COMPLIANCE INSPECTION REPORT

WINCHESTER
SEWAGE TREATMENT PLANT

COMMUNAL SEWAGE

REPORT PREPARED BY THE CORNWALL OFFICE OF THE MINISTRY OF THE ENVIRONMENT, EASTERN REGION

Inspected by: Jeff Columbus
Inspection: January 20, 2000

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Ontario

MINISTRY OF THE ENVIRONMENT

COMMUNAL SEWAGE INSPECTION REPORT

COMPANY/MUNICIPALITY: North Dundas Township

SITE ADDRESS: P.O. Box 489, 547 St. Lawrence Street, Winchester, ON K0C 2K0

CONTACT NAME: Blair Henderson **TITLE:** Acting Operations Manager

CONTACT TELEPHONE: (613) 448-3098 **FAX:** (613) 448-1616

FACILITY INSPECTED: Winchester STP **WORKS NUMBER:** 110001202

SITE ADDRESS: Winchester, Ontario

OPERATING AUTHORITY: Ontario Clean Water Agency (OCWA)

INSPECTION DATE: January 20, 2000

DATE OF LAST INSPECTION: April 10, 1995

1.0 CERTIFICATES OF APPROVAL

- 3-0362-85-886 This certificate was issued to the Village of Winchester and last amended on October 25, 1988, to allow the replacement of the Ottawa Street pumping station with a new pumping station, the addition of three new lagoon cells with a capacity of 12.5 hectares (# 5 cell with post aeration), deepening of the existing cells and replacement of the force main.

  A copy of the certificate is provided in Appendix "B".

2.0 SYSTEM DESCRIPTION

- In summary, the wastewater treatment system consists of the following:

  - sewage collection system (both gravity feed and force main);
  - two secondary sewage pumping stations, one on St. Lawrence Street in the south end of the village and one on Main Street in the west end;
  - main sewage pumping station on Ottawa Street complete with mechanical

backup;
- four facultative lagoon cells and one aeration cell totalling 19 Hectares;
- all associated controls and equipment.

3.0 EFFLUENT LIMITS

PARAMETER	1997	1998	1999	LIMITS*
BOD5 (mg/1)	15.10	21.08	10.10	30
Suspended Solids (mg/1)	20.48	25.00	16.00	30
Total Phosphorus (mg/1)	0.32	0.32	0.20	1.0

* Limits as specified on Certificate of Approval No. 3-0362-85-886.

- In addition to the above, the certificate also includes the following effluent concentration parameters:

Ammonia-Nitrogen: 20 mg/L spring discharge
2.3 mg/L fall discharge
Hydrogen Sulphide: 0 mg/L spring and fall discharge

Semi annual effluent waste loadings as well are specified in the certificate:

BOD 5:	9720 kg	spring	discharge	9720 kg	fall discharge
Suspended Solids:	9720 kg	"	"	9729 kg	" "
Ammonia Nitrogen:	6480 kg	"	"	745 kg	" "
Hydrogen Sulphide:	0 kg	"	"	0 kg	" "
Total Phosphorus	324 kg	"	"	324 kg	" "

Condition 11 on the certificate allows that if a fall discharge cannot be permitted due to low flow conditions in the receiving stream, the system is to be operated as an annual discharge basis with the following concentrations and loadings:

Parameter	Effluent Concentration	Effluent Loading
BOD5	30 mg/L	14,080 kg
Suspended solids	30 mg/L	14,080 kg
Ammonia Nitrogen	20 mg/L	9,390 kg
Hydrogen Sulphide	0 mg/L	0 kg
Total Phosphorus	1 mg/L	469 kg

The results of the monitoring programs are included in the Annual Performance Assessment Reports (PAR's) submitted by OCWA to the ministry. Overall, the plant has been operating in compliance with it's certificate of approval for 1999, but exceeded criteria for fall discharge of Ammonia Nitrogen in 1997 and 1998 with concentrations of 3.527 mg/L and 3.3 mg/L reported respectively.

- See Appendix "C" for copies of the PAR reports.

4.0 CAPACITY ASSESSMENT

ITEM	1997	1998	1999
Avg. Day Flow m^3/day	1445	1341	1424
Max. Day Flow m^3/day	4105	4871	5947
Design capacity m^3/day	1725	1725	1725
% (Avg. Day/Design Capacity)	83.8	77.7	82.6

- The system is approaching its maximum daily rated operating capacity.

- Condition 10 on the certificate includes spring and fall discharge windows and minimum number of days for discharge based on receiving stream flows:

  - The spring discharge shall take place over a period of not less than 21 days and no more than 30 days commencing no earlier than March 15th of each year and terminating no later than April 30th of each year.

  - The fall discharge shall take place over a period of not less than 21 days and no more than 30 days commencing no earlier than November 1st of each year and terminating no later than November 30th of each year.

  - There shall be no discharge in the event the receiving stream flows are less than 0.03 cubic metres/second, and the lagoon contents shall be aerated for at least 24 hours prior to discharge if the receiving stream flow is less than 0.1 cubic metres/second.

- Due to the low flows of the receiving stream, in this case the Henderson Drain, the discharge requirements with respect to timing have historically been very difficult to fully comply with, causing non-compliance with the required minimum discharge period of 21days, or non-compliance with the minimum receiving stream flow of 0.03 metres/second.

- An Environmental Study Report has been recently completed, funding obtained, and an application for amendments to the certificate of approval for the wastewater system have been submitted. This will allow for, among other modifications, the extension of the discharge pipe directly to the South Nation River. This is a much larger receiving stream that will provide sufficient dilution flows for a larger discharge window and increased effluent volume to alleviate the problem. Tendering for the upgrade has been completed, construction is expected to begin in April 2000 and be completed by late fall of 2000. For these reasons future discharges are expected to comply with the ministry's requirements for effluent quality and discharge timing.

5.0 SAMPLING REQUIREMENTS

Does the plant meet the sampling requirements as indicated in the Certificate(s) of Approval?, Order or direction?

- Conditions 11 on the certificate stipulates sampling requirements as a minimum of four effluent samples (either grab or composite) taken during the discharge periods as part of a routine sampling program by the operating authority.

  A review of the records indicates the operating authority meets these requirements. As well, OCWA collects monthly raw samples for BOD, Suspended Solids and phosphorus, and records average and peak flows entering the lagoons consistent with ministry guidelines.

6.0 REPORTING REQUIREMENTS

- Reporting requirements are provided in condition 14 of the certificate of approval. The owner is to submit an annual report to the Regional Director on the performance of the works. The report is to be submitted within one year and 90 days following the commencement of the operation of the sewage works and subsequent reports shall be submitted within 90 days following completion of the 12 month period being reported upon. The reports shall contain, as a minimum, an executive summary, table of sample results, daily flows, monthly volumes, treatment upsets, sewage pumping station bypasses, process failures and corrective actions taken along with an explanation of why the event occurred.

  Annual reports have been submitted as required by the above condition for this facility and are on file in this ministry office. The reports are thorough and complete.

7.0 MINISTRY SAMPLING AT TIME OF INSPECTION

Type of Sample: n/a

- No samples were taken as there was no discharge from this facility at the time of inspection.

8.0 DISINFECTION

a) Method of disinfection: none

b) Residual monitoring technique: n/a

- There is no disinfection of the effluent as this is a seasonal discharge lagoon.

9.0 PLANT & OPERATOR CERTIFICATION

a) Plant Certification

i) Facility Level: Class II
ii) Certificate Number: n/a
iii) Date of Issue: n/a

b) Do the plant operators have the appropriate level of certificate for this plant?

- All OCWA operators providing services to this facility meet or exceed the certification requirements.

10.0 FLOW MEASUREMENT

a) Flows are being metered at:

Raw sewage	Yes
Final effluent	Yes
At bypass	No

Raw flows are measured at the main pumping station by means of an ultrasonic level detector and recorded on a Volumetric brand flow recorder that provides totalized and instantaneous flow readings.

Final effluent is monitored by a Milltronics brand recorder and prefabricated Parshall flume utilizing an ultrasonic level sensor to measure the depth of the liquid. Also, a level

gauge is placed in the throat of the flume as an additional means of measuring the depth of the liquid.

b) Date of last calibration of flow metres: August 27, 1999

11.0 BYPASSES

- A rectangular overflow port is located less than two feet from the top of the outlet structure of cell 5 (the final aeration cell). The overflow port discharges to the Henderson Drain.

- All of the pumping stations are equipped with an overflow port which discharges to a nearby drainage course. All of the pumping stations are equipped with an alarm system to notify the operating authority of an immanent bypass event and elapsed hour metres to record the duration of the bypass.

- There has been no bypasses from this facility during the past three year review period.

12.0 SLUDGE MANAGEMENT

- Previous inspection reports indicate sludge was removed from cells 1 and 2 in 1985 or 1986 and spread on the berms. Since the addition of the newer cells, the system had not produced sufficient sludge to require removal. However, since 15 years has elapsed since that time, the operating authority should evaluate the presence of sludge and determine if any removal is warranted before effluent quality becomes an issue.

13.0 REVIEW OF OUTSTANDING ISSUES

- A review of the files indicate that the issue of non-compliance for the discharge window problem has been ongoing. While the effluent quality has been acceptable, the ability to discharge the quantity required during the time frame and duration as allowed on the existing certificate of approval has become very difficult. This should be overcome with the issuance of the new certificate and the completion of the upgraded facility.

- The previous inspection report noted that not all sample results were presented in tabular form, specifically concentrations for ammonia and hydrogen sulphide. A review of the last 3 years of submitted data confirms this error has been corrected and all summary data submitted since the last inspection report now contains the required sample data.

14.0 SUMMARY OF INSPECTION FINDINGS (HEALTH/ENVIRONMENTAL IMPACT)

- Was there any indication of a known or anticipated human health impact during the inspection and/or review of relevant material, related to this Ministry's mandate ?

  □ Yes ■ No

- Was there any indication of a known or anticipated environmental impact during the inspection and/or review of relevant material ?

  □ Yes ■ No

- Was there any indication of a known or suspected violation of a legal requirement during the inspection and/or review of relevant material which could cause a human health impact or environmental impairment ?

  □ Yes ■ No

- Was there any indication of a potential for environmental impairment during the inspection and/or the review of relevant material ?

  ■ Yes □ No

  Specifics: Discharging of lagoon effluent without the minimum required stream flow has potential for environmental impairment.

14.1 ACTION(S) REQUIRED

- Municipality and operating authority should continue to ensure upgrading of sewage works proceeds as required in a timely manner to ensure future discharges comply with authorizing documents and all ministry requirements.

15.0 OTHER INSPECTION FINDINGS

- Little documentation exists on the status of the quality/quantity of sludge in the lagoons.

15.1 ACTION(S) REQUIRED

- The operating authority should investigate the status of sludge generation, its impact on effluent quality, and manage or remove/utilize sludge as required.

OCCURRENCE REPORT #: 9940002234 and 9940002881

PREPARED BY:

ENVIRONMENTAL OFFICER: Jeff Columbus
(Print)

(Signature)

Kingston/Cornwall Area Office
(District/Area Office)

March 8, 2000
(Date)

REVIEWED BY:

DISTRICT SUPERVISOR: R.J. Robertson
(Print)

R.J. Robertson
(Signature)

Mar 9/00
(Date)

REPORT MAILED OUT ON: Mar 9/00
(Date)

NOTE: "This inspection does not in any way suggest that there is or has been compliance with applicable legislation and regulations as they apply or may apply to this facility. It is, and remains, the responsibility of the owner and/or the operating authority to ensure compliance with all applicable legislative and regulatory requirements."

APPENDICES

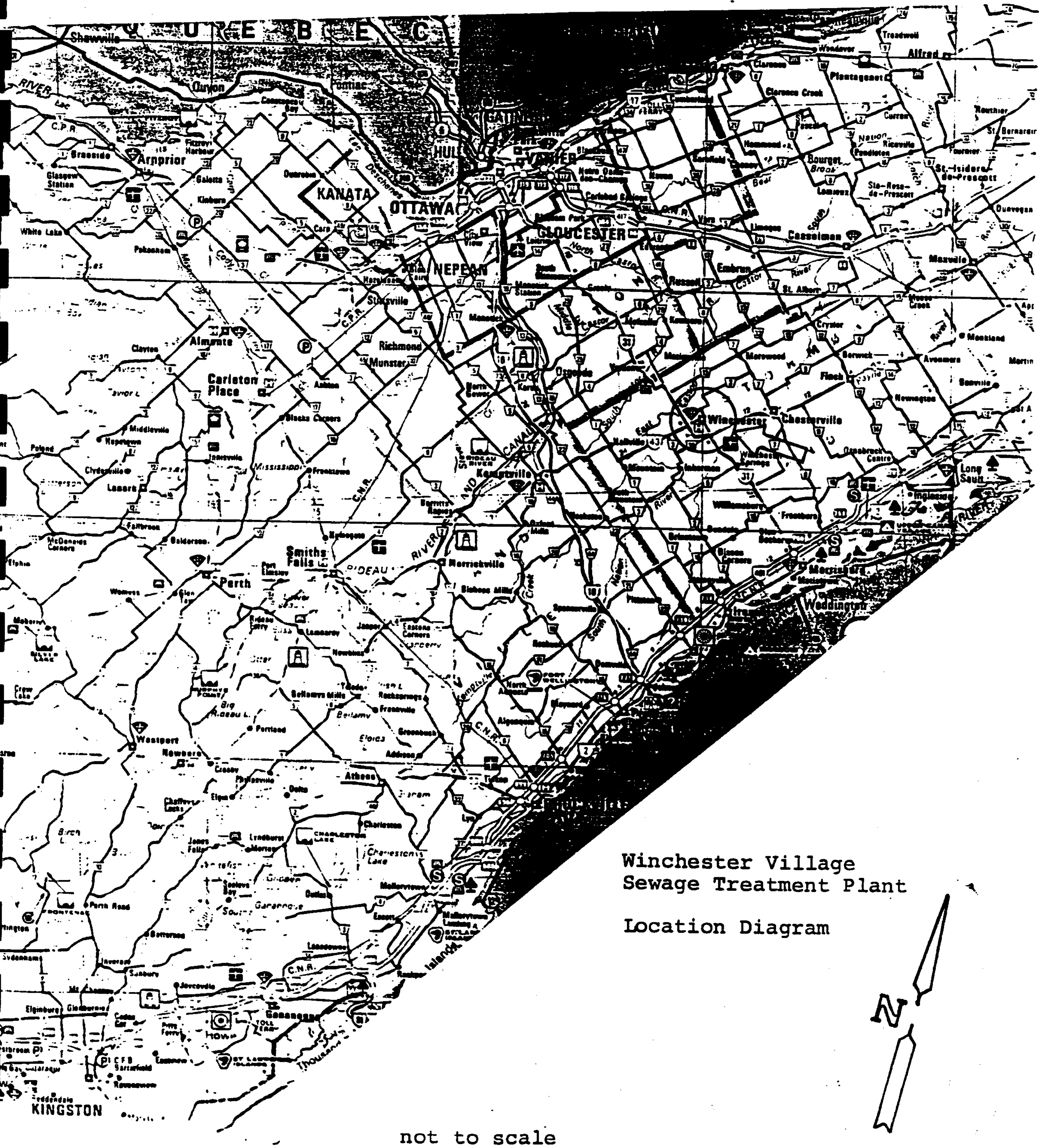
Appendix "A" . . . . . Plant Location

Appendix "B" . . . . . Certificate of Approval

Appendix "C" . . . . . Performance Assessment Reports 1996 - 1999

APPENDIX "A"

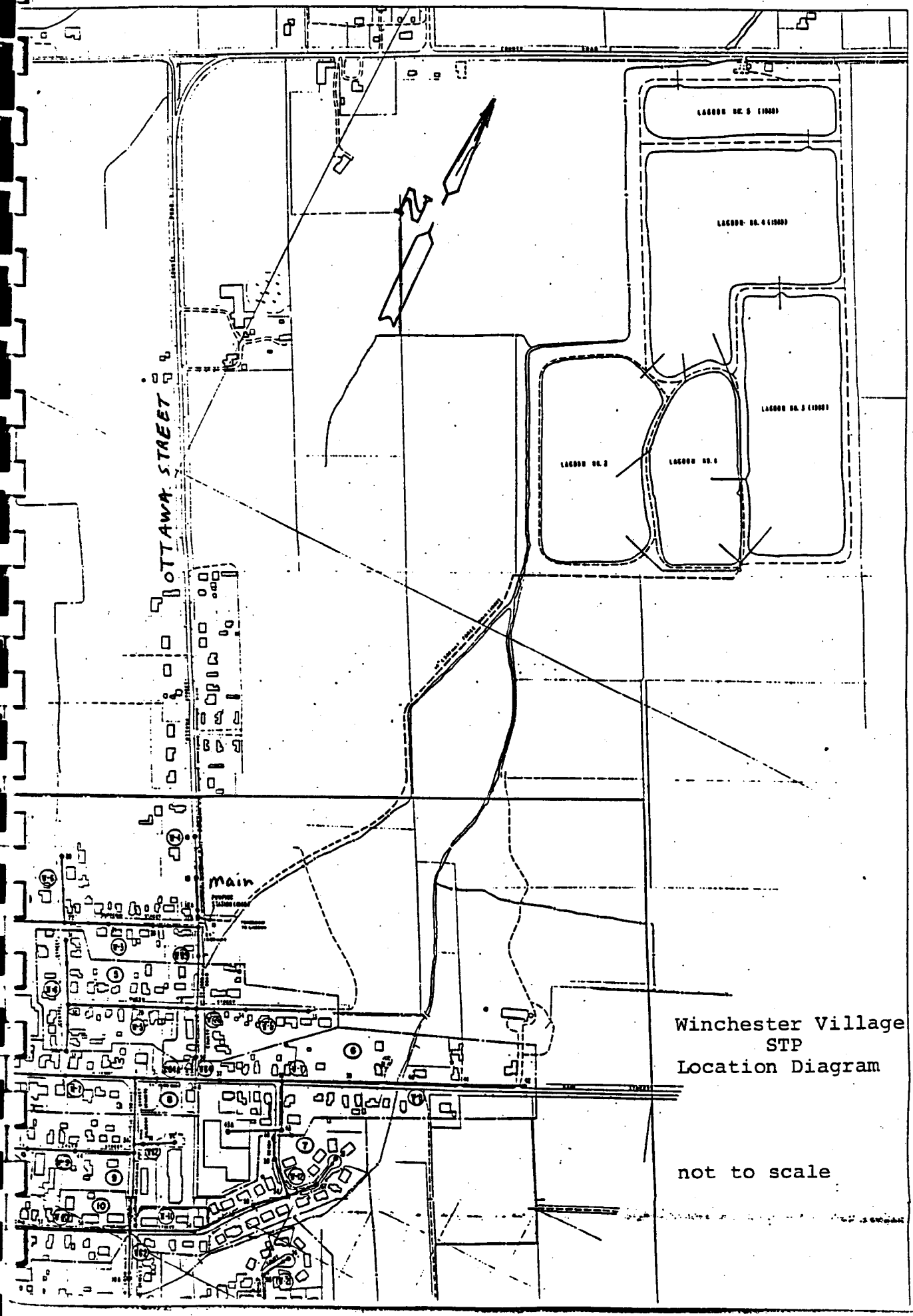
PLANT LOCATION



Winchester Village
Sewage Treatment Plant

Location Diagram

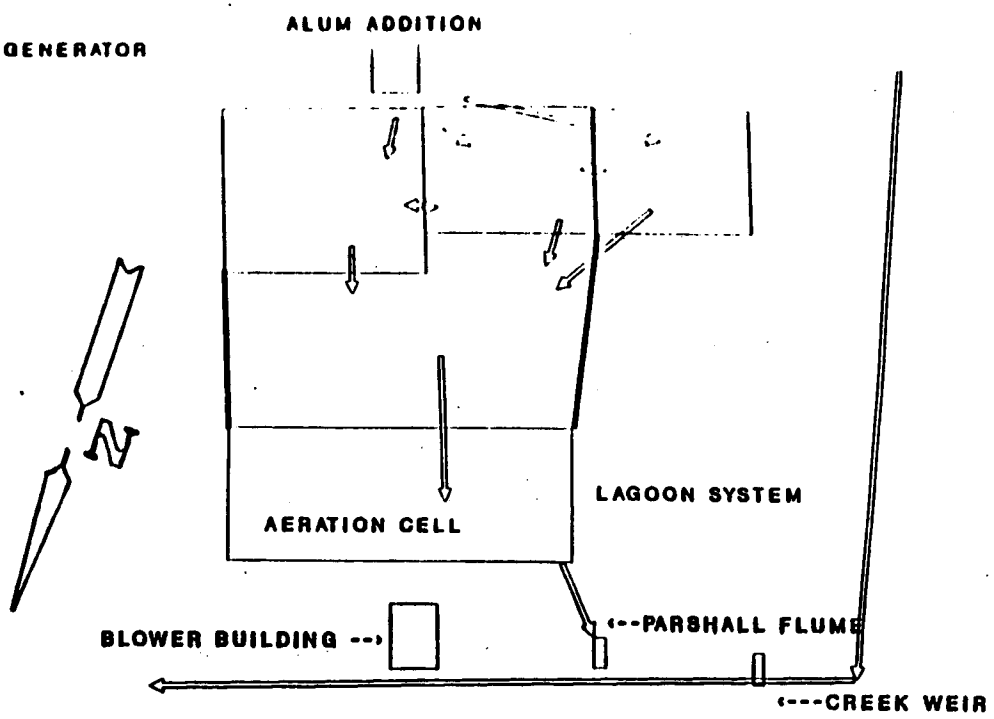
not to scale



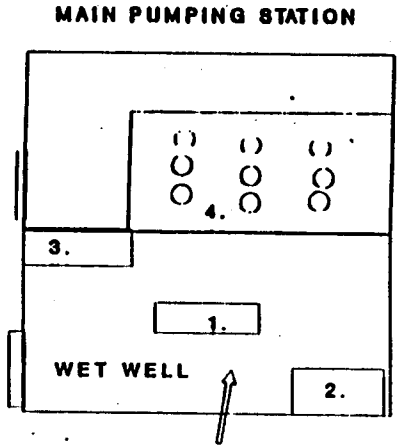
Winchester Village
STP
Location Diagram

not to scale

1. DIESEL, MITSUBISHI DRIVING A SIMPOWER GENERATOR
2. FUEL TANK
3. SIMPOWER ENGINE CONTROLLER
4. HIGH LIFT PUMP ROOM



o WINCHESTER STP



APPENDIX "B"

CERTIFICATE OF APPROVAL

Ministry of the Environment / Ministère de l'Environnement

Certificate of Approval (Sewage)
Certificat d'autorisation (eaux usees)

Number *Numero* 3-0362-85-886

Whereas ***Attendu que*** VILLAGE OF WINCHESTER.

%%%%%

has applied in accordance with Section 24 of the Ontario Water Resources Act for approval of:
a fait, conformément à l'article 24 de la loi sur les ressources en eau de l'Ontario, une demande d'autorisation:
modifications to the existing sewage collection and treatment systems serving the Village of Winchester as follows:

Sanitary Sewer Replacements

STREET	FROM	TO
Ottawa Street	Approx. 45m north of Main Street	Ottawa Street Sewage Pumping Station.
Mill Street	Main Street	Clarence Street.
Clarence Street	Louise Street	Mill Street.

Forcemain Replacement

STREET	FROM	TO
Easement	Ottawa Street Sewage Pumping Station	Sewage Treatment Plant.

including emergency bypass connection on the forcemain at the pumping station.

Ottawa Street Sewage Pumping Station

Replacement of the existing Ottawa Street Sewage Pumping Station with a new pumping station located adjacent to the existing station at Dufferin Street and Ottawa Street consisting of a dual wet well/dry well installation equipped with three (3) electric sewage pumps each rated at 90 l/s, 50 KW emergency standby diesel generator set in a separate building, interconnecting piping, valves, associated equipment and controls.

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Now therefore this is to certify that after due enquiry the said proposed works have been approved under Section 24 of the Ontario Water Resources Act.
Le présent document certifie qu'après vérification en bonne et due forme la construction dudit projet d'ouvrages a été approuvée aux termes de l'article 24 de la loi sur les ressources en eau de l'Ontario.

DATED AT TORONTO this 25th day of October, 1988
DATÉ À TORONTO ce *jour d*

Attn: R. Annable, Clerk, Village of Winchester.
cc: N. Krisjanis, Clerk, Township of Winchester.
A.D. Reid, P. Eng - J.L. Richards & Assoc. Ltd.
Y. Lane, Environmental Assessment Board.
D. Guscott, M.O.E. (S.E) Reg. Dir.
R.H. Watson & M. Holy, Kingston.
/br R.S. Dhillon, Project Engg.

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Sewage Treatment Plant Modifications

Modifications to the existing sewage treatment lagoons located in the Township of Winchester consisting of the addition of three (3) new cells (Cell #3 with a surface area of 4.1 ha, Cell #4 with a surface area of 6.3 ha and Cell #5 with a surface area of 2.0 ha) with a total surface area of 12.4 ha and total operating depth of 3.3m to provide a total overall lagoon surface area of 19 ha and deepening the existing lagoons to have a total operating depth of 3.3m for a total overall effective storage capacity of 470,000m^3, Cell #5 is to be operated as a post aeration section equipped with 144 MAT aerators each delivering 0.014 Nm^3/s, associated air piping, three (3) centrifugal air blowers each rated at 0.94 Nm^3/s with inlet air silencers, including inlet and outlet control structures, parshall flume, electrical equipment and controls, all to handle a total average flow of 1725 m^3/day for an equivalent serviced population of 3000 people (year 2005) discharging to the Castor River via the Henderson Drain,

all the above is to be constructed in accordance with the documents listed in Schedule 'A' (attached), at a total estimated cost, including engineering and contingencies, of ONE MILLION, FOUR HUNDRED EIGHTY SEVEN THOUSAND, FIVE HUNDRED DOLLARS ($1,487,500.00), subject to the following Special Terms and Conditions which are considered necessary by the undersigned:

Special Terms and Conditions

1) For the purpose of this Certificate of Approval:

(i) "the Director" means the Director of the Approvals Branch, Ministry of the Environment;

(ii) "the Regional Director" means the Regional Director of the Southeastern Region of the Ministry of the Environment;

(iii) "the District Officer" means the District Officer of the Cornwall District Office of the Ministry of the Environment's Southeastern Region;

(iv) "Certificate" means a Certificate of Approval issued in accordance with Section 24 of the Ontario Water Resources Act;

(v) "Ministry" means the Ministry of the Environment for the Province of Ontario;

(vi) "Owner" means the Corporation of the Village of Winchester.

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(vii) "grab sample" means an individual sample of at least 100 millilitres collected at a randomly selected time over a period not exceeding 15 minutes;

(viii) "BOD_5" means five day biochemical oxygen demand measured in an unfiltered sample;

(ix) "mg/L" means milligrams per litre.

(x) "kg" means kilograms.

2. Requirements specified in this Certificate are minimum requirements under Section 24 of the Ontario Water Resources Act, and do not abrogate the need to take all steps to avoid violating the provisions of applicable legislation.

3. The requirements of this Certificate are severable. If any requiremer of this Certificate, or the application of any requirement of this Certificate to any circumstance, is held invalid, the application of such requirement to other circumstances and the remainder of this Certificate shall not be affected thereby.

4. The owner must ensure compliance with all the terms and conditions of this Certificate. Any non-compliance constitutes a violation of the Ontario Water Resources Act and is grounds for enforcement.

5. The owner shall furnish to the Regional Director any information which the Regional Director may request pursuant to Section 31 of the Ontario Water Resources Act, and copies of any records required to be kept by this Certificate.

6. The owner shall take all reasonable steps to minimize any adverse impact to surface or ground waters resulting from non-compliance with the effluent requirements specified in this Certificate including, but not limited to, such accelerated or additional monitoring as necessary to determine the nature and impact of the discharge in non-compliance.

7. i) The owner shall prepare and make available for inspection by Ministry employees upon request, a complete set of drawings within six months of substantial completion of the sewage works which drawings shall show the sewage works as constructed at that time.

ii) A complete set of as constructed drawings, incorporating any amendments made from time to time, shall be kept by the owner as long as the sewage works is kept in operation.

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8. Operation and Maintenance Conditions

i) The owner shall ensure that at all times, the sewage works and related equipment and appurtenances which are installed or used to achieve compliance with this Certificate are properly operated and maintained. Proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing and training and adequate laboratory and process controls including appropriate quality assurance and quality control procedures.

ii) The owner shall ensure that adequate equipment and material are kept on hand, maintained and kept in good repair for immediate use in the event of upset conditions and equipment breakdowns in the sewage works and spills of raw or processed materials, and that personnel are trained in its use and the methods and procedures to be employed.

9. The owner shall keep its operations and maintenance manual up to date and upon request shall make all changes available to Ministry personnel for inspection and copying.

10. Performance

(a) The sewage works shall be normally operated on a seasonal discharge basis generally coinciding with peak flows in the receiving stream. The spring discharge shall take place over a period not less than twenty-one (21) days and ~~no more than~~ thirty (30) days commencing no earlier than March 15 of each year and terminating no later than April 30 of each year. The fall discharge shall take place over a period not less than twenty-one (21) days and no more than thirty (30) days commencing no earlier than November 1 of each year and terminating no later than November 30 of each year.

monthly plan?

(b) In the event that receiving stream flows are less than 0.03m3/s, the lagoon contents shall not be discharged and must be retained until stream flows are greater than 0.03m3/s.

how to measure stream flow?

(c) In the event that receiving stream flows are less than 0.1m3/s, the lagoon contents shall be aerated for at least 24 hours prior to discharge.

11. The above described sewage works shall be constructed and operated such that the concentrations and total loadings of materials as effluent parameters are not exceeded in the effluent from the sewage works as indicated in Table I.

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TABLE I

EFFLUENT PARAMETERS	EFFLUENT CONCENTRATIONS	SEMI-ANNUAL WASTE LOADING
BOD_5	30 mg/L	9720 kg
Suspended Solids	30 mg/L	9720 kg
Ammonia-Nitrogen	20 mg/L (a)	6480 kg (a)
	2.3 mg/L (b)	745 kg (b)
Hydrogen Sulphide	0 mg/L	0 kg
Total Phosphorous	1 mg/L	324 kg

where a = spring discharge
b = fall discharge

Note: The effluent loadings are based on the design semi-annual discharge volume of 324,595m3.

In order to determine compliance with the above Condition a minimum of four (4) effluent samples (either grab or composite) shall be taken during the discharge periods as part of a routine sampling program by the operating authority and as supplemented by spot sampling by the Ministry of the Environment staff as deemed necessary. The procedures to be followed in the routine sampling program must be approved by the Ministry of the Environment Regional Director in Kingston.

Non-Compliance

i) Exceedance of any effluent concentration of BOD_5, suspended solids and total phosphorous is deemed to have occurred when the arithmetic mean of the analytical results of samples taken is greater than the corresponding concentration set out for the effluent parameter in Table I.

ii) Exceedance of any effluent concentration for ammonia-nitrogen or hydrogen sulphide is deemed to have occurred when the analytical results of any of the samples taken is greater than the corresponding concentrations set out for the relevant effluent parameters in Table I.

iii) Exceedance of the semi-annual waste loading is deemed to have occurred when the effluent waste loadings for any effluent parameter calculated by determining the product of the total discharge volume times the corresponding arithmetic mean concentration is greater than the semi-annual effluent waste loading set out in Table I.

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12. In the event that the retention of lagoon contents, as specified in Condition No. 10(b), results in the elimination of the fall discharge, the sewage treatment facility shall then be operated on an annual discharge basis with a spring discharge, occuring during the period identified in Condition No. 1 (a)) such that the concentrations and total loading of materials as effluent parameters are not exceeded in the effluent from the sewage works as indicated in Table II.

Should be 10(a)

TABLE II

EFFLUENT PARAMETERS	EFFLUENT CONCENTRATIONS	ANNUAL WASTE LOADING
BOD_5	30 mg/L	14,080 kg
Suspended Solids	30 mg/L	14,080 kg
Ammonia-Nitrogen	20 mg/L	9,390 kg
Hydrogen Sulphide	0 mg/L	0 kg
Total Phosphorous	1 mg/L	469 kg

Note: The effluent loadings are based on the total effective retention capacity of the lagoons of 470,000m3.

In order to determine compliance with the above Condition [redacted] four [4] effluent samples (either grab or composite) shall be taken during the discharge period as part of a routine sampling program by the operating authority and as supplemented by spot sampling by the Ministry of the Environment staff as deemed necessary. The procedures to be followed in the routine sampling program must be approved by the Ministry of the Environment Regional Director in Kingston.

Non-Compliance

i) Exceedance of any effluent concentration of BOD_5, suspended solids and total phosphorous is deemed to have occurred when the arithmetic mean of the analytical results of samples taken is greater than the corresponding concentration set out for the effluent parameter in Table II.

ii) Exceedance of any effluent concentration for ammonia-nitrogen or hydrogen sulphide is deemed to have occurred when the analytical results of any of the samples taken is greater than the corresponding concentrations set out for the relevant effluent parameter in Table II.

iii) Exceedance of the annual waste loading is deemed to have occurred when the effluent waste loadings for any effluent parameter calculated by determining the product of the total discharge volume times the corresponding arithmetic mean concentration is greater than the annual effluent waste loading set out in Table II.

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13. All sampling results must be recorded and be made available to the Ministry of the Environment for inspection upon request.

14. i) The owner shall submit an annual report to the Regional Director on the performance of the sewage works.

ii) The report referred to in Subsection 14 (i) shall be submitted within one year and 90 days following the commencement of operations of the sewage works approved in this certificate and shall report on the first 12 months of such operation. Each subsequent report shall cover subsequent 12 month periods and shall be submitted within 90 days of the completion of the 12 months period being reported upon.

iii) Each annual report shall contain at least the following informations:

(a) an executive summary;

(b) a tabulation of all sample results including how and where the sample was taken (i.e. grab sample, 24-hour composite or other given description);

(c) a tabulation of daily flow rates, temperatures of raw sewage and treated effluent and monthly volumes;

(d) documentation of treatment upsets, sewage pumping station bypasses, process failures and the corrective actions taken along with an explanation of why the event occurred.

THIS IS A TRUE COPY OF THE ORIGINAL CERTIFICATE MAILED
ON OCT 25 1988

(Signed)

Ontario Ministry of the Environment / Ministère de l'Environnement

Certificate of Approval (A)
Certificat d'autorisation (A

Number / Numéro 8-4068-88-

Owner Operator / *Propriétaire/exploitant:*

Village of Winchester
547 St. Lawrence Street
Winchester, Ontario K0C 2K0.

Located at / *Situé(e)(s) à:*

Village of Winchester and
Township of Winchester.

This approval is for / *La présente autorisation s'applique:*

the installation of a 50 KW emergency standby diesel generator set with a stack extending 2.5m above grade to serve the Ottawa Street Sewage Pumping Station in the Village of Winchester and the expansion of the existing wastewater treatment plant in the Township of Winchester to provide three (3) additional waste stabilization ponds with a total surface area of 12.4 ha, all in accordance with Schedule 'A' (attached).

THIS IS A TRUE COPY OF THE ORIGINAL CERTIFICATE MAILED
ON OCT 25 1988

(Signed)

DATED AT TORONTO this / *DATE A TORONTO ce*

25th day of / *jour d* October 1988

cc: D. Guscott, M.O.E. (S.E) Reg. Dir.

/br

Director, Section 8
Environmental Protection Act
Directeur, Section 8

SCHEDULE 'A'

- application for approval of sewage works dated December 16, 1986, submitted by the Village of Winchester
- application for Certificate of Approval (Air) dated October 7, 1985 submitted by J.L. Richards and Associates Ltd., Consulting Engineers on behalf of the Village of Winchester
- application for approval of combustion equipment dated October 7, 1985 submitted by J.L. Richards and Associates Ltd., Consulting Engineers, on behalf of the Village of Winchester
- "Design Report on the Expansion of Sewage Treatment Facilities for the Village of Winchester", amended May 1983, prepared by J.L. Richards and Associates Ltd., Consulting Engineers
- "Amendment to Design Report on the Proposed Expansion of Sewage Treatment Facilities for the Village of Winchester", dated February 1986, prepared by J.L. Richards and Associates Ltd., Consulting Engineers
- letters and attachments dated October 16, 1985, November 8, 1985, February 26, 1986, November 19, 1986, December 17, 1986, December 22, 1986, January 5, 1987, July 6, 1987, March 8, 1988, March 17, 1988, April 29, 1988, May 20, 1988, July 15, 1988, August 26, 1988 and September 22, 1988 all prepared by J.L. Richards and Associates Ltd., Consulting Engineers
- Environmental Assessment Board report dated May 29, 1987
- minutes of December 6, 1983 meeting prepared by J.L. Richards and Associates Ltd., Consulting Engineers
- Contract I drawing Nos. 10136-C1 to C5 and specifications dated April 1988 prepared by J.L. Richards and Associates Ltd., Consulting Engineers
- Contract II drawing Nos. 10136-C1 to C4, A1 to A4, S1, S2, M1, M2, E1 to E4 and specifications dated April 1988 prepared by J.L. Richards and Associates Ltd., Consulting Engineers
- Contract III drawing Nos. 10136-C1 to C10, A1, E1 and specifications dated April 1988 prepared by J.L. Richards and Associates Ltd., Consulting Engineers
- geotechnical investigation report dated January 1988 prepared by Golder Associates (Eastern Canada) Ltd.

APPENDIX "C"

PERFORMANCE ASSESSMENT REPORTS
1996 - 1999

ONTARIO CLEAN WATER AGENCY
SEWAGE PLANT PERFORMANCE ASSESSMENT REPORT

MUNICIPALITY: WINCHESTER
PROJECT: WINCHESTER WASTE WATER TREATMENT PLANT
PROJECT NUM.: 1-0120-67-00
WORKS NUM.: 110001202
DESCRIPTION: A FIVE CELL LAGOON (#5 CELL POST AERATION) CELL #1 - 3.95 HA, CELL #2 - 2.75 HA, CELL #3 - 4.1 HA, CELL #4 - 6.3 HA, CELL #5 - 2.0 HA

YEAR: 1999
WATER COURSE: HENDERSON CREEK
DESIGN CAPACITY: 1.725 X 1000 m3/d

MONTH	FLOWS					BIOCHEMICAL O2 DEMAND			SUSPENDED SOLIDS			PHOSPHORUS			AMMONIA-N		H2S
	TOTAL FLOW 1000M3	AVG DAY FLOW 1000M3	MAX DAY FLOW 1000M3	EFFLUENT FLOW 1000M3	DISCHARGE DURATION (days)	AVG RAW BOD (mg/L)	AVG EFF BOD (mg/L)	PERCENT REMOVAL	AVG RAW SS (mg/L)	AVG EFF SS (mg/L)	PERCENT REMOVAL	AVG RAW PHOS. (mg/L)	AVG EFF PHOS. (mg/L)	PERCENT REMOVAL	AVG. RAW (mg/L)	AVG. EFF (mg/L)	AVG. EFF (mg/L)
JAN	41.136	1.327	2.845			75.0			115.0			6.81			15.3		
FEB	38.222	1.365	1.630			82.0			102.0			3.70			14.2		
MAR	71.477	2.306	5.947	275.33	14	126.0	14.00	88.9	162.0	15.00	90.7	3.81	0.20	94.8	14.0	8.9	0
APR	59.179	1.973	3.288	117.41	15	86.0	10.30	88.0	99.0	15.70	84.1	3.56	0.30	91.6	11.7	10.0	0
MAY	42.386	1.367	2.834			76.0			55.0			3.50			18.4		
JUN	38.071	1.269	2.527			31.0			33.0			3.28			24.4		
JUL	37.597	1.213	1.544			135.0			125.0			4.12			14.8		
AUG	32.825	1.059	1.321			91.0			94.0			3.98			12.3		
SEP	35.566	1.185	2.027			67.0			106.0			3.07			15.6		
OCT	36.267	1.170	2.047			76.0			106.0			3.65			12.1		
NOV	37.308	1.244	1.885	64.94	5	106.0	6.00	94.3	57.0	17.30	69.6	4.06	0.100	97.5	19.7	0.78	0
DEC	49.857	1.608	2.057			90.0			84.0			2.73			16.3		
TOTAL	519.9		SPRING	392.7	29												
TOTAL			FALL	64.941	5												
AVG		1.424		152.56		86.8	10.10	90.42	94.8	16.00	81.51	3.9	0.20	94.62			
MAX			5.947			135.0	14.00		162.0	17.30		6.8	0.30				
CRITERIA		1.725	SEMI-ANN	324.595			30.00			30.00			1.00				
CRITERIA			ANNUAL	649.190			30.00			30.00			1.00				
COMPLIANCE	YES		SPRING	YES			YES			YES			YES				
COMPLIANCE			FALL	YES			YES			YES			YES				
COMPLIANCE			ANNUAL	N/A			N/A			N/A			N/A				

	SPRING			FALL		
	ACTUAL	CRITERIA	COMPLIANCE	ACTUAL	CRITERIA	COMPLIANCE
START DATE	18-Mar-99	15-Mar-99	YES		01-Nov-99	YES
END DATE	15-Apr-99	30-Apr-99	YES		30-Nov-99	YES
MIN DURATION (d)	29	21	YES		21	YES
MAX DURATION (d)	29	30	YES		30	YES

COMMENTS:

ONTARIO CLEAN WATER AGENCY
SEWAGE PLANT PERFORMANCE ASSESSMENT REPORT

MUNICIPALITY: WINCHESTER
PROJECT: WINCHESTER WASTE WATER TREATMENT PLANT
PROJECT NUM.: 1-0120-67-00
WORKS NUM.: 110001202
DESCRIPTION: A FIVE CELL LAGOON (#5 CELL POST AERATION) CELL #1 - 3.95 HA, CELL #2 - 2.75 HA, CELL #3 - 4.1 HA, CELL #4 - 6.3 HA, CELL #5 - 2.0 HA

YEAR: 1998
WATER COURSE: HENDERSON CREEK
DESIGN CAPACITY: 1.725 X 1000 m3/d

MONTH	FLOWS					BIOCHEMICAL O2 DEMAND			SUSPENDED SOLIDS			PHOSPHORUS			AMMONIA-N	H2S
	TOTAL FLOW 1000M3	AVG DAY FLOW 1000M3	MAX DAY FLOW 1000M3	EFFLUENT FLOW 1000M3	DISCHARGE DURATION (days)	AVG RAW BOD (mg/L)	AVG EFF BOD (mg/L)	PERCENT REMOVAL	AVG RAW SS (mg/L)	AVG EFF SS (mg/L)	PERCENT REMOVAL	AVG RAW PHOS. (mg/L)	AVG EFF PHOS. (mg/L)	PERCENT REMOVAL	AVG. RAW (mg/L)	AVG. EFF (mg/L)	AVG. EFF (mg/L)
JAN	45.064	1.453	2.978			237.0			134.0			5.60			20.8		
FEB	35.599	1.271	2.076			103.0			65.0			6.92			26.2		
MAR	76.600	2.470	4.871	229.648	17	16.0	11.50	28.1	107.0	25.50	76.2	3.84	0.47	87.8	10.9	9.8	0.04
APR	51.418	1.714	3.816	94.852	9	78.0	39.00	50.0	130.0	30.00	76.9	3.56	0.45	87.4	15.4	9.9	0
MAY	35.638	1.149	1.495			76.5			105			4.71			14.4		
JUN	37.893	1.263	1.698			183			150			5.14					
JUL	36.810	1.187	1.518			89.0			90.0			4.85			15.5		
AUG	36.203	1.168	2.118			37.0			76.0			2.42			11.2		
SEP	32.895	1.097	1.375			86.0			116.0			5.85			25.6		
OCT	33.037	1.066	1.397			75.0			75.0			3.75			21.7		
NOV	29.279	0.976	1.180	61.20	5	123.0	12.75	89.6	140.0	19.50	86.1	6.18	0.045	99.3	24.1	3.3	0
DEC	39.499	1.274	2.068			40.0			59.0			2.51			6.9		
TOTAL	489.9		SPRING	324.5													
TOTAL			FALL	61.2													
AVG		1.341		128.57		95.3	21.08	55.92	103.9	25.00	79.72	4.6	0.32	91.46			
MAX			4.871			237.0	39.00		150.0	30.00		6.9	0.47				
CRITERIA		1.725	SEMI-ANN	324.595			30.00			30.00			1.00				
CRITERIA			ANNUAL	649.190			30.00			30.00			1.00				
COMPLIANCE	YES		SPRING	YES			YES			YES			YES				
COMPLIANCE			FALL	YES			YES			YES			YES				
COMPLIANCE			ANNUAL	N/A			N/A			N/A			N/A				

	SPRING			FALL		
	ACTUAL	CRITERIA	COMPLIANCE	ACTUAL	CRITERIA	COMPLIANCE
START DATE	15-Mar-98	15-Mar-98	YES	25-Nov-98	01-Nov-98	YES
END DATE	09-Apr-98	30-Apr-98	YES	30-Nov-98	30-Nov-98	YES
MIN DURATION (d)	26	21	YES	5	21	NO
MAX DURATION (d)	26	30	YES	5	30	YES

COMMENTS: THE HIGH FLOWS IN MARCH RESULTED IN A DILUTED RAW SEWAGE INFLUENT.
SAMPLE RESULTS OF MARCH 27/98 ARE NOT TRUE REPRESENTATIVE RESULTS AND THEREFORE WERE DISREGARDED IN CALCULATION OF AVERAGE EFFLUENT BOD, AVERAGE EFFLUENT SUSPENDED SOLIDS AND AVERAGE EFFLUENT PHOSPHORUS.

ONTARIO CLEAN WATER AGENCY
SEWAGE PLANT PERFORMANCE ASSESSMENT REPORT

MUNICIPALITY: WINCHESTER
PROJECT: WINCHESTER WASTE WATER TREATMENT PLANT
PROJECT NUM.: 1-0120-67-00
WORKS NUM.: 110001202
DESCRIPTION: A FIVE CELL LAGOON (#5 CELL POST AERATION) CELL #1 - 3.95 HA, CELL #2 - 2.75 HA, CELL #3 - 4.1 HA, CELL #4 - 6.3 HA, CELL #5 - 2.0 HA

YEAR: 1997
WATER COURSE: HENDERSON CREEK
DESIGN CAPACITY: 1.725 X 1000 m3/d

MONTH	FLOWS					BIOCHEMICAL O2 DEMAND			SUSPENDED SOLIDS			PHOSPHORUS			AMMONIA-N	H2S
	TOTAL FLOW 1000M3	AVG DAY FLOW 1000M3	MAX DAY FLOW 1000M3	EFFLUENT FLOW 1000M3	DISCHARG DURATION (days)	AVG RAW BOD (mg/L)	AVG EFF BOD (mg/L)	PERCENT REMOVAL	AVG RAW SS (mg/L)	AVG EFF SS (mg/L)	PERCENT REMOVAL	AVG RAW PHOS. (mg/L)	AVG EFF PHOS. (mg/L)	PERCENT REMOVAL	AVG. EFF (mg/L)	AVG. EFF (mg/L)
JAN	44.505	1.436	1.854			123.0			260.0			5.25				
FEB	41.303	1.475	3.125			139.0			200.0			8.40				
MAR	54.924	1.771	3.342			102.0			150.0			4.87				
APR	67.940	2.264	4.105	403.83	21	33	16.2	50.9	33	13.20	60.0	1.78	0.324	81.8	9.656	0
MAY	50.842	1.640	2.202			60			100			3.33				
JUN	40.379	1.346	2.004			196			270			4.94				
JUL	44.019	1.420	2.502			74.0			51.0			3.13				
AUG	36.322	1.172	1.580			114.0			118.0			6.78				
SEP	33.069	1.102	1.308			259.0			58.0			6.46				
OCT	31.956	1.031	1.357			83.0			44.0			4.14				
NOV	39.264	1.308	2.000	117.786	8	53.0	14.00	73.6	65.0	27.75	57.3	4.21	0.307	92.7	3.527	
DEC	42.777	1.379	1.842			241.0			110.0			6.43				
TOTAL	527.3		SPRING	403.8												
TOTAL			FALL	117.786												
AVG		1.445		260.81		123.1	15.10	62.25	121.6	20.48	58.65	5.0	0.32	87.25		
MAX			4.105			259.0	16.20		270.0	27.75		8.4	0.32			
CRITERIA		**1.725**	**SEMI-ANN**	**324.595**			**30.00**			**30.00**			**1.00**			
CRITERIA			**ANNUAL**	**649.190**			**30.00**			**30.00**			**1.00**			
COMPLIANCE	YES		SPRING	YES			YES			YES			YES			
COMPLIANCE			FALL	YES			YES			YES			YES			
COMPLIANCE			ANNUAL	N/A			N/A			N/A			N/A			

	SPRING			FALL		
	ACTUAL	CRITERIA	COMPLIANCE	ACTUAL	CRITERIA	COMPLIANCE
START DATE	26-Mar-97	15-Mar-97	YES	03-Nov-97	01-Nov-97	YES
END DATE	15-Apr-97	30-Apr-97	YES	28-Nov-97	30-Nov-97	YES
MIN DURATION (d)	21	21	YES	8	21	NO
MAX DURATION (d)	21	30	YES		30	YES

COMMENTS: FALL DISCHARGE WAS LIMITED TO 8 DAYS DUE TO RECEIVING STREAM FLOW BEING LESS THAN 0.03 M3/S.

ONTARIO CLEAN WATER AGENCY
SEWAGE PLANT PERFORMANCE ASSESSMENT REPORT

MUNICIPALITY: WINCHESTER
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YEAR: 1996
WATER COURSE: HENDERSON CREEK
DESIGN CAPACITY: 1.725 X 1000 m3/d

MONTH	FLOWS				BIOCHEMICAL O2 DEMAND			SUSPENDED SOLIDS			PHOSPHORUS		
	TOTAL FLOW 1000M3	AVG DAY FLOW 1000M3	MAX DAY FLOW 1000M3	ISCHARG VOLUME 1000M3	AVG RAW BOD (mg/L)	AVG EFF BOD (mg/L)	PERCENT REMOVAL	AVG RAW SS (mg/L)	AVG EFF SS (mg/L)	PERCENT REMOVAL	AVG RAW PHOS. (mg/L)	AVG EFF PHOS. (mg/L)	PERCENT REMOVAL
JAN	54.19	1.748	6.686		185.0			173.0			7.2		
FEB	49.71	1.775	4.739		152.0			118.0			6.0		
MAR	46.63	1.504	2.113	195262	168.5	15.30	90.9	145.5	24.30	83.3	6.60	0.37	94.4
APR	64.32	2.14	3.76	81837	91	16	82.4	101	24.50	75.7	6	0.28	95.2
MAY	56.57	1.83	3.69		151			139			4		
JUN	39.02	1.30	1.90		165			218			8		
JUL	44.64	1.440	3.772		578.0			1190.0			7.1		
AUG	42.46	1.370	2.598		134.0			142.0			2.8		
SEP	38.98	1.299	1.835		588.0			200.0			11.1		
OCT	46.24	1.492	2.308		127.0			190.0			5.4		
NOV	50.39	1.680	6.348	157521	111.0	3.00	97.3	165.0	10.70	93.5	6.1	0.08	98.7
DEC	61.49	1.983	2.920		37.0			82.0			2.6		
TOTAL	594.6		SPRING	324253.0									
TOTAL			FALL	157521									
AVG		1.630		62088.57	207.3	4.29	45.11	238.6	8.50	50.51	6.0	0.10	57.65
MAX			6.686		588.0	16.00		1190.0	24.50		11.1	0.37	
CRITERIA		**1.725**	**SEMI-ANN**	**324.595**		**30.00**			**30.00**			**1.00**	
CRITERIA			**ANNUAL**	**649.190**		**30.00**			**30.00**			**1.00**	

COMPLIANCE	YES	SPRING	YES		YES		YES		YES			
COMPLIANCE		FALL	YES		YES		YES		YES			
COMPLIANCE		ANNUAL	N/A		N/A		N/A		N/A			

	SPRING			FALL		
	ACTUAL	CRITERIA	OMPLIANC	ACTUAL	CRITERIA	OMPLIANCE
START DATE	15-Mar-96	15-Mar-96	YES	01-Nov-96	01-Nov-96	YES
END DATE	10-Apr-96	30-Apr-96	YES	22-Nov-96	30-Nov-96	YES
MIN DURATION (d)	27	21	YES		21	YES
MAX DURATION (d)		30	YES		30	YES

Ministry of the Environment

113 Amelia Street
Cornwall ON K6H 3P1
Telephone: (613) 933-7402
Fax: (613) 933-6402

Ministère de l'Environnement

113 rue Amelia
Cornwall ON K6H 3P1
Téléphone: (613)933-7402
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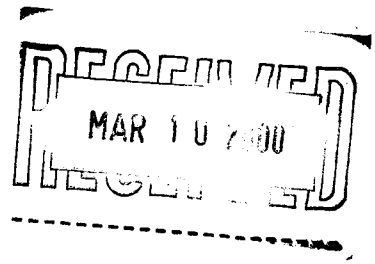
Ontario

March 9, 2000



Mr. Howard F. Smith, Clerk Administrator
North Dundas Township
P.O. Box 489
547 St. Lawrence Street
Winchester, ON K0C 2K0

Dear Sir:

Re: Compliance Inspection Report
Winchester Sewage Treatment Plant

The above-noted facility was inspected on January 20, 2000, by Jeff Columbus, Senior Environmental Officer, for this office. Enclosed is a copy of the inspection report. Two copies will also be sent to the Ontario Clean Water Agency that operates the sewage works.

In general, the inspection revealed that the sewage works is professionally operated and maintained. Your attention is directed to Sections 14.1 and 15.1 "Action(s) Required".

If you have any questions or comments, please contact Jeff Columbus at this office at extension 223.

Yours truly,

R.J.Robertson
Area Supervisor

JC:sp
Enclosures

c. Blair Henderson - OCWA
Eastern Ontario Health Unit

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