

NORTH STAR AGGREGATES INC.
hereinafter called "the Lessee"

1. WITNESSETH that in consideration of the royalties, covenants and agreements hereinafter reserved and contained on the part of the said Lessee, to be paid, observed and performed, the Lessor does by these presents demise and lease unto the Lessee "the demised premises" being Part Lots 10, 11 and 12 in Concession 12, Township of Walpole, County of Haldimand, and comprising approximately 233 acres more or less and excluding approximately 2 acres comprising a house, barn and drive-shed, and following the boundaries as shown on the site plan for the Ministry of Natural Resources Licence No.103717, which demised premises were previously operated as a Quarry under Ministry of Natural Resources Licence 103717.
2. TO HAVE AND TO HOLD the said demised premises for and during "the term" of 21 years less 1 day unless the Lessee obtains consent under the *Planning Act* of Ontario for a longer term, and then the term shall be 49 years, either of which terms shall commence on the day when the Lessee begins excavation of the Quarry.
3. The Lessor shall have the right to continue to farm the demised premises, except for a pre-extraction zone of approximately 10 acres as designated by the Lessee and an additional 10 acre zone, if required in the discretion of the Lessee, which respective zones will run parallel to and surround the Quarry face, and any area reserved for stock piles and the processing machinery required for the Quarry operation and any yearly extraction zones designated each year by the Lessee prior to spring seeding and no later than April 10th of each year, which extraction zones will be clearly marked by the Lessee and of which the Lessor will be advised, except for the first year for which year the Lessee can designate an extraction zone at its discretion.
4. The right of the Lessor to continue to farm the demised premises as leased is subject to the right of the Lessee to destroy crops to permit extraction by the Lessee in order for the Lessee to fulfill any contract which the Lessee may be obligated to perform from time to time. The Lessor or anyone farming the demised premises on behalf of the Lessor shall be fully compensated for the area of crop destroyed at the prevailing market price in the area for that particular crop, the value to be determined at the time that such crop is marketed in the normal course of marketing. If the Lessor permits another person to farm the demised premises, the Lessor agrees to obtain a covenant from such other person acknowledging and accepting the right of the Lessee to destroy crops hereunder.
5. Provided that, should the Lessee hold over after the expiration of this Lease, and the Lessors thereafter accept royalties for the demised premises, the Lessee shall hold the demised premises as a yearly tenant only subject in all other respects to the terms and conditions of this lease.
6. YIELDING AND PAYING THEREFOR the following royalties: the Lessee will deposit \$500.00 upon the signing of this Agreement. In addition, yearly and every year during the term hereby granted, the sum of a payment to be calculated on the basis of 68 cents per cubic yard, or 50 cents per

tonne in the first year of this Lease, and thereafter those royalties shall be increased in each year effective from the first day of January based on the annual yearly inflation rate determined by Statistics Canada for the previous year.

7. Royalties shall be paid to the Lessor at four month intervals within 30 days after each of the following dates in each year – April 30th, August 31st and December 31st.

8. The parties agree that no payments will be made hereunder other than the Five Hundred (\$500.00) Dollar payment referred to in paragraph 6. of this Lease, until such time as the Lessee begins excavation of the Quarry and sale of aggregate being the date on which the term of this Lease shall commence.

9. Upon the Lessee commencing excavation of the Quarry, the "minimum extraction" for each year shall be 40,000 tonnes, and should there be less than the minimum extraction in each year, "the difference" to make up the royalties payable to meet the minimum extraction shall be paid before December 31st of such year. The difference as calculated shall be recorded as an extraction credit to be deducted from royalties payable in any subsequent year if the extraction for any subsequent year exceeds the 40,000 tonnes minimum extraction. All aggregate extraction will be calculated on total monthly sales, or aggregate taken out of the gate. Payment will not be made for aggregate extracted for processing which remains on-site; if it becomes necessary for the Lessee to bring off-site material onto the demised premises for blending to produce a particular product, such off-site material shall be recorded and calculated monthly and deducted from the total yardage or tonnage payable for that month by the Lessee to the Lessor.

10. PROVISIO for re-entry by the Lessor on non-payment of royalties or non-performance of covenants by the Lessee.

11. THE LESSEE COVENANTS WITH THE LESSOR:

- a) to pay royalties and G.S.T.;
- b) to pay all business taxes and other levies in respect of the business carried on by the Lessee in or upon or by reason of its occupancy of the demised premises;
- c) to permit the Lessor to continue to farm that part of the demised premises after such part has been rehabilitated by the Lessee;
- d) to rehabilitate the demised premises or any part of the demised premises if required by and then in accordance with the *Aggregate Resources Act* of Ontario and to pay for all rehabilitation costs of the demised premises resulting from the Lessee's use of the demised premises;
- e) to pay any Provincial extraction levy or Federal and Provincial Taxes related to the operation and use of the demised premises by the Lessee;
- f) to permit the Lessee to pile top soil and to construct berms on the setback, the top soil originating from stripping for the access road and for the pre-extraction sites for the Quarry;
- g) to pay for the cost and construction of any access roads across the demised premises required by the Lessee;
- h) to indemnify and save harmless the Lessor from all loss, costs, damages, or actions resulting from the use of the demised premises by the Lessee;

- i) to apply crushed asphalt, calcium or dust suppressant to access roads in order to control dust;
- j) to provide two access points with gates for the Lessor when the demised premises are fenced as required by the *Aggregate Resources Act* of Ontario. These access points for farm machinery shall be designated by the Lessor, provided that the access points do not unreasonably interfere with the Lessee's operation;
- k) that the Lessor shall not be responsible for any personal injury which shall be sustained by the Lessee its employees, servants, agents and customers who may enter the demised premises. All risks of any such injury shall be assumed by the Lessee, who shall hold the Lessor harmless and indemnified therefrom;
- l) to provide and maintain a liability insurance policy of minimum \$1,000,000.00 coverage in each year during the term insuring for the Lessee's use of the demised premises, and if the Lessee fails to provide yearly coverage within 30 days of receiving written notice from the Lessor of such failure, the Lessor, at his option, may terminate the lease after given written notice to the Lessee of such a breach;
- m) to operate the Quarry on the demised premises during the following hours: 7:00 a.m. to 7:00 p.m. Monday to Saturday inclusive, excepting Government contracts with a time limitation which may require extended hours of operation with no operations on Sunday or holidays;
- n) to permit the Lessor to transfer or assign this lease on 30 days written notice to the Lessee;
- o) to pay for any increase in the Lessor's property taxes respecting the demised premises as related to business assessment only;
- p) to construct, as may be required, an access road to service the Quarry area.
- q) to permit the Lessor to exhibit the demised premises during the last three months of the term to any prospective tenant and will permit all persons having written authority therefore to view the said premises at all reasonable hours.

12. THE LESSOR COVENANTS WITH THE LESSEE:

- a) that no farm machinery or implements shall be allowed on any truck access road to any Quarry area, and not to interfere with the use of the access road for the demised premises;
- b) to permit the Lessee to excavate water ponds and settling ponds for the purpose of washing and processing aggregate;
- c) that he has good title to the demised premises and that the demised premises are unencumbered so that this Lease will not be subject to any encumbrance on title, and the Lessee shall be entitled to register a Notice of Lease on the title to the demised premises, and that the Lessor will indemnify and save harmless the Lessee against any liens of the Lessor which might adversely affect the Lessee;
- d) to pay all property taxes as they fall due and provide proof of payment of same to the Lessee herein so that no lien is created through nonpayment by the Lessor which would in any way affect the validity of this Lease. In the event that the Lessor defaults in payment of any amount which causes a lien to be incurred, which will adversely affect this lease in any manner whatsoever, the Lessor hereby agrees that the Lessee may pay any of those liens and deduct that

payment from the royalties otherwise payable pursuant to this Lease;

- e) to provide access to the Lessee for the demised premises, which access will be located at the northern boundary of the demised premises which borders Haldimand Road 9;
- f) for quiet enjoyment;
- g) that the Lessee shall be entitled to test hole the demised property to determine the quality and quantity of the aggregate deposit;
- h) to permit the Lessee to quarry the demised premises to the full extent and depth of the deposit as approved under an OMB Order 1194;
- i) to permit the Lessee to assign or transfer the within lease on 30 days written notice to the Lessor;
- j) to permit the Quarry operator the right to erect or construct machinery as required for the processing of stone and related products on the demised premises during the term;
- k) the Lessor agrees not to divert, interfere with, or stop up any time during the term of this lease the free flow of water across the Lessor's land, whether natural water or water pumped by the Lessee across the Lessor's land;
- l) to permit the Lessee upon expiration and termination of the lease up to one year to remove all processed stock and machinery from the demised premises;

13. The Lessor, his servants and agents and the Lessee shall keep the gates located at the entrance to the access to the demised premises locked after the working hours of the Quarry and when the demised premises is not being farmed or worked, which locking of gates shall be in compliance with the *Aggregate Resources Act*.

14. Service of any notice by one party on the other party shall be made at the following addresses:
To the Lessor at 55 Road 4, P. O. Box 172, Delhi, Ontario N4B 2W9
To the Lessee at 3158 Swimmingpool Road, P. O. Box 325, Delhi, Ontario, N4B 2W9

15. Provided that the parties intend to comply with the subdivision control provisions of the *Planning Act*.

16. Notwithstanding any term of this Lease, this Lease is conditional upon the Lessee obtaining test results to be conducted by the Lessee which are satisfactory to the Lessee and for which the Lessee shall have until May 15, 2017 to complete the testing.

17. The Lessor agrees to have a non-disturbance agreement signed by any lienholder having a title lien against the demised premises on the same date as this Lease is signed by the Lessor.

18. The Lessor acknowledges that Charges/Mortgages of the demised premises are registered on title to the Lessor's property at the time of signing this Lease. The Lessor covenants and agrees to obtain from each Chargee/Mortgagee of those respective Charges/Mortgages, a Postponement Agreement to postpone the respective Chargees'/Mortgagees' interest pursuant to their respective Charges/Mortgages in favour of the rights and interest of the Lessee pursuant to this Lease to be derived from this Lease.

19. The Lessee shall be entitled, at its cost and expense, to register this Lease or a Notice in

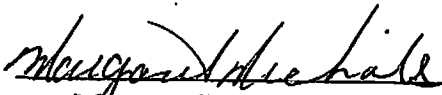
respect of this Lease and any required Reference Plans in the Land Registry Office in the County of Haldimand, Ontario, and the Lessor agrees to execute, at no cost to the Lessee, all necessary instruments, plans and documentation for that purpose.

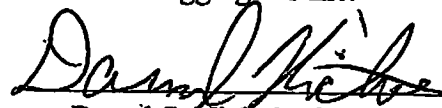
20. The words importing the singular number only shall include the plural, and vice versa, and words importing the masculine gender shall include the feminine gender, and words importing persons shall include the firms and corporations and vice versa.

21. Unless the context otherwise required, the word "Lessor" and the word "Lessee" wherever used herein shall be construed to include and shall mean the executors, administrators, successors and/or assigns of the said Lessor and Lessee, respectively, and when there are two or more Lessees bound by the same covenants herein contained, their obligations shall be joint and several.

This Agreement shall enure to the benefit of and be binding upon the parties hereto, their respective successors and assigns.

IN WITNESS WHEREOF the Lessor and the Lessee have set their hands by their proper Officers this 24th day of November, 2016.

) Nichols Gravel Limited
)
)
) 
) per: Margaret Dorothy Nichols, Secretary-
) Treasurer
)
)

) North Star Aggregates Inc.
)
)
) 
) per: Darryl S. Nichols, Secretary-Treasurer
) I have authority to bind the Corporation.

SCHEDULE "A"

TO THE LEASE BETWEEN


NICHOLS GRAVEL LIMITED (Lessor)

AND

NORTH STAR AGGREGATES INC. (Lessee)

THE UNDERSIGNED Chargee/Mortgagee in a Charge/Mortgage on the demised premises, consents to a Notice of the Lease to be registered on title, and the Lease not to be affected by the terms of the respective Charge/Mortgage of the undersigned, provided that the Lessee does not default under the terms of the Lease and the Charge/Mortgage remains in good standing, and, in any case, the respective Charge/Mortgage of the Undersigned will not be adversely affected or prejudiced in any way by the Lease, except as herein agreed.

DATED this 29 day of November, 2016.



Albert Bosma

4

RESOLUTION OF THE BOARD OF DIRECTORS

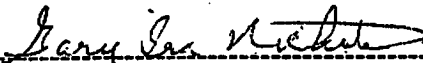
OF

NICHOLS GRAVEL LIMITED

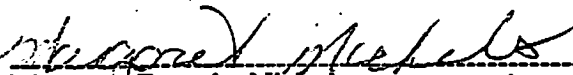
RESOLVED THAT:

- (a) The Corporation entered into a Lease with North Star Aggregates Inc. as Lessee and the Corporation, as Lessor, dated November 18th, 2016, (a copy of which has been attached for the purpose of identification by the President of the Corporation), for the consideration and upon the terms and conditions contained in the Lease;
- (b) The President of the Corporation is hereby authorized to execute the Lease under the corporate seal of the Corporation;
- (c) Upon the execution of the Lease, the President of the Corporation is hereby authorized and directed to do all things and execute all instruments and documents necessary or desirable to carry out all terms and conditions contained in the Lease, and to affix the seal of the Corporation to all documents required for that purpose.

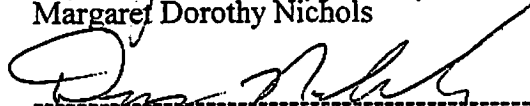
The foregoing resolution is hereby consented to by the signatures of all of the directors of the Corporation pursuant to The Business Corporations Act, this 24th day of November, 2016.



Gary Ira Nichols



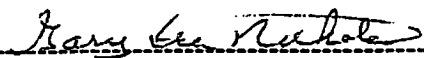
Margaret Dorothy Nichols



Dwayne Nichols

The above resolution is hereby approved, ratified and confirmed and is hereby consented to by the signature of the shareholder of the Corporation pursuant to The Business Corporation Act, this 24th day of November, 2016.

834641 Ontario Limited



Per: Gary Ira Nichols, President

RESOLUTION OF THE BOARD OF DIRECTORS


OF

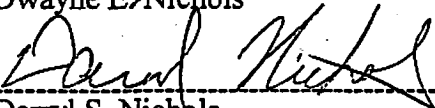
NORTH STAR AGGREGATES INC.

RESOLVED THAT:

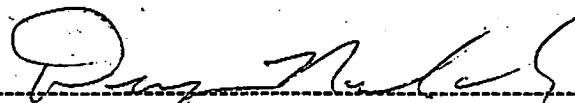
- (a) The Corporation entered into a Lease with Nichols Gravel Limited, as Lessor and the Corporation, as Lessee, dated November 18th, 2016, (a copy of which has been attached for the purpose of identification by the President of the Corporation), for the consideration and upon the terms and conditions contained in the Lease;
- (b) The President of the Corporation is hereby authorized to execute the Lease under the corporate seal of the Corporation;
- (c) Upon the execution of the Lease, the President of the Corporation is hereby authorized and directed to do all things and execute all instruments and documents necessary or desirable to carry out all terms and conditions contained in the Lease, and to affix the seal of the Corporation to all documents required for that purpose.

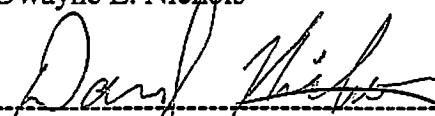
The foregoing resolution is hereby consented to by the signatures of all of the directors of the Corporation pursuant to The Business Corporations Act, this 24th day of November, 2016.


Dwayne E. Nichols


Darryl S. Nichols

The above resolution is hereby approved, ratified and confirmed and is hereby consented to by the signatures of all of the shareholders of the Corporation pursuant to The Business Corporation Act, this 24th day of November, 2016.


Dwayne E. Nichols


Darryl S. Nichols

RESOLUTIONS OF THE DIRECTORS

OF

NORTH STAR AGGREGATES INC.

1. APPROVAL OF FINANCIAL STATEMENTS

BE IT RESOLVED THAT:

there were no financial statements of the Corporation completed or filed for the fiscal period ended March 31, 2016.

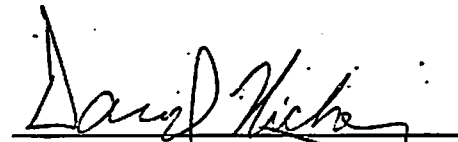
2. TRANSACTION OF ANNUAL BUSINESS

BE IT RESOLVED THAT:

the shareholders of the Corporation be and they are hereby requested to transact the annual business of the Corporation.

EACH AND EVERY OF THE FOREGOING RESOLUTIONS is hereby consented to by all of the directors of the Corporation, as evidenced by their respective signatures hereto in accordance with the provisions of section 129(1) of the *Business Corporations Act* (Ontario), this 18th day of October, 2016.


DWAYNE E. NICHOLS


DARRYL S. NICHOLS

RESOLUTIONS OF THE SHAREHOLDERS

OF

NORTH STAR AGGREGATES INC.

1. FINANCIAL STATEMENTS

BE IT RESOLVED THAT:

there were no financial statements of the Corporation completed or filed for the fiscal period ended March 31, 2016.

2. CONFIRMATION OF PROCEEDINGS

BE IT RESOLVED THAT:

- a) all by-laws, resolutions, contracts, proceedings, elections and appointments, enacted, passed, made or taken by the shareholders, directors or officers of the Corporation, at any time since the incorporation of the Corporation (hereinafter collectively called "the corporate proceedings") as the same are set forth or referred to in the minutes of the shareholders and directors for the Corporation and in the other records of the corporate proceedings, and all acts and proceedings taken by the directors, officers, agents or employees of the Corporation under the authority of or pursuant to any of the corporate proceedings be and the same are hereby ratified and confirmed with the effect stated in such corporate proceedings; and
- b) insofar as any such corporate proceeding shall not have been validly enacted, passed, sanctioned, confirmed, authorized or made, the same is hereby for greater certainty enacted, passed, sanctioned, confirmed, authorized or made, with retroactive effect, and in all other respects with the effect stated in the minutes and records of the Corporation.

3. ELECTION OF DIRECTORS

BE IT RESOLVED THAT:

The following persons, both of whom are resident Canadians, be and they are hereby elected directors of the Corporation to hold office until the completion of the next annual meeting of the shareholders of the Corporation or until their respective successors are duly elected, subject to the provisions of the by-laws of the Corporation and the provisions of the *Business Corporations Act* (Ontario):

DWAYNE E. NICHOLS
DARRYL S. NICHOLS

4. APPOINTMENT OF ACCOUNTANTS

BE IT RESOLVED THAT:

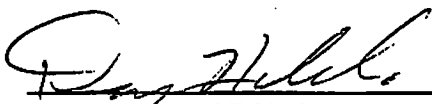
MNP LLP be and they are hereby appointed the accountants of the Corporation to hold office until the completion of the next annual meeting of the shareholders of the Corporation, or until a successor is appointed, at such remuneration as may be fixed by the board of directors and the board of directors is hereby authorized to fix such remuneration.

5. EXEMPTION FROM AUDIT PROVISIONS

BE IT RESOLVED THAT:

pursuant to section 148 of the *Business Corporations Act* (Ontario), all of the shareholders of the Corporation hereby consent to the exemption of the Corporation from the requirements of Part XII of the *Business Corporations Act* (Ontario) regarding the appointment and duties of an auditor in respect of the next ensuing fiscal year of the Corporation, and in respect of each fiscal year thereafter until this consent is revoked.

EACH AND EVERY OF THE FOREGOING RESOLUTIONS is hereby consented to by all of the shareholders of the Corporation entitled to vote thereon at a meeting of shareholders, as evidenced by their respective signatures hereto in accordance with the provisions of section 104(1) of the *Business Corporations Act* (Ontario), this 18th day of October, 2016.


DWAYNE E. NICHOLS


DARRYL S. NICHOLS

RESOLUTION OF THE DIRECTORS

OF

NORTH STAR AGGREGATES INC.

1. APPOINTMENT OF OFFICERS

BE IT RESOLVED THAT:

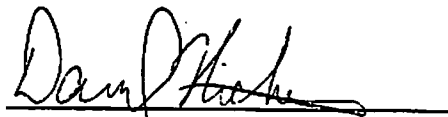
The following persons be and they are hereby elected or appointed officers of the Corporation to hold office during the pleasure of the board:

DWAYNE E. NICHOLS
DARRYL S. NICHOLS

President
Secretary-Treasurer

THE FOREGOING RESOLUTION is hereby consented to by all of the directors of the Corporation, as evidenced by their respective signatures hereto in accordance with the provisions of section 129(1) of the *Business Corporations Act* (Ontario), this 18th day of October, 2016.


DWAYNE E. NICHOLS


DARRYL S. NICHOLS


AGREEMENT

The undersigned hereby consents to and agrees to comply with the Operational Conditions of Licence as directed under Ontario Municipal Board Order 1194.

DATED this ____ day of March 31, 2017.

North Star Aggregates Inc.

Per:


Darryl S. Nichols, Secretary-Treasurer
I have the authority to bind the Corporation.



Nichols Gravel Limited
P.O. Box 172 - Delhi, Ontario N4B 2W9
Phone (519) 582-3354 Fax (519) 582-2143

9

November 23, 2016

TO WHOM IT MAY CONCERN:

This is to Advise and Confirm that Nichols Gravel Limited has no objection to the use by North Star Aggregates Inc. of the MNR approved Site Plans, Consultant Reports, and all other relevant Documentation and Approvals for the Application for Quarry Licence for Property Lots 10, 11, 12, Concession 12, Walpole Township, Haldimand County.

Sincerely,

Margaret Nichols
Secretary Treasurer

**PREFACE TO
DOCUMENTATION
AND
EVIDENCE INDEX**

**FILES OF
NICHOLS GRAVEL LIMITED**

FAST TRACK TO PRIORITY INFORMATION BOOK #1 AND #2

1. SCROLL TO YEAR DATE INDEX IN FRONT OF BOOK #1 AND #2.
2. SCROLL DOWN TO ASTERISK IDENTIFIED INFORMATION OF INTEREST.
3. CLICK TO IMMEDIATELY REVIEW THIS IDENTIFIED INFORMATION.
4. PRINT TO RECORD AND RETAIN THIS INFORMATION FOR FURTHER VIEWING AND RESEARCH.

INDEX TO DOCUMENTATION 1998 – 1999
PREVIOUS APPLICATION FOR CLASS A, CATEGORY 2
MNR NICHOLS QUARRY LICENCE

1. April 7, 1998, Harrington and Hoyle Revised Quarry Cost Estimate.
2. February 23, 1999, Harrington and Hoyle Summary Report.
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12. August 27, 1999, Harrington and Hoyle documents sent to Ministry of Environment, with notice of Public Meeting.
13. September 15, 1999. City of Nanticoke refused Application for MX Quarry Lands.
14. October 18, 1999, Letter to M.O.E. Planning Officer, Barbara Ryter.
15. October 26, 1999 – November 23, 1999, M.O.E., F.O.I., Correspondence.
16. November 23, 1999, Letter to M.O.E. Planning Officer, Barbara Ryter.
17. December 31, 1999, M.O.E. Letter to Chief Carolyn King, New Credit Nation.

2000 INDEX

1. January 6, 2000, Letter to M.O.E.
2. January 7, 2000, M.N.R. Referral of Application for Licence to O.M.B.
3. January 18, 2000, O.M.B. Confirmation of Hearing a Prescribed Hearing Fee.
4. January 26, 2000, M.O.E., F.O.I. Fee.
- * 5. M.O.E. list of Well Interference Investigation 1971 - 1972.
6. February 9, 2000, Letter to M.O.E., F.O.I. Coordinator, Fred Ruiter.
7. April 5, 2000, Letter to M.O.E., F.O.I., Fred Ruiter.
- * 8. April 19, 2000, Solicitor Ostener Report Confirming that M.O.E. Simon Gautry no longer employed by M.O.E.
9. April 26, 2000, AGRA Report to Solicitor Ostener.
- * 10. April 26, 2000, AGRA Response to M.O.E. concerns.
11. June 9, 2000, City of Nanticoke Budget to defend against Application for Quarry.
12. July 17, 2000, Goldervme Limited Review of Blasting Report.
13. July 18, 2000, AGRA Transfer Electronic Files to Dillon Consulting Ltd.
- * 14. July 24, 2000, Dillon Peer Review of AGRA Hydro G. Report.
- * 15. August 31, 2000, Dillon Review of The Harrop Drain.
- * 16. September 4, 2000, AGRA Response to Dillon Review of Hydro G Report.
- * 17. September 12, 2000, Witness Statement from M.N.R. Inspector Joe Strachan.
18. September 13, 2000, R.W.D.I. Dust Impact Assessment.
- * 19. September 18, 2000, Philips Engineering Storm Water Impacts and Harrop Drain.
- * 20. September 22, 2000, Philips Storm Water Report.
21. September 25, 2000, AMEC Draft Discussions and Proposals.
- * 22. September 27, 2000, BLS Planning Associates, Tom Smart Report.
- * 23. September 2000, S.E. Yundt Limited Economic and Resources Considerations.
- * 24. October 20, 2000, AMEC Final Version Hydro G. Proposals.
- * 25. October 20, 2000, M.O.E. Letter, Barbara Ryter to Solicitor Manfred Rudolph Accepting proposed water mitigation measures.
26. October 25, 2000, Letter to M.P.P. Toby Barrett.
27. O.M.B. Hearing concluded, November 1, 2000.

INDEX 2001

- ✱1. April 3, 2001, O.M.B. Summary Decision 0485 Quarry Licence Approval
- 2. May 9, 2001, Letter Harrington & Hoyle OMB Conditions to Amend to Site Plan.
- 3. June 6, 2001, AGRA Geodetic Survey of Ponds.
- ✱4. July 25, 2001, O.M.B. Final Decision Order 1194.
- 5. August 14, 2001, Letter to O.M.B. for Clarification of Order.
- 6. October 3, 2001, M.O.E. Notice Closing File on Temporary Permit to Take Water for Quarry.
- 7. October 30, 2001, Terra Dynamics Letter and Invoice.

INDEX 2002

1. February 28, 2002, Harrington & Hoyle Est. Reserves above Water Table.
2. March 6, 2002, Letter to M.P.P. Toby Barrett.
3. June 6, 2002, Letter from Charlie Lauer M.N.R. Deputy Assistant Minister.
- * 4. July 3, 2002, Review of costs to Hagersville Quarry Application.
- * 5. September 3, 2002, M.N.R. Inspector Paul Cutmore misrepresentations to Mayor L. Berstrand, Haldimand County, 5th Paragraph, Permit to Take Water required **prior** to M.N.R. Licence.
6. September 11, 2002, O.M.B. Andy Dewang at Inspector Cutmore request attempts to arrange further O.M.B. Hearing on water concerns.
- * 7. September 20, 2002, Response to O.M.B. Andy Dwang request for Hearing. Refused.
- * 8. October 10, 2002, O.M.B. response declining further hearing subject to A.R.A. s. 11 – 15 “No Petition or Review of Final O.M.B. Decision Order.”
9. October 25, 2002, Letter to M.N.R. Minister, Jerry Ouellette.
10. November 7, 2002, M.N.R. Letter from Alec Denys to M.O.E. Paul Odem, Permit To Take Water.
11. November 13, 2002, M.N.R. Letter from Paul Cutmore to Paul Odem.
- * 12. November 13, 2002, Letter from Paul Cutmore advising of 15 Conditions to be completed **prior** to Quarry operations. No such direction in Final O.M.B. Order 1194. Where is the License **15 months after** Final O.M.B. Order 1194 Decision? And Direction?
- * 13. December 18, 2002, O.M.B. Counsel clarification of O.M.B. **“Conditions”** to M.N.R. Inspector Paul Cutmore

INDEX 2003

- *1. January 30, 2003, M.N.R., F.O.I. Documents to application for Licence confirm M.N.R. plan to issue the Licence and immediately suspend the Licence.
- *2. February 14, 2003, M.N.R. Letter of clarification accepts and approves Site Plans without Amendments or change.
- *3. February 14, 2003, Explanatory note to issuance of Licence.
- *4. M.N.R. Inspector Cutmore investigation and reports:
 - March 10, 2003
 - March 18, 2003
 - March 22, 2003
- *5. March 27, 2003, M.N.R. Stuart Thatcher letter to M.N.R. Aylmer Office, discussing charges.
- *6. April 1, 2003, M.N.R. Inspector Cutmore and Enforcement Officer Gary Zacher hand delivered Quarry Licence 103717 along with the M.N.R. letter directing Compliance to "23 Specific Pre Operational Conditions" removed from O.M.B. Final Order 1194 and ordered to be completed prior to Quarry operation, or removal of material from the Quarry property, which order was in fact impossible.

There was in fact no such direction in Final O.M.B. Order 1194 or the Licence 103717 signed by the Minister, March 25, 2003.
- *7. April 2, 2003, Letter to M.N.R. Minister J. Ouellette.
- *8. April 14, 2003, M.N.R. Inspector Cutmore issues Licence Suspension Order.

REF: April 14, 2003 Cutmore Report.
- *9. April 14, 2003, M.N.R. Charges.
 - 10. April 22, 2003, Inspector Paul Cutmore Report.
 - 11. May 6, 2003, Letter to Alec Denys.
- *12. June 10, 2003, M.N.R. Minister response to letter of April 2, 2003.
- *13. June 12, 2003, M.O.E. issues Permit To Take Water, delivered June 20, 2003 with "Pre Dewatering Conditions."
- 14. June 12, 2003, Letter to M.N.R. Minister.
- *15. July 8, 2003, Environmental Review Tribunal acknowledgement of Appeal to M.O.E. "Pre Dewatering Conditions", not directed to any other Permit To Take Water Licence.
- *16. July 9, 2003, M.N.R. threatening letter to Quarry Contractor, resulting in removal of crushing equipment from Quarry property. In contravention of Crushing Purchase Order Agreement.

- *17. July 24, 2003, M.N.R. threatening letters to Quarry Contractors.
- *18. October 1, 2003, M.N.R. Revised Notice of Suspension M.N.R., Emmilia Kuisma.
- *19. October 2, 2003, Statement of Claim and Affidavit, September 3, 2003 for damages against the Crown.
- 20. October 6, 2003, More M.N.R. charges.
- 21. October 14, 2003 Letter to M.N.R. from Solicitor Osier.
- 22. October 20, 2003, Letter to M.N.R. assistant Deputy Minister.
- 23. December 12, 2003, Letter to M.N.R. Aylmer District Manager, Alec Denys.
- 24. December 12, 2003, Letter from M.N.R. Alec Denys.

INDEX 2004

1. January 15, 2004, Response from M.N.R. to December 12, 2003 letter.
- * 2. January 19, 2004, Spriet Associates Review Harrop Drain.
3. February 2, 2004, E.R.T. dismisses Appeal to Permit To Take Water, #03-P-2244.
4. February 18, 2004, Letter of Appeal to the Lieutenant Governor of Council.
- * 5. April 7, 2004, M.N.R. Notice of Intention to Revoke Licence.
6. May 10, 2004, Compliance to O.M.B. Order to Blast monitoring.
- * 7. July 7, 2004, Response to M.N.R. Notice of Intention to Revoke Licence.
- * 8. July 14, 2004, Letter to M.N.R. Minister David Ramsay
9. August 3, 2004, Record of M.N.R. visit to Quarry.
- * 10. August 9, 2004, Falsified Document prepared by M.N.R. Inspector Emmilia Kuisma directed to Minister Ramsay for signing Licence Revoke Order to Licence 103717. No reference whatsoever to **"Pre Operational Conditions", just to "Conditions of Licence"**.
11. August 18, 2004, Letter to M.N.R. Alec Denys.
- * 12. October 7, 2004, M.N.R. Notice of Revocation of Licence 103717, September 30, 2004.
- * 13. October 10, 2004, Sign at entrance to Quarry.
- * 14. October 15, 2004, Response from M.N.R. Minister to Letter of July 14, 2004.
- * 15. October 26, 2004, Letter from M.N.R. Minister Ramsay. Received October 28, 2004.
- * 16. October 29, 2004, Request to O.M.B. to Appeal M.N.R. Revoke of Licence.
- * 17. November 11, 2004, Letter to Minister Ramsay.
- * 18. November 17, 2004, Letter of response from Minister Ramsay.

INDEX 2005

- *1. January 2, 2005, Memorandum to Licence Conditions.
- *2. January 28, 2005, Cayuga Provincial Court J. P. Wendy Casey Stays all M.N.R. charges of April 14, 2003, and cites MNR for Abuse of Process and Infringement of Shareholders Charter Rights.
- *3. April 15, 2005, M.N.R. advisement and threats of more charges.
- *4. July 19, 2005, M.O.E. Paul Odom refuses to Amend Permit To Take Water.
- *5. November 24, 2005, Judge Martha Zivolak grants MNR Appeal to J. P. Casey Decision.?
- *6. December 19, 2005, M.N.R. drops all charges to avoid defending Abuse of Process in Court on Appeal.

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16. November 23, 1999, Letter to M.O.E. Planning Officer, Barbara Ryter.
17. December 31, 1999, M.O.E. Letter to Chief Carolyn King, New Credit Nation.



X April 7, 1998

Mr. Gary Nichols
Nichols Gravel Limited
P.O. Box 172
Delhi, Ontario
N4B 2W9

**SUBJECT: Revised Cost Estimate for Quarry Proposal
Part Lots 10-12, Concession 12
City of Nanticoke (formerly Walpole)**

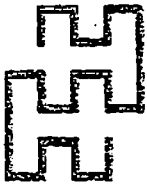
Dear Gary:

As requested, please find a revised estimate of costs that would be involved to prepare a licence application for a site consisting of approximately 94.37 hectares (+/- 233 acres) located to the west of Hagersville. The application would be for a new licence. This proposal does not include the application fees that are required by the municipality under the Planning Act to process an official plan and/or zoning by-law amendment to permit aggregate extraction on the property or preparing a legal survey of the property.

The following services would be provided in order to prepare and submit an application for a Category 4, Class "A" licence, quarry above water to MNR that meets the new provincial standards under the Aggregate Resources Act:

Phase 1 (Items 1 & 2)

It is recommended that the geological evaluation that has been requested by MNR in order to make a determination of the quality and quantity of the bedrock resources on site, can also be used to determine the elevation of the groundwater table on the site as required in the summary report. Although the provincial standards do not require a hydrogeological report for a quarry licence above the water table (see cost item (g) for a level 1 report), it is recommended that the report be done because groundwater issues will have to be addressed during the licence application. A monitor would be installed in each borehole in order to be able to measure the groundwater elevation(s). To change the application to a Category 2 licence, quarry below water, based on the quality of resources found below the water table, then a combined level 1 and 2 hydrogeological report would cost approximately \$8,000 - \$11,000.00.



H

June 5/98

There is approximately 8-11 feet (2.4 - 3.4 metres) of overburden above the caprock of cherty limestone of the Onondaga Formation in the eastern part of the site and the overburden increases to over 25 feet (7.6 metres) in the northwest part of parcel #2 as shown on the drift thickness map of the Simcoe area. Beneath the Onondaga formation is the cherty limestone of the Bois Blanc Formation which is suitable for crushed stone but may not be suitable for concrete aggregate without selective quarrying and beneficiation techniques as indicated in ARIP #59. In discussions with the hydrogeologist we use for licence applications, it was indicated that the cost to drill boreholes would be approximately \$40.00/foot plus mobilization and material costs. Therefore, to drill four sixty foot deep boreholes on site would take approximately 3 days and cost approximately \$11,950.00 which includes having a qualified person on site to log the core samples to confirm the bedrock lithology. Based on the drilling results, a letter can then be sent to the MNR geologist to verify the significance of the deposit and the boundary of the primary resource area.

Phase 1 - Geotechnical and Groundwater Investigations (Drilling Program)

Total Costs	\$11,950.00
-------------	-------------

Phase 2 (Site Plans, Summary Report and Public Notification Process)

(a) Base Contour Information for Site Plans	\$ 2,400.00
(b) Preliminary Investigation of Site, with Township and Neighbours	4,000.00
(c) Preparation of Site Plans	12,500.00
(d) Preparation of Summary Report	4,500.00
(e) Level 1 Natural Environment Report	700.00
Level 2 Natural Environment Report (Based on discussions with MNR Forester regarding the woodlot shown in Lot 10)	1,700.00
(f) Cultural Heritage Report (Level 1 and 2)	5,000.00
(g) Hydrogeological Report (Level 1) (Groundwater elevation determined by drilling boreholes on site)	3,000.00

H



(h) Noise Report	10,000.00
(i) Blast Design Report	5,000.00
(l) Administration, Coordination and Meetings	<u>13,900.00</u>
Fees	\$ 62,700.00
(l) Expenses (estimated)	<u>6,000.00</u>
Phase 2 Total	\$ 68,700.00
(k) Other reports that may be required by Region - Traffic Study	<u>5,000.00</u>
	\$ 73,700.00

We do not anticipate that a dust report will be required for the application. However, some municipalities have requested this type of report in the past, which would add to the cost of the application.

It is estimated that the phase 2 component of the proposal will cost approximately \$68,700.00 but I have also included \$5000.00 for a traffic study (item (k)) should a study be required to address item 2.1.4 in the summary report. This estimate covers the basic requirements for the application and licensing process (phase 2) as set out in the provincial standards made under the Aggregate Resources Act. Should additional issues arise or significant opposition to the application develop eg. O.M. B. Hearing, then additional fees would be required to cover additional reports, meetings, correspondence and administration. Extra time required would be charged at the following rates:

P - Project Advisor	Glenn Harrington	\$115.00/hr.
C - Coordinator	Bernie Janssen	\$75.00/hr.
T - Technician	Wendy McWilliam.	\$45.00/hr.
Cl - Clerical	Wendy Peters	\$35.00/hr

Computer time is charged at \$50.00/hour. Expenses and GST are extra and charged out at cost.

H



If you have any questions or would like to meet to discuss this proposal, please to not hesitate to call me at our Cambridge office. Thank you for the opportunity of submitting this proposal. We look forward to working with you.

Sincerely,

HARRINGTON AND HOYLE LTD.

BERNIE JANSSEN, B.E.S.
BJ/wp

Summary Report

Hagersville Quarry Nichols Gravel Limited



Part of Lots 10-12, Concession 12
City of Nanticoke
Regional Municipality of Haldimand-Norfolk

February 23, 1999

Summary Report

Nichols Gravel Limited – Hagersville Quarry

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- Appendix A: Hydrogeological Level 2
- Appendix B: Cultural Heritage Resources (Stages 1, 2, and 3)
- Appendix C: Noise Assessment
- Appendix D: Blast Impact Analysis
- Appendix E: Resource Assessment
- Appendix F: Site Plans

Summary Statement

Introduction

This report has been prepared in support of an application for a Category 2 – Class "A" licence, quarry below water by Nichols Gravel Limited for the subject property as set out in the provincial standards made under the Aggregate Resources Act, and amended by Bill 52. It summarizes the information and conclusions of the consultants who have contributed to the preparation of the site plans including:

- Hydrogeology: AGRA Earth & Environmental Limited
- Natural Environment: Harrington and Hoyle Ltd.
- Cultural Heritage: Archaeologix Inc.
- Noise Assessment: Aeroustics Engineering Limited
- Blast Design: Explotech Engineering Ltd.
- Resource Assessment: Stanley Consulting Group

The report is intended to supplement the information contained on the site plans which have been prepared by Harrington and Hoyle Ltd. (Appendix F), and assist in the review of the planning and licence applications which the company has filed with the City of Nanticoke and the Ontario Ministry of Natural Resources.

Site Description

The 93.97 hectare site is located in part of lots 10 - 12, Concession 12, in the City of Nanticoke, Regional Municipality of Haldimand-Norfolk. The site is bordered by Regional Road #9 on the north and Regional Road #18 and the Canadian National Railway along the south and east boundaries. Concession Road #11 is situated approximately 160 metres south of the southern limit of the site.

The majority of the property consists of smooth to very gently sloping farmland in crop production with the topography on site ranging from 214.5 to 221.1 m asl. The highest land is located in the northern part of Lot 11 to the southeast of the farm buildings. There are two low areas along the southeast boundary, including the area where an intermittent drainage swale exits the property through two culverts under the railway embankment and connects to the Harrop Drain. A portion of a larger deciduous woodlot, which OMNR has indicated as being significant, extends into the southwest corner of the site.

Ontario Hydro has a 76 metre wide easement centred approximately on the lot line between Lots 10 and 11. The easement contains a single circuit 500 kV transmission line connecting the Nanticoke Generating Station to Longwood Transformer Station in southwestern Ontario. There are two 500 kV suspension-type towers located on site. A smaller hydro transmission line also crosses the southeast part of the site. There is one producing gas well in the Lot 11 portion of the site. Three dry or abandoned wells have also been recorded for the site from logs obtained from

the Oil, Gas, and Salt Library in London. Their locations are shown on the site plan.

One wooden drive shed is located in the southern part of the site, while the farm house and other associated buildings are located south of the proposed quarry on lands retained by the former landowner. The house, barn and metal shed located in the north part of Lot 11, are owned by the applicant but have not been included within the area to be licensed. There are houses located adjacent to both the northwest and northeast boundaries of the site, with other rural residences and farm residences scattered along Regional Road #9, Concession Road # 11 and Highway #6. A restaurant is located at the northeast corner of Regional Road # 18 and Highway #6. The lands to the north, west and south of the site are used primarily for agriculture, producing crops such as corn and soya beans.

Southwest of the intersection of Regional Roads #9 and #18 and immediately adjacent to the subject site, are lands licensed to Dufferin Aggregates to operate a quarry under the Aggregate Resources Act. These licensed lands remain generally undisturbed except for a berm that was constructed along the north boundary and the pond(s) dug on the site. Dufferin Aggregates also own the lands located to the northwest, northeast and southeast of this intersection which contain former quarries that are now full of water. These three quarries are considered abandoned since they were never licensed under the Pits and Quarries Control Act. The Town of Hagersville is located approximately 1.8 kilometres to the north and east of the site.

Planning and Landuse Considerations

Schedule 18A in the 1980 Nanticoke District Plan, identifies the property as having secondary bedrock resources for crushable stone. Aggregate Resources policies 1.c) and 1.d) in the Plan state the following: *"With the exception of wayside pits and quarries as specified in subsection 6, an amendment to this plan and the zoning by-law is required prior to the removal of aggregate from new pits and quarries in aggregate resource areas of secondary significance as shown on Schedule 18-A. Boundaries of primary and secondary areas of sand and gravel deposits, and bedrock most suitable for production of crushed stone as shown on Schedule 18-A, are not considered absolute. Where interpretation of such a boundary is required, the Ministry of Natural Resources shall be consulted".*

On Schedule S-1 in the proposed City of Nanticoke's Official Plan dated June 1998, the majority of the property is mapped within an area of bedrock most suitable for production of crushed stone. Mineral Policy 1 in the Plan states, *"These deposits are protected for future use and extraction can occur without amendment to this Plan. Mineral Aggregate Resource areas are not considered absolute, and where an interpretation is required, more precise boundaries are to be established through consultation with the Ministry of Natural Resources."*

A drilling program was conducted on the site in the spring of 1998 and the borehole logs were forwarded to the OMNR geologist, John Fraser, for him to make a determination of the bedrock resources on the site. In Mr. Fraser's letter of June 24, 1998 (Appendix E), he recommends the resources on this property have the same potential as Selected Resource Area 2B as shown in the

Aggregate Resources Inventory Paper (ARIP) #59 for the City of Nanticoke, and should similarly be protected for possible extraction. Based on OMNR's determination that the bedrock resources on the property are considered of primary significance, only an amendment to the zoning by-law is required.

The entire site is presently zoned "A-Agricultural" as shown on Schedule "A7" to City of Nanticoke By-law 1-NA86. A zoning amendment was submitted to the City of Nanticoke by the applicant in August 1998 requesting that the zoning be amended from "Agriculture" to "MX-Extractive Industrial" to permit aggregate extraction on the site.

The subject site is located approximately 1.8 km to the southwest of the Town of Hagersville, in an area with a long history of quarry activity, dating back to the early part of this century, as noted by P.J. Barnett (1978) in *Quaternary Geology of the Simcoe Area, Geoscience Report 162*. Dufferin Aggregates holds the licence issued under the Aggregate Resources Act for the 34.0 hectare (84 acre) quarry directly east of the subject site and, in the past, has quarried the other lands adjacent to the intersection of Regional Roads #9 and #18. These three abandoned quarries were operated prior to designation under the Pits and Quarries Control Act in 1973 and now contain ponds. There are two other licensed quarries, under the ownership of Lafarge Canada Inc., on the outskirts of Hagersville, one of which is located approximately 850 metres to the northeast of the site in part of Lots 13 and 14, Concession 13, in the City of Nanticoke.

It is expected that the existing licensed quarries in the area will continue to be operated for some time into the future. During this time, truck traffic will be common on the haul routes and the area will be influenced by quarry activities. Regional Road #9 is considered a collector road in the City's Official Plan (see Haul Routes and Truck Traffic) and presently is used by trucks.

The Provincial Policy Statement (1997) confirms the provincial interest in protecting and licensing high quality resources so that they can be utilized. At the present time this property can be operated with a minimum of disturbance on the adjoining lands. The lands will be restored to wetlands/ponds and pastureland, which is compatible with the surrounding land uses and may increase the diversity of habitats in the local area. Every precaution has been taken on the site plans to ensure that the operation of the licence minimizes any effect on the adjacent residences and the significant features and operates within all provincial guidelines.

Agricultural Classification of Site

Canada Land Inventory mapping from Ministry of Agriculture, Food and Rural Affairs shows that the majority of the area to be licensed falls into three classifications shown as 2D, 3D and 3W/D. The symbol 'D' refers to the undesirable soil structure and/or low permeability and 'W' to the excess wetness of the soils. Classes 2 and 3 lands have moderate limitations that may restrict the range of crops which may be grown successfully.

The Soils of the Regional Municipality of Haldimand-Norfolk, Report No. 57 of the Ontario Institute of Pedology identifies the property as having the following soil types: TLD7 (Toledo)

and BVY8 (Beverly) which consist of mainly lacustrine silty clay and LIC6 (Lincoln) and HIM1 & 3 (Haldimand) which are mainly lacustrine heavy clays. The soils are described as being poorly or imperfectly drained because of the slow permeability of the clays.

Proposed rehabilitation for lands disturbed for aggregate extraction and being restored to pastureland and/or forestry will include the following techniques as indicated on the site plan:

- Deep ripping to eliminate compaction, as required
- Spreading overburden and rough grading
- Spreading all available topsoil from the site and fine grading
- Upon completion of the topsoil installation and fine grading, the landowner will seed areas to a cover crop of legumes and grasses. Trees will be planted in various areas.

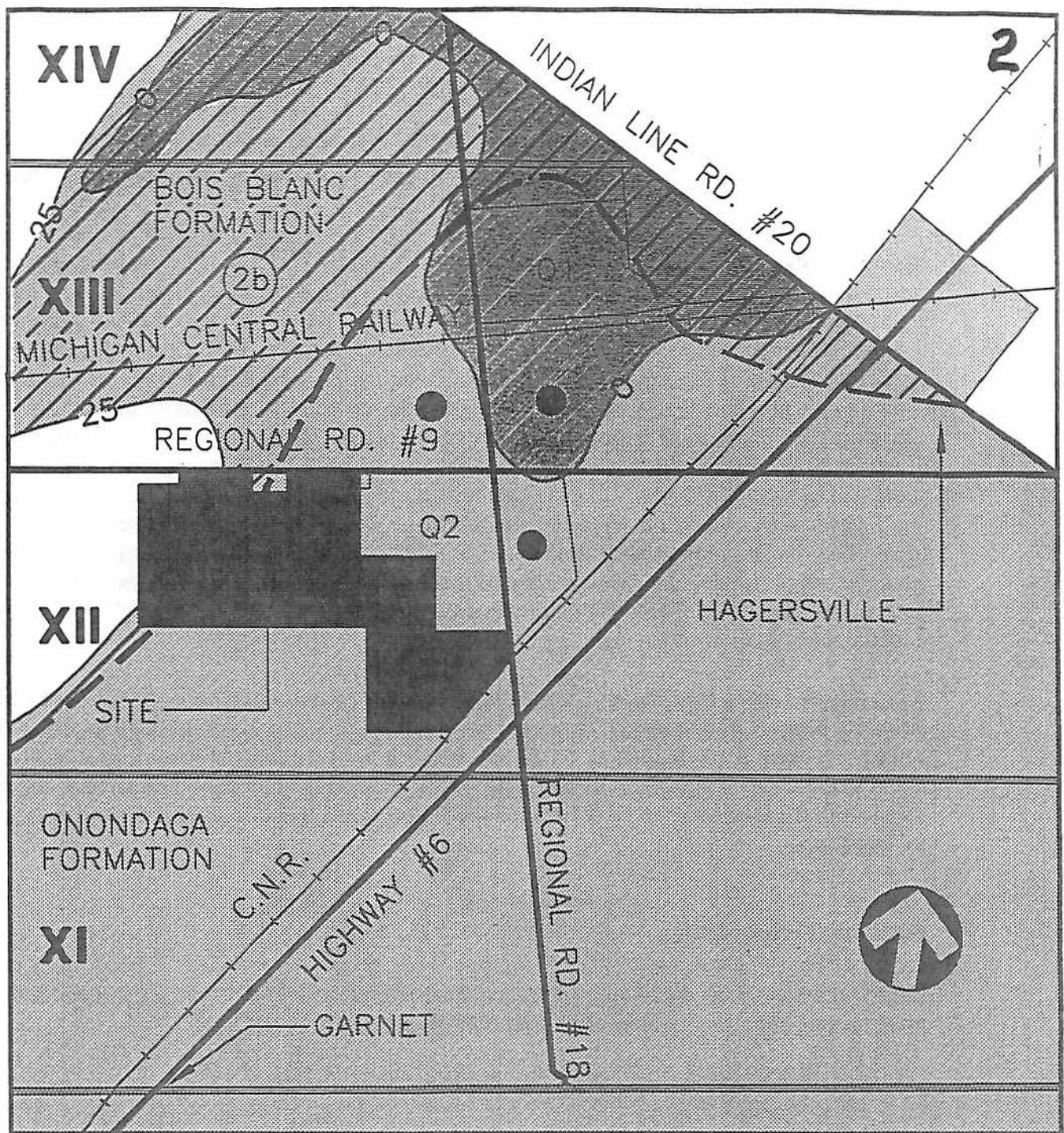
Section 2.2.3.6 (a) of the Provincial Policy Statement (1997), which deals with mineral aggregate extraction on prime agricultural land, states that on these prime agricultural lands, complete agricultural rehabilitation is not required if: "*a) there is a substantial quantity of mineral aggregates below the water table warranting extraction; or b) the depth of planned extraction in a quarry makes restoration of pre-extraction agricultural capability unfeasible;*". Based on the boreholes drilled on site and the findings in the Hydrogeological Assessment (see Appendix A) of the property, approximately 85% of the 16.6 million tonnes of resources which are available for extraction, are located within 1.5 metres of and below the high water table and warrant extraction.

Areas that are proposed to be extracted below the water table will be rehabilitated to ponds and/or wetlands as shown on the site plan. Areas of the sideslopes and the quarry floor that are backfilled, where there is sufficient depth of soil available above the water table (> 1.0 m), will be planted in pastureland and/or a variety of tree species, as shown on the site plan.

Quality and Quantity of Aggregate on Site

The site, consisting of approximately 93.97 hectares (232 acres) in Part of Lots 10-12, Concession 12, in the City of Nanticoke, Regional Municipality of Haldimand-Norfolk is located within the Haldimand Clay Plain physiographic region as described by Chapman and Putnam (1966). Underlying the clays of the lake plain are beds of the Paleozoic bedrock which dip gently to the south-southwest toward Lake Erie. Approximately 2.4 kilometres to the north of the site is a low, north-facing scarp formed of hard limestone known as the Onondaga escarpment. The bedrock outcrops along the crest of this escarpment. Bedrock and limestone boulders have been observed at or near the surface in the fields to the southeast of the farm buildings in the northern part of Lot 11.

A portion of the site was originally identified as being within selected bedrock resource area 2B as shown on map 3 of the *Aggregate Resources Inventory Paper 59* for the City of Nanticoke (see figure 1). Selected resources area 2B is part of the Bois Blanc formation which consists of



LEGEND



PROPOSED QUARRY



ABANDONED QUARRY

Q1

LICENSED QUARRY



DRIFT THICKNESS CONTOUR:
25 FOOT (8m) INTERVAL



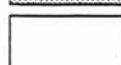
SELECTED BEDROCK RESOURCE AREA;
DEPOSIT NUMBER



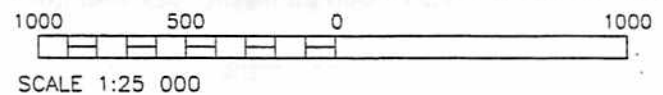
BEDROCK EXPOSED OR NEAR SURFACE;
COVERED BY LESS THAN 3 FEET (1m) OF OVERBURDEN



BEDROCK COVERED BY 3 TO 25 FEET (1 TO 8m)
OF OVERBURDEN



BEDROCK COVERED BY 25 TO 50 FEET (8 TO 15m)
OF OVERBURDEN



INFORMATION TAKEN FROM:

MINISTRY OF NATURAL RESOURCES
ONTARIO GEOLOGICAL SURVEY
AGGREGATE RESOURCES INVENTORY
CITY OF NANTICOKE
REGIONAL MUNICIPALITY
OF HALDIMOND-NORFOLK
BEDROCK RESOURCES
MAP 3
ISSUED: 1984

Figure 1

irregularly bedded, light brown or grey, very cherty, fossiliferous, bioclastic limestone. The stone is acceptable for hot-mix and concrete products with the use of beneficiation techniques (Deike 1981).

Four boreholes, having maximum depths of up to 18 metres (60 feet), were drilled on site in the spring of 1998 (Appendix E). The borehole logs and published geological data of the Hagersville area were submitted to John Fraser of OMNR in order for him to make a determination of the resources located on the subject property. In his letter of June 24, 1998 (Appendix E), John states that the site has less than 5 metres of clay overburden (ranges from 2.1 to 4.1 metres as shown in the borehole logs) above 1-3 metres of the Onondaga formation limestone and approximately 8 metres of shaley, cherty Bois Blanc formation limestone which is suitable for the production of road building materials. John also states that, "*It is recommended that the subject area be considered to have the same resource potential as Selected Resources Area 2B, and be similarly protected for possible extraction as part of the municipal process for the area*". In addition, potential reserves of dolostones of the Bertie Formation are likely below the Bois Blanc Formation which are suited for the production of high quality aggregates including concrete aggregate. This OMNR letter was submitted to the City of Nanticoke's planning department in support of the rezoning application.

It is estimated that a maximum of 31.26 hectares of the property may be excluded for extraction purposes because of operational constraints and setbacks, eg. exclusion of the woodlot in the southwest, leaving approximately 62.71 hectares that are available for extraction at this time. As noted in the Noise Assessment Report, changes in technology may allow the setback distances adjacent to the residences to be reduced in the future, which would increase the reserves available for extraction.

Reserve Calculations

Based on the borehole data obtained from the drilling program, the following quantities of materials are estimated to be available for extraction on site at this time:

- a) Onondaga Formation (limestone) - average depth of 2.1 metres

1,317,000 cubic metres (3,388,000 tonnes)*

- b) Bois Blanc Formation (limestone) - average depth of 7.9 metres

4,954,000 cubic metres (13,123,000 tonnes)*

* ARIP conversion factor of 2649 kg per cubic metre (165 pounds per cubic foot) for dolostone was used.

- c) Overburden - average depth of 3.1 metres

- i) Topsoil** - Silty clay to silty clay loam 94,000 cubic metres
- ii) Clay overburden 1,850,000 cubic metres

** Based on the general soil descriptions given in the soils report for the Beverly, Haldimand, Lincoln and Toledo soil series found on the site, an average topsoil depth of 15 cm was used in the calculations.

The hydrogeology of the site is documented in the report completed by AGRA Earth & Environmental Limited (see Appendix A). The groundwater table on site varies from approximately 217 metres asl in the northeastern part of the site to 214 metres asl in the southwestern part of the site. Groundwater movement within the bedrock is generally in a southwesterly direction as shown in the report.

Haul Routes and Truck Traffic

Existing laneways from Regional Road #9 and Concession Road #11 provide access to the farm houses and buildings located on the lands adjacent to the site. However, these laneways will not be used by the trucks to haul aggregate from the proposed quarry. The applicant proposes to construct a haul road into the site, to the east of the farm buildings in the north part of Lot 11, Concession 12, with access to Regional Road #9. The necessary approvals for the design of the entrance/exit and an entrance permit will be obtained from the road authority.

The "Transportation" section of the proposed City of Nanticoke Official plan of June 1998, indicates that all Regional Roads and some local roads are considered to be 'collector roads'. Collector roads distribute traffic from arterials to local streets and also serve as through traffic connecting links between the rural settlements, highways, and local roads. The objective of the roadway system is, *"to facilitate the movement of private, commercial, and public vehicles for the transport of goods and people within and through the municipality with the highest degree of efficiency, economy, and safety"*.

The estimated tonnage to be removed annually from the quarry during the initial phase of operations is approximately 100,000 tonnes. It is projected that truck movements will be split evenly, with 50% travelling west and the other 50% travelling east on Regional Road #9, to supply local and regional markets. The estimated annual production of 100,000 tonnes would be equivalent to approximately 5,000 truck loads spread over an 8 - 9 month operating season. This averages to approximately 2.6 truck loads per hour (5.2 truck movements per hour) over the entire operating season. There may be peak times during the year when the number of truck movements will be greater than the hourly average, i.e., to supply a specific contract. These truck movements will not have a significant impact on the current average daily vehicle movements on Regional Road #9, as shown in the Noise Assessment (Appendix C).

Progressive and Final Rehabilitation

The rehabilitation of this property will be to ponds/wetland, pastureland and/or recreational afteruse. The rehabilitated 2:1 sideslopes will return some of the site to permanent pasture, and through planting and natural regeneration, portions of the licenced area (see pg. 4 of site plan) will become forested, extending or increasing the percentage of forest cover in the local area. All existing topsoil and overburden on site will be stripped and stockpiled separately in berms or stockpiles, and replaced as quickly as possible in the progressive rehabilitation process. However, acoustical berms required to attenuate noise will remain in place for each phase as specified in the noise report before being removed and used for rehabilitation of the site. Some of the acoustic berms will remain after rehabilitation.

Overburden sideslopes will be constructed from clay overburden available from this site. Surplus clay overburden may also be used to backfill the quarry faces and create shallow near shore areas in the pond. This will facilitate both maximum resource utilization as well as timely progressive rehabilitation of the property. See hydrogeology notes regarding extracting below the water table to maximize the extraction of the high quality aggregate resources on the site.

Technical Reports

Hydrogeological Level 2: AGRA Earth & Environmental (Appendix A)

AGRA does not expect that the majority of well water users will be affected by the quarry operation. Modelling indicates that only 4 residences are expected to experience a significant decline in water levels of greater than 3 m (as shown in Table 2) after 50 years of quarry operation. This does not include those residences that would be within the quarry or use cisterns.

Natural Environment Level One and Two: Harrington and Hoyle Ltd.

As part of the Natural Environment Level one report, staff of the Ministry of Natural Resources, Aylmer District were consulted on whether any of the significant natural features identified in the provincial standards were present on or within 120 metres of the site. No Provincially Significant Wetlands, ANSI's or ESA's, endangered, vulnerable or threatened species habitat have been identified within or adjacent to the site according to existing resource mapping. However, the following two significant features have been identified on or adjacent to the property through these discussions:

1. Significant Deciduous Woodlot

In *The Soils of the Regional Municipality of Haldimand-Norfolk* it states, "*The Haldimand-Norfolk Region is entirely within the Carolinian zone, a climatic zone that supports native plants and animals having affinities with more southerly areas*". Some tree species of the Carolinian zone include, black walnut, shagbark hickory, sweet chestnut, black oak, tulip tree and sycamore. "*It was estimated that only about 1% of the original forest consisted of such Carolinian species, about the same proportion as in present-day stands. The 1981 Census of Canada indicated that*

woodland comprised about 9% of the total area of the region".

Approximately one third of a larger 6.5 hectare deciduous woodlot extends into the southwestern corner of the site. Mr. Steve Williams, OMNR Forester for the area, has indicated that because of the low percentage of forest cover of approximately 5% for the municipality, the woodlot would be considered a significant feature. Other nearby woodlot remnants of varying sizes are located approximately 300 metres to the northwest and 650 metres to the west of the site.

A number of deciduous tree species of different ages and heights are present in that part of the woodlot within the site and along the west fence row. The following species were identified during visits to the site: oak (white, bur, red and black), maple (red, silver and sugar), shagbark hickory, beech, cherry, blue beech, ash and hop hornbeam. Some of the larger oak trees, which are greater than 20 metres in height, have breast height diameters of 1 metre or greater. A few red pines are growing in the northern part of the woodlot on the higher ground. Both white and red trilliums were seen during the spring and red-osier dogwood was observed growing in wet pockets within the woodlot.

Soils mapping shows that the southwest part of the site is underlain by the imperfectly to poorly drained soils of the Beverly and Toledo series which have a medium to high water-holding capacity. It was noted that variations in soil moisture and topography have influenced the tree distributions and the diversity of tree species within the woodlot.

In consultation with the OMNR forester, the applicant has decided to maintain a minimum extraction setback of 20 metres from the edge of the woodlot and the extraction activity in order to protect the woodlot and ensure the edge remains intact. The proposed setback will also maintain the surface hydrology in the area surrounding the woodlot to direct and slowly infiltrate surface water into the clay overburden materials from which the trees obtain their water.

Excess topsoil and overburden may be stockpiled in the form of vegetated berms within this 20 metre setback area. Although studies have not proven that noise from aggregate operations have a negative impact on wildlife, the proposed berms and the non-extracted areas within the hydro easement will help reduce noise levels generated by the quarry, further protecting the woodlot and the wildlife which utilizes this habitat. The proposed extraction will commence in the area east of the hydro easement, away from the woodlot and will be ongoing for several years prior to extraction occurring in the area closest to the woodlot, as shown on the site plans.

The proposed rehabilitated overburden sideslopes will be 2:1 starting from the proposed 20 metre setback down to the bedrock surface. In some areas of the site, 2:1 sideslopes will be built with surplus overburden materials and will extend down to the quarry floor. The proposed rehabilitation has the potential to allow expansion of the forest cover into the 20 metre setback buffer surrounding the woodlot and on the adjacent 2:1 sideslopes through natural regeneration.

2. Fish Habitat

Mr. Dave Richards, OMNR Biologist for the area has indicated that, Sandusk Creek is a warm water creek and the two tributaries of Sandusk Creek, which are located within 120 metres of the northwest and southeast parts of the site, are also fish habitat based on the definition found in the Fisheries Act (Section 34-1).

The tributary to the northwest has intermittent flows during the year and is primarily fed by surface runoff. It is stated in the hydrogeological report that, "*The development of the quarry is expected to have a minimal impact on the existing natural drainage*". After preliminary discussions with the OMNR biologist, the proposed licence boundary has been adjusted to the south in the northwest part of the site because of operational constraints and regulatory excavation setbacks that are required in that part of the site. The site plan now shows an extraction setback from the northwest tributary that exceeds 175 metres.

The tributary to the southeast of the site, located between the railway and Highway 6, is a municipal drain known as the Harrop Drain. This drain flows year round, first in a southwesterly and then a southerly direction before joining the main branch of Sandusk Creek. It was noted that during high water levels, water flows through an overflow culvert from the pond in Dufferin's southeast abandoned quarry into the ditch on the east side of Regional Road #18, through a culvert under the tracks and into the Harrop Drain. Treated water is also discharged into this drain from Hagersville's sewage treatment plant located upstream from this site.

The shallow drainage swale located in the southeast part of the subject site is connected to the Harrop Drain through two large culverts under the railway embankment. This drainage swale collects surface runoff from the eastern and northern parts of this site, as well as portions of the adjacent licensed Dufferin lands, during wet periods of the year. Intermittent flow was observed in portions of the swale during the spring of 1998 but the channel was completely dry during the fall of the year. The capacity of each of the culverts is 750 litres/second or combined (18,460 gallons/minute). Therefore, the projected maximum amount of water to be pumped from the quarry of approximately 249 cubic metres/day (38.1 gpm) is only a small fraction of the total capacity of the two culverts. (See Hydrogeological report).

The Harrop Drain flows on the south side of the railway right-of-way, approximately 20 metres from the boundary of the area to be licensed at its closest point to the site. In addition, a minimum 30 metre extraction setback is proposed adjacent to the Canadian National Railway lands, on the north side of the tracks. Since extraction will be a minimum of 50 metres away from the Harrop Drain, there will be no significant impact on the area adjacent to the drain or on the drain itself during the operation of the quarry.

The development proposes to utilize the existing surface drainage pattern to discharge the water pumped from the quarry southward to the Harrop Drain. The water will be pumped from the sump hole on the quarry floor into a primary settling pond to filter out any sediments in the water. From the primary settling pond, the water will flow south and east within the existing drainage swale which will be vegetated and/or have rock check dams installed to minimize soil

erosion and the sediments carried by the water (see Hydrogeological Report). It is recommended that another settling pond with a minimum of 24 hours of storage capacity be constructed in the southeast part of the site to further trap any sediment carried by the surface water before being discharged through the two culverts into the Harrop Drain. The two settling ponds may be dredged periodically to maintain their capacity and to minimize off site discharge of sediments into the Harrop Drain.

The stripping of topsoil and the construction of berms within the setback areas can expose disturbed topsoil and/or overburden to erosion by rain water. The site plans state that all berms shall be graded smooth and seeded immediately to prevent erosion. As a failsafe measure, it is suggested that perimeter berms in the area closest to the outlet to the culverts be fenced with filter cloth prior to construction. Fencing should be maintained until the berms are completely vegetated (Refer to notes – Technical Recommendations, Drawing on site plans). This will minimize any erosion caused by storm events during construction.

The pumping of quarry water will help maintain the water levels within the Harrop Drain during periods of low flow, which can be a benefit to aquatic organisms which utilize this habitat. Since Sandusk Creek and its tributaries have warm water fish species which are less sensitive to water temperature extremes, the temperature of the quarry water discharged into the drain will not be a critical factor. With proper storage of fuel and refuelling to occur at the scales, we do not expect that there will be any significant effect on water quality, both surface and groundwater, on this site.

The M.I.S.A. review of pits and quarries undertaken under the Ministry of Environment in 1989, concluded that there were no nutrient or any other contamination problems generated by aggregate sites. It is our general experience that the removal of active agriculture from the land surface significantly reduces the nutrient input to the groundwater, i.e., no fertilizers, pesticides, etc. being used.

The pond that will remain after final rehabilitation is completed must be designed properly so that there is sufficient productive capacity to assimilate nutrients which arrive from the air and from surface runoff. This is why shallow productive zones are created to establish wetlands and weed beds, and why shoals and habitat structures are created to support healthy fish populations. Ponds are designed so that available nutrients are cycled in a healthy ecosystem. As such ponds are extremely nutrient poor to begin with, we have not experienced problems of excess nutrients in deep off line ponds. It is anticipated that there may be some intermittent overflow from the pond to the drainage swale, once the water in the pond has reached its maximum level.

In summary, with proper management, the proposed extraction will not significantly effect the function of the existing deciduous woodlot on site or the Harrop Drain, a tributary of Sandusk Creek. The rehabilitation concept proposed will provide the opportunity for the expansion of the existing woodlot and an additional pond, which may increase the ecological diversity in the local area.

Cultural Heritage Resource (Stages 1, 2 & 3): Archaeologix Inc. (Appendix B)

see Appendix B

Noise Assessment Report: Aercooustics Engineering Ltd. (Appendix C)

The central processing area and plant site location has been selected and designed to minimize disturbance to the neighbouring residential properties. Similarly, the overall operation sequence has been designed to utilize the active quarry face and overburden materials as an acoustical shield. Berm locations and heights have also been designed for acoustical attenuation in all phases of the operation.

In order to minimize disturbances to residents, the following hours of operation for Monday to Saturday have been established:

- Extraction and processing should be limited to 7:00 a.m. to 7:00 p.m.
- Shipment from the central processing area to market should be limited to 6:00 a.m. to 7:00 p.m.

With these hours of operation, evenings should be quiet allowing residents to enjoy their properties. On weekends, with no processing or extraction, there should be little disturbance to the residents.

In summary, the predicted noise impact from the proposed quarry operation, with the operating methods and stringent noise controls that are planned, should be quite acceptable to the neighbours.

Blast Impact Analysis: Explotech Engineering Ltd. (Appendix D)

The proposed Hagersville Quarry can be developed safely and productively in the proposed area while staying well within the Ontario Ministry of the Environment guidelines for blasting in quarries, provided all recommendations in this report are seriously considered by the quarry operator.

Conclusion

Given the investigation and planning undertaken to support the extraction and rehabilitation of this site, we are confident that the site plans, as prepared, adequately address and mitigate any potential adverse impacts of the proposed operation on the surrounding land uses, while maximizing the utilization of the aggregate resources and the afteruse potential of the property.

HARRINGTON AND HOYLE LTD.


for GLENN D. HARRINGTON, OALA, FCSLA

BJ/ch

Statement of Qualifications

Harrington and Hoyle Ltd.
Glenn D. Harrington, OALA, FCSLA
Bernhard Janssen, B.E.S.

Harrington and Hoyle Ltd. is a firm of landscape architects practising in Ontario for the past twenty-three years. The firm has expertise in landscape architecture, geology, and biology, with a focus on restoration and rehabilitation projects.

Harrington and Hoyle Ltd. has been producing Site Plans for aggregate licences for the past fifteen years and in that time have prepared over 100 successful plans. The firm has consulted to the Ontario Ministry of Natural Resources on a variety of new legislative initiatives and prepared the Generic Class A Site Plans as examples of new standards required under the Aggregate Resources Act. The firm is an associate member of the Aggregate Producers' Association of Ontario.

Mr. Glenn Harrington is a full member of the Ontario Association of Landscape Architects and a fellow of the Canadian Society of Landscape Architects. He has been coordinating applications and preparing site plans for the past fifteen years for pits and quarries across the province.

Mr. Harrington has served on numerous provincial advisory committees including the State of the Aggregate Resources Report, and the current Aggregate Strategy Working Group.

Mr. Bernie Janssen had over fourteen years experience working for MNR in the aggregate program, in the greater Toronto and London areas, dealing with plans, licence applications and reports before coming to work at Harrington and Hoyle Ltd.

Appendix A

Hydrogeological Report

Level 2



**LEVEL 2 HYDROGEOLOGICAL STUDY
IN SUPPORT OF A CATEGORY 2 CLASS A
QUARRY BELOW WATER LICENSE
HAGERSVILLE, ONTARIO**

Prepared for:

**Mr. Gary Nichols
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P. O. Box 172
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N4B 2W9**

Prepared by:

**AGRA Earth & Environmental Limited
440 Phillip Street
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**January 26, 1999
TK98-10-6**

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1.0 INTRODUCTION

AGRA Earth & Environmental Limited (AGRA) was retained by Mr. G. Nichols to conduct a Level 2 Hydrogeological Study in support of a Category 2 - Class A Quarry Below Water License. The quarry is to be used for the mining of limestone from the Bois Blanc Formation for the production of road building material and other uses. The maximum depth of the quarry is estimated to be 15 m (base of the Bois Blanc Formation) and the life of the quarry is expected to be at least 50 years. The estimated extraction rate is 100,000 tonnes in the first year increasing thereafter by approximately 10% (or less that 0.4 ha) per year.

1.1 STUDY OBJECTIVES

The primary objectives of this study were to document existing geologic and hydrogeologic site conditions and to evaluate the effect of quarry operations on water resources and groundwater consumers in the area.

1.2 SITE LOCATION

The proposed quarry is located in Part of Lot 10, 11 and 12, Concession 12 in Walpole Township, City of Nanticoke, in the Regional Municipality of Haldimand-Norfolk. The quarry is bounded by Regional Road 9 to the north; by Regional Road 18 to the east and by the CN Railway to the southeast. The site location is shown on Figure 1. The area of the proposed quarry is approximately 233 acres (94.3 ha). Three abandoned and 2 licensed quarries are located to the east and northeast. The majority of land surrounding the proposed quarry is currently used for agriculture.

1.3 PHYSIOGRAPHY AND TOPOGRAPHY

The site is located on the Physiographic region known as the Haldimand Clay Plain. The area is characterized by a flat topography, heavy textured soil and poor drainage (Chapman and Putnam, 1984). The elevation of the study area ranges from 214.5 to 221.1 m above mean sea level and slopes gently to the south.

1.4 DRAINAGE

The area is south of the Onondaga Escarpment and as a result, surface water drainage at this site flows south into the Harrop Drain which eventually discharges into a tributary of Sandusk Creek (which ultimately flows into Lake Erie in the Dunnville area). Sandusk Creek drains an area of 127 km² and has a gradient of approximately 0.6 m/km. Portions of the flow route are reportedly controlled by fractures in the underlying bedrock (P.J Barnett, 1978). No springs were observed on the subject property or in the immediate vicinity.

1.5 CLIMATE

Climate data for the town of Simcoe from Environment Canada indicates that the average temperature ranges from -6.3 °C in January and February to +17.2 °C in July. The Town of Hagersville has approximately 150 frost free days per year (Brown et al, 1968). Typical annual precipitation in this area is approximately 85 cm with a monthly average of approximately 7.5 cm.

The mean annual evapotranspiration (assuming 10 cm of storage) for this area is approximately 52 cm.

The prevailing winds are westerly, blowing from the west, northwest or southwest directions over 50% of the time (Brown, et al, 1968). Winds are typically lightest in the summer and strongest in the winter and spring.

2.0 FIELD PROGRAM

Four boreholes were installed by All-Terrain Drilling of Waterloo in April 28 - May 5, 1998 under the supervision of personnel from Stanley Consulting Group (Stanley). The boreholes were advanced to a maximum depth of 18.1 m by coring (size NQ). The high (up to 95%) rock quality designation (RQD) for the boreholes indicates that horizontal fracturing is relatively limited.

Monitoring wells were not installed in the boreholes by Stanley. The location of the boreholes is shown in Figure 2. Copies of the borehole logs are presented in Appendix A.

A step drawdown test was conducted at each of the monitoring wells and at the barn well located at the Gaglani property on November 26 and 27, 1998 by AGRA personnel. The step test was conducted using a Grundfos Redi-Flo 2 submersible pump with a variable speed controller. Steady state pumping rates for the proposed quarry site ranged from less than 1 to 6 gallons per minute. Pumping rates were measured using a graduated 2 gallon pail. During the testing of the barn well (at 3 gpm), water level measurements were also collected at the house well located approximately 44 m to the northwest and at a well located on the Dufferin Aggregate property approximately 1 km to the east. No measurable drawdown was detected in either well during or after the completion of the pump tests.

The pump test was conducted to determine the steady state pumping rate that could be sustained at each of the wells. Following the completion of the pump test, a response test was conducted by periodically measuring the water level as it recovers toward the equilibrium (or static) water level. This information was used to determine the hydraulic conductivity of the bedrock.

The steady state pumping rate and hydraulic conductivity was used to calibrate the computer model. The model was used to estimate the area of influence and the drawdown that could be expected over the life of the quarry. Although the quarry is expected to be in operation for over 50 years, AGRA used an estimated quarry life of 50 years to provide a worst case scenario evaluation. As a result the actual impacts are expected to be both less (in magnitude) and later in the life of the quarry than presented in this report. The pump test and response test data are presented in Appendix B.

2.1 WELL SURVEY

A water well survey was conducted on December 17, 1998 by AGRA personnel. A brief questionnaire was used as a checklist by AGRA personnel in order to ensure the collection of water quantity and quality information from the resident. The water well survey records are provided in Appendix C. Where possible, water levels and photographs of the wells were also collected. The survey information was supplemented by information contained in the Ontario Ministry of the Environment (MOE) water well records (Appendix D).

A total of 11 residences were visited and a total of 4 domestic wells identified in the field. There was no response at 9 of the houses. At least 7 of the residents use a cistern as their water supply (which is filled on a monthly basis).

Two of the wells were inaccessible or the owner of the residence was not home and therefore, water levels could not be collected. In cases where the water level in a well could be measured, care was taken to ensure that the water level tape did not get snagged in the well and was thoroughly cleaned prior to each water level measurement.

2.2 GROUNDWATER MODELLING

Numerical groundwater flow modelling was used to estimate the impact of the proposed Hagersville quarry dewatering operations on domestic groundwater users.

The groundwater modelling was conducted using Visual MODFLOW Version 2.60 software developed by Waterloo Hydrogeologic Software (Guiguer and Franz, 1997). Visual MODFLOW is a preprocessing software which permits the development of data sets required by MODFLOW. Visual MODFLOW also include postprocessing software to allow visualization of modelling results.

MODFLOW (Modular Finite Difference Groundwater Flow Model) was developed by McDonald and Harbaugh (1988) for the United States Geological Survey (USGS) and was used to simulate groundwater flow conditions at the site. MODFLOW is a block centred, finite difference model capable of simulating confined and unconfined, steady-state and transient flow regimes in two and if necessary, three dimensions. The model incorporates a variety of modules to allow for the simulation of external stresses such as recharge, evapotranspiration, drains and impermeable barriers. The series of finite difference equations generated by the program (which describe the groundwater head distribution in the model domain), can be solved using several numerical methods which are incorporated in the model.

Although MODFLOW was primarily developed to simulate flow in porous media it is often used for flow modelling in fractured rocks if they behave as porous media at the scale of study. This assumption was utilized in this analysis.

In MODFLOW, the modelled domain is divided into a grid of discrete rectangular blocks or cells. The cells are defined by rows, columns and layers that vary in size to accommodate the degree of variability in cell parameters. The numerical solution to the finite difference groundwater flow equations yields a finite set of points in the model that are known as nodes.

Model input parameters include the physical dimensions of the model and boundary conditions, in addition to aquifer parameters (i.e., hydraulic conductivity and recharge) that are assigned to each cell or node. The value assigned to each node represents the average value for the entire cell. These input parameters are used in the numerical solution of the model derived from groundwater flow equations.

2.2.1 Numerical Modelling Procedure

The modelling procedure utilized in this study involved the following steps:

- creating a conceptual model,
- selecting and digitizing the modelling domain,

- specifying boundary conditions,
- assigning initial values of input parameters,
- calibrating the groundwater flow model,
- simulating proposed quarry dewatering, and
- assessing existing uncertainties by conducting sensitivity analysis.

The model was used to simulate the water level drawdown resulting from quarry activity in 5, 10, 25 and 50 years. These scenarios were run in order to determine the area of influence of the quarry and as a result the number of houses (or wells) that may be affected. A number of variance tests (changing one of the model parameters and rerunning the model) were conducted to check the sensitivity of the model to variations in the drawdown. These variance tests are described in detail in Section 4.3.7.

3.0 GEOLOGY

The geology was determined from boreholes installed at the site by Stanley, MOE water well records and from geological reports for this area.

3.1 OVERBURDEN GEOLOGY

The overburden in the area is generally comprised of glaciolacustrine deep water deposits comprised of brown to grey, massive to laminated, varved clay. These sediments were deposited during several different lake levels as the Late Wisconsinian ice mass retreated out of the Erie Basin during the last glaciation.

3.2 BEDROCK GEOLOGY

Bedrock is located approximately 2.1 to 4.1 m below the ground surface over the majority of the site. However, in the north central part of the site, the bedrock was found to be at or just below the surface. The bedrock slopes gently to the south-southwest. The bedrock surface is gently rolling with local relief in the Hagersville area of approximately 6 m. A fracture orientation survey conducted in 1990 for the Hagersville tire fire (located approximately 3 km to the west) indicates that the predominant fracture orientation in this area is north-south with minor east-west trending fractures (Monenco, 1990).

3.2.1 Onondaga Formation

The Onondaga Formation is of Middle Devonian age and generally consists of dark grey to brown, thin to medium bedded, slightly shaley limestone with abundant crinoids and occasional rugose coral, stylolites and moderate to abundant grey and white chert nodules. The thickness of the Onondaga Formation at the proposed quarry ranges from 1.5 to 2.7 m.

3.2.2 Bois Blanc Formation

The Onondaga Formation is underlain by the Lower Devonian Bois Blanc Formation. The Bois Blanc Formation is comprised of dark grey to brown, thin to thickly bedded limestone to shaley limestone with abundant shale partings and occasional chert nodules. This unit is fossiliferous and contains abundant rugose and tabulate coral. This unit is actively quarried in the area for the production of building material. The thickness of the Bois Blanc Formation at the proposed quarry ranges from 7.3 to 8.9 m. Fraser et al (1988) indicates that the Bois Blanc Formation is generally unsuitable for the production of concrete or asphaltic aggregate because of its high chert content. However, selective extraction will be practised at this quarry (as done previously at the adjacent, depleted Hagersville Quarry) to ensure quality aggregate

3.2.3 Springvale Sandstone (Oriskany Formation)

The Bois Blanc Formation is underlain by the Lower Devonian Springvale Sandstone. This member is comprised of light tan brown, thickly bedded, calcareous sandstone with several shale partings and rugose coral. The Springvale Sandstone was not penetrated during the drilling of boreholes at this location.

3.2.4 Bertie Formation

Although the test drilling program did not penetrate formations which underlie the Springvale Sandstone, regional stratigraphy indicates that the entire subject area is underlain at greater depth by dolostones of the Upper Silurian Bertie Formation. The Ontario Ministry of Natural Resources indicates that this material, especially the brown laminated dolostones of the Akron Member of the Bertie Formation are well suited for the production of high quality aggregates including concrete aggregate.

4.0 HYDROGEOLOGY

The static groundwater level at this site is 0.05 m above ground level to 3.42 m below ground surface. The water levels indicate that groundwater in the bedrock is under artesian conditions such that the static water level in the borehole is higher than the level at which it was encountered.

4.1 GROUNDWATER UTILIZATION

The primary aquifer in use in this area is the fractured sedimentary bedrock comprised predominantly of limestone, sandstone and dolostone.

MOE water well records for the area (Appendix D) indicate that the majority of wells are located within the bedrock. The depth of the wells around the perimeter of the proposed quarry range from 27 feet (8.2 m) to 172 feet (52.4 m) deep. The pumping rate ranges from 1 to 10 gallons per minute. The majority of the water from the domestic wells is reported to be fresh although some of the water well records and the well survey indicated that the water is often mineralized or has a sulphur taste or odour. Two shallow wells (each approximately 30 feet in depth) reportedly went dry during the 1998 summer months.

A number of residences obtain their water exclusively or partly using cisterns due to the poor quality of the water or the inadequate supply from existing wells. In these houses, water is provided by a water tanker.



4.2 GROUNDWATER FLOW CONDITIONS

Regional groundwater flow is toward the south with ultimate base flow into Lake Erie. The predominant means of flow in the bedrock is via fracture flow whereby the groundwater flows along the fractures in the bedrock (which are primarily oriented in a north-south direction). The direction of shallow groundwater flow and groundwater equipotentials is presented in Figure 3.

The hydraulic conductivity of the various stratigraphic units was based on hydraulic conductivity values obtained during the response testing. Copies of the response testing are presented in Appendix D. Since the boreholes penetrated the Onondaga, Bois Blanc and occasionally the Springvale stratigraphic units, the hydraulic conductivities obtained were a combination of all three units. However, each of the units is expected to have a hydraulic conductivity within an order of magnitude of the other units.

The groundwater velocity for the Onondaga Formation is estimated to range from 4×10^{-5} cm/sec to 4×10^{-6} cm/sec. The groundwater velocity of the underlying Bois Blanc formation is approximately one-quarter of the Onondaga formation at 1×10^{-5} cm/sec to 1×10^{-6} cm/sec. Both velocities were derived using an assumed porosity of 10%.

4.3 NUMERICAL MODELLING RESULTS

4.3.1 Modelling Assumptions

The silty clay layer (overburden) was assumed to have a uniform thickness of 3 m. The upper portion of bedrock (the Onondaga Formation), underlying the overburden, was also assumed to be about 3 - 4 m thick.

The total thickness of the modelled section was assumed to be about 24-25 m and includes the Bois Blanc Formation and the Bertie Formation. Groundwater flow in the shale bedrock, underlying the Bois Blanc Formation, was neglected compared with flow in the upper limestone and sandstone units. Fracture orientation in the bedrock was assumed to be predominantly north-south in accordance with information presented in Monenco (1990).

The regional flow direction was assumed to be predominantly southward, with some local flow components towards the abandoned quarries, Sandusk Creek and its tributaries. All streams in the area were assumed to mainly gain from streams. Abandoned quarries, located west of Hagersville, were assumed to be approximately 10 m deep. The water levels in these quarries were assumed to be at an elevation of about 215 to 217 masl.

4.3.2 Modelling Domain and Numerical Grid

The modelling domain is shown in Figure 4. It encompasses the area of the proposed and abandoned quarries. The domain extends significantly further to the south, west, east and north from the area of interest in order to avoid possible artificial boundary effects on the simulated results (especially when simulating the variants of the proposed quarry dewatering).

The grid for the numerical finite-difference groundwater flow model consisted of 139 rows and 117 columns. The majority of numerical cells were constructed with horizontal sizes of approximately 100 m. Finer grid spacing of about 50 m was utilized in the area associated with proposed quarry development.

Vertical discretization of the modelling domain resulted in the development of six model layers. The uppermost layer (model layer 1) represents the overburden. The second layer (model layer 2) represents the Onondaga Formation. Four other model layers (layers 3 through 6) represent the Bois Blanc Formation and the Springvale Sandstone.

4.3.3 Boundary Conditions

Boundary conditions, specified along the perimeter of modelling domain, account for the interaction between the groundwater flow within the modelled area and the rest of the aquifer(s). Their specification was based on the interpreted flow system.

"No-flow" condition was specified along the entire western and eastern boundaries since they appear to be parallel to the regional groundwater flow direction. "No-flow" condition specified along the significant portion of the northern boundary represents the interpreted local watershed boundaries.

A hydraulic head value of about 202 masl to 207 masl was specified along the southern boundary of modelling domain. This head value was estimated based on the ground surface topography and expected surface water levels in an area about 5,000 m to the south of the site.

4.3.4 Initial Values of Input Parameters

Hydraulic conductivities of the Onondaga and Bois Blanc Formations were assumed to be anisotropic in accordance with the existing data on fracture orientation (Monenco, 1990).

Hydraulic conductivity of the Bois Blanc Formation in the west-east direction (K_x) was taken as 10^{-5} cm/s. This is close to the average hydraulic conductivity value for this formation estimated from the recovery data for the pump tested wells at the site (farm well, MW-1, MW-2, MW-3 and MW-4). The Bois Blanc Formation hydraulic conductivity in the north-south direction (K_y) was assumed to be 2 times higher than in the east-west direction. Vertical hydraulic conductivity in this formation (K_z) was assumed to be 10 times lower than the velocity in the horizontal plane. Hydraulic conductivity in the Onondaga Formation was assumed to be about an order of magnitude (i.e., 10 times) higher than in the Bois Blanc Formation.

Hydraulic conductivity of the silty clay overburden was assumed to be 10^{-5} cm/s and 10^{-6} cm/s in the horizontal and vertical directions, respectively. A recharge rate value of 50 mm/year (2 inches per year) was assigned to the majority of the modelling domain due to the presence of silty clay at the surface.

Net infiltration into the ponds (abandoned quarries) was assumed to 200 mm/year. Some of these input parameters were modified during the calibration process.

4.3.5 Model Calibration

Calibration of a groundwater flow model requires a demonstration that the model is capable of producing field measured heads and flows (the so-called calibration values) (Anderson and Woessner, 1992). Model calibration is accomplished by adjusting the physical and hydraulic parameters that are associated with the highest degree of uncertainty in order to achieve a reasonable match between computed and observed (measured) data.



Groundwater flow model for the proposed Hagersville Quarry was calibrated using the following data:

- static water levels in the farm well, MW-1, MW-2, MW-3 and MW-4, measured on November 26 and 27, 1998;
- sustainable yields of the farm well, MW-1, MW-2, MW-3 and MW-4, estimated from their pumping tests, conducted on November 26 and 27, 1998.

Hydraulic conductivities of the simulated bedrock formations and the recharge rates were modified in order to match the above data. Finally, the following calibrated input parameters were obtained:

- recharge rate is 10 mm - 20 mm per year;
- hydraulic conductivity of the Onondaga Formation is 5×10^{-4} cm/s in the north-south direction and 2×10^{-4} cm/s in the east-west and vertical directions;
- hydraulic conductivity of the Bois Blanc Formation is 10^{-4} cm/s in the north-south direction, 5×10^{-5} cm/s in the east-west direction, and 1×10^{-5} cm/s in the vertical direction.

These values fall within the reported typical range of hydraulic conductivities for limestone and sandstone aquifers (Freeze and Cherry, 1979). Simulated flow in the vicinity of the proposed quarry for the existing conditions is shown in Figure 3.

The average discrepancy between observed and computed static water levels at the site is about 0.27 m. The computed sustainable rate of pumping from a single well screened over the depth of about 10 m was estimated to be about 8.5 m³/day (2 lgpm), which is close to the observed average sustainable yield of the tested wells. This level of model calibration was considered to be acceptable for the purpose of the study.

4.3.6 Simulation of Proposed Quarry Dewatering

During the simulation of dewatering at the proposed quarry, it was assumed that:

- water levels will be kept at about 15 m below the ground surface (proposed base of the quarry at approximately 205 masl); and
- quarry development will occur gradually, over a period of at least 50 years, starting from the south central portion of the site (southern part of Lot 11).

For the base case scenario, specific yield of both simulated bedrock formations was taken as 0.1 (Anderson and Woessner, 1992).

Figures 5 through 8 show the simulated drawdown contours after 5 years, 10 years, 25 years and 50 years for the so-called base case scenario (variant 1).

4.3.7 Sensitivity Analysis

The purpose of the sensitivity analysis conducted for the groundwater flow model was to quantify the impact of the uncertainty in the input aquifer parameters on the estimated impact of dewatering and stabilized inflow into the proposed Hagersville Quarry.

Simulated results were expected to be affected mostly by the following input parameters:

- hydraulic conductivity of the Bois Blanc Formation;
- water levels in the ponds (abandoned quarries);
- storage coefficients of the Onondaga and the Bois Blanc Formations; and
- recharge rates.

Only those variants that could potentially increase either the zone of groundwater depression or the amount of flow into the quarry (or both parameters) compared with the base case scenario were simulated. The total number of additionally simulated variants was six (variants 2 - 7). They are described as follows:

Variant 2. Increased Hydraulic Conductivity

All hydraulic conductivity values in the Bois Blanc Formation were increased by a factor of 3 compared with the Base Case (Variant 1);

Variant 3. Increase in Isotropy of Bedrock

Horizontal hydraulic conductivity values for the Bois Blanc Formation were taken as 1×10^{-4} cm/s both in the north-south and west-east directions. Vertical hydraulic conductivity was taken as 5×10^{-5} cm/s.

Variant 4. Increase in Anisotropy in Bedrock

Hydraulic conductivity for the Bois Blanc Formation in the east-west direction was taken as 1×10^{-5} cm/s, (i.e. 10 times less than in north-south direction).

Variant 5. Reduced Storage Coefficients

The specific yields for the Onondaga and the Bois Blanc Formations were taken as 0.05, (i.e., reduced by a factor of 2 compared with the Base Case) (Variant 1).

Variant 6. Higher Water Levels in Abandoned Quarries

Initial water levels in the abandoned quarries were assumed to be 3 metres below the ground surface (i.e., 3 to 5 m higher than in the base case scenario).

Variant 7. Reduced Infiltration Rate

Infiltration rates through the overburden were reduced by a factor of 2 compared with the Base Case (Variant 1).

Note that for each of the aforementioned variants, the input parameters which are not specially described, were assumed to be equal to the values used in the base case scenario. Results of the conducted sensitivity analysis are summarized in Table 1. The simulated 5, 10, 25 and 50 years variant drawdown contours are presented in Appendix E.



5.0 DISCUSSION

The area of influence (cone of depression) for the quarry will increase as the quarry expands, ranging from approximately 250 ha after 5 years to approximately 724 ha at the completion of quarrying.

The modelling indicates that at the completion of quarrying, 20 houses will experience a drop in their water level by 1 m or more. These residences are identified on Table 2. Ten of the 20 affected houses would only experience the 1 m drop in water levels after at least 25 years of operation. Two of the 20 residences (Bosma and the Gagliani house) are immediately adjacent to the proposed quarry and their wells may have to be decommissioned prior to quarry completion. In addition, at least 6 of the 20 do not have a well (deriving their water supply solely from cisterns) and would not be affected by a drop in the local water table. The remaining 12 residences will have an estimated drop in the water level ranging from 1 to 6 m. Ten residences would experience water level drawdowns less than 3 m after 50 years.

However, it should be kept in mind that some of these houses may not be present after 50 years and several other houses may be built within the area of influence. In addition, there is also no certainty that the quarry will continue to operate for as long as 50 years (due to changes in market, price, etc.) and as such, long term projections (beyond 10 years) are of limited value.

After ten years of operation, 4 residences along the northern boundary of the quarry are expected to be affected (a drop in their water level by 1 m or more). Two of the impacted residences are on cisterns and one of the residences (Gagliani) currently does not use the on site well as a source of water. The remaining residence (N. O'Brien) will experience a drawdown of 1 to 2 m.

The amount of water to be pumped out of the quarry will also increase as the quarry is developed reaching a maximum of approximately 249 m³ /day (38.1 gpm) at the completion of quarrying activities. If the hydraulic conductivity of the Bois Blanc Formation is approximately 3 times that estimated, the ultimate pumping rate would be approximately 640 m³/day (98 gpm). Since the required pumping rate will exceed the 50,000 L/day requirement in the Ontario Water Resources Act, (regardless of the hydraulic conductivity of the bedrock), a Permit to Take Water will be obtained by the quarry operator prior to commencing quarry excavation activities.

Following the completion of quarry activities, the excavating equipment and any structures present would be removed and the pumps turned off. The quarry would eventually fill with water. Water levels in the area would also rise and eventually would be approximately the same as current conditions.

Site Drainage and Stormwater Management

The development of the quarry is expected to have a minimal impact on the existing natural drainage. Approximately 80% of the proposed quarry lands drains to the south or southeast with discharge into the Harrop drain. Twenty percent of the surface drainage flows to the north and west into a tributary of Sandusk Creek and along Regional Rd. 9 to Sandusk Creek. As the quarry expands, precipitation catchment in the quarry will be directed into a natural surface swale which will flow directly into the Harrop Drain. As such, there is expected to be no impact to the surface drainage of adjacent properties or on Regional Roads 9 and 18.

Currently, surface drainage flows through two 36 inch diameter drains run under the CN Rail tracks running along the south east property boundary and into the Harrop drain. When full, these drains are capable of handling approximately 1400 L/s or 18,460 gpm. The additional inflow from

dewatering of the quarry (38 gpm) will comprise approximately 0.2% of capacity. In addition, a silt settlement lagoon will be constructed to limit erosion and prevent silt and other sediment from flowing through the CN culverts and into the Harrop drain. The settlement pond will be maintained and cleaned as necessary by the quarry proponent.

5.1 MITIGATION MEASURES

Since the life time of the quarry is expected to be at least 50 years, the mitigation measures must be dynamic in order to account for changes in land ownership, changes in quarry practice, quarry expansions, reduced lifespan of quarry, extension of the Hagersville municipal water line to this area and other mitigating factors that may occur.

Prior to commencing bedrock extraction activities, water levels will be collected from those wells identified as potentially being affected by pumping operations (assuming that permission is granted by the homeowner). Care will be taken to collect static water levels and not intermittent water levels (resulting from use of water in the residence during the collection of the water level measurement) which could result in artificially low water levels. We propose that water levels be collected in the early spring (seasonally high water table), late summer (seasonally low water table) and fall on a yearly basis for the duration of the quarry operation.

In addition, we propose that all domestic wells likely to be affected by quarry operations (less than 15 m in depth) be identified for increased water level monitoring (three times per year). We also recommend that the water level in the boreholes (BH1-BH4) be measured at a similar frequency in order to check the actual water levels against the forecast water levels.

AGRA proposes that after three years of monitoring (when sufficient, representative data has been obtained) a set of trigger levels be developed in conjunction with the MOE. Insufficient water level monitoring data exists to establish effective trigger levels at this time.

We do not expect that the majority of well water users will be affected by the quarry operation (the modelling indicates that only 4 residences are expected to experience a significant decline in water levels of greater than 3 m as shown on Table 2) after 50 years of quarry operation (not including those residences that are immediately adjacent to the quarry itself {Gaglan} or use cisterns {L. Gowan, E. O'Brien, K. Sheppard, D. Wilson, D. Parkinson, L. McKeen and K. Bowen}). These residences are N. O'Brien, R. Hanson, R. Gibbons and A. Deboer.

After year five, as a contingency measure, the quarry operator will obtain a source or sources for potable water tanks and retain a plumbing contractor that would be available to hook up residences if required. The quarry operator need not have a supply of potable water tanks available on site but will make arrangements to obtain them quickly, if necessary. If a complete loss of water can be directly linked to dewatering at this quarry, the quarry operator will arrange for the installation of a new well or make other arrangements with the affected resident to ensure that an adequate supply of potable water is provided.

The contingency plan should be reviewed (and modified if necessary) a minimum of every 5 years to ensure that it is up to date and reflects existing conditions.

We also recommend that the drawdown contours be updated every 10 years in order that the quarry owner can modify the contingency plan accordingly. These updates would incorporate the latest information in terms of residences (new, existing or abandoned), flow rates from the quarry and water levels in the domestic wells.



6.0 CLOSURE

This report has been prepared for the exclusive use of Nichols Gravel Limited for specific application to the project site. The environmental investigation was conducted in accordance with the work plan developed for this site and verbal requests made by the client. The work was performed using generally accepted assessment practices. No other warranty, expressed or implied is made.

AGRA Earth & Environmental Limited appreciates the opportunity to do work for Nichols Gravel Limited. Do not hesitate to contact the undersigned if you have any comments regarding this report.

Yours truly,
AGRA Earth & Environmental Limited

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AGRA EARTH & ENVIRONMENTAL

AGRA Earth and Environmental Limited (AGRA) is one of North America's largest full service environmental and geotechnical consulting firms, providing services in environmental sciences, water resources, engineered wetland development, geotechnical, environmental and materials engineering. These services are delivered to government, resource, manufacturing, development and institutional clients across Canada, and internationally through approximately 55 offices worldwide.

Each office has professional skills and laboratory facilities to meet local needs. The wide geographic distribution of the offices enable AGRA to provide fast, efficient, and economical services to clients at a local level, while having immediate access to the resources of the entire organization. The professional services of AGRA are supported by specialized field testing equipment, innovative field instrumentation, computer analysis techniques, and state-of-the-art laboratories. Our professionals enjoy a reputation for providing reliable responsive and cost effective consulting services which results from exercising sound judgement while providing superior engineering and environmental services throughout the world.

AGRA employs over 1,500 people worldwide including 1,200 scientists, technicians, professionals, and engineers. The proven ability to attract and retain highly educated, trained and dedicated professionals enables AGRA to meet the diverse needs of its clients, regardless of project size and complexity.

JAMES EVANS, M.Eng.
Hydrogeologist

Hydrogeology
Landfills
Site Selection
Site Assessments
Mining

2

EDUCATION

University of Waterloo, Waterloo, B.Sc. Honours Applied Earth Science (Co-op), 1984
University of Western Ontario, London, M.Eng. Engineering Science (ongoing)

REPRESENTATIVE EXPERIENCE

Mr. Evans has provided technical expertise on hydrogeological investigations, landfill site evaluations, and site decommissioning. His project experience includes:

- project manager for AGRA's environmental activities during the design and construction of Highway 407 Electronic Toll Road
- hydrogeologist for the investigation of acid mine drainage from a coal fire in Pingding Shan, People's Republic of China
- expert witness for natural gas transmission company in case involving water interference complaint - testified before National Energy Board hearing and assisted in cross-examination of plaintiff
- hydrogeologist/project manager for a dewatering/depressurization program for an 850 acre residential development, Richmond Hill, Ontario
- project manager for a detailed settlement capability study for the Town of Whitchurch-Stouffville
- evaluated various diffuser designs for thermal discharge from a power plant in Barbados, W.I. and for treated sewage effluent discharge into Lake Ontario for an existing and proposed sewage treatment plants near Pickering, Ontario using CORMIX modelling program
- project manager for the technical review of Phase I, II and III reports prepared by various consultants on behalf of developers seeking mortgage financing from CMHC
- field operations manager for hydrocarbon spill investigations in Joliette, Quebec, and Sault Ste. Marie, Ontario
- project manager for chlorinated hydrocarbon investigations in Concord, Rexdale and Toronto, Ontario

-
- field operations manager for DNAPL investigations in Mississauga, Ontario, Lynn, Massachusetts, and Indianapolis, Indiana
 - lead investigator for the decommissioning of manufacturing facilities in Guelph, Toronto and Collingwood, Ontario
 - supervision of ASB and cogeneration facility site selection studies in Northern Ontario

Mr. Evans has been involved in numerous landfill monitoring programs and landfill site evaluations. Specific projects include:

Echo Bay Mines Ltd, Timmins, Ontario: Designed and obtained Certificate of Approval for a solid waste landfill at the Echo Bay Mines, Aquarius Project.

Potter Power, Hearst, Ontario: Assisted in the design and permitting of a wood ash landfill and wood storage facility for a waste wood/waste heat cogeneration power plant in Hearst, Ontario.

Laidlaw, Timmins, Ontario: Semi-annual monitoring program for two commercial septic waste disposal sites. Monitoring program involved both groundwater and surface water sampling.

Malette Inc., Timmins, Ontario: Semi-annual monitoring program for wood waste landfill. Monitoring included both groundwater and surface water sampling.

City of Marion, Marion, Indiana: Quarterly monitoring program for municipal waste disposal site. Monitoring program included both groundwater and surface water sampling.

Halton Regional Landfill Site Evaluation: Principal investigator for site selection of Halton Regional Landfill. Supervised drilling program for final site selection.

Peel Regional Landfill Site Evaluation: Consultant to landowners during site selection of Peel Regional Landfill. Evaluated proponents monitoring well installation and sampling techniques.

Town of Campbellford, Campbellford, Ontario: Semi-annual monitoring program for municipal waste disposal site. Monitoring program included both groundwater and leachate sampling.

City of Brantford, Brantford, Ontario: Semi-annual monitoring program for municipal waste disposal site. Monitoring program included both groundwater and surface water sampling.

Credit Valley Conservation Authority, Mississauga, Ontario: Reviewed existing landfills within Credit River watershed and evaluated potential impact on river water quality.

Norbord Corporation, Cochrane, Ontario: Set-up groundwater and surface water monitoring program for wood waste landfill, developed sampling protocols, evaluated existing landfill operation.

Steep Rock Resources Inc., Perth, Ontario: Set-up groundwater and surface water monitoring program for calcite waste landfill, developed sampling protocols.

Mr. Evans has been involved in a number of site selection projects which include:

James River Marathon, Marathon, Ontario: Characterized hydrogeologic conditions at 2 sites for the proposed installation of an aerated stabilization basin (ASB). Supervised installation of wells and collection of data.

Malette Kraft Pulp and Power, Smooth Rock Falls, Ontario: Investigated site hydrogeology prior to the installation of the ASB. Assisted in the development of the long-term monitoring plan.

Northland Power, Iroquois Falls, Ontario: Evaluated hydrogeologic conditions at 2 sites, proposed for the construction of a natural gas fired co-generation facility.

Destec Inc., Kingston, Ontario: Characterized soil/bedrock and hydrogeologic conditions at 2 sites proposed for the construction of a natural gas fired co-generation facility. Evaluated potential site easement for service lines.

Mr. Evans has been the project manager or supervised the field operations for numerous projects. Specific projects include:

Confidential Client, Concord, Ontario: Project manager for investigation of chlorinated solvents in soil and groundwater at a solvent packaging facility. Developed work plan, directed field investigations, compiled and tabulated data and prepared report.

Confidential Client, Concord, Ontario: Project manager for investigation of chlorinated solvents in air, soil and groundwater on an offsite property. Prepared work plan, directed field investigations, compiled and tabulated data and prepared report.

Confidential Client, Penetanguishene, Ontario: Project manager for an assessment to determine if a client's operations could have contributed to the presence of chlorinated hydrocarbons in a Town well field.

Confidential Client, Toronto, Ontario: Project manager for investigation of chlorinated solvents and gasoline in soil and groundwater on an offsite property. Developed work plan, directed field investigations, compiled and tabulated data, provided conceptual remediation options and prepared report.

TransCanada PipeLines, North Bay, Ontario: Investigated water interference complaint arising from construction and installation of natural gas pipeline. Developed monitoring program. Prepared questions for use of counsel in cross-examination of plaintiff witness and testified as expert witness before National Energy Board hearing.

Xerox Canada, Mississauga, Ontario; Montreal, Quebec: Supervised drilling, well installation and testing program for dense non-aqueous phase liquid (DNAPL) contamination of soil and groundwater at an electronic manufacturer.

ITT, Mississauga, Ontario: Supervised on-site and off-site drilling, well installation and testing program for DNAPL contaminated groundwater which had moved off the subject property (metal stamping facility) and underneath an adjacent strip mall.

General Electric Company, Lynn, Massachusetts: Supervised on-site and off-site drilling, hydropunch, well installation and testing program for DNAPL contaminated groundwater.

General Electric Company, Indianapolis, Indiana: Supervised on-site drilling, hydropunch and well installation and testing program for DNAPL contaminated groundwater.

Hilroy Paper Products, Jolietta, Quebec: Developed and supervised on-site drilling and well installation program to investigate a large fuel oil spill which had migrated into the basement of an adjacent residence.

James Evans
Hydrogeologist

Employment Record
Certification

EMPLOYMENT RECORD

1995 - Present	AGRA Earth & Environmental Limited, Mississauga, Ontario
1989 - 1995	Beak Consultants Limited, Guelph, Ontario
1987 - 1989	Trow, Dames and Moore, Brampton, Ontario
1985 - 1987	Trow Geotechnical Ltd., Brampton, Ontario
1984 - 1985	Ministry of Natural Resources, Lindsay, Ontario

CERTIFICATION

1990	Certification U.S. Department of Labour, Occupational Safety and Health Administration training in compliance with Title III and 29 CFR 1910 requirements
1992	Certification Hazardous Waste Site Worker Supervisory training in compliance with SARA Title III and 29 CFR 1910 requirements
1990	Certified WHMIS (Workplace Hazardous Materials Information System) Instructor

Eric Y. Chung

**Transportation
Environmental Assessments
Affiliations**

Transportation:

Several of Mr. Chung's transportation projects have included geotechnical investigation of a variety of projects including rock cutting, embankment, deep and shallow foundations, grade separation, geotextile reinforced subgrade and embankments and pavement evaluation of roadways and parking lots.

Environmental Assessments:

Mr. Chung has conducted field investigations and assessed numerous sites on an environmental basis. This involvement has ranged from conducting and preparing various Phase I and Phase II reports for existing residential/commercial and industrial properties to implementing and monitoring of clean-up programs of contaminated sites. Some projects have included; various residential/commercial buildings, Southern Ontario; Victoria Street Autoplaza, Kitchener, Ontario; clean-up of WCI Manufacturing, Cambridge, Ontario; clean-up of Top Value gas station, Kitchener, Ontario; Timberjack site Brantford, Ontario; American Standard site, Cambridge, Ontario.

Project Management:

Mr. Chung has been responsible for the management of the Kitchener-Waterloo Office since 1987. In addition to supervise a staff of 16 Technical Personnel, he is also responsible for the office's geotechnical and inspection/testing operations and business development in the Kitchener-Waterloo area.

He is also responsible for the CSA Class II Certified concrete testing laboratory, CCIL soils and asphalt testing laboratory.

Affiliations:

Member:

Association of Professional Engineers of
Ontario Canadian Geotechnical Society

EMPLOYMENT RECORD

1994 - present

1987 - 1994

1986 - 1987

1979 - 1986

AGRA Earth & Environmental Limited

Dominion Soil Investigation Inc.

V. A. Wood and Associates Ltd., Toronto,
Ont.

Peto MacCallum Ltd., Kitchener & Toronto,
Ont.

LANGUAGES

English, Cantonese/Mandarin

3 February 1999

Eric Y. Chung
Kitchener-Waterloo Branch Manager

Geotechnical Engineering
Foundations
Private Sewage Systems
Transportation
Project Management

EDUCATION:

University of Western Ontario
London, Ontario

M. Eng. 1978

University of Western Ontario
London, Ontario

B.E.Sc. 1977

REGISTRATION: Professional Engineer: Ontario, 1980

REPRESENTATIVE EXPERIENCE:

Geotechnical Engineering:

Mr. Chung has been involved in a wide range of projects involving the application of geotechnical engineering, including slope stability, tunnels, pipelines, shoring systems, retaining structures, subdivision developments, bridge and grade separation structures.

He has also provided inspection and quality assurance supervision on many projects. Some major projects have included CIL Ammonia II Plant, Samia, Ontario; GMC Plants Additions Oshawa, Ontario. Over 100 Farm Silos in Southern Ontario and Ottawa areas, slope stability studies along Grand River and Saugeen River, Waterloo Recreation Complex, Kressview Springs Condominiums, Cambridge, Ontario.

Foundations:

Mr. Chung has acted as Project Engineer for many projects involving foundation design and construction. Several of these projects have included design and construction of monitoring of deep excavation and groundwater control in Downtown Toronto and Harbour Front area.

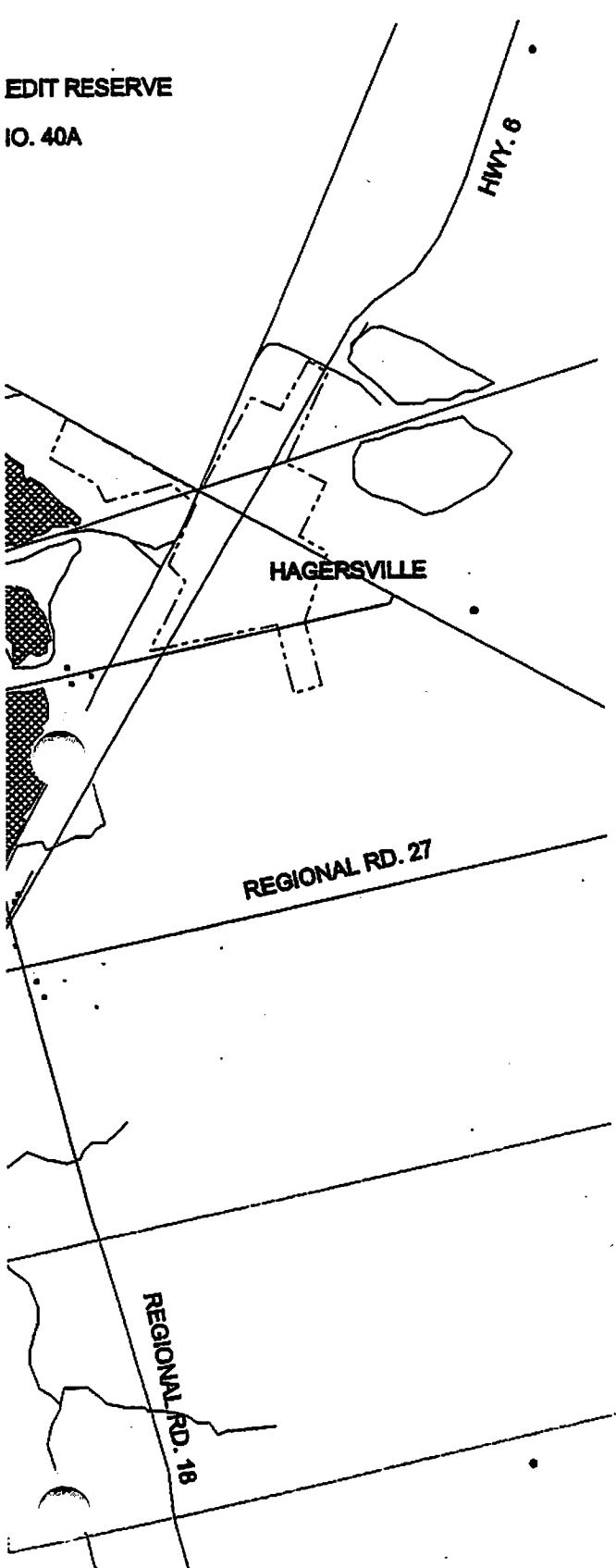
Other typical projects involve with residential, light commercial and heavy industrial buildings, schools, arenas, multi-storey buildings.

Private Sewage Disposal:

Mr. Chung's involvement in the subsurface disposal of sewage has been active in the residential, institutional and commercial areas. Numerous septic systems for single family dwellings have been designed and field investigated by Mr. Chung in the Counties of Waterloo, Wellington, Halton, Peel, Perth, Oxford, Brant and Haldimond-Norfolk. In some projects within the same noted Counties, Mr. Chung has been geotechnically involved in conjunction with hydrogeologists to determine site suitability for the development of rural residential subdivisions considering the use of on-site septic systems of both individual and communal type. Other projects include larger septic system designs for Carmelite Monastery, Maryhill Golf and Country Club, Good Samaritan Church, Heidelberg Meats, all located within the Region of Waterloo. Mr. Chung has also performed numerous septic system failure analysis reports, as well as redesigns for the failed systems.

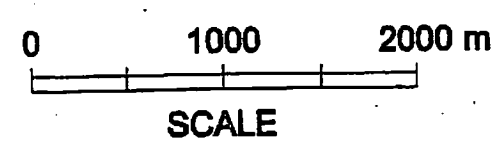
FIGURES

EDIT RESERVE
IO. 40A



LEGEND

- ABANDONED QUARRY (WATER FILLED)
- RESIDENTS
- RAILWAY
- SILOS
- SILOS ON SUBJECT PROPERTY

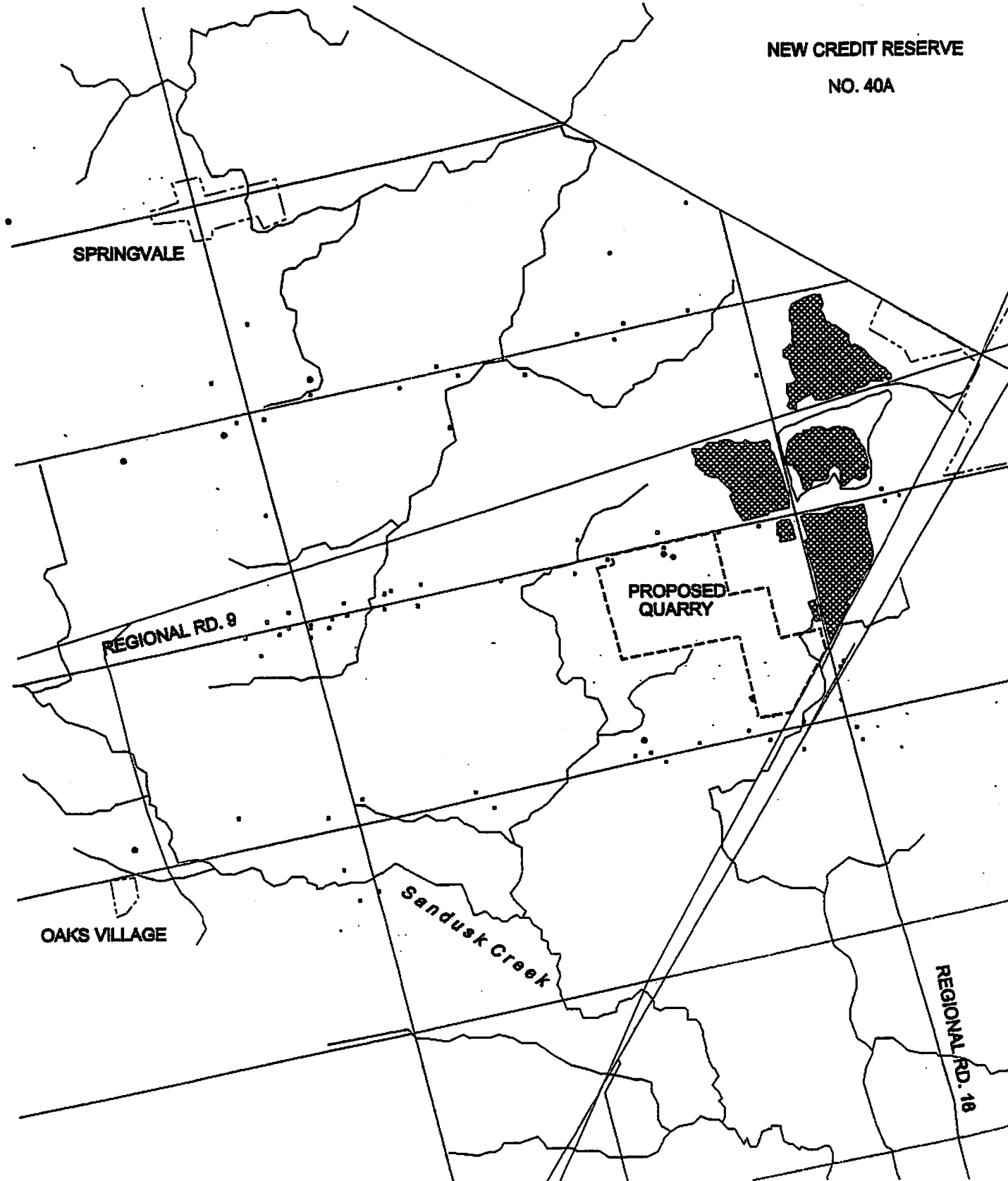


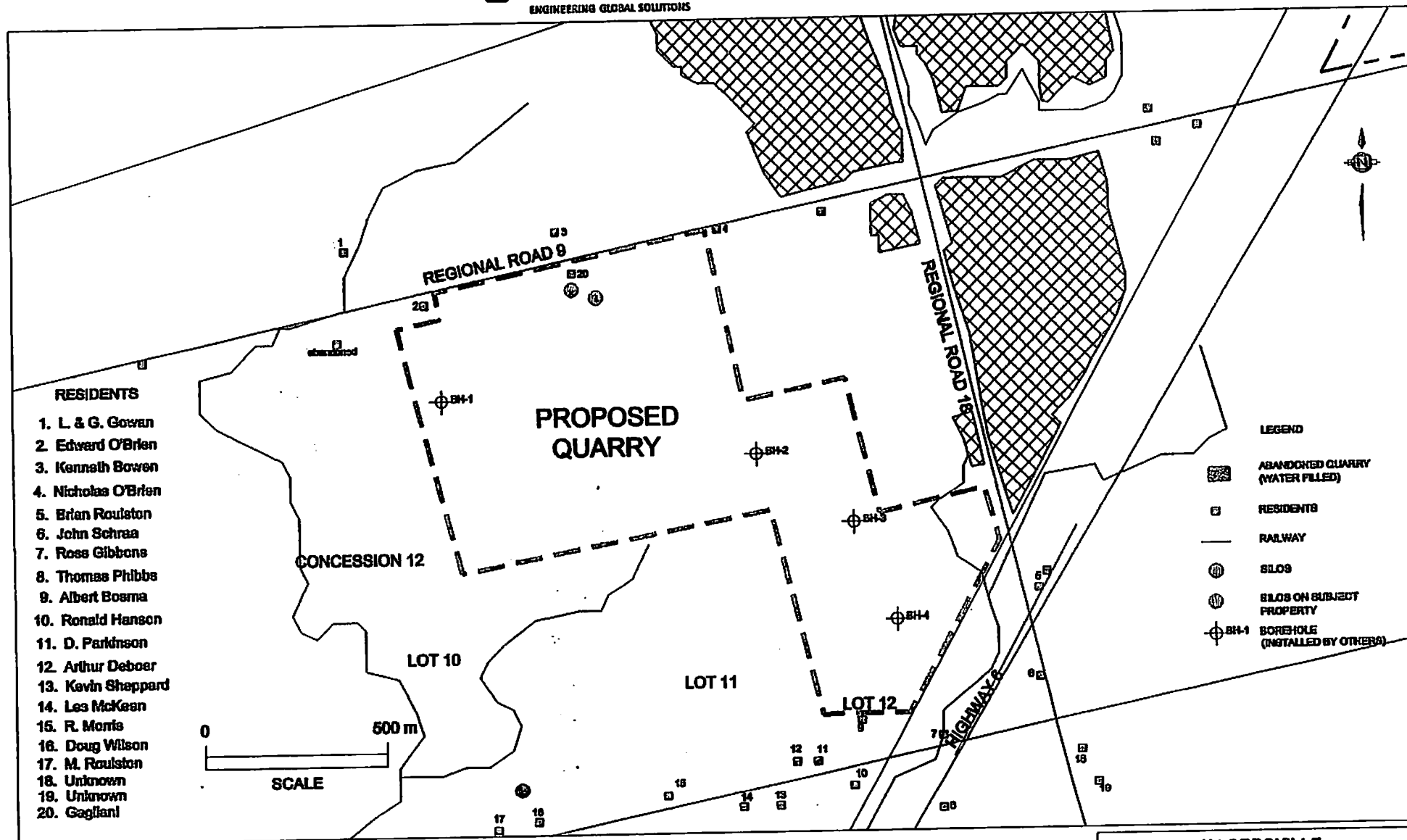
HAGERSVILLE
FIGURE 1
SITE LOCATION PLAN

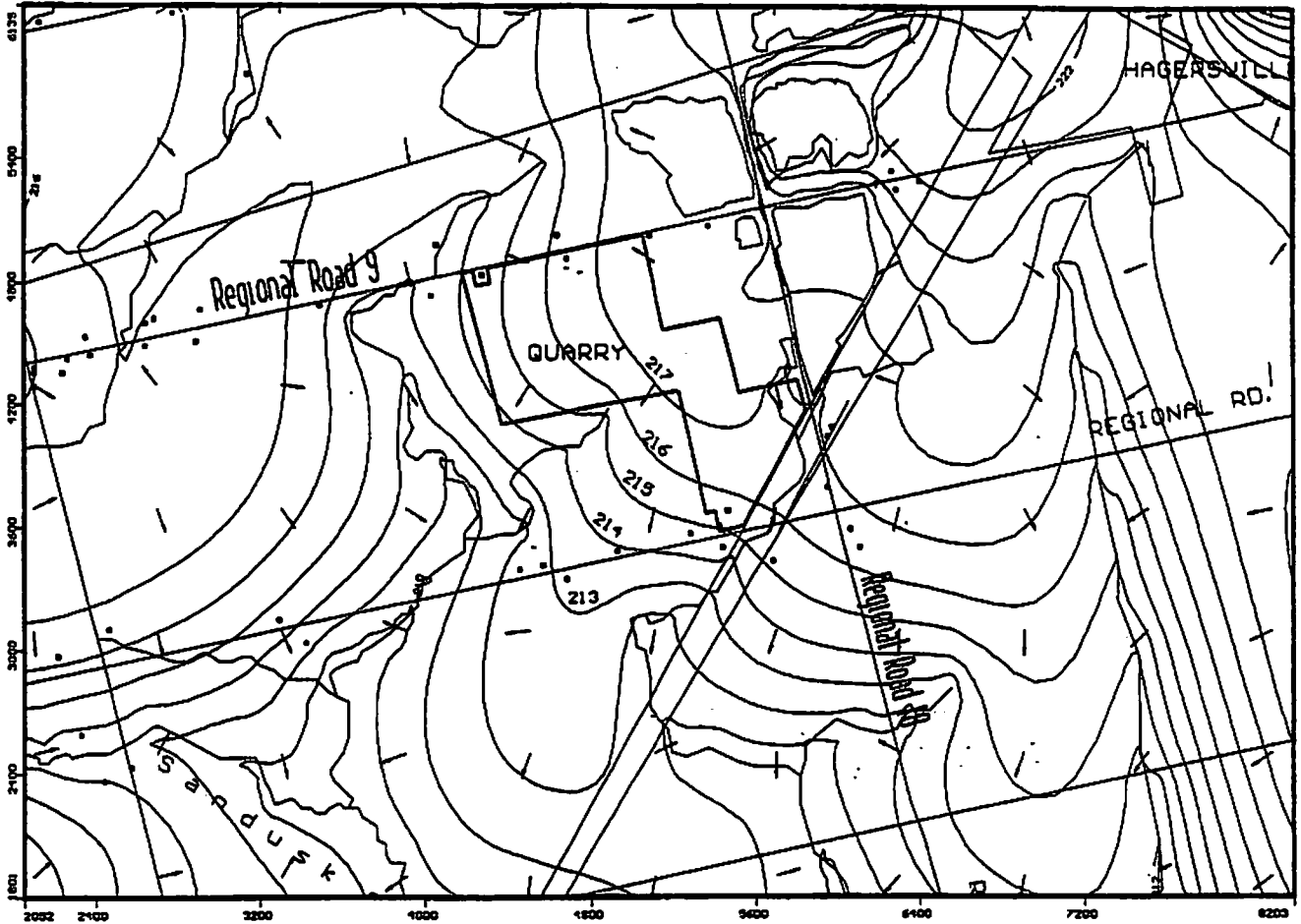


NEW CREDIT RESERVE

NO. 40A

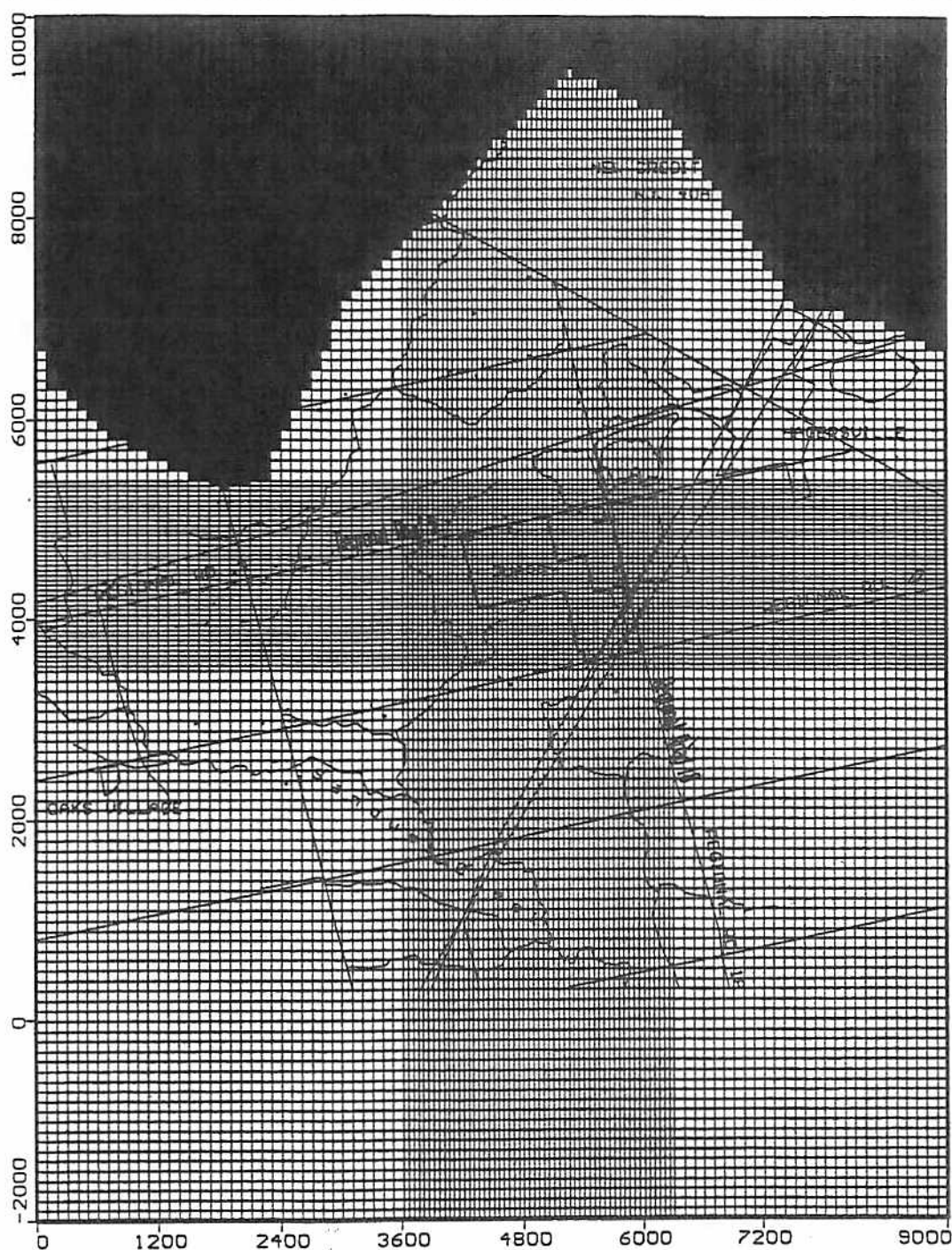






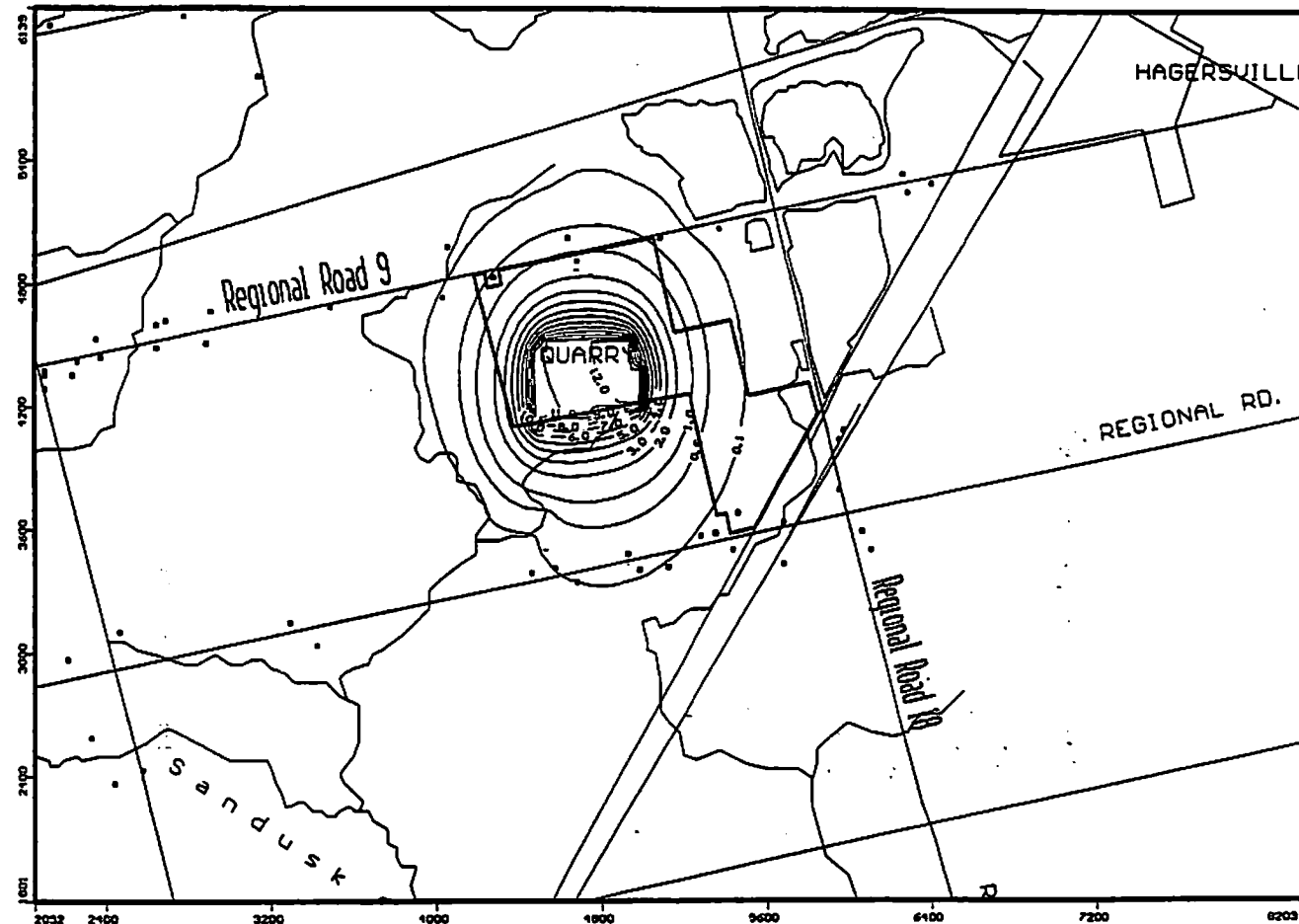
Agra Earth & Env. - Mississauga, ON
 Project: Hagersville Quarry
 Description: FIGURE 3. Computed Flow
 Modeller: JZ
 10 Dec 98

Visual MODFLOW v.2.60, (C) 1995-1997
 Waterloo Hydrogeologic Software
 NC: 117 NR: 139 NL: 6
 Current Layer: 3



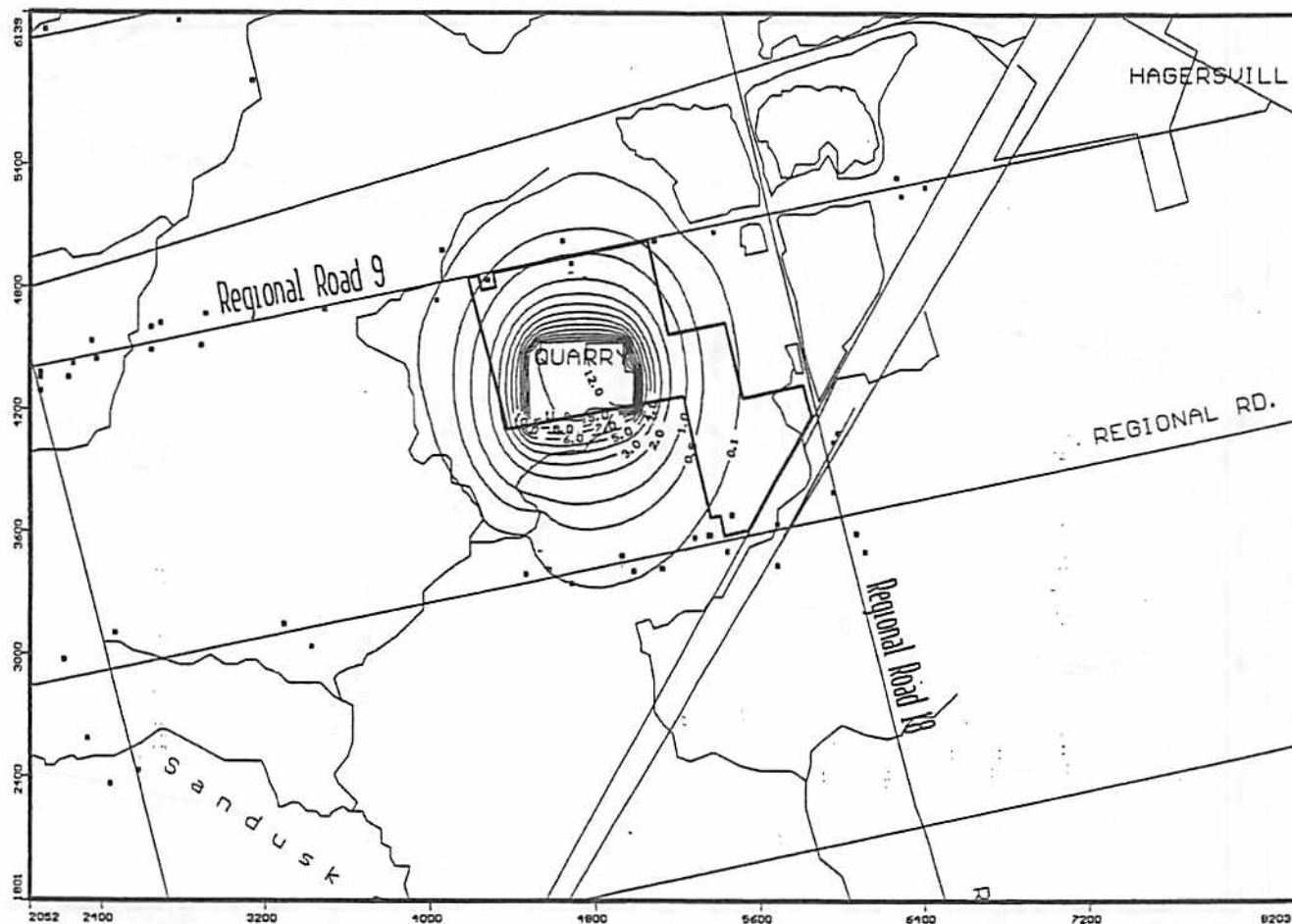
Agra Earth & Env. - Mississauga, ON
Project: Hagersville Quarry
Description: FIGURE 4. Modeling Domain
Modeller: JZ
10 Dec 98

Visual MODFLOW v.2.60, (C) 1995-1997
Waterloo Hydrogeologic Software
NC: 117 NR: 139 NL: 6
Current Layer: 6



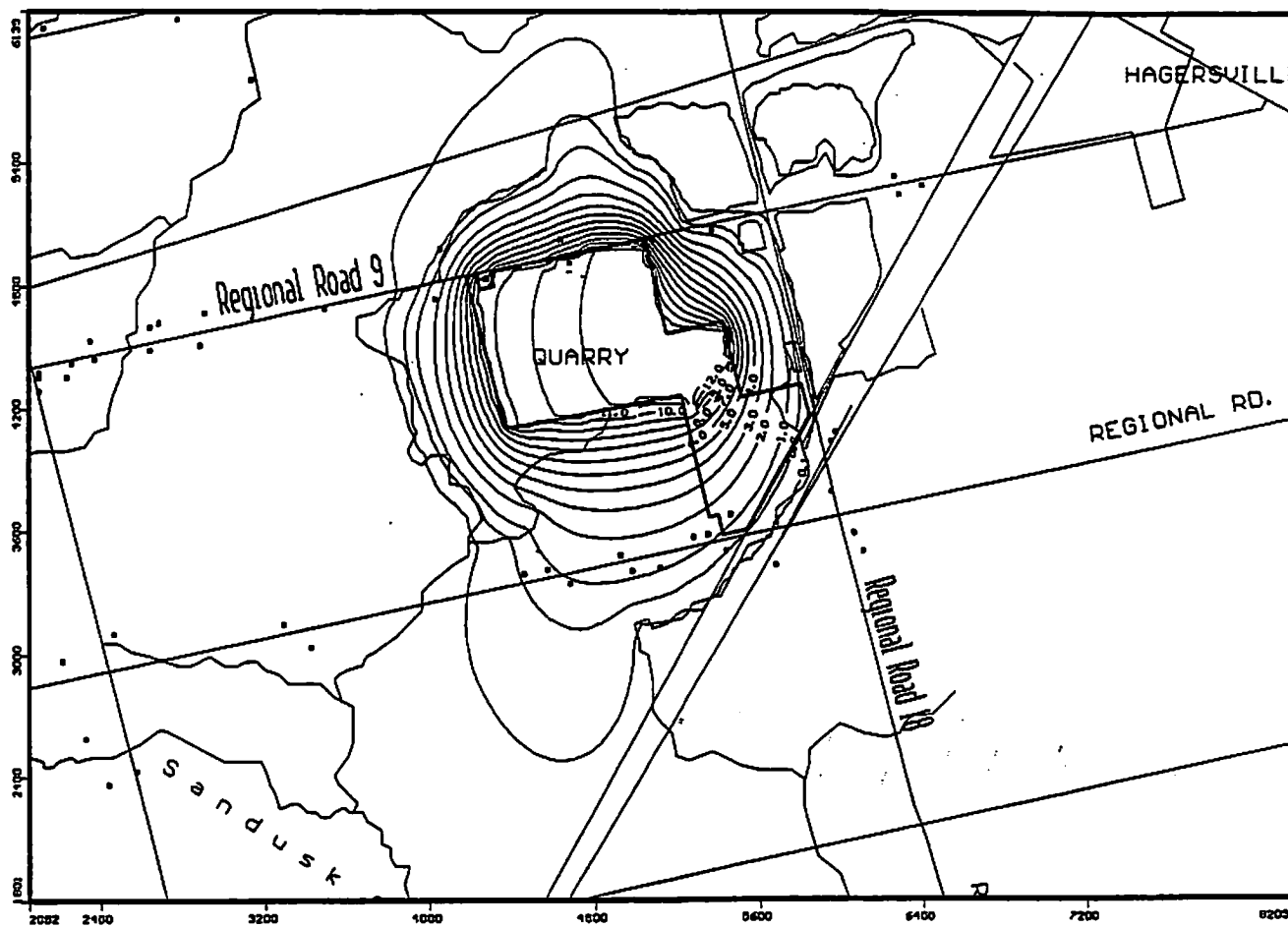
Agra Earth & Env. - Mississauga, ON
 Project: Hagersville Quarry
 Description: FIGURE 5. 5 Year Drawdown
 Modeller: JZ
 25 Jan 99

Visual MODFLOW v.2.60, (C) 1995-1997
 Waterloo Hydrogeologic Software
 NC: 117 NR: 139 NL: 6
 Current Layer: 5



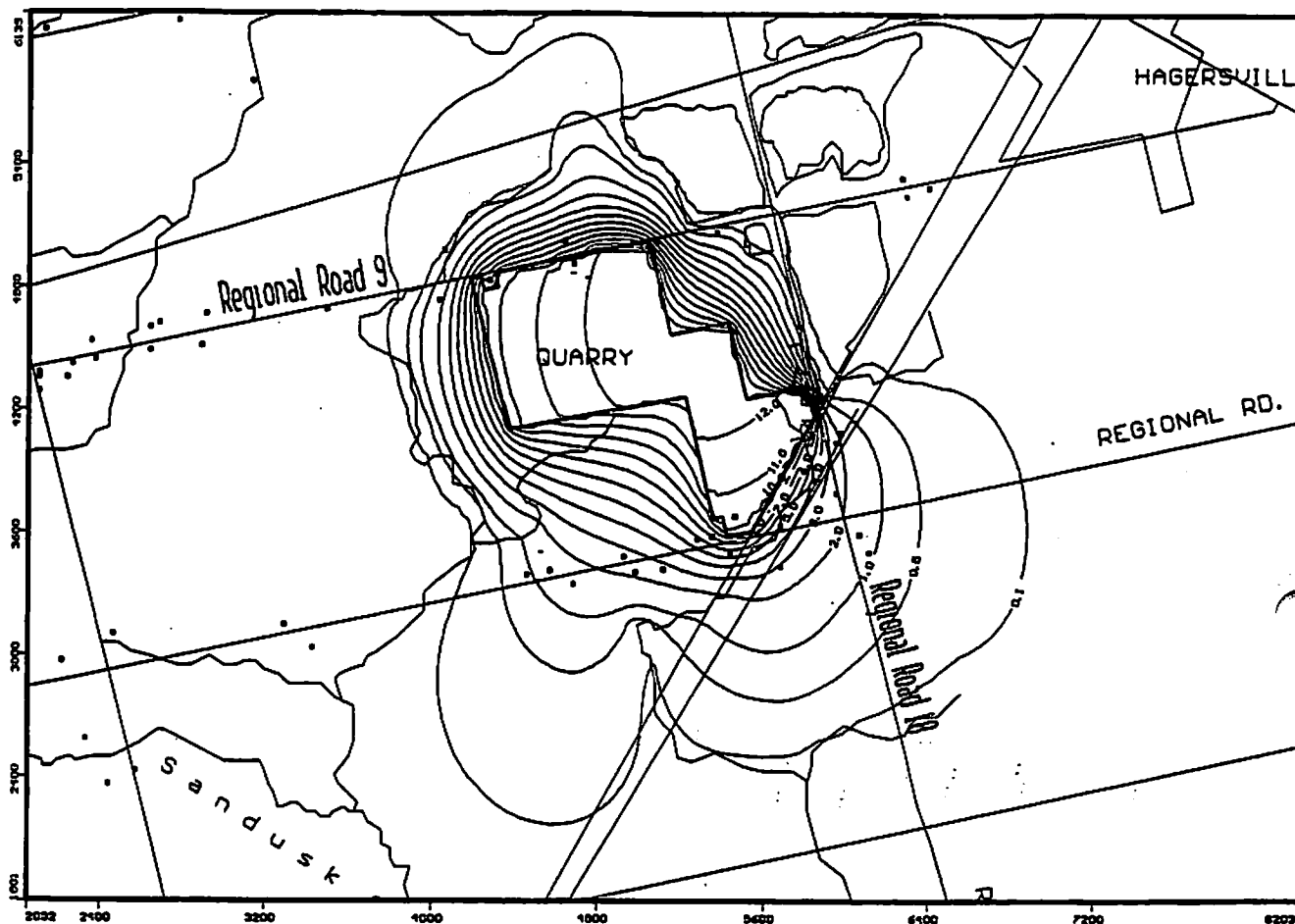
Agra Earth & Env. - Mississauga, ON
Project: Hagersville Quarry
Description: FIGURE 5. 5 Year Drawdown
Modeller: JZ
25 Jan 99

Visual MODFLOW v.2.60, (C) 1995-1997
Waterloo Hydrogeologic Software
NC: 117 NR: 139 NL: 6
Current Layer: 5



Agra Earth & Env. - Mississauga, ON
 Project: Hagersville Quarry
 Description: FIGURE 7. 25Year Drawdown
 Modeller: JZ
 25 Jan 99

Visual MODFLOW v.2.60, (C) 1995-1997
 Waterloo Hydrogeologic Software
 NC: 117 NR: 139 NL: 6
 Current Layer: 5



Agra Earth & Env. - Mississauga, ON
Project: Hagersville Quarry
Description: FIGURE 8. 50Year Drawdown
Modeller: JZ
25 Jan 99

Visual MODFLOW v.2.60, (C) 1995-1997
Waterloo Hydrogeologic Software
NC: 117 NR: 139 NL: 6
Current Layer: 5

TABLES

TABLE 1: IMPACT OF QUARRY DEWATERING

Variant	Description	Houses Affected (drawdown > 1 m)*				Stabilized Inflow into Quarry (m ³ /day)			
		5 years	10 years	25 years	50 years	5 years	10 years	25 years	50 years
1	Base Case	1	4	10	20	145	155	177	249
2	Increased hydraulic conductivity	4	10	16	23	293	336	459	640
3	More isotropic bedrock	2	4	11	23	193	219	289	418
4	More anisotropic bedrock	2	4	12	15	132	146	197	267
5	Reduced storage coefficients	4	7	13	21	135	159	236	334
6	Higher water levels in ponds	2	4	12	20	166	186	243	338
7	Reduced infiltration rate	2	4	13	22	130	137	151	210

*Assuming that all houses are on groundwater

TABLE 2: WATER LEVEL IMPACTS

5 Years	10 Years	25 Years	Quarry Completion
Gagliani*	Gagliani Nicholas O'Brien Kenneth Bowen Edward O'Brien	Gagliani Nicholas O'Brien Albert Bosma D. Parkinson Arthur Deboer R. Morris Kevin Sheppard Les McKeen Kenneth Bowen Edward O'Brien	Gagliani** Nicholas O'Brien** Albert Bosma** D. Parkinson** Arthur Deboer** R. Morris Les McKeen Kenneth Bowen** L. & G. Gowan Edward O'Brien** Brian Roulston John Schraa Ross Gibbons** Thomas Phibbs Ronald Hanson** Kevin Sheppard Doug Wilson M. Roulston Unknown Unknown

Notes:

Impact is defined as a drop in the water level of 1 or more metres.

* - Occupied by John Taylor (tenant)

** - Predicted to experience a drop in water level of greater than 3 m at completion of quarry

Homeowner names in bold type use cisterns as their source of water.

**APPENDIX A
BOREHOLE LOGS**

BOREHOLE: BH1

Drilling Date: April 28, 1998

2

Project: Hagersville Proposed Quarry

Contractor: All-Terrain Drilling

Project no. 9088

Location: see Figure 2

Depth (metres)	Drilling Method	Description	Run No.	RQD (%)	Fract Ind (per 0.25 metres)	We Data
1	Auger, NW Casing Set	Overburden: Grey brown Silty Clay	4 m			
2						
3		- coarser, possible cobbles or weathered bedrock at 3.4 m				
4		3.9 m				
5	NQ Core (open hole in rock)	Onondaga Formation: Brown grey, thinly to medium bedded, slightly shaley limestone with abundant crinoid hash, occasional rugose coral, occasional styoiltes - moderate to abundant grey and white chert nodules	1	85%	3 1 2 0 0 1 2 1 3	
6		6.5 m	6.3 m		1 2 3 0 1 0 0 1 0 1	
7		Bois Blanc Formation; Unit # 3 Dark grey grading to tan brown, thinly to thickly bedded limestone with abundant shale partings, abundant rugose and tabulate coral, lower contact sharp, fossiliferous - occasional chert nodules	2	85%	1 2 3 0 1 0 0 1 0 1	
8					1 0 1 0 1 0 1 0 1	
9		9.3 m	9.6 m		1 2 1 1 2 1 1 0 0	
10		Bois Blanc Formation; Unit # 2 Bluish grey, fine to medium bedded shaley limestone, abundant white calcarenite - trace to occasional chert nodules	3	85%	1 2 1 1 2 1 1 0 0	
11					1 2 1 1 2 1 1 0 0	

BOREHOLE: BH1

Drilling Date: April 28, 1998

Project: Hagersville Proposed Quarry

Contractor: All-Terrain Drilling

Project no. 9088

Location: see Figure 2

2

[illegible]

BOREHOLE: BH2

Drilling Date: April 29, 1998

Project: Hagersville Proposed Quarry

Contractor: All-Terrain Drilling

Project no. 9088

Location: see Figure 2

Depth (metres)	Drilling Method	Description	Run No	RQD (%)	Fract Ind (per 0.25 metres)	Well Details
1	Auger, NW Casing Set	Overburden:	3.5 m			
2		Grey brown Silty Clay				
3		3.4 m				
4	NQ Core (open hole in rock)	Onondaga Formation;	1			
5		Brown grey, slightly shaley limestone, with occasional shale partings, occasional rugose, crinoids and chert				
6		Blue grey to light grey limestone, abundant crinoids, cherty from 4.2 m bgs to 5.9 m bgs				
7		drilling problems - sample very fractured				
8		5.9 m	2	63%		
9		Bois Blanc Formation; Unit # 3				
10		Grey limestone, occasional shale parting, abundant crinoidal hash, few rugose and tabulate corals, moderately cherty, some slump structures	3			
11		8.7 m				
		Bois Blanc Formation; Unit # 2	9.5 m			
		Dark to blue grey, thinly bedded shaley limestone, clacarenite, fine chert and no coral				
		9.6 m				
		Bois Blanc Formation; Unit # 1				
		Light tan brown, medium bedded limestone, abundant rugose corals, occasional tabulate corals, shale partings				
		- abundant blue grey chert nodules, occasional white cherty bands, lower and upper contacts sharp				

Project no. 9088

Drilling Date: April 29, 1998

Contractor: All-Terrain Drilling

Location: see Figure 2

2

[illegible]

BOREHOLE: BH3

Drilling Date: May 4, 1998

Project: Hagersville Proposed Quarry

Contractor: All-Terrain Drilling

Project no. 9088

Location: see Figure 2

Depth (metres)	Drilling Method	Description	Run No.	RQD (%)				Fract Ind (per 0.25 metres)				Well Details
				100	75	50	25	10	5	2	1	
1	Auger, NW Casing Set	Overburden: Grey brown Silty Clay										
2		2.1m										
3	NQ Core (open hole in rock)	Onondaga Formation; Brown grey, medium bedded limestone, occasional shale partings, moderate rugose and tabulate coral, moderate chert nodules	2.2 m									
4		4.3 m										
5		Bols Blanc Formation; Unit #3 Grey to light grey shaley limestone to limestone, abundant crinoidal hash, occasional stylolite, few rugose and tabulate corals - 1 blue grey chert bed	4.6 m									
6		5.8 m										
7		Bols Blanc Formation; Unit #2 Bluish grey, fine bedded shaley limestone, abundant clacarenite, one bed with abundant chert and rugose coral from 6.1 m bgs to 6.7 m bgs	7.6 m									
8		8.8 m										
9		Bols Blanc Formation; Unit #1 Tan brown, medium bedded limestone, abundant rugose corals occasional tabulate corals, occasional shale partings - abundant blue grey chert nodules, several 10 cm thick chert bands, lower contact very sharp, siliceous, with blue grey chert nodules	10.7m									
10												
11												

BOREHOLE: BH3

Drilling Date: May 4, 1998

Project: Hagersville Proposed Quarry

Contractor: All-Terrain Drilling

Project no. 9088

Location: see Figure 2

2

Depth (m)	Drilling Method	Description	Run No.	ROD (%)					Fract Ind					Well Details (continued)
				8	9	10	11	12	1	2	3	4	5	
12	NQ Core (open hole in rock)	11.8	4	100										
13		Springdale Sandstone Member: Light brown calcareous sandstone, occasional shale partings rare tabulate coral, with approximately 0.3 m thick glauconitic bed												
14		End of Drillhole at 13.7 m												
15														
16														
17														
18														
19														
20														
21														
22														

BOREHOLE: BH4

Drilling Date: May 5, 1998

Project: Hagersville Proposed Quarry

Contractor: All-Terrain Drilling

Project no. 9088

Location: see Figure 2

Depth (metres)	Drilling Method	Description	Run No.	RQD (%)					Fract Ind (per 0.25 metres)					Well Details
				2	5	5	5	5	2	5	5	5	5	
1	Auger, NW Casing Set	Overburden: Grey brown Silty Clay												
2														
3														
4														
5	NQ Core (open hole in rock)	Onondaga Formation; Grey, fossiliferous limestone, occasional shale partings moderate to abundant chert nodules	1	50%					2					
6		Bois Blanc Formation; Unit # 3 Dark grey shaley limestone coarsening with depth to light grey limestone, occasional rugose coral, stylolites and shale partings - moderate chert nodules	6.1 m						1					
7		7 m							4					
8		Bois Blanc Formation; Unit # 2 Grey shaley limestone, abundant calcarenite, rare rugose and tabulate coral, moderate fine chert nodules - lower 0.3 m has more chert and is slightly coarser, may be Bois Blanc Formation; Unit # 1	2						3					
9				61%					2					
10									0					
11									0					
		End of Drillhole at 9.4 m	9.4 m						0					

**APPENDIX B
PUMPING TEST AND
RESPONSE TEST DATA**

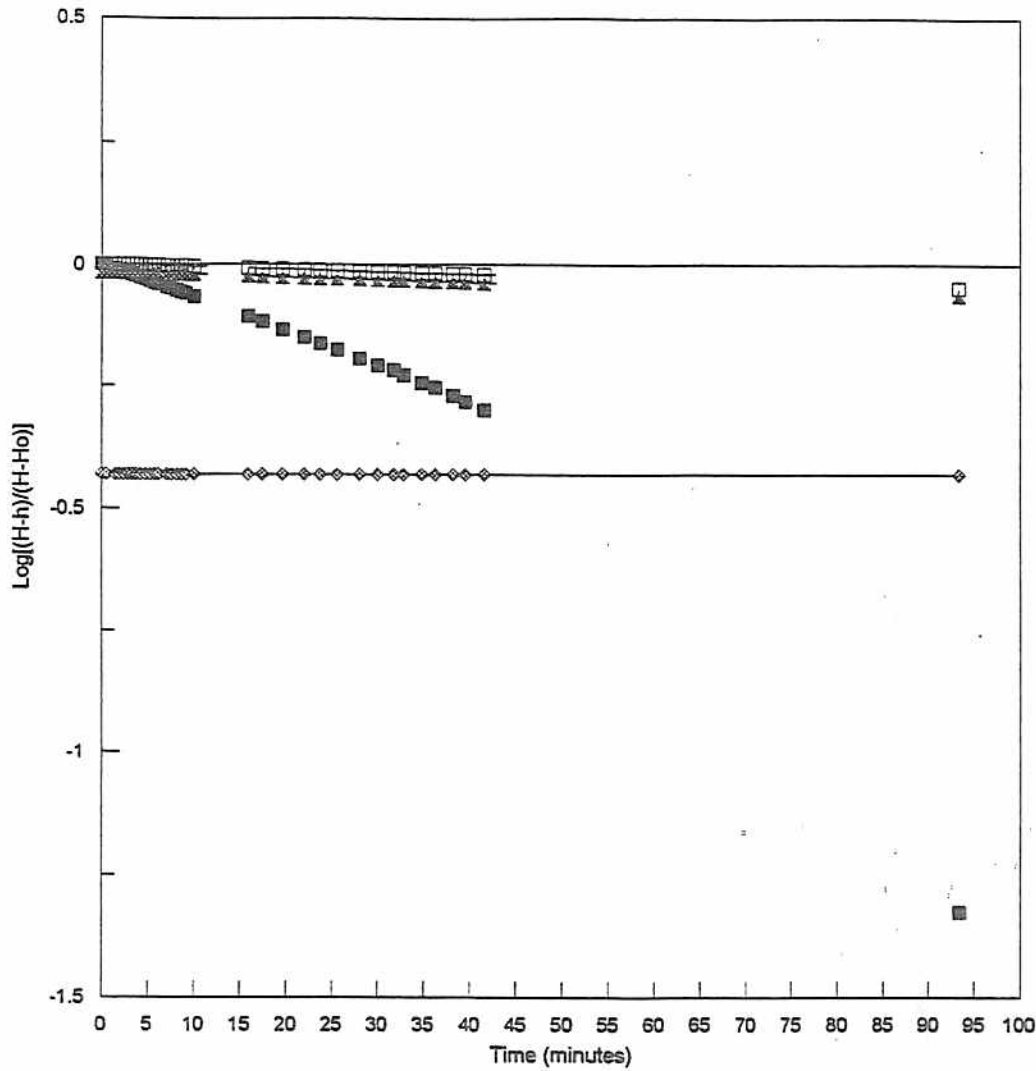
SLUG TEST DATA SHEET

Date: November 26, 1998
 Project Name: Hagersville
 Borehole:
 Pipe Size (d): 0.051 m
 Seal Location: N.A. m
 Static Level (H): 5.76 m
 H-H0: -5.74 m

Work Order No.: TK98-10-6
 Monitor No.: MW-1
 Borehole Diameter (D): 0.205 m
 Slotted Interval: m
 Screen Length (L): 14.10 m
 Initial Water Level (H0): 11.50 m
 Completed By:

ACTUAL TIME				CUMULATIVE TIME INTERVAL (seconds)	CUMULATIVE TIME INTERVAL (minutes)	WATER LEVEL (h) (metres)	RECOVERY (H-h) (metres)	(H-h) (H-H0)	.37 line	log (H-h) (H-H0)	COMMENTS
day	hh	min	sec								
16	0	0	0	0.00	0.00	11.50	-5.74	1.00	-0.4318	0.0000	
16	0	0	30	30.00	0.50	11.11	-5.35	0.93	-0.4318	-0.0306	
16	0	1	0	60.00	1.00	10.55	-4.79	0.83	-0.4318	-0.0786	
16	0	1	30	90.00	1.50	10.13	-4.37	0.76	-0.4318	-0.1184	
16	0	2	0	120.00	2.00	9.74	-3.98	0.69	-0.4318	-0.1590	
16	0	2	30	150.00	2.50	9.35	-3.59	0.63	-0.4318	-0.2038	
16	0	3	0	180.00	3.00	9.00	-3.24	0.56	-0.4318	-0.2484	
16	0	3	30	210.00	3.50	8.68	-2.92	0.51	-0.4318	-0.2935	
16	0	4	0	240.00	4.00	8.38	-2.62	0.46	-0.4318	-0.3406	
16	0	4	30	270.00	4.50	8.10	-2.34	0.41	-0.4318	-0.3897	
16	0	5	0	300.00	5.00	7.87	-2.11	0.37	-0.4318	-0.4346	
16	0	5	30	330.00	5.50	7.58	-1.82	0.32	-0.4318	-0.4988	
16	0	6	0	360.00	6.00	7.37	-1.61	0.28	-0.4318	-0.5521	
16	0	6	30	390.00	6.50	7.18	-1.42	0.25	-0.4318	-0.6066	
16	0	7	0	420.00	7.00	7.02	-1.26	0.22	-0.4318	-0.6585	
16	0	7	30	450.00	7.50	6.86	-1.10	0.19	-0.4318	-0.7175	
16	0	8	0	480.00	8.00	6.73	-0.97	0.17	-0.4318	-0.7721	
16	0	8	30	510.00	8.50	6.60	-0.84	0.15	-0.4318	-0.8346	
16	0	10	0	600.00	10.00	6.34	-0.58	0.10	-0.4318	-0.9955	
16	0	11	0	660.00	11.00	6.24	-0.48	0.08	-0.4318	-1.0777	
16	0	12	0	720.00	12.00	6.17	-0.41	0.07	-0.4318	-1.1461	
16	0	13	0	780.00	13.00	6.14	-0.38	0.07	-0.4318	-1.1791	
16	0	15	0	900.00	15.00	6.10	-0.34	0.06	-0.4318	-1.2274	
16	0	17	0	1020.00	17.00	6.09	-0.33	0.06	-0.4318	-1.2404	

Slug Test Farm Well



$$K = \frac{d^2 \ln(L/d + (1+L/D)^{0.5})}{8 \times L \times T_0}$$

$$K = 3.2E-08 \text{ m/s}$$

Where:

K	=	Hydraulic Conductivity
d	=	Monitor Diameter
D	=	Borehole Diameter
h	=	Water Level
H0	=	Initial Water Level
H	=	Static Water Level
L	=	Screen Length
T0	=	Time Lag
	=	3000 seconds

Note:

The Time Lag is the time at which $(H-h)/(H-H_0) = 0.37$
 $(\log(0.37) = -0.4318)$.

PUMPING TEST DATA

Project : TK98-10-8
Pump Well : MW1

Location: Hagersville
Static Water Level : 5.76 mbtoc

Date: November 26, 1998
Stickup 0.88 m

Elapsed Time (min)	Water Level	Pumping Rate
0	7.00	1 gpm
0.5	7.10	
1	7.11	
1.5	7.12	
2	7.12	
2.5	7.16	
3	7.20	
3.5	7.23	
4	7.28	
4.5	7.31	
5	7.34	
5.5	7.36	
6	7.37	
6.5	7.34	
7	7.31	
7.5	7.30	
8	7.30	
8.5	7.31	1.5 gpm
9	7.32	
9.5	7.32	
10	7.34	
11	7.36	
12	7.37	
13	7.39	
14	7.40	
15	7.41	
16	7.40	
17	7.41	
18	7.51	
19	7.60	
20	7.83	
20.5	7.79	
21	7.99	
21.5	8.05	
22	8.13	
22.5	8.19	
23	8.24	
23.5	8.29	
24	8.35	
24.5	8.37	
25	8.40	
25.5	8.42	
26	8.50	
26.5	8.52	
27	8.55	
27.5	8.57	
28	8.60	
28.5	8.62	
29	8.65	
29.5	8.68	
30	8.70	
31	8.75	
32	8.81	
33	8.90	

Project : TK98-10-6
 Pump Well : MW1

Location: Hagersville
 Static water Level : 5.76 mbtoc

Date: November 26, 1998
 Stickup 0.88 m

Elapsed Time (min)	Water Level	Pumping Rate
34	8.97	
35	9.05	
36	9.17	
37	9.20	
38	9.21	
39	9.22	
40	9.24	
42	9.25	
44	9.26	
46	9.29	
48	9.32	
50	9.34	
55	9.37	
60	9.42	2 gpm
62	9.62	
64	10.16	
66	10.53	
68	10.91	
70	11.21	
75	12.11	
80	12.61	
85	13.00	
90	13.27	
95	13.45	
100	13.60	
105	13.70	End Test

S**PUMPING TEST DATA****Project : TK98-10-6****Location: Hagersville****Date: November 27, 1998****Pump Well : MW2****Static Water Level : 4.27 mbtoc****Stickup 0.76 m**

Elapsed Time (min)	Water Level	Pumping Rate
0	4.15	1 gpm
0.5	5.00	
1	5.38	
1.5	5.50	
2	5.69	
2.5	5.81	
3	5.92	
3.5	6.05	
4	6.15	
4.5	6.28	
5	6.36	
5.5	6.41	
6	6.51	
6.5	6.59	
7	6.64	
7.5	6.72	
8	6.79	
8.5	6.84	
9	6.91	
9.5	6.98	
10	7.03	
11	7.10	
12	7.17	
13	7.23	
14	731.00	
15	7.41	
16	7.51	
17	7.59	
18	7.71	
19	7.80	
20	7.93	
22	8.10	
24	8.27	
26		
28	8.46	
30	8.49	
32	8.62	

Project : TK98-10-6
 Pump Well : MW2

Location: Hagersville
 Static water Level : 4.27 mbtoc

Date: November 27, 1998
 Stickup 0.76 m

Elapsed Time (min)	Water Level	Pumping Rate
34	8.80	
36	8.94	
38	9.05	
40	9.16	
45	9.28	
50	9.64	
55	9.82	
60	9.92	
61	10.16	1.5 gpm
61.5	10.27	
63.5	10.66	
64.5	10.95	
65.5	11.18	
66.5	11.36	
67.5	11.64	
68.5	11.80	
69.5	12.01	
70.5	12.18	
71.5	12.37	
72.5	12.51	
73.5	12.68	
74.5	12.79	
75.5	12.88	End Test

S

PUMPING TEST DATA

Project : TK98-10-6

Location: Hagersville

Date: November 27, 1998

Pump Well : MW3

Static Water Level : 2.26 mbtoc

Stickup 0.82 m

Elapsed Time (min)	Water Level	Pumping Rate
0	2.50	1 gpm
0.5	2.53	
1	2.54	
1.5	2.55	
2	2.55	
2.5	2.55	
3	2.56	
3.5	2.56	
4	2.56	
4.5	2.55	
5	2.55	1.5 gpm
5.5	2.55	
6	2.55	
6.5	2.62	
7	2.66	
7.5	2.67	
8	2.68	
8.5	2.69	
9	2.69	
9.5	2.70	
10	2.70	2 gpm
11	2.70	
12	2.70	
13	2.81	
13.5	2.82	
14	2.83	
14.5	2.82	
15	2.83	
15.5	2.84	
16	2.84	
16.5	2.84	3 gpm
17	2.84	
17.5	2.85	
18	2.86	
18.5	2.86	
19	2.87	
19.5	2.87	
20	-	
20.5	2.99	
21	3.01	
21.5	3.03	
22	3.03	
22.5	3.04	
23	3.04	
23.5	3.05	
24	3.05	
24.5	3.06	
25	3.07	
25.5	3.09	
26	3.10	
26.5	3.11	
27	3.12	
27.5	3.12	
28	3.13	

Project : TK98-10-6
 Pump Well : MW3

Location: Hagersville
 Static Water Level : 2.26 mbtoc

Date: November 27, 1998
 Stickup 0.82 m

Elapsed Time (min)	Water Level	Pumping Rate
28.5	3.14	
29	3.14	
29.5	3.15	
30	3.15	
30.5	3.26	
31	3.30	
31.5	3.34	
32	3.37	
32.5	3.39	
33	3.41	
34	3.44	
34.5	3.45	
35	3.46	
35.5	3.46	
36	3.47	
36.5	3.48	
37	3.49	
38	3.50	
39	3.52	
40	3.55	
41	3.57	
42	3.59	
43	3.60	
44	3.63	
45	3.63	
46	3.64	
47	3.65	
48	3.65	
49	3.67	
50	3.68	
51	-	5 gpm
52	7.70	
53	3.80	
53.5	3.82	
54	3.84	
54.5	3.85	
55	3.88	
55.5	3.89	
56	3.90	
56.5	3.91	
57	3.92	
57.5	3.93	
58	3.94	
58.5	3.95	
59	3.96	
59.5	3.97	
60	4.00	6 gpm
60.5	4.06	
61	4.10	
62	4.14	
62.5	4.15	
63	4.16	
63.5	4.21	
64.5	4.24	
65.5	4.30	
66.5	4.32	

S

Project : TK98-10-6
Pump Well : MW3

Location: Hagersville
Static Water Level : 2.26 mbtoc

Date: November 27, 1998
Stickup 0.82 m

Elapsed Time (min)	Water Level	Pumping Rate
67.5	4.34	
68	4.35	
69	4.36	
70	4.37	
72	4.43	
74	4.49	
76	4.59	
78	4.67	
80	4.70	
82	4.75	
84	4.80	
86	4.87	
88	4.93	
90	5.00	
92	5.09	
94	5.16	
96	5.21	
98	5.27	
100	5.30	
105	5.36	
110	5.42	
115	5.51	
120	5.60	End Test

PUMPING TEST DATA

Project : TK98-10-6
Pump Well : MW4

Location: Hagersville
Static Water Level : 3.12 mbtoc

Date: November 26, 1998
Stickup 1.0 m

Elapsed Time (min)	Water Level	Pumping Rate
0	3.28	1.5 gpm
0.5	4.15	
1	4.57	
1.5	4.98	
2	5.43	
2.5	5.85	
3	6.23	
3.5	6.64	
4	7.02	
4.5	7.37	
5	7.78	
5.5	8.10	
6	8.37	
6.5	8.67	
7	8.97	
7.5	9.25	
8	9.52	
8.5	9.78	
9	10.07	End Test

5

PUMPING TEST DATA

Project : TK98-10-6
 Pump Well : Barn Well

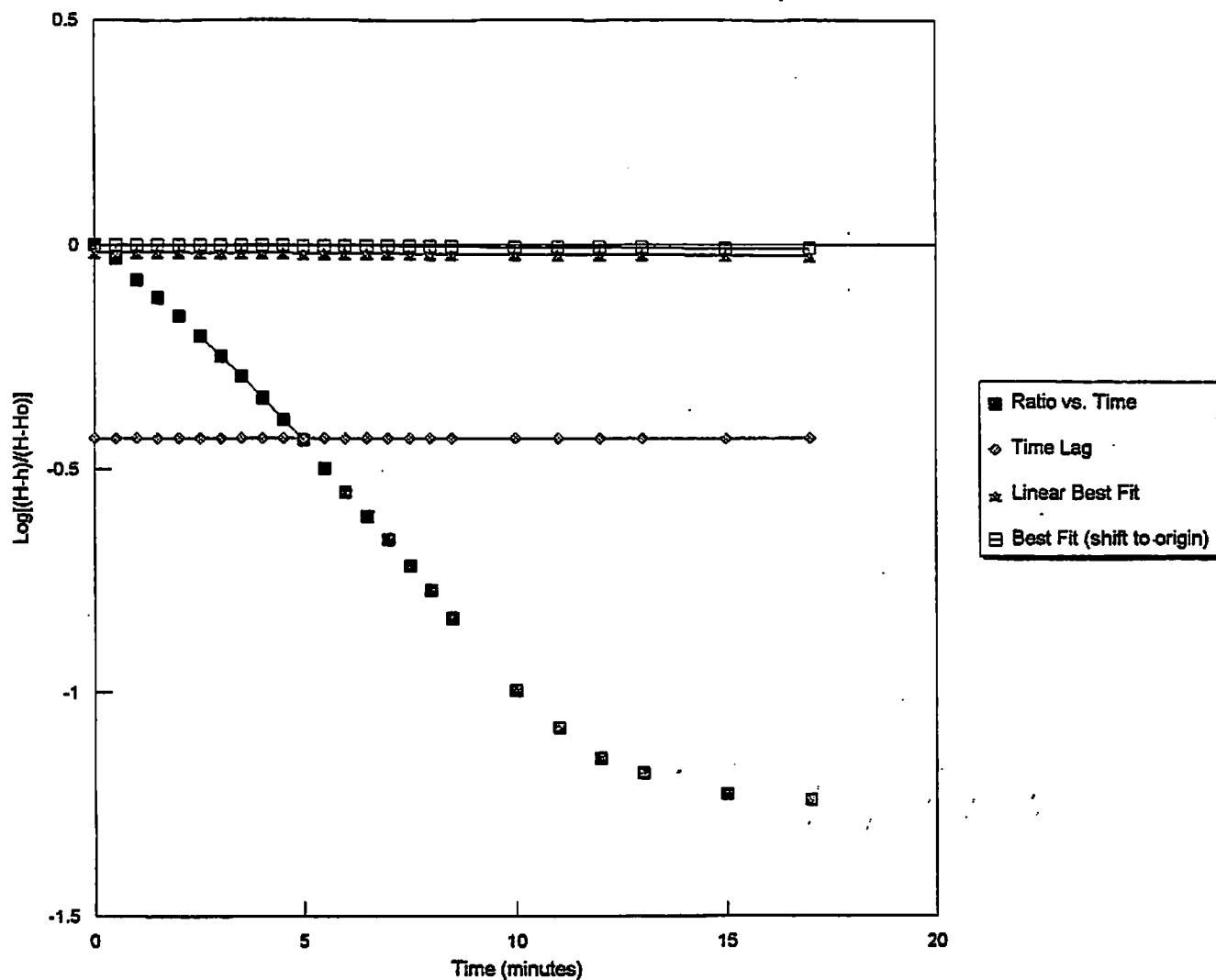
Location: Hagersville
 Static Water Level : 3.63 mbtoc

Date: November 26, 1998
 Stickup NA

Elapsed Time (min)	Water Level	Pumping Rate
0	4.21	3 gpm
0.5	4.23	
1	4.25	
1.5	4.30	
2	4.44	
2.5	4.74	
3	4.92	
3.5	5.17	
4	5.39	
4.5	5.62	
5	5.84	
5.5	6.06	
6	6.28	
6.5	6.49	
7	6.76	
7.5	6.99	
8	7.24	
8.5	7.45	
9	7.69	
9.5	7.90	
10	8.12	
11	8.66	
12	9.09	
13	9.58	
14	10.03	
15	10.48	
16	10.98	
17	11.57	
18	11.96	
19	12.43	
20	12.91	
22	13.96	
24	14.87	
26	15.93	
28	17.06	
30	18.40	
35	20.98	End Test
40	Broke suction	

Slug Test

MW-1



$$K = \frac{d^2 \ln(L/d + (1+L/D)^{0.5})}{8 \times L \times T_0}$$

$$K = 3.9E-07 \text{ m/s}$$

Where:

K	=	Hydraulic Conductivity
d	=	Monitor Diameter
D	=	Borehole Diameter
h	=	Water Level
H ₀	=	Initial Water Level
H	=	Static Water Level
L	=	Screen Length
T ₀	=	Time Lag
	=	330 seconds

Note:

The Time Lag is the time at which (H-h)/(H-H₀) = 0.37
(log(0.37) = -0.4318).

SLUG TEST DATA SHEET

Date: November 26, 1998
 Project Name: Hagersville
 Borehole:
 Pipe Size (d): 0.051 m
 Seal Location: N.A. m
 Static Level (H): 4.27 m
 H-H0: -8.96 m

Work Order No.: TK98-10-6
 Monitor No.: MW-2
 Borehole Diameter (D): 0.205 m
 Slotted Interval: m
 Screen Length (L): 11.70 m
 Initial Water Level (H0): 11.23 m
 Completed By:

ACTUAL TIME				CUMULATIVE TIME INTERVAL (seconds)	CUMULATIVE TIME INTERVAL (minutes)	WATER LEVEL (h) (metres)	RECOVERY (H-h) (metres)	(H-h) (H-H0)	.37 lln	log (H-h) (H-H0)	COMMENTS
day	hh	min	sec								
16	0	0	0	0.00	0.00	11.23	-6.96	1.00	-0.4318	0.0000	
16	0	0	30	30.00	0.50	10.82	-6.55	0.94	-0.4318	-0.0264	
16	0	1	0	60.00	1.00	10.46	-6.19	0.89	-0.4318	-0.0509	
16	0	1	30	90.00	1.50	10.08	-5.81	0.83	-0.4318	-0.0784	
16	0	2	0	120.00	2.00	9.69	-5.42	0.78	-0.4318	-0.1086	
16	0	2	30	150.00	2.50	9.50	-5.23	0.75	-0.4318	-0.1241	
16	0	3	0	180.00	3.00	9.13	-4.86	0.70	-0.4318	-0.1560	
16	0	3	30	210.00	3.50	8.90	-4.63	0.67	-0.4318	-0.1770	
16	0	4	0	240.00	4.00	8.51	-4.24	0.61	-0.4318	-0.2152	
16	0	4	30	270.00	4.50	8.30	-4.03	0.58	-0.4318	-0.2373	
16	0	5	0	300.00	5.00	8.03	-3.76	0.54	-0.4318	-0.2674	
16	0	5	30	330.00	5.50	7.80	-3.53	0.51	-0.4318	-0.2948	
16	0	6	0	360.00	6.00	7.56	-3.29	0.47	-0.4318	-0.3254	
16	0	6	30	390.00	6.50	7.32	-3.05	0.44	-0.4318	-0.3583	
16	0	7	0	420.00	7.00	7.11	-2.84	0.41	-0.4318	-0.3893	
16	0	7	30	450.00	7.50	6.91	-2.64	0.38	-0.4318	-0.4210	
16	0	8	0	480.00	8.00	6.75	-2.48	0.36	-0.4318	-0.4482	
16	0	8	30	510.00	8.50	6.56	-2.29	0.33	-0.4318	-0.4828	
16	0	10	0	570.00	9.50	6.26	-1.99	0.29	-0.4318	-0.5438	
16	0	11	0	630.00	10.50	5.99	-1.72	0.25	-0.4318	-0.6071	
16	0	12	0	690.00	11.50	5.82	-1.55	0.22	-0.4318	-0.6523	
16	0	13	0	750.00	12.50	5.63	-1.36	0.20	-0.4318	-0.7091	
16	0	15	0	810.00	13.50	5.47	-1.20	0.17	-0.4318	-0.7634	
16	0	17	0	870.00	14.50	5.33	-1.06	0.15	-0.4318	-0.8173	
16	0	19	0	930.00	15.50	5.23	-0.96	0.14	-0.4318	-0.8603	
16	0	21	0	990.00	16.50	5.17	-0.90	0.13	-0.4318	-0.8884	
16	0	23	0	1110.00	18.50	5.03	-0.76	0.11	-0.4318	-0.9618	
16	0	25	0	1230.00	20.50	4.97	-0.70	0.10	-0.4318	-0.9975	
16	0	27	0	1350.00	22.50	4.91	-0.64	0.09	-0.4318	-1.0364	
16	0	29	0	1470.00	24.50	4.83	-0.56	0.08	-0.4318	-1.0944	

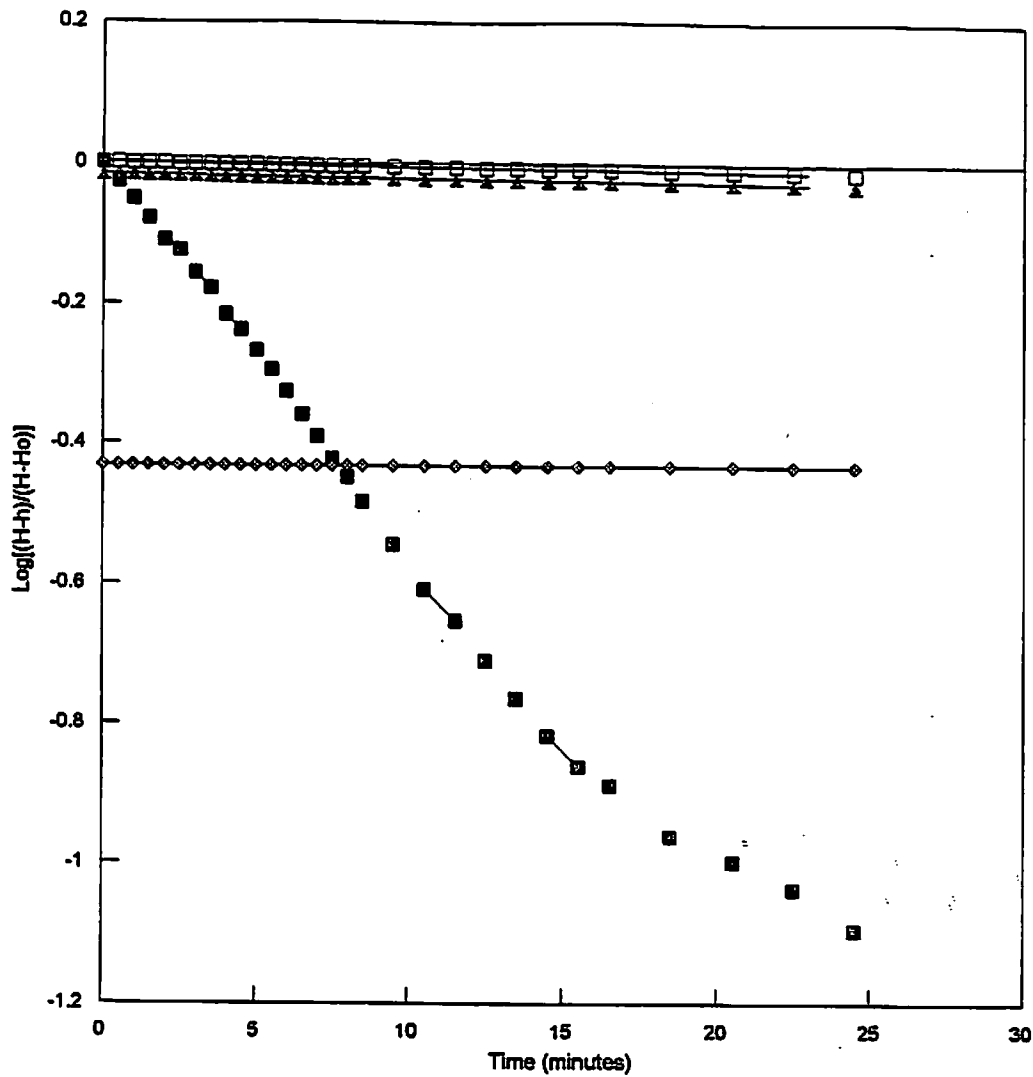
SLUG TEST DATA SHEET

Date: November 26, 1998
 Project Name: Hagersville
 Borehole:
 Pipe Size (d): 0.051 m
 Seal Location: N.A. m
 Static Level (H): 2.26 m
 H-H0: -1.61 m

Work Order No.: TK 98-10-6
 Monitor No.: MW-3
 Borehole Diameter (D): 0.205 m
 Slotted Interval: m
 Screen Length (L): 11.50 m
 Initial Water Level (H0): 3.87 m
 Completed By:

ACTUAL TIME				CUMULATIVE TIME INTERVAL (seconds)	CUMULATIVE TIME INTERVAL (minutes)	WATER LEVEL (h) (metres)	RECOVERY (H-h) (metres)	(H-h) (H-H0)	.37 line	log (H-h) (H-H0)	COMMENTS
day	hh	min	sec								
16	0	0	0	0.00	0.00	3.87	-1.61	1.00	-0.4318	0.0000	
16	0	0	30	30.00	0.50	3.58	-1.32	0.82	-0.4318	-0.0863	
16	0	1	0	60.00	1.00	3.51	-1.25	0.78	-0.4318	-0.1099	
16	0	1	30	90.00	1.50	3.46	-1.20	0.75	-0.4318	-0.1276	
16	0	2	0	120.00	2.00	3.41	-1.15	0.71	-0.4318	-0.1461	
16	0	2	30	150.00	2.50	3.38	-1.12	0.70	-0.4318	-0.1576	
16	0	3	0	180.00	3.00	3.36	-1.10	0.68	-0.4318	-0.1654	
16	0	3	30	210.00	3.50	3.32	-1.06	0.66	-0.4318	-0.1815	
16	0	4	0	240.00	4.00	3.29	-1.03	0.64	-0.4318	-0.1940	
16	0	4	30	270.00	4.50	3.27	-1.01	0.63	-0.4318	-0.2025	
16	0	5	30	330.00	5.50	3.23	-0.97	0.60	-0.4318	-0.2201	
16	0	6	30	390.00	6.50	3.20	-0.94	0.58	-0.4318	-0.2337	
16	0	7	30	450.00	7.50	3.16	-0.90	0.56	-0.4318	-0.2526	
16	0	8	30	510.00	8.50	3.13	-0.87	0.54	-0.4318	-0.2673	
16	0	10	0	630.00	10.50	3.08	-0.82	0.51	-0.4318	-0.2930	
16	0	11	0	690.00	11.50	3.06	-0.80	0.50	-0.4318	-0.3037	
16	0	12	0	750.00	12.50	3.03	-0.77	0.48	-0.4318	-0.3203	
16	0	13	0	810.00	13.50	3.02	-0.76	0.47	-0.4318	-0.3260	
16	0	19	0	990.00	16.50	2.98	-0.72	0.45	-0.4318	-0.3495	
16	0	21	0	1050.00	17.50	2.96	-0.70	0.43	-0.4318	-0.3617	
16	0	23	0	1110.00	18.50	2.94	-0.68	0.42	-0.4318	-0.3743	
16	0	25	0	1170.00	19.50	2.93	-0.67	0.42	-0.4318	-0.3808	

Slug Test MW-2



$$K = \frac{d^2 \ln(1/d + (1-L/D)^{0.5})}{8 \times L \times T_0}$$

$$K = 3.3E-07 \text{ m/s}$$

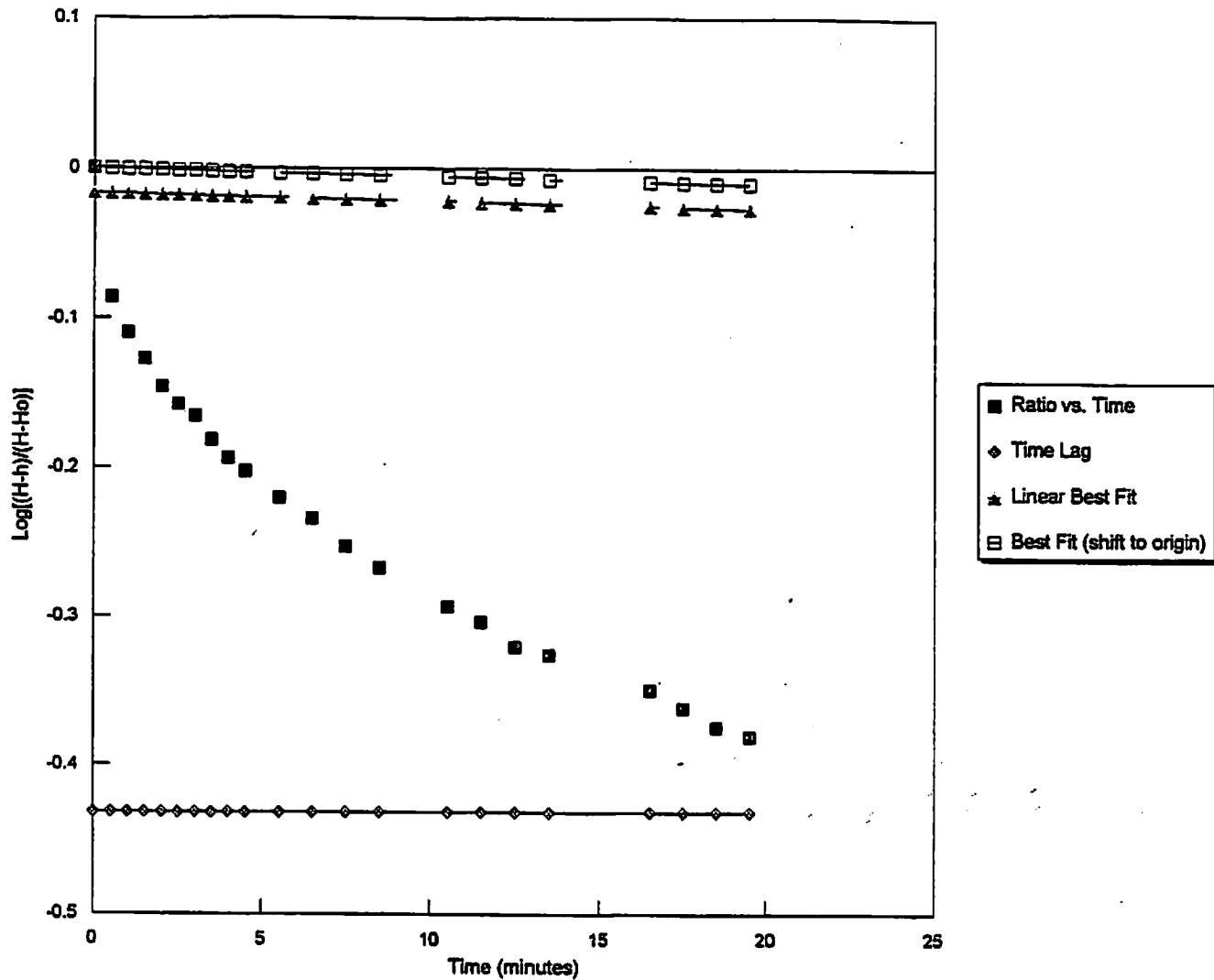
Where:

K	=	Hydraulic Conductivity
d	=	Monitor Diameter
D	=	Borehole Diameter
h	=	Water Level
H0	=	Initial Water Level
H	=	Static Water Level
L	=	Screen Length
T0	=	Time Lag
	=	465 seconds

Note:

The Time Lag is the time at which $(H-h)/(H-H_0) = 0.37$
($\log(0.37) = -0.4318$).

Slug Test MW-3



K	=	$\frac{d^2 \ln(1/d + (1-L/D)^{0.5})}{8 \times L \times T_0}$
K	=	1.0E-07 m/s
Where:		
K	=	Hydraulic Conductivity
d	=	Monitor Diameter
D	=	Borehole Diameter
h	=	Water Level
H0	=	Initial Water Level
H	=	Static Water Level
L	=	Screen Length
T0	=	Time Lag
	=	1500 seconds

Note:
The Time Lsg is the time at which $(H-h)/(H-H0) = 0.37$
($\log(0.37) = -0.4318$).

SLUG TEST DATA SHEET

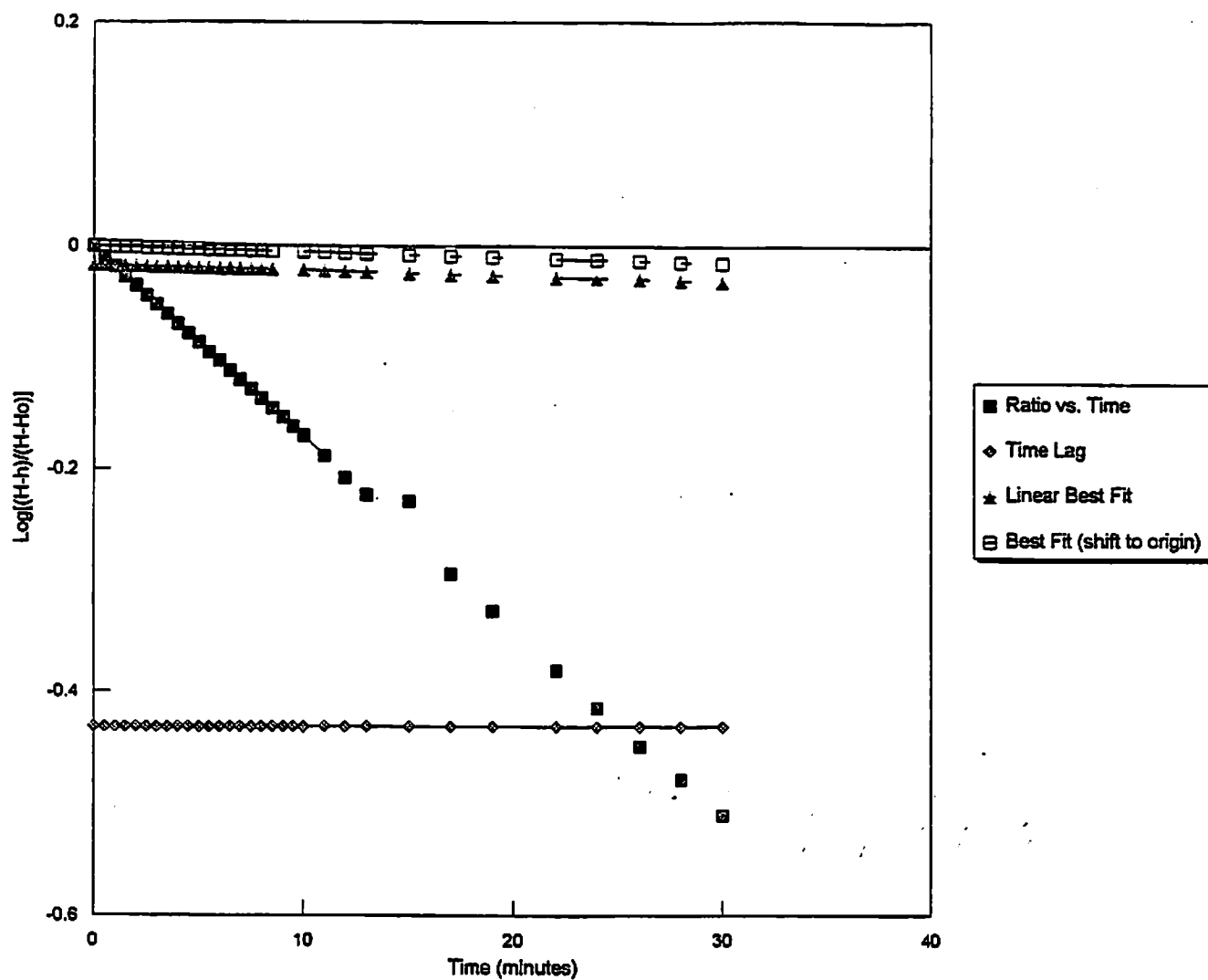
Date: November 26, 1998
 Project Name: Hagersville
 Borehole:
 Pipe Size (d): 0.051 m
 Seal Location: N.A. m
 Static Level (H): 3.12 m
 H-H0: -6.84 m

Work Order No.: TK98-10-6
 Monitor No.: MW-4
 Borehole Diameter (D): 0.205 m
 Slotted Interval: m
 Screen Length (L): 5.30 m
 Initial Water Level (H0): 9.96 m
 Completed By:

ACTUAL TIME				CUMULATIVE TIME INTERVAL (seconds)	CUMULATIVE TIME INTERVAL (minutes)	WATER LEVEL (h) (metres)	RECOVERY (H-h) (metres)	(H-h) (H-H0)	.37 line	log (H-h) (H-H0)	COMMENTS
day	hh	min	sec								
16	0	0	0	0.00	0.00	9.96	-6.84	1.00	-0.4318	0.0000	
16	0	0	30	30.00	0.50	9.81	-6.69	0.98	-0.4318	-0.0096	
16	0	1	0	60.00	1.00	9.68	-6.56	0.96	-0.4318	-0.0182	
16	0	1	30	90.00	1.50	9.55	-6.43	0.94	-0.4318	-0.0268	
16	0	2	0	120.00	2.00	9.43	-6.31	0.92	-0.4318	-0.0350	
16	0	2	30	150.00	2.50	9.30	-6.18	0.90	-0.4318	-0.0441	
16	0	3	0	180.00	3.00	9.19	-6.07	0.89	-0.4318	-0.0519	
16	0	3	30	210.00	3.50	9.07	-5.95	0.87	-0.4318	-0.0605	
16	0	4	0	240.00	4.00	8.95	-5.83	0.85	-0.4318	-0.0694	
16	0	4	30	270.00	4.50	8.84	-5.72	0.84	-0.4318	-0.0777	
16	0	5	0	300.00	5.00	8.73	-5.61	0.82	-0.4318	-0.0861	
16	0	5	30	330.00	5.50	8.62	-5.50	0.80	-0.4318	-0.0947	
16	0	6	0	360.00	6.00	8.52	-5.40	0.79	-0.4318	-0.1027	
16	0	6	30	390.00	6.50	8.41	-5.29	0.77	-0.4318	-0.1116	
16	0	7	0	420.00	7.00	8.31	-5.19	0.76	-0.4318	-0.1199	
16	0	7	30	450.00	7.50	8.21	-5.09	0.74	-0.4318	-0.1283	
16	0	8	0	480.00	8.00	8.11	-4.99	0.73	-0.4318	-0.1370	
16	0	8	30	510.00	8.50	8.01	-4.89	0.71	-0.4318	-0.1457	
16	0	9	0	540.00	9.00	7.92	-4.80	0.70	-0.4318	-0.1538	
16	0	9	30	570.00	9.50	7.83	-4.71	0.69	-0.4318	-0.1620	
16	0	10	0	600.00	10.00	7.74	-4.62	0.68	-0.4318	-0.1704	
16	0	11	0	660.00	11.00	7.55	-4.43	0.65	-0.4318	-0.1887	
16	0	12	0	720.00	12.00	7.36	-4.24	0.62	-0.4318	-0.2077	
16	0	13	0	780.00	13.00	7.21	-4.09	0.60	-0.4318	-0.2233	
16	0	15	0	900.00	15.00	7.16	-4.04	0.59	-0.4318	-0.2287	
16	0	17	0	1020.00	17.00	6.60	-3.48	0.51	-0.4318	-0.2935	
16	0	19	0	1140.00	19.00	6.34	-3.22	0.47	-0.4318	-0.3272	
16	0	21	0	1320.00	22.00	5.97	-2.85	0.42	-0.4318	-0.3802	
16	0	23	0	1440.00	24.00	5.75	-2.63	0.38	-0.4318	-0.4151	
16	0	25	0	1560.00	26.00	5.55	-2.43	0.36	-0.4318	-0.4494	
16	0	27	0	1680.00	28.00	5.39	-2.27	0.33	-0.4318	-0.4790	
16	0	29	0	1800.00	30.00	5.23	-2.11	0.31	-0.4318	-0.5108	
16	0	35	0	2100.00	35.00	4.90	-1.78	0.26	-0.4318	-0.5846	
16	0	37	0	2400.00	40.00	4.63	-1.51	0.22	-0.4318	-0.6561	
16	0	39	0	2700.00	45.00	4.39	-1.27	0.19	-0.4318	-0.7313	
16	0	41	0	3000.00	50.00	4.17	-1.05	0.15	-0.4318	-0.8139	

Slug Test

MW-4



$$K = \frac{d^2 \times \ln(0.4) \times (1 + L/D \times 0.5)}{8 \times L \times T_0}$$

$$K = 1.9E-07 \text{ m/s}$$

Where:

K = Hydraulic Conductivity
 d = Monitor Diameter
 D = Borehole Diameter
 h = Water Level
 H₀ = Initial Water Level
 H = Static Water Level
 L = Screen Length
 T₀ = Time Lag

Note:

The Time Lag is the time at which $(H-h)/(H-H_0) = 0.37$
 $(\log(0.37) = -0.4318)$.

1500 seconds

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SLUG TEST DATA SHEET


Date: November 26, 1998
 Project Name: Hagersville
 Borehole:
 Pipe Size (d): 0.051 m
 Seal Location: N.A. m
 Static Level (H): 3.63 m
 H-H0: -14.67 m

Work Order No.: TK98-10-6
 Monitor No.: Farm well
 Borehole Diameter (D): 0.205 m
 Slotted Interval: m
 Screen Length (L): 20.60 m
 Initial Water Level (H0): 18.30 m
 Completed By:

ACTUAL TIME				CUMULATIVE TIME INTERVAL (seconds)	CUMULATIVE TIME INTERVAL (minutes)	WATER LEVEL (h) (metres)	RECOVERY (H-h) (metres)	(H-h) (H-H0)	.37 line	log (H-h) (H-H0)	COMMENTS
day	hh	min	sec								
16	0	0	0	0.00	0.00	18.30	-14.67	1.00	-0.4318	0.0000	
16	0	0	30	30.00	0.50	18.20	-14.57	0.99	-0.4318	-0.0030	
16	0	1	29	89.00	1.48	18.00	-14.37	0.98	-0.4318	-0.0090	
16	0	1	55	115.00	1.92	17.90	-14.27	0.97	-0.4318	-0.0120	
16	0	2	25	145.00	2.42	17.80	-14.17	0.97	-0.4318	-0.0151	
16	0	2	54	174.00	2.90	17.70	-14.07	0.96	-0.4318	-0.0181	
16	0	3	21	201.00	3.35	17.60	-13.97	0.95	-0.4318	-0.0212	
16	0	3	45	225.00	3.75	17.50	-13.87	0.95	-0.4318	-0.0244	
16	0	4	15	255.00	4.25	17.40	-13.77	0.94	-0.4318	-0.0275	
16	0	4	46	286.00	4.77	17.30	-13.67	0.93	-0.4318	-0.0307	
16	0	5	15	315.00	5.25	17.20	-13.57	0.93	-0.4318	-0.0339	
16	0	5	46	346.00	5.77	17.10	-13.47	0.92	-0.4318	-0.0371	
16	0	6	13	373.00	6.22	17.00	-13.37	0.91	-0.4318	-0.0403	
16	0	7	7	427.00	7.12	16.80	-13.17	0.90	-0.4318	-0.0468	
16	0	7	39	459.00	7.65	16.70	-13.07	0.89	-0.4318	-0.0502	
16	0	8	9	489.00	8.15	16.60	-12.97	0.88	-0.4318	-0.0535	
16	0	8	39	519.00	8.65	16.50	-12.87	0.88	-0.4318	-0.0569	
16	0	9	9	549.00	9.15	16.40	-12.77	0.87	-0.4318	-0.0602	
16	0	10	5	605.00	10.08	16.20	-12.57	0.86	-0.4318	-0.0671	
16	0	15	55	955.00	15.92	15.10	-11.47	0.78	-0.4318	-0.1069	
16	0	17	29	1049.00	17.48	14.80	-11.17	0.76	-0.4318	-0.1184	
16	0	19	39	1179.00	19.65	14.40	-10.77	0.73	-0.4318	-0.1342	
16	0	21	57	1317.00	21.95	14.00	-10.37	0.71	-0.4318	-0.1507	
16	0	23	45	1425.00	23.75	13.70	-10.07	0.69	-0.4318	-0.1634	
16	0	25	37	1537.00	25.62	13.40	-9.77	0.67	-0.4318	-0.1765	
16	0	28	8	1688.00	28.13	13.00	-9.37	0.64	-0.4318	-0.1947	
16	0	30	2	1802.00	30.03	12.70	-9.07	0.62	-0.4318	-0.2088	
16	0	31	48	1908.00	31.80	12.50	-8.87	0.60	-0.4318	-0.2185	
16	0	32	52	1972.00	32.87	12.30	-8.67	0.59	-0.4318	-0.2284	
16	0	34	53	2093.00	34.88	12.00	-8.37	0.57	-0.4318	-0.2437	
16	0	36	19	2179.00	36.32	11.80	-8.17	0.56	-0.4318	-0.2542	
16	0	38	13	2293.00	38.22	11.50	-7.87	0.54	-0.4318	-0.2705	
16	0	39	35	2375.00	39.58	11.30	-7.67	0.52	-0.4318	-0.2816	
16	0	37	0	2496.00	41.60	11.00	-7.37	0.50	-0.4318	-0.2990	
16	0	37	0	5599.00	93.32	4.32	-0.69	0.05	-0.4318	-1.3276	

APPENDIX C
WELL SURVEY RECORDS

WATER WELL INVENTORY

PROJECT NAME		
DATE	Dec. 17, 98	PROJECT NO. 98-10-6
WELL INFORMATION		
PROPERTY LOCATION	RR#4	
	10	
	13	
	Wal pole	
	Heldimand	
	George Bowman	
	Same as above	
	768-3671	
	Yes	
	26-01200	
	drilled	
	6"	
	25-30 years (1964/12)	
	#4824	
	Bedrock	
	Domestic / Farm	
	95'	
	barn west of house well located	
	@ sw side of barn	
	7.8m.	
	top of casing	
	casing 3 1/2' above ground.	
ADDITIONAL NOTES		
 AGRA Earth & Environmental Limited		

WATER WELL INVENTORY

PAGE

POTENTIAL SOURCES OF CONTAMINATION RELATED TO LOCATION (ie: proximity to barnyard, gas tanks, etc):

next to barnyard

LOCATION OF SEPTIC BED/TANK:

N. of house?

CONDITION OF THE TOP OF THE WELL CASING:

good

ANY PAST PROBLEMS RELATED TO WATER QUANTITY AND QUALITY:

Has the well ever run dry: No

Problems with taste, colour, odour, etc: Sulphur (lots), Blackish

IS THE WELL EASILY ACCESSIBLE?

So So

IF YES, MAY WE CONDUCT A MONITORING STUDY ON THIS WELL?

Yes

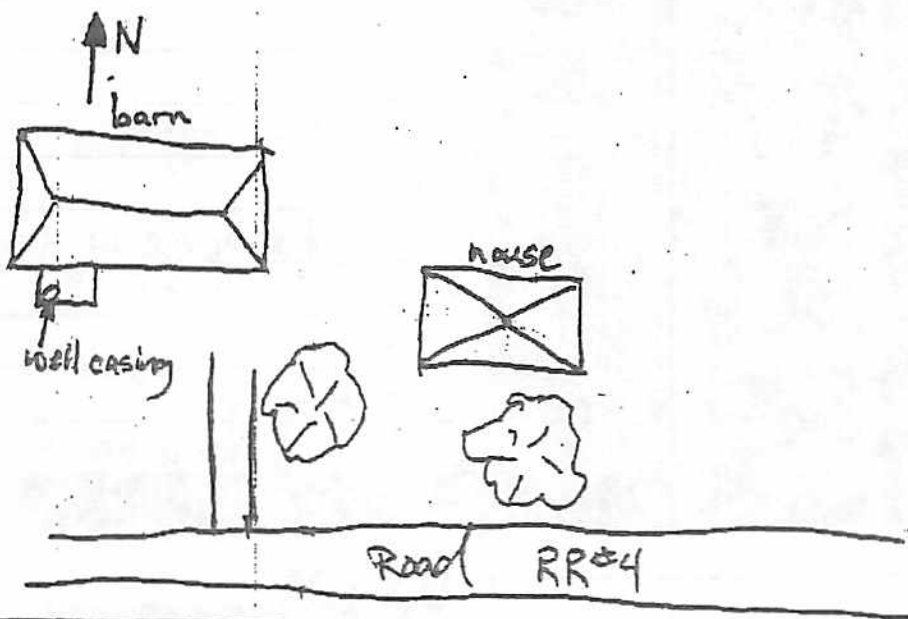
COMMENTS:

Type of Plumbing System:

Water Purification, Softeners, Filters etc.: sistern also

Children or Infants: Yes

APPROXIMATE WELL LOCATION (Sketch Diagram). (Please show relationship to buildings and road)




PROJECT:

NAME:

CONSTRUCTION ETC LOT NO SYSTEMID FIRST DATE SECTION AND WATER FIRST YEAR YEAR QRS FIRST QRS FIRST UNIT FIRST UNIT

CON	13	002	26-	868140	730	1989/08	3604	06	PM	0065	30	40	10	2	10	ST DO
CON	13	001	26-	81374 4753960		1984/08	3604	06	PM	0068	38	56	20	1	10	DO
CON	13	002	26-	868140												
CON	13	003	26-	868140	710	1975/04	3604	06	PM	0010	16	63	4	1	10	ST DO
CON	13	004	26-	81374 4753960	740	1981/08	4804	06	PM	0097	10	32	10	1	10	DO
CON	13	005	26-	868140	740	1979/08	4804	06	PM	0035	40					DO
CON	13	006	26-	81374 4753960	730	1980/10	4810	06	PM	0079	15	70	7	2	10	ST DO
CON	13	007	26-	81374 4753960	726	1977/02	1702	06	PM	0037	15	35	20	1	10	TR ST
CON	13	008	26-	81374 4753960	715	1984/02	4814	06	PM	0015	28	40	3	1	10	DO
CON	13	009	26-	81374 4753960	720	1986/10	4818	06	PM	0065	32	32	28	2	10	ST DO
CON	13	010	26-	81374 4753960	710	1987/07	4723	06	PM	0048	30					DO
CON	13	011	26-	81374 4753960	705	1987/11	1804	06	PM	0060	32	50	14	1	10	ST
CON	13	012	26-	81374 4753960	700	1979/04	4804	06	PM	0040	5	0				DO
CON	13	013	26-	81374 4753960	700	1979/02	4803	06	PM	0044	10	25	10	1	10	DO
CON	13	014	26-	81374 4753960	710	1986/12	4074	06	PM	0075	30	30	5	1	10	ST DO
CON	13	015	26-	81374 4753960	725	1971/03	0081									DO
CON	13	016	26-	81374 4753960	735	1971/03	0082									DO
CON	13	017	26-	81374 4753960	737	1971/07	0083									DO

WATER WELL INVENTORY

PROJECT NAME			
DATE	Dec. 17, 98	PROJECT NO.	98-10-6
WELL INFORMATION			
PROPERTY LOCATION	RESIDENT NAME	Cons. 11 part 12	
	SECTION	12	
	TOWNSHIP	12	
	COUNTY	Haldimand	
	WALPOLE	Walpole	
	AL BOSMA	Al Bosma	
	901 RR #5	901 RR #5	
	768-3546	768-3546	
	same as residents		
	Mr. Bilton	Mr. Bilton	
	Yes	26-01182	26-01182
		26-01182	
		drilled / dug	
		6"	
		1959 / 07	
		*4810	
		bedrock / overburden	
		Farm	
		40'	
		40m' E of E. side of barn (drilled)	
		8m' S of drilled well	
		No test available (304m. on well)	
ADDITIONAL NOTES			
No pictures due to weather + time of day (night)		 AGRA Earth & Environmental Limited	

WATER WELL INVENTORY

PAGE 2

POTENTIAL SOURCES OF CONTAMINATION RELATED TO LOCATION (ie. proximity to barnyard, pastures, etc):

chicken farm located west of wells

LOCATION OF SEPTIC BED/TANK:

West side of House

CONDITION OF THE TOP OF THE WELL CASING:

Not avail.

ANY PAST PROBLEMS RELATED TO WATER QUANTITY AND QUALITY:

Has the well ever run dry: No

Problems with taste, colour, odour, etc: little sulphur clear / spring blackish

IS THE WELL EASILY ACCESSIBLE?

Yes

IF YES, MAY WE CONDUCT A MONITORING STUDY ON THIS WELL?

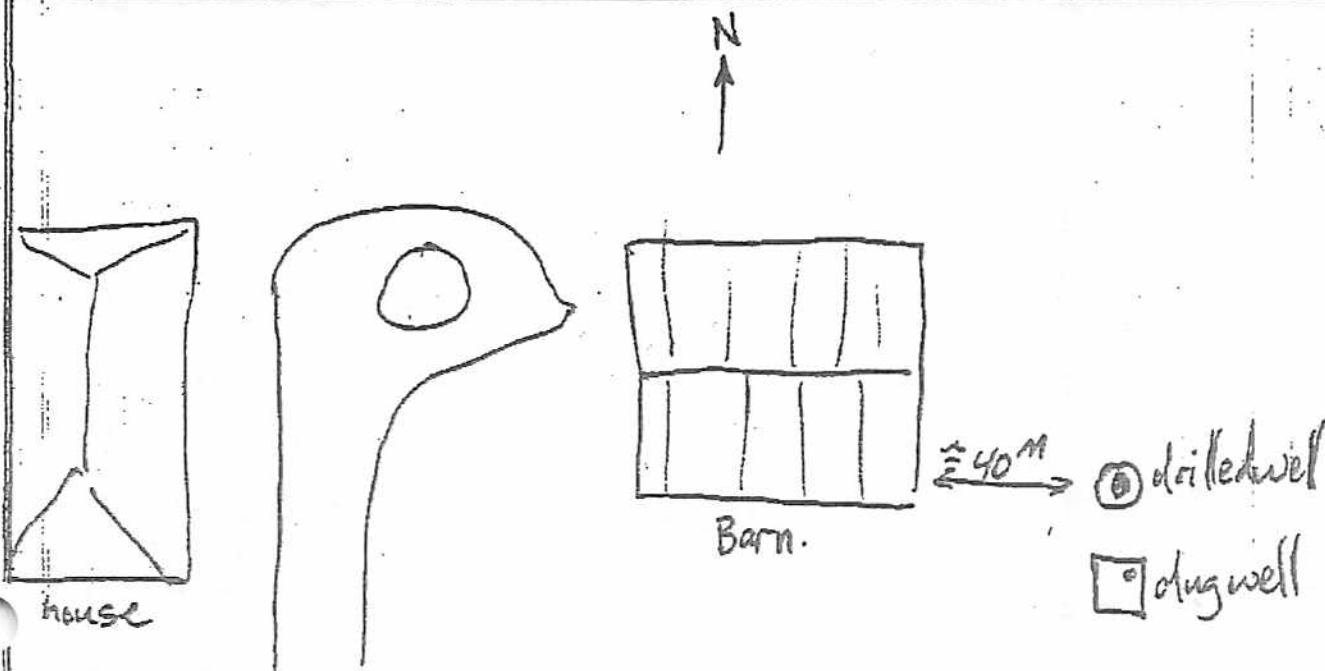
COMMENTS

Type of Plumbing System: Pressure PVC

Water Purification, Softeners, Filters etc.:

Children or Infants: No

APPROXIMATE WELL LOCATION (Sketch Diagram) (Please show relationship to buildings and road)



PROJECT:

NAME:

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MUNICIPALITY CONCESSION ETC	LOT	WELL EASTING NO	UTM NORTHING	ELEV FEET	DATE	DRILLER	INS	WATER FEET	STAT FEET	PUMP LVL	TEST RATE	DEPTH FEET	LENGTH FEET	SCREEN DEPTH	WATER USG	TIME HR:MM	TEST GPM	FORMATIONS EXTEND
CON	12 008	26- 999999 02296 999999			1988/07 5417	06	MY	0064	20	50	10	1 : 0	DO					JOHN, VODRTMAN BRNN CLAY 0017 GREY CLAY 0044 GREY CLAY GVDY 0050 GREY LMSN 0065 HANKIS, ALLAN BRNN CLAY 0015 WHIT SAND 0017 BRNN FLAT 0015 GREY LMSN 0070 TRANSPORT DEPT CLAY 0027 LMSN 0042 BLUE LMSN MSND 0055 QRTZ 0062 LMSN MSND 0067 BRNN LMSN 0123 SHLE LMSN 0150 LIVINGSTON INDUS BRNN CLAY 0034 GREY LMSN 0072 LIVINGSTON INDUS BRNN CLAY 0024 GREY GRVL CLAY 0030 GREY FLAT 0041 GREY SHLE 0051 BRNN LMSN 0100 TRANSPORT DEPT CLAY 0028 ROCK 0057 PHILLIPS C CLAY 0023 LMSN 0062 ROULSTON F LOAM 0002 BLUE CLAY 0033 LMSN 0050 SMITH R BRNN CLAY 0022 ROCK 0070 CHERRY G CLAY MSND 0016 LMSN 0032 LMSN 0075 TRIBUSER J LOAM 0002 CLAY 0012 LMSN 0070 WILSON J HAROLD PRDR 0056 ROCK 0058 DAVIS T YLLW CLAY 0009 LMSN 0030 MALEJKO BOIESLAW CLAY 0010 LMSN 0050 CROZIER D LOAM 0004 BLUE CLAY 0012 LMSN 0036 HARROP C CLAY 0011 LMSN 0042 SCHURR R GREY CLAY 0016 LMSN 0040 COMAN K LOAM 0001 BRNN CLAY 0011 GREY GRNT 0060 BLUE SHLE 0084 GREY GRNT 0087 MALEJKO, BILL GREY CLAY LOOS 0010 GREY LMSN HARD 0041 TEAL D CLAY 0014 LMSN 0050 SLACK L YLLW CLAY 0011 LMSN 0030 HARROP C GREY CLAY 0011 LMSN 0060 GREY LMSN 0087 NORTH WALTER BRNN CLAY 0008 GREY SHLE 0035
CON	13 003	26- 999999 02103 999999			1983/10 3604	07	FR	0060	24	68	3	1 : 30	DO					
CON	11 004	26- 570780 00144 4753465			1941/10 2801	10	UK	29	79	35	24 : 0	NU						
CON	11 004	26- 571620 02074 4753360			1982/08 1702	06	SU	0053	22	32	5	0 : 30	IN					
CON	11 004	26- 571600 02019 4752360			1980/12 3604	08	SU	0078	12	94	5	12 : 0	IN					
CON	11 005	26- 571860 00145 4752410			1943/09 2801	10	UK	29	30	24 : 0	NU							
CON	11 007	26- 573424 01154 4752681			1967/09 4810	06	SU	0059	18	25	28	1 : 30	DO					
CON	11 007	26- 572709 01153 4753524			1959/02 2803	06	FR	0050	20	50	4	1 : 30	ST DO					
CON	11 008	26- 573505 01494 4753955			1971/11 3604	06	SU	0065	30	35	10	1 : 30	ST DO					
CON	11 009	26- 574462 01155 4752851			1952/02 4827	05	FR	0070	3				ST DO					
CON	11 010	26- 575125 01156 4753419			1952/11 4723	06	FR	0069	13	15			DO					
CON	11 010	26- 574780 01564 4754240			1971/03 0001								DO					
CON	11 011	26- 575535 01044 4754170			1963/08 4810	06	FR	0027	10	27	5	1 : 30	ST DO					
CON	11 011	26- 575375 01369 4753675			1969/11 3604	06	FR	0028	22	43	7	1 : 30	ST					
CON	11 011	26- 575416 01158 4754039			1958/07 2803	06	FR	0036	12	36	1	1 : 30	DO					
CON	11 011	26- 575422 01157 4753933			1952/02 4827	06	SU	0038	9	9			DO					
CON	11 011	26- 575247 01162 4753801			1965/08 3604	06	FR	0038	20	30	10	1 : 30	DO					
CON	11 011	26- 575317 01159 4753842			1959/09 1815	06	FR	0087	20	87	1	1 : 0	DO					
CON	11 011	26- 999999 02227 999999			1987/02 4005	06	FR	0038	5	40	1	1 : 0	DO					
CON	11 011	26- 575372 01160 4753908			1961/10 4810	06	FR	0047	15	49	1	1 : 0	DO					
CON	11 011	26- 575471 01161 4754039			1963/08 4810	06	FR	0027	9	30	1	1 : 0	DO					
CON	11 011	26- 575621 01163 4754056			1965/08 3604	06	SU	0079	24	85	2	2 : 0	DO					
CON	11 012	26- 575539 01712 4754410			1975/01 3653	06	FR	0034	30	10	1	1 : 30	DO					

M.O.E

APPENDIX D

WELL SURVEY RECORDS

2

GROUND WATER BULLETIN REPORT

COUNTY: HALDIMAND

PAGE: 3

WATER WELL DATA SYSTEM Dec 09 1998

MUNICIPALITY CONCESSION ETC	LOT	WELL NO	EASTING UTM	ELEV	DATE	DRILLER	INS	DIA OF	CSG KIND	WATER FOUND	STAT LVL	PUMP LVL	TEST RATE	TIME GPH	WATER DEPTH	LENGTH	IN FEET	TO WHICH FORMATIONS EXTEND	OWNER
CONTINUING... WALPOLE TOWNSHIP																			
CON	12	009	26-	573773	700	1967/08	3604	06	FR	0036	11	30	6	24:0	DO				LANE J
			01175	4754185															GREY CLAY 0032 LMSN 0037
CON	12	010	26-	574696	712	1974/12	3604	06	UK	0106	33	65	8	1:30	DO				ROULSTON GORDON
			01710	4754359															GREY CLAY 0017 BRWN LMSN SHLE 0108
CON	12	011	26-	575276	705	1951/10	4723	06	FR	0104	28				DO				DIELLIO O
			01176	4754550															PRDR 0050 LMSN SHLE 0106
CON	12	011	26-	574940	710	1951/10	4827	06	FR	0115					ST DO				CATHENWOOD E
			01177	4755681															CLAY 0008 LMSN 0085 BRWN LMSN 0118 SHLE 0172
CON	12	011	26-	575041	705	1958/12	4810	06	FR	0036	19	109	5		ST				DILILLO O
			01178	4754447															CLAY 0012 LMSN 0090
CON	12	012	26-	575607	709	1959/07	4810	06	FR	0025	10	20	10	0:30	DO				BILTON L
			01182	4754613															CLAY 0011 LMSN 0030
CON	12	012	26-	575938	710	1947/07	4723	06	FR	0068	18				IR				MOORE H
			01179	4754595															LOAM 0010 LMSN 0024 SHLE 0040 BRWN LMSN 0100
CON	12	012	26-	576088	710	1949/07	4723	06	FR	0068	18				DO				BILTON T
			01180	4754662															CLAY 0003 CLAY 0011 LMSN 0070
CON	12	012	26-	575717	709	1958/10	4810	06	FR	0024	16	6			DO				HERON B
			01181	4754563															CLAY 0016 LMSN 0027
CON	12	013	26-	576046	715	1959/10	4810	06	FR	0062	29	55	2	0:30	DO				DORRIAN J
			01184	4754923															CLAY 0020 LMSN 0065
CON	12	013	26-	576165	715	1963/08	4810	06	FR	0080	30	95	1	1:0	ST				RICHARDSON F
			01185	4755044															YLLM CLAY 0017 LMSN 0055 GREY LMSN 0085 BRWN LMSN 0100
CON	12	013	26-	576392	715	1957/09	4810	06	FR	0061	34	40	10		ST				RICHARDSON BROS
			01183	4755513															CLAY 0009 LMSN 0065
CON	12	014	26-	576340	723	1971/03	0001			37					DO				RAINER F
			01561	4756020															PRDR 0068 ROCK 0070
CON	12	014	26-	576606	726	1974/01	1620	06	FR	0038	10	38	2	3:0	CO				DEMICK CONST
			01711	4755744															BRWN CLAY 0013 LMSN 0042
CON	12	014	26-	577020	720	1971/08	3604	05	FR	0047	37	45	15	1:0	ST DO				LENG B
			01486	4754770															GREY CLAY 0006 BRWN LMSN 0044 WHIT MSND 0048 BRWN LMSN 0061
CON	12	018	26-	579631	705	1952/12	4723	06	FR	0037	12				DO				HEWITT I
			01190	4755415															LOAM 0003 ROCK 0040
CON	12	019	26-	579827	705	1951/12	4827	06	FR	0059	14				DO				KANE G
			01191	4755437															CLAY 0003 LMSN 0064
CON	12	019	26-	580122	705	1955/09	1715	06	FR	0058	32		1	0:30	DO				STEWART W G
			01192	4755484															CLAY 0001 LMSN 0045 BRWN LMSN 0068
CON	12	019	26-	579603	710	1959/07	1715	05	FR	0058	31	50	4	0:30	CO DO				BOWMAN C
			01193	4755741															CLAY 0002 BRWN LMSN 0040 WHIT LMSN 0060
CON	12	019	26-	580020	730	1979/09	3604	08	UK	0122	15	90	20	2:20	IN DO				GAGNON L
			01968	4755420															GREY STNS 0002 GREY LMSN STNS 0007 GREY LMSN SHLE 0020 BRWN FLAT 0025 BRWN LMSN 0080 GREY SHLE 0120 BRWN LMSN 0130
CON	13	001	26-	569055	735	1969/07	4810	06	FR	0074	30	74	5	2:30	DO				WINKNORTH JAMES
			01351	4754600															YLLM CLAY 0030 BLUE CLAY 0058 GREY LMSN 0077
CON	13	001	26-	568560	740	1980/05	3604	06	FR	0071	12	55	15	1:10	ST DO				PETHERAH D
			02100	4754580															BRWN CLAY 0009 BRWN LMSN 0010 BRWN CLAY GRVL 0014
CON	13	001	26-	568470	735	1960/06	4810	06	FR	0072	29	30	20	2:0	DO				BRWN FLAT 0032 GREY LMSN 0075
			01194	4754853															KAUK J
CON	13	001	26-	568550	740	1976/07	3653	06	FR	0074	35	65	10	2:30	DO				CLAY 0011 LMSN 0075
			01800	4754500															LERBER VINCENT
																			GREY CLAY 0017 GREY LMSN FLAT 0075

GROUND WATER BULLETIN REPORT

PAGE: 4 COUNTY: HALDIMAND

Dec 09 1998

WATER WELL DATA 2M

**MUNICIPALITY
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DRILLER INS

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PUMP TEST	LVL	RATE	FEET	GPM
1	10.0	10.0	10.0	10.0
2	10.0	10.0	10.0	10.0
3	10.0	10.0	10.0	10.0
4	10.0	10.0	10.0	10.0
5	10.0	10.0	10.0	10.0
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72	10.0	10.0	10.0	10.0
73	10.0	10.0	10.0	10.0
74	10.0	10.0		

ST
HE WATER
:MN USE

SCREEN	TH LENGTH	T FEET
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CONTINUING... WALPOLE TOWNSHIP

CON	13	002	26-	569140	730	1969/08	3604	06	FR	0065	30	40	10	2 : 0	ST	DO	BOWMAN W GREY CLAY 0007 LMSN 0047 BRWN LMSN 0070
CON	13	002	26-	01374 4755960 26- 999999 02482 9999999		1994/09	3604	06	FR	0062	36	56	20	1 : 0	DO		ROMAGNOLI, RALPH BRWN LOAM 0001 BRWN CLAY 0012 CGVL 0014 GREY CLAY 0017 GREY LMSN 0050 BLUE SHLE SOFT 0052 BRWN LMSN 0066
CON	13	003	26-	569520	730	1975/06	3604	06	FR	0030	16	65	4	1 : 10	ST	DO	MATTHEWS C BRWN CLAY 0012 BRWN FLAT 0060 GREY LMSN 0070
CON	13	004	26-	01743 4756020 26- 570460	740	1981/09	4804	06	FR	0097	30	52	10	1 : 0	DO		NEWMANN L YLLW CLAY 0010 GREY SHLE 0097
CON	13	005	26-	02054 4756160 26- 570800 01957 4756320	740	1979/08	4804	06	FR	0095	40			:	DO		SNIDER B LOAM 0002 GREY LMSN HARD SHRP 0065 GREY LMSN HARD 0095
CON	13	005	26-	570980	730	1969/10	4810	06	SU	0075	35	70	7	2 : 0	ST	DO	GATES FARELL GREY CLAY 0026 GREY LMSN 0080
CON	13	006	26-	01372 4755010 26- 571760 01846 4755360	726	1977/03	1702	08	FR	0037	15	35	20	1 : 0	IR	ST	TYSON L BRWN CLAY 0013 BRWN CLAY 0018 GREY FLAT 0035 GREY LMSN 0060
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CON	13	006	26-	01195 4755239 26- 571594 01196 4756486	720	1966/10	4810	06	FR	0065	32	32	25	2 : 30	ST	DO	WINGER A YLLW CLAY 0017 GREY LMSN 0070
CON	13	007	26-	572409	710	1947/07	4723	06	FR	0049	20			:	DO		TOLL E LOAM 0002 SHLE 0011 LMSN 0020 LMSN SHLE 0050
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CON	13	011	26-	01559 4756950 26- 574730	735	1971/03	0001			6				:	DO		HALBECK-PARKS PRDR 0028 ROCK 0030
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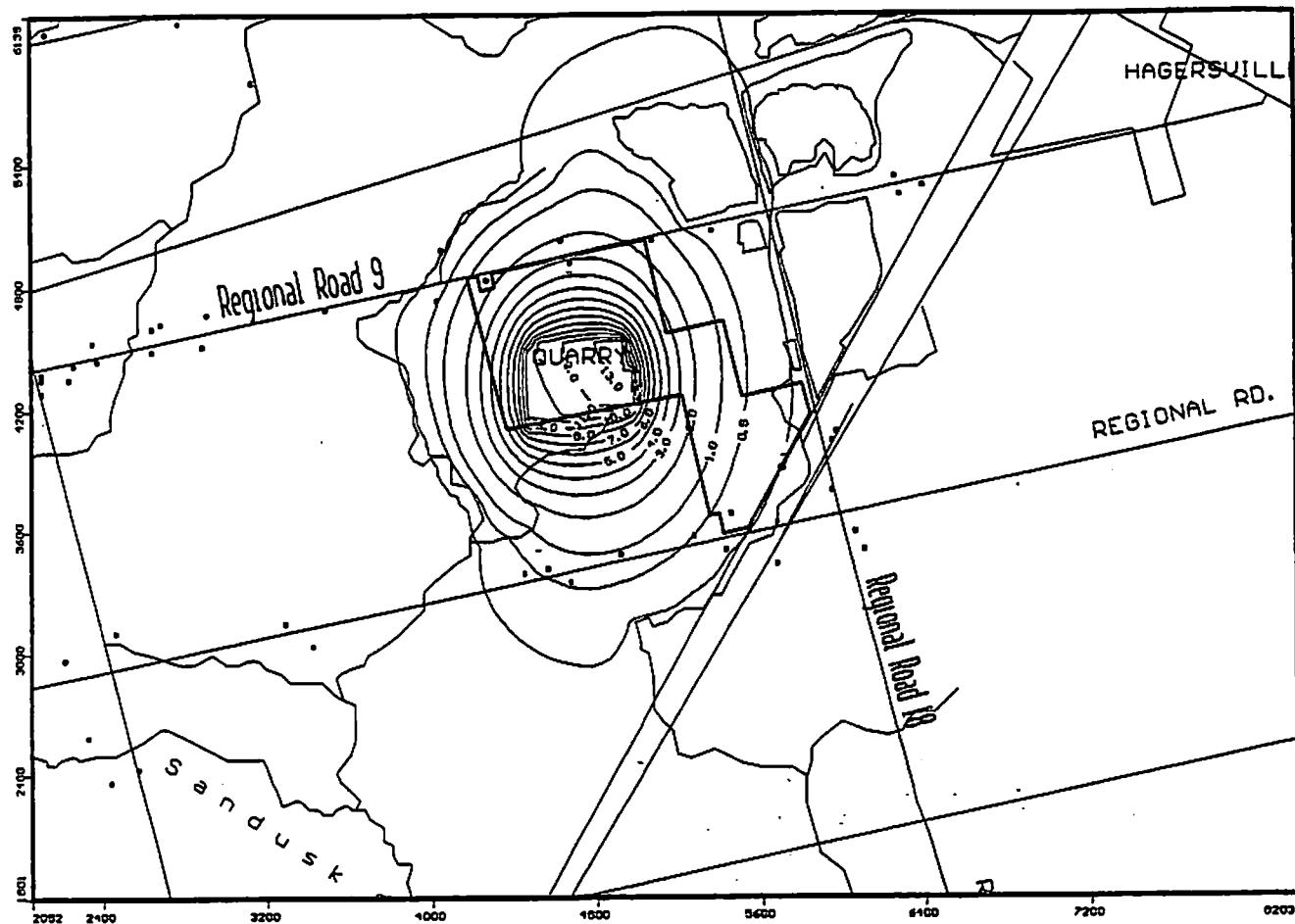
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WATER WELL RECORDS

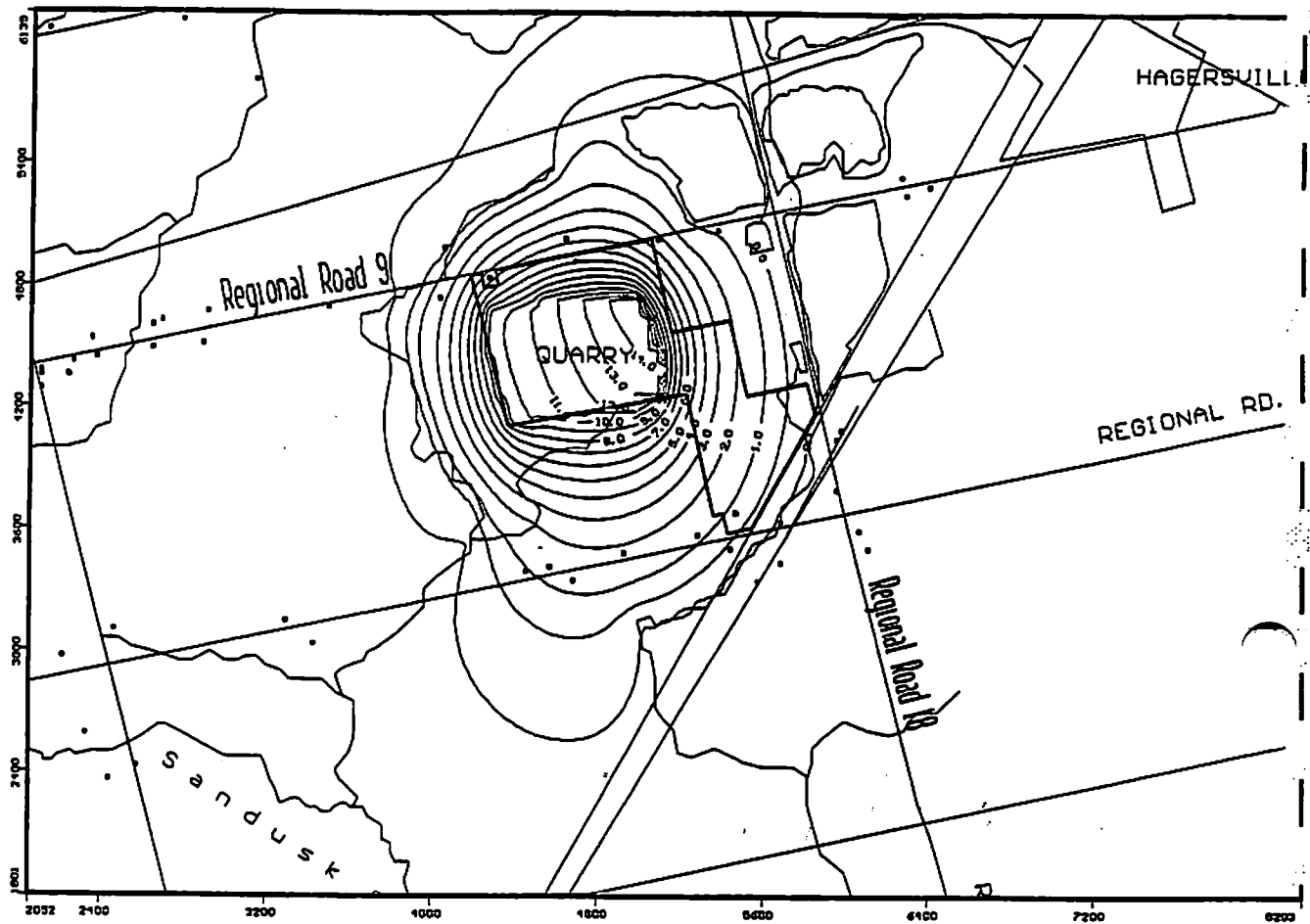
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TOTAL		ENDING IN		KIND OF WATER						WATER USE, ETC.							
WELLS DRILLED 87	OVER- BURDEN 1	BED- ROCK 86	FRESH 61	SALT 0	SULPH 12	MIN- ERAL 5	DRY HOLE 0	DOM. OR STOCK 81	IRRIG- ATION 2	INDUS- TRIAL 3	COMM- ERCIAL 2	MUNI- CIPAL 0	PUBLIC SUPPLY 0	COOL/ AIR COND 0	NOT USED 2	TEST HOLE 2	ABAN- DONED 0

APPENDIX E
VARIANT DRAWDOWN SIMULATIONS



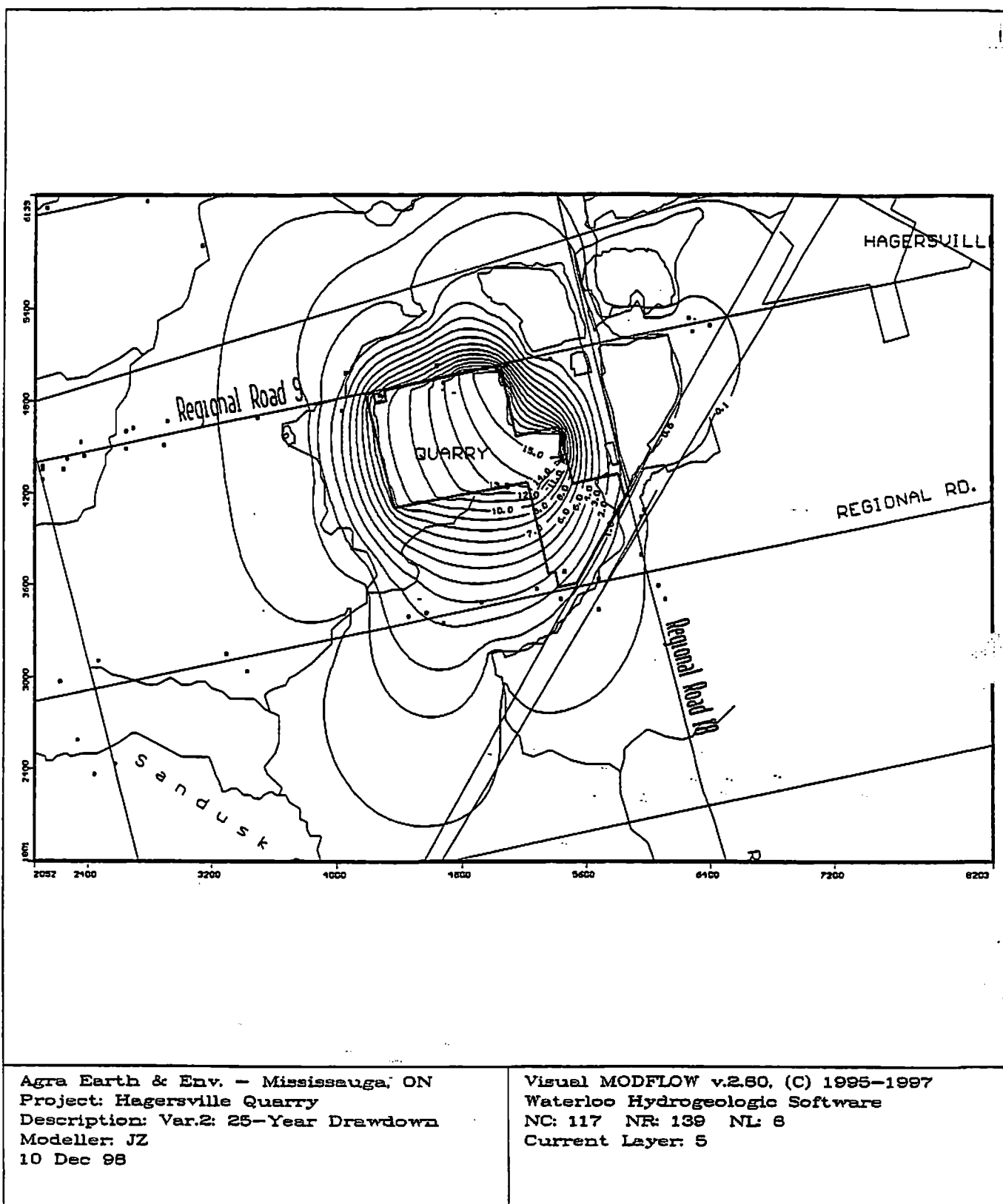
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 Project: Hagersville Quarry
 Description: Var.2: 5-Year Drawdown
 Modeller: JZ
 10 Dec 98

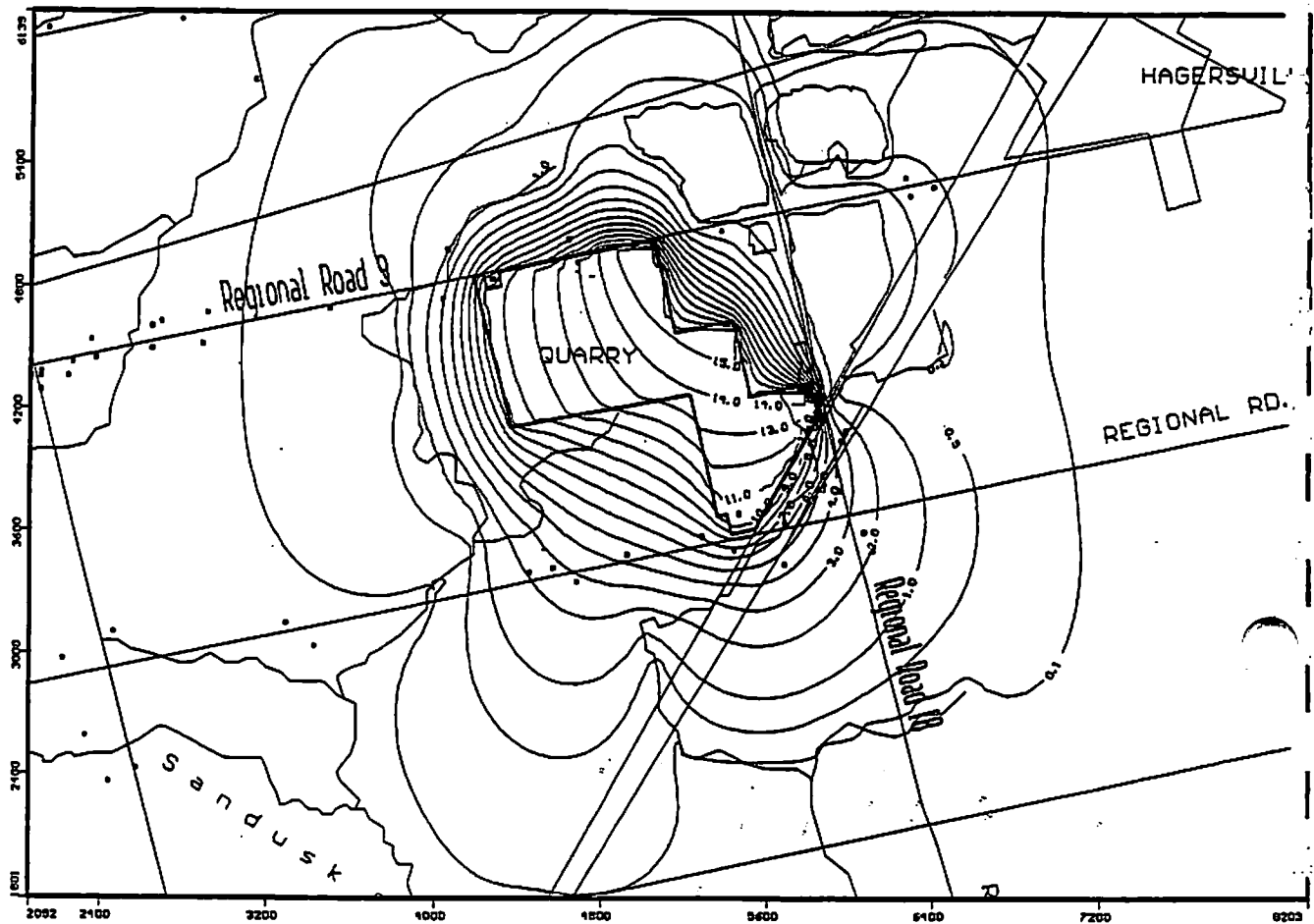
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 Waterloo Hydrogeologic Software
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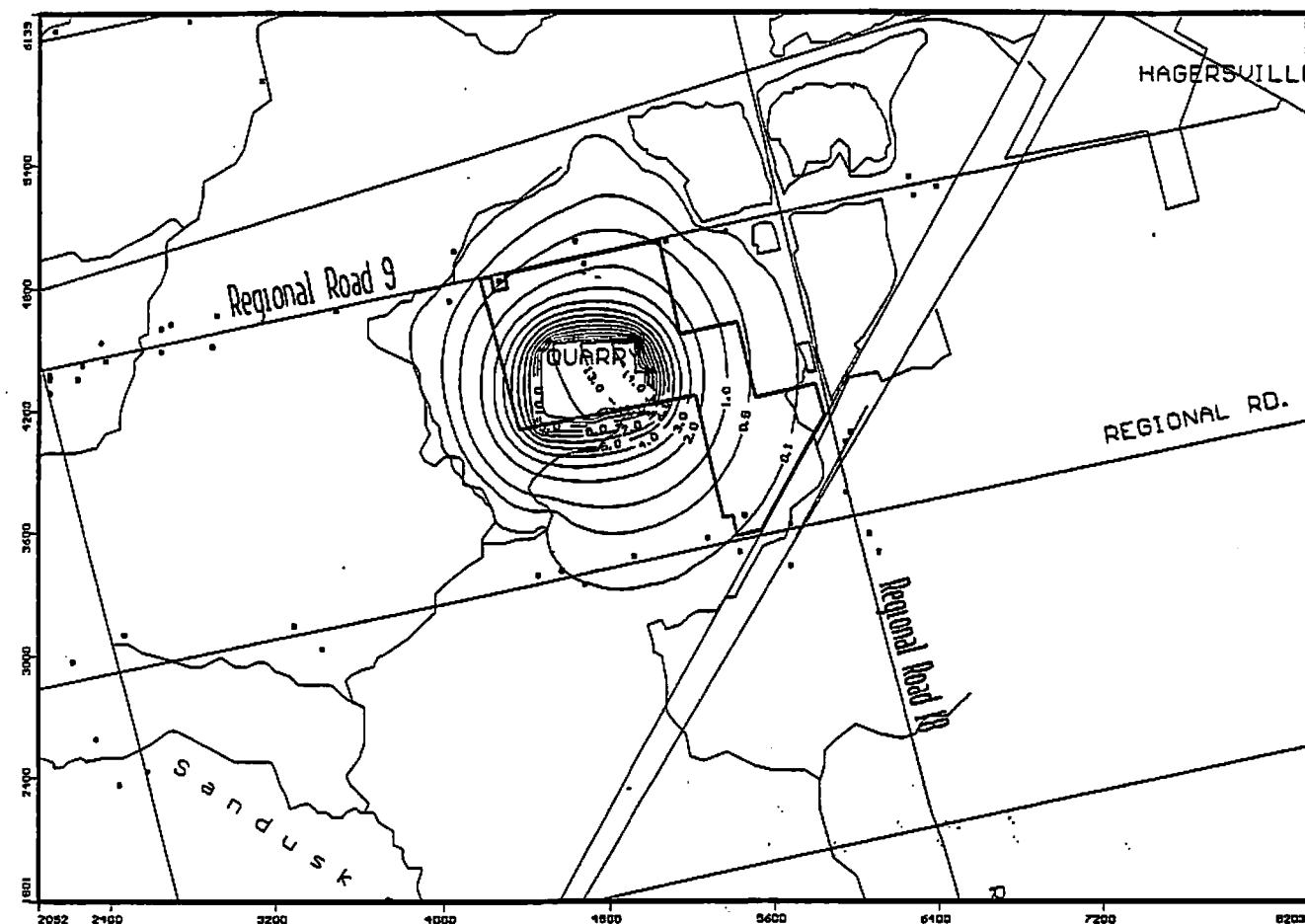
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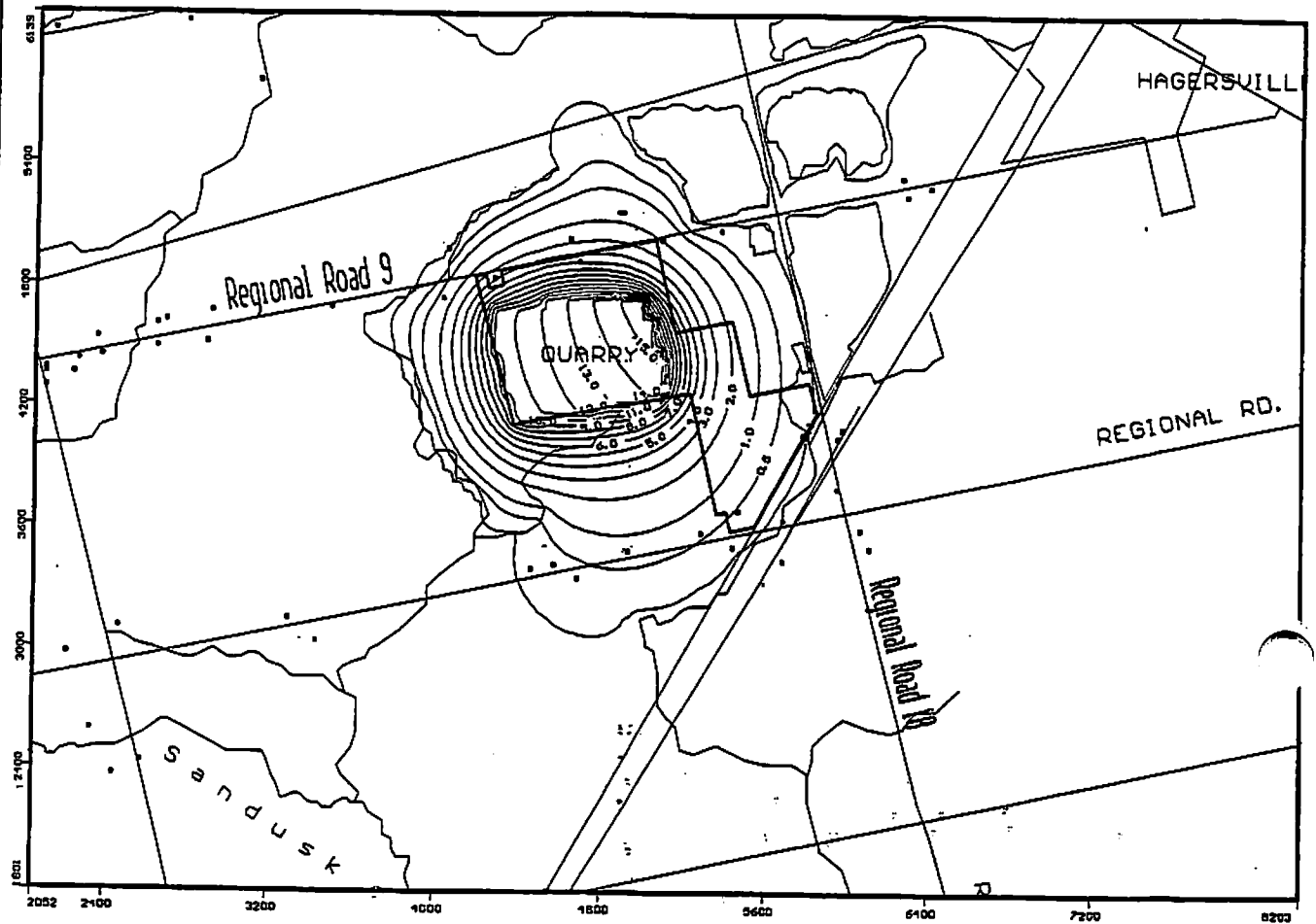
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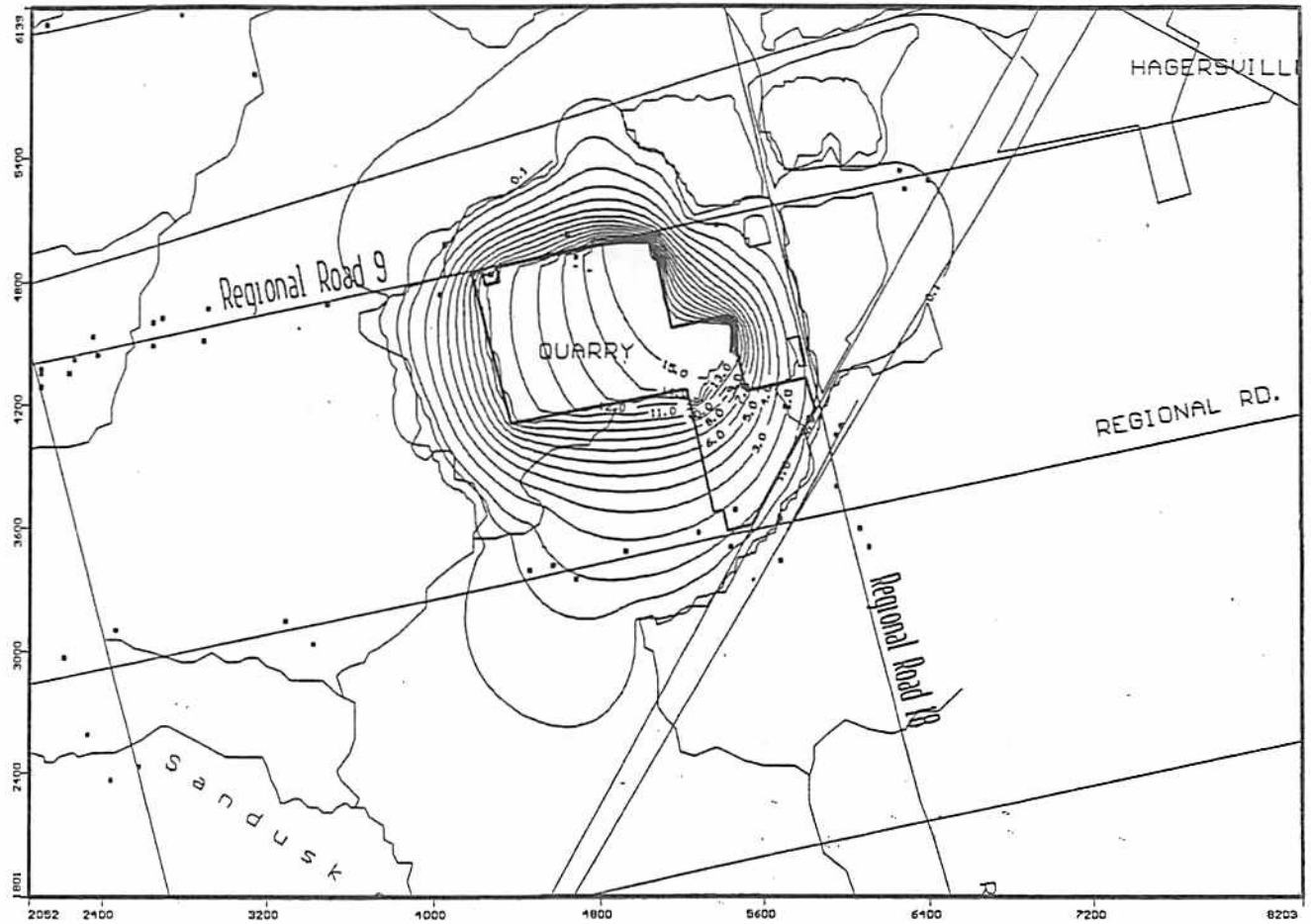
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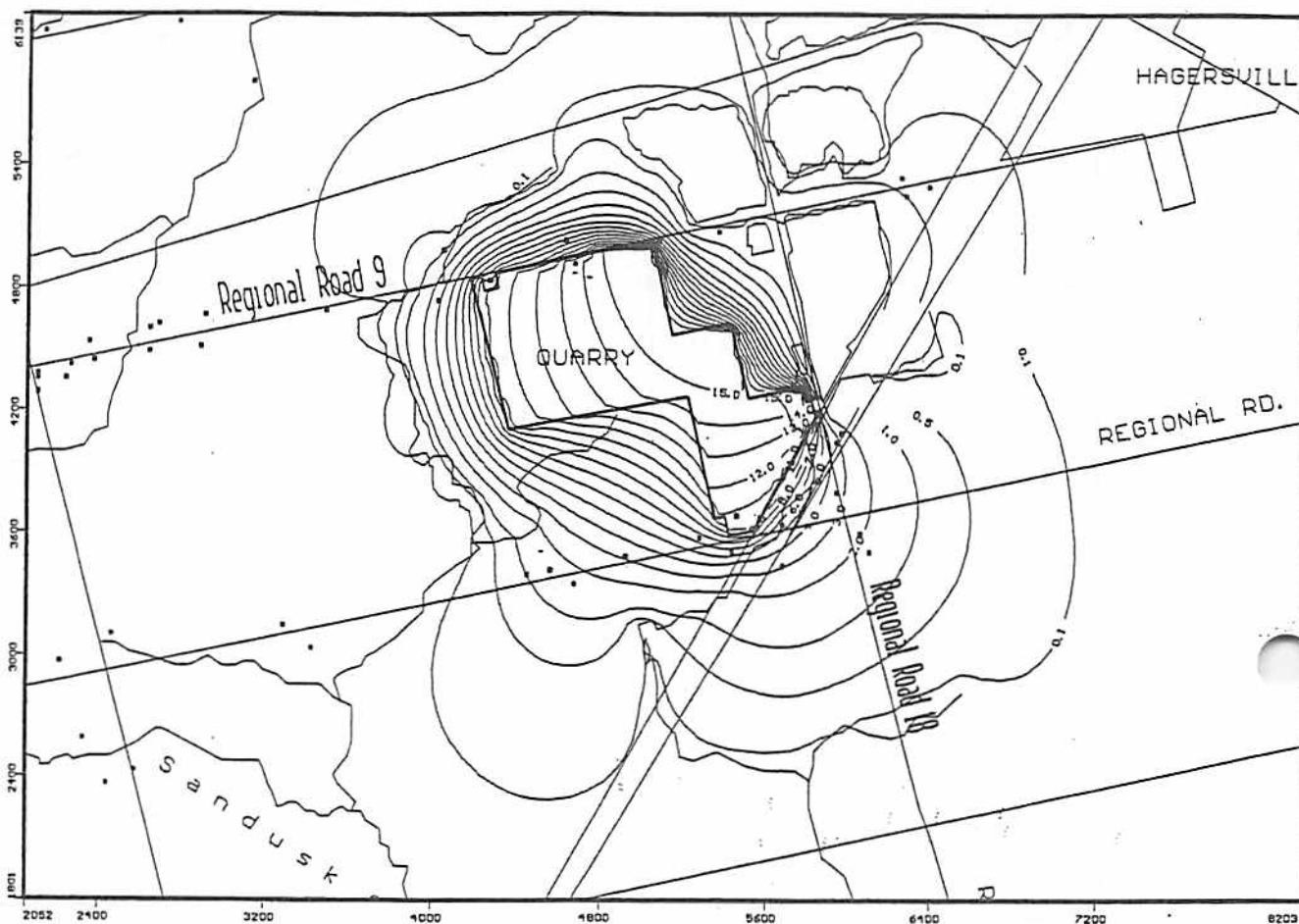
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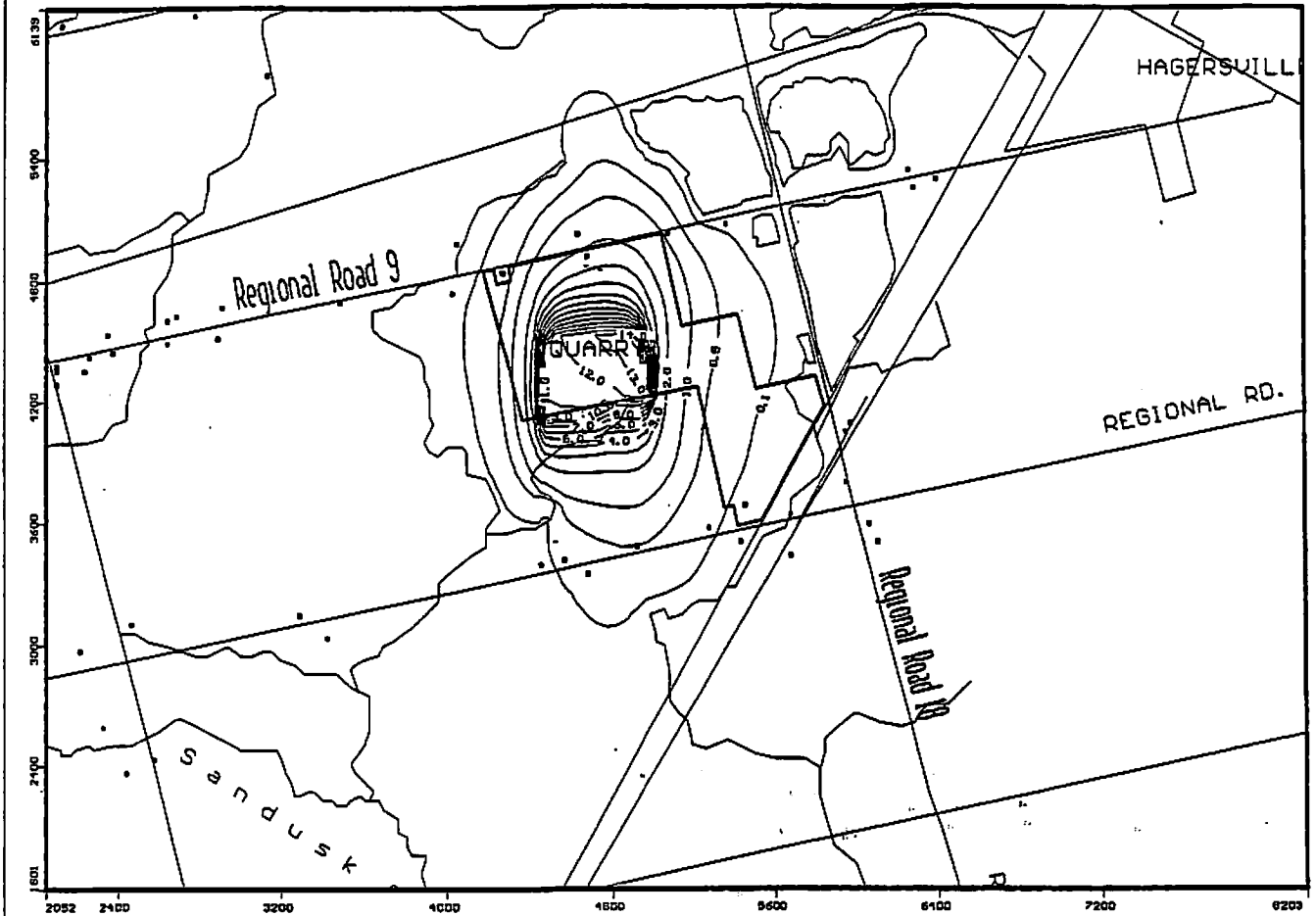
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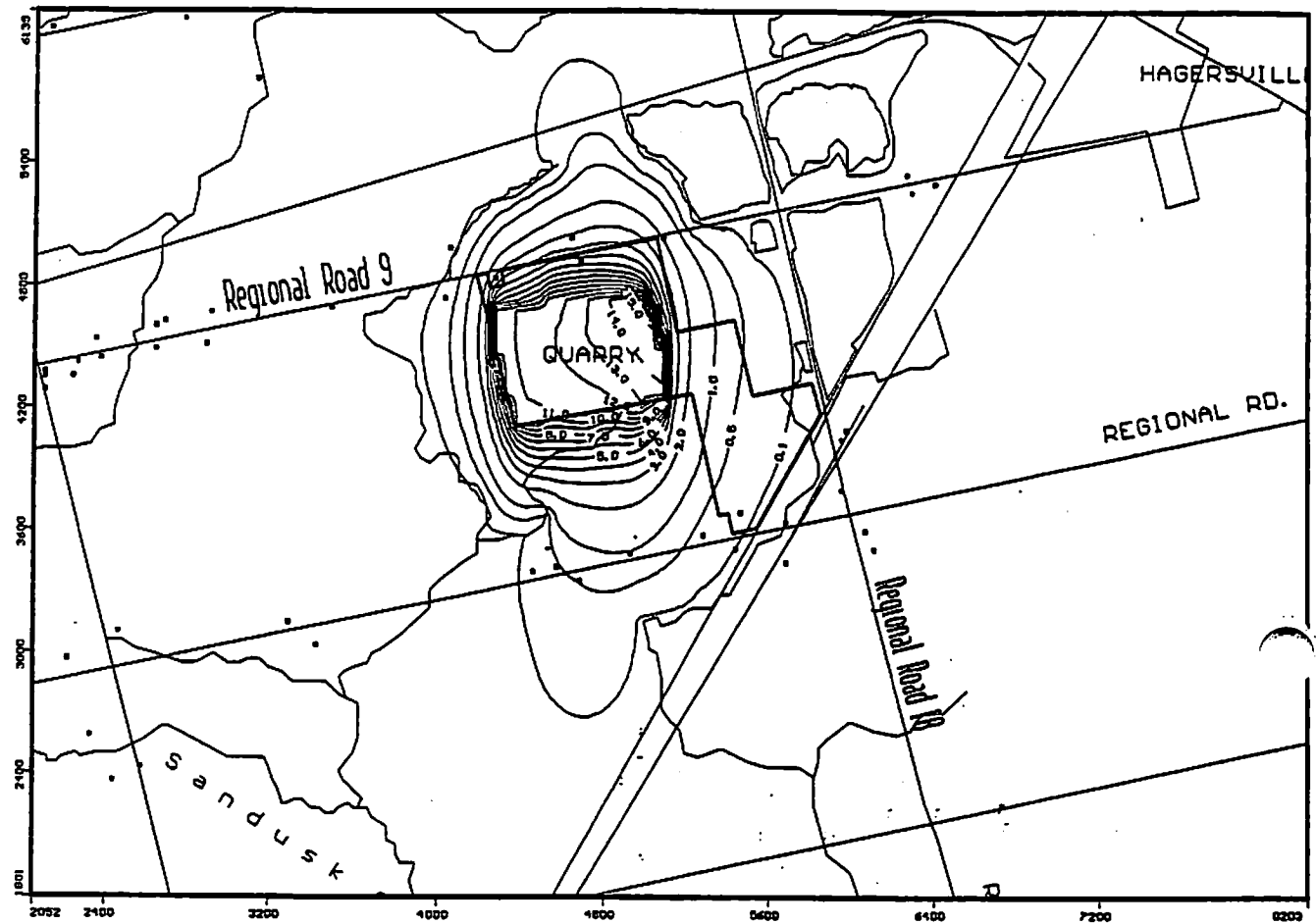
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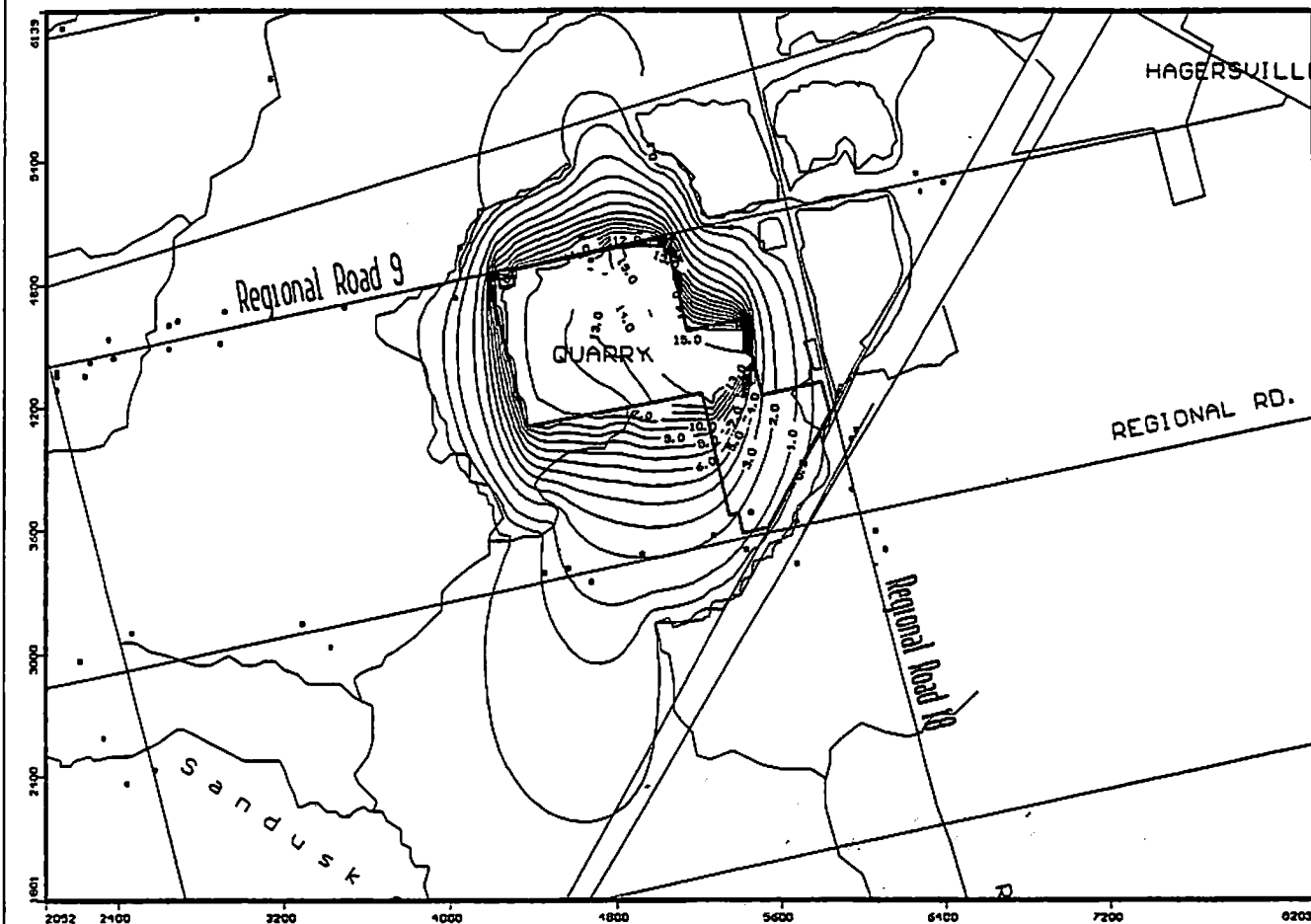
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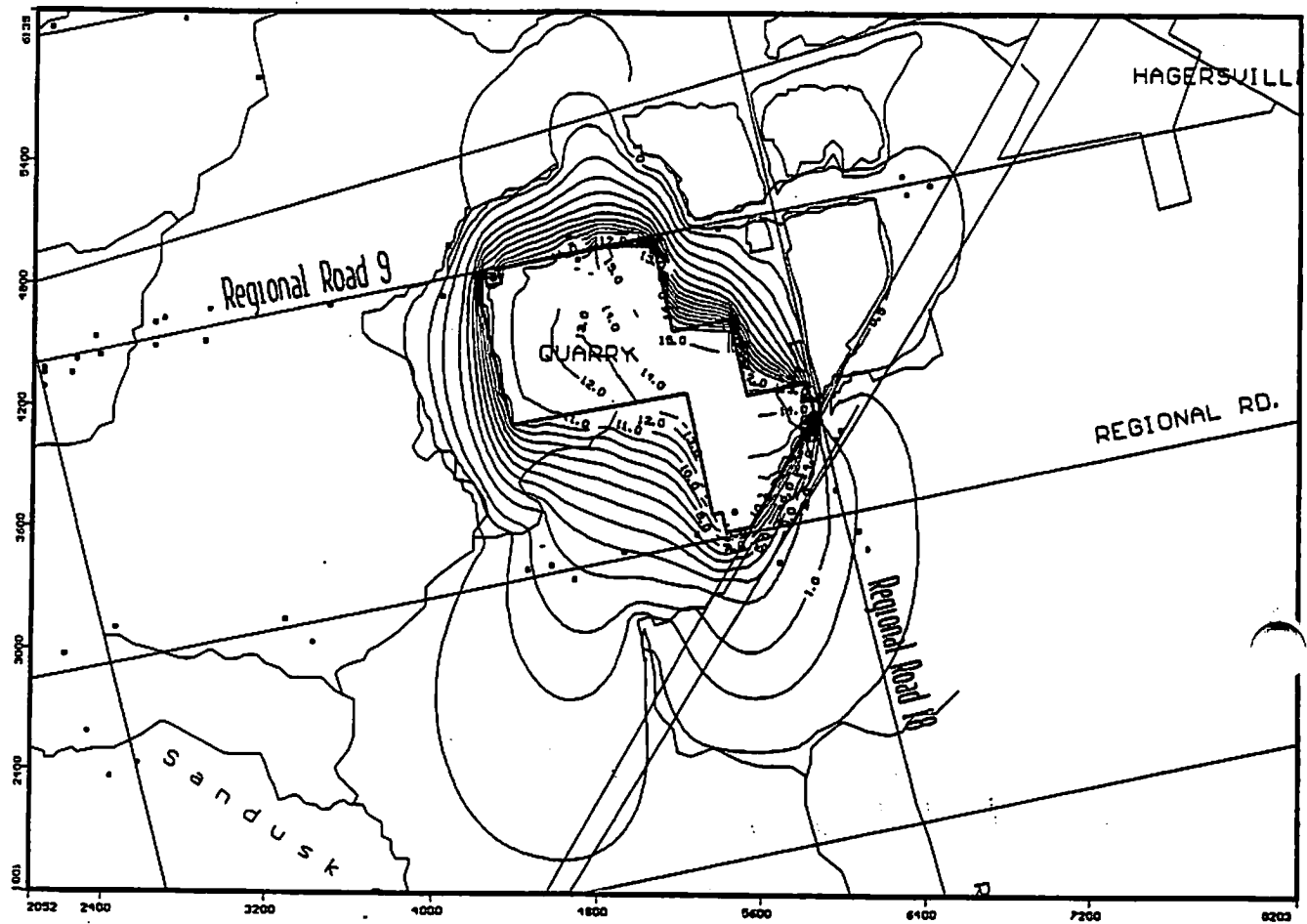
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10 Dec 98

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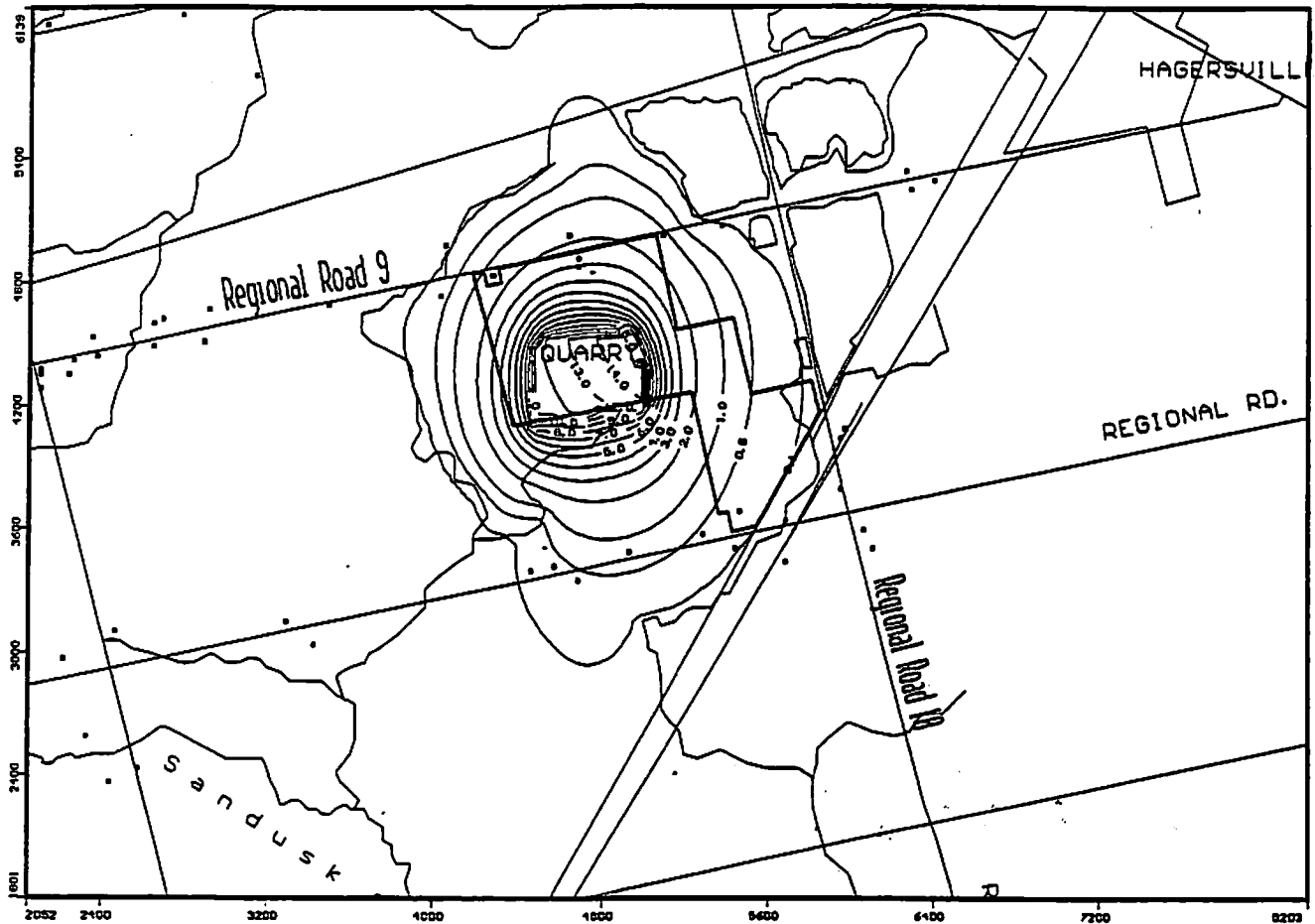
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10 Dec 98

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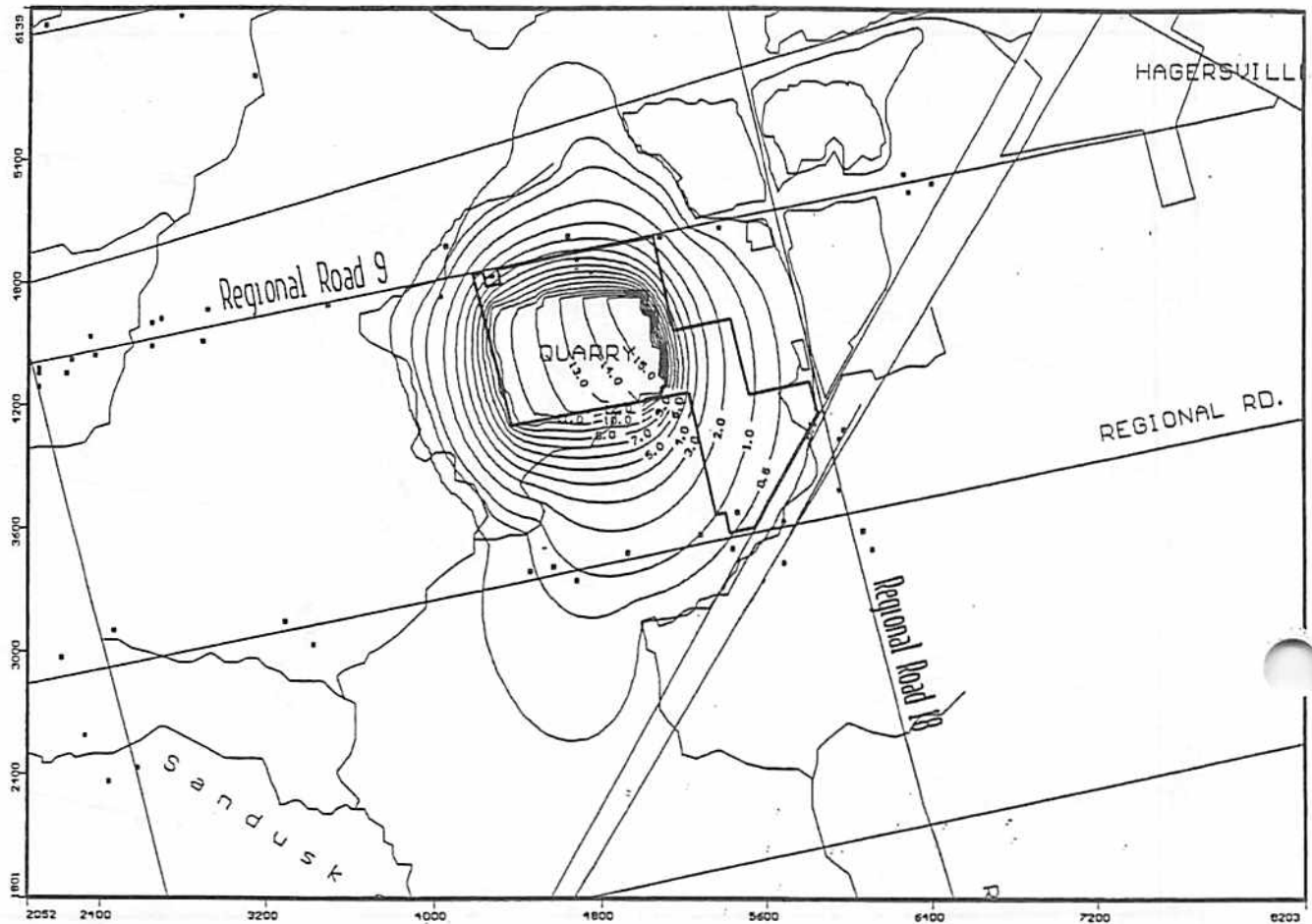
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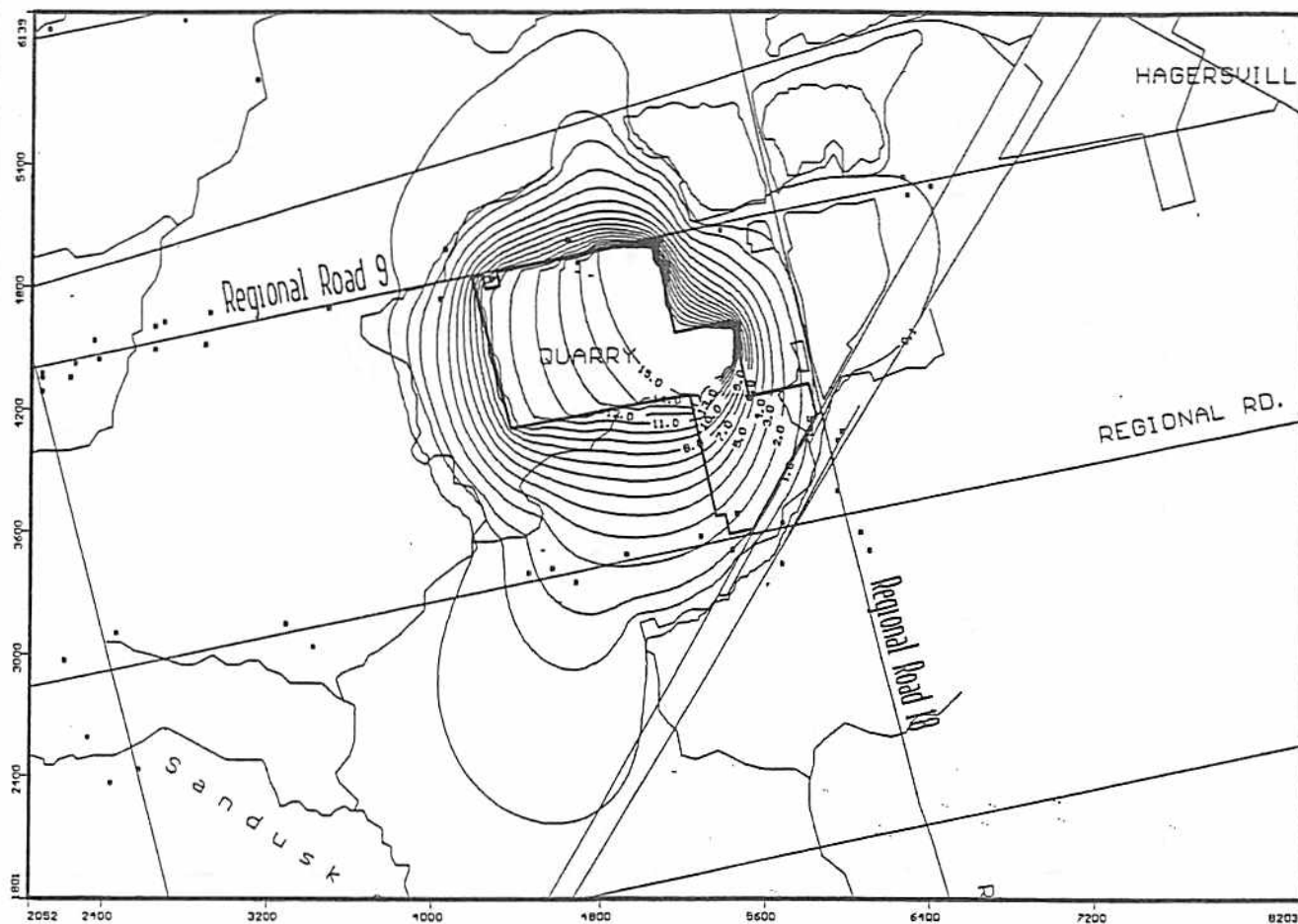
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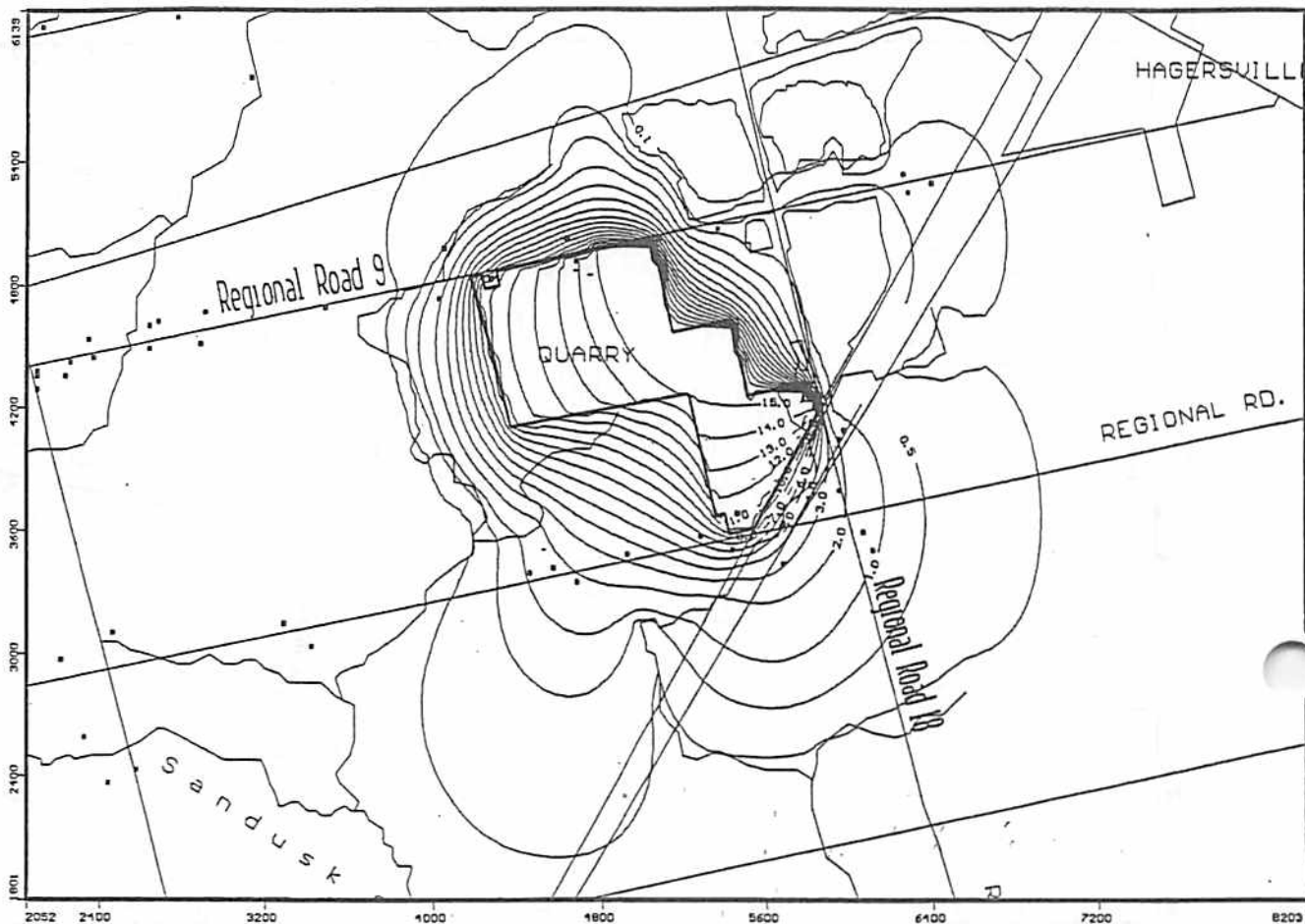
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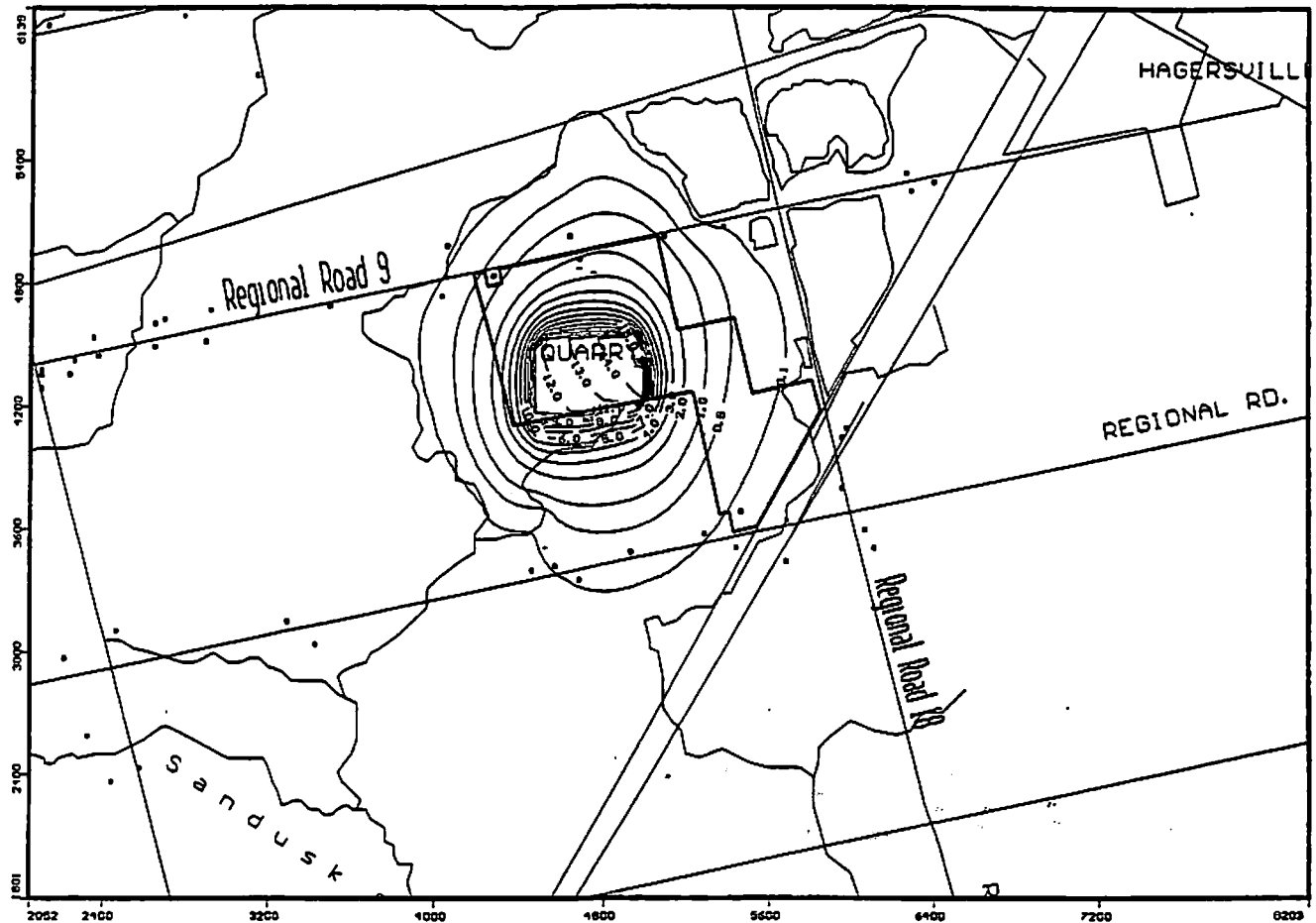
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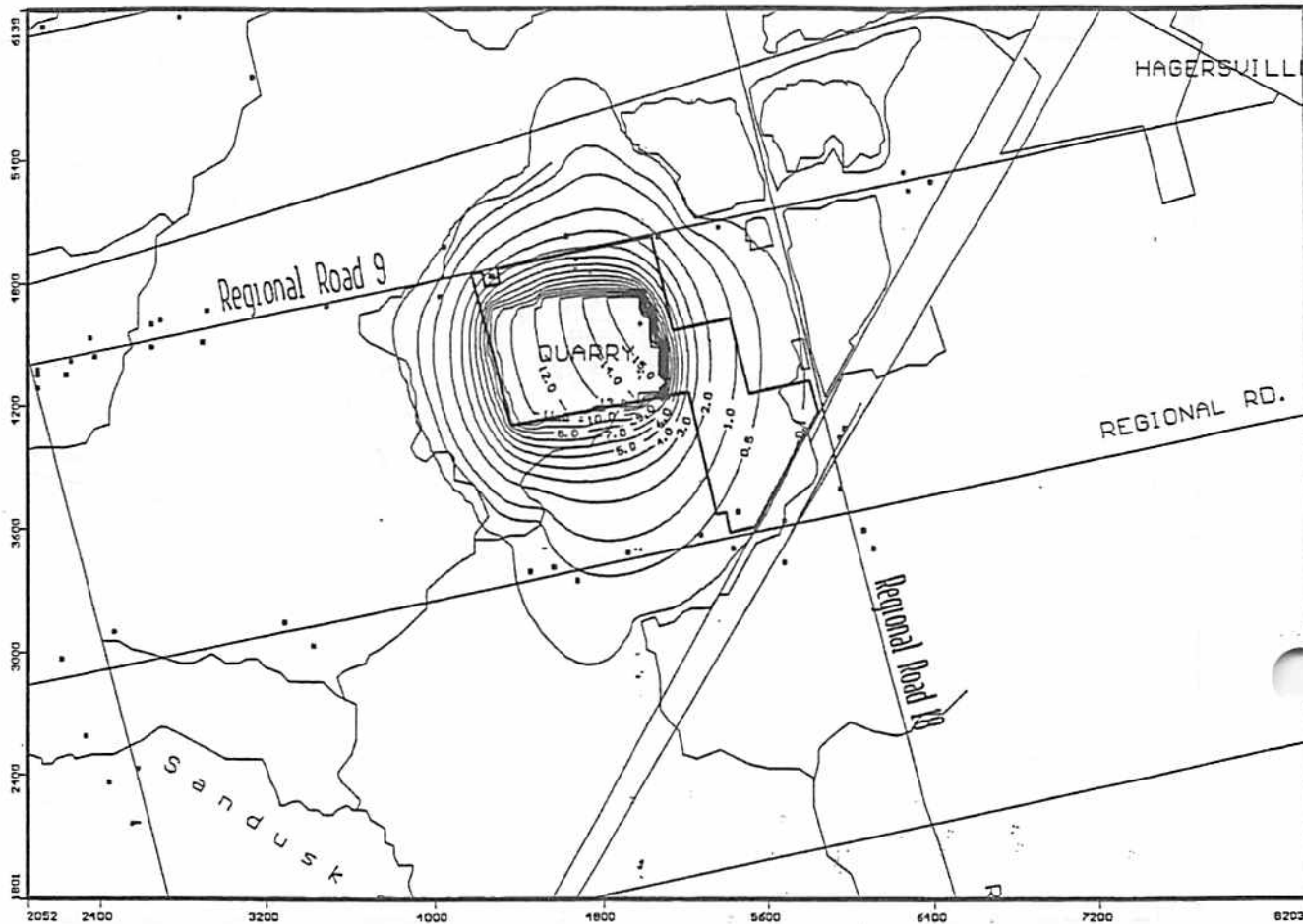
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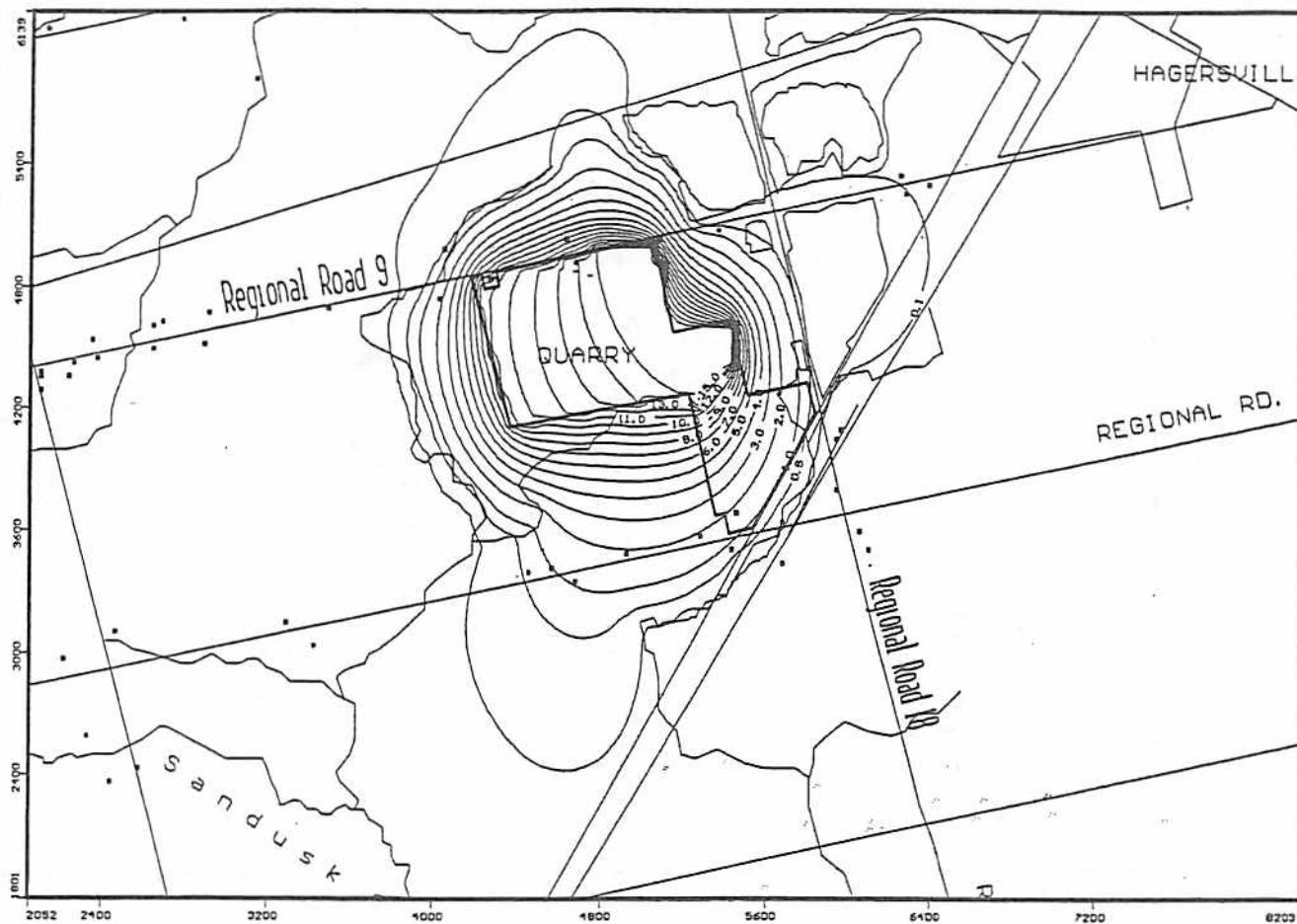
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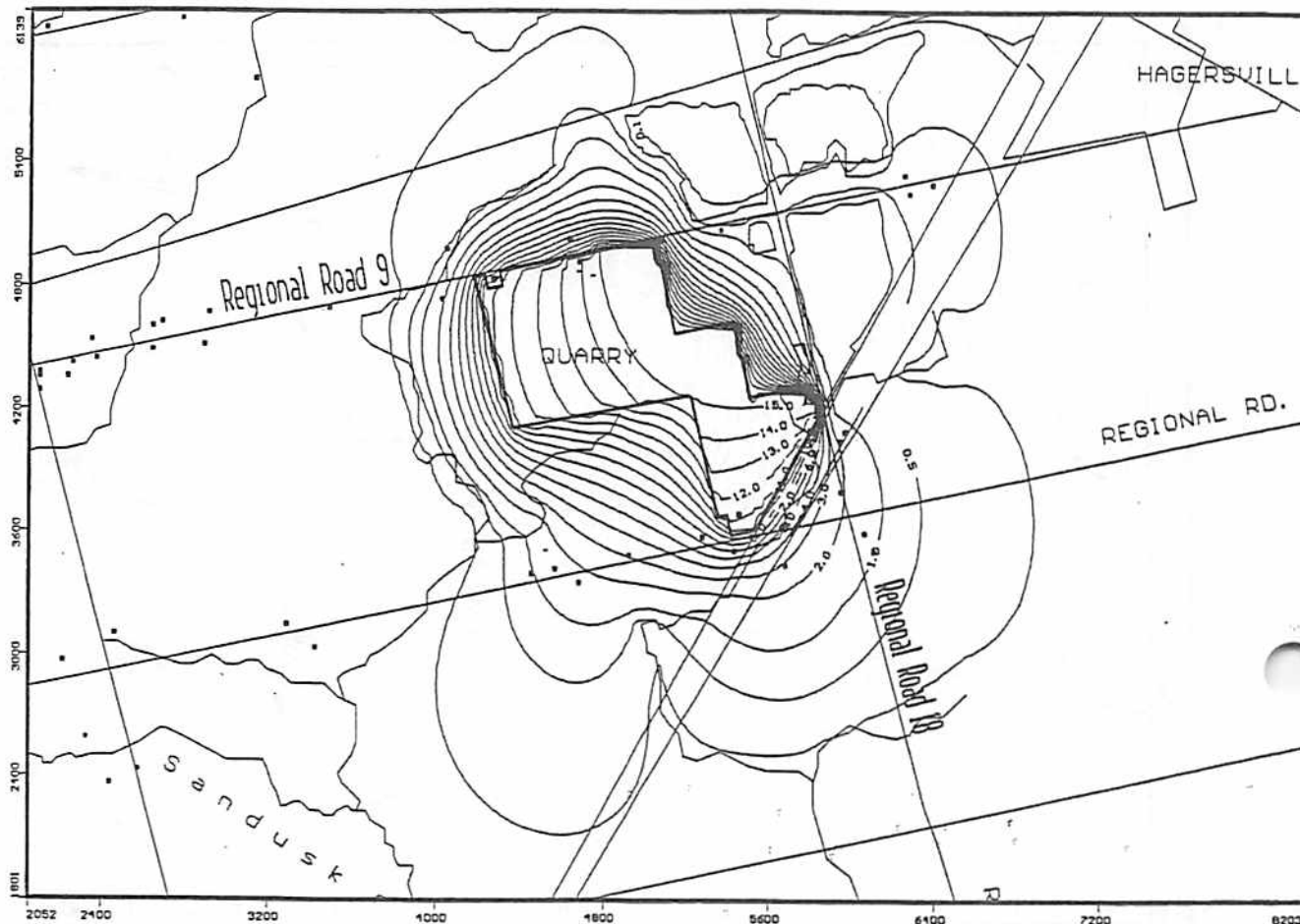
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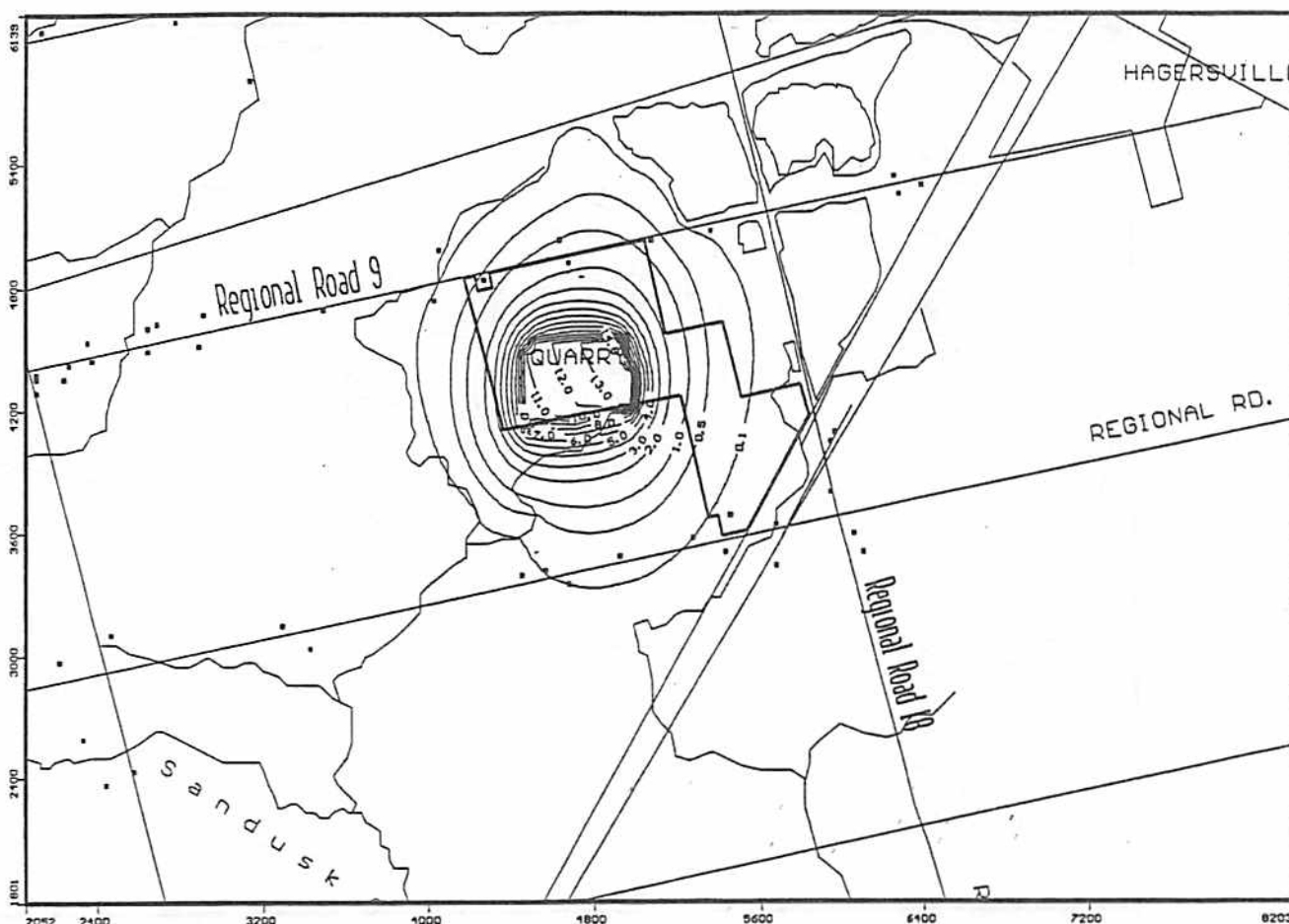
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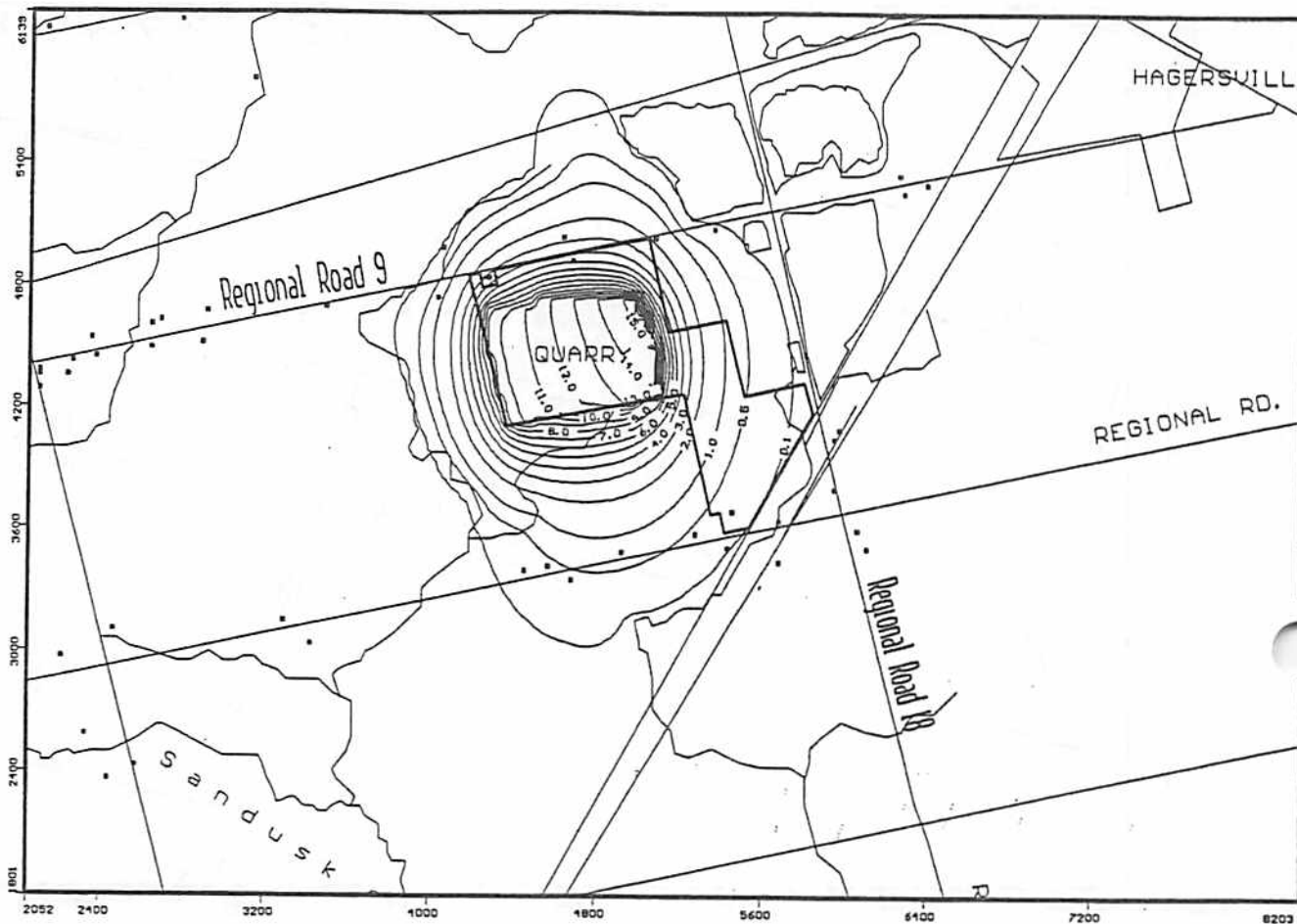
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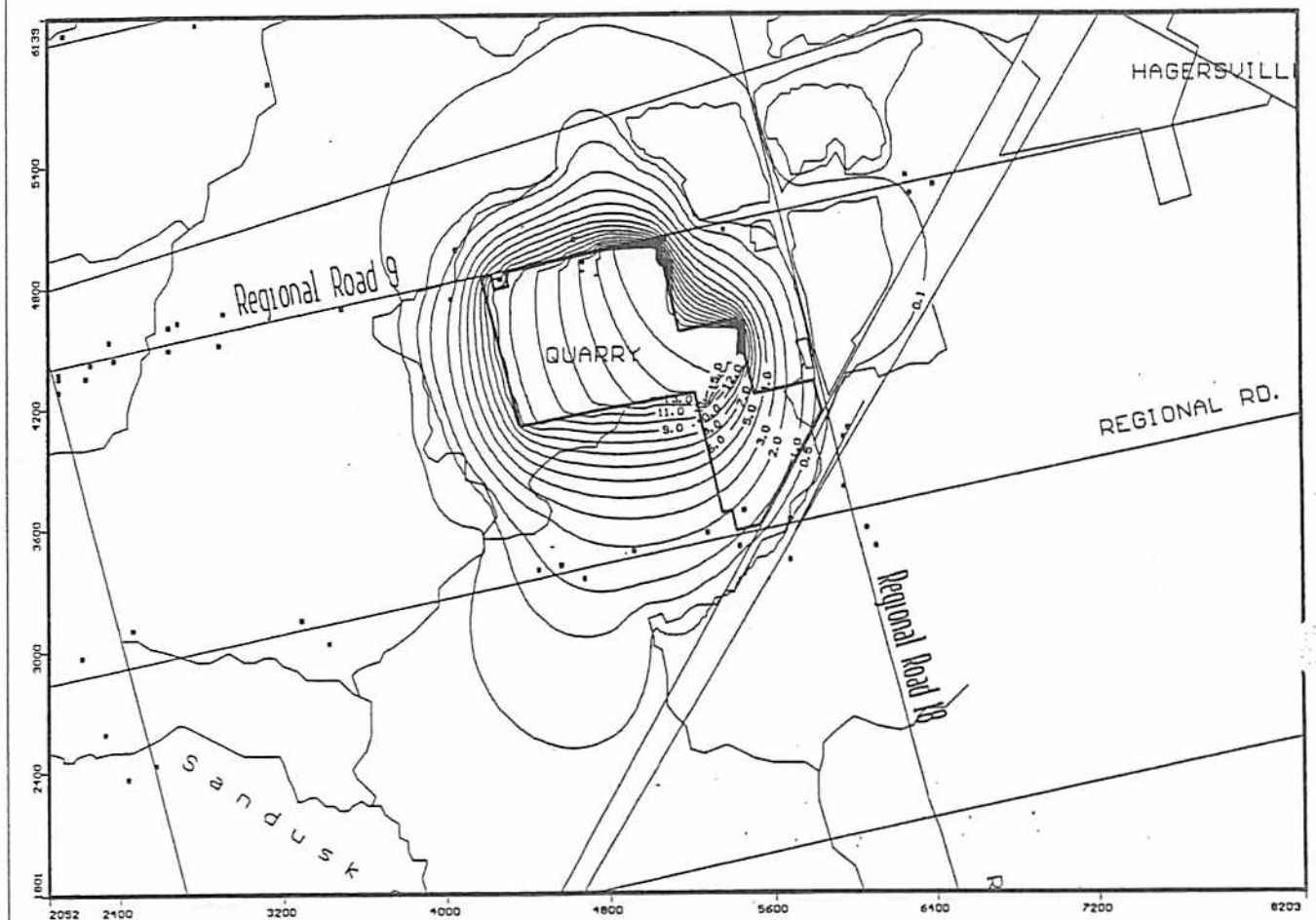
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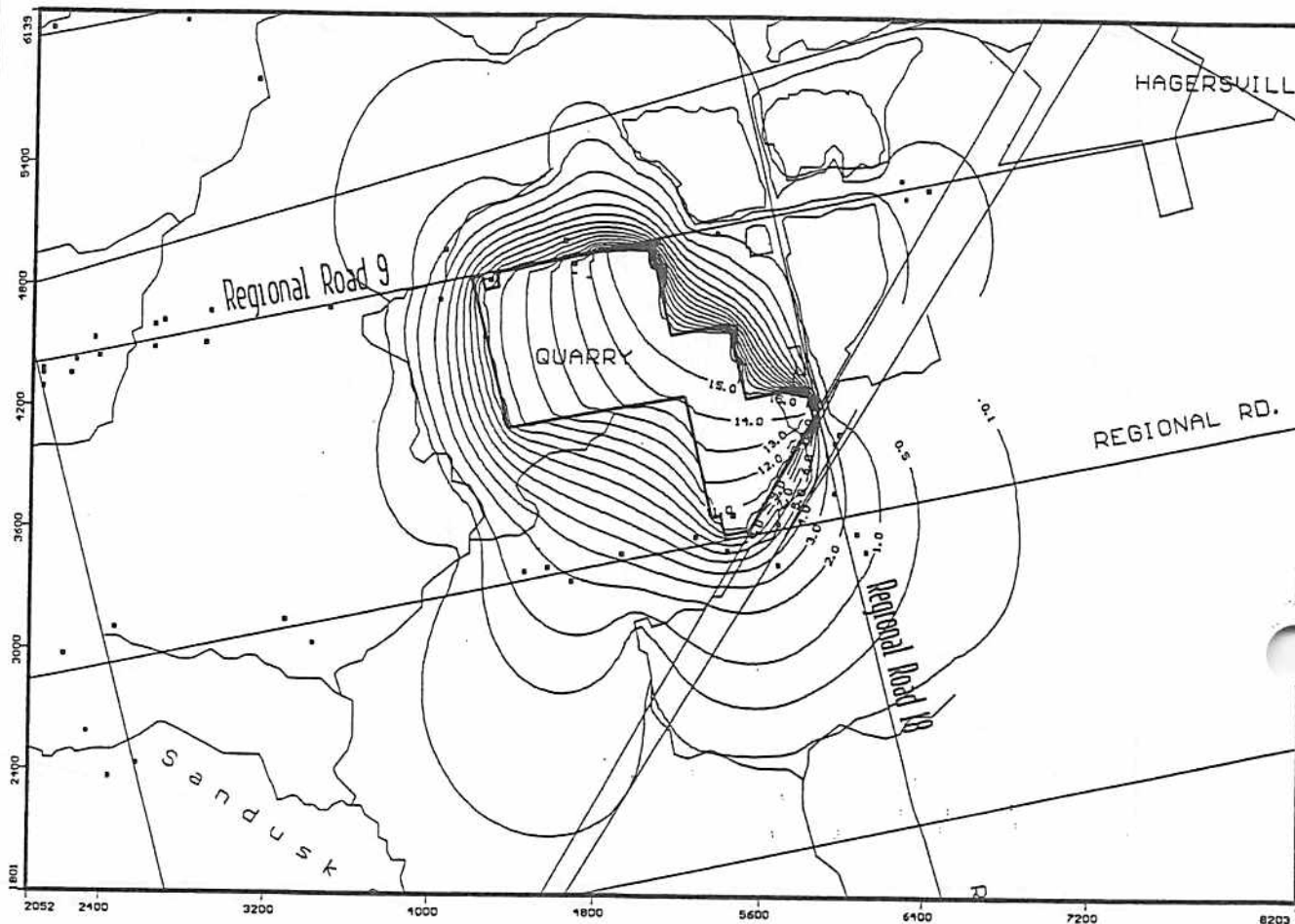
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Visual MODFLOW v.2.60, (C) 1995-1997
 Waterloo Hydrogeologic Software
 NC: 117 NR: 139 NL: 6
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Agra Earth & Env. - Mississauga, ON
Project: Hagersville Quarry
Description: Var.7: 25-Year Drawdown
Modeller: JZ
10 Dec 98

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Waterloo Hydrogeologic Software
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Agra Earth & Env. - Mississauga, ON
 Project: Hagersville Quarry
 Description: Var.7: 50-Year Drawdown
 Modeller: JZ
 10 Dec 98

Visual MODFLOW v.2.60, (C) 1995-1997
 Waterloo Hydrogeologic Software
 NC: 117 NR: 139 NL: 6
 Current Layer: 5

Appendix B

Cultural Heritage Resources

Stages 1, 2, and 3



**Archaeological Assessment (Stages 1, 2 & 3)
Nichols Gravel, Hagersville Quarry**

**City of Nanticoke
R.M. of Haldimand Norfolk, Ontario**

Submitted to

Harrington and Hoyle Ltd.

and the

Ontario Ministry of Citizenship, Culture and Recreation

Prepared by

ARCHAEOLOGIX INC.

508 Platt's Lane, London, Ontario, N6G 5E4
Tel: (519)-642-7836 Fax: (519)-642-7733

Archaeological Licence Number 98-009

Project Number 98-034

December 1998

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<i>Acknowledgments</i>	iii
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- **Bernard Janssen**, Aggregate Resource Specialist, Harrington and Hoyle Ltd., Ontario.
- **Gary Nichols**, President, Nichols Gravel Ltd.; and
- **Penny Young**, Archaeological Data Coordinator, Archaeology Unit, Heritage Branch, Ontario Ministry of Citizenship, Culture and Recreation, Toronto.

Project Summary

An archaeological assessment (Stages 1, 2 & 3) was conducted on a 233 acre proposed limestone quarry located on Part of Lots 10-12, Concession 12, City of Nanticoke, formerly Walpole Township, R.M. of Haldimand-Norfolk, Ontario. This assessment was undertaken as part of the aggregate pit licensing process, as outlined in Sections 2.2.5 and 2.2.6 of the amended *Aggregate Resources Act*.

The background research indicated the presence of four registered archaeological site within two kilometers, although no resources had been reported within the limits of the study area.

With the exception of a five-acre bushlot, the subject property consists of a series of large agricultural fields. All of the property with the exception of 15 acres that could not be ploughed this year has now been assessed. The Stage 2 field assessment resulted in the identification twenty-one pre-contact Aboriginal sites as well as one mid-to-late 19th century Euro-Canadian site. Additional Stage 3 archaeological assessment was recommended for three of these sites, including; AfHa-210 (Location 1), AfHa-211 (Location 2), and AfHa-212 (Location 3).

The Stage 3 investigations resulted in the recovery of minimal cultural material and no diagnostic artifacts from each of the three sites, and consequently no additional investigation is required for AfHa-210, AfHa-211 or AfHa-212. The remaining 15 acres of the study area will be assessed in August of 1999, after the wheat crop of wheat has been harvested.

The Ministry of Citizenship, Culture and Recreation (MCzCR) is asked to review the results and recommendations presented in this report. Based on the results of the Stage 1-3 assessment, the Ministry of Citizenship, Culture and Recreation is asked at this time to issue a letter of clearance for the subject property, conditional on the completion of the Stage 2 assessment in August of 1999.

Archaeological Assessment (Stages 1 and 2)
Nichols Gravel, Hagersville Quarry
City of Nanticoke, R.M. of Haldimand-Norfolk, Ontario

1.0 PURPOSE

An archaeological assessment (Stages 1, 2 & 3) was conducted on a 233 acre proposed limestone quarry located on Part of Lots 10-12, Concession 12, City of Nanticoke, formerly Walpole Township, R.M. of Haldimand-Norfolk, Ontario. This assessment was undertaken as part of the aggregate pit licensing process, as outlined in Sections 2.2.5 and 2.2.6 of the amended *Aggregate Resources Act*.

The background research indicated the presence of four registered archaeological site within two kilometers, although no resources had been reported within the limits of the study area.

The assessment was conducted between on various dates between May 2nd and December 3rd, 1998 under archaeological consulting licence 98-009, issued to Jim Wilson by Jane Marlatt, the Assistant Deputy Minister of Citizenship, Culture and Recreation. The Stage 2 field assessment resulted in the identification of twenty-one pre-contact Aboriginal sites as well as one mid-to-late 19th century Euro-Canadian site. Additional Stage 3 archaeological assessment was recommended for three of these sites, including; AfHa-210 (Location 1), AfHa-211 (Location 2), and AfHa-212 (Location 3).

The Stage 3 investigations resulted in the recovery of minimal cultural material and no diagnostic artifacts from each of the three sites, and consequently no additional investigation is required for AfHa-210, AfHa-211 or AfHa-212. The remaining 15 acres of the study area will be assessed in August of 1999, after the wheat crop of wheat has been harvested.

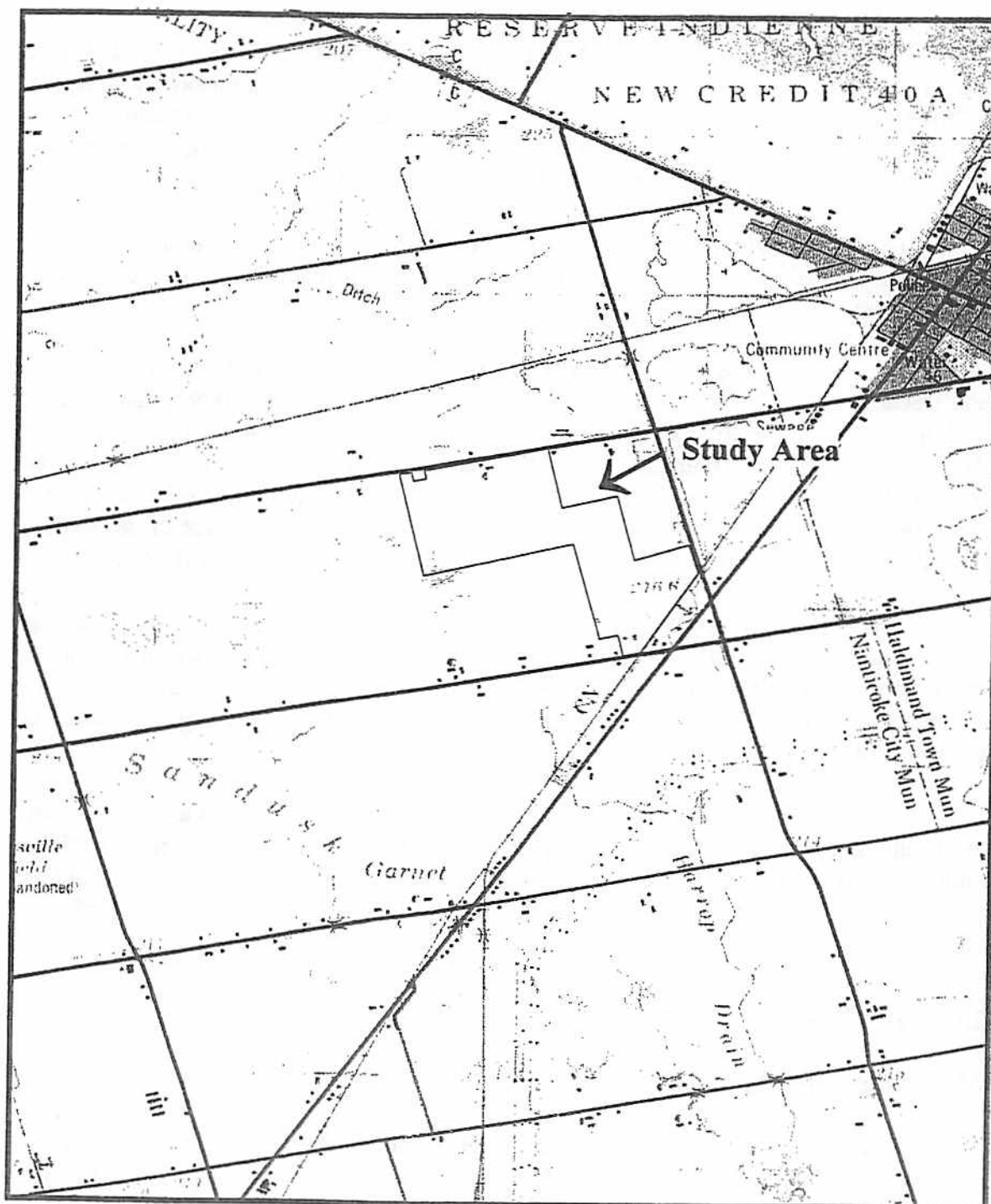
The Ministry of Citizenship, Culture and Recreation (MCzCR) is asked to review the results and recommendations presented in this report. Based on the results of the Stage 1-3 assessment, the Ministry of Citizenship, Culture and Recreation is asked at this time to issue a letter of clearance for the subject property, conditional on the completion of the Stage 2 assessment in August of 1999.

2.0 STUDY METHODS

2.1 Stage 1 Background Research

In compliance with the provincial regulations set out in the "*Archaeological Assessment Technical Guidelines*" (MCzCR 1993), the Stage 1 Archaeological Overview/Background Study included;

Figure 1: Location of the Study Area



- a review of the land use history, including pertinent historic maps; and
- an examination of the National Site Registration Database to determine the presence of known archaeological sites in and around the project area.

Background research was conducted at the Ministry of Citizenship, Culture and Recreation Office (MCzCR) in Toronto, the University of Western Ontario Map Library, and the corporate library of Archaeologix Inc.

2.2 Stage 2 Field Assessment

With the exception of a five-acre bushlot, the subject property consists of a series of large agricultural fields. The ploughed portion of the study area had been well weathered and was examined using pedestrian transects at a five-metre interval. The five acre bush was assessed using the shovel test pit method, also at a five-metre interval.

There is an additional 15 acres of the study area that was planted in winter wheat, and could not be assessed this field season. This portion of the property will be assessed in August of 1999 (Figure 3).

2.3 Stage 3 Assessment of Site Significance and Information Potential

The Stage 3 assessment included the controlled mapping of surface artifacts locations documented during the Stage 2 assessment, as well as the hand excavation of a series of one-meter test units strategically placed to sample the nature and density of the ploughzone deposits. All excavated artifacts were retained for laboratory analysis and description. With the exception of potentially diagnostic artifacts, all surface artifacts were left in place.

3.0 RESULTS

3.1 Background Research

3.1.1 The Natural Environment

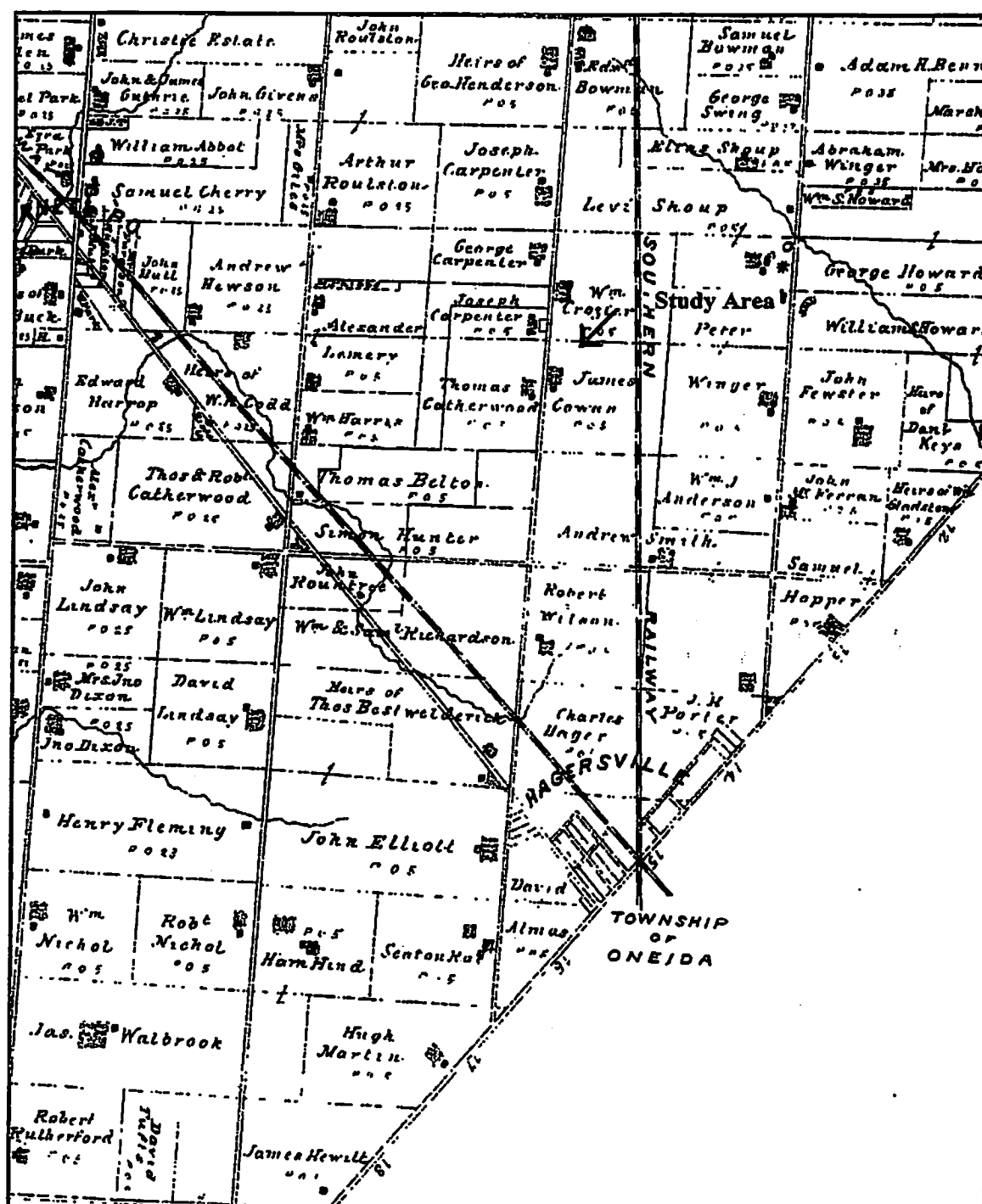
The study area is situated within the "Haldimand Clay Plain" physiographic region (Chapman and Putnam 1966:156-158).

Although it was all submerged in Lake Warren, the till is not all buried by stratified clay; it comes to the surface generally in low morainic ridges in the north. In fact, there is in that area a confused intermixture of stratified clay and till. The northern part has more relief than the southern part where the typically level lake plains occur.

Chapman and Putnam, 1984:156

The study area has very little topographic relief and the soils are heavy clay. Drainage of the property is to the southwest, to Spring Creek.

Figure 2: A Portion of the 1877 Map of the Township of Walpole



3.1.2 Previously Known Archaeological Resources

There has been very little archaeological assessment in the immediate vicinity of Hagersville, although there are four sites registered in the Provincial database that are within two kilometers of the study area. All four of these sites are pre-contact Aboriginal camps of an undetermined cultural or temporal affiliation. Table 1 list these four sites while Table 2 provides a general outline of the culture history for the Haldimand-Norfolk area.

3.1.3 Potential for Historic Archaeological Sites

There are two locations of potential nineteenth century Euro-Canadian sites indicated within the limits of the study area on 1877 H.R. Page & Co. Map of Walpole Township in the *Illustrated Historical Atlas of the Counties of Haldimand & Norfolk* (Figure 2). The owner of Lot 10 is listed as "Joseph Carpenter" while "Thomas Catherwood" owned Lot 11. "Thomas Belton" and Simon Hunter owned the west and east halves of Lot 12, respectively.

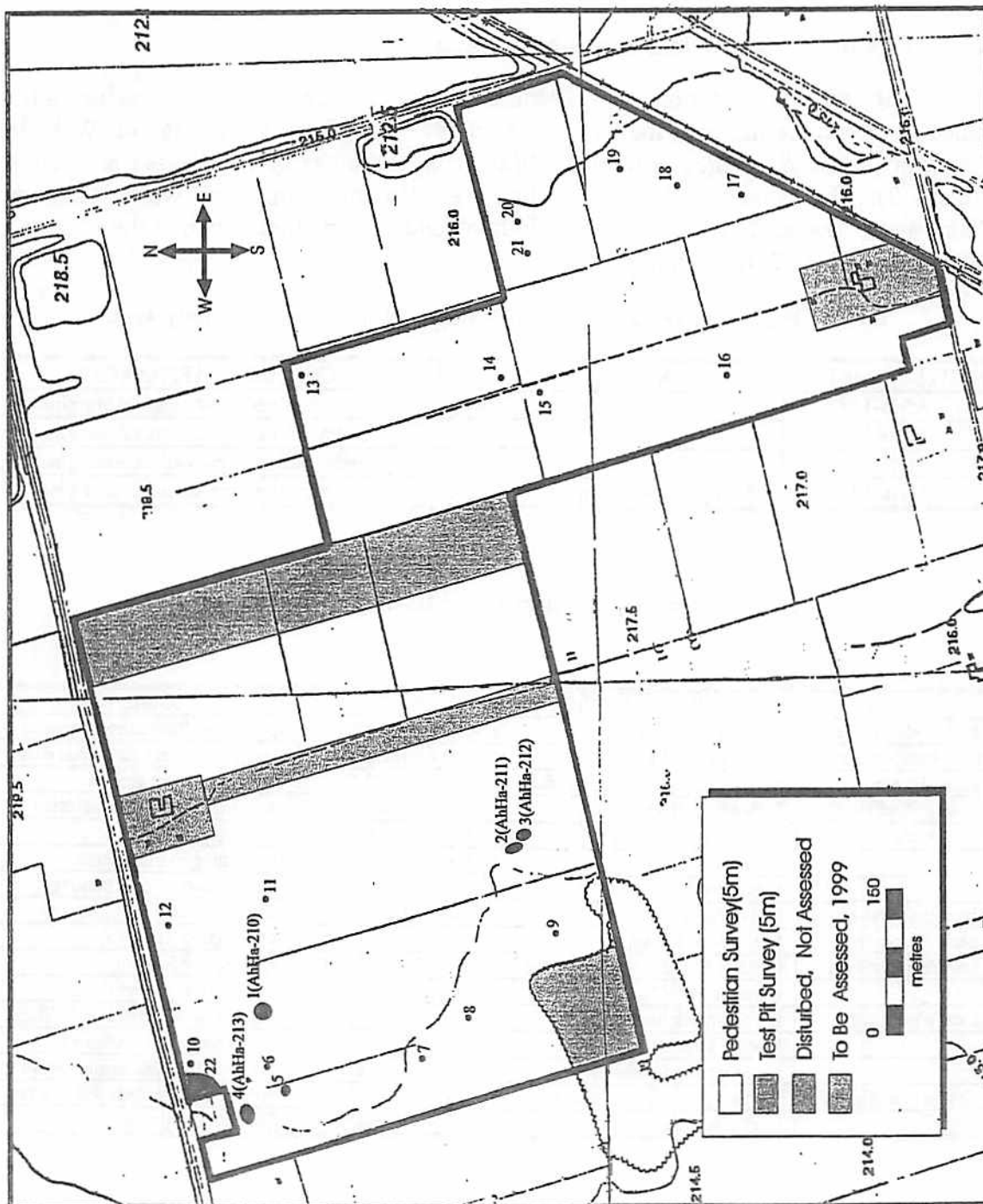
Table 1: Registered Archaeological Sites within 2 Kilometers of the Study Area.

SITE NUMBER	NAME	SITE TYPE	CULTURAL AFFILIATION
AfHa-157	-	camp	undetermined pre-contact Aboriginal
AfHa-152	-	camp	undetermined pre-contact Aboriginal
AfHa-153	-	camp	undetermined pre-contact Aboriginal
AfHa-127	Rocky's Restaurant	camp	undetermined pre-contact Aboriginal

Table 2: Cultural Chronology for the Haldimand-Norfolk Area.

PERIOD	CHARACTERISTICS	TIME	COMMENTS
Early Paleo-Indian	Fluted Projectiles	9000 - 8400 B.C.	spruce parkland/caribou hunters
Late Paleo-Indian	Hi-Lo Projectiles	8400 - 8000 B.C.	smaller but more numerous sites
Early Archaic	Kirk and Bifurcate Base Points	8000 - 6000 B.C.	slow population growth
Middle Archaic	Brewerton-like points	6000 - 2500 B.C.	environment similar to present
Late Archaic	Lamoka (narrow points)	2000 - 1800 B.C.	increasing site size
	Broadpoints	1800 - 1500 B.C.	large chipped lithic tools
	Small Points	1500 - 1100 B.C.	introduction of bow hunting
Terminal Archaic	Hind Points	1100 - 950 B.C.	emergence of true cemeteries
Early Woodland	Meadowood Points	950 - 400 B.C.	introduction of pottery
Middle Woodland	Dentate/Pseudo-Scallop Pottery	400 B.C. - A.D. 500	increased sedentism
	Princess Point	A.D. 550 - 900	introduction of corn
Late Woodland	Early Ontario Iroquoian	A.D. 900 - 1300	emergence of agricultural villages
	Middle Ontario Iroquoian	A.D. 1300 - 1400	long longhouses (100m +)
	Late Ontario Iroquoian	A.D. 1400 - 1650	tribal warfare and displacement
Contact Aboriginal	Various Algonkian Groups	A.D. 1700 - 1875	early written records and treaties
Historic	Euro-Canadian	A.D. 1796 - present	European settlement

Figure 3: Stage 2 Methods and Results



3.2 Stage 2 Field Assessment Results

The Stage 2 field assessment resulted in the identification twenty-one pre-contact Aboriginal sites as well as one mid-to-late 19th century Euro-Canadian site. Each of these sites is described separately below.

3.2.1 Location 1 (AfHa-210)

Location 1 consists of a roughly circular, 20 by 20 metre scatter of pre-contact Aboriginal artifacts located in the northwest corner of the study area (Figure 3). The site was identified in May of 1998, at which time thirty pieces of Onondaga chert chipping detritus were noted on the surface. The site was revisited in November after it had been re-ploughed. At this time fifteen additional pieces of chipping detritus were noted on the surface.

Because Location 1 consists of a moderately dense and spatially discrete scatter of pre-contact Aboriginal artifacts, it was recommended that the site be subjected to additional Stage 3 archaeological assessment in order to better assess its' significance and information potential.

3.2.2 Location 2 (AfHa-211))

Location 2 consists of a 15 east-west by 20 metre north-south scatter of pre-contact Aboriginal artifacts located in the northwest corner of the study area (Figure 3). The site was identified in November of 1998, at which time thirteen pieces of Onondaga chert chipping detritus were noted on the surface.

Because Location 2 consists of a moderately dense and spatially discrete scatter of pre-contact Aboriginal artifacts, it was recommended that the site be subjected to additional Stage 3 archaeological assessment in order to better assess its' significance and information potential.

3.2.3 Location 3 (AfHa-212)

Location 3 consists of a 15 east-west by 20 metre north-south scatter of pre-contact Aboriginal artifacts located in the northwest corner of the study area (Figure 3). The site was identified in November of 1998, at which time twelve pieces of Onondaga chert chipping detritus were noted on the surface.

Because Location 3 consists of a moderately dense and spatially discrete scatter of pre-contact Aboriginal artifacts, it was recommended that the site be subjected to additional Stage 3 archaeological assessment in order to better assess its' significance and information potential.

Figure 4: General View of the Survey Conditions



Figure 5: Stage 3 Testing of Location 1 (AfHa-210)

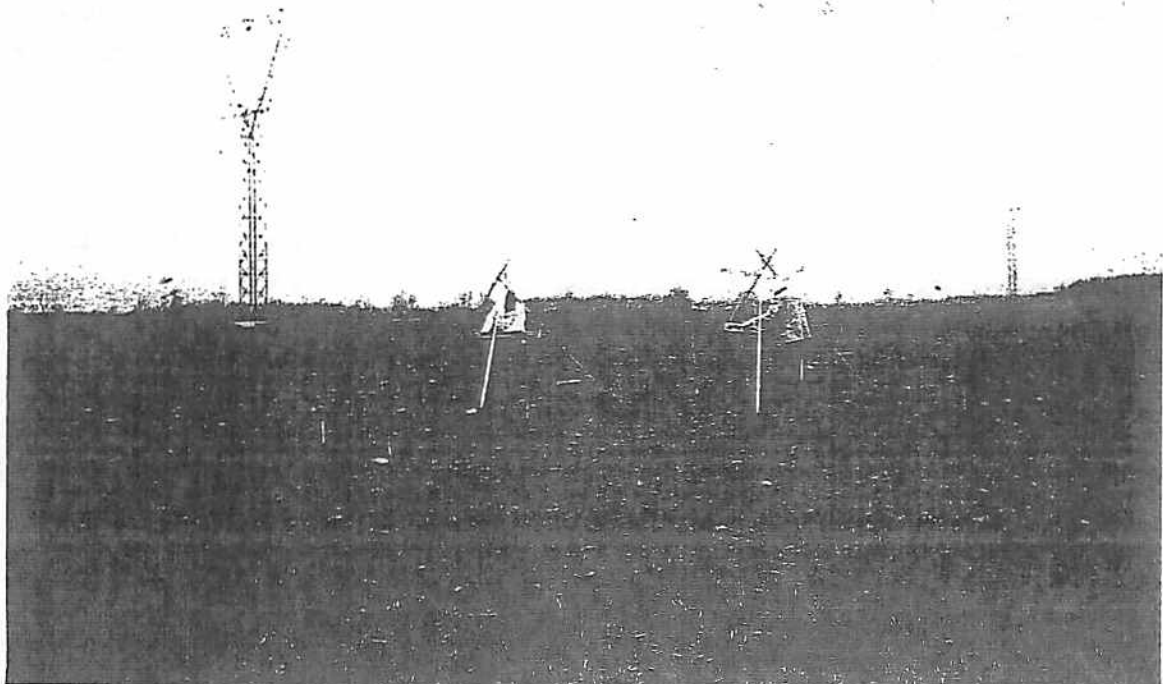


Figure 6: Stage 2 Artifact Recoveries

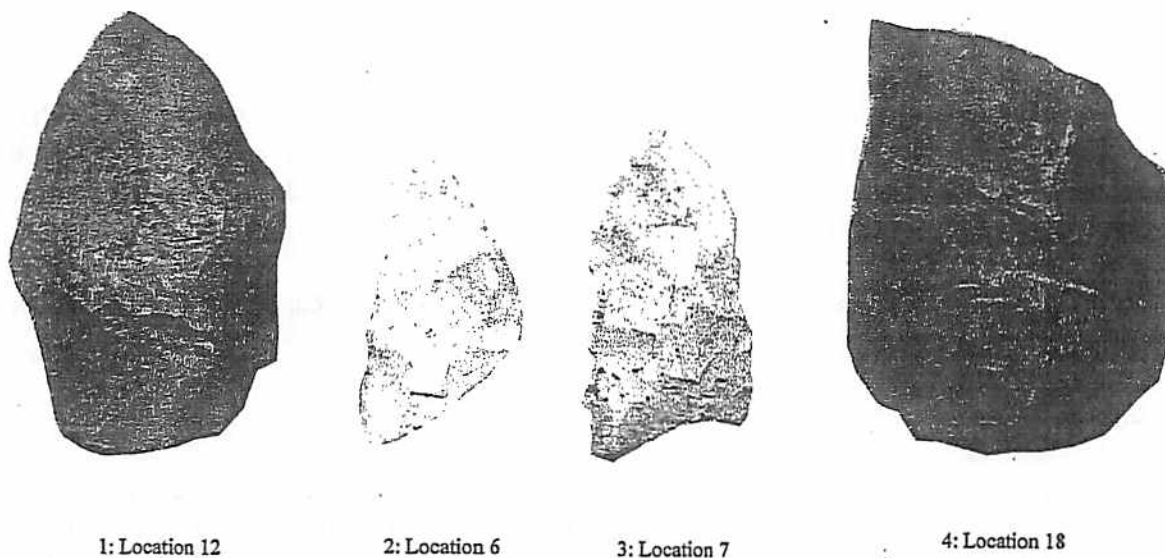


Figure 7: Bushlot, Tested at a Five-Metre Interval



3.2.4 Location 4 (AfHa-213)

Location 4 consists of a 30 east-west by 20 metre north-south scatter of pre-contact Aboriginal artifacts located in the northwest corner of the study area (Figure 3). The site was identified in May of 1998, at which time 40 pieces of Onondaga chert chipping detritus were noted on the surface.

Because Location 4 is located immediately behind an existing residential structure, the decision was made by the proponent to exclude this area from the Licence application. The limits of the site were clearly marked, and the new limits of the application will provide at least a ten-metre buffer for the site.

Because Location 4 is located outside the revised application limits, no further assessment is required.

3.2.5 Location 5

Location 5 consists of a 15 east-west by 20 metre north-south scatter of pre-contact Aboriginal artifacts located in the northwest corner of the study area (Figure 3). The site was identified in May of 1998, at which time seven pieces of Onondaga chert chipping detritus were noted on the surface. Location 5 was re-walked in November of 1998, after the site area had been ploughed. No additional cultural material was noted.

Due to the limited number of artifacts note at Location, as well as the lack of diagnostic material, no additional assessment is recommended.

3.2.6 Location 6

Location 6 consists of an isolated find spot of a non-diagnostic biface tip, manufactured from Haldimand chert (Figure 3).

Despite the reduction of the survey interval to one-meter surrounding this find, no additional material was located. Consequently no additional assessment is recommended for Location 6.

3.2.7 Location 7

Location 7 consists of an isolated find spot of a non-diagnostic biface tip, manufactured from Haldimand chert (Figure 3).

Despite the reduction of the survey interval to one-meter surrounding this find, no additional material was located. Consequently no additional assessment is recommended for Location 7.

3.2.8 Location 8

Location 8 consists of an isolated find spot of a single piece of Onondaga chert chipping detritus (Figure 3).

Despite the reduction of the survey interval to one-meter surrounding this find, no additional material was located. Due to the limited significance of an isolated piece of chipping detritus, no additional assessment is recommended for Location 8.

3.2.9 Location 9

Location 9 consists of an isolated find spot of a non-diagnostic biface mid-section, manufactured from Onondaga chert (Figure 3).

Despite the reduction of the survey interval to one-meter surrounding this find, no additional material was located. Consequently no additional assessment is recommended for Location 9.

3.2.10 Location 10

Location 10 consists of an isolated find spot of a two pieces of Onondaga chert chipping detritus, located fifteen meters apart (Figure 3).

Despite the reduction of the survey interval to one-meter surrounding this find, no additional material was located. Due to the limited significance of two isolated pieces of chipping detritus, no additional assessment is recommended for Location 10.

3.2.11 Location 11

Location 11 consists of an isolated find spot of a single piece of Onondaga chert chipping detritus (Figure 3).

Despite the reduction of the survey interval to one-meter surrounding this find, no additional material was located. Due to the limited significance of an isolated piece of chipping detritus, no additional assessment is recommended for Location 11.

3.2.12 Location 12

Location 12 consists of an isolated find spot of a non-diagnostic biface preform manufactured from Onondaga chert (Figure 3). The biface was apparently rejected in manufacture when a large hinge island developed during thinning. The biface measures 58.9 millimeters long, is 38.1 millimeters wide and is 24.1 millimeters thick.

Despite the reduction of the survey interval to one-meter surrounding this find, no additional material was located. Given the limited archaeological significance of an isolated biface, no additional assessment is recommended for Location 12.

3.2.13 Location 13

Location 13 consists of an isolated find spot of a single piece of Onondaga chert chipping detritus (Figure 3).

Despite the reduction of the survey interval to one-meter surrounding this find, no additional material was located. Due to the limited significance of an isolated piece of chipping detritus, no additional assessment is recommended for Location 13.

3.2.14 Location 14

Location 14 consists of an isolated find spot of a single piece of Onondaga chert chipping detritus (Figure 3).

Despite the reduction of the survey interval to one-meter surrounding this find, no additional material was located. Due to the limited significance of an isolated piece of chipping detritus, no additional assessment is recommended for Location 14.

3.2.15 Location 15

Location 15 consists of an isolated find spot of a single piece of Onondaga chert chipping detritus (Figure 3).

Despite the reduction of the survey interval to one-meter surrounding this find, no additional material was located. Due to the limited significance of an isolated piece of chipping detritus, no additional assessment is recommended for Location 15.

3.2.16 Location 16

Location 16 consists of an isolated find spot of a single piece of Onondaga chert chipping detritus (Figure 3).

Despite the reduction of the survey interval to one-meter surrounding this find, no additional material was located. Due to the limited significance of an isolated piece of chipping detritus, no additional assessment is recommended for Location 16.

3.2.17 Location 17

Location 17 consists of an isolated find spot of a single piece of Onondaga chert chipping detritus (Figure 3).

Despite the reduction of the survey interval to one-meter surrounding this find, no additional material was located. Due to the limited significance of an isolated piece of chipping detritus, no additional assessment is recommended for Location 17.

3.2.18 Location 18

Location 18 consists of an isolated find spot of a large non-diagnostic biface base manufactured from Onondaga chert (Figure 3).

Despite the reduction of the survey interval to one-meter surrounding this find, no additional material was located. Given the limited archaeological significance of an isolated biface, no additional assessment is recommended for Location 12.

3.2.19 Location 19

Location 19 consists of an isolated find spot of a single piece of Onondaga chert chipping detritus (Figure 3).

Despite the reduction of the survey interval to one-meter surrounding this find, no additional material was located. Due to the limited significance of an isolated piece of chipping detritus, no additional assessment is recommended for Location 19.

3.2.20 Location 20

Location 20 consists of an isolated find spot of a single piece of Onondaga chert chipping detritus (Figure 3).

Despite the reduction of the survey interval to one-meter surrounding this find, no additional material was located. Due to the limited significance of an isolated piece of chipping detritus, no additional assessment is recommended for Location 20.

3.2.21 Location 21

Location 21 consists of an isolated find spot of a single piece of Onondaga chert chipping detritus (Figure 3).

Despite the reduction of the survey interval to one-meter surrounding this find, no additional material was located. Due to the limited significance of an isolated piece of chipping detritus, no additional assessment is recommended for Location 21.

3.2.22 Location 22

Location 22 consists of a 40 by 30 meter scatter of late 19th and early 20th century domestic artifacts located adjacent to the ruins of the cobble stone barn foundation

associated with the structure mapped as the "Carpenter" house in the 1877 Map of the Township of Walpole (Figure 2 & 3).

Numerous fragments of semi-porcelain, milk glass, ironstone and late varieties of transfer printed whiteware were scattered about the surface, amid numerous pieces of 20th century crown top bottles and plastics.

Given the relatively late date of the surface materials, as well as the clear association with the Carpenter structure mapped in the 1877 atlas, no additional archaeological assessment is recommended for this location.

3.3 Stage 3 Archaeological Site Documentation

Based on the results of the Stage 2 general survey, three of the twenty-two sites required a Stage 3 assessment (Location 1, AfHa-210; Location 2, AfHa-211; and Location 3, AfHa-213). The Stage 3 assessments included the controlled surface mapping of surface artifacts locations documented during the Stage 2 assessment, as well as the hand excavation of a series of one-meter test units strategically placed to sample the nature and density of the ploughzone deposits. All soil was screened through ¼ inch hardware mesh to facilitate the recovery of artifacts. All excavated artifacts were retained for laboratory analysis and description. Each of the three sites is described separately below.

3.3.1 Location 1 (AfHa-210)

The Stage 2 survey indicated that Location 1 (AfHa-210) consisted of a roughly circular, 20 by 20 metre scatter of pre-contact Aboriginal artifacts (Figure 3). The site was identified in May of 1998, at which time thirty pieces of Onondaga chert chipping detritus were noted on the surface. When the site was revisited after fall ploughing, only fifteen flakes were noted on the surface (Figure 8).

The Stage 3 excavation of eight one-metre test units resulted in the recovery of an additional thirty-one pieces of Onondaga chert chipping detritus; including twelve primary flakes, twelve broken flakes and seven biface thinning flakes. Table 3 presents the Stage 3 results by excavation unit.

Due to the low recovery rate of artifacts from the test units, as well as the failure to document any diagnostic artifacts, no additional assessment is recommended for Location 1 (AfHa-210).

Figure 8: Location 1 (AffHa-210) Stage 3 Results.

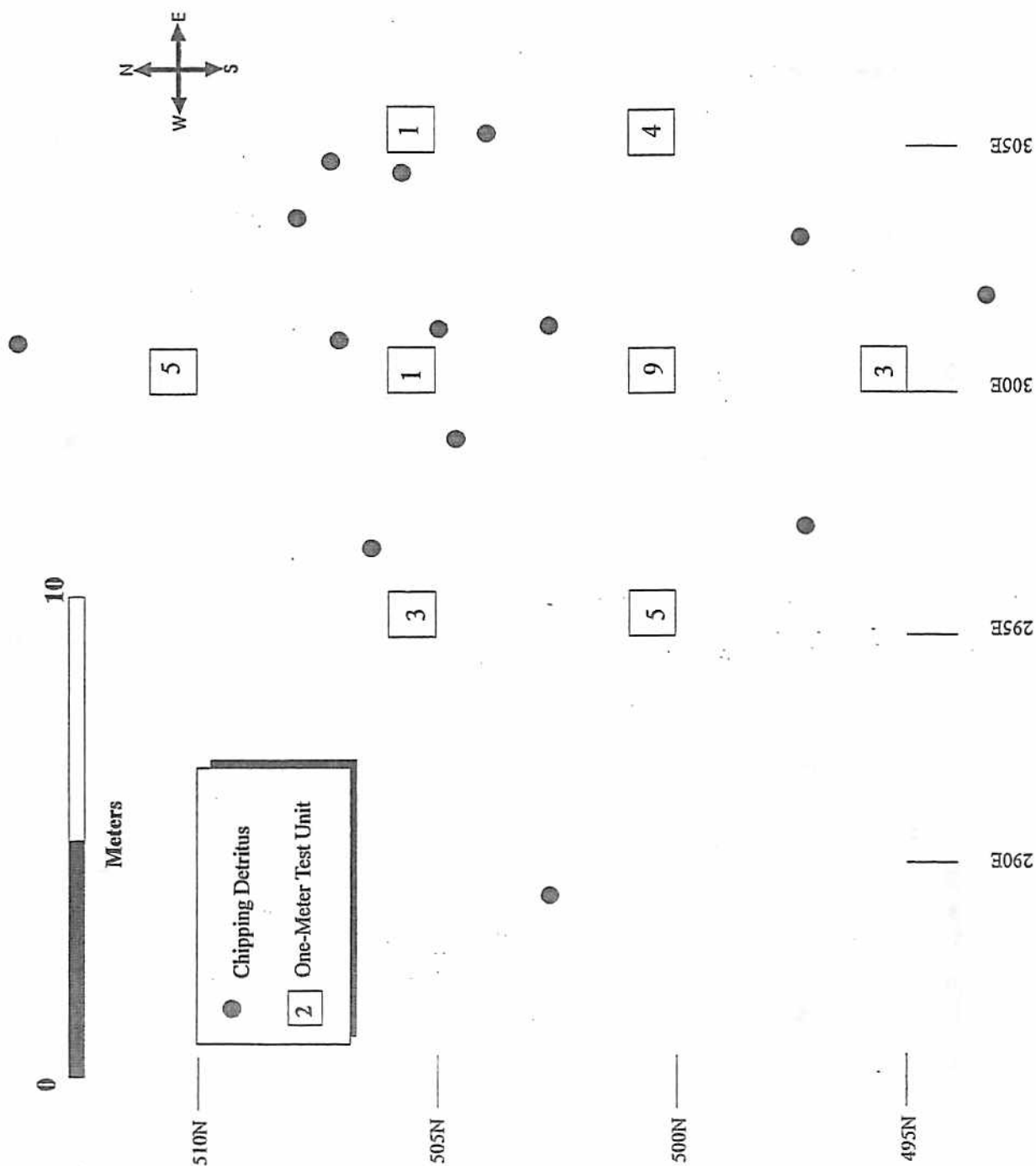


Figure 9: Location 2 (AfHa-211) Stage 3 Results.

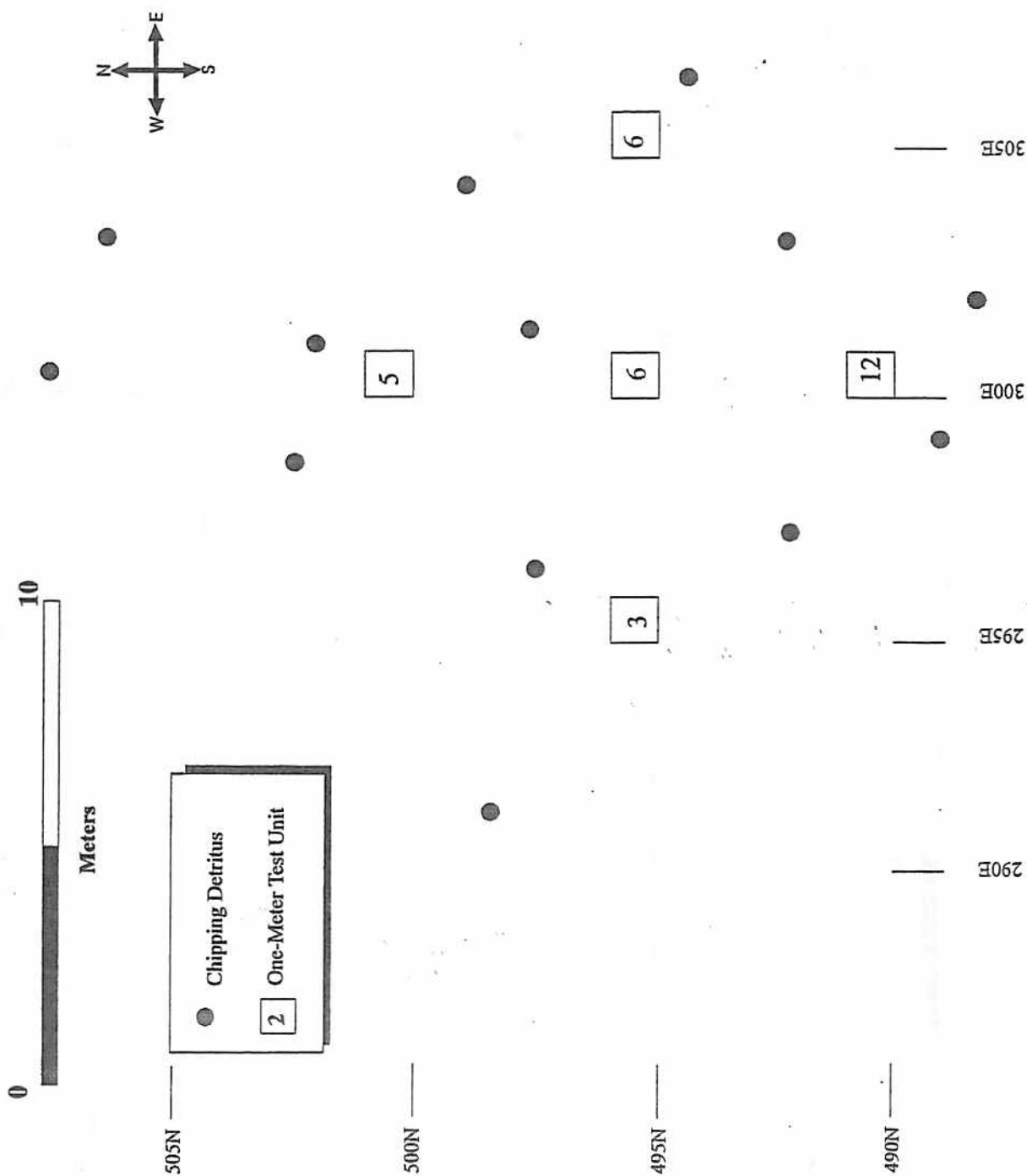


Figure 10: Location 3 (AfHa-212) Stage 3 Results.

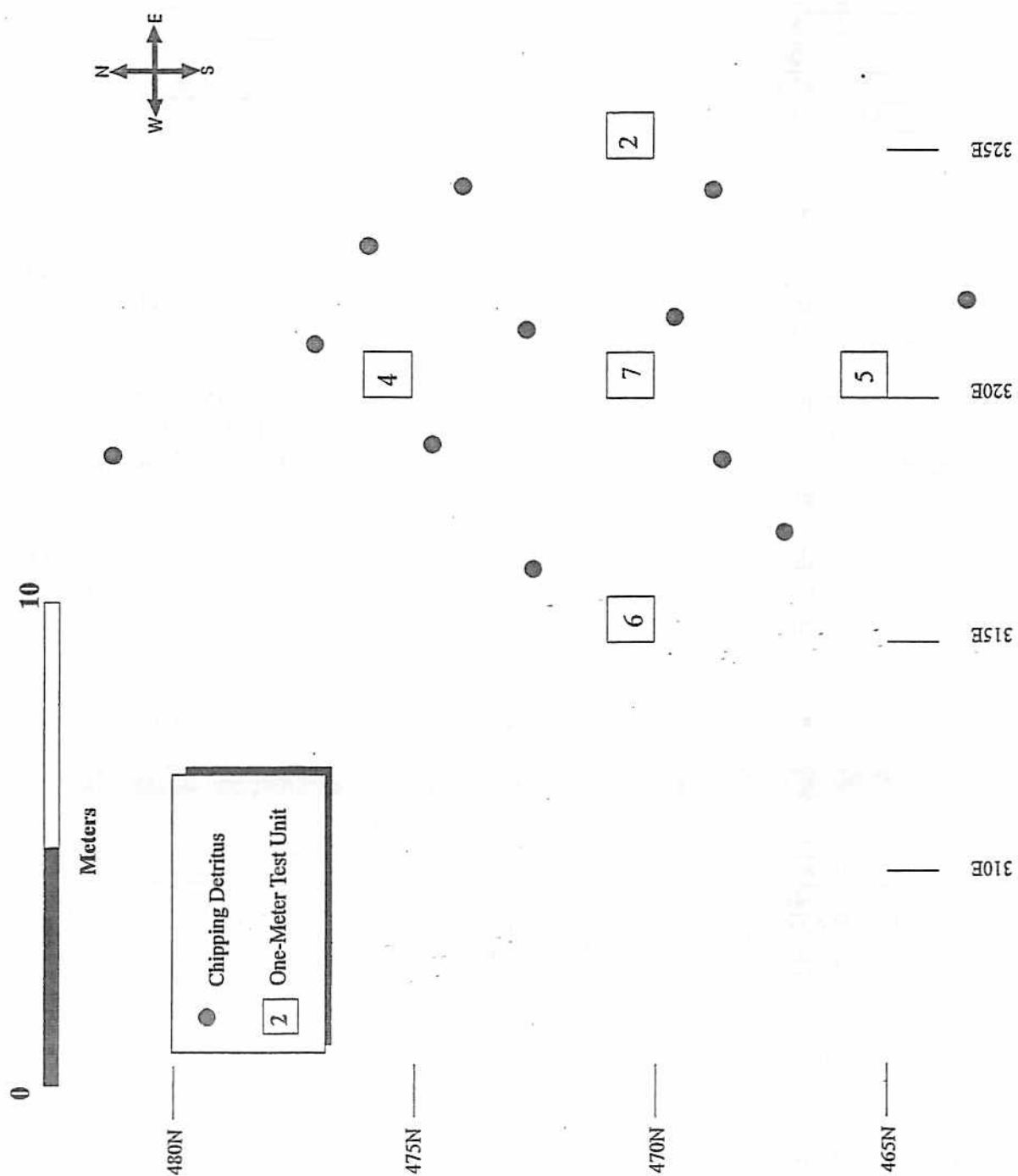


Table 3: Location 1 (AfHa-210) Stage 3 Artifact Recoveries

Unit	Depth	Class	Cat.#	Frequency
295E-500N:1	0-18	CDE	1	5
295E-505N:1	0-19	CDE	2	3
300E-495N:1	0-17	CDE	3	3
300E-500N:1	0-20	CDE	4	9
300E-505N:1	0-19	CDE	5	1
300E-510N:1	0-18	CDE	6	5
305E-495N:1	0-18	CDE	7	4
305E-505N:1	0-20	CDE	8	1

3.3.2 Location 2 (AfHa-211)

The Stage 2 survey indicated that Location 2 (AfHa-211) consisted of a 15 east-west by 20 metre north-south scatter of thirteen pieces of Onondaga chert chipping detritus (Figure 9).

The Stage 3 excavation of five one-metre test units resulted in the recovery of an additional thirty-two pieces of Onondaga chert chipping detritus; including fourteen primary flakes, ten broken flakes and eight biface thinning flakes. Table 4 presents the Stage 3 results by excavation unit.

Due to the low recovery rate of artifacts from the test units, as well as the failure to document any diagnostic artifacts, no additional assessment is recommended for Location 2 (AfHa-211).

Table 4: Location 2 (AfHa-211) Stage 3 Artifact Recoveries

UNIT	DEPTH	CLASS	CAT.#	FREQUENCY
295E-495N:1	0-18	CDE	1	3
300E-490N:1	0-20	CDE	2	12
300E-495N:1	0-19	CDE	3	6
300E-500N:1	0-20	CDE	4	5
305E-495N:1	0-18	CDE	5	6

3.3.3 Location 3 (AfHa-212)

The Stage 2 general survey indicated that Location 3 consisted of a 15 east-west by 20 metre north-south scatter of twelve pieces of Onondaga chert chipping (Figure 10).

The Stage 3 excavation of five one-metre test units resulted in the recovery of an additional twenty-four pieces of Onondaga chert chipping detritus; including ten primary flakes, ten broken flakes and four biface thinning flakes. Table 4 presents the Stage 3 results by excavation unit.

Due to the low recovery rate of artifacts from the test units, as well as the failure to document any diagnostic artifacts, no additional assessment is recommended for Location 3 (AfHa-212).

Table 5: Location 3 (AfHa-212) Stage 3 Artifact Recoveries

Unit	Depth	Class	Cat.#	Freq.
315E-465N:1	0-20	CDE	1	6
320E-460N:1	0-18	CDE	2	5
320E-465N:1	0-19	CDE	3	7
320E-470N:1	0-20	CDE	4	4
325E-465N:1	0-21	CDE	5	2

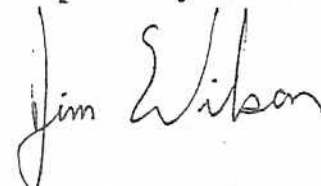
4.0 RECOMMENDATIONS

The Stage 2 field assessment resulted in the identification of twenty-one pre-contact Aboriginal sites as well as one mid-to-late 19th century Euro-Canadian site. Additional Stage 3 archaeological assessment was recommended for three of these sites, including; AfHa-210 (Location 1), AfHa-211 (Location 2), and AfHa-212 (Location 3).

The Stage 3 investigations resulted in the recovery of minimal cultural material and no diagnostic artifacts from each of the three sites, and consequently no additional investigation is required for AfHa-210, AfHa-211 or AfHa-212. The remaining 15 acres of the study area will be assessed in August of 1999, after the wheat crop of wheat has been harvested.

The Ministry of Citizenship, Culture and Recreation (MCzCR) is asked to review the results and recommendations presented in this report. Based on the results of the Stage 1-3 assessment, the Ministry of Citizenship, Culture and Recreation is asked at this time to issue a letter of clearance for the subject property, conditional on the completion of the Stage 2 assessment in August of 1999.

Respectfully Submitted by



Jim Wilson, M.A.
President, Archaeologix Inc.

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H.R. Page & Co.

1877 **Illustrated Historical Atlas of the Counties of Haldimand and Norfolk, Ontario.**

**Addendum
Archaeological Assessment (Stages 1, 2 & 3)
Nichols Gravel, Hagersville Quarry**

**City of Nanticoke
R.M. of Haldimand Norfolk, Ontario**

**Submitted to
Harrington and Hoyle Ltd.
and the
Ontario Ministry of Citizenship, Culture and Recreation**

**Prepared by
ARCHAEOLOGIX INC.**

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Archaeological Licence Number 98-009 & 99-049

Project Number 98-034

August 1999

Addendum
Archaeological Assessment (Stages 1, 2 & 3)
Nichols Gravel, Hagersville Quarry
City of Nanticoke, R.M. of Haldimand-Norfolk, Ontario

1.0 PURPOSE

An archaeological assessment (Stages 1, 2 & 3) was previously conducted on a 233 acre proposed limestone quarry located on Part of Lots 10-12, Concession 12, City of Nanticoke, formerly Walpole Township, R.M. of Haldimand-Norfolk, Ontario (Archaeologix Inc. 1999). During the 1998 field season there were approximately 15 acres of the subject property that could not be examined because they were planted in winter wheat. This addendum report describes the methods and results of this additional assessment.

The additional assessment was conducted on August 11th, 1999 under archaeological consulting licence 99-049, issued to Jim Wilson by Jane Marlatt, the Assistant Deputy Minister of Citizenship, Culture and Recreation. The Stage 2 field assessment resulted in the identification of no new archaeological sites and additional assessment is not recommended.

The Ministry of Citizenship, Culture and Recreation (MCzCR) is asked to review the results and recommendations presented in this report. Based on the results of the Stage 1-3 assessment, the Ministry of Citizenship, Culture and Recreation is asked to issue a letter of clearance for the subject property.

2.0 STUDY METHODS

2.1 Stage 2 Field Assessment

The remaining area requiring assessment consists of approximately 15 acres of agricultural field. The area had been ploughed in early August, and had been weathered by one heavy rainfall prior to assessment. Due to the presence of numerous archaeological sites and find spots elsewhere on the subject property, the archaeological potential was judged to be high. Consequently the remaining assessment was conducted using the pedestrian transect method at a five-meter interval.

3.0 RESULTS

3.1 Stage 2 Field Assessment

The additional Stage 2 assessment did not result in the recovery of any additional archaeological remains, and additional assessment is not recommended.

Figure 1: Stage 2 Methods and Results

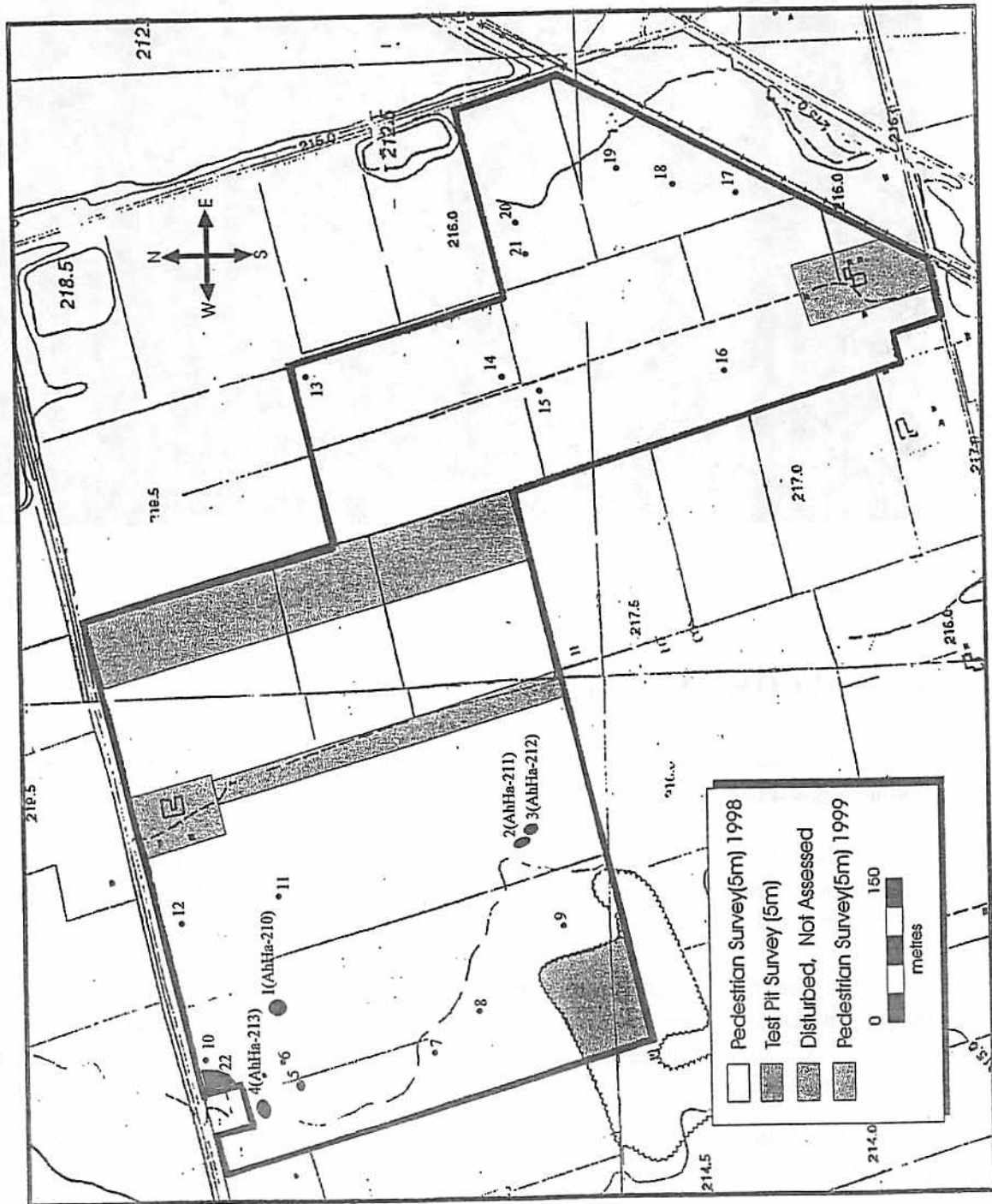
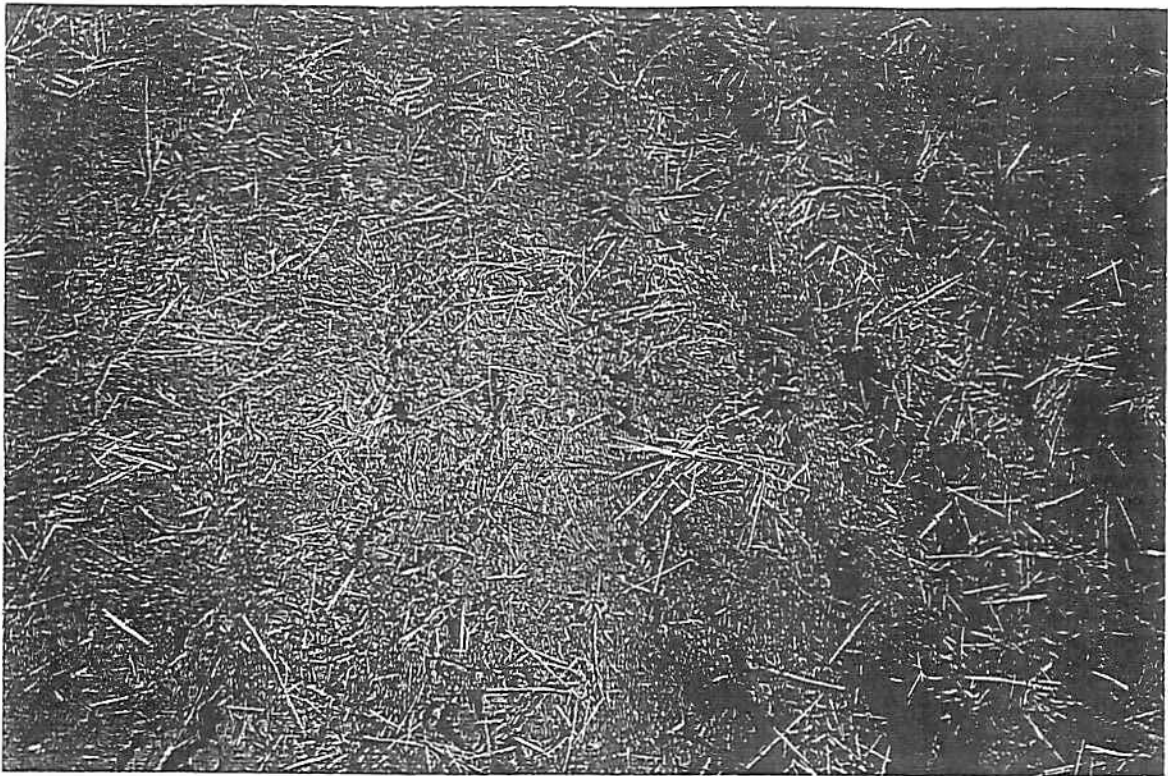


Figure 2: Stage 2 Survey Conditions



4.0 RECOMMENDATIONS

The additional Stage 2 field assessment did not result in the recovery of any archaeological remains and additional assessment is not recommended.

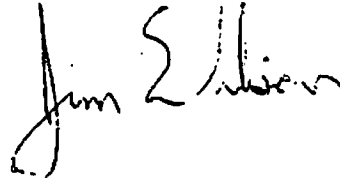
Should deeply buried archaeological material be found on the property during excavation activities, the Ministry of Citizenship, Culture and Recreation should be notified immediately (519)-675-7742.

In the event that human remains are encountered during construction, the proponent should immediately contact both the MCzCR and the Registrar or Deputy Registrar of the Cemeteries Regulation Unit of the Ministry of Consumer and Commercial Relations, (416) 326-8392.

The Ministry of Citizenship, Culture and Recreation (MCzCR) is asked to review the results and recommendations presented in this report. Based on the results of the

Stage 1-3 assessment, the Ministry of Citizenship, Culture and Recreation is asked at this time to issue a letter of clearance for the subject property.

Respectfully Submitted by

A handwritten signature in black ink, appearing to read "Jim Wilson". The signature is fluid and cursive, with the first name "Jim" and last name "Wilson" clearly distinguishable.

**Jim Wilson, M.A.
President, Archaeologix Inc.**

References Cited

Archaeologix Inc.

1998 Archaeological Assessment (Stages 1, 2 and 3), Nichols Gravel, Hagersville Quarry, City of Nanticoke, R.M. of Haldimand-Norfolk, Ontario. Report on file with the MCzCR, Heritage & Libraries Branch, Toronto.

Archaeologix Inc. Profile

Archaeologix Inc. has staff and associates with extensive experience in conducting archaeological field assessments for both public and private sector clients throughout the Province of Ontario. In addition to field assessments, Archaeologix Inc. offers a range of heritage related services including Stage 1 background research, archaeological potential modeling studies, and built heritage assessments. The staff at Archaeologix Inc. is dedicated to fast turn around time on projects and quality reporting.

Archaeologix Inc. is the only archaeological assessment firm in the Province which is an associate member of the *Aggregate Producers Association of Ontario*. During the 1998 field season we have been involved with the assessment of aggregate extraction sites located in Leamington, Barrie, Orillia, Hagersville, Ingersoll, Mount Brydges, Simcoe, Arkona, Cambridge, and Woodstock. Archaeologix Inc. specializes in servicing the aggregate industry's need for archaeological assessments, as detailed in the amended *Aggregate Resources Act*.

Jim Wilson, the president of Archaeologix Inc., is a licensed archaeological consultant (Stages 1-4), as defined by section 48 of the *Ontario Heritage Act*. Specializing in the pre-contact Aboriginal and early Euro-Canadian occupations of Ontario, Mr. Wilson received a Bachelor of Arts degree in Anthropology from the University of Western Ontario in 1988 and a Master of Arts degree in Anthropology from McMaster University in 1990. Mr. Wilson has a wealth of experience conducting archaeological research throughout the Province of Ontario.

Over the past 13 years Mr. Wilson has worked on and directed numerous survey and excavations funded by research grants from the *National Geographic Society*, the *Ontario Heritage Foundation*, as well as contract projects for various consulting firms. His research has focussed on the exploration of reductions in residential mobility among hunter-gatherers as well as GIS applications in archaeology. He has lectured in archaeology at both the University of Western Ontario and McMaster University, and he contributes regularly to Ontario archaeological publications.

Prior to the inception of Archaeologix Inc., Mr. Wilson was employed in the archaeological consulting industry as a principal field investigator/project coordinator. In this capacity he has led numerous projects ranging from the archaeological survey for Highway 407 to the construction of the Red Hill Creek archaeological potential model. More recently he has constructed a GIS driven archaeological potential model spanning large portions of Kent, Lambton and Elgin counties, to aid in the identification of the preferred route for a new gas pipeline. In 1995 Mr. Wilson authored, *The City of London Archaeological Master Plan*

Jim Wilson, M.A.

Education:

- 1988 Honours B.A., University of Western Ontario, London, Ontario Canada.
Department of Anthropology.
- 1990 Master's Degree, McMaster University, Hamilton, Ontario Canada. Department of
Anthropology.
- Current Ph.D. candidate in archaeology at McMaster University.

University Lecturing Positions:

- 1994 McMaster University: "The Human Journey". An Introduction to Archaeology
and Physical Anthropology.
- 1995 McMaster University: "The Human Journey". An Introduction to Archaeology
and Physical Anthropology.
- 1995 University of Western Ontario: "The Archaeology of Southern Ontario".

Archaeological Experience:

- 96-97 Principle Field Investigator, Mayer Heritage Consultants Inc.
- 94/95 City of London Archaeologist Planner.
- 1994 Principle Field Investigator, Mayer Heritage Consultants Inc.
- 1993 Ontario Heritage Foundation Research: Research Assistant on the Middle
Sydenham River Survey.
- McMaster University: Project Director for the Thames River Middle
Woodland Settlement/Subsistence Project.
- Wilson Heritage Services: Project Director, Aldborough Township
Archaeological Resource Assessment.
- 1992 McMaster University: Project Director for the Thames River Middle Woodland
Settlement/Subsistence Project.
- 1991 Mayer, Poulton and Associates: Field Director for the Edenridge Subdivision
Assessment.
- Archaeological Research Associates: Field Assistant.

- 1990 McMaster University: Field Assistant on the Mixteca Alta Archaeological Survey; Oaxaca, Mexico.
- 1989 McMaster University: Project Director of the Boresma Site excavations.
Mayer, Poulton and Associates. Field Assistant on the Rosedale Subdivision Assessment.
- 1988 Mayer, Pihl and Poulton: Field Assistant for the Ontario Hydro Longwoods Transformer Station Project.
Mayer, Pihl and Poulton: Assistant on the Union Gas Hamilton to Niagara Falls pipeline survey and subsequent mitigations.
McMaster University: Field Assistant for the Harvie Site mitigation, a 19th century pioneer cemetery.
- 1987 Mayer, Pihl and Poulton: Field Assistant on the Vaughn Master Plan Survey.
Museum of Indian Archaeology: Field Assistant for the Matthew's Wood's Project.
Mayer, Pihl and Poulton: Field Assistant on the Ontario Hydro Longwoods Transformer Station Assessment, Phase One.
University of Western Ontario Field School.
- 1986 Museum of Indian Archaeology: Field Assistant at the Crawford Lake Site.

Publications:

- 1988 The Snake Creek Burial. *KEWA* 88(7):2-6. (With Dr. M.W. Spence).
- 1991 A Bad Analogy?: Northern Algonquian Models and the Middle Woodland Occupations of Southwestern Ontario. *KEWA*: 91(6):9-22.
- 1991 The Kittmer Site: A Middle Woodland Camp on the Upper Thames Drainage. *KEWA*: 91(6):2-8.
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- 1993 The Preliminary Investigations at the Pocock Site and the Meadowood Phase along the Middle Thames Drainage. *KEWA*: 93(3):2-21.
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- 1997 Summary of an On-Going Archaeological Assessment, Lt.-Colonel John Butler Homestead (AgGu-66), Niagara-on-the-Lake. In *Arch Notes* Vol.2(5):6-14.

(With R.G. Mayer and S. Gouglas).

- 1997 Cherry Hill: A Kirk Corner-Notched Site at Fonthill, Ontario. In *KEWA* : 97(7):2-11. (With B. Wimmer and A. Figura).

Presentations:

- 1989 An Introduction to the Boresma Site: A Middle Woodland Occupation in the Middle Thames River Drainage. At: **The Ontario Archaeological Society Annual Meeting**; London Ontario.
- 1989 The Middle Woodland Period in the Thames River Drainage. For: **McMaster Anthropology Society**.
- 1992 The 1989 Excavations at the Boresma Site: A Middle Woodland Basecamp. For: **London Chapter of the Ontario Archaeological Society**.
- 1993 The Prehistory of the Delaware Area from the Late Archaic to the Early Late Woodland. For: **London Chapter of the Ontario Archaeological Society**.
- 1993 Early Woodland and Middle Woodland Settlement Systems: Exploring Two Distinct Adaptive Strategies. At: **The Ontario Archaeological Society Annual Meeting**. Niagara Falls, Ontario
- 1993 Which Way to the Lawson Site? Late Woodland Settlement Patterns West of the Caradoc Sand Plain. At: **The Ontario Archaeological Society Annual Meeting**; Niagara Falls, Ontario. (With D. Riddell).
- 1995 Identifying Reductions in Residential Mobility in the Early and Middle Woodland Periods in Southwestern Ontario. At: **The Canadian Archaeological Society Annual Meetings**; Kelowna, British Columbia.
- 1995 GIS applications and archaeological master plans. At: **The Annual ESRI Canada Arc/Info Users Conference**; Waterloo, Ontario.
- 1996 GIS Workshop. At **The 10th Annual Canadian Association of Professional Heritage Consultants Meetings**; Toronto, Ontario.

Research Grants:

- 1989 Ontario Heritage Foundation - \$18,489.00
- 1989 Ontario Heritage Foundation - \$ 6,600.00
- 1992 Ontario Heritage Foundation - \$11,000.00
- 1993 Ontario Heritage Foundation - \$18,498.00

License Reports/Jim Wilson/ 1996/8:

- 1998 Archaeological Assessment (Stage 4), AgHk-32, Greenway Environmental Management Pit, Warwick Township, Lambton County, Ontario.

Archaeological Assessment (Stage 4), AiHc-14, Historic Village of New Aberdeen, City of Kitchener, R.M. of Waterloo, Ontario.

Archaeological Assessment (Stages 1 and 2), City of Barrie Rezoning File D14-1138, Simcoe County, Ontario.

Archaeological Assessment (Stage 1), Sunningdale Hylands Development, City of London, Middlesex County, Ontario.

Archaeological Assessment (Stage 1), Proposed Kilally North Community Plan, City of London, Middlesex County, Ontario.

Archaeological Assessment (Stage 4), AeHf-38, Bradley Park Subdivision, Town of Aylmer, Elgin County, Ontario.

Archaeological Assessment (Stages 1 and 2), Wellington Estates Subdivision, Township of Delaware, County of Middlesex, Ontario.

Archaeological Assessment (Stages 1 and 2), Hillway 12th Line Pit, Township of Oro-Medonte, Simcoe County, Ontario.

Archaeological Assessment (Stage 1), Medway Trunk Sanitary Sewer Extension, City of London, County of Middlesex, Ontario.

Archaeological Assessment (Stage 1), Snyder Farm Aggregate Pit, City of Cambridge, R.M. of Waterloo, Ontario.

Archaeological Assessment (Stages 1 and 2), Greenway Environmental Management Pit, Warwick Township, Lambton County, Ontario.

Archaeological Assessment (Stage 3), Greenway Environmental Management Pit, Warwick Township, Lambton County, Ontario.

Archaeological Assessment (Stages 1 and 2), Sharp Pit, Township of Gosfield South, Essex County, Ontario.

Archaeological Assessment (Stages 1 and 2), Scott Pit, Township of Gosfield South, Essex County, Ontario.

Archaeological Assessment (Stage 4) AeHh-82, Mill Creek Subdivision (34T-96507), City of St. Thomas, Elgin County, Ontario.

Archaeological Assessment (Stage 2 and 3), Mill Creek West Subdivision, City of St. Thomas, Elgin County, Ontario.

Archaeological Assessment (Stages 1 and 2), City of London OZ-5331, Middlesex County, Ontario.

Archaeological Assessment (Stages 1 and 2), City of London OZ-5544, Middlesex County, Ontario.

Archaeological Assessment (Stages 1 and 2), Hilltop Stone & Supply Inc., Quarry Expansion, Town of Halton Hills, R.M. of Halton, Ontario.

Archaeological Assessment (Stages 1 and 2), Don Young Trucking Sand Pit, Caradoc Township, Middlesex County, Ontario.

Archaeological Assessment (Stages 1 and 2), Kupi Excavating Ltd. Sand Pit, Delhi Township, R.M. of Haldimand-Norfolk, Ontario.

Archaeological Assessment (Stage 3), City of London OZ-5544, Middlesex County, Ontario.

1997 Archaeological Assessment (Stage 3), Ducks Landing Subdivision (28T-97501-No.1) Port Rowan, R.M. of Haldimand-Norfolk, Ontario.

Archaeological Assessment (Stage 2), Airport Road Extension (Oxford St. to Huron St.), City of London, County of Middlesex, Ontario.

Archaeological Assessment (Stages 1 to 4), Ontario Seed Subdivision (21T-93012B), City of Brampton, R.M. of Peel, Ontario.

Archaeological Assessment (Stages 1 and 2), Springdale Community Subdivision, City of Brampton, R.M. of Peel, Ontario.

Archaeological Assessment (Stages 1 and 2), Ontario Realty Corporation Subdivision (21T-95067, City of Mississauga, R.M. of Peel, Ontario.

Archaeological Assessment (Stages 1-3), Union Gas NPS 26-30, Bentpath-Rosedale Pipeline, TWPS. Of Dawn & Enneskillen, Lambton County, Ontario.

Archaeological Assessment (Stage 3), Petersburg Subdivision (30T-90032), Wilmot Township, R.M. of Waterloo, Ontario.

Archaeological Assessment (Stages 1 and 2), Seip Gravel Pit Expansion, Wilmot Township, R.M. of Waterloo, Ontario.

Archaeological Assessment (Stages 1 and 2), Timber Run Subdivision (25T-90029), Town of Flamborough, R.M. of Hamilton-Wentworth, Ontario.

Archaeological Assessment (Stages 1-3), Greenworld Estaes Subdivison (25T-89043R), Town of Flamborough, R.M. of Hamilton-Wentworth, Ontario.

Archaeological Assessment (Stages 1 and 2), Ducks Landing Subdivision (28T-97501-No.1), Port Rowan, R.M. of Haldimand-Norfolk, Ontario.

Licence Numbers 92-060 and 93-053. The Middle Thames River Settlement/ Subsistence Project, Middlesex County, Ontario.

Archaeological Assessment (Stage 3), Bob-Lo Island Test Area 2, Town of Amherstburg, Essex County, Ontario.

Archaeological Assessment (Stages 2 and 3), Union Gas NPS 8 Leamington North Reinforcement Pipeline, Mersea, Gosfield North & Rochester Townships, Essex County, Ontario.

Archaeological Assessment (Stages 2 to 4), South Bay Marina Complex (OPA No. 2), Township of Pelee, Essex County, Ontario.

Archaeological Assessment (Stages 1 and 2), Vicdom Sand and Gravel Sunderland Pit, Township of Brock, R.M. of Durham, Ontario.

Archaeological Assessment (Stages 1-3), TCG Materials Limited Proposed Gravel Pit, Township of Brantford, County of Brant, Ontario.

Archaeological Assessment (Stages 1 and 2), Harris to Ivey Park Bicycle Trail, City of London, Ontario.

Archaeological Assessment (Stages 1 and 2), Springbank Park Pedestrian Walkway, City of London, Ontario.

Archaeological Assessment (Stages 1 and 2), Greenway Park Bicycle Trail, City of London, Ontario.

Archaeological Assessment (Stages 1 and 2), Blairhampton Subdivision Phase 2 (43T-94018), Tiny Township, Simcoe County, Ontario.

Archaeological Assessment (Stages 4), TCG Materials Fonthill Pit Expansion, Town of Pelham, R.M. of Niagara, Ontario.

1996 Archaeological Assessment (Stages 1 and 2), Proposed Ferrone Gravel Pit, Amaranth Township, Dufferin County, Ontario.

Addendum to the Archaeological Assessment (Stages 1 and 3), South Bay Marina Complex (OPA No.2), Township of Pelee, Essex County, Ontario.

Archaeological Assessment (Stage 1), Union Gas NPS 8 Leamington North Reinforcement Pipeline, Mersea, Gosfield North & Rochester Townships, Essex County, Ontario.

Archaeological Assessment (Stages 1, 2 and 3), Mill Creek West Subdivision (34T-96507), City of St. Thomas, Elgin County, Ontario.

Archaeological Assessment (Stages 1, 2 and 3), Bradley Park Subdivision, Town of Aylmer, Elgin County, Ontario.

Archaeological Assessment (Stages 1 and 2), Proposed Mill Creek West Subdivision, City of St. Thomas, Elgin County, Ontario.

Archaeological Assessment (Stages 1 and 2), Brittany Estates Subdivision (24T-94014), City of Burlington, R.M. of Halton, Ontario.

Archaeological Assessment (Stages 4), Proposed Otter Creek Bridge Replacement, Town of Wallaceburg, County of Kent, Ontario.

Archaeological Assessment (Stages 1 and 2), Proposed Pelgrim Subdivision, Township of Harwich, County of Kent, Ontario.

Archaeological Assessment (Stages 1 and 2), Petersburg Subdivision (30T-90032), Wilmot Township, R.M. of Waterloo, Ontario.

Archaeological Assessment (Stages 2 & 3), Bear Creek Bridge Reconstruction & Road Modifications, Township of Sombra, County of Lambton, Ontario.

Archaeological Assessment (Stage 1), Union Gas NPS 26-30, Bentpath-Rosedale Pipeline, Twps. Of Dawn & Enniskillen, Lambton County, Ontario.

Archaeological Assessment (Stages 1 and 2), Royal Orchards Estates Subdivision (26T-94015), Town of Lincoln (Beamsville), R.M. of Niagara, Ontario.

Archaeological Assessment (Stages 1 and 2), Proposed Business Park Development, Town of Wasaga Beach, Nottawasaga Twp., Simcoe County.

Archaeological Assessment (Stages 1 and 2), Blairhampton Subdivision (43T-94018), Tiny Township, Simcoe County, Ontario.

Archaeological Assessment (Stages 1, 2 and 3), TCG Materials Fonthill Pit Expansion, Town of Pelham, R.M. of Niagara, Ontario.

Archaeological Assessment (Stages 1, 2 and 3), de Latt Property, Niagara-on-the-Lake, R.M. of Niagara, Ontario.

Archaeological Assessment (Stages 1 and 2), Hill Estates Subdivision (26T-91018 Rev.), Town of Fort Erie (Stevensville), R.M. of Niagara, Ontario.

Archaeological Assessment (Stage 3), Hill Estates Subdivision (26T-91018 Rev.), Town of Fort Erie (Stevensville), R.M. of Niagara, Ontario.

Archaeological Assessment (Stage 4), Hill Estates Subdivision (26T-91018 Rev.), Town of Fort Erie (Stevensville), R.M. of Niagara, Ontario.

Archaeological Assessment (Stages 1 and 2), Rijnen Subdivision, Village of Dorchester, Middlesex County, Ontario.

Appendix C

Noise Assessment



**POTENTIAL IMPACT AND CONTROL OF NOISE
FROM THE PROPOSED HAGERSVILLE QUARRY**

**A STUDY PREPARED FOR
HAGERSVILLE QUARRY**

by

**Roland G. Andrews
B.Sc., B.E., P.Eng.**

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Rexdale Ontario
M9W 1B3

File # 98305
23 February, 1999



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1. INTRODUCTION

This noise study was commissioned by Nichols Gravel Limited to address potential noise issues related to production and shipment of aggregate at a proposed quarry in Part of Lots 10, 11, & 12, City of Nanticoke (formerly Walpole Township). Aercoustics Engineering Ltd undertook investigation of predicted noise impact from the proposed operations in context with the background noise in potentially noise-sensitive sectors of the neighborhood. Noise control options were evaluated, and recommendations were prepared. This report is based on the final site and operating plans, which include control measures that are expected to keep noise impact at levels that are generally acceptable to most people and in compliance with MOE guidelines.

Reference Documents and Data Sources:

- * Site Plans : Drawings 1, 2, 3, & 4, HAGERSVILLE QUARRY Project # 98-24 by Harrington & Hoyle Ltd. Dated Feb 1999.
- * Noise Criteria : MOE Model Municipal Noise Control By-Law and supporting publications.
- * Background Noise: Aercoustics Site Examinations and Project Files
- * Noise Sources : Aercoustics Measurements and database
- * Traffic Data: FAXGRAM from MTO 1998-11-19
Fax from Region of Haldimand-Norfolk 1998-11-19

2. DESCRIPTION OF THE SITE AND ENVIRONS:

2.1 Location & Context:

Figure 1, Key Plan, shows the location of the site and the surrounding land uses. Figure 2 shows the site configuration and the neighboring points of reception that might be affected by the proposed quarry. Example residences which are representative of those that would experience the highest noise impact at various stages in the life of the operation are coded R1 through R10.

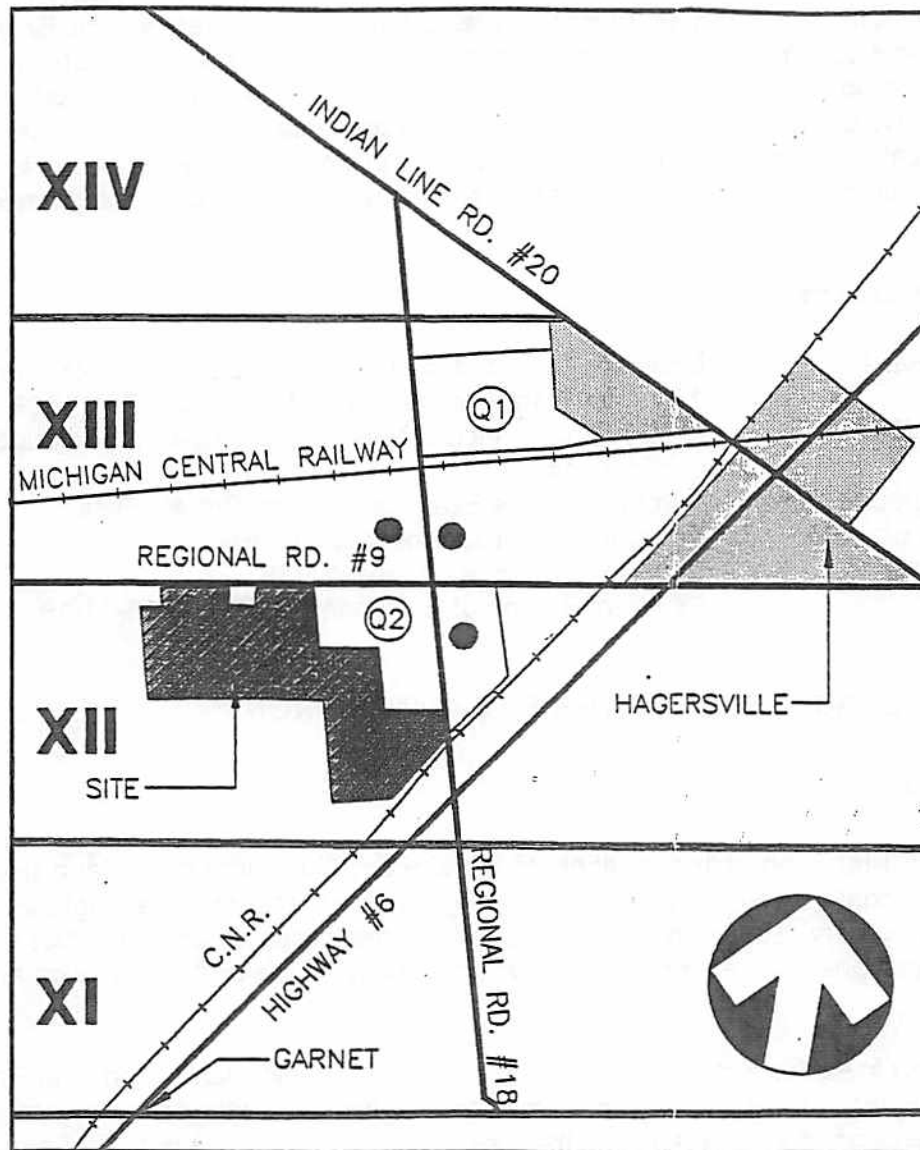
The site is now in agricultural use, like much of the surrounding land. Regional Road 9 forms the north boundary of the site. North of the road, agriculture extends northward to a rail line and east to an abandoned quarry on the west side of Regional Road 18. East of Road 18 there is a depleted quarry south of the railway and a licensed (now dormant) quarry north of the railway. Another licensed quarry, also dormant, adjoins the site at the north-east and extends eastward to Regional Road 18, beyond which there is another abandoned quarry. The south east corner of the site adjoins Regional Rd 18 and a CNR line running in a north-east/south-west direction. A strip of predominantly vacant land about 150 meters deep separates the CNR line from Highway 6. There is a group of residential lots south of the south east corner of the site, fronting on the road between concessions 11 and 12. South of the houses and further west there are farms both north and south of the concession road. Farms also adjoin the west side of the site.

FIGURE 1

KEY PLAN

KEY MAP

N.T.S.



PROPOSED QUARRY

ABANDONED QUARRY

LICENCED QUARRY

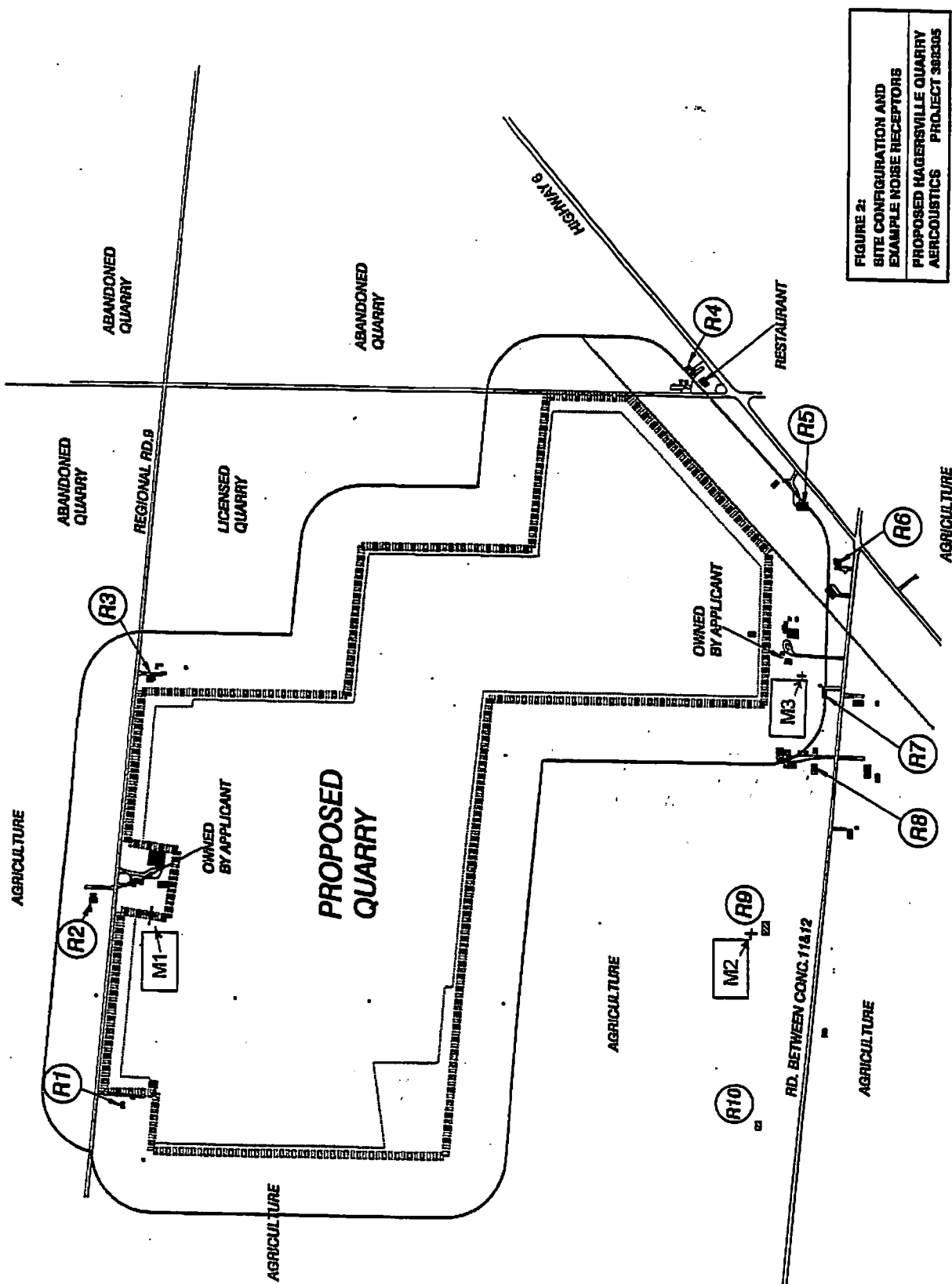


FIGURE 2:
SITE CONFIGURATION AND
EXAMPLE NOISE RECEPTORS
PROPOSED HAGERSVILLE QUARRY
AERCOUSTICS PROJECT 98305

2.2 Noise Sensitive Receptors in the Vicinity and Existing Noise Environment:

There was extensive exposure to quarry noise in the vicinity of the site for many years in the past, but the noise environment in recent times has been generally characterized by agriculture and traffic on the adjacent roads. The noise sensitive points of reception around the site are the houses that are identified in Figure 2. The prevailing noise environment was sampled by continuous monitoring of sound at three locations (coded M1, M2, & M3 on Fig 2) for six days in November 98, and by examination of the area on two days in November 98. In addition, the $Leq^{(1)}$ from traffic was computed for each of the example receptors using MOE's traffic noise prediction code Stamson 5.0 and traffic statistics provided by MTO and the Region of Haldimand-Norfolk. Appendix A provides further information on background noise assessment.

⁽¹⁾ *The Leq is a form of average noise level. It is the steady noise level that would have the same acoustic energy in a defined time period as the varying noise that actually occurs in that period. The 1-hour Leq is used as the dominant metric in MOE noise guidelines because it has been found to correlate well with subjective response to noise.*

On the north side of the site there is a house at each corner, and two in the middle. The center one on the south side of the road is owned by the applicant and the MOE noise guidelines do not apply. The other three are coded R1, R2, & R3. Moderate traffic volume on Regional Rd. 9 produces daytime Leq 's in the low to mid 50's at these houses. Agricultural activity adds to the background sound from time to time.

At the south-east, three houses coded R4, R5, and R6 front on Highway 6. This is a busy highway and daytime Leq 's at the front of the houses are in the mid to high 50's. The highest potential noise exposure from the quarry would be at the rear. At 30m from the rear of the houses, where MOE procedures prescribe noise assessment, the traffic Leq is about 54 dBA.

The closest house south of the east segment of the site is owned by the applicant and is not subject to the noise limitations. Other houses, widely spaced westward along the north side of the concession road, are coded R7 through R10. Additional houses along the south side of the concession road would have somewhat lower impact from the quarry than the ones on the north side which have been used to evaluate impact and control requirements. Traffic on the concession road is sparse. Highway 6 traffic defines a background Leq of about 47 at R7. Increasing distance reduces the effect of Hwy 6 traffic at R8 and the houses further west, where a background Leq of about 45 prevails.

The existing noise environment at the houses represented by R1 through R7 fits MOE classification 2, in which man-made sounds dominate the daytime Leq , with significant reduction in the evening. For R8 and the houses further west along the concession road, MOE class 3 applies.

3. CRITERIA:

3.1 Stationary Sources:

The Ministry of Environment guidelines as to community acceptance of noise are defined in their "Model Municipal Noise Control By-Law", (the model by-law). For industrial noise from sources such as pits and quarries ("Stationary Sources"), section NPC 205 of the model by-law deals with cases in Class 1 or 2 areas where there is significant man-made sound in the prevailing noise background in the receptor areas. NPC 232 applies within 30 meters from a residence in Class 3 environments where the prevailing background is dominated by nature sounds and there is little or no road traffic. It is normal practice to apply the 30m spacing also under NPC 205 in the case of large rural lots.

The guiding principle in both these standards is that noise from a new industrial source will be acceptable to most people provided it is no louder than the prevailing background or a defined "floor" level, whichever is higher. All noise sources on the premises of the industrial operation, including production noise, plant services, and on-site vehicles are combined as "the source" for assessment of noise impact. While in some cases the L90 is significant when NPC 232 applies, the two standards differ primarily in the floor limits. Table 3 - 1 lists the 1-hour Leq noise floor levels defined by the MOE publications. (For the proposed quarry, which is planned as a daytime-only operation, only the daytime limit applies)

Table 3 - 1 MOE Noise Floor Levels

PUBLICATION	NPC 205	NPC 205	NPC 232
HOURS	CLASS 1	CLASS 2	CLASS 3
07:00 - 19:00	50	50	45
19:00 - 23:00	50	45	40
23:00 - 07:00	45	45	40

Table 3 - 2 lists for each of the example receptors the background Leq's derived from the monitoring program, the traffic noise computations, and the "floor" level, and it shows the Leq's that were used as the recommended limit and the basis for design of noise controls. Monitor M1 is representative of R1, R2, & R3 with minor adjustments for distance. Monitor M2 is representative of R9. While the levels measured at M3 should apply at R7, some inconsistencies reduce confidence in the data recorded by that monitor.

Table 3 – 2 Background Noise Levels and Criteria at Example Receptors

Receptor	Monitored Leq		Traffic Leq Per ST5	NPC Floor	Criterion Applied
	Typical	Lowest			
R1	55	51	52	50	52
R2	58	54	58	50	55
R3	55	51	53	50	53
R4			53	50	53
R5			54	50	54
R6			55	50	55
R7	45	43	47	50	47
R8			45	45	45
R9	>50	46	<45	45	45
R10			<45	45	45

3.2 Blasting Noise and Vibration:

Blasting is subject to a separate MOE regulation. It is the topic of another engineering study for this project and its potential impact will not be dealt with here.

3.3 Shipping Trucks on Public Highways:

There is no regulation limiting traffic volume or noise levels from traffic on public highways. However, the proponent has recognized noise from shipping trucks on Regional Road 9 as a potential source of concern, and that has been a factor during consideration of shipping options.

4. OPERATIONS:

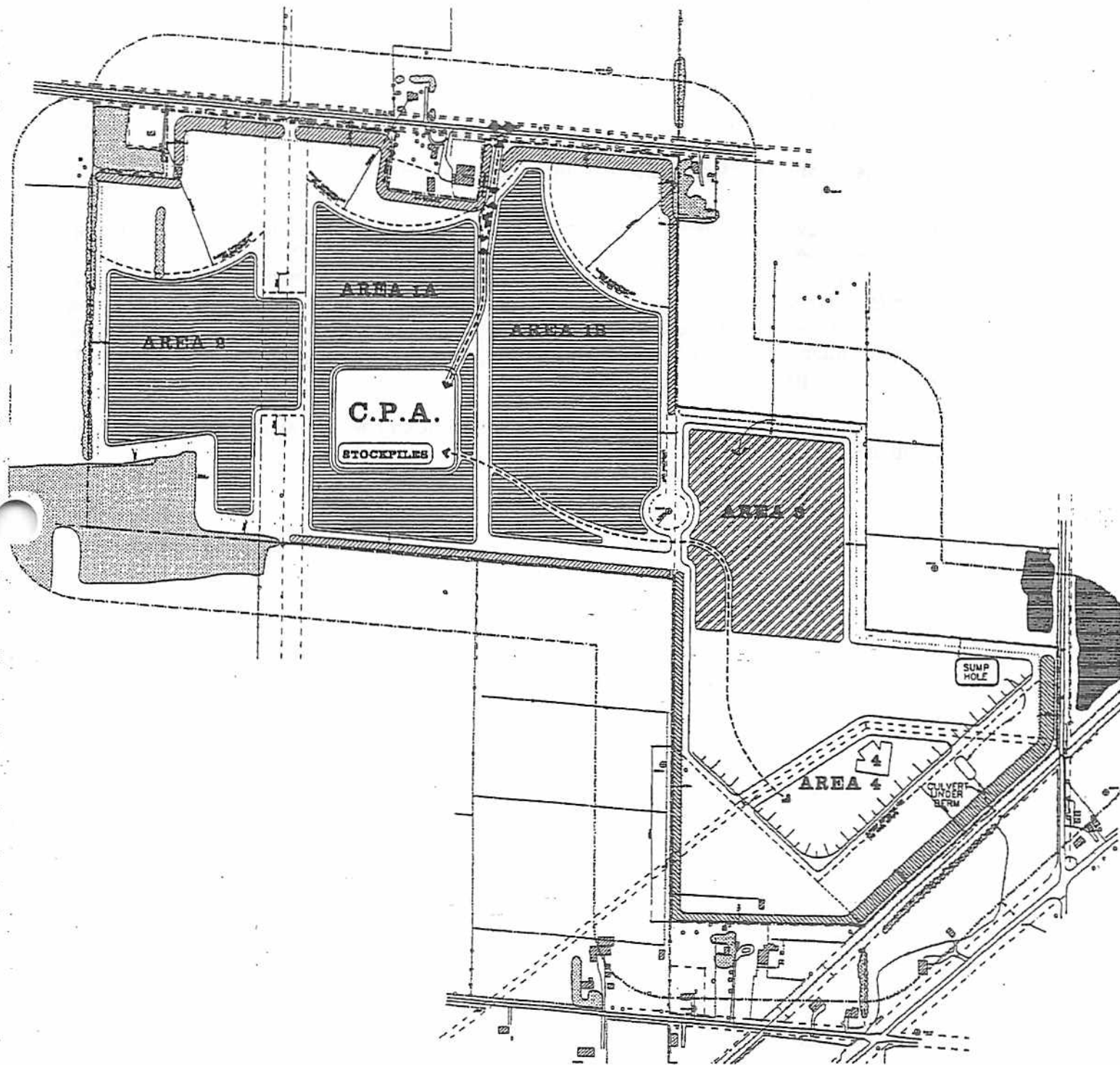
4.1 General Plan:

The Operational Plan, Drawings 2 & 3 of the Site Plans, details the site configuration and planned extraction sequence. The site and operating plans also prescribe set-backs, acoustic barriers, constraints on operating hours, equipment locations and noise emission levels, as defined in section 6 of this noise report, to limit noise impact on the neighbours. The expected annual production is about 100,000 Tonnes, with daytime operation only.

Figure 4 – 1 outlines the extraction sequence. The plan is to start near the south end of the north-west block. Initially an area big enough for the first few years' production will be stripped, and an interim berm will be built around the perimeter of the stripped area. A permanent Central Processing Area (CPA) will be established there, on the quarry floor when space is available. A portable crushing & screening plant will be brought in from time to time as needed, with the possibility of a fixed plant installation in the future. A haul road will run north from the startup area to Regional Road 9. The road will be depressed to the pit floor as extraction proceeds.

FIGURE 4 - 1

EXCAVATION SEQUENCE



levels. This is particularly significant in the extended periods when only a loader in the plant area and shipping trucks will be active. After the start-up phase, when berms are in place around R1, R2, and R3, the predicted Leq from the shipping trucks will be reduced by another 4 dB. Total predicted Leq's from the quarry will then be a maximum of about 41 at R2, mid 30's or lower at all the rest, and seldom audible at any of the houses.

In summary, most people would find the noise levels predicted for the proposed operations quite acceptable.

5.4 Noise From Trucks on the Public Road Haul Routes:

There is no legislation that limits noise from traffic on public highways. However, the potential effect of adding the expected trucks from the quarry to the existing traffic volume on Regional Road 9 has been computed. If six loads per hour, the maximum expected shipping rate, continued for a 10 hour shipping day, it would be add sixty return trips to the background traffic volume. Is all these went in one direction along Regional Rd. 9 the Leq would increase by one dB. If half of them went in each direction the Leq would increase by 0.5dB. The change in Leq would not be perceptible in either case.

In summary, noise from trucks serving the proposed quarry is not expected to cause any measurable impact.

6. RECOMMENDED NOISE CONTROLS:

6.1 Drawings:

The noise control measures recommended in this section should be considered an integral part of the site and operating plans. Any proposed changes to the plans should be subject to approval by a Professional Engineer qualified in aggregate noise technology, with respect to compliance with the applicable noise criteria.

6.2 General Noise Controls:

6.2.1 Recommended Hours of Operation:

Site preparation & rehabilitation, excavation & processing	07:00 – 19:00
Shipping to market	06:00 – 19:00

6.2.2 Processing:

All crushing & screening should be done in the Central Processing Area (CPA) with the processing plant at the pit floor, elevation not more than 206 m.a.s.l. Acoustic screening should be in place as specified in Figure 6-1 whenever a crushing/screening plant is operating. The screening may be in the form of stockpiles, berms, a quarry face, or other barrier.

If processing is required during the start-up phase before the CPA on the pit floor has been prepared, an interim crushing/screening plant may installed at an intermediate elevation, as low as practical, with a face+berm or other form of barrier not less than 7 m above the crusher floor level and not more than 15m from the crusher in an arc from south-west to south-east.

6.2.3 Site Preparation and Rehabilitation:

It is recommended that preparatory work that is close to residential premises, including berm construction, topsoil stripping, and rehabilitation work, be done during cool weather when windows are normally closed and noise sensitivity is reduced.

6.2.4 Noise Source Emission Limits:

Production machinery used on the site should have noise emission levels no higher than those listed in table 6-1. The emission levels listed are 1-hour Leq's based on actual operation during the hour, at the reference distances shown in the table from the centre of the operating location. For each item listed, the noise level includes the entire operation of that equipment. That is, the loader noise listed includes extraction of material from the face or stockpile, dumping into trucks, and trucks arriving, idling, departing. Crushing and Screening plant noise includes its power source, aggregate crushing and screening, loaders feeding the plant, and conveyors and stackers moving the product.

Table 6 - 1 Extraction & Processing Machinery Emission Limits

ITEM	# OF UNITS	AVG LEO (Ea1hr)	@ ref DIST (m)
Primary crushing/screening plant	1	86	30
Plant / Shipping Loader	1	75	30
Loader at the face	1	75	30
Drill	1	83	30
Highway Trucks - Face to CPA	As reqd		

6.3 Maintenance:

All equipment used on the site should be properly maintained to ensure that noise levels remain within the specified limits.

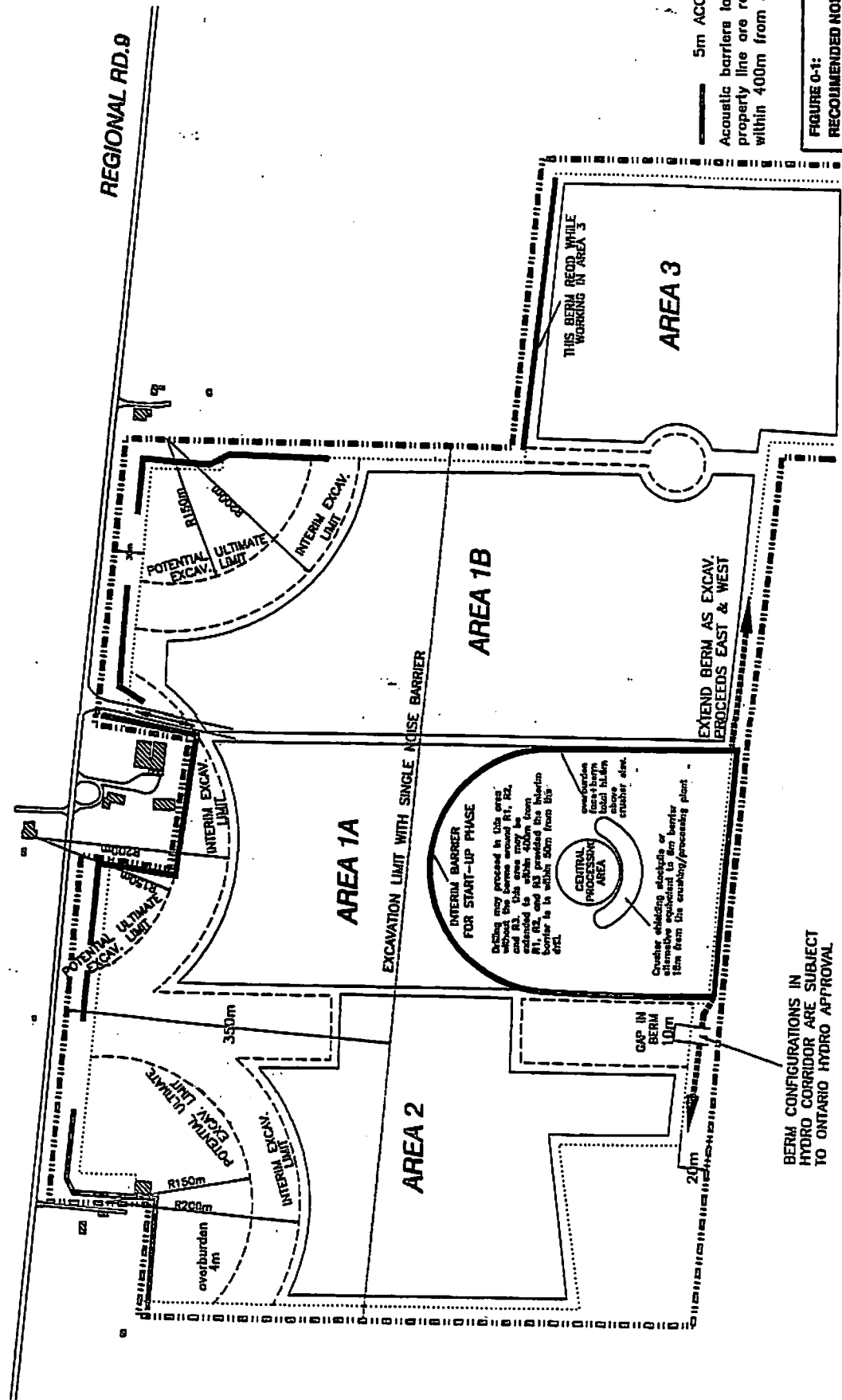
6.4 Alternative Methodology:

Alternative production equipment and/or methods may be substituted provided a Professional Engineer qualified in aggregate industry acoustics certifies that no increase in the noise impact predicted in this report will result from the change.

Extension of excavation beyond the recommended interim limits may be considered acceptable if at some future time additional or alternative measures to further reduce noise impact are available and if a Professional Engineer qualified in aggregate industry acoustics certifies that the operation as proposed will comply with the noise criteria then in effect.

6.5 Site Specific Noise Controls:

Perimeter berming and supplementary shielding to attenuate drill noise is defined in Figure 6 - 1 for phases 1, 2, and 3, and in Figure 6 - 2 for phase 4.



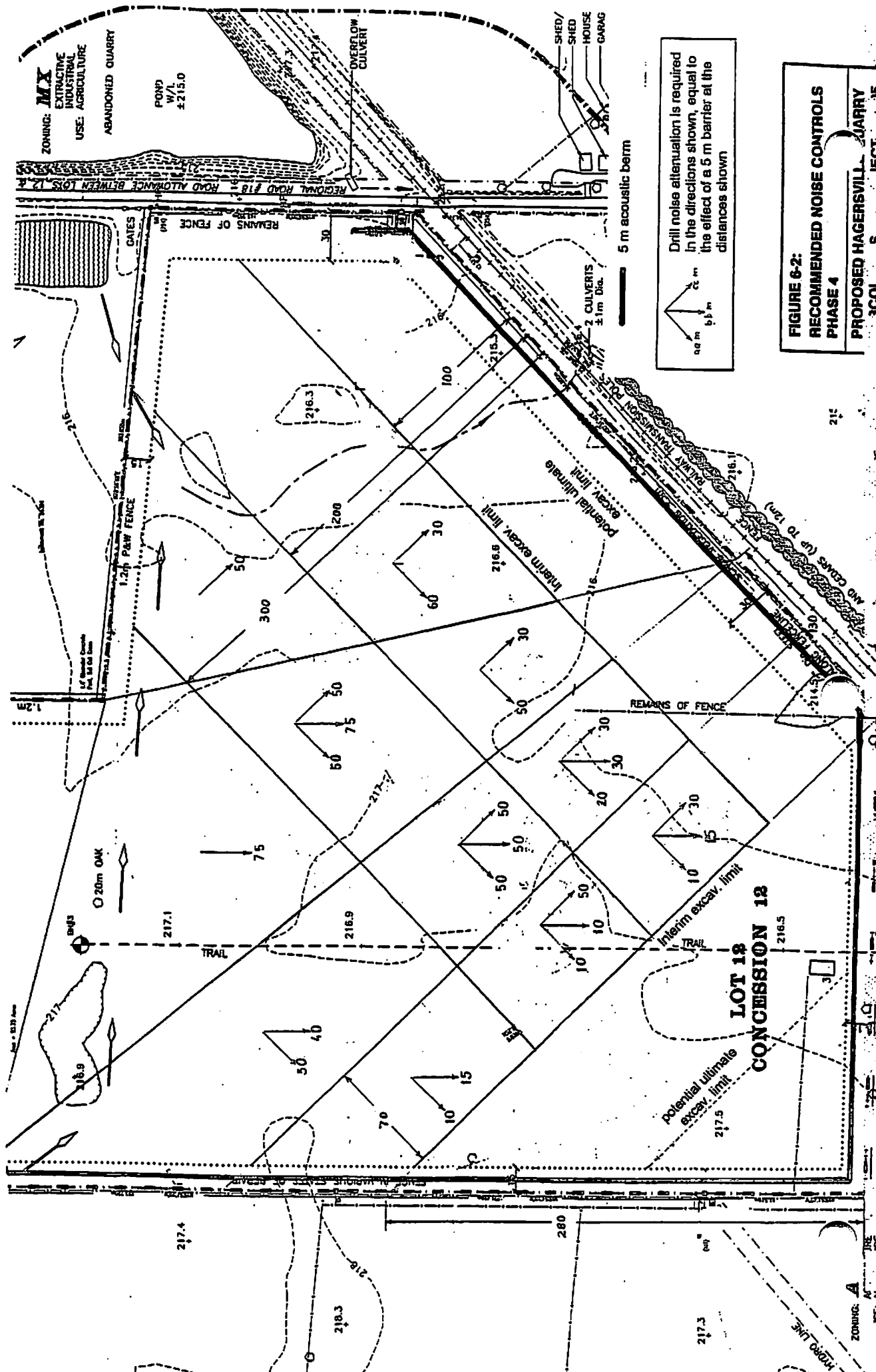
5m ACOUSTIC BARRIER

Acoustic barriers located at the north property line are required when drilling within 400m from R1, R2, or R3

FIGURE 0-1:

RECOMMENDED NOISE CONTROLS
PHASE 1, 2, AND 3

PROPOSED HAGERSVILLE QUARRY
AERACOUSTICS PROJECT 398305



APPENDIX A TRAFFIC

Traffic data provided by MTO included:

- Highway 6 historical data, 1991 – 1995
- Directional traffic flow, Highway 6 and Regional Rd. 9, June 28 1996, including vehicle classifications
- Highway 6 hourly traffic counts for 1 week, May 1997

The Region of Haldimand-Norfolk Engineering Department provided 1995 AADT information and posted speed limit for Regional Roads 9 and 18.

Table A – 1 summarizing traffic data was compiled from the MTO and Region submissions. This data was used, with MOE "Stamson 5.0" code for computation of traffic noise impact.



HWY 6		8.2 km north of hwy 3		MTO count Apr 09/97 to Apr 16/97							
Start @	WED	THU	FRI	SAT	SUN	MON	TUE	WED	TOTAL	AVG.DAY	
07:00 AM		554	540			579	538	552			
08:00 AM		483	511			512	515	461			
09:00 AM		386	395			383	449	395			
10:00 AM		387	443			385	427	388			
11:00 AM		391	489			408	435	399			
12:00 PM		421	504			416	439	391			
01:00 PM		422	465			408	433	407			
02:00 PM		451	526			447	459	460			
03:00 PM		586	596			569	638	541			
04:00 PM		717	722			722	697	672			
05:00 PM		548	558			557	607	560			
06:00 PM		416	478			388	420	418			
TOT, Day,(12 hrs)		5762	6227			5774	6057	5644	29464	5893	
TOT, 24 hr		7423	8089			7243	7709	6800	37264	7453	
Day % of 24 hrs										79%	
Commercial, Day	(MTO count 96/06/06)									No.	
Cars						7.6				448	
Assume: Med Trucks						92.4				5445	
Heavy Trucks						3.8				224	
						3.8				224	

HWY 9		0.2 km west of Hwy 6			
AADT per Haldimand Norfolk (1995)					1950
MTO Directional count 96/06/06					1068
Assume DAY, (12 hrs)				8 hrsx1.5	1602
DAY % of 24 hrs					82%
					No.
Commercial, Day (MTO count 96/06/06)					183
Cars					1419
Assume: Heavy Trucks					91
Med Trucks					91



Ministry
of
Transportation
Ontario

F A X G R A M

2

FAX # 416-249-3613

Date: 1998-11-19

Page 1 of 7

To: Roly Andrews
Aercoustics Eng. Ltd.
Toronto, Ontario

FROM:
Colleen Mayor
Traffic Analyst
Traffic Info. Services

Tel: (519) 873-4363
Fax: (519) 873-4370

SUBJECT: Traffic Volume Information
Highway 6, Hagersville

See attached.

AADT

Annual Average Daily Traffic: defined as the average twenty-four hour, two way traffic for the period January 1st to December 31st.

SADT

Summer Average Daily Traffic: defined as the average twenty-four hour, two way traffic for the period July 1st to August 31st, including weekends.

SAWDT

Summer Average Weekday Daily Traffic: defined as the average twenty-four hour, two way, weekday traffic for the period July 1st to August 31st, excluding weekends. Weekend traffic is defined to start at noon on Friday and end at noon on Monday for a normal short weekend.

A long holiday weekend would have an additional day either commencing at noon on the Thursday or ending at noon on the Tuesday, depending on whether the holiday falls on the Friday or the Monday.

WADT

Winter Average Daily Traffic: defined as the average twenty-four hour, two-way traffic for the period December 1st to March 31st including weekends.

TVIS HISTORY

**** History Listing ****

LINE#	O/S	Location	YR	PCS	PCF	DIR	ADT	SADT	SAVDT	WADT
GEN.	DISP.	TRF.	LEN.	ENT	STN.	DIRV	STLT	CON		
13420	7.7	HALD/HARRIS RD 18 - SANDUSK RD								
EN / 2 / 2	1.6 KM	6	74							
1991	30	10.0	9.3	9150	10100	10100	8100			
1992	30	9.9	9.3	9200	10200	10100	8100			
1993	30	9.5	9.3	9100	10100	10400	8200			
1994	30	10.0	9.3	9300	10400	10400	8200			
1995	30	9.9	9.3	9300	10400	10500	8300			
13430	.0	H/H RD 9-PARKVIEW RD(M)-START OF HA								
EN / 2 / 2	1.6 KM	6								
HAGERSVILLE										
13430	1.6	HAGERSVILLE L28-29 - END OF HA								
EN / 2 / 2	11.1 KM	6	25							
1991	75	9.6	15.3	9200	9700	10500	8900			
1992	75	10.1	12.6	9200	9700	10500	8888			
1993	75	8.0	12.6	9300	9800	10500	8580			
1994	77	7.8	12.6	9400	10200	10500	8400			
1995	77	7.8	12.6	9500	10200	10600	8700			
13446	.0	S JCT HWY 7181-BALEWIND								
EN / 2 / 2	6.5 KM	6	27							
1991	75	9.6	12.2	4950	5200	5600	4880			
1992	75	10.1	12.5	5000	5200	5700	4750			
1993	75	8.0	12.5	5180	5400	5700	4650			
1994	75	8.0	12.5	5150	5400	5700	4700			
1995	75	8.0	16.0	5200	5500	5700	4750			
13455	.0	N JCT HWY 7191-BALDWIN								
EN / 2 / 2	2.9 KM	6	29							
1991	75	9.6	72	10.0	15000	15800	17200	14500		
1992	75	10.1	72	10.0	15000	15900	17200	14300		
1993	75	8.0	72	10.0	15000	15800	16900	13800		
1994	77	7.8	60	10.0	16000	17400	17900	14100		
1995	77	7.8	60	8.1	16000	17200	17900	14700		
13455	2.9	HWY CONTINUES IN CN								
EN / 2 / 2	.0 KM	6								
13456	.0	HALDTHAM RD L75/GLANBROOK TWP RDV								
CR / 6 / 2	4.9 KM	6	30							
1991	75	9.6	67	8.1	17000	20000	19500	16400		
1992	75	10.1	67	8.1	17000	18900	20300	17100		
1993	30	9.5	67	8.1	18700	21100	20900	16500		
1994	30	10.0	67	8.1	19180	21600	21600	17100		
1995	30	9.9	67	8.1	19480	21900	22100	17600		
13460	.0	HAH/HBHT RD 637 - AIRPORT RD (W)								
CR / 6 / 2	4.8 KM	6	30							
1991	75	9.6	63	8.0	18600	19700	21300	18000		
1992	75	10.1	63	8.0	19500	20100	21500	18800		
1993	30	9.5	63	8.0	20400	23200	23000	18300		
1994	30	10.0	57	7.7	21500	24800	24000	19100		
1995	30	9.9	57	6.8	21950	24500	24800	19700		

[illegible]

WEST APPROACH				SOUTH APPROACH				EAST APPROACH				NORTH APPROACH			
EIGHT THROUGH		IN	OUT TOTAL	EIGHT THROUGH		IN	OUT TOTAL	EIGHT THROUGH		IN	OUT TOTAL	EIGHT THROUGH		IN	OUT TOTAL
362	167	50	519 + 592 = 1158	2068	365	2432	2432	166	692 + 692 = 1325	364	2432	170 + 2005 = 3127	3127 + 2661 = 5136	692 + 692 = 1325	364
25	39	6	0	167	21	0	0	29	17	0	0	13	138	0	0
0	14.37	15.21	12.45	6.50	7.98	8.75	10.55	1.32	10.55	8.75	10.55	1.80	1.81	0	0
48	48	7		250	63	36	17	46	36	17	46	34	164	34	164
28	28	9		389	53	65	1.76	1.79	65	1.76	1.79	1.86	1.86	266	49
1.86	1.79	1.86		1.86	1.76	1.79	1.76	1.79	1.79	1.76	1.79	1.86	1.86	303	687
567	298	959		3636	4488	4678	1226	1478	4678	4488	4678	1409 + 4906 = 9315	1409 + 4906 = 9315	3459	616
1935	956	956		9058	9058	9058	80/0.53	80/0.53	9058	9058	9058	10/0.93	10/0.93	267	616
500	247	82	829 + 861 = 1690	3606	560	696	4.11	4.11	3606	560	696	1285 + 1064 = 2349	1285 + 1064 = 2349	267	616
1242 + 4509 = 8751	3459	267		4214 + 4138 = 8350	96	267	1285 + 1064 = 2349	1285	4214	4138	2349	1285 + 1064 = 2349	1285 + 1064 = 2349	267	616
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1242 + 4509 = 8751	3459	267		4214 + 4138 = 8350	96	267	1285 + 1064 = 2349	1285	4214	4138	2349	1285 + 1064 = 2349	1285 + 1064 = 2349	267	616
1242 + 4509 = 8751	3459	267		4214 + 4138 = 8350	96	267	1285 + 1064 = 2349	1285	4214	4138	2349	1285 + 1064 = 2349	1285 + 1064 = 2349	267	616
1242 + 4509 = 8751	3459	267		4214 + 4138 = 8350	96	267	1285 + 1064 = 2349	1285	4214	4138	2349	1285 + 1064 = 2349	1285 + 1064 = 2349	267	616
1242 + 4509 = 8751	3459	267		4214 + 4138 = 8350	96	267	1285 + 1064 = 2349	1285	4214	4138	2349	1285 + 1064 = 2349	1285 + 1064 = 2349	267	616
1242 + 4509 = 8751	3459	267		4214 + 4138 = 8350	96	267	1285 + 1064 = 2349	1285	4214	4138	2349	1285 + 1064 = 2349	1285 + 1064 = 2349	267	616
1242 + 4509 = 8751	3459	267		4214 + 4138 = 8350	96	267	1285 + 1064 = 2349	1285	4214	4138	2349	1285 + 1064 = 2349	1285 + 1064 = 2349	267	616
1242 + 4509 = 8751	3459	267		4214 + 4138 = 8350	96	267	1285 + 1064 = 2349	1285	4214	4138	2349	1285 + 1064 = 2349	1285 + 1064 = 2349	267	616
1242 + 4509 = 8751	3459	267		4214 + 4138 = 8350	96	267	1285 + 1064 = 2349	1285	4214	4138	2349	1285 + 1064 = 2349	1285 + 1064 = 2349	267	616
1242 + 4509 = 8751	3459	267		4214 + 4138 = 8350	96	267	1285 + 1064 = 2349	1285	4214	4138	2349	1285 + 1064 = 2349	1285 + 1064 = 2349	267	616
1242 + 4509 = 8751	3459	267		4214 + 4138 = 8350	96	267									

COMMERCIAL : HWY 6 & BEG RD 9 (PARKVIEW DR) RD 9
BALDWIN-HOPE COUNTY
SIGNALIZED

ETIS System
Volume Report

produced at 1:19 PM on May 12/97

Page 1

2

File : C:\ETIS\DATA\0006D9VC.M51
 Location : 134200820H1000000CM8 HWY 6 8.2KM N OF HWY 3
 Highway : 0006 Rq: 97-00-00 Inventory Count Pgm.
 File Interval : 60
 File Dates : Wed Apr 09/97 to Wed Apr 16/97 Volume Data
 Detector : Loop Counter ID : 1729

Report Dates : Wed Apr 09/97 to Wed Apr 16/97

Report Interval: 60

Direction : C Combined

Stream : M Mainline

Lane : 8 Total

Classification : * All

Comments :

HOURL INTERVAL	Wed 97/04/09	Thu 10	Fri 11	Sat 12	Sun 13	Mon 14	Tue 15	Wed 16
0:00- 1:00	--	62	86	87	105	36	44	52
1:00- 2:00	--	35	32	73	79	26	23	26
2:00- 3:00	--	36	25	59	32	14	20	28
3:00- 4:00	--	19	31	50	23	20	19	23
4:00- 5:00	--	38	31	16	22	39	25	37
5:00- 6:00	--	90	93	53	40	104	116	101
6:00- 7:00	--	363	349	164	111	390	389	386
7:00- 8:00	--	554	540	183	119	579	538	552
8:00- 9:00	--	483	511	257	158	512	515	461
9:00-10:00	--	386	395	301	211	383	449	395
10:00-11:00	--	387	443	368	298	385	427	368
11:00-12:00	399	391	489	444	385	408	435	399
AM TOTAL	399	2844	3025	2055	1581	2896	3000	2848
12:00-13:00	391	421	504	424	384	416	439	--
13:00-14:00	407	422	465	427	488	408	433	--
14:00-15:00	460	451	526	438	438	447	459	--
15:00-16:00	541	588	596	379	417	569	638	--
16:00-17:00	672	717	722	413	423	722	697	--
17:00-18:00	560	548	558	361	315	557	607	--
18:00-19:00	418	416	478	332	305	388	420	--
19:00-20:00	332	333	375	247	262	285	318	--
20:00-21:00	284	235	306	192	234	197	251	--
21:00-22:00	197	208	238	139	161	153	172	--
22:00-23:00	136	138	161	125	99	137	178	--
23:00-24:00	111	104	135	105	60	68	97	--
PM TOTAL	4459	4579	5064	3530	3586	4347	4709	--
24 HR TOTAL	4858	7423	8089	5635	5167	7243	7709	2848
NOON-NOON	7303	7604	7119	5161	6482	7347	7557	--

AUG WKDAY
 07:00-17:00
 70 of 24 hr #

ADT : 6939
 AWD : 7453

RTIS System
Volume Report

produced at 1:41 PM on Aug 28/97

Page 1

File : C:\APPL\RTIS\DATA\0006G3VC.M51
Location : 134200820H1000000CM8 HWY 6 8.2KM N OF HWY 3
Highway : 0006 Rq: 97-00-00 Inventory Count Pgm.
File Interval : 60
File Dates : Thu Jul 03/97 to Fri Jul 11/97 Volume Data
Detector : Loop Counter ID : 3758

Report Dates : Thu Jul 03/97 to Fri Jul 11/97

Report Interval: 60

Direction : * All

Stream : * All

Lane : * All

Classification : * All

Comments :

HOURL INTERVAL	Thu 97/07/03	Fri 04	Sat 05	Sun 06	Mon 07	Tue 08	Wed 09	Thu 10
0:00- 1:00	--	82	80	124	86	67	67	66
1:00- 2:00	--	50	71	55	52	26	32	31
2:00- 3:00	--	49	54	56	30	19	31	34
3:00- 4:00	--	44	44	48	43	25	22	23
4:00- 5:00	--	65	36	48	66	43	45	39
5:00- 6:00	--	141	95	57	129	104	106	121
6:00- 7:00	--	411	186	164	389	371	417	413
7:00- 8:00	--	559	249	148	566	521	540	553
8:00- 9:00	--	441	287	177	442	487	467	445
9:00-10:00	--	412	394	286	404	422	454	440
10:00-11:00	--	472	519	432	458	443	464	472
11:00-12:00	--	538	538	559	464	491	512	521
AM TOTAL	--	3264	2553	2152	3129	3019	3157	3158
12:00-13:00	507	558	574	700	517	476	492	533
13:00-14:00	525	594	590	687	498	484	446	513
14:00-15:00	436	564	625	736	476	596	464	499
15:00-16:00	567	659	547	660	592	535	611	612
16:00-17:00	696	744	555	679	656	706	681	807
17:00-18:00	677	696	561	634	652	645	656	632
18:00-19:00	557	618	466	585	489	473	517	532
19:00-20:00	434	528	456	565	396	345	357	452
20:00-21:00	394	342	348	448	286	257	305	338
21:00-22:00	262	314	292	330	222	265	291	268
22:00-23:00	212	199	240	239	167	163	197	195
23:00-24:00	112	144	171	136	109	126	141	110
PM TOTAL	5431	5960	5425	6399	5038	5121	5158	5191
24 HR TOTAL	5431	9224	7978	8551	8167	8140	8315	8649
NOON-NOON *	8695	8513	7577	9528	8057	8278	8316	

ADT : 8423
AWD : 8337

RTIS System

Volume Report

produced at 4:43 AM on Dec 12/97

Page 1

2

File : C:\AFPL\RTIS\DATA\0006ITVC.M51
 Location : 134200820H1000000CM8 HWY 6 8.2KM N OF HWY 3
 Highway : 0006 Rq: 97-00-00 Inventory Count Pgm.
 File Interval : 60
 File Dates : Mon Sep 29/97 to Thu Oct 02/97 Volume Data
 Detector : Loop Counter ID : 1242

Report Dates : Mon Sep 29/97 to Thu Oct 02/97

Report Interval: 60

Direction : C Combined

Stream : M Mainline

Lane : 8 Total

Classification : * All

Comments :

HOUE	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Mon
INTERVAL	97/09/29	30	01	02	03	04	05	06
0:00- 1:00	--	64	56	62	--	--	--	--
1:00- 2:00	--	27	50	27	--	--	--	--
2:00- 3:00	--	27	29	22	--	--	--	--
3:00- 4:00	--	35	11	20	--	--	--	--
4:00- 5:00	--	50	44	51	--	--	--	--
5:00- 6:00	--	118	127	125	--	--	--	--
6:00- 7:00	--	497	523	527	--	--	--	--
7:00- 8:00	--	631	653	629	--	--	--	--
8:00- 9:00	--	542	542	497	--	--	--	--
9:00-10:00	--	421	455	477	--	--	--	--
10:00-11:00	--	426	453	459	--	--	--	--
11:00-12:00	--	152	453	451	--	--	--	--

AM TOTAL	--	3290	3399	3347	--	--	--	--

12:00-13:00	463	470	416	473	--	--	--	--
13:00-14:00	440	454	463	--	--	--	--	--
14:00-15:00	471	457	471	--	--	--	--	--
15:00-16:00	576	642	645	--	--	--	--	--
16:00-17:00	838	784	760	--	--	--	--	--
17:00-18:00	632	677	606	--	--	--	--	--
18:00-19:00	436	482	517	--	--	--	--	--
19:00-20:00	275	317	349	--	--	--	--	--
20:00-21:00	199	293	242	--	--	--	--	--
21:00-22:00	174	198	225	--	--	--	--	--
22:00-23:00	111	126	172	--	--	--	--	--
23:00-24:00	49	166	88	--	--	--	--	--

PM TOTAL	4697	5066	4981	473	--	--	--	--

24 HR TOTAL	4697	8356	8380	3820	--	--	--	--

NOON-NOON	7987	8465	8328	--	--	--	--	--

AWD : 8260

ENGINEERING

COVER SHEET

DEPARTMENT**FAX**

To: Roly Andrews , Aercoustics Engineering Limited
Fax #: 416-249-3613

Date: November 19, 1998

Re: Traffic Data for Hwy 6 south of Hagersville

The following is the information we have on file for the roads requested:

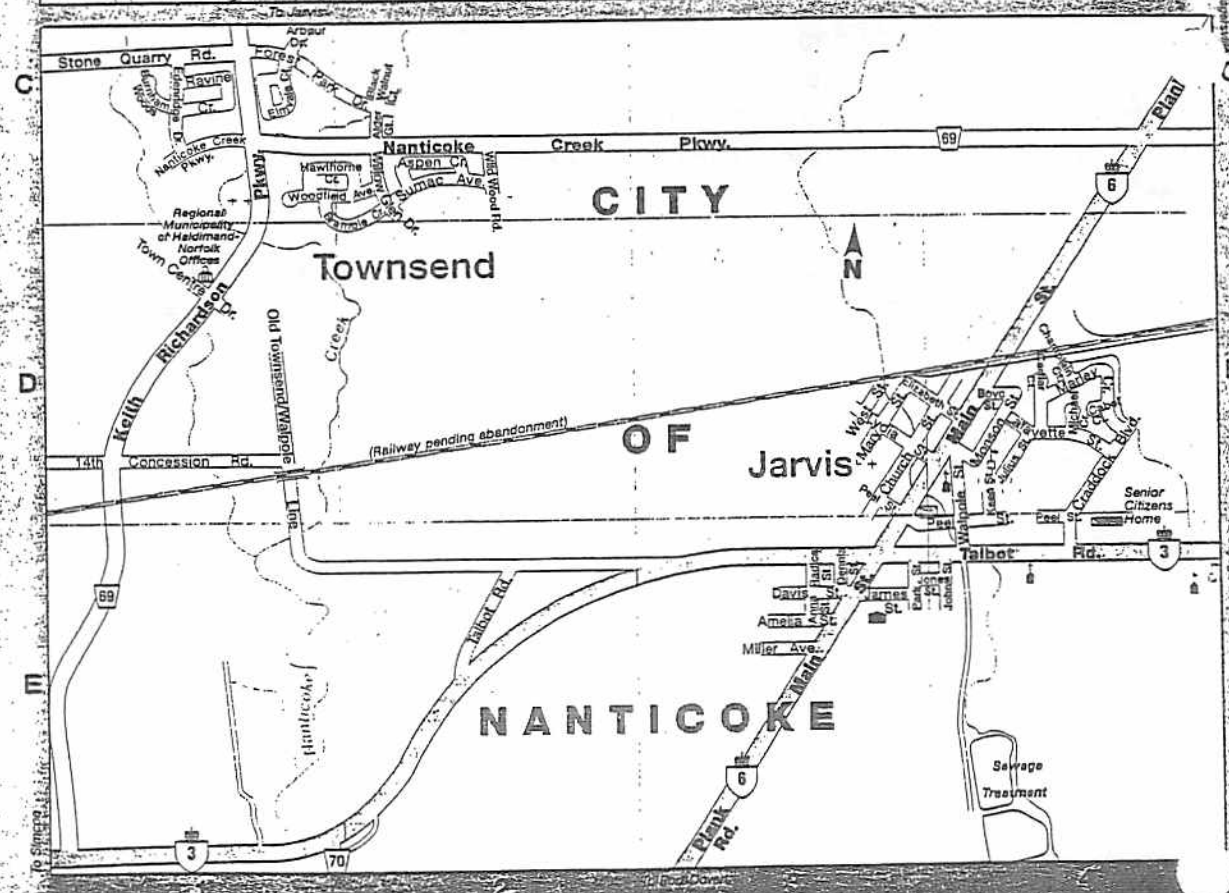
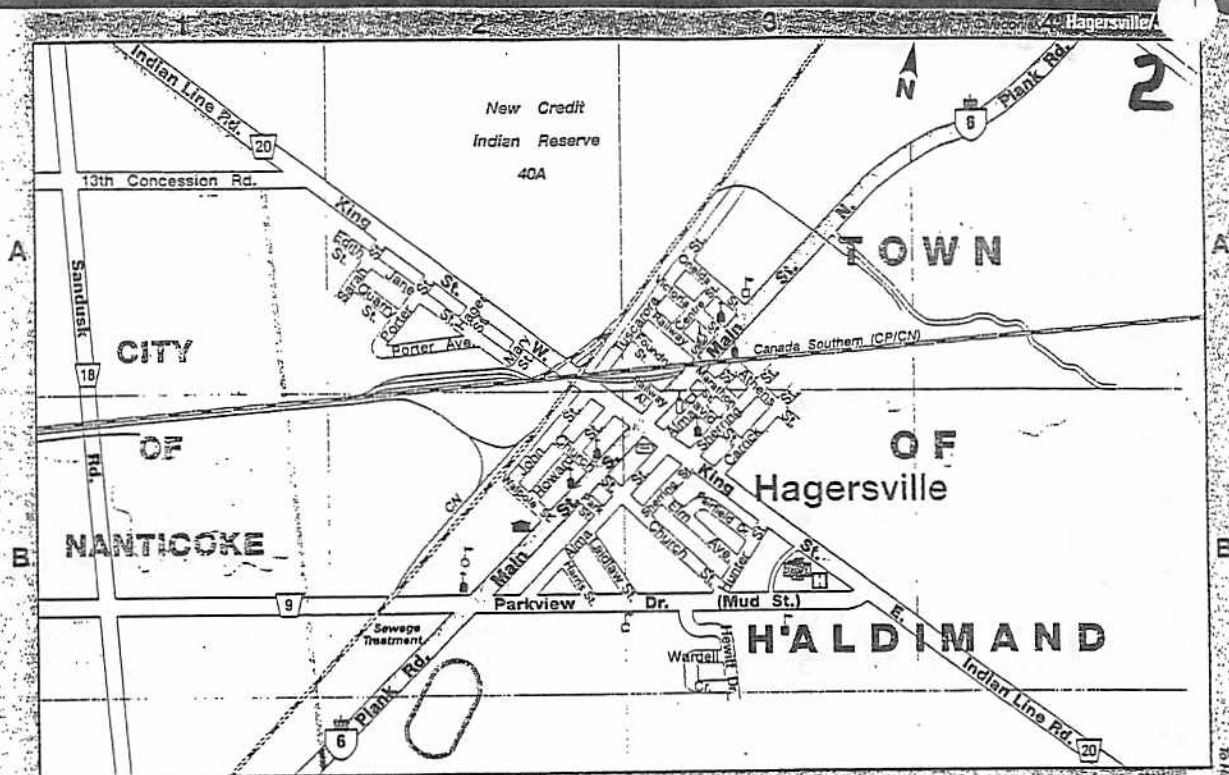
1995 AADT

Reg. Road # 9 - 0.3 km east of Reg. Road # 74	- 1500	
Reg. Road # 9 - 0.2 km west of Hwy. # 6	- 1950	
Reg. Road # 18 - 0.8 km north of Hwy. # 6	- 200	(NEGLIGIBLE)

The Posted Speed on both roads is 80 km/h.

From the desk of...
Marv Fehrman
C.E.T.
Region of Haldimand-Norfolk
70 Town Centre Drive
Townsend, ON N0A 1S0

519-587-4911 ext. 246
Fax: 519-587-4301



AERCOUSTICS ENGINEERING LIMITED

Established 1971

Roland G. Andrews
B.Sc., B.E., P.Eng.

Mohan Barman
M.A.Sc., P.Eng.

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Canada M9W 1B3
Phone (416) 249-3361
Fax (416) 249-3613

email: aercoustics@aercoustics.com
website: www.aercoustics.com

MEMO

TO: Marv Fehrman
Traffic Dept, Region of Haldimand Norfolk
FAX: 1 519 587-4301
FROM: Roly Andrews
RE: Traffic data for Hwy 6 south of Hagersville

Date: 18 Nov 98

Our ref: 98305TRAF2
of pgs: 2

Gentlemen:

The appended map locates segments of regional roads 9 and 18 just south of the junction with highway 6 at Hagersville. We have been commissioned to do a noise study for a proposed quarry between these roads. Road traffic defines the background noise and affects the allowable noise limit for the quarry. Would you kindly FAX me whatever you have available for these sectors of regional roads 9 and 18 from the following list of traffic data?

AADT

Day/Night split (07:00 – 23:00) and (23:00 – 07:00)

Percentage of:

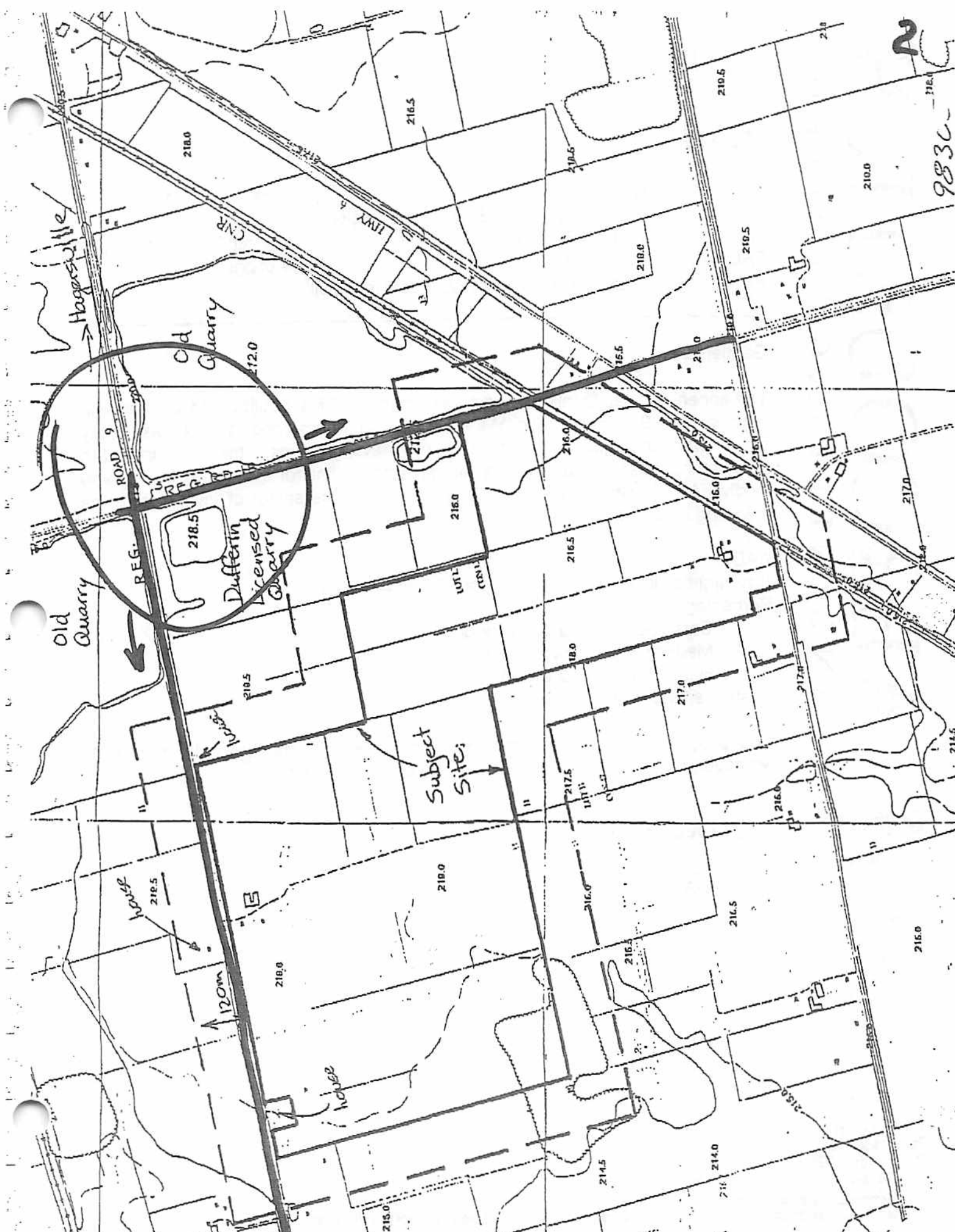
Cars (including vans & pick-ups)

Medium Trucks (two axles)

Heavy Trucks (> 2 axles)

Posted speed limit

You probably do not have the breakdowns exactly as listed. In any case, whatever guidance you can give us would be appreciated.



2
9836

AERCOUSTICS[®] ENGINEERING LIMITED

Established 1971

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Canada M9W 1B3
Phone (416) 249-3361
Fax (416) 249-3613

email: aercoustics@aercoustics.com
website: www.aercoustics.com

MEMO

TO: Howard Wright
Traffic Dept, MTO South West Region
FAX: 1 519 649-3097 873-4370
FROM: Roly Andrews
RE: Traffic data for Hwy 6 south of Hagersville

Date: 18 Nov 98

Our ref: 98305TRAF1
of pgs: 2

Gentlemen:

The appended map locates a segment of highway 6 just south of the junction with regional road 9 at Hagersville. We have been commissioned to do a noise study for a proposed quarry beside this highway, and road traffic defines the background noise and affects the allowable noise limit for the quarry. Would you kindly FAX me whatever you have available for this sector of Hwy 6 from the following list of traffic data?

AADT

Day/Night split (07:00 – 23:00) and (23:00 – 07:00)

Percentage of:

Cars (including vans & pick-ups)

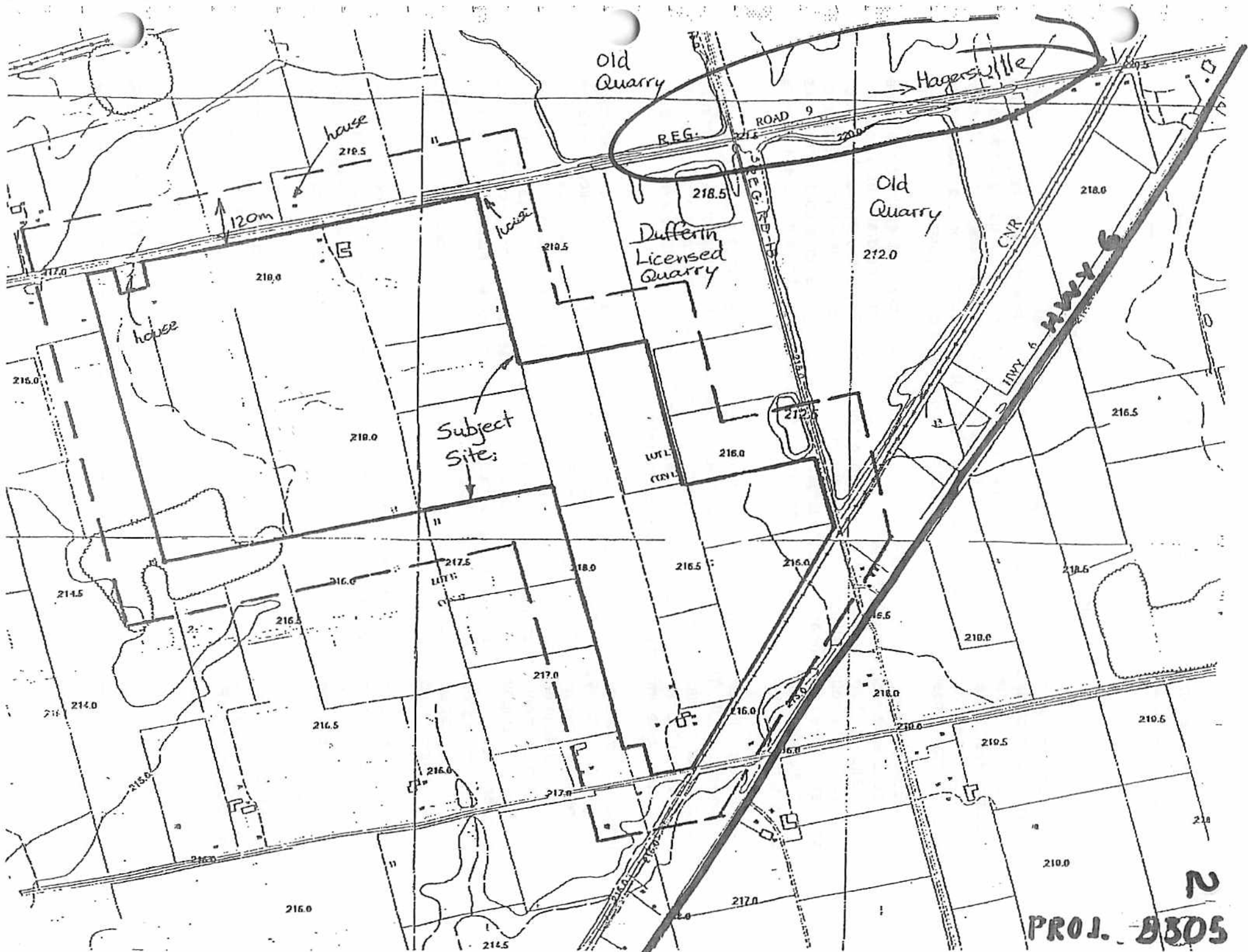
Medium Trucks (two axles)

Heavy Trucks (> 2 axles)

Posted speed limit

You probably do not have the breakdowns exactly as listed. In any case, whatever guidance you can give us would be appreciated.

Sincerely,
Roly Andrews



N
PROJ. 8305

APPENDIX B

NOISE PREDICTION METHODOLOGY

The noise study undertook to identify operational scenarios that would produce the highest noise impact at each of the residences, and to design out any that are likely to cause unacceptably high levels. The maximum impact might be expected to occur during extraction in areas closest to the receptor. However, as topography varies within the site, and the effect of acoustic barriers varies with distances between source, barrier, and receptor, it is necessary to evaluate many possible scenarios that may occur during the life of the operation.

For each scenario, propagation lines were drawn from the location of each of the noise sources to each receptor, and profiles along the propagation lines were drawn as a basis for computation of barrier effect and other propagation factors. The noise impact from each individual noise source at the point of reception was computed, and the total effect of all sources. Where noise impact above the target was indicated, possible noise control measures were evaluated and incorporated in the operational plan. Drilling, loading and processing were computed as point sources.

The noise prediction algorithm used was International Standard ISO 9613-2, Part 2, which is endorsed by MOE. The assumptions used result in prediction of noise impact levels that may occur under conditions that augment noise propagation, including the down-wind case, with conservative factors for ground and barrier attenuation. The predicted impact levels are nearly worst-case; lower impact would usually occur in reality.

Noise from trucks on internal haul roads was computed as a series of moving point sources, using ISO 9613-2, Part 2. Truck volumes and speeds on internal roads are below the range where MOE's "Stamson" Traffic Noise Prediction Code applies. Each route was broken down into several segments, each of which is approximately uniform in physical features. The Leq from each segment was computed, and added to produce the total Leq for a range of trucks per hour. The shipping truck haul route is a constant and noise computations assumed 6 round trips per hour, the highest volume expected. The pit truck routes increase in length as extraction moves toward the perimeter. Travel time will affect the number of truck pass-by's per hour. Loader capacity is usually about 15 truckloads per hour, so impact predictions assumed 15 round trips per hour.

Noise from traffic on Highway 6 and Regional Rd 9 was computed by MOE prediction code Stamson 5.02. It breaks the travel path into segments within which geometry is more or less uniform. Traffic characteristics and propagation path characteristics for each segment are entered in the prediction code. Predicted noise impact is computed for each segment and for the total.

Tables B1, B2, B3, B4, & B5 are print-outs of example computation summaries for a crushing/screening plant, a wheel loader, a drill, trucks on internal haul roads, and background traffic on Regional Rd. 9.

Project:	98305	NICHOLS QUARRY				GROUP 2		01/23 Feb/99		ISO 9613-2 PART 2			
				FIG B - 1		Portable Crush/Screen Plant							
			S/P2	TOP OF ROCK; ELEV 217									
			F/P2	QUARRY FLOOR; ELEV 206									
Source:	Crush7												
			Reference Sound Level @ 30m										
			Octave Band Centre Frequency										
Source Description			31.5	63	125	250	500	1000	2000	4000	8000	dBA	
Portable Crush/Screen Plant			70	74	77	78	77	79	81	76	69	86	
A-weighted			31	48	61	69	74	79	82	77	68		
Receptor	R7	R8	R9	R9	R10	R6	R6	R4	R1	R1	R3	R3	R3
Lift/Locn	F/P2	F/P2	F/P2	S/P2	F/P2	F/P2	F/P2	F/P1	S/P1	F/P1	S/P1	S/P1	F/P1
Sh	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Se	206.0	206.0	206.0	217.0	206.0	206.0	206.0	206.0	217.0	206.0	217.0	217.0	206.0
Rh	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Re	216.0	215.0	215.0	215.0	216.0	216.0	216.0	216.0	218.0	218.0	220.0	220.0	220.0
RS	1000	940	800	800	880	1160	1160	1250	630	630	650	650	650
BN	2	2	2	1	2	2	1	1	1	1	0	1	1
B1h	6.0	6.0	6.0	8.0	6.0	6.0	3.0	5.0	5.0	12.0	0.0	5.0	15.0
B1e	206.0	206.0	206.0	217.0	206.0	206.0	218.0	216.0	217.0	206.0	0.0	217.0	206.0
B1S	15	15	15	15	15	70	300	1130	490	490	0	600	600
B2h	3.0	3.0	3.0	3.0	3.0	3.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0
B2e	218.0	218.0	218.0	218.0	218.0	218.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
B2S	260	260	220	220	260	300	0	0	0	0	0	0	0
G source	0	0	0	0	0	0	0	0	0	0	0	0	0
G receiver	1	1	1	1	1	1	1	1	1	1	1	1	1
G middle	1	1	1	1	1	1	1	1	1	1	1	1	0
Co	0	0	0	0	0	0	0	0	0	0	0	0	0
Cmeteo	0	0	0	0	0	0	0	0	0	0	0	0	0
Error	0	0	0	0	0	0	0	0	0	0	0	0	0
											N/A		
dBA	34	35	35	36	35	38	38	37	46	46	51	46	46
32	31	32	33	33	32	30	30	30	36	36	46	35	35
63	35	35	36	36	36	34	34	34	40	40	50	39	39
125	37	37	38	38	37	37	37	36	43	43	45	42	42
250	36	36	36	37	36	37	37	36	42	42	42	42	43
500	32	33	33	34	33	35	35	34	42	42	43	41	41
1000	30	30	31	32	31	35	35	34	42	42	48	42	42
2000	23	24	25	27	25	30	30	29	41	41	46	40	40
4000	0	0	0	0	0	0	0	0	21	21	26	20	20
8000	0	0	0	0	0	0	0	0	0	0	0	0	0
Adiv	33.5	32.9	31.5	31.5	32.3	34.7	34.7	35.4	29.4	29.4	29.7	29.7	29.7
Aatm													
31.5 Hz	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
63 Hz	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
125 Hz	0.4	0.4	0.3	0.3	0.4	0.5	0.5	0.5	0.3	0.3	0.3	0.3	0.3
250 Hz	1.0	0.9	0.8	0.8	0.9	1.2	1.2	1.3	0.6	0.6	0.7	0.7	0.7
500 Hz	1.9	1.0	1.5	1.5	1.7	2.2	2.2	2.4	1.2	1.2	1.2	1.2	1.2
1000 Hz	3.7	3.5	3.0	3.0	3.3	4.3	4.3	4.6	2.3	2.3	2.4	2.4	2.4
2000 Hz	9.7	9.1	7.8	7.8	8.5	11.3	11.3	12.1	6.1	6.1	6.3	6.3	6.3
4000 Hz	32.8	30.8	26.2	26.2	28.9	38.0	38.0	41.0	20.7	20.7	21.3	21.3	21.3
8000 Hz	117.0	110.0	93.6	93.6	103.0	135.7	135.7	146.3	73.7	73.7	76.1	76.1	76.1
Ascreen													
31.5 Hz	10.9	10.9	11.0	10.9	10.9	10.4	10.4	10.4	10.1	10.1	5.4	10.1	10.1
63 Hz	11.4	11.5	11.8	11.4	11.5	10.4	10.4	10.4	10.1	10.1	5.4	10.1	10.1
125 Hz	3.0	3.4	4.4	3.8	3.7	1.0	1.0	1.0	2.5	2.5	0.0	2.4	4.7
250 Hz	2.3	2.8	3.7	2.7	2.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.6
500 Hz	6.2	6.7	7.9	6.7	6.9	1.3	1.3	1.3	1.3	1.3	0.0	1.3	3.7
1000 Hz	12.7	13.4	14.7	13.3	13.6	5.7	5.6	5.6	5.6	5.6	0.8	5.6	8.0
2000 Hz	16.0	16.7	18.1	16.6	16.9	6.5	6.3	6.3	6.3	6.3	1.5	6.3	8.6
4000 Hz	18.7	19.5	20.9	19.4	19.7	6.6	6.3	6.3	6.3	6.3	1.5	6.3	8.6
8000 Hz	21.6	22.4	23.9	21.5	22.6	7.0	6.3	6.3	6.3	6.3	1.5	6.3	8.6
Aground													
31.5 Hz	-5.6	-5.6	-5.5	-5.5	-5.5	-5.7	-5.7	-5.7	-5.4	-5.4	-5.4	-5.4	-5.4
63 Hz	-5.6	-5.6	-5.5	-5.5	-5.5	-5.7	-5.7	-5.7	-5.4	-5.4	-5.4	-5.4	-5.4
125 Hz	3.6	3.5	3.1	3.1	3.3	3.7	3.7	3.8	2.3	2.3	2.4	2.4	0.0
250 Hz	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	3.1
500 Hz	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	1.1
1000 Hz	-0.8	-0.8	-0.8	-0.8	-0.8	-0.8	-0.8	-0.8	-0.8	-0.8	-0.8	-0.8	-3.2
2000 Hz	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-3.9
4000 Hz	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-3.9
8000 Hz	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-3.9

Calculations		PG 2 OF 2		98305	Crush7	9 Feb 99								
StoR	1000.036	940.0299	800.0352	800.0077	880.0411	1160.031	1160.031	1250.029	630.0002	630.0875	650.0017	650.0017	650.1202	
FBtoSB	245.1653	245.1653	205.1975	205.039	245.1653	230.176	370.8423	1151.408	537.9442	536.3059	0	639.7531	639.4068	
StoFB	15.29706	15.29706	15.29706	15.81139	15.29706	70.06426	300.2399	1130.064	490.0041	490.0826	220	600.0033	600.12	
StoSB	260.2768	260.2768	220.327	220.0023	260.2768	300.2399	206	209	220	209	220	220	209	
RtoFB	985.0154	925.0109	785.0129	785.046	865.0175	1090.014	860.0071	120.051	140.0223	140.008	688.7039	50.0025	50.0025	
RtoSB	740.0083	680.0149	580.0175	580.0175	620.0099	860.0071	1179.665	1268.781	667.1434	667.1434	688.7039	688.7039	688.7039	
Z	0.434462	0.447279	0.476826	0.84975	0.431138	0.216256	0.215884	0.085846	0.026203	0.003188	256.7022	0.004102	0.002307	
Kw	0.164521	0.191455	0.255604	0.29861	0.21106	0.001736	1.91E-06	1.5E-07	5.8E-07	1.31E-18	0.803585	2.59E-11	7.58E-15	
Ascreen (C2 = 20)														
C3														
31.5 Hz	2.740928	2.740928	2.649582	1	2.740928	2.71112	1	1	1	1	1	1	1	
63 Hz	2.928263	2.928263	2.899142	1	2.928263	2.919006	1	1	1	1	1	1	1	
125 Hz	2.981277	2.981277	2.973379	1	2.981277	2.978785	1	1	1	1	1	1	1	
250 Hz	2.995286	2.995286	2.993278	1	2.995286	2.994654	1	1	1	1	1	1	1	
500 Hz	2.998819	2.998819	2.998315	1	2.998819	2.998861	1	1	1	1	1	1	1	
1000 Hz	2.999705	2.999705	2.999579	1	2.999705	2.999665	1	1	1	1	1	1	1	
2000 Hz	2.999926	2.999926	2.999895	1	2.999926	2.999916	1	1	1	1	1	1	1	
4000 Hz	2.999982	2.999982	2.999974	1	2.999982	2.999979	1	1	1	1	1	1	1	
8000 Hz	2.999995	2.999995	2.999993	1	2.999995	2.999995	1	1	1	1	1	1	1	
Dz														
31.5 Hz	5.261841	5.352761	5.652647	5.396862	5.38671	4.77391	4.771214	4.771213	4.771213	4.771213	0	4.771213	4.771213	
63 Hz	5.759547	5.93117	6.328846	5.943273	5.994449	4.777019	4.771215	4.771213	4.771213	4.771213	0	4.771213	4.771213	
125 Hz	6.578834	6.862218	7.507904	6.852101	6.964909	4.78296	4.771217	4.771213	4.771213	4.771213	0	4.771213	4.771213	
250 Hz	7.861744	8.278964	9.192123	8.253049	8.427095	4.794801	4.771221	4.771213	4.771213	4.771213	0	4.771213	4.771213	
500 Hz	9.85253	10.19744												

[illegible]

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Calculations	PG 2 OF 2				Front6				R4 - R9				19 Feb 98							
StoR	530.1141	480.1724	570.1482	1230.033	1230.033	1160.035	1020.031	940.034	800.04	880.046	900.045	1200.034	400.125							
FBoSB	180.0694	407.707	180.0694	1151.408	1151.408	372.6137	100	326.253	311.8349	341.2345	373.2077	639.7531	100.1798							
StoFB	330.1367	340.4001	370.1787	1130.069	1130.069	300.2603	260.3003	240.3253	220.3548	260.3003	300.3036	600.1519	50.42073							
StoSB	510.2081	208.5	550.2474	208.5	208.5	208.5	160.4875	208.5	208.5	208.5	208.5	208.5	150.5199							
RtoFB	200.0056	150.0408	200.0056	100.0612	100.0612	860.0071	760.0133	700.0145	580.0175	620.0099	600.0169	600.0169	350.0175							
RtoSB	20.30394	537.7381	20.30394	1249.082	1249.082	1180.214	860.0118	964.6099	828.7776	908.4801	925.9083	1219.552	250.0125							
z	0.395947	0.268541	0.403818	0.09744	0.09744	0.232513	0.282258	0.305723	0.332285	0.264165	0.275472	0.134981	0.488087							
Kw	0.34675	0.03292	0.316089	1.58E-06	1.58E-06	3.08E-06	7.84E-05	0.000322	0.002025	0.000275	0.000188	2.05E-09	0.320924							
Ascreen (C2 = 20)																				
C3																				
31.5 Hz	2.567579	1	2.567579	1	1	1	1	1	1	1	1	1	2.057505							
63 Hz	2.870972	1	2.870972	1	1	1	1	1	1	1	1	1	2.635576							
125 Hz	2.965568	1	2.965568	1	1	1	1	1	1	1	1	1	2.892868							
250 Hz	2.991279	1	2.991279	1	1	1	1	1	1	1	1	1	2.972096							
500 Hz	2.997813	1	2.997813	1	1	1	1	1	1	1	1	1	2.99295							
1000 Hz	2.999453	1	2.999453	1	1	1	1	1	1	1	1	1	2.998233							
2000 Hz	2.999863	1	2.999863	1	1	1	1	1	1	1	1	1	2.999558							
4000 Hz	2.999966	1	2.999966	1	1	1	1	1	1	1	1	1	2.999889							
8000 Hz	2.999991	1	2.999991	1	1	1	1	1	1	1	1	1	2.999972							
Dz																				
31.5 Hz	5.817683	4.794587	5.563274	4.771213	4.771213	4.771214	4.771271	4.771473	4.772996	4.771405	4.77135	4.771213	5.551224							
63 Hz	6.477504	4.817836	6.377156	4.771213	4.771213	4.771216	4.77133	4.771734	4.774779	4.771598	4.771487	4.771213	6.543808							
125 Hz	7.751722	4.863237	7.597403	4.771214	4.771214	4.77122	4.771445	4.772248	4.778287	4.771977	4.771758	4.771213	7.988669							
250 Hz	9.527575	4.953351	9.319488	4.771216	4.771216	4.771228	4.771678	4.773283	4.785349	4.772742	4.772303	4.771213	9.897455							
500 Hz	11.75066	5.128158	11.49942	4.771219	4.771219	4.771243	4.772144	4.775353	4.79944	4.774271	4.773393	4.771213	12.20847							
1000 Hz	14.30436	5.487981	14.02419	4.771226	4.771226	4.771273	4.773075	4.779489	4.827486	4.777327	4.775572	4.771213	14.81509							
2000 Hz	17.06643	6.050831	16.76916	4.771238	4.771238	4.771333	4.774937	4.787749	4.883039	4.783433	4.779927	4.771213	17.60674							
4000 Hz	19.94694	7.037969	19.64032	4.771264	4.771264	4.771454	4.778658	4.804224	4.992058	4.795619	4.788623	4.771213	20.50298							
8000 Hz	22.89083	8.519773	22.57931	4.771316	4.771316	4.771695	4.786092	4.836985	5.202214	4.81989	4.805964	4.771213	23.45498							
Aground	source	source	source	source	source	source	source	source	source	source	source	source	source							
G	0	0	0	0	0	0	0	0	0	0	0	0	0							
a'(h)	4.685708	4.50886	4.857177	6.117887	6.117887	6.08982	6.988489	5.891259	5.623698	5.793416	5.828657	6.10725	4.089378							
b'(h)	6.40001	6.399861	6.400077	6.400132	6.400132	6.400132	6.400132	6.400132	6.400132	6.400132	6.400132	6.400132	6.398488							
c'(h)	2.289806	2.289782	2.289817	2.289826	2.289826	2.289826	2.289826	2.289826	2.289826	2.289826	2.289826	2.289826	2.289561							
d'(h)	1.518032	1.518032	1.518033	1.518033	1.518033	1.518033	1.518033	1.518033	1.518033	1.518033	1.518033	1.518033	1.518027							
31.5 Hz	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5							
63 Hz	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5							
125 Hz	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5							
250 Hz	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5							
500 Hz	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5							
1000 Hz	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5							
2000 Hz	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5							
4000 Hz	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5							
8000 Hz	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5							
Aground	receiver	receiver	receiver	receiver	receiver	receiver	receiver	receiver	receiver	receiver	receiver	receiver	receiver							
G	1	1	1	1	1	1	1	1	1	1	1	1	1							
a'(h)	4.724808	4.488215	4.970581	6.77756	6.77756	6.73733	6.592089	6.452741	6.069224	6.312486	6.362997	6.782313	3.870485							
b'(h)	8.523329	8.523114	8.523425	8.523504	8.523504	8.523504	8.523504	8.523504	8.523503	8.523504	8.523504	8.523504	8.521148							
c'(h)	6.473045	6.472894	6.473114	6.473169	6.473169	6.473169	6.473169	6.473169	6.473169	6.473169	6.473169	6.473169	6.471501							
d'(h)	2.159953	2.159933	2.159962	2.159969	2.159969	2.159969	2.159969	2.159969	2.159969	2.159969	2.159969	2.159969	2.159748							
31.5 Hz	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5							
63 Hz	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5							
125 Hz	3.224808	2.968215	3.470581	5.27756	5.27756	5.23733	5.092089	4.952741	4.569224	4.812486	4.862997	5.282313	2.370485							
250 Hz	7.023329	7.023114	7.023425	7.023504	7.023504	7.023504	7.023504	7.023504	7.023503	7.023504	7.023504	7.023504	7.021148							
500 Hz	4.973045	4.972894	4.973114	4.973169	4.973169	4.973169	4.973169	4.973169	4.973169	4.973169	4.973169	4.973169	4.971501							
1000 Hz	0.659953	0.659933	0.659962	0.659969	0.659969	0.659969	0.659969	0.659969	0.659969	0.659969	0.659969	0.659969	0.659748							
2000 Hz	0	0	0	0	0	0	0	0	0	0	0	0	0							
4000 Hz	0	0	0	0	0	0	0	0	0	0	0	0	0							
8000 Hz	0	0	0	0	0	0	0	0	0	0	0	0	0							
Aground	middle	middle	middle	middle	middle	middle	middle	middle	middle	middle	middle	middle	middle							
G	1	1	1	1	1	1	1	1	1	1	1	1	1							
q	0.773585	0.755102	0.789474	0.902439	0.902439	0.896552	0.882353	0.87234	0.85	0.883636	0.866887	0.9	0.7							
31.5 Hz	-2.32075	-2.26531	-2.36842	-2.70732	-2.70732	-2.68966	-2.64706	-2.61702	-2.55	-2.59091	-2.6	-2.7	-2.1							
63 Hz	-2.32075	-2.26531	-2.36842	-2.70732	-2.70732	-2.68966	-2.64706	-2.61702	-2.55	-2.59091	-2.6	-2.7	-2.1							
125 Hz	0	0	0	0	0	0	0	0	0	0	0	0	-2.1							
250 Hz	0	0	0	0	0	0	0	0	0	0	0	0	-2.1							
500 Hz	0	0	0	0	0	0	0	0	0	0	0	0	-2.1							
1000 Hz	0	0	0	0	0	0	0	0	0	0	0	0	-2.1							
2000 Hz	0	0	0	0	0	0	0	0	0	0	0	0	-2.1							
4000 Hz	0	0	0	0	0	0	0	0	0	0	0	0	-2.1							
8000 Hz	0	0	0	0	0	0	0	0	0	0	0	0	-2.1							
Cmeteo																				
Co	0	0	0	0	0	0	0	0	0	0	0	0	0							
Cmeteo	0	0	0	0	0	0	0	0	0	0	0	0	0							
Berror																				

Project:	98305	NICHOLS QUARRY, HAGERSVILLE				0 21 Feb 1999		ISO 9613-2 PART 2					
					PHASE 4		Group 6						
					FIG B - 3		DRILL						
Source:	Drill3												
			Reference Sound Level @ 30m										
			Octave Band Centre Frequency--										
Source Description			31.5	63	125	250	500	1000	2000	4000	8000	dBA	
Ingersol Rand Air-Hydraulic Drill			70	74	84	76	79	78	76	73	72	83	
A-weighted			31	48	68	67	76	78	77	74	71		
TARGET	52	52	52	52	52	47	47	47	45	45	45	45	45
Receptor	R4	R4	R4	R4	R4	R7	R7	R7	R8	R8	R8	R10	R9
Phase/loc:	4/R4/400	4/R4/300	4/R4/200	4/R4/150	4/R4/150	4/R7/250	4/R7/350	4/R7/200	4/R8/350	4/R8/450	4/R8/550	2/R10/70	4/R9/550
Sh	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Se	213.0	213.0	213.0	213.0	213.0	214.0	214.0	214.0	214.0	214.0	214.0	215.0	214.0
Rh	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Re	216.0	216.0	216.0	216.0	216.0	216.0	216.0	216.0	217.0	217.0	215.0	216.0	215.0
RS	400	300	200	150	150	250	350	200	350	450	550	750	550
BN	1	2	2	2	1	2	2	2	2	2	2	1	2
B1h	6.0	5.0	5.0	6.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	3.0	5.0
B1e	216.0	213.0	213.0	213.0	216.0	214.0	214.0	214.0	214.0	214.0	214.0	218.0	214.0
B1S	300	75	30	20	50	20	40	30	15	30	50	150	20
B2h	0.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	0.0	5.0
B2e	0.0	216.0	216.0	216.0	216.0	217.0	217.0	216.0	217.0	217.0	217.0	0.0	217.0
B2S	0	200	100	50	50	170	270	100	170	310	450	0	100
G source	0	0	0	0	0	0	0	0	0	0	0	0	0
G receiver	1	1	1	1	1	1	1	1	1	1	1	1	1
G middle	1	1	1	1	1	1	1	1	1	1	1	1	1
Co	0	0	0	0	0	0	0	0	0	0	0	0	0
Cmeteo	0	0	0	0	0	0	0	0	0	0	0	0	0
Berror	0	0	0	0	0	0	0	0	0	0	0	0	0
								N/A					
dBA	50	50	50	50	54	46	45	51	45	45	42	43	43
32	40	42	45	48	48	43	40	45	40	38	37	34	37
63	44	46	49	51	51	46	44	49	44	42	40	38	41
125	53	55	57	59	61	54	53	58	53	52	49	48	50
250	45	47	48	48	51	44	43	48	43	43	40	39	41
500	48	48	49	48	53	45	44	49	44	44	41	42	42
1000	46	45	45	44	49	41	40	46	40	41	37	39	38
2000	41	39	39	38	44	34	33	40	33	34	29	33	31
4000	28	27	28	29	35	23	19	29	19	18	11	13	13
8000	0	0	8	12	18	0	0	9	0	0	0	0	0
Adv	25.5	23.0	19.5	17.0	17.0	21.4	24.3	19.5	24.3	26.5	28.3	31.0	28.3
Aatm													
31.5 Hz	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1
63 Hz	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1
125 Hz	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.3	0.2
250 Hz	0.4	0.3	0.2	0.2	0.2	0.3	0.4	0.2	0.4	0.5	0.6	0.8	0.6
500 Hz	0.8	0.6	0.4	0.3	0.3	0.5	0.7	0.4	0.7	0.9	1.0	1.4	1.0
1000 Hz	1.5	1.1	0.7	0.6	0.6	0.9	1.3	0.7	1.3	1.7	2.0	2.8	2.0
2000 Hz	3.9	2.9	1.9	1.5	1.5	2.4	3.4	1.9	3.4	4.4	5.3	7.3	5.3
4000 Hz	13.1	9.8	6.6	4.9	4.9	8.2	11.5	6.6	11.5	14.8	18.0	24.6	18.0
8000 Hz	46.8	35.1	23.4	17.6	17.6	29.3	41.0	23.4	41.0	52.7	64.4	87.8	64.4
Ascreen													
31.5 Hz	9.8	9.6	9.2	8.8	8.5	10.1	10.2	9.1	10.2	10.1	10.4	10.2	10.2
63 Hz	9.8	9.8	9.8	9.8	8.9	11.1	10.7	9.6	10.8	10.3	10.8	10.2	10.4
125 Hz	4.0	5.3	7.3	9.0	6.9	8.2	6.3	6.9	6.3	4.4	4.4	1.9	3.8
250 Hz	0.0	0.6	3.2	5.9	2.2	4.6	2.7	2.6	2.8	0.9	1.8	0.0	0.8
500 Hz	1.6	3.8	7.3	10.6	5.8	8.9	6.7	6.5	6.8	4.1	5.4	1.3	4.1
1000 Hz	6.2	9.6	13.9	17.5	12.0	15.8	13.3	13.0	13.5	10.1	11.8	5.6	10.1
2000 Hz	7.4	12.3	17.2	21.0	15.2	19.3	16.6	16.3	16.8	12.9	14.9	6.3	12.9
4000 Hz	8.2	14.7	20.1	23.9	17.9	22.2	19.4	19.1	19.6	15.4	17.7	6.3	15.4
8000 Hz	9.6	17.4	23.0	26.5	20.7	25.2	22.3	22.0	22.5	18.2	20.5	6.3	18.1
Aground													
31.5 Hz	-5.0	-4.7	-4.0	-3.3	-3.3	-4.4	-4.8	-4.0	-4.8	-5.1	-5.3	-5.5	-5.3
63 Hz	-5.0	-4.7	-4.0	-3.3	-3.3	-4.4	-4.8	-4.0	-4.8	-5.1	-5.3	-5.5	-5.3
125 Hz	0.9	0.2	-0.3	-0.6	-0.6	-0.1	0.5	-0.3	0.5	1.2	1.8	2.9	1.8
250 Hz	5.5	5.5	5.4	5.2	5.2	5.5	5.5	5.4	5.5	5.5	5.5	5.5	5.5
500 Hz	3.5	3.5	3.4	3.2	3.2	3.4	3.5	3.4	3.5	3.5	3.5	3.5	3.5
1000 Hz	-0.8	-0.8	-0.9	-0.9	-0.9	-0.8	-0.8	-0.9	-0.8	-0.8	-0.8	-0.8	-0.8
2000 Hz	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5
4000 Hz	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5
8000 Hz	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5

Calculations		Drill4	pg 2 of 2	98305	15 Feb/99	Group6								
StoR	400.0028	300.0037	200.0056	150.0075	150.0075	250.0005	350.0004	200.0006	350.0032	450.0025	550.0002	750.0002	550.0002	
FBtoSB	373.2077	125.036	70.06426	30.06659	0	150.03	230.0198	70.02857	155.029	280.0161	400.0112	267.0974	80.05623	
StoFB	300.06	75.02666	30.06659	20.22375	50.24938	20.09975	40.04997	30.06659	15.13275	30.06659	50.03998	150.03	20.09975	
StoSB	216	200.0625	100.1249	50.24938	50.24938	170.0735	270.0463	100.08	170.0735	310.0403	450.0278	218	100.1249	
RtoFB	100.1012	225.0006	170.0007	130.0087	100.0812	230.0049	310.0036	170.0066	335.0004	420.0003	500.0082	600.0102	50.0059	
RtoSB	455.309	100.0812	100.0812	100.0612	100.0812	80.12646	80.12646	100.0612	180.034	140.0437	100.1511	780.9009	450.0336	
Z	0.15838	0.120138	0.186455	0.344073	0.30311	0.255711	0.195639	0.155766	0.182586	0.123907	0.202142	0.040039	0.189364	
Kw	0.045989	0.216362	0.529866	0.717428	0.572518	0.641694	0.428643	0.499133	0.45534	0.250932	0.271023	4.95E-07	0.163295	
Ascreen (C2 = 20)														
C3														
31.5 Hz	1	2.272188	1.708701	1.183581	1	2.431255	2.710784	1.708235	2.457555	2.795211	2.894119	1	1.834857	
63 Hz	1	2.749735	2.374083	1.575772	1	2.819267	2.9189	2.373644	2.829759	2.944544	2.972435	1	2.482684	
125 Hz	1	2.929884	2.792583	2.22825	1	2.950772	2.978757	2.792393	2.953824	2.985618	2.992925	1	2.83717	
250 Hz	1	2.981898	2.943772	2.728484	1	2.987462	2.994647	2.943717	2.988253	2.996384	2.998227	1	2.956647	
500 Hz	1	2.995469	2.98564	2.924426	1	2.996851	2.998659	2.985626	2.99705	2.999095	2.999558	1	2.988983	
1000 Hz	1	2.998865	2.986391	2.860556	1	2.999212	2.999685	2.996387	2.999262	2.999774	2.999889	1	2.997234	
2000 Hz	1	2.999716	2.999096	2.995103	1	2.999803	2.999918	2.999096	2.999815	2.999943	2.999972	1	2.999308	
4000 Hz	1	2.999929	2.999774	2.998774	1	2.999951	2.999979	2.999774	2.999954	2.999988	2.999993	1	2.999827	
8000 Hz	1	2.999982	2.999944	2.999693	1	2.999988	2.999985	2.999943	2.999988	2.999996	2.999998	1	2.999957	
Dz														
31.5 Hz	4.790481	4.92504	5.197183	5.483975	5.208518	5.717806	5.335585	5.109776	5.307989	4.995723	5.172456	4.771213	4.91909	
63 Hz	4.809663	5.134569	5.864871	6.458868	5.60579	6.715835	5.906818	5.653693	5.920558	5.231397	5.558763	4.771213	5.160317	
125 Hz	4.847174	5.506526	6.994098	8.449339	6.295278	8.141675	6.826301	6.606539	6.886389	5.652137	6.223827	4.771213	5.808132	
250 Hz	4.92183	6.155954	8.589722	11.06853	7.421215	10.05399	8.228293	8.011693	8.33071	6.389012	7.313854	4.771213	6.363742	
500 Hz	5.067399	7.212694	10.6351	13.7994	9.055065	12.3792	10.13259	9.889066	10.26943	7.566899	8.908161	4.771213	7.548679	
1000 Hz	5.34467	8.769106	13.05592	16.60634	11.16918	14.99859	12.48128	12.18647	12.62246	9.254483	10.98824	4.771214	9.236809	
2000 Hz	5.851162	10.81584	15.73492	19.49237	13.65086	17.79858	15.08581	14.78754	15.28189	11.41321	13.44607	4.771218	11.39385	
4000 Hz	6.715333	13.24991	18.56864	22.43406	16.3706	20.69957	17.88917	17.57888	18.07397	13.92558	16.15131	4.771219	13.90447	
8000 Hz	8.053505	15.94056	21.48765	25	19.22799	23.65412	20.79226	20.47207	20.98161	16.66371	19.00063	4.771228	16.6414	
Aground	source	source	source	source	source	source	source	source	source	source	source	source	source	source
G	0	0	0	0	0	0	0	0	0	0	0	0	0	0
a'(h)	4.271354	3.918587	3.591021	3.418748	3.418748	3.75093	4.090925	3.591021	4.090925	4.453506	4.804962	5.367133	4.804982	
b'(h)	5.324496	5.316296	5.255708	5.135305	5.135305	5.300001	5.322291	5.255708	5.322291	5.325307	5.325715	5.325778	5.325715	
c'(h)	1.722845	1.722367	1.718837	1.711821	1.711821	1.721418	1.722717	1.718837	1.722717	1.722892	1.722916	1.72292	1.722918	
d'(h)	1.501517	1.501514	1.50149	1.501442	1.501442	1.501507	1.501516	1.50149	1.501516	1.501518	1.501518	1.501518	1.501518	
31.5 Hz	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	
63 Hz	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	
125 Hz	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	
250 Hz	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	
500 Hz	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	
1000 Hz	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	
2000 Hz	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	
4000 Hz	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	
8000 Hz	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	
Aground	receiver	receiver	receiver	receiver	receiver	receiver	receiver	receiver	receiver	receiver	receiver	receiver	receiver	receiver
G	1	1	1	1	1	1	1	1	1	1	1	1	1	1
a'(h)	3.870485	3.225018	2.670379	2.43966	2.43966	2.932474	3.540814	2.670379	3.540814	4.20431	4.849235	5.881246	4.849235	
b'(h)	8.521148	8.506094	8.394864	8.173824	8.173824	8.47618	8.517099	8.394864	8.517099	8.522637	8.523388	8.523502	8.523388	
c'(h)	6.471501	6.480842	6.382083	6.22557	6.22557	6.43966	6.468634	6.382083	6.468634	6.472556	6.473086	6.473168	6.473086	
d'(h)	2.159748	2.158333	2.147881	2.127111	2.127111	2.155522	2.159367	2.147881	2.159367	2.159888	2.159958	2.159969	2.159958	
31.5 Hz	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	
63 Hz	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	
125 Hz	2.370485	1.725018	1.170379	0.93966	0.93966	1.432474	2.040814	1.170379	2.040814	2.70431	3.349235	4.381246	3.349235	
250 Hz	7.021148	7.006094	6.894864	6.673824	6.673824	6.97618	7.017099	6.894864	7.017099	7.022637	7.023388	7.023502	7.023388	
500 Hz	4.971501	4.960842	4.852083	4.72557	4.72557	4.93966	4.968634	4.852083	4.968634	4.972556	4.973086	4.973168	4.973086	
1000 Hz	0.659748	0.658333	0.647881	0.627111	0.627111	0.655522	0.659367	0.647881	0.659367	0.659888	0.659958	0.659969	0.659958	
2000 Hz	0	0	0	0	0	0	0	0	0	0	0	0	0	
4000 Hz	0	0	0	0	0	0	0	0	0	0	0	0	0	
8000 Hz	0	0	0	0	0	0	0	0	0	0	0	0	0	
Aground	middle	middle	middle	middle	middle	middle	middle	middle	middle	middle	middle	middle	middle	middle
G	1	1	1	1	1	1	1	1	1	1	1	1	1	1
q	0.6625	0.55	0.325	0.1	0.1	0.46	0.614286	0.325	0.614286	0.7	0.754545	0.82	0.754545	
31.5 Hz	-1.9875	-1.65	-0.975	-0.3	-0.3	-1.38	-1.84286	-0.975	-1.84286	-2.1	-2.26364	-2.46	-2.26364	
63 Hz	-1.9875	-1.65	-0.975	-0.3	-0.3	-1.38	-1.84286	-0.975	-1.84286	-2.1	-2.26364	-2.46	-2.26364	
125 Hz	0	0	0	0	0	0	0	0	0	0	0	0	0	
250 Hz	0	0	0	0	0	0	0	0	0	0	0	0	0	
500 Hz	0	0	0	0	0	0	0	0	0	0	0	0	0	
1000 Hz	0	0	0	0	0	0	0	0	0	0	0	0	0	
2000 Hz	0	0	0	0	0	0	0	0	0	0	0	0	0	
4000 Hz	0	0	0	0	0	0	0	0	0	0	0	0	0	
8000 Hz	0	0	0	0	0	0	0	0	0	0	0	0	0	
Cmeteo														
Co	0	0	0	0	0	0	0	0	0	0	0	0	0	
Cmeteo	0	0	0	0	0	0	0	0	0	0	0	0	0	
Berror														
PLDB1	0.15838	0.023468	0.061703	0.224902	0.30311	0.104142	0.053241	0.072585	0.128905	0.06439	0.046007	0.040039	0.10542	
PLDB2	5E-06	0.119972	0.180528	0.30311	5E-06	0.199476	0.172398	0.140574	0.104324	0.081563	0.178688	5E-06	0.158305	
PLD2	5E-06	0.000167	0.005927	0.040953	5E-06	0.056235	0.023241	0.01519	0.062881	0.042344	0.023457	5E-06	0.03106	
BAB1	217.125	217	216.75	216.5	216.5	217.34	217.3857	217.25	217.0643	218.0333	218.5809	217.9	216.8091	
Berror1	0	0	0	0	0	0	0	0	0	0	0	0	0	
BAB2	235.5	217.875	217.5	218	221	217.5862	217.7407	218.2	218.7687	217.4839	217.5556	221.875	218	
Berror2	1	0	0	0	0	0	0	0	0	0	0	1	0	
Berror	0	0	0	0	0	0	0	0	0	0	0	0	0	

Project:	98305	Nichols Quarry, Hagersville			19 Feb 99					0			
		FIG B - 4		Pit Trucks: South limit of Phase 4; all segments at quarry floor									
Source:	Truck2												
			Reference Sound Level @ 30m										
-----Octave Band Centre Frequency-----													
Source Description			31.5	63	125	250	500	1000	2000	4000	8000		dBA
Highway Truck			58	63	73	67	62	62	61	51	48		67
	A-weighted		19	37	57	58	59	62	62	52	47		
Receptor	R7	R7	R7	R7	R7	R7	R7	R7	R7	R7	Total		
Seg't	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10			
Sh	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4			
Se	206.0	206.0	206.0	206.0	206.0	206.0	206.0	206.0	206.0	206.0	Trips/hr		Leq
Rh	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5			
Re	216.0	216.0	216.0	216.0	216.0	216.0	216.0	216.0	216.0	216.0	1		25.1
RS	270	340	410	500	590	670	720	770	830	880	10		35.1
BN	2	2	2	2	2	2	1	1	1	1	20		38.1
B1h	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12	12	30		39.9
B1o	206.0	206.0	206.0	206.0	206.0	206.0	206.0	206.0	206.0	206.0	40		41.1
B1S	30	70	120	250	250	40	70	90	130	150	50		42.1
B2h	5.0	5.0	5.0	5.0	5.0	5.0	0.0	0.0	0	0	15.0		36.9
B2e	218.0	218.0	218.0	218.0	218.0	218.0	0.0	0.0	0	0			
B2S	160	240	320	410	500	590	0	0	0	0			
G source	0	0	0	0	0	0	0	0	0	0			
G receiver	1	1	1	1	1	1	1	1	1	1			
G middle	1	1	1	1	1	1	1	1	1	1			
Co	0	0	0	0	0	0	0	0	0	0			
Cmteo	0	0	0	0	0	0	0	0	0	0			
Berror	0	0	0	0	0	0	0	0	0	0			
m / segt	200	200	200	200	200	200	200	200	200	200			
m / hour	25000	25000	25000	25000	25000	25000	25000	25000	25000	25000			
Hr/Trip	0.0080	0.0080	0.0080	0.0080	0.0080	0.0080	0.0080	0.0080	0.0080	0.0080			
dBA	42	40	38	36	34	32	32	31	30	30			
dBA/trip	21	19	17	15	13	11	11	10	9	9	25		
32	34	32	30	29	27	26	26	25	24	24			
63	39	37	35	34	32	31	31	30	29	29			
125	49	47	45	44	42	41	40	40	39	39			
250	42	40	38	37	35	34	33	33	32	31			
500	37	35	34	32	30	28	28	28	27	26			
1000	37	35	33	31	29	27	27	26	25	25			
2000	34	32	29	27	25	22	22	21	19	18			
4000	18	14	10	5	1	0	0	0	0	0			
8000	0	0	0	0	0	0	0	0	0	0			
Adv	19.1	21.1	22.7	24.4	25.9	27.0	27.6	28.2	28.8	29.3			
Aatm													
31.5 Hz	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1			
63 Hz	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1			
125 Hz	0.1	0.1	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.4			
250 Hz	0.3	0.3	0.4	0.5	0.6	0.7	0.7	0.8	0.8	0.9			
500 Hz	0.5	0.6	0.8	1.0	1.1	1.3	1.4	1.5	1.6	1.7			
1000 Hz	1.0	1.3	1.5	1.9	2.2	2.5	2.7	2.8	3.1	3.3			
2000 Hz	2.6	3.3	4.0	4.9	5.7	6.5	7.0	7.5	8.1	8.5			
4000 Hz	8.9	11.2	13.5	16.4	19.4	22.0	23.6	25.3	27.2	28.9			
8000 Hz	31.8	39.8	48.0	58.5	69.0	78.4	84.2	90.1	97.1	103.0			
Ascreen													
31.5 Hz	9.9	9.9	10.0	10.1	10.2	10.7	10.3	10.3	10.3	10.4			
63 Hz	9.9	9.9	10.0	10.1	10.2	10.8	10.3	10.3	10.3	10.4			
125 Hz	5.1	4.4	3.9	3.3	2.7	2.7	2.0	1.8	1.6	1.5			
250 Hz	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
500 Hz	1.9	1.5	1.4	1.3	1.3	1.9	1.3	1.3	1.3	1.3			
1000 Hz	6.2	6.8	5.7	5.8	5.6	6.3	5.8	5.8	5.8	5.6			
2000 Hz	6.8	6.5	6.4	6.3	6.3	7.0	6.3	6.3	6.3	6.3			
4000 Hz	6.9	6.5	6.4	6.3	6.3	7.0	6.3	6.3	6.3	6.3			
8000 Hz	6.9	6.5	6.4	6.3	6.3	7.1	6.3	6.3	6.3	6.3			
Aground													
31.5 Hz	-4.7	-5.0	-5.1	-5.3	-5.4	-5.5	-5.5	-5.5	-5.6	-5.6			
63 Hz	-4.7	-5.0	-5.1	-5.3	-5.4	-5.5	-5.5	-5.5	-5.6	-5.6			
125 Hz	0.0	0.5	0.9	1.5	2.1	2.5	2.8	3.0	3.2	3.3			
250 Hz	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5			
500 Hz	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5			
1000 Hz	-0.8	-0.8	-0.8	-0.8	-0.8	-0.8	-0.8	-0.8	-0.8	-0.8			
2000 Hz	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5			
4000 Hz	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5			
8000 Hz	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5			

FIG. B-5

STAMSON 5.0

NORMAL REPORT

Date: 03-02-1999 12:23:47

MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: rld.te

Time Period: 12 hours

Description: 98305 background Leq 30m from s-w corner of house

Road data, segment # 1: Reg Rd 9

Car traffic volume : 1602 veh/TimePeriod
 Medium truck volume : 91 veh/TimePeriod
 Heavy truck volume : 91 veh/TimePeriod
 Posted speed limit : 80 km/h
 Road gradient : 0 %
 Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 1: Reg Rd 9

Angle1 Angle2 : -90.00 deg 90.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 0
 Surface : 1 (Absorptive ground surface)
 Receiver source distance : 70.00 m
 Receiver height : 1.50 m
 Topography : 1 (Flat/gentle slope; no barrier)
 Reference angle : 0.00

Results segment # 1: Reg Rd 9

Source height = 1.50 m

ROAD (0.00 + 52.06 + 0.00) = 52.06 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.66	64.62	0.00	-11.10	-1.46	0.00	0.00	0.00	52.06

Segment Leq : 52.06 dBA

Total Leq All Segments: 52.06 dBA

TOTAL Leq FROM ALL SOURCES: 52.06

APPENDIX C

MINISTRY OF ENVIRONMENT CHECK LIST



Ontario

Ministry of the Environment
Ministère de l'Environnement

CHECK LIST FOR ENVIRONMENTAL NOISE IMPACT REPORTS

The objective of this form is to ensure that the minimum MOE requirements for a report addressing the noise impact on a sensitive land-use proposal are satisfied. This form should be completed by the proponent or the acoustical consultant and all items listed on this form should be answered and required documents included with the noise report.

PROponent/DEVELOPER:	DEVELOPMENT IDENTIFICATION:
Nichols Gravel Limited	Hagersville Quarry

1. IDENTIFY THE PURPOSE OF THIS NOISE REPORT - THE REPORT SUPPORTS AN APPLICATION TO:

- (a) ☐ amend an Official Plan; OPA No.: _____
- (b) ☒ rezone; Rezoning No.: _____
- (c) ☐ obtain Draft Approval; Plan No. _____ T _____ or _____ CON _____
- (d) ☐ clear conditions of Draft Approval; Plan No. _____ T _____ or _____ CON _____
- (e) ☐ obtain Site Plan Approval; No.: _____
- (f) ☐ clear conditions of Site Plan Approval; No.: _____
- (g) ☒ obtain approval other than that identified in (a) to (f) above; Specify Aggregate Resources Act (quarry licence)

2. IDENTIFY THE APPROVING AUTHORITY FOR THIS PROJECT:

- (a) ☐ Ministry of Municipal Affairs
- (b) ☐ Regional Government of _____
- (c) ☒ Municipal Government of City of Nanticoke
- (d) ☒ Other (specify) MNR

3. ATTACH PERTINENT CORRESPONDANCE:

- (a) ☐ A copy of MOE's Noise Conditions for Draft Approval.
- (b) ☐ The proposed plan received Draft Approval on DD _____ MM _____ YY _____.
- (c) ☒ Letters from railways, road authorities, Municipalities, and MOE pertinent to this report.

4. INCLUDE THE FOLLOWING SITE PLANS:

- (a) ☒ "Blue print" of site plan showing the development.
- (b) ☒ Scaled plan identifying all significant noise sources, e.g. roadways, railways and industrial/commercial facilities, within a minimum of 500 m of the proposed site, and existing/future land uses abutting the proposed development. If the site is located near an airport, the plan is to show noise contours of NEF/NEP=25 and greater.
- (c) ☒ If a noise barrier is used, include the following:
- (i) Plan view showing location of noise barriers and elevations of the tops of the barriers.
 - (ii) Cross-sectional views of the barrier showing source-receiver distances and heights.
 - (iii) Scaled cross-section of site with the barrier.

5. ENSURE THAT CONTENTS OF THE REPORT INCLUDE:

- (a) ☒ Description of methods used in assessing the noise impact.
- (b) ☒ Summary of sound levels with and without noise control measures at receptor locations.
- (c) ☒ Summary of recommended noise control measures, including warning clauses and plans to implement and verify the completion of the acoustical requirements.

6. FORM COMPLETED BY:

R. G. ANDREWS, P. ENG.

Signature

AERCOUSTICS
ENGINEERING LTD

Company

24 FEB 99

Date

APPENDIX D

QUALIFICATIONS OF THE AUTHOR

AERCOUSTICS ENGINEERING LIMITED

Established 1971

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Mohan Barman
M.A.Sc., P.Eng.

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M.A.Sc., P.Eng.

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B.A.Sc., P.Eng.

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PROFESSIONAL PROFILE ROLAND G. ANDREWS, B.Sc, B.E., P.Eng.

EDUCATION:

B.Sc. Mount Allison University
B.E. Technical University of Nova Scotia

LECTURES:

University of Western Ontario, School of Business

PROFESSIONAL MEMBERSHIPS:

PROFESSIONAL ENGINEERS OF ONTARIO

PROFESSIONAL BACKGROUND:

Mr. Andrews was registered as a Professional Engineer in 1949 and worked for many years in design, manufacturing, marketing, and management in aerospace, materials handling, and other industrial fields. In 1968 he started Consulting Engineering practice specializing in product design, feasibility studies and project management relating to start up of new industrial projects.

In 1971, evolving from several projects relating to noise impact and control, he and an associate co-founded Aercoustics Engineering to provide Engineering services in environmental and industrial acoustics. He has continued this work since that time, the scope of activities expanding to include a wide range of acoustics, noise and vibration fields. Clients have regularly included diverse industries, community groups, institutions, and government agencies throughout Ontario, other areas of Canada and USA.

During the course of many hundreds of noise and vibration projects the services he has provided have included:

Noise Source Evaluation: measurement, monitoring, analysis of:

Transportation sources:

Roads and freeways

Truck stops; truck & accessory noise at industrial sites; parking lots

Train noise and vibration:

Pass-by, idling,

Railway marshalling yards & shunting operations

Aircraft :

Overflights;

Airport noise sources

Correlation of subjective noise impact with various noise metrics

Stationary Sources:

- Individual noise sources
- Large commercial and industrial sites with many individual sources and complex, varying propagation paths, such as pits and quarries, refineries, land-fill sites, industrial plants, co-generation plants.

Community Noise sources:

- Residential/institutional HVAC equipment
- Playgrounds
- Commercial activities, outdoor dining/bar facilities, parking lots
- Concerts & sporting events
- Complaint investigation; noise disputes between neighbors

Noise Impact Prediction and Control:

- Development of impact prediction procedures and codes
- Evaluation of noise impact on diverse classes of receptors
- Evaluation of noise impact on wild-life
- Design and evaluation of noise control measures, including:
 - Participation in planning of major stationary sources to incorporate noise control in the basic design
 - Reduction of noise source emission levels
 - Measures to impede propagation of noise

Peer Review of Studies and Reports on Acoustical Matters:

Testimony as an Expert Witness:

- Many OMB hearings
- Many Municipal and other Public Hearings

References:

The following persons are familiar with Mr. Andrews' work on the topics outlined above and may be contacted for comment:

Dr. Vic Schroter

Sr Noise Analyst, MOEE Noise Assessment Unit ph: 440-3715 fax: 440-6973

Mr. Chris Krajewski, P.Eng.

Sr Noise Analyst, MOEE Noise Assessment Unit ph: 440-3590 fax: 440-6973

Appendix D

Blast Impact Analysis



EXPLOTECH

Specialists in Explosives, Blasting and Vibrations
Consulting Engineers

2

BLAST IMPACT ANALYSIS PROPOSED HAGERSVILLE QUARRY CITY OF NANTICOKE, ONTARIO

January 22, 1999

Prepared for

Harrington and Hoyle Ltd.
28 Colborne St.
Cambridge, Ontario
N1R 1R2

By

Gabrielle Boursat

For - Dan Corkery, B.Sc.

Reviewed By

Ray Jambakhsh

Ray Jambakhsh, M.Sc., P.Eng.



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EXPLOTECH

Hagersville Quarry of Nichols Gravel City of Nanticoke near Hagersville, Ontario

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Well Water Impact

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References

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EXECUTIVE SUMMARY

The Blast Impact Analysis report on the proposed Hagersville Quarry is based on reviews of a) the drawings of the proposed quarry, b) the Ontario Ministry of the Environment and Energy Guidelines for Blasting in Mines and Quarries and c) the blast damage potential to surrounding structures from blasting operations.

Site preparation will be carried out prior to and during mineral extraction. All drilling and blasting operations will be carefully controlled during site preparation to ensure that no damage occurs to nearby buildings, or structures.

Drilling and blasting during mineral extraction will ensure that MOEE guidelines for blasting in mines and quarries are strictly adhered to.

EXPLOTECH

Blast Impact Analysis
Hagersville Quarry

January 22, 1999

INTRODUCTION

This Blast Impact Analysis of the proposed quarry operation located on Part Lots 10 - 12, Concession 12, in the City of the Nanticoke (formerly Walpole), west of Hagersville is based on a recent site visit as well as our knowledge of the quarrying industry in Ontario.

The proposed quarry is located on a property of approximately 233 acres in size and displayed in the location map (Appendix 1, in attached map pocket). The limestone extraction will be from the Bois Blanc formation.

There are two hydro transmission lines located on the property (see location map). The first is a 500 kv transmission line with two steel towers on the site. There is also a 76 meter wide easement associated with this line. We understand that Ontario Hydro has requested a 30 meter buffer zone to be left on either side of the towers for maintenance vehicle travel. The second line is smaller and located in the southeast section of the property.

There is one producing gas well and two abandoned or plugged gas wells on the property. We understand that these have surface lines leading to the homes, which utilize the gas.

The Blast Impact Analysis is based on the Ministry of the Environment and Energy's Model Municipal Bylaw (NPC 119) with regard to Guidelines for Blasting in Mines and Quarries. We have assessed the area surrounding the proposed license with regard to potential damage from blasting operations.

Recommendations are included in this report to ensure that the blasting operations are carried out in a safe and productive manner and to ensure that no possibility of damage exists to any buildings, structures or residences surrounding the site.

BLAST VIBRATION AND OVERPRESSURE LIMITS

The Ontario Ministry of the Environment and Energy's (MOEE) guidelines for blasting in quarries are amongst the most stringent in North America.

Recent studies by the U.S. Bureau of Mines have shown that normal temperature and humidity changes can cause more damage to residences than blast vibrations and overpressure in the range permitted by the MOEE. The limits suggested by the MOEE are as follows.

Vibration: 12.5 mm/sec Peak Particle Velocity (PPV)

Overpressure: 128 dB Peak Sound Pressure Level (PSPL)

The above guidelines apply when blasts are being monitored. Cautionary levels are slightly lower.

DEFINITIONS

Peak Particle Velocity

The rate of change of the amplitude, usually measured in mm/sec or in/sec. This is the excitation of the particles in the ground resulting from vibratory motion.

Blast Overpressure

A compression wave in air caused by

- a) the direct action of the unconfined explosive, or
- b) the direct action of the confining material subjected to explosive loading.

EXPLOTECH

Blast Impact Analysis
Hagersville Quarry

January 22, 1999

BLAST VIBRATION DATA

Blast vibration and overpressure data used in this report was collected from locations in and around Ontario quarries during the past several years. Data comes primarily from limestone quarries using various lengths of blast holes with diameters ranging from 63 mm to 150 mm.

Instantel self-triggering digital blasting seismographs were used to collect the data. All data was plotted using square root scaling from blast vibrations and cube root scaling for blast overpressure.

This composite data has been used as a start-up guideline for many quarries and has proven to be quite conservative until site specific data can be acquired. Our data also shows that blast overpressure is greatest when blasting toward residences and blast vibrations are greatest when retreating towards the residences. It is our experience that blast overpressure creates the greatest concern for nearby residents.

Blast induced overpressure is highly variable and influenced by many factors including:

- Orientation of the blast face with respect to the monitoring observation point.
- Wind speed and direction.
- Cloud cover.
- Possible temperature and/or pressure inversions.
- Length of blast hole collar and the material used for stemming.

Blast Impact Analysis
Hagersville Quarry

January 22, 1999

**MAXIMUM ALLOWABLE EXPLOSIVE LOAD WEIGHTS PER PERIOD
TO CONFORM TO MOEE GUIDELINE FOR
BLASTING IN MINES AND QUARRIES**

Blast Vibration Limit - 12.5 mm/s

Distance to Receptor (m)	Allowable Explosives per Period (kg)	
	Front of Blast	Back of Blast
150	39	17
200	69	30
250	108	48
300	156	68
350	213	94
400	278	122
500	434	190
600	625	275
700	851	374
800	1111	477
900	1406	604
1000	1831	746
1100	2216	903
1200	2500	1075

Blast Overpressure Limit - 128(dB)

Distance to Receptor (m)	Allowable Explosives per Period (kg)	
	Front of Blast	Back of Blast
150	8	38
200	20	88
250	38	171
300	67	296
350	106	470
400	158	702
500	308	1372
700	846	3764
900	1799	8000
1200	4264	18962

EXPLOTECH

Blast Impact Analysis
Hagersville Quarry

January 22, 1999

CALCULATION OF PREDICTED VIBRATION LEVELS AT THE NEAREST HOUSE / BUILDING

The most commonly used formula for predicting PPV is known as Bureau of Mines (BOM) prediction formula or Propagation Law. We have used this formula to predict the PPV's at the closest house.

$$PPV = K [d/\sqrt{w}]^e$$

where, PPV = the predicted peak particle velocity (mm/s)

K, e = site factors

d = distance from receptor (m)

w = maximum explosive charge per delay (kg)

The value of K is highly variable and is influenced by many factors (i.e. rock type, geology, thickness of overburden, etc.). Based on the monitoring discussed in earlier sections, "e" will be set at -1.60 and "K" will be set at 2022 in front of the blast and 3929 behind the blast.

An *example* of this calculation is as follows:

For a distance of 500 m behind (i.e. the minimum standoff distance to the nearest house during the initial phases of quarrying) and a maximum explosives weight of 117 kg (for a 100 mm diameter hole, 60 feet deep and a 4 foot collar), we can predict the maximum PPV at the nearest house.

$$PPV = 3929 [500/\sqrt{117}]^{-1.60} = 8.52 \text{ mm/s} = 0.33 \text{ in/s}$$

As discussed in previous sections, the MOEE guideline for blast induced vibration is 12.5 mm/s (0.5 in/s). The calculated predicted PPV (based on the proposed blasting data discussed above) at the closest house is less well below the MOEE's guideline.

DETAILS OF PROPOSED BLASTING OPERATIONS

We propose the following procedure for the blasting operations in the proposed quarry location:

- Orientation of the quarry will be designed so that the direction of the noise propagation and flyrock from the face will be away from the nearest residence(s) where possible.
- Sequential blasting techniques will be used to ensure minimal explosives per delay period initiated. These include a) programmable blasting machines such as the REO Sequential Blasting Machine or b) nonelectric blasting systems such as the EZ-Det / Handi-Det systems.
- As mineral extraction approaches separation distances of 200 meters, controlled blasting procedures such as reducing the bench height, changing the hole diameter or decking the charges will have to be instituted. This will be governed by site specific blast vibration and overpressure data accumulated during the development of this quarry.
- Only one hole will be fired at any one instant (i.e. one hole per delay period).
- Suggested blast pattern will vary from 2.1 m X 2.1 m to 3.0 m X 3.0 m dependant on the distance to the nearest structures.
- Maximum blast hole depth will be 18 m (60 ft).
- Minimum collar will be 1.2 m (4.0 ft).
- Maximum explosive charge per hole vary with the distance to the nearest structures.
- Clear crushed stone will be used for stemming.
- Primary and secondary dust collectors will be employed on the rock drills to keep the level of rock dust to a minimum.

EXPLOTECH

Blast Impact Analysis
Hagersville Quarry

January 22, 1999

REFERENCES

Froedge, D.T., *"Blasting Effects on Water Wells", Proceedings of the Ninth Conference on Explosives and Blasting Techniques*, Dallas, Texas, 1983.

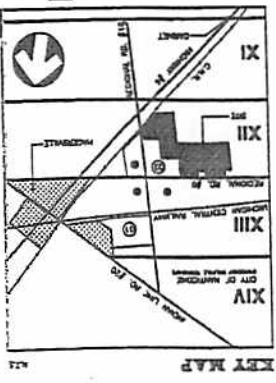
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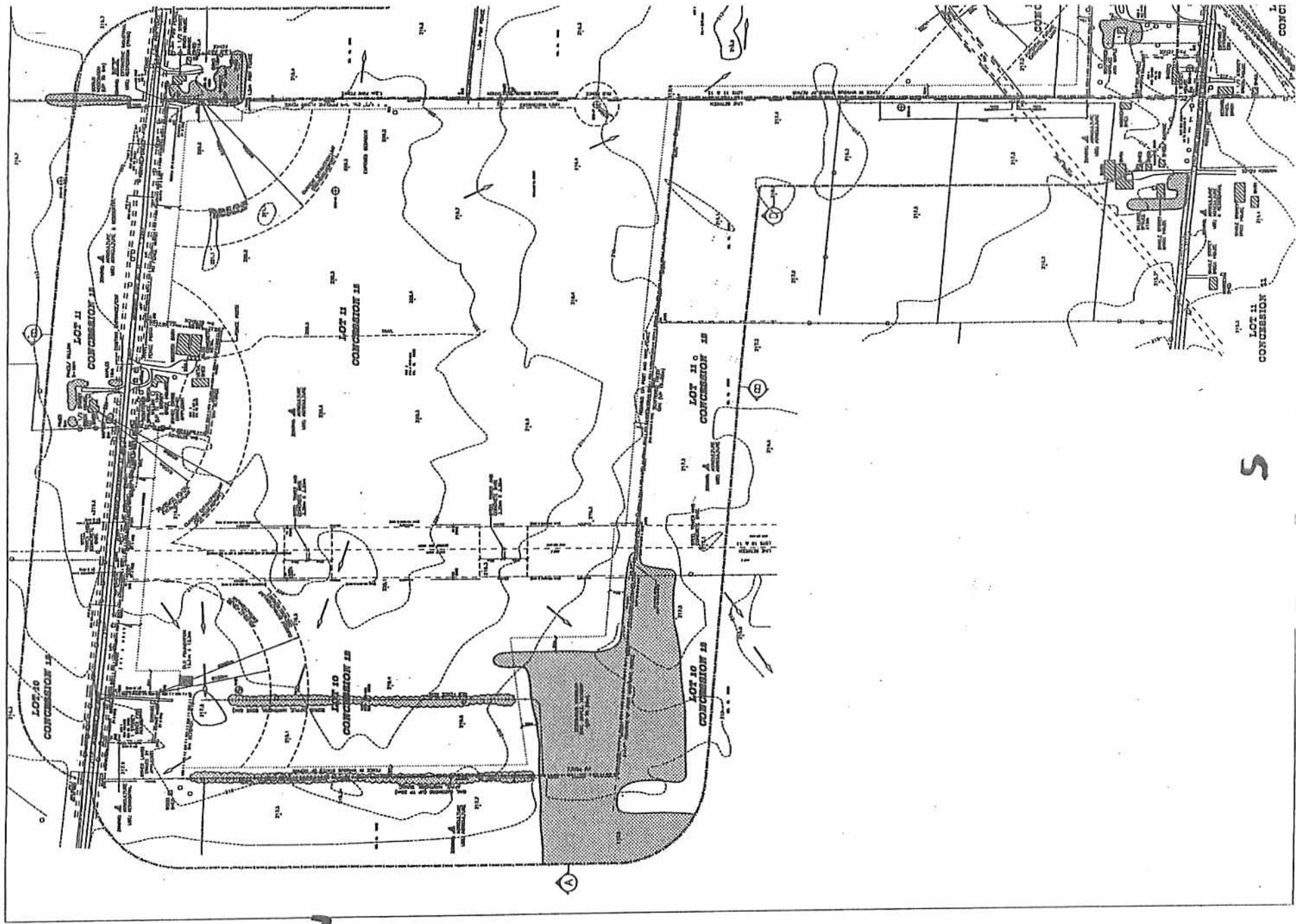
Rose, R., Bowles, B., Bender, W.L., *"Results of Blasting in Close Proximity to Water Wells at the Sleeper Mine"*, Proceedings of the Seventeenth Conference on Explosives and Blasting Technique, Las Vegas, Nevada, 1991.

U.S. Management Science Associates, *"A Model for the Determination of Flyrock Range as a Function of Shot Conditions"*, Los Altos, California, 1979.

APPENDIX 1



KEY MAP



5

3



2



2

APPENDIX 2

** FLYROCK ** ° A Model For The Determination Of Maximum Flyrock Range
 ° As A Function Of Shot Condition And Rock Type

This program was written based on the following report:

A Model for the Determination of Flyrock
Range as a Function of Shot Conditions

By: J. Roth
Management Science Associates (MSA)

Prepared For: United States Department Of The Interior
Bureau of Mines
Report OFR 77-81

Program Developed By: Peter S. Campbell
Ground Control Engineer
Ontario Ministry Of Labour
Mining Health And Safety Branch
March 24, 1988

Press any key to continue...

S
** FLYROCK ** A Model For The Determination Of Maximum Flyrock Range

Input Parameters

Rocktype = LIMESTONE/DOLOMITE
Density (lbs/ft³) = 168.50
Explosive = AN/FO
V.O.D. (ft/sec) = 12045
Density (gm/cc) = 0.85
Borehole Dia. (in) = 3.00
Minimum Burden (ft) = 8.00
Hole Length (ft) = 40.00
Depth To Top Of Explosive (ft) = 4.00
Weight Of Explosives Per Hole (lbs) = 93.76
Bench Height Above Ground Level (ft) = 0.00

Output - Maximum Range Of Flyrock (ft)

FLYROCK From Face = 112.3
FLYROCK From Bench Top = 440.7

Press <Shift-PrtSc> For A Printout

Another Calculation? (y/n): []

** FLYROCK ** A Model For The Determination Of Maximum Flyrock Range

Input Parameters

Rocktype = LIMESTONE/DOLOMITE
Density (lbs/ft^3) = 168.50
Explosive = AN/FO
V.O.D. (ft/sec) = 13410
Density (gm/cc) = 0.85
Borehole Dia. (in) = 4.00
Minimum Burden (ft) = 10.00
Hole Length (ft) = 40.00
Depth To Top Of Explosive (ft) = 5.00
Weight Of Explosives Per Hole (lbs) = 162.06
Bench Height Above Ground Level (ft) = 0.00

Output - Maximum Range Of Flyrock (ft)

FLYROCK From Face = 185.9
FLYROCK From Bench Top = 537.1

Press <Shift-PrtSc> For A Printout

Another Calculation? (y/n): []

S

** FLYROCK ** A Model For The Determination Of Maximum Flyrock Range

Input Parameters

Rocktype = LIMESTONE/DOLOMITE
Density (lbs/ft³) = 168.50
Explosive = AN/FO
V.O.D. (ft/sec) = 13410
Density (gm/cc) = 0.85
Borehole Dia. (in) = 4.00
Minimum Burden (ft) = 10.00
Hole Length (ft) = 40.00
Depth To Top Of Explosive (ft) = 4.00
Weight Of Explosives Per Hole (lbs) = 166.69
Bench Height Above Ground Level (ft) = 0.00

Output - Maximum Range Of Flyrock (ft)

FLYROCK From Face = 185.9
FLYROCK From Bench Top = 695.3

Press <Shift-PrtSc> For A Printout

Another Calculation? (y/n): []

EXPLOTECH

**Specialists In Explosives, Blasting and Vibrations
Consulting Engineers**

REZA (RAY) M. JAMBAKSH, P.ENG.
Senior Blasting Engineer - Branch Manager

EDUCATION

- . B.Sc. Mining Engineering, Laurentian University,
Sudbury, Ontario, Canada, 1984
- . M.Sc. Applied Physics, Laurentian University,
Sudbury, Ontario, Canada, 1990
- . Ph.D. Candidate, Department of Mining and Metallurgical Engineering, McGill
University, Montreal, Quebec.

PROFESSIONAL AFFILIATIONS

- . Registered member of the Association of Professional Engineers of Ontario (APEO)
- . Member of the Society of International Explosives Engineers (SEE)
- . Member of the Canadian Institute of Mining, Metallurgical and Petroleum (CIMM)

SUMMARY OF EXPERIENCE

Ray Jambakhsh has underground mining experience and has been involved in numerical modelling as a rock mechanics engineer for a major Canadian mining firm. He has also been instrumental in the design and implementation of electric and non-electric sequential blasting for underground (VRM) and quarry applications, demolition blasting, pipeline and marine blasting. He has handled blast monitoring, blast vibration analysis and blast damage complaints for major blasting consultants in Eastern Canada. Mr. Jambakhsh specializes in explosives, blasting and vibrations.

PROFESSIONAL RECORD

- . 1989 - Present - Senior Engineer, Branch Manager, Explotech Engineering Limited
- . 1988 - 1989 - Project Engineer, Explotech Engineering Limited
- . 1987 - Field Engineer, B.H.M. Consultants Limited
- . 1987 - Rock Mechanics Engineer-in-Training, Kidd Creek Mines Limited
- . 1986 - Researcher, Centre in Mining and Mineral Exploration Research
- . 1986 - 1990 - Graduate Studies and Research, Laurentian University

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EXTREME

Curriculum Vitae - Reza (Ray) Jambakshi, M.Sc., P. Eng.

June 5, 1998

KEY PROJECT EXPERIENCE

1984 - Present

- Lecturing and field training for the Surface Blaster Apprenticeship and Licensing Program, Sir Sandford Fleming College, Lindsay, Ontario, Canada. Training blasters and new candidates for the proposed surface blasting licensing program in the Province of Ontario, Canada.
- Guest Lecturer, Post Diploma in Ground Control program sponsored by Mining Research Directorate (MRD), Ontario Centre for Ground Control Training, Cambrian College of Applied Arts and Technology, Sudbury, Ontario Canada. Provided hands on training in the application of new techniques in explosive technology, rock fragmentation by blasting and demolition by blasting to engineers and technologists from Northern Ontario area mines.
- Design and execution of demolition by blasting of the Ore Silo and Pebble Bin structures at the old Denison Mine site.
- Coordinating underground blast induced vibration and overpressure monitoring programs for Inco's Sudbury area mines. Consulting to Inco Limited, Ontario Division, Sudbury, Ontario, Canada.
- Lecturing and field training of candidates for drilling and controlled blasting course sponsored by Corporation of the Town of Nickel Centre in Sudbury, Ontario, Canada.
- Design and supervision of Portage Dam demolition by blasting carried out by Matthews Contracting Inc., Doris, Ontario, Canada.
- Instrumental in the design and implementation of the St. Lawrence Seaway (Welland Canal) demolition by blasting project carried out on an annual basis in St. Catharines, Ontario, Canada.
- Instrumental in implementation of marine blasting in Lemieux Island carried out by Peter Kiewit Sons Company Limited in Ottawa, Ontario, Canada.
- Instrumental in the introduction, design and implementation of combination of electric/non-electric sequential blasting techniques in underground Vertical

EXPLOTECH

Curriculum Vitae - Reza (Ray) Jambakhsh, M.Sc., P. Eng.

June 5, 1998

Retreat: Mining (VRM) stopes at Inco Limited mines in Sudbury area.

- Design and introduction of sequential blasting for the development of long (up to 18 meters) blind raises achieved in one blast in the Sudbury area mines. Development of raises 18 meters along with some 74 production holes were achieved. This technique is now being widely implemented as a mining method.
- Introduced the design and implementation of sequential blasting techniques at the Inco Garson Open Pit Mine in Sudbury, Ontario. Segregation of ore from waste was achieved within the blasting operations.
- Site Blasting Engineer, consulting to Matthews Group, for the development of Water Treatment Plant in Sturgeon Falls, Ontario, Canada.
- Site Blasting Engineer, consulting to International Pipeline Engineering Limited, for the underground installation of Bell Canada's Fibre Optics Line across Ontario, Canada.
- Associate Professional Engineer, consulting to TransCanada Pipelines Limited, for the construction of a natural gas pipeline across Ontario, Canada.
- Research Engineer on the "Rock Fragmentation and Fatigue Using Ultrasonic Cyclic Loading" for the Centre in Mining and Mineral Exploration Research (CIMMER) in Sudbury, Ontario, Canada.

PUBLICATIONS

1. Jambakhsh, R. M., Cameron, E. A., Richardson, S., "Development of Upper Blind Raises By Longhole Carbide Drilling (LCD) Methods", Proceedings of the Eighteenth Annual Conference on Explosives and Blasting Technique, International Society of Explosive Engineers, Orlando, Florida, 1992.
2. Jambakhsh, R. M., Okell, J., "Blast Vibrations and Overpressure Control Using Sequential Blasting Techniques at Inco's McCreedy West Mine", Proceedings of the Nineteenth Annual Conference on Explosives and Blasting Technique, International Society of Explosive Engineers, San Diego, California, 1993.
3. Jambakhsh, R. M., Copping, G., "Improved Methods of Blasting Concrete for Welland Canal Rehabilitation", Proceedings of the Twentieth Annual Conference

EXTRETECH

Curriculum Vitae - Reza (Ray) Jambakshi, M.Sc., P. Eng.

June 5, 1998

on Explosives and Blasting Technique, International Society of Explosive Engineers, Austin, Texas, 1994.

EXPLOTECH

Specialists in Explosives, Blasting and Vibrations
Consulting Engineers

DANIEL J. CORKERY

Senior Blasting Geologist

EDUCATION:

- Bachelor of Science (Honours), Geological Sciences and Chemistry,
Brock University, St. Catharines, Ontario, 1983

PROFESSIONAL AFFILIATIONS:

- Canadian Institute of Mining, Metallurgy and Petroleum (CIMM)
- International Society Of Explosive Engineers (ISEE)

SUMMARY OF EXPERIENCE:

Mr. Dan Corkery has been involved in underground, quarry, construction, demolition and marine blasting, as well as blasting operations for pipeline and hydroelectric power plant operations. He has handled blast monitoring, blast performance and vibration analysis and investigations of blast damage complaints. He also provides geological interpretations for blasting projects in complex terrain. He has worked as project geologist for a major exploration firm in Northern Ontario.

PROFESSIONAL RECORD:

- | | |
|----------------|---|
| 1989 - Present | - Blasting Technician / Geologist, Explotech Engineering Limited. |
| 1985 - 1989 | - Project Geologist, Geocanex Limited |
| 1985 | - Geologist, Kennco Explorations Limited. |
| 1984 | - Geologist, Geosearch Limited |
| 1984 | - Geologist, Geocanex Limited |
| 1983 | - Research Assistant, Brock University |

KEY PROJECT EXPERIENCE:

1989 - Present:

Demolition

- Involved in the implementation of the St. Lawrence Seaway (Welland Canal) demolition blasting project, St. Catharines, Ontario.

Explotech Engineering Ltd.
200-469 Bouchard Street
Sudbury, Ontario
P3E 2K8
(705) 522-0585

Head Office:
Explotech Engineering Ltd.
58 Antares Drive, Unit 5
Nepean, Ontario
K2E 7W6
(613) 772-2800

EXPLOTECH

Resume - Daniel Corkery, B.Sc.

- Involved in the implementation of the Norwood Bridge Pier Demolition blasting project, in Winnipeg, Manitoba.

Hydro-Electric Projects

- Blast monitoring and consulting for the blasting operations at Ontario Hydro's Matabitchuan Power Station Rehabilitation, North Cobalt, Ontario.
- Blast monitoring and consulting for the blasting operations at Ontario Hydro's Big Chute Generating Station Redevelopment, Port Severn, Ontario.
- Blast monitoring and consulting for the blasting operations required for the hydroelectric power plant installation at E.B. Eddy's paper plant in Espanola, Ontario.
- Blast monitoring and consulting for the blasting operations of John Bianchi Grading Limited for the dam sluiceway safety upgrading at the South Falls Generating Station in Bracebridge, Ontario.
- Monitoring and consulting for blasting operations at Black River Power Project for Conwest Limited, Heron Bay, Ontario.

Civil Projects

- Blast monitoring and consulting for the blasting operations adjacent the steep slope, which was excavated in the native clay beds at the Abitibi-Price paper plant in Iroquois Falls, Ontario.
- Implementation and analysis of traffic vibration impact studies in the Sudbury region.

Pipeline Construction and Rehabilitation

- Blast monitoring and consulting to TransCanada Pipelines Limited for the construction of a natural gas pipeline across Ontario. This included both mainline and station blasting operations.
- Blast monitoring and consulting to Centra Gas for an undercrossing of their main service line near College Boreal in Sudbury.

Marine Projects

- Involved in design and implementation of sequential marine blasting for channel widening/deepening carried out by Peter Kiewit Sons Company Limited at Little Chute, Port Severn, Ontario.
- Consulting and monitoring of vibrations and overpressure for the marine blasting operations of Ontario Trap Rock Limited in Bruce Mines, Ontario.

Quarry Operations

- Established a vibration attenuation curve for the Bruce Mine Quarry of Ontario Trap Rock Limited.

EXPLOTECH

Resume - Daniel Corkery, B.Sc.

- Blast and seismic monitoring and vibration analysis for Rainbow Concrete Industries' Rainbow Quarry in North Bay and Maley Quarry in Sudbury.
- Blast Impact Analyses prepared for quarries in Temagami, North Bay, Washago and Sudbury.

Mining Operations

- Monitoring and blast performance analysis of combination electric/non-electric sequential blasting techniques in Vertical Retreat Mining (VRM) stopes and long blind raises (up to 18 meters) for Inco Limited.
- Established vibration and overpressure attenuation curves for Placer Dome's Dome Mine in preparation for their development of their "super pit".
- Training of personnel in the setup, operation and data analysis of Instantel data acquisition systems (i.e. Omniprobe and BM III Systems) at mines in Sudbury and Hemlo mining camps.

Research and Development

- Timing evaluation of prototype non-electric detonators (EZ-Drifters) for Ensign-Bickford Limited at several underground mine sites.
- Velocity of Detonation (V.O.D.) measurements of explosives for production blasts and in controlled tests.
- Responsible for implementation and analysis for a controlled study of the effects of temperature and humidity versus blasting vibrations on homes in Copper Cliff, Ontario.

Training

- Guest Speaker, Diploma Program in Mining, Ontario Centre for Ground Control Training, Cambrian College of Applied Arts and Technology, Sudbury, Ontario, Canada. Introduced the students to the concepts and techniques of blast monitoring.

PUBLICATIONS:

- 1) D.J. Corkery, R. Wing, 1993, Proceedings of the Nineteenth Annual Conference on Explosives and Blasting Technique, International Society of Explosive Engineers, "Controlled Study of the Effects of Temperature and Humidity Versus Blasting Vibrations on Homes".
- 2) H.R. Williams, D.J. Corkery, E.G. Lora, 1985, Canadian Journal of Earth Sciences, Vol. 25, "A Study of Joints and Stress Release Buckles in Paleozoic Rocks of the Niagara Peninsula, Southern Ontario".

Appendix E

Resource Assessment



BOREHOLE : BH1

Drilling Date: April 28, 1998

Project: Hagersville Proposed Quarry

Contractor: All-Terrain Drilling Ltd.

2

Project No.: 9088

Location : see Figure 1

Depth (metres)	Drilling Method	Description	Run No.	RQD (%)	Fract Ind (per 0.25 metres)	Well Details
				100 90 80 70 60 50 40 30 20 10 5	5 10 15 20 25	
1	Auger, NW Casing Set	Overburden: Grey brown Silty Clay	4 m			
2						
3		- coarser; possible cobbles or weathered bedrock at 3.4 m				
4		3.9 m				
5	NQ Core (open hole in rock)	Onondaga Formation: Brown grey, thinly to medium bedded, slightly shaley limestone with abundant crinoid hash, occasional rugose coral, occasional stylolites - moderate to abundant grey and white chert nodules	1	82%	3 1 2 0 0 1 2 1 3	
6		6.6 m	6.3 m		1 2 3 0 1 0 0 1 0 1	
7		Bois Blanc Formation; Unit # 3 Dark grey grading to tan brown, thinly to thickly bedded limestone with abundant shale partings, abundant rugose and tabulate coral, lower contact sharp, fossiliferous - occasional chert nodules	2	90%	1 0 0 0 1 0 1 0 1	
8					2 1 1 0 1	
9		9.3 m	9.6 m		2 1 1 2 1 0 0	
10		Bois Blanc Formation; Unit # 2 Bluish grey, fine to medium bedded shaley limestone, abundant white clacarenite - trace to occasional chert nodules	3	95%	2 1 1 2 1 0 0	
11						

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page 1 of 2

STANLEY CONSULTING GROUP LTD.

BOREHOLE : BH2

Drilling Date: April 29, 1998

Project: Hagersville Proposed Quarry

Contractor: All-Terrain Drilling Ltd.

Project No.: 9088

Location : see Figure 1

2

Depth (metres)	Drilling Method	Description	Run No.	RQD (%)	Fract Ind (per 0.25 metres)	Well Details
1	Auger, NW Casing Set	Overburden: Grey brown Silty Clay	3.5 m	100	5	
2				80	10	
3				60	15	
4	NQ Core (open hole in rock)	3.4 m	1	40	20	
5		Onondaga Formation; Brown grey, slightly shaley limestone, with occasional shale partings, occasional rugose, crinoids and chert		20	25	
6		Blue grey to light grey limestone, abundant crinoids, cherty from 4.2 m bgs to 5.9 m bgs		10	20	
7		drilling problems - sample very fractured		5	15	
8		5.9 m		0	10	
9		Bois Blanc Formation; Unit # 3 Grey limestone, occasional shale parting, abundant crinoidal hash, few rugose and tabulate corals, moderately cherty, some slump structures	2	0	5	
10		8.7 m		0	5	
11		Bois Blanc Formation; Unit # 2 Dark to blue grey, thinly bedded shaley limestone, clacarenite, fine chert and no coral		1	5	
12		9.6 m		2	5	
13		Bois Blanc Formation; Unit # 1 Light tan brown, medium bedded limestone, abundant rugose corals, occasional tabulate corals, shale partings - abundant blue grey chert nodules, occasional white cherty bands, lower and upper contacts sharp		3	5	
14				2	5	

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page 1 of 2

STANLEY CONSULTING GROUP LTD.

BOREHOLE : BH3

Drilling Date: May 4, 1998

Project: Hagersville Proposed Quarry

Contractor: All-Terrain Drilling Ltd.

Project No.: 9088

Location : see Figure 1

2

Depth (metres)	Drilling Method	Description	Run No.	RQD (%)					Fract Ind (per 0.25 metres)					Well Details
				100	80	60	40	20	5	10	15	20	25	
1	Auger, NW Casing Set	Overburden: Grey brown Silty Clay												
2		2.1m												
3	NQ Core (open hole in rock)	Onondaga Formation; Brown grey, medium bedded limestone, occasional shale partings, moderate rugose and tabulate coral, moderate chert nodules	2.2 m											
4		4.3 m	1							2				
5		Bois Blanc Formation; Unit # 3 Grey to light grey shaley limestone to limestone, abundant crinoidal hash, occasional stylolite, few rugose and tabulate corals - 1 blue grey chert bed	4.6 m							2				
6		5.8 m								3				
7		Bois Blanc Formation; Unit # 2 Bluish grey, fine bedded shaley limestone, abundant clacarenite, one bed with abundant chert and rugose coral from 6.1 m bgs to 6.7 m bgs	7.6 m							1				
8		8.8 m	2							2				
9		Bois Blanc Formation; Unit # 1 Tan brown, medium bedded limestone, abundant rugose corals occasional tabulate corals, occasional shale partings - abundant blue grey chert nodules, several 10 cm thick chert bands, lower contact very sharp, siliceous, with blue grey chert nodules								3				
10			3							1				
11			10.7m							0				
										1				
										2				
										2				
										na				
										2				
										1				

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page 1 of 2

STANLEY CONSULTING GROUP LTD.

BOREHOLE : BH4

Project: Hagersville Proposed Quarry

Project No.: 9088

Drilling Date: May 5, 1998

Contractor: All-Terrain Drilling Ltd.

Location: see Figure 1

2

Depth (metres)	Drilling Method	Description	Run No.	RQD (%)	Fract Ind (per 0.25 metres)	Well Details
1	Auger, NW Casing Set	Overburden: Grey brown Silty Clay				
2						
3						
4						
5	NQ Core (open hole in rock)	Onondaga Formation; Grey, fossiliferous limestone, occasional shale partings moderate to abundant chert nodules	1	50%	2	
6		Bois Blanc Formation; Unit # 3 Dark grey shaley limestone coarsening with depth to light grey limestone, occasional rugose coral, stylolites and shale partings - moderate chert nodules	6.1m		1	
7		Bois Blanc Formation; Unit # 2 Grey shaley limestone, abundant calcarenite, rare rugose and tabulate coral, moderate fine chert nodules - lower 0.3 m has more chert and is slightly coarser, may be Bois Blanc Formation; Unit # 1	2		3	
8					3	
9					3	
10					0	
11		End of Drillhole at 9.4 m	9.4 m	67%	0	

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page 1 of 1

STANLEY CONSULTING GROUP LTD.

to 3 meters of shaley Onondaga Formation limestone and then approximately 8 meters of shaley cherty Bois Blanc Formation Limestone. Drill holes were terminated on contact with compact sandstones of the Oriskany Formation. The Bois Blanc Formation is extracted at a number of quarries in the area for the production of road building material, although the production of higher specification material including concrete aggregate is limited by shaley and cherty components. Fraser et al (1988) indicate that the Bois Blanc Formation material is generally unsuitable for the production of concrete or asphaltic aggregate because of high chert content.

The information provided by the test drilling allows for some modification to existing resource inventory mapping for the area. The subject property contains bedrock resources similar in quality and with similar depths of overburden to those identified in Selected Resource Area 2b in the Aggregate Resources Inventory Paper for the City of Nanticoke.

It is recommended that the subject area be considered to have the same resource potential as Selected Resource Area 2b, and be similarly protected for possible extraction as part of the municipal planning process for the area.

B. Oriskany Formation

Although the Oriskany formation is a brittle and erodable sandstone which has limited value as for the production of construction aggregates, it has potential for specialty materials including shoreline armour stone (when placed underwater) and in places for glass manufacturing because of its high silica content and chemical purity.

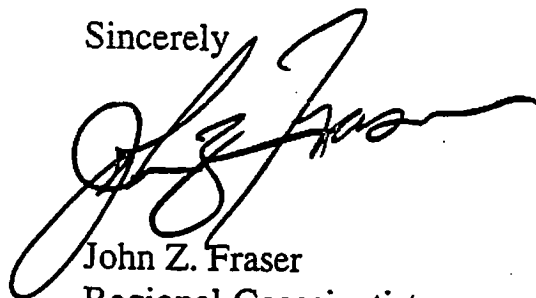
It is recommended that some consideration be given to the extraction of the Oriskany for these products and in combination with the extraction of underlying Bertie Formation as discussed below.

C. Bertie Formation

Although the test drilling program did not penetrate formations which underlie the Oriskany Formation, regional stratigraphy indicates that the entire subject area is underlain at greater depth by dolostones of the Upper

Please Contact me if you require any additional information and clarification

Sincerely



John Z. Fraser
Regional Geoscientist
South Central Science Unit
Ontario Ministry of Natural Resources
4th floor south, Box 7000
300 Water St. Peterborough Ont

Tel. (705) 755 3213

Fax. (705) 7553289

Internet: fraserj@gov.on.ca

References:

Fraser, J.Z., L. Taylor and I. Severinsky. 1988. Extraction techniques for production of high specification aggregates from palaeozoic limestones, Niagara Peninsula, Ontario, Canada. Transactions of the Institution of Mining and Metallurgy, Section B, Applied Earth Science. Vol. 97, p B1-B8.

**X Evaluation of Test Drilling Report,
G. Nichols Ppty: Part Lots 10-12, Concession 12,
City of Nanticoke, Regional Municipality of
Haldimand-Norfolk**

**X Prepared by John Z. Fraser, Regional Geoscientist
Ontario Ministry of Natural Resources
South Central Science Unit
98.06.24**

X Introduction:

On request of the Aggregate Resources Officer with the MNR Long Point Area Team, and on submission of drilling test results for the Nichols property, by Harrington and Hoyle Ltd., I have undertaken a review and evaluation of bedrock resource potential in the subject area. Testing was undertaken to confirm the resource potential in a portion of the Onondaga Escarpment sequence of Palaeozoic limestones, sandstones and dolostones in an area adjacent to significant past and current quarrying activity Just west of the village of Hagarsville.

Drilling Results, Observations and Recommendations:

A. Onondaga and Bois Blanc Formations

Drilling results confirm general stratigraphic relationships in this portion of the Onondaga Escarpment bedrock sequence. Overburden thickness encountered in the drill locations is generally less than 5 meters, overlying 1 to 3 meters of shaley Onondaga Formation limestone and then approximately 8 meters of shaley cherty Bois Blanc Formation Limestone.

Drill holes were terminated on contact with compact sandstones of the Oriskany Formation. The Bois Blanc Formation is extracted at a number of

quarries in the area for the production of road building material, although the production of higher specification material including concrete aggregate is limited by shaley and cherty components. Fraser et al (1988) indicate that the Bois Blanc Formation material is generally unsuitable for the production of concrete or asphaltic aggregate because of high chert content.

The information provided by the test drilling allows for some modification to existing resource inventory mapping for the area. The subject property contains bedrock resources similar in quality and with similar depths of overburden to those identified in Selected Resource Area 2b in the Aggregate Resources Inventory Paper for the City of Nanticoke.

It is recommended that the subject area be considered to have the same resource potential as Selected Resource Area 2b, and be similarly protected for possible extraction as part of the municipal planning process for the area.

B. Oriskany Formation

Although the Oriskany formation is a brittle and erodable sandstone which has limited value as for the production of construction aggregates, it has potential for specialty materials including shoreline armour stone (when placed underwater) and in places for glass manufacturing because of its high silica content and chemical purity.

It is recommended that some consideration be given to the extraction of the Oriskany for these products and in combination with the extraction of underlying Bertie Formation as discussed below.

C. Bertie Formation

Although the test drilling program did not penetrate formations which underlie the Oriskany Formation, regional stratigraphy indicates that the entire subject area is underlain at greater depth by dolostones of the Upper Silurian Bertie Formation. This material, especially the brown laminated dolostones of the Akron Member of the Bertie are well suited for the production of high quality aggregates including concrete aggregate. It is extracted along with the Onondaga and Bois Blanc Formations at a number of other quarries in the Onondaga Escarpment sequence and is important as a blending material to

beneficiate the quality of the Onondaga and Bois Blanc material. Blending of higher and lower quality materials permits the production of higher specification aggregates. Fraser et al (1988) a copy of which is attached, provide a detailed discussion of various benching and blending approaches that may be used in the extraction of the Onondaga Sequence for the production of a wide variety of road base as well as higher specification concrete and asphaltic aggregates.

It is recommended that the property owner undertake further studies to evaluate the additional potential of this underlying material to increase both the volume and quality of the resource available on the site.

Conclusions:

From a regional mineral aggregate resource management perspective the subject sites provides an opportunity for the identification and protection for possible extraction of significant resources suitable, with appropriate extraction techniques, for the production of a wide range of products. Its location in an area of low population density, relatively few competing resource interests and adjacent to past and existing mineral aggregate extraction make the area worthy of careful consideration for future resource development.

It is recommended that the Regional Municipality, the Ministry of Natural Resources and Ministry of Northern Development and Mines consider a regional re-evaluation of the resource potential in the Onondaga Escarpment to more accurately identify additional areas suitable for resource protection in municipal planning documents.

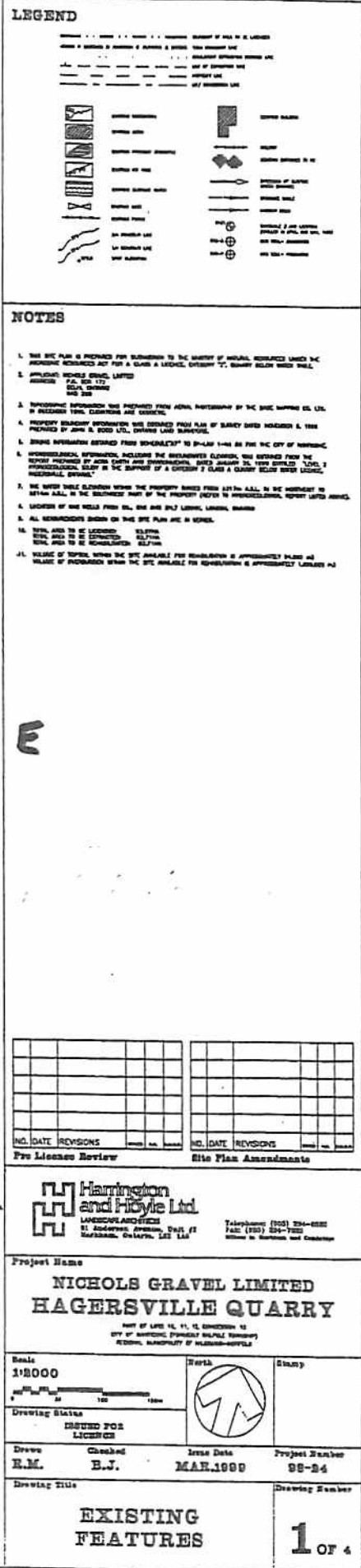
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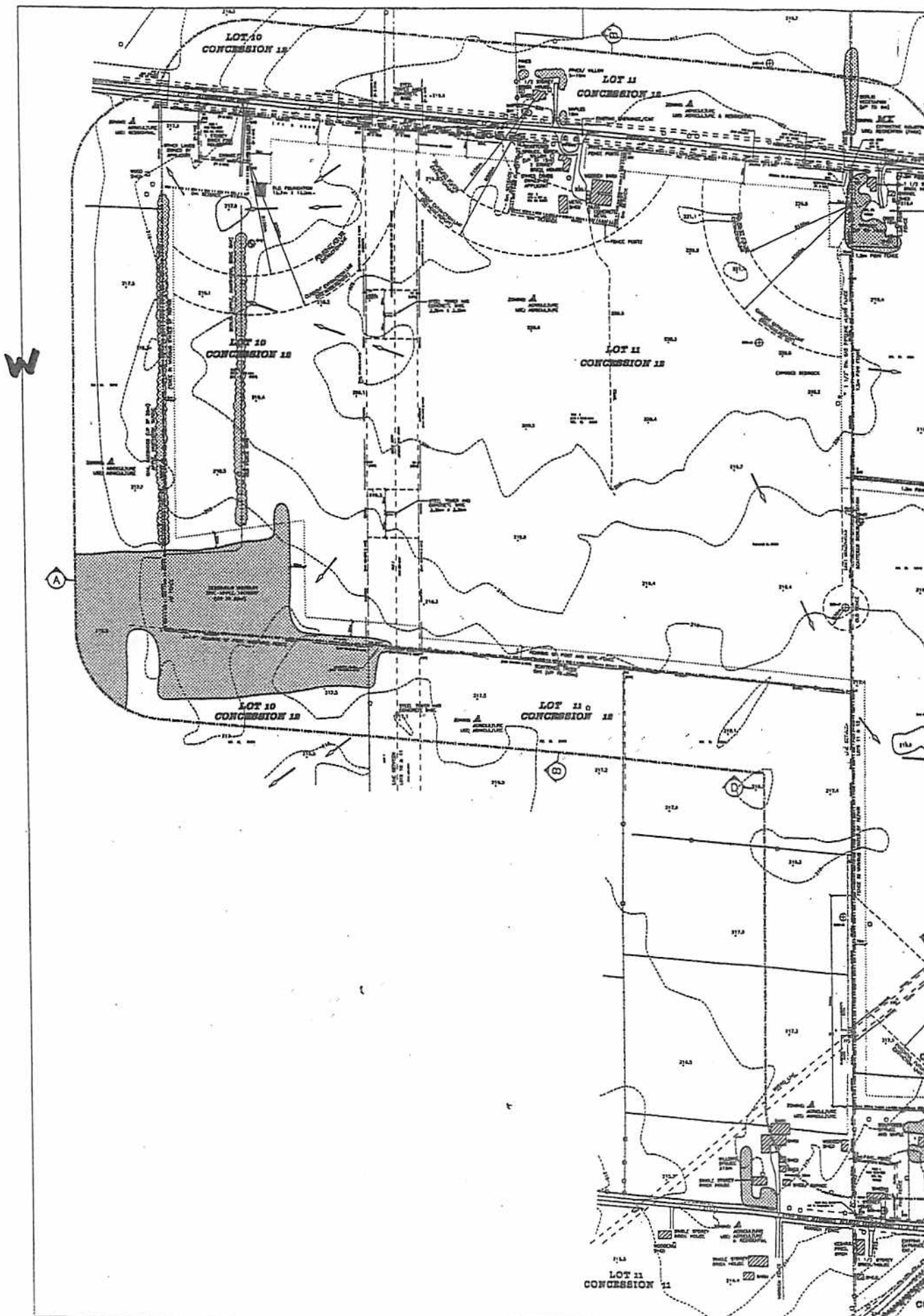
Fraser, J.Z., L. Taylor and I. Severinsky. 1988. Extraction techniques for production of high specification aggregates from palaeozoic limestones, Niagara Peninsula, Ontario, Canada. Transactions of the Institution of Mining and Metallurgy, Section B, Applied Earth Science. Vol. 97, p B1-B8.

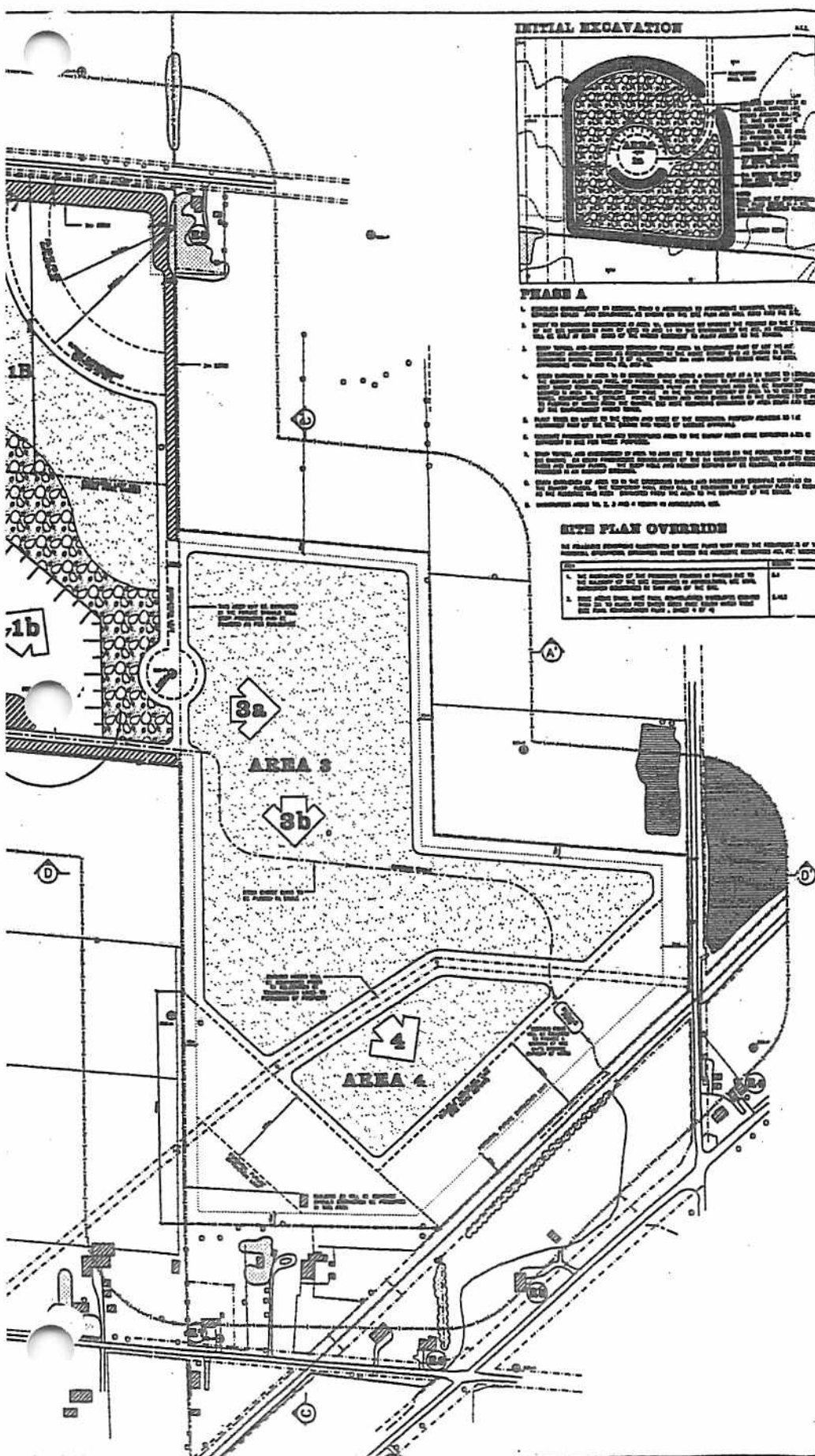
Appendix F

Site Plans

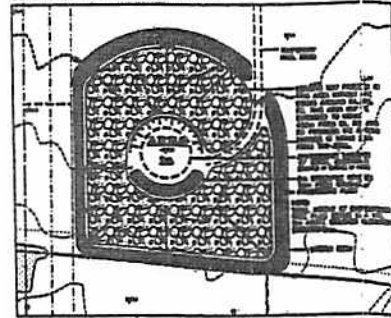








INITIAL EXCAVATION



PHASE A

1. Excavate the area within the circular structure to a depth of 10 feet, removing all debris and rubble.
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9. Excavate the area within the circular structure to a depth of 10 feet, removing all debris and rubble.
10. Excavate the area within the circular structure to a depth of 10 feet, removing all debris and rubble.

SITE PLAN OVERVIEW

The following table provides a summary of the site plan, including the location of the excavation areas and the estimated volume of material to be excavated.

Area	Location	Estimated Volume (cu yd)
1b	Left side of plan	100
3a	Upper middle	200
3b	Upper middle	50
4	Bottom	150

LEGEND

Symbol	Description
[Symbol]	Excavation Area
[Symbol]	Excavation Area
[Symbol]	Excavation Area
[Symbol]	Excavation Area
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NOTES

1. The site plan shows the location of the excavation areas and the estimated volume of material to be excavated.
2. The site plan shows the location of the excavation areas and the estimated volume of material to be excavated.
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Area	Location	Estimated Volume (cu yd)
1b	Left side of plan	100
3a	Upper middle	200
3b	Upper middle	50
4	Bottom	150

Harrington and Hyle Ltd.
INCORPORATED IN ENGLAND
100, QUEEN STREET, LONDON, E.C. 4

Project Name
**NICHOLS GRAVEL LIMITED
HAGERSVILLE QUARRY**

Scale
1:10000

North Arrow

Drawn
H.M.

Checked
H.J.

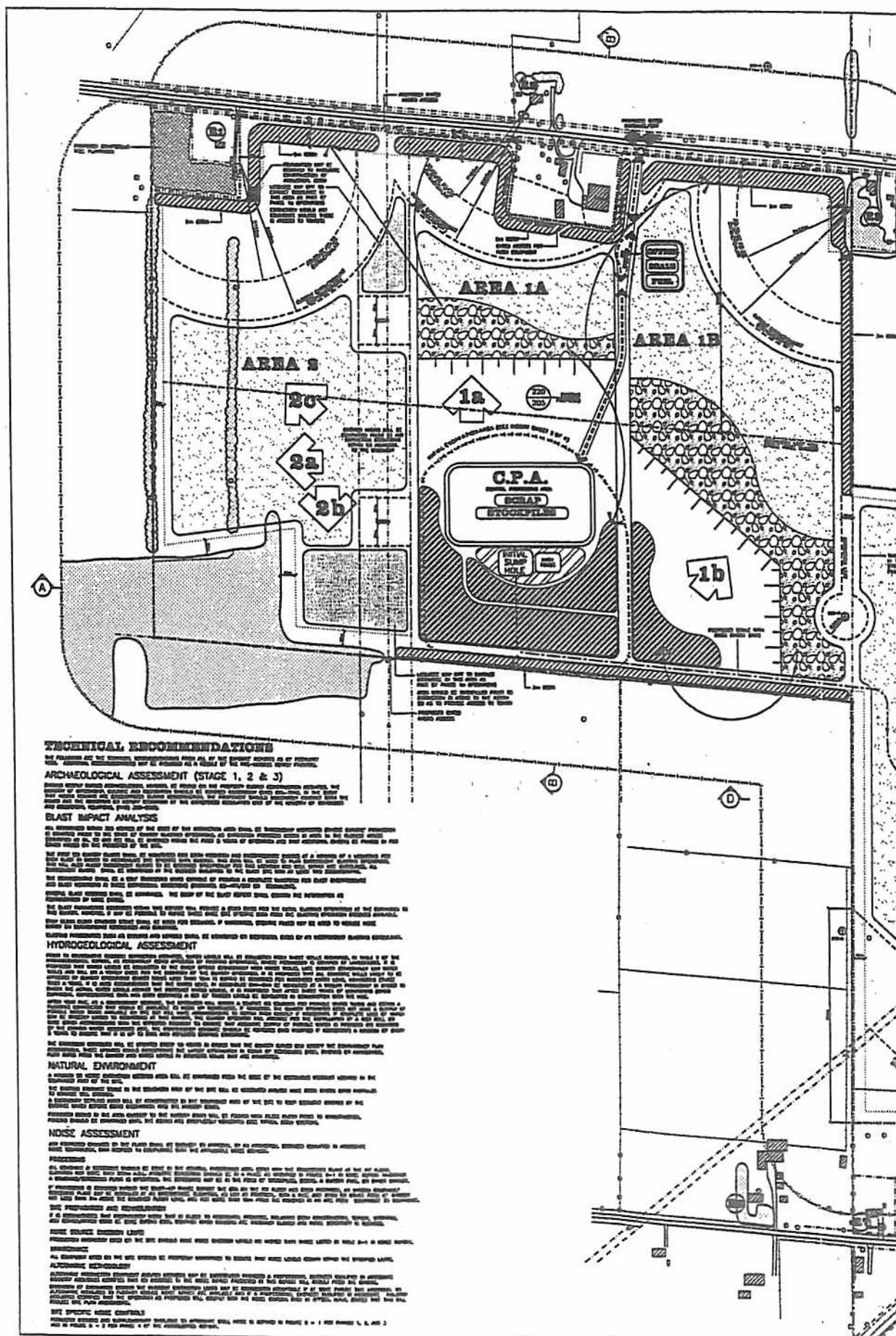
Date
MAR 1966

Project Number
00-04

Operations Plan
PHASE A

2 of 4

W



TECHNICAL RECOMMENDATIONS

THE FOLLOWING ARE THE TECHNICAL RECOMMENDATIONS FOR THE SITE AS OF PRESENT
DATE. TECHNICAL RECOMMENDATIONS FOR THE SITE AS OF PRESENT DATE.

ARCHAEOLOGICAL ASSESSMENT (STAGE 1, 2 & 3)

STAGE 1: INITIAL SURVEY AND ASSESSMENT. STAGE 2: DETAILED SURVEY AND ASSESSMENT. STAGE 3: FINAL SURVEY AND ASSESSMENT. STAGE 1: INITIAL SURVEY AND ASSESSMENT. STAGE 2: DETAILED SURVEY AND ASSESSMENT. STAGE 3: FINAL SURVEY AND ASSESSMENT.

BLAST IMPACT ANALYSIS

THE BLAST IMPACT ANALYSIS WAS CONDUCTED TO DETERMINE THE POTENTIAL FOR BLAST IMPACT ON THE SITE. THE ANALYSIS WAS CONDUCTED USING THE FOLLOWING ASSUMPTIONS: 1. THE BLAST WAVE WAS ASSUMED TO BE A PLANE WAVE. 2. THE BLAST WAVE WAS ASSUMED TO BE A PLANE WAVE.

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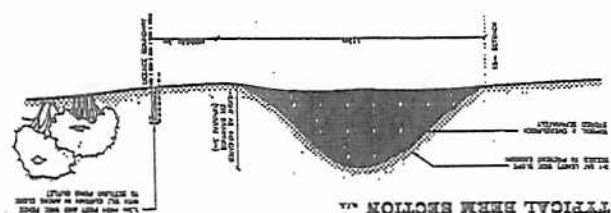
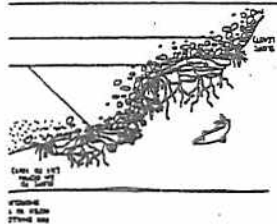
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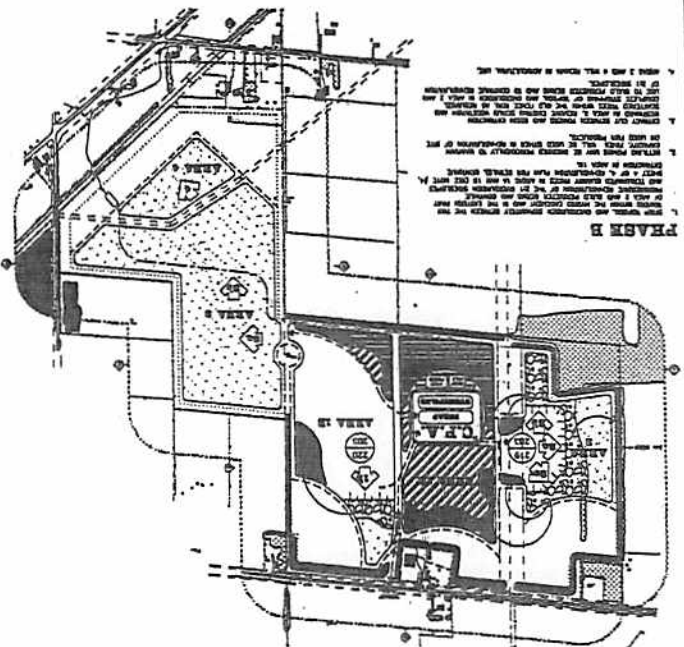
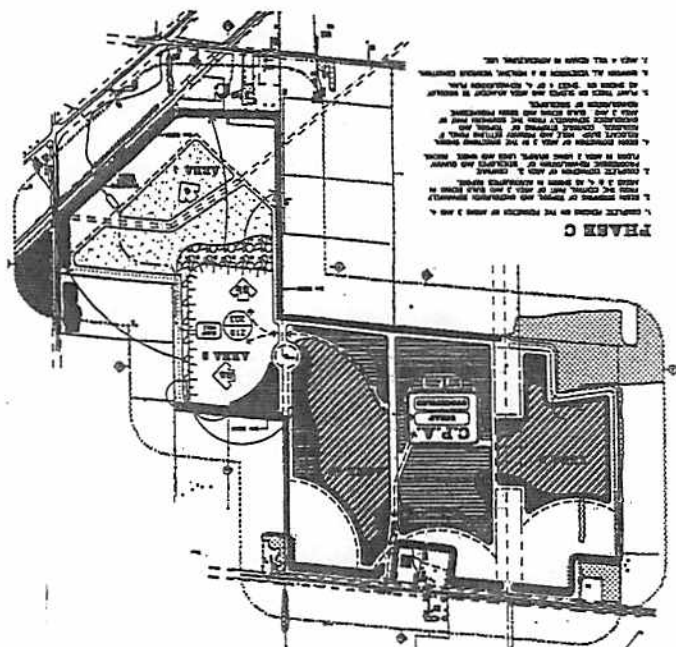
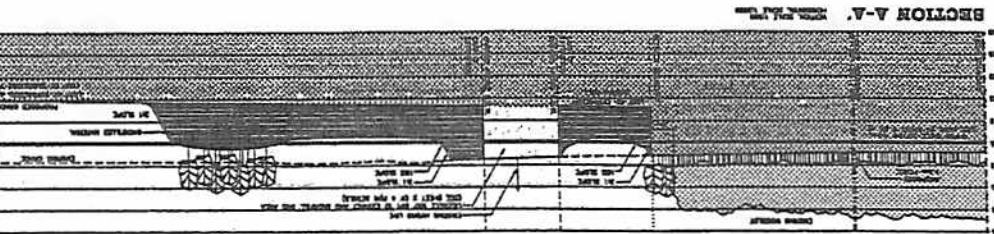
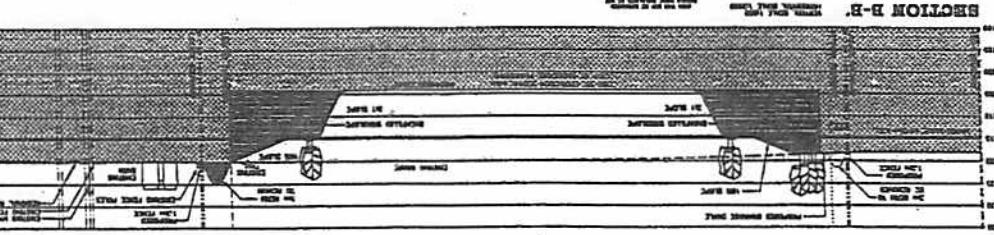
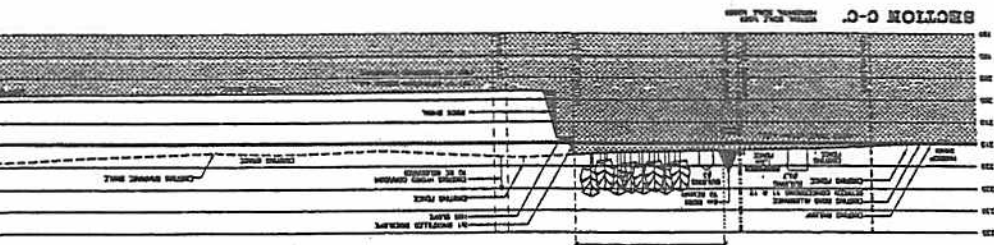
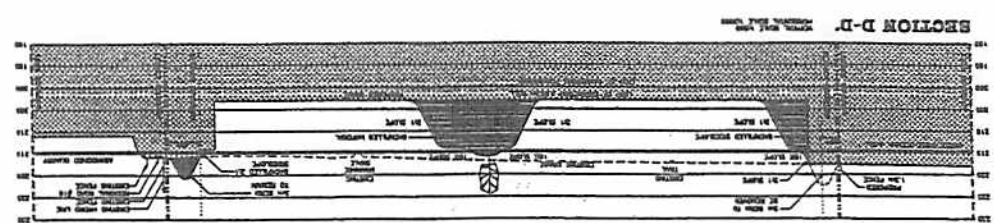
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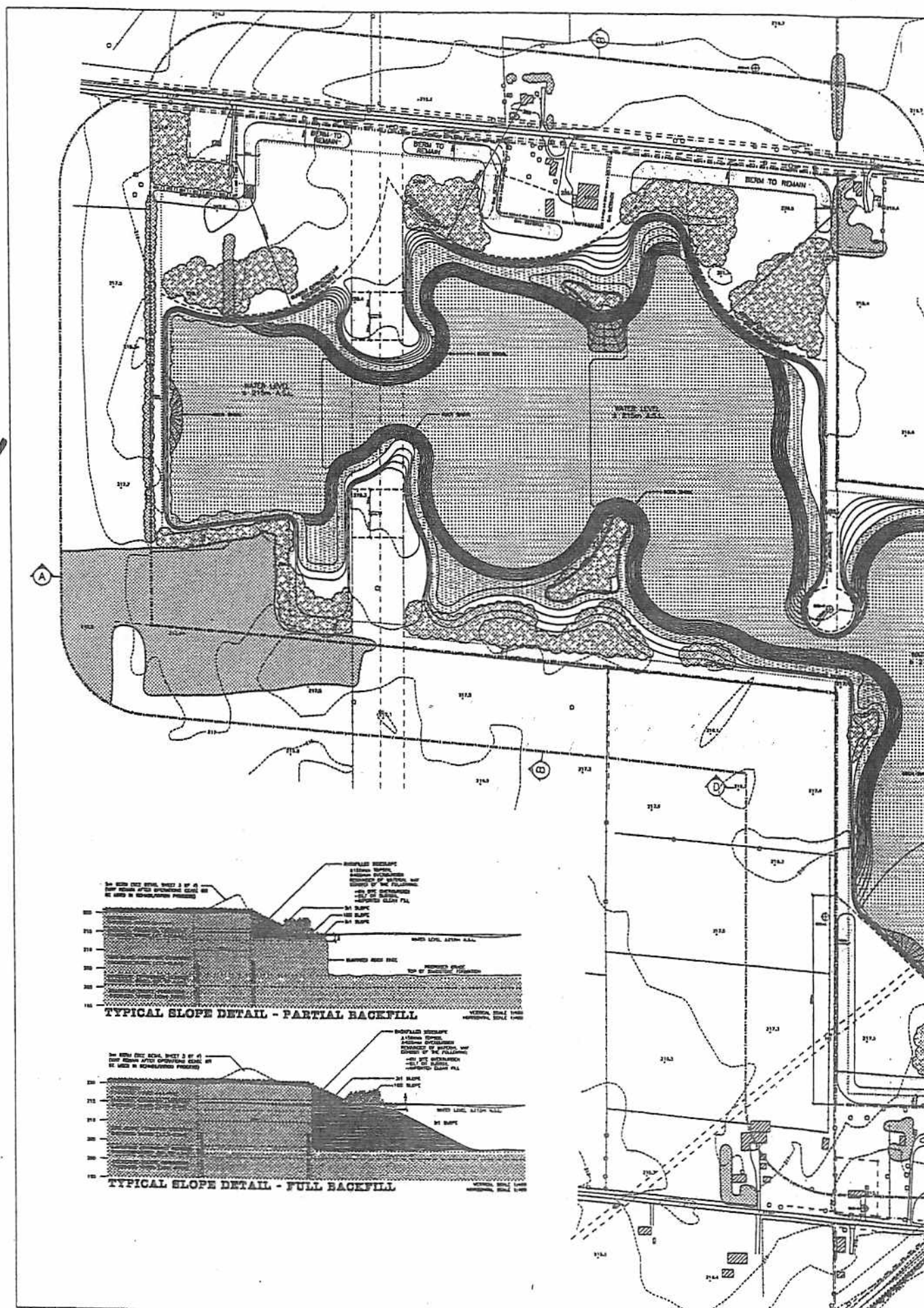
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TYPICAL DEEP SHORELINE



M





Ministry of
Natural
Resources

Ministère des
Richesses
naturelles

The Aggregate
Resources Act

Loi de 1989 sur
les ressources
en agrégats

Application for a Licence

Demande de permis

Application for a:
Demande concernant :

☐ Pit
un puits d'extraction

☒ Quarry
une carrière

- The site plan required under section 8 of the Act must accompany this application.
Le plan du site exigé aux termes de l'article 8 de la Loi doit être joint à la présente demande.
- For Class A licences the report required under section 9 of the Act must accompany this application.
Pour les demandes de permis de classe A, le rapport exigé aux termes de l'article 9 de la Loi doit être joint à la présente demande.
- Personal information required on this form is collected under the authority of the Aggregate Resources Act, s.7(1) and will be used for the administration of the Act.
Les renseignements personnels contenus dans cette formule sont demandés en vertu de la Loi de 1989 sur les ressources en agrégats, par. 7(1) et seront utilisés à des fins d'application de la Loi.
- Questions about this information should be directed to the District Manager of the Ministry of Natural Resources district in which the site is located.
Adresser toute question sur cette demande au chef du district du ministère des Richesses naturelles dans lequel se trouve la carrière ou le puits d'extraction.
- All information submitted in respect of this application is available for public review.
Tous les renseignements donnés relativement à cette demande peuvent être examinés par le public.

1 Type of Application:
Type de demande :

☒ Class 'A' Licence - more than 20,000 ton per year
Permis de classe 'A' - plus de 20 000 tonnes métriques par année

☐ Class 'B' Licence - 20,000 tonnes or less per year
Permis de class 'B' - 20 000 tonnes métriques par année ou moins

2 Applicant: Requérant :	Name Nom NICHOLS GRAVEL LIMITED		Address Adresse P.O BOX 172 DELHI, ONTARIO		Phone No. N° de tél. (519) 582-3354
			Postal Code Code postal N4B 2W9		
3 Landowner: (If different from Applicant) Propriétaire : (S'il est différent du requérant)	Name Nom SEE ATTACHED DOCUMENTS		Address Adresse		Phone No. N° de tél.
					Postal Code Code postal
	Type of Tenure Type de bail	<input type="checkbox"/> Lease Location	Expiry Date Date d'expiration		
		<input type="checkbox"/> Extraction Agreement Entente d'extraction	Expiry Date Date d'expiration		
4 Site Location: Emplacement :	Lot Part 10-12	Concession 12	Geographic Township Canton géographique Walpole	Local Municipality Municipalité locale City of Nanticoke	County / Regional Municipality Comté / municipalité régionale / Haldimand-N
5 Site History: Historique de l'emplacement : (Complete i), ii) or iii) as appropriate) (Remplissez la section i), ii) ou iii), selon le cas)	i) <input type="checkbox"/> Licence under Pits and Quarries Control Act Permis aux termes de la Loi sur les puits d'extraction et les carrières Licence No. Permis n°		ii) <input type="checkbox"/> Established pit / quarry in newly designated area Puits d'extraction / carrière existant dans une zone nouvellement désignée a) When previously operated Période d'activités précédente b) Tonnage removed within previous 2 years Quantité extraite pendant les deux dernières années c) Area disturbed Région perturbée d) Present zoning of site and adjacent lands on site plan Zonage actuel de l'emplacement et des terrains adjacents indiqués sur le plan du site		iii) <input checked="" type="checkbox"/> New Pit / Quarry Nouveau puits d'extraction / nouvelle carrière Present zoning of site and adjacent lands on site plan Zonage actuel de l'emplacement et des terrains adjacents indiqués sur le plan du site A. AGRICULTURE
6 Pit / Quarry Operation: Activités au puits / à la carrière	Estimated amount of aggregate to be excavated annually Quantité approximative d'agrégats à extraire chaque année 750 000 tonnes métriques	Licensed Area Région touchée par le permis 93.97 hectares	Extraction Area Zone d'extraction 62.71 hectares	Is this an expansion to an existing pit / quarry? S'agit-il de l'expansion d'un puits d'extraction ou carrière existant ? NO	
7 Corporation Use Only: Réservé à la compagnie :	I have authority to bind the herein-named Corporation Je suis habilité à prendre des engagements au nom de la compagnie ci-après mentionnée G.I. Nicholas		Initials and Surname of Corporation Official (Please Print) Initiales et nom de famille du représentant de la société (en caractères d'imprimerie) G.I. Nicholas		Signature of Corporation Official Signature du représentant de la société G.I. Nicholas
	Signature of Applicant Signature du requérant G.I. Nicholas		Dated this Ce 3rd day of MARCH jour de		Position Fonctions President
For Office Use Only Réservé au bureau	Ci-joint	copies of the site plan included as per Section 8 of the Act exemplaires du plan du site, conformément à l'article 8 de la Loi	Ci-joint	copies of report included as per Section 9 of the Act exemplaires du rapport, conformément à l'article 9 de la Loi	\$ application fee included as per Section 1 of the Regulations \$ exigé pour la demande, conformément à l'article 1
					Receipt No Reçu n°

Aggregate Resources Act
Notice of Application for a Licence

4

NICHOLS GRAVEL LIMITED

Name

P.O. Box 172

Address

DELHI, ONTARIO N4B 2W9

Postal Code

Hereby, give notice that application has been made for a CATEGORY 2, CLASS "A" LICENCE
(Category, Class A or Class B)

to excavate aggregate from a QUARRY of 93.97 hectares, located in:
(pit or quarry)

Lots or Part lot(s) 10-12 Concession(s) 12

Geographic Township WALPOLE Local Municipality CITY OF NANTICOKE

County/Region/District HALDIMAND-NORFOLK

Application is for a/
☐ expansion to an established pit or quarry
☒ new quarry

Tonnage Condition applied for annually is 750,000 tonnes.

detailed site plan and report(s) for the proposal may be examined at the local or county/regional municipal offices or at the district/local office of the Ministry of Natural Resources.

Any person(s) wishing to object to this application must send in writing, their objection with reason(s) to the applicant and the district/local office of the Ministry of Natural Resources at the addresses below:

The Applicant:

NICHOLS GRAVEL LIMITED

P.O. Box 172, DELHI, ONTARIO N4B 2W9; and

MNR:

353 TALBOT STREET WEST

AYLMER, ONTARIO N5H 2S8

The last day on which objections may be filed with the applicant and Ministry is Oct. 15/1999
mth/day/year

Cre: All information in respect of this application including any written objections is available for public review.

X List of Objectors to Hagersville Quarry Application

Mr. & Mrs. Ross Barr
R.R. #5
Hagersville ON N0A 1H0

Mr. & Mrs. Russ Beaurivage
R.R. #5
Hagersville ON N0A 1H0

Mr. Tom Beischlag
R.R. #5
Hagersville ON N0A 1H0

Mr. Stan Botts
R.R. #5
Hagersville ON N0A 1H0

Mr. & Mrs. Ken Bowen
R.R. #4
Hagersville ON N0A 1H0

Mr. Bob Phibbs
R.R. #1
Jarvis ON N0A 1J0

Mr. Bruce Roulston
R.R. #5
Hagersville ON N0A 1H0

Mr. John Castelo
R.R. #5
Hagersville ON N0A 1H0

Mr. & Mrs. Wayne Bowmen
R.R. #5
Hagersville ON N0A 1H0

Mr. & Mrs. Glenn Cherry
613, Lot 8, Concession 10, Walpole
Hagersville ON N0A 1H0

Mr. & Mrs. Charles Clause
R.R. #5
Hagersville ON N0A 1H0

Sandra Chan
Canadian National Railways
8th Floor, 277 Front Street West
Toronto ON M5V 2X7

Mr. Dan Davidson
883 Concession 13
Hagersville ON N0A 1H0

Mr. & Mrs. Jerry DeGraaf
R.R. #5
Hagersville ON N0A 1H0

Mr. & Mrs. Doug Greenfield
Lasera Farms Ltd.
R.R. #4
Hagersville ON N0A 1H0

Mr. & Mrs. Al Doughty
R.R. #5
Hagersville ON N0A 1H0

Mr. & Mrs. Dave Phibbs
R.R. #5
Hagersville ON N0A 1H0

Mr. & Mrs. Edward O'Brien
R.R. #4
2684 Regional Road 9
Hagersville ON N0A 1H0

Mr. Ted Edwards
3691 Highway #6
Hagersville ON N0A 1H0

Mr. Edward Phibbs
R.R. #5
Hagersville ON N0A 1H0

Mr. Bill Forrest
R.R. #5
Hagersville ON N0A 1H0

Mr. & Mrs. George Gowan
R.R.4
2661 Regional Road 9
Hagersville ON N0A 1H0

Mr. & Mrs. Gerald Greenfield
2374 Regional Road 9
R.R. #4
Hagersville ON N0A 1H0

Mr. James Hagan
R.R. #4
Hagersville ON N0A 1H0

Mr. Frank Sommer, Chair
Land-use Planning, HFA
Haldimand Federation of Agriculture
162 Cleary Ave.,
Dunnville ON N1A 2J3

Mr. & Mrs. Ron Hanson
R.R. #5
Hagersville ON N0A 1H0

Mr. & Mrs. Ted Heeg
Highestate Farms
R.R. #4
Hagersville ON N0A 1H0

Mr. Walter Held
R.R. #5
3498 Highway #6
Hagersville ON N0A 1H0

Mr. Hubert Heeg
R.R. #4
Hagersville ON N0A 1H0

Mr. John Beischlag
R.R. #1
Jarvis ON N0A 1J0

Mr. & Mrs. John Greenfield
R.R. #4
Hagersville ON N0A 1H0

Mr. Frederick Karl
R.R. #4
Hagersville ON N0A 1H0

Mr. Bob LaFleur
3686 Highway #6
R.R. #5
Hagersville ON N0A 1H0

Mr. & Mrs. Paul Leatherbarrow
Kar Lea Farms Limited
R.R. #4
Hagersville ON N0A 1H0

Mr. Rick Mayers
2554 Regional Road 9
R.R. #4
Hagersville ON N0A 1H0

Mr. & Mrs. Les McKeen
R.R. #5
Hagersville ON N0A 1H0

Mr. Greg Misner
644 Army Camp Road
Hagersville ON N0A 1H0

Mr. & Mrs. Michael Mitchell
R.R. #4
2477 Regional Road 9
Hagersville ON N0A 1H0

Mr. & Mrs. Rick Morris
R.R. #5
Hagersville ON N0A 1H0

Mr. & Mrs. Bob Nixon
982 Regional Road 27
R.R. #5
Hagersville ON N0A 1H0

Mr. & Mrs. Nicholas O'Brien
R.R. #4
Hagersville ON N0A 1H0

5

Mr. & Mrs. Fred Olds
R.R. #4
Hagersville ON N0A 1H0

Mr. Chris Vanderreest
Ontario Hydro Services Company
7676 Woodbine Avenue, Suite 300
Markham ON L3R 2N2

Mr. & Mrs. Dwight Parkinson
R.R. #5
Hagersville ON N0A 1H0

Mr. & Mrs. Tom Patterson
2472 Lot 8 Concession 12 Walpole
Hagersville ON N0A 1H0

Mr. & Mrs. Rex Pihbs
R.R. #5
Hagersville ON N0A 1H0

Ms. Ruth Philips
R.R. #5
Hagersville ON N0A 1H0

Mr. Oscar Phillips
3468 Highway 6
Hagersville ON N0A 1H0

Mr. Paul Pihbs
R.R. #1
1819 Regional Road 18
Jarvis ON N0A 1J0

Mr. & Mrs. Ralph Cherry
679 Lot 9 Concession 10 Walpole
Hagersville ON N0A 1H0

Mr. Bruce Reynolds
915 Lot 12 Concession 14 Walpole
Hagersville ON N0A 1H0

Mr. Murray Roulston
R.R. #5
Hagersville ON N0A 1H0

Mr. & Mrs. Raymond Pihbs
948 Concession 10 Walpole
Hagersville ON N0A 1H0

Mr. & Mrs. Vince Salerne
R.R. #4
Hagersville ON N0A 1H0

Mr. & Mrs. John Schraa
R.R. #5
Hagersville ON N0A 1H0

Mr. & Mrs. Kevin Sheppard
R.R. #5
Hagersville ON N0A 1H0

Mr. Lawrence Slack
R.R. #5
Hagersville ON N0A 1H0

Mr. & Mrs. Ross Smith
R.R. #5
Hagersville ON N0A 1H0

Mr. Paul Snyder
2401 Regional Road 18
Hagersville ON N0A 1H0

Mr. Dave Stirling
2513 Regional Road 9
R.R. #4
Hagersville ON N0A 1H0

Mr. Rob Suchinski
R.R. #4
2471 Regional Road 9
Hagersville ON N0A 1H0

Mr. Donald Teal
R.R. #5
Hagersville ON N0A 1H0

Ms. Linda Thurston
R.R. #5
607 Concession 11
Hagersville ON N0A 1H0

5

Mr. & Mrs. Tom Phibbs
3788 Highway #6
R.R. #5
Hagersville ON N0A 1H0

Mrs. Mary VanBetham
1938 Lot 13 Concession 11 Walpole
Hagersville ON N0A 1H0

Mr. & Mrs. John Varga
R.R. #5
Hagersville ON N0A 1H0

Mr. Doug Wilson
R.R. #5
Hagersville ON N0A 1H0

Mr. & Mrs. Ralph Berry
690 Lot 9 Conc 13 Walpole
R.R. #4
Hagersville ON N0A 1H0

Chief Carolyn King
Mississaugas of the Credit First Nation
R.R. #6
Hagersville ON N0A 1H0

Mr. Ron Sinden, Deputy Clerk
City of Nanticoke
Administrative Offices
101 Nanticoke Creek Parkway
P.O. Box 5194
Townsend ON N0A 1S0 7

6
X MINISTRY OF THE ENVIRONMENT

REPORT ON

THE INVESTIGATION OF

X WELL INTERFERENCE COMPLAINTS

NEAR HAGERSVILLE

TOWNSHIP OF WALPOLE

X WATER QUANTITY MANAGEMENT BRANCH
NOVEMBER, 1972

MINISTRY OF THE ENVIRONMENT

WATER SUPPLY INTERFERENCE INVESTIGATION - TOWNSHIP OF WALPOLE

X INTRODUCTION

During January, 1971, an enquiry was received from Dufferin Materials and Construction Limited, denoted hereafter as DMC, regarding approval for quarry dewatering. The firm intended to deepen an existing quarry near Hagersville, and an increase was anticipated in the rate of dewatering from its quarry operation. Local farmers expressed concern, through the Haldimand Federation of Agriculture, that the dewatering of the quarry would adversely affect their well-water supplies.

Subsequent to a preliminary investigation, a Permit To Take Water was issued to the firm, with provision for the protection of previously-existing adequate water supplies in the event of serious interference.

In February, 1971, a water-level monitoring program was established to determine the effects of the increased dewatering on local ground-water supplies. Continuous chart recorders were installed on three wells, and water-level measurements were periodically taken in many domestic wells in the vicinity of the quarry.

DEWATERING OPERATIONS

Dewatering of the Hagersville quarries was initiated prior to 1961, and was periodically carried out at rates in the order of 500 Imperial gallons per minute until January, 1971.

At that time, plans were made to deepen a quarry (Pit 2), which was previously abandoned in 1955, by approximately 50 feet, or to a depth of about 90 feet below ground level. To dewater the quarry to the working level, pumping was commenced at a rate of 1,500 gallons per minute on March 31, 1971 and continued until mid-May, 1971. Thereafter, dewatering has been carried out to remove accumulated precipitation and ground-water seepage at rates up to 1,500 gallons per minute for variable periods of time.

Portable pumps are operated continuously to maintain a suitable water level in the lower portion of the quarry and discharge water to the main quarry floor. From this location, water is pumped either to Sandusk Creek, to a nearby abandoned quarry (Pit 3) or to the storage pond at the asphalt plant (Pit 1).

PRECIPITATION

The mean annual precipitation at the Hagersville meteorological station shown on Figure 1 is 33.4 inches. In 1971, the precipitation in the area was about 23 per cent below normal. During the anticipated recharge period extending from January to May 1971, the precipitation was 45 per cent below normal. Precipitation for the period from January to August, 1972 was normal.

HYDROGEOLOGY

The study area lies within the gently sloping Haldimand Clay Plain. Beneath the surficial clay deposits there is a thin mantle of glacial till, which in turn overlies the bedrock. The overburden thickness is variable, but normally ranges between 10 feet and 40 feet. The upper 30 feet of the bedrock exposed in the Dufferin quarry is composed of cherty limestone of the Bois Blanc Formation, which rests unconformably on dolomite of the Bertie Formation.

At the quarry site, the bedrock appeared to have moderate permeability, which essentially results from the presence of irregularly distributed fracture systems.

Domestic water supplies are mainly obtained from the bedrock, as the overburden is poorly permeable and generally yields small supplies of water. The bedrock wells have variable specific capacities and yields and are relatively shallow, usually less than 70 feet, since mineralized water is encountered at depth.

WATER LEVEL FLUCTUATIONS

Due to the random distribution of the water-bearing fracture systems and the effects of natural climatic conditions, the amount and the effect of interference with a bedrock well caused by a large ground-water withdrawal are not readily determinable.

Normally, water-level data and information on the reported well performances must be collected for a substantial period of time to ascertain the interference effect.

Three continuous monitoring recorders were installed on abandoned wells on the Snyder, Bilton and Livingston properties, located about 500 yards, one mile and three miles respectively, from the quarry dewatering site. In addition, the water levels in several domestic and barn wells were monitored on a regular basis. Brief descriptions of the well performances reported during the survey are provided in Appendix A and water-level hydrographs for the monitored wells are presented in graphical form in Appendix B.

The Livingston well was initially selected to provide information on the regional water-level fluctuations as it was anticipated that the well was located outside of the possible area of interference. The Snyder and Bilton wells were monitored in an attempt to determine the magnitude of water-level lowering within the area influenced by the quarry dewatering.

DISCUSSION OF FINDINGS

From the water-taking records submitted by DMC, it was established that the ground-water seepage into Pit 2 was substantial. The area influenced by the quarry dewatering

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was deduced to comprise several square miles, by consideration of the water-transmitting and storage capacities of the bedrock aquifer, the probable ground-water recharge rate through the overburden and the observed water-level fluctuations. As a result, the Livingston well data could not be considered to represent the natural water-level fluctuations. In fact, the wide discrepancy between the water-level fluctuation of four feet recorded during 1971, in the nearest Ministry observation well located near Vanessa, about 17 miles west of Hagersville, and in the same bedrock unit as the Livingston well, suggested that the latter well was affected by the DMC dewatering activities. Additional information from bedrock observation wells located at Kohler, about twelve miles south-east of Hagersville, indicated that the magnitude of natural water-level fluctuation may be in the order of five feet.

If the fluctuations in the Vanessa and Kohler observation wells represent the effect of natural climatic conditions, appreciable interference has occurred with many of the local domestic wells. The most pronounced drawdown effect has been noted in the area to the south-west of the quarry, where four shallow bedrock wells either failed or yielded inadequate supplies during the fall of 1971.

6

Sharp declines in water levels were observed in several wells at various times during the recording period. This phenomenon is attributed to dewatering of a water-bearing zone intercepted by the well with an immediate drop in water level and specific capacity. Although large water-level fluctuations occurred in many wells, the water-level lowerings caused serious water-supply shortages in relatively few wells.

CONCLUSION

Sufficient water-level lowering resulted from the dewatering activities at the DMC Pit 2 to cause serious interruption of water supplies from several bedrock wells in the vicinity of the quarry, namely the wells of Mr. O. Crone, Mr. G. Snyder, Mr. R. Smith, Mr. A. Smit, Mr. G. Roulston, Mr. H. Wilson and Mr. B. D'Andreamatteo.

RECOMMENDATION

In accordance with the terms and conditions of Permit To Take Water No. 71-P-54, authorizing the quarry dewatering, Dufferin Materials and Construction Limited is obligated to make available, or to take such action as will make available to the affected parties an amount

of water equal to their normal takings, or reduce the rate and amount of the taking so that the serious interference is eliminated.

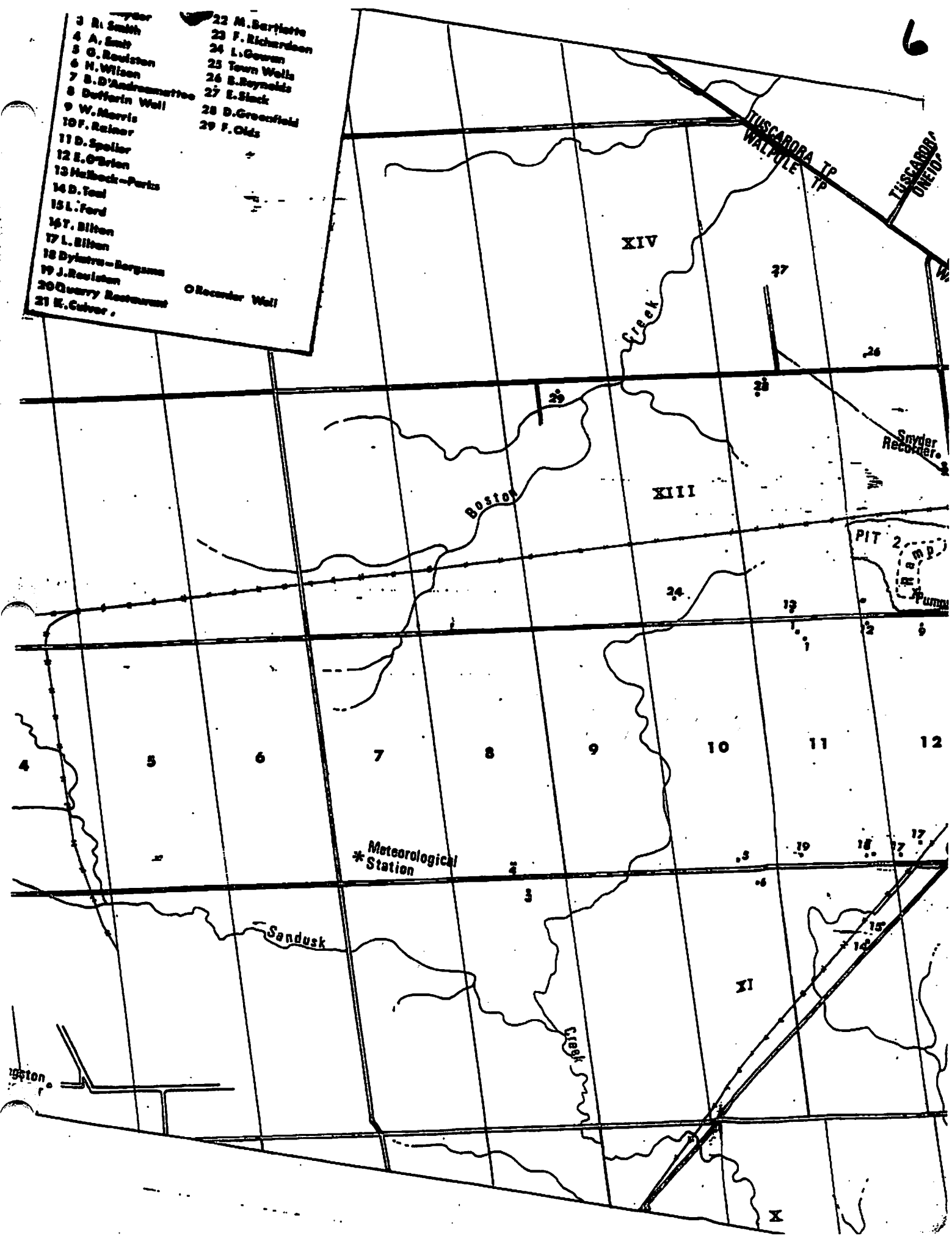
X B. T. Beswick,
Hydrogeologist,
Water & Well Management Section.

X November 17, 1972

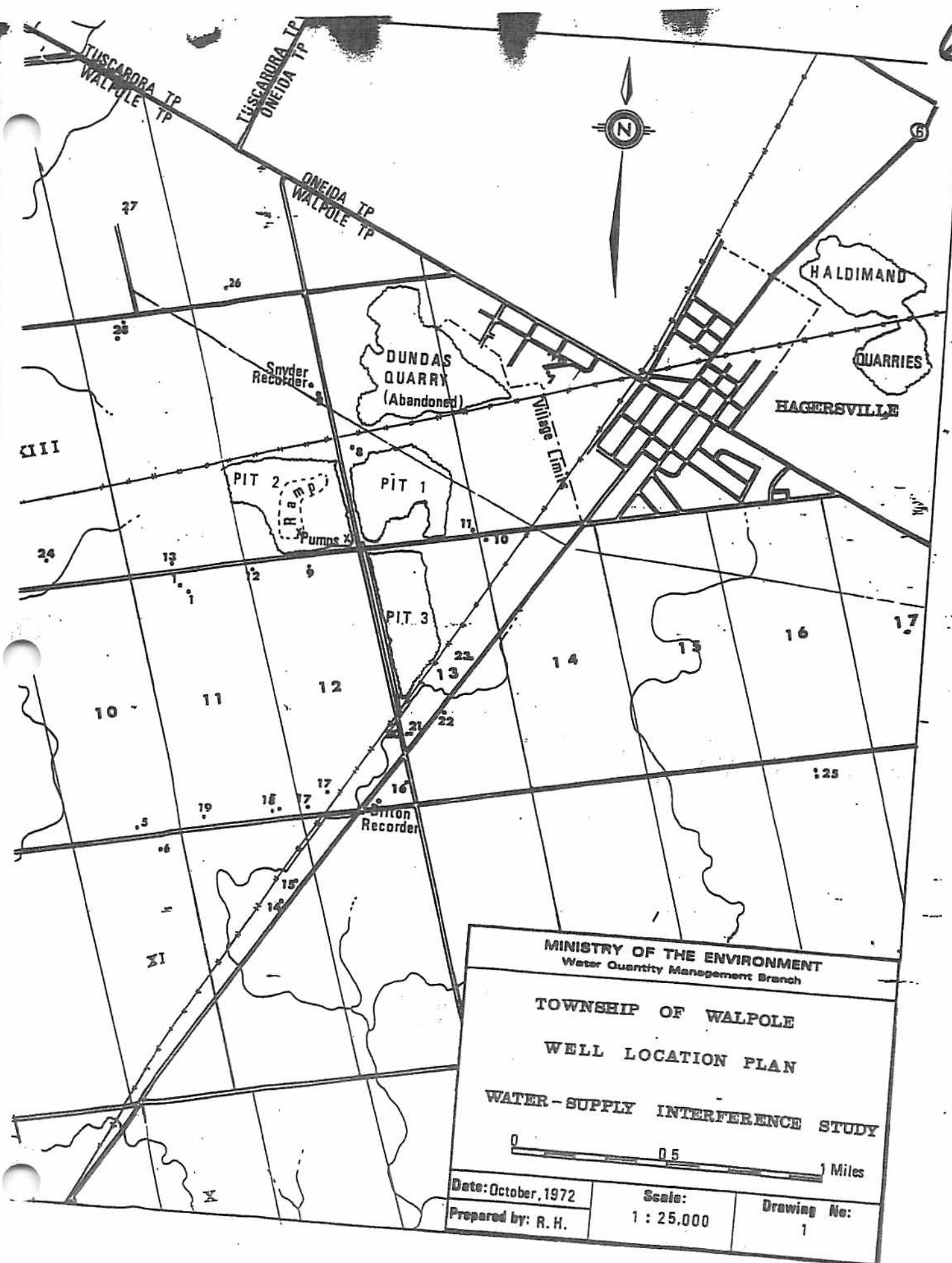
X L. G. Bryck
L. G. Bryck, Supervisor,
Water & Well Management Section,
Water Quantity Management Branch.

- | | |
|----------------------|------------------|
| 3 R. Smith | 22 M. Bartlett |
| 4 A. Smith | 23 F. Richardson |
| 5 G. Reister | 24 L. Gowan |
| 6 H. Wilson | 25 Town Wells |
| 7 S.D. Andromattee | 26 E. Reynolds |
| 8 Duffin Wall | 27 E. Slack |
| 9 W. Morris | 28 D. Greenfield |
| 10 F. Rainer | 29 F. Olds |
| 11 D. Speller | |
| 12 E. O'Brien | |
| 13 Hallock-Parke | |
| 14 D. Teal | |
| 15 L. Ford | |
| 16 T. Bilton | |
| 17 L. Bilton | |
| 18 Dylstra-Bergman | |
| 19 J. Reister | |
| 20 Quarry Restaurant | |
| 21 E. Culver | |

Recorder Wall



Station



MINISTRY OF THE ENVIRONMENT
Water Quantity Management Branch

TOWNSHIP OF WALPOLE
WELL LOCATION PLAN
WATER-SUPPLY INTERFERENCE STUDY

0 0.5 1 Miles

Date: October, 1972	Scale: 1 : 25,000	Drawing No: 1
Prepared by: R. H.		

APPENDIX A

X WELL DATA

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Well Depths: House Well - 44 feet
Barn Well - 120 feet (constructed October 31, 1951)

Barn Well - 39 feet

The barn well is used to supply the water demands of up to 500 hogs at various times of the year. A water-supply shortage was experienced in late September and in late October, 1971, at which times water was hauled to the property. During the late summer, Mr. Crone was required to augment the barn well supply with his domestic well supply by means of a plastic line, which was subsequently buried to avoid winter freezing.

G. SNYDER (2)

Well Depths: House Well - 30 feet (equipped with recorder)
 Barn Well - 85 feet

The barn well is used for domestic and stock-watering purposes. The stock includes some beef cattle and as many as 12,000 chickens at various times of the year. A water shortage

6

was initially experienced on November 9, 1971, and continued until late November, when the well-water level recovered.

A water-supply shortage reportedly occurred during the late summer period of 1972, and work has been carried out to modify the pressure system in an attempt to improve the well yield.

R. SMITH (3)

Approximate Distance to Quarry (Pit 2) - 8,500 feet

Well Depths:	Old Well	-	35 feet
	New Well	-	70 feet

Remarks:

Mrs. D. Smith reported that her well had failed on October 31, 1971. The well had not reportedly yielded in-adequate supplies at any time prior to the quarry dewatering. A new well was drilled in early November, but yielded sulphurous water which was unsuitable for domestic use. DMC made temporary tank supplies available to the residence, until the water level recovered in the well. Adequate supplies have been available from the old well during 1972.

A. SMIT (4)

Approximate Distance to Quarry (Pit 2) - 8,600 feet

Well Depths:	Old Well	-	32 feet
	New Well	-	74 feet

6

Remarks:

Mr. Smit initially contacted Mr. R. MacKinnon, Quarry Superintendent, on October 20, 1971, regarding his water-supply shortage.

Mr. Smit had previously used his 32-foot drilled well for domestic purposes and for watering of about 5,000 chickens. At the time of the initial visit in late October, he was experiencing a water shortage, although the well was only used to supply household needs.

The new well, drilled in November, 1971, yields moderately mineralized water, which is suitable for domestic and stock use. Adequate supplies have been available from the well during 1972.

G. ROULSTON (5)

Approximate Distance to Quarry (Pit 2) - 5700 feet

Well Depth - 40 feet

Remarks:

The well is used for domestic and stock-watering purposes. No water shortages were experienced prior to the monitoring program. Data collected during a 1958 water-quality survey indicated that the well was an adequate source of supply at that time.

6

The well failed on October 19, 1971, after which time Mr. Roulston was required to haul water to meet his water demands. In early November, DMC provided tanked water supplies as required and continued the service until mid-December. At that time, Mr. Roulston arranged to have his well cleaned out and a sufficient supply was reportedly obtained thereafter.

H. WILSON (6)

Approximate Distance to Quarry (Pit 2) - 6000 feet

Domestic Well Depth - 56 feet

Remarks:

A deeper well, 72 feet, was abandoned in 1955, in favour of the shallower 56-foot well due to the high sulphur content of the water obtained from the deeper well. Water shortages had reportedly never been experienced in either well.

Water shortages were first experienced in late October and continued until about mid-December, 1971. During this period, Mr. Wilson purchased a second pump and used the abandoned well to augment his barn water supply. Both wells operating together were capable of producing about three gallons per minute. DMC hauled water to the property in November, 1971. Shortly thereafter, the water level recovered sufficiently to permit withdrawal of an adequate supply from the shallow well.

6

A water shortage was experienced on October 22, 1972, but the well yielded adequate supplies thereafter, and tanked water supplies were not required.

B. D'ANDREAMATTEO (7)

Approximate Distance to Quarry (Pit 2) - 4000 feet

Well Depth - 70 feet (constructed May 22, 1964)

Static Level on Completion - 20 feet

Remarks:

A prolonged water shortage was experienced at the household in November, 1971, and water supplies were hauled to the property on one occasion. Shortly thereafter, the water level began to recover and the water supply became adequate again.

A water shortage problem was periodically experienced during August and September, 1972.

DUFFERIN MATERIALS & CONSTRUCTION LIMITED - Production Well (8)

Approximate Distance to Quarry (Pit 2) - 400 feet

Well Depth - 85 feet

Remarks:

This well is used for sanitary purposes and recharging two boiler units. No water shortages were reported during the monitoring program although the water level in this well in April, 1972, was approximately 16 feet below that recorded for the same month in 1971.

6

A drop in water level of about 30 feet occurred in September, 1972, and continued until October, when the water level recovered.

W. MORRIS (9)

House and Property owned by Dufferin Materials & Construction Limited.

Approximate Distance to Quarry (Pit 2) - 300 feet

Well Depth - 85 feet

Remarks:

The well is used for domestic purposes. No water shortages were reported throughout the monitoring period.

F. RAINER (10)

Approximate Distance to Quarry (Pit 2) - 2400 feet

Well Depth - 70 feet

Water Level - 31 feet - August 1970

Remarks:

The well is equipped with a hand pump and no water shortage was reported during the monitoring period.

D. SPELLER (11)

Property is owned by Dufferin Materials & Construction Limited.

Approximate Distance to Quarry (Pit 2) - 2000 feet

Well Depth - unknown

Measurements - inaccessible

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Remarks:

No further information was available concerning this well.

E. O'BRIEN (12)

Approximate Distance to Quarry (Pit 2) - 600 feet

Well Depth - 27 feet

Remarks:

Mr. D. Weaver, owner of the property at the time of the initial survey, stated that the well had been cleaned out in the spring of 1970, but did not report any previous water shortage.

Mr. E. O'Brien assumed occupancy of the property on June 15, 1971. Water shortages were reportedly encountered in early August and he was forced to conserve water throughout the remainder of the fall. Tanked water supplies were required in November, 1971, but subsequently the well was able to supply sufficient water to meet domestic needs.

Although water-supply shortages did not occur during 1972, Mr. O'Brien has made careful use of the well supply to avoid a shortage.

HALBECK - PARKS (13)

Approximate Distance to Quarry - 2000 feet

Well Depth - 30 feet

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Remarks:

No water shortage was reported by Mr. Parks during his period of residence, terminating in late 1971.

D. TEAL (14)

Approximate Distance to Quarry (Pit 2) - 6300 feet

Well Depth - 50 feet (constructed October 20, 1961)

Static Level on Completion - 15 feet

Remarks:

Mr. Teal reported a water shortage in November, 1971, but the well subsequently yielded adequate water supplies.

During a brief pumping test, rapid drawdown and a slow recovery was observed indicating poor water-yielding conditions. On each ensuing visit, the water level was observed to recover, until the well was made inaccessible in February 1, 1972. No further water shortages were reported in 1972.

L. FORD (15)

Approximate Distance to Quarry (Pit 2) - 6000 feet

Well Depth - 45 feet

Remarks:

The well is used for domestic purposes and no water shortages have been reported during the monitoring period.

6

T. BILTON (16)

Approximate Distance to Quarry (Pit 2) - 4,200 feet

Domestic Well Depth - 70 feet

Water level - 18 feet, July 30, 1949

Remarks:

A 12-inch diameter abandoned gas well on the property was equipped with a water-level recorder in November, 1971. The domestic well has reportedly yielded sufficient supplies during the monitoring period, but Mr. Bilton stated that the well was used carefully during prolonged dry periods.

L. BILTON (17)

Approximate Distance to Quarry (Pit 2) - 4,200 feet

Well Depth - 30 feet (constructed July 29, 1959)

Static Level on Completion - 10 feet

Remarks:

The house well also supplies about 30 head of cattle. No water shortages were reported throughout the monitoring period.

DYKSTRA & BERGSMA (18)

Approximate Distance to Quarry (Pit 2) - 4,600 feet

Well Depth - 90 feet (house well)

- 106 feet (abandoned well) (constructed Oct. 30, 1951)

Static Level on Completion - 28 feet

6

Remarks:

No water shortages were reported to have been experienced prior to or during the dewatering operation.

J. ROULSTON (19)

Approximate Distance to Quarry (Pit 2) - 5,000 feet

Well Depth - 90 feet

Remarks:

This well is used mainly as a source of supply for livestock and no water shortages were experienced with this supply during the monitoring program.

QUARRY ROAD RESTAURANT (20)

Approximate Distance to Quarry (Pit 2) - 3,500 feet

Well Depth - 27 feet (construction October 30, 1958)

Static Level on Completion - 16 feet

Remarks:

No water shortages were reported during the dewatering operation.

K. CULVER (21)

Approximate Distance to Quarry (Pit 2) - 3,600 feet

Well Depth - 100 feet (constructed July 11, 1947)

Static Level on Completion - 16 feet

Remarks:

No water shortages were reported during the dewatering operation.

6

M. BARTLETTE (22)

Approximate Distance to Quarry (Pit 2) - 3,500 feet

Well Depth - - 100 feet

Remarks:

This well was not used as a source of water supply during the monitoring program, because the water is highly mineralized.

F. RICHARDSON (23)

Approximate Distance to Quarry (Pit 2) - 3,000 feet

Well Depth - 65 feet (constructed September 20, 1957)

Static Level on Completion - 34 feet

Remarks:

This well is equipped with a hand pump and no water shortages were reported by Mr. Richardson during the dewatering operation.

L. GOWAN (24)

Approximate Distance to Quarry (Pit 2) - 4,000 feet

Well Depth - 95 feet (constructed December 2, 1969)

Static Level on Completion - 30 feet

Remarks:

Mr. Gowan reportedly experienced pump problems at various times during the summer of 1971, but did not experience a water shortage at any time. The well was sealed after the

6

November 15, 1971 reading was obtained and has been unavailable for further water-level measurements. No water shortages were reported during 1972.

VILLAGE OF HAGERSVILLE (25)

In 1958, the Village of Hagersville developed two wells in the north part of lot 16, concession 11, Township of Walpole, referred to as the "Nicol Wells". These wells are presently in use to provide municipal water supplies. The wells were not accessible for monitoring purposes; however, Mr. A. Roth, Village Clerk, provided water-level measurements taken by village staff on December 7, 1971. The static level at that time was 32 feet prior to pumping and 40 feet after commencement of pumping.

B. REYNOLDS (26)

Approximate Distance to Quarry - 3,500 feet

Well Depth - 80 feet

Remarks:

The well was reportedly deepened from 27 feet to the present depth in 1935. No shortages were reported to have occurred prior to or during the dewatering operation.

E. SLACK (27)

Approximate Distance to Quarry - 5,000 feet

Well Depth - 90 feet

Information compiled from the 1972 Ministry of the Environment
Investigation of well interference complaints regarding Dufferin Materials and
Constructions Hagerhill Quarry.

- | | | | |
|------------------------|-------------------------|-----------------------------|-------|
| J. Crone (1) | late Sept late Oct 1971 | water shortage reported | (L) X |
| G. Syder (2) | Nov. 9/71 | water shortage reported | (L) X |
| R. Smith (3) | well failed Oct 31/71 | water shortage reported | (L) |
| A. Smit (4) | Oct 20/71 | water shortage reported | (L) |
| G. Roulester (5) | | no water shortage reported | X |
| H. Wilson (6) | late Oct/71 | water shortage reported | (L) |
| B. Sandreematt (7) | Nov. 71 | water shortage reported | (L)? |
| Dufferin (8) | | no shortage reported | X |
| W. Morril (9) | | no water shortages reported | X |
| F. Rainer (10) | | no water shortages reported | X |
| D. Speller (11) | | no information | X |
| E. O'Brien (12) | early Aug 1971 | water shortage reported | (L) |
| H. Bush-Park (13) | | no water shortages reported | X |
| Teal (14) | Nov. 71 | water shortage reported | (L) |
| Ford (15) | | no water shortage reported | X |
| T. Bilton (16) | | no water shortage reported | X |
| L. Bilton (17) | | no water shortage reported | X |
| E. Patra Bergma (18) | | no water shortage reported | X |
| J. Roulester (19) | | no water shortage reported | X |
| Quarry Restaurant (20) | | no water shortage reported | X |
| K. Culver (21) | | no water shortage reported | X |
| M. Bartlette (22) | | no info. well not used | X |
| F. Richardson (23) | | no water shortage reported | X |
| L. Howan (24) | | no water shortage reported | X |

X Denotes water shortage reported Number - 16

Denotes water shortage reported Number - 8

Only 8 reported well interferences of 24 wells surveyed in the investigation

X S.I.N.

Ministry
of the
Environment

119 King Street West
12th Floor
Hamilton ON L8P 4Y7

Ministère
de
l'Environnement

119 rue King ouest
12^e étage
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Ontario

MINISTRY OF THE ENVIRONMENT
WEST CENTRAL REGION
119 KING ST. W.
HAMILTON, ON L8P 4Y7

X Date: 99/05/13

X TO:

Fax: JACOB ZAIDELS

Name: 905-568-1685

Ministry/Branch/Company: AGRA

X FROM:

Name: SIMON GAULTREY

Section: TECHNICAL SUPPORT

No. of Pages (including cover page): 5

If you do not receive the number of pages specified, or if you have trouble reading this copy, please call the number below for assistance.

Telephone: (905)521-7640 - operator
(905)521-7820 - fax number

Comments:

Hi Jacob,
here are my questions, and a couple of maps
to give you an idea of where I am coming from. I
understand that there is a public meeting on May 27th. Can
you respond in the next week or so, so the Ministry can
take a position before the meeting?

ENVIRONMENTAL FORMS
PACKAGE NEW
Nov. 18, 1997

X May 13, 1999

Jacob Zaidels
AGRA Earth & Environmental Limited
Mississauga, Ontario

7
MOE FOI DID NOT
INCLUDE COPY OF
AGRA'S RESPONSE
TO THIS REQUEST
MAY 13/99

X RE: MOE Questions concerning the Hagersville Quarry Report

X Hi Jacob,

As we discussed on the telephone, I am sending a list of my questions concerning the model used in the AGRA report titled *Level 2 Hydrogeological Study in support of a category 2, class A Quarry below the water license Hagersville Ontario*. I would appreciate it if you would investigate and respond in writing to the following points:

- Can you provide a table listing the water levels used to calibrate the model for the five proposed monitoring wells, and the existing flooded quarries.
- The bedrock surface drops by 20 to 30 metres north of the Onondaga Escarpment, and the bedrock depression north of the Escarpment is filled with silt and clay overburden material. How was the Onondaga Escarpment incorporated into the model?
- Data from quarries on the far side of the Hagersville indicate that the hydraulic conductivity of the bedrock increases significantly close to the escarpment. How was this incorporated into the model?
- Regional data indicates that a groundwater divide passes several hundred metres north of the proposed quarry. How does the model support or refute this regional interpretation?
- On a recent site visit to the area, many of the streams marked on the topographic maps were dry, indicating that they are not connected to the regional groundwater system. How do you justify modelling the streams as gaining streams?
- Hydrogeologic conductivity data from aquifer testing at the Hagersville tire fire site indicates that the hydraulic conductivity of the bedrock is close to an order of magnitude higher (1.3 to 4.0×10^{-4} cm/sec) than used in the model. Please explain the different hydraulic conductivities for the two areas. How representative are the slug and pump test data from the site?
- Similarly, actual drawdown from the quarry north of Hagersville was measured at 4.0 metres at a distance of one kilometer north of the quarry and 2.5 meters at a distance of one kilometre south of the quarry. Given these numbers, please justify the significantly smaller drawdown predicted at the proposed quarry. Previous MoE investigations of well interference due to historical dewatering of the abandoned quarries northwest of the proposed site, have concluded that the quarries were responsible for well interference at distance of several kilometres southeast of the abandoned quarries.
- Historical data indicates that the abandoned quarries northeast of the proposed quarry have had to pump at rates of 37.8 to 114 litres/sec (500 to 1500 Igpm), and the existing quarries north of Hagersville must pump at 167 litres/sec (2200 Igpm) in order to dewater the quarries. Given these numbers please justify the prediction that the quarry will need to

dewater at a rate of 2.9 litres/sec (38 Igpm).

- Historical data also indicates that the adjacent quarries are 15 to 30 metres deep and not 10 metres deep as assumed in the model. How would changing the depth of the abandoned quarries affect the model predictions?
- The boundary conditions along the northern end of the model are not described in the report. Please describe what boundary conditions are used along the northern edge of the model.

In addition to the above questions, I also have some questions concerning groundwater quality and the domestic well survey, but I think it would be best to address these concerns after my questions about the model have been dealt with. Please call me at (905) 521-3732, if you need any clarification. My fax number here is 905-521-7820.

X Simon Gautrey, M.Sc.

X May 26, 1999
TK98106

Ontario Ministry of the Environment
West Central Region
119 King Street West
Hamilton, Ontario
L8P 4Y7

Via Fax: (905) 521-7820

Attention: Mr. Simon Gautrey, M.Sc.

X Dear Mr. Gautrey:

X RE: MOE Questions Concerning the Hagersville Quarry Report

Please find below our responses to the questions in your May 13, 1999 fax.

1. Table listing the water levels used to calibrate the model and existing flooded quarries

Response: The table showing the water levels in 5 monitoring wells and the flooded abandoned quarries northeast of proposed quarry is presented below:

Wells	Water Levels Used for Model Calibration (masl)
MW-1	215.07
MW-2	216.49
MW-3	218.56
MW-4	217.88
Farm House	216.52
Abandoned Quarries	217-221*

* Depending on the simulated variant.

2. Bedrock surface drop north of the Onondaga Escarpment

Response: This feature was taken into account by the model. It was assumed that the bedrock surface deepens by about 20 m north of the Onondaga Escarpment. Accordingly, the overburden was assumed to be thicker in that area.

3. Hydraulic conductivity of the bedrock close to the Onondaga Escarpment

Response: This feature was taken into account by the model. Hydraulic conductivity of the bedrock at the elevation of the proposed quarry floor was assumed to be 4-5 times less than in the Onondaga Escarpment area.

4. Groundwater divide north of the Proposed Quarry

Response: According to the developed groundwater flow model, the simulated groundwater divide (base case scenario) is located about 800 m - 1000 m north of the Regional Road 9 and the proposed quarry (west of Regional Road 18). This is very close to the location of the Regional Ground Water Divide shown in Figure 3 from the Jagger Hims report (Jagger Hims Limited, February 1996) attached to your fax (May 13, 1999). In the area of the abandoned quarries, east of the Regional Road 18, the simulated groundwater divide (base case scenario) runs closer to the Regional Road 9 than the interpreted one. In the Hagersville area (about 2,000 m - 3,000 m east of the proposed quarry) the distance between computed and interpreted groundwater divide reaches about 500 m - 700 m. However, this discrepancy is not expected to effect the simulated impacts of the proposed quarry dewatering more than the uncertainty in other parameters, addressed in the conducted sensitivity analysis.

5. Connection of local streams to Groundwater System

Response: The developed groundwater flow model was calibrated to the fall 1998 data. At that time most of the streams in the area were flowing. The fact that some of them appear to be dry now may not be a typical situation due to the extremely dry weather conditions observed during 1998 and 1999.

6. Hydraulic conductivity data for the Hagersville Tire Fire Site

Response: According to hydrogeologic interpretation conducted by Trow, Dames & Moore (1990) for the Hagersville Tire Fire Site the hydraulic conductivity values for the weathered shallow bedrock are estimated to be about 1×10^{-4} cm/s. Note that this is the horizontal conductivity value because of the majority of fractures occurring along bedding planes. Fracture orientation was reported to be north-south predominantly (Monenco, 1990). In the developed model, hydraulic conductivity of the Bois Blanc Formation in this direction was taken as 5×10^{-5} cm/s (base case) and 1.5×10^{-4} cm/s (Variant 2). Hydraulic conductivity of the Onondaga Formation was taken as 5×10^{-4} cm/s and 2×10^{-4} cm/s (north-south and east-west directions, respectively). These values are supported by the site-specific slug and pump test results (Harrington and Hoyle Ltd; AGRA E&E 1999; Appendix B). According to the slug test data estimated hydraulic conductivity of the Bois Blanc Formation varied from 3.2×10^{-6} cm/s to 3.9×10^{-5} cm/s (Farm House Well and MW-1, respectively). Using the above hydraulic conductivity values, the computed sustainable rate of pumping from a single well screened over the depth of 10 m was estimated to be about 2 l/gpm, which is close to the observed average sustainable yield of the tested wells approximately 1 to 1.5 gpm. From this we conclude that hydraulic conductivities utilized in the model are representative of the site-specific conditions. Possible uncertainties in the hydraulic conductivity values were addressed by the sensitivity analysis.

7. Actual drawdown from the existing and abandoned quarries versus predicted drawdown for the Proposed Quarry

Response: Analysis of the interpreted actual drawdown from the quarry north of Hagersville (Figure 8, Jagger Hims Limited, 1996) shows that the distance between the drawdown contours first decreases to the south until the contour of about 3.5 m and then increases between contours of 3.5 m and 2 m. However, under the steady-state water flow regime, the drawdown contours should gradually condense as they approach the sink (i.e., the dewatered quarry in this case) if the hydraulic conductivity of the aquifer is assumed to be uniform. Contradiction between theoretical distribution of the drawdown contours and the observed/interpreted data for the Hagersville Quarry can be explained by significantly higher hydraulic conductivity values close to the quarry and further north. This conclusion is consistent with the fact that hydraulic conductivity of bedrock increases significantly close to the Onondaga Escarpment. Regarding the drawdown caused by currently abandoned quarries to the northeast of the proposed site. These quarries appear to be nearly two times deeper than the proposed one (MOE comment 9) and may be penetrating a more permeable deeper zone. From this we conclude that the differences between predicted drawdown for the proposed quarry and existing/abandoned ones could be caused by higher hydraulic conductivity values and/or deeper excavation. In addition to this, abandoned quarries located close to the proposed one, act as reservoirs providing water for area further south-west from them, therefore mitigating the impact of water extraction from the proposed quarry.

8. Historical data on the pumping rates from the Abandoned and Existing Quarries

Response: The predicted flow rate of 249 m³/day (2.9 litres/sec or 38 l/gpm) for the proposed quarry corresponds to the base case scenario only. The simulated flow rate is about 640 m³/day (7.4 litres/sec or 98 l/gpm) for the simulated variant 2 with increased hydraulic conductivity values. Secondly, these flow rate values correspond only to the groundwater flow component into the quarry. Adding the direct precipitation minus evaporation (assumed to be about 250 mm of water per annum) within the proposed quarry area results in the estimated dewatering rates of about 10 - 15 litres/sec (136 l/gpm - 198 l/gpm). Note that these numbers correspond to the stabilized long-term dewatering rates. Higher reported rates for the abandoned and existing quarries can be attributed to the deeper excavation of abandoned quarries (nearly by a factor of 2) and more permeable formation close to the Hagersville Quarry (see the reply on comment 7).

9. Historical data on the depth of the adjacent Abandoned quarries

Response: The fact that the adjacent abandoned quarries appear to be deeper than 10 m, as was assumed in the model, is expected to result in better hydraulic connection between the quarries. This will increase the mitigative effect of the abandoned quarries, and therefore, reduce the predicted impacts caused by the dewatering of the proposed quarry.

10. Boundary conditions along the northern end of the model

Response: In the western portion of the model the groundwater flow was assumed to be predominantly towards the local creeks running through the Credit Indian Reserve area north of the

Indian Line Road 20. These creeks were simulated as drain nodes. In the eastern portion of the northern boundary the local flow was assumed to be predominantly towards the existing quarries. They were simulated as constant head nodes. "No-flow" condition utilized for the rest of the northern portion of the model boundary represented the interpreted flow direction along this boundary, towards the local discharge zones. Note that the northern end of the model appears to be on the other side of the interpreted and simulated regional groundwater divide and predicted impacts do not extend into that area. Therefore, boundary conditions along the northern end of the model are not expected to affect the simulated results.

Please do not hesitate to contact the undersigned if you have any questions.

Yours truly,
AGRA Earth & Environmental Limited



X Jacob Zaidel, Ph.D.
Senior Analyst Computer Modelling

9
X June 4, 1999

MEMORANDUM

X TO: Barb Ryter
Environment Planner

X FROM: Simon Gautrey
Water Resources Unit

X RE: Nicols Gravel Limited proposed Hagersville Quarry

I have reviewed the report titled *Level 2 Hydrogeological Study in Support of a Category 2 Class A Quarry Below Water License Hagersville, Ontario* prepared by AGRA Earth and Environmental Limited, on behalf of Nicols Gravel Limited. The report attempts to document existing geologic and hydrogeologic site conditions and evaluate the effect of quarry operations on water resources and groundwater consumers in the area. The report is insufficient to support the application and the proposal should not be approved.

Background and Hydrogeology

The proposed quarry is located two kilometres southwest of Hagersville, on the north side of Highway 6. The area of the proposed quarry is 94.3 hectares and consists of a strip of rectangular properties extending from the CN railroad to Road 9. There are four other quarries between Hagersville and the proposed quarry which were abandoned in the 1970's, and they are now filled with water. Northeast of Hagersville there is also an operational quarry operated by Lafarge. In the past, there have been several well interference complaints from both the operational and abandoned quarry. Several of the complaints related to the abandoned quarries have been documented in a 1972 Ministry of Environment report titled *Report on the Investigation of Well Interference Complaints near Hagersville*. This report concluded that the deepening of a quarry from 15 to 27 metres caused well interference of several domestic wells at distances of several kilometres. The proposed quarry will be 15 metres deep.

The geology of the site consists layers of porous, fractured bedrock overlain by two to four metres of glaciolacustrine clay. The bedrock consists of approximately two metres of limestone of the Onondaga Formation, over eight metres of limestone to shaley limestone of the Bois Blanc Formation, over the Springvale Sandstone and the Bertie Formation. Water quality in the bedrock declines with depth, and many of the deeper domestic wells in the area have sulphur tasting water.

One to two kilometres north of the site, the bedrock surface drops sharply along the buried Onondaga Escarpment from close to surface to depths of more than 20 to 30 metres below ground. North of the Escarpment, the bedrock low is filled by overburden material and the Escarpment is not visible on surface. South of the Escarpment, the bedrock slopes gently down towards Lake Erie. The Escarpment is an important Hydrogeological feature. It represents a high point in the bedrock

aquifer, and a groundwater divide exists in the upper bedrock between the proposed quarry and the Escarpment. The Escarpment also associated with higher hydraulic conductivity values in the bedrock. Hydraulic conductivity is a measure of the materials ability to transmit water and is an important parameter to determine if the impacts of quarry dewatering are to be accurately predicted. The increased hydraulic conductivity close to the Escarpment means that the impacts from the Lafarge Quarry north of Hagersville will affect a wider area relative to the proposed quarry.

Report Methodology and Assumptions

The report relies heavily on a computer model (Visual Modflow version 2.6) to predict the impacts of the quarry on existing groundwater resources in the area. The results of computer models are highly dependent on what information was inputted into the model, and changing key assumptions or input parameters by a small amount can greatly affect the predicted impact (garbage in, garbage out). In this case, the model relies on very limited data from five on site wells collected in two days in November 1998 to characterize groundwater conditions over an area measured in square kilometres for a 50 year period. This information was supplemented with topographic maps and data from the Hagersville Tire Fire site, located more than seven kilometres away. The limited database of field data greatly reduces the amount of confidence that can be placed in the model.

The Ministry had several questions about the computer model which were subsequently addressed by the consultant in a May 26 1999 fax. However, after reviewing the data provided by the consultant, the Ministry remains concerned that the proponent has not provided sufficient data to support the models initial conditions and the available field data used to select the hydraulic conductivity is not representative.

The initial, pre dewatering conditions relied heavily on topographic maps in order to estimate groundwater levels from elevations of streams in the local area. In doing this, the consultants assumed that a hydraulic connection exists between the streams and the bedrock. This may be a reasonable assumption for the larger streams in the area such as Sandusk Creek or the stream along the northern boundary of the model. However, anecdotal evidence, supported by field observations from May of 1999 and data from 1:10,000 topographic maps indicates that several of the smaller streams are dry during the summer months, suggesting these streams only flow in response to surface runoff and are not connected to the bedrock aquifer. Without groundwater data in the form of water levels from nearby wells and mini piezometers along the creek, it is not safe to assume the streams reflect bedrock water levels conditions. This important along the west side and south side (Harlop Drain is feed by the Municipal Sewage Treatment plant) of the quarry, where the presence of streams appears to mitigate predicted impacts. However, if a good hydraulic connection between the streams and the bedrock does not exist, actual quarry impacts may be greater than predicted by the model.

Similarly, the Ministry is concerned that the hydraulic conductivity values selected for the model underestimate actual conditions. Slug tests and single well pumping tests only estimate the hydraulic conductivity of the rock immediately adjacent to the wells, and may miss vertical fractures in the rock which are capable of transmitting large volumes of water. In a fractured bedrock like this one, the actual "bulk" hydraulic conductivity of the rock is commonly much higher than the hydraulic conductivity determined from slug and single well pump tests. Furthermore, slug test and single well

pump tests are notoriously inaccurate, and the actual hydraulic conductivity may be wrong by a multiple of ten or more.

The lack of adequate field data for this study means that there is a strong probability that the actual impacts of the quarry will be much greater than impacts predicted by the model. As a result, model variant 2 should be considered the most accurate scenario, but may still underestimate actual quarry impacts.

Ministry concerns about the domestic well survey

The domestic well survey completed by the consultant is completely inadequate. During the survey, a total of two residents were contacted in person, out of the many of households and businesses in the area likely to be impacted. Of those two households visited, water levels were taken on only one occasion, and samples for chemical analysis were not collected from either of the two wells. The proponent should also be aware, that some livestock, particularly poultry, are sensitive to changes in water quality and mitigating well interference by simply drilling a deeper well into an aquifer of poorer quality, may not be satisfactory to the well owner. The Ministry will not approve this application until a thorough domestic well inventory has been completed, with water quality data and multiple water level measurements from each accessible domestic well within the area of potential impact has been collected. A thorough well survey should clearly indicate how the well is used, and if possible, the amount of water used on a regular basis. For those wells which are used for watering cattle, poultry or irrigation, the proponent may wish to record the productivity of the well in a short pump test.

Ministry concerns about the proposed monitoring

The proposed monitoring program suggested by the consultant is also inadequate. A monitoring program acceptable to the Ministry would consist of, but should not be limited to, the following:

1. Quarterly measurements of water levels in the five wells on site (MW 1 to 4, and the farm well).
2. Quarterly measurements of water levels in all accessible domestic wells in the area to be impacted. This area should extend at least one kilometre out from the boundaries of the quarry. After a period of several years, when water level trends have been documented, the number of sites and frequency of measurements can be reduced. Quarterly measurements of water levels need only continue through out the life of the quarry in those wells closest to the quarry.
3. The construction of multilevel monitors in key locations around the perimeter of the site, where they will not be destroyed by quarry activities. The purpose of these wells is to establish permanent monitoring points to provide comparable water level and water chemistry data over the life of the quarry without disruption by quarry activities or changes in permission agreements between domestic well owners and the quarry. Water levels should be taken at these wells on a quarterly basis.
4. Quarterly measurements of surface water levels in the two abandoned quarries to the north and east of the proposed sites.

5. The establishment of mini-piezometers at key locations in nearby surface water bodies to establish groundwater recharge-discharge regimes. These should be monitored on a quarterly basis.
6. Quarterly measurements of stream flow at key points along Harlop Drain and the stream to the west of the proposed quarry.
7. Quarterly water quality measurements in the surface water stream destined to receive water due to quarry dewatering activities.
8. Water quality monitoring from the multilevel monitors and domestic wells.

These monitoring requirements are to establish groundwater conditions before and during quarry dewatering activities and check the models initial conditions. The proponent should also be aware, that it will be necessary to record the amount of water pumped from the quarry and the water quality of that water once dewatering activities begin.

In the mitigation section of the report, the consultant states that "If a complete loss of water can be directly linked to dewatering at this quarry, the quarry operator will arrange for the installation of a new well or make other arrangements with the affected resident to ensure that an adequate supply of potable water is provided." The proponent should be aware that it is not necessary for water loss to be complete before the operator is obliged to correct the problem, and the onus of determining the quarries responsibility in the case a well interference complaint will fall upon the quarry operator. In addition to the above requirements, the quarry must prepare a complaint resolution procedure which is acceptable to the Ministry. The present complaint resolution procedure does not clearly state under what conditions the proponent will take action.

There is the potential that several quarries may begin extraction operations in the area over the 50 year life span of the quarry, and determining who is responsible for well interference will be expensive and complex, unless adequate pre dewatering data is collected. It is in the best interests of the proponent to thoroughly document groundwater conditions before the quarry begins operation to avoid future litigation costs.

Summary

The report prepared by AGRA does not document existing groundwater conditions to the satisfaction of the Ministry, and the Ministry has some concerns that groundwater impacts will be more extensive than shown in the computer model. The Ministry can not approve this application on the basis of the data provided by the proponent. The Ministry recommends that the proponent resubmit the application once the field work outlined above has been completed. This second application should incorporate the new field data and also include a well interference complaint resolution procedure.

X Simon Gautrey.

file: HN HG 06 06
Cc. Paul Odom

Ministry
of the
Environment

119 King Street West
12th Floor
Hamilton ON L8P 4Y7

Ministère
de
l'Environnement

119 rue King ouest
12^e étage
Hamilton ON L8P 4Y7



Ontario

* JUNE 4/99 MOE

J.R. PLANNER

* SIMON GAUTREY
CRITICAL REVIEW.

* DIRECTED TO
H-N REG. PLANNER
CHRIS BELL

X June 14, 1999

X Mr. C. Bell, Planner
Regional Municipality of Haldimand-Norfolk
City of Nanticoke, Planning & Economic Development
Field Office
101 Nanticoke Creek Parkway
Townsend, Ontario
N0A 1S0

X Dear Mr. Bell:

X RE: Proposed Zoning Amendment Application for Part Lot 12, Concession 12
Former Township of Walpole, City of Nanticoke

As per your request, staff have reviewed the report titled *Level 2 Hydrogeological Study in Support of a Category 2 Class A Quarry Below Water License Hagersville, Ontario* prepared by AGRA Earth and Environmental Limited, on behalf of Nichols Gravel Limited and have concluded that its attempt to document existing geologic and hydrogeologic site conditions and evaluate the effect of quarry operations on water resources and groundwater consumers in the area is inadequate.

In terms of hydrogeologic background for this area, the proposed quarry is located two kilometres southwest of Hagersville, on the north side of Highway 6. The area of the proposed quarry is 94.3 hectares and consists of a strip of rectangular properties extending from the CN railroad to Road 9. There are four other quarries between Hagersville and the proposed quarry which were abandoned in the 1970's, and are now filled with water. Northeast of Hagersville there is also an operational quarry operated by Lafarge. In the past, there have been several well interference complaints from both the operational and abandoned quarry. Several of the complaints related to the abandoned quarries have been documented in a 1972 Ministry of Environment report titled *Report on the Investigation of Well Interference Complaints near Hagersville*. This report concluded that the deepening of a quarry from 15 to 27 metres caused well interference of several domestic wells at distances of several kilometres. The proposed quarry will be 15 metres deep.

The geology of the site consists layers of porous, fractured bedrock overlain by two to four metres of glaciolacustrine clay. The bedrock consists of approximately two metres of limestone of the Onondaga Formation, over eight metres of limestone to shaley limestone of the Bois Blanc Formation, over the Springvale Sandstone and the Bertie Formation. Water quality in the bedrock declines with depth, and many of the deeper domestic wells in the area have sulphur tasting water.



One to two kilometres north of the site, the bedrock surface drops sharply along the buried Onondaga Escarpment from close to surface to depths of more than 20 to 30 metres below ground. North of the Escarpment, the bedrock is filled by overburden material and the Escarpment is not visible on surface. South of the Escarpment, the bedrock slopes gently down towards Lake Erie. The Escarpment is an important-Hydrogeological feature. It represents a high point in the bedrock aquifer, and a groundwater divide exists in the upper bedrock between the proposed quarry and the Escarpment. The Escarpment is also associated with higher hydraulic conductivity values in the bedrock. Hydraulic conductivity is a measure of the materials ability to transmit water and is an important parameter to determine if the impacts of quarry dewatering are to be accurately predicted. The increased hydraulic conductivity close to the Escarpment means that the impacts from the Lafarge Quarry north of Hagersville will affect a wider area relative to the proposed quarry.

Report Methodology and Assumptions

The report relies heavily on a computer model (Visual Modflow version 2.6) to predict the impacts of the quarry on existing groundwater resources in the area. The results of computer models are highly dependent on what information was inputted into the model, and changing key assumptions or input parameters by a small amount can greatly affect the predicted impact. In this case, the model relies on very limited data from five on site wells collected in two days in November 1998 to characterize groundwater conditions over an area measured in square kilometres for a 50 year period. This information was supplemented with topographic maps and data from the Hagersville Tire Fire site, located more than seven kilometres away. The limited database of field data greatly reduces the amount of confidence that can be placed in the model.

Staff had several questions about the computer model which were subsequently addressed by the consultant in a May 26 1999 fax. However, after reviewing the initial data provided by the consultant, staff remains concerned that the proponent has not provided sufficient data to support the model's initial conditions and the available field data used to select the hydraulic conductivity is not representative.

The initial, pre-dewatering conditions relied heavily on topographic maps in order to estimate groundwater levels from elevations of streams in the local area. In doing this, the consultants assumed that a hydraulic connection exists between the streams and the bedrock. This may be a reasonable assumption for the larger streams in the area such as Sandusk Creek or the stream along the northern boundary of the model. However, anecdotal evidence, supported by field observations from May of 1999 and data from 1:10,000 topographic maps indicates that several of the smaller streams are dry during the summer months, suggesting these streams only flow in response to surface runoff and are not connected to the bedrock aquifer. Without groundwater data in the form of water levels from nearby wells and mini piezometers along the creek, it is not safe to assume the streams reflect bedrock water levels conditions. This is important along the west and south side (Harlop Drain is fed by the Municipal Sewage Treatment plant) of the quarry, where the presence of streams appears to mitigate predicted impacts. However, if a good hydraulic connection between the streams and the bedrock does not exist, actual quarry impacts may be greater than predicted by the model.

Similarly, the Ministry is concerned that the hydraulic conductivity values selected for the model underestimate actual conditions. Slug tests and single well pumping tests only estimate the hydraulic conductivity of the rock immediately adjacent to the wells, and may miss vertical fractures in the rock which are capable of transmitting large volumes of water. In a fractured bedrock like this one, the actual "bulk" hydraulic conductivity of the rock is commonly much higher than the hydraulic conductivity determined from slug and single well pump tests. Furthermore, slug test and single well pump tests are notoriously inaccurate, and the actual hydraulic conductivity may be wrong by a multiple of ten or more.

The lack of adequate field data for this study means that there is a strong probability that the actual impacts of the quarry will be much greater than impacts predicted by the model. As a result, model variant 2 should be considered the most accurate scenario, but may still underestimate actual quarry impacts.

Ministry concerns about the domestic well survey

The domestic well survey completed by the consultant is inadequate. During the survey, a total of two residents were contacted in person, out of the many of households and businesses in the area likely to be impacted. Of those two households visited, water levels were taken on only one occasion, and samples for chemical analysis were not collected from either of the two wells. The proponent should also be aware, that some livestock, particularly poultry, are sensitive to changes in water quality and mitigating well interference by simply drilling a deeper well into an aquifer of poorer quality, may not be satisfactory to the well owner. The Ministry would not be able to issue a Permit-to-Take Water for this application until a thorough domestic well inventory has been completed, with water quality data and multiple water level measurements from each accessible domestic well within the area of potential impact has been collected. A thorough well survey should clearly indicate how the well is used, and if possible, the amount of water used on a regular basis. For those wells which are used for watering cattle, poultry or irrigation, the proponent may wish to record the productivity of the well in a short pump test

Ministry concerns about the proposed monitoring

The proposed monitoring program suggested by the consultant is also inadequate. A monitoring program acceptable to the Ministry would consist of, but should not be limited to, the following:

1. Quarterly measurements of water levels in the five wells on site (MW 1 to 4, and the farm well);
2. Quarterly measurements of water levels in all accessible domestic wells in the area to be impacted. This area should extend at least one kilometre out from the boundaries of the quarry. After a period of several years, when water level trends have been documented, the number of sites and frequency of measurements can be reduced. Quarterly measurements of water levels need only continue through out the life of the quarry in those wells closest to the quarry;

3. The construction of multilevel monitors in key locations around the perimeter of the site, where they will not be destroyed by quarry activities. The purpose of these wells is to establish permanent monitoring points to provide comparable water level and water chemistry data over the life of the quarry without disruption by quarry activities or changes in permission agreements between domestic well owners and the quarry. Water levels should be taken at these wells on a quarterly basis;
4. Quarterly measurements of surface water levels in the two abandoned quarries to the north and east of the proposed sites;
5. The establishment of mini-piezometers at key locations in nearby surface water bodies to establish groundwater recharge-discharge regimes. These should be monitored on a quarterly basis;
6. Quarterly measurements of stream flow at key points along Harlop Drain and the stream to the west of the proposed quarry;
7. Quarterly water quality measurements in the surface water stream destined to receive water due to quarry dewatering activities and
8. Water quality monitoring from the multilevel monitors and domestic wells.

These monitoring requirements are to establish groundwater conditions before and during quarry dewatering activities and check the models initial conditions. The proponent should also be aware, that it will be necessary to record the amount of water pumped from the quarry and the water quality of that water once dewatering activities begin.

In the mitigation section of the report, the consultant states that "If a complete loss of water can be directly linked to dewatering at this quarry, the quarry operator will arrange for the installation of a new well or make other arrangements with the affected resident to ensure that an adequate supply of potable water is provided." The proponent should be aware that it is not necessary for water loss to be complete before the operator is obliged to correct the problem, and the onus of determining the quarries responsibility in the case a well interference complaint will fall upon the quarry operator. In addition to the above requirements, the quarry must prepare a complaint resolution procedure which is acceptable to the Ministry. The present complaint resolution procedure does not clearly state under what conditions the proponent will take action.

Summary

The report prepared by AGRA does not document existing groundwater conditions to the satisfaction of the Ministry, and the Ministry has some concerns that groundwater impacts will be more extensive than shown in the computer model. In order to fully assess the impacts of the proposed quarry on the area's groundwater resources, staff recommends that the proponent resubmit the application once the field work outlined above has been completed. This second application should

incorporate the new field data and also include a well interference complaint resolution procedure.

Should you have any questions or wish to discuss these comments further, please contact me at (905) 521-7864.

Yours truly,

Barbara Ryter

X Barbara Ryter
Environmental Planning Officer
Air, Pesticides & Environmental Planning

X cc. Mr. J. Evans, AGRA Earth & Environmental Ltd., 440 Phillip Street, Waterloo, Ontario

**Harrington
and Hoyle Ltd.**
LANDSCAPE ARCHITECTS

X August 25, 1999

Joe Strachan
Ontario Ministry of Natural Resources
353 Talbot Street West
Aylmer, Ontario
N5H 2S8

X **SUBJECT: Nichols Gravel Limited Licence Application for Hagersville Quarry
Located in the City of Nanticoke (formerly Walpole Township)**

X Dear Joe:

X As requested, enclosed are two copies of the summary report and site plans submitted in support of an application under the Aggregate Resources Act for a Category 2, Class "A" licence, quarry below the water table, for a 93.97 hectare site located in Part of Lots 10 -12, Concession 12, in the City of Nanticoke, Regional Municipality of Haldimand - Norfolk:

Please advise us if the application is now complete in order that we can proceed with the Notification and Consultation Standards as outlined for a Category 2 Licence Application under the Aggregate Resources Act.

Please give me a call at (519) 740-7250, if you require any additional information for your review of this licence application

Sincerely,

HARRINGTON AND HOYLE LTD.

X *B. Janssen*
BERNIE JANSSEN

BJ/wp
Encls.

c.c. Gary Nichols, Nichols Gravel limited.

RECEIVED AUG 30 1999

✓ 353 Talbot St. W.
Aylmer, Ont.
N5H 2S8
Tel. 519-773-4747
Fax 519-773-9014

August 25, 1999

Harrington and Hoyle Ltd.
Landscape Architects
28 Colborne St.
Cambridge, Ont.
N1R 1R2

✓ Attention: Mr. Bernie Janssen

✓ Dear Sir,

✓ **SUBJECT: REVIEW OF NEW LICENCE APPLICATION**
NICHOLS GRAVEL LIMITED
LICENCE I. D. # 20676
PT. LOTS 11 & 12, CON. 12
CITY OF NANTICOKE (WALPOLE)

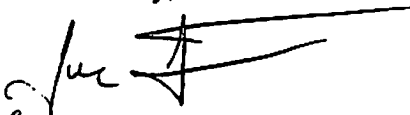
We have now completed our review of the draft application package for the above property.

The application package is complete and you should now proceed with the Notification and Consultation Standards for Category 2 Applications (see attached).

It is your responsibility to submit a summary and written documentation, to this office, showing how you have completed this notification and consultation procedure (ie. proofs of required deliveries with dates, tear sheet of newspaper adds, picture of sign, etc.).

Please call Joe Strachan at this office if you have any questions.

Yours truly,

✓ 
Joe Strachan
Aggregate Resources Inspector
Aylmer District

COPY

12

**Harrington
and Hoyle Ltd.**
LANDSCAPE ARCHITECTS

X August 27, 1999

X Ministry of the Environment
P.O. Box 2112
119 King Street West, 12th Floor
Hamilton, Ontario
L8N 3Z9

X **SUBJECT: Nichols Gravel Limited. Licence Application for a Quarry
Located in Part of Lots 10 - 12, Concession 12
City of Nanticoke, Regional Municipality of Haldimand - Norfolk**

Dear Sir/Madam:

Enclosed is a copy of the completed application form, form 2, the site plans, summary statement and technical reports completed in support of a licence application for the subject site as required in the provincial standards made under the Aggregate Resources Act. The application is for a Category 2, Class "A" quarry below the water table, for 93.97 hectares located on the subject site in the City of Nanticoke. The application is for a new quarry with the annual tonnage limit of 750,000 tonnes.

X The application was determined to be complete on August 26, 1999 and permission was granted to proceed with the notification and consultation procedures as set out in the standards. The 45 day notification period will commence on September 1, 1999.

Please review the complete application package and provide comments (if any), in writing to Harrington and Hoyle Ltd. and Joe Strachan at the Ministry of Natural Resources's office in Aylmer by October 15, 1999 which is the last day of the 45 day notification period. After October 15, 1999, it will be deemed that there are no objections with the application.

Page 1 of 2

Please give me a call at (519) 740-7250, if you require any additional information or have any questions, in order to complete your review of this licence application.

Sincerely,

HARRINGTON AND HOYLE LTD.


X BERNIE JANSSEN

BJ/wp

Encls.

X c.c. Gary Nichols, Nichols Gravel Limited

LICENCE APPLICATION PROCESS

CLASS A CATEGORY 1

	DATE
SUBMISSION/COMPLIANCE (TAB 2)	
Submission of application to MNR (with plan, application fee, form & summary report)	March 5/99
Approval from MNR to proceed to Notification/Consultation	August 26/99
NOTIFICATION/CONSULTATION (TAB 3)	
<i>Public Notice:</i>	
Posting notice to landowners within 120 meters of site, including Form 1 & 2, delivered personally or registered mail	August 30/99
Posting on Property Boundary	Sept 1/99
Publication of Form 1 and 2 in local paper	Sept 1/99
<i>Agency Consultation: Submit complete Application package and Form 2</i>	
• Ministry of Natural Resources	August 31/99
• Local Municipality	August 30/99
• Region/County	August 30/99
• Local Conservation Authority (as required)	August 30/99
• Ministry of Agriculture, Food & Rural Affairs (as required)	August 30/99
• Niagara Environment Commission (as required)	N/A
• Utility Companies (as required)	August 30/99
• Ministry of Transportation (as required)	August 30/99
CONSULTATION PERIOD (TAB 4)	
Public information session	
Required between Sept 22 and Sept 25	Sept 23/99
OBJECTIONS RECEIVED by Oct 1/99 (TAB 5)	

(TAB 6)	<u>DATE</u>
Existing Designation in Official Plan - Bedrock Resources	
Application for Amendment to Official Plan submitted	N/A
Existing Zoning in Zoning Bylaw - "A - Agricultural"	August /98
Application for Amendment to Zoning Bylaw submitted	
Public meeting held under Planning Act	May 27/99
Passing of Amendment(s) to :	
Official Plan	N/A
Zoning Bylaw	
Approval of Official Plan by MMA	

NAME:	Archaeologix Inc.
REPORT:	Archaeological Assessment (Stages 1, 2 & 3) Hagersville Quarry
DATE:	December 1998
REVISIONS:	Addendum Report: August 1999
NAME:	AGRA Earth & Environmental Limited
REPORT:	Level 2 Hydrogeology Study in support of a Category 2 Class A Quarry Below Water Licence
DATE:	January 26, 1999
REVISIONS:	
NAME:	Harrington and Hoyle Ltd.
REPORT:	Natural Environment Level 1 and 2
DATE:	February 1999
REVISIONS:	
NAME:	Aercoustics Engineering Limited
REPORT:	Potential Impact & Control of Noise from the Proposed Hagersville Quarry
DATE:	February 23/99
REVISIONS:	
NAME:	Explotech Engineering Ltd.
REPORT:	Blast Impact Analysis
DATE:	January 22, 1999
REVISIONS:	
NAME:	Harrington and Hoyle Ltd.
REPORT:	Summary Report
DATE:	February 1999
REVISIONS:	
NAME:	
REPORT:	
DATE:	
REVISIONS:	

X Form 2

Aggregate Resources Act

Notice of Public Information Session

I, NICHOLS GRAVEL LIMITED P.O. Box 172
 (Name) (Address)
DELHI, ONTARIO N4B 2W9
 (Postal Code)

Hereby give notice that a Public Information Session will be held on:

September 23/99 at 5:00 - 8:00 PM
 (date) (time)

at the City of Nanticoke's Municipal Office
 (location)
101 Nanticoke Parkway
 (address)
Townsend, Ontario

The purpose of the Information Session is to present the details of the

application for a CATEGORY 2 CLASS "A" LICENCE
 (Category) (Description - Class of Licence)

TO EXCAVATE AGGREGATE FROM A NEW QUARRY.

The location of the proposed ☐ Pit or ☒ Quarry is:

Lots or Part lot(s) 10-12 Concession(s) 12

Geographic Township WALPOLE Local Municipality CITY OF NANTICOKE

County/Region/District HALDIMAND - NORFOLK

OBJECTIONS

72

		DATE
Received from:	Rick & Leah Morris	Sept 16/99
Answered:		Oct 19/99
Response:		Nov 3/99
Received from:	Paul Snyder	Sept 20/99
Answered:		Sept 21/99
Response:		Nov 3/99
Received from:	Nicholas & Luba O'Brien	Oct 11/99
Answered:		Oct 19/99
Response:		Nov 3/99
Received from:	D. Stirling	Oct 18/99
Answered:		Oct 19/99
Response:		Nov 3/99
Received from:	City of Nanticoke	Sept 17/99
Answered:		Oct 19/99
Response:		Nov 4/99
Received from:	Ministry of Environment (fax)	Oct 15/99
Answered:		Nov 24/99
Response:		
Received from:	Region of Haldimand-Norfolk	Sept 24/99
Answered:		Oct 22/99
Response:		Nov 1/99
Received from:	Canadian National Railway	Sept 9/99
Answered:		Sept 15/99 & Nov 26/99
Response:		
Received from:	Ontario Hydro	Sept 24/99
Answered:		Oct 27/99 & Nov 26/99

Response:		
Received from:	Marlene & Tom Phibbs - 67 Letters	Oct 12/99
Answered:		Oct 19/99
Response:		Nov 3/99
Answered:		Nov 12/99
Response:		Dec 2/99
Received from:	Mississaugas of the New Credit First Nation	Oct 15/99
Answered:		Oct 27/99
Response:		Nov 5/99
Answered:		Nov 25/99
Response:		Dec 14/99

X September 15, 1999

Mr. Bernie Janssen
Harrington and Hoyle Ltd.
28 Colborne St.
Cambridge, Ontario
N1R 1R2

Dear Mr. Janssen,

X SUBJECT: Nichols Gravel Limited - Licence Application for a Quarry
Part Lots 10-12, Concession 12, former Township of Walpole
City of Nanticoke

This letter is in response to your request for comments concerning the Aggregate Resources Act licence application made by Nichols Gravel Limited.

The City of Nanticoke Council made the following decision concerning the rezoning application associated with this proposed quarry at its meeting of June 15, 1999:

X *"That we hereby recommend that this application Z-NA-2/98 to amend the City of Nanticoke Zoning By-law 1-NA 86 for lands described as Part Lots 10, 11, 12, Concession 12, former Township of Walpole to change the zoning from Agricultural "A" to Extractive Industrial "MX" be refused as it is incompatible with surrounding land uses and water impact worries."*

Accordingly, zoning which would permit the proposed quarrying use is not currently in place on the lands subject to this licencing application. As you may be aware, the applicant has subsequently appealed the decision of City of Nanticoke Council on this matter to the Ontario Municipal Board.

Should you require any additional information concerning this matter, please do not hesitate to contact this office.

Sincerely,



X Ron Sinden
Deputy Clerk

cc: Joe Strachan, Ministry of Natural Resources

Nichols Gravel Limited

P.O. BOX 172 - DELHI, ONTARIO N4B 2W9 - PHONE (519) 582-3354

X October 18, 1999

X Ministry of the Environment,
119 King Street West,
12th Floor,
Hamilton, Ontario
L8P 4Y7

X Attention: Environmental Planning Officer: Barbara Ryter

X Dear Madam:

X Ref: Application Z-NA-2/98 Part Lot 10-12, Conc. 12, Former Walpole Twp., City
of Nanticoke.

Please find enclosed Freedom of Information request in respect to your letter of June 14, 1999 addressed to City of Nanticoke, Planner Chris Bell and the unsigned Fax letter to our Consultant, Harrington and Hoyle dated October 13, 1999.

It is my understanding that prior to the letter of June 14, 1999 our consultants at Agra responded and supplied further information and clarification to your Ministry. Since I did not receive any of this correspondence and the consultant who prepared the report had shortly thereafter, left the employ of Agra; I am unable to determine if you received appropriate clarification and whether or not all of your concerns are in fact valid.

I am in agreement to most of your proposals, but we are not prepared to be burdened with extreme costs attempting to address generalized concerns which are not clearly defined based on assumption and speculation which would be next to impossible to prove or disprove regardless of how much money is spent, or how extensive the report.

Since your letter of June 14, 1999 is quoted in most of the objections received, it would appear that this letter has served to further inflame the controversy with area residents regarding our proposed Quarry.

My Consultants at Agra have informed me that their previous request for information has been directed through Freedom of Information. Since this matter will be proceeding to the OMB hearing shortly, I request your immediate attention to the F.O.I. request enclosed.

Thank you.

Yours sincerely,



X Gary Nichols, President,
Nichols Gravel Limited

X c.c. Minister of the Environment - Hon. Tony Clement
c.c. M.P.P. Toby Barrett

X Ministry
of the
Environment

Ministère
de
l'Environnement



Freedom of Information and
Protection of Privacy Office

Bureau de l'accès à l'information
et de la protection de la vie privée

40 St. Clair Avenue West
9th Floor
Toronto ON M4V 1M2
Tel. (416) 314-4075
Fax (416) 314-4285

40, avenue St. Clair ouest
9^e étage
Toronto ON M4V 1M2
Téléphone (416) 314-4075
Télécopieur (416) 314-4285

X October 26, 1999

Mr. Craig Kelly
AGRA Earth & Environmental Limited
160 Traders Blvd East, Suite 110
Mississauga, ON
L4Z 3K7

X Dear Mr. Kelly:

X Re: **Freedom of Information and
Protection of Privacy Act Request
Our File Number WCR992610 & WCR992789
Your reference # TC5003/005035 & TK98-10-6**

This letter is in response to both of your requests made pursuant to the Freedom of Information and Protection of Privacy Act relating to the Lafarge Hagersville Quarry and the former Dufferin Aggregates Quarries.

After a thorough search of West Central Regional Office, Hamilton District Office, Approvals Branch, Environmental Assessment Branch, records were located in response to your request. It is my preliminary decision to provide partial access to the information as the identity of private citizens will be removed to protect privacy (section 21(1)(f) of the Act), staff advice provided to senior management will be removed to encourage that advice (section 13 of the Act) and it may be necessary to contact the third party to determine if there are corporate confidential records (section 17 of the Act).

In accordance with section 57 of the Freedom of Information and Protection of Privacy Act, the fee estimate is:

Search time 1.5 hrs @ \$30./hr.	\$45.00
photocopying approx. 1000 pages @ \$0.20	200.00
preparation time 1 hour @ \$30./hr.	30.00
delivery	3.00
Total	\$278.00
deposit received (2 requests)	85.00
Additional deposit required	\$96.50

Please forward to me at the above address a cheque made payable to the Minister of Finance (FOI) in the above amount in order that we may continue processing.

If you object to any decision I have made, you may request a review by contacting the Information and Privacy Commissioner, 80 Bloor Street West, 17th Floor, Toronto, M5S 2V1. Please note that there is a \$25.00 fee and you only have 30 days from receipt of this letter to request a review.

SENT BY: AGRA E & E

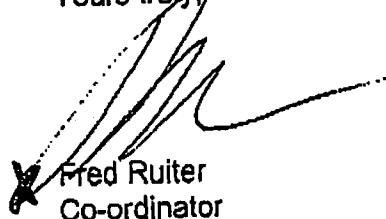
: 1-12- 0 : 16:29 :

519 582 2143: #25/2:

15

If you have any questions regarding this matter, please contact me.

Yours truly,



Fred Ruiters
Co-ordinator

CC: K. Chang, B. Hislop

Ministry
of the
Environment

Freedom of Information and
Protection of Privacy Office

40 St. Clair Avenue West
9th Floor
Toronto ON M4V 1M2
Tel. (416) 314-4075
Fax (416) 314-4285

Ministère
de
l'Environnement

Bureau de l'accès à l'information
et de la protection de la vie privée

40, avenue St. Clair ouest
9^e étage
Toronto ON M4V 1M2
Téléphone (416) 314-4075
Télécopieur (416) 314-4285



15
Ontario

November 23, 1999

Mr. Gary Nichols
Nichols Gravel Limited
P.O. Box 172
Delhi, ON N4B 2W9

Dear Mr. Nichols:

RE: ***Freedom of Information and
Protection of Privacy Act Request
Our File #WCR992930
Your Reference #***

This letter is in response to your request made pursuant to the *Freedom of Information and Protection of Privacy Act* relating to an environmental planning matter in Nanticoke/Haldimand, Ontario.

After a thorough search of the Hamilton District Office, records were located in response to your request. It is my decision to provide full access to the information.

To provide you with a copy of the records and in accordance with Section 57 of the *Freedom of Information and Protection of Privacy Act*, the fee is:

• Search Time 7 hours @ \$30/hour	\$210.00
• Photocopying approx. 234 pages @ \$0.20	46.80
• Preparation Time 1 hour @ \$30/hour	30.00
• Delivery	3.00
• Total	\$289.80
• Deposit Required (50%)	\$144.90

Please forward to me at the above address a cheque made payable to the Minister of Finance (FOI) in the above amount in order that we may send you the records. Should you no longer require the records, please remit \$30.00 for the work undertaken.

SUPPOSE
RESPOND NO.
THIS RESPON
NOV 24/99 51
DAY AS MY. 11
DELIVERED LE
RECEIVED IN
HAMILTON.

If you object to any decision I have made, you may request a review by contacting the Information and Privacy Commissioner, 80 Bloor Street West, 17th Floor, Toronto, M5S 2V1. Please note that there is a \$25.00 fee and you only have 30 days from receipt of this letter to request a review.

If you have any questions regarding this matter, please contact me.

Yours truly,


Fred Ruiters
Coordinator

c: B. Hislop

Nichols Gravel Limited
P.O. BOX 172 - DELHI, ONTARIO N4B 2W9 - PHONE (519) 582-3354

X November 23, 1999

X Ministry of the Environment,
119 King St. West,
12th Floor,
Hamilton, Ontario
L8P 4Y7

99 NOV 24 19:39

X Attention: Environmental Planning Officer, Barbara Ryter

X Dear Madam:

In reference to your June 14, 1999 letter apparently your staff did not review our Level 1 & 2 Hydrogeological report very well.

A statement subject to speculation is quote: "The increased hydraulic conductivity close to the Escarpment means that the impacts from the LaFarge Quarry north of Hagersville will affect a wider area relative to the proposed quarry.", unquote. I do not perceive any relevance to anything in that statement. In the first place the La Farge operation almost borders the Escarpment. Our proposal is at least 2 kilometers away. Further more I don't know how such a connection could be determined unless La Farge has made an impact study of their operation in relation to the area of our proposed quarry. Has that been done?

It is further stated under Report Methodology and Assumptions, quote: "In this case, the model relies on very limited data from five on site wells collected in two days in November 1998 to characterize groundwater conditions over an area measured in square kilometers for a 50 year period.", unquote. I disagree with this statement that the model relies on very limited data from five on site wells. I suggest that in fact we have provided extensive data over and above that normally provided. My information is that the modeling pump test is usually conducted on one on site well only.

Part of that conclusion comes from my estimates for Level 2, Hydrogeological assessment provided by Consultants Agra and Stanly Consulting who have both indicated a pump test on one well only. (See estimates enclosed) My information is at this point, that previous Hydrogeological reports produced for La Farge conducted testing on only one well. In that respect I require clarification as to why testing on five well sites is considered limited data in comparison.

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I take exception to determinations arrived at and comparisons used by your Ministry to arrive at such conclusions in respect to: May 13 question to Jacob Zaidel and his response May 26 numbers 1-10.

1. Table of water levels: Provided by Agra.
2. Onandaga Escarpment Impact on model: Explained by Agra.
3. Hydraulic conductivity close to Escarpment: Explained by Agra.
4. Regional groundwater divide impact: Explained by Agra.
It should be noted that the Regional groundwater divide passes 2000 to 3000 meters north and east of our proposal, whereby it passes directly through the extraction area of the La Farge Quarry. Is there some relevance to this question? It would seem that this did not present a problem for La Farge.
5. Gaining streams: I find no attempt by our Consultants to make any correlation of impact on the water table by streams in the area which provide drainage for surface run off and at certain times of the year are completely dry. I believe it would be quite impossible to make such a correlation of impact based on variable, inconsistent and no flow conditions. How then is this relevant?
6. Hydrogeologic conductivity data Hagersville Tire Fire site comparison fully explained by Agra. I disagree with attempting to correlate a comparison of two sites seven kilometers apart with differing site specific conditions which could relate to a number of various factors. In this respect not relevant without comparable testing on both sites as to porosity of rock, density of rock and other geological evaluations.
7. La Farge Hagersville drawdown comparison: Explained by Agra.
I find the drawdown numbers quoted do not correspond to the Map of interpreted drawdown provided by M.O.E. from Jagger Hims. Upon closer inspection I note the date of February 1996. It is my information that a later report was required for the most recent expanded dewatering program at La Farge in 1997. If this is in fact correct, I question as to why our consultant was provided with outdated information and not the most up to date information available. How can our Consultant be expected to accurately respond, if we are not provided with the same information that you are quoting from? This is like saying how do you compare an apple to an orange? The simple answer is, you don't.

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8. Attempted comparison of the previous dewatering rates of Dufferin and present dewatering rates of La Farge to our projected dewatering rates. Explained by Agra.

My conclusion, a comparison is not possible because there is no comparable here to our proposal.

The 1972 report by B.T. Beswick, Page 1 states that dewatering rates at Dufferin were in the order of 500 gallons per minute until 1971. At the deepening of the quarry in 1971 from 50' to 90', dewatering commenced at the rate of 1500 gallons per minute, which almost immediately caused well interference in the lower aquifer. Our information is that there was no reported well interference until that time. Our proposed extraction on our site plan is 15 meters or approximately 50'. There is no comparable here, so why is your Ministry attempting to make a comparable to something not proposed or that will not take place. In respect to the comment that La Farge must pump at 2200 gallons per minute, Mr. Gautrey failed to mention that the only reason La Farge must pump at this rate is so they can extract a 4th lift deeper in the quarry similar to what Dufferin attempted in 1971. Again there is absolutely no comparable to our proposal, but Mr. Gautrey requests that our consultants justify our numbers based on these comparables. I find this to be a complete deception and misrepresentation of fact.

9. Modeling based on adjacent quarry depth of 10': Explained by Agra.
10. Boundary conditions along northern edge of model: Explained by Agra.

In respect to your letter of June 14, 1999, I have identified a number of inaccurate statements:

1. Quote, Page 1: "Several of the complaints related to the abandoned quarries have been documented in a 1972 Ministry of Environment report titled "Report on the Investigation of Well Interference Complaints" near Hagersville. This report concluded that the deepening of a quarry from 15 to 27 meters caused well interference of several domestic wells at a distance of several kilometers. The proposed quarry will be 15 meters deep.", unquote.
In respect to the statement of well interference of several domestic wells at a distance of several kilometers, I find no such statement or conclusion in this report. No, not there!
2. The geology of the site consists of porous, fractured bedrock overlain by two to four meters of glaciolacustrine clay. In respect to the statement; the geology of the sites consists of porous, fractured bedrock. No, not according to the comments of

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B.T. Beswick in his 1972 report, Page 3, quote: "At the quarry site, the bedrock appeared to have moderate permeability, which essentially results from the presence of irregularly distributed fracture systems.", unquote.

I find this comment accurately describes this rock formation, moderate permeability and irregularly fractured, not porous and fractured. Page 4, we have your comment: In a fractured bedrock like this one. This contention is further not supported in our Borehole logs Appendix A which makes comments such as:

BHH1 below 6.3 meters to 15.2 meters thinly to thickly bedded limestone.

BHH2 6.5 meters occasional shale partings to 15.2 meters occasional shale partings.

BHH3 7.6 meters medium bedded limestone to 13.7 meters occasional shale partings.

BHH4 not representative as was not completed past 9.4 meters.

These results indicate that this deposit is not highly fractured below 6.3 meters and therefore would not allow a high degree of water infiltration below this level which is further confirmed by the slow recover rate in the well slug tests report.

On November 11, 1999 an extended drilling program was conducted on site with the express purpose, to identify at what depth water would be contacted within the bedrock. The drilling of 4 additional well sites for future monitoring was done by Gibbons Contracting of Fort Erie, with Hydrogeologist Craig Kelly of Agra attending to record the information. A full report will be provided by Agra upon completion of our final report subject to receiving F.O.I. information as requested from M.O.E. The hole drilled in the central section on a rock outcrop at our proposed start of extraction was of particular interest. This hole was drilled to a depth of 38' before some dampness was encountered. This hole was checked with a water recording instrument by Craig Kelly and recorded no water. Another hole was drilled at the base of the south Hydro transmission tower. Water was not contacted until 27'6" depth. This contact with water would appear to be accurate as old gas well log records that we have located for the area confirm water contact on average at approximately 30 to 35' or deeper. The fact that these two drill holes on site did not make water contact until 27' to 38' compared to the fact that the west quarry contains water at a level of 12' from the surface of the bedrock, would further indicate that the true water table is not controlled or directly affected by these bodies of water and that this rock deposit is tight allowing very little water infiltration which confirms and supports the findings in our modeling report.

I suggest that this information should dispel any future speculation by the M.O.E. or the residents regarding future impacts of our proposal in respect the actual water table. In this respect we intend to extract this deposit on two lifts of approximately 24'. We do not intend to proceed to full depth extraction until required. In that way we shall

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avoid the immediate and continued expense of dewatering until it becomes necessary. We calculate that at our projected rate of extraction of 100,000 tonnes per year to start, that it could be approximately 20 to 30 years before we shall require a permit to take water, unless it is required to pump to wash and process aggregate on site.

Ministry concerns about the domestic well survey. I find some of your comments to be inaccurate and misleading. Quote: "During the survey, a total of two residents were contacted in person, and of those two households visited water levels were taken on only one occasion.", unquote. The report indicates that the well of George Gowan was measured with water recorded 7.8 meters below ground level. It also indicates that at that point Mr. Gowan was agreeable to allow monitoring of his well but recently we received no response to our circulation of October 29, 1999. A survey was done at the residence of Wendy Parker, although the report does not indicate a measurement of water level. This could be explained under quote: condition of the top of well casing "filled with water", unquote. Also the residence of John Taylor which is at the location of the proposed quarry has well measurement at 3.77 meters to water from top of casing. My count is that three households were contacted in person with two confirmed wells checked.

Our report indicates that a total of 11 residences were visited with no responses at 9 houses. Of the 9 residents at least 7 use a cistern as their water supply which are filled as required, therefore these 7 would most likely not be adversely impacted by dewatering. This in fact only left 2 residences that should have been contacted.

Recently, October 29, 1999, it was attempted to invite all 17 of those listed as impacted at 50 years at quarry completion to participate in a well monitoring program and additionally Mr. & Mrs. Tom Phibbs who have expressed concern.

The response from that circulation of 18 residences was that 2 agreed to participate. This offer remains open, but we cannot force the residents to participate. I suggest that we can proceed no further in this respect at this time with the confrontational attitude that exist leading up to the O.M.B. hearing.

I am enclosing a response from Mr. Doug Wilson that seems to express the attitude of area residents at this time. I am quite prepared upon approval of our application to again contact the residents, as this offer of well monitoring remains open and subject to discussion along with the recommendations in your letter of June 14, 1999 and in any event will no doubt become part of the conditions for issuance of a Permit to take water prior to dewatering.

In response to your Summary, our latest drilling program has confirmed the true water table level and existing groundwater conditions on site.

In that respect I request that your staff fully review our Level 1 and 2 Hydrogeological report taking into consideration this latest information relative to the calculations in the report.

Since our Consultants cannot complete a final report until we have received the F.O.I. information from your Ministry as requested, this could conceivably take another 60 to 90 days.

Therefore please accept this letter as your response to your circulation letter of response, October 13, 1999.

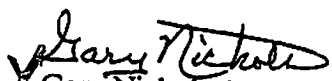
The Ministry of Natural Resources allows that if there is no response to this letter within 20 days that we may proceed to the O.M.B. hearing process.

In view of the speculation, misrepresentation and falsity of fact from your office regarding our Hydrogeological report provided in your letter of June 14, 1999 to Mr. Bell and in turn provided to area residents, I question as to what was the motivation for this action. The facts confirm to me that your office has not provided an impartial, unbiased review of our report. Do we have some sort of conspiracy at work to delay or prevent this application from proceeding?

You should be aware that if these concerns remain unresolved, we most certainly shall require yourself and Mr. Gautrey to attend the O.M.B. hearing in order to provide evidence in this regard. I shall expect a response to this letter at your earliest convenience.

Thank you for your co-operation in this respect.

Yours sincerely,


 X Gary Nichols, President
 Nichols Gravel Limited

X c.c. M.P.P. Toby Barrett

WORK REQUEST

Form Version 94.1

For work by the Regional Water Resources Unit

Send to: Chief, Water Resources Unit
Technical Support Section
HAMILTON Regional Office
119 King St.W. 12th Fl.

Type of Field Work:
Work Meeting Attendance:
Document Review: ☒
Document Writing:

Client: ☒ Originating Officer: - Barb Ryker

Originating Section/Office: APEP

Name of Issue: Nichols Quarry - Hagersville

Site/Waterbody Name: groundwater

Location/Township: Walpole - Hartwick Lot: 10-12 Concession: 12

Expected Result of Work Request: Planning approvals to enable establishment of quarry have been appealed to OMB. Our review of hydrogeology report indicated that it was deficient. Attached letter and supplementary material is in response to our comments.

Document Title: letter from proponent @ attachments

Author Company:

Rpt. Date (MM/YY): 11 199

Review in Entirety: ☒

OR review Chapter(s):

OR review page(s):

ORIS/SAC #

Prior TAS personnel: Simon Gauthrey (23006560)

MMA #

Potential Court/Hearing (Y/N)? Y!!

Status:

New:

Revised:

Ongoing: ☒

Response to MOEE Request:

Priority:

[] For information only:

Requested

[E] As time permits:

[D] Low:

[C] Moderate:

[B] High:

[A] Immediate: ☒

If Request is High or Immediate, INDICATE REASON

Human Health Impacts

Environmental Damage

Legal Issue ☒

Political Issue ☒

Emergency Provisions

Date of Submission: NOV 25/99

Date response required: ASAP

Authorization by District Officer/Unit Head (Initial):-

This Section to be Completed by Water Resources Unit

Assigned by:

To:

Assigned Status:

Groups involved:

Both []

Surface Water []

Groundwater []

Review with me: []

Related Project #:

Date Assigned:

Project #: TAS 9

Also See TAS #

Comments:

WCR Ultimate Destination File Code:

X
Ministry
of the
Environment

119 King Street West
12th Floor
Hamilton ON L8P 4Y7

Ministère
de
l'Environnement

119 rue King ouest
12^e étage
Hamilton ON L8P 4Y7



X December 31, 1999

X Chief Carolyn King
Mississaugas of The New Credit First Nation
R.R. #6
Hagersville, Ontario
N0A 1H0

X Dear Chief King:

Re: *Nichols Quarry Proposal*

Thank you for providing me with copies of correspondence pertaining to the Nichols Quarry proposal. I would like to take this opportunity to advise you as to the Ministry's involvement in this matter.

Back in April, 1999, I was asked to provide comments to the Regional Municipality of Haldimand-Norfolk as to the adequacy of the hydrogeologic assessment that had been prepared for Mr. Nichols in support of both the rezoning and pit licence applications required to enable the establishment of a quarry operation upon this property. As the property was already designated to permit extraction, the principle of aggregate extraction had already been established. The rezoning and subsequent licence from the Ministry of Natural Resources would set the "conditions" under which extraction could occur.

As you may be aware, a "protocol" has been established between this Ministry and the Ministry of Natural Resources with respect to the manner in which applications for aggregate expansion will be reviewed. Prior to the protocol, this Ministry would request the proponent of an extractive operation to provide technical assessment as to the potential for adverse affects as a result of the operation (that is, impacts to water resources and emissions to the atmosphere including noise and particulates) and the mitigative measures that would be incorporated into the extractive operation to minimize these impacts to acceptable limits. The protocol now restricts this Ministry's involvement to two areas: first, to augment the pit licence review process by the Ministry of Natural Resources, we review any hydrogeologic assessments that are required whenever extractive proposals indicate that extraction below the water table is to occur. Second, any legislative requirements pertaining to Section 9 of the Environmental Protection Act (pertaining to approvals required for any equipment which may discharge a contaminant into the atmosphere) must be met.

Accordingly, the hydrogeologic assessment which was provided by the Region of Haldimand-Norfolk was reviewed. The review concluded that the assessment that had been done was

inadequate. Because of the methodology and amount of data used, the predicted level of impacts as a result of the quarry operation is questionable. The concerns of Ministry staff with respect to the assessment which was undertaken were communicated in my response back to the Region of Haldimand-Norfolk dated June 14, 1999. A copy of these comments was also provided to the consulting engineer responsible for the assessment.

Since that time, additional correspondence has been received by this office. However, no new technical information was submitted to address Ministry concerns. We anticipate the receipt of further technical assessment in the near future, at which time staff will review this information to determine whether our concerns have been adequately addressed. Under the protocol, our comments will be directed to the Ministry of Natural Resources.

Should you have any questions, or wish to discuss these comments further, please feel free to contact me at (905) 521-7864.


Yours truly,

Barbara Ryter

X Barbara Ryter
Environmental Planning Officer,
Air, Pesticides & Environmental Planning

enclosed and by believing that the information provided is accurate and complete, the undersigned hereby certifies that the information provided is true and correct to the best of their knowledge and belief.

2000 INDEX

1. January 6, 2000, Letter to M.O.E.
2. January 7, 2000, M.N.R. Referral of Application for Licence to O.M.B.
3. January 18, 2000, O.M.B. Confirmation of Hearing a Prescribed Hearing Fee.
4. January 26, 2000, M.O.E., F.O.I. Fee.
- 
6. February 9, 2000, Letter to M.O.E., F.O.I. Coordinator, Fred Ruiter.
7. April 5, 2000, Letter to M.O.E., F.O.I., Fred Ruiter.
8. April 19, 2000, Solicitor Ostener Report Confirming that M.O.E. Simon Gautry no longer employed by M.O.E.
9. April 26, 2000, AGRA Report to Solicitor Ostener.
10. April 26, 2000, AGRA Response to M.O.E. concerns.
11. June 9, 2000, City of Nanticoke Budget to defend against Application for Quarry.
12. July 17, 2000, Goldervme Limited Review of Blasting Report.
13. July 18, 2000, AGRA Transfer Electronic Files to Dillon Consulting Ltd.
14. July 24, 2000, Dillon Peer Review of AGRA Hydro G. Report.
15. August 31, 2000, Dillon Review of The Harrop Drain.
16. September 4, 2000, AGRA Response to Dillon Review of Hydro G Report.
17. September 12, 2000, Witness Statement from M.N.R. Inspector Joe Strachan.
18. September 13, 2000, R.W.D.I. Dust Impact Assessment.
19. September 18, 2000, Philips Engineering Storm Water Impacts and Harrop Drain.
20. September 22, 2000, Philips Storm Water Report.
21. September 25, 2000, AMEC Draft Discussions and Proposals.
22. September 27, 2000, BLS Planning Associates, Tom Smart Report.
23. September 2000, S.E. Yundt Limited Economic and Resources Considerations.
24. October 20, 2000, AMEC Final Version Hydro G. Proposals.
25. October 20, 2000, M.O.E. Letter, Barbara Ryter to Solicitor Manfred Rudolph Accepting proposed water mitigation measures.
26. October 25, 2000, Letter to M.P.P. Toby Barrett.
27. O.M.B. Hearing concluded, November 1, 2000.

Nichols Gravel Limited

P.O. BOX 172 - DELHI, ONTARIO N4B 2W9 - PHONE (519) 582-3354

X Jan. 6/2000.

X Ministry of the Environment

X Freedom of Information and Protection of Privacy Office.
40 St Clair Ave West. 9th Floor
Toronto Ont.

Reference File # WCR 992610 & W.C.R. 992789

Reference File # WCR 992930

Attention: Mr. Fred Ruiters Co-ordinator.

Dear Sir;

Please find copy of fax from my consultant at Agra.
In accordance with the F.O.I. act the response to Agra was due
on Dec 15/99 and the response to my request was due Dec 26/99.
In respect to the fact that our application will be forwarded to the
O.M.B. to set a hearing date and should arrive at the Office of
C.M.B. this week, we can accomodate no further delay from your
office in providing this information.

X Therefore if we have not received all of the information
as requested by 4 PM. January 10/2000, on Jan 13/2000
I shall instruct my lawyer to file for a court injunction
requiring the release of this information.

Yours sincerely

X Gary Nichols Pres.
Nichols Gravel Limited.

c.c. X Craig Kelly Agra.

c.c. M.P.P. Toby Barrett.

2000 09:08

FROM: M.N.R. AYLMER



Ministry of
Natural Resources

Ministère des
Richesses naturelles

353 Talbot St. W.
Aylmer, Ont.
N5H 2S8
Tel. 519-773-4747
Fax 519-773-9014

January 7, 2000

Ontario Municipal Board
655 Bay St.
Suite 1500
Toronto, Ont.
M5G 1E5

Attention: Ms. Judy Smith, Caseworker

Dear Madam:

SUBJECT: REQUEST FOR A HEARING (JOINT)
APPLICATION FOR A QUARRY LICENCE UNDER THE AGGREGATE
RESOURCES ACT BY NICHOLS GRAVEL LIMITED
Pt. Lots 10 - 12, Con. 12, City of Nanticoke (former Walpole Township)
Regional Municipality of Haldimand - Norfolk

Attached is a package of information documenting the licencing process for Nichols Gravel Limited's proposed quarry.

Numerous written objections were received from the public and some of the review agencies during the 45 day notification period as specified in the *Aggregate Resources of Ontario - Provincial Standards - Version 1.0*.

The majority of the objections have not been resolved. Therefore, according to Section 11(5) of the Aggregate Resources Act, the Ministry of Natural Resources is referring the application and the objections to the Ontario Municipal Board for a hearing.

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As a hearing will also be held on the zoning amendment for the property, we are requesting the Board hold a joint hearing into these two matters according to Section 11 (7) of the Aggregate Resources Act.

Yours truly,

X *Alec S. Denys*

Alec Denys
District Manager
Aylmer District

Ontario
Municipal
Board

655 Bay Street, Suite 1500
Toronto On M5G 1E5
Telephone: (416) 326-6800
Facsimile: (416) 326-5370

Commission des
affaires municipales
de l'Ontario

655 rue Bay bureau 1500
Toronto On M5G 1E5
Téléphone: (416) 326-6800
Télécopieur: (416) 326-5370



X January 18, 2000

X Alec Denys
District Manager
Ministry of Natural Resources
353 Talbot St W
Aylmer ON N5H 2S8

Re: O.M.B. File No. M000002
O.M.B. Case No. PL000043
Appeal by Nichols Gravel Limited
Property. Part of Lot 10-12, Conc. 12

The Board acknowledges receipt of the above referenced matter. In communicating with the Board, please quote the O.M.B. case number PL000043 and file number M000002.

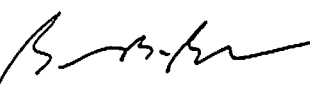
X This case will be assigned the earliest available hearing date. All parties are therefore advised that they should be prepared to proceed to a hearing at any time.

In order to avoid loss of hearing time, hearing dates once scheduled are firm unless adjourned by the Board. Adjournments will not be granted except in the most serious circumstances, and with consent of all parties and/or the approval of the Board.

All parties must attend at the scheduled start time of the hearing, irrespective of the number of days scheduled. Failure to attend at the opening of the hearing may preclude your being heard by the Board.

The Caseworker responsible for this file is Judy Smith. If you have any questions regarding this case, please contact her at (416) 326-6795. For general information concerning the Board's policies or procedures you may also contact the Board's Information office at (416) 326-6800.

Yours truly,

X 
Besham Bhikam
Administrative Clerk

cc: Clerk, City of Nanticoke
Nichols Gravel Limited

**X Ontario
Municipal
Board**

655 Bay Street, Suite 1500
Toronto On M5G 1E5
Telephone: (416) 326-6800
Facsimile: (416) 326-5370

**Commission des
affaires municipales
de l'Ontario**

655 rue Bay bureau 1500
Toronto On M5G 1E5
Téléphone: (416) 326-6800
Télécopieur: (416) 326-5370



X January 18, 2000

PRIORITY COURIER

**X Mr. Gary Nichols
Nichols Gravel Limited.
PO Box 172
Delhi ON N4B 2W9**

Re: O.M.B. Case No: PL000043
O.M.B. File No: M000002
Municipality: City of Nanticoke

X Dear Mr. Nichols:

The fee prescribed in Schedule 5, Regulation 888/90 of the Ontario Municipal Board Act, in this case is \$125.00 in order to process your appeal. A cheque or money order made payable to the Minister of Finance, is required. Please attach the tear off portion at the bottom of this letter to your cheque or money order.

Subsection 37.1(1)(a) of the Ontario Municipal Board Act permits the Board to dismiss any matter brought before it on its own motion without holding a hearing if the fee has not been paid. In the event that the fee is not received within 21 days from the date of this letter, subject to the provisions of subsection 37.1(1)(a) of the Act, the Board may proceed to dismiss this matter without holding a hearing.

The full text of the relevant sections of the Act is located on the reverse side of this letter.

Yours truly,

**X Joanne Hayes
Manager, Hearings & General Administration**

cc: Hugh B. Hanly, Clerk- City of Nanticoke

O.M.B. Case No: PL000043
O.M.B. File No: M000002
Municipality: City of Nanticoke
Appeal by: Nichols Gravel Limited

Mark Christie Done
X Mr Dawang 416-326-6794
2001 March 16 said MNR enquired a few
days ago had no response yet.
will make enquiries and call back
monday.

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Ministry
of the
Environment

Ministère
de
l'Environnement

Freedom of Information and
Protection of Privacy Office

Bureau de l'accès à l'information
et de la protection de la vie privée

40 St. Clair Avenue West
9th Floor
Toronto ON M4V 1M2
Tel. (416) 314-4075
Fax (416) 314-4285

40, avenue St. Clair ouest
9^e étage
Toronto ON M4V 1M2
Téléphone (416) 314-4075
Télécopieur (416) 314-4285

January 26, 2000

X Mr. Gary Nichols
Nichols Gravel Limited
Regional Road 4, #55 (East of Delhi)
Township of Delhi, Ontario
Tel (519)582-3354
N4B 2W5

X Dear Mr. Nichols:

X Re: **Freedom of Information and
Protection of Privacy Act Request
Our File Numbers WCR992610, WCR992789, & WCR992930
Your reference #**

This letter is further to your request made pursuant to the Freedom of Information and Protection of Privacy Act relating to properties/environmental planning.

After a thorough review of the records from the Hamilton District Office and West Central Regional Office, it is my decision to provide partial access to the information as the identity of complainants and/or private citizens who contacted the Ministry has been removed to protect privacy (section 21(1)(f) of the Act). Disclosure, in my view, would be an unjustified invasion of their privacy. In addition, the records listed on the attachment require notice to third parties to determine if they can be released. My decision with respect to these documents will be made by February 28, 2000.

Since there will be additional records forthcoming after this consultation period, the fees will be calculated at that time. To date, the cost for the requests is:

Search time 8.5 hrs @ \$30./hr.	\$255.00
photocopying 1056 pages attached @ \$0.20	2111.20
preparation time 3 hours @ \$30./hr.	90.00
delivery	10.00
Total	\$566.20
deposits received (\$85.00 + \$96.50 + \$144.90)	\$326.40
Amount owing as of today	\$239.80*

If you object to any decision I have made, you may request a review by contacting the Information and Privacy Commissioner, 80 Bloor Street West, 17th Floor, Toronto, M5S 2V1. Please note that there is a \$25.00 fee and you only have 30 days from receipt of this letter to request a review.

If you have any questions regarding this matter, please contact me.

Yours truly,


Fred Ruiters
Co-ordinator

CC: B. Hislop

4

Freedom of Information Request WCR992610/WCR992789/WCR992930
Records that require notice to third party to determine if they can be released.

#	DESCRIPTION	R/D/P*	COMMENTS	SECTION OF THE ACT
1	FAX from Jagger Hims Limited dated 10/5/95 and attachments		marked confidential	
2	FAX from Jagger Hims Limited dated 19/9/95 and attached letter		marked confidential	
3	FAX from Jagger Hims Limited dated 31/10/94 and attachments		marked confidential	
4	Letter from Jagger Hims Limited dated January 19, 1995 & attachment			
5	FAX from Jagger Hims Limited dated 28/03/96 and attachments		marked confidential	
6	letter from Jagger Hims Limited dated 10/9/95 and attachment			
7	letter from Jagger Hims Limited dated 22/12/94			
8	Letter from Jagger Hims Limited dated 6/1/95 and attachments			
9	Groundwater Level Monitoring Program Hagersville Quarry by Jagger Hims Limited dated July 1998			
10	letter from Jagger Hims Limited dated 18/12/95 and attachments			
11	MOE memo dated May 1, 1996 reviewing Jagger Hims Limited report of February 1996 (#12)			

12	Hagersville Quarry Dewatering Impact Assessment by Jagger Hims Limited dated February 1996			
13	1998 Ground Water Monitoring Program Hagersville Quarry by Jagger Hims Limited dated April 1999			
14	Geotechnical/ Hydrogeological Investigation proposed Subdivision Development, Springvill, Ontario for Crowntron Corporation by Peto MacCallum dated July 1990.			
15	Letter of Sept 24, 1990 from Trow, Dames & Moore on behalf of Sunspot Tent & Trailer Park			
16	Letter of Sept 24, 1990 from Trow, Dames & Moore on behalf of Sunspot Tent & Trailer Park to Haldimand- Norfolk Regional Health Department			
17	Letter of October 12, 1990 from Trow, Dames & Moore on behalf of Sunspot Tent & Trailer Park			
18	Letter of December 12, 1989 from Sunspot Recreational Centres and attachments			
19	Letter of May 25, 1989 from Trow, Dames & Moore on behalf of Sunspot Tent & Trailer Park			

20	Results of Testing Program, Applicability of Site for Spreading of Supernatant from Sewage Holding System, Part Lot 12, Concession 12, Township of Walpole by Trow, Dames & Moore on behalf of Sunspot Tent & Trailer Park			
21	April 30, 1990 letter from Standard Aggregates - MISA initial reports			
22	Gartner Lee Hydrogeology Report of Haldimand Quarries & Construction Ltd. Property, Hagersville, Ontario, Region of Haldimand Norfolk for Aggregates Division, Standard Industries Limited dated July 1979.			

* R/D/P = Release in Full/Deny in Full/Partial Disclosure

Nichols Travel Limited.

Ministry of the Environment
Freedom of Information and Protection of Privacy Office
40 St Clair Ave. West 9th Floor
Toronto Ont. M4V 1M2

Feb. 9/2000

X Co-ordinator Mr. Fred Ruiter.

Dear Mr. Ruiter;

Thank you for your response of Jan 26/2000 and the information provided. Find enclosed our cheque for balance owing to date of \$239.80

X I note that you are withholding certain documents, subject to third party review and possible release before February 28/2000.

X Please be advised that we have no interest in the following items by number, as listed in your information under review. The items as numbered not required are: #14, 15, 16, 17, 18, 19, 20.

Thank you for your co-operation in this regard.

Yours Sincerely;

X Gary Nichols

Nichols Travel Limited.

Nichols Gravel Limited

P.O. BOX 172 - DELHI, ONTARIO N4B 2W9 - PHONE (519) 582-3354

Ministry of the Environment
Freedom of Information and Protection of Privacy
40 St. Clair Ave. West
Toronto Ont. M4V 1M2

* Apr. 5/2000

* C.O.-ordinator: Mr. Fred Reuter.

Dear Sir;

Since I have not yet received your response to my letter of Feb-23/2000 (find copy enclosed) I am again requesting that you respond to items one to four. If this information is not available or does not exist, I still require a response in that regard.

* Failure to respond to this letter will result in our requiring you to attend the O.M.B. hearing to answer questions in this respect.
Thank you.

Yours sincerely,

* Gary Nicholas Pres.
Nichols Gravel Limited.

* c.c. Solicitor Al Ostner.

X WHITE, DUNCAN, OSTNER & LINTON
Barristers and Solicitors

WILLIAM H. WHITE, Q.C.
ALBERT L. OSTNER
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X April 19, 2000
File #027406

SENT BY FAX TRANSMISSION
519-582-2143

X Mr. Gary Nichols
Nichols Gravel Limited
Box 172
Delhi, Ontario
N4B 2W9

X Dear Gary:

Joint Hearing - Zoning By-law Amendment Request and Application for Quarry Licence

Ms. Barbara Ryter of MOE returned my telephone call this afternoon.

She had the following comments:

- X** ■ She agrees with the matters contained in my April 19th letter to you but advised that there was just one "crinkle"; i.e., the MOE hydrogeologist who provided input to the initial Agra Report is no longer employed by MOE. ✓ **LE?**
- In view of the time constraints, once we authorize Agra to forward their Report to MOE, Ms. Ryter will request MOE's most senior hydrogeologist to again review:
 - the original Agra Report;
 - the June 14, 1999 MOE Critique;
 - the April, 2000 Agra response.
- She requests that the Agra response be forwarded to her attention as she is the only Environmental Planner who is familiar with this Application.
- She agrees (in accordance with the Board's direction) that, once MOE has reviewed the Agra response a meeting should be held with the hydrogeologists

in absence of any solicitors to see whether a consensus or partial consensus or statement of agreement can be reached.

Again, the MOE review and suggested meeting will be "fast tracked", given the extreme time constraints.

By a copy of this letter to Mr. Craig Kelly, we have just received his draft "Chronology of Events" and we are in the process of reviewing the same.

We are, by a copy of this letter to Mr. Kelly, suggesting that we have a three-way telephone conference as soon as possible.

Yours very truly,

WHITE, DUNCAN, OSTNER & LINTON

Per:



X A. L. OSTNER

ALO:ct

X cc: Mr. Craig Kelly - by fax

P.S. Since dictating the foregoing, we acknowledge your voice-mail of this afternoon whereby you indicate that you wish to receive a written MOE response **before** proceeding with the meeting of the hydrogeologists. We should also be discussing this issue in our telephone conference.

ALO:ct



TC05041
April 26, 2000

9

AGRA Earth &
Environmental Limited
160 Traders Blvd. East
Suite 110
Mississauga, Ontario
Canada L4Z 3K7
Tel (905) 568-2929
Fax (905) 568-1686

X White, Ostner, Duncan, and Linton
P.O. Box 457
45 Erb Street
Waterloo, Ontario
N2J 4B5

X Attention: Mr A. L. Ostner

X Re: Chronology of Events Concerning the Procurement of Information/data for Preparation of a Response to the MOE Review Letter of June 14, 1999, and the Impact of This Information Upon AGRA's Hydrogeological Assessment of the Proposed Nichols Quarry

AGRA Earth and Environmental Limited (AGRA) present herein a chronology of events which outlines the delays which were encountered in procuring the information from the Ministry of the Environment (MOE) that AGRA required to prepare an informed response to the comments contained in the above captioned letter. The following also outlines the importance of this information in responding to the MOE's review of AGRA's Level 2 Hydrogeological Study Report, and in completing our hydrogeological impact assessment of the proposed quarry operations.

CHRONOLOGY OF EVENTS CONCERNING THE PROCUREMENT OF PERTINENT INFORMATION/DATA

The public meeting at the City of Nanticoke Council chambers occurred on May 27, 1999, at which time the Council rejected the request for Zoning Amendment. Subsequent to this Gary Nichols of Nichols Gravel Limited resolved to take the issue to an Ontario Municipal Board (OMB) hearing. Mr. Nichols communicated the request for a Hearing to the OMB office in June, 1999, and received acknowledgement of his request and a file number in a letter dated July 20, 1999.

The MOE's June 14, 1999 review of the AGRA report "Level 2 Hydrogeological Study in Support of a Category 2 Class A Quarry Below Water License," was addressed to Mr. C. Bell of the City of Nanticoke in response to a request made by Mr. Bell. This letter was quickly circulated to a number of members of the public. Mr. Nichols received a copy of the letter on or about June 17, 1999.

Mr. Nichols also requested a copy of the 1972 MOE report entitled "Report on the Investigation of Well Interference Complaints near Hagersville" during June, 1999. The copy he received was incomplete, with no text after p. 11 and no Figures or Appendices, which documented the local well investigations on a "per well" basis.

AGRA, on behalf of Nichols Gravel, originally requested hydrogeological data/information from the local MOE office for the vicinity of the proposed quarry on September 10, 1999. It was expected that this information would be a necessary aid in enhancing our understanding of the regional geology, and in preparing a comprehensive response to the concerns raised in the MOE letter. Within the next few days, AGRA was informed by Mr. Jamie Connelly of the MOE's Hamilton office that the request for this information would have to be undertaken under the auspices of the Freedom of Information (FOI) Act, and that the enquiries should be directed through the MOE's Toronto FOI office.

X The original FOI request from AGRA was forwarded on September 16, 1999. This request was rejected by the office for being too general in the parameters of the request, which encompassed a File Search within a five kilometre radius of the site. AGRA was directed to submit separate requests for each specific site of interest to us. The chronology of events subsequent to this is summarized as follows:

- September 17, 1999 - submitted FOI request for Lafarge Construction Materials Hagersville Quarry;
- October 8, 1999 - submitted FOI request for Former Dufferin Quarries;
- October 8, 1999 - acknowledgement of the FOI request from the FOI office with a response due date stamp of November 1, 1999;
- October 18, 1999 - Mr. Nichols submitted an independent FOI request for more specific correspondence than that covered by AGRA's FOI request;
- October 21, 1999 - Mr. Nichols received a letter from Mr. Fred Ruiter of the FOI office acknowledging receipt of Mr. Nichols' request and indicating that, "in accordance with the Act, you may expect a reply or additional communication by November 19, 1999."
- October 26, 1999 - AGRA received a letter from Mr Fred Ruiter of the FOI office concerning the records found and the cost of retrieval over and above the deposit received from AGRA; on November 3, 1999, Mr. Craig Kelly of AGRA sent a copy of this letter to Mr. Nichols requesting direction as to how to proceed, (i.e. have the FOI office send material to AGRA or Mr. Nichols, and payment by AGRA or Mr. Nichols);
- December 14, 1999 AGRA contacted the FOI office regarding the status of our requests. Mr. Kelly informed Mr. Ruiter that payment had been forwarded over one month ago, and Mr. Ruiter stated that he would look into the status of the file. On December 15, 1999, a message was received on Mr. Kelly's voice mail that, due to a large amount of material to reproduce, we (AGRA and/or Gary Nichols) probably wouldn't see anything until January;
- January 6, 2000 - Gary Nichols sent a letter to Mr. Ruiter stating that responses were due on December 15, 1999 for AGRA's request and December 26, 1999 for Gary Nichols' request. The letter also states that "...our application will be forwarded to the OMB to set a hearing date and should arrive at the Office of OMB (sic) this week, we can accommodate no further delay from your office in providing this information." Mr. Nichols also states his intention to have his lawyer involved if the information is not received by 4 p.m., January 10, 2000;
- January 14, 2000 - A letter from Mr. Nichols' counsel, Mr. A. L. Ostner, to the FOI office, enquiring as to the reason for the delay in responding to Mr. Nichols, and requesting a written response to this letter from Mr. Ruiter no later than January 21, 2000.
- January 21, 2000 - A voice mail message left by Mr. Ostner for Mr. Ruiter. The call was returned on January 24, 2000 indicating that; the material should be released on January 26, that there are some documents marked "Confidential" and Mr. Ruiter requires the written consent of the affected parties before this information can be released, and uncertainty as to whom the information should be sent to (Mr. Kelly of AGRA or Mr. Nichols).

- February 24, 2000 - Mr. Nichols receives the final set of cleared documents from the FOI office.
- March 24, 2000 - AGRA receives the FOI material from Mr. Gary Nichols.

It is notable that the October 26, 1999 letter to AGRA states that "records were located in response to AGRA's request," yet, by December 15th, none of these records had seemingly been reproduced to date, and mention was made of the large amount of material to reproduce which would delay release of the information until January, 2000. Furthermore, contact with parties regarding documents marked "confidential" was only being addressed on January 24, 2000. One wonders what, if anything, was being done with reference to the FOI requests between October 26, 1999 and January, 2000. The total package sent to Mr. Nichols covering the documents retrieved to answer both requests is approximately 1,000 pages. This would entail approximately one full day of photocopying.

A written response to Mr. Nichols' FOI request was prepared by Ms. Barb Ryter of the MOE, dated November 4, 1999, where, in response to Mr Nichols' request for copies of "all documentation between your Ministry and our consultants at AGRA," Ms. Ryter indicates that there is "no written correspondence between Ministry staff and AGRA consultants." This is false; this correspondence is even referred to in the June 14, 1999 letter (p.2), and comprises a May 13, 1999 letter of questions from Mr. Simon Gautrey of the MOE to Mr. Jacob Zaidel of AGRA, and a May 26, 1999 reply from Mr. Zaidel. Neither of these correspondence comprised part of the FOI Act documentation received by Mr. Nichols in January, 1999.

In addition, several of the reports which were of special interest to AGRA in responding to the June 14, 1999 review letter are incomplete. The appendices and appended tables and figures from the Jagger Hims 1996 Dewatering Impact Assessment Report were not provided. Also, the four maps which comprise an integral part of the Gartner Lee 1979 Hydrogeological Assessment of The Hagersville Quarries (now Lafarge) were not provided. A direct request for this information should be made to Mr. Fred Ruiter and Mr. Jamie Connelly of the MOE Hamilton office.

AGRA also did not receive a copy of the 1990 report by Golder & Associates Ltd. entitled "Hydrogeology of the Standard Industries Quarry, Hagersville, Ontario (Draft)," referred to in Jagger Hims' 1996 Dewatering Impact Assessment Report. It is possible that this report is not resident in the MOE's files, however, a formal request should be made to the MOE for a copy of this report. If it is unavailable, consideration should be made to procure a copy through Golder & Associates Ltd.

IMPACT OF THE INFORMATION PROCURED THROUGH THE FOI ACT UPON AGRA'S HYDROGEOLOGICAL ASSESSMENT OF THE PROPOSED NICHOLS QUARRY

The information and data received by AGRA from the FOI requests was invaluable in addressing the concerns expressed in the MOE's June 14, 1999 letter, and in supporting the technical data, assumptions, simulations, and conclusions incorporated into AGRA's original Level 2 Hydrogeological Study Report (AGRA, February, 1999).

A number of the MOE's assertions and more critical statements regarding AGRA's hydrogeological assessment directly and/or indirectly refer to reports and/or data resident in MOE files which AGRA had no access to until receiving the results of the FOI request(s). Several examples of these MOE assertions and/or statements include the following:

- *"This report concluded that the deepening of a quarry (former Dufferin) from 15 to 27 metres caused well interference of several domestic wells at distances of several kilometres."*

This statement was found to be misleading in reference to the proposed quarry, and, in and of itself, inaccurate;

- *"The geology of the site consists of porous fractured bedrock..."*

Based on a review of our technical data and the FOI materials concerning the Lafarge and former Dufferin quarries, this statement was found to be inaccurate. There was no data, findings, or conclusions in any of the material that we reviewed which supports the above captioned statement. The FOI documents supported AGRA's findings of an irregularly fractured bedrock network of low to moderate permeability in the Bois Blanc Formation. The statement itself is misleading, and the motivation for making it is suspicious; and

- *"...the available field data used to select the hydraulic conductivity is not representative."*

Reviewing the data provided through the FOI requests revealed that AGRA's field data, assumptions, and input parameters were representative and defensible. In fact, many of our assumptions and parameters used in the numerical model variants were found to be very conservative. The FOI materials provided valuable information with which to compare AGRA's assumptions, methodology, and findings.

It was apparent that the MOE reviewer had access to information which AGRA did not, and used reference to this information to make critical statements or bold assertions (non sequiturs, practically) in an effort to discredit the hydrogeological assessment of potential impacts from quarry operations. It is notable that he didn't use any of the data or information *per se*, he merely made reference to it, presumably to intimidate Nichols into undertaking more extensive (and, ultimately, unnecessary) field investigations.

In summary, the information procured through the FOI requests was invaluable in testing AGRA's technical data, methodology, and conclusions, and in validating AGRA's overall interpretation of the hydrogeology of the site and its' environs. It was also invaluable in providing AGRA the data and information to prepare an informed response to the MOE June 14, 1999 letter's provocative statements.

X CLOSURE

It is evident that there was an significant delay in receiving the materials requested through the FOI process. This material was required to prepare an informed response to the MOE's June 14, 1999 letter. It was not received by Mr. Nichols until the end of January, 2000. ?

Mr Nichols wrote to Mr. Ruiter on February 23, 2000 and on April 5, 2000 requesting a response regarding four outstanding items outlined by Mr. Nichols. To date, Mr. Nichols has not received a response to these enquiries. ?

We trust that the above is satisfactory to explain the importance of the FOI process with regards to the present time constraints, and the importance of the FOI data and information in validating our hydrogeological assessment of the proposed quarry. Should you have any questions or comments, please contact Mr. Craig Kelly at 905-568-2929, ext. 4237.

Respectfully submitted,
AGRA Earth and Environmental Limited

Craig Kelly

X Craig S. Kelly, B.Sc.
Hydrogeologist

CSK/csk

X Copies: Mr. Gary Nichols
Ms. Barb Ryter, MOE
Mr. Jamie Connelly, MOE
Mr. C. Bell, Planner, Regional Municipality of Haldimand Norfolk

TC05041

X April 26, 2000

Mr. Gary Nichols
Nichols Gravel Limited
P.O. Box 172
Delhi, Ontario
N4B 2W9

X Attention: Mr Gary Nichols

X Re: Response to MOE Review of Level 2 Hydrogeological Study In Support of A Category 2 Class A Quarry Below Water License - MOE Letter dated June 14, 1999

1.0 INTRODUCTION AND BACKGROUND

AGRA Earth and Environmental Limited (AGRA) present herein a response to concerns presented by the Ontario Ministry of the Environment (MOE) in their review of a Level 2 Hydrogeological Study prepared by AGRA on behalf of Nichols Gravel Limited (Nichols). The study was undertaken to assess the geological and hydrogeological conditions of a site located in Part of Lot 10, 11, and 12, Concession 12, in Walpole Township, City of Nanticoke, in the Regional Municipality of Haldimand-Norfolk. The site is the location of a proposed quarry to be used for the mining of limestone from the Bois Blanc Formation for the production of road building material and other uses.

This letter has been prepared in response to comments contained in the MOE's June 14, 1999 review of the AGRA report "Level 2 Hydrogeological Study in Support of a Category 2 Class A Quarry Below Water License," dated February 1999.

In the MOE review letter, several assertions are made concerning the general geology and hydrogeology of the area. In addition, conclusions and interpretations are presented concerning the report methodology and assumptions, especially regarding the numerical modelling, which was undertaken to characterise the site hydrogeology and assess potential impacts to the local groundwater regime due to future quarry dewatering. AGRA's review of the MOE's comments is presented in detail below.

2.0 REVIEW OF MOE LETTER

2.1 INTRODUCTORY COMMENTS

MOE Comment:

Page 1, Paragraph 2 "Northeast of Hagersville, there is also an operational quarry operated by Lafarge. In the past, there have been several well-interference complaints from both the operational and abandoned (former Dufferin Materials and Construction Quarries immediately east of the subject site) quarries. Several of the complaints related to the abandoned quarries have been documented in the 1972 MOE report titled Report on the Investigation of Well Interference Complaints near Hagersville. This report concluded that the deepening of a quarry from 15 to 27 metres caused well interference of several domestic wells at distances of several kilometres. The proposed quarry will be 15 metres deep."

10

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Environmental Limited
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Mississauga, Ontario
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X Response:

In the case of both the abandoned quarries and the Lafarge quarries, there is no evidence of well interference complaints until the quarries were being deepened into the Bertie Formation, which underlies the Springvale Sandstone at the subject site and the Bois Blanc formation at the Lafarge quarry. Extraction at the subject site will only take place within the Bois Blanc Formation, overlying the Springvale Sandstone.

In the 1972 study, it is recorded that precipitation in the Hagersville area was 23 per cent below normal in 1971. In four of the seven "affected" wells, the water levels were observed to recover and supplies replenish shortly after the reported shortage. Two of these wells, the Roulston and R. Smith well, are shallow (<12 m (40 ft.) deep), which suggests that the decline in precipitation was also a factor in the water level decline in these wells. At the D'Andreamatteo well, which is approximately 22 m (70 ft.) deep, the shortage was only experienced in November, 1971. It is possible that the well was affected by dewatering at this time, as it probably is seated in the same formation (Bertie Formation) that was being accessed by Dufferin. It should be noted, however, that at the Bilton well, located very close to the D'Andreamatteo well, but which is only 9 m (30 ft.) deep, no shortages were being experienced. The 1972 report concludes that "although large water level fluctuations occurred in many wells, the water-level lowerings caused serious water supply shortages in relatively few wells." These shortages were only observed when the quarry was deepened into the Bertie Formation, which the proposed quarry is not going to access.

At the Lafarge quarry, our review of MOE files obtained through Freedom of Information Act requests reveal that the first well interference complaint was lodged in October, 1994. Standard Aggregates (the quarry is now owned by Lafarge) had begun a new lift in the spring of 1994, at which time periodic increased dewatering was instituted. The new lift accesses rock from the Bertie Formation, and the main quarry sump extends to the base of the Bertie Formation. The 1996 Dewatering Impact Assessment prepared by Jagger Hims on behalf of Lafarge indicates that 18 of the 24 domestic wells located in close proximity to the quarry are terminated within the Bertie aquifer. This suggests that the water level declines observed in wells monitored during the 1995 program for the 1996 Dewatering Assessment Report (Jagger Hims, 1996), and subsequent monitoring programs, are related to dewatering of the Bertie Formation subsequent to deepening the extraction of material from the quarry. As noted above, there is no record of interference complaints prior to deepening of this quarry.

It is concluded that the above statements by the MOE are not germane to the situation envisaged for the subject site, where extraction will be restricted to a depth of 15 m (50 ft.) in the Bois Blanc formation alone. In fact, the last sentence quoted above renders the previous statements concerning well interference moot. The motivation for including these statements is suspect.

MOE Comment:

Page 1, Paragraph 3 "The geology of the site consists of porous fractured bedrock..."

Response:

This statement is not supported based on the following:

- The observed bedrock conditions detailed in the borehole logs;
- A review of water well records for domestic wells proximal to the proposed quarry;



AGRA

SEEKING GLOBAL SOLUTIONS

- Observations of the shallow bedrock conditions in the former Dufferin quarries and the Lafarge quarry; and
- The observed water levels in the ponds (former Dufferin and Dundas quarry pits).

The borehole logs (AGRA, 1998, from Stanley, 1998) indicate that the lower units of the Bois Blanc Formation (units 2 and 3) are medium bedded with occasional shale partings. Rock Quality Designations (RQDs), which are used to characterize the intensity of fracturing of bedrock cores, are generally in the 80 to 95 % range, indicating moderate to low fracture.

The hydraulic conductivity values derived from the four 1998 boreholes and the farm well (MOE #1559) ranged from 1.0×10^{-5} cm/s to 3.9×10^{-5} cm/s. The well locations were picked at random to cover different areas of the subject site. The range of hydraulic conductivities estimated from the slug testing are remarkably similar. This will be described in more detail in Section 2.2.

A perusal of water well records proximal to the site also suggests that the porosity and fracturing in the bedrock is variable and in general, not intensive. A rough estimate of hydraulic conductivity (i.e. within an order of magnitude) can be derived from the information in water well records using the following equations:

Q/s	=	T/2000 (confined aquifer) or Q/s = T/1500 (unconfined aquifer)
and K	=	T/b
where Q	=	pumping rate from the water well records in Imperial gallons per minute (lgpm)
s	=	approximate available drawdown in feet (static water level minus top of aquifer)
T	=	transmissivity in gal/day/ft
b	=	saturated thickness of the aquifer in feet
K	=	hydraulic conductivity gal/day/ft ²

Dividing K by a factor of 17,600 converts gal/day/ft² to cm/sec.

The hydraulic conductivity (K) estimates from a number of water well records in the vicinity of the site indicate that the shallow domestic wells (<12 m) in the area are in bedrock of dominantly low to moderate permeability. Yields of these wells range from 1 to 10 Imperial gallons per minute. In addition, of eleven residences visited during the domestic well survey conducted by AGRA, at least seven obtain potable water from a cistern. Assuming that this situation is indicative of poor water quality from an on-site well, it is well documented that poor water quality is associated with the deeper bedrock of the Salina and lower Bertie Formation in the area. This suggests that there was not sufficient water encountered at shallow depths to constitute a sustainable domestic supply, which would be a function of low bulk porosity of the underlying shallow bedrock and/or non-intensive or irregularly distributed fracturing.

On November 11, 1999 a drill investigation was conducted at four locations on the site (Figure 1) to further characterize the distribution of water occurrence across the site. Water was encountered at depths ranging from 4.9 m (16.3 ft.) at BH99-4 to no water found to a depth of 11.6 m (38 ft.) at BH99-2 (Table 2). This suggests a variable and irregularly fractured shallow bedrock across the subject site.

In the 1972 MOE Well Interference report, the Dufferin quarries are described as appearing "to have moderate permeability, which essentially results from the presence of irregularly distributed fracture systems" (MOE, 1972, p. 3). The 1996 Dewatering Impact Assessment report for the Lafarge Quarry

describes the Bois Blanc Formation as "an unconfined groundwater aquifer with limited potential in view of its partial penetration and tight structure" (Jagger Hims, 1996, p. 8)

The assertion that the shallow bedrock in the area is highly fractured is also not supported by observation of the water levels in the adjacent abandoned quarries. A persistent difference in relative pond level is observed between the abandoned quarry immediately east of the subject site (Dufferin Pit 3), the quarry immediately north of Pit 3, denoted Dufferin Pit 2 located immediately west of Pit 1, and the former Dundas quarry north of Dufferin 1 (Figure 1). These elevation differences were also observed during a reconnaissance of the site and surrounding area in September, 1999, and are noted in Ministry Topographic maps.

The following table summarizes the observed differences between water levels in the adjacent ponds:

Table 1: Relative Differences in Ponds' Water Levels

Pond	Pond	Distance Between Ponds (m) ¹	Difference in Water Levels (m)	Estimated Hydraulic Gradient (-)
Pit 3	West Quarry	100	0.36 ² - 0.5	0.0036-0.005
West Quarry	Pit 1 ³	100	0.5	0.005
Pit 3	Pit 1	100	1.0 - 1.5	0.01
Pit 1	Old Dundas Quarry ³	150	~5 - 6	0.033
Average				0.013
Regional				0.002

¹ The minimum distance between water in the adjacent ponds.

² Reference: Stanley Consulting Group Ltd. Level 1 Hydrogeological Study Report (June 1998).

Table 1 shows that the estimated local hydraulic gradients between the existing ponds are much higher than the regional gradient, estimated from Pit 3 to Lake Erie. The difference in water levels between the ponds does not support the MOE assumption of high "bulk" hydraulic conductivity values for this area. If the shallow bedrock was porous and highly fractured, this water level difference would not be maintained; the water levels over time would be similar (subject to the regional hydraulic gradient). The difference in relative water level elevation in the ponds suggests a poor hydraulic connection between the pits, which is a function of low bulk porosity in the shallow bedrock.

In light of the above, the MOE assertion concerning "fractured, porous bedrock" appears to be presumptuous.

MOE Comment:

Page 2, Paragraph 1 "The increased hydraulic conductivity close to the Escarpment means that impacts from the Lafarge quarry north of Hagersville will affect a wider area relative to the proposed quarry."

Response:

The 1996 Dewatering Impact Assessment report prepared by Jagger Hims Limited concludes the following:

The dewatering of the Hagersville Quarry site drawdown (sic) the ground water level to different degrees in the various rock formations. The greatest influence is in the Bertie Formation, where the cone of influence extends to the North and East between 1,000 and 1,500 metres from the quarry.

The above drawdown estimates are projections of "measurable drawdown" (sic) based on Jagger Hims' monitoring well data (Jagger Hims, 1996).

AGRA constructed a numerical groundwater model for the subject site and surrounding area for the purpose of conservative simulation of the potential impact on the shallow groundwater regime of quarrying dewatering over time. Drawdown projections were simulated at various intervals over a conservatively projected 50-year period. Several different variants were simulated, utilizing a number of different sets of input parameters (see below Section 2.2, p.5). Although a direct comparison of the numerical modelling results for the proposed site with Jagger Hims' drawdown projections at Lafarge is not possible, a comparison of the relative scale of potential observed drawdowns may help evaluate the conservatism of the input parameters utilized in AGRA's groundwater flow model simulations.

The calculated 0.1 m drawdown contour for the 50-year drawdown projections from the "base case" numerical model ranged from 500 m west of the quarry face to 2,100 m southwest of the quarry face. For the variant 2 simulation, which is more conservative in assigning higher hydraulic conductivities to the Bois Blanc Formation than the base case scenario, the 0.1 m drawdown projections ranged from 1,200 m west of the quarry face to 2,400 m southwest of the quarry face. Based on these projections, which range from a similar radius to a greater radius of projected drawdown from those predicted for the Lafarge Quarry, and the above statement from the MOE, it would appear that the assumptions and input parameters for the numerical modelling of the subject site are sufficiently conservative.

In conclusion, we concur with the above captioned statement by the MOE reviewer "that impacts from the Lafarge quarry north of Hagersville will affect a wider area relative to the proposed quarry."

2.2 REPORT METHODOLOGY AND ASSUMPTIONS

MOE Comment:

- Page 2, Paragraph 2 ...changing key assumptions or input parameters (in the model) by a small amount can greatly affect the predicted impact.*
- Page 2, Paragraph 2 "...the model relies on very limited data from five on-site wells collected on two days in November 1998 to characterize groundwater conditions over an area measured in square kilometres for a 50-year period. The limited database of field data greatly reduces the amount of confidence that can be placed in the model."*
- Page 2, Paragraph 3 "...the available field data used to select the hydraulic conductivity is not representative."*

Response:

The sensitivity analysis presented in Section 4.3.7 of the Level 2 Hydrogeology Study report (AGRA, 1998) addresses the affect of "changing key assumptions or input parameters." The parameters were not changed by a small amount; parameters such as hydraulic conductivity, storage coefficients, and infiltration were changed by factors of two to ten in the direction of more conservative values, i.e. more pronounced dewatering impacts (AGRA, 1999, Section 4.3.7, and Appendix E).

The hydraulic conductivity values derived from the four 1998 boreholes and the farm well (MOE #1559), based on the results of the slug tests, were as follows:

- BH-1 (MW-1) 3.9×10^{-5} cm/s
- BH-2 (MW-2) 3.3×10^{-5} cm/s
- BH-3 (MW-3) 1.0×10^{-5} cm/s
- BH-4 (MW-4) 1.9×10^{-5} cm/s
- Farm Well 3.2×10^{-6} cm/s

All of the 1998 wells encountered water-bearing fractures in the lower Onondaga and Bois Blanc Formation. The well locations were picked at random to cover different areas of the subject site. The range of hydraulic conductivities for the four wells are remarkably similar, and showed good agreement with the recovery data from the five pump tests on the wells. It is difficult to understand exactly what would be "representative" of the site according to the MOE reviewer. The following are all indicative of low to moderate hydraulic conductivities, on average, in the shallow bedrock of the subject site:

Mr. Gary Nichols
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- The low to moderate yields and estimated hydraulic conductivities of most of the surrounding domestic wells;
- the RQD measurements of the rock core;
- the description of the Dufferin Aggregate shallow bedrock in the MOE 1972 report;
- the similarity of the hydraulic conductivities of the five on-site wells;
- the description of the Bois Blanc Formation in the 1996 Dewatering Impact Assessment report as "an unconfined groundwater aquifer with limited potential in view of its partial penetration and tight structure" (Jagger Hims, 1996, p. 8);
- the findings of the November 1999 drilling program undertaken to observe where water is found in different areas of the site; and
- the relative difference in pond (i.e. former quarry) water levels;

yet the Ministry is concerned that actual conditions are "underestimated." This is not to say that there aren't zones which have higher conductivities, but it suggests that, if one of these zones was encountered during the Level 2 Study, the reviewer would have desired to see the whole numerical flow model calibrated to that value.

The base case model, in fact, was calibrated to hydraulic conductivities that were higher than the conductivities estimated from the field tests. These were as follows:

- Onondaga Formation - 5×10^{-4} cm/s north-south and 2×10^{-4} cm/s east-west, vertical directions; and
- Bois Blanc Formation - 1×10^{-4} cm/s north-south, 5×10^{-5} cm/s east-west, and 1×10^{-5} cm/s in the vertical direction.

For the variant 2 simulation, all of the above conductivities were assigned values three times higher than those used for the base case.

MOE Comment:

Page 2, Paragraph 3 "Staff had several questions about the computer model which were subsequently addressed by the consultant in a May 26, 1999 fax. However, after reviewing the initial data provided by the consultant, staff remains concerned that the proponent has not provided sufficient data to support the model's initial conditions..."

Response:

The reviewer does not provide any inkling as to what type and what quantity of data is thought to be required, nor the manner in which he expects that data to be procured. The questions that the reviewer sent to AGRA, and our faxed response, are appended to the back of this letter.

MOE Comment:

Page 2, Paragraph 4 "the consultants assume that a hydraulic connection exists between the streams and the bedrock.....However, anecdotal evidence, supported by field observations from May 1999 and data from 1:10,000 topographic maps indicates that several of the smaller streams are dry during the summer months, suggesting that these streams only flow in response to surface run-off and are not connected to the bedrock aquifer..."

Response:

The statements captioned above are correct. The model was constructed assuming that a hydraulic connection exists between the streams and the bedrock. This was based on observations of the streams during the field program in November 1998.

In response to this, a variant of the numerical groundwater model was run assuming no stream flow in the streams (essentially, drainage ditches) in the vicinity of the proposed site. It should be noted that the hydraulic conductivity distribution used in Variant 2 of the 1999 numerical modelling was utilized in the simulation of this variant. The model was run to simulate projected drawdowns due to dewatering over the same time intervals as the previous variants. For this simulated variant, the 0.1 m drawdown projections ranged from 1,600 m north of the quarry face to 2,700 m southwest of the quarry face. Once again, based on these projections, which constitute a greater radius of projected drawdown to those predicted for the Lafarge Quarry, and the previously noted statement from the MOE (see above p. 5), it would appear that the assumptions and input parameters for the numerical modelling of the subject site are sufficiently conservative.

MOE Comment:

Page 3, Paragraph 2 "In a fractured bedrock like this one, the actual bulk hydraulic conductivity of the rock is commonly much higher than the hydraulic conductivity determined from slug and single well pump tests. Furthermore, slug test and single well pump tests are notoriously inaccurate, and the actual hydraulic conductivity may be wrong by a multiple of ten or more."

Response:

With reference to the allusion to "fractured bedrock," please see above (Re: Response to comments found in page 2, paragraph 2 of the June 14, 1999 letter). Bedrock formations, as a matter of course, contain fractures; it is the intensity and extent of the fracture network which defines the "bulk"

Mr. Gary Nichols
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(sic) hydraulic conductivity of a given subsurface bedrock regime, with respect to the prevailing groundwater regime. Considering the results of the hydraulic conductivity tests on the monitoring wells on the site, and the observations by others on the nature of the shallow bedrock in the adjacent pits, including the observations concerning the characteristics of the Bois Blanc Formation at the Lafarge Quarry (Jagger Hims, 1996, p.8, referenced above), this statement seems arbitrary and unsupported. Given the lack of evidence (e.g., references from prior studies or data acquisition) to support this assertion, one is inclined to question the motivation, source, and frame of reference for this assertion by the MOE reviewer.

Slug tests were performed on each of the five on-site wells. Pump tests were also undertaken on these wells in an effort to assess potential interference in the other on-site monitoring wells; this data was to be used to construct distance-drawdown curves for estimation of "bulk" hydraulic conductivities. No measurable interference was found in the monitoring wells, which is an indication of relatively low "bulk" hydraulic conductivity. Instead, the pump test recovery data was used to estimate hydraulic conductivities. The slug and pump test data re-inforced each other (i.e. the hydraulic conductivity estimates from the slug tests and the hydraulic conductivity calculations from the pump test recovery data validated each other in terms of the approximate hydraulic conductivity of the site's underlying shallow bedrock). The convergence of this data to hydraulic conductivity values in the range of 1×10^{-5} to 1×10^{-4} cm/s (the latter value from pump test recovery data from MW-3 calibrated to observed conditions in the numerical model) across the site is significant; slug and pump tests were conducted on each of the five on-site wells. The assertion concerning "bulk" hydraulic conductivity commonly being higher than that determined from slug and single well pump tests may be valid, although no evidence is offered to support it (case studies, references, etc.). Even if one were to assume that this assertion is valid in general, it does not negate the findings of the site-specific data presented for the subject lands.

The assertion that "single well pump tests are notoriously inaccurate" is curious. These were not single well pump tests. During each pump test, the water levels were observed in the other four on-site wells. There was no water level response in any of the other wells during any of the tests. This method of utilizing observation wells to assess the extent, if any, of hydraulic connection between wells, and to estimate aquifer parameters, has been used for decades in the evaluation of everything from municipal wells to groundwater recovery wells to dewatering for construction to characterization of regional aquifers.

An apparent increase in the "bulk" hydraulic conductivity with the scale of measurement, obliquely referred to by the MOE reviewer, is attributed to the fact that as large blocks of the subsurface are tested for flow, preferred pathways are encountered that could be missed by testing relatively small rock volumes. In the bedrock aquifers these pathways are typically associated with relatively large openings or fractures. We fully realize that a drilled monitoring well may not intercept all major fractures at the site and, therefore, may not provide the representative "bulk" hydraulic conductivity. However, it is hard to believe that the existing abandoned quarries at the adjacent properties also do not intercept major fractures, since these quarries have about the same scale as the proposed one and are deeper than the proposed 15 m depth of excavation. Based on this, one would expect a significantly better hydraulic connection between the existing ponds, as compared with the relatively small interconnection between individual monitoring wells observed during the pumping tests conducted at the site in November 1998. The analysis of the existing differences in water

levels observed in the four pits (Section 2.1 of this letter) does not support the argument for underestimated hydraulic conductivities. In fact, the hydraulic gradients estimated from the water levels in the pits appear to be much higher than the regional gradient. From this we conclude that there are no significant subsurface flow conduits encountered at the subject property and at the adjacent ones that might justify the utilization of hydraulic conductivities higher "by a multiple of ten or more" than the estimated site-specific conditions.

It was already noted above that the hydraulic conductivity values utilized in the numerical groundwater model (base case) were higher than those estimated from the field tests. The hydraulic conductivity values adopted for the Bois Banc Formation for Variant 2 (the reviewers' preferred simulation, June 14, 1999, p. 3), outlined in the Sensitivity Analysis (AGRA, 1999, Section 4.3.7), were three times higher than the base case scenario, which is effectively three to ten times higher than the estimates from the field test results, depending on the axis of the bedrock medium one is referring to. The assertion from the reviewer that the hydraulic conductivity of the bedrock may differ up to ten times from the estimates gleaned from the field tests may be true at selected given localities; however, it may just as well be that the hydraulic conductivities are ten times lower in some places (e.g MW2-00) than those estimated from the 1998 field data, as opposed to being ten times higher. The remarkable convergence of the field test results for the on-site wells, however, does little to bolster the original blanket assertion by the reviewer.

MOE Comment:

Page 3, Paragraph 2: "The lack of adequate field data for this study means that there is a strong possibility that the actual impacts of the quarry will be much greater than impacts predicted by the model."

Comments by the MOE concerning the adequacy of the field data have been addressed in the above sections. However, there are other assumptions incorporated into the numerical groundwater model which are far more conservative than the conditions which will be observed in the operation of the subject sites' quarry.

Specifically, the Simulation of Proposed Quarry Dewatering (AGRA, 1999, p. 8, Figures 5 to 8, and Appendix E (sensitivity analysis variants)) assumes the following:

- water levels will be kept at about 15 m below ground surface (proposed base of quarry) over the whole life of the quarry; and
- quarry development will occur to full depth and expand in aerial extent, gradually, over a period of at least 50 years.

The simulations assumed that dewatering would occur over the whole life of the site (projected 50 years) and dewatering would occur over a period of fifty years to a level of 15 m below ground surface. Both of these assumptions are extremely conservative.

The proposed operations plan for the quarry (Harrington and Hoyle, 1999) provides for 2 lifts of extraction at approximately 7.6 m (25 ft.) per lift. It is not expected that the water-bearing zones will

be encountered before, at a minimum 15 to 30 years over much of the site, based on the estimated rate of extraction of the first lift, and the observed depth of "water found" both across the site and in proximal water well records. Therefore, apart from possible local dewatering on the site, the excavation of rock below the depth of the water-bearing zones, with subsequent more regular dewatering, is not expected to occur for 15 to 25 years after the onset of quarrying activities.. Dewatering to a depth of fifteen m below ground surface will not be occurring over the complete life cycle of the extraction, and therefore, certainly will not be occurring for a fifty-year duration. Certainly, pumping on site to a drawdown of 15 metres below ground surface will not occur over the entire life of the proposed quarry, as is assumed in the model(s). Thus, the simulations of ultimate projected drawdowns in the vicinity of the quarry due to dewatering are extremely conservative, and were deliberately designed to be so during the conceptualization of the numerical modelling exercise.

2.3 MINISTRY CONCERNS ABOUT THE DOMESTIC WELL SURVEY

Page 3, Paragraph 3: "The domestic well survey completed by the consultant is inadequate...the Ministry would not be able to issue a Permit-to-Take- Water for this application until a thorough domestic well inventory has been completed..."

Nichols Gravel Ltd. agrees that a more thorough domestic well survey would have been prudent during the course of the Level 2 Hydrogeological Study. However, it should be recognized that, of the eleven residences that were attempted to be engaged, at least seven use a cistern as their water supply. In addition, upon recognizance of the Application for a Quarry license by Nichols on the part of the local residents, the "distribution" of the contents of the MOE June 14, 1999 letter to the public, and the disposition of the attendants of the Public Open House of September 23, 1999, local residents were, in general, loathe to allow Nichols' representatives to survey their water wells.

Both AGRA and Nichols are quite willing to undertake a survey of local residents' domestic wells. However, Nichols' independent attempt to solicit local residents' co-operation in conducting a survey of their water supply in October, 1999 was met with responses ranging from assumed indifference (no response) to open hostility. It is unlikely that local residents will be receptive to such an undertaking prior to the onset of the OMB Hearing concerning the Quarry Application.

2.3 MINISTRY CONCERNS ABOUT THE PROPOSED MONITORING

The monitoring program for quarry dewatering will be developed at the time that a Permit To Take Water (PTTW) for dewatering is applied for by Nichols. It is not expected that pumping of water will be necessary, except for aggregate wash activities, for between 15 and 30 years after the onset of quarrying. Prior to this time, the baseline conditions of the surrounding domestic wells will be established, and a monitoring program satisfactory to the MOE will be formulated with full input from and consultation with the Ministry.

As for the complaint resolution process, it is fully expected that the procedure for resolving well interference complaints will be developed at the time of Application for a PTTW with full input from and consultation with the Ministry, with appropriate triggers for the assessment of such complaints and, where warranted, remediation of affected wells (if any).

Mr. Gary Nichols
Nichols Gravel Limited
Response to MOE Review Letter

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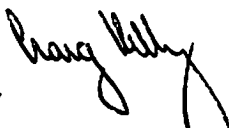
3.0 SUMMARY

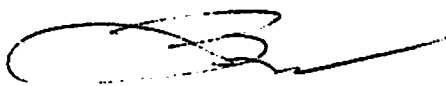
AGRA conclude that the relationship that the reviewer attempts to establish between the extraction and dewatering activities at the former Dufferin quarries and the current Lafarge quarry with the proposed quarry is misleading. The depths of extraction and the scale of dewatering at the Dufferin and Lafarge quarries are simply not comparable to the scale of operation and dewatering at the proposed quarry. The reviewer attempts to establish this relationship, and then abandons this line of thought after noting the proposed depth (15 m) of the Nichols quarry. The original reference to well interference at the former Dufferin quarry is sufficient to mislead a given reader. Equating well interference at the former Dufferin and Lafarge Quarries to potential interference at the proposed Nichols quarry is not substantiated by the data currently available to the MOE. Consequently, the statements that were placed in the introductory comments of the June 14, 1999 letter have served no purpose other than to unnecessarily alarm local residents, councillors, and the reviewers' colleagues at the MOE. This is decidedly unfair.

The reviewer then proceeds to assert that the data used to construct the numerical groundwater flow model is insufficient, and that the data which has been utilized is not representative. The reviewer offers no detailed explanation as to why this is so; nor does the reviewer indicate what he believes would be sufficient and representative data.

We trust that the above is satisfactory to address the concerns expressed by the MOE Reviewer. Nichols Gravel expect a response from the MOE to this letter prior to the onset of the up-coming O.M.B. Hearing. Should you have any questions or comments, please contact Mr. Craig Kelly at 905-568-2929, ext. 4237.

Respectfully submitted,
AGRA Earth and Environmental Limited


X Craig S. Kelly, B.Sc.
Hydrogeologist


X Peter B. Duckworth
Senior Consultant

CSK/csk
X Copies: Ms. Barb Ryter, MOE
Mr. Jamie Connelly, MOE
Mr. A. L. Ostner
Mr. C. Bell, Planner, City of Nanticoke

REFERENCES

AGRA Earth and Environmental Limited. February, 1999. *Level 2 Hydrogeological Study In Support of a Category 2 Class A Quarry Below Water License, Hagersville Ontario.*

AGRA Earth and Environmental Limited. May, 1999. *Letter - Response to MOE Questions Concerning the Hagersville Quarry Report.*

Gartner Lee and Associates Limited. 1979. *Hydrogeological Report of Haldimand Quarries and Const. Ltd. Property, Hagersville, Ontario.*

Jagger Hims Limited. 1996. *Hagersville Quarry Dewatering Impact Assessment.*

Jagger Hims Limited. 1998. *Groundwater Level Monitoring Program, Hagersville Quarry.*

Jagger Hims Limited. 1998. *1998 Groundwater Monitoring Program, Hagersville Quarry.*

Ontario Ministry of the Environment. Various Years. *Ontario Water Well Records.*

Ontario Ministry of the Environment. 1972. *Report on the Investigation of Well Interference Complaints Near Hagersville, Ontario.*

Ontario Ministry of the Environment. May, 1999. *Letter - MOE Questions Concerning the Hagersville Quarry Report.*

Ontario Ministry of the Environment. June, 1999. *Letter concerning Proposed Zoning Amendment for Part Lot 12, Concession 12, Former Township of Walpole, City of Nanticoke.*

Ontario Geological Survey. 1993. *An Inventory of Inactive Quarries in the Paleozoic Limestone and Dolostone Strata of Ontario.* OGS Open File Report 5863.

Stanley Consulting. 1998. *Letter to Harrington Hoyle Ltd. - Hagersville Proposed Quarry.*

Miscellaneous Correspondence in the Ministry of the Environment Files Concerning the Lafarge Quarry Site, Former Dufferin Quarry Site, and Proposed Nichols Gravel Quarry; 1971 to Winter, 2000.

Table 2
Borehole Summary - November 11, 1999

BH1-99

Overburden 1.98 m
Bedrock 5.73 m End of Hole

Total Depth 6.71 m

Water Found 5.70 m

BH2-99 Advanced Through Outcrop

Bedrock 11.58 m End of Hole

Total Depth 11.58 m

Water Not Found To 11.58 m

BH3-99

Overburden 1.05 m
Bedrock 8.09 m End of Hole

Total Depth 9.14 m

Water Found 8.38 m

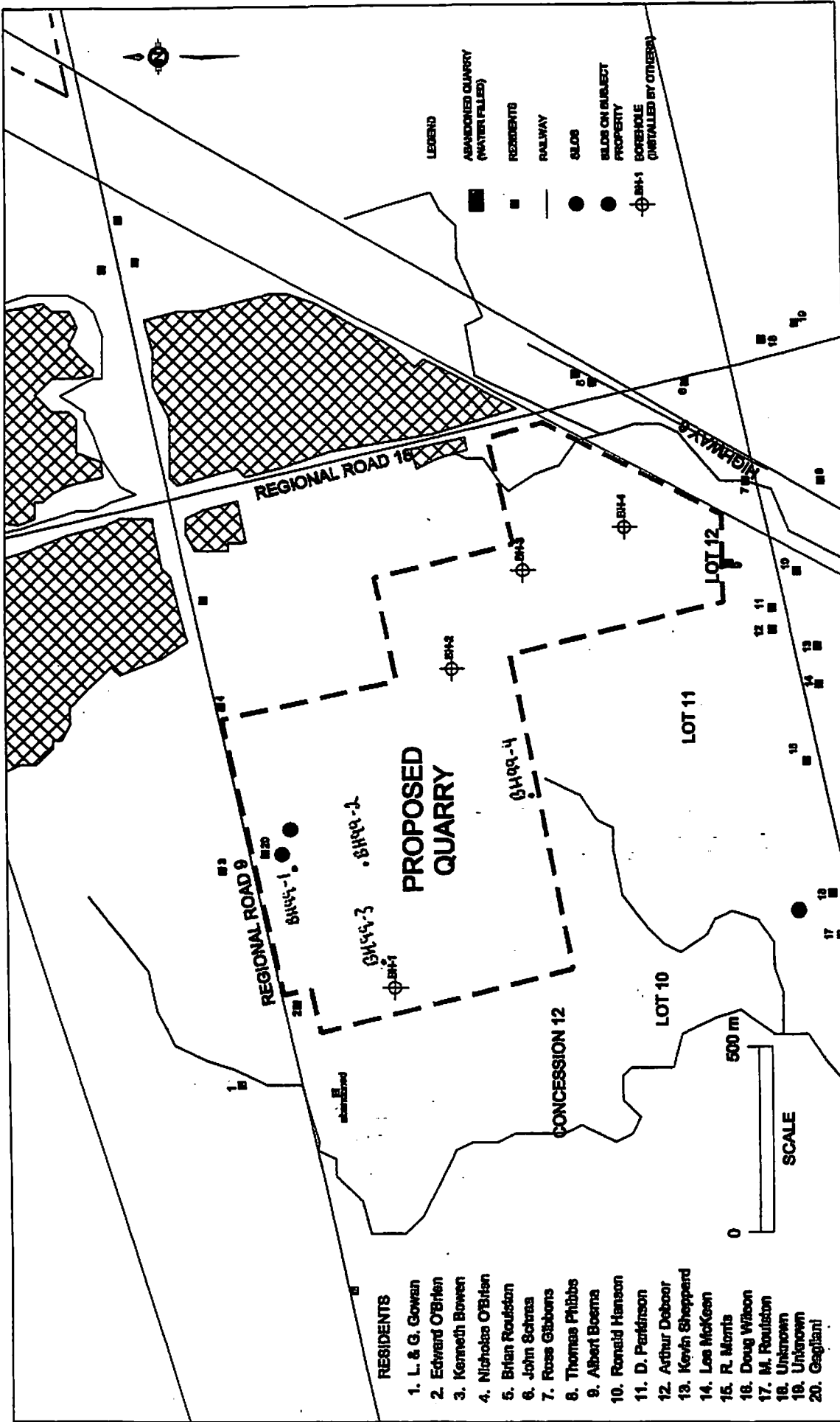
BH4-99

Overburden 2.57 m
Bedrock 3.53 m End of Hole

Total Depth 6.10 m

Water Found 4.98 m

FIGURE



HAGERSVILLE
FIGURE 2
MONITORING WELL LOCATIONS

AFTER HARRINGTON AND HOYLE

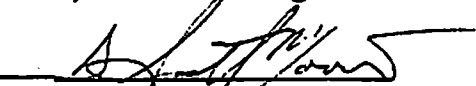
11

CITY OF NANTICOKE - RECOMMENDATION -

DATE: 2000 June 9 **X**
REPORT TO: Members of Council (2000 June 13)
FROM: J. Scott Morris, City Treasurer
SUBJECT: Nichols Gravel Pit Application (FIN00013)

X RECOMMENDATION:

- a) That the unbudgeted amount of \$35,000 for the City of Nanticoke to defend its position on Zoning Amendment Z-NA-2/98 in the name of Nichols Gravel Pit be financed from the Council Contingency Reserve;
- b) That financing for the Nichols Gravel Pit be conditional upon Transition Board approval.


J. Scott Morris

FINANCIAL/STAFFING/LEGAL IMPLICATIONS:

BACKGROUND:

Contained in the recommendations of Finance and Administration Committee of May 31, 2000 is the following recommendation:


- X** a) That the City of Nanticoke defend its position on Zoning Amendment Z-NA-2/98 in the name of Nichols Gravel Pit at the Ontario Municipal Board hearing, at an estimated cost of \$40,000.
- b) That the City request a deferral of the Ontario Municipal Board's pre-hearing until approval of the Transition Board of the financing for the above noted.

Direction was given to the City Treasurer to include the source of financing in the forthcoming report pertaining to Community Reinvestment Funds excess allocation. Given current concerns by the Transition Board regarding the CRF excess grant and other possible unbudgeted revenues, I suggest the source of funding be from the Council Contingency Reserve. Sufficient funds are contained in that reserve. In either case Transition Board approval is required.



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Golder VME 

12

X July 17, 2000

001-6525

Brian Duxbury
Barrister & Solicitor
1 King St. West
Suite 1500
Hamilton, Ontario
L8P 1A4

RECEIVED JUL 20 2000

X RE: NICHOLS GRAVEL LTD. QUARRY APPLICATION
PART LOTS 10-12, CONCESSION 12
CITY OF NANTICOKE

X Dear Mr. Duxbury;

In response to your request on behalf of the Rural Community Coalition, I have completed a review of the documents pertaining to proposed blasting procedures at the referenced site should the Proponent's quarry license application be granted.

I note that the Proponent's blasting consultant, Explotech Engineering Ltd. has submitted a number of recommendations, detailed on Pages 12 and 13 of their report and reproduced herewith as Appendix I. I suggest that these recommendations be included as conditions attached to the license should it be granted, along with my own recommendations as follows:

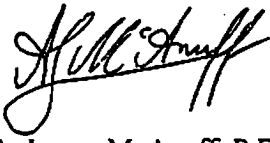
1. The monitoring results of the first six quarry blasts monitored at a minimum of 4 locations in accordance with the recommendations of the Proponent's consultant, along with the consultant's analysis and recommendations, shall be submitted to the local offices of MNR and MOE.
2. The monitoring results of ongoing production blasts monitored with a least two seismograph/sound meter combinations in accordance with the recommendations of the Proponent's consultant shall likewise be submitted to the local offices of MNR and MOE.
3. Whenever possible, blasting shall be carried out at approximately the same time of day.
4. Blast preparation and detonation during unsuitable weather conditions, i.e. those known to be conducive to the production of excessive overpressure, shall be avoided whenever practicable. These include temperature inversion, low and/or heavy cloud ceiling and high wind velocity.
5. The occupants of any building housing ultra-sensitive equipment for manufacturing or other purposes shall, upon request, be notified of the imminence of any blasting operation so that the operation of such equipment may be temporarily suspended during the blast detonation to avoid disruption by ground vibration.

6. Residences within 300 metres of the quarry site, which will have been thoroughly inspected in accordance with the recommendations of the Proponent's consultant, shall be re-examined following the initial six blasting operations. Copies of the original examination records and of the re-examination results shall be submitted to the property owner concerned.

Attached to the granting of a license to the Proponent, the foregoing conditions are intended to lessen the impact of blasting operations on the community. This is also contingent however, on the assumption that the blasting procedures will indeed be carried out as described by the Proponent's blasting consultant and that explosive weights detonated per millisecond delay period will be reduced whenever the need for such reduction is indicated by the results of ongoing monitoring of ground vibration and air blast.

Yours very truly,

GOLDER VME LIMITED

X 

A. Lance McAnuff, P.Eng.
Consulting Specialist
Explosives and Blasting

ALM/dd

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Project: IC05064
July 18, 2000

X Dillon Consulting Limited
495 Richmond St., London
London, Ontario
N6A 4W7

Attention: Mr. Rob Kell

Dear Mr. Kell:

X Re: Transfer of Electronic Files - Proposed Nichols Quarry

INTRODUCTION

At the request of Mr. Rob Kell, of Dillon Consulting Limited, AGRA Earth & Environmental Ltd. (AGRA) provide herein the digital files pertaining to the numerical groundwater flow model variants for the proposed development of the proposed Nichols Gravel Quarry near Hagersville, Ontario.

Mr. Kell requested that two variants, the base case variant, described in AGRA's Level 2 Hydrogeological Study Report (AGRA E&E, January 1998) and one other variant, be forwarded to him for Dillon's review. The variants that have been forwarded are the following:

- the base case scenario (AGRA, 1999, p. 6-9);
- the model variant, which is the base case variant with "no stream flow" and increased hydraulic conductivity for the Bertie Formation; and
- the modified conservative variant, which is similar to the model variant with "no stream flow," except that the hydraulic conductivity of the Bois Blanc Formation is increased (see below).

The model variants were constructed to take into account the intermittent nature of some of the local streams or drains, and possible higher conductivity within the Bertie Formation. In these variants, the intermittent streams/drains were not treated as intermittent, they were simply removed from the model.

The assumptions and calibration of the modified model variant(s) are described in more detail below.

DESCRIPTION OF THE BASE CASE AND MODIFIED MODEL VARIANTS

Base Case Scenario

In constructing the original 1999 scenarios (base case and others), the following primary assumptions were included:

- all of the streams in the area were hydraulically connected to the bedrock aquifer¹;
- the bedrock aquifer units corresponding to the Bois Blanc and Bertie Formations are characterized by similar hydraulic properties.

In the simulation of the proposed quarry dewatering, it was assumed that:

- water levels will be kept at about 15 m below the ground surface (proposed base of the quarry at approximately 205 m.a.s.l.);
- quarry development will occur gradually, over a period of 50 years, starting from the south central portion of the site (southern part of Lot 11); and
- water levels in the abandoned quarry pits will be at the existing levels since the proponent (Nichols Gravel Limited) is committed, subject to the permission of the quarry pit owners, to maintain these levels during the operations of the proposed quarry.

Modified Model Variant

Based on the MOE review (MOE, June 14, 1999), subsequent AGRA field reconnaissance conducted in the fall of 1999, and the procurement of available data through the Freedom of Information Act, the modified variants were simulated assuming no hydraulic connection between the small streams in the vicinity of the proposed quarry and the bedrock aquifer. In addition to this assumption, it was also specified that:

- the Bois Blanc formation extends down to a depth of about 20 metres below ground surface;
- the Bertie formation (about 10 m thick) is more permeable than the overlying Bois Blanc formation, except in the upper reaches of the Bertie Formation, which is assumed to have a similar magnitude of K as the Bois Blanc Formation;
- the vertical hydraulic conductivity between the Bois Blanc and Bertie Formations is expected to be relatively low due to the reported confined groundwater conditions in the Bertie Formation (Jagger Hims Limited, February 1996) and/or presence of the Springvale Sandstone Formation; and

Mr. R. Keli
Dillon Consulting Limited
Electronic File Transfer - Proposed Nichols Quarry

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- the groundwater flow between the Bertie and underlying Salina formation can be neglected

Calibration of the Modified Model

Calibration of the modified model variant(s) was done somewhat differently compared with the original base case scenario:

- the static water levels in BH-1 through BH-4 were taken from the Stanley Consulting Group Ltd. Report (June 1998) for the May 8, 1998 data;
- the water level in the Pit 3 (East Quarry) was fixed at the estimated elevation of 216.3 m a.s.l.;
- water levels in three other pits (West Quarry, Pit 1 and Old Dundas Quarry) were treated as additional calibration targets (i.e., computed by the model in order to match the observed differences in their water levels);
- the abandoned West Quarry, known to have been deepened in 1971, was assumed to be penetrating the Bertie Formation. Other pits were assumed to extend down to the base of the Bois Blanc Formation.

The model calibration was achieved with the horizontal/vertical hydraulic conductivity values for the Onondaga and Bois Blanc Formations of $K=(5/2) \times 10^{-4}$ cm/s and $K=(1/0.5) \times 10^{-4}$ cm/s, respectively, for the majority of the study area, in a similar manner as the original base case scenario. The average recharge rate was taken as 20 mm/yr, except for the ponds, where a net infiltration rate of 200 mm/yr was specified. Ponds were represented by an artificially high hydraulic conductivity value of 0.2 cm/s. This K-value was found to be high enough to simulate a relatively flat water table configuration within each pond and, at the same time, ensure the convergence of numerical iterations.

The calibrated hydraulic conductivities for the Bertie Formation appeared to be in the range of 1×10^{-3} cm/s - 8×10^{-3} cm/s for the majority of the study area. An higher calibrated hydraulic conductivity value of 8×10^{-3} cm/s for this formation was obtained in the area between the West Quarry, Pit 1 and Pit 3.

Calibration results for the modified model variant are summarized in the following table:

Mr. R. Kell
Dillon Consulting Limited
Electronic File Transfer - Proposed Nichols Quarry

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X Table 1: Calibration Results for the Modified Model Variant

Calibration Point	Observed Water Levels Elevation (m.a.s.l.)	Computed Water Levels Elevation (m.a.s.l.)
BH-1	216.0	216.8
BH-2	216.7	216.3
BH-3	216.7	216.0
BH-4	215.3	215.7
West Quarry Pit	216.8 217.1	216.8
Pit	216.6 217.3	216.7
Old Dundas Quarry Pit	220.1 220.4	220.2

Given the uncertainty of the estimated water levels in ponds, their unknown actual depths and the natural fluctuations of water levels these calibration results were considered to be sufficiently accurate for the purpose of the study.

Simulation of the Proposed Quarry Dewatering by Running the Modified Model

Simulations of the proposed quarry dewatering were run, utilizing a transient MODFLOW model for the calibrated modified model variant and the conservatively increased hydraulic conductivities.

The assumptions pertaining to proposed quarry dewatering were similar to those utilized for the original model variants.

DISCUSSION

Note that all of the simulated model variants (including the original and modified variants) are to be treated as dewatering impact assessment variants only. Their primary goal was to conservatively estimate the potential water level decline caused by the proposed quarry dewatering operations. There was no attempt made to simulate accurately all of the groundwater flow regime details within this larger, regional-scale model.

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X July 24, 2000

Cobb & Jones
Barristers and Solicitors
Two Talbot Street North
P.O. Box 548
Simcoe, Ontario
N3Y 4N5

Attention: Mr. Keith M. Jones, B.A., L.L.B.

City of Nanticoke - Peer Review - Nichols Gravel Limited

Dear Mr. Jones:

X Enclosed please find a draft report detailing our peer review of the hydrogeological assessment completed for the proposed quarry. We will finalize this report once we have received your comments.

Yours sincerely,

Dillon Consulting Limited

X

Rob Kell, M.A.Sc., P.Eng.
Project Manager

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Cobb & Jones, Barristers and Solicitors
X Peer Review of Supporting Hydrogeological Assessment
of the Proposed Nichols Gravel Limited Quarry
Draft Report

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Figure 1 - Stratigraphic Schematic
 Figure 2 - Simulated Drawdown

1. INTRODUCTION

This review was completed on technical documents related to an application for a Class 2 License for a proposed quarry southwest of Hagersville by Nichols Gravel Limited. This review was completed focussing on the potential impact on water resources caused by the proposed quarry. The *Aggregate Resources Act* and *Aggregate Resources of Ontario, Provincial Standards, Version 1.0*, (MNR, 1997) provide the basis for the requirements of an impact assessment for the proposed quarry.

The following material was reviewed:

Level 2 Hydrogeological Study in Support of a Category 2 Class A Quarry Below Water Licence, Hagersville, Ontario, (report) AGRA Earth and Environmental Limited, January 1999.

Response to MOE Review of Level 2 Hydrogeological Study in Support of a Category 2 Class A Quarry Below Water Level License, Hagersville, Ontario (letter with attachments), AGRA Earth and Environmental, April 26, 2000.

Transfer of Electronic Files - Proposed Nichols Quarry, (letter with electronic files on CD-ROM), AGRA Earth and Environmental, July 18, 2000.

The *Aggregate Resources of Ontario, Provincial Standards, Version 1.0*, (MNR, 1997) state what areas are required to be addressed in a Level 2 Hydrogeological Study. The documentation lacks specific details on many aspects of the study such as drilling methods, monitoring well construction methods, data analysis methods and specific details on the computer model. Some missing details are provided in the MOE Response letter and especially in the electronic files of the model. However, some details have been assumed (e.g., well construction methods).

The review focusses on three main issues. These issues are:

- Concerns related to the adequacy of the field investigation
- Concerns related to the groundwater modelling

Concerns related to the monitoring, mitigation measures and contingency measures for the proposed quarry.

For each issue, a background sub-section and a discussion sub-section is provided followed by suggested recommendations.

2. SUBSURFACE INVESTIGATIONS

2.1 Background

To evaluate potential impact resulting from the quarry on groundwater and surface water, there has to be an understanding of the physical environment. For groundwater concerns, this physical environment consists of the water bearing soil and rock influencing groundwater flow in the region of the proposed quarry. The physical environmental goes beyond just defining the types and thicknesses of major soil and rock units at the site but also into their hydrogeological characteristics. In particular, hydraulic conductivity, defined as the ability of soil or rock to transmit water, is a critical parameter.

Four boreholes were drilled to determine subsurface characteristics on the proposed quarry property. These boreholes were drilled using a drilling method that allowed rock cores to be taken throughout the depth of the borehole. Drilling depths range from 9.4 to 15.1 metres. The rock cores were logged as to rock type and the interpreted lithology is shown on borehole logs. The borehole logs also show that a well was installed in each borehole; however, well construction details, methodology or development could not be found in the documentation. From the appearance of the logs and subsequent discussion in the documents, the wells appear to have been constructed by installing a casing of unknown diameter through the surficial soil at the site and the remainder of the borehole was left "open" in the rock without casing or well screen.

In November, 1998, pumping tests were completed in the four monitoring wells and an existing well ("barn well"). The purpose of the pumping tests was to obtain data so that the hydrogeological characteristics of the bedrock could be determined. The pumping tests were "step" tests where the flow rate was increased at periodic intervals during the test. The duration of the pumping tests

ranged from 9 to 120 minutes and the flow rate varied from 1 to 6 l/gpm. The data from these tests were analysed to determine the hydraulic conductivity of the rock.

In response to a MOE comment that the field investigation was insufficient to characterize the site hydrogeology, additional boreholes were drilled in November 1999. Information on the drilling method, borehole logs and static water levels are not documented. The only information that is documented is that there was rock present at the site and that "water was found" at certain depths. There is no information documented on what is meant by "water found", who made the interpretation or for what duration the holes were open for observation. Further, the depth of two of the boreholes were less than 7 metres whereas the proposed quarry is to be 15 metres in depth.

2.2 Discussion

2.2.1 Number of Boreholes

Only four boreholes were completed at the site of a proposed quarry with an overall area of 94 ha (235 acres) and a quarry of 63 ha (155 acres). As well, the boreholes did not penetrate to a major groundwater yielding formation (the Bertie Formation). Boreholes were not completed in the potential area of influence of dewatering operations away from the quarry site. Also, there was no investigation of the hydraulic characteristics with depth at the site. Such tests could consist of installing wells at different depths to ascertain static water levels and hydraulic conductivity. Also sections of the borehole could have been isolated during the drilling process and injection tests conducted. The lack of vertical differentiation in hydraulic characteristics meant broad assumptions had to be made on over a wide thickness of different rock types. For example the Bois Blanc Formation consists of four distinct "Members" yet all were treated as one rock type.

The additional boreholes drilled in November 1999 did not materially increase the hydrogeological knowledge of the site. The boreholes only confirmed that bedrock occurs near (or at) surface, and the "water found" information is qualitative only. The boreholes were generally not deep enough given the 15 m depth of the proposed quarry (borehole depths were 6.71 m, 11.58 m, 9.14 m and 6.10 m). Also static water levels were not documented for these boreholes.

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In summary, there was insufficient coverage (by area and depth) of the proposed quarry and environs in the subsurface investigation so that an impact assessment of the proposed quarry cannot be completed with any confidence.

2.2.2 Pumping Test Methodology and Analysis

The pumping test durations were very limited (maximum 120 minutes, minimum 9 minutes). The minimum duration for a pumping test quoted in the literature for a confined aquifer is 24 hours (e.g., Driscoll, 1986, Kruseman and De Ridder, 1976) and even longer for an unconfined aquifer. The short duration tests mean that all references to the fact that there was not measurable drawdown in observation wells located 44 m and 1 km from a pumping well technically meaningless. The tests would have to continue much longer for drawdown to occur in observation wells located that distance from the pumping well.

The Level 2 report states that *"The pump test was conducted to determine the steady state pumping rate that could be sustained at each of the wells. Following the completion of the pump test, a response test was conducted by periodically measuring the water level as it recovers toward the equilibrium (static) water level."* However, based on the analysis presented in Appendix B, the recovery data were analysed using a method that assumes that there was an instantaneous change in water level caused by a sudden removal of water (referred to as a slug test analysis). An erroneously low hydraulic conductivity will result when applying the slug test equations to pumping test recovery data. It is possible to derive a transmissivity (hydraulic conductivity times the thickness of the aquifer) by plotting recovery drawdown versus the ratio of the time since pumping began to the time since pumping stopped (referred to as t/t') if a constant flow rate was used in the pumping test (Driscoll, 1986). In this case, stepped tests at increasing flow rates were completed.

Also the diameter of the borehole (D) given in Appendix B is not correct (stated as 0.205 m). Since NQ coring was completed, the diameter of the hole would be 0.076 m. The diameter of the well (d) was given as 0.051 m. Although no construction details of the monitoring wells were provided in the report, it is assumed that the rock portion of the borehole was not cased (i.e., an open hole) and since the water level would be mainly within the open hole, the diameter (d) used in the equation should also be 0.076 m. Further, a "transformation ratio" ($m = \sqrt{k_h / k_v}$) is usually incorporated into the slug test formula to account for anisotropic conditions (i.e., when the vertical hydraulic

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conductivity (k_v) is less than the horizontal hydraulic conductivity (k_h). Errors in specifying the correct diameters used in the equations and disregarding anisotropic conditions have the effect of underestimating hydraulic conductivity.

Given that the pumping test data was incorrectly analysed (slug test equations used for pumping test recovery data) and the errors used for the input parameters (incorrect borehole diameter, neglecting anisotropy), the hydraulic conductivity values presented in the report can not be used with any confidence.

2.3 Recommendations

The following are recommended to address concerns related to the field investigation:

- more boreholes are needed to adequately address the relatively large area of the quarry and potential impact area.
- investigations are needed to adequately characterize hydrogeological conditions with depth including horizontal and vertical hydraulic gradients and hydraulic conductivities.
- the Bertie Formation should be investigated to determine its hydraulic characteristics to evaluate its hydraulic "connection" to the overlying Bois Blanc Formation.
- pumping tests should be conducted of proper length (24 hours minimum and longer if necessary) and the data from the tests should be analysed using appropriate methods.

3. GROUNDWATER FLOW MODELLING

3.1 Background

Groundwater flow modelling was used to assess the potential impacts from the proposed quarry. A computer program called Visual MODFLOW was used for the assessment and it is a sophisticated tool and is appropriate for simulating conditions over a range of hydrogeologic units over a wide

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area. However, the computer model must be based on the physical reality of the modelled area if any confidence can be placed in the results of the model. As outlined in Section 2, there was insufficient investigation of the area to adequately define the hydrogeological characteristics of the quarry site and environs. Other concerns with the model are outlined below.

3.2 Discussion

3.2.1 Calibration of the Model

The model was calibrated by adjusting parameters such as hydraulic conductivity and recharge rates so that simulated water level matched (as closely as possible) measured water levels at on-site monitoring wells. In subsequent variants of the model, the water levels in nearby quarries were also used in the calibration process. Although there were no monitoring wells installed outside of the quarry area, static water levels from Water Well Records should have been used in the area that may be impacted by the quarry (e.g., wells located near the intersection of Regional Roads 18 & 27 and 55 & 9). Inclusion of data from these areas in the calibration process would increase the level of confidence of the simulated impacts in these areas. X (1)

A relatively low infiltration rate of 50 mm per year was used as an initial estimate in calibrating the model. The only justification for using the low infiltration rate is "...the presence of silty clay at the surface". Bedrock occurs at surface at (at least) one location at the site. As well, fractures and other discontinuities within the clay increases its permeability. The effect of assuming a low infiltration initial estimate will result in low hydraulic conductivities after calibration of the model. Additionally, the model should account for an increase in hydraulic conductivity as a result of explosive blasting at the proposed quarry. Also, zones of different hydraulic conductivity were specified in the model without explanation on the basis for spatial extent of these zones. (2) (3) (4) (5)

3.2.2 Modelled Domain

A major hydrostratigraphic unit at the site, the Bertie Formation, was not simulated in the Level 2 report. The Bertie Formation consists of dolostone, is reported to be more permeable than the overlying Bois Blanc Formation and has water supply wells installed in it in the vicinity of the site. Although the quarry will not be deep enough to intercept the Bertie Formation, the quarry will have

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an impact on the groundwater in the unit. This is illustrated in Figure 1, which shows schematically the major bedrock units at the property. The water level in the Bertie will be quite high (near ground surface) and the water level in the quarry will be at its base. Therefore, the difference in water levels will cause a driving force, where water will flow from the Bertie Formation upwards into the base of the quarry.

A variant of the model was made subsequent to MOE comments on the Level 2 report. This variant incorporated explicitly the Bertie Formation and assigned it a higher permeability than the overlying rock. This was portrayed as a "conservative" variant; however, it is considered that the simulation including the Bertie Formation is more appropriate than the "base case" presented in the Level 2 report. Inclusion of the Bertie Formation in the simulation increases the predicted dewatering flows in the quarry from the "base case" of 250 m³/day (38 igpm) to approximately 2400 m³/day (370 igpm).

3.2.3 Stream/Groundwater Interaction

In the Level 2 report, streams were specified to be hydraulically connected to the underlying bedrock. However some small streams in the vicinity of the site, are intermittent in nature and clearly will not influence bedrock hydrogeological conditions. The effect of the inclusion of streams that are hydraulically connected to the bedrock is illustrated on Figure 2. This figure shows the area where water levels are predicted to decrease by one metre or greater as a result of the proposed quarry. Two simulations are shown on the figure: the "base case" simulation documented in the Level 2 report, and a variant that does not simulate stream interaction for some small streams. At point "A" on the Figure, the predicted drawdown for the "base case" does not go beyond the stream at this point because the model assumes that the stream will replenish groundwater limiting the zone of influence of the quarry dewatering operation.

The "conservative" simulation shows a much larger area of predicted impact. However, the influence of simulated stream / groundwater interaction is also apparent for this simulation at point "B", where the zone of influence essentially stops at the stream. This stream at location "B" is also a small stream with limited catchment area and probably will not influence groundwater in the way predicted in the simulation. If this is the case, the zone of influence will expand westward, probably encompassing the residences located at the intersection of Regional Roads 55 and 9. The simulation

that includes no stream / groundwater interaction for small streams is portrayed as a "conservative" case; however, it is considered that the simulation is more appropriate than the "base case" which relies on the small streams to replenish groundwater at depth.

3.3 Recommendations

The model is a good basis to assess impacts from the proposed quarry. However, as the site has not been adequately characterized to allow for any confidence to be placed in the modelling results. Therefore:

- The model should be updated with information obtained from additional site investigations.
- Stream/groundwater interaction should be reviewed for small streams.
- The model should be calibrated using the new information from the additional investigations as well as Water Well Record information from areas potentially impacted by the quarry.

4. MONITORING AND CONTINGENCY PLANS

4.1 Background

The *Aggregate Resources of Ontario, Provincial Standards, Version 1.0*, (MNR, 1997) are quite clear that a monitoring plan, mitigation measures (including trigger mechanisms), and a contingency plan are an integral part of a Level 2 report. However, the Level 2 report covers these items in a very superficial manner.

4.2 Discussion

The monitoring program suggests that only domestic wells less than 15 metres in depth be monitored. However, as Figure 1 and the model variant that includes the Bertie Formation shows, wells installed at greater depths can be influenced by the quarry. The program also states that only residences that will allow access can be monitored and warns of potential erroneous data caused by

home owner use of the well. A more appropriate monitoring system would rely on monitoring wells installed by the proponent in areas and depths identified to be at risk of impact. The water levels in these wells can be inexpensively continuously monitored using electronic devices. The monitoring of domestic wells at the frequency stated in the Level 2 report would be a suitable supplement to the monitoring program. Proposed wells to be included in the monitoring program should be explicitly stated.

A baseline water quality evaluation of domestic wells should also be completed. It is agreed that the quarry operation would not directly affect water quality in nearby wells (especially during dewatering operations). However, the dewatering operations will cause a shift in the natural groundwater flow direction in the area and groundwater from impacted areas (e.g., agricultural impacts) may be drawn towards residents wells as groundwater moves towards the quarry.

The trigger mechanism for mitigative measures in the report is deferred to a later date when data is available on the water level variability. It is correct that the trigger mechanism should have some flexibility to account for natural variability in water levels, however, details can be provided on how the trigger mechanism will be developed and implemented. Further, there should be an annual report prepared by the quarry operator that summarizes monitoring data and states whether trigger mechanisms have been exceeded and provides a prediction on whether there is the potential for the trigger mechanism to be enacted in the foreseeable future (e.g., a two or three year time line). This report should be provided to the Municipality and interested nearby residents.

The contingency measure stated in the report consists of the quarry operator providing potable water tanks to residents who have a "... complete loss of water ... directly linked to dewatering at this quarry." This is clearly a significant burden to the resident who must prove that there has been a complete loss of water, then must prove that the quarry dewatering has caused the loss of water just to get a potable water tank installed at the residence. A preferred contingency measure would be to have the quarry operator provide a temporary potable water tank if there has been a disruption in the water supply at the residence while an investigation is completed on the cause of the disruption. The ^{MCE} results of the investigation should be reviewed by an independent party. If the quarry is clearly not the cause of the disruption, the water tank should be removed. If the disruption has been caused by the quarry and the disruption is predicted to persist, the quarry operator should modify the operation of the quarry (e.g., stopping dewatering operations) to provide a long term solution to the problem.

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4.3 Recommendations

The following are recommended:

- permanent monitoring wells with continuous data collection equipment should be the primary monitoring system for the site.
- water levels from domestic wells should be collected at the suggested frequency to supplement the primary system
- a baseline water quality survey should be completed on nearby residents' wells.
- the results of the monitoring program should be documented in an annual report; the report should be provided to the Municipality and nearby residents
- details of mitigation measures including trigger mechanisms should be clearly defined with flexibility to address presently unknown natural fluctuations in water levels.
- contingency measures should put the onus of providing temporary relief and long term solutions on the quarry operator
- an independent review should be completed on monitoring data and determination of potential impact.

5. SUMMARY

Due to the lack of adequate site characterization, it is not possible to state an opinion on the potential impacts on water resources caused by the proposed quarry. Based on the review and the available information, the impacts predicted in the "conservative" simulation are considered to more accurately reflect potential impacts than the "base case" simulation. However, data from additional site investigations may indicate significantly different conclusions from both of these simulations. Changes in the site monitoring, mitigation and contingency measures should be made to ensure that the water resources of nearby property owners are protected.

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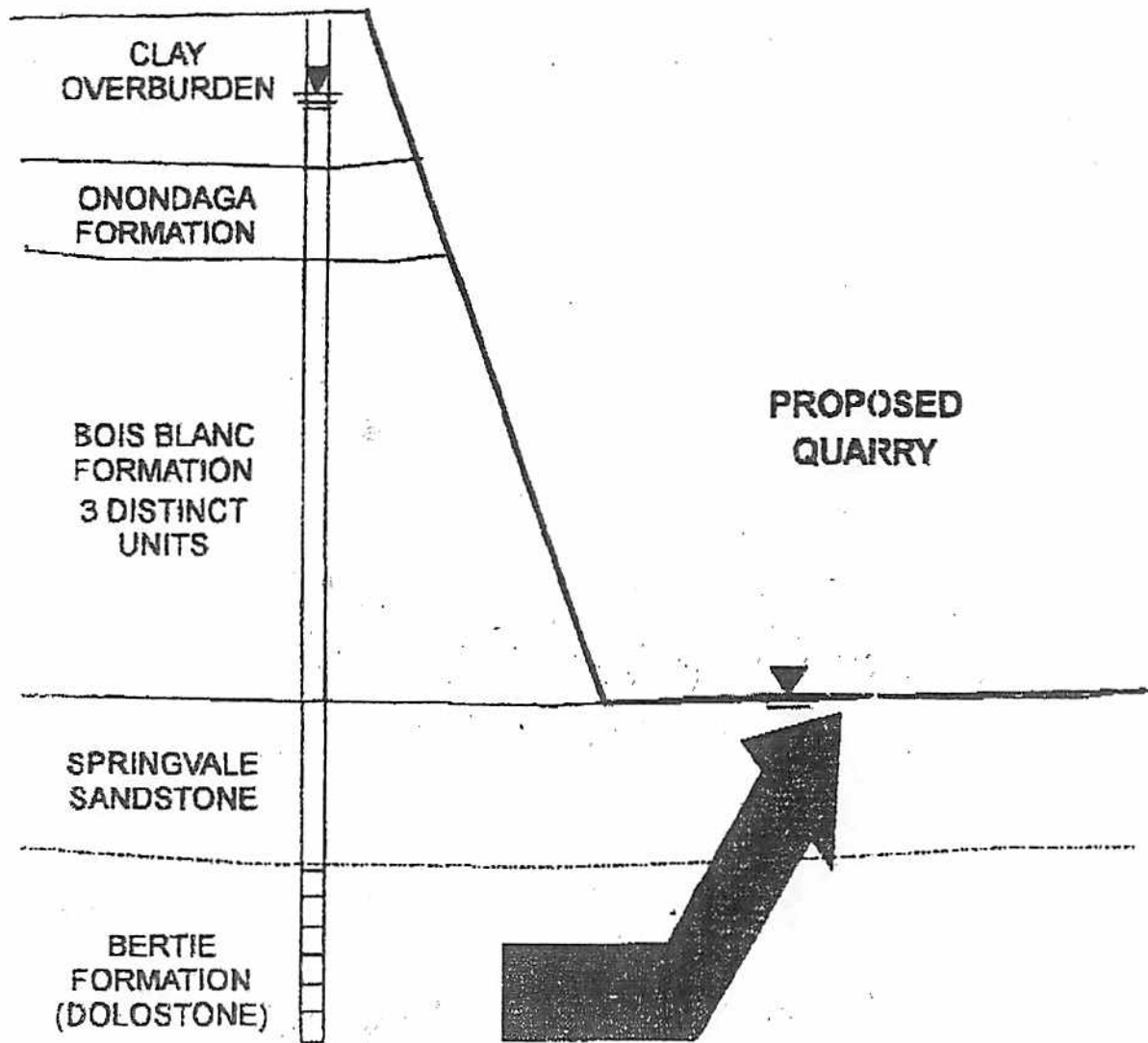
REFERENCES


Driscoll, F.G., 1986, *Groundwater and Wells*, Second Edition, Johnston Division, St. Paul Minnesota.

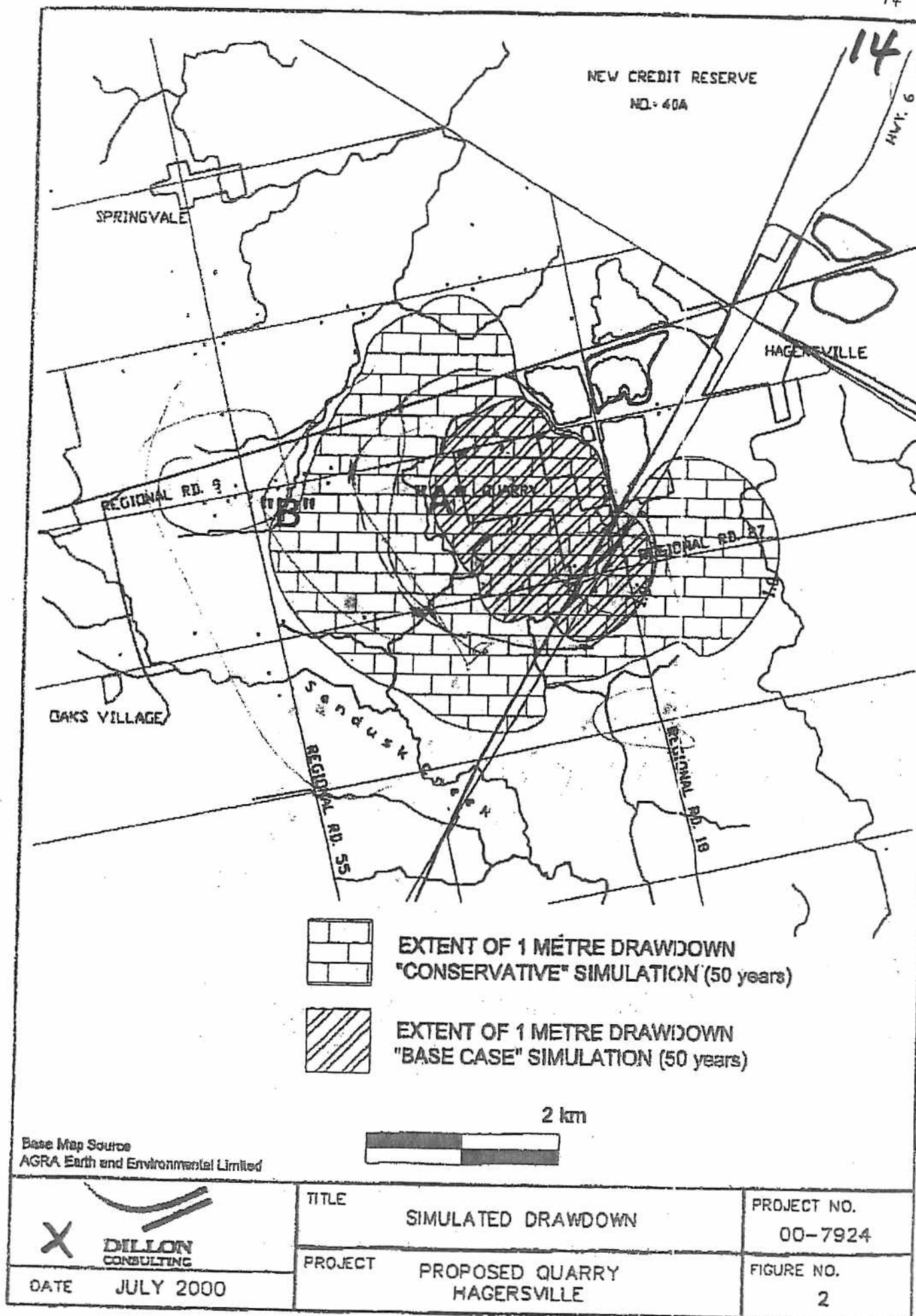
Kruseman, G.P., and N.A. De Ridder, 1976, *Analysis and Evaluation of Pumping Test Data*, Third Edition, International Institute for Land Reclamation and Improvement, Wageningen, The Netherlands.

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FIGURES



 DILLON CONSULTING	TITLE	STRATIGRAPHIC SCHEMATIC	PROJECT NO. 00-7924
	PROJECT	PROPOSED QUARRY HAGERSVILLE	FIGURE No. 1
DATE	JULY 2000		



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X August 31, 2000

X **DILLON**
CONSULTING

X Cobb & Jones
Barristers and Solicitors
Two Talbot Street North
P.O. Box 548
Simcoe, Ontario
N3Y 4N5

Attention: Mr. Keith M. Jones, B.A., L.L.B.

X City of Nanticoke - OMB Hearing - Nichols Gravel Limited
Part Lot 12, Concession 12, City of Nanticoke (Walpole)
X Harrop Drain Assessment

X Dear Mr. Jones:

Further to your authorization of July 31, 2000, and our e-mail of August 22, 2000, we have completed your request to assess the hydraulic capacity of the Harrop Municipal Drain in respect to the Nichols Gravel Limited proposal to use the drain as an outlet for quarry dewatering activities.

The Harrop Municipal Drain was established by an Engineer's Report under the Drainage Act ca. 1954. The drainage area covers approximately 2400± acres from the Hagersville Quarries immediately west of Hagersville to Sandusk Creek.

A site condition survey of the drain was completed by Dillon staff on August 23, 2000. This survey documented and photographed:

- drain channelways for cross section, vegetative cover, soil types, and signs of aging and weathering
- drain undercrossing hydraulic structure types, materials, and signs of aging and weathering
- drain general horizontal and vertical alignment geometry.

... continued

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Barristers and Solicitors
August 31, 2000

The following conclusions/observations were made from the survey.

1. The drain is significantly aged and weathered.
 - cross sectional geometry has been lost due to channelway side slope erosion
 - profile grade is irregular and heavily sedimented
 - uncontrolled vegetative growth has occurred, including the establishment of mature trees
 - there are signs of flooding onto adjacent agricultural fields.
2. The drain, originally, appears to be designed in accordance with the Drainage Act and Ministry of Agriculture and Food design guidelines. This design appears to be for approximately 6 mm to 13 mm of rainfall in 24 hours. Typically, this would be in the range of the 1.0 m³/sec maximum at the downstream reaches at maximum depth of flow and related freeboard.
3. There appears to be no excess available capacity for flows other than this region's design rainfall events. The addition of flows, other than rainfall, would increase the incidences of localized flooding and increase the duration of flooding.
4. Significant improvements would be required over the whole length of the drain, if grade and outlet is available, to accommodate additional flows.

We advise that there are different design bases for the different components of the Harrop Municipal Drain. For example:

open drain:	2 year frequency design storm
road culverts:	typically a 50 year frequency design storm
railway culverts:	could be as high as a 75 year frequency design storm.

The design capacities for culverts are obviously high but the lowest component, the open drain, controls overall capacity.

... continued

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August 31, 2000

In summary, the Harrop Drain was not designed to allow for additional inputs other than this region's typical rainfall. Further, the condition of the drain suggests that significant improvements would be required to accommodate additional flows.

Yours sincerely,

X Dillon Consulting Limited

X *W. A. Boussey*

W. A. (Bill) Boussey, P.Eng.
for Rob Kell, M.A.Sc., P.Eng.
Project Manager

16
X September 4, 2000
TC 05041

Nichols Gravel Limited
Box 172
Delhi, Ontario
N4B 2W9

DRAFT

X Attention: Gary Nichols
President

X Dear Mr. Nichols

X RE: Response to Dillon's Review of Hydrogeological Assessment Reports
Proposed Nichols Quarry, City of Nanticoke, Ontario

AGRA Earth and Environmental Limited (AGRA) present herein our response to Dillon Consulting Limited's "Peer Review of Supporting Hydrogeological Assessment of the Proposed Nichols Gravel Limited Quarry - Draft Report" (Dillon's review), dated July 24, 2000

Dillon's review focuses on the following categories of concerns:

- Concerns related to the adequacy of the field investigation;
- Concerns related to the adequacy of the groundwater modelling; and
- Concerns related to monitoring, mitigation measures, and contingency measures for the proposed quarry.
- Concerns related to the adequacy of the field investigation

Dillon: Number of boreholes

AGRA:

considered more monitors were recommended, until the results of the FOI request was reviewed - considered K of shallow bedrock, Bertie, extent of fracturing of shallow bedrock, pre-1971 impacts at other quarries, observed impacts at Lafarge - our assumptions sufficiently conservative that further intrusive work wouldn't materially alter the dewatering impact assessment

4 members of Bertie - no quantitative value in assessing impact from dewatering all four members, or assigning bulk K, wells completed at different depths but K's very similar; can have K diff of same magnitude in different levels of formation with only one member

Nichols conducted to ascertain depths at which water bearing fractures may be found in different areas of property for his purposes

Dillon: Pumping Test Methodology and Analysis

Dillon have raised concerns about the duration of the pumping tests (should be minimum 24-hours), the application of the slug test analysis to the pumping test recovery data, and the slug test analysis itself (i.e. well diameter and transformation ratio).

AGRA Response

DRAFT

Regarding the duration of the pumping tests.

- The main purpose of the pump tests conducted on the four boreholes was "to determine the steady-state pumping rate that could be sustained at each of the well" (AGRA, 1999, page 2) rather than to pump the tested well(s) at smaller rates over a longer period of time with an attempt to measure drawdown in the surrounding wells. The conducted tests showed that the long-term sustainable rates vary from about 1 lpgm to 6 lpgm. The hydraulic properties of the aquifer were estimated based on the wells' recovery data for each of the pumped wells, and not based on the responses obtained in the observation wells.

At three of the boreholes (BH-1, BH-2, and BH-4), the wells were pumped at between 1 and 3 lpgm, and were close to "breaking suction" (drawdown to pump level) between nine (9) minutes and one hundred and five (105 minutes). At the barn well, a five to six inch diameter well with a pump level at approximately 70 ft., the drawdown broke suction in approximately 40 minutes at 3 lpgm. AGRA do not consider that conducting a 24-hour pump test on any of these wells, at rates that would have to be considerably less than the rates noted above in order to endure the duration of the test, would have provided a more appreciable estimate of the bulk hydraulic conductivities of the bedrock.

- The fact that there was no measurable drawdown in the observation wells located in the range of 44 m to 1 km from a given pumping well suggests that there are no highly conductive zones/ fractures between these wells.

Regarding the application of the slug test analysis to the pumping test recovery data

A comparison of "K" values derived from the slug test analysis, modified slug test (incorporating Dillon's suggested transformation ratio), the Theis analysis, and the K values incorporated into the 1999 base case and July 2000 conservative model scenarios is presented in Table 1. It does not matter which analysis is applied to the data; the K values used in the base case and conservative scenarios were assumed to be higher.

The application of the Theis recovery method for the analysis of the well recovery at the site had is problematic since (i) two (BH-1 and BH-3) out of five tested wells were pumped at significantly varying rates (more than 50% variation); and (ii) the residual drawdowns plotted versus t/t^* were not well approximated by a straight line in a semi-log coordinate system.

Table 1 shows the results of the well recovery analysis conducted for BH-1, BH-2, BH-4 and the Farm wells (BH-3 data was not analyzed since its pumping rate varied by a factor of 6 during the test). The mean K-value obtained from this analysis (i.e., 6.0×10^{-4} cm/s) is almost 3 times lower than the average K-value for the Onondaga and Bois Blanc formations utilized in the 1999 base case scenario and more than 4 times less than the K-value utilized in the conservative variants. Note that the K-values for the well recovery data are based on the average slopes of the drawdown versus $\ln(t/t^*)$ "best fit"

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lines obtained by Aquifer-Test software package. Analysis of the middle portions of these curves, corresponding to the intermediate t/r^2 values, resulted in lower K-values for BH-1 and BH-2, compared with what is presented in Table 1

Results presented in Table 1 show that K-values obtained from the modified slug test analysis and by the Theis recovery method are similar. This may be attributed to the relatively low bulk hydraulic conductivity of the Onondaga and Bois Blanc Formations. In this case, the drawdown does not spread out much laterally and, being limited to the immediate vicinity of the pumped well, approaches the conditions created during the slug test.

Regarding the slug test analysis itself (i.e. well diameter and "transformation" ratio):

AGRA agrees with the comment on the well diameter and "transformation" ratio (Dillon review, p. 4). Table 1 shows the originally estimated and modified hydraulic conductivity values obtained from the slug-test analysis of the recovery data. Comparison between the originally estimated and newly obtained K-values shows that the original values were underestimated by a factor of 2-3. However, the K-values obtained from the slug-test were not utilized in any of the model runs. The average K-values for the Onondaga and Bois Blanc formations used in the model were 10 - 17 times higher than those estimated from the slug-tests. The K-values used in the model still remain 3 - 5 times higher than the newly obtained numbers.

Finally, responding to the concerns related to pumping test methodology and analysis AGRA would like to emphasize that:

- K-values used for the estimation of quarry impacts were and remain significantly higher than those obtained from the slug-test analyses;
- Two different methods of analysis (Theis recovery and slug test) showed that the bulk K-value for the Onondaga and Bois Blanc formations is in the order of 10^{-5} - 10^{-4} cm/s;
- K-values used in the groundwater flow model are closer to the upper limit of this range, i.e. 10^{-4} cm/s;
- There is nothing to suggest that the bulk K-value for the Onondaga and Bois Blanc formations is above the 10^{-4} cm/s range, since the hydraulic conductivity of the more permeable Bertie Formation is expected to be in the range of 10^{-4} to 10^{-3} cm/s;
- K-values used in the model were also confirmed by a simulated pumping test at an average sustainable rate of 2 l/gpm (AGRA E&E, 1999; page 8). Note that Dillon completely ignored this result in their comments.

Concerns related to the groundwater modelling

Dillon: Calibration of the Model

Dillon asserts that static water levels from the water well records in the vicinity of the proposed quarry should have been incorporated into the model. They also expressed concern that the infiltration rate used in the simulations was too low.

AGRA:

Regarding the application of static water levels from Water Well Records.

- The model was calibrated to the on-site static water level data obtained in November 1998, while static water levels in the domestic wells were recorded 10 - 40 years ago at different dates. Given the fact that (i) water levels in the area fluctuate up to about 1.5 m - 3 m annually in response to

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Nichols Gravel Limited
Response to Dillon's Review - Proposed Nichols Quarry

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show a similar water level range of 210 m.a.s.l. to 215 m.a.s.l.

It is our opinion that including the water levels in the abandoned quarries into the calibration procedure is more valuable for the estimation of the bulk K-value in the bedrock than using the domestic water well records, since the created ponds intersect a large area of the fracture distribution in the shallow aquifer.

The model was also calibrated for pumping conditions (AGRA E&E, 1999; page 8). Dillon completely ignored this result in their comments.

Regarding a relatively low infiltration rate of 50 mm per year.

According to the surficial geology map for the Region, the majority of the modelled area is lacustrine clay at the surface. Bedrock may occur at the surface at some isolated locations, possibly resulting in increased highly localized infiltration rates. However, modelling experience shows that local small-scale variations in the infiltration rates do not notably affect the simulation results.

According to the representative drainage basin studies carried out by the Ontario Water Resources Commission, the maximum acceptable infiltration recharge rate for dense clay (or clayey till) is 50 mm per year (MOE, 1991). In addition to this, the recent studies for the Oak Ridges Moraine Area show that percolation to groundwater through fine textured clay soils on the lower slopes adjacent to the Moraine is estimated to be 30 mm per year (Background Report No.3 for the Oak Ridges Moraine Planning Study, 1996). These soils are typically coarser than the lacustrine clay deposits in the area of interest.

Application of significantly higher infiltration rates not only contradicts the data available for the major surficial soil material, but will result in K-values that are not supported by the pumping test data after calibration of the model. Note that higher infiltration rates will also have a mitigative effect on the predicted impacts.

In addition, it is known that the area is rife with drainage, in order to allow for the raising of crops on the clayey soils. The ditches were constructed to divert precipitation as surface runoff, because the natural infiltration into the subsurface is very low. These ditches will tend to decrease the infiltration due to precipitation across the study area.

Regarding an increase in hydraulic conductivity due to blasting.

Explosive blasting at the proposed quarry may result in local fracturing of rock away from the blast "front", primarily in the horizontal direction. Horizontal fractures created by blasting typically are not expected to be longer than 10 m. Therefore, the impact of horizontal fracturing due to blasting cannot exceed the impact of quarry expansion by 10 m from each side. This will make the zone of influence wider/longer by about the same amount. Given the fact that the projected zone of influence for the proposed quarry is in the order of 10^2 - 10^3 m, the impact on bulk hydraulic conductivity of the rock due to horizontal fracturing created by blasting will be minor, beyond the uncertainty associated with other input parameters used in the model.

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Nichols Gravel Limited
Response to Dillon's Review - Proposed Nichols Quarry

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Fracturing of rock in the vertical direction due to the directional explosive blasting is very limited. Existing data for other quarries (eg. The Dufferin Aggregates Quarry in Milton) shows that impacts of blasting do not extend more than 1 m - 2 m below the quarry floor. In the case of the proposed quarry, it means that the impact of blasting in the vertical direction will be within the Springvale Sandstone Formation. This formation is considered to be less permeable and fractured than the overlying Bois Blanc Formation. However, in all of the simulated variants, the K-value for the Springvale Sandstone Formation was assumed to be the same as for the Bois Blanc Formation. Therefore, the simulated variants already utilize higher K-values for material underlying the quarry floor.

Existing data for the nearby abandoned quarries also supports the argument that no significant vertical fracturing is expected to occur, since there were no water shortages observed in nearby domestic wells prior to the deepening of these quarries into the Bertie Formation in the early 1970s. These quarries were also subjected to blasting, yet show no significant blasting effects at their margins.

Regarding the zones of different hydraulic conductivity.

With reference to Dillon's concerns regarding the various zones of hydraulic conductivity in the groundwater model domain, AGRA provide the following:

- The presence of zones of increased hydraulic conductivity close to the Onondaga Escarpment in the developed model is consistent with observed data and explained in AGRA's response to the June 1999 MOE review letter (AGRA, May 26, 1999).
- Increased K-values in the immediate proximity of the existing ponds were introduced in an attempt to take into account additional fracturing created by the explosive-blasting.
- Decreased K-values in the area close to the Old Dundas Quarry was introduced to in order approximate the significant difference in water levels observed in this pond with respect to the other ponds.
- Other zones of K-values, within a similar order of magnitude, are attributed solely to the model calibration.

Dillon: Concerns Related to the Modelled Domain

Dillon asserts that "it is considered that the simulation including the Bertie Formation is more appropriate than the "base case" presented in the Level 2 report" (Dillon review, p. 7).

AGRA:

AGRA do not agree that the model is not very conservative, based on field observations, historical data, historical experience of quarries in the area, and conditions and impacts observed in nearby quarries.

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created by blasting will be minor, beyond the uncertainty associated with other input parameters used in the model

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Existing data for the nearby abandoned quarries also supports the argument that no significant vertical fracturing is expected to occur, since there were no water shortages observed in nearby domestic wells prior to the deepening of these quarries into the Bertie Formation in the early 1970s. These quarries were also subjected to blasting, yet show no significant blasting effects at their margins.

Regarding the zones of different hydraulic conductivity.

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- Other zones of K-values, within a similar order of magnitude, are attributed solely to the model calibration.

Dillon: The Modelled Domain

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Dillon assert that "it is considered that the simulation including the Bertie Formation is more appropriate than the "base case" presented in the Level 2 report" (Dillon review, p. 7).

AGRA:

AGRA do not agree that the model is not very conservative, based on field observations, historical data, historical experience of quarries in the area, and conditions and impacts observed in nearby quarries.

Regarding the conservatism of the 2000 variant.

The 2000 variant, constructed in response to the 1999 MOE comments on the Level 2 report, is considered to be a conservative variant for the following principal reasons:

- According to the MOE Report on the Investigation of Well Interference Complaints near Hagersville (MOE, 1972) "dewatering of the Hagersville quarries was initiated prior to 1961, and was

periodically carried out at rates in the order of 500 lpgm until January 1971". The rate of 500 lpgm should be interpreted as the maximum extraction rate. This information suggests that the average long-term extraction rate is expected to be notably less than 500 lpgm. According to information obtained through a discussion with the former Dufferin Quarries Plant Manager during the period in question (before deepening of the one quarry into the Bertie Fm.) the dewatering of the quarries took place only during high runoff and/or precipitation periods (Personal Communication, September 20 00). This suggests that the average groundwater/ seepage flow component was minor throughout most of the calendar year. Contrary to this, the model predicts the groundwater component of flow to be in the range of 150 lpgm - 370 lpgm. Taking into account that nearby abandoned quarries each had total area and depths (prior to deepening) similar to the proposed quarry, we conclude that the model overpredicts the groundwater flow rates into the quarry.

- According to Jagger Hims Dewatering Assessment of the nearby Lafarge Hagersville Quarry, the regional groundwater divide is located at a distance of about 1,000 m north of the proposed quarry (Jagger Hims Ltd., 1996). The subject model variant predicts the location of the divide to be at a distance of only 200 m - 400 m from the proposed quarry. As a result, simulated close location of the divide to the quarry underestimates the recharge area and, consequently, overestimates the impact of quarry dewatering.
- The average hydraulic conductivity for the Onondaga and Bois Blanc Formations used in this model variant is higher than the bulk K-value for these two formations, estimated from the analysis of the pumping tests.
- Horizontal hydraulic conductivities utilized by the model for the Bertie Formation in the area close to the proposed quarry location and within the predicted zone of influence are about 5×10^{-3} - 8×10^{-3} cm/s. Although the hydraulic conductivity for this formation is expected to be in the 10^{-3} range (Gartner Lee Associates Ltd. 1979). Assigning even higher K values to the Bertie than that already used in the 2000 variant would result in K values in the order of 10^{-2} cm/s, which is not supported by any existing data.
- Existing data suggests that the Bertie Formation aquifer is under confined conditions, which is attributed "to the differences within the lower portion of the Bois Blanc Formation and possibly the upper portion of the Bertie Formation" (Jagger Hims Ltd., 1996). As a result of this confinement, there was no significant impact observed in the Bois Blanc Formation when the Lafarge Quarry was deepened in 1993. Monitoring of domestic wells in the vicinity of the Lafarge quarry from 1996 to 1999 doesn't indicate any measurable impacts to wells within the shallower (+/- 15 m depth), bedrock (Bois Blanc Formation, despite continuous pumping rates of 2200 lpgm over much of the year. These results correspond to a nearby location where the Springvale Formation sandstone is not present, and where the hydraulic conductivities are expected to be higher than at the location of the proposed quarry due to the proximity of the Lafarge Hagersville Quarry to the Onondaga Escarpment. ASRA conclude that the interaction between the Bois Blanc and Bertie Formations is expected to be minimal at the location of the proposed quarry. This conclusion is also supported by the fact that there were no water shortages observed in the nearby wells prior to the deepening of the currently abandoned quarries into the Bertie Formation. Contrary to these observations, the discussed variant predicts similar drawdowns in both the Bois Blanc and Bertie Formations. This is attributed to the fact that the model does not take into account the presence of the less fractured Springvale Formation and utilizes higher than actual vertical hydraulic conductivity in the Bertie and/or Bois Blanc Formations.
- All streams in the vicinity of the proposed quarry were ignored. This was done based on the field data obtained in the fall of 1999, one of the driest (Precip data)
- In the simulation of the proposed quarry development over time, it was assumed that excavation below the water table will occur immediately over an area that comprises more than 15% of the total quarry area. The entire area of the proposed quarry was simulated to be excavated below the water table down to a depth of about 15 metres in 25 years. This is at least 2 times faster

(Nichols confirm) than the actual proposed quarry's development. The rate and duration of dewatering in this simulation is very conservative

Dillon: Stream/Groundwater Interactions

AGRA :

Regarding the streams and predicted impacts at Locations "A" and "B" (Dillon Review, Figure 2)

- All streams in the vicinity of the proposed quarry that were not flowing during the field examination conducted in the fall of 1999 were not taken into account by the modified conservative model variant. Only those streams where some water flow was still observed in the fall of 1999 were simulated by the model. Note that the fall of 1999 corresponds to one of the driest periods (precip data)
- The modelling results show that a drawdown of about 1 m at location "B" occurs only after about 15 years of the proposed quarry dewatering. Considering that the model simulates the quarry expansion to occur faster than is expected in reality, we conclude that it will take significantly more than 15 years before any notable impacts may occur at the identified location. Given the significant level of conservatism built into the model and the long period required for the zone of influence to reach location "B", the likelihood of any significant impact in the referred area seems to be low both with and without stream-groundwater interactions.

Dillon: Monitoring and Contingency

Monitoring network - discuss and suggest - check Dufferin Milton and Lafarge for ref point on network, periodicity of monitoring, and replacement well protocols.

Look at radius of monitoring in 1972 investigation - divide by three = suggested area of monitoring subject to review after 10 years of operation

Discussion

Ignore much of Response letter concerning extent of fracturing, historical experience, etc.

Over half of surrounding properties on cisterns - hardly a great shallow aquifer

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TABLE 1. ESTIMATED AND UTILIZED BULK HYDRAULIC CONDUCTIVITY VALUES FOR THE ONONDAGA AND BOIS BLANC FORMATIONS

Borehole	Original Slug Jan 1999 (cm/s)	Modified Slug Test Analysis		Theis Recovery (cm/s)	Base Case (cm/s)	Conservative (cm/s)
		$K_h = K_v^{**}$ (cm/s)	$K_h = 10 \times K_v$ (cm/s)			
BH-1	3.9×10^{-5}	1.0×10^{-4}	1.1×10^{-4}	8.4×10^{-5}	1.7×10^{-4}	2.6×10^{-4}
BH-2	3.3×10^{-5}	6.7×10^{-5}	8.0×10^{-5}	4.6×10^{-5}	"	?
BH-3	1.0×10^{-5}	2.0×10^{-5}	2.4×10^{-5}	N.A.	"	?
BH-4	1.9×10^{-5}	4.3×10^{-5}	5.5×10^{-5}	6.0×10^{-5}	"	?
Farm/Barn Well	3.2×10^{-5}	2.5×10^{-5}	3.0×10^{-5}	5.5×10^{-5}	"	?
Average K-value	1.5×10^{-5}	4.3×10^{-5}	5.1×10^{-5}	6.0×10^{-5}	1.7×10^{-4}	2.6×10^{-4}

*AquiferTest (version 3.0)

**Geometric mean

N.A. - analysis not applicable due to 6-times variation of pumping rate

K_h = horizontal hydraulic conductivity

K_v = vertical hydraulic conductivity

Note: Farm well advanced into Bertie Fm. K is bulk of Onondaga, Bois Blanc, and Bertie Formation K. K used in Conservative Model for Bertie Fm. was 6.10^{-4} cm/s

COPY

X WITNESS STATEMENT FOR JOE STRACHAN

I am an inspector for the Ministry of Natural Resources, Aggregates Division.
Attached to this statement is a copy of my resume.

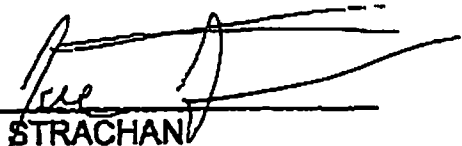
In my role as an inspector with the Ministry, I have come to know the applicant company, Nichols Gravel and the principal behind the company, Gary Nichols.

I have known him and his business operations for over 25 years.

In those 25 years, I have come to know Mr. Nichols as a responsible operator.

In my experience, his business operations always comply with the conditions set by this Ministry and Mr. Nichols is reasonable and responsible in his dealings with my office.

X Date: September 12th, 2000

X 
JOE STRACHAN



X September 13, 2000

Mr. Fred Rudolph
Turkstra Mazza
151 Bold Street
Hamilton, Ontario
L8P 1T3

X Re: Dust Impact Assessment
New Quarry in Southern Ontario
RWDI Proposal #01-118P

Fax/Mail: 905-529-3663

Dear Fred:

Further to your telephone conversation with Mike Lepage, RWDI is pleased to assist you and your client with a licensing and re-zoning process for a proposed 750,000 tonnes/year quarry operation in Southern Ontario. We understand that you would like to have a preliminary air quality assessment in hand so that you can quickly respond to questions about dust impacts, should the need arise. Our proposed scope of work, cost estimate and schedule to help you meet your needs are outlined below.

Scope of Work

Our preliminary assessment will consist of comments and recommendations with respect to potential dust impacts and control of those impacts, based on our past experience in monitoring and modelling dust impacts from aggregate operations in Ontario and elsewhere. The proposed tasks are as follows:

- Conduct a visit to the site to view the surrounding landscape, locations of residences, etc.
- Review the operational plans and description of the operations for the proposed quarry.
- Review wind climate for the study area.
- Review data from previous RWDI modelling and monitoring studies for quarries.
- Submit a letter summarizing our findings with a preliminary opinion as to the potential for dust impacts and recommended mitigation strategies.

Rowan Williams
Davies & Irwin Inc.
Consulting Engineers
650 Woodlawn Road West
Guelph, Ontario
N1K 1B8
(519) 823-1311
Fax: (519) 823-1316
Email: info@rwdi.com
Website: http://www.rwdi.com



September 13, 2000
Mr, Fred Rudolph
Turkstra Mazza

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Schedule

As indicated over the telephone, our current workload is very heavy. Still, we feel that we can provide the letter report by October 9th, as requested. In order to do so, we would need to have a set of operational plans and other relevant information sent to us as soon as possible (i.e., by no later than September 18th), so that we have as much time as possible in which to schedule our activities. We are assuming that no arrangements need to be made for the site visit, and that we can simply go to the site and examine the study area whenever one of us is available. Either Michael Lepage or I will conduct the site visit.

Required Information

Before we can conduct our assessment, we require the following information. As mentioned above, we need this information by about September 18th to ensure that we can complete our work by October 9th.

- Up-to-date operational plans for the proposed quarry.
- A site plan and, if possible, an aerial photograph that allows us to clearly understand the positions of nearby residences relative to the proposed quarry operations, local terrain characteristics, etc.
- Details on the proposed operations, such as annual production rates, types of processing to take place, types of equipment to be used on site, dust control measures to be employed, etc.
- Written authorization to proceed (see attached form).

Cost

The cost for our professional fees to conduct the services described in this proposal is \$3,200. This fee includes all expenses, but excludes GST. This fee includes a visit to the proposed site. Preparation for and attendance at meetings or hearings have not been included in this budget. A fee schedule is attached, which provides our hourly rates in the event that such activities become necessary.

Payment

Due to the length of time that would normally occur from the start of our work and when we would begin to receive payment, we will invoice for 100% of the contract when we receive authorization to proceed. The invoice will be submitted by fax and mail.



X September 13, 2000
Mr, Fred Rudolph
Turkstra Mazza

Page 3


Project Team

Michael Lepage will be the Air Quality Specialist on the project and will provide the overall technical direction and leadership for the study. As Project Manager, I will ensure that the scope and quality of the provided services are consistent with the proposed objectives and schedule.

If you have any questions, please give me a call. If I am not available, please contact Mike.

Yours very truly,

ROWAN WILLIAMS DAVIES & IRWIN Inc.

X 
John J. Alberico, M.Sc.
Associate / Project Manager

JJA/dp
attach.

Rowan Williams
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3215 North Service Road, Box 220, Burlington, Ontario L7R 3Y2

September 18, 2000
Our File: 63300

Nichols Gravel Ltd.
P. O. Box 172
Delhi, ON N4B 2W9

ATTENTION: Mr. Gary Nichols

Dear Sir:

RE: Stormwater Management Review of
Proposed Nichols Quarry Documentation
City of Nanticoke - Hagersville

X TO COPY
REVIEW OF DILLON
PEER REVIEW OF
HARROP DRAIN
BY PHILIPS ENG.
SEPT 18/2000
H.K.

Further to our telecon of September 15, 200, with yourself, Fred Rudolph and Tom Smart, we met with Tom Smart on the same day and he provided us with a copy of the pertinent material.

As we understand it, Dillon Consultants, the Peer Reviewer for the Municipality has raised issues and concerns with respect to potential stormwater impacts associated with the proposed quarry. AMEC, your earth sciences consultant, (formerly Agra) has provided limited information/assessment with respect to this discipline to date.

It is your interest to have Philips undertake a Peer Review of the AMEC and Dillon reports/letters, and provide an opinion letter on the significance of potential impacts. To this end, you have also secured a copy of the original Engineers Report for the Harrop Drain from 1957.

As part of our assessment, we propose to review the AMEC, Dillon and Harrop Drain reporting and maps. In addition, we will (time permitting) undertake a site reconnaissance. An opinion letter, we understand will be required for the pending hearing by Mr. Rudolph on or about September 21, 2000. We will make best efforts to address this timeframe.

Our fees to complete this assessment as described are \$3,000. excluding GST.

We have initiated this assessment on the basis of Tom Smarts' authorization, on your behalf. Please forward written authorization to formalize the foregoing.

We look forward to establishing a working relationship; thank you for considering our Firm.

Yours very truly,

PHILIPS ENGINEERING LTD.

Per: Ronald B. Scheckenberger, M. Eng., P. Eng.

RBS/mp

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Tel: (905) 335-2353 • Fax: (905) 335-1414 • admin@philipseng.com • www.philipseng.com

Faxed 529-3663

X September 22, 2000
Our File: 100103

Turkstra Mazza
15 Bold Street
Hamilton, ON L8P 1T3

ATTENTION: Mr. Manfred Rudolph

X Dear Sir:

X RE: Stormwater Management Review
of Proposed Nichols Quarry Documentation
City of Nanticoke - Hagersville

Further to our letter proposal of September 18, we have conducted a review of the package of information provided by ELS Planning Associates, AMEC, Nichols and yourself including the following:

Background Information

- (i) Engineers Report, R. Blake Ervin - Town of Walpole, By-Law No. 1270; July 15, 1958
- Summary Report, Hagersville Quarry Nichols Gravel Ltd., Part of Lots 10-12, Concession City of Nanticoke, Region of Haldimand-Norfolk, Harrington and Pyle, February 23, 1999
- (ii) Level 2 Hydrogeological Study in support of a Category 2, Class A Quarry Flow Water License, Hagersville, Ontario, AGRA, January 26, 1999
- (iv) Correspondence
 - (a) Kelly - Duckworth to Nichols, AGRA, April 26, 2000
 - (b) Kell - Jones, Dillon, July 24, 2000
 - (c) Jones to Duxbury - Rudolph - Sommer, Cobb & Jones, July 31, 2000
 - (d) Boussey to Jones, Dillon, August 31, 2000
 - (e) Kelly to Kell, AGRA, September 6, 2000
 - (f) Kelly - Zaidel to Nichols, AMEC, September 10, 2000 (Draft)
 - (g) Sinden - Nichols, City of Nanticoke, May 11, 2000
 - (h) Boussey - Kelly, Dillon, September 15, 2000
 - (i) Rudolph - Jones, Turkstra Mazza, September 15, 2000

REVIEWED BY
DILLON
HARROP DRAUGHT BY
PHILIPS ENGINEERING
CONCL. NO IMPACT
FROM DEWATERING
FOR EXTRACTION.

CONDITIONS
49, 50, 51 AND
52 ADOPTED
RECOMMENDED BY
NICHOLS GRAVEL LTD.
CONSULTANTS

X Philips Engineering Ltd.
 Turkstra Mazza
 September 22, 2000
 Page 2

(v) Harrop Drain Assessment Schedule, October 4, 1996, TSH

(vi) Miscellaneous Notes - June 22, 1971 Sketch
 - July 29, 1971 Pumping Records - Dufferin
 - March 1971 OWRC Inter-office Memo
 - August 1971 OWRC Inter-office Memo
 - October 2, 1972 MOE Memo
 - November 14, 1972 MOE Memo
 - Annual Record of Water Levels

(vii) Notes from Harrop Drain Condition Survey, August 23, 2000, Dillon

(viii) Photo log from Harrop Drain, August 23, 2000, Dillon

Quarry Proposal Background

The summary report for "Hagersville Quarry Nichols Gravel Limited" dated February 23, 1999. Harrington and Hoyle suggests that a Category 2, Class A License Quarry below water is being proposed on the subject property (part of Lots 10 to 12, Concession 12, City of Nanticoke, Regional Municipality of Haldimand-Norfolk). The application is being made under the Aggregate Resources Act, as amended by Bill 52.

The applicant has commissioned studies of hydrogeology, natural environment, cultural heritage, noise, blast design and resource assessment. This work was co-ordinated by Harrington and Hoyle and involved numerous sub-consultants including AGRA Earth and Environmental Limited for Hydrogeology and Harrington and Hoyle for Natural Environment.

As noted in the aforementioned documentation, the site is 93.97 ha bordered by Regional Road 9 to the north, and Regional Road 18 and the CNR along the south and east. Concession 11 is about 160 m south of the southern limit of the site. The site has limited relief and generally drains from the northwest to the southeast. There are intermittent drainage swales on the property, one of which drains through twin culverts on the railway embankment which connects to the Harrop Drain. It is suggested by Harrington and Hoyle that after the quarrying activities, the lands would be restored to wetlands/ponds and pasture land, this being considered compatible with the surrounding land uses.

Water Resources Aspects

In terms of the water resources and environmental features on/or downstream of the site, Harrington and Hoyle conclude that there are no Provincially Significant Wetlands, ANSI's, ESA's, endangered, vulnerable or threatened species habitat, within or adjacent to the site. This has also been confirmed through discussion with MNR resource staff by Harrington and Hoyle.

Only two significant features were identified: one does not relate to water resources, (namely the deciduous wood lot) and the other is the Harrop Drain.

The Harrop Drain is a tributary to the Sandusk Creek, which according to the MNR biologist (Dave Richards) is a warm water system. The Harrop Drain has been identified to flow year round, probably due to receiving treated discharge from Hagersville's sewage treatment plant.

X Philips Engineering Ltd.
Turkstra Mazza
September 22, 2000
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Based on several sources of information, it is evident that the subject site drains through twin CSP culverts through the CN Rail embankment approximately 1 m in diameter. As noted by Harrington and Hoyle, the drainage swale on-site collects surface runoff from the eastern and northern parts of the subject lands, as well as portions of the adjacent quarry lands (Dufferin). The February 1999, Summary Report notes that the proposed quarry development will use the existing surface drainage pattern to discharge the water pumped from the quarry southward to the Harrop Drain. This is to be implemented through the use of a sump hole in the quarry floor and a settling pond system. Water would be pumped from the sump hole on the quarry floor into a primary settling pond which would act to remove any fine sediments. Over flow from the primary settling pond would then flow in a south and easterly direction in the existing drainage swale. Another settling pond with a minimum of 24 hours of storage (presumably dewatering storage) would be constructed on the southeast part of the site, prior discharging into the twin culvert system, through the CNR into the Harrop Drain.

The January 26, 1999 Hydrogeology Report of AGRA notes that the dewatering pumping rate out of the quarry would range between approximately 250 and 640 m³ per day. AGRA notes that approximately 80% of the proposed quarry lands currently drain to the Harrop Drain with the balance (i.e. 20%) flowing to the north and west into another tributary of the Sandusk Creek.

AGRA notes that based on the "full capacity" of the twin 1 m diameter drains under the CN Rail (as an indicator of "design flow"), dewatering would constitute between 0.2 and 0.5% of capacity. AGRA also suggests that "as the quarry expands, precipitation catchment in the quarry will be directed into a natural surface swale which will flow directly into the Harrop Drain. As such, there is to be no impact to the surface drainage of adjacent properties or on Regional Roads 9 and 18".

The Engineer's Report of July 15, 1958 notes that the crossing at the CN Railway flows through two 42" concrete pipes, however, these are suggested by the Engineer to be considerably above the new grade line of the Harrop Drain and were recommended to be lowered. The size and exact invert were not available on the information provided for review; now does it provide any information with respect to design standards and conditions.

The information provided by Dillon which included the condition survey and photographs suggest that the maintenance of the drain is required and that numerous areas have grown in and/or filled with sediment. This, however, is a common condition, particularly in rural communities where drain gradients are mild, which is the case in this instance.

Typical Concerns with respect to Stormwater Management for Quarrying Operations

Based on our experience in quarry applications, as well as water resources, the typical concerns which relate to surface water associated with a proposed quarry include the following:

1. Loss of streamflow (interception of surface runoff).
2. Management of dewatering flows.
3. Impacts on instream water quality from dewatering.

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Turkstra Mazza
September 22, 2000
Page 4

The loss of flow issue results from the quarry modifying the surface grades and "severing or cutting off" tributary catchments to either local or primary stream systems. This water, rather than flowing over the surface as excess rainfall/runoff now is directed to the low point in the quarrying operation. This low point, as can be expected, typically moves about as the quarry expands itself over time. Our experience has shown that there needs to be consideration for the amount of rainfall which could potentially be converted to runoff in managing the quarry operations themselves, in order that the site is safely and economically maintained.

Dewatering flows comprise of ground water and surface runoff. The timing of discharge and the quality of this discharge are most typically of concern to approval agencies with respect to environmental integrity of the receiving system. It is normally a practice that the pumping of dewatering flow be on a cycled with upper and lower flow rates. The collection system typically constitutes a pond or a series of ponds which remove primary and secondary level contaminants from the quarry (i.e. sediments and fines). Standard application of Best Management Practices can address these matters.

X Professional Opinion with respect to Nichols Gravel Limited Application

In Dillon's letter of August 31, 2000, Dillon concludes that:

1. The Harrop Drain is significantly aged and weathered. We would agree with this contention. Notwithstanding, our review of the photographs and information provided does not suggest any "significant" potential damage areas.
2. Dillon notes that the design standard "appears to be for approximately 6 mm to 13 mm of rainfall in 24 hours". Dillon states that this would result in a 1 m³/s maximum flow. Again, from the information provided, we are not clear as to the source of this conclusion. Notwithstanding, it appears to be somewhat low in the context of traditional design standards for railway crossings, roadway crossings and even serviceable ditches on municipal roadways. As noted by others, these design standards range anywhere from a 2 year to a 25 year event which, in terms of a comparative rainfall depth, would likely range between 40 and 70 mm in 24 hours.
3. Conclusion 3 in Dillon's correspondence suggests that there is no excess capacity available for flows other than Haldimand-Norfolk's design rainfall events. We would assume implicit in this statement is the fact that currently a large portion (80% ref. AGRA) of the proposed quarry site drains to the Harrop Drain under current conditions. As such, once the quarry is actively mined surface flow would no longer be contributed to the drain in the same timeframe as a design event condition. In simple terms, the rainfall would be converted to runoff, which would be captured in the quarry, which would be pumped to the stream at a considerably lower rate than what would have been anticipated during a storm. This also would contribute flow after the storm event, thereby, prolonging the period of discharge, which is normally interpreted as a positive influence on the environmental system.
4. Point No. 4 in Dillon's correspondence suggests that significant improvements would be required to the drain to accommodate additional flows. Based on our opinion of what will likely be a reduction in flows during storm events, we are of the opinion that no improvements would be required.

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20
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Turkstra Mazza
September 22, 2000
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X Conclusion

Our conclusions regarding stormwater and water resources issues specifically focussed on the surface water regime for the proposed quarry site is as follows:

1. We would anticipate no impact on flooding of any element of the Harrop Drain as a result of the proposed quarry. In fact, it is anticipated that the runoff rates after and during the quarrying will be lower than existing.

X Recommendations

It is recommended that:

1. The internal collection system within the quarry incorporate component storage for groundwater and surface runoff. The surface runoff capture internal to the quarry needs to be designed such that internal quarrying building/roads and actively used areas be set above and outside of the limits of any flooding.
2. External berming be constructed around the quarry to prevent any surface water spillage into the quarry; any surface water collected external from the quarry be directed to its existing outlet.
3. Water quality polishing measures be incorporated into the internal collection system in order that fines from the quarrying sediment and fines from the quarrying operation are settled out prior to discharge to the Harrop Drain.

ALL ADOPTED BY OMB AS CONDITIONS OF APPROVAL
We trust the foregoing adequately address your current requirements. Please contact our office, should you require additional input.

Yours very truly,

PHILIPS ENGINEERING LTD.

X Per: Ronald B. Scheckenberger, M. Eng., P. Eng.

X Cc: Tom Smart, BLS Planning Associates

RBS/mp
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P. HILPS

GANG LTD.

Box 220

Burlington

Ontario L7R 3Y2

Tel: (905) 335-2353

(905) 335-1414

20

G.S.T. REG. No. R104180328

X TO NICHOLS GRAVEL LTD.
BOX 172
DELHI, ONTARIO
N4B 2W9

November 10, 2000

20373

100103

PROJECT NAME

ATTENDANCE AT COURT FOR HEARING

PROPOSED NICHOLS GRAVEL LTD.

FOR PROFESSIONAL SERVICES RENDERED

DURING NOVEMBER 2000

STAFF ON NORMAL ASSIGNMENT

CLERICAL

1.00 hrs @ 42.46

\$ 42.46

PRINCIPAL(S) ON NORMAL ASSIGNMENT

R. SCHECKENBERGER

6.50 hrs @ 120.00

\$ 780.00

PRINCIPAL(S) ON SPECIAL ASSIGNMENT (EXPERT TESTIMONY)

R. SCHECKENBERGER

4.00 hrs @ 180.00

\$ 720.00

TOTAL LABOUR

\$ 1,542.46

REIMBURSABLE EXPENSES

R. SCHECKENBERGER - TRAVEL
PRINTING COSTS

\$ 68.69

\$ 5.34

TOTAL LABOUR AND DISBURSEMENTS

\$ 1,616.49

G.S.T. @ 7%

\$ 113.15

TOTAL THIS INVOICE

X \$ 1,729.64

RBS
NO11

X R. SCHECKENBERGER, P. ENG.

INVOICE
DUE UPON RECEIPT

1

X September 25, 2000
TC 05041

X Nichols Gravel Limited
Box 172
Delhi, Ontario
N4B 2W9

X Attention: Gary Nichols
President

Post-It™ Fax Note 7671E		Date	# of pages
To	Manfred Rudolph	From	C. M. Kelly
Co./Dept.		Co.	
Phone #		Phone #	
Fax #		Fax #	

X Dear Mr. Nichols:

X RE: Proposed Monitoring and Contingency Plan
Proposed Nichols Quarry, City of Nanticoke, Ontario

X DRAFT FOR DISCUSSION

Dillon Consulting Limited's "Peer Review of Supporting Hydrogeological Assessment of the Proposed Nichols Gravel Limited Quarry - Draft Report" (Dillon's review), dated July 24, 2000, expressed concerns regarding the proposed monitoring, trigger mechanisms, and contingency plans for local water supplies in the area upon the onset of dewatering activities. AMEC appreciates these concerns, and has revisited the monitoring and contingency plans.

~~As per the draft~~ Nichols Gravel, propose the following, to be enacted upon granting of the Quarry License:

Monitoring

- Installation of ~~three~~ monitoring well nests with observation wells installed at the top of the Bois Blanc Formation, the base of the Bois Blanc Formation, and to the approximate 24 - 30 m (80 - 100 foot) depth within the Bertie Formation. *one of these nests will be installed in the vicinity of the area where extraction will commence. BH-1 and the Farm well can each be used as components of a monitoring well nest.* *OUT*
- Monitoring of all domestic wells within 120 m of the quarry property boundary. Water level monitoring will be conducted three times a year. As the life of the quarry proceeds, and the data is collected and evaluated over time, the adequacy of this extent of monitoring can be reviewed;
- Selected on-site monitoring wells will be fitted with electronic water level devices;
- Semi-annual water quality sampling of the on-site monitoring wells;
- Preparation of an annual report by an independent consultant to the quarry operator that summarizes the results of monitoring, evaluates whether trigger mechanisms

2

are being approached, and provides a prediction on whether there is the potential for the trigger mechanism to be enacted in the foreseeable future. The report shall be made available for the Region, City, MOE, and the surrounding residents for review.

Groundwater Quality/Quantity Interference Resolution Protocol.

The intent of this Protocol is to identify:

- 1) Who to contact and what steps should be taken if a concern related to local water supplies is lodged respecting the operations of Nichols Gravel Limited - Hagersville Quarry, and
- 2) To identify clearly and briefly the issue shall be assessed, and the manner in which the licensee will address issues and alleviate concerns.

Regard must be made to specific licensed conditions, as stipulated by the Ministry of Natural Resources, and the site plans and accompanying notes..

It is understood, based on Provincial Protocol, that a three-step complaint investigation/resolution hierarchy exists. Namely:

- 1) Contact licensee with the expectation of concern/complaint resolution.
- 2) If the complainant is not satisfied with the actions of the licensee, then contact the Ministry of Natural Resources.
- 3) Should the Ministry of Natural Resources determine that the concern/complaint cannot be readily resolved through reasonable mitigation measures, or has determined that a significant "upset" has occurred, then the Ministry of Environment shall be notified.

Complaint Notification

Who to Contact..... Mr. Gary Nichols (Owner)
..... Tel: (519) 582-3354 Fax: (519) 582-2143

When to Call..... As soon as possible after the incident

What Information to Provide..... Your Name, Address & Telephone Number
..... Time and Date of Incident
..... Details of Incident

The complainant may be requested to provide additional information. The complainant's co-operation is appreciated.

Nichols Gravel Limited realize that some complaints can be resolved quickly whereas others may take longer depending on the type of issue. They are committed to attempting resolution of all complaints as expeditiously as possible. Therefore, the time frames indicated below represent what are considered to be the maximum probable timing for implementation of the "Complaint Notification and Resolution Protocol".

X Upon Receipt of a Complaint:

- Nichols Gravel Limited undertakes to discuss, whenever possible, the means of resolving the issue. Normally this will occur on the same business day. If this is not possible, the complainant will be contacted before the end of the following business day.
- In the event of any change to either water quality or quantity that would adversely affect normal usage of those wells identified in the hydrogeologic reports, the licensee shall supply temporary water to the affected property owner, advise the Ministry of the

4.

Environment of the complaint and identify the cause of such impairment to the quality or quantity of water.

The water supply quantity/quality concern will be evaluated by an independent consultant that is satisfactory to the MOE, local residents, the City, and Nichols Gravel.

Should the quantity of groundwater available to normal takings be adversely affected due to the operations of the licensee, the licensee shall, at its own expense, provide a permanent supply, as technically determined by the licensee, water of equivalent quality and quantity as that which existed before the identified adverse change to the water quality and/or quantity.

- Maintain a log of all complaints received and actions taken. This log is to be available to members of the Public, The City of Nanticoke, The Regional Municipality of Haldimand-Norfolk, and the Ministry of Natural Resources for review.

If, after implementation of the Protocol, the complainant is not satisfied, the complainant may contact the following agencies to pursue the complaint through:

- MNR Alymer District Office:..... Tel: (519) 773-9241; Fax: (519) – 773-9014
- MOE District Office:..... Tel: (905) 704-3900; Fax: (905) 704-4015

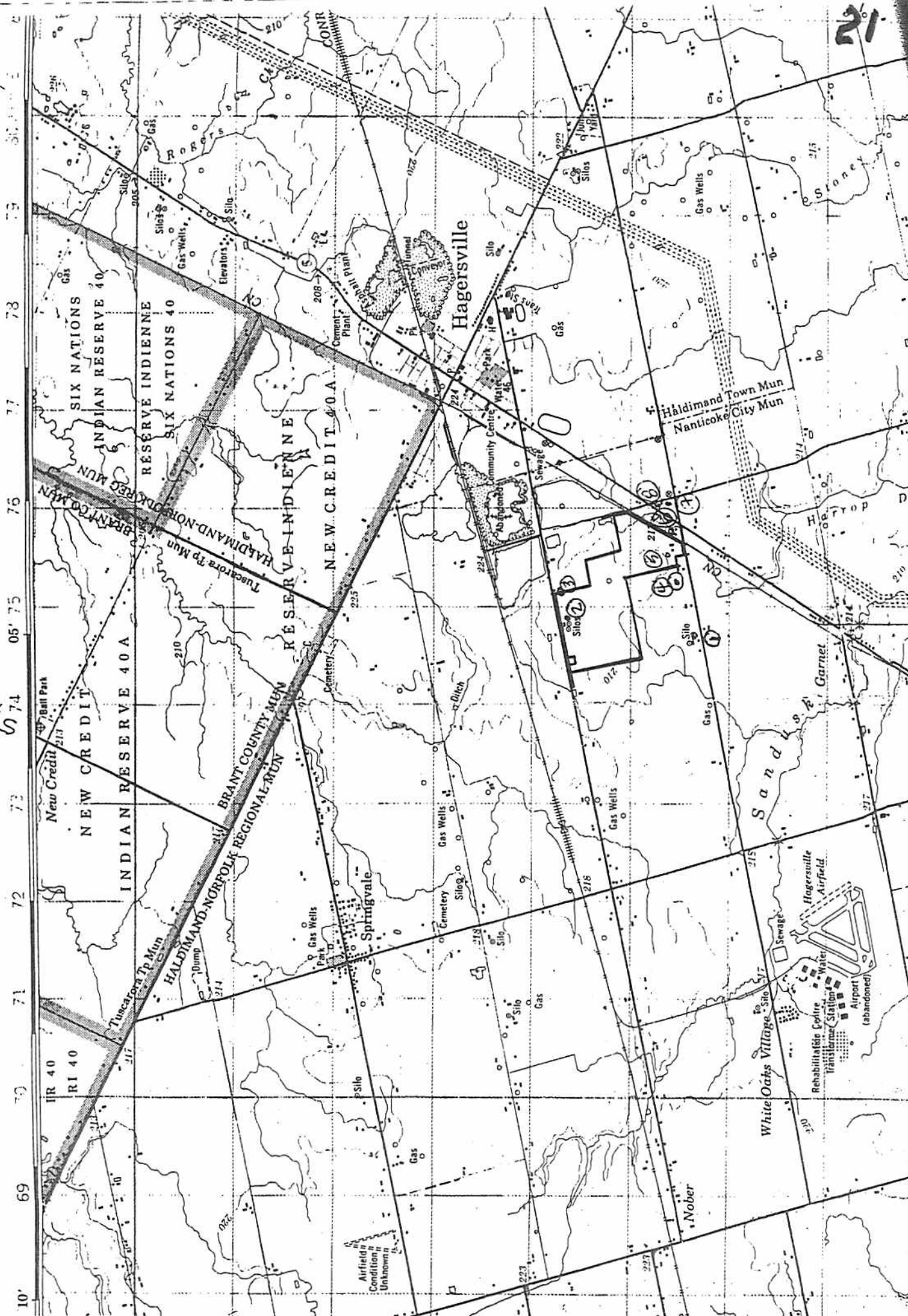
X Trigger Mechanism

- It was proposed above that monitoring of all domestic wells within 120 m of the quarry property boundary will be undertaken. Should an independent investigation of a water quantity concern be verified by the mechanism described above, the radius of monitoring will be extended a further 120 metre in the direction of the affected domestic well. Should subsequent extraction and monitoring at some time confirm a persistent impact to a domestic well at the expanded radius, the radius of monitoring may then be extended to 500 metres from the quarry property boundary, in the direction of the affected well.

Domestic well owners within the 120 metre radius from the property boundary must allow their wells to be part of the monitoring program in order to be eligible for consideration re potential disruption of water supplies. If, over time, the extent of the area of monitoring changes, then the number of domestic wells to be monitored will also change, ~~and~~

AMEC trust that the above adequately addresses the concerns expressed in the Dillon review. Should you have any questions, please contact the undersigned.

Yours very truly,
AMEC Earth & Environmental Limited



MUNICIPALITY CONCESSION ETC	LOT	UTM WELL NO	EASTING NORTHING	ELEV FEET	DATE	DRILLER	CSG DIA INS	KIND OF WATER	WATER FEET	STAT LVL FEET	PUMP LVL FEET	TEST RATE GPM	TEST TIME HR/MN	WATER USE	OWNER/LOG/SCREEN DEPTHS IN FEET TO WHICH FORMATIONS EXTEND
WALPOLE TOWNSHIP (CONTINUED....)															
CON	11	20	26- 580985 1349 4754205	720	08/69	3604	6	SU		10	30	4	12/00	ST DO	SEPSON G CLAY 0002 LMSN 0037
CON	11	22	26- 582000 1507 4754540	720	11/71	4804	6	MN	51	36	50	2	1/00	DO	BURGESS K YLLW CLAY 0006 GREY LMSN 0051
CON	12	1	26- 568846 1167 4754329	735	01/62	2302	6	FR	32 81	40	44	9	1/30	ST DO	MARTIN G MSND TP5L 0006 CLAY 0017 LMSN 0065 SNDS 0075 GREY SHLE LMSN 0083
CON	12	1	26- 569035 1306 4754495	735	07/68	4810	6	FR	55	32	47	15	3/00	DO	CHANDLER ROBERT GREY CLAY 0051 ORTZ 0057
CON	12	1	26- 569115 1371 4754540	735	10/69	4810	6	FR	58	37	50	11	1/30	DO	CHANDLER EDWARD GREY CLAY 0048 BRWN LMSN 0060
CON	12	3	26- 569852 1168 4754704	725	07/62	4804	5	FR	77	23	77	3	/30	DO	LISTER E CLAY 0033 BRWN LMSN 0077
CON	12	4	26- 570509 1658 4754741	722	10/73	3604	6	SU	64	35	62	3	1/30	ST DO	TRATNYEK TONY GREY CLAY ROCK 0030 BRWN LMSN 0065
CON	12	4	26- 570724 1169 4754918	720	12/64	5417	6	SU	86	35	74	20	/45	ST DO	KOCHUR J W BRWN CLAY 0015 BLUE CLAY 0022 BLUE CLAY GRVL 0028 LMSN 0030 GREY LMSN 0088
CON	12	8	26- 571636 1170 4755091	720	09/67	4810	6	FR	48	24	45	5	1/30	DO	BRADSHAW J CLAY 0017 LMSN 0050
CON	12	7	26- 572203 1173 4755221	715	07/62	4810	6	FR	69	26	37	12	1/30	ST DO	KAUK J CLAY 0032 LMSN 0072
CON	12	7	26- 572209 1172 4755101	710	04/63	4810	6	FR	57	16	30	18	1/30	DO	KAULK J GREY CLAY 0030 LMSN 0045 LMSN 0060
CON	12	7	26- 572548 1171 4754125	700	03/59	2803	6	FR	72	25	50	10	1/30	ST DO	DUSCHARN E TPSL 0004 BLUE CLAY 0040 LMSN 0072
CON	12	8	26- 572839 1174 4755337	705	05/59	4810	6	FR	60	20	25	6	2/00	DO	STEWART R GREY CLAY 0055 LMSN 0064
CON	12	8	26- 573420 1496 4754130	710	11/71	3604	6	FR	65	27	27	20	2/30	ST DO	SMIT A BRWN CLAY 0036 LMSN 0068 BRWN LMSN 0074
CON	12	9	26- 573773 1175 4754185	700	08/67	3604	6	FR	36	11	30	6	24/00	DO	LANE J GREY CLAY 0032 LMSN 0037
CON ①	12	10	26- 574696 1710 4754359	712	12/74	3604	6		106	33	65	8	1/30	DO	ROULSTON GORDON GREY CLAY 0017 BRWN LMSN SHLE 0108
CON ②	12	11	26- 574940 1177 4755681	710	10/51	4827	6	FR	115					ST DO	CATHENWOOD E CLAY 0008 LMSN 0085/BRWN LMSN 0118 SHLE 0172
CON ③	12	11	26- 575041 1178 4754447	705	12/58	4810	6	FR	36	19	109	5		ST	DIELLO O CLAY 0012 LMSN 0090 w.c. 7' into B/R.
CON ④	12	11	26- 575276 1176 4754550	705	10/51	4723	6	FR	104	28	20			DO	DIELLO O PRDR 0050 LMSN SHLE 0106
CON ⑤	12	12	26- 575607 1182 4754613	709	07/59	4810	6	FR	25	10	2320	10	/30	DO	BILTON L CLAY 0011 LMSN 0030 x w.c. B/R.
CON ⑥	12	12	26- 575717 1181 4754563	709	10/58	4810	6	FR	24	16	21	6		DO	HERON B CLAY 0016 LMSN 0027 x w.c. B/R.
CON ⑦	12	12	26- 575938 1179 4754595	710	07/47	4723		MN		18	21			IR	MOORE H TPSL 0010 LMSN 0024 SHLE 0040 BRWN LMSN x w.c. above B/R.
CON ⑧	12	12	26- 576088 1180 4754662	710	07/49	4723	6	FR	40 68	18	21			DO	BILTON T CLAY 0003 CLAY 0011 LMSN 0070 x w.c. 7' into B/R.

X Planning Report
Nichols Gravel Line 150
Hagersville QLS
City of Hantsville

X



BLS Planning
Associates Inc.

ONTARIO MUNICIPAL BOARD
COMMISSION DE AFFAIRES MUNICIPALES DE L'ONTARIO

Nichols Gravel Limited has appealed to the Ontario Municipal Board under 34(11) of the *Planning Act*, R.S.O. 1990, c.P. 13, as amended, against Council to neglect to enact a proposed amendment to Zoning By-law 1-N-85 in Nanticoke to rezone lands composed of Part of Lots 10, 11 and 12, to quarry and operate an aggregate supply business.
OMB File No. Z990094

The Minister of Natural Resources has referred to subsection 11(5) of the *Aggregate Resources Act*, R.S.O. 1990, c.A. 30, an application for a Class "A" license for the removal of aggregate from lands composed of Part of Lots 10, 11 and 12, Concession 12, in the County of Huron.
OMB File No. M000002



BLS Planning
Associates

1 St. Paul Street, Phase 1, Second Floor, St. Catharines, Ontario L2R 7L2
Tel: (905) 688-1130 Fax: (905) 688-5893 E-Mail: planning@blsplanning.on.ca

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1 INTRODUCTION

BLS Planning Associates were retained by Nichols Gravel Limited in late May of 1990 to provide a professional planning opinion related to the merits of their application for a Category 2-Class "A" Quarry License, pursuant to the Aggregate Resources Act and an amendment to Zoning By-law 1-NAS6 of the City of Nanticoke to rezone land composed of Part of Lots No. 11 and 12, Concession 12, presented before the Municipal Board.

Specifically, the property is described as:

- 93.97 hectare (232 acre) property; of which 12.71 hectares (31.45 acres) are proposed to be extracted and rehabilitated.

Nichols Gravel Limited is seeking a license to ensure that they have a reserve available to serve their client base and future needs. The purpose of this report is to provide planning evidence to supplement the information contained in the site plans, which have been prepared by Harrington and Hoyle Ltd., the summary report filed in support of the application for a Category 2-Class "A" Quarry License and Zoning By-law Amendment, and reports prepared by BLS Planning Associates and filed with the Board in this Hearing. The report is also intended to address issues with concerns related to planning matters raised as part of the Pre-hearing Conference and submissions by others in these proceedings. The report is intended to address the various points contained within:

- The Planning Act, including Provincial Policy Statements;
- The Aggregate Resources Act, and regulations there under;
- The Official Plan of the Regional Municipality of Hamilton-Norfolk; and
- The City of Nanticoke Official Plan.

2 PROVINCIAL POLICY STATEMENT

The Provincial Policy Statement (PPS) issued under the authority of Section 3 of the Planning Act requires that planning matters "have regard to" the policies of the statement.

The preamble to the PPS indicates that:

The Province's resources - its agricultural land base, mineral resource, natural heritage resources, water supply and cultural heritage resources - provide economic, environmental and social benefits. The wise use and protection of these resources over the long term is a key provincial interest.



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Associates

Part II, Principles indicates that:

Ontario's long-term economic prosperity, environmental health and social well-being depend upon:

- (1) managing change and promoting efficient, cost-effective development and land use patterns which stimulate economic growth and protect environment and public health;*
- (2) protecting resources for their economic use and other benefits; and*
- (3) reducing the potential for public cost or risk to Ontario's residents by directing development away from areas where there is a risk to health or safety or of property damage.*

Part III of the Provincial Policy Statement provides the policy outline Province.

Section 1 addresses Efficient, Cost-effective Development and Land Use Patterns.

Specifically, Section 1.1, Developing Strong Communities, indicates in policy 1.1.1 b) that cost-effective development patterns will be promoted. Accordingly:

Rural areas will generally be the focus of resource activity, resource-based recreational activity and other rural land uses;

For the purpose of this portion of the PPS rural area is defined to mean lands in the rural area which are not prime agricultural areas.

Policy 1.1.3 indicates that long-term economic prosperity will be supported by:

- f) Optimizing the long-term sustainability and the use of agricultural and other resources;*

Section 2 addresses Resources.

Section 2.1 deals with Agricultural Policies. Specific to applications for resource extraction policy 2.1.3 allows areas to be excluded from prime agricultural areas only for:

- b) Extraction of mineral resources, in accordance with policy 2.2.*

Impacts from any new non-agricultural uses on surrounding agricultural operations and lands will be mitigated.



Section 2.2 deals with Mineral Resources. Specific to the protection of the mineral resource policy 2.2.1 indicates that the mineral resource is to be protected for long-term use. The policies of section 2.2.3 indicate:

- 2.2.3.1 As much of the mineral aggregate resources as is realistic possible will be made available to supply mineral resources needed as close to markets as possible.
- 2.2.3.2 Mineral aggregate operations will be protected from activities that would preclude or hinder their expansion or continued use or which would be incompatible for reasons of public health, safety or environmental impact.
- 2.2.3.5 Progressive rehabilitation to accommodate subsequent area use will be required.
- 2.2.3.6 In prime agricultural areas, or prime agricultural land, extraction of mineral aggregates is permitted as an interim use provided that rehabilitation of the site will be carried out whereby substantially the same areas and the average soil quality for agriculture are restored.

On these prime agricultural lands, complete agricultural rehabilitation is not required if:

- a) there is a substantial quantity of mineral aggregates below the water table preventing extraction; or
- b) the depth of planned extraction in a quarry makes restoration of pre-extraction agricultural capability unfeasible; or
- c) other alternatives have been considered by the applicant and found unsuitable; and
- d) agricultural rehabilitation in remaining areas will be maximized.

Policy 2.3 addresses Natural Heritage, and protects these features from incompatible development.

Policy 2.3.3 indicates that:

The diversity of natural features in an area, and the natural connections between them should be maintained, and improved where possible.

Policy 2.4 deals with Water Quality and Quantity. The provisions of the policy require that ground water and surface water systems be protected or enhanced.

Policy 2.5 deals with Cultural Heritage and Archaeological Resources. The provisions of the policies require that significant built heritage and cultural landscapes will be preserved.

Section 3 of the PPS addresses Public Health and Safety. The policies relate to natural and Human-made hazards, and are not applicable to this application.

3 AGGREGATE RESOURCES ACT

A license under the Provincial Aggregate Resources Act is required. Provincial standards for a Category-2 - "Class A" Quarry Below Water will apply to this application.

Section 12 (1) of the Aggregate Resources Act sets out matters, which, in considering whether a license should be issued or refused, the Minister or the Board as the case may be, shall have regard to. These matters include:

- (a) the effect of the operation of the pit or quarry on the environment;
- (b) the effect of the operation of the pit or quarry on nearby communities;
- (c) any comments provided by the municipality in which the site is located;
- (d) the suitability of the progressive rehabilitation and final rehabilitation plans for the site;
- (e) any possible effects of the operation on ground and surface water resources;
- (f) any possible effect of the operation of the pit or quarry on agricultural resources;
- (g) any planning and land use considerations;
- (h) the main haulage routes and proposed truck traffic to and from the site;
- (i) the quality and quantity of the aggregate on the site;
- (j) the applicant's history of compliance with this Act and the regulations, if a license or permit has previously been issued to the applicant under this Act or a predecessor of this Act; and
- (k) such other matters as are considered appropriate.



The Aggregate Resources Act of Ontario also sets out Provincial Standards, prescribes conditions that apply aggregate resource applications pursuant to the Act.

4 EXISTING LAND USE DESIGNATIONS

4.1 Official Plan of the Regional Municipality of Halton and Norfolk

The Regional Official Plan was adopted by Council on September 28, 1993, was approved by the Minister of Municipal Affairs and Housing on March 11, 1997. The Plan sets out a series of policy guidelines related to a broad range of policies.

Section J - Mineral Resources

Schedule 3, Aggregate Resource Areas, identifies the lands subject of the Nichols Gravel Limited application to be within and adjacent to "Areas of Bedrock Suitable for the Production of Crushable Stone". A copy of Schedule 3 contained at Tab 2, page 19 of the Exhibit Book of T. Smart, Exhibit A2 to these proceedings. The evidence given before this Board by T. Smart related to the designation will not be repeated in this document. T. Smart remains of the opinion that the property, subject of these applications, is located within the mineral resource area of bedrock most suitable for the production of crushable stone, as confirmed by the Ministry of Natural Resources.

The policies of the Mineral Resources section of the Regional Plan indicate that mineral resource activities, including aggregate extraction, are important to the Regional economy. Valuable deposits of varied non-renewal mineral resources are located within the Region and should be protected for future, local, Regional or Provincial needs. The Plan anticipates there will be a continued demand for mineral resources to accommodate growth, both within and outside the Region. In particular, resource areas close to market areas should be protected for extractive uses in order to ensure resource availability at reasonable cost.

The Plan policies go on to indicate that the mineral extractive industry should be permitted to operate as free from conflict as possible, while ensuring minimal environmental impact and social disruption.

Development and changes in land use, which would prevent future access, use, or extraction will be discouraged in the identified resource area. As such, the Plan contains tests related to the development of land within the resource areas or adjacent to those resource areas for uses other than the extraction of resource.

Policy J.10 provides some direction for the location of new pits and quarries in that the Region will discourage aggregate extraction operations from locating in significant biotic



areas designated in this Plan. The Nichols Gravel Limited property is not identified as a significant biotic area.

Policy J-12 indicates:

"New pits and quarries or expansion of legally existing pits or quarries in Aggregate Resource Areas identified on Schedule '3' will be permitted without amendment to the area municipal plan. New pits and quarries or expansion of legally existing pits or quarries will require an amendment to the appropriate zoning by-law."

Policy J-14 indicates:

"Where extraction is proposed below the water table in prime agricultural areas, the following matters must be demonstrated:

- (a) A substantial quantity of mineral aggregate is located below the water table warranting extraction below the water table;*
- (b) Other alternatives have been considered by the applicant and found unsuitable. Other alternatives include resources in areas of Classes 4 agricultural lands, resources on lands committed to future urban uses, and resources on prime agricultural lands where rehabilitation to agriculture is possible; and*
- (c) In those areas remaining above the water table following extraction, agricultural rehabilitation will be maximized."*

Policy J-17 addresses rehabilitation and indicates:

"Rehabilitation of pits and quarries is required under the Aggregate Resources Act. Progressive rehabilitation will be encouraged. A rehabilitation program will ensure that the pit or quarry can be utilized for agricultural purposes.

Prime agricultural lands are to be rehabilitated to ensure that substantially the same acreage and average soil capability for agriculture are restored. Where extraction is permitted below the water table, complete agricultural rehabilitation may not be required. Other appropriate after uses, such as recreation may be considered in accordance with this Plan and area municipal plans where possible."



Section K - Agricultural Area

The provisions of the Regional Plan indicates the prime component of the Region's Heritage is the extensive area of highly productive agricultural lands. It is the Region's interest to preserve these lands for agricultural and agriculturally related use. Policy K-3 indicates:

"The Agricultural Area includes prime agricultural areas, rural areas, forested lands, and aggregate reserve areas located outside Urban, Hamlet and Resort Residential areas, Hazard Lands and Significant Biotic Areas. The Agricultural Areas will be delineated in area municipal plans."

Policies 4 and 5 specifically address the productive agricultural lands within the Region. These policies state:

- (4) *The Canada Land Inventory of Soil Capability for Agriculture provides seven soil classes with Class 1 being the highest in productivity potential and Class 7 the lowest. Agricultural suitability rating systems are available which identify lands with a high suitability for the production of specialty crops. The agricultural lands in this Region, as defined in the preceding section, are predominantly Class 1 to 3 and/or specialty crop lands. Other than lands on which development is precluded, such as steep slopes, flood plains, wetlands or unstable soils, there are few pockets of lands with a predominance of soils of lower productivity. Indeed most communities are surrounded by prime agricultural lands.*

The foregoing characteristics are of fundamental importance in the consideration of possible future expansions of urban areas and hamlets for the formulation of balanced, realistic land use policies for agricultural lands, and in fulfilling the intent of the provincial land use policies.

- (5) *The Region is committed to the protection of prime agricultural lands. It must be recognized, however, that wherever development occurs within this Region, lands with significant capability for agricultural productivity will need to be utilized. It is therefore Regional policy that priority will be given to less productive agricultural lands for non-agricultural development and uses where and to the extent that it is feasible and practical to do so. This Plan and the plans of area municipalities must also provide for the functional needs of the agricultural industry and the social economic needs of the farming community."*

It remains the opinion of the author, as provided to the Board in evidence, that an amendment to the Official Plan of the Regional Municipality of Haldimand-Norfolk is not required for the establishment of a quarry on lands subject of the applications presently before the Ontario Municipal Board.



4.2 The City of Nanticoke Official Plan

The City of Nanticoke Official Plan was adopted by the Council of the Corporation of the City of Nanticoke on August 18, 1998, following an extensive draft review by the public and agencies. The Plan was approved by the Regional Municipality of Hamilton-Norfolk on November 19, 1998, with modifications and deferrals. Notice of Decision was given by the Clerk, on November 24, 1998, and the Plan came into force on December 15, 1998, save and except that portion referred to the Ontario Municipal Board. None of the matters referred with the approval of the Plan affect matters presently before the Ontario Municipal Board on these applications.

The Official Plan provides the broad objectives and policy framework for development within the Municipality and is supplemented by more precise land use information and regulations which are not part of the Official Plan, but which serve to implement the policies of the Official Plan.

The Plan indicates that the basic decision-making guidelines for the Official Plan are provided through the goals and objectives of the Plan. Goals reflect the long-range purpose of the Plan and tend to be broad in scope. Objectives, on the other hand, are shorter range, more measurable options taken as a series of steps towards obtaining the broader goal. Detailed land use policies provide the guidance and direction in order for the private, public and corporate members of the community to achieve the objectives.

Section M - Agricultural Areas

Section M of the Plan has as its goal "to protect the agricultural land base and to encourage the continued use of such lands for agriculture and rural uses compatible with agriculture."

The objective of this designation is to promote agriculture and related uses as the long-term land use within the agricultural designation area. Policy M.1 sets out the permitted uses for the agricultural area, and indicates the predominant use shall be uses related to farming. However, Policy M.1.2 indicates other land uses permitted within the agricultural designation may include:

- (a) Forestry;
- (b) Conservation and Resource Management;
- (c) Aggregate Resources;
- (d) Limited residential development in accordance with the consent policies of this Plan and upon lots of record;
- (e) Small scale agriculturally oriented commercial and industrial uses.



Section O – Biotic areas.

The provision of the Official Plan would not permit the establishment of a quarry in an identified biotic area. Schedule O-1 of the Official Plan indicates there are no areas in the vicinity of the proposed Nichols Gravel Limited quarry.

Section P – Hazard Lands

This section similarly describes the policies for the protection of life and property respecting man made hazards and constraints in land use development. There are no hazard lands in the vicinity of the application by Nichols Gravel Limited.

Section Q – Forest Resources

Section Q provides the goal to protect the existing and future forestry resources of the City of Nanticoke. The objective of this designation is to ensure the protection and wise use of the wooded areas and forest resources within the City of Nanticoke, particularly those with high potential for timber production and those which contribute to erosion control, ground water storage and wild life habitat.

The City of Nanticoke has not specifically identified and mapped significant woodlots within the Municipality. The policies of this portion of the Official Plan encourages the use of good forestry management practices, the expansion of forest cover in suitable areas, particularly in areas of poorer class agricultural soils. The Policy indicates that appropriate protection will be afforded to these areas through the development review process in consultation with the appropriate conservation authority.

Nichols Gravel Limited has made provision in the ARA site plans to preserve the woodlot on the property.

Section S – Mineral Resources

This section contain policies specific to mineral resources. The goal expressed in this section of the Plan is:

"To provide for the orderly extraction and optimum utilization of mineral resources while minimizing undesirable short and long term impacts on the natural environment and the quality of life for existing and future residents."

The objective of this designation is to protect significant mineral resource deposits so as to ensure their availability for extraction and long term use.

The policies of the mineral resources designation are similar in most respects to the policy previously enunciated in this report with regard to the Regional Plan. Policies specifically related to the applications presented before the Board include:

- (1) Deposits of sand, gravel and stone are delineated on Schedule "S-1". These deposits are protected for future use and extraction can occur without amendment to this Plan. Mineral Aggregate Resource areas are not considered absolute, and where an interpretation is required, more precise boundaries are to be established through consultation with the Ministry of Natural Resources.
- (2) Development changes in land use, which would prevent future access, use, or extraction of aggregate resources will be discouraged in the identified resource areas. Development may only be permitted where it can be shown that:
 - (a) Extraction would not be feasible;
 - (b) The proposed land use or development serves a greater long term interest of the general public than does extraction; or
 - (c) The proposed land use or development would not significantly preclude or hinder future extraction.
- (3) The City of Nanticoke encourages the extraction of mineral aggregate resources prior to and during the development of land, if such development can be designed to maximize removal of the resource as part of the construction process.
- (6) Council recognizes the potential for incompatibility of certain types of development within an area near a pit or quarry. Land use separations should be applied to new sensitive land uses encroaching on an existing aggregate extraction operation. Establishment of a new pit or quarry near existing development should also be subject to appropriate minimum distance separation.
- (7) Where extraction is proposed below the water table in prime agricultural areas, the following matters must be demonstrated:
 - (b) A substantial quantity of mineral aggregate is located below the water table warranting extraction below the water table.
 - (c) Other alternatives have been considered by the applicant and found unsuitable. Other alternatives include consideration of resources in Class 4 to 7 agricultural lands, resources on lands



committed to future urban uses and resources on prime agricultural lands where rehabilitation to agriculture is possible.

(d) In those areas remaining above the water table following extraction, agricultural rehabilitation will be maximized.

(9) Prime agricultural lands are to be rehabilitated to ensure that substantially the same acreage and average soil capability for agriculture are restored. Where extraction is permitted below the water table, complete agriculture rehabilitation may not be required. Other appropriate post extraction uses such as recreational, environmental area development, and where applicable, other economic related uses may also be developed subject to municipal and Provincial approval.

Section T – Heritage Resources

Section T of the Official Plan addresses cultural heritage resources. The goal of this section is to protect, where practical and feasible, those cultural heritage resources, which contribute in a significant way to the identity and character of the City. The objective is to encourage the maintenance, restoration and enhancement of buildings, structure areas or sites, which are considered to be of significant architectural, historical or archaeological value. There are no identified cultural heritage resources in the vicinity of subject application.

Section U – Transportation Policies

Section U of the Plan outlines the transportation policies of the Official Plan. The goal of this portion of the Plan is:

"To provide for the efficient movement of people and goods within and through the municipality in a manner which will support the desired economic growth and development patterns within the City of Nanticoke."

The objective of the roadway system is:

"To facilitate the movement of private, commercial, and public vehicles for the transportation of goods and people within and through the municipality with the highest degree of efficiency, economy and safety."

The policies of this section identify a hierarchy of roads including arterials such as Highway 6, and Regional Road 9 onto which the property has access. Policies of this designation indicate that the City will encourage the use of Provincial and Regional roads for long range or through traffic movements.



Section U.2 of the transportation policy section addresses development near railways. The objective of this portion of the policy is:

"Though the planning and co-ordination of development through rail authorities, conflict between railway and other land uses will be minimized."

The policies of this designation generally indicate that active railway corridors could be subject to environmental hazards such as excessive noise, and vibration and safety concerns.

"Development adjacent to the railway will require appropriate safety measures such as setbacks, berms and security fencing to the satisfaction of the City in consultation with the railway operator."

The policies serve to protect noise-sensitive development from the noise and vibration impacts of railway systems.

Section Z- Site-specific policies.

None of these policies apply to the lands subject of the applications presently before the Board; however, there are two site specific policy areas in the immediate vicinity of the Nichols Gravel Limited application.

Special Policy-8 relates to property located east of Regional Road 18, south of Regional Road 9, north of the railway line in Lot 13, Concession 12. This property is, in part, a previous quarry that has been rehabilitated to a water body. The special provisions related to this property will allow the sales and service of recreational vehicles and mobile homes, the sale of propane, an air station, and water sport activities, subject to specific conditions related to drainage affecting the railway surface run-off, installation of fencing and buffering from the railway right-of-way.

Special Policy Area 19 relates to lands in Part Lot 13, Concession 12, located east of the railway, east of Regional Road 18, north of Regional Road 27, south of Regional Road 9, and west of the municipal boundary. These lands include all lands in Lot 13 east of the railway. The special policy area provisions related to these lands indicate that limited industrial activity may be permitted, provided that the permitted industrial uses are limited only to those industrial uses which do not require high usage of water and sewage treatment, and that in addition to any industrial zone provision the minimum setback from Highway 6 right-of-way shall be 91 feet.

It remains the opinion of the author, as provided to the Board in evidence, that an amendment to the City of Nanticoke Official Plan is not required for the establishment of a quarry on the lands subject of the applications presently before the Board.

5 EXISTING LAND USE

The 93.97 hectare (232 acre) site is located in Part of Lots 10 – 12, Concession 12, in the City of Nanticoke, Regional Municipality of Halton-Norfolk. The site is bordered by Regional Road 9 on the north, and Regional Road 18 and the Canadian National Railway on the south and east boundaries. Concession Road 11 is situated approximately 160 metres south of the southern limit of extraction on the site. Lands immediately adjacent to the eastern boundary of the site are currently in agricultural production, however, licensed for mineral resource extraction. Lands abutting the site to the west are currently in agricultural field crop production, and pasture.

The majority of the property consists of smooth to very gently sloping farmland in crop production with the topography on site ranging from 214.5 to 221.1 metres^{asl}. The highest land is located in the northern part of Lot 11 to the southeast of the farm buildings.

There are two low areas along the southeast boundary, including the areas an intermittent drainage swale exits the property through two culverts under the railway embankment and connects the Harrop Drain. A portion of a larger deciduous woodlot, which the Ontario Ministry of Natural Resources has indicated as being significant, extends into the southwest corner of the site. Ontario Hydro has a 76 metre wide easement centered approximately on the lot line between Lots 10 and 11. The easement contains a single circuit 500kV transmission line connecting the Nanticoke Generating Station to Long Wood Transformer Station in Southwestern Ontario. There are two 500kV suspension-type towers located on site. A smaller hydro transmission line also crosses the southeast part of the site. There is one producing gas well in the Lot 11 portion of the site. Three dry or abandoned wells have also been recorded for the site from logs obtained from the Oil, Gas and Salt Library in London. The locations of the wells are shown on the site plan, prepared by Harrington and Hoyle Ltd.

One wooden drive shed is located in the southern part of the site, while the farm house and other associated buildings are located south of the proposed quarry on lands retained by the former landowner. The house, barn and metal shed located on the north part of Lot 11 are owned by the applicant but have not been included within the area to be licensed. There are houses located adjacent to both northwest and northeast boundaries of the site, with other rural residences and farm residences scattered along Regional Road 9, Concession 11 and Highway 6.

The provisions of the Aggregate Resources Act, and the regulations and standards there under, require that site plans prepared for quarry applications identify all land uses within 120 metres of the proposed quarry. The site plans prepared by Harrington and Hoyle Ltd., for the Hagersville Quarry have identified all land uses within that 120 metre radius.

Commencing at the northern boundary of the site, there are three non-farm residential dwellings located in close proximity. Two of these dwellings are immediately abutting the site, and the third dwelling is located on the north side of Regional Road 9 (Mud

Street) immediately opposite the dwelling located on the land subject of the quarry license application. Other lands to the north of the subject site within the 120 metre boundary are in agricultural, field crop production.

To the west of the site, all lands are in agricultural production, or woodlot use. There are no residences within 120 metres of the proposed quarry site along the western boundary adjacent to Lot 10, Concession 12 of the quarry property.

Lands along the southern boundary of the site in Lots 10 and 11, Concession 12, and along the western boundary adjacent to Lot 12, are in agricultural production. At the southern boundary of the property, adjacent to Concession 11 Road, there are 3 non-farm dwellings within the boundary, one of which is the remnant parcel formerly associated with the lands subject of this quarry application. Just beyond the 120 metre boundary and fronting on Concession 11 Road to the southwest of the subject site is a farm dwelling associated with the adjacent agricultural field crop use.

On the southeast boundary of the property, the Canadian National Railway line is located, and between King's Highway # 6 and that rail line is located a residential dwelling associated with an eleven acre farm property.

Lands located along the eastern boundary of the subject site are all related to potential or past quarry activities. Portions of Lot 13 on the east side of Regional Road 18 consist of an abandoned quarry, which has been rehabilitated to a water body. Between Regional Road 18 and the property to Regional Road 9 is an area currently in field crop production and identified as a licensed quarry pursuant to the provisions of the Aggregate Resources Act. Small portions of this property have, in the past, been utilized for extractive activities; however, there is no apparent extraction activity occurring on the site at this date.

It is the normal and accepted practice of planners in assessing new quarry developments to examine land use within 500 metres of a proposed facility. Ministry of Natural Resources and Ministry of Environment guidelines in assessing all industrial activities, including quarry activities, generally indicate that any potential impact of an industrial use on adjacent land uses will occur, if at all, within a 500 metre radius of the site.

Land uses within 120 metres of the site have been previously detailed in this report and are shown on the Aggregate Resources Act site plans. The predominant land use to the north and east of the Nichols Gravel Limited proposed quarry site within both 500 and 1,000 metres of the site are quarry related uses, and industrial uses such as the manufacturing of concrete products. Lands to the west of these quarry activities, including the subject site, and the CN rail line are predominantly rural in nature, consisting of farms generally larger than 50 acres in size in a variety of field crop, pasture, and animal operations.



Specifically, the land use within 500 metres of the quarry, south of the quarry to the CNR rail line consists of four farm properties of 100 acres, 66 acres, 50 and 49 acres in size. Within this area there are three non-farm residential properties in addition to the two previously noted being located within 120 metres of the quarry site.

Between the CNR rail lines and Highway No. 6, a narrow band of land has been developed predominantly for non-farm uses. Commencing at the southeast portion of the strip, from the 500 metre line to the edge of that line in Lot 13, there are nine non-farm residents, one residence on a six and one half acre farm property (sheep grazing), and the quarry restaurant, which is located at the corner of Highway No. 6 and Sandusk Road (Regional Road 18).

South of the intersection of No. 6 Highway Regional Road No. 27 are two farm residences associated with parcels of 64 and 75 acres in size (note residence on the 75 acre parcel is beyond 500 m).

To the east of Sandusk Road is located a concrete storage yard and shop use (All Mix), and vacant land associated with the Special Policy Area previously mentioned, and agricultural fields.

North of the CN rail lines within 500 metres in the northeast portion of the site is the Dufferin licensed property, the three previous quarries which are being rehabilitated to water bodies, and the dwelling identified as being within 120 metres of the site located adjacent to the property fronting on Regional Road No. 9. To the north of the property is a single non-farm residence within 120 metres of the property, and three farms of 81 acres, 74.5 acres and 96 acres respectively, without residences located within the 500 metre radius.

A portion of the adjacent 194-acre farm also falls within the 500 metre boundary on the north side of Regional Road No. 9. Immediately to the west of the property and completing the land uses within the 500 metre radius of the property are two farm holdings of approximately 50 acres in size each, and without farm residences.

In total, within 500 metres of the property, there are 14 non-farm residences, and 3 farm residences plus the 2 farm residences on the subject property. (Note: some of the residences are in close proximity to the line delineating 500 metres and have been included for purposes of this assessment). The majority of these non-farm residential properties and dwelling units (9) are to the south of the property and separated from the site by the CNR rail line.

The attached assessment map, delineating land use, has been compiled from a number of assessment sheets obtained from the Regional Municipality to provide an illustration of the lot fabric in the vicinity of the quarry site. Lot fabric between 500 metres and 2 kilometers of the site is similar, in that the predominant use of land is agricultural lands generally on large farm parcels, interspersed with non-farm residential development along most roads. Two notable exceptions are the Village of Hagersville located



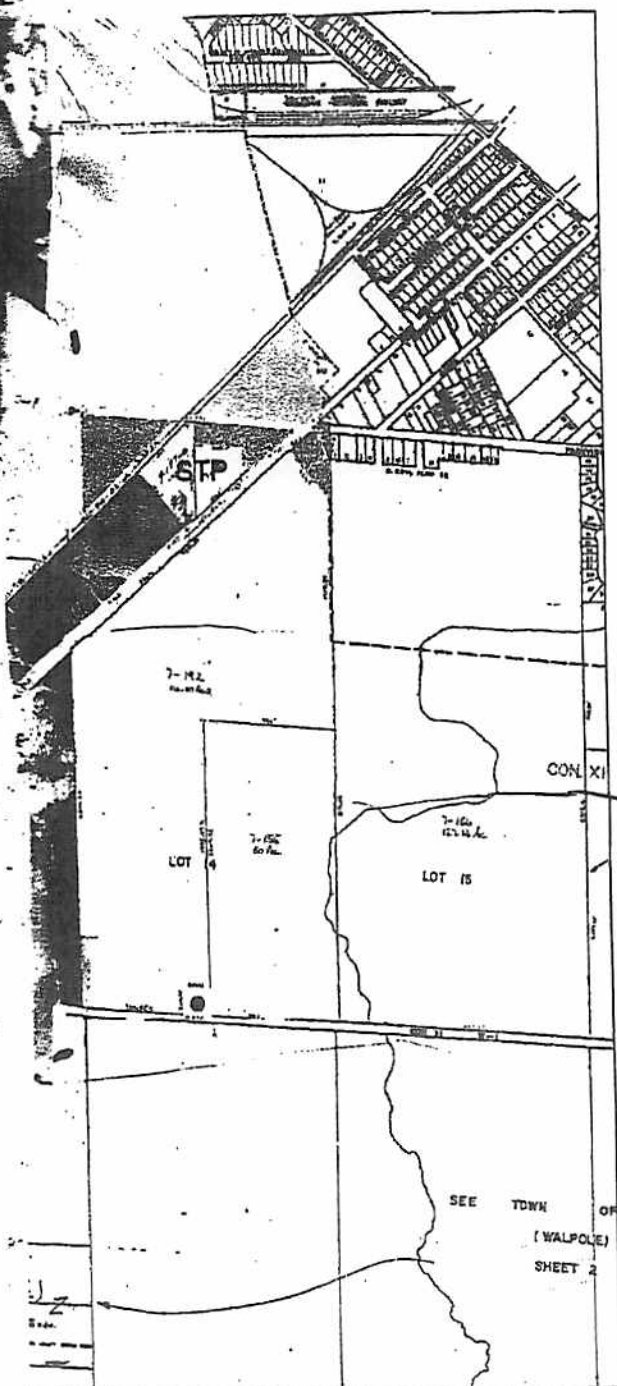
approximately 1.6 kilometers from the site and the hamlet of Varlet located approximately 1.6 kilometers from the site.

An examination of the existing lot pattern within the Regional Municipality of Haldimand-Norfolk, and in particular, those areas identified as Selected Resource Areas, provides a similar lot fabric for most of the Region.



City of Nanticoke

Existing Land Use Map



LEGEND

- NON-FARM RESIDENTIAL
- FARM
- FARM DWELLING
(LOCATION APPROXIMATE)
- COMMERCIAL
- INDUSTRIAL
- OLD QUARRY
- LICENSED QUARRY
- VACANT AGRICULTURAL
LAND
- SEWAGE TREATMENT
PLANT
- INSTITUTIONAL



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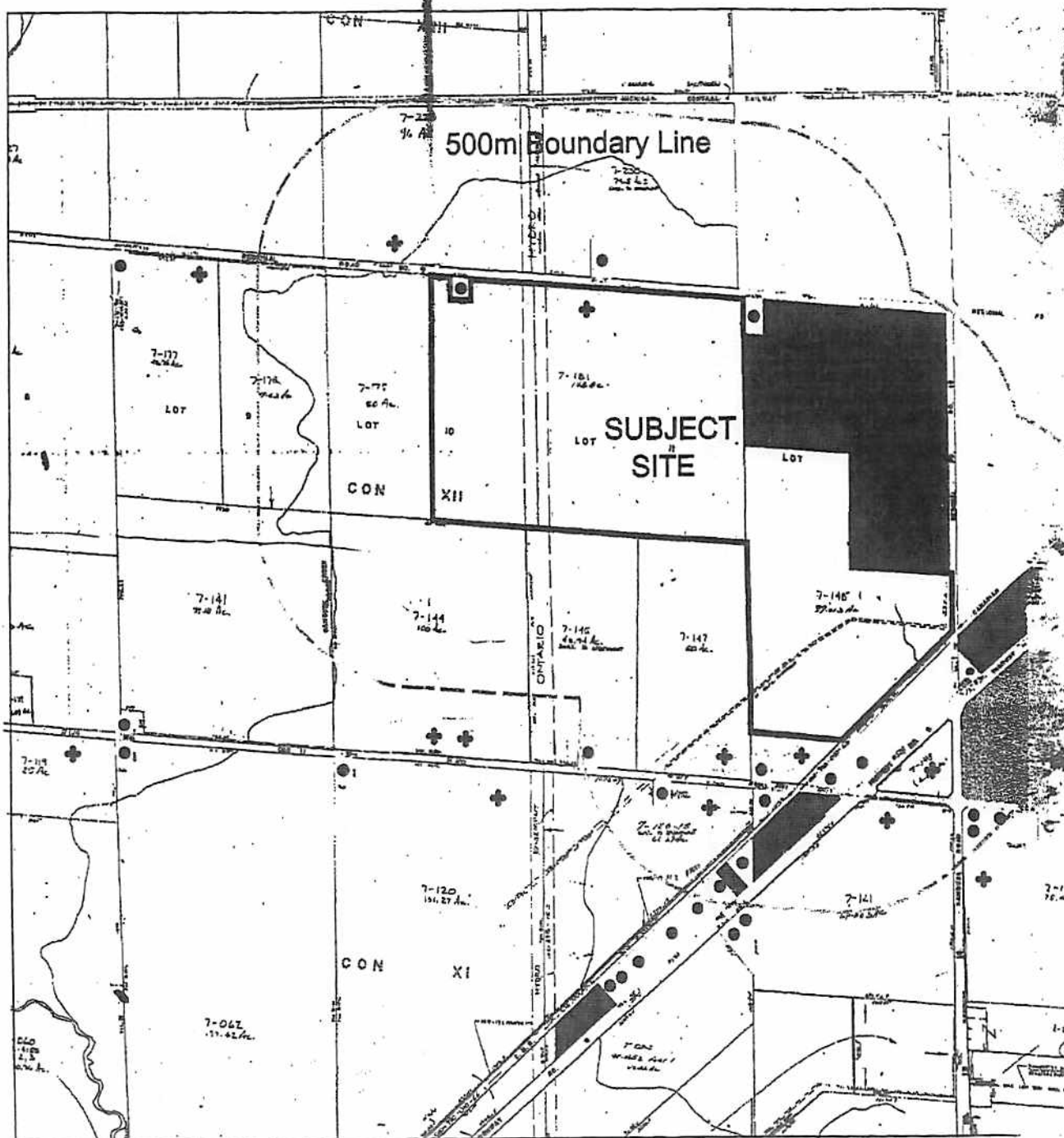
Scale



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6 RESOURCE CONSIDERATION

6.1 Aggregate Resources

Nichols Gravel Limited is seeking a license pursuant to the Aggregate Resources Act to ensure that they have a long-term reserve available to serve their client base and future needs. Particularly, Nichols Gravel Limited, needs a supply of crushed stone to augment their current pit operations in the vicinity of Delhi, Ontario. Crushed stone is an important component of Nichols Gravel Limited's operation and is necessary for many of the contracts bid upon by Nichols Gravel Limited for roadwork and other construction projects. The report of Ms. Sherry Yundt provides specific economic details related to the Nichols Gravel Limited need for a source of aggregate.

The provisions of the Provincial Policy Statement, local and regional official plans, and current Ontario Municipal Board decisions, do not require a proponent to determine need for the aggregate resource. Rather, the onus is on those who wish to develop lands, which contain the resource for uses other than extraction to demonstrate that the use of identified resource areas for other purposes will serve a greater public good. However, both the Regional Official Plan and the City of Nanticoke Official Plan contain provisions whereby the proponent of a quarry, which proposes to extract material below the water table in prime agricultural areas, must provide an indication that other alternatives have been considered by the applicant and found unsuitable. The specific policies of these plans have been addressed previously in this report.

The planner retained by the City in this matter, Mr. B. Smith of Plansmith, in his September planning opinion report has correctly noted that the policy of the Regional Plan (D.5) and the City Official Plan (J.14) was not addressed in the information provided by the proponent in support of the rezoning and Aggregates Resources Act submissions. In my conversations with Mr. Chris Bell, Planner for the City, I was advised that while the matter had been discussed by the planning staff of the City and Region, no request for documentation of the site selection undertaken by Nichols Gravel Limited was requested by planning staff. Those staff members did not feel it necessary to require site search documentation to reach their planning opinion and recommendation to their respective Councils for approval of these applications.

However, in order to ensure that the matter is appropriately before the Ontario Municipal Board and to address the issue raised by Mr. Smith the site selection process is documented as follows:

Alternative Site Search

Nichols Gravel Limited, in considering all alternatives, went beyond the Regional Municipality of Haldimand-Norfolk in its search for suitable sites to achieve the type of aggregate reserve necessary for their business. As an aggregate producer, Nichols Gravel

Limited were well aware of the resources being mined by their competitors. They were also well aware of the limitations on the type of bedrock resource available, and the need for them to seek a crushed stone quarry rather than a pit for their purposes. Existing licensed properties in Brant, Haldimand-Norfolk and portions of Hamilton-Wentworth which could potentially serve their market area were examined, and rejected either due to quality of the reserve or quantity of the reserve available.

Within the Region of Haldimand-Norfolk, areas suitable for the production of crushed stone, are generally located in the eastern half of the Region. Areas in the western portion of the Region and beyond towards Brantford and other areas, contain sand and gravel resources which were considered to be unsuitable for their needs.

The dilemma faced by any individual or company in determining an adequate location for a new quarry, is perhaps best expressed in the introduction to the Aggregate Resources Inventory of the City of Nanticoke, previously entered as an exhibit in this Hearing, where it states:

"Although mineral resource aggregate deposits are plentiful in southern Ontario, they are fixed-location, nonrenewable resources which can be exploited only in those areas where they occur. Mineral aggregates are characterized by their high bulk and low unit value so that the economic value of a deposit is a function of its proximity to a market area as well as its quality and size. The potential for extractive development is usually greatest in the urban fringe areas where land use competition is extreme. For these reasons the availability of adequate resources for future development is now being threatened in some areas.

Comprehensive planning and resource management strategies are required to make the best use of available resources, especially in those areas experiencing rapid development. Such strategies must be based on a sound knowledge of the total mineral aggregate resource base of both local and regional levels. The purpose of the Aggregate Resource Inventory is to provide the basic geological information required to include potential mineral aggregate resource areas in planning strategies and official plans. The report should form basis for discussion on those areas best suited for possible extraction. The aim is to assist the decision-makers in protecting the public well-being by ensuring that adequate resources of mineral aggregate remain available for future use."

The Regional Municipality of Haldimand-Norfolk, and the City of Nanticoke have identified selected bedrock resource areas within the Municipalities to ensure that the resource is protected for its ultimate use.

Bedrock Resources

Within the Regional Municipality of Haldimand-Norfolk, three selected bedrock resource areas were identified in the Official Plan. These resource areas represent the Bertie, Bois Blanc and Dundee formations (Selected Resource Areas 1, 2 & 3 respectively). The



largest of these areas follows the Onondaga Escarpment running generally in a northwest southeast direction across the Region. West of the Town of Dunnville, the Escarpment is partially buried and east of Dunnville reappears. The geologic formations comprising these two areas are related to the Onondaga Escarpment consists of the Bois Blanc Formation overlying the Bertie Formation. Large portions of the Bertie Formation are at or near ground surface level in the northern part of this escarpment feature. Due to the small area of the exposed Bertie Formation, and the comparable quality of the resource for crushed stone, these two selected resource areas were treated as a single unit in the site selection process.

The remaining resource area is identified adjacent to Lake Erie near the City of Nanticoke. This formation represents the Dundee Formation of the selected resource area.

Within the selected bedrock resource areas, existing quarries are mining the Bois Blanc and Bertie Formations. The Dundee Formation is found entirely within the City of Nanticoke and is identified as Selected Resource Area 3.

No quarries are currently operating within the Dundee Formation, within the Selected Bedrock Resource Area 3. The Agricultural Resource Inventory Paper, filed as an exhibit in these proceedings, indicates that the Dundee Formation is the youngest bedrock unit to subcrop in the City and is described by Hewitt (1972) as a light brown, medium-grained limestone. Chert is often present and occurs as small nodules or in thin irregular beds (Telford and Hamblin 1980).

The Aggregate Resources Inventory Paper describes the Upper Dundee Formation limestone as being of poor quality in some areas because of the presence of white, porous chert.

Only one of the quarries operating in the City of Nanticoke is mining the Dundee Formation, that being the Norfolk Quarries Co., that operates a facility near Port Dover outside of the Selected Bedrock Resource area.

All quarries in the vicinity of Hagersville are mining the Bois Blanc Formation, and in some cases have extended the quarry to the underlying Bertie Formation. Within the eastern portion of the Region, Cayuga Materials and Construction Co. Limited operate the Cayuga Quarry. This quarry is also mining material from the Bertie formation, having removed most of the available material from the Bois Blanc Formation.

In close proximity to that quarry is an area licensed under the provisions of the Aggregates Resources Act, owned by Nelson Aggregate Co. This quarry has not as yet been opened for extraction of the Bois Blanc and Bertie aggregates on site.

The site selection process was concentrated on the Bertie and Bois Blanc Resource areas to ensure a high quality of resource to serve the needs of the client.



Agricultural Land Capability

In examining the Selected Bedrock Resource Areas, as identified in the Official Plan and by the Ministry of Natural Resources in their Aggregate Resource Inventory Papers, it is also necessary to also address agricultural capability. Utilizing Canada Land Inventory for Agricultural Capability Mapping provided by the Ministry of Agriculture and Food, (copy attached) and the Soils of the Regional Municipality of Haldimand-Norfolk Report by the Ontario Institute of Pedology prepared for the Ministry of Agriculture and Food, we are able to provide a broad view of the soil capability for agriculture as it relates to the selected bedrock resource areas.

As previously indicated in this report when listing policies related to the Regional Plan, much of the agricultural land base of the Region is considered to be prime agricultural land. Within the identified selected bedrock resource area there is very little Class 4 - 7 agricultural land. Selected Bedrock Resource Area 3, representing the Dundee Formation, is entirely within areas identified as having Class 2 agricultural land capability with some soil limitations. Selected Bedrock Resource Area 1, consisting of the Bertie Formation, is found in the area generally described as being Class 1, 2 or 3 agricultural lands. The northern portion of this Formation in the vicinity of Boston and Bealton is identified as being 60% Class 1 and 40% Class 3 with some topographic limitations. The majority of the remaining portions of the formation are found on Class 2 agricultural land with the exception of a small portion of the resource located south of Springvale, which is identified as Class 6.

The Bois Blanc Formation, Regionally is predominantly Class 1, 2 or 3 agricultural capabilities throughout its length with three significant exceptions of Class 6 agricultural land. No Class 4, 5 or 7 capability lands were found within the selected bedrock resource areas.

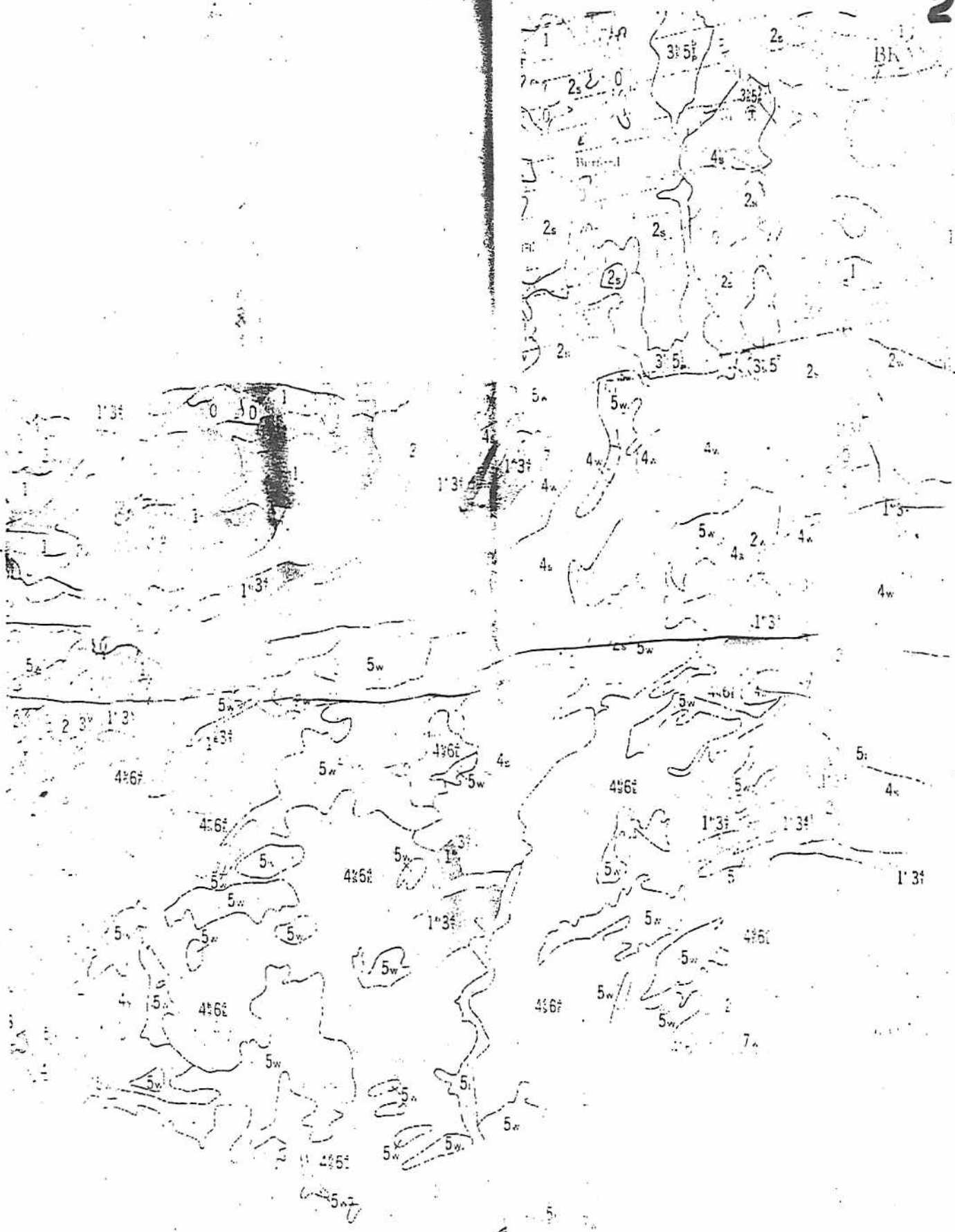




CANADA LAND INVENTORY FOR AGR

CLASS 6 LANDS

- A SPRINGVALE
- B HAGERSVILLE
- C CLAN BRASSIL



These areas of Class 6 agricultural land represents the area previously noted near Springvale, an area adjacent to the Village of Hagersville, and an area in Haldimand County west of the Grand River and the Village of Cayuga south of the Village of Clanbrassil and north of the hamlet of Decewsville. Each of these Class 6 agricultural lands has been identified on the attached CLI map and will be assessed individually as follows:

a) Springvale Class 6 Agricultural Land

In this area classified as having Class 6 Soils with 'r' (rock at surface) limitations, the underlying resources are from the Bertie Formation and the Bois Blanc Formations. Within this area of Class 6 soils, is also located an unlicensed quarry, representing an abandoned or wayside quarry operating on demand on authority of a permit by Cayuga Materials and Construction Ltd. This quarry has not been utilized for a number of years.

It is also noted that the Significant Biotic Areas Mapping And Policies of both the Regional Plan and the City of Nanticoke Plan, the majority of these lands are also contained within the Salem-Rockford Rockland identified as a Significant Biotic Area. Any mining in the Significant Area or within adjacent lands could significantly impact on the biotic area. Because this area represents a Rockland formation, removal of resource in this area would remove the significant area, and be contrary to the Policies, Goals and Objectives of both the City of Nanticoke Official Plan and the Regional Official Plan.

b) Hagersville Class 6 Agricultural Land

Lands within the Hagersville area identified as Class 6 agricultural land capability, have, for the most part, been removed as a result of past mining activities or development of the Village of Hagersville itself. A small portion of the Standard Aggregates (Lafarge) quarry, which is licensed but not currently operating, represents the only available area of land with lower agricultural capability in this area. All quarries in the area are currently or have in the past mined material from below the water table in this area.

c) Clanbrassil Class 6 Agricultural Land

The remaining area of Class 6 agricultural land is located in the vicinity of Clanbrassil, and running south between Decewsville and Nelles Corners. Large portions of this area of poor agricultural soil are currently licensed for extraction by Cayuga Materials and Construction Limited as part of their Cayuga Quarry, and Nelson Aggregate Co. The Cayuga Materials quarry is located in Lots 44 - 47 inclusive, Concession 1 NTR. The Nelson Quarry is located to the north and west in Lots 48 - 51 inclusive, Concession 1 from North Cayuga.

It is also noted that within the vicinity of these Class 6 agricultural lands, and including the remaining portions of the poor soil area, are located the following Significant Biotic Areas, as identified in the Town of Haldimand Official Plan:

- The Clanbrassill Raised Beaches;
- The Oriskany Sandstone and Woodlands; and
- The Taquanyah Conservation Area, and an area known as Dry Lake.

Given the limited availability of poorer class agricultural lands within the Region, and within the City of Nanticoke, it is difficult to find locations where the resource is suitable and available for aggregate extraction. As a private sector proponent Nichols Gravel Limited can only look to properties that are available, and at a cost suitable to their needs. Having examined all lands of lower agricultural capability it has been determined that for the reasons previously stated that there are no viable areas available for extraction of the selected bedrock resource.

Areas Where Extraction Could Occur Above the Water Table

The provisions of the Official Plan also require that alternatives include the consideration of lands committed for future urban uses and resources on prime agricultural land where rehabilitation to agriculture is possible. In order to address the provision of the policy related to lands above the water table, as lands below the water table cannot be rehabilitated to agriculture, it is necessary to look at ground water probability mapping for the Region.

Some time ago the Ministry of the Environment prepared Ground Water Probability Mapping and Reports for the County of Haldimand and the Regional Municipality of Haldimand-Norfolk western portion. These reports, prepared in the late 1970's, do not establish the ground water table for the entire Region; however, provide an indication where most wells provide water within a given distance from the surface. AGRA Earth and Environmental Limited (now AMEC), the environmental consulting firm retained by Nichols Gravel Limited, have reviewed this documentation, the compilation of water well records available from the MOE (available records to 1998), for the Bedrock Aggregate Resource Areas in the Region and other pertinent data.

Throughout the areas of interest, the potentiometric surface of the shallow bedrock aquifer (Bois Blanc, Onondaga, Dundee Formations) is generally found at depths of 4 to 7.5 metres (12 to 25 ft.) below ground level (bgl). AMEC conclude that most, if not all, viable quarry operations within the selected bedrock resource areas within the Region, or the City of Nanticoke in particular, would be extracting below the water table for at least a portion of the quarry.

Only the Cayuga Materials and Construction Co. Limited, Cayuga Quarry is currently mining above the water table. Rehabilitation of most quarries within the selected bedrock resource areas, to full agricultural use would not be possible given the depth of material, rehabilitated side slopes and levels of ground water identified.



In order to determine whether there are any areas capable of removing the resource and rehabilitating the site to agriculture, it would be necessary to conduct extensive drilling throughout the Municipality, and examine the available aggregate to the point where site plans have been prepared to address quarry side-slopes following removal of the resource. Clearly, this is beyond the financial resources of most private sector quarry operators.

Given the limitations on available data related to ground water supplies, it is not possible for Nichols Gravel Limited to demonstrate that they have examined all sites, or possible sites within the Region where resources are located on prime agricultural lands where rehabilitation to agriculture is possible.

Lands Committed for Future Urban Use

The Local and Regional Plan Policy also requests that the applicant consider alternatives for those lands committed for future urban uses, which remain undeveloped. Within the Regional Municipality of Haldimand-Norfolk the only available vacant area committed for urban use represents an area of the eastern-most portion of the Nanticoke Industrial Park, located in Concessions 1, 2 and 3, Lots 9, 10 and 11. Much of this land is presently occupied or scheduled for industrial development by others such as the Stelco Steel Mills, Texaco Refinery, a sewage treatment plant and Ontario Hydro. The vast majority of the vacant land within Nanticoke Industrial Park, and the associated industrial influence area, is located west of, and outside of the selected bedrock resource area.

Properties Examined Within and Outside of the Region

Nichols Gravel Limited, in determining the search for a site, based the site on their search for resource to meet their individual corporate needs. As previously indicated, the selected bedrock resource area is identified based on the aggregate found and includes the three formations previously noted. Nichols Gravel Limited rejected the Dundee Formation based on distance to their market area, and the quality of stone within the formation. It is noted that the Aggregate Resource Inventory of the City of Nanticoke clearly indicates that there are no quarries operating in the areas of Selected Bedrock Resource Area of this formation in the City of Nanticoke. The report indicates that the formation is being worked northeast of Port Dover and stone from the quarry is taken from the Upper Dundee Formation which of poor quality in some areas because of the presence of white, porous chert.

Given the limitations on the quality of rock found within the Dundee Formation near the industrial business park of the City of Nanticoke, the search for alternative sites concentrated on the Bois Blanc Formation and Bertie Formations found in the northern portion of the City of Nanticoke and the Town of Haldimand. Because Nichols Gravel Limited's existing client base is presently being served from Delhi, from their pits located in the Township Burford just north of Scotland, the search concentrated predominantly on the western portion of the Region, and areas in the County of Brant.



- Within the County of Brant, four properties were examined in some detail. A property near the Brantford Municipal Airport was examined, however terms could not be reached with the owners of those lands. The Crawford Reid Pit on Rest Acres Road was examined, however the material was too sandy and the stone of poor quality. Two other properties within the County of Brant were examined and test holes dug. On the first property stone was of acceptable quality, however Nichols Gravel Limited were unable to agree on the conditions of the sale. A second nearby property was examined and test holes drilled, however the quality of gravel and stone was not at a standard satisfactory to Nichols Gravel Limited.

The Mississauga-New Credit were approached to allow testing of their lands, however the approval of Six Nations was a requirement, and the attempt to establish negotiations ceased.

- X Early in 1996 Nichols Gravel Limited began negotiations with Dufferin Aggregates to acquire the currently licensed property immediately adjacent to the subject site. The site of approximately 85 acres contained known reserves and was licensed pursuant to the Aggregate Resources Act. Nichols Gravel Limited approached Dufferin Aggregate and the parent company St. Lawrence Cement Inc., with an offer to purchase in September of 1996. However they were advised subsequently that Dufferin/St. Lawrence Cement wish to divest themselves of all four quarry properties in this area which was beyond the needs of Nichols Gravel Limited. Nichols Gravel Limited continues to negotiate with Dufferin Aggregate, and the owners of the ACCU II Development 9 (potential purchasers of all of the Dufferin properties) to acquire the extraction rights pursuant to the Dufferin Aggregate's license.

Other properties within the City of Nanticoke were examined and rejected either because of the environmental features, quality of rock, or inability to negotiate the sale of the property to the Company. Subsequently, Nichols Gravel Limited were able to obtain accepted offers of purchase and sale on the properties subject of this application and the applications for quarry license and rezoning were commenced.

From a land use planning perspective, it is desirable to locate new quarries near existing quarries or to expand existing quarries for a number of reasons. These reasons include the known quality of the aggregate on site, the known impacts of quarry operations on adjacent land uses, the fact that many of the land uses in the area have occurred during quarry operations and users are aware of those operations, and the fact that the rehabilitation efforts of the quarry operations are generally similar in a given area. Areas around the Village of Hagersville have developed with a significant number of quarry operations presently in place.

- X Generally speaking, those quarry operations to the west of Hagersville have been operating since the early to late 1800's, during the development of most of the Village. The current Lafarge Aggregates Operation to the northeast of Hagersville is operating without significant impact to the adjacent village and surrounding land uses. From a



resource perspective, the expansion of the existing Dufferin Aggregates property to the adjacent Nichols Gravel Limited property will not add any significant impacts to the extraction of resource in this area.

The Niagara Peninsula is an important area for crushed stone. All official plans within the Peninsula, including the Regional Municipality of Niagara, the Regional Municipality of Haldimand-Norfolk and the Regional Municipality of Hamilton-Wentworth, identify potential resource areas where stone outcrops occur within three feet of the ground surface. The shallow depths of the deposits make extraction easily accessible and cost-effective. The provision of all plans in the Peninsula protect these areas for future extraction wherever possible, in accordance with the provisions of the Provincial Policy Statement.

Nichols Gravel Limited, in undertaking their site selection process to find a new quarry site for their market area, undertook a search that included all the provisions of the Official Plan related to alternative sites. No suitable sites were found on Class 4 - 7 agricultural lands, no sites were found with suitable resource on lands committed for future urban uses, and no resources were found on prime agricultural lands where rehabilitation to agriculture is possible without sterilizing much of the resource available.

6.2 On Site Agricultural Resource

The summary report prepared by Harrington and Hoyle Limited identified the agricultural classification on site to include lands of Class 2 and 3 agricultural capabilities. The individual soil classes on site are contained within that report and need not be repeated.

As indicated in the preceding section, the agricultural capability of the subject site represents some of the lowest quality agricultural land within the selected bedrock resource areas.

The provisions of the Provincial Policy Statement provide the ability to remove prime agricultural land from production for resource extraction. Both the existing quarries in the vicinity of the site, and the adjacent licensed Dufferin property have been or are proposed to be rehabilitated to a water body. Nichols Gravel Limited will be mining below the water table, and overburden is limited in this area.

Therefore, it is not possible to rehabilitate the entire site to agricultural use. The rehabilitated quarry will be flooded and utilized as a water body for aquaculture, or recreational purposes.

Nichols Gravel Limited does not intend to mine the entire property. As indicated in the summary report, it is estimated that a maximum of 31.26 hectares of the property may be excluded for extraction purposes because of operational constraints and setbacks, (e.g. exclusion of the woodlot in the southwest, leaving approximately 62.71 hectares that are available for extraction at this time). The 31.26 hectares will continue in agricultural use,

and form part of the agricultural resource upon completion of mining and rehabilitation. The agricultural use of the property will be maximized following extraction by utilizing the setback areas for agricultural purposes in accordance with the Provincial Policy Statement, the provisions of the Regional Plan, and the City of Nanticoke Official Plan.

Based on the reports filed in support of the application, and the mitigation measures identified in those reports, no impacts associated with the quarry operations will affect the agricultural use of surrounding lands.

Quarry operations are normally found in rural areas of the Province of Ontario. Both the City of Nanticoke Official Plan and the Regional Municipality of Haldimand-Norfolk Official Plan identify aggregate resource extraction as a permitted use in the agricultural area. Properly operated quarries can exist in close proximity to agricultural and intensive animal operations without impact on those operations.

Agricultural operations in this portion of the City have existed throughout the extended period of time that the Dufferin and Lafarge quarries to the north and northeast of the site have been in operation. Normal agricultural operations, such as are existing in the area surrounding the proposed quarry, are compatible with properly operated quarry operations. The proposed Nichols Gravel Limited Quarry will similarly be compatible with adjacent agricultural operations.

7 LAND USE CONSIDERATIONS

7.1 Provincial Policy Statement

The proposed Nichols Gravel Limited quarry is consistent with the policy of the Provincial Policy Statement. Approval of the quarry and rezoning application will allow for the use of the resource in keeping with the preamble and Part 2 - Principles of the Provincial Policy Statement. The quarry lands are located within a rural portion of the City of Nanticoke in close proximity to the existing market and demand.

The Provincial Policy Statement contains provisions to allow mineral resource aggregate operations to occur on prime agricultural lands without complete agricultural restoration where there is a substantial quantity of mineral aggregate below the water table warranting extraction. The Nichols Gravel Limited quarry operation, as with the adjacent Dufferin licensed property, and other Dufferin and Lafarge quarries in the area, will mine mineral aggregate below the water table and therefore will be unable to rehabilitate the site to other than a water body.

The findings of the hydrogeologic study and a review of local water well records indicate that the water table in this area is between 3 and 7.5 m (10 and 25 ft.) below ground surface. Extraction of stone will take place in up to two ± 7.6 metre benches (benches may be combined but will not exceed 18 metres in height) to a maximum depth of ± 203 metres A.S.L.



With regard to the natural features, it is noted that there are no significant wetlands or significant portions of habitats of endangered or threatened species in the area subject of this application. However, during the preparation of the natural environmental level one and two reports by Harrington and Hoyle Ltd., it was noted that the Ministry of Natural Resources has identified the woodlot to be of some local significance.

Approximately 1/3 of a larger 6.5 hectare deciduous woodlot extends into the southwestern corner of the site. Because of the low percentage of forest cover of approximately 5% for the Municipality, the woodlot would be considered a significant feature. In consultation with the OMNR forester, the applicant has decided to maintain a minimum extraction setback of 20 metres from the edge of the woodlot and the extraction activity in order to protect the woodlot to ensure the edge remains in tact.

The proposed setback will also maintain the surface hydrology in the area surrounding the woodlot to direct and slowly infiltrate surface water into the clay overburden materials from which the trees obtain their water. As noted in the Harrington and Hoyle report, the proposed rehabilitation has the potential to allow expansion of the forest cover onto the 20 metre setback buffer surrounding the woodlot and onto the adjacent one side slopes through natural regeneration.

The Harrington and Hoyle Report contains the following summary:

"In summary, with proper management, the proposed extraction will not significantly affect the function of the existing deciduous woodlot on the site or the Harrop Drain, a tributary of Sandusk Creek. The rehabilitation concept proposed will provide the opportunity for expansion of the existing woodlot and an additional pond, which may increase the ecological diversity in the local area."

With regard to cultural heritage features, Nichols Gravel Limited retained Archaeologix Inc. to undertake an archaeological assessment (Stages 1, 2 and 3) for the site.

These investigations resulted in the recovery of minimal cultural material and no diagnostic artifacts from each of the three sites found on the property. Consequently, no additional investigation was required. Based on the results of this assessment, the Ministry of Citizenship, Culture and Recreation was asked to issue a letter of clearance for the subject property.

It is noted in the recommendations contained within the archaeological study that "should deeply buried archaeological material be found on the property during excavation activities, the Ministry of Citizenship, Culture and Recreation should be notified immediately".



Further the report indicates:

"In the event that human remains are encountered during construction, the proponent should immediately contact the Ministry of Citizenship, Culture and Recreation and the Registrar or Deputy Registrar of the Cemeteries Regulations Unit of the Ministry of Consumer and Commercial Relations."

Having had regard to the provisions of the Provincial Policy Statement, the application by Nichols Gravel Limited for the quarry is consistent with all provisions of the Provincial Policy Statement.

7.2 Land Use Compatibility

The proposed quarry area is located in a rural portion of the City of Nanticoke. The predominant land use in this area is quarry operations and agricultural uses. All quarry operations, dust, noise and traffic can be mitigated to ensure that the surrounding agricultural area, and the scattered rural residential dwellings, are not adversely affected by quarry activities. All operations will be screened from the public by means of berms and vegetative cover in place and setbacks required by the Aggregate Resources Act along the property lines. Additional setbacks have been imposed on the site plans to address existing non-farm residential dwellings in close proximity to the site as recommended in the noise study prepared by Aerocoustics Engineering Limited.

Based on the operational history of Nichols Gravel Limited at its previous quarry and pits in the Delhi area, as confirmed by the Ministry of Natural Resources, and other quarry operations in the area, it is my professional planning opinion that the quarry will be compatible with surrounding agricultural, residential and quarry operations.

The City of Nanticoke, in refusing the zoning application put forward by Nichols Gravel Limited, specifically indicated that land use compatibility was an issue.

The provisions of the Aggregate Resources Act, in establishing setbacks from quarry operations, have considered potential impacts on residential operations and other land uses. These setbacks have been prepared by the Ministry of Natural Resources based on their long experience of issues and impacts associated with quarry operations. Similarly, the policies of the Provincial Policy Statement indicate that the Rural Areas will generally be the focus of resource activity (1.1.1b).

It is not uncommon to find residential development immediately adjacent to active quarry operations. Clearly, in this portion of the City of Nanticoke, the Village of Hagersville, although located in the Town of Haldimand, has historically developed immediately adjacent to active quarry operations. Much of the Village is currently immediately adjacent to an active quarry operation on the northeast portion of the Village adjacent to the Lafarge Quarry site. Other specific examples include the Lafarge, Queenston Quarry which is located abutting a residential development known as the Bevan Heights Estates



Development where quarry activities are presently occurring, and have occurred in the past within 30 metres of a residential plan of subdivision.

Another example would be the Nelson Aggregate Company, Burlington Quarry located immediately adjacent to the Mount Nemo Settlement Area in the City of Burlington. During the operation of the Nelson Quarry in Burlington, the Niagara Escarpment Commission and the City of Burlington have allowed the expansion of the Mount Nemo Settlement Area and other intensive farm operations to occur in close proximity to that quarry facility. There are numerous other examples of quarries operating immediately adjacent to residential development without apparent land use conflict.

Within the Village of Hagersville, and on portions of abutting lands within the City of Nanticoke, there is currently a proposal for development of a residential/resort facility. While most of this proposed development, known locally as the ACCU II Development, proposes that residential uses will be located in excess of one kilometer from the proposed Nichols Quarry site, golf facilities are proposed within 500 metres of the site.

Similar to residential development, golf courses adjacent to quarry activities, or even part of the rehabilitation plans of quarries, are not uncommon. In many cases, partially depleted quarries have been rehabilitated to golf courses where play occurs while mining activities also occur. Perhaps the best example of a golf course operating adjacent to an operating aggregate resource extraction is the Peninsula Lakes Golf Course, which not only won a Bronze Plaque from the Aggregate Producers Association of Ontario during its construction and early years, but is also currently being listed as one of the top courses in Ontario.

While the residential and clubhouse development proposed for the ACCU II Development is located in excess of one kilometer from the active quarry site, the Region and Municipal planners must have regard for the Provincial Policy Statement, and local plan provisions which would preclude any development that could hinder mineral resource extraction within the selected resource areas.

In many respects the impacts of an aggregate resource extraction operation and a normal agricultural operation are similar. The Ontario Agricultural Code of Practice imposes restrictions on development adjacent to intensive animal operations in a manner similar to the restrictions placed on new non-farm development and adjacent to quarry operations. Non-farm residences in the rural area are normally discouraged in the PPS and Official Plans to allow the maximum utilization of the resource, be it agricultural resource or the extraction of the aggregate resource.

Nichols Gravel Limited have retained the services of R.P.G. Transtech Inc. to undertake a traffic study to ensure that traffic related to haul routes can be accommodated within the Local, Regional and Provincial roadway system. All haul routes from the proposed quarry will utilize Regional and County Roads and Provincial Highways, which are designed to carry and do carry truck traffic. The findings of the Transtech report indicate that the impact of site truck traffic will be negligible. The report also indicates that the



impact of truck traffic on school bus related activity in the vicinity of the site will be negligible. All site distances on the haul routes are excellent and intersections are capable of handling the various vehicle movements.

The proposed Nichols Gravel Limited, Hagersville Quarry, and mitigation measures proposed in the various discipline reports is and will be compatible with surrounding quarry, agricultural, residential and rail uses.

8 POTENTIAL IMPACTS AND PROPOSED MITIGATION

Local, Regional and Provincial policy requires that major facilities such as a quarry operation must be appropriately designed, buffered and/or separated from sensitive land uses such as residences to prevent adverse or nuisance effects from noise, dust and other impacts. The purpose of this section of the report is to provide an integrated summary of the potential impacts of the proposed quarry based on the findings of the various disciplines. Each discipline has examined, in detail, the potential impacts of the development in their area of expertise. However, issues or impacts identified in the hydrogeological assessment and stormwater basement may have differing impacts on aquatic and terrestrial resources. It is, therefore, necessary to integrate these findings in the form of an overall impact assessment to ensure that the impact identified is adequately addressed or efforts are taken to eliminate, mitigate, minimize or avoid the potential impact. In some cases, potential impacts and actions will have the opportunity to enhance natural features or functions.

This section of the document will identify the potential impacts identified by the discipline report and by issues raised during the review of these reports by various agencies during the processing of the application. The findings are based on the results contained in these reports and additional work requested as a result of the extensive review. The section is organized by the potential impact as a result of the quarry operation on the natural or manmade features. For each potential impact, there is brief outline of the existing conditions, potential concerns, findings of disciplines and identified impacts, if any, and measures taken to resolve concerns or enhance the feature or function affected.

8.1 Visual

The proposed quarry is located in an area of the City of Nanticoke, which is not visually dominant. Open agricultural fields interspersed with small woodlots and moderate topographic variation provides interspersed views of existing quarry operations in the overall landscape. All existing and previous quarries in the area are screened from view by existing vegetation, by berms and plantings.

With the exception of the frontage on Regional Road 9, it will not be necessary to screen the quarry, as existing vegetation along the property line and adjacent and surrounding properties provide visual barriers to the site. A five metre high berm will be constructed along the Regional Road 9 frontage and to the rear of the existing dwellings located



adjacent to and on site. A three metre high berm will be constructed along a portion of the eastern property line adjacent to the licensed Dufferin property to ensure that views from Regional Road 9 and the intersection of Regional Road 18 are screened from a view of the quarry.

The western property line presently contains a hedgerow along the property line, which screens views of the quarry from that view. In the southern portion of the property, hedgerows adjacent to the railway right-of-way, and the existing development, which will be retained fronting on Concession 11 Road, will adequately screen the quarry from view. Much of the area south of the quarry contains a wooded area, which will be retained due to its significance and will provide screen of the quarry from the south. With these measures in place, there will be minimal visual impact as a result of the approval of the quarry.

X 8.2 Noise

A noise assessment report was prepared by Nichols Gravel Limited by Aerocoustics Engineering Limited. That report indicated that there was extensive exposure to quarry noise in the vicinity of the site for many years in the past, but the noise of the environment in recent times has generally been characterized by agriculture and traffic on the adjacent roads.

The report identifies noise sensitive points of reception around the site as being the houses on immediately adjacent properties. The existing noise and environment at the houses generally located within 120 metres of the quarry property fits MOE Classification 2, in which man made sounds dominate the daylight hours with significant reduction in the evening. For houses further west along Concession 11 road, noise levels are reduced somewhat given the distance from Provincial Highway 6 and the rail line.

The report examines the operations of the Nichols Quarry and predicts that noise impacts from the quarry operations will be negligible at most of the neighbouring receptors most of the time. As activity moves closer to each group and potential noise there increases, control measures are required to keep the noise at acceptable levels. The study undertook to identify operational scenarios that could produce significant noise impact at any of the residences around the site. The ten example houses that were selected for the noise analysis include the most vulnerable. The report indicates that compliance with the noise guidelines of these ten receptors will ensure compliance at all other receptors in the vicinity of the quarry site.

The Noise Report contains specific recommendations to mitigate potential noise impacts, which were considered to be an integral part of the site and operating plans. Recommended noise controls have been incorporated in the site plans prepared by Harrington and Hoyle Limited.

Aerocoustics Engineering Limited also prepared a supplementary report to address higher levels of production from the site at 250,000 and 750,000 tonnes per year, and concurrent



mining of the adjacent Dufferin Licensed Property. The report concludes that compliance with MOE noise criteria is feasible with the operation as planned at the proposed Nichols Quarry with annual production rates up to 750,000 Tonnes per year. Impacts of the addition of worst-hour noise from the Dufferin quarry and the worst-hour noise impact from the Nichols quarry would not be significantly higher than the Nichols quarry alone. Noise from trucks serving the quarries is not expected to cause any measurable impact.

X 8.3 Dust

The primary objective of any dust control program is to ensure that dust emissions from quarry operations are mitigated and controlled on site. The "prescribed conditions" under the Aggregate Resources Act require that:

- (3.1) Dust will be mitigated on site
- (3.2) Water or other Provincially approved dust suppressant will be applied to internal haul routes and processing areas as often as required to mitigate dust.
- (3.3) Processing equipment will be equipped with acceptable means of reducing dust where applicable and where equipment is being operated within 300 metres of a sensitive receptor.

No increases in dust loading from the surrounding agricultural lands are expected as a result of the quarry operations. Nichols Gravel Limited will monitor dust and wind events to ensure that dust is mitigated on site.

X 8.4 Haul Routes/Traffic

Nichols Gravel Limited intends on utilizing existing Regional Roads and Provincial Highways for their haul routes. All roads in the vicinity of the quarry are asphalt surfaced with gravel shoulders and rural cross sections. Road widths are typically 7 metres with speed limits of 80 km. per hour.

The Aeroustics Engineering Limited noise assessment examined the potential noise impact from truck usage of the haul routes, at a variety of process rates, and determined that trucks servicing the proposed quarry are not expected to cause any measurable impact from a noise perspective.

Haul routes were examined by R.G.P Transtech Inc., who determined that the combined impact of the site trucking traffic with future background traffic and the full operation of the Dufferin Quarry results in a level of service 'B'. This is a minor effect and the intersection will continue to have good operating characteristics. The impact of trucking traffic on school bus related activity in the vicinity of the site will be negligible. The generally level grade in the area provides excellent sight distances.

X

No mitigation measures or highway improvements are required as a result of approval of this application.

X 8.5 Blasting

A blast impact analysis was conducted by Explotech Engineering Limited for the proposed Nichols Gravel Limited quarry. The blast impact analysis was based on the Ministry of Environment and Energy's model municipal by-law (NPC 119) with regard to guidelines for blasting in mines and quarries. The report assessed the area surrounding the proposed license with regard to potential damage from blasting operations.

Blast vibration and over-pressure data used in the report was collected from locations in and around Ontario quarries during the past several years. Data comes primarily from limestone quarries using various lengths of blast holes with diameters ranging from 63mm to 150mm. The report provides a calculation of predicted vibration levels at the nearest houses or buildings. The report also contains details of the proposed blasting operations, which will be included in the suggested conditions of approval.

The report also addressed well water impact and indicated that, based on observations and research, Explotech believes that the blast-induced vibration at the proposed Hagersville quarry will not affect the water wells in the area.

The conclusion of the Explotech Blast Impact Analysis is that the proposed Hagersville quarry can be developed safely and productively in the proposed area while staying well within the Ontario Ministry of the Environment and Energy's Guidelines for Blasting in Quarries, provided all recommendations in this report are seriously considered by the quarry operator.

The recommendations of the blast impact analysis have been included in the site plans prepared by Harrington and Hoyle Limited.

The Explotech Engineering Ltd. blasting report was peer reviewed by Golder VME Limited (VME). VME made six specific recommendations intended to lessen the impact of blasting operations on the community, which will be included in the suggested conditions of approval.

Nichols Gravel Limited are prepared to incorporate these suggested conditions on the site plans and as part of the approval of these applications.

X 8.6 Ground Water Modifications

The detailed hydrogeologic studies prepared by AGRA Earth and Environmental Limited (now AMEC) examined existing and predicted conditions and assessed potential impacts on ground water relative to the quarry operation. In the development of the quarry, excavation will extend below the ground water table, which will result in the need for a water management system to maintain dry working conditions. A principal component

of the water management system will be pumping of the accumulated water in the excavation for use in the processing and/or discharge from the quarry. At a minimum, it is anticipated that the active portion of the quarry will be drained.

The dewatering will result in ground water movement from the rock into the excavation. Thus, the quarry will act as a large sump or ground water discharge zone within the hydrogeologic setting. The zone of influence of the dewatering is dependent on factors such as the hydrogeologic properties of the bedrock and the hydrogeologic conditions.

Numerical ground water flow monitoring was used to conservatively estimate the impact of the proposed Hagersville Quarry dewatering operation on domestic ground water users. AMEC is of the opinion that the impacts on ground water and groundwater users are minor and can be readily mitigated. Negotiations between the consultants for the City and area residents are underway to prepare a set of conditions and mitigation measures to ensure minimal impact on ground water.

Since all estimates of the required pumping rate will exceed the 50,000 l per day requirement of the Ontario Water Resources Act (regardless of the hydrogeologic conductivity of the bedrock), a Permit to Take Water will be obtained by the quarry operator prior to commencing quarry dewatering activities.

The supplementary approval process of The Ministry of the Environment, in issuing the Permit to Take Water, will also require that mitigation measures and contingency plans are in place to protect well water users from potential loss of water resources.

Following the completion of quarry activities, the excavating equipment and any structures present will be removed and the pumps turned off. The quarry will eventually fill with water. Water levels in the area will also rise and eventually will approximate current conditions.

In addition, in order to satisfy the concerns of the Hydrogeologist retained by The Mississauga's of the New Credit First Nation, Nichols Gravel Limited and the AMEC hydrogeologist have agreed that the following be included as a condition of approval:

During the quarry dewatering operations for the proposed Nichols Quarry (on part of Lots 10 - 12, Concession 12, City of Nanticoke) the proponent shall implement the appropriate measures to maintain the current water levels (subject to natural, seasonal and climatic variations) in the ponds which occupy the mined out quarries to the north and east of the proposed quarry, subject to the permission of the owners of the ponds.

The proponent shall only be responsible for remediating significant reductions in pond levels that are caused by his quarry dewatering activities, and shall not be responsible for remediating any reductions in pond water levels caused by other factors beyond the control of the proponent (e.g. climatic variations, pond dewatering done by the owners of the ponds, etc).



A reduction in water levels in any of the ponds of 0.3 metres or more (from their current levels) shall be considered a significant reduction.

X 8.7 Stormwater Flow Modification

AGRA Earth and Environmental Limited prepared, as part of their hydrogeological study, a report addressing surface water flows. The background information of this report indicates that the area is south of the Onondaga Escarpment and as a result, surface water drainage at the site flows into the Harrop Drain, which eventually discharges into a tributary of the Sandusk Creek (which ultimately flows into Lake Erie in the Dunnville area). Sandusk Creek drains an area of 127 km² and has a gradient of approximately 0.6 m per km.

Portions of the flow route are reportably controlled by fractures in the underlying bedrock (P.J. Barnett, 1978). No springs were observed on the subject property or in the vicinity.

The report indicates that the development of the quarry is expected to have minimal impact on the existing natural drainage. Approximately 80% of the proposed quarry lands drain to the south or southeast with discharge into the Harrop Drain. Twenty percent of the surface drainage flows to the north and west into a tributary of Sandusk Creek and along Regional Road 9 to Sandusk Creek.

As the quarry expands, precipitation catchment in the quarry will be directed into a natural surface pond, which will flow directly into the Harrop Drain. As such, there is expected to be no impact on surface drainage of adjacent properties or on Regional Road 9 and 18.

Currently, surface drainage flows through two 36" diameter drains run under the CN Rail tracks running along the southeast property boundary and into the Harrop Drain. When full, these drains are capable of handling approximately 1,400 L/S or 18,460 gpm. The report indicates that the additional inflow from dewatering of the quarry will comprise approximately 0.2% of capacity. In addition, a silt settlement lagoon will be constructed to limit erosion and prevent silt and other sediments from flowing through the CN culvert and into the Harrop Drain. The settlement pond will be maintained and cleaned as necessary by the quarry proponent.

Concern has been raised that the Harrop Drain may not be of sufficient standards due to lack of maintenance to accept quarry flows during peak flow periods. Further study by Philips Engineering Limited has determined that they would anticipate no impact on flooding of any element of the Harrop Drain as a result of the proposed quarry. In fact, it is anticipated that the runoff rates after and during the quarrying will be lower than existing.

X



BLS Planning
Associates

9 SUMMARY OF PLAN POLICY

Chapters 2, 3 and 4 of this report outline the existing land use designations and policies applicable to the Nichols Gravel Limited Quarry application. Most of the issues contained in those policies have been addressed in the body of this report. The following summary table addresses the policies and provides an indication of where, in this report, or in other reports where these matters have been addressed.

OFFICIAL PLAN POLICIES/PROVINCIAL POLICY STATEMENT/ARA TESTS		
Policy	Comments	Report Reference
Reg-J-10,I-12,39, Loc-S-8,11 Location of new quarries to avoid significant biotic areas	There are no Significant Biotic Areas in the vicinity of the proposed quarry. The wood lot on site, identified as having significance due to the lack of forest cover in the Region will be retained and enhanced upon completion of quarry activities.	BLS Section 7
Reg-J-11, Loc- S-3- Aggregate resources should be removed before allowing development	The aggregate resource has been identified as a significant resource to be protected for utilization. The application is in conformity with this provision.	BLS Section 7
Reg-J-12 Loc-S-1-Quarries permitted without OPA, and require only zoning amendment to local by-law	This issue has been addressed, as part of the pre-hearing evidence of T. Smart, D. Roe, and C. Bell who all agree an amendment is not required to the Official Plans of the City or Region.	BLS Exhibit A-1
Reg-J-14, Loc-S7 -Extraction below water table must demonstrate:	Much of the aggregate resource on site is located below the water table.	Summary report
a) A substantial amount of mineral aggregate	Alternative sites have been considered and rejected as not suiting the owner's needs.	BLS Section 6.2
b) other alternative have been considered	Rehabilitation to agriculture has been maximized on site, and large areas have been retained in setback areas.	BLS Section 6.1
c) agricultural rehabilitation will be maximized		
Reg-J-1, Loc- S6, PPS 2.2.3.5, ARA Rehabilitation of Quarries to compatible after use	Quarry to be rehabilitated to a water body and agricultural use that is consistent with surrounding rehabilitated quarries and agricultural uses.	BLS Section 7



OFFICIAL PLAN POLICIES/PROVINCIAL POLICY STATEMENT/ARA TESTS		
Policy	Comments	Report Reference
Reg-K3, Loc-M.1.2, PPS-Resource extraction is a permitted use in an agricultural area.	Quarry site is located within the rural area of municipality	BLS Section 5, 6.2
Reg-K4, K5 Loc- M-goal, PPS-2.1.2 Soil capabilities for agriculture, and preservation of prime agricultural lands.	Extraction of the resource will remove prime agricultural lands, for part of the site. It will not be possible to rehabilitate the entire site to agricultural use.	BLS Section 6.2
Loc-D1-General Development Policies Orderly land use patterns throughout the community.	The removal of a significant resource as identified in the plan in an area where past resource extraction has occurred is an efficient and orderly use of land.	BLS Sections 6, 7 & 8
Loc-D5- assessing development proposals, compatibility, required reports	The proposal is supported by all required reports and represents an appropriate use of the site. Potential impacts will be mitigated.	Reports of other disciplines. BLS Sections 6, 7, 8, 9, 10
Reg- J-4, Loc-D12, S6 PPS-2.2.2.2 Sensitive land uses not permitted in Selective Resource Areas that would preclude removal of Resource	These policies apply to new development adjacent to resource areas and quarries. The policies may affect the ACCU II development proposed near the Village of Hagersville.	BLS Section 7.2
Loc-R1-Cooperation between agencies for water management issues	Conservation Authority, MNR, and MOE will ensure during the Permit to Take Water application that these issues are addressed.	AGRA reports, BLS Sections 8&10
Loc-R3-Submission of Stormwater Management Plans.	Stormwater management has been addressed in the AGRA reports and in the Summary Report filed with these applications. Mitigation measures will insure minimal impact.	AGRA BLS Sections 8.6, 8.7, 10
Loc-R4, R5-Policies for issues associated with agricultural and municipal drains	Policies require that Municipal drains be maintained. The Harrop Drain is a municipal drain in need of some maintenance.	BLS Section 8.6, 10.2



Having examined the provisions of these documents, as contained in this report, I am of the professional planning opinion that the proposed application conforms in all respects with the policies and planning programs of the Province, Region and City of Nanticoke. The proposal is in conformity with the Official Plan, and the By-law Amendment Application sought satisfies the test pursuant to the Planning Act related to conformity of zoning by-laws with official plans.

X 10 CONCLUSION

Nichols Gravel Limited is seeking a license to ensure that they have a long-term reserve available to serve their client base and future needs. They are also seeking an amendment to the City of Nanticoke Zoning By-law in accordance with the provisions of the City and Regional Official Plans to zone the property for the resource extraction use.

The area to be licensed is a natural and logical extension of previous quarry operations. Local, Regional and Provincial Plan policies all contain specific policies to identify areas of potential mineral resources and to protect these areas to allow consideration for future utilization of the resource. Allowing this quarry would be in keeping with the wise use of protecting mineral aggregate resources.

The Nichols Gravel Limited, Hagersville Quarry is a good example of a well located, close to market, aggregate source area, that will have minimal impact on the surrounding rural area.

Extraction is required to take place below the water table, similar to other quarries in the area, and therefore it will not be possible to rehabilitate the site to other than a water body. The provisions of the Provincial Policy Statement, as outlined in this report, indicate that where there is a substantial quantity of mineral aggregates below the water table complete restoration to agricultural use is not required. Nichols Gravel Limited is seeking a Category 2 Class A Quarry Below Water Table License.

This report presently before the Ontario Municipal Board, addresses all planning issues associated with the quarry operations as raised by the various agencies and members of the public. No adverse impacts, as a result of quarrying activity at this site are anticipated to occur off site that cannot be mitigated with the recommendations contained within this report and the reports of the other disciplines supporting this application.

In order to address concerns, statutory requirements, peer review comments and to provide a suggested set of conditions of approval a complaint protocol/action plan will be forwarded, under separate cover, to allow discussion between the technical advisors to the parties and a final version will be prepared for submission at the Board at the end of the process of those discussions.



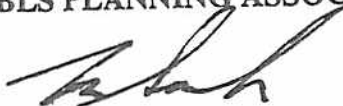
The intent of this action plan is to:

- Set out clearly and briefly the issues associated with the topics of ground and surface water, blasting and vibration, complaint notification protocols and other issues identified as part of the Pre-hearing submissions,
- The way in which such problems will be monitored and assessed, and;
- The manner in which the licensee will address issues and alleviate concerns;
- And to prepare suggested conditions of approval to ensure compliance with the action plan.

An amendment to the City of Nanticoke Zoning By-law is required for this site. The overall objectives of the Regional, Local and Provincial planning documents have been considered, and the application meets the tests contained within these documents, and the provisions of the Planning Act. It is concluded that the application for rezoning and requirements of the Aggregate Resources Act have been met, and approval of this application is appropriate and in keeping with sound planning and resource management principles.

Respectfully submitted,

X BLS PLANNING ASSOCIATES



X Tom Smart, MCIP, RPP
Director

X

 BLS Planning
Associates

23

READY
COMPLETE

**X SOME ECONOMIC AND RESOURCE
CONSIDERATIONS
RELATED TO THE
PROPOSED HAGERSVILLE QUARRY**

X Prepared for: Nichols Gravel Limited

X Prepared by: S.E. Yundt, S.E. Yundt Limited

September 2000

INTRODUCTION

This report is prepared in support of an application by Nichols Gravel Limited for a Category 2, Class "A" licence to operate a quarry. The site is located in part of Lots 10 - 12, Concession 12, City of Nanticoke, Regional Municipality of Haldimand-Norfolk.

BACKGROUND

Aggregate is an essential non-renewable resource used for development and growth of all types, including, roads and highways, houses, commercial and industrial complexes, manufacturing, environmental protection, etcetera. Aggregate is literally the "foundation" of our economy and society. Transportation costs are significant and aggregates must be obtained from sources as close to the market as possible. Transportation can represent 60% of the final price when aggregate is delivered to its final market. In addition to economic advantages of close to market aggregate resources, there are also social and environmental benefits resulting from reduced truck haulage. The longer the haul distance from the pit or quarry to the market the greater the impact is on people along the haul routes and on the environment in terms of emissions and fuel consumption.

Because aggregate is a non-renewable resource, every tonne of sand and gravel and stone removed from a licensed pit or quarry must be replaced if the resource is to be sustainable, and a continuous supply assured for future generations. This application is to replace the supply of gravel removed from licensed properties in the Burford area operated by Nichols Gravel Limited. These pits have provided sand and gravel for development of all types to markets in Delhi, Simcoe, Scotland and Long Point for decades.

X HISTORY OF NICHOLS GRAVEL LIMITED

Nichols Gravel Limited was founded in 1943 by Edwin Nichols primarily to supply aggregate to the tobacco industry in and around Delhi for construction of kilns, pack barns and greenhouses. As the demand tapered off for this use, the demand for aggregate for road construction increased. Over the years they operated out of several other pits at Vanessa and Holbrook and a quarry at Jarvis. Aggregate from the Jarvis Quarry was used for the Ontario Hydro and Texaco projects at Nanticoke.

Today, Nichols Gravel Limited is still a family business. The President is Mr. Gary Nichols and his wife, Margaret, is the Vice President and responsible for the administrative side of the business. They have two sons who manage the company's licensed properties. The company employs a total of ten people directly and many others indirectly and in related industries, such as, trucking, construction, equipment supply and services.

Nichols Gravel Limited are currently operating four licensed pits with two in Scotland, one in Burford and the main pit in Delhi. Nichols Gravel Limited supply a variety of aggregates to its customers, including concrete sand and stone, stone chips and other granular materials. Their markets are largely within 32 km (or 20 miles) of their licensed properties. (Figure 1)

X LICENSED PROPERTIES

Nichols operate four licensed properties. The main pit is located just north of Delhi on the Brantford Road and it was depleted of sand and gravel in 1964. It is currently used as a redistribution yard for aggregate from other properties.

Two licensed properties are located in the Township of Burford just north of Scotland. The pit in Lot 1, Concession 11 is 80% sand and 20% gravel. Reserves are depleting on this property. The Burford pit #3 is located in Lots 1 and 2, Concession 9, Township of Burford. This property is 50% gravel and 50% sand but it has no concrete quality material.

In an effort to secure aggregate resources for future production and meet customer demand, Nichols Gravel Limited proposes to open a quarry in the Hagersville area on part of Lots 10-12, Concession 12, in the City of Nanticoke. This location was chosen primarily to supplement the stone at the Scotland pits especially to supply concrete aggregate. Nichols Gravel Limited have had to buy material from other suppliers to obtain the right mix from their current licensed properties. Production from these licensed properties averages $\pm 100,000$ tonnes per year. Production has grown from an estimated 10,000 tonnes in 1943 to an estimated 20,000 tonnes in 1962 and to over 100,000 tonnes in 1999. This quarry property was chosen as well to meet a broader spectrum of specifications for road construction projects.

MARKETS

Nichols Gravel Limited has established unique market niches for their products. These markets are largely within 32 km (or 20 miles) of their operations as indicated in Figure 1. These markets include the following customers.

1. FARM AND FARM RELATED

Wallace Kennedy
Kennedy & McElhone Ginseng
Canadian Imperial Ginseng
Joe Vandenheede
Dalt White Farms

FIGURE 1



Tom McElhone
Butch Clare
Merten Farms
Joe Vandavelde
Stockmans Farms

2. CONTRACTORS TO LOCAL PROJECTS

Huron Construction
Warren Bitulithic Limited
Brantford Engineering and Construction
Robert Simon Construction Ltd.
R.F. Almas Construction & Redi-Mix
Subterra Construction
Sierra Construction
Sousa Construction
Summit Paving (702756 Ontario Ltd.)
Paris Construction

3. LOCAL BUSINESSES

Roswell Concrete
M & M Concrete
Hagersville Precast Products
Cathcart Concrete
Kwik Mix Port Colborne
Hunter Lumber
Dan Elliott Construction Six Nations
Titan Trailers
Longs Lumber
Koutstaal Construction

4. MUNICIPALITIES

City of Nanticoke
Township of Norwich
Six Nations Road Department
County of Oxford
County of Brant
Town of Haldimand
Region of Haldimand-Norfolk
Town of Tillsonburg

5. TRUCKING COMPANIES

Vern Wiens Trucking
Lloyd Wood Trucking
Ken Gilbert Trucking
Mussels Trucking Ltd.
South Brant Trucking & Grading
Don Malcolm
Walsh Trucking
George Burnett Ltd.
Fuller Trucking
Hawley Trevor Trucking

LIST OF PRODUCTS NICHOLS GRAVEL LIMITED

Granular A	3/8 Stone Class 1
Granular A2	3/8 Round Stone
Granular B	1/4 Stone Class 5
Screened Sand	1/4 Round Stone
Sand Fill	Pre Mix
Screenings	Concrete Sand
Tile Bed Stone	Mason Sand
3/4 Concrete Stone	Oversize Stone
3/4 Round Stone	

QUALITY AND QUANTITY OF AGGREGATE

The Devonian Bois Blanc and Onondaga limestones have been quarried for crushed stone in the Hagersville area since 1874. (Inventory, 1993, p. 216) In 1938, Goudge reported,

"The Onondaga limestone at Hagersville is extensively quarried for crushed stone, which as railway ballast, road metal, and concrete aggregate finds a market over the whole of southern Ontario." (Goudge, 1938, p. 230)

Dufferin Aggregates has a licence under the Aggregate Resources Act for 34 hectares directly east of the proposed site of Nichols Gravel Limited. Although the Dufferin Aggregates property is currently not being operated, it could be opened at any time. There are also three abandoned quarries that were operated prior to designation under the Pits and Quarries Control Act in 1973. These three abandoned quarries contain ponds that are currently being considered for residential and recreational use.

Lafarge Canada Inc. has two licensed properties on the outskirts of Hagersville to the north and west. It is expected that these existing licensed quarries will continue to be operated for some time into the future.

Nichols Gravel Limited has applied to open a quarry in parts of Lots 10 - 12, Concession 12, in the City of Nanticoke as indicated in Figure 2. Figure 2 is from Map 3 of the Aggregate Resources Inventory Paper 59 for the City of Nanticoke. A portion of the site is identified within Selected Bedrock Resource Area 2b. A drilling program was conducted and Mr. J.Z. Fraser of the Ministry of Natural Resources evaluated the drilling report and he recommended,

"...the subject area be considered to have the same resource potential as Selected Resource Area 2b, and be similarly protected for possible extraction as part of the municipal planning process for the area." (Fraser, 1998)

Based on the drill hole data, the reserves of aggregate to be extracted from the Nichols Gravel Limited site, would be 16.6 million tonnes, and 85% of this material, or over 14 million tonnes of aggregate, are below the watertable. The Onondaga Formation is 2.1 metres deep above the Bois Blanc Formation which is 7.9 metres deep on the site. By using selective extraction techniques and modern processing equipment these Formations can meet the requirements of high specification concrete and asphalt material. (Fraser, Taylor & Severinsky, 1988)

NORFOLK QUARRIES CO. AT PORT DOVER AND BEACHVILLE QUARRIES

PRODUCTION OF SAND & GRAVEL VS CRUSHED STONE

While the proportion of crushed stone to sand and gravel varies from year to year, in general crushed stone has accounted for a larger share of total licensed aggregate production in the 1990's than it did in the latter 1980's. Figure 3 indicates that crushed stone production in Ontario is increasing and sand and gravel production is decreasing in the last decade. (Clayton Research, 1999)

This trend has occurred for a number of reasons such as,

- * sand and gravel deposits are easier and less expensive to operate than stone deposits so they are extracted and depleted sooner;
- * a sandy source requires the addition of crushed stone or gravel to meet road specifications;

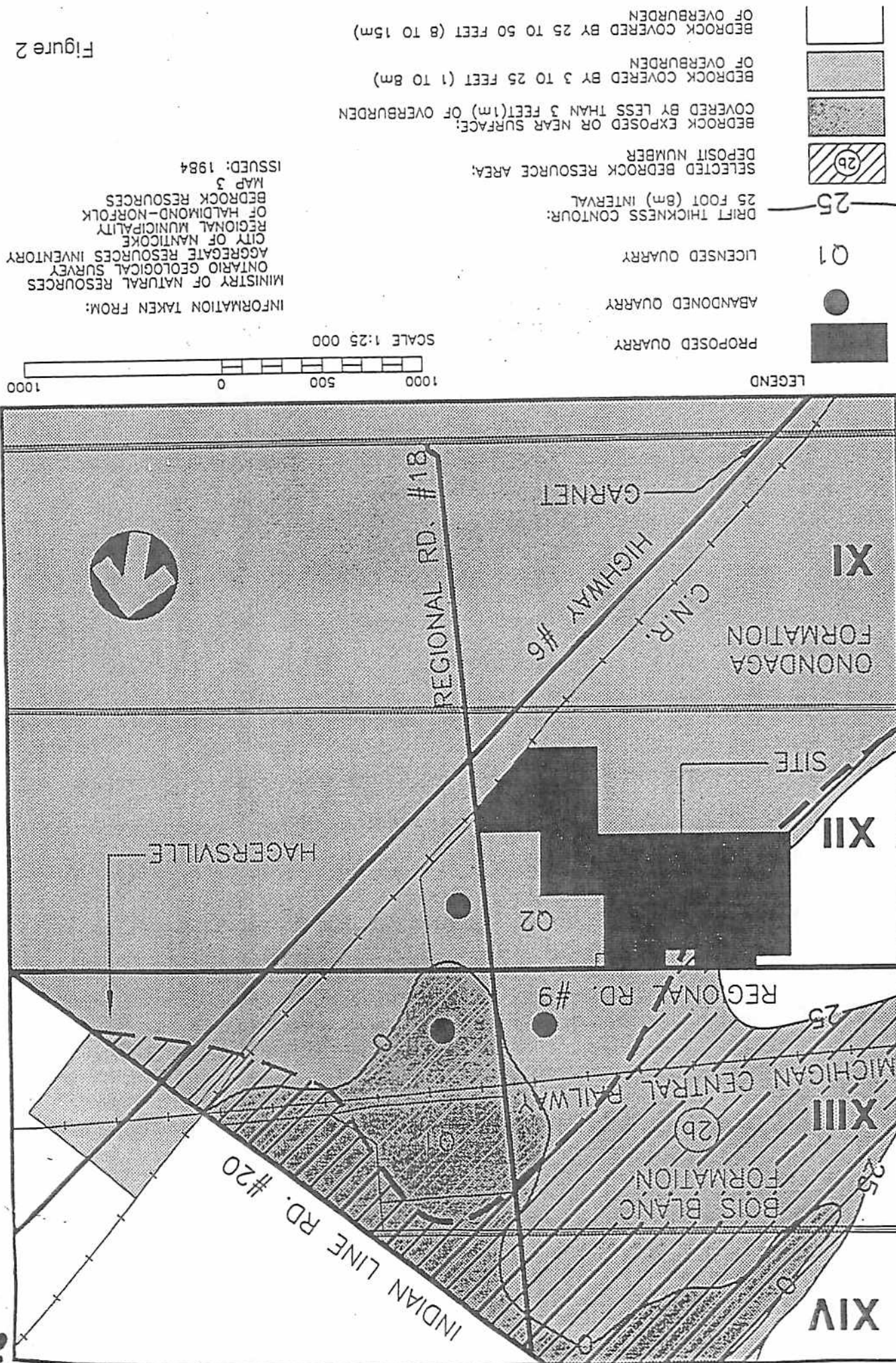


Figure 2

Percentage of Total Aggregate Production in Ontario by Commodity 1989 - 1998

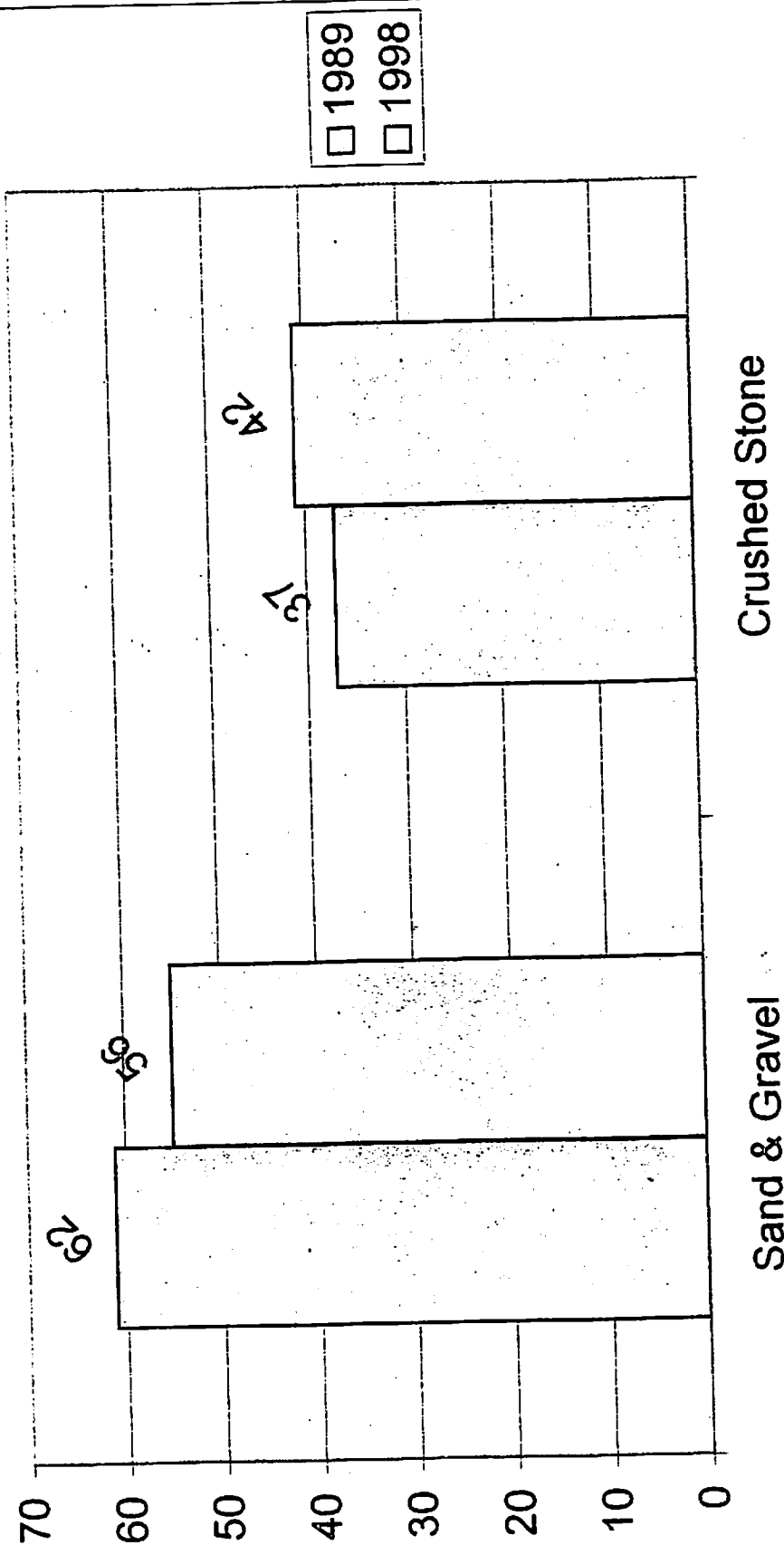


Figure 3

* a crushed stone source can meet a broader spectrum of specifications for road construction by MTO and municipalities; and

* urbanization in Ontario has developed over many sand and gravel deposits rendering them unusable.

This ties into the Nichols Gravel Limited application for a quarry at Hagersville. Nichols Gravel Limited have operated mainly sand and gravel properties so naturally they examined sand and gravel sources first. In attempting to find a source of stone to replace the depleting material at their Scotland properties, they could not obtain a source of sand and gravel and eventually turned to a crushed stone source.

X Nichols Gravel Limited investigated the following properties to establish a source of stone,

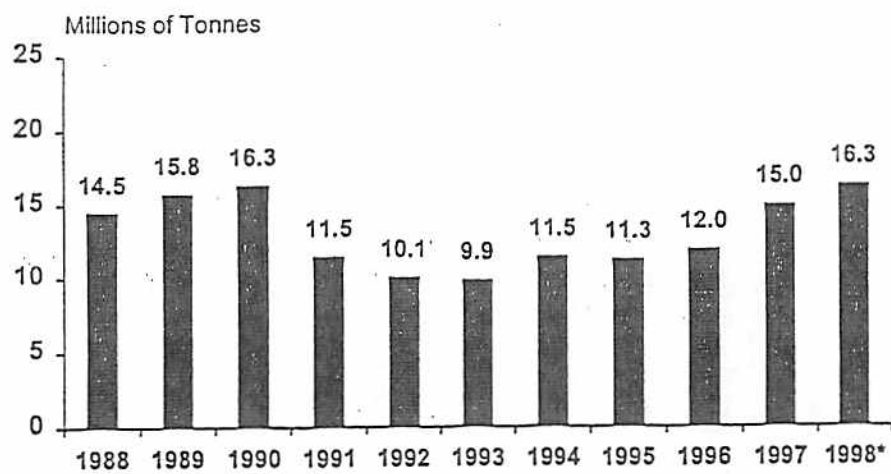
1. John Vamos Farm next to Brantford Municipal Airport in Brant County(not interested)
2. Crawford Reid Pit Rest Acres Road Brant County (too sandy and poor quality stone)
3. Zenen Sobczyk (dug Test holes good quality but couldn't agree on conditions (no sale)
4. John Innes Across from Z. Sobczyk (quality too sandy) Dug Test Holes
5. Mississaugas New Credit (must have Six Nations approval) (too complicated)
6. Dufferin Aggregates Licensed Property (85 Acres) at Hagersville (parent company imposed too many conditions) let offer to purchase expire

SUPPLY AND DEMAND FOR AGGREGATE

In the report entitled "Aggregates in Ontario: Recent Trends and Medium-Term Outlook" by Clayton Research Associates Limited in 1999, the Regional Municipality of Haldimand-Norfolk is included in the Peninsula area and grouped with Niagara, Brant and Hamilton-Wentworth.

From 1995 - 1997 the Peninsula area produced 12.8 million tonnes of aggregate and it consumed 14.8 million tonnes. This means that the Peninsula area of which the Regional Municipality of Haldimand-Norfolk is part, is a net importer of roughly 2 million tonnes of aggregate a year. This material is imported from the Southwest and the West Central areas. The Peninsula area is the only area in Ontario besides the Greater Toronto Area that is not currently self sufficient in aggregate production. (Clayton Research, 1999) Figure 4 gives the aggregate production from the Peninsula area from 1988 to 1998 and in recent years the production has been increasing.

Aggregate Production Peninsula



* Estimate

Source: Clayton Research based on data from Ministry of Natural Resources and APAO

Figure 4

X The supply of aggregate in the Peninsula area is not keeping up with the demand and new licences under the Aggregate Resources Act is the way to improve the local supply of aggregates. In the Peninsula area 20% of the aggregate production comes from sand and gravel sources and 80% comes from crushed stone sources. This is the highest percentage of crushed stone production in any area in Ontario.

X September 30, 2000

Mr. G. Nichols
President
Nichols Gravel Limited
P.O. Box 172
Delhi, Ontario
N4B 2W9

X Dear Mr. Nichols:

Enclosed is Invoice 1 for work completed by S.E. Yundt Limited in August and September 2000. The invoice totals \$10,548.37 including GST of \$690.08. Please note that I have not charged you for 8.25 hours @ \$110.00 per hour for \$907.50.

If you have any questions or would like to discuss this invoice please contact me.

Yours sincerely,

X S.E. Yundt
President

att.

GST NO. 12413 3968 RT.

INVOICE 1

Project 140
Nichols Gravel Limited
S.E. Yundt Limited

DATE	WORK COMPLETED	REPORT	OTHER*
AUG. 21	REVIEW FAX FROM RUDOLPH AND CALL RUDOLPH AND REVIEW MATERIAL FOR MEETING	2:00	
AUG. 30	MEETING PREPARATION	.50	
AUG. 31	MEETING IN HAMILTON RUDOLPH, NICHOLS AND SMART	5.00	
SEPT. 01	PREPARE MARKETING QUESTIONS AND FAX TO NICHOLS AND RUDOLPH AND REVIEW SUMMARY STATEMENT	4.00	
SEPT. 02	REVIEW OBJECTORS STATEMENTS, GEOLOGY INFORMATION AND CALLS FRASER MNR	1.00	
SEPT. 04	REVIEW GEOLOGY REPORTS AND REPORTS FROM TURKSTRA MAZZA		3.50
SEPT. 05	MEETING NICHOLS IN DELHI, CALLS AND FAXES FRASER MNR, STRACHAN MNR, RUDOLPH, PREPARE CONCERNS RELATED TO PROPOSAL AND VISIT NICHOLS PROPERTIES	6.75	2.50
SEPT. 06	REVIEW GEOLOGY REPORTS, PREPARE NOTES FROM MEETING WITH NICHOLS AND CALLS FRASER MNR	1.25	1.00
SEPT. 07	REVIEW FRASER ARTICLES, PREPARE GRAPHS, REPORT DRAFTING, REVIEW CLAYTON REPORT ON MARKETS AND MEETING PREPARATION	5.00	
SEPT. 08	MEETING IN HAMILTON SMART, RUDOLPH AND NICHOLS, FAX TO RUDOLPH, PREPARE CHART AND COURIER TO RUDOLPH	5.25	1.50
SEPT. 10	REVIEW SMITH REPORT AND DRAFT REPORT FROM SMART AND WRITE REPORT	4.00	.75
SEPT. 11	WRITE REPORT, FAXES AND CALLS NICHOLS, SMART, RUDOLPH & KAY TRANSTECH AND PREPARE MAP	5.50	
SEPT. 12	CALLS AND FAXES RUDOLPH	.75	
SEPT. 13	REVIEW MATERIAL FROM TURKSTRA MAZZA AND APPENDICES FROM SMITH REPORT AND CALL RUDOLPH	1.00	3.00
SEPT. 14	MEETING PREPARATION, MEETING IN HAMILTON RUDOLPH, SMART AND NICHOLS, REVISE REPORT, PREPARE REFERENCES AND FAX NICHOLS	7.50	
SEPT. 15	REVIEW SMART REPORT, CALLS AND FAXES STRACHAN MNR, NICHOLS, RUDOLPH AND REVISE REPORT	7.50	2.00

SEPT. 16	REVIEW SMART PLANNING REPORT		1.50 i (NO CHARGE)
SEPT. 17	PREPARE COMMENTS AND FAX TO SMART AND RUDOLPH		1.00
SEPT. 18	REVISIONS AND ADDITIONS TO REPORT	2.50	
SEPT. 21	CALLS AND FAXES RUDOLPH, STRACHAN MNR, REVISE REPORT, REVIEW REVISED DRAFT TRAFFIC REPORT AND FAX COMMENTS TO RUDOLPH, MEETING IN HAMILTON AND REVISE REPORT	4.75	6.75 (NO CHARGE 5.00)
SEPT. 22	CALL STRACHAN MNR, PREPARE FINAL REPORT AND DELIVER REPORT TO HAMILTON	3.25	1.75 (NO CHARGE)

* Other includes reviewing and commenting on reports by others and attending extra meetings.

TIME S.E. YUNDT AUGUST AND SEPTEMBER 2000
 REPORT 67.50 HOURS @ \$110 = \$7425.00
 OTHER 17.00 HOURS @ \$110 = \$1870.00
 TOTAL TIME = \$9295.00

NO CHARGE FOR 8.25 HOURS @ \$110 = \$907.50

COPIES 380 @ 10¢ = \$38.00

TRANSPORTATION

AUG. 31 MISS.-HAMILTON RETURN 127 KM
 SEPT. 5 MISS.-DELHI-SCOTLAND-HAGERSVILLE RETURN 347 KM
 SEPT. 8 MISS.-HAMILTON RETURN 127 KM
 SEPT. 14 MISS.-HAMILTON RETURN 132 KM
 SEPT. 21 MISS.-HAMILTON RETURN 126 KM
 SEPT. 22 MISS.-HAMILTON RETURN 126 KM

TOTAL TRANSPORTATION 985 KM @ 40 ¢ = \$394.00

PRIORITY COURIER = \$10.70
 J.R. GRAPHICS COPYING = \$31.51
 TELEPHONE AND FACSIMILES = \$29.08
 REPORTS 12 COPIES @ \$5.00 = \$60.00

TOTAL EXPENSES AUGUST & SEPTEMBER 2000 = \$563.29

TOTAL TIME & EXPENSES FOR SEPTEMBER & AUGUST 2000 = \$9858.29

GST @ 7% = \$690.08

TOTAL INVOICE 1 AUGUST & SEPTEMBER 2000 = \$10548.37

**X APPENDIX "A"**

X 20 October 2000
TC 05041

X Nichols Gravel Limited
Box 172
Delhi, Ontario
N4B 2W9

X Attention: Gary Nichols
President

X Dear Mr. Nichols:

X RE: Final Version – Monitoring Program, Contingency Plan, and Trigger Mechanisms
Proposed Nichols Quarry, City of Nanticoke, Ontario

SECOND DRAFT FOR DISCUSSION

Enclosed is the final version of the Monitoring Program, Contingency Plan, and Trigger Mechanisms for the proposed Nichols Quarry as agreed upon by AMEC, Dillon, and Nichols Gravel:

X Monitoring Program

- Monitoring well nests with upgradient, downgradient, and cross-gradient wells at the top of the Bois Blanc Formation, to the base of the Bois Blanc Formation, and into the Bertie Formation at the property boundaries. It is expected that BH-1, BH-2, and the Barn well could be incorporated as part of three of the well nests. These wells would have to be accessed and instrumented so that they monitor discreet zones within the underlying bedrock. The proposed locations of the well nests are attached;
- Monitoring of all domestic wells within 120 m of the quarry property boundary. This radius is based on the projected water level drawdown of 3.0 m in the vicinity of the quarry after 25 years of quarry operation – base case scenario. Water level monitoring will be conducted three times a year. As the life of the quarry proceeds, and the data is collected and evaluated over time, the adequacy of this extent of monitoring can be reviewed;
- All on-site monitoring well nests should be fitted with electronic water level monitoring equipment
- Baseline and subsequent semi-annual water quality sampling of the on-site monitoring wells;
- Baseline water quality sampling of the domestic wells within the 120 m monitoring radius;

AMEC Earth & Environmental Limited
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Mississauga, Ontario
Canada, L4Z 3K7
Tel +1 (905) 568-2929
Fax +1 (905) 568-1686

www.amec.com

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Nichols Gravel Limited
Monitoring Program, Contingency Plan, and Trigger Mechanisms
Proposed Nichols Quarry
20 October 2000

- Preparation of an annual report by the licensee's consultant that summarizes the results of monitoring, evaluates whether trigger mechanisms are being approached, and provides a prediction on whether there is the potential for the trigger mechanism to be enacted in the foreseeable future.

Groundwater Quality/Quantity Interference Resolution Protocol

The intent of this Protocol is to identify:

- 1) Who to contact and what steps should be taken if a concern related to local water supplies is lodged respecting the operations of Nichols Gravel Limited - Hagersville Quarry, and
- 2) To identify clearly and briefly the issue shall be assessed, and the manner in which the licensee will address issues and alleviate concerns.

Regard must be made to specific licensed conditions, as stipulated by the Ministry of Natural Resources, and the site plans and accompanying notes..

It is understood, based on the Provincial Protocol, that a three-step complaint investigation/resolution hierarchy exists. Namely:

- 1) Contact licensee with the expectation of concern/complaint resolution.
- 2) If the complainant is not satisfied with the actions of the licensee, then contact the Ministry of Natural Resources.
- 3) Should the Ministry of Natural Resources determine that the concern/complaint cannot be readily resolved through reasonable mitigation measures, or has determined that a significant "upset" has occurred, then the Ministry of Environment shall be notified.

X Complaint Notification

Who to Contact..... Mr. Gary Nichols (Owner)
..... Tel: (519) 582-3354 Fax: (519) 582-2143

When to Call..... As soon as possible after the incident

What information to Provide..... Your Name, Address & Telephone Number
..... Time and Date of Incident
..... Details of Incident

The complainant may be requested to provide additional information. The complainant's co-operation is appreciated.

Nichols Gravel Limited realize that some complaints can be resolved quickly whereas others may take longer depending on the type of issue. They are committed to attempting resolution of all complaints as expeditiously as possible. Therefore, the time frames indicated below represent what are considered to be the maximum probable timing for implementation of the "Complaint Notification and Resolution Protocol".

Upon Receipt of a Complaint:

- Nichols Gravel Limited undertakes to meet to discuss any complaints as soon as is practicable and no later than the end of the business day following the receipt of the complaint.
- In the event of a complaint concerning a change in water quantity and/or quality, that would adversely affect normal usage of those wells identified and monitored within 120 metres of the quarry, the licensee shall supply temporary water to the affected property owner, if appropriate, advise the Ministry of the Environment of the complaint and identify the cause of such impairment to the quality or quantity of water.

The water supply quantity/quality concern will be evaluated by an independent consultant that is satisfactory to the MOE, local residents, the City, and Nichols Gravel.

Should the quantity of groundwater available to normal takings be adversely affected due to the operations of the licensee, the licensee shall undertake to review quarry operations and implement appropriate changes (e.g. change in dewatering methods or flow rates) in an attempt to alleviate the observed adverse effect(s). If appropriate implemented changes are demonstrated not to correct the problem, the licensee shall, at its own expense, provide a permanent supply, as technically determined by the licensee, of water of equivalent quality and quantity as that which existed before the identified adverse change to the water quality and/or quantity.

- Maintain a log of all complaints received and actions taken. This log is to be available to members of the Public, The City of Nanticoke, The Regional Municipality of Haldimand-Norfolk, and the Ministry of Natural Resources for review.

If, after implementation of the Protocol, the complainant is not satisfied, the complainant may contact the following agencies to pursue the complaint through:

- MNR Alymer District Office:..... Tel: (519) 773-9241; Fax: (519) – 773-9014
- MOE District Office:..... Tel: (905) 704-3900; Fax: (905) 704-4015

Contingency Plan

- It was proposed above that monitoring of all domestic wells within 120 m of the quarry property boundary will be undertaken. Should an independent investigation of a water

quantity concern be verified by the mechanism described above, the radius of monitoring will be extended a further 120 metres in the direction of the affected domestic well. Should subsequent extraction and monitoring at some time confirm a persistent impact to a domestic well at the expanded 240 m radius, the radius of monitoring may then be extended to 500 metres from the quarry property boundary, in the direction of the affected well.

- Domestic well owners within the 120 metre radius from the property boundary must allow their wells to be part of the monitoring program in order to be eligible for consideration re potential disruption of water supplies. If, over time, the extent of the area of monitoring changes, then the number of domestic wells to be monitored will be expanded accordingly.

X Trigger Mechanism

A trigger mechanism will be established based on the expected behaviour of the groundwater regime as predicted by the dewatering impact assessment. There are two aspects to the assessment that will be used as trigger mechanisms:

- The flow rate from dewatering operations; and
- The water level impacts in the vicinity of the quarry.

In addition, the condition concerning quarry pond impacts as agreed to by Nichols and the New Credit First Nation may be considered a trigger mechanism. This condition reads as follows:

"During the quarry dewatering operations for the proposed Nichols quarry (on part of Lots 10-12, Concession 12, City of Nanticoke), the proponent shall implement the appropriate measures to maintain the current water levels (subject to natural and seasonal variations) in the ponds which occupy the mined out quarries to the north and east of the proposed quarry subject to the permission of the owners of the ponds.

The proponent shall only be responsible for remediating significant reductions in pond water levels that are caused by his quarry dewatering activities, and shall not be responsible for remediating any reductions in pond levels caused by other factors beyond the control of the proponent (e.g. climatic variations, pond dewatering done by the owners of the ponds, etc.)

A reduction in water levels in any of the ponds of 0.3 m or more (from their current levels) shall be considered a significant reduction."

Should either of the above be found to deviate appreciably from the impacts as predicted from the dewatering impact assessment, the groundwater flow regime should be re-evaluated, and adjustment and a new simulation of the groundwater flow model should be undertaken. If the reviewing body (eg. MOE) concludes that significant impacts are identified in the re-assessment, the appropriate changes to the quarry operation, monitoring program, and/or contingency plans should be undertaken.

X APPENDIX "B"**SCOPE OF WORK FOR FURTHER HYDROGEOLOGICAL CHARACTERIZATION
PROPOSED NICHOLS GRAVEL LIMITED QUARRY, HAGERSVILLE**

The purpose of the additional hydrogeological characterization is to supplement the preliminary hydrogeological investigations completed to date. The study will generate a more complete understanding of the hydrogeological characteristics of the site, and will permit an increased level of certainty in the impact assessment.

Additional Drilling

The minimum number of new drilling locations is four. More drilling may be required as a result of the information gained from the drilling locations (e.g., if hydrogeological conditions vary significantly between the new drilling locations). At each drilling location, a borehole will be advanced into the Bertie Formation. The drilling method will allow collection of rock cores throughout the depth of the borehole.

Packer-Injection Testing

After drilling, the borehole will be developed for use as a well. The well development process will follow standard industry procedures, and will remove any residual effects of the drilling process. Following well development, packer-injection testing will be completed along the entire length of the boreholes. The length of each packer test shall not be longer than 3 metres.

Nested Wells

Two additional wells will be nested at each drilling location. A shallow and deep well will be installed in the lower and upper portions of the Bois Blanc Formation, respectively. Well depths will be determined based on the rock core collected in the original borehole and the results of the packer-injection tests. These wells will be fully developed.

In situ Hydraulic Conductivity Testing

Water levels will be recorded in all wells until the water level returns to static conditions. In situ hydraulic conductivity tests will be completed in the new wells.

Pumping Tests

Pumping tests will be completed at two of the new drilling locations. These pumping tests will be completed at separate times. Prior to initiation of the tests, all water levels should be at static levels. Water levels in all wells (not just the new wells) will be monitored throughout the duration of the test and recovery period. The pumping test will be performed at a constant rate and last for at least 24 hours. The test will be extended if water level data indicate non-steady state conditions. Recovery shall be monitored until the wells have recovered to 95% of the final drawdown.

The locations of the wells that will be tested will be based on the proximity of other wells that can be used as observation wells. It is important that the observation wells be in close enough vicinity to the pumping well so that meaningful water level data can be collected.

The measuring points for all wells will be surveyed to geodetic datum so that water levels can be converted to water level elevations.

Data Analysis

All of the collected data will be analyzed to develop a comprehensive understanding of the hydrogeological conditions at the site. Emphasis will be placed on vertical and horizontal hydraulic gradients, vertical and horizontal hydraulic conductivities (derived from the packer-injection tests, the in situ hydraulic conductivity tests and the pumping tests) in the various rock formations.

The groundwater flow model previously developed for the site will be changed and the impacts of the quarry operation reassessed.

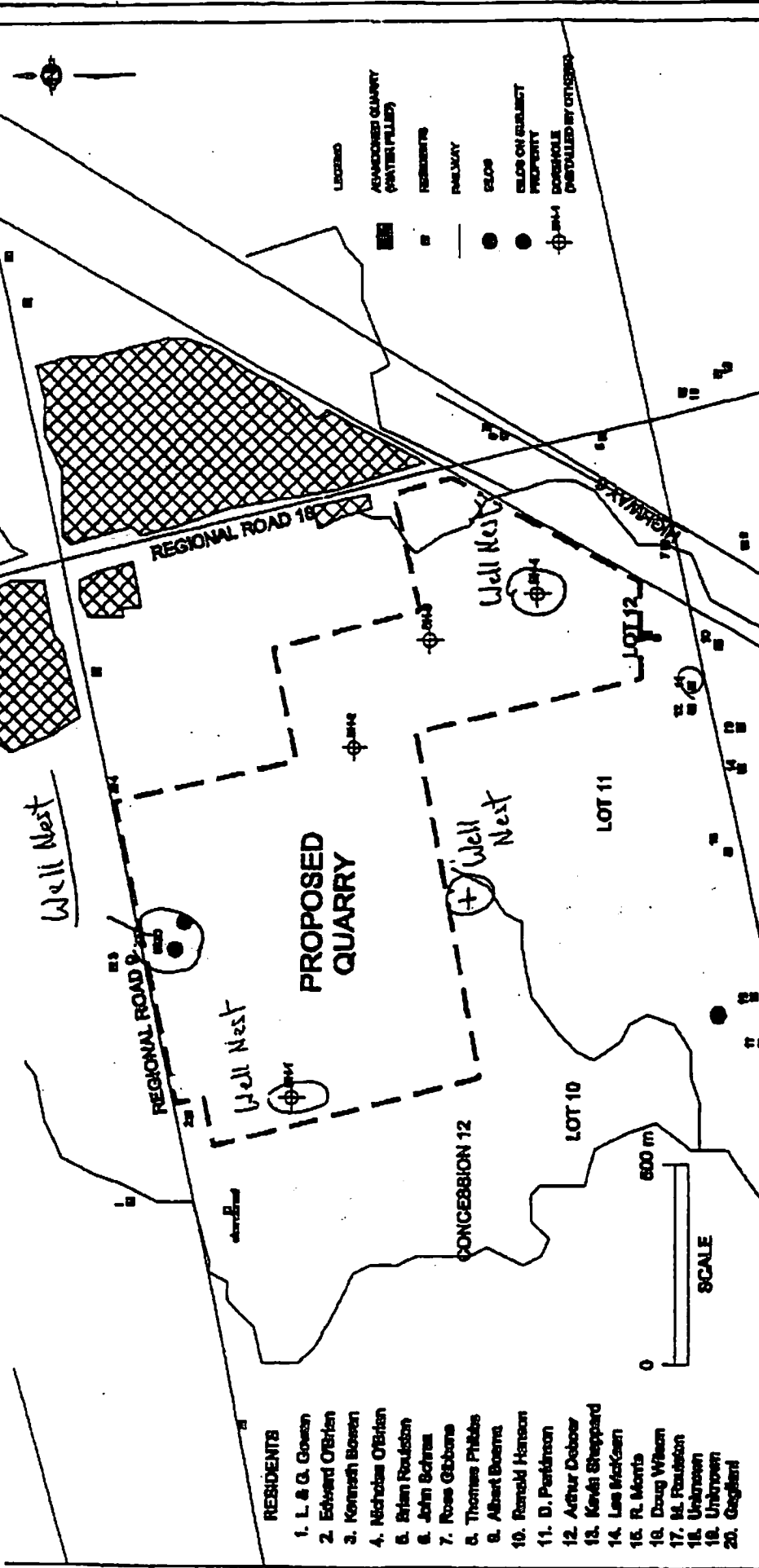
Surface water and quality monitoring will be incorporated into the program.

This work proposal is subject to MOEE review and concurrence.

GRA Earth & Environmental

CLIENTS GLOBAL SOLUTIONS

Post-IT F.	7671E	Date	10/20	# of pages	1
To	Good Duddah	From	C. Kelly		
Co./Dept.		Co.			
Phone #		Phone #			
Fax #		Fax #			



HAGERBVILLE

FIGURE 2

MONITORING WELL LOCATIONS

AFTER HARRINGTON AND HOYLE

RESIDENTS

1. L. & G. Gowan
2. Edward O'Brien
3. Kenneth Bowen
4. Nicholas O'Brien
5. Brian Rouleau
6. John Schram
7. Ross Gibbons
8. Thomas Phillips
9. Albert Bozma
10. Ronald Hanson
11. D. Parkinson
12. Arthur Debow
13. Kevin Sheppard
14. Lee McKean
15. R. Morris
16. Doug Wilson
17. M. Rouleau
18. Unknown
19. Unknown
20. Gagliardi

X
Ministry
of the
Environment

119 King Street West
12th Floor
Hamilton ON L8P 4Y7

Ministère
de
l'Environnement

119 rue King ouest
12^e étage
Hamilton ON L8P 4Y7



25

X October 20, 2000

X OCT 24 2000

X Mr. Manfred Rudolph
Turkstra Mazza Associates, Lawyers
15 Bold Street
Hamilton, Ontario
L8P 1T3

X Dear Mr. Rudolph:

X Re: Nichols Quarry Hearing
City of Nanticoke
OMB Files Z990094 and M000002
Your File No. 40630

Please be advised that staff have reviewed the information that you provided yesterday afternoon, to assist you and the City of Nanticoke (Council) in resolving hydrogeologic concerns that were initially raised by this Ministry. Specifically, staff have reviewed Draft #3 of the Groundwater Agreement, Appendix "A" - Monitoring Program and Appendix "B" - Scope of Work for Further Hydrogeological Characterization Proposed Nichols Gravel Limited Quarry, Hagersville".

It is understood that the intent of the proponent is to request the Ontario Municipal Board to impose conditions on the MNR pit licence, to ensure the inclusion of monitoring, contingency plans and trigger mechanisms. In our review of Appendix "A", some deficiencies were identified. Accordingly, to satisfy Ministry concerns with respect to the proposed monitoring, contingency plans and trigger mechanisms, we request the condition be worded as follows:

"A program to address monitoring, contingency plans and trigger mechanisms will be submitted to the Ministry of Environment for their review and approval, at least six (6) months in advance of excavation of aggregate at a point at which the water table is anticipated to be encountered".

This condition recognizes our present concerns with what has been proposed in Appendix "A", and should provide your client with ample time to address these concerns in a revised program in advance of when groundwater may be encountered without restricting the ability to extract aggregates above the watertable.

With respect to Appendix "B", staff agree in principal with what has been proposed.



However, additional details regarding both the ground and surface water components are required. However, as the proposal is subject to this Ministry's review and approval, we are satisfied that we have the opportunity to review the program and make any outstanding requirements as conditions to the Permit To Take Water

X In conclusion, with the inclusion of a pit licence condition as suggested above, concerns with respect to monitoring, contingency and trigger mechanisms should be adequately addressed. Second, the review that will be undertaken prior to issuance of the Permit To Take Water, should also be adequate to ensure that any remaining concerns are addressed. ✓

Should you have any further questions, please contact me at (905) 521-7864.

Yours truly,

X *Barbara Ryter*

Barbara Ryter
Environmental Planning Officer
Air, Pesticides & Environmental Planning

X cc. Mr. K. Jones, Cobb & Jones, Barristers & Solicitors, 2 Talbot Street North, P.O. Box 548, Simcoe, Ontario, N3Y 4N5

Nichols Gravel Limited

P.O. BOX 172 - DELHI, ONTARIO N4B 2W9 - PHONE (519) 582-3354

X October 25, 2000

X Haldimand-Norfolk Brant M.P.P.
Mr. Toby Barrett

X Dear Sir:

This letter is in further reference to our conversation a few weeks ago in respect to the complete lack of cooperation by the Ministry of the Environment regarding our application for M.N.R. Quarry extraction license at Hagersville.

At this point we are partly through an onerous and expensive Ontario Municipal Board Hearing which I believe *could have been avoided had it not been for the* uncomplimentary negative review by Mr. Simon Gautrey and signed by Barbara Ryter, which served to inflame the negative attitude of area residents to this proposed quarry. Our company now has to fund this expensive hearing against the Rural Coalition represented by lawyer Brian Duxbury consisting of residents and farmers in the area, as well as the politically correct City of Nanticoke in this election year represented by lawyer Keith Jones.

Through various ongoing discussions and negotiations between consultants and lawyers in an attempt to resolve issues we have agreed to costly mitigation measures to address speculative assumed impacts, to the extent that this entire application is now on the verge of becoming counterproductive to a viable commercial quarry operation. In other words we will almost need a full time consultant to address mitigation measures which most likely won't be required, placing an unnecessary burden of cost on this small operation.

The two primary concerns at this point are storm water management due to dewatering into the Harrop drain, and ground water supplies for domestic consumption, both of which come under Ministry of Environment regulations and approval.

It would seem at this point that an agreement may be made between Nichols Gravel, the residents, and the City subject to approval and issuance by M.O.E. of the permit to take water with the O.M.B. granting conditional approval under a "H" holding clause both on the rezoning and the issuance of the M.N.R. pit license removal of the "H" to become effective upon the issuance by M.O.E. of the permit to take water.

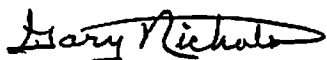
With such an agreement, it becomes quite obvious that we must have complete cooperation from the Ministry of Environment in respect to bringing this operation on

stream as quickly as possible. This application process started in 1997. We now have a major investment in the property of approximately \$700,000 dollars with the cost climbing at this hearing at the rate of \$700.00 per hour. Therefore it is imperative that we have all approvals in place for April 2001 startup.

I am completely disgusted with this time consuming and costly burdensome O.M.B. process whereby our costs for this hearing alone are approximately \$200,000 with further mitigation work on site in order to get agreement of another \$100,000.00. With this process in a few short years the monopoly of the aggregate industry in the Province of Ontario will be complete, and there will be no small operators such as this 57 year old business, and it will be totally controlled by Multi-National companies such as LaFarge and Blue Circle.

As stated previously should this application fail to gain approval, or fail to proceed as a result of negligent misconduct of Ministry of Environment staff, our company shall proceed with legal action in order to recover our costs and losses.

Yours sincerely,



X Gary Nichols, President
Nichols Gravel Limited

INDEX 2001

1. April 3, 2001, O.M.B. Summary Decision 0485 Quarry Licence Approval
2. May 9, 2001, Letter Harrington & Hoyle OMB Conditions to Amend to Site Plan.
3. June 6, 2001, AGRA Geodetic Survey of Ponds.
4. July 25, 2001, O.M.B. Final Decision Order 1194.
5. August 14, 2001, Letter to O.M.B. for Clarification of Order.
6. October 3, 2001, M.O.E. Notice Closing File on Temporary Permit to Take Water for Quarry.
7. October 30, 2001, Terra Dynamics Letter and Invoice.

ISSUE DATE:
APR. 3, 2001

DECISION/ORDER NO.:
0485



Ontario

Ontario Municipal Board

Commission des affaires municipales de l'Ontario

PL990656

Nichols Gravel Limited has appealed to the Ontario Municipal Board under subsection 34(11) of the *Planning Act*, R.S.O. 1990, c.P. 13, as amended, against Council's refusal or neglect to enact a proposed amendment to Zoning By-law 1-NA86 of the City of Nanticoke to rezone lands composed of Part of Lots 10, 11 and 12, Concession 12 to quarry and operate an aggregate supply business
OMB File No. Z990094

The Minister of Natural Resources has referred to the Ontario Municipal Board under subsection 11(5) of the *Aggregate Resources Act* R.S.O. 1990, c. A.8, as amended, an application for a Class "A" licence for the removal of aggregate from lands being composed of Part of Lots 10, 11 and 12, Concession 12, in the City of Nanticoke
OMB File No. M000002

X APPEARANCES:

Parties

Nichols Gravel Limited

City of Nanticoke

The Rural Community of Coalition

Counsel

A.L. Ostner

Keith Jones

Brian Duxbury

X DECISION OF THE BOARD DELIVERED BY G. A. HARRON

Nichols Gravel Limited has applied for and seeks a licence to open and operate a quarry on a 232 acre (93.97 ha) property known municipally as part of Lots 10, 11 and 12, Concession 12 in the City of Nanticoke.

The quarry licence pursuant to the *Aggregate Resources Act* is for a category 2-Class "A" licence. The applicant also seeks a zoning by-law amendment. This panel of the Board ruled in a decision attached as Schedule 1 to this decision issued earlier that an Official Plan amendment was not required.

Several neighbouring property-owners appeared with legal counsel opposed to the application citing concerns relating to the effect of the quarry on the water table and

their water supply. Many of the neighbours operate sizable livestock and poultry operations and expressed concerns relating to the effect a loss of water supply can have on the viability of their operations based on past experiences that the Board will detail later in this decision.

The municipality was also represented by counsel who chose not to call planning evidence.

The subject property is located south west of the Village of Hagersville. It is bordered by Regional Road 9 on the north, and Regional Road 18 and the Canadian National Railway on the south and east boundaries. Concession Road 11 is situated south of the southern limit of the extraction site.

While the lands located immediately to the east boundary of the site are in agricultural production they are licensed for mineral resource extraction. Lands abutting to the west are currently in field crops production and pasture. There are 3 abandoned quarries located north east of the subject site, 2 located north of Regional Road No. 9 and one south of the same road, all now partially filled with water. While no concrete proposals were presented to the Board, everyone agreed there is a proposal by a development company somewhere in the works to develop a Residential Plan of Subdivision adjacent to Hagersville in conjunction with a golf course that would include the abandoned quarries, a concept plan of which was filed as Exhibit 27. An active agricultural area would best describe the area west, south and east beyond the Canadian National right-of-way and Provincial Highway No. 6.

A municipal drain referred to as the "Harrop Drain", a tributary of Sandusk Creek, drains the subject and neighbouring lands and will play a part in the operation of the proposed quarry.

The Mississauga of the New Credit First Nation appeared with a hydrogeologist at the 1st prehearing. Following private meetings with representatives of the applicant they withdrew their appeal subject to negotiated conditions set out in Condition 13 attached.

Tom Smart, the planning consultant who gave planning evidence on behalf of the applicant detailed the application as it relates to the relevant planning documents and provincial legislation summarized as follows.

Tests have shown the subject lands have approximately 2-3 metres of overburden and Onondaga Formation and then approximately 13 m of Bois Blanc Formation. Below the Bois Blanc there is a layer of sand overburden on top of the Bertie Formation. The Bois Blanc is described as being composed of "dark grey to brown, then to thickly bedded limestone to shaly limestone with abundant shale partings and occasional chert nodules" at a thickness of 7.3 m to 8.9 m at the subject site. There is no intention of the applicant to mine any of the Bertie Formation which will be spelled out in the agreement and the license. The Ministry of Natural Resources has identified high quality material located below the water table in the Bois Blanc Formation. Both the City of Nanticoke Official Plan and the Regional Official Plan set out objectives to protect significant mineral resource deposits so as to ensure their availability for extraction and long-term use which is set out in the Board's September 22, 2000 decision attached. The Regional Official Plan also identifies areas to be protected including the majority of the subject area.

The Provincial Policy Statement (PPS) at Sections 1 and 11 seeks to protect prime agricultural areas but then goes on to permit extractions of mineral resources in prime agricultural areas provided mitigation measures are implemented. Mr. Smart agreed both agricultural activities and mineral resources are given high priority in the PPS as well as the Official Plans in effect here. He stated it comes down to balancing the two valuable and important resources and with proper mitigation measures they can take place in close proximity without major conflicts.

The proposed site plan filed as Exhibit 21B sets out 5m high berms to the north and 3m high berms to the south of the extraction areas. There is to be 100-200m setback to the quarry operation from the residences to the north. The existing woodlot located at the south west of the subject lands is to be protected and expanded. Haul routes taking material from the site will be restricted to Regional and Provincial highways.

The operation is to be phased so that one area is to be completely mined out before the next area of mining can commence. The initial blasting, when the quarry is first open, will be the harshest, however it will take place within Ministry of the Environment (MOE) guidelines. They will attempt to reach the floor of the quarry as soon as possible so that subsequent blasts will lay the rock into the pit floor and, with the operation then taking place within the quarry area, less noise will emanate from the site. New blasting techniques are to be utilized where smaller amounts of blasting material is used. Site preparation and rehabilitation, excavation and processing is restricted to 7:00 a.m. to 7:00 p.m., Monday to Saturday and no operation shall occur on Sundays and holidays. All residential homes are to be inspected prior to the initial blasting.

The Harrop municipal drain begins just north of the subject property where the discharge from the Hagersville sewage plant discharges into it. The drain now receives the surface runoff from the subject lands.

Sump pumps are to be installed in the floor of the quarry where excess water will be pumped to settling ponds on the surface that will eventually drain into the Harrop Drain. It is intended to hold most of the water during heavy runoff periods and then allow the water drain out during lower volume periods.

The foregoing is all contingent on a Water Taking Permit being issued by the Ministry of the Environment enabling the applicant to mine below the water table.

Several neighbouring property owners, the majority represented by counsel, gave evidence detailing their concerns and explained how the operation of the quarry could affect their particular business operation or residence. There are several large chicken operations, some of which have recently expanded as well as dairy, hog, beef and cash crop enterprises.

In 1971 and 1972, Dufferin Quarry attempted to mine aggregate below the Bois Blanc formation and into the Bertie formation. Following a "blast" one day, some of the farmers lost their water supply. This resulted in a costly inconvenience, particularly to the dairy farmers, who had to have water trucked in for their livestock. They were reimbursed by Dufferin Quarries and when Dufferin ceased pumping water from the

Bertie formation, a number of wells returned to the previous water levels, however, several reported the quality never returned to its previous level.

It was evident from the residents' evidence that those with shallow wells, 50 to 75 feet, generally retain higher quality water. They agreed a continual monitoring of their wells would give them some comfort but emphasized they require assurance they will be fully compensated if their water supply is detrimentally affected as set out in an MOE report at Tab 6.

There was concern expressed about the upkeep of and control of weeds on the proposed berms and the effect of the weed seeds on adjacent crops.

Kevin Sheppard who resides downstream adjacent to the Harrop Drain, filed several photos to demonstrate the drain overflows its banks from time to time during excess runoff. He agreed the drain would benefit from a "clean out" and further agreed that if the proposed development resulted in the construction of a retention pond that would hold back some of the water volume entering the Harrop Drain during peak runoff periods, this would be a positive step.

Royce Thurston explained that he is engaged in an engraving business called "Inlay Creations Inc.", where he does laser engraving on wood, solid surface metal, plastic, painted metal, and glass, etc. There is "O" vibration tolerance when engraving some material so that he does some of his more precise engraving from 11:00 p.m. to 4:00 a.m., in order to avoid any vibration from trains. He requested 4 hours notice prior to any blasting in the subject quarry to which the applicant agreed. The Board is satisfied condition (24) attached provides proper notice to Mr. Thurston.

The Board agrees the residents have legitimate concerns particularly relating to their water supply that the board will address at the conclusion of the decision and in conditions of approval.

Craig Kelly, the hydrogeologist giving evidence on behalf of the applicant, went into some detail explaining draw down conductivity and the difference between the effect on clay, gravel and shale, pointing out that highly fractured rock can have high conductivity. His firm developed a computer model, using data from the bore holes, that

pumped the proposed quarry for 50 years keeping it dry down to the sandstone while monitoring the dewatering effect on the aquifer and neighbouring wells. He noted there is a divide in the aquifer north of the subject property where some of the water flows north and some flows south from the divide. The Ministry of the Environment (MOE) was not satisfied with the 1st model requiring some "nested wells" defined as a group of wells located in the same vicinity at varying depths in order to produce additional data along with data available from domestic well records. In the end, four models were eventually developed. Four nesting wells are now in place that can remain there for the next 20 years.

It was Mr. Kelly's conclusion that neighbouring wells were affected in 1991 and 1992 from a quantity standpoint when Dufferin Quarry blasted down into the Bertie formation affecting that aquifer. He explained the precipitation was 23% below normal in 1971 and from January to May of that year, it was 45% below normal according to a 1972 report completed by MOE. This caused wells to drain water from further away than normal including shale where you can get sulphur in the water, this could have been the source of foul smelling water containing black specs.

He further told the Board that domestic wells will be monitored as well as the nesting wells and the model data will eventually be revisited with real numbers.

He concluded that there will be "virtually no impact on water resources located to the southwest of the quarry if there is no blasting into the Bertie formation".

M. M. Dillon did a peer review of the hydrogeology on behalf of the City and among other recommendations, recommended a baseline water quality survey on nearby residents' wells.

Counsel for the applicant stated his client would be prepared to do so and would include the Roulston, Wilson and Grenfiled wells which are outside the initial survey area.

Counsel for the residents referred Mr. Kelly to his Exhibits 45A and B that shows there will be some impact on some domestic wells with a draw down of 4-5 m after 50

years. Mr. Kelly agreed that establishing a base line and knowing the capacity of the wells now, will assist in the monitoring of the domestic wells.

He further explained, the water level in the existing quarries is to be maintained within 0.3 m of the present level as set out in the agreement with New Credit First Nation.

Aircoustics Engineering Limited completed a noise study relating to the proposed quarry based on the following quarry operations:

- Stripping of overburden from a section of the site in preparation for extraction;
- Drilling a pattern of holes for blasting to fragment a block of rock;
- Transporting the shot rock to a central location for processing;
- Crushing, screening and stockpiling the aggregate;
- Loading from inventory and shipment to market;

The original noise study was based on annual production of not more than 100,000 tonnes. A supplementary study assumed the same operating methods and phasing as the first study but with annual production levels of 250,000 to 750,000 tonnes.

Noise protection is designed to keep the maximum noise level within the MOE limits as the drilling and other functions proceed. The site plan requires implementation of additional noise protection as the noise level increases during the operation. They concluded that if machinery size increased along with the loads of material per hour to produce 750,000 tonnes per year, the dBA could reach 47 to 48 "fractionally above the 47 dBA target, an increase not subjectively detectable".

Counsel for the applicant indicated his client is prepared to implement the recommended noise control measures.

An archaeological assessment prepared by Archeologist Inc. was filed that satisfied the concerns of the municipality and the Ministry of Citizenship, Culture and Recreation.

RGP Transtech Inc., consultants in transportation, completed a Traffic Impact Study concluding:

- The existing Regional Road No. 9 and No. 18 intersection currently has excellent operating characteristics (level of service "A"). The combined impact of site trucking traffic with future background traffic and the full operation of the Dufferin Quarry results in a level of service "B". This is a minor effect and the intersection will continue to have good operating characteristics.
- The impact of trucking traffic on school bus related activity in the vicinity of the site, will be negligible. The general level grade in the area provides excellent sight distances.

Neither the noise study conclusions nor the results of the traffic study were seriously challenged during the hearing and were found acceptable by the municipality. The Board accepts the results of both studies.

A detailed site plan was filed with the Board that was prepared by Harrington and Hoyle Ltd., Landscape Architects, that set out phasing, buffering, tree planting, ingress and egress etc. Unlike some gravel operations where excavation areas can be levelled off or filled in and then used for agricultural or recreational purposes, the subject and neighbouring quarries leave a hole that cannot feasibly be rehabilitated to the above uses. It was enlightening to hear that the existing abandoned quarries may become part of a proposed residential golf course proposal.

The city accepted the site plan, however, both the Federation of Agriculture and the citizens had some legitimate concerns relating to weed control on the berms. The Board will add a paragraph to condition #55 C that any weeds on the berms must be controlled by the applicant to the satisfaction of the municipality.

In a letter dated October 20th, 2000, the MOE states "The Ministry would prefer that the pit license simply be made conditional upon the issuance of a permit to take water prior to any extraction on site".

The Board takes very seriously, the residents' concerns relating to water quality and quantity in light of their fears of a repeat of the 1971-1972 situation.

The Board is satisfied that in the present application, the applicant does not intend nor will the Board approve extraction into the Bertie formation. It is clear to the Board, based on hydrogeology evidence, blasting into the Bertie formation was the major cause of the loss of water in 1971-1972. Both the MOE and the hydrogeologists have the study done after the 1971-1972 water problems, plus the tests done by Lafarge and the subject bore holes and test wells data to analyse, that were not available in 1971. The monitoring being proposed here is far more intense than was done for the Dufferin Quarry which should give some comfort to the neighbouring property owners. The Board does accept the request of the MOE and accordingly, the pit license will be conditional upon the issuance of a permit to take water by the MOE. The Board accepts the argument of Counsel for the concerned residents and directs that the sump holes are not to penetrate the Beatie formation.

The Board finds that both the Regional and City Official Plans recognize the potential for aggregate extraction on the subject lands and the By-law before the Board therefore conforms to the Official Plan.

The Official Plans also recognize that agriculture is a major industry that is to be encouraged and protected. The Board is satisfied that with all the measures that will have to be implemented such as buffering, berming, phasing, hours of operation, well monitoring, surface water retention pond, plus further ground water studies to satisfy the MOE, the surrounding agricultural operations can continue satisfactorily along with the Nichols Quarry Operation.

Section 2.2 of the Provincial Policy Statement, a document that both this Board and the Municipality "shall have regard to", states mineral resources (mineral aggregates, minerals and petroleum resources) will be protected for long term use.

That apparently is what this municipality is attempting to do by designating known resources of aggregate for long term use.

Section 12(1) of the *Aggregate Resources Act*, sets 11 matters the Minister or in this case, the Board, shall have regard to. The Board is satisfied all the above matters have been addressed and with the conditions to be attached, have been satisfied. The appeal to the by-law is allowed. By-law 1-NA86 is attached as Attachment 2.

Accordingly, pursuant to Section 11(8) of the *Aggregate Resources Act*, R.S.O. 1990, the Board directs the Minister to issue a Class "A" license for the removal of aggregate from lands composed of Part of Lots 10,11 and 12, Concession 12, in the City of Nanticoke, subject to the conditions appended as Attachment 1 and the Site Plan filed as Exhibit 21B. The license is for the removal of aggregate to the bottom of the Bois Blanc formation only and there is to be no quarrying of the Bertie formation at this location. The action plan is attached as Attachment 3.

X "G. A. Harron"

G.A. HARRON
MEMBER

X To: Gary Nichols @ Nichols Gravel Limited FAX # (519) 582-2143

X Date: May 9, 2001

Sent By: Bernie Janssen

X Regarding: Hagersville Quarry - OMB decision conditions

of Pages: 1 (including cover) **Project #:** 98-24

Message. Hi Gary:

X As discussed, Joe Strachan and I went over the conditions set out in attachment 1 of the April 3, 2001 OMB decision this past Monday. Joe had sent a copy to MNR policy section who advised him that all the conditions of the decision must go on the site plans or licence. This is what we came up with:

Conditions #1 -12 are prescribed conditions and appear on all Category 2 licences.

X The Hydrogeological Assessment notes found on page 2 of our site plans under Technical Recommendations will be removed and replaced with the following conditions verbatim: #13 and #27 - #35
Blasting: Conditions #14 - #19 already appear on the site plan under Blast Impact Assessment. We will add conditions #20 - #26 to the list under #14-#19.

Noise: Conditions #36 - #43 already appear on the site plans.

Complaint Record: Condition #44 - will be added to the end of the technical recommendations.

Surface Water: Conditions #45 - #53 will be added to page 2 under a new heading of "Surface Water"

Condition #54 - A note will be added on page 2 of the plans below Nick O'Brien's property indicating access to the gas well along the east boundary. We will move the berm over slightly to show an access for him.

Condition #55 - This note will be added to operational note #9 found on page 2 of the site plans. We will delete two of the existing sentences found in note #9 because they are duplicated in condition #55.

On the typical berm section found on page 3 of the plans, we will add, "and to reduce dust" after the word erosion.

With regards to Attachment 3, Joe will ask for clarification. It was suggested that reference be made on the site plans to this action plan but not have it verbatim on the site plans.

If you have any questions, please give me a call at (519) 740-7250. Bernie

c.c. Joe Strachan

519 765-1998

Original will not be sent.

If you do not receive all pages, or copy is not legible, please call 519-740-7250.

Harrington and Hoyle Ltd., 28 Colborne St., Cambridge, Ontario N1R 1R2 — Phone: 519-740-7250 Fax: 519-740-2119

X 6 June 2001
TC 05041

X Nichols Gravel Limited
Box 172
Delhi, Ontario
N4B 2W9

X Attention: Gary Nichols
President

Post-it™ Fax Note 7671E		Date 06/06/01	# of pages 3
To Gary Nichols		From Craig Kelly	
Co./Dept.		Co.	
Phone #		Phone #	
Fax # 519 582 2443		Fax #	

X Dear Mr. Nichols:

Re: Results of Geodetic Survey of Ponds – July, 2000

As per your request AMEC Earth & Environmental Limited (AMEC) provide herein the results of a geodetic survey of the ponds (former quarries) surrounding the subject site (proposed Nichols Gravel quarry), conducted on July 14, 2000. The purpose of the survey was to confirm the pond elevations used in the numerical groundwater flow model for projected drawdown from future quarry operations. Specifically, the elevations would confirm the assumption of limited hydraulic connection between the ponds, based on elevation differences shown on the 1984 Ontario Base Map (OBM) for the area.

X The results of the elevation survey of the ponds is presented below, and shown pictorially in the attached Figure.

Pond and Location	Ground Elevation (masl)	Pond Elevation (masl)
Old Dundas Quarry (SW corner)	224.36	220.46
Dufferin Pit 1 (NW corner)	217.314	217.310
Dufferin Pit 2 (Central east edge)	222.17	217.17
Dufferin Pit 2 (Central West edge)	218.36	217.24
Dufferin Pit 2 (SW corner)	218.30	217.26
Dufferin Pit 3 (NW corner)	218.25	216.97
Dufferin Pit 3 (SW corner)	216.224	216.220

masl – metres above sea level

The results confirm a significant hydraulic gradient between the Old Dundas Quarry and the Dufferin Pits, and an elevated gradient between the Dufferin Pit No. 1 pond and No. 2 pond. The results confirmed that statements from the MOE concerning "porous fractured bedrock" and significant hydraulic connection between the ponds were not supported by observed conditions.

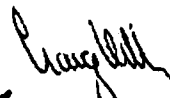
Nichols Gravel Limited
Pond Survey - Proposed Nichols Quarry
6 June 2001

Page 2

The data also confirmed that the spot elevations from the OBM were valid, although the ponds may have still been filling up.

AMEC trust that the above adequately addresses your request of May 14, 2001.

Yours very truly,
AMEC Earth & Environmental Limited



X Craig Kelly, B.Sc.
Hydrogeologist

CSK/csk

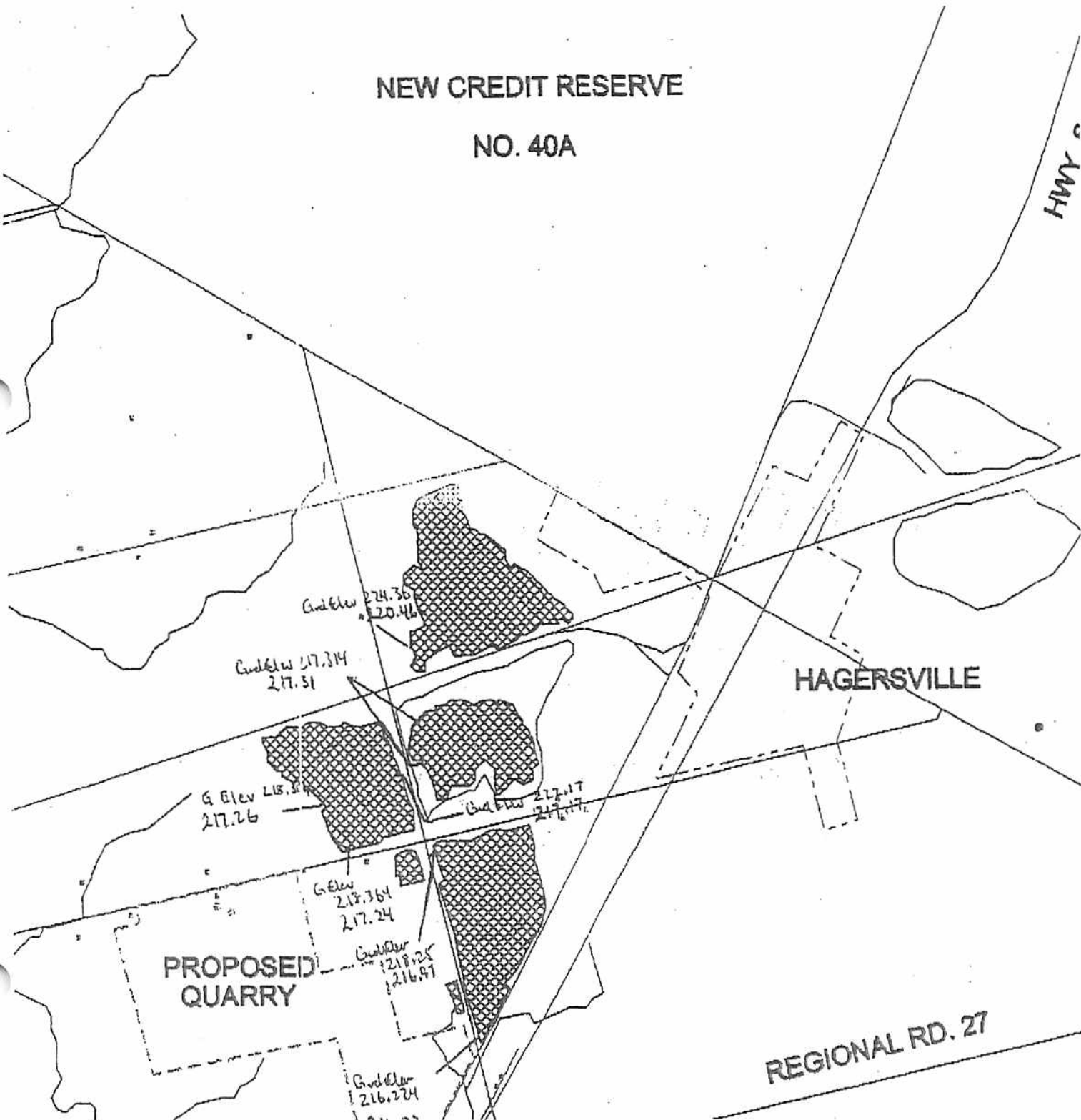


AGRA Earth & Environmental

ENGINEERING GLOBAL SOLUTIONS

NEW CREDIT RESERVE

NO. 40A





Ontario

Ontario Municipal Board

Commission des affaires municipales de l'Ontario

PL990656

E DATE:
JULY 25, 2001

DECISION/ORDER NO:
1194

Nichols Gravel Limited has appealed to the Ontario Municipal Board under subsection 34(11) of the *Planning Act*, R.S.O. 1990, c. P.13, as amended, against Council's refusal or neglect to enact a proposed amendment to Zoning By-law 1-NA86 of the City of Nanticoke to rezone lands composed of Part of Lots 10, 11 and 12, Concession 12 to quarry and operate an aggregate supply business
OMB File No. Z990094

The Minister of Natural Resources has referred to the Ontario Municipal Board under subsection 11(5) of the *Aggregate Resources Act* R.S.O. 1990, c. A.8, as amended, an application for a Class "A" licence for the removal of aggregate from lands being composed of Part of Lots 10, 11 and 12, Concession 12, in the City of Nanticoke
OMB File No. M000002

BEFORE:

G. A. HARRON
Member

Tuesday, the 3rd day of

April, 2001

CERTIFIED TO BE
A TRUE COPY

JUL 24 2007

ONTARIO MUNICIPAL BOARD

THIS MATTER having come on for public hearing;

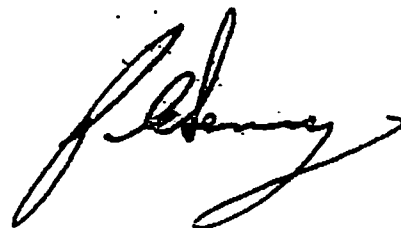
THE BOARD FURTHER ORDERS that the appeal by Nichols Gravel Limited to amend Zoning By-law 1-NA86 of the City of Nanticoke is allowed and Zoning By-law 1-NA86 is amended in the form as set out in Attachment "1" and forming part of this Order. The Township is hereby authorized to assign a by-law number to this document for record-keeping purposes.

THE BOARD DIRECTS the Minister, pursuant to Section 11(8) of the *Aggregate Resources Act*, R.S.O. 1990, to issue a Class "A" license for the removal of aggregate from lands composed of Part of Lots 10, 11 and 12, Concession 12, in the City of Nanticoke, subject to the following conditions:

X 1. The applicant shall obtain a long-term Water Taking Permit issued by the Ministry of the Environment.

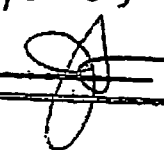
X 2. The applicant shall fulfil a set of conditions as set out in Attachment "2".

The license is for the removal of aggregate to the bottom of the Bois Blanc formation only and there is to be no quarrying of the Bertie formation at this location. The action plan is attached as Attachment "3".



ACTING SECRETARY

X

ENTERED AT CAYUGA
in Book No. 2007
as Document No. 47
on July 22 2007
by 

EXPLANATION OF THE PURPOSE AND
EFFECT OF BY-LAW NO. __-NA 99

This By-law amendment applies to parcels land described as Part Lot 10, 11 and 12, Concession 12, former Township of Walpole, now in the City of Nanticoke.

The purpose of this By-law is to change the zoning on the subject lands from an Agricultural zoning to an Extractive Industrial zoning in order to allow a quarry and aggregate supply business as a permitted use.

CORPORATION OF THE CITY OF NATICOKE

BY-LAW NO. __-NA 99 as amended by the Ontario Municipal Board

By-law to amend Zoning By-law 1-NA 86, as amended, of the City of Nanticoke for property described as Part Lots 10, 11 and 12, former Township of Walpole, now in the City of Nanticoke.

WHEREAS Nicholas Gravel Limited has appealed to the Ontario Municipal Board under subsection 34(11) of the *Planning Act*, R.S.O. 1990, c.P. 13, as amended, against Council's refusal to neglect to enact a proposed amendment to Zoning By-law 1-NA 86 of the City of Nanticoke to rezone lands composed of Part of Lots 10, 11 and 12, Concession 12 to quarry and operate an aggregate supply business.

AND WHEREAS By-law __-NA 99 was the subject of an appeal to the Ontario Municipal Board;

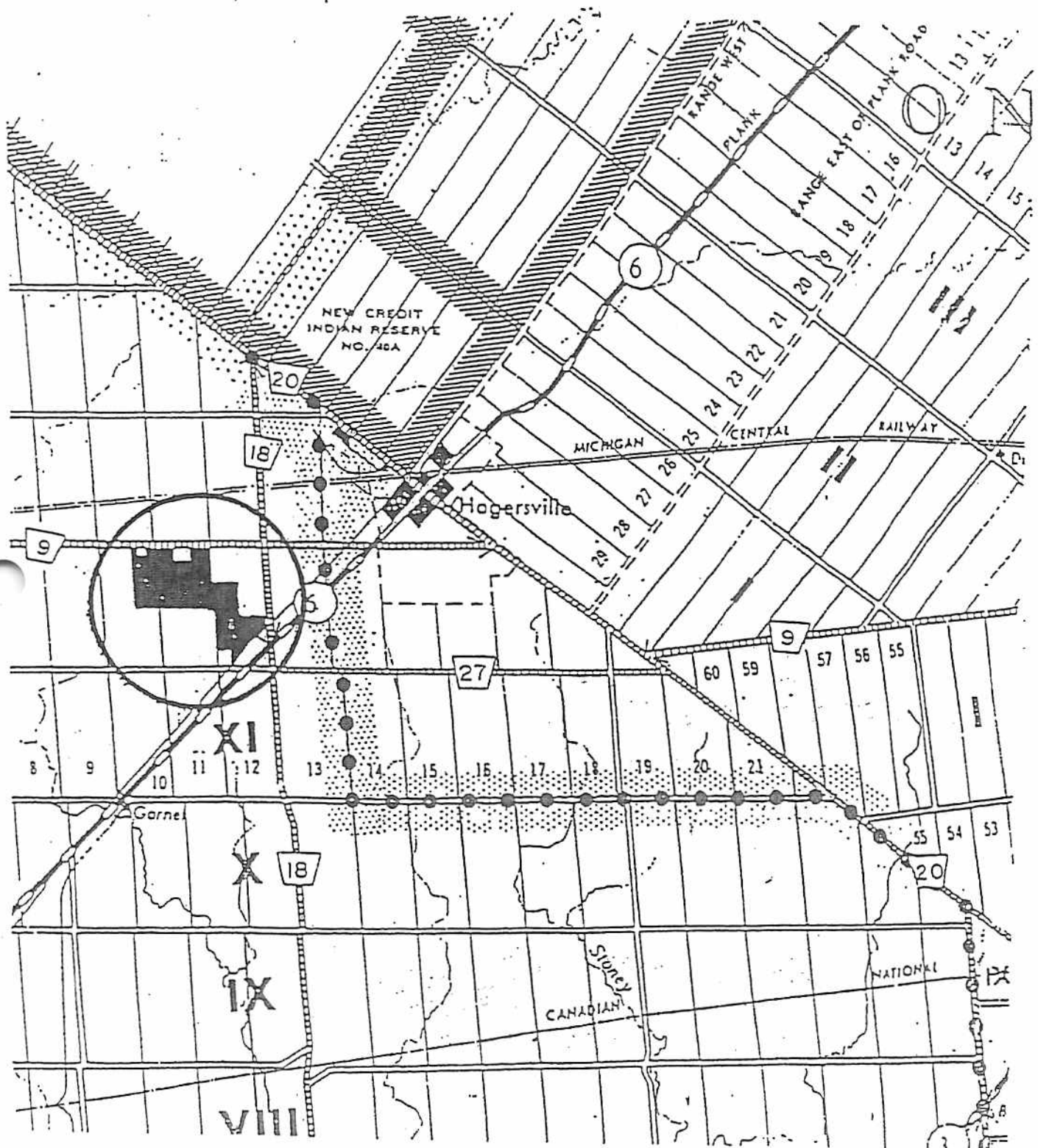
AND WHEREAS the Ontario Municipal Board held a hearing to consider the appeal on the __ and __ days of October 2000;

By-law __-NA 99 of the Corporation of the City of Nanticoke as amended by the Ontario Municipal Board provides as follows:

1. THAT Schedule "A7" of the City of Nanticoke Zoning By-law 1-NA 86, as amended, is hereby amended by delineating thereon on lands shown as the subject lands on Maps "A" and "B" (attached to and forming part of this By-law) from "Agricultural (A)" to "Extractive Industrial.
2. AND THAT this By-law shall become effective from and after the date of the order of the Ontario Municipal Board.

MAP A - Key Map

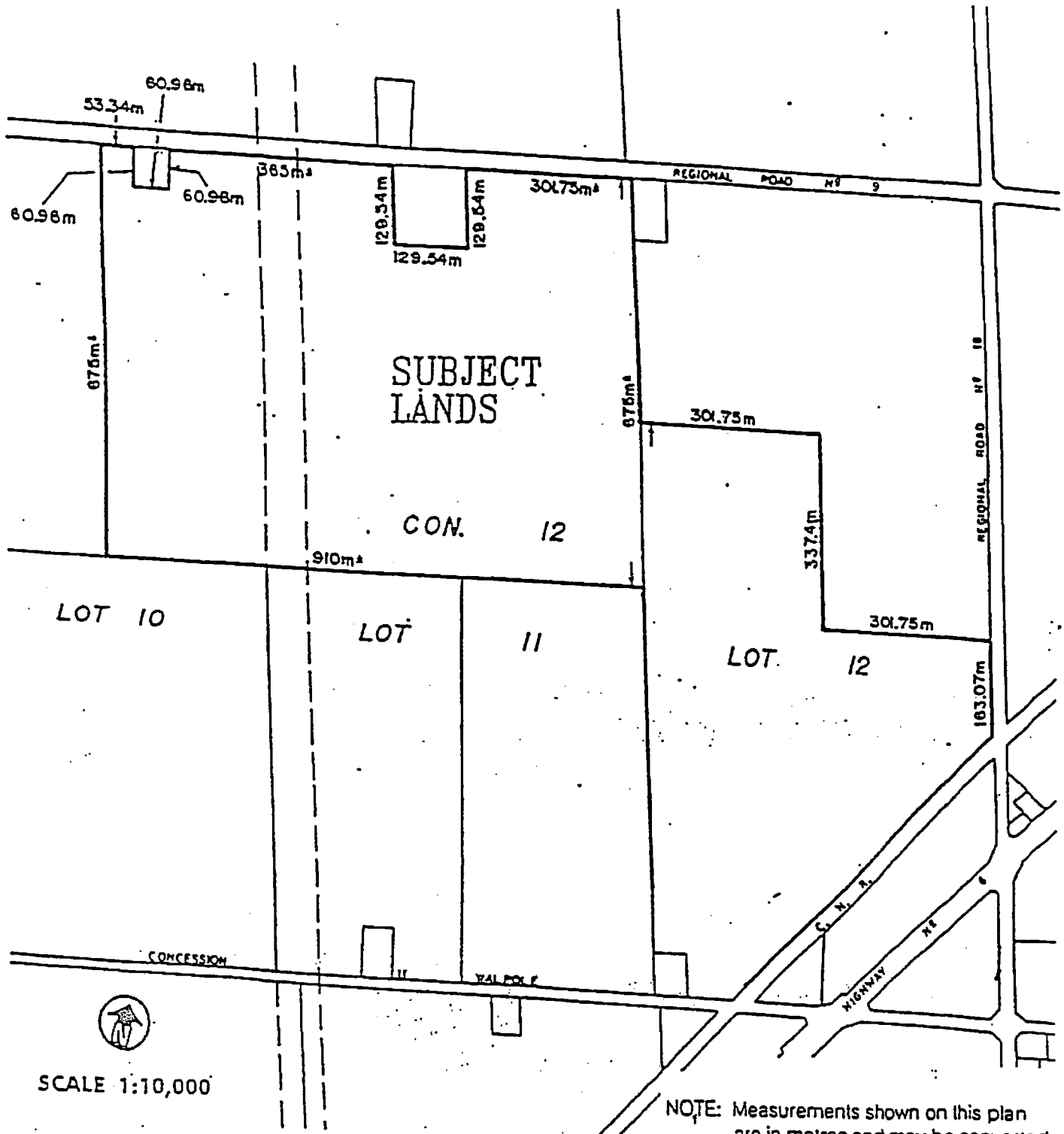
City of Nanticoke
Former Township of Walpole



This is Map A to Zoning By-law _____ Approved by order of the Ontario Municipal Board the _____ day of _____ 2000.

MAP B - Detail Map

City of Nanticoke
Former Township of Walpole



NOTE: Measurements shown on this plan are in metres and may be converted into feet by dividing by 0.3048.

This is Map B to Zoning By-law _____ Approved by order of the Ontario Municipal Board the _____ day of _____ 2000.

CONDITIONS OF APPROVAL

X The Aggregate Resources Act of Ontario sets out Provincial Standards, and prescribes conditions that apply aggregate resource applications pursuant to the Act. The prescribed conditions for a Category 2 - Class 'A' Quarry License indicated in Section 3.0 are as follows:

- (1) *Dust will be mitigated on site.*
- (2) *Water or another provincially approved dust suppressant will be applied to internal haul routes and processing areas as often as required to mitigate dust.*
- (3) *Processing equipment will be equipped with dust suppressing or collection devices, where the equipment creates dust and is being operated within 300 metres of a sensitive receptor.*
- (4) *Any recommendations and/or recommended monitoring program identified in the technical report will be described on the site plan. All records will be retained by the licensee and made available on request by the Ministry of Natural Resources for audit purposes.*
- prior (5) *A Spill Contingency Program will be developed prior to site preparation.*
- (6) *Fuel storage tanks will be installed and maintained in accordance with the Gasoline Handling Act.*
- (7) *If required, a Certificate of Approval will be obtained for the discharge system should water be discharged off site.*
- (8) *If required, a Certificate of Approval will be obtained for processing equipment to be used on site.*
- (9) *If required, a Permit to Take Water will be obtained for utilizing ground and/or surface water.*
- (10) *The licensee will monitor all blasts for ground vibrations and blast overpressure and will operate to ensure compliance with current provincial guidelines.*
- (11) *Blasting will not occur on a holiday or between the hours of 6 p.m. on any day and 8 a.m. on the following day.*

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- (12) *All blast monitoring reports must be retained by the licensee and made available upon request by the Ministry of Natural Resources for audit purposes.*

Upon approval of the license, pursuant to the provisions of Section 15.1 of the Aggregate Resources Act, the licensee will be required to provide annual compliance reports to the Minister, and provide copies to the clerk of the Municipality.

Mississauga of the New Credit First Nation

In addition, in order to satisfy the concerns of the Mississauga's of the New Credit First Nation, Nichols Gravel Limited and the AMEC hydrogeologist have agreed that the following be included as a condition of approval:

- (13) *During the quarry dewatering operations for the proposed Nichols Quarry (on part of Lots 10 - 12, Concession 12, City of Nanticoke) the licensee shall implement the appropriate measures to maintain the current water levels (subject to natural, seasonal and climatic variations) in the ponds which occupy the mined out quarries to the north and east of the proposed quarry, subject to the permission of the owners of the ponds.*

The licensee shall only be responsible for remediating significant reductions in pond levels that are caused by his quarry dewatering activities, and shall not be responsible for remediating any reductions in pond water levels caused by other factors beyond the control of the licensee (e.g. climatic variations, pond dewatering done by the owners of the ponds, etc).

A reduction in water levels in any of the ponds of 0.3 metres or more (from their current levels) shall be considered a significant reduction.

Blasting

Explotech Engineering Limited conducted a blast impact analysis for the proposed Nichols Gravel Limited quarry.

The recommendations of the blast impact analysis have been included in the site plans prepared by Harrington and Hoyle Limited. These recommendations include:

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- Prior*
- (14) All residences within 300 metres of the edge of the extraction area shall be thoroughly inspected by the licensee's consultant prior to the start of quarry blasting operations (with the owners permission). It is recommended that as extraction proceeds north in Area 1A, that the closest homes (identified as R1, R2 and R3 on the site plans) be checked within the first five years of operation and that additional checks be phased in for other homes on the perimeter of the site.
 - (15) The first six quarry blasts shall be monitored for both vibration and over-pressure (noise) at a minimum of four locations for each blast in order to accumulate site-specific data quickly. This data will be used to plan subsequent blasting operations. This will also allow subsequent blasts to be designed specifically for this location as well within MOE Guidelines. All subsequent blasts shall be monitored at the closest buildings to the blast site with at least two seismographs.
 - (16) The seismographs shall be self triggering units capable of printing a complete wave form for blast over-pressure and blast vibrations in three orthogonal directions (Instansel DS 477/677 or equivalent).
 - (17) Careful blast records shall be maintained. The body of the blast report should contain the information as recommended by MOE.
 - (18) Only clean, clear crushed stone shall be used for stemming. If warranted, stemtite plugs may be used to reduce noise impact on surrounding residences and buildings.
 - (19) Blasting procedures such as drilling and loading shall be monitored annually by an independent blasting consultant.

The Explotech Engineering Ltd. blasting report was peer reviewed by Golder VME Limited (VME). VME made six specific recommendations intended to lessen the impact of blasting operations on the community as follows:

- (20) The monitoring results of the first six quarry blasts monitored at a minimum of 4 locations in accordance with the recommendations of the Licensee's consultant, along with the consultant's analysis and recommendations, shall be submitted to the local offices of MNR and MOE.

- (21) *The monitoring results of on-going production blasts monitored with at least two seismograph/sound metre combinations in accordance with the recommendations of the Licensee's consultant shall likewise be submitted to the local offices of the MNR and MOE.*
- (22) *Wherever possible, blasting shall be carried out at approximately the same time of day.*
- (23) *Blast preparation and detonation during unsuitable weather conditions, i.e. those known to be conducive to the production of excessive overpressure, shall be avoided whenever practicable. These include temperature inversion; low and/or heavy cloud ceiling and high wind velocity.*
- (24) *The occupants of any building housing ultra-sensitive equipment for manufacturing or other purposes shall, upon request, be provided 4 hours pre-notice and notified of the imminence of any blasting operation so that the operation of such equipment may be temporarily suspended during the blast detonation to avoid disruption by ground vibration.*
- (25) *Residents within 300 metres of the quarry site, which will have been thoroughly inspected in accordance with the recommendations of the Licensee's consultant, shall be re-examined following the initial six blasting operations. Copies of the original examination records and of the re-examination results shall be submitted to the property owner concerned.*
- (26) *Should blasting cause any damage, as determined by the licensee's consultant, the licensee at his expense will repair it.*

Ground Water

The AMEC Hydrogeology report indicates specific mitigation measures, monitoring measures and contingency measures, which have been included in the site plans by Harrington and Hoyle Limited. However, further work and discussion with the peer review consultants have suggested modifications to replace those measures. In order to ensure that local wells and potential impacts on ground water are adequately addressed, the following monitoring conditions have been developed:

- (27) The licensee will provide for the installation of monitoring well nests with upgradient, downgradient, and cross-gradient wells at the top of the Bois Blanc Formation, to the base of the Bois Blanc Formation and into the Bertie Formation at the property boundaries. It is expected that BH-1, BH-2, and the Barn well could be incorporated as part of the three well nests. These wells and new well locations would have to be accessed and instrumented so that they monitor discreet zones within the underlying bedrock.
- (28) All on-site monitoring well nests shall be fitted with electronic water level monitoring equipment. The licensee's consultant will undertake baseline and subsequent semi-annual water quality sampling of the on-site monitoring wells.
- (29) Upon issuance of the quarry license, the licensee's consultant will commence, with the permission of the property owner, monitoring of all water wells within 120 m of the quarry property boundary, and the wells presently owned by D. Wilson, D. Greenfield and M. Roulston. This radius is based on the projected water level drawdown of 3.0 m in the vicinity of the quarry after 25 years of quarry operation - base case scenario. Water level monitoring will be conducted three times a year. As the life of the quarry proceeds, and the data is collected and evaluated over time, the adequacy and requirement for this extent of monitoring shall be reviewed in the annual report.
- (30) The licensee's consultant will undertake baseline water quality sampling of the water wells within the 120m monitoring radius, and the three additional wells noted above. The following parameters will be monitored: pH, Total Dissolved Solids, Hardness, Sulphates, Sodium, Chloride, Potassium, Calcium, Magnesium, Nitrate nitrogen, Nitrates, Iron, Fluoride, Bacteria Coliforms, and Total Suspended Solids.
- (31) In the event of a complaint concerning a change in water quantity and/or quality, that would adversely affect normal usage of those wells identified and monitored within 120 metres of the quarry, the licensee shall supply temporary water with appropriate storage to the affected property owner, all at the expense of the Licensee, and advise the Ministry of the Environment of the complaint and identify the cause of such impairment to the quality or quantity of water.

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The water supply quantity/quality concern will be evaluated by an independent consultant retained by and at the expense of the licensee that is satisfactory to the Ministry of the Environment, local residents, the Municipality, and Nichols Gravel.

Should the quantity or quality of groundwater available to normal takings be adversely affected due to the operations of the licensee, the licensee shall undertake to review quarry operations and implement appropriate changes (e.g. change in dewatering methods or flow rates) in an attempt to alleviate the observed adverse effect(s). If appropriate implemented changes are demonstrated not to correct the problem, the licensee shall, at its own expense, provide a permanent supply, as technically determined by the licensee, of water of equivalent quality and quantity as that which existed before the identified adverse change to the water quality and/or quantity.

The licensee will maintain a log of all complaints received and actions taken. This log is to be available to members of the Public, The Municipality, and The Ministry of Natural Resources for review.

- (32) *Nichols Gravel Limited undertakes to meet to discuss any complaints as soon as is practicable and no later than the end of the business day following the receipt of the complaint. The licensee will respond to any water loss complaints on the same day as the complaint is received.*
- (33) *Should an independent investigation of a water quantity and quality concern be verified by the mechanism described above, the radius of monitoring will be extended a further 120 metres, or to the next water well to a maximum distance of 240 metres, in the direction of the affected water well. Should subsequent extraction and monitoring at some time confirm a persistent impact to a water well at the expanded 240 m radius, the radius of monitoring may then be extended to 500 metres from the quarry property boundary, in the direction of the affected well.*

The requirements and obligations set out in paragraph 31 herein, shall apply to the property owners in the expanded monitoring radius.

Water well owners within the 120 metre radius, or expanded radius, from the property boundary must allow their wells to be part of the monitoring program in order to be eligible for consideration regarding potential disruption of water supplies. If, over time, the extent of the area of monitoring changes, the number of wells to be monitored will be expanded accordingly.

- (34) A trigger mechanism will be established based on the expected behavior of the groundwater regime as predicted by the dewatering impact assessment. There are two aspects to the assessment that will be used as trigger mechanisms: The flow rate from dewatering operations; and The water level impacts in the vicinity of the quarry.

In addition, the condition (13) concerning quarry pond impacts as agreed to by Nichols and the New Credit first Nation may be considered a trigger mechanism.

Should either of the above be found to deviate appreciably from the impacts as predicted from the dewatering impact assessment, the groundwater flow regime shall be re-evaluated, and adjustment and a new simulation of the groundwater flow model should be undertaken. If the reviewing body (e.g. MOE) concludes that significant impacts are identified in the re-assessment, the appropriate changes to the quarry operation, monitoring program, and/or contingency plans shall be undertaken.

- (35) An annual report will be prepared by the licensee's consultant that summarizes the results of monitoring, evaluates whether trigger mechanisms are being approached, and provides a prediction on whether there is the potential for the trigger mechanism to be enacted in the foreseeable future. This report will be filed as part of the annual compliance report pursuant to the provisions of the Aggregate Resources Act.

Noise

The Noise Report contains specific recommendations to mitigate potential noise impacts, which were considered to be an integral part of the site and operating plans. All of the recommended noise controls have been incorporated in the site plans prepared by Harrington and Hoyle Limited. These include:

- (36) Any proposed changes to the Plans shall be subject to approval by an acoustical engineer qualified in aggregate noise technology, with respect to compliance with the applicable noise criteria.

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- (37) All crushing and screening shall be done in the central processing area with the processing plant at the pit floor, elevation not more than 206m a.s.l. acoustical screening should be in place as specified whenever a crushing/screening plant is operating. The screening shall be in the form of stockpiles, berms, a quarry face, or other barrier.
- (38) If processing is required during the start-up phase before the C.P.A. on the pit floor has been prepared, an interim crushing/screening plant may be installed at an intermediate elevation, as low as practical, with a face and berm or other form of barrier not less than 7m above the crusher floor level and not more than 15m from the crusher in an arc from the southwest to southeast.
- (39) It is recommended that the preparatory work that is close to residential premises, including berm construction, topsoil stripping, and rehabilitation work, be done during cool weather when windows are normally closed and noise sensitivity is reduced.
- (40) Production machinery used on the site shall have noise emission levels no higher than Table 6.1 of the Aerocoustic report.
- (41) All equipment used on site shall be properly maintained to ensure that noise levels remain within the specified limits.
- (42) Alternative production equipment and/or methods may be substituted provided a professional engineer qualified in aggregate industry acoustics certifies that no increase in the noise impact predicted in the Aerocoustic report will result from the change.
- (43) Extension of excavation beyond the recommended interim limits may be considered acceptable if at some future time additional or alternative measures to further reduce noise impact are available and if a professional engineer qualified in aggregate industry acoustics certifies that the operation as proposed will comply with the noise criteria then in effect.

Dust

The primary objective of any dust control program is to ensure that dust emissions from the quarry operations are mitigated and controlled on site. The "prescribed conditions" under the Aggregate Resources Act require that:

- (3.1) Dust will be mitigated on site

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- (3.2) Water or other Provincially approved dust suppressant will be applied to internal haul routes and processing areas as often as required to mitigate dust.
- (3.3) Processing equipment will be equipped with acceptable means of reducing dust where applicable and where equipment is being operated within 300 metres of a sensitive receptor.

No further conditions of approval are required to address dust issues.

Complaint Record

- (44) *The licensee shall maintain a log of all complaints received regarding the quarry, which will include the nature of the complaint, weather conditions, the location, time, date, complainant's name and remedial action taken by the licensee in response to the complaint. A copy of this log will be available to the Ministry of Natural Resources, and the Municipality.*

Surface Water

- (45) *The licensee shall conduct surface water monitoring of quarry discharges to the Harrop Drain. The Licensee's consultant will conduct quarterly flow monitoring of the Harrop Drain upstream of the site, at the site, and downstream of the site. At a minimum, one quarterly monitoring event will coincide with the wet season (early spring). Water quality monitoring of the Harrop Drain will be undertaken by the licensee's consultant, upstream of the site, at the site, and downstream of the site once per year. The following parameters will be monitored pH, conductivity, alkalinity, calcium, magnesium, sodium, potassium, chloride, sulphate, nitrate, nitrite, un-ionized ammonia, iron, manganese, copper, zinc, ortho-phosphate, silica, turbidity, total suspended solids, dissolved organic carbon, hardness, and oil and grease*
- (46) *Sump water discharge quality will be monitored annually during the summer for the following parameters: temperature, total suspended solids, oil and grease, un-ionized ammonia and pH.*

- (47) The results of surface water quality and quantity monitoring will be reported in the annual monitoring report. The Licensee shall record volumes of sump discharge on a monthly basis. The duration and frequency of pumping will be determined primarily by operational needs and climatic conditions. To prevent downstream flooding, following storm events, pumping will be regulated to occur after in-channel flow peaks.
- (48) The licensee shall monitor the quarry face on a monthly basis for areas exhibiting excess inflow into the quarry. The monthly assessment will be of a qualitative nature. The results of this monitoring will be reported in the annual report. In the event of any significant increase of inflow of water into the quarry that adversely affects surface water bodies, or groundwater, the licensee shall contact the Ministry of the Environment and take remedial action. The initial remedial action will involve rerouting seepage back to the affected water body and increased monitoring of the seep to a daily frequency.
- (49) The licensee will ensure that the internal water collection system within the quarry will incorporate component storage for groundwater and surface runoff. The surface runoff internal to the quarry will be designed such that internal quarrying, buildings/roads, and actively used areas be set above and outside of the limits of flooding.
- (50) External berming will be constructed around the quarry to prevent any surface water spillage into the quarry, any surface water collected external to the quarry be directed to its existing outlet.
- (51) The licensee will ensure that water polishing measures will be incorporated into the internal collection system, in order that sediment and fines from the quarrying operation are settled out prior to discharge to the Harrop Drain.
- (52) The licensee will ensure that the stormwater holding system be designed such that sufficient capacity is provided to hold a 100 year storm with zero discharge. The dewatering rate (due to any combination of groundwater and stormwater inflows) is not to exceed the peak flow rate which would naturally emanate from the subject property during a 25mm depth 24 hour rainfall event under existing land use.

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- (53) *The Licensee will obtain any required approvals, pursuant to the provisions of the Drainage Act, for discharge of water to the Harrop Drain.*
- (54) *That the Aggregate Resources Act Site Plans be amended to provide for an access, of sufficient width and clearance (12 feet) along the eastern property line, to ensure the ability of a vehicle to access and maintain the existing Gas well and infrastructure shown on the site plans.*
- (55) *All berms shall be graded smooth to a stable (2:1) slope and seeded to prevent erosion and to reduce dust. Wherever possible suitable plants be established such as Crown Vetch (Coronilla varia) or other suitable seed mixtures to promote a deep root system and enhance soil structure. Seed mixture may be modified due to availability and soil structure. Any seed mixture shall be designed to limit the propagation of weed species onto adjacent agricultural lands. All vegetation shall be maintained in a healthy, vigorous growing condition for the lifetime of the license.*

1 ACTION PLAN

Comments from the public clearly indicate the desirability of having in place an action plan to provide the framework to address and mitigate concerns should they arise. Nichols Gravel Limited has prepared this action plan to demonstrate the commitment to operate a quarry without adverse impact on adjacent properties.

The intent of this action plan is to:

- Set out clearly and briefly the issues associated with the topics set out below,
- The way in which such problems will be monitored and assessed, and;
- The manner in which the licensee will address issues and alleviate concerns.

Regard must be had to the specific license conditions, as stipulated by the Ministry of Natural Resources, and the site plan notes contained on the license. This action plan does not prevail over any regulatory legislation. It is understood that all environmental issues that are the mandate of the Ministry of the Environment will be regulated by the Ministry of the Environment in accordance with their legislation.

1.1 Ground Water

The licensee agrees to conduct monitoring of private wells, and on site monitoring wells in accordance with the program and recommendations contained in the Detailed Hydrogeologic Study, as prepared by AGRA (now AMEC) Earth & Environmental Limited. The licensee will agree to discuss and consider any additional measures that may be deemed necessary by the Ministry of the Environment during the application process to obtain a Permit to Take Water.

* Annual monitoring reports commencing at the end of the year of the issuance of the quarry license will be furnished to the Ministry of Natural Resources and the Ministry of the Environment in accordance with the provisions of the Aggregates Resources Act and the Permit to Take Water. The report shall be prepared to the satisfaction of the Ministry of the Environment.

The licensee agrees to prepare and submit to the Director of the Ministry of the Environment, an annual report on or before February 28 for the previous year ending December 31. The report shall document both surface and groundwater quality as well as discharge flow and water level data, include interpretation of surface and groundwater flow for the area and an evaluation of the impact of the quarry on aquifer levels, water quality and baseflow.

The annual report shall include but not be limited to the following:

1. Summary and interpretation of water level monitoring in wells;
2. Summary and interpretation of water quality monitoring in wells and of the sump discharge;
3. Summary of flow measuring at the discharge point;
4. Summary and interpretation of surface flow monitoring;
5. Summary and interpretation of surface water quality;
6. Summary of complaints, resolutions and relevant well and water data related to the remediation of problems;
7. Identify any problems the licensee has encountered in conducting the water monitoring program during the respective 12-month period and identify how the licensee will deal with these problems in the future. The licensee will make any changes to its monitoring procedures as may be reasonably requested by the Ministry of the Environment.

The monitoring will be conducted by personnel satisfactory to the Ministry of the Environment.

In the event of any change to either water quality or quantity that would adversely affect normal uses of those wells identified in the hydrogeologic reports, and in the monitoring program the licensee shall forthwith supply temporary water to the affected property owner, and advise the Ministry of the Environment of the complaint. The alleged interference will be investigated by a qualified hydrogeologist to the satisfaction of the Ministry of the Environment.

Should the cause of the impairment, that would adversely affect normal usage, be due to the operations of the licensee, the licensee shall, at its expense, provide a permanent water supply, as technically determined by the licensee, of equal quality and quantity as that which existed before the negative change to the quantity and quality.

As part of the licensee's monitoring program, a log will be kept of all complaints together with a report as to the remedial measures taken. This log shall comprise a component of the above noted annual report.

Other residents who depend on wells for their water supply and who are not included in the above noted ground water monitoring program shall be given an opportunity to take part in the program when and if it is found that the zone of impact must be expanded.

1.2 Surface and Discharge Water

The licensee agrees to conduct surface water monitoring of quarry discharges to the Harrop Drain. The licensee will agree to additional measures deemed necessary by the Ministry of the Environment during the application process to obtain a Permit to Take Water.

The Licensee agrees to quarterly flow monitoring of the Harrop Drain upstream of the site, at the site, and downstream of the site. At a minimum, one quarterly monitoring event will coincide with the wet season (early spring).

The Licensee agrees to surface water quality monitoring of the Harrop Drain upstream of the site, at the site, and downstream of the site once per year. The following parameters will be monitored pH, conductivity, alkalinity, calcium, magnesium, sodium, potassium, chloride, sulphate, nitrate, nitrite, un-ionized ammonia, iron, manganese, copper, zinc, ortho-phosphate, silica, turbidity, total suspended solids, dissolved organic carbon, hardness, and oil and grease

The Ministry of the Environment has discharge water quality criteria, which will be applied to this undertaking. Sump water discharge quality will be monitored annually during the summer for the following parameters: temperature, total suspended solids, oil and grease, un-ionized ammonia and pH.

As indicated previously, the results of surface water quality and quantity monitoring will be reported in the annual monitoring report.

The Licensee agrees to record volumes of sump discharge on a monthly basis. The duration and frequency of pumping will be determined primarily by operational needs and climatic conditions. To prevent downstream flooding, following storm events, pumping will be regulated to occur after in-channel flow peaks.

The licensee agrees to monitor the quarry face on a monthly basis for areas exhibiting excess inflow into the quarry. The monthly assessment will be of a qualitative nature. The results of this monitoring will be reported in the annual report. In the event of any significant increase of inflow of water into the quarry that adversely affects surface water bodies, the licensee shall contact the Ministry of the Environment and take remedial action. The initial remedial action will involve rerouting seepage back to the affected water body and increased monitoring of the seep to a daily frequency.

1.3 *Blasting and Ground Vibration*

The licensee will follow the blasting procedures established in the Explotech Report, and will conduct on-going monitoring programs to gather background data both on on-site and off-site and any additional measures deemed necessary by the Ministry of the Environment.

Detailed information with respect to monitoring equipment, monitoring location, record keeping and related methodologies will be furnished to the Ministries of Environment and Natural Resources as required at the commencement of extraction operations.

An annual report commencing one year from the issuance of the quarry license shall be submitted to the Ministries of Environment and Natural Resources. This report shall be prepared to the satisfaction of the Ministry of the Environment. The licensee shall make changes to its monitoring procedures that may be requested by the Ministry of the Environment.

The monitoring will be conducted by personnel satisfactory to the Ministry of the Environment.

The licensee will endeavour to minimize occurrences of blasting during times of adverse weather conditions such as temperature inversions and heavy cloud cover.

Unless otherwise agreed to by the Ministry of the Environment, the following standards shall apply to the operations of the licensee respecting ground vibration and noise from blasting:

Ground Vibration

1. Blasting will, at all times, be conducted so as not to exceed a peak particle velocity for ground borne vibration of 12.5 mm per second at any building.

Noise

1. Extraction will be planned in such a fashion to minimize any off-site impacts. Particularly, the licensee will, wherever possible, ensure that the nearest residents are located behind the working face of the quarry.
2. The peak air pressure level for concussion due to blasting shall be maintained at a level of less than 128 decibels (dB) at all points 7 metres from any residential building, and the licensee will monitor and record these levels to the satisfaction of the Ministry of the Environment.

Should any damage be caused as a result of blasting, it will be repaired by the licensee.

The licensee will, prior to quarrying activities commencing, conduct a survey of ambient noise levels in the vicinity of the quarry.

As quarry operations move in any direction, further testing will be implemented to assess any increase in the ambient noise levels at the point of survey. Should it be determined by the above referenced Ministries that the ambient noise levels in the vicinity of the quarry are adversely impacted upon, the licensee shall undertake necessary remedial action.

Detailed information with respect to monitoring equipment, monitor locations, record keeping and related methodologies will be furnished to the above-mentioned Ministries.

The monitoring will be conducted by personnel satisfactory to the Ministry of the Environment.

A log will be kept of all noise complaints, including location, time, date and complainant's name, and the remedial action taken by the licensee in response to such complaints.

Dust

The licensee shall conduct an on-going dust control program for all dust generating areas within the quarry site which shall include the watering or use of other acceptable dust suppressants on its internal haulage and service roads and product stock piles so as to minimize off-site effects on surrounding residences.

The licensee will conduct an on-going dust monitoring program.

Detailed information with respect to monitoring equipment, monitor locations, record keeping and related methodologies will be furnished to the above Ministries.

The monitoring will be conducted by personnel satisfactory to the Ministry of the Environment.

A log will be kept of all complaints including location, time, date, and complainant's name, and the remedial action taken by the licensee in response to such complaints

Circulation, Comments and Implementation

Copies of all reports outlined above will be available to the planning departments of the City of Nanticoke and the Regional Municipality of Haldimand-Norfolk. This action plan is intended to amplify and supplement the licensed conditions and site plan notes to be implemented by the licensee.

X 2 COMPLAINT NOTIFICATION AND RESOLUTION PROTOCOL

NICHOLS GRAVEL LIMITED- HAGERSVILLE QUARRY

The intent of this "Complaint Notification and Resolution Protocol" is to identify:

- 1) Who to contact and what steps should be taken if you have any concerns/complaints respecting the operations of Nichols Gravel Limited - Hagersville Quarry, and
- 2) To identify clearly and briefly the potential issues that may be associated with the operation of the Hagersville Quarry, the way in which such uses shall be monitored and assessed and the manner in which the licensee will address issues and alleviate concerns.

Regard must be had to specific licensed conditions, as stipulated by the Ministry of Natural Resources, and the site plans and accompanying notes. This "Complaint Notification and Resolution Protocol" does not prevail over any regulatory legislation.

It is understood, based on Provincial Protocol, that a three-step complaint investigation/resolution hierarchy exists. Namely:

- 1) Contact licensee with the expectation of concern/complaint resolution.
- 2) If you are not satisfied with the actions of the licensee, then contact the Ministry of Natural Resources.
- 3) Should the Ministry of Natural Resources determine that the concern/complaint cannot be readily resolved through reasonable mitigation measures, or has determined that a significant "upset" has occurred, then the Ministry of Environment shall be notified.

COMPLAINT NOTIFICATION

Who to Contact

Mr. Gary Nichols (Owner)
Tel: (519) 582-3354 Fax: (519) 582-2143

When to Call

As soon as possible after the incident

What information to Provide

Your Name, Address & Telephone Number
Time and Date of Incident
Details of Incident

4

The complainant may be requested to provide additional information. The complainant's co-operation is appreciated.

Nichols Gravel Limited realizes that some complaints can be resolved quickly whereas others may take longer depending on the type of issue. They are committed to attempting resolution of all complaints as expeditiously as possible. Therefore, the time frames indicated below represent what are considered to be the maximum probable timing for implementation of the "Complaint Notification and Resolution Protocol".

Upon Receipt of a Complaint:

- 1) Nichols Gravel Limited undertakes to discuss, whenever possible, the means of resolving the issue. Normally this will occur on the same business day. If this is not possible, the complainant will be contacted before the end of the following business day.
- 2) Maintain a log of all complaints received and actions taken. This log is to be available to members of the Public, The City of Nanticoke, The Regional Municipality of Haldimand-Norfolk, and the Ministry of Natural Resources for review.

If, after implementation of the Complaint Notification and Resolution Protocol, you are not satisfied, you may contact the following agencies to pursue your complaint through:

- ☐ MNR Alymer District Office:
- ☐ MOE District Office:

Tel: (519) 773-9241; Fax: (519) -
Tel: (905) 704-3900; Fax: (905) 704-4015

OPERATIONAL PARAMETERS

To assist the public in understanding the obligations of Nichols Gravel Limited, in its operation of the Hagersville Quarry, the following provides a summary of the key operational parameters by which Nichols Gravel Limited must govern itself accordingly.

DUST

The licensee will follow the recommendations contained in the Aggregates Resources Act and regulations, or any additional measures deemed necessary by the Ministry of Natural Resources and/or the Ministry of the Environment. The licensee shall carry out an on-going dust control program for all dust generating areas within the quarry area, which shall include the watering or use of other acceptable dust suppressants on internal haulage and service roads and product stockpiles so as to minimize off-site effects on surrounding residences.

4

Dust will be mitigated on site and may include a combination of the following control measures:

1. Regular water of active internal haul routes by water truck.
2. Supplemental application of other MOE approved dust suppressants on the haul routes, open areas, and stockpiles where necessary.
3. Dampening of active pit faces and stockpiles during dry conditions.
4. Paved roads will be regularly cleaned to reduce the accumulation of loose material that may generate dust.
5. Disturbed areas will be minimized by reducing the area that has been stripped in preparation for extraction and increasing the rate of progressive rehabilitation in accordance with the ARA Site Plans.
6. Perimeter berm construction and tree screen planting in accordance with phase construction, as shown on the ARA plans.
7. Maintenance of vegetation of perimeter berms and retaining existing vegetation along the property perimeter.

NOISE

Aercoustics Engineering Limited prepared a noise study and recommended that the licensee institute an on-going noise control program of: increased setbacks from residences; regulated operation hours; maintenance provisions for equipment to ensure noise levels remain within acceptable limits; and maintaining all process operations at a location on the floor of the quarry.

GROUNDWATER

The Nichols Gravel Limited, Hagersville Quarry, proposes to mine below the water table. The Detailed Hydrogeologic Study and the Supplemental Hydrogeologic Report prepared by AMEC (formerly AGRA) Earth & Environmental Limited indicated the effects of quarry dewatering may extend into the vicinity of local water wells

In the event of any change to either water quality or quantity that would adversely affect normal usage of those wells identified in the hydrogeologic reports, the licensee shall supply temporary water to the affected property owner, advise the Ministry of the Environment of the complaint and identify the cause of such impairment to the quality or quantity of water.

Should the quantity of groundwater available to normal takings be adversely affected due to the operations of the licensee, the licensee shall at its own expense, provide a permanent supply, as technically determined by the licensee, water of equivalent quality and quantity as that which existed before the negative change to the water quality and/or quantity.

ANNUAL COMPLIANCE REPORTING

As required by Section 15.1 (i) of the Aggregate Resources Act, Nichols Gravel Limited will provide The Ministry of Natural Resources the compliance assessment report with respect to their compliance with the Act, regulations, operational standards, site plan and conditions of license.



Nichols Gravel Limited
P.O. BOX 172 - DELHI, ONTARIO N4B 2W9
PHONE (519) 582-3354 FAX (519) 582-2143

5

X August 14th, 2001

X Ontario Municipal Board
655 Bay St.
TORONTO, On. M5G 1E5

X Attention: Caseworker Mr. Andy DaWang

Dear Sir:

I am writing to request clarification in respect to a document received July 26, 2001 identified as PL990656 issue date July 25, 2001 Decision/Order No. 1194.

As you will recall Decision/Order 0485 was issued on April 3, 2001. We have now received a second Decision/Order and to this point we have not yet received a signed document with Chairman Harrons' signature.

As previously stated we have been working on this project for the past 4 years. It is now over 8 months since the O.M.B. hearing concluded, so that what we are looking for, is some closure on this matter so that we can determine where or when we can proceed under these Decision/Orders.

What we require from the Board is written confirmation as to whether or not this last Decision/Order is the final order, or if this is conditional, and open ended, so that further Decision/Orders can be issued and amended from time to time with changes at the Boards discretion over an extended period of time.

Please provide written clarification in this regard.

Thank you for your attention to this matter.

Yours sincerely,

Gary Nichols

X Gary Nichols

X NO RESPONSE RECEIVED TO THIS LETTER TO
SEPT. 5/02.

S.17.

X Ministry
of the Environment

119 King Street West
12th Floor
Hamilton ON L8P 4Y7

Ministère
de l'Environnement

119 rue King ouest
12^e étage
Hamilton ON L8P 4Y7



X October 3, 2001

X Gary and Margaret Nichols
Nichols Gravel Supply Ltd.
P.O. Box 172
Delhi, ON
N4B 2W9

X Dear Mr. Nichols:

X **RE: Permit to Take Water Application**

Please find enclosed your application for a temporary Permit to Take Water for Nichols Gravel Supply Ltd., for the purpose of aquifer testing and preliminary quarry dewatering from two wells and one sump on Lots 10-12, Concession 12, formerly Wapole Township, City of Nanticoke. As per a conversation between the Ministry's Steve Wallace and David Slaine representing Nichols Gravel Supply Ltd. on September 27, 2001, Mr. Slaine informed us that you were putting the re-submission of the application on hold, therefore we are returning your application and closing you file.

Please note that under the Ontario Water Resources Act, R.S.O. 1990, Section 34 a Permit to Take Water is required for the taking of more than 50,000 Litres (approximately 10,000 Imperial gallons) of water in a day from any groundwater or surface water source, or any combination thereof. Taking water in excess of 50,000 Litres per day without a valid permit is an offence under Section 34 of the Ontario Water Resources Act and is liable to prosecution.

X At this time I am returning your application and closing you file. Please reapply when you are ready to go forward with this project. If you have any questions, please call me at 1-800-668-4557 or (905) 521-7640.

Yours truly,

X P. Odom

Director, Section 34
Ontario Water Resources Act.
R.S.O. 1990
Encl.

F Request Amount of Taking from each Source (if the taking involves the taking of water into storage, please state the amount of water taken into storage as well as the amount of water withdrawn from storage).

Source Number	Name of source or Description	Maximum amount taken per minute	Maximum amount taken per day	Number of hours of taking per day-maximum	Number of hours taken per day-average	Maximum number of days taking per year
1	NICHOLS QUARRIES	700	42,000	10	10	280
	HAGERSVILLE ONT.	190 m ³ /h				
	HALDIMAND COUNTY ROAD 9					
	911# 2742					

Indicate unit of measure ☐ Litres ☒ Imperial Gallons ☐ U.S. Gallons

G Project/application description for purposes of EBR registry (brief description of proposal)

THIS APPLICATION FOR THE DUAL PURPOSE OF DEWATERING THE QUARRIES TO ALLOW EXTRACTION OF LIMESTONE UNDER O.M.B. APPROVAL DECISION ORDER D485 FOR ISSUANCE OF M.N.R. CLASS "A" LICENSE AND TO FURTHER ALLOW WASHING OF AGGREGATE ON SITE AS REQUIRED.

H Environmental Bill of Rights requirements

Is this a proposal for a Prescribed Instrument under EBR? ☐ Yes ☐ No
 If "Yes" is it excepted from public notification? ☒ Yes ☐ No
 If it is excepted from public notification, provide reason
 EVERYTHING BROUGHT UNDER REVIEW THROUGH THE O.M.B. HEARING PROCESS. SECTION 4(8). SEE LETTER.
 Documentation in support of the above noted exception must be provided (refer to "Guide").
☒ Equivalent Public Participation ☐ Emergency
☐ Environmentally Insignificant amendment or revocation ☐ EAA or Tribunal Decision

I Supporting Information checklist This is a list of all supporting information attached to this application and is subject to the Freedom of Information and Protection of Privacy Act (FOI/PPA) and the Environmental Bill of Rights (EBR).

SUPPORTING INFORMATION	ATTACHED?	REFERENCE	CAN BE DISCLOSED
Pre-application consultation with MOEE	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		
Documentation Provided			
Description of the proposed works	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	M.N.R. SITE PLAN	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Environmental Study Report (ESR)	<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/> Yes <input type="checkbox"/> No
Preliminary Report	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	LEVEL 1 AND 2 HYDRO G. M.O.E. FILE	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Design Report/Brief	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Hydraulic and Process Calculations	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	LEVEL 2 HYDRO G. REPORT	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Final Plans and Specifications	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	UPON COMPLETION OF WELL TESTS	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Water Supply and Treatment			
Raw Water Quality Analysis	<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/> Yes <input type="checkbox"/> No
Hydrogeological Report	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	LEVEL 1 AND LEVEL 2	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Additional Attached Information	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		

Statement of Applicant

The undersigned hereby declare that to the best of my knowledge, the information contained herein and the information submitted in support of this application is complete and accurate in every way. The applicant agrees to indemnify and save harmless the Crown in right of the Province of Ontario and its officers, employees, agents and contractors from and against all damages, loss, costs, claims, suits, injuries, demands, actions and proceedings resulting from or in any manner connected with act or omission of the applicant or any of its officers, employees, agents or contractors relating to this Application and any Permit, Renewal Permit or terms and conditions of a Permit issued in response to this Application. I understand that it is the policy of the Director in issuing a Permit to Take Water to impose the General Terms and Conditions appearing on the Guide for Applying for Permit to Take Water.

Name of Applicant or Agent/Official of Applicant (please print)

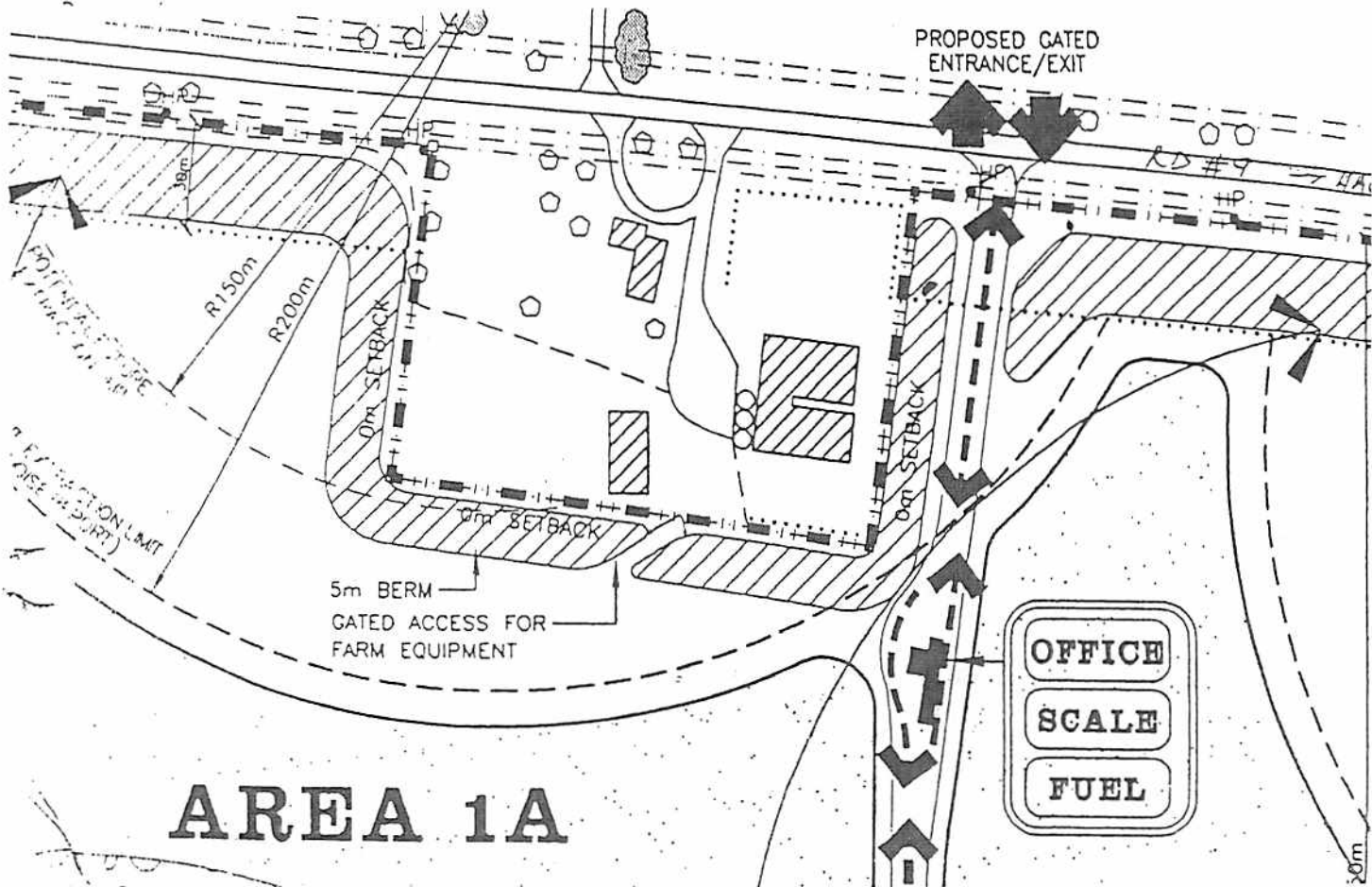
Signature of Applicant or Agent of Applicant

Date

X GARY IRA NICHOLS PRESIDENT N.G.L.

G.I. Nichols

May 3/2001





Terra-Dynamics Consulting Inc.

24B Nihan Drive, St. Catharines, ON L2N 1L2

X October 30, 2001
013

Mr. Gary Nichols
Nichols Gravel Limited
P.O. Box 172
Delhi, ON N4B 2W9

Re: Invoice for Hydrogeological Consulting Services, June 27 to July 24, 2001
Haggersville Permit to Take Water Project, City of Nanticoke


X Dear Mr. Nichols:

Terra-Dynamics Consulting Inc. respectfully submits the enclosed invoice for services provided relative to permit-related activities at the proposed Haggersville Quarry. The total is \$1,489.18. The labour costs and expenses pertain to the following tasks:

- On-site meeting on July 5, 2001;
- Correspondence with Steven Wallace (MOE) regarding the Temporary Permit to Take Water;
- Meeting with Steven Wallace and a hydrogeologist from Dillon Consulting at Hamilton's MOE office on July 24, 2001.

At present, I am awaiting direction from you or Mr. Rudolph regarding the direction of this project. Please do not hesitate to contact me at 905-646-7931 if you have any questions.

Yours truly,
TERRA-DYNAMICS CONSULTING, INC.

X 
David D. Slaine, M.Sc.
Hydrogeologist



Terra-Dynamics Consulting Inc.

24B Nihan Drive, St. Catharines, ON L2N 1L2

INVOICE

X October 30, 2001

Project 013, Nichols Gravel – City of Nanticoke, Regional Municipality of Haldimand-Norfolk

Invoice No. C010

Mr. Gary Nichols
Nichols Gravel Limited
P.O. Box 172
Delhi, ON N4B 2W9

Billing Period: June 27 to July 24, 2001

Labour: David Slaine, Hydrogeologist
10.5 hours at \$120/hour

\$1,260.00

Expenses Kilometres - Two trips, St. Catharines, ON to
Hagersville (site) and return and one trip to Hamilton – MOE
& return
296 km x \$0.36/km
Telecommunications at 2% of labour

\$106.56

\$25.20

Expenses Subtotal \$131.76

Labour and Expenses \$1,391.76

GST (GST No. 873280218) \$97.42

Invoice Total \$1,489.18

Make cheques payable to Terra-Dynamics Consulting, Inc.

Net 30 Days

INDEX 2002

1. February 28, 2002, Harrington & Hoyle Est. Reserves above Water Table.
2. March 6, 2002, Letter to M.P.P. Toby Barrett.
3. June 6, 2002, Letter from Charlie Lauer M.N.R. Deputy Assistant Minister.
4. July 3, 2002, Review of costs to Hagersville Quarry Application.
5. September 3, 2002, M.N.R. Inspector Paul Cutmore misrepresentations to Mayor L. Berstrand, Haldimand County, 5th Paragraph, Permit to Take Water required prior to M.N.R. Licence.
6. September 11, 2002, O.M.B. Andy Dewang at Inspector Cutmore request attempts to arrange further O.M.B. Hearing on water concerns.
7. September 20, 2002, Response to O.M.B. Andy Dwang request for Hearing. Refused.
8. October 10, 2002, O.M.B. response declining further hearing subject to A.R.A. s. 11 – 15 “No Petition or Review of Final O.M.B. Decision Order.”
9. October 25, 2002, Letter to M.N.R. Minister, Jerry Ouellette.
10. November 7, 2002, M.N.R. Letter from Alec Denys to M.O.E. Paul Odem, Permit To Take Water.
11. November 13, 2002, M.N.R. Letter from Paul Cutmore to Paul Odem.
12. November 13, 2002, Letter from Paul Cutmore advising of 15 Conditions to be completed prior to Quarry operations. No such direction in Final O.M.B. Order 1194. Where is the License 15 months after Final O.M.B. Order 1194 Decision? And Direction?
13. December 18, 2002, O.M.B. Counsel clarification of O.M.B. “Conditions” to M.N.R. Inspector Paul Cutmore



Facsimile
Transmittal

X To: Gary Nichols @ Nichols Gravel Limited FAX # (519) 582-2143

X Date: February 28, 2002

Sent By: Bernie Janssen

Regarding: Hagersville Quarry Application - Above water table aggregate reserves

of Pages: 1 (including cover) **Project #:** 98-24

X Message: Hi Gary:

Joe Strachan called this afternoon requesting information in regards to the amount of aggregate located above the water table on the property. In the 1999 summary report, we had estimated approximately 15% of the 16.6 million tonnes was above the water table based on the water table elevations shown in AGRA's hydrogeological report. The majority of the rock above water table is located in areas 1 and 2, where the surface elevations are highest and there is less overburden (some outcrops noted). Based on the 1999 information there are approximately 2,000,000 tonnes above the water table in the initial two phases of the quarry, if operated in a single bench 4-5 m. This is equal to 15-20 years of production should the annual extraction rates be around 100,000 tonnes as initially estimated.

Harrington and Hoyle has not been involved in the application process since we submitted the documentation binders to MNR in early 2000 and there may have been numerous changes in the hydrogeology issues (You had indicated that additional drilling had taken place on the property after the initial 4 boreholes were drilled in 1998 and there has been much discussion regarding hydrogeology and the water table before and during the OMB hearing). Has your new hydrogeologist confirmed the findings of AGRA's report regarding the elevation(s) of the water table being between 215-217 masl on site? A change in the actual water table elevation(s) would change the amount of aggregate located above the water table. Can you let me know as soon as possible so that Joe can proceed with your licence application.

I will not be in the office tomorrow but if you fax the information Wendy can forward it to me. If you have any questions, please give me a call at (519) 740-7250.

Bernie

Nichols Gravel Limited

P.O. Box 172
Delhi, Ont. N4B 2W9

MAR 07 2002

Phone: 519-582-3354

Fax: 519-582-2143

X March 6, 2002

X M.P.P. Haldimand-Norfolk-Brant
Mr. Toby Barrett
39 Norfolk St.
SIMCOE, Ontario

X Dear Mr. Barrett:

I am writing in respect to our proposed Quarry at Hagersville which has been the subject of various letters over the past 4 years copied to you, the Ministry of the Environment, and the Ministry of Natural Resources.

As you are well aware, this application for rezoning and Class A Category 2 M.N.R. license, along with the uncomplimentary review from the Ministry of the Environment, provoked a long drawn out and costly Ontario Municipal Board hearing process which lasted most of the year 2000 and concluded November 1st. 2000.

On April 3rd, 2001 approximately 5 months after the hearing concluded we received a decision order from the O.M.B. and after the 30 day appeal period had passed I called the O.M.B. for clarification and spoke with case worker Andy Dawang as to when this order became effective, and whether or not we could proceed with development of the quarry, as we were reluctant to expend money on the property, and then have someone obtain a stop work order so that we could not proceed. I was assured by Mr. Dewang that the Boards' position was that the decision had been rendered and there was nothing to prevent us from proceeding.

Although the decision order did not direct that a Permit to take water was required prior to issuance of the M.N.R. license, in his summation Chairman Harron had stated that he agreed with the M.O.E. position of the October 20th letter proposing that a Permit to take water be issued by M.O.E. prior to issuance of the Class A License.

In early May 2001 an application for a Temporary Permit to take water was applied for to the M.O.E., so that we could proceed to develop the quarry and conduct the further Hydrogeological review requested by the Dillon Peer review within the one year term of the Temporary M.O.E. P.T.T.W..

At the end of May I called the Director of Water Resources M.O.E., Hamilton branch to inquire as to the status of our application. Mr. Odum stated that we did not need a Permit to take water as our prescribed extraction evidence to the O.M.B. was that we would not contact the water table in the first lift of 7 metres and most likely would not

require a Permit to dewater for 20 years, and furthermore he could not issue a permit before the fact or before it was required.

I agreed with Mr. Odums' comments, but reminded him that Mr. Harrons' summation seemed to indicate that we must obtain a Permit to take water before the issuance of the Class A License from M.N.R. Mr. Odum then responded that he would have to have clarification from the O.M.B., and I had no further discussion with M.O.E. until on July 12th, 2000 I received a fax from our consultant of a draft agreement from M.O.E. for a Temporary Permit to take water. Although our consultant had an appointment with M.O.E. staff for July 24th, 2000 this agreement had been drafted without discussion or consultation with our consultant or anyone from our company.

On July 25th, 2001 the O.M.B. issued another decision order #1194 which stated quote: The Board Directs the Minister, pursuant to Section 11 (8) of the Aggregate Resources Act R.S.O. 1990 to issue a Class "A" license for the removal of aggregate from lands composed of Part of Lots 10,11, and 12, Concession 12, in the City of Nanticoke subject the following conditions:

1. The applicant shall obtain a long-term Water Taking Permit issued by the Ministry of Environment.
2. The applicant shall fulfill a set of conditions as set out in Attachment "2"
The license is for the removal of aggregate to the bottom of the Bois Blanc formation only, and there is to be no quarrying of the Bertie formation at this location. The action plan is attached as Attachment "3".

Upon reviewing condition #1 of the decision, this seemed to cancel any possibility of obtaining a Temporary Permit to take water. This meant that we were too late in the season to proceed with hydrogeological investigations and develop the quarry and obtain a return of cash flow in the year 2001.

At that point we had no option but to instruct our consultant not to pursue further discussions with M.O.E. and deferred all further expense in this regard. By this time we had already spent just under \$100,000.00 on hydrogeological investigation on the property, and the work suggested by Dillons' Peer review came in at an additional estimate of \$110,000.00.

In our view this additional investigation is not necessary at this time as our own investigations indicate no contact with the water table in the first lift of 7 metres. If there is no contact with the water table there is no need to dewater for extraction, therefore no dewatering means that there is no impact. There is quite adequate monitoring provisions in the 55 conditions agreed to at the hearing, until the point where it becomes necessary to dewater for extraction.

The proposal by M.O.E. in the letter of October 20th, 2000 which evolved through discussion between our lawyer and Barbara Ryter of M.O.E. was a no brainer right from the start for a number of reasons.

In the first place it was illegal to propose a condition before the fact, that a Permit to take water be obtained prior to issuance of the M.N.R. license. This is already addressed under Prescribed Conditions of the Aggregate Act under Category "2" Section 3, Subsection 3.9 quote: If required, a Permit to take water will be obtained for utilizing ground and/or surface water. unquote.

Aggregate Act

Prescribed Conditions:

The prescribed conditions are conditions that pertain to the individual category and cannot be varied or recinded by either the Minister or the Ontario Municipal Board. On a site-by-site basis, additional conditions can be attached to the license or site plan at the discretion of the Board or Minister, however these conditions do not form part of the prescribed conditions.

We are extremely disappointed in what has turned into a complete fiasco, as a result of what now appears to be a negligent performance by our lawyer, our planner and officials of M.O.E. in providing this illegal proposal to the O.M.B.. This was done at the insistence in the 11th hour over my protest that this would only serve to further complicate matters, which history now confirms to be correct.

The October 20th, 2000 M.O.E. letter was received by fax from our lawyer October 23rd, 2000 at 10:33 A.M. and read by myself that evening after I returned home that day from the first day of the O.M.B. hearing.

No one could expect Chairman Harron to be familiar with all aspects of the Aggregate Act, and he simply accepted information provided by lawyers and witnesses and attempted to resolve the various issues.

However, when I carefully read the final order of July 25th, 2001, I find no direction that a Permit to take water must be obtained prior to issuance of the M.N.R. License, and in fact Condition #2 appears to properly direct quote: The applicant shall fulfill a set of conditions as set out in Attachment "2". unquote. If you make reference to Attachment "2" the first conditions of approval are the prescribed conditions of the Aggregate Act and under #9 it states: If required a Permit to take water will be obtained for utilizing ground and/or surface water.

This all seems quite clear to me, Chairman Harrons' decision complies with the Aggregate Act prescribed conditions and directs M.N.R. it issue the license.

My question now is why has this O.M.B. direction not been complied with by M.N.R. and what seems to be the problem?

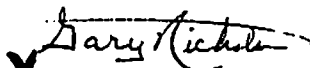
If there is any common sense or logic, the bottom line is, that if first the M.N.R. license is not issued, we don't require a Permit to take water, we also do not require 55 conditions of agreement to issue the license, and nothing in this entire exercise is relevant until the point that the license is issued by M.N.R. The appeal was filed with the O.M.B. for approval of rezoning and the issuance of a Class A Category "2" license, it was not appealed for an M.O.E. Permit to take water. The O.M.B. must respond directly to the appeal by M.N.R. and Nichols Gravel Limited. This is the only option which directly fulfills the purpose for the O.M.B. hearing in respect to the M.N.R. License.

In summary I hereby advise that subject to a request by the land renter to construct an irrigation pond to water crops, we shall be proceeding with construction of this pond as of April 1st, 2002, as it is quite obvious that whether Mr. Sommers crops the land, or we crop the land, water will be required in order to keep the land productive in these periods of extreme draught conditions. Until such time as the M.N.R. License is issued the primary use of this land is farming which would make the construction of the irrigation pond comparable to an "other use" such as the Van Aqua Fish Farm gravel operation at Burford, Ontario. See letter Mr. Sommers. See Nichols Gravel Limited response.

In order to avoid further confusion and confrontation in the future, I suggest and request that the Ministry of Natural Resources immediately comply with the O.M.B. decision order of July 25th, 2001 as directed, and issue the Class "A" Category "2" license to Nichols Gravel Limited.

Thank you for your consideration to this letter.

Yours sincerely,


X Gary Nichols, Pres.

Nichols Gravel Limited.

- X c.c. Minister of Natural Resources
c.c. M.O.E. Mr. Paul Odum
c.c. M.N.R. Inspector Joe Strachan
c.c. O.M.B. Case Worker Andy Dawang

X Ministry of
Natural Resources

Ministère des
Richesses naturelles

Room 6540, Whitney Block
99 Wellesley Street West
Toronto ON M7A 1W3



3
Ontario

MNR10MC-2002-690

X JUN 06 2002

Mr. Gary Nichols
Nichols Gravel Limited
PO Box 172
Delhi ON N4B 2W9

X Dear Mr. Nichols:

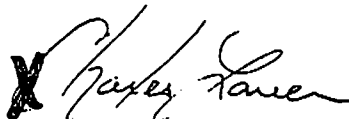
Thank you for your letter of March 6, 2002, addressed to the former Parliamentary Assistant to the Minister of Natural Resources, Mr. Toby Barrett, regarding a proposed quarry at Hagersville. A response to your letter was delayed due to the labour disruption at the Ontario government.

With regards to the issuance of your quarry licence, the ministry's Aylmer District Office has requested a clarification from Mr. Harron of the Ontario Municipal Board regarding the timing of the issuance of the water taking permit which will be required at your operation. Once this clarification is received, the process of issuing the licence will proceed.

In the meantime, if you have any further concerns, please contact Mr. Joe Strachan, Aggregates Inspector, Aylmer District, at (519) 773-4747

Again, thank you for writing.

Sincerely,

X 

Charlie Lauer
A/Assistant Deputy Minister
Field Services Division

X JULY 3/02

4

NICHOLS GRAVEL LIMITED
HAGERSVILLE QUARRY REVIEW OF COSTS.
O.M.B. HEARING COSTS AS OF JAN 1, 2000. TO DATE

WHITE DUNCAN & OSTENER SEPT 99 TO MAY 2000	\$ 14,966.25
MR FRED RUDOLPH MAY 2000 TO OMB CONCLUSION	\$ 134,495.39
BLS PLANNING MR. TOM SMART (PLANNING)	\$ 53,907.77
AGRA-AMEC (HYDRO - G.)	\$ 46,182.51
HARRINGTON & HOYLE CONSULTANTS (MISC.)	6745.02
R.W.I. CONSULTANTS (DUST)	3424.00
TRANSTECH (TRAFFIC STUDY)	4304.46
S.E. YUNDT (FINANCIAL IMPACT STUDY)	10548.37
AEROCOUSTICS (NOISE STUDY)	2155.87
EXPLOTECH (BLASTING) ADDITIONAL TO REPORTS.	770.40
PHILIPS ENGINEERING (DRAINAGE)	4939.64
TERRA DYNAMICS (HYDRO G.)	1489.18
MACNAUGHTON-HERMSEN JIM PARKIN (MEETING PETER PICKFIELD)	613.68
TOTAL	\$ 284,642.54
TO COMPLY WITH CONDITIONS OF MNA AGGREGATE ACT APPROX	\$ 87,000. SPENT ON
CONSULTING FEES PRIOR TO JAN 1, 2000	X TOTAL \$ 371,642.00
ALMOST ALL ADDITIONAL CONSULTING COSTS INCURRED AT THE INSISTENCE OF	
MR. FRED RUDOLPH, NICHOLS OMB HEARING SOLICITOR.	

X B.I.A.



353 Talbot Street West
Aylmer West, Ontario
N5H 2S8
(519)773-4747

X September 3, 2002

X Haldimand County
Office of the Mayor
Cayuga Administration Office
45 Munsee Street North,
P.O. Box 400, Cayuga, Ontario, NOA 1E0

X Attention: Lorraine Bergstrand - Mayor

X Dear Lorraine:

Subject: Nichols Aggregate Licence Application – Pt. Lots 10-12, Conc. 12 City of Nanfako

This letter is in response to Janice McLachlan's letter dated September 3, 2002, requesting an update on matters involving the Nichols Aggregate Licence application at the above location.

The property was visited by an Aggregates Inspector (the undersigned) on August 27, 2002. At that time stockpiled quarry material was observed on the property.

X { I had a chance to speak with Mr. Nichols this afternoon. I advised Mr. Nichols to refrain from blasting and crushing on the site until the Aggregate Licence had been issued. Our Ministry's Head Office has recently informed us that operation of an unlicensed quarry operation (as defined in the Aggregate Resources Act) doesn't necessarily have to include the removal of material off the property. }

Due to additional information given to our MNR office this morning, involving Mr. Nichols company actually removing quarried material offsite, the subject property is now under investigation for compliance with the Aggregate Resources Act.

Our office is presently in the process of obtaining feedback from the MOE office in Hamilton regarding the status of Mr. Nichols Permit to Take Water application. According to the OMB decision on the Licence application, the applicant is to obtain a Permit to Take Water from the MOE prior to the MNR issuing the Aggregate Licence. NOT IN BOARD ORDER 1194. X

FALSE
L.H.

If you have any further questions on this matter, please give me a call.

Yours truly,

Paul G. Cutmore

X Paul. G. Cutmore
Aggregate Resources Inspector, Aylmer District.

cc - J. McLachlin, Haldimand County
- L. Patrick, MNR Peterborough

JM :

TO :

519 582 2143

1593.01-22

01:39

#507 P.01/01

ATTN: MR. NICHOLS
519/582-2143

Dawang, Andy (JUS)

X From: Dawang, Andy (JUS)
Sent: Wednesday, September 11, 2002 1:03 PM
X To: 'cobblaw@cobbjones.ca'; 'paul.odom@ene.gov.on.ca';
'duxbury@interlynx.net'; Cutmore, Paul (MNR)
Subject: Gary Nichols Gravel

X The Board would like to revisit the matter in order to resolve the issue among the parties over the water extracting condition imposed in the Board's decision for the issuance of MNR licence. ?

Please indicate your calendar availability for this short meeting before Mr Harron. We are scheduling a half day. Please indicate also if more time is needed.

(A copy of this e-mail is being sent to Mr Gary Nichols by fax)

Thanks.

X Andy Dawang Tel 416-326-6794
OMB Planning Fax 416-326-5370
655 Bay St andy.dawang@jus.gov.on.ca
Toronto ON M5G 1E1

7

Nichols Gravel Limited

P.O. Box 172
DELHI, On. N4B 2W9

Phone: 519-582-3354

Fax: 519-582-2143

X September 20, 2002

X OMB Planning
c/o Mr. Andy Dawang for O.M.B. Chairman Mr. Gary Harron
655 Bay Street
Toronto, On. M5G 1E6

X Dear Sir:

X Re: **NICHOLS GRAVEL LIMITED**
Quarry – Lot 10-12 Concession 12, Former City of Nanticoke

I acknowledge receipt of your letter faxed to me on September 11, 2002. See copy #1

Respectfully, please advise the authority relied on for the Board to revisit the matter. My lawyer, who represented me at the Board hearing, confirmed to me last year that the Board's decision is final. Further to that I was advised by my solicitor that the aggregate act did not allow a review on a final O.M.B. decision order. See letter dated May 11, 2001 and copy of Bill 52 Aggregate Act. #2

Further, I am perplexed that the Board has to resolve any further issues. In my opinion all issues have been resolved, which has taken over four years to complete at a cost to our company of over \$250,000.00 for the cost of the hearing alone as well as the loss of last year's extraction sales of approximately \$800,000.00 gross and loss of sales to date this year. The Board's order is very clear to me.

The problem is that the M.N.R. and the M.O.E. will not issue the licenses which the Board has directed them to do, we have applied for the processing permits and licenses and completed everything of which we was obligated to do. Over one year later, we have still not received our licenses and no explanation is forthcoming. I would like to know what our rights are with respect to the default of the two Ministries in not complying with the Board's Order.

We should not have to spend any more time and incur any more cost with respect to this matter. There would be no concerns whatsoever if the two Ministries would simply comply with the Board's Order so that we may proceed with our business without the harassment received as a result of these delays.

My reference is to the recent complaints by lawyer Duxbury on behalf of the residents, and that of Haldimand County, in respect to the recent trespass on our property September 5th, 2002, 2 p.m. by M.N.R. Inspectors Steven Lamb and Paul Cutmore in order to gain information and deliver a stop work order 2:15 p.m. for operation of an illegal quarry. See Copy #3. We have not stopped producing aggregate and are now selling products produced on this property. If in fact there is an illegal quarry operation 1 year and 2 months after the clear and explicit O.M.B. direction order, we have to conclude that the root cause of any problem all relates directly back to the non compliance to the Board direction order to M.N.R. and M.O.E.. Yet now we have the enforcers out to our property from M.N.R. to attempt to continue to keep our business shut down. See July 25, 2001 O.M.B. Direction Order #4. There is something seriously wrong with this picture, and I have to wonder if the M.O.E. and M.N.R. have become parties to the conspiracy to bankrupt our business by officials of the previous Haldimand-Norfolk government as well as Ministry of Transportation Ontario. When I review the events of what has caused the most controversy and problems to our application and O.M.B. hearings, the Ministry of Environment comes up as number 1 in respect to:

- ✕ 1. M.O.E. Junior Hydrogeologist, Simon Gautrey's uncomplimentary and inflammatory review of our Hydrogeological investigation and report on the property prior to the hearing which was not reviewed by a Senior Hydrogeologist at M.O.E.
- ✕ 2. The October 20, 2001 letter from M.O.E. Barbara Ryter stating the M.O.E. would prefer that the Permit to take Water be issued prior to issuance of the aggregate license which in fact is a contravention to the Aggregate Act prescribed conditions.
- ✕ 3. The extended delay in issuance of the M.O.E. Permit to take Water applied for March 12th, 2002 and still not received 6 ½ months later when in fact I was informed by Paul Odum of M.O.E. May 2001 that it takes 3 months to process the application to issue a permit. We now have to try to determine or pinpoint why we have received this extended delay and spinning process from M.O.E..

The only thing that comes to mind is a possible payback from M.O.E. for embarrassment caused when in August of 2000, then Haldimand-Norfolk Regional Councillor Gary Nichols made public through an anonymous letter the cover-up investigation by M.O.E. and Regional Staff of illegal dumping at the Tom Howe Regional Landfill site. Councillor Nichols requested that O.P.P. investigate possible municipal corruption which of course as usual the O.P.P. declined to investigate. Councillor Nichols then conducted his own investigation which included appeals for documentations to the Freedom of Information and Privacy Commission who directed M.O.E. to release the documentation. However, critical documentation which would have confirmed a forged and falsified document produced by Commissioner of Engineering Eric D'hond't and Regional Chairman John Harrison was not released as directed. A further appeal to the F.O.I. Commissioner (2 occasions) received no

further response. Now we have to ask who is interfering with the Freedom of Information and Privacy Commission, and why did M.O.E. F.O.I. Co-ordinator Cathy Clarke not follow the direction order. See letter December 6, 2001. #5

It is interesting to note that the H-N Transition board appointed by the Province hired Mr. D'hond't as Commissioner of Engineering for Norfolk County even before the M.O.E. investigation cover-up concluded. This served to place Mr. D'hond't in a position where he has continued to conspire with others to bankrupt Nichols Gravel Limited. It should be further noted that it was Mr. D'hond't, Mr. Lambert and Mr. Anderson that directed our company down this path of establishing a quarry relative to their discriminatory Tender specifications of 100% crushed aggregate which cannot be produced in gravel pits, but only in quarries which served to eliminate our company from the competition to supply aggregate to the H-N Region.

Regardless of whether or not the M.O.E. or M.N.R. have become a party to this conspiracy, the failure to issue the necessary permits have delayed and prevented development to this point so that in fact if we continue to carry this huge debt burden without return cash flow, this will serve to bankrupt this company which in fact in any event supports the purpose of the existing conspiracy.

This conspiracy has also been supported by the Police and the Ontario Court of Justice with the latest obstruction of Justice out of Divisional Court Hamilton for the third time from Justice of the Peace Mitchell Baker regarding 16 private informations filed for Criminal charges. See Letter #6. I suggest that the Attorney General should direct and appoint someone with the experience and integrity to review this information as her worship Justice of the Peace Madam General Lickers.

However, since there was a non response to my Private Informations; we are proceeding as stated in my covering letter information #1 of March 15, 2002 to make all information now public. See letter #7.

As for the M.O.E. performance, the letter May 23, 2002 acknowledging our application for Permit to take Water 3 months after the fact with the Fairy Tale about the backlog and that it could take several months to process was in fact quite ridiculous in respect to the fact that at approximately the same time our M.P.P. Toby Barrett arranged for M.O.E. staff to come down to Delhi to hold an "open house" where farmers went in and filled out applications for Permits to take Water and had them processed on the spot. Quite amazing how things work in the Province of Ontario when you consider that the same member of parliament who we supported in 2 provincial elections did not have the courtesy to respond to my letter of inquiry of March 6, 2002 as to the status of our M.N.R. license. Do we also detect some political indifference or manipulation as well? I am certain that our heavy weight competition Lafarge, Cayuga-Dufferin and Trent Valley Sand and Stone would be pleased if this quarry was never approved and productive. They don't need the competition, and have enjoyed a patronage preference for years.

It is also interesting to note that Marlene Phibbs the main driving force for the opposition to our quarry, rents land from Dufferin Aggregates.

At this point I believe that the conspiracy, discrimination and spin jobs to this company have gone quite far enough. We have had our O.M.B. hearing. A final decision order was issued July 25, 2001. The public planning process has been concluded, it is over, it is done, and we have complied to the letter of the law.

My comment in conclusion is that this extended stress since 1994 has had a severe impact on the health of members of this family, brought about by the defamation and trade libel of our company's products as well as the reflection on the honesty and integrity of this family who operate this business.

My wife required both a bowel and 2 breast cancer operations last year, and most recently our youngest son who has turned into a mental basket case from this prolonged stress, has informed us that he must leave our company in order to preserve his sanity.

I can truthfully state that in my entire 42 years in business, that I have never been involved in such an absolutely perverted fiasco, whereby no one is accountable for anything.

Ripley's "Believe it or Not" most likely would not accept our story, as no one would believe that one family could encounter this degree of deception, discrimination, conspiracy and corruption living in "Canada, the best country in the world."

In the experience of this company and this family, we conclude the following:

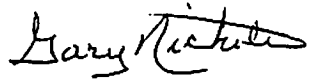
1. That our O.P.P. Law enforcement does not work.
2. The Ontario Court of Justice and the Supreme Court of Canada have not provided administration of Justice, but in fact obstruction of Justice.
3. And with the O.M.B. hearing fiasco, it now appears that the Public Planning process in Ontario does not work either.

In respect to the fact that a stop work order was issued September 5, 2002 by M.N.R., our lawyer has advised against having any further discussion after the fact with M.N.R., M.O.E, or the O.M.B., as this could compromise our position should this matter come before the courts.

The simple and logical solution at this point would appear to be for the O.M.B. to simply issue a directive to the M.N.R. and M.O.E. to comply with the Board order of July 25, 2001. End of story.

We thank the O.M.B. for your consideration in this matter.

Yours sincerely,


* Gary Nichols

Additional Documentation:

1. Letter dated August 14, 2001 to O.M.B. Caseworker Mr. Andy Dawang. #8
2. Information Faxed 7:05 September 6, 2002 to M.N.R. Inspector Mr. Paul Cutmore. #9
3. June 6, 2002 response to letter March 6, 2002 to M.P.P. Toby Barrett. #10

- ✓
- c.c. Premier of Ontario
 - c.c. Attorney General of Ontario
 - c.c. Minister of Natural Resources Ontario
 - c.c. Minister of the Environment of Ontario
 - c.c. The news media

X Ontario
Municipal
Board
655 Bay St Suite 1500
Toronto, ON M5G 1E5
Tel (416) 326-6800
Fax (416) 326-5370
www.omb.gov.on.ca

Commission des
affaires municipales
de l'Ontario
655 rue Bay Bureau 1500
Toronto, ON M5G 1E5
Tel (416) 326-6800
Fax (416) 326-5370
www.omb.gov.on.ca



8

X October 10, 2002

Mr. Gary Nichols
Nichols Gravel Limited
P.O. Box 172
DELHI, On N4B 2W9

X Dear Mr. Nichols:

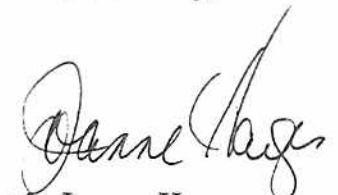
Re: OMB Case No.: PL990656
OMB File No(s): Z990094 and M000002
Former City of Nanticoke

X Thank you for your letter of September 20, 2002 noting your concerns about the issuance of a license under the *Aggregate Resources Act*.

X The Board's Decision on this matter was issued on April 3, 2001. The Board's final Order issued July 25, 2001 amending Zoning By-law 1-NA86 and directing the Minister to issue a Class 'A' license subject to certain conditions noted in the Order. The Ministry of Natural Resources is responsible for the issuance of the license in compliance with, and/or fulfillment of the conditions imposed by the Board.

X The *Aggregate Resources Act*, subsection 11(15) provides that a decision or order of the Board cannot be reviewed under the Board's powers under section 43 of the *Ontario Municipal Board Act* or section 21.2 of the *Statutory Powers Procedure Act*. The Board is therefore unable to intervene further in this matter. ✓

Yours truly,

X 
Joanne Hayes
Senior Case Manager

X cc: The Hon. Ernie Eves, Premier of Ontario
The Hon. David Young, Attorney General
Ministry of Natural Resources, Paul Cutmore
Ministry of the Environment, Paul Odom, Supervisor, Water Resources, West Central Region

NICHOLS GRAVEL LIMITED

**P.O. BOX 172
DELHI, ON. N4B 2W9**

PHONE: 519-582-3354

FAX: 519-582-2143

X October 25, 2002

**X Minister of Natural Resources
Hon. Jerry Ouellette
99 Welleslay St. W.
Whitney Block 6th Floor
TORONTO, On. M7A 1W3**

X Dear Sir:

In respect to the recent clarification from the Ontario Municipal Board dated October 10, 2002, and received by me on October 17, 2002, the Board has confirmed that no review by the Board is allowed under the Aggregate Act of Ontario.

The Board's letter re-confirms, one year and three months after its decision/order dated July 25, 2001, that: "The Ministry of Natural Resources is responsible for issuance of the license in compliance with, and/or fulfillment of the conditions imposed by the Board."

At this point in time I have under consideration the substantial monetary loss to my Company, resulting from both the stop work order of September 5, 2002, and the loss of income from the subject property due to the delay in issuing the license since July 25, 2001.

X I anticipate the issuance to my Company of the permit and license by the M.N.R. and M.O.E. by return mail.

Yours sincerely,


X Gary Nichols

**X c.c. Premier Hon. Ernie Eves
c.c. Hon. Chris Stockwell, Minister of the Environment**

Zacher, Gary (MNR)

From: Denys, Alec (MNR)
Sent: Thursday, November 07, 2002 3:36 PM
To: 'paul.odom@moe.gov.on.ca'
Cc: Cutmore, Paul (MNR); Zacher, Gary (MNR); Elliott, Dan (MNR)
Subject: FW: Nichols Gravel Ltd. - Unlicensed Quarry Hagersville Site - Permit To Take Water

X Paul,

This note is to confirm our discussion held in the conference call on November 7, 2002, between yourself, and, Alec Denys (District Manager), Gary Zacher (Enforcement Supervisor), Paul Cutmore (Aggregate Resources Inspector) of the MNR Aylmer District Office. The following decisions and actions were agreed upon in dealing with the Nichols Gravel Ltd. property situation:

X Decisions

- 1) MNR and MOE agreed that the OMB Case Worker's interpretation for the Nichols company to acquire the Permit To Take Water before the MNR can issue the Aggregate Licence, is not the standard procedure in either of our organizations.. We will seek to have the OMB recognize this and rule in this regard with respect to the Board order and subsequent interpretations.
- 2) MNR and MOE recognize that the current excavation operation is within the ground water table and there is an immediate need for the Permit To Take Water.
- 3) MNR and MOE agreed that the PTTW application from Nichols should be processed and that the applicant be notified in writing of the immediate need for the permit and for supporting baseline monitoring and other studies MOE may require.
- 4) MNR and MOE need to work closely together on this file in recognition of the ongoing investigation by MNR into the operation of an illegal quarry (operating without a licence) .

X Actions

- 1) Paul Cutmore, MNR, will send Paul Odom, MOE, a letter/e-mail stressing that the operation is in the water table according to the site plans, and that the site plans will be amended to require the Permit To Take Water for the ground water.
- 2) Paul Odom, MOE, will draft a letter to the OMB to clarify and support the usual standard practice of issuing an AR Licence without the necessity of having a PTTW issued first.
- 3) Paul Odom, MOE, will draft a letter to the Nichols Gravel Ltd. company stressing the immediate need for the Permit TO Take Water as there has been excavation into the water table and evidence of water pumping.

X Because of the MNR investigation into this highly profile unlicensed operation, we appreciate your acknowledgement of the need of our Ministry's to work closely together, and, allowing us to review the MOE's draft letters.

Thankyou for your patience and co-operation, Paul.

X Alec Denys
District Manager, Aylmer MNR District

Zacher, Gary (MNR)

✂ From: Cutmore, Paul (MNR)
Sent: Wednesday, November 13, 2002 3:13 PM
✂ To: Odom, Paul (ENE)
Cc: Denys, Alec (MNR); Elliott, Dan (MNR); Zacher, Gary (MNR)
Subject: Nichols Gravel Ltd. - Reply Letter for Permit To Take Water

✂ Paul,

This note is in response to your draft letter of November 5, 2002, to Nichols Gravel Ltd, that you sent to our MNR office for review.

The following is a list of points that our MNR office considers important to be included in the letter to Nichols. These points relate to the facts of the issues at hand, and interrelate with our MNR investigation and the licensing procedure ongoing with Nichols:

- 1) Present exactly what your inspectors witnessed at the site on the day of Sept.5, 2002. They were also told onsite by Gary Nichols that their was pumping of water recently.
- 2) Relate to former letters where Nichols advised the MOE that he was going to start pumping water for an irrigation pond. The guy admitted in writing that he was going to start pumping. (March 6, 2002 letter to MPP - your office was sent a cc)
- 3) Stress immediate need for the PTTW Permit - Your Ministry knows he has pumped water and is in the water table as pointed out on the Mining MNR site plans.
- 4) Deal with the future processing points of the Permit. Outline in steps what studies or factors Nichols has to do for the Permit.
(ie. Hydrogeology Study)
- ✂ 5) Don't deal with the untrue statements in the application. Nichols is constantly snowballing Ministry staff (MOE and ? MNR) in order to justify his illegal proceedings.

✂ The largest aspect our MNR Ministry would like to see is that the Permit continue to be processed in a pro-active and a ? constructive manner.

Thank you for the opportunity to provide comments.

Regards,

✂ Paul Cutmore
Aylmer MNR Office

✂ CONSPIRACY?

BY MNR + MOE TO ISSUANCE OF THE MOE PERMIT TO TAKE
WATER WITH 24 "PRE" DEWATERING CONDITIONS A PERMIT
WHICH PERMITS NOTHING COMPARABLE TO THE MNR MARCH 31/03
LETTER IMPOSING 13 SPECIFIC PRE OPERATING CONDITIONS,
FRAUD!

Is this Nichols

Ontario

Ministry of Natural Resources
Ministère des Richesses naturelles

53 Talbot Street West
Aylmer West, Ontario
N5H 2S8
(519) 773-4747

Registered Mail

* November 13, 2002

Nichols Gravel Limited
P.O. Box 172,
Delhi, Ontario, N4B 2W9.

Attention: Mr. Gary Nichols

Dear Sir,

* Subject: OMB Case No. PL990656 – Nichols Gravel Ltd.

This letter is written in order to provide your company with an update as to the status of your Aggregate Licence application for the property located on Pt. Lots 10, 11, and 12, Concession 12, in the Geographical Township of Walpole.

Apart from the ongoing investigation into the allegation of your company operating an illegal quarry, I am working with the OMB and MOE to clarify the situation with respect to the sequence of the Aggregate Licence and Permit to Take Water approvals that you require. I have submitted a proposal to the OMB that I believe is technically workable and would permit MNR to proceed with the issuance of the Aggregate Licence.

* In anticipation of the imminent issuance of the Aggregate Licence, I would like to inform you of some key matters and Licence Conditions you must satisfy, that is a requirement of the Licencee, and prior to commencing extraction operations on the property. These key items are: ?

- 1) The site plans for the property require final approval. If there is new information pertaining to the site plan (ie. drilling or groundwater data) that has not been included, then this information should be reviewed by the MNR office. Any new information may have an effect on fulfilling the Conditions related to the Aggregate Licence.
- 2) Obtaining the surface and ground water Permit To Take Water approvals from MOE. These approvals usually take several months to acquire and could involve background water monitoring information. Depending on the information involved with these Permits, an actual Permit may be required to any extraction allowed on the property.
- 3) A Spill Contingency Program should be developed prior to site preparation. * DONE ? D.I.N. MAY 2002
- 4) A Certificate of Approval will be required for the discharge system should water be discharged off site.
- 5) A Certificate of Approval will be required for the processing equipment to be used on site * NOT REQUIRED
- 6) A blasting monitoring system will be set up and utilized for all ground vibrations and blasting overpressure. Records of all blasting operations will be forwarded to the MNR and all blasting reports should contain information as recommended by MOE. * DONE 20 AUG. D.I.N.

(2)

- 7) All residents within 300 metres of the edge of the extraction area shall be thoroughly inspected by the licensee consultant prior to the start of quarry blasting operations. *** COMPLETED APRIL 15/2000**
- 8) The first six quarry blasts shall be monitored for both vibration and over-pressure (noise) at a minimum of four locations for each blast in order to accumulate site-specific data quickly. The monitoring results and the consultant's analysis and recommendations shall be submitted to the local offices of MNR and MOE. *** COMPLETED AUG. 7/2000**
- 9) Residents within 300 metres of the quarry site, which will be thoroughly inspected in accordance with the recommendations of the licensee's consultant, shall be re-examined following the initial six blasting operations. Should the blasting cause any damage, as determined by the licensee's consultant, the licensee at his expense will repair it. *** COMPLETED**
- 10) The licensee will provide for the installation of monitoring well nests with up-gradient, down-gradient, and cross-gradient wells at the top of the Bois Blanc Formation, to the base of the Bois Blanc Formation, and into the Bertie Formation at the property boundaries.
- 11) All on-site monitoring well nests shall be fitted with electronic water level monitoring equipment.
- 12) After the quarry licence is issued, the water monitoring consultant will commence, with the permission of the property owner, monitoring of all water wells within 120 metres of the quarry boundary, and the wells presently owned by D. Wilson, D. Greenfield and M. Roulston. Also, baseline water quality sampling of the water wells within the 120 metre monitoring radius and the above three noted wells will be required. *** COMPLETED JULY 18/03**
- 13) External berming will be constructed around the quarry to prevent any surface water spillage into the quarry, any surface water collected external to the quarry shall be directed to its existing outlet.
- 14) The licensee will obtain any required approvals, pursuant to the provisions of the Drainage Act, for discharge of water to the Harrop Drain.
- 15) The site plans should be amended to provide for an access of sufficient width and clearance along the eastern property line, to ensure the ability of a vehicle to access and maintain the existing gas well and infrastructure shown on the site plans. *** COMPLETED MAY 25/2000**

Since these Conditions are very numerous and technically involved I am available to discuss the full extent of your obligations pertaining to the Aggregate Licence. Please give me a call at (519) 773-4747. ?

*** NO LICENCE ISSUED TO THIS DATE. L.L.N.**

Yours truly;

Paul G. Cutmore
*** Paul G. Cutmore**
 Aggregate Resources Inspector, Aylmer District

c.c. Gary Zacher - Acting Enforcement Supervisor

Ministry of the
Environment

Legal Services
Ontario Municipal
Board

655 Bay St Suite 1500
Toronto ON M5G 1E5
Tel (416) 326-6800
Fax (416) 326-5370

Ministère du
Procureur général

Services juridiques
Commission des affaires
municipales de l'Ontario

655 rue Bay Bureau 1500
Toronto ON M5G 1E5
Tél (416) 326-6800
Télé (416) 326-5370

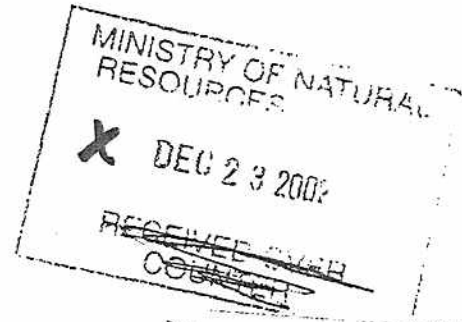


December 18, 2002

Mr. Paul G. Cutmore
Aggregate Resources Inspector
Ministry of Natural Resources
Aylmer District
Aylmer, ON N5H 2S5

Dear Mr. Cutmore:

RE: OMB Case Number: PL990656
OMB File Numbers: Z990094 and M000002
Nichols Gravel Ltd.
Former City of Nanticoke



MR. CUTMORE'S
RESPONSE: MARCH 2002
LETTER DIRECTING
23 SPECIFIC PRE OPERAT-
IONAL CONDITIONS
IMPOSSIBLE TO COMPLETE
WITHOUT OPERATION
OF A QUARRY
A.I.N.

I have been asked to respond to your letter dated October 21, 2002 to Joanne Hayes, Senior Case Manager at the Ontario Municipal Board (the "Board"), in which reference is made to the specifically enumerated condition, that is, condition "1" in the Board's Decision/Order No: 1194 (the "Order") that issued on July 25, 2001.

It is understood that on or about February 6, 2002 Mr. Andy Dawang of the Board's staff provided what purported to be a "clarification" of the Order to indicate that the Board required Nichols Gravel Limited ("Nichols") to obtain a long-term Water Taking Permit (the "Permit") issued by the Ministry of the Environment ("MOE") prior to the issuance of a licence to extract aggregates to Nichols.

In the imposition of conditions on a licence that the Board directs the Minister of Natural Resources to issue under the provisions of the *Aggregate Resources Act*, it is my position, as counsel to the Board, that the Board does not intend that any condition imposed by it be incapable of being fulfilled by reason that a "technical impossibility" makes compliance with the conditions impossible or for any other reason that makes compliance with the Order impossible.

It is understood that, in this case, MOE will not issue, and will not consider the issuance of a Permit, until such time as Nichols will have extracted aggregates to a level to the water table.

An interpretation of condition "1" that requires Nichols to have obtained the Permit prior to the issuance of a licence that would allow Nichols to extract aggregates from the subject site cannot reasonably be applied in this case where Nichols cannot obtain the requisite Permit until such time as Nichols will have extracted aggregates to the level of the water table.

000065

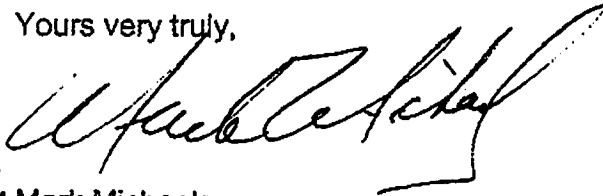
13³

X Mr. Paul G. Cutmore
December 18, 2002 – Page 2

- X Accordingly, in order to give effect to the Order and the Board's having directed the issuance of a licence, condition "1" of the Order provides that the licence is to be issued (provided that all other conditions have been or are being fulfilled) subject to the requirement that, at the point where the water table is reached, Nichols is required to seek and obtain the Permit prior to Nichols' continuing any further extraction.

If you have any further questions, please contact the undersigned at your convenience.

Yours very truly,



X Mark Michaels
Counsel

X cc: Mr. Paul Odom, MOE

letters:cutmorenichols

17. July 24, 2003, M.N.R. threatening letters to Quarry Contractors.
18. October 1, 2003, M.N.R. Revised Notice of Suspension M.N.R., Emilia Kuisma.
19. October 2, 2003, Statement of Claim and Affidavit, September 3, 2003 for damages against the Crown.
20. October 6, 2003, More M.N.R. charges.
21. October 14, 2003 Letter to M.N.R. from Solicitor Osier.
22. October 20, 2003, Letter to M.N.R. assistant Deputy Minister.
23. December 12, 2003, Letter to M.N.R. Aylmer District Manager, Alec Denys.
24. December 12, 2003, Letter from M.N.R. Alec Denys.

X Licence Application
Issuance/Refusal Matters to be Considered by the Minister
under Section 12(a-k) of the Aggregate Resources Act

X Applicant: Nichols Gravel Limited

Address: Box 172
Delhi, Ontario
N4B 2W9

X Property Description: Part of Lots 10, 11, & 12, Concession 12
Geographic Township of Walpole, Haldimand County

X Matters to be Considered:

(a) Effect of the operation on the environment

The property has farm and residential buildings located on site. Rural and farm residences exist adjacent to the north, east and south boundaries of the property. Natural Environmental Level 1 and 2 Studies were completed and two significant features, namely a significant deciduous woodlot and a warm water stream system were identified as Provincially Significant. The deciduous woodlot, which encroaches into the southwest corner of the property, would be protected by an increased extraction setback and eventually extended through final rehabilitation measures. The warm water fish stream, known as Sandusk Creek and its two tributaries located in the north-west and south-east areas of the property, will not be significantly effected, as there will be an additional pond feature and an increase in surface water to increase the ecological diversity in the local area.

Hydrological Level 1 and 2 Studies were completed and it was concluded that the majority of water well users would not be effected by the underwater quarry operation. Only four residents will experience a significant decline in water levels over the fifty-year existence of the quarry. A detailed water monitoring program has been established, with the Licencee being held responsible for the remediation of any lowered water levels.

(b) The effect of the operation of the pit on nearby communities

This property is situated in an agricultural/rural residential setting almost 1.8 kilometres southwest of the Town of Hagersville. Quarry operations have been involved with the local community for the past fifty years. No significant concerns have been identified for the local urban area.

(c) Municipal comments in which the site was located

The property is appropriately designated in order to allow aggregate extraction, according to the City of Nanticoke's Official Plan dated November 1998. The local land use zoning for the property was Agricultural (A). As a zoning amendment was required, the applicant submitted an application to change the land use to Extractive Industrial (MX). The zoning amendment was objected to by local residents, and in turn, the Municipality refused the application due to the development being "incompatible with surrounding land uses and water impact worries". The applicant appealed the Municipality's decision to the Ontario Municipal Board.

The initial licence application concerns of the Municipality involved a proper stormwater drainage plan, blasting effects to residents in Hagersville, and entrance approval. The Municipality's concerns have been resolved through amendment of the site plan.

The Ontario Municipal Board ruled approval of the appealed zoning amendment on July 25, 2001. In a letter dated January 6, 2003, the Haldimand County Planning and Development Manager, advised that the County had passed Zoning By-Law # 95-HC-02 to implement the appropriate extraction zoning on the property (ie. Industrial Extractive - MX).

d) Suitability of progressive and final rehabilitation plans

The proposed final rehabilitation land use for the property involves an area of ponds/wetlands at 52.3 Ha., and a smaller area of agricultural pastureland at 10.6 Ha., for a total rehabilitated area of 62.9 Ha.. These land uses will be compatible with the surrounding agricultural land uses and the previous worked quarry lake areas. The final elevation of the water bodies will be 215 m. ASL.

(e) Possible effects on ground and surface water resources

Maximum depth of extraction will range from 206 m. to 203 m. ASL. (ie north to south). The water table elevation ranges from 217 m. to 214 m. (ie. north to south). The average underwater extraction depth of material will be 11.0 m. After the quarry dewatering, the final pond elevation will be re-established at 215 m. ASL. The applicant is required to obtain from MOE a Permit to Take Water for ground water, surface water, and long term dewatering purposes.

(e) Possible effects on ground and surface water resources (Cont.)

Water level monitoring is required for the groundwater level, and also, to monitor surface water discharged into the main drainageway, known as the Harrop Municipal Drain. A water sample program is also to be carried out during quarry dewatering operations to analyse the water quality parameters. Extraction will take place below the watertable with no foreseeable impacts on the quantity or quality, as long as all of the prescribed operating practices and monitoring preventative measures are followed.

f) Any effects on agricultural resources

Approximately two-third's of the area of the property will be extracted below the watertable and rehabilitated to a wetland / pond environment. The Canada Land Inventory mapping classed the property as 2D, 3D, and 3W/D. The local County Soils Capability mapping indicated the area to have heavy lacustrine clays, with poor drainage characteristics. OMAFRA advised in a letter dated October 13, 1999 that the application has regard for Section 2.2.3.6. of the PPS. Basically, eighty-five percent of the resources base for the property was below the water table.

(g) Any planning or land use considerations

Due to the final Decision of the Ontario Municipal Board on July 25, 2001, the Zoning By-Law # 95-HC-02 is in full force and effect, to implement the extractive land use zone for the property. The combined rehabilitated land use of wetlands/ponds and agricultural pasturelands will be compatible with the adjacent agricultural land uses.

(h) Main haulage routes and proposed truck traffic to and from the site

Regional Road #9 along the north boundary and Concession Road #11 along the south boundary, provide the main access to the property. The main entrance will be on the north boundary on Regional Road #9, which is considered to be a "collector road". The projected truck traffic will be split fifty percent east and west onto Regional Road #9.

(i) Quantity and quality of aggregates on the site

The property is situated on the Haldimand Clay Plain that includes little or no surficial sand and gravel material. The aggregate potential of the property lies within the Paleozoic bedrock resources underlying the clay plain.

(i) Quantity and quality of aggregates on the site (Cont.)

A re-evaluation of the bedrock resources on June 24, 1998, by the MNR Regional Geoscientist established that the property had significant bedrock resources. Generally the clay overburden is less than 5 meters thick, which overlies 1 to 3 meters of shaley Onongaga Formation Limestone, then approximately 8 meters of shaley cherty Bois Blanc Formation Limestone, and finally, Sandstones of the Oriskany Formation. The Bois Blanc bedrock is suitable for road building aggregates, but not suitable for concrete or asphalt aggregates. Further down, the entire area is underlain by high quality dolostones of the Bertie Formation, which is the highest quality bedrock in the area and is suitable for concrete and aggregate. Due to previous water well problems with other quarries mining in the Bertie Formation, the site plans for this property forbids mining in the Bertie Formation.

The maximum tonnage extraction allowed per year is 750,000 tonnes. The quantity factors are 3.4 million tonnes of Onondaga limestone and 13.1 million tonnes of Bois Blanc limestone.

X (j) Applicant's History of Compliance

The licensee has four existing Aggregate licences within Brant and Norfolk Counties, involving sand and gravel operations. The history of compliance for these operations has been quite good over the past twenty-five years. There have been no suspensions or charges laid in connection with these operations. ?

Although there are no problems existing with this applicant's current licenced operations, MNR Aylmer District has concerns with the current licence application. The OMB Decision for this application required the applicant to first obtain approval from MOE for a Permit to Take Water before MNR could issue the Aggregate Licence. While MNR staff was working to resolve this problem, the applicant proceeded to start blasting, quarrying, and crushing rock on the property during the month of June 2002. The commencement of this unlicensed quarry operation drew many complaints from the local residents. MNR staff started enforcement proceedings and gathering evidence on the illegal operation. The applicant during the fall of 2002 produced in excess of 50,000 tonnes of crushed material and removed it off the site without a licence. 10,000 ?

X The Aylmer District is in the process of laying charges for operating without a licence, and obstruction for the refusal to allow Inspectors to audit documents and records related to the unlicensed operation. ?

.....5

X (j) Applicant's History of Compliance (Cont.)

Compounding the illegal operation problem, is the matter of the applicant proceeding without the many environmental monitoring and abatement measures that were required prior to the extraction of material. These involved an in-depth Hydrogeological analysis of the area for the Permit to Take Water, trial blasting and monitoring measures, and a water well monitoring program. A total of fifteen licence conditions were required to be filled prior to any extraction occurring on the site.

Many discussions have taken place with area residents involved in an anti-aggregate coalition group and staff from the local Municipality. At the request of MNR for a review of the OMB decision and after considerable deliberation, a decision from the Minister of the Attorney General's office was rendered (on December 18, 2002) to permit the issuance of the Aggregate Licence.

X (k) Other matters considered appropriate

Even though the application appears unfavourable, MNR staff feel that there would be more enforceable advantages with the situation if the property was actually licenced. If the property was licenced, enforceable tools would include fifty-six licence conditions and the licence site plans. Without the licence, the enforceable tools would only involve the unlicensed Sections of the Aggregate Resources Act. The preventative and environmental parameters involved in the conditions and site plans would not be enforceable.

Considering the total lack of extraction preparation measuring that the applicant has not completed, according to the licence conditions, MNR staff will be suspending the Aggregate Licence shortly after the applicant receives the licence. It will remain suspended until all of the preparatory conditions have been fulfilled.

X Paul G. Cutmore
Aggregate Resource Officer
Aylmer District

X January 30, 2003 ✓
CONSPIRED PLAN
2 MONTHS PRIOR
TO ISSUANCE OF
THE LICENCE.
X LICENCE CONDITIONS
ONLY APPLY AFTER
THE LICENCE IS
ISSUED. A.I.N.



Ministry of Ministère des
Natural Richesses
Resources naturelles

Ontario

2

353 Talbot Street West
Aylmer West, Ontario
N5H 2S8
(519)773-4747

Registered Mail

X February 14, 2003

Nichols Gravel Limited
P.O. Box 172,
Delhi, Ontario, N4B 2W9

X Attention: Mr. Gary Nichols

Dear Sir,

**Re: Issuance of Aggregate Licence for Property Located on:
Part of Lots 10-12, Concession 12, County of Haldimand (Walpole)**

This letter is in response to your letter of February 5, 2003, regarding the issuance of the Aggregate Licence as per your application under the Aggregate Resources Act.

Following the submission of your complete application for an Aggregate Licence and as per the direction of the Ontario Board Decision on July 25, 2001, the Aylmer District office has submitted the Aggregate Licence to the Minister of Natural Resource's office for final signature and approval. Once successfully approved, our Aylmer District office will be issuing an Aggregate Licence for the subject property. As you were previously informed, our Ministry received clarification on the OMB Decision, and approval to issue the Aggregate Licence prior to the issuance of the Permit to Take Water by the Ministry of the Environment.

Once you have received the Aggregate Licence, if you prefer not to continue with the Licence, it will have to be surrendered, and any required rehabilitation work conducted on the property.

Yours truly,

X Paul G. Cutmore
Aggregate Resources Inspector
Aylmer District, Ministry of Natural Resources.

Harrington and Hoyle Ltd.

LANDSCAPE ARCHITECTS

91 Anderson Avenue, Unit #2
Markham, Ontario. L6E 1A5

Telephone: (905) 294-8282

Fax: (905) 294-7623

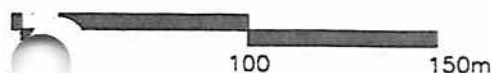
Offices in Markham and Cambridge

Name

NICHOLS GRAVEL LIMITED LAGERSVILLE QUARRY

PART OF LOTS 10, 11, 12, CONCESSION 12
CITY OF NANTICOKE (FORMERLY WALPOLE TOWNSHIP)
REGIONAL MUNICIPALITY OF HALDIMAND-NORFOLK

10



Status

**ISSUED FOR
LICENCE**

North



Stamp



Checked

B.J.

Issue Date

MAR.1999

Project Number

98-24

Title

**EXISTING
FEATURES**

Drawing Number

1 OF 4

Recent Drawing Revisions

G	DATE
	MARCH 1999
	MAR 2002
	MAR 2002
	MAY 2001

MINISTRY OF NATURAL
RESOURCES
AYLMER
DISTRICT

SITE PLANS
APPROVED

UNDER THE AGGREGATE
RESOURCES ACT

[Signature]
AREA SUPERVISOR

DATE Feb. 14/03

X

*

A

X EXPLANATORY NOTE TO ACCOMPANY DOCUMENTS FOR SIGNING

Title: Licence Under Aggregate Resources Act RS # 103717

X Source of Legal Authority to Sign:

Under Section 11(9) of the Aggregate Resources Act, the Minister shall decide whether to issue a new licence.

Background/Explanation of Document Development:

On March 5, 1999, Nichols Gravel Limited made application for a Class A Category 2 licence to operate a quarry under the Aggregate Resources Act, on Part of Lots 10 to 12, Concession 12, (formerly Geographic Township of Walpole), Haldimand County.

The last day for objections was October 15, 1999. There were seventy-one (71) letters of objection received from residents, and seven (7) letters of objection/concern received from agencies/Ministries, during the forty-five (45) day notification period. In an attempt to resolve the objections, the applicant's consultant forwarded each objector a 20-day letter in accordance with Sections 4.3.3.1 and 4.3.3.2 of the Operational Standards. There were sixty-five (65) letters from residents, and four (4) letters from agencies/Ministries received in response to the 20-day letter indicating that they wanted their objections to stand.

In a letter dated January 7, 2000, from Alec Denys, District Manager, Aylmer District, the Ministry referred the application to the Ontario Municipal Board in accordance with Sections 11(5) and 11(8) of the Aggregate Resources Act and requested that a hearing be held. The Ontario Municipal Board held a pre-hearing on July 12, 2000, with the main hearing being held on October 23, 2000, and with a final decision made on July 25, 2001.

In Ontario Municipal Board Decision No. 1194 dated July 25, 2001, the Board ordered the following:

- The appeal by Nichols Gravel Limited to amend Zoning By-Law #1-NA86 of the City of Nanticoke is allowed and Zoning By-Law #1-NA86 is hereby amended. (The compliance of the application with the local Official Plan was established at a previous pre-hearing session).
- The Board, having had regards for the matters in Section 12(1) of the Aggregates Resources Act, directs the Minister (pursuant to Section 11(8) of the Act) to issue a licence subject to the prescribed conditions, along with additional conditions specified in the Attachment to the decision. The licence is to be a Class A, Category 2 Licence to extract up to 750,000 tonnes annually.

(2)

Attached to this "Explanatory Note" is a copy of the "Issuance/Refusal Matters to be Considered by the Minister", under Section 12(a-k) of the Aggregate Resources Act. The "Note" includes eleven sections that analyze various operational and environmental factors involved in the licence application. In this "Note" specific notice should be given to the last two items involving the "Applicant's History of Compliance" and "Other Matters Considered Appropriate".

Following the release of the Decision by the OMB on July 25, 2001, a problem existed with the wording of the Conditions involved in the document. For over a year the MNR and MOE worked on resolving the problem, until the Ministry of the Attorney General's office rendered a final decision on December 18, 2002.

Since all legal obligations under the Aggregate Resources Act have now been met, we recommend the issuance of a new licence. This licence is subject to a total of fifty-six (56) conditions as set out in Schedules A & B, which includes the standard prescribed conditions. Two copies of the licence are attached for the Minister's signature.

X Return Signed Document To:

X Alec Denys,
District Manager, Aylmer District

Contact:

X Paul G. Cutmore,
Aggregate Resources Inspector, Aylmer District.
(519) 773-4747

X Approvals:

X Alec J. Denys
Alec Denys, District Manager, Aylmer District

Feb 14 03 **X**
Date

X [Signature]
Deputy Minister

Feb 26 2003 **X**
Date

4

Nichols Gravel hdd.

Pl. Lts 10-12, Conc 12, Nanfiche (Haldimand)

Site Inspection on March 10/02? ✓?

- arrived at site at 10:40 pm with S. Humb and Ron Eastman.
- S. Humb went around property took measurements
- myself & R. Eastman went inside work area, & took measurements, while Ron took pictures.
- took measurements of stockpile & quarry area
- noticed some new berm work and expanded stripped area.
- one main stockpile of 5/8" Crusher Run left in property. 40' WIDE x 70' long. (\approx 3-4,000 tonnes).
- no berms around north boundary. (acoustic to be 5m)
 - berms req'd when drilling get within 400m of houses
- * - fencing req'd on north, west, east & south boundaries of phase 1A, 1B & 2, before stripping begins.
- * - road/entrance too close to residence - no room for berm (noise barrier).
- area of quarry material taken out \approx 70-12,000 tonnes
- platted new quarry area.
- * - berms require sloping & seeding
- * - fuel to be stored near scalehouse at per site ph

X MARCH 18/03

X NICHOLS QUARRY

MATERIAL ESTIMATE

- ① Quarry Estimate Taken on March 10/03
(measurements compared to those taken on Sept 5/02)

- Tonnage estimated at 10 → 12,000 tonnes.
* actual value ≈ 8 → 10,000 tonnes

- ② Tonnage Removed.

- Sept 5/02 - Nichols extracting and crushing on that day - reserves of 7 → 8,000 on site in stockpiles.
- Sept 25/02 - roughly $\frac{1}{2}$ → $\frac{2}{3}$ ids of material had been removed from stockpiles. ≈ 5,000
- March 10/03 - 1 large stockpile of material $\frac{1}{2}$ " → $\frac{5}{8}$ " crusher run remained on site ≈ 1 → 2,000

* Estimate is approximate only, as material was added & removed from stockpiles.

* Estimate between 6-8,000 tonnes removed.

- ③ Dollar (\$) Value

- Estimate Hagersville

Crusher Run - \$10-12 / tonne

Clear limestone - \$15-18 / tonne

* Based on 6-8K

① Low \$ Value

@ 6,000 tonnes

\$11 CR / \$16 cl ⇒ \$81,000
(market value)

② High \$ Value

@ 8,000 tonnes

\$11 CR / \$16 cl ⇒ \$108,000
(market value)

③
 X Sat. March 22/03 ?

X Nichols File

- Met with Murray Ralston at 777 Army Camp Road, and also J. Greenwood, C.O. attended at the Ralston residence.
- Ralston lives to the west of the Nichols property, end. off the southerly conc. road.
- Ralston has dates, with video tapes taken from his own property which shows the quarry operating.
- Ralston is going to submit a list of times & events that he remembers about the operation of the quarry.
- Ralston is prepared to act a witness if a court case is involved.
- Ralston also talked about blasting during the April / May months, that gave MWR an idea to investigate possible leads with blasting companies or engineers.

X Pt Curmore

Zacher, Gary (MNR)

X From: Elliott, Dan (MNR)
X Sent: Thursday, March 27, 2003 11:16 AM
To: Cutmore, Paul (MNR); Zacher, Gary (MNR); Greenwood, Jim (MNR)
X Subject: FW: Issuance of Aggregate Resources Licence to Nichols Gravel Limited & Pending ARA Charges

FYI

Dan Elliott
Area Supervisor
Aylmer District
519-773-4720

Original Message
X From: Thatcher, Stuart (MNR)
X Sent: March 27, 2003 11:12 AM
X To: Denys, Alec (MNR)
X Cc: Elliott, Dan (MNR); Messerschmidt, Brian (MNR); Lintell, Krystine (MNR)
X Subject: Issuance of Aggregate Resources Licence to Nichols Gravel Limited & Pending ARA Charges

Alec

s.19

Any questions please call.

X Stuart Thatcher
Senior Policy Advisors, Aggregates
705-755-1286

X F.I. INFO WITHHELD? ✓
S.I.N. X

X F.O.I. REFUSED ↑ ?

JUN 14 2000 10:40 FR 416 326 4181

416 326 4181 TO 919057655144

PAGE 02/02
P.03/03

5

Zacher, Gary (MNR)

From: Elliott, Dan (MNR)
Sent: Thursday, March 27, 2003 11:18 AM
To: Cutmore, Paul (MNR); Zacher, Gary (MNR); Greenwood, Jim (MNR)
Subject: FW: Issuance of Aggregate Resources Licence to Nichols Gravel Limited & Pending ARA Charges

FYI

Dan Elliott
Area Supervisor
Aylmer District
519-773-4720

Original Message

From: Thatcher, Stuart (MNR)
Sent: March 27, 2003 11:12 AM
To: Danya, Alec (MNR)
Cc: Elliott, Dan (MNR); Messerschmidt, Brian (MNR); Lindal, Krystina (MNR)
Subject: Issuance of Aggregate Resources Licence to Nichols Gravel Limited & Pending ARA Charges

X Alec

With respect to the District concerns regarding the issuance of the ARA licence to Nichols and the pending charges against Nichols for operating the quarry without the authority of a licence, please be advised, that the Minister can issue the licence and this will in no way affect the laying of charges that are being contemplated by your enforcement staff and aggregate staff against Nichols.

s.19

In fact, you will be able to use this information in court to demonstrate that Nichols was well aware of the fact that a licence is a prerequisite under the ARA before any extraction/processing etc. could occur on site.

Furthermore, I've discussed this situation with Krystina, who is very familiar with this file and the issues surrounding the OBM and MOE, and she concurs with my opinion.

Any questions please call.

X Stuart Thatcher
Senior Policy Advisor, Aggregates
705-755-1288

X F.O.I. INFO ✓
RELEASED
K.L.W.
X CONFIRMATION TO ?
THE CONSPIRED MNR.
PLAN. A.I.X.



Ministry of Natural Resources
Ministère des Richesses naturelles

Ontario

* THIS COPY CAME
FROM MNR FILES
AYLMER DISTRICT
PHOTO COPIED BY
INSPECTOR EKUSMA.
JULY 8/04. L.H.N.

416

353 Talbot St. W.
Aylmer, Ont.
N5H 2S8
Tel. 519-773-4747
Fax 519-773-9014

Hand Delivered

* Photocopy of
original correspondence
on file @ MNR.
copy made.
July 8/2004.
ek

* March 31, 2003

* Nichols Gravel Limited
Box 172, Delhi,
Ontario, N4B 2W9

* Attention: Mr. Gary Nichols

* Dear Mr. Nichols,

* **SUBJECT: Licence Reference No. 103717 – Aggregate Resources Act
Pt. Lots 10, 11, & 12, Concession 12, Haldimand County (Walpole)**

Please find attached a new Class "A" Category 2 Licence to operate a quarry under the Aggregates Resources Act. ?

The Licence Reference Number is 103717 and the effective date of the Licence is March 25, 2003. The Licence has been issued with a condition that states "the maximum number of tonnes of aggregate to be removed from the site in any calendar year is 750,000 tonnes".

* Please find attached two copies of the approved site plans dated February 14, 2003, which are now in force for your company's licenced property. Please note that "the acceptance of these site plans by the Ministry of Natural Resources for the purposes of the Aggregate Resources Act does not relieve the licensee from complying with the requirements of other applicable Federal or Provincial Acts, Regulations, orders and operative by-laws.

?* { The Licence has been issued subject to a total of fifty-six (56) conditions on the attached Schedules "A" and "B". We have also attached a separate list of ~~conditions~~ ^{twenty-three} of the original fifty-six conditions entitled as "Specific Pre-Operational Conditions", which must be satisfied prior to the operation of the quarry or removal of material from the licenced property. Please contact our office regarding the assistance of completing the involved conditions. (23) ?

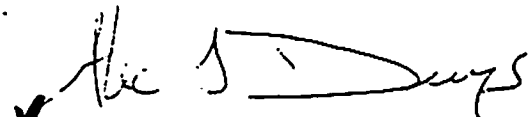
The subject licenced property was inspected on March 10, 2003, in preparation of issuing the licence. Also attached is a short list of infraction items entitled "Licenced

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(2)

Property Infraction Items, that according to your site plans must be satisfied prior to the removal of material from the property.

If you have any further questions regarding these matters, please do not hesitate to contact Paul Cutmore, Aggregate Resources Officer.



x Alec Denys
District Manager

x PGCutmore/Encl.

x c.c Haldimand County – F. Bauthus
Ministry of Transportation – G. Brunskill
Ministry of Labour
TOARC, Burlington - L. Peterson

~~THESE ARE PRESCRIBED CONDITIONS OF PROVINCIAL STATUTES WHICH CANNOT BE CHANGED BY ANYONE TO~~ ~~TOTALLY UNLAWFUL TO THIS ENFORCEMENT: A.H.C. ?~~

~~X~~ Specific Pre-Operational Conditions
Nichols Gravel Limited - Licence No. 102717

~~X~~ March 31, 2003 ?

~~➤~~ The following licence conditions must be satisfactorily completed prior to the commencement of quarry operations or the removal of quarried material from the licenced property. The condition numbers relate exactly to the list attached to the licence: ??

- 5. A Spills Contingency Program will be developed prior to site preparation.
- 7. If required, a Certificate of Approval will be obtained for the discharge system should water be discharged off site.
- 8. If required, a Certificate of Approval will be obtained for processing equipment to be used on site.
- 9. If required, a Permit to Take Water will be obtained for utilizing ground and/or surface water.
- 10. The licensee will monitor all blasts for ground vibrations and blast overpressure and will operate to ensure compliance with current provincial guidelines.
- 12. All blast monitoring reports must be retained by the licensee and made available upon request by the Ministry of Natural Resources for audit purposes.
- 14. All residences within 300 metres of the edge of the extraction area shall be thoroughly inspected by the licensee's consultant prior to the start of quarry blasting operations (with the owners permission)- It is recommended that as extraction proceeds north in Area 1A, that the closest homes (Identified as R1, R2 and R3 on the site plans) be checked within the first five years of operation and that additional checks be phased in for other homes on the perimeter of the site.
- 15. The first six quarry blasts shall be monitored for both vibration and over pressure (noise) at a minimum of four locations for each blast in order to accumulate site-specific data quickly. This data will be used to plan subsequent blasting operations. This will also allow- subsequent blasts to be designed specifically for this location air well within MOE Guidelines.. All subsequent blasts shall be monitored at the closest buildings to the blast size with at least two seismographs.
- 17. Careful blast records shall be maintained. The body of the blast, report should contain the information as recommended by MOE.
- 20. The monitoring results of the first six quarry blasts monitored at a minimum of 4 locations in accordance with the recommendations of the Licensee's consultant, along with the consultant's analysis and recommendations, shall be submitted to the local offices of MNR and MOE.

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- ✓ 25. Residents within 300 metres of the quarry site, which will have been thoroughly inspected in accordance with the recommendations of the Licensee's consultant, shall be re-examined following the initial six blasting operations. Copies of the original examination records and of the re-examination results shall be submitted to the property owner concerned.
27. The licensee will provide for the installation of monitoring well nests with upgradient, downgradient, and cross-gradient wells at the top of the Bois Blanc Formation, to the base of the Bois Blanc Formation and into the Bertie Formation at the property boundaries. It is expected that BH-1, BH-2, and the Barn well could be incorporated as part of the three well nests. These wells and new well locations would have to be accessed and instrumented so that they monitor discreet zones within the underlying bedrock
- ✓ 29. Upon issuance of the quarry license, the licensee's consultant will commence, with the permission of the property owner, monitoring of all water wells within 120 m of the quarry property boundary, and the wells presently owned by D. Wilson, D. Greenfield and M. Roulston. This radius is based on the projected water level drawdown of 3.0 m in the vicinity of the quarry after 25 years of quarry operation - base case scenario. Water level monitoring will be conducted three times a year. As the life of the quarry proceeds, and the data is collected and evaluated over time, the adequacy and requirement for this extent of monitoring shall be reviewed in the annual report.
- ✓ 37. All crushing and screening shall be done in the central processing area with the processing plant at the pit floor, elevation not more than 206m a.s.l. acoustical screening should be in place as specified whenever a crushing/screening plant is operating. The screening shall be in the form of stockpiles, berms, a quarry face, other barrier.
- ✓ 38. If processing is required during the start-up phase before the C.P.A on the pit floor has been prepared, an interim crushing/screening plant may be installed at an intermediate elevation, as low as practical, with a face and berm or other form of barrier not less than 7m above the crusher floor level and not more than 15m from the crusher in an arc from the southwest to southeast.
45. The licensee shall conduct surface water monitoring of quarry discharges to the Harrop Drain. The Licensee's consultant will conduct quarterly flow monitoring of the Harrop Drain upstream of the site, at the site, and downstream of the site. At a minimum one quarterly monitoring event will coincide with the wet season (early spring). Water quality monitoring of the Harrop Drain will be undertaken by the licensee's consultant, upstream of the site, at the site, and downstream of the site

OK

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45. (Cont.) once per year. The following parameters will be monitored pH, conductivity, alkalinity, calcium, magnesium, sodium, potassium, chloride, sulphate, nitrate, nitrite, un-ionized ammonia, iron, manganese, copper, zinc, orthophosphate, silica, turbidity, total suspended solids, dissolved organic carbon, hardness, and oil and grease.

- ✓ 49. The licensee will ensure that the internal water collection system within the quarry will incorporate component storage for groundwater and surface runoff. The surface runoff internal to the quarry will be designed such that internal quarrying, buildings/roads, and actively used areas be set above and outside of the limits of flooding.
- ✓ 50. External berming will be constructed around the quarry to prevent any surface water spillage into the quarry, any surface water collected external to the quarry be directed to its existing outlet.
- ✓ 51. The licensee will ensure that water polishing measures will be incorporated into the internal collection system, in order that sediment and fines from the quarrying operation are settled out prior to discharge to the Harrop Drain.
- ✓ 52. The licensee will ensure that the stormwater holding system be designed such that sufficient capacity is provided to hold a 100 year storm with zero discharge. The dewatering rate (due to any combination of groundwater and stormwater inflows) is not to exceed the peak flow rate which would naturally emanate from the subject property during a 25mm depth 24 hour rainfall event under existing land use.
- 53. The Licensee will obtain any required approvals, pursuant to the provisions of the Drainage Act, for discharge of water to the Harrop Drain.
- 55. All berms shall be graded smooth to a stable (2:1) slope and seeded to prevent erosion and to reduce dust. Wherever possible suitable plants be established such as Crown Vetch (*Coronilla varia*) or other suitable seed mixtures to promote a deep root system and enhance soil structure. Seed mixture may be modified due to availability and soil structure. Any seed mixture shall be designed to limit the propagation of weed species onto adjacent agricultural lands. All vegetation shall be maintained in a healthy, vigorous growing condition for the lifetime of the license.

X Nichols Gravel Limited – Licence No. 103717
Licensed Property / Site Plan Infraction Items

X March 31, 2003

OK 6

X An Inspection of your licenced property was conducted on March 10, 2003. **?**
According to the accompanying site plans the following items require improvement or correction prior to commencing quarrying operations or removal of material from the property:

- ✓ 1) Perimeter fencing is required around Phase 1a, 1b and 2, as detailed on the site plan. **?**
- 2) The interim berms surrounding the quarry area required sloping and seeding, in order to reduce dust in the local area. Interim berm height should be higher as per site plan details (minimum 6m above bedrock floor). **?**
- ✓ 3) The fuel tank existing in the quarry area should be relocated near the scale house as specified in the site plan. **?**
- 4) The roadway entrance and weigh scales should be moved eastward of the existing location, as an acoustic berm is required along the boundary of the adjacent farm residence. **?**



Ministry of Natural Resources
Ministère des Richesses naturelles

LICENCE
Aggregate Resources Act

PERMIS
Loi sur les ressources en agrégats

1711 copy of licence
at MNR. CH/Original
Copy made on July 8/2001.

Licence No.
No du permis

103717

New Licence

Pursuant to the Aggregate Resources Act and Regulations thereunder, and subject to the limitations thereof and to the conditions of the licence and the requirements of the site plan,

Conformément à la Loi de 1997 sur les ressources en agrégats et à ses règlements, et sujet aux restrictions qu'ils comportent, aux conditions d'octroi du permis et aux exigences du plan du site,

this Class
nous délivrons ce permis de classe: A licence is issued to:
à:

NICHOLS GRAVEL LIMITED
BOX 172
DELHI, ON
CANADA
N4B 2W9

to operate a pour exploiter un/une	<u>Quarry</u>	on a sur le terrain de	<u>93.97</u>	hectare site located in: hectares situé à l'endroit suivant:
<u>10, 11, & 12</u>	<u>12</u>	<u>WALPOLE</u>	<u>HALDIMAND COUNTY</u>	<u>HALDIMAND-NORFOLK R</u>
Lot	Concession	Section	Geographic Township	Local Municipality
				County / Regional Municipality / District

The licence is subject to the following conditions:

Ce permis est assujéti aux conditions suivantes: As shown on attached Schedules "A" & "B",

Effective the 10th day of July

Minister of Natural Resources
Ministre des Richesses naturelles

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X SCHEDULE "A"

X PRESCRIBED CONDITIONS FOR LICENCE NO. 103717

1. Dust will be mitigated on site.
2. Water or another provincially approved dust suppressant will be applied to internal haul roads and processing areas as often as required to mitigate dust.
3. Processing equipment will be equipped with dust suppressing or collection devices, where the equipment creates dust and is being operated within 300 metres of a sensitive receptor.
4. Any recommendations and/or recommended monitoring program identified in the technical reports will be described on the site plan and all records will be retained by the licensee and made available upon request by the Ministry of Natural Resources for audit purposes.
5. A Spills Contingency Program will be developed prior to site preparation.
6. Fuel storage tanks will be installed and maintained in accordance with the Gasoline Handling Act.
7. If required, a Certificate of Approval will be obtained for the discharge system should water be discharged off site.
8. If required, a Certificate of Approval will be obtained for processing equipment to be used on site.
9. If required, a Permit to Take Water will be obtained for utilizing ground and/or surface water.
10. The licensee will monitor all blasts for ground vibrations and blast overpressure and will operate to ensure compliance with current provincial guidelines.
11. Blasting will not occur on a holiday or between the hours of 6 p.m. on any day and 8 a.m. on the following day.
12. All blast monitoring reports must be retained by the licensee and made available upon request by the Ministry of Natural Resources for audit purposes.

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X SCHEDULE "B"

ADDITIONAL CONDITIONS FOR LICENCE NO. 103717

13. During the quarry dewatering operations for the proposed Nichols Quarry (on part of Lots 10 - 12, Concession 12, City of Nanticoke) the licensee shall implement the appropriate measures to maintain the current water levels (subject to natural, seasonal and climatic variations) in the ponds which occupy the mined out quarries to the north and east of the proposed quarry, subject to the permission of the owners of the ponds.

The licensee shall only be responsible for remediating significant reductions in pond levels that are caused by his quarry dewatering activities, and shall not be responsible for remediating any reductions in pond water levels caused by other factors beyond the control of the licensee (e.g. climatic variations, pond dewatering done by the owners of the ponds, etc). A reduction in water levels in any of the ponds of 0.3 metres or more (from their current levels) shall be considered a significant reduction.

14. All residences within 300 metres of the edge of the extraction area shall be thoroughly inspected by the licensee's consultant prior to the start of quarry blasting operations (with the owners permission). It is recommended that as extraction proceeds north in Area IA, that the closest homes (identified as RI, R2 and R3 on the site plans) be checked within the first five years of operation and that additional checks be phased in for other homes on the perimeter of the site.
15. The first six quarry blasts shall be monitored for both vibration and over pressure (noise) at a minimum of four locations for each blast in-order to accumulate site-specific data quickly. This data will be used to plan subsequent blasting operations. This will also allow subsequent blasts to be designed specifically for this location air well within MOE Guidelines. All subsequent blasts shall be monitored at the closest buildings to the blast size with at least two seismographs.
16. The seismographs shall be self triggering units capable of printing a complete wave form for blast over pressure and blast vibrations in three orthogonal directions (InstanTel DS 477/677 or equivalent).
17. Careful blast records shall be maintained. The body of the blast report should contain the information as recommended by MOE.
18. Only clean, clear crushed stone shall be used for stemming. If warranted, stemtite plugs may be used to reduce noise impact on surrounding residences and buildings.
19. Blasting procedures such as drilling and loading shall be monitored annually by an independent blasting consultant.

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X ADDITIONAL CONDITIONS FOR LICENCE NO. 103717 - SCHEDULE "B"

20. The monitoring results of the first six quarry blasts monitored at a minimum of 4 locations in accordance with the recommendations of the Licensee's consultant, along with the consultant's analysis and recommendations, shall be submitted to the local offices of MNR and MOE.
21. The monitoring results of on-going production blasts monitored with at least two seismograph/sound metre combinations in accordance with the recommendations of the Licensee's consultant shall likewise be submitted to the local offices of the MNR and MOE.
22. Wherever possible, blasting shall be carried out at approximately the same time of day.
23. Blast preparation and detonation during unsuitable weather conditions, i.e. those known to be conducive to the production of excessive overpressure, shall be avoided whenever practicable. These include temperature inversion; low and/or heavy cloud ceiling and high wind velocity.
24. The occupants of any building housing ultra-sensitive equipment for manufacturing or other purposes shall, upon request, be provided 4 hours pre-notice and notified of the imminence of any blasting operation so that the operation of such equipment may be temporarily suspended during the blast detonation to avoid disruption by ground vibration.
25. Residents within 300 metres of the quarry site, which will have been thoroughly inspected in accordance with the recommendations of the Licensee's consultant, shall be re-examined following the initial six blasting operations. Copies of the original examination records and of the re-examination results shall be submitted to the property owner concerned.
26. Should blasting cause any damage, as determined by the licensee's consultant, the licensee at his expense will repair it.
27. The licensee will provide for the installation of monitoring well nests with upgradient, downgradient, and cross-gradient wells at the top of the Bois Blanc Formation, to the base of the Bois Blanc Formation and into the Bertie Formation at the property boundaries. It is expected that BH-1, BH-2, and the Barn well could be incorporated as part of the three well nests. These wells and new well locations would have to be accessed and instrumented so that they monitor discreet zones within the underlying bedrock.
28. All on-site monitoring well nests shall be fitted with electronic water level monitoring equipment. The licensee's consultant will undertake baseline and subsequent semi-annual water quality sampling of the on-site monitoring wells.

ADDITIONAL CONDITIONS FOR LICENCE NO. 103717 - SCHEDULE "B"

29. Upon issuance of the quarry license, the licensee's consultant will commence, with the permission of the property owner, monitoring of all water wells within 120 m of the quarry property boundary, and the wells presently owned by D. Wilson, D. Greenfield and M. Roulston. This radius is based on the projected water level drawdown of 3.0 m in the vicinity of the quarry after 25 years of quarry operation - base case scenario. Water level monitoring will be conducted three times a year. As the life of the quarry proceeds, and the data is collected and evaluated over time, the adequacy and requirement for this extent of monitoring shall be reviewed in the annual report.
30. The licensee's consultant will undertake baseline water quality sampling of the water wells within the 120m monitoring radius, and the three additional wells noted above. The following parameters will be monitored pH, Total Dissolved Solids, Hardness, Sulphates, Sodium, Chloride, Potassium, Calcium, Magnesium, Nitrate nitrogen, Nitrates, Iron, Fluoride, Bacteria Coliforms, and Total Suspended Solids.
31. In the event of a complaint concerning a change in water quantity and/or quality, that would adversely affect normal usage of those wells identified and monitored within 120 metres of the quarry, the licensee shall supply temporary water with appropriate storage to the affected property owner, all at the expense of the Licensee, and advise the Ministry of the Environment of the complaint and identify the cause of such impairment to the quality or quantity of water.

The water supply quantity/quality concern will be evaluated by an independent consultant retained by and at the expense of the licensee that is satisfactory to the Ministry of the Environment, local residents, the Municipality, and Nichols Gravel.

Should the quantity or quality of groundwater available to normal taking be adversely affected due to the operations of the licensee, the licensee shall undertake to review quarry operations and implement appropriate changes (e.g. change in dewatering methods or flow rates) in an attempt to alleviate the observed adverse effect(s). If appropriate implemented changes are demonstrated not to correct the problem, the licensee shall, at its own expense, provide a permanent supply, as technically determined by the licensee, of water of equivalent quality and quantity as that which existed before the identified adverse change to the water quality and/or quantity.

The licensee will maintain a log of all complaints received and actions taken. This log is to be available to members of the Public, The Municipality, and The Ministry of Natural Resources for review.

32. Nichols Gravel Limited undertakes to meet to discuss any complaints as soon as is practicable and no later than the end of the business day following the receipt of the complaint. The licensee will respond to any water loss complaints on the same day as the complaint is received.

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X ADDITIONAL CONDITIONS FOR LICENCE NO. 103717 - SCHEDULE "B"

33. Should an independent investigation of a water quantity and quality concern be verified by the mechanism described above, the radius of monitoring will be extended a further 120 metres, or to the next water well to a maximum distance of 240 metres, in the direction of the affected water well. Should subsequent extraction and monitoring at some time confirm a persistent impact to a water well at the expanded 240 m radius, the radius of monitoring may then be extended to 500 metres from the quarry property boundary, in the direction of the affected well.

The requirements and obligations set out in paragraph 31 herein, shall apply to the property owners in the expanded monitoring radius.

Water well owners within the 120 metre radius, or expanded radius, from the property boundary must allow their wells to be part of the monitoring program in order to be eligible for consideration regarding potential disruption of water supplies. If, over time, the extent of the area of monitoring changes, the number of wells to be monitored will be expanded accordingly.

34. A trigger mechanism will be established based on the expected behavior of the groundwater regime as predicted by the dewatering impact assessment. There are two aspects to the assessment that will be used as trigger mechanisms: The flow rate from dewatering operations; and The water level impacts in the vicinity of the quarry.

In addition, the condition (13) concerning quarry pond impacts as agreed to by Nichols and the New Credit first Nation may be considered a trigger mechanism.

Should either of the above be found to deviate appreciably from the impacts as predicted from the dewatering impact assessment, the groundwater flow regime shall be re-evaluated, and adjustment and a new simulation of the groundwater flow model should be undertaken. If the reviewing body (e.g. MOE) concludes that significant impacts are identified in the re-assessment, the appropriate changes to the quarry operation, monitoring program, and/or contingency plans shall be undertaken.

35. An annual report will be prepared by the licensee's consultant that summarizes the results of monitoring, evaluates whether trigger mechanisms are being approached, and provides a prediction on whether there is the potential for the trigger mechanism to be enacted in the foreseeable future. This report will be filed as part of the annual compliance report pursuant to the provisions of the Aggregate Resources Act.

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X ADDITIONAL CONDITIONS FOR LICENCE NO. 103717 - SCHEDULE "B"

36. Any proposed changes to the Plans shall be subject to approval by an acoustical engineer qualified in aggregate noise technology, with respect to compliance with the applicable noise criteria.
37. All crushing and screening shall be done in the central processing area with the processing plant at the pit floor, elevation not more than 206m a.s.l. acoustical screening should be in place as specified whenever a crushing/screening plant is operating. The screening shall be in the form of stockpiles, berms, a quarry face, or other barrier.
38. If processing is required during the start-up phase before the C.P.A on the pit floor has been prepared, an interim crushing/screening plant may be installed at an intermediate elevation, as low as practical, with a face and berm or other form of barrier not less than 7m above the crusher floor level and not more than 15m from the crusher in an arc from the southwest to southeast.
39. It is recommended that the preparatory work that is close to residential premises, including berm construction, topsoil stripping, and rehabilitation work be done during cool weather when windows are normally closed and noise sensitivity is reduced.
40. Production machinery used on the site shall have noise emission levels no higher than Table 6.1 of the Aerocoustic report.
41. All equipment used on site shall be properly maintained to ensure that noise levels remain within the specified limits.
42. Alternative production equipment and/or methods may be substituted provided a professional engineer qualified in aggregate industry acoustics certifies that no increase in the noise impact predicted in the Aerocoustic report will result from the change.
43. Extension of excavation beyond the recommended interim limits may be considered acceptable if at some future time additional or alternative measures to further reduce noise impact are available and if a professional engineer qualified in aggregate industry acoustics certifies that the operation as proposed will comply with the noise criteria then in effect.
44. The licensee shall maintain a log of all complaints received regarding the quarry, which will include the nature of the complaint, weather conditions, the location, time, date, complainant's name and remedial action taken by the licensee in response to the complaint. A copy of this log will be available to the Ministry of Natural Resources, and the Municipality.

X ADDITIONAL CONDITIONS FOR LICENCE NO. 103717 - SCHEDULE "B"

45. The licensee shall conduct surface water monitoring of quarry discharges to the Harrop Drain. The Licensee's consultant will conduct quarterly flow monitoring of the Harrop Drain upstream of the site, at the site, and downstream of the site. At a minimum one quarterly monitoring event will coincide with the wet season (early spring). Water quality monitoring of the Harrop Drain will be undertaken by the licensee's consultant, upstream of the site, at the site, and downstream of the site once per year. The following parameters will be monitored pH, conductivity, alkalinity, calcium, magnesium, sodium, potassium, chloride, sulphate, nitrate, nitrite, un-ionized ammonia, iron, manganese, copper, zinc, orthophosphate, silica, turbidity, total suspended solids, dissolved organic carbon, hardness, and oil and grease.
46. Sump water discharge quality will be monitored annually during the summer for the following parameters: temperature, total suspended solids, oil and grease, un-ionized ammonia and pH.
47. The results of surface water quality and quantity monitoring will be reported in the annual monitoring report. The Licensee shall record volumes of sump discharge on a monthly basis. The duration and frequency of pumping will be determined primarily by operational needs and climatic conditions. To prevent downstream flooding, following storm events, pumping will be regulated to occur after in-channel flow peaks.
48. The licensee shall monitor the quarry face on a monthly basis for areas exhibiting excess inflow into the quarry. The monthly assessment will be of a qualitative nature. The results of this monitoring will be reported in the annual report. In the event of any significant increase of inflow of water into the quarry that adversely affects surface water bodies, or groundwater, the licensee shall contact the Ministry of the Environment and take remedial action. The initial remedial action will involve rerouting seepage back to the affected water body and increased monitoring of the seep to a daily frequency.
49. The licensee will ensure that the internal water collection system within the quarry will incorporate component storage for groundwater and surface runoff. The surface runoff internal to the quarry will be designed such that internal quarrying, buildings/roads, and actively used areas be set above and outside of the limits of flooding.
50. External berming will be constructed around the quarry to prevent any surface water spillage into the quarry, any surface water collected external to the quarry be directed to its existing outlet.
51. The licensee will ensure that water polishing measures will be incorporated into the internal collection system, in order that sediment and fines from the quarrying operation are settled out prior to discharge to the Harrop Drain.

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X ADDITIONAL CONDITIONS FOR LICENCE NO. 103717 - SCHEDULE "B"

52. The licensee will ensure that the stormwater holding system be designed such that sufficient capacity is provided to hold a 100 year storm with zero discharge. The dewatering rate (due to any combination of groundwater and stormwater inflows) is not to exceed the peak flow rate which would naturally emanate from the subject property during a 25mm depth 24 hour rainfall event under existing land use.
53. The Licensee will obtain any required approvals, pursuant to the provisions of the Drainage Act, for discharge of water to the Harrop Drain.
54. That the Aggregate Resources Act Site Plans be amended to provide for an access, of sufficient width and clearance (12 feet) along the eastern property line, to ensure the ability of a vehicle to access and maintain the existing Gas well and infrastructure shown on the site plans.
55. All berms shall be graded smooth to a stable (2:1) slope and seeded to prevent erosion and to reduce dust. Wherever possible suitable plants be established such as Crown Vetch (*Coronilla varia*) or other suitable seed mixtures to promote a deep root system and enhance soil structure. Seed mixture may be modified due to availability and soil structure. Any seed mixture shall be designed to limit the propagation of weed species onto adjacent agricultural lands. All vegetation shall be maintained in a healthy, vigorous growing condition for the lifetime of the license.
56. The applicant shall obtain a long-term Permit to Take Water issued by the Ministry of the Environment.

Nichols Gravel Limited – Licence No. 103717
Licensed Property / Site Plan Infraction Items

March 31, 2003

x ER.6

An Inspection of your licenced property was conducted on March 10, 2003. ?
According to the accompanying site plans the following items require
improvement or correction prior to commencing quarrying operations or removal
of material from the property:

- ✓ 1) Perimeter fencing is required around Phase 1a, 1b and 2, as detailed on the site plan. ?
- 2) The interim berms surrounding the quarry area required sloping and seeding, in order to reduce dust in the local area. Interim berm height should be higher as per site plan details (minimum 6m above bedrock floor). ?
- ✓ 3) The fuel tank existing in the quarry area should be relocated near the scale house as specified in the site plan. ?
- 4) The roadway entrance and weigh scales should be moved eastward of the existing location, as an acoustic berm is required along the boundary of the adjacent farm residence. ?

NICHOLS GRAVEL LIMITED

P.O. Box 172
DELHI, On. N4B 2W9

Phone: 519-582-3354

Fax: 519-582-2143

X April 2, 2003

Ministry of Natural Resources
99 Wellesley St. W.
Whitney Block, 6th Floor
TORONTO, On. M7A 1W3

X ATTENTION: Minister Mr. Jerry Ouellette

X Dear Sir:

On April 1st, 2003 two employees of the Ministry of Natural Resources arrived at the office of Nichols Gravel Limited and hand delivered a Class A, Cat 2 License #103717 for a quarry at 911 #2746, Haldimand County Rd. 9. This occurred 1 year and 8 months after the Ministry of Natural Resources was provided with Ontario Municipal Board Direction Order 1194 to issue the license. In respect to numerous letters of inquiry to various government ministries and agencies without response, we have never received clarification as to why the Ministry of Natural Resources did not comply with the July 25, 2001 direction order.

With the license was enclosed a covering letter signed by M.N.R. Aylmer District Manager, Alec Denys. See letter.

Attached to this letter dated March 31, 2003 was a page entitled Nichols Gravel Limited – License No. 103717.

Licensed Property/Site Plan Infraction Items 1 to 4 which stated quote:

An inspection of your licensed property was conducted on March 10, 2003. According to the accompanying site plans the following items require improvements or correction prior to commencing quarrying operations or removal of material from the property:

1. Perimeter fencing is required around Phase 1a, 1b, and 2, as detailed on the site plan.
2. The interim berms surrounding the quarry area required sloping and seeding in order to reduce dust in the local area. Interim height should be higher as per site plan details (minimum 6 m above bedrock floor).
3. The fuel tank existing in the quarry area should be relocated near the scale house as specified in the site plan.
4. The roadway entrance and weigh scales should be moved eastward of existing location, as an acoustic berm is required along the boundary of the adjacent farm resident. unquote.

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What I have identified in these statements are misrepresentation, falsity of fact and a fraud:

X Quote: An inspection of your licensed property was conducted March 10, 2003. (??)

X Comment: No. Not according to the date of issuance on the license which is dated March 25, 2003. Therefore the inspection that was conducted without prior notice or authorization on our property was conducted March 10, 2003 on the unlicensed property. ?
Definitely a misrepresentation and a false statement of fact.

1. True. The start of perimeter fencing will proceed as soon as the clay soil is dry enough to support machinery, however this may not be completed until the crops are off in the fall as we cannot destroy the land renter's crops in order to construct fencing.
2. Clarification: The working face at bedrock is 16'.
On top of the bedrock we have 3' of overburden for a
Total of 19'
6 metres equal $6 \times 3.3' = 19' 8''$

Surrounding the excavation we have a berm on top of the overburden of over 6' in height which equates to a total height above the pit floor of 25' 8" or 7.7 metres which is well within the requirement of the site plan which confirms another misrepresentation of fact under stated infraction. ? number 2

The interim berms are under construction and are temporary, as they will be moved outward as the quarry face expands in order to not take any more agricultural land out of production than is absolutely necessary. At the point that the outer limits of Area 1A are reached the berms will be shaped graded and seeded as per the site plan.

3. The fuel tank is temporary storage and will be moved to the designated storage area as per site plan, just as everything on this site plan is in the pre-development stage. No magic wand, everything will conform to plan in good time.
4. To imply that the roadway entrance and weigh scales should be moved to allow for an acoustic berm along the boundary of the adjacent farm residence is a misrepresentation and a fraud by Mr. Denys and Mr. Cutmore as this was previously discussed with our consultant Bernie Janssen on February 3, 2003 as to whether or not our site plan should be amended prior to release to M.N.R. to accommodate and relocate the acoustic berm farther to the west in order to accommodate the existing location of the access entrance from Rd. 9.

Bernie Janssen discussed this matter with Paul Cutmore and reported back to me that Mr. Cutmore said this would not be a problem, and was something that could be addressed later. See Fax of February 5, 2003 from Bernie Janssen in respect to this matter.

7

Now #4 on March 31, 2003 this has become a problem, and in respect to what is stated on the site plan and in the fax from Bernie Janssen this acoustic berm is confirmed not required until the drills are working within 350 metres of the North boundary confirming the falsity of fact in this statement by Mr. Denys and Mr. Cutmore that this berm must be constructed prior to commencing quarrying operations or removal of material from the property.

This license and letter was delivered approximately 3:15 PM, April 1, 2003. I completed my review of the documentation first thing April 2, 2003 and at 9:00 AM my wife took a call from Mr. Cutmore who warned that if we did not cease and desist from removing material from the property, as an officer of the Corporation she could expect repercussions and that M.N.R. would suspend the license due to the infractions. I was very disturbed when I received this message, as my wife has had a number of health problems over the past few years and what she does not need is added stress intimidation or threats from any insensitive arrogant beauracrats from our Provincial government or elsewhere.

In addition to this incident I am astounded by the extreme arrogant and arbitrary attitude of Senior Officers and Inspectors of the Ministry of Natural Resources.

Just to recap the events, in the first instance we had the trespass on September 5, 2002 by the M. N. R. Inspectors Mr. Lumb and Mr. Cutmore in order to obtain information without permission or authorization to the issuance of a stop work order.

Now we are informed on April 1st, 2003 in the hand delivered letter dated March 31, 2003 that our proposed quarry property was inspected March 10, 2003, again without notification, a request for inspection or any authorization whatsoever to make this inspection on our property.

In order to enter this property these inspectors proceeded past 3 no trespass signs and a locked gate. Does this company really need Agents of the Provincial Government sneaking around on our properties without our knowledge and with unknown intent?

Please advise your inspectors not to enter any of our properties again without a prior appointment and during business hours. Further to that there are to be no discussions between agents of your ministry and the company Secretary Treasurer, Margaret Nichols. All correspondence and inquires are to be directed to Gary, Dwayne and Darryl Nichols.

It should be noted that material being removed at this time are from stockpiles produced last August from the extraction of the construction of the irrigation pond and has nothing to do with this years extraction and is therefore not relative to issuance of this license, as we have not yet started drilling, or crushing at this property this year.

The M.N.R. after having screwed the issuance of this license around for a year and eight months, rather than cut our company some slack in order to comply with the conditions imposed, and rather than provide some degree of co operation, we have instead the

April 14/03?

X Nichols Quarry

- Gary Zacher & myself left Sylmer at 1:00 pm to go to Nichols Quarry at Hagerwil. We arrived at 2:20 pm and commenced to take pictures until 2:30 around quarry area.
- the quarry gates were open and there was recent evidence of activity around the stock-pile material area.
- went to entranceway & waited for trucks to return - took 2 photos of a trailer truck coming into pit at 3:10 pm - # CK2 205.
- Truck driver Gerry Van Crainebeck was hauling material to Scotland - Gary Nichols had given driver instructions to haul material to Scotland.
- Driver Gerry V. omitted hauling several loads out since licence was issued on April 1/03.
- X Went to Nichols office in Delhi, Ont. & issued suspension of licence notice on Gary Nichols.
 - was at office 4:00 → 4:45 pm.

X R. C. Moore



AVIS DE SUSPENSION DE PERMIS

Aux termes de l'article 22 (par.), 32 (par. 1) ou 45 (par. 1) de la Loi sur les ressources en agrégats (LRA), LRO 1990, Chap. A.8 en tenant compte des modifications

/ the authority delegated to me by the Minister of Natural Resources, I
En vertu des pouvoirs qui m'ont été conférés par le ministre des Richesses naturelles, je

Paul G. Cutmore

Aylmer District

Inspector / Inspecteur

Administrative District / District administratif

do hereby suspend licence / permit number 103717
suspend, par la présente, le permis ou la licence numéro

issued to Nichols Gravel Limited
délivré à
for the following reasons:
et ce, pour les motifs suivants:

On April 1st, 2003, a Class A Aggregate Licence (with fifty-six conditions) for the property located at Pt. Lots 10-12, Concession 12, Haldimand County, (Walpole Township), was hand delivered to your main office in Delhi, Ontario. In the covering letter (attached to the Licence) instructions were included specifying that twenty-three conditions of the Licence had to be fulfilled prior to the operation of the quarry or removal of material from the licenced property. Following the issuance of the Licence, we have received information that material was removed from the licenced property. ?

Due to the removal of quarried material from the licenced property, without fulfilling the required licenced conditions, the following Section of the Aggregate Resources Act was violated :

1. Contravention of Section 15 of the Aggregate Resources Act which states that, ("every licensee shall operate the licensee's pit or quarry in accordance with the Act,) the regulations, the site plan and the conditions of the licence", which is specifically, the attached Schedule 'A' list of twenty-three licence conditions, and the attached Schedule 'B' list of four site plan infractions.

AND FURTHER TAKE NOTICE that this suspension is effective from the time of service of this notice upon you and shall continue in effect until you take or desist from taking, as the case may be, the following action(s) to my satisfaction:
EN OUTRE, VEUILLEZ ÊTRE AVISÉ que la présente suspension entre en vigueur dès que l'avis vous est signifié et ne sera pas levée tant et aussi longtemps que vous n'aurez pas pris ou n'aurez pas renoncé à prendre les mesures suivantes:

- ~~X~~ 1. Complete the list of twenty-three licence conditions, as specified on the attached Schedule 'A' to the satisfaction of the Ministry of Natural Resources, as per Aggregate Resources Inspector Paul Cutmore by September 30, 2003.
2. Resolve the list of four (4) site plan contraventions, as specified on the attached Schedule 'B' to the satisfaction of the Ministry of Natural Resources, as per Aggregate Resources Inspector Paul Cutmore by September 30, 2003.

AND FURTHER TAKE NOTICE that all activities associated with the pit or quarry authorized by the above licence (or permit) are prohibited. Continuing any activities during the suspension is a contravention of the Aggregate Resources Act and is punishable upon conviction by a fine of not less than \$500.00 and not more than \$30,000.00 for each day on which the offence continues (Section 58, ARA) and could result in cancellation of your licence (or permit) (s. 22(4) or s. 32(5) or s. 45(5)).

EN OUTRE, VEUILLEZ ÊTRE AVISÉ que toute activité liée à l'exploitation du puits ou de la carrière visé par le permis ou la licence mentionné ci-dessus est interdite. Le fait de poursuivre toute activité pendant la période de suspension constitue une infraction à la Loi sur les ressources en agrégats et est passible, sur inculpation, d'une amende minimale de 500 \$ maximale de 30 000 \$ pour chaque journée pendant laquelle se poursuit l'infraction (article 58, LRA), et qu'il peut entraîner la révocation du permis ou de la licence aux termes de l'article 22 (paragraphe 4), 32 (paragraphe 5) ou 45 (paragraphe 5).

Dated at Aylmer this 14th day of April, year 2003
fait à en ce jour du mois de, année

R. C. Moore
Inspector / Inspecteur

Aylmer District

Administrative District / District administratif

Schedule "A" – (Notice of Suspension – Licence 103717) ?

Specific Pre-Operational Conditions X ?
Nichols Gravel Limited – Licence No. 103717

X March 31, 2003 ?

The following licence conditions must be satisfactorily completed prior to the commencement of quarry operations or the removal of quarried material from the licenced property. The condition numbers relate exactly to the list attached to the licence:

PREScribed CONDITIONS

PREScribed CONDITIONS PROVINCIAL STATUTES CANNOT BE CHANGED TO "SPECIFIC PRE OPERATIONAL CONDITIONS" ✓ ?

5. A Spills Contingency Program will be developed prior to site preparation.
7. If required, a Certificate of Approval will be obtained for the discharge system should water be discharged off site.
8. If required, a Certificate of Approval will be obtained for processing equipment to be used on site.
9. If required, a Permit to Take Water will be obtained for utilizing ground and/or surface water.
- ✓ 10. The licensee will monitor all blasts for ground vibrations and blast overpressure and will operate to ensure compliance with current provincial guidelines.
- ✓ 12. All blast monitoring reports must be retained by the licensee and made available upon request by the Ministry of Natural Resources for audit purposes.
- ✓ 14. All residences within 300 metres of the edge of the extraction area shall be thoroughly inspected by the licensee's consultant prior to the start of quarry blasting operations (with the owners permission)- It is recommended that as extraction proceeds north in Area 1A, that the closest homes (identified as R1, R2 and R3 on the site plans) be checked within the first five years of operation and that additional checks be phased in for other homes on the perimeter of the site.
- ✓ 15. The first six quarry blasts shall be monitored for both vibration and over pressure (noise) at a minimum of four locations for each blast in order to accumulate site-specific data quickly. This data will be used to plan subsequent blasting operations. This will also allow- subsequent blasts to be designed specifically for this location air well within MOE Guidelines.. All subsequent blasts shall be monitored at the closest buildings to the blast size with at least two seismographs.
- ✓ 17. Careful blast records shall be maintained. The body of the blast, report should contain the information as recommended by MOE.
- ✓ 20. The monitoring results of the first six quarry blasts monitored at a minimum of 4 locations in accordance with the recommendations of the Licensee's consultant, along with the consultant's analysis and recommendations, shall be submitted to the local offices of MNR and MOE.

- ✓ 25. Residents within 300 metres of the quarry site, which will have been thoroughly inspected in accordance with the recommendations of the Licensee's consultant, shall be re-examined following the initial six blasting operations. Copies of the original examination records and of the re-examination results shall be submitted to the property owner concerned.
27. The licensee will provide for the installation of monitoring well nests with upgradient, downgradient, and cross-gradient wells at the top of the Bois Blanc Formation, to the base of the Bois Blanc Formation and into the Bertie Formation at the property boundaries. It is expected that BH-1, BH-2, and the Barn well could be incorporated as part of the three well nests. These wells and new well locations would have to be accessed and instrumented so that they monitor discreet zones within the underlying bedrock }
29. Upon issuance of the quarry license, the licensee's consultant will commence, with the permission of the property owner, monitoring of all water wells within 120 m of the quarry property boundary, and the wells presently owned by D. Wilson, D. Greenfield and M. Roulston. This radius is based on the projected water level drawdown of 3.0 m in the vicinity of the quarry after 25 years of quarry operation - base case scenario. Water level monitoring will be conducted three times a year. As the life of the quarry proceeds, and the data is collected and evaluated over time, the adequacy and requirement for this extent of monitoring shall be reviewed in the annual report.
- ✓ 37. All crushing and screening shall be done in the central processing area with the processing plant at the pit floor, elevation not more than 206m a.s.l. acoustical screening should be in place as specified whenever a crushing/screening plant is operating. The screening shall be in the form of stockpiles, berms, a quarry face, other barrier.
- ✓ 38. If processing is required during the start-up phase before the C.P.A on the pit floor has been prepared, an interim crushing/screening plant may be installed at an intermediate elevation, as low as practical, with a face and berm or other form of barrier not less than 7m above the crusher floor level and not more than 15m from the crusher in an arc from the southwest to southeast.
45. The licensee shall conduct surface water monitoring of quarry discharges to the Harrop Drain. The Licensee's consultant will conduct quarterly flow monitoring of the Harrop Drain upstream of the site, at the site, and downstream of the site. At a minimum one quarterly monitoring event will coincide with the wet season (early spring). Water quality monitoring of the Harrop Drain will be undertaken by the licensee's consultant, upstream of the site, at the site, and downstream of the site

(3)

- 45. (Cont.) once per year. The following parameters will be monitored pH, conductivity, alkalinity, calcium, magnesium, sodium, potassium, chloride, sulphate, nitrate, nitrite, un-ionized ammonia, iron, manganese, copper, zinc, orthophosphate, silica, turbidity, total suspended solids, dissolved organic carbon, hardness, and oil and grease.
- 49. The licensee will ensure that the internal water collection system within the quarry will incorporate component storage for groundwater and surface runoff. The surface runoff internal to the quarry will be designed such that internal quarrying, buildings/roads, and actively used areas be set above and outside of the limits of flooding.
- ✓ 50. External berming will be constructed around the quarry to prevent any surface water spillage into the quarry, any surface water collected external to the quarry be directed to its existing outlet.
- ? 51. The licensee will ensure that water polishing measures will be incorporated into the internal collection system, in order that sediment and fines from the quarrying operation are settled out prior to discharge to the Harrop Drain.
- ? 52. The licensee will ensure that the stormwater holding system be designed such that sufficient capacity is provided to hold a 100 year storm with zero discharge. The dewatering rate (due to any combination of groundwater and stormwater inflows) is not to exceed the peak flow rate which would naturally emanate from the subject property during a 25mm depth 24 hour rainfall event under existing land use.
- ? 53. The Licensee will obtain any required approvals, pursuant to the provisions of the Drainage Act, for discharge of water to the Harrop Drain.
- 55. All berms shall be graded smooth to a stable (2:1) slope and seeded to prevent erosion and to reduce dust. Wherever possible suitable plants be established such as Crown Vetch (*Coronilla varia*) or other suitable seed mixtures to promote a deep root system and enhance soil structure. Seed mixture may be modified due to availability and soil structure. Any seed mixture shall be designed to limit the propagation of weed species onto adjacent agricultural lands. All vegetation shall be maintained in a healthy, vigorous growing condition for the lifetime of the license.

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X Schedule "B" (Notice of Suspension – Licence 103717)

Nichols Gravel Limited – Licence No. 103717
Licensed Property / Site Plan Infraction Items

March 31, 2003 ?

An Inspection of your [?]licensed property was conducted on March 10, 2003. ✓ ? WHY?
According to the accompanying site plans the following items require
improvement or correction prior to commencing quarrying operations or removal
of material from the property: H.I. X.

- 1) Perimeter fencing is required around Phase 1a, 1b and 2, as detailed on the site plan. ?
- ✓ 2) The interim berms surrounding the quarry area required sloping and seeding, in order to reduce dust in the local area. Interim berm height should be higher as per site plan details (minimum 6m above bedrock floor). ?
- ✓ 3) The fuel tank existing in the quarry area should be relocated near the scale house as specified in the site plan. ?
- ? 4) The roadway entrance and weigh scales should be moved eastward of the existing location, as an acoustic berm is required along the boundary of the adjacent farm residence. ?

9

X Nichols Gravel Ltd. ✓
R.R. #2
Delhi, ON

L on or about the ~~period~~ between the dates
of March 31, and December 01
2002 20 02 at Part Lots 10-12, Conc. 12 of the former Twp of Walpole
day of 2002 jour de a location / lieu
City of Nanticoke, now Haldimand County

X did commit the offence of
commis l'infraction suivante
unlawfully operate a quarry without the authority of a licence, contrary to subsection 7(1) of the Aggregate Resources Act,
RSO 1990, Chapter A.8 as amended and thereby committed an offence pursuant to subsection 57(1) of the said Act and
on or about the 7th day of October, 2002 did commit the offence of unlawfully obstruct an inspector by refusing to furnish
the inspector with information, contrary to subsection 57(4) of the Aggregate Resources Act, RSO 1990, Chapter A.8 as
amended.

contrary to Aggregate Resources Act
en violation de
section 7(1), 57(1) and 57(4)
règle
Sworn before me at HALDIMAND COUNTY
Assermenté devant moi à
this 14 day of APRIL 2003
ce jour de

THEREFORE you are commanded in her Majesty's name to
À ces causes, au nom de Sa Majesté, vous êtes sommé de

appear before the Ontario Court of Justice
comparaître devant la Cour de Justice de l'Ontario


A Judge of the Peace in and for the Province of Ontario
Juge ou juge de paix dans et pour la province de l'Ontario

At Ontario Court, 45 Munsee Rd., Cayuga, ON
A On the 25th day of April 20 03 at 1:00 P M.
Le jour de à h
AVÀ
Courtroom/salle d'audience

AND TO APPEAR THEREAFTER AS REQUIRED BY THE COURT TO BE DEALT WITH ACCORDING TO LAW
ET DE COMPARAÎTRE PAR LA SUITE CHAQUE FOIS QUE LE TRIBUNAL L'EXIGERA DE FAÇON À CE QUE VOUS SOYEZ
JUGÉ SELON LA LOI

NOTE TO DEFENDANT:
Appear personally, by agent or counsel.

REMARQUE AU DÉFENDEUR :

Vous pouvez comparaître personnellement, par mandataire,
ou par un avocat.

If you do not appear:

- a) the court may issue a warrant for your arrest: or
- b) the trial may proceed, and the evidence may be taken in
your absence

Si vous ne comparez pas :

- a) le tribunal peut émettre un mandat d'arrêt contre vous: ou
- b) le procès peut être tenu sans que vous y soyez et preuve
peut être recueillie en votre absence.

If you do appear:

- a) the trial may proceed: or
- b) you, or the prosecutor, may ask the court to adjourn your
case to another date. The court may grant or refuse such a
request.

Si vous comparez:

- a) le procès peut être tenu: ou
- b) vous pouvez vous, ou le poursuivant, demander au
tribunal un ajournement. Le tribunal peut accorder ou
refuser cette demande.

INFORMATION / DÉNONCIATION

Under Section 23 of the Provincial Offences Act, 1980
En application de l'article 23 de la Loi sur les infractions provincialesForm 105 / Courts of Justice Act
Formule 105 / Loi sur les tribunaux judiciairesTHE ONTARIO COURT
OF JUSTICE
COUR DE JUSTICE
DE L'ONTARIO

Haldimand County

This is the information of Jim Greenwood
Dénonciation de:of/de the Ontario Ministry of Natural Resources

Conservation Officer

(occupation / profession)

The informant says
Le dénonciateur/la dénonciatricethat he/she believes on reasonable grounds that
déclare qu'il (elle) a des motifs raisonnables de croire queX NICHOLS GRAVEL LTD., RR#2 Delhi, ON and GARY I NICHOLS, DOB 1937 08 19 and MARGARET D NICHOLS
DOB 1941 03 29 of 61 Elizabeth St., Delhi, ON N4B 2W9 and DWAYNE E NICHOLS DOB 1961 12 21 of RR 1
LaSalette, ON N0E 1H0between the dates of March 31 and December 1 20 02, at the Part Lots 10-12, Conc.12
or about the 2002 day of xxxx le ou vers le jour de à

of the former Twp of Walpole, City of Nanticoke, now Haldimand County

did commit the offence of
a commis l'infraction deX unlawfully operate a quarry without the authority of a licence, contrary to subsection 7(1) of the Aggregate Resources
Act, RSO 1990, Chapter A.8 as amended and thereby committed an offence pursuant to subsection 57(1) of the said
Act

AND FURTHER

X NICHOLS GRAVEL LTD., RR#2 Delhi, ON and GARY I NICHOLS, DOB 1937 08 19 and MARGARET D NICHOLS
DOB 1941 03 29 of 61 Elizabeth St., Delhi, ON N4B 2W9 and DWAYNE E NICHOLS DOB 1961 12 21 of RR 1
LaSalette, ON N0E 1H0 on or about the 7th day of October 2002 at NICHOLS GRAVEL LTD., RR #2 Delhi, ON,
Norfolk County,did unlawfully obstruct an inspector by refusing to furnish the inspector with information, contrary to subsection 57(4)
of the Aggregate Resources Act, RSO 1990, Chapter A.8 as amended.

X Gary I Nichols ✓
61 Elizabeth St.
Delhi, ON
N4B 2W9
DOB 1937 08 19

of March 31, and December 01
day of ~~XXXX~~ 2002 20 02 at Part Lots 10-12, Conc. 12 of the former Twp of Walpole
location / lieu
City of Nanticoke, now Haldimand County

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contrary to Aggregate Resources Act
on violation de

section article 7(1), 57(1) and 57(4)

Sworn before me at HALDIMAND COUNTY
Assermenté devant moi à

X this 14 day of APRIL 2003
ce jour de



Judge of the Peace in and for the Province of Ontario
Juge ou juge de paix dans et pour la province de l'Ontario

THEREFORE you are commanded in her Majesty's name to
À ces causes, au nom de Sa Majesté, vous êtes sommé de

appear before the Ontario Court of Justice
comparaître devant la Cour de Justice de l'Ontario

At Ontario Court, 45 Munsee Rd., Cayuga, ON

On the 25th day of April 20 03 at 1:00 P M.
Le jour de à h

AVÀ

Courtroom/salle d'audience

AND TO APPEAR THEREAFTER AS REQUIRED BY THE COURT TO BE DEALT WITH ACCORDING TO LAW
ET DE COMPARAÎTRE PAR LA SUITE CHAQUE FOIS QUE LE TRIBUNAL L'EXIGERA DE FAÇON À CE QUE VOUS SOYEZ
JUGÉ SELON LA LOI

NOTE TO DEFENDANT:
Appear personally, by agent or counsel.

If you do not appear:

- a) the court may issue a warrant for your arrest; or
- b) the trial may proceed, and the evidence may be taken in your absence

If you do appear:

- a) the trial may proceed: or
- you, or the prosecutor, may ask the court to adjourn your case to another date. The court may grant or refuse such a request.

REMARQUE AU DÉFENDEUR:

Vous pouvez comparaître personnellement, par mandataire, ou par un avocat.

Si vous ne comparez pas:

- a) le tribunal peut émettre un mandat d'arrêt contre vous; ou
- b) le procès peut être tenu sans que vous y soyez et preuve peut être recueillie en votre absence.

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- b) vous pouvez vous, ou le poursuivant, demander au tribunal un ajournement. Le tribunal peut accorder ou refuser cette demande.

X Margaret D Nichols ✓

61 Elizabeth St.

Delhi, ON

N4B 2W9

DOB 1941 03 29

of March 31 and December 01

day of 2002

20 02

at
à

Part Lots 10-12, Conc. 12 of the former Twp of Walpole

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a, le ou vers le

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contrary to Aggregate Resources Act
violation de

section 7(1), 57(1) and 57(4)
article

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X Dwayne E Nichols ✓

R.R. #1.

LaSalette, ON

N0E 1H0

DOB 1961 12 21

of March 31, and December 01

2002

20 02

at

Part Lots 10-12, Conc. 12 of the former Twp of Walpole

location / lieu

City of Nanticoke, now Haldimand County

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en violation de

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Vous pouvez comparaître personnellement, par mandataire, ou par un avocat.

Si vous ne comparez pas :

- a) le tribunal peut émettre un mandat d'arrêt contre vous; ou
- b) le procès peut être tenu sans que vous y soyez et preuve peut être recueillie en votre absence.

Si vous comparez :

- a) le procès peut être tenu; ou
- b) vous pouvez vous, ou le poursuivant, demander au tribunal un ajournement. Le tribunal peut accorder ou refuser cette demande.

No. of Information/Numéro de dénonciation
Return Date of summons/Sommission rapportée le
April 25
2003

INFORMATION Against/ DÉNONCIATION visant

Nichols Gravel Ltd, RR2 Delhi, Gary I
Nichols & Margaret D. Nichols,
61 Elizabeth St., Delhi, ON & Dwayne E
Nichols, RR1 LaSalette
CHARGE/ ACCUSATION

Unlawfully operate a quarry without the
authority of a licence, contrary to

Sec.57(1) and obstruct an inspector

contrary to Sec. 57(4) Aggregate Res.Act

<input checked="" type="checkbox"/> Summons	<input type="checkbox"/> Warrant	<input type="checkbox"/> Arrest
<input checked="" type="checkbox"/> Reportable M.V. Offence (H.A. 184)	<input type="checkbox"/> C.V.O.R. No (Commercial Vehicles Only)	<input type="checkbox"/> Arrestation
<input type="checkbox"/> Report V.M. (Code de la route 184)	<input type="checkbox"/> Numéro I.V.U.P. (véhicules utilisés seulement)	<input type="checkbox"/> Le défendeur était-il propriétaire?
Sex Sexe	Birth Date/Date de naissance Day/Jour Month/Mois Year/Année	Was defendant owner? Le défendeur était-il propriétaire? <input type="checkbox"/> Yes/Oui <input type="checkbox"/> No/Non
Driver's Licence Number/ Numéro du permis de conduire		
Plate No/Numéro de plaque		<input type="checkbox"/> Involves an Accident Intrication reliée à un accident
Informant Dénonciateur		
Date Sworn Date d'asseurement		
Officer Agent de police	Jim Greenwood	No N° 340
Div	MNR	Dist. Dist. Aylmer
Courtroom/ Salle d'audience		
A/V/A		
Ont Court, 45 Munsee Rd. N, Cayuga		

Nichols QuarryX April ²²~~23~~/03

- I left Refiner at 11:00 am to go to Nichols quarry in Hagersville, Ont, in response to a dewatering complaint from M. Phibbs
- Met MOE officer Jason Ryan at M. Kolston farm at 1:30 pm - spent 1 hour at Nichols gate seeing if any haulage of material, was not hauling at that time
- Jason Ryan & myself went into the south end of Nichols quarry from the Hydro line easement.
- there was evidence of water ponding in Kolston's fields south of the quarry. - via a drainageway across the field in a SW direction.
- a large water pump was present in the quarry with intake/outtake hoses and water in drainageway heading south of the quarry hole.
- the water level in the quarry was down 4-5 ft from the last time observed on April 14/03.
- additional material had been removed from the material stockpile.
- pictures were taken between 2:00-2:30 around the quarry.

Rt Cutmore

X April 23/03

Nichols Quarry

- I phoned Jason Ryan of MOE - said he was not going to issue stop order or charges, but work on issuing the Permit to Take Water

Rt Cutmore

NICHOLS GRAVEL LIMITED

P.O. BOX 172
DELHI, ON. N4B 2W9

PHONE: 519-582-3354

FAX: 519-582-2143

X May 6, 2003

X Ministry of Natural Resources
Aylmer District

X ATTENTION: District Manager, Alec Denys

X Dear Mr. Denys:

In respect to the March 25, 2003 issuance to Nichols Gravel Limited a Class A Quarry License by the Minister which was hand delivered April 1st, 2003 along with a letter dated March 31st, 2003 which advised that no aggregate was to be removed from the site subject to an inspection conducted on the property March 10th noting 4 infractions as listed and 23 "pre operational" conditions which must be met before permission would be granted to operate the quarry, ship material, or conduct business from this site.

On April 14th, Mr. Cutmore and Mr. Zackar from M.N.R. delivered at our office to me a suspension order for removing aggregate from the property processed in 2002 from the construction of the farm irrigation pond.

I have reviewed the Aggregate Act and found no authority for the actions taken by Inspector Cutmore, There would seem to be misinterpretation of the Conditions of the O.M.B. decision order, as well as conditions of the site plan, and M.N.R. authority for enforcement.

In respect to "pre operational conditions" I find nothing in the O.M.B. decision order which makes reference to compliance with, or a requirement of "pre operational conditions" upon issuance of the license, it simply states quote: "The Board Directs the Minister pursuant to Section 11 (8) of the Aggregate Resources Act, R.S.O. 1990, to issue a Class "A" license for the removal of aggregate from lands composed of Part of Lots 10, 11, and 12, Concession 12, in the City of Nanticoke, subject to the following conditions:

1. The applicant shall obtain a long-term Water Taking Permit issued by the Ministry of the Environment.
2. The Applicant shall fulfill a set of conditions as set out in Attachment "2".
unquote.

To further clarify, for those who have problems understanding the English language, reference such as (shall obtain) #1 and (shall fulfill) #2 makes reference to future tense.

X The 55 conditions were agreed to by Nichols Gravel Limited so that the quarry could become operational and be developed under the phasing and conditions of the site plan. These 55 conditions were offered by Nichols Gravel Limited and imposed by the O.M.B. with the consent of Nichols Gravel Limited with this understanding. Upon further careful review of the Aggregate Act, I find no provisions in the act for suspension of a license subject to non compliance of "pre operational conditions", before the quarry in fact becomes operational (March 31, 2003 letter). It should clearly be noted that to date this year there has been no drilling, blasting, crushing or manufacturing of products or sales of aggregate at this site. In that respect we can conclude that at this point this quarry is not operational until the point that sales take place at this property, and revenue is produced for Nichols Gravel Limited, directly from this license and this site. ?

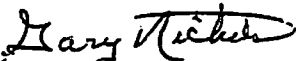
In recent discussions with our consultant, it was agreed that it would most likely be in the best interests of both M.N.R. and our company to have discussions in an attempt to resolve these issues, before it becomes necessary for our company to seek compensation for lost sales due to the extended unnecessary delay in issuance of the license, and now the further extended damage to our business through what appears to be an illegal suspension of our license.

In that respect I hereby request a meeting to discuss and clarify these issues with yourself Mr. Denys, Mr. Elliot, Mr. Cutmore, our consultant Bernie Janssens, myself and possibly Joe Strachan if he is available.

If we have received no appropriate response to resolve these matters by May 15th, 2003 we will instruct our solicitor to prepare and file court documents to the Ministry of Natural Resources and the Ministry of the Environment and various officials for negligent misrepresentation, conspiracy to harassment and illegal interference with economic and business relations of Nichols Gravel Limited.

Thank you for your consideration in this matter.

Yours sincerely,

X 
Gary Nichols

X c.c. Hon. Jerry Ouellette, Minister of Natural Resources
c.c. Ministry of the Attorney General Crown Law Office



Ministry of
Natural
Resources

Minister

Ministère des
Richesses
naturelles

Ministre

12
Queen's Park
Toronto ON
M7A 1W3
416 314-2301

X JUN 10 2003

MNR10MC-2003-1353

Mr. Gary Nichols
President
Nichols Gravel Limited
P.O. Box 172
Delhi ON N4B 2W9

X Dear Mr. Nichols:

Thank you for your letter of April 2, 2003, regarding your Nichols Gravel Limited quarry property in Hagersville.

I am aware that staff from the Ministry of Natural Resources' (MNR) Aylmer District office delivered an Aggregate Licence to your company on April 1, 2003. Whether a property is licensed or not, an aggregates inspector designated under Section 4(2a) of the *Aggregate Resources Act* may enter any property that appears to have been used for a pit or quarry. The activities of the aggregates inspector may involve pre-licensing assessments of the property.

Environmental and safety matters that are specified on the licence conditions and accompanying site plans must be completed prior to the removal of any material from the property. Compliance with the terms of the licence is specified in the *Aggregate Resources Act* under the title of "Duties of Licencee."

I note your concern that ministry staff took longer than a year to issue the Aggregate Licence for your property. While MNR staff try to issue licences as quickly as possible, there can be various legal and planning considerations that require resolution before a licence can be issued and this process can take time.

Please contact staff in the Aylmer District office at (519) 773-9241, in order to expedite the remaining issues involved with your quarry operation.

Again, thank you for writing.

Sincerely,

X 
Hon. Jerry J. Ouellette
Minister of Natural Resources

c: X The Honourable Ernie Eves, MPP
Premier

X Toby Barrett, MPP, Haldiman-Norfolk-Brant

X Alec Denys, District Manager, Aylmer District Office

13
*HAND DELIVERED & RECEIVED JUNE 20/03 ??
H.L.N.

X
Ministry of Environment
119 King Street West
12th Floor
Hamilton, Ontario L8P 4Y7
Tel.: 905 521-7640
Fax: 905 521-7820

Ministère de l'Environnement
119 rue King ouest
12^e étage
Hamilton, Ontario L8P 4Y7
Tél.: 905 521-7640
Téléc.: 905 521-7820



*✓ **PERMIT TO TAKE WATER N^o03-P-2244**

Under Section 34 of The Ontario Water Resources Act, R.S.O. 1990, this permit is issued to:

Nichols Gravel Limited

whose address for all purposes pertaining to this permit is:

P.O. Box 172, Delhi, Ontario, N4B 2W9

for the taking of water in accordance with the terms and conditions set out below and on the back of this form.

**TERMS AND CONDITIONS
PARTICULARS**

SOURCE: One sump

LOCATION: Lot 11, Concession 12, County of Haldimand, Geographic Township of Walpole

PURPOSE: Gravel Pit Dewatering and Aggregate Washing

PERIOD: Annually between March 15 and December 15
from date of issue to March 31, 2008 Inclusive

RATE NOT TO EXCEED: 1070 LPM (240 IGPM) Subject to Special Conditions ?

AMOUNT NOT TO EXCEED: 640,000 LPD (141,000 IGPD) Subject to Special Conditions

SPECIAL

See Schedule "A" Attached

Dated at: Hamilton, Ontario, this 19th day of June, 2003

X [Signature]
Director

Section 34
Ontario Water Resources Act
R.S.O. 1990

~~X~~ SCHEDULE "A"

~~X~~ SPECIAL TERMS AND CONDITIONS ?

- ~~X~~ N°1. Prior to the taking of water under this permit, the Permit Holder shall notify all private well owners within a 1 kilometre radius of the site boundaries of the commencement date of water taking and provide the Director with a list of these owners and with confirmation that each has been made aware of the intended water taking. All these activities shall take place at least one working day prior to the commencement of water taking. ?
- N°2. Temporary water supplies must be provided to those well users whose wells are affected by the taking. A protocol shall be developed for providing this replacement supply and transmitted to the Director and to the Manager, MOE Hamilton District Office and to the Manager, MNR Aylmer District Office and to the Haldimand County Clerk's Office and to the Haldimand Public Health Unit, at least 3 working days prior to the commencement of water taking under the authorization of this permit.
- N°3. Along with the contact provided for in Special Conditions N°1, the Permit Holder shall identify to each private well owner a procedure for complaints or concerns during the water taking. A copy of this procedure shall be provided to the Director and to the Manager, MOE Hamilton District Office and to the Manager, MNR Aylmer District Office and to the Haldimand County Clerk's Office and to the Haldimand Public Health Unit at least one working day prior to the commencement of water taking under the authorization of this permit.
- ~~X~~ N°4. Prior to any water taking under the authorization of this permit, the Permit Holder shall identify to the Director the make and model of all water pumps to be used on site along with their specifications and/or rating curves. Prior to any on-site water taking, each pump shall be equipped with an integrating flow meter and the Permit Holder shall keep on hand written verification that the meter is properly calibrated and operating during use. Prior to any water taking under the authorization of this permit, the Permit Holder shall identify to the Director the make and model of the flow meter(s) installed. ?
- N°5. Water taking under the authorization of this permit is prohibited until Special Condition N° 15 has been fulfilled and the recommended monitoring program has been approved by the Director.
- ~~X~~ N°6. The Permit Holder shall contact each of the private domestic well owners within a 120m. radius of the site boundaries and request access to their well(s) for long-term monitoring purposes. On or before June 30, 2003, the Permit Holder shall provide the Director a list of these well owners, indicating that they have either agreed to be monitored or have refused access. ? X
K IN 10 DAYS?
H.A.
- ~~X~~ N°7. The Permit Holder shall supply to the Director on or before June 30, 2003 the monitoring data for the period April 2001- March 2003 collected from all on site monitoring wells. ?

Permit N°: 03-P-2244

Issued to: Nichols Gravel Limited

Date of Renewal: June 12, 2003

N°8. The Permit Holder shall conduct a thorough water quality survey as required by condition 30 of "Schedule B" of pit license N° 103717 and take a water level measurement on each domestic and agricultural well within a 1 km. radius of the site boundaries on or before July 31, 2003. If access is denied at any location, the Permit Holder shall supply written notification that access was denied, signed by the owner or occupant. If the well is inaccessible, a record should be provided of the reason. This survey shall be submitted to the Director within thirty (30) days of completion.

X N°9. Prior to water taking under this permit and/or prior to any quarrying below the water table, the Permit Holder shall install a minimum of four (4) nested monitoring wells upgradient, downgradient and crossgradient (on both sides) of the quarrying activity. These nests shall be set to monitor water levels in all significant water-bearing units. These monitoring well nests shall be located in areas where they can be monitored and maintained for the entire life of the pit. The zones to be monitored shall be selected by a licensed Professional Geoscientist or licensed Professional Engineer specializing in Hydrogeology and be agreed to by the Director, based upon rock core examination and the results of the packer testing in Special Condition N° 10.

X N°10. Prior to water taking under this permit and/or prior to any quarrying below the water table, the Permit Holder shall conduct packer - injection testing on all four monitors that terminate within the Bertie Formation to identify all significant water bearing units within the entire saturated thickness of the bedrock formations. The length of each Packer test shall not be longer than 1.0 m. This testing shall be carried out under the direction of a licensed Professional Geoscientist or a licensed Professional Engineer specializing in Hydrogeology.

X N°11. On or before June 30, 2003, the Permit Holder shall submit a detailed work plan to the Director for approval for at least two (2) pumping tests that are to be conducted to evaluate the hydraulic characteristics of the Bois Blanc Formation. Upon approval of the Director and prior to taking water under this permit and/or to any quarrying below the water table, this work plan shall be carried out under the direction of a licensed Professional Geoscientist or a licensed Professional Engineer specializing in Hydrogeology.

X N°12. Prior to water taking under this permit, and/or to any quarrying below the water table, the Permit Holder shall conduct in-situ hydraulic conductivity testing on all on-site monitoring wells. This testing shall be conducted under the guidance of a licensed Professional Geoscientist or a licensed Professional Engineer specializing in Hydrogeology.

X N°13. Prior to water taking under this permit, and/or to any quarrying below the water table, the Permit Holder shall establish baseline water level measurements and water quality conditions as follows:

- a) Quarterly water level measurements from all on - site wells and all residential wells within 120 m of the site's boundaries including the wells presently owned by D. Wilson, D. Greenfield and M.Roulston for a minimum of one (1) full year. As the life of the quarry proceeds and the data is collected and evaluated over time, the adequacy and requirement for this extent of monitoring shall be reviewed in the annual report required in special condition N° 22.
- b) Quarterly water level measurements of the quarry ponds that occupy the mined-out quarries to the north and east of the site for a minimum of one (1) full year.

Permit N°: 03-P-2244
 Issued to: Nichols Gravel Limited
 Date of Renewal: June 12, 2003

- c) Quarterly stream flow measurements (excepting winter , unless the pit is operational) upstream of the site, at the site and downstream of the site on both Harrop Drain and the stream to the west of the quarry.

N°14. All on-site monitoring wells/nests shall be equipped with electronic water level sensors/pressure transducers and water levels recorded on an hourly basis during the first full year of water taking. Following the first full year of water taking, upon approval of the Director, the Permit Holder may modify the frequency of measurements.

- X N°15. Prior to water taking under this permit and/or to any quarrying below the water table, the Permit Holder shall submit to the Director a report prepared by a licensed Professional Geoscientist or licensed Professional Engineer specializing in Hydrogeology, which includes and interprets the investigative monitoring data collected under Special Conditions N° 7, 8, 9, 10, 11, 12 and 13. The report to be submitted shall include but not be limited to:
 - a) a detailed discussion of bedrock stratigraphy (including appropriate cross sections),
 - b) identification of the water – bearing layers and lateral extent,
 - c) refinement of predictive zone of influence of de-watering of final licensed levels,
 - d) observed baseline conditions and detailed analysis,
 - e) impact of future de-watering on local surface water features,
 - f) assessment of impacts on local wells,
 - g) calculations detailing the anticipated rates and volumes of de-watering,
 - h) borehole logs and construction details for all on-site monitoring wells,
 - i) recommendations on long-term water monitoring and
 - j) water quality monitoring data collected under conditions , 28, 30, 45 and 46 of "Schedule B." of pit license N° 103717.

N°16. Upon taking water under the authorization of this permit, the Permit Holder shall maintain a log book of the pumping dates, rates, duration and daily flowmeter reading (recorded prior to daily pumping) of water taking for each source, in addition to the well monitoring data record (unless dataloggers are used) and monthly recording of discharge volumes. This log and these records must be kept on site for inspection by any Provincial Officer during the duration of the pit license period.

N°17. The Permit Holder shall take all practical and reasonable measures to prevent the discharge of deleterious substances (sediment, oil, grease, etc.) to the Harrop municipal drain when water is discharged from the sump.

N°18. Following the commencement of taking of water under the authorization of this permit and/or quarrying below the water table, the Permit Holder shall conduct the following (minimum) monitoring program and continue until otherwise indicated in writing by the Director:

- a) Quarterly water level measurements from all residential wells as specified in Special Condition N° 13(a).
- b) Water level measurements in on-site wells shall be conducted as specified in Special Condition N° 14.

Permit N^o: 03-P-2244Issued to: Nichols Gravel LimitedDate of Renewal: June 12, 2003

- c) Quarterly water level measurements of the quarry ponds that occupy the mined-out quarries to the north and east of the site as specified in Special Condition N^o 13(b).
- d) Quarterly stream flow measurements at key points along the Harrop Drain and the stream to the west of the quarry as specified in Special Condition N^o 13(c).

N^o19. If any wells identified in Special Condition N^o 13(a) show a three (3) metre or greater decline in water levels for two consecutive quarters, the Permit Holder shall install an electronic water level monitor in that well and commence daily water level measurements until the well recovers, and/or an assessment of the impact, conducted by a licensed Professional Geoscientist or licensed professional engineer specializing in Hydrogeology, is made and acceptable to the Director. If required, temporary water supplies must be provided to the affected residences immediately and continue until the impact is resolved to the satisfaction of the Director.

N^o20. If any wells identified in Special Condition N^o 13(a) show significant changes in water quality to levels above the Ontario Drinking Water Standards that are identified to be a result of quarrying activities, the Permit Holder shall supply water of equivalent or better quality and quantity with appropriate storage until such time as the water quality recovers and an assessment and resolution of the impact is provided by a licensed Professional Geoscientist or licensed Professional Engineer specializing in Hydrogeology and acceptable to the Director.

N^o21. Upon taking water and/or quarrying below the water table under this permit, the Permit Holder shall maintain a log of complaints regarding water quality and quantity, for the life of the pit. This log shall be kept up-to-date and available on site for inspection by a Provincial Officer. Any complaints received shall be reported to the Manager, MNR Aylmer District Office and investigated within one working day and any complaint of water loss shall be investigated the day the complaint is received.

In the event of such a complaint, the Permit Holder shall supply temporary water with appropriate storage to the affected property owner. The complaint shall be evaluated by a licensed Professional Geoscientist or licensed Professional Engineer specializing in Hydrogeology retained by and at the expense of the permit holder. Provision of a suitable replacement supply shall be as per the protocol developed in Special Conditions N^o 2 and 19 above and in condition 31 of "Schedule B" of pit license N^o 103717.

Should the evaluation conducted above verify an interference, the radius of monitoring will be extended a further 120 m., or to the next water well to a maximum distance of 240 m in the direction of the affected water while. Should subsequent extraction and monitoring at some time, confirm any persistent impact will water well at the expanded 240 m radius, the radius of monitoring may then be extended to 500 m beyond the site boundary in the direction of the affected well. Should the radius for the monitoring program be expanded, the additional well(s) included shall be included in the monitoring program in Special Condition N^o 18 and requirements of Special Conditions N^o 19 and 20 shall apply.

N°22. On or before April 30 of each year after water taking under this permit and/or quarrying below the water table has commenced the Permit Holder shall submit to the Director and to the Manager, MNR Aylmer District Office an annual report covering water-related activities associated with the operation during the previous calendar year. The report shall include but not be limited to the following:

- a) data gathered in accordance with Special Condition N° 18, any impacts identified under Special Conditions 19 and/or 20. These shall be accompanied by an interpretive analysis of that data with respect to the potential effects on area wells and surface water features, of the water taking under this permit and/or quarrying below the water table,
- b) a detailed summary of complaints, resolutions and all relevant data relating to the problem as per Special Condition N° 21,
- c) ongoing water quality monitoring of ground and surface waters under conditions 28, 30, 45 and 46 of Schedule B of pit license N° 103717,
- d) a discussion and evaluation of the trigger mechanisms identified in condition 34 of Schedule B of pit license N° 103717, as required in condition 35 of Schedule B of pit license N° 103717,
- e) a summary of quarry face inflow as required by condition 48 of Schedule B of pit license N° 103717,
- f) an annual summary of the water taking data collected under Special Condition N° 16, and,
- g) recommendations for any modifications to the long-term monitoring program based on the interpretation of the Geoscience.

N°23. The reports required in Special Conditions N°15 and 22 shall contain a signed declaration made by the Engineer or Geoscientist responsible as follows:

"I, the undersigned, hereby declare that to the best of my knowledge, the information contained herein, is complete and accurate in accordance with my obligations under the Professional Engineers Act, R.S.O. 1990 and its regulations or the Professional Geoscientists Act, c.13 and its regulations".

N°24. Discharge of water taken under the authorization of this permit shall be strictly controlled to prevent erosion, scouring or flooding on adjacent properties. The Permit Holder shall ensure that the on-site settling pond on Lot 12 is of sufficient size and design to mitigate these concerns to the satisfaction of the Ministry of Natural Resources and the Long Point Region Conservation Authority and in compliance with condition 52 of Schedule B of pit license N° 103717.



Ministry of the
Environment

X NOTICE OF TERMS AND CONDITIONS

in accordance with Section 100 of the *Ontario Water Resources Act*, R.S.O. 1990, notice is hereby given of the issuance of Permit To Take Water

No. 03-P-2244

which contains terms and conditions pertaining to the taking of water and to the results of the taking. The terms and conditions have been designed to allow for the development of water resources for beneficial purposes while providing reasonable protection to existing water uses and to public interests in water.

You may, by written notice served upon me, the Environmental Review Tribunal and the Environmental Commissioner, *Environmental Bill of Rights*, S.O. 1993, Chapter 28, within fifteen days after receipt of this Notice, require a hearing by the Tribunal. The Environmental Commissioner will place notice of your appeal on the Environmental Registry. Section 101 of the *Ontario Water Resources Act*, as amended provides that this Notice requiring a hearing shall state:

1. The portions of the permit or each term or condition in the permit in respect of which the hearing is required, and;
2. The grounds on which you intend to rely at the hearing in relation to each portion appealed.

In addition to these legal requirements, the Notice shall also include:

3. The name of the appellant;
4. The address of the appellant;
5. The Permit to Take Water number;
The date of the Permit to Take Water;
The name of the Director;
6. The municipality within which the works is located;

and the Notice should be signed and dated by the appellant.

The Notice must be served upon:

The Secretary,
Environmental Review Tribunal,
P.O. Box 2382,
2300 Yonge St., Suite 1201
Toronto, Ontario, M4P 1E4

The Director,
Section 34,
Ontario Water Resources Act
Ministry of the Environment
(issuing office)

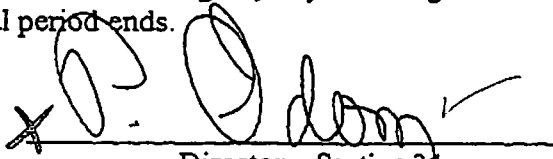
The Environmental Commissioner,
1075 Bay St., 6th floor,
Suite 605,
Toronto, Ontario
M5S 2W5

Further information on the Environmental Review Tribunal's requirements for an appeal can be obtained directly from the Tribunal by telephone at (416) 314-4600 by fax at (416) 314-4506 or website at www.ert.gov.on.ca

In the event of an appeal, the terms and conditions of the permit, as issued, would remain in effect until the appeal has been finalized. This instrument is subject to Section 38 of the *Environmental Bill of Rights*, that allows residents of Ontario to seek leave to appeal the decision on this instrument. Residents of Ontario may seek leave to appeal for 15 days from the date of this decision is placed on the Environmental Registry. By accessing the Environmental Registry, you can determine when the leave to appeal period ends.

Dated at Hamilton, Ontario

This 12th day of May 20 03


Director Section 34
Ontario Water Resources Act R.S.O. 1990

14

Nichols Gravel Limited

P.O. Box 172
Delhi, On. N4B 2W9

PHONE: 519-582-3354

FAX: 519-582-2143

X June 12, 2003

X Ministry of Natural Resources
Hon. Jerry Ouellette, Minister

X Dear Sir:

Thank you for your letter of June 10th, 2003 in response to our April 2nd, 2003 letter. In respect to the various non responses, confrontation, and problems experienced with your Ministry and in review of the correlation of events which have transpired since the final O.M.B. decision/order was issued July 25th, 2001, we can now conclude without prejudice that the Ministry of Natural Resources has dealt with our company in bad faith.

We arrived at this conclusion based on the following fact:

Upon receiving the April 3rd, 2001 O.M.B decision/order, our consultant in consultation with M.N.R. immediately proceeded to amend the site plans to include certain recommendations and conditions of the decision/order so that there would be no delay in issuance of the Class A license, as we were starting our 2001 working season, and needed to start up as quickly as possible.

The site plans were amended and completed by May 25th, 2001 and the final O.M.B. decision/order was issued July 25th, 2001. However, there was no response from M.N.R. or M.O.E. which resulted in the loss of income for the 2001 season as we were unable to start as neither the license or Permit to Take Water was issued as directed.

Recent information indicates that there exists legislation which requires a response to an O.M.B. decision/order within 30 days of receiving that decision/order. Now we have to ask the question why did these two ministries not comply, and why did it take 1 year and 8 months to receive the Class A License from M.N.R. which now places us at this date into our 3rd working season after the O.M.B. decision, with very substantial losses for the 2 previous working seasons lost in year 2001 and 2002 and we are now still spinning with a license issued and immediately suspended and not operational from the date of receiving it April 1st, 2003. What kind of spin game is this?

In the March 6, 2002 letter to M.P.P. Toby Barrett copied to M.N.R, we identified our plans to proceed with development on the property in the year 2002. There was no response from Mr. Barrett and only from the M.N.R. after drilling and blasting had occurred on the property.

On. September 5th, 2002 we had the Trespass event by M.N.R. Inspectors Lumb and Cutmore to obtain information to issue a shut down order for an illegal quarry operation.

When this did not achieve the expected result, Mr. Cutmore immediately contacted O.M.B. case worker Andy Dawang and conspired the illegal reopening of the O.M.B. hearing to discuss the Permit to Take Water issue which we declined to participate in, subject to M.N.R. Aggregate Act legislation which prohibited an O.M.B. decision review under Provincial Statutes Section 43 Ontario Municipal Board Act.

The O.M.B. letter of October 10th, 2002 confirmed this legislation and clearly advised that the O.M.B. could not further intervene in this matter. The letter also confirmed the negligent misrepresentation of Mr. Cutmore in respect to his attempt to promote and arrange an illegal review contrary to his Ministries' own legislation. See letter #1

Then on November 13th, 2002 we received a registered letter from Mr. Cutmore and another negligent misrepresentation where he stated that he was working with the O.M.B. and M.O.E. to clarify the situation with respect to the sequence of the Aggregate License and Permit to Take Water approvals that were required. Mr. Cutmore further stated quote: "I have submitted a proposal to O.M.B. that I believe is technically workable and would permit M.N.R. to proceed with issuance of the Aggregate License." Unquote. No, not according to the October 10, 2002 O.M.B. letter of clarification signed by Joanne Hayes. This letter clearly indicated that the Board had issued its decision, and that it was the responsibility of the M.N.R. to act on that decision without further intervention by the Board.

The November 13th letter set out 15 conditions to be addressed stating that these conditions must be satisfied prior to any extraction taking place on the property. And my question is, by what authority was that determination made, in reference to the fact that this was not so stated in the final O.M.B. decision/order.

X A review of the 55 conditions as approved by the O.M.B. identify only 2 conditions which direct conditions prior to operation.

These are: Prescribed Condition #5 and Condition #14 both of which were addressed as directed.

The O.M.B. decision/order directed the Minister quote: "The Board directs the Minister, pursuant to Section 11(8) of the Aggregate Resources Act R.S.01990 to issue a Class A License for removal of aggregate from lands composed of Parts of Lots 10, 11, and 12, Concession 12, in the City of Nanticoke subject to the following conditions." unquote. The clear intent of the Board direction was for the issuance of a license for quote: "the removal of aggregate" and not the issuance of a license for the enforcement freeze on the license with 23 "pre operational conditions" which relates to the same thing as no license at all if it is not operational.

The clear intent here is to have this company spend more mega bucks in the property, but don't dare attempt to get a return on the investment to help pay for it.

Clearly Inspector Cutmore's crowning achievement of negligent misrepresentation was the March 31, 2003 letter signed by District Manager Alec Denys which identified the 23 "pre operational conditions" and 4 stated infractions received with the Class A License on April 1st 2003.

X We contend that the 23 "pre operational conditions" imposed before the license became operational is contrary to Aggregate Act Legislation and the O.M.B. decision/order and therefore have no authority in law and can be considered a conspired fraud.

In particular of the 4 infractions listed, we find infraction #4 to be negligent misrepresentation and a complete fraud.

This matter concerning these berms was identified and discussed with our consultant prior to release of the site plans to M.N.R. The question was whether the site plans should be amended to relocate the berm farther west of the access road entrance before the site plans were released to M.N.R.

X Our consultant discussed this question with Mr. Cutmore on February 3rd, 2003 and reported no concern by Mr. Cutmore at this time, as these berms were not required until the drills were working within 350 metres of the nearest residence, and that this could be addressed later when required.

X See fax dated February 5th, 2003 from our consultant confirming this discussion and conclusion, and a follow up fax from our consultant April 22, 2003 reaffirming the previous discussion after my inquiry after the March 31, 2003 letter. 2, 3

In this regard the site plans state quote: " Initial Excavation Area 1A. Drilling may proceed in this area without the berms around R1, R2, R3. This area may be extended to within 400 m from R1, R2, and R3 provided the interim barrier is within 50 m from the drill." unquote. See Site Plan.

X However, in spite of what is indicated on the site plan and the documented conversations between Mr. Cutmore and our consultant Bernie Janssen, Mr. Cutmore makes the comment under infraction #4 quote: "The roadway entrance and weigh scales should be moved eastward of the existing location, as an acoustic berm is required along the boundary of the adjacent farm residence."

X If ever there was an underhanded conspired snake in the grass event directed to impact our company, this has to be it. Sure we will move our access road over, and move our scales and destroy and replace \$10,000.00 worth of concrete footings. No, I don't think so. No suggestion such as amending the site plan to accommodate and save this useless unnecessary expense. ?

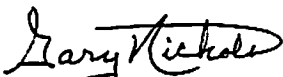
We have now spent thousands of dollars constructing berms which are not required at this time in an attempt to accommodate this order, although we project these berms will not be required for at least 4 or 5 years. ?

All of this information confirms that for whatever reason, this direction by Mr. Cutmore under infraction number 4 was an intentional and conspired fraud. We have now been made aware of another interference by Mr. Cutmore when he contacted Roads Director David Anderson of Haldimand County to try to further restrict and complicate matters concerning our access to the Harrop drain for dewatering the quarry. I suggest such actions far exceed Mr. Cutmore's responsibilities for enforcement of the Aggregate Act. ?

- X Please be advised at this time, that in respect to Mr. Cutmore's bad faith interferences and fraudulent performances directed to this company, the officers of this company shall have no further business dealings with Mr. Cutmore. If he should again enter any of our properties, we shall file Trespass and Harassment charges along with conspiracy and fraud charges with the courts to the illegal interference with economic and business relations of Nichols Gravel Limited. ?
- X I suggest in respect to Inspector Cutmore's pathetic overpowering performances and as well, the complete loss of credibility of the Ministry of Natural Resources, that it would be most appropriate if Mr. Cutmore were to resign his position with the Ministry, or in the alternative have his employment terminated. ?
- X Please further be advised that our lawyers are researching whether we shall proceed to file contempt of an O.M.B. decision/order charges against the Minister of Natural Resources and the Minister of the Environment and staff, and for monetary damages as well, due to the extended unnecessary delay in issuance of the Class A License and the Permit to Take Water, and the further delay imposed with the License suspension order. ?
- X As a final comment in respect to your letter of June 10, 2003 I would advise you, that I previously served a three year term as a Haldimand-Norfolk Regional Councillor for the Township of Delhi, and in the experience, received my education as to how government really works. Been there, done that. ?
- X It would be my suggestion, that this Provincial government enforce the elected authority of the people, and direct staff, instead of staff directing the government. This really does work, if anyone is interested in stopping the spinning process. ?

Thank you for your consideration in this matter.

Yours sincerely,



X Gary Nichols

- X c.c. Premier Hon. Ernie Eves
 c.c. Alec Denys, M.N.R. Aylmer District
 c.c. Crown Law Office
 c.c. Toby Barrett

15
X Environmental
Commissioner
of Ontario



Commissaire à
l'environnement
de l'Ontario

Gord Miller, B.Sc., M.Sc.
Commissioner

Gord Miller, B.Sc., M.Sc.
Commissaire

X July 8, 2003

Mr. Gary Nichols
Nichols Gravel Limited
Box 172
Delhi ON
N4B 2W9

X Dear Mr. Nichols:

X RE: Nichols Gravel Limited, File #A2003012
Notice of Appeal under the *Environmental Protection Act* - Date of Placement on the
Environmental Registry in Accordance with s. 47 of the *EBR*

On July 4, 2003, the Environmental Commissioner of Ontario (ECO) received a copy of your Notice of Appeal concerning the Permit to take Water No. 03-P-2244 issued by the Ministry of the Environment.

In accordance with the ECO's duty pursuant to section 47(3) of the *Environmental Bill of Rights, 1993* to place notice of instrument appeals on the Environmental Registry, notice of this appeal was placed on the Registry on July 8, 2003. Please find enclosed a copy of the Notice of Appeal - Registry Number IA02E0939.

If you have any questions regarding this letter please do not hesitate to contact me at 416-325-3378, or you may wish to contact Peter Lapp, Executive Assistant, at 416-325-3369.

Yours truly,

Bev Edwards.

X Bev Edwards
Policy & Decision Analyst

Attachment

15

EBR Registry Number: IA02E0939

Ministry Reference Number: 23021096

Type of Posting: Instrument

Status of Posting: Appeal

Ministry: Environment

Type of Appeal: Applicant Appeal

Date Proposal Loaded: 2002/08/09

Comment Period: 30 day(s)

Written submissions were permitted between August 09, 2002 and September 08, 2002.

Date Decision Loaded: 2003/06/26

Date Appeal Application was received by the Environmental Commissioner: 2003/07/04

Date Applicant Appeal Notice was placed on the Registry by the Environmental Commissioner: 2003/07/08

X NOTICE OF AN APPEAL OF A DECISION FOR AN INSTRUMENT:

© Queen's Printer for Ontario, 2002, 2003

Application for Appeal Initiated by:

Nichols Gravel Limited ("appellant")

Decision under Appeal:

The appellant is appealing all of the terms and conditions of the Permit to take Water No. 03-P-2244 issued by the Director.

Grounds for Appeal:

The Appellant considers the permit to be unlawful and invalid for the following reasons:

- X** a. The permit is not a "renewal"; it is a "new" permit.
- X** b. The 24 "pre dewatering conditions" do not comply with the conditions as approved by OMB Decision/Order 1194. The Ministry of the Environment has no authority to change conditions imposed by the OMB.
- X** c. The pre-conditions prevent any water taking until all conditions are met and approved by MOE. This is a contravention of the Aggregate Resources Act Prescribed Conditions (e.g., for mitigation of dust) which cannot be changed or altered even by the Minister or the OMB.

For Information on hearing dates and locations, please contact the Appellate Body listed under Contacts.

Contacts:

Environmental Review Tribunal

15

Contact: The Secretary
2300 Yonge St., 12th Floor, P.O. Box 2382, Toronto, Ontario, M4P 1E4
PHONE: (416) 314-3300 FAX: (416) 314-3299

Peter Lapp, Executive Assistant
Environmental Commissioner of Ontario
1075 Bay Street, Suite 605, Toronto, Ontario M5S 2B1
PHONE: (416) 325-3377 FAX: (416) 325-3370

X INFORMATION ABOUT THE DECISION FOR WHICH THE APPLICATION WAS RECEIVED:

Instrument Type:

OWRA s. 34 - Permit to take water

Instrument Holder: (Proponent)

Nichols Gravel Limited P.O. Box 172, Delhi, Ontario, N4B2W9

Location of Activity:

P.O. Box 172, Delhi, Ontario, N4B 2W9

Nanticoke

County/District/Region: Regional Municipality Of Haldimand-Norfolk

Other Activity Location Identifiers:

Lots 10,11, 12, Concession 12 Former Walpole Twp, City of Nanticoke, Haldimand County

X Description:

The proponent has asked that the Ministry of Environment and Energy review their application for the following:

Permit: New

Source: Pond

Purpose: Industrial (aggregate extraction)

Period of Taking: Fifty (50) years

X Amount of water to be taken (maximum): 700 Igpm (3,182 Lpm), 420,000 Igpd (1,909,320 Lpd) 280 days per year.

Location: Lots 10-12 Concessio 12, Former Walpole Twp., City of Nanticoke, Haldimand County

Proposal Decision:

The Permit has been issued with conditions

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This permit was issued on June 12, 2003 and is valid annually between March 15 and December 15 until March 31, 2008.

Number of Comments Received: 32 ?

X Effect of the Comments on the Decision of the Ministry:

Comments received were reviewed and where appropriate were considered in the ministry's decision whether or not to proceed with this proposal. In this case, comments were consistent with concerns within the ministry and as a result terms and conditions were added.

These conditions do not represent all conditions imposed on the instrument holder but rather those that are directly in line with comments received.

X 32 individual comments/letters were received through the EBR posting. All 32 letters submitted were not in favor of the PTTW application submitted by Nichols Gravel Limited. The majority of the comments/concerns made by these individuals were similar in nature and are summarized as follows:

1. Mr. Nichols has proceeded to quarry the site before any of the Ontario Municipal Board's (OMB) 52 points, issued on April 16th 2001, have been addressed.

X 2. Historical interference problems have occurred in the past through similar operations with respect to both water quality and quantity. In 1972, a number of private wells and a spring fed pond went dry and/or experienced adverse water quality impacts due to quarrying activities that occurred within the Bertie Formation.

X 3. The requested rate of 700 IGPM was much higher than the 39 IGPM that was proposed by Nichols Gravel Limited during the OMB hearing.

4. The potential for future interference problems with the areas water supply. There are a number of individuals in the area that rely on the groundwater supply for private domestic use as well as for agricultural purposes and therefore, a consistent supply of good quality groundwater is a major concern.

5. Nichols Gravel Limited was noted to be operating the quarry without a quarry license.

X 6. The applicant has not complied with a number of recommendations put forth by the MOE ? that should have been completed prior to the submission of an application for a long-term PTTW.

7. A number of concerns revolved around the inadequacies of the hydrogeologic model and unsatisfactory hydrogeological report prepared by the consultants on behalf of Nichols Gravel Limited. ?

8. The Harrop Drainage System is maintained by a number of area residents and there is concern that by discharging large amounts of water into this drain by Nichols Gravel Limited ? will adversely impact the system. Concerns with respect to the flooding of fields, the effects on the natural habitat in the area and the potential for erosion of the drainage system were noted.

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Other additional comments/concerns raised include:

- a) The potential impact on a residence natural gas well. ?
- b) No communication with the surrounding landowners or anyone else as to the current operations of the quarry has occurred by Nichols Gravel Limited in some time.

The majority of the above noted comments/concerns were addressed in a number of Special Conditions attached to the approved PTTW. A number of the attached Special Conditions are required to be completed and submitted to the Director prior to taking water under the approved permit. Furthermore, the maximum approved rate was lowered to 240 IGPM (over a 10-hour day) to more appropriately reflect what was presented at the OMB public hearing.

A number of the 52 points put forth by the OMB that did not relate to water quality and quantity, in point 1) above, were not addressed as they were beyond the scope of this review. ?
Furthermore, points 5) and a) above were also beyond the scope of this review.

X Jennifer Volpato B.Sc., M.Eng.
Hydrogeologist

Additional material in support of this notice is available by clicking the following hyperlink(s):

http://www.ene.gov.on.ca/envision/env_reg/er/documents/pttw/2003/IA02E0939.pdf

X
Other Pertinent Information:

This application to comply with OMB decision Order #1194 and Aggregate Act prescribed condition Cat. 2 Class "A" licence, page 9, section 3.0, Sub. 3.2 and OMB Conditions of Approval, attachment "2", pages 1-2 and for intermittent dewatering of surface water and storm events which may occur and the possible projected need to wash aggregate as required.

Issuing Authority:

Director
West Central Regional Office
12th Floor, 119 King St. West
Hamilton, Ontario, L8N 3Z9
PHONE: (905) 521-7640 FAX: (905) 521-7820

AS THE APPLICATION IS CONSIDERED, THIS INFORMATION WILL BE UPDATED BY THE ENVIRONMENTAL COMMISSIONER OF ONTARIO.

Ministry of
Natural Resources

Ministère des
Richesses naturelles



353 Talbot Street West
Aylmer ON N5H 2S8
Tel: 519-773-9241
Fax: 519-773-9014

353, rue Talbot Ouest
Aylmer ON N5H 2S8
Tél.: 519-773-9241
Téléco.: 519-773-9014

X July 9, 2003

REGISTERED MAIL

X MORCON LTD.
R.R. #1
Brownsville, ON
N0L 1C0

X ATTENTION: John Cattle, Vice President and General Manger

Dear John:

X SUBJECT: Nichols Gravel Ltd., R.R. #2 Delhi, Ontario

X Please be advised that licence no. 103717 issued to Nichols Gravel Ltd. April 1, 2003 for property located at Pt. Lots 10-12, Conc. 12, Haldimand County (Walpole Township), was suspended April 7, 2003. This suspension is in effect until conditions specified are completed to the satisfaction of the Ministry of Natural Resources by September 30, 2003. ?

X All activities associated with the quarry authorized by the above licence are prohibited. Continuing any activities during the suspension is a contravention of the Aggregate Resources Act and is punishable upon conviction by a fine of not less than \$500.00 and not more than \$30,000.00 for each day on which the offence continues. ?

X Please be aware that the placement of equipment and the operation of said equipment on this property could result in prosecution under the Aggregate Resources Act. ?

For further information, please contact Conservation Officer Jim Greenwood at 519-773-4701 or myself.

Yours truly,

X Gary Zacher
A/Enforcement Supervisor
Aylmer District
Tel. 519-773-4734

JG/jo

X ATTENTION: PAUL OSIER

FROM: GARY NICHOLS - THE MOST RECENT INTERFERENCE BY MNR. JULY 30/03 3:30P.

Ministry of
Natural Resources

Ministère des
Richesses naturelles



353 Talbot Street West
Aylmer ON N5H 2S8
Tel: 519-773-8241
Fax: 519-773-9014

353, rue Talbot Ouest
Aylmer ON N5H 2S8
Tél.: 519-773-8241
Téléc.: 519-773-9014

X NOW THEY INTERFERE WITH OUR COMPLIANCE TO
OMB DECISION / ORDER 1194. B.I.N.

X July 24, 2003

REGISTERED MAIL

COPY

Golder Associates Ltd.
2390 Argentea Road
Mississauga, ON
L5N 5Z7

X ATTENTION: Lony Harmon

X Dear Mr. Harmon:

SUBJECT: Nichols Gravel Ltd., R.R. #2 Delhi, Ontario

X Please be advised that licence no. 103717 issued to Nichols Gravel Ltd. April 1, 2003 for property located at Pt. Lots 10-12, Conc. 12, Haldimand County (Walpole Township), was suspended April 7, 2003. This suspension is in effect until conditions specified are completed to the satisfaction of the Ministry of Natural Resources by September 30, 2003. ?

X All activities associated with the quarry authorized by the above licence are prohibited. Continuing any activities during the suspension is a contravention of the Aggregate Resources Act and is punishable upon conviction by a fine of not less than \$500.00 and not more than \$30,000.00 for each day on which the offence continues. ?

X Please be aware that the placement of equipment and the operation of said equipment on this property could result in prosecution under the Aggregate Resources Act. ?

For further information, please contact Conservation Officer Jim Greenwood at 519-773-4701 or myself.

Yours truly,

for Gary Zacher
A/Enforcement Supervisor
Aylmer District
Tel. 519-773-4734

JG/jo



X Ministry of Natural Resources
Ministère des Richesses naturelles

353 Talbot Street West
Aylmer West, Ontario
N5H 2S8
(519)773-4747

X October 1, 2003

"Registered Mail"

X Nichols Gravel Limited
P.O. Box 172
Delhi, Ontario
N4B 2W9

X Attention: Gary Nichols

Dear Sir:

X Subject: Nichols Gravel Limited
Licence No. 103717
Notice of Suspension

A letter addressing the current status of your licence No. 103717 was submitted by Paul J. Osier on September 19, 2003. After a formal review of this correspondence, our office has subsequently revised the Notice of Suspension issued on April 14, 2003 by Paul Cutmore. The attached revised Notice of Suspension, dated as of October 1, 2003, now supercedes the former Notice of Suspension. This order outlines the specific outstanding conditions that must be met in order for your licence to be re-instated.

Once the licence has been formerly re-instated, you remain responsible for meeting the remainder of the 56 conditions associated with this licence. Failure to comply with these conditions is a violation of Section 15 of the Aggregate Resources Act. Section 15 of the Aggregate Resources Act R.S.O. 1990 states that, "Every licensee shall operate the licensee's pit or quarry in accordance with the Act, the regulations, the site plan and the conditions of the licence".

Please note that in accordance with the revised Notice of Suspension dated October 1, 2003, Licence No. 103717 is currently suspended. Please be advised that your licence will remain suspended until all of the remedial action work as outlined on the Notice of Suspension has been completed. In the interim, your licence remains suspended and no production, processing, or shipping of material can occur within this licence site.

Failure to comply with this revised Notice of Suspension by December 15, 2003, shall be deemed an offense under section 57(3) of the Aggregate Resources Act R.S.O. 1990. Failure to comply with this order may result in further charges or the revocation of your aggregate licence.

We look forward to hearing from you in the near future.

Sincerely,

X Emilia Kuisma
Aggregate Resources Inspector
Aylmer District

Attach.
ekuisma/2003

c.c. Paul J. Osier.



Ministry of Ministère des
Natural Richesses
Resources naturelles

353 Talbot Street West
Aylmer West, Ontario
N5H 2S8
(519)773-4747

"Registered Mail"

X October 1, 2003

Arrel, Brown, Osier and Murray
Barristers and Solicitors
41 Caithness Street West
Caledonia, Ontario
N3W 2J2

X Attention: Paul J. Osier

Dear Sir:

X Subject: **Nichols Gravel Limited**
Licence No. 103717
Notice of Suspension

Thank-you for your letter dated September 19, 2003 in regards to your client Gary Nichols. After a formal review of your correspondence, this office has subsequently revised the Notice of Suspension issued on April 14, 2003 by Paul Cutmore. The attached revised Notice of Suspension, dated as of October 1, 2003, now supercedes the former Notice of Suspension. This order outlines the specific outstanding conditions that must be met by your client. ?

Once the licence has been formerly re-instated, your client remains responsible for meeting the remainder of the 56 conditions associated with his licence. Failure to comply with these conditions is a violation of Section 15 of the Aggregate Resources Act. Section 15 of the Aggregate Resources Act R.S.O. 1990 states that, "Every licensee shall operate the licensee's pit or quarry in accordance with the Act, the regulations, the site plan and the conditions of the licence".

X Failure to comply with this revised Notice of Suspension by December 15, 2003, shall be deemed an offense under section 57(3) of the Aggregate Resources Act R.S.O. 1990. Failure to comply with this order may result in further charges or the revocation of this aggregate licence.

We look forward to hearing from you in the near future.

Sincerely,

X Dan Elliott
Area Manager
Aylmer District

Atch.
ekuisma/2003

c.c. Gary Nichols- Nichols Gravel Limited.

X REVISED****

X NOTICE OF SUSPENSION



Ministry of Natural Resources
Ministère des Richesses naturelles

Under the authority of Section 22(1), or 32(1) or 45(1) Aggregate Resources Act (ARA)
R.S.O. 1990, Chapter A. 8, as amended

AVIS DE SUSPENSION DE PERMIS

Aux termes de l'article 22 (par. 1), 32 (par. 1) ou 45 (par. 1) de la Loi sur les ressources et les déchets (LRA), LRO 1990, Chap. A.8 en tenant compte des modifications

By the authority delegated to me by the Minister of Natural Resources, I
En vertu des pouvoirs qui m'ont été conférés par le ministre des Richesses naturelles, je

X Emmilia Kuisma

Guelph/Aylmer District

Inspector / Inspecteur

Administrative District / District administratif

do hereby suspend licence / permit number 103717
suspend, par la présente, le permis ou la licence numéro

issued to Nichols Gravel Limited
délivré à

for the following reasons:
et ce, pour les motifs suivants:

XTHIS SUSPENSION ORDER SUPERCEDES THE FORMER SUSPENSION ORDER ISSUED ON APRIL 14, 2003 BY AGGREGATE INSPECTOR PAUL G. CUTMORE****

X On April 1, 2003, a Class A Aggregate Licence (with fifty-six conditions) for the property located at Pt. Lots 10-12, Concession 12, Haldimand County (Walpole Township) was hand delivered to the main office of Nichols Gravel Limited in Delhi, Ontario. In the covering letter (attached to the Licence) instructions were included specifying that twenty-three conditions of the Licence had to be fulfilled prior to the operation of the quarry or removal of material from the licensed property. Following the issuance of the licence, material was removed from the licensed property.

X Due to the removal of quarried material from the licensed property, without fulfilling the required licence conditions, Section 15 of the Aggregate Resources Act has been violated.

Section 15 of the Aggregate Resources Act states that, 'Every licensee shall operate the licensee's pit or quarry in accordance with the Act, the regulations, the site plan and the conditions of the licence'.

AND FURTHER TAKE NOTICE that this suspension is effective from the time of service of this notice upon you and shall continue in effect until you take or desist from taking, as the case may be, the following action(s) to my satisfaction:
EN OUTRE, VEUILLEZ ÊTRE AVISÉ que la présente suspension entre en vigueur dès que l'avis vous est signifié et ne sera pas levée tant et aussi longtemps que vous n'aurez pas pris ou n'aurez pas renoncé à prendre les mesures suivantes:

X Complete the following by December 15, 2003:

1. Copies of the Spills Contingency Program, as required by Condition 5 of your licence, must be provided to this office by December 15, 2003.
2. As required by Condition 12 of your licence, all blast monitoring reports must be provided to this office by December 15, 2003.
3. As required by Condition 14 of your licence, all residences within 300 metres of the edge of the extraction area shall be thoroughly inspected by the licensee's consultant prior to the start of quarry blasting operations. Provide this office with copies/records of these inspections by December 15, 2003.

4. As required by Condition 15 of your licence, the first six quarry blasts shall be monitored for both vibration and over pressure (noise) at a minimum of four locations for each blast in order to accumulate site-specific data quickly. Provide this office with copies/records of the first six quarry blasts by December 15, 2003.
5. As required by Condition 17 of your licence, careful blast records shall be maintained. Provide this office with all blast records, post issuance of your aggregate licence 103717, by December 15, 2003.
6. As required by Condition 20 of your licence, the monitoring results of the first six quarry blasts monitored at a minimum of 4 locations in accordance with the recommendations of the Licensee's consultant, along with the consultant's analysis and recommendations, shall be submitted to the local offices of MNR and MOE. Provide this office with copies of the monitoring results and documentation that these results have been forwarded to the Ministry of the Environment by December 15, 2003.
7. As required by Condition 25 of your licence, residences within 300 metres of the quarry site, which will have been thoroughly inspected in accordance with the recommendations of the Licensee's consultant, shall be re-examined following the initial six blasting operations. Copies of the original examinations records and of the re-examination results shall be submitted to the property owner concerned. Provide this office with written confirmation/records that this condition has been met, by December 15, 2003.
8. As required by Condition 27 of your licence, the licensee will provide for the installation of monitoring well nests with upgradient, downgradient, and cross-gradient wells at the top of the Bois Blanc Formation, to the base of the Bois Blanc Formation and into the Bertie Formation at the property boundaries. Documentation/records that these wells have been installed must be supplied to this office, by December 15, 2003.
9. As required by Condition 29 of your licence, upon issuance of the quarry licence, the licensee's consultant will commence, with the permission of the property owner, monitoring of all water wells within 120 m of the quarry property boundary, and the wells presently owned by D.Wilson, D.Greenfield, and M.Roulson. Provide this office with records/documentation that monitoring of all water wells has begun, by December 15, 2003.
10. As required by Condition 49 of your licence, the licensee will ensure that the internal water collection system within the quarry will incorporate component storage for groundwater and surface runoff. Construct the internal water collection system by December 15, 2003.
11. As required by Condition 50 of your licence, external berming will be constructed around the quarry to prevent any surface water spillage into the quarry. Complete the berming requirement by December 15, 2003.
12. As required by Condition 51 of your licence, the licensee will ensure that water polishing measures will be incorporated into the internal collection system. Incorporate the water polishing measures into the internal collection system by December 15, 2003.
13. As required by Condition 52 of your licence, the licensee will ensure that the stormwater holding system be designed such that sufficient capacity is provided to hold a 100 year storm with zero discharge. Construct the stormwater holding system by December 15, 2003.
14. As required by Condition 53 of your licence, the licensee will obtain any required approvals, pursuant to the provision of the Drainage Act, for discharge of water to the Harrop Drain. Provide this office with copies of the required approvals by December 15, 2003.
15. As required by Condition 55 of your licence, all berms shall be graded smooth to a stable (2:1) slope and seeded to prevent erosion and to reduce dust. All berms must be graded, sloped and seeded by December 15, 2003.
16. Perimeter fencing is required around Phase 1a, 1b and 2, as detailed on your site plan. Erect all required fencing by December 15, 2003.

17. The interim berms surrounding the quarry area require sloping and seeding, in order to reduce dust in the local area. Interim berm height should be higher as per site plan details (minimum 6m above bedrock floor). Erect, slope and seed berms surrounding the quarry area, as per your approved site plans, by December 15, 2003.
18. The fuel tank existing in the quarry areas should be relocated near the scale house as specified in the site plan. Move and locate the fuel tank, as per your approved site plans, by December 15, 2003.
19. The roadway entrance and weigh scales should be moved eastward of the existing location, as an acoustic berm is required along the boundary of the adjacent farm residence. Move the roadway entrance and weigh scales to the location delineated on your approved site plans by December 15, 2003.

AND FURTHER TAKE NOTICE that all activities associated with the pit or quarry authorized by the above licence (or permit) are prohibited. Continuing any activities during the suspension is a contravention of the Aggregate Resources Act and is punishable upon conviction by a fine of not less than \$500.00 and not more than \$30,000.00 for each day on which the offence continues (section 58, ARA) and could result in cancellation of your licence (or permit) (s. 22(4) or s. 32(5) or s. 45(5)).

EN OUTRE, VEUILLEZ ÊTRE AVISÉ que toute activité liée à l'exploitation du puits ou de la carrière visé par le permis ou la licence mentionné ci-dessus est interdite. Le fait de poursuivre toute activité pendant la période de suspension constitue une infraction à la Loi sur les ressources en agrégats et est pas passible, sur inculpation, d'une amende minimale de 500 \$ et maximale de 30 000 \$ pour chaque journée pendant laquelle se poursuit l'infraction (article 58, LRA), et qu'il peut entraîner la révocation du permis ou de la licence aux termes de l'article 22 (paragraphe 4), 32(paragraphe 5) ou 45 (paragraphe 5).

X
Dated at Aylmer this 1st day of October, year 2003
Fait à _____ en ce _____ jour du mois de _____, année _____


Inspector / Inspecteur

Aylmer.
Administrative District / District administratif

X155/03

NICHOLS GRAVEL LTD. v. HER MAJESTY THE QUEEN

Court file no.

ONTARIO SUPERIOR COURT OF JUSTICE

PROCEEDING COMMENCED AT CAYUGA

X STATEMENT OF CLAIM X

ARRELL, BROWN, OSIER & MURRAY
Barristers & Solicitors
41 Caithness Street West
Caledonia, Ontario
N3W 2J2
Telephone: (905) 765-5414
Facsimile: (905) 765-5144
(Paul J. Osier)
LSUC #116531
Solicitor for the Plaintiff

61

19
✓ Court file no.
~~X~~ 155 | 2003

**ONTARIO
SUPERIOR COURT OF JUSTICE**

BETWEEN:

NICHOLS GRAVEL LIMITED

Plaintiff

- and -

**HER MAJESTY THE QUEEN, in the RIGHT OF THE
PROVINCE OF ONTARIO, its servants or agents including
ALEC DENYS and PAUL CUTMORE**

Defendants

X STATEMENT OF CLAIM

TO THE DEFENDANTS:

A LEGAL PROCEEDING HAS BEEN COMMENCED AGAINST YOU by the Plaintiff. The claim made against you is set out in the following pages.

IF YOU WISH TO DEFEND THIS PROCEEDING, you or an Ontario lawyer acting for you must prepare a statement of defence in Form 18A prescribed by the Rules of Civil Procedure, serve it on the plaintiff's lawyer or, where the plaintiff does not have a lawyer, serve it on the plaintiff, and file it, with proof of service, in this Court office, **WITHIN TWENTY DAYS** after this statement of claim is served on you, if you are served in Ontario.

If you are served in another province or territory of Canada or in the United States of America, the period for serving and filing your statement of defence is forty days. If you are served outside Canada and the United States of America, the period is sixty days.

Instead of serving and filing a statement of defence, you may serve and file a notice of intent to defend in Form 18B prescribed by the Rules of Civil Procedure. This will entitle you to ten more days within which to serve and file your statement of defence.

IF YOU FAIL TO DEFEND THIS PROCEEDING, JUDGMENT MAY BE GIVEN AGAINST YOU IN YOUR ABSENCE AND WITHOUT FURTHER NOTICE TO YOU. If you wish to defend this proceeding but are unable to pay legal fees, legal aid may be available to you by contacting a local Legal Aid office.

X Date: October 2, 2003 Issued by: [Signature]

Address of
Court Office: 55 Munsee St.
Cayuga, Ontario
N0A 1E0

X Her Majesty the Queen
In the Right of the Province of Ontario
Crown Law Office
Civil Law
720 Bay Street, 8th Floor
Toronto, Ontario
M5G 2K1

X Alec Denys, Manager
Ministry of Natural Resources
353 Talbot Street West
Alymer, Ontario
N5H 2S8

X Paul Cutmore, Inspector
Ministry of Natural Resources
300 Water Street
Peterborough, Ontario
K9J 8M5

X CLAIM

1. The Plaintiff claims:

- (a) A Declaration that the defendants have not complied with the order of The Ontario Municipal Board dated April 3, 2001 relating to parts of lots 10 -12, Concession 12, Haldimand County (formerly Walpole Township);
- (b) An Declaration that the licence as issued by the Defendants to the Plaintiff is not in accordance with the orders of The Ontario Municipal Board dated April 3, 2001 and July 25, 2001 (Order 1194);
- (c) For general damages against the defendant in the amount of \$800,000.00 as a consequence of the failure of the defendant to issue the licence as ordered by The Ontario Municipal Board on July 25, 2001;
- (d) For punitive damages in the amount of \$250,000.00 for the wilful misconduct of the defendant, the Queen in the right of the Province of Ontario, its agents and servants in refusing to issue the licence as required, in time, or at all;
- (e) For special damages for costs sustained by the plaintiff as a consequence of the defendants' actions;
- (f) For pre-judgment and post-judgment interest in accordance with the provisions of the Courts of Justice Act, 1984, c. 11 and amendments

thereto;

(g) Costs of this action on a solicitor and client basis;

(h) Such further and other relief as This Honourable Court may deem just.

2. The plaintiff is incorporated in accordance with the laws of the Province of Ontario and carries on business amongst other places in Haldimand County in the Province of Ontario.
3. The defendant, the Queen in the right of the Province of Ontario, has dealt with the plaintiff through its Ministries, The Ministry of Natural Resources and The Ministry of the Environment.
4. The plaintiff states that on or about the 3rd day of March 1999 the plaintiff applied for a licence to operate a quarry pursuant to the provisions of The Aggregate Resources Act.
5. The plaintiff further states that on or about the 7th day of January 2000 the Ministry of Natural Resources (hereinafter referred to as the M.N.R.) referred the application to the Ontario Municipal Board (hereinafter referred to as the O.M.B.) for a hearing both as to the issuing of licence and as to a zoning amendment on the property.
6. The plaintiff further states that on September 22, 2000 the O.M.B. issued a preliminary order permitting the re-zoning of the subject lands.
7. The plaintiff further states that after a full hearing a preliminary ruling granting the licence was ordered on April 3, 2003 on or about the 25th

day of July 2001 the O.M.B. ordered that M.N.R. to issue the licence sought by the plaintiff and subject to terms as set forth in the order.

8. The plaintiff further states that despite numerous requests to the defendants the M.N.R. declined or refused to issue the licence until April 1, 2003.
9. The plaintiff further states that the licence issued was not the licence as ordered by the O.M.B. on July 25, 2001 but instead contained approximately twenty-three conditions not approved or ordered by the O.M.B.; and identified as Schedules A and B on the licence.
10. The plaintiff further states that there is no appeal or review from the O.M.B. decision and pleads and relies on The Aggregate Resources Act, The Ontario Municipal Board Act s. 43 and The Statutory Powers Procedures Act, s. 21.
11. The plaintiff further states that on or about the 13th day of March 2002 it applied for a permit to take water in connection with the licence referred to. The application was made to The Ministry of the Environment (hereinafter referred to as the M.O.E.). That permit was granted but was subject to twenty-four pre-conditions. This permit is under appeal.
12. The plaintiff further states that on the 7th day of April 2003 the M.N.R. suspended the licence it granted on April 1, 2003 alleging violations of The Aggregate resources Act having taken place between March 2002 and December 2002.

13. The plaintiff further states that the M.N.R. also charged it with these violations in an Information dated April 14, 2003.
14. The plaintiff further states that the defendant through the M.N.R. has interpreted the conditions on the licence as ordered by the O.M.B. as being pre-conditions to the granting of an operational licence and has imposed further conditions of its own thereby emasculating the licence originally directed to be granted and making it impossible for the plaintiff to comply with the terms of the licence as issued.
15. The Plaintiff states that there is no legislative authority entitling the Defendants to impose pre-operating conditions on a licence specifically ordered by the O.M.B. both as to whom it was to be granted and as to its conditions.
16. The plaintiff therefore states that it has lost revenue and business as a result of both the excessive and unjustifiable delay in issuing the licence and in the non-response of the defendant to comply with the terms as set by the O.M.B. and has incurred unnecessary costs thereby.

RE: Defendants Alec Denys and Paul Cutmore:

17. The plaintiff states that Alec Denys is the manager of the M.N.R. for the Alymer District of that Ministry and which district included Haldimand County and that the defendant Paul Cutmore is or was an Inspector within that district having responsibility for the licence referred to herein and issued to the plaintiff.

18. The plaintiff further states that the defendant, Pāul Cutmore, failed to exercise his statutory duties in a responsible manner and wilfully misconducted himself and was negligent in acting upon the order of the O.M.B. and in the issuance of the licence referred to herein to the plaintiff. Particulars of which negligence are as follows:

- (a) He misrepresented conditions listed on the site plan required in connection with the licence to representatives of the plaintiff thereby causing the plaintiff to expend monies on features on the site plan; which features were later complained of by Paul Cutmore as being infractions of the site plan;
- (b) He unlawfully added twenty-three pre-operational conditions to those conditions ordered by the O.M.B. as a requisite to the licence;
- (c) He termed the conditions that he added as well as certain of those ordered by the O.M.B. to be pre-operational conditions to be complied with prior to extraction when he knew or ought to have known that the O.M.B. directive contained no such requirement and that to impose such requirements made the fulfilment of the conditions an impossibility for the plaintiff;
- (d) Without lawful justification or excuse he was primarily responsible for a delay of almost two years before issuing the licence from the date of the order of the O.M.B.;

- (e) He caused a Notice of Suspension dated April 14, 2003 to be issued one week after the licence in question had been issued to the plaintiff alleging that site plan contraventions, some of which he had previously approved of and failing to complete twenty-three licence conditions which he had imposed knowing that the licence itself had only been issued one week previously;
- (f) He knew or ought to have known that the excessive and unjustifiable delay and the imposition of unreasonable and impossible conditions would have the effect of creating massive financial loss and hardship for the plaintiff;
- (g) He exceeded the bounds of his authority in the purported exercise of his Inspector functions as authorized under the Aggregate Resources Act and the O.M.B. order.

RE: Alec Denys:

19. The Plaintiff alleges that Alec Denys, as the supervisor for the defendant, Paul Cutmore, failed to adequately supervise or supervise at all the conduct of Paul Cutmore and failed to determine the misfeasance and wilful neglect of Paul Cutmore in the exercise of his responsibilities as an Inspector under the regulations appended to the Aggregate Resources Act and in particular failed to ensure that the licence, as ordered by the O.M.B., be issued in a timely fashion and thereby knew or ought to have known that the impediments imposed by the M.N.R.

contrary to the O.M.B. order would cause severe financial hardship to the plaintiff. In addition he knew or ought to have known that his agents and officials contacted private contractors working for the plaintiff and encouraged them not to work for the plaintiff under threat of prosecution thereby causing further loss of income to the plaintiff.

20. The defendant, Her Majesty the Queen, in the Right of the Province of Ontario, is also responsible for the actions of the defendants Alec Denys and Paul Cutmore as their employers.

X 21. The plaintiff estimates that the following are its losses to date and which losses are ongoing:

- X (a) Loss of profit July 25, 2001 to September 20, 2003 (26 months):
\$800,000.00;
- X (b) Loss of additional revenue due to loss of opportunity to expand:
\$50,000.00;
- X (c) Additional operating costs: \$10,000.00

22. The plaintiff states that the trial of this action be at Haldimand County (Cayuga), Ontario.

X Arrell, Brown, Osier & Murray
Barristers & Solicitors
41 Caithness Street West
Caledonia, Ontario
N3W 2J2 (905) 765-5414
Fax: (905) 765-5144
Paul Osier, LSUC # 116531
Solicitor for the Plaintiff

**ONTARIO
SUPERIOR COURT OF JUSTICE**

BETWEEN:

NICHOLS GRAVEL LIMITED

Plaintiff

- and -

**HER MAJESTY THE QUEEN, in the RIGHT OF THE
PROVINCE OF ONTARIO, its servants or agents including
ALEC DENYS and PAUL CUTMORE**

Defendants

X AFFIDAVIT OF GARY NICHOLS

I, **Gary Nichols**, of the Town of Delhi, in Norfolk County, President of Nichols Gravel Ltd., **MAKE OATH AND SAY** as follow:

1. I am the President of Nichols Gravel Limited and as such have knowledge of the matters hereinafter referred to.
2. On or about the 1st day of April 1999 Nichols Gravel Limited applied for a licence to operate a quarry on lands known as part of lots 10 - 12, Concession 12, former Township of Walpole, now Haldimand County.
3. The licence was applied for pursuant to the provisions of The Aggregate Resources Act and regulations appended pursuant

thereto and because objections were received from nearby residents the application proceeded to an Ontario Municipal Board hearing as referred by the M.N.R.

4. Following a lengthy hearing at which full submissions were made by all interested parties the Ontario Municipal Board granted the plaintiff the licence it sought in a preliminary ruling dated April 3, 2001 and in a final order on July 25, 2001. The Ministry of Natural Resources and the Ministry of the Environment chose not to participate in this hearing.
5. Now produced and shown to me and marked as Exhibit "A" and "B" to this my affidavit are true copies of each of the said rulings.
6. Despite numerous requests the Ministry of Natural Resources which has jurisdiction to grant the licence in question declined or refused to grant same until April 1, 2003. Now produced and shown to me and marked as Exhibit "C" is a true copy of the licence as issued by the Ministry of Natural Resources. This licence contains in addition twenty-three terms or conditions which the Ministry of Natural Resources has termed pre-operational conditions.
7. The Ontario Municipal Board order does not contain any such pre-operational conditions as unilaterally imposed by The Ministry of Natural Resources.

8. On the 7th day of April 2003 the Ministry of Natural Resources which granted the licence in the first place issued a suspension order and served same on the plaintiff on the 14th day of April 2003 at which time it also served on April 15th a Summons alleging various infraction alleged to have occurred in the year 2002.
9. Now produced and shown to me and marked as Exhibit "D" is a true copy of the Suspension Order.
10. Now produced and shown to me and marked as Exhibit "E" is a true copy of the Summons.
11. I make this affidavit for no improper purpose but solely in support of a declaration declaring that the defendant, The Queen, in the Right of The Province of Ontario is not in compliance with the Ontario Municipal Board Decision/Order 1194 issued April 3, 2001 and July 25, 2001, and the license as issued has no validity or effect and that there are no pre-operational conditions in same.
12. I retained Tom Smart of B.L.S. Planning to submit suggested conditions for approval of the application for a license to the Ontario Municipal Board. These conditions were not submitted as pre-operational or as conditions precedent to the granting of a license. Rather, they were suggested as ongoing matters to be dealt with as the quarry developed. Now produced as shown to me and marked as Exhibit "F", is a true copy of such conditions. The conditions of

19
approval as adjusted by the Board are identical to those as suggested

by Tom Smart.

X **SWORN BEFORE ME at**

Haldimand County in the

Province of Ontario

this 3rd day of September 2003

A Commissioner, etc.

X *Mary Nichol*

ONTARIO COURT
OF JUSTICE
PROVINCE OF ONTARIO
COUR DE JUSTICE
DE L'ONTARIO
PROVINCE DE L'ONTARIO

X SUMMONS / SOMMATION
Under Section 25 of the Provincial Offences Act
Sommission adressée au défendeur aux termes de l'article
25 de la Loi sur les infractions provinciales

Form 106
Formulaire 106

Courts of Justice Act
Loi sur les tribunaux judiciaires

X Nichols Gravel Ltd.

R.R. #2

Delhi, ON

Whereas you have been charged
before me that you ~~are~~ ^{are} between the
Attendu que vous avez été accusé devant
moi d'avoir le ou vers le

dates of May 31, 2003 and August 31, 2003

_____ day of _____ at _____
jour de _____ à _____
City of Nanticoke, now Haldimand County

did commit the offence of
commis une infraction

X unlawfully operate a quarry without the authority of a licence, contrary to subsection 7(1) of the Aggregate Resources Act,
RSO 1990, Chapter A.8 as amended and thereby committed an offence pursuant to subsection 57(1) of the said Act.

contrary to _____
par dérogation à _____

section _____
article _____
Issued / Émis

THEREFORE YOU ARE COMMANDED IN HER MAJESTY'S NAME
TO APPEAR BEFORE THE ONTARIO COURT (PROVINCIAL DIVISION)
À CES CAUSES, AU NOM DE SA MAJESTÉ, VOUS ÊTES SOMMÉ COM-
PARAÎTRE DEVANT LA COUR DE L'ONTARIO (DIVISION PROVINCIALE)

AT
A Ontario Court, 45 Munsee Rd, Cayuga, ON

ON THE 7th DAY OF November, 2003 AT 1:00 P.M. AT
LE JOUR DE DANS
(courtroom)
(salle d'audience)

AND TO APPEAR THEREAFTER AS REQUIRED BY THE COURT TO BE
DEALT WITH ACCORDING TO LAW
ET DE COMPARAÎTRE PAR LA SUITE CHAQUE FOIS QUE LE TRIBUNAL
L'EXIGERA DE FAÇON À CE QUE VOUS SOYEZ JUGÉ SELON LA LOI.

Note to Defendant:

You may appear personally, by agent
or counsel.

If you do not appear:

- a) the court may issue a warrant for your arrest; or
- b) the trial may proceed, and the evidence may be taken in your absence

If you do appear:

- a) the trial may proceed; or
- b) you, or the prosecutor, may ask the court to adjourn your case to another date. The court may grant or refuse such a request.

Remarque à l'adresse du prévenu :

Vous pouvez comparaître personnellement, par
mandataire, ou par un avocat.

Si vous ne comparez pas:

- a) le tribunal peut émettre un mandat d'arrêt contre vous; ou
- b) le procès peut être tenu sans que vous y soyez et la preuve peut être entendue en votre absence.

Si vous comparez:

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ONTARIO COURT
OF JUSTICE
PROVINCE OF ONTARIO
COUR DE JUSTICE
DE L'ONTARIO
PROVINCE DE L'ONTARIO

SUMMONS / SOMMATION

Under Section 25 of the Provincial Offences Act
Sommation adressée au défendeur aux termes de l'article
25 de la Loi sur les infractions provinciales

Form 106
Formulaire 106

Courts of Justice Act
Loi sur les tribunaux judiciaires

X Gary I Nichols
61 Elizabeth St.
Delhi, ON
N4B 2W9
DOB 1937 08 19

Whereas you have been charged
before me that you, ~~on or about the~~ ^{between the}
Attendu que vous avez été accusé devant
moi d'avoir le ou vers le

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AT
A Ontario Court, 45 Munsee Rd, Cayuga, ON

ON THE 7th DAY OF November, 2003 AT 1:00 P.M. AT
LE JOUR DE NOVEMBRE, 2003 À 1:00 P.M. DANS
(courtroom)
(salle d'audience)

at Haldimand County
à Haldimand County
this 6th day of October 2003
le 6th jour de Octobre 2003

KB Judge or Justice of the Peace in and for the Province of
Ontario
Juge ou juge de paix nommé pour la province de l'Ontario

Note to Defendant:

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Under Section 25 of the Provincial Offences Act
Somation adressée au défendeur aux termes de l'article
25 de la Loi sur les infractions provinciales

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Formulaire 106

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Loi sur les tribunaux judiciaires

X Wayne E Nichols
R.R. #1
LaSalette, ON
N0E 1H0
DOB 1961 12 21

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before me that you, ~~personally~~ between the
Attendu que vous avez été accusé devant
moi d'avoir le ou vers le

dates of May 31, 2003 and August 31, 2003
~~day of~~ at Part Lots 10-12, Conc. 12 of the former Twp. of Walpole,
~~jour de~~ à

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ONTARIO COURT
OF JUSTICE
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X Margaret D Nichols
61 Elizabeth St.
Delhi, ON
N4B 2W9
DOB 1941 03 29

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Attendu que vous avez été accusé devant
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dates of May 31, 2003 and August 31, 2003

_____ day of _____ at _____
_____ jour de _____ à _____
City of Nanticoke, now Haldimand County

did commit the offence of
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à _____
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K Born
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THESE CHARGES TO BE HEARD AT CAYUGA COURT HOUSE DECEMBER 10 AM

X ARRELL, BROWN, OSIER & MURRAY
 BARRISTERS, SOLICITORS, ETC.
 41 CAITHNESS ST. W
 CALEDONIA, ONTARIO
 N3W 2J2

HARRISON ARRELL, Q.C. (1898-1967)
 FRANK J. BROWN, B.A., LL.B.
 PAUL J. OSIER, B.A., LL.B.
 W. PETER MURRAY, LL.B.
 ELAINE ROSEWELL B.A., LL.B.

TELEPHONE (905) 765-5414
 Paul J. Osier, Ext #34
 Stacey, Family Assistant, Ext #29
 Allison, Criminal/Civil Assistant, Ext #31
 FAX (905) 765-5144

X October 14, 2003

COPY
 Emmilia Kuisma
 Aggregate Resources Inspector
 Ministry of Natural Resources
 355 Talbot Street West
 Aylmer West, Ontario
 N5H 2S8
 By Fax: 519-773-9014

X Dear Ms. Kuisma:

X Re: Nichols Gravel Limited
 Licence No. 103717

Thank you for your letter of October 2, 2003. At the without prejudice meeting that we had in Simcoe. I had suggested that you re-instate Mr. Nichols licence on a schedule under which he would complete all of the items you desired. You have done it in the reverse. You have suspended his licence and asked that he complete the items in the Notice. How can he operate a quarry when you have suspended his licence? It seems to me that you are doing this backwards. If you would agree to re-instate the licence on conditions, each of which having a time schedule to be completed by, that would be doable. ?

If there is some possibility of doing this, please give me a call. ?

Yours very truly,

ARRELL, BROWN, OSIER & MURRAY

X PAUL J. OSIER

PJO/sr
 c.c. Mr. Nichols

NICHOLS GRAVEL LIMITED

P.O. BOX 172
DELHI, ON. N4B 2W9

22

PHONE: 519-582-3354

FAX: 519-582-2143

X October 20, 2003

Ministry of Natural Resources

X ATTENTION: Mr. George Ross
Assistant Deputy Minister
Field Services Division

X Dear Mr. Ross:

In clarification to your letter dated October 2, 2003 on behalf of former M.N.R. minister Hon. Jerry Ouellette in reply to my letter of June 12, 2003, I accept this letter with a one paragraph response to my 4 page letter, not as an acceptable response, but as another M.N.R. ass covering exercise. ?

There was in fact no response to the valid points identified in our letter of June 12, and only when M.N.R. became aware October 1st, 2003 that our company had filed claims with the Courts for the delay of 1 year and 8 months to issuance of the licence after the O.M.B. direction of Decision/Order 1194, as well as for the negligent misrepresentation and bad faith dealings of your ministry, it was only after the fact that we received any acknowledgement or response from your Ministry in your letter dated October 2, 2003. ?

It is now time for common sense and logic to prevail, in order to resolve this mentally deficient mess, or it will be up to the courts to decide if your ministry and staff have the authority to disregard the O.M.B. Decision/Order and make up your own rules and regulations and then attempt to enforce these conditions under Aggregate Act legislation.

We could ask what happened to our entitlement to fair business dealings without discrimination from provincial government ministries? Do we have equality before the law? Do we have Democracy and Free Enterprise, or Government Administrative Dictatorship. ?

In review of what has transpired in respect to our application for the M.N.R. Quarry licence at Hagersville, Ontario, we can confirm that the public planning process is not working, and that this has in fact been a most pathetic and arrogant performance by both the Ministry of Natural Resources and the Ministry of the Environment. ?



X Gary Nichols, President
Nichols Gravel Limited

X c.c. Premier Hon. Dalton McGuinty
c.c. Alec Denys, M.N.R.
c.c. Paul Odum, M.O.E.
c.c. M.P.P. Toby Barrett

NICHOLS GRAVEL LIMITED

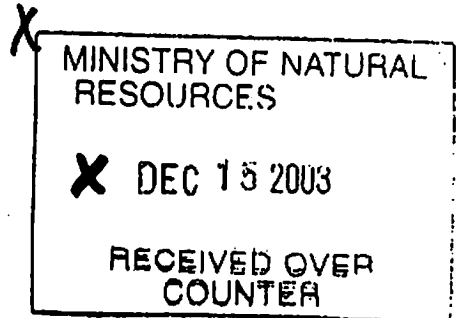
P.O. BOX 172
 DELHI, ON. N4B 2W9

PHONE: 519-582-3354 FAX: 519-582-2143

X December 12, 2003

X Ministry of Natural Resources
 Aylmer District
 Aylmer, Ont.

X ATTENTION: Manager Alec Denys
 Inspector E. Kuisma



Dear Sir and Madam:

This letter of Clarification becomes necessary due to the misinterpretation by M.N.R. of the 55 conditions imposed by O.M.B. Decision Order 1194 in respect to Mr. Cutmores' issuance of the Licence April 1 2003 with "23 pre operational Conditions" and the suspension of the licence April 14, 2003 before the quarry became operational, and could begin to accommodate the conditions as ordered by the Board which our company proposed as conditions of O.M.B. approval.

You will note that conditions: #5, #12, #14, #15, #17, #20, #25, all provide time lines as to when they are to be completed. Find documentation enclosed. It therefore should be obvious, that for conditions with no designated time line for completion that these conditions would be completed along with the on going phased development of the quarry. In retrospect, so that there would be no confusion, our consultant should have inserted with these conditions the words "when required".

Under Condition #27 it states quote: "The licensee will provide for" unquote. It does not say quote: "the licensee shall provide prior to issuance" of the licence or operation of the quarry" unquote. There has not been a need established to require monitoring. This condition will be completed prior to the requirement to dewater for extraction (20 yrs.?) and at the point that well monitoring confirms a drawdown impact from dewatering the quarry for extraction.

Under Condition #49 it states quote: "the licensee will ensure that the internal water collection system within the quarry will incorporate component storage for groundwater and surface runoff" unquote.

In respect to the March 31, 2003 letter received with the licence advising that there was to be no removal of quarried material from the property, and that the quarry could not

become operational until all of these conditions were completed and then the April 14, 2003 suspension order reaffirming this fact, I request M.N.R. to please explain how it is possible to construct an internal water collection system within the quarry if your licence and suspension order prevents extraction and removal of material in order to develop a quarry extraction in the first place. The same thing applies to Condition #51. Is this brain dead or what? Please send the M.N.R. magic wand so that this can be accomplished.

Condition #50 Completed (No Quarry) license suspension.

Condition #52 again quote: "The licensee will ensure that the storm water holding system be designed such that sufficient capacity is provided to hold a 100 year storm with zero discharges. The dewatering rate due to any combination of groundwater and stormwater inflows is not to exceed the peak flow rate which would naturally emanate from the subject property during a 25mm 24 hour rainfall event under existing land use" unquote.

You will note that the reference is to a combination of dewatering rate of groundwater and surface water. Since we have not been allowed under the licence or the suspension order to extract in order to establish a quarry, we have been unable to determine at what point there will be a requirement to dewater the quarry. See letter Dec. 2, 2003 to our consultant confirming no water contact to a depth of 20' in 143 holes drilled July 2003 at this location.

This condition will not be fulfilled until the true water table has been established and it has been determined at what point that it becomes necessary to dewater for extraction.

Condition #53 The property already has approval for discharge of water to the Harrop Drain under the Drainage Act. See Letter: City of Nanticoke, May 11, 2000.

Condition #55 All berms that have been completed have been graded and seeded. Other berms under construction will be graded and seeded upon completion of the berm construction.

#18 The fuel tank was relocated approximately 2 weeks after issuance of the licence April 1, 2003.

#19 The roadway entrance, weigh scale and berms will not be moved as a result of Mr. Cutmore's conspired deception of February 3, 2003, as had he indicated to our consultant that this was a problem in respect to my inquiry to Bernie Janssen, we could have amended our site plans prior to releasing them to M.N.R.. As a result of this deceptive fraud, there will now have to be a site plan amendment to indicate the entrance, scales and berms as located farther to the west.

And again we draw to your attention the fact that once this application was referred by the Ministry of Natural Resources to the O.M.B. that subject to Provincial Statutes Aggregate Act 11 (05) Section 14 O.M.B. Act, Section 21.2 Statutory Powers Act, the M.N.R. does not in fact possess any legislative authority to review, alter or change conditions as imposed by O.M.B. decision/order 1194.

We therefore again repeat our position in respect to the fact that the licence as issued 103717, March 25, 2003 is illegal, unlawful and unenforceable under Aggregate Act legislation, as it is a falsified and forged document in respect to the fact that there was no reference whatsoever to the reconstructed conditions of Schedule A and B in O.M.B. decision/order 1194. Read the Decision/Order! It states quote: "The applicant shall fulfill a set of conditions as set out in attachment "2". unquote.

When we review the correlation of events after the September 5 trespass event and shutdown order, because Nichols Gravel Limited did not roll over and play dead, it becomes obvious that Mr. Cutmore supported by other M.N.R. officials conspired to make every thing for this company as difficult as possible.

X The Events:

1. M.N.R. September 5, 2002 Trespass and shut down order. Declined. Constructing irrigation pond using extraction to construct access roads and stockpile area
2. September 11, 2002 O.M.B. Fax Letter, Mr. Cutmore and Mr. Dawang illegal attempt to reopen O.M.B. Hearing. Declined. Not allowed under Provincial Statutes. See Confirmation October 10, 2002 letter from O.M.B.
3. November 13, 2002, Cutmore's letter advising of 15 conditions to be completed prior to extraction. How was this determined? Where is our Licence?
4. January 30, 2003, Mr. Cutmore called to advise clearance received from the Attorney Generals Office to issue the licence, requested copies of site plans from our consultant.
5. I advised Bernie Janssens that we should amend our site plans before release to M.N.R. to properly identify location of access road, scale and berms farther to the west.
6. February 3, 2003 Bernie Janssens discussed the entrance and berms with Mr. Cutmore, reported back to me as not a problem as berms are not required until drills approach 400 metres of nearest residence as indicated on site plan.
7. March 10 2003, Mr. Cutmore conducts "pre inspection" of property to issuance of licence. Nichols Gravel Limited not informed or aware of this inspection.

8. March 31, 2003, Letter signed by Alec Denys directing completion of 23 "pre operational" conditions to be completed prior to operation of the quarry under Schedule A & B as issued with the licence April 1, 2003. These conditions of the licence declined. Not as directed by the O.M.B. Decision/Order 1194.
9. Listed infraction #4 of March 31, 2003 letter also declined as a fraud, subject to the fact that we could have amended our site plans before release to M.N.R., but our consultant informed by Cutmore, February 3, 2003 the location of berms and entrance not a problem, could be addressed later. Now on March 31, 2003, it is a problem and listed as an infraction of the site plan.
10. We are also aware that during March 2003, Mr. Cutmore had contacted David Anderson, Haldimand County Manager of Engineering to further complicate matters in respect to approvals to dewater the quarry and outlet to the Harrop Drain. This is the same Mr. Anderson who previously falsified documents and libeled our products as substandard and later provided false evidence and perjury to the courts. This is just one more example of Mr. Cutmore's abuse of authority and vindictive extensive attempts to prevent this quarry from becoming operational.

We now confirm that after March 10, 2003 "pre inspection" by Mr. Cutmore at the very same time that our licence was being processed, Mr. Cutmore, Mr. Zacker and Mr. Greenwood was conducting an investigation into events of the previous year, whereby they contacted our crushing contractor, John Cattle and later Marlene Phibbs and various farmers as well as Bill Hunt a salesman for La Farge.

The most astounding event was that on the very same day April 1, 2003 that the license was issued, Mr. Greenwood met with Marlene Phibbs the organizer of the 67 resident, Rural Community Coalition to take a witness statement for their M.N.R. investigation. ?

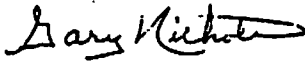
All of this information in respect to the various events, combined with an investigation prior to issuance of the licence would confirm that the "23 pre operational" conditions was a preplanned conspiracy involving the M.N.R., Mr. Cutmore, Mr. Zacher, Mr. Greenwood and Alec Denys as well as the Rural Community Coalition, Bill Hunt, La Farge Canada and David Anderson promoted to further delay and prevent this quarry from becoming operational. ?

Subject to that conclusion please find copy of a Private Information taken before Justice of the Peace, K. Boon on October 1, 2003 to file criminal charges. Mr. Boon declined to file charges stating that Cayuga was the wrong court jurisdiction, as the M.N.R. documents were delivered to Nichols Office in Delhi, Ont. ?

I have not pursued this matter to this point, in anticipation that at some point there will be a consensus to attempt to resolve these problems both by the M.N.R. and the M.O.E.

In that respect please be informed that if this matter has not been resolved to the satisfaction of this company by March 15, 2004, I shall contact Edward Greenspan or Clayton Ruby to act on behalf of our company to file appropriate criminal charges to staff of M.N.R. and M.O.E. and others concerning conspiracy, fraud and production of falsified and forged documents.

Yours sincerely,


* Gary Nichols

* c.c. Premier Hon. Dalton McGuinty
c.c. Minister of Natural Resources, Hon. David Ramsey
c.c. Minister of the Attorney General, Hon. Michael Bryant
c.c. M.P.P. Toby Barrett
c.c. M.O.E. Mr. Paul Odom

* REF: www.injusticecanada.com. current story.

X Ministry of
Natural Resources

Ministère des
Richesses naturelles



353 Talbot Street West
Aylmer ON N5H 2S8
Tel: 519-773-9241
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353, rue Talbot Ouest
Aylmer ON N5H 2S8
Tél. : 519-773-9241
Télec. : 519-773-9014

X December 12, 2003

"Registered Mail"

Nichols Gravel Limited
P.O. Box 172
Delhi, Ontario.
N4B 2W9

X Attn: Gary Nichols

Dear Sir:

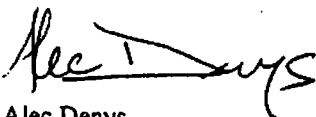
X Subject: Nichols Gravel Limited
Licence No. 103717
Notice of Suspension

This office has issued a Revised Notice of Suspension on October 1, 2003. The final deadline date for compliance is December 15, 2003. As of December 12, 2003, we have not received any written confirmation that the items addressed within the Revised Notice of Suspension have been completed. Please contact this office with written confirmation and documentation, as to what items have been completed within the Notice of Suspension.

Failure to comply with the revised Notice of Suspension by December 15, 2003 shall be deemed an offence under section 57(3) of the Aggregate Resources Act R.S.O. 1990. Furthermore, failure to comply with this order may also result in further charges or the revocation of your aggregate licence.

Should you have any further questions, please contact Emmilia Kuisma, Aggregate Resources Inspector at 519-773-4747.

Regards,


X Alec Denys
District Manager
Aylmer District

c.c. Paul J. Osier

INDEX 2004

1. January 15, 2004, Response from M.N.R. to December 12, 2003 letter.
2. January 19, 2004, Spriet Associates Review Harrop Drain.
3. February 2, 2004, E.R.T. dismisses Appeal to Permit To Take Water, #03-P-2244.
4. February 18, 2004, Letter of Appeal to the Lieutenant Governor of Council.
5. April 7, 2004, M.N.R. Notice of Intention to Revoke Licence.
6. May 10, 2004, Compliance to O.M.B. Order to Blast monitoring.
7. July 7, 2004, Response to M.N.R. Notice of Intention to Revoke Licence.
8. July 14, 2004, Letter to M.N.R Minister David Ramsay
9. August 3, 2004, Record of M.N.R. visit to Quarry.
10. August 9, 2004, Falsified Document prepared by M.N.R. Inspector Emmilia Kuisma directed to Minister Ramsay for signing Licence Revoke Order to Licence 103717. No reference whatsoever to **"Pre Operational Conditions", just to "Conditions of Licence"**.
11. August 18, 2004, Letter to M.N.R. Alec Denys.
12. October 7, 2004, M.N.R. Notice of Revocation of Licence 103717, September 30, 2004.
13. October 10, 2004, Sign at entrance to Quarry.
14. October 15, 2004, Response from M.N.R. Minister to Letter of July 14, 2004.
15. October 26, 2004, Letter from M.N.R. Minister Ramsay. Received October 28, 2004.
16. October 29, 2004, Request to O.M.B. to Appeal M.N.R. Revoke of Licence.
17. November 11, 2004, Letter to Minister Ramsay.
18. November 17, 2004, Letter of response from Minister Ramsay.

X Ministry of
Natural Resources

Ministère des
Richesses naturelles



353 Talbot Street West
Aylmer ON N5H 2S8
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Télec. : 519-773-9014

X January 15, 2004

X Mr. Gary Nichols
Nichols Gravel Limited
P.O. Box 172
Delhi, ON
N4B 2W9

X Dear Mr. Nichols,

This letter will confirm receipt of your correspondence of December 12, 2003. As some of the conditions and events covered in your letter are currently before the court, it is not appropriate for us to respond at this time.

Sincerely,

X Alec Denys
District Manager
Aylmer District

C	X	Hon. Dalton McGuinty	Premier of Ontario
		Hon. David Ramsay	Minister of Natural Resources
		Hon. Michael Bryant	Minister of the Attorney General
		Toby Barrett	MPP, Haldimand-Norfolk-Brant
		Paul Odom	Ministry of Environment
		Emilia Kuisma	Aggregates Inspector, Aylmer District



X SPRIET ASSOCIATES
ENGINEERS & ARCHITECTS
155 York Street
London, Ontario N6A 1A8
Tel. (519) 672-4100
Fax (519) 433-9351
E-mail: mail@spriet.on.ca
www.spriet.on.ca

X January 19, 2004

X Sullivan-Mahoney
Barristers & Solicitors
40 Queen Street, Box 1360
ST. CATHARINES, Ontario L2R 6Z2

Attention: Sara J. Premi

X TO COPY
HARROP DRAIN
ENGINEERS REPORT

X Dear Ms. Premi:

X Re: Harrop Drain
Nichols Gravel Ltd.
Hagersville Quarry
Our Reference No. 203272

Further to your call with respect to the preliminary hearing of January 14, 2004, we provide the following information as requested:

A. DRAINAGE ENGINEER

John R. Spriet has been a partner at Spriet Associates London Limited for 30 years. As a Consulting Engineer to many municipalities in Niagara, Elgin, Middlesex as well as Haldimand and Norfolk, J. R. Spriet has prepared 1000+ reports under the Ontario Drainage Act during that time.

B. HARROP DRAIN AND QUARRY PLANS

We have reviewed the existing Harrop Drain plans and report, as well as the Harrington and Hoyle Summary Report for the proposed quarry. We have also reviewed the Harrington and Hoyle Plans 1-4 for the operation of the quarry. These plans have an issue date of March, 1999 a plot date of August 17, 1999.

C. DRAINAGE PROPOSAL ON QUARRY PLANS

The operation Drawing No. 2 as prepared by Harrington and Hoyle indicates that an initial sump hole and wash pond will be located in Area 1a. A 3 meter berm is to be constructed along the south property boundary of Area 1a. Just north of this berm in 1a, a drainage swale is proposed to run easterly across Area 1b to connect to an existing swale in Area 3b. This existing swale will outlet into a settling pond in Area 4. At this point the swale connects to the Harrop Drain open ditch through two surface culverts under the railway roadbed. Note 4 under Phase A Drawing No. 2 covers the above.

D. SUMMARY REPORT FOR QUARRY BY HARRINGTON AND HOYLE

Under Item 5.0 Discussion, on Page 10 of the Appendix A as prepared by Harrington and Hoyle (copy attached), the report states that 80% of the proposed quarry lands drain into the Harrop Drain. The total quarry area is stated to be 233 acres. The quarry is located in part of Lots 10, 11 and 12, Concession 12. A review of the Harrop Drain reports indicates that 92 acres in Lot 12 and 16.9 acres in Lot 11 were assessed into the drain. This totals to 108.9 acres, which actually represents 46.7% of the total quarry area. In view of the substantial increase in area to be drained, i.e. 124 acres, the quarry owner must request permission from Haldimand County to outlet additional lands into the Harrop Drain in accordance with Section 66 of the Ontario Drainage Act.

Spriet Associates was not involved with Haldimand County at the time of the original application or the subsequent O.M.B. Hearing. We are, however, aware that the original approval required, as a condition, that the licensee obtain any required approvals pursuant to the provisions of The Drainage Act and discharge of water to the Harrop Drain. This condition has to this point in time not been complied with.

E. HARROP DRAIN ASSESSMENT


The maximum pumping rate as stated on Permit No. 03-P-2244 is 18 litres per second. This is not likely to overload the Harrop Drain, however, the Drainage Act requires that a Drainage Engineer be appointed to prepare a report and assessment for the additional lands to be added to the drain. A review of the original assessments on the Harrop Drain indicates that the 92.0 and 16.9 acres of proposed quarry lands in Lots 12 and 11 were assessed at the agricultural rate of \$1.20 per acre. The lands involving adjacent quarries at that time, were assessed \$5.50 per acre. The increased rate per acre was due to quarry dewatering by pumping.

We enclose four (4) copies of the Harrop Drain plan along with copies of the Harrington and Hoyle Quarry Plans 1 to 4 for your reference.

If there are any questions, please contact the undersigned.

Yours truly,

SPRIET ASSOCIATES LONDON LIMITED

X 
J. R. Spriet, P. Eng.

JRS:sjs
Encls:

Environmental Review Tribunal Decision:
Nichols Gravel Limited v. Director,
Ministry of the Environment

Reasons for Decision

Background:

A teleconference was held on Friday, January 30, 2004 (see Tribunal order of February 5, 2004) to consider a motion to adjourn brought by Nichols Gravel Limited (the "company"). The motion was denied.

At the same Hearing, the Ministry of the Environment (the "MOE") brought a motion to dismiss the appeal, or failing that ruling, to scope the Hearing to matters of law related to the MOE's authority to impose conditions and pre-conditions. Mr. Marc Kemerer presented the MOE's motion.

After examination and discussion, I ruled as follows:

1. On consent of the company, the time for filing the MOE's motion was abridged.
2. Based primarily on the fact that the company had not presented evidence or witness statements through disclosure, the MOE's motion to dismiss had merit.
3. Since the main Hearing was scheduled to commence on Monday, February 2, 2004, and since public notification of the Hearing had been made, it would be necessary to convene the Hearing as scheduled. This was primarily in the public interest, in the event that members of the public decided to attend on February 2, 2004.
4. Notwithstanding the MOE's position that the appeal should be dismissed immediately, I ruled that the Hearing would commence as scheduled on February 2, 2004 in Cayuga.
5. To ensure complete fairness to the company, I indicated that I would be prepared to hear an opening statement, on February 2, from the company as to the evidence, which they were going to introduce in support of their appeal of the Permit to Take Water ("PTTW"). After that, I would hear the MOE's motion to dismiss the appeal.

At the commencement of the main Hearing on February 2, 2004, Mr. Nichols advised the Environmental Review Tribunal (the "Tribunal") that his Counsel, Mr. Osier, could not attend due to a prior commitment. He also indicated that Mr. Osier's partner, Mr. Murray who had participated in the January 30, 2004 teleconference, was not sufficiently familiar with the file, to act as Counsel. Mr. Nichols was advised that these were very flimsy reasons, particularly since the Notice of Appeal was served on Mr. Nichols on or before August 3, 2003. Mr. Nichols was also advised that he could conduct his own case if he wished.

Environmental Review Tribunal Decision:
Nichols Gravel Limited v. Director,
Ministry of the Environment

03-068

Mr. Nichols was affirmed and asked to present an opening statement, as agreed at the January 30, 2004 teleconference, outlining the case he would present for his appeal of the PTTW. He immediately launched into a challenge of my oral decision of January 30, 2004 to deny the company's motion to adjourn the Hearing, pending the outcome of a statement of claim filed with the Superior Court of Justice. He alleged that there was misinformation at the teleconference, that facts had been manipulated, and that there was abuse of process. He was asked to expand on these allegations, but he declined to do so. I advised Mr. Nichols that I would not revisit that Hearing, nor would I change my decision. I indicated that both he and his Counsel had ample opportunity to raise those issues at the teleconference. I also advised him that he could seek judicial review if he felt that I had made errors in law.

At this point, Mr. Nichols indicated that he had no evidence to produce and that he would not be conducting a case for his appeal.

I then asked Mr. Kemmerer to speak to the MOE's motion for dismissal. He indicated that there was no evidence on which to consider an appeal. He also noted that, since Mr. Nichols did not have legal counsel, there was no point in scoping the Hearing to the legality of the MOE imposing conditions and pre-conditions on the PTTW.

I then sought comment from the Participants, the Rural Community Coalition and the County of Haldimand. Both supported dismissal of the appeal.

Decision

X (confirmation of verbal decision made on February 2, 2004)

The appeal of the PTTW by the company is dismissed. The following summarizes the essential reasons:

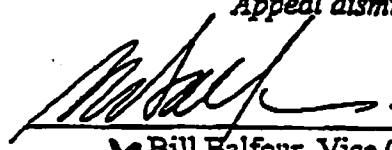
- X 1. There is no evidence on which the appeal can be considered. ?
- X 2. The company does not have legal counsel to pursue legal arguments regarding the MOE's authority to issue the PTTW and its conditions and pre-conditions. ?
- X 3. There are no other outstanding matters to discuss. ?

Environmental Review Tribunal Decision:
Nichols Gravel Limited v. Director,
Ministry of the Environment

03-068

- * 4. The company may pursue its allegations of manipulation and abuse of process by other means. ? X

Appeal dismissed


X Bill Balfour, Vice Chair ✓

Appendix A - List of Exhibits

NICHOLS GRAVEL LIMITED

P.O. BOX 172
DELHI, ON. N4B 2W9

PHONE: 519-582-3354

FAX: 519-582-2143

X February 18, 2004

X Province of Ontario
Queens Park
Toronto, On.

Y Lieutenant Governor in Council

Subject to: RSO1990c.0.405.9(1)2000c.26 Schedule F 13(5)

Dear Sir or Madam:

Please provide considerations to this appeal to the decision of the Environmental Review Tribunal, released February 9, 2004 by vice-chair Bill Balfour to dismiss our appeal to a Ministry of the Environment Permit to take Water hand delivered to Nichols Gravel Limited June 20, 2003, one year and 3 months after application, and containing 24 "Pre" conditions to dewatering or pumping of water. This Permit as issued, resembled exactly the Ministry of Natural Resources issuance of a Class A quarry extraction licence issued April 1, 2003, 1 year and 8 months after the O.M.B. direction to issue the licence under Decision/Order 1194 of July 25, 2001. This M.N.R. licence was issued with 23 "pre" conditions to extraction and operation of the quarry, which conditions included water related conditions under M.O.E. authority.

Reasons for Appeal of Environmental Review Tribunal Case Number 03-068

1. Manipulation and abuse of process by both the Ministry of the Environment Lawyer Mark Kemerer and the Environmental Review Tribunal, as vice-chair Bill Balfour was made aware that the M.O.E. had not complied with procedural rules of disclosure Schedule F, S.13 (6) Examination of Documentary Evidence: An applicant, permittee or licensee who is a party to proceedings under this section shall be afforded an opportunity to examine before the hearing any written or documentary evidence that will be produced or any report the contents of which will be given in evidence at the hearing. RSO1990 c. 40, S.47 (6).

At the teleconference of January 30, 2004 Mr. Kemerer stated that the M.O.E. had met all the conditions of the procedural orders with disclosure and identification of witnesses and witness statements, but that Nichols Gravel Limited had not, and requested that his motion to dismiss not filed in the prescribed time be granted.

The procedural order from the Pre hearing January 14, 2004 directed that all

4

disclosure and witness statements were to be provided by January 23, 2004, 4 p.m. The facts are, that the M.O.E. played a waiting game subject to a circulation on the EBR between August 9, and September 8, 2002 for objection to our PTTW application, to which we were not informed. The M.O.E. in response to our appeal of the Permit indicated 32 letters of objection were received. On September 25, 2003 through a Freedom of Information request to M.O.E. we requested copies of the 32 letters of objection in order to prepare a response for the hearings January 14 and February 2, 2004. By letters dated November 19 and 20 2003 the M.O.E. refused to release this information. See F.O.I. request and response. At the Pre hearing we had not yet received any disclosure and a direction was made by the Chairman for disclosure by January 23, 2004.

At the teleconference of January 30, 2004 I responded to Mr. Kemmerer's statements that the 32 letters in question had not been received until January 29, 2004 at my lawyer's office, and that I had just briefly reviewed them, and that having not received these letters of objection was the reason that we had not been able to prepare our consultant reports and witness statements. Vice-chair Mr. Balfour made no acknowledgement of this fact for our motion for adjournment of the hearing, until after the courts had ruled on the M.O.E. and M.N.R. authority to override and change conditions as imposed by O.M.B. Decision/Order 1194 issued without "Pre"conditions. Mr. Balfour then made the decision to dismiss our motion for adjournment.

On Saturday and Sunday prior to the hearing Monday February 2, 2004 I reviewed the 32 letters and found 10 letters incomplete no signatures, 10 letters with no dates, and 3 objections from residences on cisterns and without wells, and only one letter with M.O.E. date stamp September 6 within the prescribed objection period.

It became obvious why M.O.E. withheld this information as these letters of objection are based on speculation and not fact, and do not justify the severe unreasonable preconditions imposed upon this P.T.T.W. by staff of M.O.E. Had we received these letters in time as required by procedural rules, we could have responded properly through our hydrogeological consultants and witness statements, so that in fact the reason that Nichols Gravel Limited did not properly respond to the E.R.T. was because M.O.E. did not properly respond in the first place. See letter to Mr. Osier dated January 23, 3:14 p.m. confirming that the 32 letters had not been disclosed by the required date. See Letter. Disclosure A & C

At the beginning of the hearing of February 2, 2004 Mr. Balfour refused to hear my evidence to the failure of disclosure by Mr. Kemmerer and the M.O.E., as he had made his decision to dismiss our motion for adjournment at the teleconference of January 30, 2004. I then declined to present any evidence. In respect to Mr. Balfour's reasons for Decision of February 2, 2004, if there is a

tape available for the teleconference hearing, I would request a copy in order to verify what was stated.

In respect to Mr. Balfour's February 9, 2004 decision statement quote: "He alleged that there was misinformation at the teleconference, that facts had been manipulated, and there was abuse of process." He was asked to expand on these allegations, but he declined to do so. unquote. Clarification to my comments: When asked for my comments by Mr. Balfour, I stated quote: "There has been misrepresentation, manipulation and abuse of process in respect to Mr. Kemerer's comments at the teleconference." unquote. When asked to clarify these comments I stated quote: "There has been misrepresentation, manipulation, and abuse of process in respect to non compliance to procedural rules." unquote. Not as stated by Mr. Balfour. In conclusion the Environmental Review Tribunal process became a farce firstly because M.O.E. manipulated the procedure and secondly, because Mr. Balfour allowed procedural rules to be manipulated and contributed and supported the manipulation when he made exceptions to procedural rules for the M.O.E. motion to dismiss, which was not filed within the prescribed time limitations period.

It should be noted that the M.O.E. provided no oral or written presentation of concern to the O.M.B. Hearing. Now the M.O.E. has disregarded the decision of the Board, which thoroughly reviewed the water concerns of the land owners and accepted the mitigation conditions to water concerns as proposed by Nichols Gravel Limited as adequate.

This appeal was to the PTTW provoked in the first place by M.O.E. staff who have assumed god-like powers of administration to impose unreasonable arbitrary conditions without absolutely any justification in fact, with no requirement to be reasonable or accountable for their responsibilities to their position of public trust.

- X Example: LaFarge Quarries Hagersville PTTW. various property owner water interferences over the past 20 years, pumping 24 hours a day 2200 Imperial Gallons per minute with 8 permit conditions.
- X Nichols Quarry: No established quarry, projected no requirement to dewater for extraction for 15 to 20 years. No projected impact for at least 10 years, no pumping or identified immediate impact to anyone, and 24 onerous "pre" conditions required prior to pumping, involving expenditures of hundreds of thousands of dollars. What happened to equality before the law?
- X In conclusion, all of these problems involving the Ministry of the Environment and the Ministry of Natural Resources have been provoked through abuse of process and abuse of regulatory authority by these 2 ministries in non compliance with Ontario Municipal Board Decision/Order 1194 which did not impose "Pre" operating conditions in the decision. In 42 years in business I have never heard

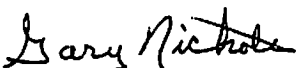
of a licence or permit issued with "Pre" conditions to be completed before the authority in the licence becomes valid.

X I suggest that this could be described as an extortion and fraud.

X In that respect on behalf of Nichols Gravel Limited, I hereby request an Order in Council by Cabinet to dismiss the Environmental Review Tribunal decision of February 2, 2004 and a direction to the Ministry of the Environment to amend the Permit to Take Water without "Pre conditions" as applied for March 12, 2002, and a further direction to the Ministry of Natural Resources to reissue the Class A extraction licence in compliance with O.M.B. Decision/Order 1194 without 23 "Pre" operating conditions which also enforces M.O.E. water related compliance.

Thank you for your considerations in this matter.

Sincerely,

X 
Gary Nichols

*** NO RESPONSE!**

- X c.c. Minister of the Environment, Hon. Leona Dombrowsky
- Y c.c. Minister of Natural Resources, Hon. Dave Ramsay

X Documentation:

1. July 25, 2001 O.M.B. Decision/Order 1194.
2. April 1, 2003, M.N.R. Class A Licence & March 31, 2003 Letter 23 Pre Operating Conditions.
3. March 12, 2002 Letter P. Odum Application for Permit to Take Water
4. June 12, 2003 M.O.E. Permit to Take Water # 03-P-2244.
5. Lafarge PTTW.
6. June 27, 2003 Appeal to Environmental Review Tribunal.
7. July 8, 2003 Response to Appeal from ERT and M.O.E. geoscientist in training Jennifer Volpato B. Sc., M. Eng.
8. F.O.I. Request to M.O.E.
9. November 11, 2003 Letter F.O.I. Commissioner.
10. November 19 & 20, 2003 F.O.I. response M.O.E.
11. January 5, 2004 F.O.I. request Haldimand County response received after February 2, 2004 ERT Hearing.
12. January 23, 2004 Letter M.O.E., Mark Kemerer to Nichols Lawyer Mr. Osier.
13. ERT February 5, 2004 Decision Teleconference Hearing of January 30, 2004.
14. ERT February 9, 2004 decision to February 2, 2004 hearing.

X Ministry of
Natural Resources

Ministère des
Richesses naturelles



353 Talbot Street West
Aylmer ON N5H 2S8
Tel: 519-773-4747
Fax: 519-773-9014

353, rue Talbot Ouest
Aylmer ON N5H 2S8
Tél.: 519-773-4747
Téléc.: 519-773-9014

X April 7, 2004

"Registered Mail"

Nichols Gravel Limited
P.O. Box 172
Delhi, Ontario
N4B 2W9

X Attention: Gary Nichols

Dear Sir:

X Subject: Nichols Gravel Limited
Licence No. 103717
Lots 10, 11, 12, Con 12. Walpole Township. Haldimand County
Notice of Intention to Revoke under the Aggregate Resources Act

In correspondence dated October 1, 2003, a revised "Notice of Suspension" was issued for your licence. Under subsection 22.3 of the Aggregate Resources Act, the licensee shall comply with the notice within the period of the suspension. Failure to comply with the Notice of Suspension is a violation of the Aggregate Resources Act. To this date, fourteen (14) licence infractions remain outstanding.

You are subsequently being served with the following "Notice of Intention to Revoke". You will have 90 days to complete the outstanding items, as described within the "Notice of Intent", in order to bring you licence into Compliance under the Aggregate Resources Act. Failure to do so will result in the revocation of your licence.

If you have any questions regarding the outstanding items to be completed, please contact Emmilia Kuisma of this office at your earliest opportunity, to schedule a meeting.

Sincerely,

X Alec Denys
District Manager
Aylmer District
Ministry of Natural Resources

Ek/2004/attch

X NOTICE OF INTENTION TO REVOKE

UNDER THE AGGREGATE RESOURCES ACT

TAKE NOTICE THAT pursuant to subsection 20(2) of the Aggregate Resources Act, R.S.O.1990, Chapter A.8 as amended:

I, Alec Denys, District Manager, Ministry of Natural Resources, hereby give notice of intention to revoke licence number **103717** issued to **Nichols Gravel Limited**, herein referred to as "the licensee", for the following reasons:

-Contravention of section 22.3 of the Aggregate Resources Act which demands that you shall comply with a Notice of Suspension.

AND FURTHER TAKE NOTICE that if the following conditions of the suspension order are not completed within 90 days after being served with this notice, the licence will be revoked.

1. As required by Condition 20 of the licence, the monitoring results of the first six quarry blasts monitored at a minimum of 4 locations in accordance with the recommendations of the Licensee's consultant, along with the consultant's analysis and recommendations, shall be submitted to the local offices of MNR and MOE. Provide this office with documentation that these results have been forwarded to the Ministry of the Environment.
2. As required by Conditions 27 and 28 of the licence, the licensee will provide for the installation of monitoring well nests with up gradient, down gradient and cross-gradient wells at the top of the Bois Blanc Formation, to the base of the Bois Blanc Formation and into the Bertie Formation at the property boundaries. Provide this office with conformation that electronic water level monitors have been installed with the well nests and the results/documentation of the monitoring.
3. As required by Condition 49 of the licence, the licensee will ensure that the internal water collection system within the quarry will incorporate component storage for groundwater and surface runoff. Construct the internal water collection system.
4. As required by Condition 50 of the licence, external berming will be constructed around the quarry to prevent any surface water spillage into the quarry. Complete the berming requirement as noted on the approved site plans. Berms located within Area 1a, 1b, and Area 2 of the licence is currently incomplete. Existing berming must be moved to the locations noted on the site plan and must be properly graded and seeded.

- 5**
5. As required by Condition 51 of the licence, the licensee will ensure that water polishing measures will be incorporated into the internal collection system. Incorporate the water polishing measures into the internal collection system. Install the proposed rock check dams within the drainage swale and construct the south-east settling pond as per the licence site plans.
 6. As required by Condition 52 of the licence, the licensee will ensure that the stormwater holding system be designed such that sufficient capacity is provided to hold a 100 year storm with zero discharge. Construct the stormwater holding system within Area 1a of the licence.
 7. As required by Condition 53 of the licence, the licensee will obtain any required approvals, pursuant to the provision of the Drainage Act, for discharge of water to the Harrop Drain. Provide this office with documentation showing approvals, from the Municipality, to allow for the current drainage discharge into the Harrop Drain.
 8. As required by Condition 55 of the licence, all berms shall be graded smooth to a stable (2:1) slope and seeded to prevent erosion and to reduce dust. All berms within Areas 1a, 1b and Area 2, as delineated on the site plan, must be graded, sloped and seeded.
 9. As required by Condition 25 of your licence, residences within 300 metres of the quarry site, which will have been thoroughly inspected in accordance with the recommendations of the Licensee's consultant, shall be re-examined following the initial six blasting operations. Copies of the original examinations records and of the re-examination results shall be submitted to the property owner concerned. Provide this office with written confirmation/records that these results have been forwarded to the property owners.
 10. Perimeter fencing must be erected around Areas 1a, 1b and 2, as detailed on the licence site plan. Fencing along the west side of Area 2 must be repaired or replaced. Fencing along the north boundary of Area 2 must be installed. Fencing along the southern boundary of Areas 2, 1a and 1b must be erected. Fencing must be installed along the northern boundary of Area 1a, south of the farm house. The current fencing located on the east side of the entrance road is currently located in the incorrect location and must be moved to the west side of the road/entrance allowance. Fencing located along the west licence boundary, adjacent to R1, must be located as per the current licence site plan. A gate and/or fencing must be installed along the 13.2 m area along the north east boundary of Area 1b, to allow for access to the gas well.
 11. The interim berms surrounding the quarry area require sloping and seeding, in order to reduce dust in the local area. Interim berm height should be higher as per site plan details (minimum 6m above bedrock floor). Erect, slope and seed berms surrounding the quarry area (Area 1a), as per the locations noted on the approved site plans.
 12. The fuel tank must be relocated adjacent to the scale house as specified in the site plan. Move and locate the fuel tank adjacent to the scale house, as per the approved site plans.

13. The roadway entrance and weigh scales must be moved eastward of the existing location. Move the roadway entrance and weigh scales to the location delineated on the approved site plans.
14. As per section 5.22 of the Operational Standards and Section 7 of Regulation 244/97, of the Aggregate Resources Act which requires the installation of a sign at the entrance/exit that is a minimum of 0.5 metres by 0.5 metres and contains wording that "this site is licensed under the Aggregate Resources Act, Licence reference number". The current licence sign at the entrance must be repaired to show the current Licence Reference Number 103717.

AND FURTHER TAKE NOTICE that if the licence is revoked, agents of the Trust, in accordance with subsection 6.1(5) of the Act, may enter the land to carry out such rehabilitation as the trustee considers necessary.

AND FURTHER TAKE NOTICE that in accordance with subsection 6.1(6) of the Act, any amount spent by the Trust on the rehabilitation of the land is a debt due to the Trust by you, the most recent licensee.

Dated at Aylmer, this

X 7th Day of April, 2004.

X 
District Manager
Aylmer District

NICHOLS GRAVEL LIMITED

**P.O. BOX 172
DELHI, ON. N4B 2W9**

PHONE: 519-582-3354

FAX: 519-582-2143

X Blast Monitoring Report O.M.B. Condition #14 & 15 & 20 & 25

To Whom It May Concern:

This letter will confirm that a blast monitoring survey was conducted at the residence of

TEP O'BRIEN RECEPTOR #1 (SITE PLAN)

On the first 6 quarry blasts of property owned by Nichols Gravel Limited O.M.B.
condition of approval #14 & 15 & 20 & 25.

At the time the consultant for Nichols Gravel Limited verbally informed that all blast
shots were well within Ministry of Environment guide lines and to this date we had made
no request for a written report.

X However this will confirm that on this date MAY 10 2004 Gary Nichols hand
delivered the written report for this monitoring by Golder Associate as received by

E. O'Brien

NICHOLS GRAVEL LIMITED

P.O. BOX 172
DELHI, ON. N4B 2W9

PHONE: 519-582-3354

FAX: 519-582-2143

X Blast Monitoring Report O.M.B. Condition #14 & 15 & 20 & 25

To Whom It May Concern:

This letter will confirm that a blast monitoring survey was conducted at the residence of R#2
Trevor & Kelly Smith 2739 Regional Rd #9 Hagersville.
On the first 6 quarry blasts of property owned by Nichols Gravel Limited O.M.B.
condition of approval #14 & 15 & 20 & 25.

At the time the consultant for Nichols Gravel Limited verbally informed that all blast
shots were well within Ministry of Environment guide lines and to this date we had made
no request for a written report.

X However this will confirm that on this date July 7, 2004 Gary Nichols hand
delivered the written report for this monitoring by Golder Associate as received by
Kelly A. Smith

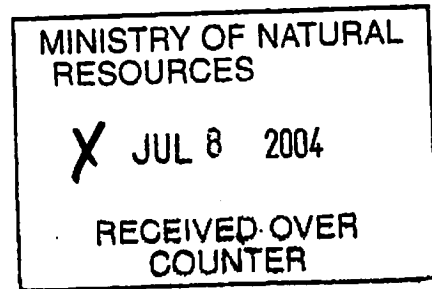


Nichols Gravel Limited
P.O. Box 172 - Delhi, Ontario N4B 2W9
Phone (519) 582-3354 Fax (519) 582-2143

7

X July 7, 2004

X Ministry of Natural Resources
Aylmer District



X **Notice of Intention to Revoke**

X **ATTENTION: Alec Denys**
Response to your letter April 7, 2004

#1: Find enclosed and express post receipt to M.O.E.

#2: Condition 27 and 28

Not required until dewatering for extraction and well monitoring indicates a draw down on the ground water table. No draw down, no impact.

#3: Condition #49

In reference to your October 1st, 2003 letter.

Please advise how it is possible to complete this condition subject to: *3RD PARAGRAPH*
Without extraction to develop a quarry.

#4: Condition #50

Berms in 1A, 1B, and Area 2 are phased on the site plan with development of the quarry on going construction.

#5: Condition #51

Cannot construct an internal water collection system within the quarry when the operator has been prevented from developing a quarry, there is no quarry, only a quarry property whose primary use at this time is agriculture.

#6: Condition #52

It is impossible for the licensee to construct a stormwater holding system designed of sufficient capacity to hold a 100 year storm with zero discharge without development of the quarry to determine at what point the true ground water level has been contacted. Then the extraction will have to be deepened to contact with the sandstone which is the lower limit of extraction. At that point pump tests will have to be conducted to calculate the volume of inflow to be pumped out, by which in turn a calculation can be made to construct a stormwater holding system of sufficient capacity to hold this volume of water. This is not a magic act.

- **Please note:** The stormwater holding system is not in area 1A.

#7: Condition 53

There is no requirement for any approvals for discharge of water to the Harrop Drain. There is no intent to discharge water to the Harrop Drain until it becomes a requirement to dewater for extraction. That is the only reason condition 53 was suggested. Future need. Further to that M.O.E. Permit to Take Water prevents any pumping or discharge with the 24 pre dewatering conditions imposed on the permit.

Surface drainage is addressed under the current assessment on the property.

In this respect please further be informed that conditions 45, 51, 52, and 53 will not be implemented until it becomes necessary to dewater for extraction and discharge to the Harrop Drain.

#8: Condition #55

Berms are in construction as they are completed, they will be graded and seeded.

#9: Condition #25

See written confirmation as received R #1 and R #2.

#10: Fencing again in the construction stage and should be completed in 2 weeks.

#11: Please go back to your records this has been explained previously.

#12: Again go back to your records December 2003 letter.

This fuel tank was moved to its present location after Mr. Cutmore's infraction note. Further please be advised of wording on site plan: Near the scale house not adjacent. Ministry of Labour regulations?

#13: Again go back to our previous clarification.

There will be no relocation of the entrance or weigh scale due to Mr. Cutmore's negligent misrepresentation to Bernie Janssen on February 3 and to Nichols Gravel Limited in the March 31 letter with licence.

#14: Numbers of the licence have been placed on sign.

Yours sincerely,

X 
Gary Nichols



Nichols Gravel Limited
P.O. Box 172 - Delhi, Ontario N4B 2W9
Phone (519) 582-3354 Fax (519) 582-2143

X July 14, 2004

X Ministry of Natural Resources

X Hon. David Ramsay, Minister

Dear Mr. Ramsay:

This letter is to advise you of our company position in respect to recent information received confirming the negligent misconduct and possible criminal activity of your Ministry staff. This information is in reference to a response to a Freedom of Information request April 21, 2004 to M.N.R. concerning the issuance of licence #103717 as a comparable to the licence as hand delivered April 1, 2003 to Nichols Gravel Limited with letter dated March 31, 2003.

It becomes obvious when you compare the M.N.R. Freedom of Information licence identified by code number A0037174 as signed and approved by the Minister March 25, 2003 to the licence hand delivered to the office of Nichols Gravel Limited April 1, 2003, that these documents are not the same and conditions have been changed, restructured and altered to "Specific Pre Operating Conditions."

The change from the original licence which was also prepared and submitted to the Minister by Paul Cutmore indicate Schedule A conditions #5, 7, 8, 9, 10, and 12 changed to Specific Pre Operating Conditions after the original licence was signed by the Minister.

In addition under Schedule B of the original licence conditions 14, 15, 17, 20, 27, 29, 37, 38, 45, 49, 50, 51, 53, and 55 were all changed to "Specific Pre Operating Conditions", also not so directed in this format under the licence signed March 25, 2003 by the Minister.

See: Photocopy June 30, 2004 F.O.I. Licence. See: Hand delivered April 1, 2003, March 31 letter & licence. Please take note of the file code #A0037174 on F.O.I. licence, not shown on licence delivered April 1, 2003 which basically confirms that the restructured conditions occurred after the licence was signed March 25, 2003.

In respect to the fact that M.N.R. Inspector Paul Cutmore was responsible for preparing the licence documents sent to the Minister, the Hon. Jerry Oullette for approval and issuance of the licence in proper form, together with the fact that the signed and approved licence and conditions were changed from the format as issued and restructured to "23 Specific Pre Operating Conditions" upon arriving back at the M.N.R. Aylmer District Office, we can only conclude that with Aylmer District Manager Alec Denys signature on the March 31, 2003 letter to the hand delivered April 1, 2003 issuance of Licence 103717 with "23 Pre operating Conditions" that this was a pre planned conspiracy by Mr. Cutmore, Mr. Denys, M.N.R. Enforcement staff Gary Zacher and Jim Greenwood, Senior M.N.R. staff, Marlene Phibbs and the Rural Community Coalition, La Farge Hagersville Quarry Manager Mr. Horvat and salesman Bill Hunt as well as David Anderson Haldimand County, with the specific purpose to further delay the start up of this

quarry and impose financial hardship on this business. This quarry now still not productive 3 years after the O.M.B. direction to M.N.R. to issue the licence.

- X To clarify, we have the issuance to Nichols Gravel Limited April 1, 2003 the invalid, falsified and forged licence produced by Mr. Cutmores' negligent misrepresentation to Extortion and Fraud. The administrative injustice is further promoted and compounded by the April 14 2003 Suspension Order based on non compliance to the 23 fraudulent Specific Pre Operating Conditions illegally imposed on licence 103717. Then on April 7, 2004 this fraud is further promoted with the Notice of Intention to Revoke the Licence by Alec Denys Supervisor for Inspector Cutmore.
- X We have attended in court with M.N.R. on April 29, and again June 28, and the negligent misconduct of Mr. Cutmore, Mr. Denys and the M.N.R. is now a matter of record in the court transcripts.

In order to address this problem we request a Parliamentary Review into the negligent misconduct of M.N.R. staff to administration of the Aggregate Act to the Administrative injustice to licenced aggregate operators in the Province of Ontario.

- X We must advise you at this time that if no appropriate response has been received by July 22, 2004 toward resolving this mess, all of this information will be made public and we shall pursue our claim for damages against M.N.R. and M.O.E. and additionally file Criminal charges to the various parties involved.

After July 22 find this letter and the two comparable licences as issued on our website www.injusticecanada.com/current story.

We shall expect your immediate response forthwith.

Yours sincerely,


X Gary Nichols

Enclosures:

- Licence 103717 M.N.R. F.O.I. of June 30, 2004
- Licence 103717 hand delivered April 1, 2003 photocopy provided July 8, 2004 from the M.N.R. Files District Office Aylmer dated w/signature Inspector Emelia Kuisma.

X NO RESPONSE TO THIS LETTER RECIEVED UNTIL
OCT. 28/04 AFTER THE MINISTER HAD SIGNED THE
REVOKE ORDER ON SEPT. 30/04
SEE LETTER STAMP DATED OCT 15/04.

L.I.A.



In summary we find the following M.N.R. enforcement contraventions without legislative authority by staff of Aylmer District office and in particular Inspector Paul G. Cutmore.

X Contravention #1

1. M.N.R. prescribed conditions of O.M.B. Decision/Order 1194.
Prescribed conditions are conditions that pertain to the individual category and cannot be varied or rescinded by either the Minister or the Ontario Municipal Board. Ref: Provincial Standard version 1.0. #1 ?

Inspector Cutmore changed prescribed conditions as approved by the O.M.B. to "Specific Pre Operational Conditions" on the Class A licence as issued April 1, 2003 without legislative authority to alter M.N.R. prescribed conditions, or to review and alter or change the conditions of approval of O.M.B. Decision/Order 1194. Ref. October 10, 2002 O.M.B. letter Joanne Hayes, 3rd paragraph provincial statutes. ?

This letter was in response to a letter dated September 20, 2002 from Nichols Gravel Limited which clarified that this company would not take part in any further O.M.B. hearings. This was after Inspector Cutmore and Lumb had issued a shutdown order for operation of an illegal quarry September 5, 2002. #2 ?

Mr. Cutmore had then immediately thereafter requested to the O.M.B. to reopen the hearing to discuss water issues that had been previously reviewed at the O.M.B. hearing without any input from the M.N.R. or M.O.E. #3 ?

The October 10th O.M.B. letter clearly stated that Provincial Statutes prevented any further review of the matter by the O.M.B. #4 ?

This letter was also copied to Mr. Cutmore, and obviously completely disregarded in respect to his later productions and directions. REF: Mr. Cutmore letter of November 13, 2002. #5 ?

M.N.R. Class A Licence issued April 1, 2003 subject to conditions of schedule A & B not identified or directed in final O.M.B. Decision/Order 1194. #6

O.M.B. Decision/Order 1194 #7

X Contravention #2

2. Amendment of site plans Aggregate Act 16 Subsection (5):

If the Minister proposes to require the amendment of a site plan or proposes to approve the amendment of a site plan, he or she shall forthwith serve notice of the proposal on the licensee. ?

Decision/Order 1194 O.M.B. conditions of approval #27, 29, 45, 50, 51, 52, and 53 were not described in O.M.B. Decision/Order 1194 or on the M.N.R. site plans as "specific pre operating conditions". However, these conditions were changed and imposed upon the Class A Licence under schedule A & B without amending the site plans. This was a contravention of A.R.A. Legislation 16 Subsection 8: which provides: A licensee who is served with notice under subsection (5) of a proposal to require amendment of a site plan is entitled to a hearing by the Board if the Licensee within 30 day after being served, serves the Minister with a notice that a hearing is required. 1996, c30s. 13. ?

Nichols Gravel Limited was not notified that conditions of the site plan as approved and accepted by M.N.R. February 14, 2003 would be changed to "specific pre operational conditions" of the invalid Class A Licence as issued April 1, 2003 and was therefore denied the right to Appeal under A.R.A. Legislation 16 Subsection 8. See A.R.A. Statutes. #8 ?

It should further be noted that inquiries by consultant Bernie Janssen regarding a berm and access road location confirmed in the fax letter of February 5, 2003 were not identified as a concern by Inspector Cutmore prior to acceptance of the site plans by M.N.R. February 14, 2003 the letter stated: No revision to site plans were needed by M.N.R. See letter February 5, 2003. #9. ?

However, upon issuance of the licence April 1, 2003 the location of the berm, access road and scale was identified under schedule B as site plan infraction #4 with a direction from Mr. Cutmore to move the access road and scale farther to the east, in order to accommodate a berm not required at this time according to provisions on the site plan. REF: Site plan infractions. #10. ?

In respect to the previous discussions February 3, 2003 with Nichols consultant Bernie Janssen, and the fact that the site plan clearly indicates that this berm is not required at this time, we confirm that Mr. Cutmore for whatever reason, knowingly made this illegal direction based on a false misrepresentation of fact. This direction also represented a change of conditions as indicated on the site plan without amendment. See consultant fax letter April 22, 2003. #11 ?

See site plan conditions. Initial Excavation #12.

✓ Contravention #3 Compliance

The Aggregate Act as amended 1997 made compliance to the Aggregate Act Operator self regulatory under A.R.A. legislation.

X M.N.R. Charge #1

The charges filed by M.N.R. April 14, 2003 under Section 7 (1) 57 (1) and 57 (4) are invalid. ?

X There was no operating quarry.

There was construction and development of a irrigation pond which served a dual purpose in anticipation to the delayed issuance of the M.N.R. Class A Quarry licence 1 year after O.M.B. directed M.N.R. to issue the licence. The intent to proceed in this respect was clearly identified in the letter of March 6, 2002 to M.P.P. Toby Barrett. This letter was copied to the Minister of Natural Resources, M.O.E. Water Resources director Paul Odom, M.N.R. Inspector Joe Strachan and O.M.B. case worker Andy Dawang. There was no response from Mr. Barrett or any of those copied of the letter. ?

The letter from land renter Mr. Sommers of August 30th, 2001, and the letter of response from Gary Nichols October 5, 2001 was included with this letter

The aggregate from the construction of the irrigation pond provided stone for construction of the access road, back fill for motor truck scale ramps and to level stockpile areas. ?

At this time, there was no truck scale, no telephone, and no sign at the entrance, and provisions of O.M.B approval did not apply until issuance of the licence. Again there was no operating quarry. ?

If this was in fact an operating quarry, why did M.N.R. not file these charges September 5, 2002 rather than wait until after they had suspended the licence April 14, 2003. 14 days after the licence was issued. ?

X M.N.R. Charge #2: October 6, 2003 Subsection 7 (1) 57 (1).

Invalid Charge: The licence as issued April 1, 2003 provided no authority to operate, until 23 Specific Pre Operating Conditions had been completed. This licence represents an extortion to fraud, and is and remains invalid as it permitted and authorized nothing but expenditures of hundreds of thousands of dollars without providing the authority to operate. To ensure that this quarry did not operate, M.N.R. officials threatened and intimidated subcontractors of Nichols Gravel Limited with prosecution if they entered or performed work on the quarry property, and as a result these contractors declined to fulfill their contract agreement so that there could be no operating quarry. ?

These Gestapo like intimidations ensured that there was in fact no operating quarry by Nichols Gravel Limited in the year 2003 under licence # 103717. ?

X Contravention #4

Suspension Order April 14, 2003.

Invalid Suspension Order: Under Section 15 A.R.A. . The licence that was issued did not allow the operation of a pit or quarry until 23 Specific Pre operating Conditions under Schedule A of the licence had been completed. ?

X Between issuance of the licence April 1 and inclusive to the suspension dated April 14 there was no stripping of overburden, no drilling and blasting, no crushing and screening and stockpiling, no aggregate sold at that location, no daily loading service or anyone employed on site. ?

The Aggregate Act provides only for licence suspension under Section 15 (1) Compliance Report Section 15 6 (a) and (b). Nichols Gravel Limited was not allowed to operate and as a result was not able to provide the Annual Compliance Report. ?

X There was in fact no operating quarry, therefore the suspension order was another conspired fraud, without legislative authority for enforcement. ?

See April 7, 2004 M.N.R. letter notice of intention to revoke under Aggregate Resources Act #13.

See May 5, 2004 letter Nichols Gravel Limited letter to Minister request for O.M.B hearing A.R.A. Section 20 Subsection 6. #14

9
X Aug 3/04 9 AM Hagersville Quarry

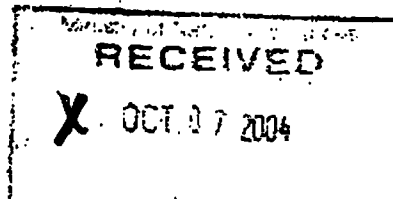
MNR Gary Caron at Hagersville Quarry, and another discussion about conditions and specific Be operating conditions. I advised Mr Caron that we would be operating under the legitimate license FOI confirmed as signed by the Minister, and that no corrupt court in this land would require that we comply with the extortion and fraud license hand delivered by

Paul Cutmore April 2003. Mr Caron declined to discuss that. Mr Caron advised that most likely, there would be further charges and a possible restraining order issued. I advised Mr Caron that MNR had better get to it, as we would not be stopping from operating this time and would discuss it in court. Mr Caron left, and I was later advised that he attended at Nichols pit 2 at Scotland Ontario, where he had followed our truck from Hagersville. He requested the drivers name and drivers license and advised our driver that he could be charged as an accessory. He attempted to question other employees at this property. End. B.I.N.

X Aug 4/04 APPROX 9:30 AM MNR Gary Caron stopped Nichols truck at entrance and had another discussion with Gary Nichols. B.I.N. X

X EXPLANATORY NOTE TO ACCOMPANY DOCUMENTS FOR SIGNING

X DATE: August 9, 2004
OCMS #: MNR450IT-2004-876
DIVISION: Field Services
DISTRICT: Aylmer, Southern Region



X Title: Revocation of Licence under the Aggregate Resources Act R.S.O. 1990.
Licence Identification No: 103717
Licensee Name: Nichols Gravel Limited
Location: Lots 10, 11, 12, Con 12, Walpole Township, Haldimand County

Riding: Haldimand-Norfolk

Source of Legal Authority to sign:

Under subsection 20 (1) of the Aggregate Resources Act, the Minister may revoke a licence for any contravention of the Act, the regulations, the site plan and the conditions of the licence. ?

Background/Explanation of Document Development:

Nichols Gravel Limited was issued a Class A licence under the Aggregate Resources Act on March 25, 2003 to operate a quarry on Lots 10, 11, 12, Concession 12, Walpole Township in Haldimand County.

Section 15 of the Act states that every licensee shall operate the licensee's pit of quarry in accordance with this Act, regulations, the site plan and the conditions of the licence.

Pursuant to subsection 20 (1) the Minister may revoke a licence for any contravention of this Act, the regulations, the site plan, or the conditions of the licence.

Action Taken to Date:

? On April 14, 2003, Licence No. 103717 was suspended for failing to comply with several conditions of the licence and for several site plan infractions. FALSE X
A.I.A.

? On October 1, 2003, a revised Notice of Suspension was issued for Licence No. 103717 allowing for the completion of required licence conditions and site plan infractions to be met by December 15, 2003. Each violation was described and the remedial action date of December 15, 2003 was established in order to bring operations back into compliance with the licence conditions and the site plan. ?

Inspections of the licence on April 5, 2004 and April 6, 2004 revealed that several of these violations had not been brought back into compliance. ?

On April 7, 2004 a Notice of Intent to Revoke was issued for Licence No. 103717 and was delivered via registered mail. On April 8, 2004 the registered letter was received by Nichols Gravel Limited. ?

? An inspection on July 19, 2004, revealed that the majority of the required licence conditions and site plan infractions had not been addressed. As of July 19, 2004 ten licence/site plan infractions remain outstanding. A detailed list of the infraction items is included on the attached Notice of Revocation of Licence. X FALSE? h.l.u.

Ministry Position:

Since the 90 day period allowed for the Notice of Intent to Revoke has now passed and all of the specified violations and licence conditions have not been addressed, it is recommended that the licence be revoked. ?

Two copies of the Notice of Revocation of Licence are attached for the Minister's signature.

Upon receiving the Notice of revocation of Licence, the Licensee has 30 days to request a hearing by the Ontario Municipal Board.


Return Signed Document To:

Alec Denys, District Manager, Aylmer District

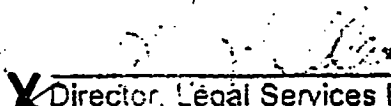
X **Contact:**
Emmilia Kuisma, Aggregate Resources Inspector, Aylmer District, 519-773-4747

Approvals:

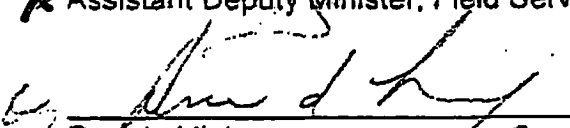
Original signed by Alec Denys, District Manager, Aylmer- August 9/04

X  Aug 11/2004 ?
For Ron Running, Regional Director, Southern Region

X  04.08.16 ?
Manager, Aggregate & Petroleum Resources Section Date

X  Aug 12, 2004 ?
Director, Legal Services Branch Date

X  Aug 24/04 ?
Assistant Deputy Minister, Field Services Date

X  1 Sep 2004 ?
Deputy Minister for Gail Beggs ? ?
Date

10
bc: Regional Director, Southern Region

X APPROVAL SHEET

Log Number: MNR1205MC-2004-2485
Final Due Date: August 10, 2004

X Prepared By: Emmilia Kuisma

X Position: Aggregate Inspector
District/Region: Aylmer District
Division: Field Services Division

Telephone Number: (519) 773-4747

X Date Prepared: July 23, 2004
Interim Response Sent:

Approved By	Name	Date
Manager	Alec Denys	July 26, 2004 X
Correspondence Unit	Janet Francis	July 28, 2004 X
Director, Legal Services Branch	Approved with revisions/K. Lintell	July 29, 2004 X
ADM, Field Services (Required)		
Minister's Office		
Special Instructions:		



Nichols Gravel Limited
P.O. Box 172 - Delhi, Ontario N4B 2W9
Phone (519) 582-3354 Fax (519) 582-2143

X August 18, 2004

X Ministry of Natural Resources
District Manager Aylmer District
Mr. Alec Denys

+ Dear Mr. Denys:

This letter is a follow up report to our submissions to your office of July 8, 2004 in response to your April 7, 2004 letter of Notice of Intent to revoke Licence #103717 and discussions that day with Supervisor Dan Elliott and Inspector Emillia Kuisma.

In respect to the now confirmed fraudulent extortion performance inflicted upon our company by Inspector Cutmore's restructured O.M.B. Conditions and Licence requiring that 23 "Pre Operational Conditions" be completed prior to operation of the quarry, these have now been reduced to 4 conditions which are impossible to complete without extraction and an operating quarry.

In review of this law perverted ridiculous fiasco, we can confirm that our company has followed the public planning process to the letter, and has complied explicitly with O.M.B. Decision/Order 1194, whereby the Ministry of Natural Resources and the Ministry of the Environment have ignored their responsibility to compliance, and with the most recent M.N.R charges received August 17, 2004 continue to promote and enforce the fraud of the falsified and forged licence and suspension orders by Mr. Cutmore's restructured "Pre Operating Conditions" in the hand delivered licence of April 1, 2003.

We have now complied with conditions of site plan and O.M.B. Decision/Order 1194 to the full extent possible, and cannot further fulfill the O.M.B. conditions of licence under schedule A & B without operating the quarry.

This will confirm our previous advisement to your staff that we shall now proceed to operate this quarry as a business under the legitimate licence as signed by the Minister March 25, 2003 which complied exactly with O.M.B. Decision/Order 1194. If minor amendments to the site plan, and other outstanding issues cannot be resolved through reasonable, sensible negotiation, these matters will be resolved before the courts.

Please further advise your Enforcement Supervisor Mr. Zacher that we shall tolerate from his staff no further intimidation, harassment or interference with our business.

Yours sincerely,


x Gary Nichols

P.S. In respect to the Notice of Intent to Revoke Licence 103717 dated April 7, 2004, we find that we are now approximately 42 days past the 90 day limitation period.

Please immediately respond with the Revocation, so that we may exercise our Entitlement to Hearing under Section 20 subsection (4) A.R.A.

x c.c. Minister Natural Resources Hon. David Ramsay
c.c. Brian Messerschmidt
c.c. Aggregate Producers Association of Ontario

X
Ministry of
Natural Resources

Ministère des
Richesses naturelles



353 Talbot Street West
Aylmer ON N5H 2S8
Tel: 519-773-9241
Fax: 519-773-9014

353, rue Talbot Ouest
Aylmer ON N5H 2S8
Tél.: 519-773-9241
Télec.: 519-773-9014

X October 7, 2004

"Hand Delivered"

Nichols Gravel Limited
P.O. Box 172
Delhi, Ontario.
N4B 2W9

Attn: Gary Nichols

X Re: Revocation of Licence under the Aggregate Resources Act R.S.O. 1990
Licence No. 103717
Nichols Gravel Limited
Lots 10, 11, 12, Con 12. Walpole Township. Haldimand County.


Dear Sir:

Attached is a Notice of Revocation for Licence No. 103717 signed by the Honourable David Ramsay, Minister of Natural Resources on September 30, 2004.

In accordance with subsection 20(4) of the Aggregate Resources Act R.S.O. 1990, you have 30 days after being served with the attached Notice to appeal to the Ontario Municipal Board. If no appeal has been received within 30 days of being served, then the revocation will be finalized.

Should you have any further questions, please contact the Aylmer District Office in order to set up an appointment to discuss these or any other issues.

Regards,

X 
Alec Denys
District Manager
Aylmer District

ek/2004

NOTICE OF REVOCATION FOR LICENCE

Under the authority of Section 20(1), Aggregate Resources Act (ARA)
R.S.O. 1990, Chapter A. 8, as amended

AVIS DE RÉVOCATION DE PERMIS

Aux termes de l'article 20 (par. 1) de la Loi sur les ressources en agrégats (LRA) LRO 1990,
chap. A.8 en tenant compte des modifications

X David Ramsay Minister of Natural Resources,
Ministre des Richesses naturelles,

I hereby revoke licence number 103717
j'annule, par la présente le permis numéro

X issued to Nichols Gravel Limited
: livré à

for the following reasons:
: ce, pour les motifs suivants:

X Nichols Gravel Limited has failed to adhere to the Notice of Suspension issued on October 1, 2003, with a deadline date of December 15, 2003, pursuant to subsection 22(1) of the Aggregate Resources Act R.S.O. 1990. Under the authority of subsection 20(1), Licence No. 103717 is hereby revoked for the following reasons: ?

1. As required by Conditions 27 and 28 of the licence, as of July 19, 2004 the licensee has failed to provide for the installation of monitoring well nests and electronic water level monitoring, with up gradient, down gradient and cross-gradient wells at the top of the Bois Blanc Formation, to the base of the Bois Blanc Formation and into the Bertle Formation at the property boundaries.
- DONE X** 2. As required by Condition 49 of the licence, the licensee will ensure that the internal water collection system within the quarry will incorporate component storage for groundwater and surface runoff. As of July 19, 2004, the licensee has failed to construct the internal water collection system. ?
- DONE X** 3. As required by Condition 50 of the licence, external berming will be constructed around the quarry to prevent any surface water spillage into the quarry. As of July 19, 2004, the licensee has failed to complete the required berming within Area 1a of the site. ?
4. As required by Condition 51 of the licence, the licensee will ensure that water polishing measures will be incorporated into the internal collection system. As of July 19, 2004, the licensee has failed to install the proposed rock check dams within the drainage swale and construct the south-east settling pond as specified on the site plan.
- DONE X** 5. As required by Condition 52 of the licence, the licensee will ensure that the stormwater holding system be designed such that sufficient capacity is provided to hold a 100 year storm with zero discharge. As of July 19, 2004, the licensee has failed to construct the stormwater holding system (initial sump hole) within Area 1a of the site. ?
6. As required by Condition 53 of the licence, the licensee will obtain any required approvals, pursuant to the provision of the Drainage Act, for discharge of water to the Harrop Drain. As of July 19, 2004, the licensee has failed to provide documentation from the Municipality, to allow for the drainage discharge into the Harrop Drain.
7. As required by Condition 55 of the licence, all berms shall be graded smooth to a stable (2:1) slope and seeded to prevent erosion and to reduce dust. As of July 19, 2004, the licensee has failed to grade and slope the constructed berms within Area 1a of the site.
- DONE X** 8. As of July 19, 2004, the licensee has failed to install perimeter fencing around Areas 1a, 1b and 2, as specified on the site plan. Fencing along the west side of Area 2 must be repaired or replaced. Fencing along the north boundary of Area 2 must be installed. Fencing along the southern boundary of Areas 2, 1a and 1b must be installed. Fencing must be installed along the northern boundary of Area 1a, south of the farm house. The fencing located on the east side of the entrance road is currently erected in the incorrect location and must be moved to the west side of the road/entrance allowance. A gate and/or fencing must be installed along the 13.2 m area along the north east boundary of Area 1b, to allow for access to the gas well and all required fencing along the east licence boundary Area 1b must be installed. ?

~~DOVE~~ 8. The interim berms surrounding the quarry area require sloping and seeding, in order to reduce dust in the local area. Interim berm height must be a minimum of 6m in height above the bedrock floor as per the site plan. As of July 19, 2004, the licensee has failed to erect, slope and seed berms surrounding the quarry area (Area 1a), as per the locations and heights specified on the site plan. 12

10. The roadway entrance and weigh scale is incorrectly located and must be moved eastward of the existing location. As of July 19, 2004, the licensee has failed to move the roadway entrance and weigh scale to the location specified on the site plan.

AND FURTHER TAKE NOTICE that this revocation is effective from the time of service of this notice upon you.
EN OUTRE, VEUILLEZ ÊTRE AVISÉ que la révocation entre en vigueur dès que le présent avis vous est servi.

AND FURTHER TAKE NOTICE that all activities associated with the pit or quarry authorized by the above licence are prohibited. Continuing any activities without the authority of a licence, is a contravention of the Aggregate Resources Act and is punishable upon conviction by a fine of not less than \$500.00 and not more than \$30,000.00 for each day on which the offence continues.

EN OUTRE, VEUILLEZ ÊTRE AVISÉ que toute activité liée à l'exploitation du puits ou de la carrière visé(e) par le permis ou la licence mentionné(e) ci-dessus est interdite. Le fait de poursuivre toute activité pendant la période de suspension constitue une infraction à la Loi sur les ressources en agrégats et est passible, sur inculpation, d'une amende minimale de 500 \$ et maximale de 30 000 \$ pour chaque journée pendant laquelle se poursuit l'infraction (article 58, LRA).

AND FURTHER TAKE NOTICE that you, the licensee, are entitled to a hearing by the Ontario Municipal Board, if, within 30 days of service of this Notice, you serve the Minister with a Notice that a hearing is required. (The appeal Notice may be served at the local Ministry of Natural Resources office for which the pit or quarry is located.)

EN OUTRE, VEUILLEZ ÊTRE AVISÉ qu'en tant que titulaire du permis, vous avez droit à une audience devant la Commission des affaires municipales de l'Ontario si, dans les 30 jours suivant réception du présent avis, vous faites au ministre un avis l'informant que vous exigez une audience. (L'avis peut être signifié au bureau local du ministère des Richesses naturelles duquel relève le puits d'extraction ou la carrière.)

AND FURTHER TAKE NOTICE that despite the fact a hearing is required, the revocation of the licence remains effective. The Board may confirm the revocation of the licence or direct the Minister to rescind the revocation.

EN OUTRE, VEUILLEZ ÊTRE AVISÉ qu'indépendamment de la possibilité d'assister à une audience, la révocation reste en vigueur. La Commission peut confirmer la révocation du permis ou aviser le ministre d'annuler la révocation.

AND FURTHER TAKE NOTICE that you must rehabilitate the entire site immediately or, the agents of the Trust in accordance with subsection 6.1 (5) of the Act, may enter the land to carry out such rehabilitation as the Trustee considers necessary.

EN OUTRE, VEUILLEZ ÊTRE AVISÉ que vous devez immédiatement réhabiliter le terrain complet, ou les Agents du fonds, conformément au paragraphe 6.1 (5) de la Loi, peuvent pénétrer sur le terrain et y entreprendre telle réhabilitation selon que le fiduciaire le juge nécessaire.

AND FURTHER TAKE NOTICE that in accordance with subsection 6.1 (6) of the Act, any amount spent by the Trust on the rehabilitation of the land is a debt due to the Trust by you, the most recent licensee.

EN OUTRE, VEUILLEZ ÊTRE AVISÉ que, conformément au paragraphe 6.1 (6) de la Loi, tout montant dépensé par le fonds au, travaux de réhabilitation du terrain est une dette en votre nom, en tant que titulaire de dernière date, au compte du fonds.

X Dated at Toronto this 30th day of Sept, year 2004
Fait à _____ en ce _____ jour du mois de _____ de l'année _____

X [Signature]
Minister/Ministre

OCT 10/2004

ONTARIO
PROVINCE OF MANIPULATION AND INJUSTICE.
MINI QUARRY LICENCE ISSUED APRIL 1, 03 WITH 23
PRE OPERATING CONDITION CONFIRMED BY MINR P.O.L.
JUNE 30, 04 TO BE FALSIFIED AND FORGED DOCUMENTS

NO 23 PRE OPERATING CONDITIONS ON LICENCE
SIGNED BY THE MINISTER MARCH 25, 03.

NO ATTEMPT BY MINR OR THE MINISTER TO CORRECT
NEGLIGENT MISREPRESENTATION FORGERY & FRAUD.
www.injusticecanada.com

NICHOLS QUARRY →

700-8598

13

13



Ministry of
Natural
Resources

Minister

Ministère des
Richesses
naturelles

Ministre

Queen's Park
Toronto ON
M7A 1W3
416 314-2301

X OCT 15 2004

MNR1205MC-2004-2485

X Mr. Gary Nichols
President
Nichols Gravel Limited
P.O. Box 172
Delhi ON N4B 2W9

X Dear Mr. Nichols:

Thank you for your letter regarding your *Aggregate Resources Act* Licence No. 103717 and its associated licence conditions.

The Notice of Intention to Revoke served upon your Licence No. 103717, dated April 7, 2004, outlined 14 licence conditions that your company failed to meet. Failure to comply with the required licence conditions within the 90-day time period, specified in the Notice of Intention to Revoke, will result in the final revocation of your *Aggregate Resources Act* licence. These licence conditions contain items such as erecting required fencing and completing berming. ?

Since the 90-day time period has elapsed, staff in Aylmer District will be initiating the revocation of your licence.

I understand that the previous invitations to meet with district staff to discuss your licence remain open. Should you require further information on this matter, please contact Mr. Alec Denys, Aylmer District Manager, at (519) 773-4710 to set up a meeting.

Again, thank you for writing.

Sincerely,

X Hon. David Ramsay
Minister

c: Alec Denys, District Manager, Aylmer District

X Received Oct 28/04
Gary Nichols



Nichols Gravel Limited
P.O. Box 172 - Delhi, Ontario N4B 2W9
Phone (519) 582-3354 Fax (519) 582-2143

15

X October 26, 2004

X Ministry of Natural Resources

X Hon. David Ramsay Minister

Dear Sir:

In response to the Notice of Revocation for Licence 103717 as signed by yourself September 30, 2004, received hand delivered October 7, 2004, please be advised of our request to appeal to the Ontario Municipal Board under subsection 20 (4) ARA R.S.O 1990.

We are extremely concerned with the negligent misrepresentation which continues to be promoted, after your office was clearly made aware in my letter to you of July 14, 2004, which included a copy of the legitimate licence signed by the Hon. Jerry Ouellette March 25, 2003, and a copy comparison of the hand delivered April 1, 2003 restructured licence, dated July 8, 2004 initialed by Emellia Kuisma at the Aylmer District Office which contained 23 Specific Pre Operating Conditions not found on the original licence as signed March 25, 2003 by the Minister.

With no response received from your office to my July 14, 2004 letter and now the Revocation order signed by yourself September 30, 2004, it is most obvious to me that you have now become a party to the promotion of extortion, forged documents and fraud inflicted upon our Company by your M.N.R. staff, who failed to comply with O.M.B. Decision/Order 1194 and then conspired the reconstructed licence and suspension orders which followed.

Please further be advised that we are proceeding as stated in our letter of July 14, 2004.

Thank you for your attention to this matter.

Yours sincerely,

X Gary Nichols

X c.c. Ontario Municipal Board

353 Talbot Street West
Aylmer ON N5H 2S8
Tel: 519-773-4710
Fax: 519-773-9014

353, rue Talbot Ouest
Aylmer ON N5H 2S8
Tél.: 519-773-9241
Télééc.: 519-773-9014

X October 29, 2004

"Registered Mail"

X Ontario Municipal Board
655 Bay Street, Suite 1500
Toronto, Ontario
M5G 1E5

X Subject: Request for Ontario Municipal Board Hearing
Appeal on Licence Revocation
Aggregate Resources Act Licence No. 103717
Nichols Gravel Limited
Lots 10, 11, 12, Con 12. Walpole Township. Haldimand County.

X Dear Chair:

Nichols Gravel Limited was issued Licence No. 103717 to operate a quarry on Part of Lots 10, 11, 12, Concession 12, in the former Township of Walpole, Haldimand County on March 25, 2003.

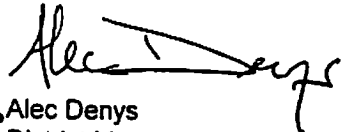
On April 7, 2004, a Notice of Intention to Revoke for Licence No. 103717 was issued via registered mail.

On October 7, 2004, the Aylmer District office received the Notice of Revocation signed by the Minister of Natural Resources, David Ramsay dated September 30, 2004. In accordance with subsection 20 (3) of the Aggregate Resources Act, the revocation notice was served on Mr. Gary Nichols, President of Nichols Gravel Limited, on October 7, 2004.

On October 28, 2004, the Aylmer District Ministry of Natural Resources received a request to appeal the Notice of Revocation from Nichols Gravel Limited.

In accordance with subsection 20 (6) of the Aggregate Resources Act R.S.O. 1990, the Ministry of Natural Resources is now referring this matter to the Ontario Municipal Board for a hearing. For your reference copies of the Licence, the Notice of Intention to Revoke, the Notice of Revocation, and the appeal from Nichols Gravel Limited are attached to this correspondence. Should you have any questions or concerns in regards to this matter please contact Emmilia Kuisma, Aggregate Resources Inspector at 519-773-4747.

Yours sincerely,



X Alec Denys
District Manager
Aylmer District
Ministry of Natural Resources

ekuisma/att'd

c.c. Nichols Gravel Limited



Nichols Gravel Limited
P.O. Box 172 - Delhi, Ontario N4B 2W9
Phone (519) 582-3354 Fax (519) 582-2143

17

X November 11, 2004

X Ministry of Natural Resources
Minister Hon. David Ramsay

X Dear Mr. Ramsay:

Thank you for your too late response to my July 14, 2004 letter which was stamp dated October 15, 2004 and received October 28, 2004 approximately one month after you signed the Revoke Order on our Quarry licence 103717.

I found no reference whatsoever in your letter to address the forgery and fraud by Aylmer M.N.R. staff which was confirmed by the M.N.R. F.O.I. computer file copy of the licence, without 23 Specific Pre Operating Conditions as signed by the Minister Hon. Jerry Ouellette March 25, 2003, and the comparison restructured falsified and forged licence with the March 31, 2003 letter from Aylmer District Manager, Alec Denys which contained for enforcement 23 Specific Pre Operating Conditions to be completed before the quarry could become operational. This licence was hand delivered to our office April 1, 2003 by Inspector Paul Cutmore and Enforcement Officer Zacher and did not comply with the direction of O.M.B. Decision/Order 1194. In order to clarify the M.N.R. staff negligent misrepresentation and fraud both of these documents were included with my July 14, 2004 letter. ?

In consideration of the fact that your response to my letter came after you had signed the Revoke Order of September 30, 2004, long after you had received my letter and licence documentation which clearly revealed the manipulation and fraud by your staff, I now have to conclude that you did not read my letter, or if you did, having been informed with written documentation of staff negligent misrepresentation to criminal actions, you have opted to become a party to this coverup, by not investigating this matter and taking appropriate action prior to signing the Revoke Order, and as a result you have failed to fulfill your responsibilities as Minister to serve and protect the Public Interest which will only serve to keep this matter spinning to its final conclusion before the courts. ?

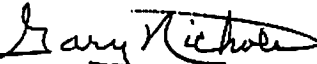
Because no one has made any attempt to resolve this conspired fraudulent fiasco, what has been accomplished since April 1, 2003 to this date, is a huge amount of M.N.R. intimidation, harassment, and aggravation to our company, a total waste of M.N.R. staff ?

time attempting to enforce the unenforceable, a waste of court time and court services, as well as a huge waste of tax dollars for this arrogant unlegislated, unlawful enforcement exercise. ?

X Please further be informed that the Revoke Order has now been appealed to the O.M.B. for hearing.

We thank you for any interest you may have in resolving this negligent complicated mess.

Yours sincerely,


X Gary Nichols, Pres.
Nichols Gravel Limited

X c.c. Premier Hon. Dalton McGuinty
X c.c. Minister of the Attorney General Michael Bryant

X www.injusticecanada.com



Ministry of
Natural
Resources

Minister

Ministère des
Richesses
naturelles

Ministre

Queen's Pa
Toronto ON
M7A 1W3
416 314-2301

MNR1205MC-2004-3718

X NOV 17 2004

X Mr. Gary Nichols
President
Nichols Gravel Limited
P.O. Box 172
Delhi ON N4B 2W9

X Dear Mr. Nichols:

Thank you for your letter regarding a request to appeal the Notice of Revocation for your Licence No. 103717 to the Ontario Municipal Board.

In correspondence dated October 29, 2004, the Aylmer District office of the Ministry of Natural Resources, as per subsection 20 (6) of the *Aggregate Resources Act*, has referred this matter to the Ontario Municipal Board for a hearing. I have been advised that the Aylmer District office provided your company with a copy of the correspondence to the Board.

In regard to your letter dated July 14, 2004, I have previously provided a response, dated October 15, 2004, addressing the Notice of Intention to Revoke for Licence No. 103717.

Should you require any further information on the appeal process, please contact Mr. Alec Denys, Aylmer District Manager, at (519) 773-4710 to set up a meeting.

Again, thank you for writing.

Sincerely,

X Hon. David Ramsay
Minister

c: Alec Denys, District Manager, Aylmer District

INDEX 2005

1. January 2, 2005, Memorandum to Licence Conditions.
2. January 28, 2005, Cayuga Provincial Court J. P. Wendy Casey Stays all M.N.R. charges of April 14, 2003, and cites MNR for Abuse of Process and Infringement of Shareholders Charter Rights.
3. April 15, 2005, M.N.R. advisement and threats of more charges.
4. July 19, 2005, M.O.E. Paul Odom refuses to Amend Permit To Take Water.
5. November 24, 2005, Judge Martha Zivolak grants MNR Appeal to J. P. Casey Decision.?
6. December 19, 2005, M.N.R. drops all charges to avoid defending Abuse of Process in Court on Appeal.

X MEMORANDUM TO LICENCE 103717

X In respect to O.M.B. Decision/Order 1194 which approved and directed the Ministry of Natural Resources on 25, July 2001 to issue a Class A, Cat. 2 licence to Nichols Gravel Limited subject to 55 suggested conditions of approval, and subject to these conditions as imposed on M.N.R. Licence #103717, issued March 25, 2003 this is a statement of clarification as to the status of these licence conditions as of this date:

X Conditions #1, 2, 3, 5, 6, 9, 10, 11, 12, 14, 15, 16, 17, 18, 20, 22, 23, (24), 25, 26, 29, 30, 32, 37, 38, 39, 40, 41, 44, 48, 50, 54, and 55 have all been complied with to date. (33) conditions. ✓

X *NOTE: Condition #24 no longer relevant. Inlay Creations sold business, laser equipment moved to Toronto.

X In respect to the fact that the licence was hand delivered April 1, 2003 with 23 Specific Pre Operating Conditions, this quarry was prevented by M.N.R. from becoming operational until October 4, 2004 when Nichols Gravel Limited proceeded to open this quarry for business.

X The following conditions are operational conditions and are not relevant until the on going phased development of the quarry operation requires that these conditions be implemented: These are conditions:

#4, 7, 8, 13, 19, 21, 27, 28, 31, 33, 34, 35, 36, 42, 43, 45, 46, 47, 49, 51, 52, 53, (22) conditions. ✓

X This quarry is now operated under licence 103717 as signed and issued March 25, 2003, by the Minister Hon. Jerry Ouellette as directed by O.M.B Decision/Order 1194 which in fact does not contain 23 Specific "Pre operating Conditions" as confirmed in our letter of June 14, 2004 to the Minister, Hon. David Ramsay. ?

Gary Nichols

Information No. 03/0053

Information No. 03/0573

IN THE SUPERIOR COURT OF JUSTICE

B E T W E E N:

HER MAJESTY THE QUEEN

-and-

NICHOLS GRAVEL LTD., GARY NICHOLS,
MARGARET NICHOLS AND DWAYNE NICHOLS

Charges : ss.7(1) of the Aggregate Resources Act.
RSO 1990, Ch.A.8 as amended
ss.57(1) of the Aggregate Resources Act

X REASONS FOR JUDGMENT

Given by Her Worship, Justice of the Peace W. Casey
on January 28th, 2005 in
Haldimand County, Cayuga, Ontario.

APPEARANCES:

Prosecutor

C. Szoke, Esq.

Counsel for the defendants

P. Osier, Esq.

Reasons by Her Worship W. Casey

who were opposed to the gravel pit operations. Despite the opposition the OMB ordered the MNR to issue a quarry license to Nichols Gravel Limited.

- And interim order was issued dated April 3rd, 2001 and the final OMB order was issued July 25th, 2001.
- It wasn't until March 31st, 2003 that the license was issued by the MNR and delivered to Mr. Nichols on April 1st, 2003.
- On April the 14th, 2003, the MNR issued a notice of suspension to Nichols Gravel Limited alleging that it failed to complete 23 pre-conditions of the license issued to them and requiring them to complete by September 30th, to be completed rather, by September the 30th, 2003.
- On April 25th, 2003, the charges as read were laid.

A pre-trial Motion was made by the defence which alleges that the rights of Nichols Gravel Limited have been subject to an abuse of process under the law, and the individual rights of Gary, Margaret, and Dwayne Nichols have been violated under sections 7 and 15 of the Charter of Canadian Rights and Freedoms.

✕ Reasons by Her Worship W. Casey

The first day of evidence was heard on the Motion was April 29th, 2004 continuing for several days and concluding November the 5th, 2004.

I have reviewed all the evidence, the written Motions and arguments, in detail but will highlight only the testimony I consider relevant to this Motion.

Number 1:

MNR Inspector Strachan testified that the application for a license is normally made to the MNR and subject to conditions under the Aggregate Resources Act. Upon completion of a site place containing:

- a) the existing conditions of the land,
- b) the operating conditions of the quarry,
- and c) rehabilitation plans when the quarrying is completed,

the MNR would then issue the license if there is no opposition.

2: In this case there was opposition to the license and the matter was referred to the OMB for a hearing. the MNR, however, took no part in the actual hearing before the OMB when the license was granted.

3. The Ministry of the Environment (MOE) requested at the OMB hearing that the taking of water should be made by a permit issued by the MOE.

4. The first OMB order was issued on April the 3rd, 2001 and it states on page 9 at the end of the

X Reasons by Her Worship W. Casey

third paragraph, quote:

The Board does accept the request of the MOE and accordingly, the pit license will be conditional upon the issuance of a permit to take water by the MOE.

5. Although purportedly written Tuesday, April 3rd 2001 a further order was issued on July the 25th, 2001 by the OMB stating that, quote:

The applicant shall obtain a long-term Water Taking Permit issued by the Ministry of the Environment.

6. Inspector Strachan told the court that he needed clarification from the Board at this point as to whether or not Mr. Nichols had to obtain a permit to take water before they issued the license. He stated that of the 55 conditions the Board put on the ruling the pit would have to be operating to fulfil those conditions.

7. On page 31 of the transcript Inspector Strachan was asked the question by Mr. Osier, counsel for Mr. Nichols:

Q. And in the case of Nichols, can you assist us as to whether or not at least initially there was an absolute requirement to pump water?

A. At the every beginning, no, there would be, You'd have to get down to the water table before you'd do that.

X Reasons by Her Worship W. Casey

8. Inspector Strachan did not issue the license, although he tried on a number of occasions through various people to obtain clarification of the order. One of the responses came from Andy Dawang at the Attorney General's web site, Exhibit Number 4, which states in part that all conditions had to be cleared before the license could issue. This is clearly impossible as 55 of the conditions require that the pit be operational at the time the conditions are required to be fulfilled. The Inspector then directly e-mailed Garry Harron, the member who made the OMB ruling, but did not get a response.
9. Throughout his testimony Inspector Strachan reiterated the fact that the MNR did not have the power to change an order of the OMB and that was the reason he could not issue the license.
10. On August the 12th, 2002 Inspector Paul Cutmore replaced Inspector Strachan and he was the next person to testify at the hearing. He testified that as the result of a complaint he received concerning unlicensed activity, he visited the Nichol's site August the 27th, 2002, and formed the opinion that because of gravel being stock-piled on the site, it was an indication that there was a quarry being run. He did not visit the site itself but took pictures at the entrance to the site, and on September the 5th, 2002 he issued a Cease and Desist Order to Mr.

X Reasons by Her Worship W. Casey

Nichols, although Mr. Cutmore himself never saw a stone being taken out of the ground.

11. On October 21st, 2002, Inspector Cutmore wrote the OMB for further clarification of their Order issued July 25th, 2001. A response came Mark Michaels, counsel for the Board on December the 18th, 2002, Exhibit number 11. In essence the letter said that the, "clarification" of the Order given by Andy Dawang, a member of the Board's staff was not correct in that:

'the Board does not intend that any condition imposed by it be incapable of being fulfilled by reason that a "technical impossibility" makes compliance with the conditions impossible or for any other reason that makes compliance with the Order impossible.'

Further, the last paragraph of the letter reads: 'Accordingly, in order to give effect to the Order and the Boards having directed the issuance of a license, condition 1 of the Order provides that the license is to be issued (providing that all other conditions have been or are being fulfilled) - that is in brackets - subject to the requirement that, at the point where the water table is reached, Nichols is required to seek and obtain the Permit prior to Nichols continuing any further extractions.'

12. Inspector Cutmore as he indicated on page 101 of the transcript was, quote, "the person with

X Reasons by Her Worship W. Casey

the prime responsibility for issuing the license," but did not do so until March 25th, 2003, over three months after receiving the letter. He explained the delay from the 30 days which Inspector Strachan acknowledged as the norm for licenses to be issued, to his having to check with other people in the Ministry to clarify the legal terminology of the letter.

- ? 13. "When the license was delivered to Mr. Nichols, Inspector Cutmore had drafted a letter which Mr. Denys, his supervisor, signed attaching a specific list of 23 of the original conditions entitled, "Specific pre-Operating Conditions which must be satisfied prior to the operation of the quarry or removal of material from the licensed property."
- ? 14. Throughout the trial Inspector Strachan, Mr. Denys and the OMB itself made it clear that no one had the right to change the OMB Order. Yet Inspector Cutmore told the court he had the right as an Inspector to add these pre-operating conditions not specified as such by the OMB or specified as such on the site plan.
15. As the court previously heard it was not possible to comply with pre-operating conditions when the quarry was not in operation. The term pre-operating conditions is one which only Inspector Cutmore used.

X Reasons by Her Worship W. Casey

- ? 16. Mr. Nichols in his testimony explained that one of the pre-operating conditions was to construct an internal water collection system which requires the establishment of a sump hole at a lower level within the quarry. An impossible condition to comply with as the area then has to have been quarried before the sump hole could be established.
17. On April 14th, 2003, 20 days after he issued the license to Mr. Nichols, Inspector Cutmore suspended it citing non-compliance of the 23 conditions stipulated in the pre-operating conditions and four site plan contraventions.
18. Page 166 of the transcript, line 18, on cross-examination by the prosecutor, Inspector Cutmore was asked:
- Q. Do you have personal knowledge, sir, that this particular site has or is presently operating as a gravel pit?
- A. Personally I don't have that information, sir.
19. On April 25th, 2003, the charges of operating a quarry without a license and with unlawfully obstructing an Inspector by failing to provide an Inspector with information under the Aggregate Resources Act were laid.

CONCLUSIONS:

The court has been asked to rule that the charges

X Reasons by Her Worship W. Casey

before it are an abuse of process against the company and the individual shareholders.

Under section 7 and 15 of the Charter of Rights and Freedom,

Section 7 concerns legal rights and it states in part;

Everyone has the right to Life, Liberty and Security of person, and the right not to be deprived thereof, except in accordance with the principles of fundamental justice.

Section 15 concerns Equal Rights and it states; Everyone is equal before and under the law and has the right to the equal protection and equal benefit of the law without discrimination.

When the OMB issued the Order to the MNR to issue a license to Mr. Nichols to operate a gravel pit the license was a fait accompli.

X The OMB is the highest authority for this type of dispute, there is no appeal from this Order and as testimony revealed even the Board cannot change the Order it made.

What happened next was a series of events resulting from a non-specific addition to the license regarding a Water Taking Permit requested by the MOE.

A request for clarification of the Order from Inspector Strachan resulted in further problems when Andy Duwang, a member of the Board's staff, responded without any authority to do so or knowledge of the

X Reasons by Her Worship W. Casey

implications of his reply.

- X** Over 18 months after the Board approved the license clarification came from Mark Michaels, counsel for the Board, stating that it was not the intention of the Board to put on the license any conditions which could not be fulfilled and ordered the MNR to issue the license.

It is this court's opinion that any conditions the Board put on the license were ones to be completed after the license was issued and as the project was naturally evolving. All these problems were systemic, including the MNR's inability to communicate with the OMB.

- X** On December 18th, 2002 or within 30 days of Mark Michael's response, Inspector Peter Cutmore should have issued the license to Mr. Nichols as directed. He chose not to do this, instead indicating to the court that he needed clarification from a number of people and he delayed the issuance of the license until March 25th, 2003.
- X** Inspector Cutmore's testimony regarding his motives for not issuing a license were not believable, the letter was self-explanatory and required no interpretation.
- X** The court can come to no other conclusion than when Inspector Cutmore delivered the license with 23 pre-operating conditions, many of which were

X Reasons by Her Worship W. Casey

X impossible to comply, he set up Mr. Nichol to fail in his bid to operate the quarry on a productive basis.

X He had no legal authority to change the OMB ruling and his explanation for why he made up pre-operating conditions was also not believable.

Inspector Cutmore issued the Cease and Desist Order to Nichols Gravel on information given to him through resident's complaints, having visited the site only once and making his observations from the gate.

X It is this court's opinion that when Inspector Cutmore issued that Cease and Desist Order he entered into the arena on the side of the people opposed to the quarry.

X Gary, Margaret and Dwayne Nichols have the right to the equal protection and equal benefits of the law without discrimination, and Inspector Cutmore deprived them of their rights by issuing orders they could not comply with. And when they could not comply with the order, he charged them along with the company under the Aggregated Resources Act.

X The Ministry of Natural Resources must bear some responsibility for the actions of one of their Inspectors, when they not only allowed him to issue illegal orders under the authority of his supervisor, but did little, if anything, to assist Mr. Nichols in his dilemma over the OMB ruling, (with the excep-

Reasons by Her Worship W. Casey

X tion of former Inspector Strachan).

I considered the case of Abitibi Paper Company Limited, in which Jessop, JA stated:

While there does not exist a broad jurisdiction to stay criminal proceedings as an abuse of process, the doctrine of abuse of process does exist, limited, however, to the most exceptional circumstances.

In any event there is no question of the existence of the doctrine in civil proceedings and the charges in this case,

- which applies to this case also - being for a breach of provincial statutes are matters of civil law.

X In my opinion these are exceptional circumstances. The interference in the proper administration of valid orders by Ministry personnel in what appears to be a highly politicized situation is not to be tolerated.

X The charges against the company and the individuals cannot be allowed to proceed, and all counts on Information 03-0053 and Information 03-0573 against Nichol Gravel Ltd., Gary Nichols, Margaret Nichols and Dwayne Nichols are stayed.

X It is this court's opinion that Nichols Gravel Ltd.,

Reasons by Her Worship W. Casey

X is legally entitled to be operating the quarry by virtue of the order of the OMB directing the MNR to issue the license. That is the end of my Judgment.

MR. OSIER: Thank you, Your Worship.

MR. NICHOLS: Thank you.

X

Transcribed from a recording to the best of my skill and ability.

M. Hudacin
M. Hudacin, Official Court Reporter.

Sworn before me at the
Asserment devant moi au

X HALDIMAND COUNTY

2

is **X** 14 day of APRIL 2003 **X**

Ronald R. R. R.
Judge or Justice of the Peace in and for the Province of Ontario
Juge ou juge de paix dans et pour la province de l'Ontario

Informant/Dénonciateur

Sec. 23/art. 23

☐ Summons for
☐ Somation pour

20

☐ Confirmed on
☐ Confirmée le

20

Justice of the Peace/Juge de paix

Date/Date	Defendant / Prévenu	Pleas / Plais Guilty to Counts Coupable sous les chefs	Pleas / Plais Not Guilty to Counts Non coupable sous les chefs	Found Guilty on Counts Déclaré coupable sous les chefs	Not Guilty on Counts Déclaré non coupable sous les chefs
X JAN 28 2005	ALL Charges stayed		1, 2		

Date

☐ In Absentia / ex parte

counts/chefs d'accusation	
Fined \$ amende de	& \$ \$ et
costs. Time to Pay \$ de frais. Délai de paiement	
Date of Birth date de naissance	
Probation Période de probation de	
Sentenced to Imprisonment for Peine d'emprisonnement de	
<input type="checkbox"/> withdrawn accusation(s) retirée(s)	<input type="checkbox"/> sentence suspended condamnation avec sursis

counts/chefs d'accusation	
Fined \$ amende de	& \$ \$ et
costs. Time to Pay \$ de frais. Délai de paiement	
Date of Birth date de naissance	
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Sentenced to Imprisonment for Peine d'emprisonnement de	
<input type="checkbox"/> withdrawn accusation(s) retirée(s)	<input type="checkbox"/> sentence suspended condamnation avec sursis

X W. C. C. C. **X**
Judge or Justice of the Peace in and for the Province of Ontario
Juge ou juge de paix dans et pour la province de l'Ontario

353 Talbot Street West
Aylmer ON N5H 2S8
Tel: 519-773-9241
Fax: 519-773-9014

353, rue Talbot Ouest
Aylmer ON N5H 2S8
Tél.: 519-773-9241
Télec.: 519-773-9014

✶ April 15, 2005

Nichols Gravel Limited
R.R. # 2 Delhi, P.O. Box 172
Delhi, Ontario N4B 2W9

✶ Attention: Mr. Gary Nichols

RE: Revoked Aggregate Resources Act Licence No. 103717
Part Lots 10, 11 & 12, Concession 12, Haldimand Co. (Walpole Twp.)

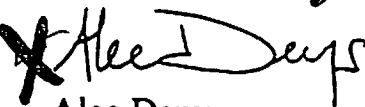
✶ On September 30, 2004 the Honourable David Ramsay, Minister of Natural Resources, signed an order revoking *Aggregate Resources Act* Licence No. 103717. Notice of Revocation was served on October 7, 2004.

✶ Licence No. 103717 issued to "Nichols Gravel Limited" of Delhi, Ontario remains under revocation. The status of the revocation is not altered by the dismissal of charges under the *Aggregate Resources Act* on January 28, 2005. Nor is the status of the revocation altered by the fact that you have launched an appeal of the revocation. ?

✶ Section 7(1) of the *Aggregate Resources Act* applies. At the property in question (Part Lots 10, 11 & 12, Concession 12, Haldimand Co. (Walpole Twp.)) you are not to operate a pit or quarry "except under the authority of and in accordance with a licence." In your case, no valid licence exists – your licence is revoked. You must not operate. ?

The Ministry of Natural Resources reserves the right to lay additional charges under the *Aggregate Resources Act* for ongoing operations in breach of the revocation.

Yours truly,

✶ 
Alec Denys
District Manager
Aylmer District

GZ/2005

MNRA 001

✶ ASTOUNDINGLY, EVEN AFTER THE COURT DECISION OF JAN 28, 2005 WHICH STAYED ALL CHARGES, AND FOUND M.N.R. ABUSE OF AUTHORITY AND ABUSE OF PROCESS, M.N.R. CONTINUES TO INTIMIDATE AND PROMOTE THIS FRAUD ON THIS FAMILY BUSINESS. IS THIS BRAIN DEAD GOVERNMENT OR WHAT? M.N.R.

4

X Ministry of the Environment
West-Central Region
Technical Support Section
Water Resources
12th Floor
119 King St W
Hamilton ON L8P 4Y7
Fax: (905)521-7820
Telephone: (905) 521-7674

Ministère de l'Environnement
Direction régionale du Centre-Ouest
Secteur du Soutien Technique
Ressource en eau
12e étage
119 rue King W
Hamilton ON L8P 4Y7
Télécopieur: (905)521-7820
Téléphone : (905) 521-7674



X July 19, 2005

Nichols Gravel Ltd.
Box 172
Delhi, Ontario, N4B 2W9
Canada

RE: Reference Number 5226-629QXX
PTTW Application March 29, 2005

X Dear Mr. Nichols:

In March of this year, the Ministry received an application from you for an amendment to Permit to Take Water N° 03-P-2244 for Lots 10, 11 and 12 Concession 12 in the Geographical Township of Walpole. In a subsequent letter of May 13, 2005, you took issue with having received the Ministry's standard letter confirming acknowledgement of receipt of an application.

I have reviewed your letter and all of your submissions relating to this site and conferred with Crown Counsel and staff from the Ministry of Natural Resources. Following all of these actions, I have determined that your application is premature at this time.

I am required by law to consider in my deliberations "whether there is a reasonable prospect that the person will actually use the water in the near future" (O. Reg. 387/04 §4.3.iii). On September 30, 2004, the Honorable David Ramsey, Minister of Natural Resources issued a Notice of Revocation For License number 103717 previously issued to Nichols Gravel Ltd. for this property on the basis of multiple failures to comply with Licence #103717. Since there is no valid license for quarrying on this property, I consider there is no reasonable prospect that water can legally be used for aggregate washing in the near future. ?

X I will be prepared to reconsider a resubmission of this application at the time that Nichols Gravel Ltd. Has a valid license for this property and that this license is in good standing. At the same time, I shall only be prepared to consider an amendment to the existing Permit to Take Water provided that permit is in good standing. ?

We wish to point out that, in our initial screening of this application, we have reviewed the conditions within the existing permit N°03-P-2244. Arising from that screening, I am identifying to you that:

4

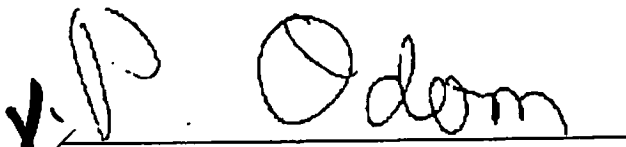
~~V~~ P.T.T.W HAND DELIVERED AND RECEIVED JUNE 20/2003
10 DAYS TO COMPLY? AND 15 MONTHS FOR MSE TO RESPOND
J.L.H

- X {
- 1) Nichols Gravel Ltd. is in violation of Special Condition N°6. in that the list of well owners was not provided to the Director by June 30, 2003.
 - 2) Nichols Gravel Ltd. is in violation of Special Condition N°7, in that the monitoring data for the period April 2001 to March 2003 was not supplied to the Director by June 30, 2003.
 - 3) Nichols Gravel Ltd. is in violation of Special Condition N°11 in that a detailed work plan for conducting two (2) pumping tests on site was not submitted to the Director by June 30, 2003.

Please be aware that The Ontario Water Resources Act, R.S.O. 1990 §34(8) provides that contravention of any of the terms and conditions of a permit issued by a Director is a violation of the Act. You should also be aware that there are several other conditions within this Permit which require actions be taken by Nichols Gravel Ltd. by certain dates which do not, at this time, require submissions to the Director but which are prerequisites to the taking of water.

At this time, we are returning your application for an amendment to this permit until such time that you can demonstrate that a valid license exists.

Yours truly,

X 
Paul Odom
Supervisor, Water Resources
West Central Region

File Storage Number: AP28 WANI



Ministry of
Environment
and Energy
Ontario

Application for Permit to Take Water

Information requested by this form is collected under the authority of the Ontario Water Resources Act, R.S.O. 1990, Chapter O.40 (OWRA) and the Environmental Bill of Rights, Statutes of Ontario, 1993, Chapter 28 (EBR). The purpose of the Permit is to regulate water takings in order to promote efficient development and equitable use of surface and ground waters.

<input type="checkbox"/> New Permit <input type="checkbox"/> Permit Renewal <input checked="" type="checkbox"/> Permit Amendment		Existing Permit No. 03-P-2244
Name of Applicant NICHOLS GRAVEL LIMITED		Telephone No. 519-582-335
Address BOX 172 DELHI ONT.		Postal Code N4B 2W9

Application Particulars

Please read instructions on the Guide for Applying for Approval of Permit to Take Water ("Guide") and ensure that all sections of the application are completed in full, especially the section on Request Amount of Taking from each Source and project/application description for purposes of EBR registry.

Submit a diagram of the area of this water taking. Diagram, instructions and example are shown in the "Guide". If the taking is from a groundwater source, then a diagram indicating any wells within 500 metres of the taking must be submitted.

If there are questions concerning the application, please contact the corresponding Ministry of Environment and Energy Regional Office listed in the "Guide".

A Source of Water

1 Well(s): How many? <input type="text"/>	Spring(s): How many? <input type="text"/>	2 Lake, Stream or River Name (s)
3 Pond(s): How many? <input type="text"/>	Type: <input type="checkbox"/> Dugout <input type="checkbox"/> By-Pass <input type="checkbox"/> On-Stream <input checked="" type="checkbox"/> Pit or Quarry	
4 Other: Type of Source		
5 Construction date of Source MAY 29 2002	6 Date of installation of Water Taking Equipment UPON ISSUANCE OF AMENDED PTTW 2002	

B Location of Taking

Lot, Concession, Township or former Township and County or Region or District, or City, Town or Village with name of street and number
LOTS 10, 11, 12 CON-12 OLD WALPOLE TWP. HALDIMAND COUNTY.

Are the proposed works located in an area of development control as defined by the Niagara Escarpment Planning and Development Act (NEPDA)

☐ Yes ☒ No (if Yes, attach copy of NEPDA permit)

C Location of Water Use

☒ Same as B or

Lot, Concession, Township or former Township and County or Region or District, or City, Town or Village with name of street and number

D Purpose of Taking

☐ Irrigation ☐ Commercial ☒ Industrial ☐ Municipal ☐ Public Supply ☐ Recreation
☐ Drinking water ☐ Other (please describe)

E Period of Water Taking (complete either section 1 or 2 below)

1 Taking to commence on MAY 1/05 and to extend for a period of 50 <input type="checkbox"/> days <input type="checkbox"/> weeks <input type="checkbox"/> months <input checked="" type="checkbox"/> By
2 Seasonal taking to extend from _____ to _____ each year for _____ (number of years)

F Request Amount of Taking from each Source (if the taking involves the taking of water into storage, please state the amount of water taken storage as well as the amount of water withdrawn from storage).

Source Number	Name of source or Description	Maximum amount taken per minute	Maximum amount taken per day	Maximum amount of taking per day-maximum	Number of hours taken per day-average	Maximum number of days taken per year
	NICHOLS QUARRY	1200	864000	24	12	280
	911# 2746 ROAD					
	RR#5 HALERSVILLE CRT.					

G Project/application description for purposes of EBR registry (brief description of proposal)

FOR WASHING AGGREGATE AND WATER SUPPLY TO CONCRETE BATCHING PLANT AND ALSO DEWATERING QUARRY AS MAY BE REQUIRED.

H Environmental Bill of Rights requirements

Is this a proposal for a Prescribed Instrument under EBR? ☒ Yes ☐ No

If "Yes", is it excepted from public notification? ☐ Yes ☐ No

If it is excepted from public notification, provide reason

☐ Environmentally insignificant amendment or revocation

☐ Equivalent Public Participation

☐ EEA or Tribunal Emergency

Documentation in support of the above noted exception must be provided (refer to "Guide").

Supporting information checklist. This is a list of all supporting information attached to this application and is subject to the Freedom of Information and Protection of Privacy Act (FOIP/OPA) and the Environmental Bill of Rights (EBR).

SUPPORTING INFORMATION	ATTACHED?	REFERENCE	CAN BE DISCLOSED
Pre-application consultation with MOEE	<input type="checkbox"/> Yes <input type="checkbox"/> No	PREVIOUS APPL.	
Documentation Provided			
Description of the proposed works	<input type="checkbox"/> Yes <input type="checkbox"/> No	PREVIOUS APPL.	<input checked="" type="checkbox"/> Yes
Environmental Study Report (ESR)	<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/> Yes
Preliminary Report	<input type="checkbox"/> Yes <input type="checkbox"/> No	PREVIOUS	<input checked="" type="checkbox"/> Yes
Design Report/Brief	<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/> Yes
Hydraulic and Process Calculations	<input type="checkbox"/> Yes <input type="checkbox"/> No	PREVIOUS	<input checked="" type="checkbox"/> Yes
Final Plans and Specifications	<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/> Yes
Water Supply and Treatment			
Raw Water Quality Analysis	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/> Yes
Hydrogeological Report	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	LEVEL 1 AND LEVEL 2 PREVIOUS	<input checked="" type="checkbox"/> Yes
Other Attached Information	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	O.M.B. DECISION/ORDER 1194	<input checked="" type="checkbox"/> Yes

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Statement of Applicant

The undersigned hereby declare that to the best of my knowledge, the information contained herein and the information submitted in support of this application is complete and accurate in every way. The applicant agrees to indemnify and save harmless the Crown in right of the Province of Ontario and its officers, employees, agents and contractors from and against all damages, loss, costs, claims, suits, injuries, demands, actions and proceedings resulting from or in any manner connected with act or omission of the applicant or any of its officers, employees, agents or contractors relating to this Application and any Permit, Renewal Permit or terms and conditions of a Permit issued in response to this Application. I understand that it is the policy of the Director in issuing a Permit to Take Water to impose the General Terms and Conditions appearing on the Guide for Applying for Permit to Take Water.

Name of Applicant or Agent Official of Applicant (please print)

Signature of Applicant or Agent of Applicant

Date

X GARY NICHOLS

Gary Nichols

✓ MARCH 29, 2005

Diagram of Location of Water Taking

X ON FILE TO PREVIOUS APPLICATION MAY 3, 2001

ONTARIO COURT OF JUSTICE

IN THE MATTER OF an appeal pursuant to s. 116 of the
Provincial Offences Act, R.S.O. 1990, c.P.33, as amended

B E T W E E N:

HER MAJESTY THE QUEEN

Appellant

- and -

NICHOLS GRAVEL LTD., GARY I. NICHOLS,
MARGARET D. NICHOLS and DWAYNE E. NICHOLS

Respondents

X REASONS FOR RULING

X BEFORE THE HONOURABLE JUSTICE M.J. ZIVOLAK ?
on November 24, 2005 at BRANTFORD, Ontario

X Appearances:

B. Davis, Agent for
D. Kappos

Counsel for the Crown

P. Osier

Counsel for the Respondents

THURSDAY, NOVEMBER 24, 2005

REASONS FOR RULING

X ZIVOLAK, J. (Orally):

All right, thank you. This is a matter that has come before me by way of appeal. In essence, there are four issues that need to be dealt with.

Firstly, whether or not Section 15 (Canadian Charter of Rights and Freedoms) rights have been infringed in the circumstances. Secondly, whether there have been Section 7 rights that have been infringed. Thirdly, whether or not outside of the Charter there still exists and have they been made out, an abuse of process in the circumstances. And finally, if so, if there has been a breach of any of these or an abuse of process, what is the appropriate remedy and is that the stay that was granted in the circumstances.

Firstly, I will just outline briefly the history of this matter. The history is a rather long and complicated one but this is a summary. Nichols Gravel Ltd. had a farm in the Walpole Township, City of Nanticoke. That land was to be re-zoned at some point to operate as a gravel pit. That was the hope and expectation, it would appear, of the owners. There appears to have been opposition to the proposed pit and in 1999 the Ministry of Natural Resources referred the matter to the Ontario Municipal Board for a decision with respect

to that aspect. Evidence was heard by the Ontario Municipal Board in July, 2000, and an interim order was granted, it is referred to as an interim order. Perhaps an initial order is better language, April 3rd, 2001, and then a subsequent addendum to that and a formal order was issued July 25, 2001.

In March 31, 2003, a licence was issued by the Ministry of Natural Resources and it was delivered to Mr. Nichols on April 1st, 2003.

On April 14th, 2003, the Ministry of Natural Resources issued a notice of suspension to Nichols Gravel alleging that it had failed to complete several of the pre-conditions in the licence that was issued to them. And on April 25th the charges that are before the court were laid.

This is an appeal by Her Majesty the Queen with respect to a ruling of Her Worship Justice Casey wherein on a pre-trial motion brought by the defendant, now the respondent in the circumstances, (but then the defendant company and individuals,) where Her Worship found that there was a breach of the Charter, both Sections 7 and 15, and granted a stay in the proceedings.

I turn then firstly to Section 15 and whether or not, in fact, there has been a breach of Charter rights in that regard. Firstly, Section 15(1) of the Canadian Charter of Rights and Freedoms reads as follows:

Every individual is equal before and under the law and has the right to equal protection and equal benefit of the law without discrimination and, in particular, without discrimination based on race, national or ethnic origin, colour, religion, sex, age or mental or physical disability.

The approach that is normally adopted in the courts with respect to the interpretation of Section 15(1) that I have just read focuses, in essence, on three central issues, and this has been outlined in the case of Law v. Canada (Minister of Employment and Immigration), [1999] SCJ No. 12 at para 23, 30. Firstly, whether a law imposes differential treatment between the claimant and others in purpose or in effect. Secondly, whether one or more enumerated or analogous grounds of discrimination are the basis for the differential treatment. And three, whether the law in question has a purpose or effect that is discriminatory within the meaning of the equality guarantee.

Now, it has been acknowledged by the respondent in the circumstances that in this particular case there was no enumerated or analogous grounds that were advanced or argued before the Justice of the Peace. And accordingly, there cannot be any breach of Section 15(1) Charter right in the circumstances. There is no suggestion that any of the grounds or analogous grounds have, in fact, been the basis of the differential treatment, which

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has been acknowledged by the respondent. Therefore it would have been an error finding that there was a breach pursuant to Section 15.

I turn then to Section 7. Section 7 is as follows:

Everyone has the right to life, liberty and security of the person and the right not to be deprived thereof except in accordance with the principles of fundamental justice.

It has been suggested by other courts that the appropriate analysis for a Section 7 consideration is as follows:

- (i) Does the legislation or state action affect an interest protected by the right to life, liberty and security of the person?
- (ii) If so, then has the deprivation of this right been caused by the state? and finally
- (iii) Is the deprivation of the right protected by s. 7 done in accordance with the principles of fundamental justice?

In that regard, it has been established that economic rights and the right of corporations are not rights that are protected pursuant to Section 7 of the Charter. In part, that is addressed in the Irwin Toy decision of the Supreme Court in 1989, Irwin Toy Ltd. v. Quebec (Attorney General), [1989] S.C.J. No. 36, as well as subsequent decisions of the court considering similar issues.

So accordingly, there would not be a Section 7 breach in the circumstances. There would be an error in law in that regard as it cannot apply to either a corporate accused, as is one of the accused in the circumstances, nor to economic interest, which would be what is being alleged with respect to all of the defendants in the circumstances.

That still leaves the question of whether or not there exists a common law right of abuse of process and in that regard the court considered that if the right continues to exist, it exists in a fashion that requires the clearest of cases to be shown in the circumstances and I refer to Regina and O'Connor, the 1993 decision of the Supreme Court of Canada. At paragraph 70, R. v. O'Connor, (1993), 103 C.C.C. (3d) 1 (SCC). Madame Justice L'Heureux-Dubé states as follows:

"...I conclude that the only instances in which there may be a need to maintain any type of distinction between the two regimes will be those instances in which the Charter, for some reason, does not apply yet where the circumstances nevertheless point to an abuse of the court's process."

So having found that Her Worship erred with respect to application of Section 15 or Section 7 in the circumstances, in the light of the jurisprudence, I am left with that consideration as outlined that if

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the Charter does not apply, as I have ruled that it does not, then is there still a existence of a potential abuse of the court's process.

I then must turn to Her Worship's decision to determine whether or not she considered this in that light.

Her Worship made a number of findings with respect to the evidence, and while it is clear the evidence of the inspector, Mr. Cutmore, was key in making her ruling, and this is evidenced by the strong language that she employed in her judgment, I nevertheless find that she made it in a very conclusionary fashion. What I am left with is that there are a number of conclusions, but yet there is insufficient material or commentary to support those conclusions that allow for a reviewing court to review it on the substance. On what basis did she make those conclusions? How are those conclusions reached that would permit any meaningful appellant review with respect to her considerations regarding the other aspect of whether or not an abuse of process existed.

For example, she finds that the letter, and I am reading from her judgment at page 11, she indicates that the letter was self-explanatory and required no interpretation. I have read and re-read the letter and I am unable to extract any obvious meaning other than what is contained from the words on the page. She indicated on more than one

occasion that Mr. Cutmore was not believable, but she did not expand on why his evidence was not believable in the circumstances.

This matter was a long and complicated one and took place over several days in front of Her Worship, and even if I separate out the application, or the findings with respect to Section 15 and 7, although I do note that they fuel and appear to form a central part of her decision, and even if I separate out the declaratory relief that she would appear to have given in the last paragraph of her decision, indicating that Nichols Gravel is legally entitled to be operating a quarry by virtue of the order of the Ontario Municipal Board, which I do not see that she has authority to make in the circumstances; I am still left with an inadequate level of reasons to allow for a meaningful appellant review as required in R. v. Sheppard, a recent Supreme Court of Canada decision.

For abuse of process to exist in a common law sense it must be made out in the clearest of cases. I do not have adequate evidence before me to establish that that clearest of cases exist. I do not have adequate reasons before me from the initial justice to satisfy that I can properly review the basis on which that ruling was made by her. And accordingly, I cannot find that there was an abuse on the clearest of cases and the matter will need to be remitted back for a hearing of the trial. Now, the appellant has also made a request for a

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declaration that the respondents not be permitted to raise a collateral attack on the suspension of the licence of any trial. Is that something the prosecution is continuing to advance at this stage?

MR. DAVIS: Yes, Your Honour. That is my understanding.

THE COURT: Could you assist me then, what authority do I have to provide declaratory relief at this stage of proceedings to effect how another proceeding will be handled?

MR. DAVIS: Your Honour, I don't have that information available before me at this time. Unfortunately, Your Honour, Mr. Kappos, who was arguing this matter for the Crown, is unable to attend today due to another matter. If Your Honour so desires, if Your Honour is willing to grant a brief recess I could try to locate that authority for you...

THE COURT: All right.

MR. DAVIS: ...although at the top of my head, I, I am unaware at this time.

THE COURT: All right. Well, there is the brief that has been filed and there has been some reference to the argument in that regard but I am not able, based on what has been presented to me, to ascertain what my legal authority is to provide declaratory relief in the circumstances as is being requested. Mr. Osier, are you?

MR. OSIER: I think you'd be treading on new ground to make that order. I don't see how an appeal court can better the hands. You're here to decide strictly an appeal. You're remitting the matter

back to the trial court. That's up to the trial court to make that ruling it seems to me.

THE COURT: I note that there was not anything in your materials specifically with respect to that and it was something that came upon my final review of all of the materials so I will stand the matter down briefly to allow, I'm sorry, your name again for the record?

MR. DAVIS: My apologies, Your Honour. For the record, last name Davis, D-A-V-I-S, initial B.

THE COURT: Thank you. Mr. Davis, if you want to make that enquiry, but at this stage I'll hold off then with respect to that. See whether or not you are in a position to argue that today or whether or not the Crown wishes to abandon that aspect of their appeal. So we will just stand the matter down briefly to make that enquiry. Thank you very much.

MR. DAVIS: Thank you.

(REPORTER'S NOTE: Dealt with other matters)

R E C E S S ?

U P O N R E S U M I N G:

THE COURT: Thank you.

MR. DAVIS: Thank you, Your Honour, for a brief recess on that matter. I have looked into it further and at this time, Your Honour, the Crown wishes to amend its appeal with respect to the collateral issue so as not to proceed with that particular issue. ?

THE COURT: All right. Thank you.

MR. DAVIS: Thank you.

THE COURT: All right. Thank you. Then in light of that, that will be abandoned by the Crown. I take it you have no issue in that regard?

MR. OSIER: No.

THE COURT: All right. Well. I'd like to express my thanks to both the respondent and appellant in the circumstances for their materials that were filed and the arguments that were made. I should in closing indicate that I am mindful in my consideration of the defence argument that the preconditions as were outlined in the licence were virtually incapable of compliance and that it was defence position that the equities of the circumstances should dictate and allow a stay. But at the same time, the relief that is permissible is only permissible within the parameters of what is legally permitted and that must be supported by legal authority. And the reasons, as I've indicated, are inadequate in that regard to satisfy me that, in fact, the stay that was granted was on that basis. Saying all of that, at the same time it is important for the appellant to consider given the history of this matter and the evidence that has been taken to this point, the viability of any further prosecution and the reasonable prospects of potential conviction as is necessary to determine and re-assess one's position when the matter has gone through as many stages as this one has.

MR. OSIER: I understand your comments.

THE COURT: All right. Thank you very much. I will

make the endorsement on the actual document with respect to the abandonment of the one ground and that the other ground has been allowed, is going to be re-directed back before a justice of the peace other than the original justice of the peace. ?

MR. DAVIS: Thank you, Your Honour.

MR. OSIER: Thank you very much, Your Honour.

EE

X FORM 2

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Certificate of Transcript
Evidence Act, subsection 5(2)

I, Susan Chute certify that
this document is a true and accurate transcription of the
recording of R.v. Nichols Gravel Ltd. et al in the Ontario Court of
Justice held at 44 Queen Street taken
from Recording(s) No. 98/2005 which has
been certified in Form 1.

December 20, 2005
(Date)

Susan Chute
(Signature of authorized person)

Photostat copies of this transcript are not certified and have not been
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of Justice Act, January 1, 1990

Transcript ordered: December 6, 2005
Transcript Complete: December 8, 2005
Ordering Party Notified: December 20, 2005

Revised: July 21, 2005

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Sent by fax

Our File No. 939-12-1350

X December 19, 2005

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COPY

RE: R. v. Nichols Gravel Limited et al.
• Charges under the Aggregate Resources Act

X Dear Sir:

I have received your letter dated December 16, 2005.

I have been awaiting a copy of the transcript of the decision of Judge Zivolak, which we had ordered on an expedited basis, but we have yet to receive a copy. However, based upon the notes of my colleague who was in attendance at the oral decision, and after consideration of the matter, please be advised that the Crown will not be proceeding with the charges that were before Judge Zivolak. There will be no re-trial of those charges.

There are, as you know, other existing charges, the ones that are set to return to court to be spoken to on January 6, 2005 (i.e., the July & August, 2004 offence dates). I am having some concern about delay with regard to those charges. Additionally, I believe that the revocation hearing which was in abeyance pending the decision of Judge Zivolak is a more pressing matter than this particular prosecution. Finality to that revocation hearing process is in the public interest. I do not see the need for that prosecution to occur concurrently with the revocation hearing if that hearing can resume in a timely fashion. I therefore request your agreement to adjourn the July & August, 2004 offence-date charges to be tried after the conclusion of the revocation hearing. Failing your consent to such an adjournment of those charges, I intend to withdraw

X ✓ MNR DROPPED ALL?
CHARGES TO APPEAL GRANTED
WHY? G.L.K.

2

those charges on January 6, 2005.

I am sure, as ordered by Board Member Smout, you will ensure that a copy of the decision of Judge Zivolak is filed with the Board as soon as it is available. Please copy me on that filing correspondence once sent.

Yours truly,



X Demetrius Kappos
Counsel
Legal Services Branch

XX c.: D. Brown ?