"14. Measurement of pH and flow: The person responsible for a petroleum refinery shall measure continually the flow of liquid effluents deposited in the environment by that refinery.

The person responsible for a petroleum refinery shall also measure continually the pH of those liquid effluents according to the method described in Volume 2 of the Guide d'échantillonnage à des fins d'analyses environnementales published by the Ministère de l'Environnement et de la Faune."

- **5.** Section 17 is amended by adding the following at the end: "or by telematics or a computer medium in accordance with the sample standard format provided by the Minister.".
- **6.** The following is substituted for the second paragraph of section 18:

"Composite sampling must be carried out in accordance with the method described in Volume 2 of the Guide d'échantillonnage à des fins d'analyses environnementales published by the Ministère de l'Environnement et de la Faune."

- **7.** The following is substituted for section 19:
- **"19. Preservation of samples**: Every sample collected for the purposes of this Regulation must be preserved in accordance with the method described in Volume 2 of the Guide d'échantillonnage à des fins d'analyses environnementales published by the Ministère de l'Environnement et de la Faune."
- **8.** The following is substituted for section 20:
- "20. Methods of analysis: The analyses required to ensure the application of this Regulation must be carried out by a laboratory accredited by the Minister of the Environment and Wildlife under section 118.6 of the Act and in accordance with the methods described in the Liste des méthodes d'analyses relatives à l'application des règlements découlant de la Loi sur la qualité de l'environnement published by the Ministère de l'Environnement et de la Faune.

Analysis reports produced by a laboratory must bear the signatures of the professionals involved, and the results must be approved by a chemist who is a member of the Ordre des chimistes du Québec.

Until 3 April 1999, the required analyses may be carried out by any laboratory in accordance with the methods provided for in the first paragraph.".

- **9.** The Regulation is amended by substituting the word "minister" for the words "deputy minister" wherever they appear.
- **10.** This Regulation comes into force on the fifteenth day following the date of its publication in the *Gazette officielle du Québec*.

2094

M.O., 1998

Order of Minister of the Environment and Wildlife dated March 2nd, 1998

An Act to amend the Act to preserve agricultural land and agricultural activities and other legislative provisions in order to promote the preservation of agricultural activities (1996, c. 26)

RESPECTING Guidelines for determining minimum distances to ensure odour management in rural areas

WHEREAS the Act to amend the Act to preserve agricultural land and agricultural activities and other legislative provisions in order to promote the preservation of agricultural activities (1996, c. 26) was assented to on June 20, 1997;

WHEREAS section 79.17 enacted by section 47 of the amending Act, provides for immunity from prosecution with regard to odours resulting from agricultural activities in an agricultural zone, insofar as such activities are exercised in accordance with the municipal regulatory standards adopted under the third paragraph of section 113 of the Act respecting land use planning and development (R.S.Q., c. A-19.1);

WHEREAS municipal regulatory standards shall comply with regional county municipality development plans, which, in turn, shall comply with the aims of government development plans;

WHEREAS the government's aims were adopted in June 1997 and published in the document "Les orientations du gouvernement en matière d'aménagement - La protection du territore et des activités agricoles - document complémentaire, juin 1997";

WHEREAS the government's aims refer to the standards contained in the Guidelines concerning prevailing summer winds:

WHEREAS under this reference, there is reason to maintain current standards concerning prevailing summer winds for the purposes of the application of the government's aims by regional county municipalities and municipalities;

WHEREAS under section 87 of the amending Act, until the coming into force of a regulation respecting odours and passed by a municipality, immunity from prosecution also applies with regard to odours caused by agricultural activities exercised in an agricultural zone in the territory of that municipality, if such activities are exercised in accordance with the standards provided by the Guidelines concerning the Prevention of Air Pollution in Livestock Operations, drafted by the Minister of the Environment and Wildlife and published in the *Gazette officielle du Québec*;

WHEREAS under section 88 of the amending Act, until the coming into force of a regulation respecting odours and passed by a municipality, the distance standards to be applied by the municipality for the issue of a building permit for a non-agricultural building are, with the necessary modifications, the standards set out in the said Guidelines:

WHEREAS the Guidelines concerning the Prevention of Air Pollution in Livestock Operations were published in the *Gazette officielle du Québec* on September 25, 1996;

WHEREAS the Guidelines contains parameters defining minimum distances to ensure odor management in rural areas, and these distances differ from those contained in the document outlining the government's aims;

WHEREAS there is reason to harmonize the current Guidelines with the government's aims as regards these minimum distances;

WHEREAS under section 87 of the amending Act, any amendment to the Guidelines by the Minister of the Environment and Wildlife shall be published in the *Gazette officielle du Québec*;

THEREFORE the Minister of the Environment and Wildlife hereby publishes new guidelines whose text appears below.

Québec City, March 2nd, 1998

PAUL BÉGIN, Minister of the Environment and Wildlife

Guidelines for determining minimum distances to ensure odour management in rural areas

OBJECT

The following provisions pertain only to inconveniences due to odours resulting from agricultural activities; the overall proposed parameters do not concern aspects relating to pollution control. The aim of the provisions is not to except agricultural producers from the obligation to respect environmental standards contained in specific regulations of the Ministère de l'Environnement et de la Faune, but to establish optimally a suitable procedure for determining minimum distances that will foster harmonious coexistence in rural areas.

In addition, the provisions serve as guidelines in the case of certificates of authorization to be issued by the Minister of the Environment and Wildlife with regard to odours. However, Schedule G serves only for the application of government aims by regional county municipalities and municipalities.

2. DEFINITIONS

Dwelling

A dwelling or shelter on the farm premises, covering a minimum of 21 m², not belonging to the owner or the operator of the livestock facilities in question or to a shareholder or manager of a corporate entity which owns or operates these facilities, or not accommodating one or more of its employees.

Protected immoveable

- a) a business or recreational, sports or cultural centre;
 - b) a municipal park;
 - c) a public beach or marina;
- d) property belonging to an educational establishment or an establishment to which the Act respecting health services and social services (R.S.Q., c. S-4.2) applies;
 - e) a campground;
- f) buildings belonging to a conservation area or a nature interpretation centre;
 - g) a ski lodge or golf clubhouse;

- h) a religious temple;
- i) a summer stock theatre;
- *j*) a restaurant, vacation centre or youth hostel as defined in the Regulation respecting tourist establishments;
- *k*) a vineyard or restaurant holding a year-round operating permit;

Bicycle paths not comprised within a municipal park are not considered as a protected immoveable.

Municipal urbanization perimeter

The boundary envisaged for the growth of a municipality's urban areas, as defined in its development plan, and any new boundaries defined by an amendment to the development plan, with the exception of any portion of this growth occurring within an agricultural zone.

Outdoor feeding area

An area outside a building where livestock is kept periodically or permanently and where it feeds on food originating solely outside this area.

Marina

Site designated as such on a municipal zoning map or regional country municipality development plan.

Camping

Site designated as such on a municipal zoning map or regional country municipality development plan.

Public highway

A roadway designed for automobile traffic, maintained by a municipality or by the Ministère des Transports, or a bikeway (bicycle path, protected or unprotected bike lane).

Solid manure management

Management practices reserved for manure comprising livestock excrement, litter and bedding materials, which is stored in solid form and handled using a loader.

Liquid manure management

Management practices reserved for liquid manure comprising primarily livestock excrement, litter, bedding materials and wash-water, which is liquid in form and is handled by pumping.

Livestock facility

A livestock facility or feeding area for keeping livestock, a structure or facility for storing farm manure, or several such facilities, each of which is less than 150 m from a neighbouring facility and belongs to the same operation.

3. MINIMUM DISTANCES FOR MANURE SPREADING

The minimum distances for livestock facilities are computed using formulas combining seven (7) parameters specific to the category of neighbouring unit in question.

These parameters are as follows:

Parameter A: number of animal units.

It is calculated using the table in Schedule A.

Parameter B: base distance.

This table constitutes Schedule B. Select the base distance corresponding to the value calculated for parameter A.

Parameter C: odour load.

The table in Schedule C presents odour potential by livestock group or category.

Parameter D: type of manure.

This table constitutes Schedule D.

Parameter E: project type.

Schedule E contains the values to be used whether the project is designed to establish a new operation or expand an existing operation. An increase involving 300 units or more is equated with a new project.

Parameter F: attenuation factor.

This parameter reflects the attenuating effect of the technology used. While Schedule F indicates certain values, it will be supplemented by attenuation factors assigned new systemic management practices, equipment and technologies as they are validated and accredited. Insisting on the importance of this factor will be a powerful incentive to use the innovations available.

Parameter G: usage factor.

This factor is based on the type of neighbouring unit in question. To determine minimum distance, parameters B, C, D, E, F and G are multiplied, the latter using the following values:

- for a **protected immovable**, the minimum is obtained by multiplying the set of parameters by G = 1.0;
 - for a **dwelling**, G = 0.5;
 - for an **urbanization perimeter**, G = 1.5;
- for a **public roadway**, **G** = **0.1**, however all facilities must consider a minimum distance of six (6) meters from a lot line.

4. VESTED RIGHTS

Parameter E (project type) recognizes the vested rights related to expanding small existing farms. Under certain other circumstances, other vested rights apply where minimum distances for the following are concerned. For operations with 100 animal units or fewer, the type of livestock may be changed, provided the same number of animal units and effluent management is maintained or replaced by more favourable management practices targeting the nuisances associated with odours. For other operations, the type of livestock may be changed only if the minimum distance calculation parameters are respected. A vested right is also recognized for rebuilding following a fortuitous event or for renovating livestock facilities in the same spirit as above.

5. MINIMUM DISTANCES FOR FARM MANURE STORAGE SITES LOCATED MORE THAN 150 M FROM LIVESTOCK FACILITIES

When farm manure is stored off the livestock operation, minimum distances to be respected are based on the consideration that one animal unit requires a 20-m³ storage capacity. To determine the value of parameter A, every 1000-m³ tank capacity corresponds to 50 animal units. Once parameter A has been determined, the corresponding value of B can be found, and the formula B x C x D x E x F x G, applied. The following table illustrates cases for which C, D, E and F equal 1, with only G varying with the neighbouring unit in question.

Minimum distances for liquid manure storage sites¹ located more than 150 m from a livestock facility

Storage	Minimum distances (m)			
capacity ² (m ³)	Dwelling	Protected immoveable	Urbanization perimeter	Public roadway
1 000	148	295	443	30
2 000	184	367	550	37
3 000	208	416	624	42
4 000	228	456	684	46
5 000	245	489	734	49
6 000	259	517	776	52
7 000	272	543	815	54
8 000	283	566	849	57
9 000	294	588	882	59
10 000	304	607	911	61

¹ For solid manure, multiply these distances by 0.8.

6. MINIMUM DISTANCES FOR SPREADING FARM MANURE

Farm manure shall be spread in keeping with the minimum distances indicated in the following table.

Minimum distances for spreading farm manure³

Minimum distance from a dwelling, urbanization perimeter or protected immoveable (m)

Туре	Spread	ing method	June 15 to August 15	Other times
		sprinkler	300	300
		lance (cannon)	300	300
L I	aero- sprinkling	liquid manure tank left on the surface more than 24 h	75	25
Q U I D		liquid manure tank incorporated within less than 24 h	25	X
	sprinkling	by spraybar	25	X
	by drop pipe		X	X
	simultaneous	s incorporation	X	X

² For other storage capacities, use the rule of apportionment or the data for parameter A.

Minimum distance from

		a dwelling, urbanizati perimeter or protecto immoveable (m)	
Туре	Spreading method	June 15 to August 15	Other times
S	fresh, left on the surface more than 24 h	75	X
L I	fresh, incorporated within 24 h	X	X
D	deodorized compost	X	X

 $^{^{3}}$ X = Spreading permitted up to field edge.

This table does not apply to uninhabited urbanized perimeters, in which case spreading is permitted to the field edge.

RECIPROCITY PRINCIPLE

Minimum distances to be respected are valid both ways; this is the reciprocity principle. If there already exists an agricultural use at the time a non-agricultural use is being planned in a white zone adjacent to a green zone, the distance to be respected is the same as if the reverse situation had occurred, that is, the distance to be respected is the same if the adjacent non-agricultural use had existed prior to the implementation of the said agricultural use. However, it is understood that section 79.2, introduced in the Act to preserve agricultural land and agricultural activities and other legislative provisions in order to promote the preservation of agricultural activities, can be used by a municipality.

To maintain a certain potential for development by livestock operations, it is advisable to set a limit in the green zone of 367 metres (value of parameter B for 100 animal units), corresponding to the distance within which a protected immoveable could not be built. Adjustments would be required for a dwelling (184 m), an urban area boundary (550 m) and a public road (37 m).

8. DEPARTURE FROM THE MINIMUM DISTANCES RELATING TO LIVESTOCK FACILITIES AND FARM MANURE STORAGE SITES

Distances prescribed for livestock facilities and farm manure storage sites under the present guidelines may be dismissed if a right-of-way is duly constituted and registered with the land register against the lot of each abutting neighbour who, by this right-of-way, agrees that a distance inferior to the one provided for in these guidelines be respected and abandons any recourse he might have otherwise been entitled to if such a standard distance had not been respected, the whole, in favour of the lot where the livestock facility or farm manure storage site is located.

9. These Guidelines replace the Guidelines Concerning the Prevention of Air Pollution in Livestock Operations published in the *Gazette officielle du Québec* on September 25, 1996 and amended by a ministerial Order-in-Council published in the *Gazette officielle du Québec* on November 5, 1997.

10. These Guidelines come into effect the day they are published in the *Gazette officielle du Québec*.

SCHEDULE A

NUMBER OF ANIMAL UNITS (PARAMETER A)¹

Livestock group or category	Number of animals equivalent to one animal unit
Cow or heifer, bull; horse	1
Calf or heifer weighing 225-500 kg	2
Calf weighing less than 225 kg	5
Breeder hogs weighing 20-100 kg each	5
Sows and piglets not weaned during the year	4
Piglets weighing less than 20 kg	25
Laying hens or roosters	125
Broiling or roasting chickens	250
Started pullets	250
Turkeys weighing more than 13 kg	50
Turkeys weighing 8.5-10 kg	75
Turkeys weighing 5-5.5 kg	100
Female mink (males and young are not calculated)	100
Vixen (males and young are not calculated)	40
Ewes and new-crop lambs	4

Livestock group or category	Number of animals equivalent to one animal unit
Goats and new-crop kids	6
Female rabbits (males and young not calculated)	40
Quail	1 500
Pheasants	300

¹ This table is provided for information purposes only; a complete table will be compiled by reducing the gaps between categories. The basis remains 500 kg per animal unit.

The weight indicated in this schedule refers to the animal's weight at the end of the breeding period. For all other animal species, a live weight of 500 kg equals one animal unit.

SCHEDULE BBASE DISTANCE (PARAMETER B)²

Total number of animal units	Distance (m)	Total number of animal units	Distance (m)	Total number of animal units	Distance (m)
10	178	300	517	880	725
20	221	320	528	900	730
30	251	340	538	950	743
40	275	360	548	1000	755
50	295	380	557	1050	767
60	312	400	566	1100	778
70	328	420	575	1150	789
80	342	440	583	1200	799
90	355	460	592	1250	810
100	367	480	600	1300	820
110	378	500	607	1350	829
120	388	520	615	1400	839
130	398	540	622	1450	848
140	407	560	629	1500	857
150	416	580	636	1550	866
160	425	600	643	1600	875

Total number of animal units	Distance (m)	Total number of animal units	Distance (m)	Total number of animal units	Distance (m)
170	433	620	650	1650	883
180	441	640	656	1700	892
190	448	660	663	1750	900
200	456	680	669	1800	908
210	463	700	675	1850	916
220	469	720	681	1900	923
230	476	740	687	1950	931
240	482	760	693	2000	938
250	489	780	698	2100	953
260	495	800	704	2200	967
270	501	820	709	2300	980
280	506	840	715	2400	994
290	512	860	720	2500	1006

 $^{^{\}rm 2}$ Source: Adapted from the German Association of Engineers VDI 3471

SCHEDULE C

ODOUR LOAD PER ANIMAL (PARAMETER C)³

Livestock group or category	Parameter C
Beef cattle	
in a closed facilityin an outdoor feeding area	0.7 0.8
Dairy cattle	0.7
Ducks	0.7
Horses	0.7
Goats	0.7
Turkeys	
— in a closed facility — in an outdoor feeding area	0.7 0.8
Rabbits	0.8
Sheep	0.7

Livestock group or category	Parameter C
Hogs	1.0
Hens	
laying hens in cagesbreeder hensbroiler hens / large chickenspullets	0.8 0.8 0.7 0.7
Foxes	1.1
Slaughter calves	
veal calvesgrain-fed calves	1.0 0.8
Mink	1.1

³ For all other animal species, C = 0.8.

SCHEDULE D

TYPE OF MANURE (PARAMETER D)

Farm manure management practices	Parameter D
Solid manure	
Beef and dairy cattle, horses, sheep and goats	0,6
Other livestock groups and categories	0,8
Liquid manure	
Beef and dairy cattle	0,8
Other livestock groups and categories	1,0

SCHEDULE E

TYPE OF PROJECT (PARAMETER E) [new project or increase in the number of animal units]

Increase ⁴ up to (a.u.)	Parameter E	Increase up to (a.u.)	Parameter E
10 or fewer	0.50	181-185	0.76
11-20	0.51	186-190	0.77
21-30	0.52	191-195	0.78
31-40	0.53	196-200	0.79
41-50	0.54	201-205	0.80
51-60	0.55	206-210	0.81
61-70	0.56	211-215	0.82
71-80	0.57	216-220	0.83

Increase ⁴ up to	D	Increase up to	.
(a.u.)	Parameter E	(a.u.)	Parameter E
81-90	0.58	221-225	0.84
91-100	0.59	226-230	0.85
101-105	0.60	231-235	0.86
106-110	0.61	236-240	0.87
111-115	0.62	241-245	0.88
116-120	0.63	246-250	0.89
121-125	0.64	251-255	0.90
126-130	0.65	256-260	0.91
131-135	0.66	261-265	0.92
136-140	0.67	266-270	0.93
141-145	0.68	271-275	0.94
146-150	0.69	276-280	0.95
151-155	0.70	281-285	0.96
156-160	0.71	286-290	0.97
161-165	0.72	291-295	0.98
166-170	0.73	296-300	0,99
171-175	0.74	300 and more or	1,00
176-180	0.75	new projects	1,00

⁴ To be taken into consideration depending on the targeted number of animals in the herd, wether or not buildings are expended or built. For projects resulting in a total of 300 or more animal units and for new projects, E=1.

SCHEDULE F

ATTENUATION FACTOR (PARAMETER F)

 $F = F_1 \times F_2 \times F_3$

Technology	Parameter F
Cover over storage site	F_1
— absent — rigid, permanent	1.0 0.7
— temporary (layer of peat, plastic covering)	0.9
Ventilation	F_2
— natural and forced with multiple air outlets	1.0
 forced with grouped air outlets and air outlets above the covering forced with grouped air outlets and each treatment with air washers 	0.9
or biological filters	0.8
Other technologies	F_3
— new technologies enabling distances to be reduced once their effectiveness has been proven	factor to be determined upon accreditation

SCHEDULE G

SITING STANDARDS FOR BREEDING FACILITIES OR YARDS FOR EIGHBOURING DWELLINGS, POPULATION CENTRES, PROTECTED IMMOVEABLES OR MUNICIPAL ZONES EXPOSED TO PREVAILING SUMMER WINDS (Linear distances are expressed in meters)

		Hogs (fattening)	ttening)			Hog	Hogs (breeding)			Fowl, waterfow	Fowl, waterfowl or turkeys in a building	uilding
Type of ar	Maximum number of animal units allowe ^è	Total number ^e of animal unit	Minimum distance from a population centre', protected immoveable* or municipal zone* exposed** to prevailing wind	Minimum distance from a neighbouring dwelling exposed to prevailing winds**	Maximum number of animal units allowed [§]	Total number* of animal units	Minimum distance from a population centre, protected immoveable or municipal zone* exposed to prevailing winds**	Minimum distance from a neighbouring dwelling exposed to prevailing winds"	Maximum number of animal units allowed [§]	Total number ^e	Minimum distance from a population centre, protected immoveable or municipal zone* exposed to prevailing winds**	Minimum distance from a neighbouring dwelling exposed to prevailing winds**
New livestock operation		$ \begin{array}{c} 1 - 200 \\ 201 - 400 \\ 401 - 600 \\ \ge 601 \end{array} $	900 1 125 1 350 2.25/au	600 750 900 1.5/au		0.25 - 50 51 - 75 76 - 125 126 - 250 251 - 375 ≥ 376	450 675 900 1 125 1 350 3.6/au	300 450 600 750 900 2.4/au		0.1 - 80 81 - 160 161 - 320 321 - 480 > 480	450 675 900 1 125 3/au	300 450 600 750 2/au
Change in the type of livestock	200	1 - 50 51 - 100 101 - 200	450 675 900	300 450 600	200	0.25 - 30 31 - 60 60 - 125 126 - 200	300 450 900 1 125	200 300 600 750	480	0.1 - 80 81 - 160 161 - 320 321 - 480	450 675 900 1 125	300 450 600 750
Expansion	200	1 - 40 41 - 100 101 - 200 1-20	225 450 675 150	150 300 450 100	200	0.25 - 30 31 - 60 61 - 125 126 - 200 0,25 - 12	300 450 900 1 125 225	200 300 600 750	480	0.1 - 40 41 - 80 81 - 160 161 - 320 321 - 480 0.1 - 40	300 450 675 900 1 125	200 300 450 600 750
Increase in the number of animal units	100	21-40 41-100	225 450	300	200	13 -30 31 - 60 61 - 125 126 - 200	300 450 900 1 125	200 300 600 750	480	41 - 80 81 - 160 161 - 320 321 - 480	450 675 900 1 125	300 450 600 750

Note: The definitions contained in the "Regulation respecting the prevention of water pollution in livestock operations", as published in the Gazette officielle du Québec on June 10, 1981, and somewhat adapted, apply to this schedule.

When applying the siting standards cited in this schedule, projects exceeding the maximum number of animal units indicated shall be considered new livestock operations.

6 "Total number": The number of animals contained in all of a livestock operation's buildings or yards located at least 150 m from one another and belonging directly or authorization. When two or more types of livestock are being raised (or plans to this effect exist), the siting standards governing this type of livestock breeding and including To determine which siting standards apply, the livestock operation's total number of animal units are added and this total is applied to the type of livestock which posts the the largest number of animal units apply, unless these standards are lower than those that would apply if the number of animal units were taken separately for each species. indirectly to the same owner, or using a common manure management system, including those animals you are planning to add for an application for a certificate highest number of animal units.

7 "Population centre":

(i) a group of at least five dwellings

which are situated within a diameter of 150 metres; and 1. none of which is inhabited by a farm producer; 2. which are situated within a diameter of 150 met

3. which are located anywhere in Québec, other than in an agricultural zone designated under sections 47 to 53 of the Act to preserve agricultural land (R.S.Q., c. P-41.1); or

a group of at least three dwellings

none of which is inhabited by a farm producer;

2. which are situated within a diameter of 300 metres;

3. which are situated outside an agricultural zone designated under sections 47 to 53 of the Act to preserve agricultural land (R.S.Q., c. P-41.1);

4. which are all situated within the territorial boundaries of a village, town or city municipality; and

5. at least one of which is located less than 300 metres from another dwelling that is not itself inhabited by a farm producer but that is also situated within the territorial boundaries of a village, town or city municipality;

" "protected immovable": a municipal park, campground, a restaurant with at least 20 seats or a hotel with a permit issued under the Hotels Act (R.S.Q., chapter H-3), an outdoor recreational area, a vacation village, a public beach, an educational institution, a religious temple, an establishment to which the Act respecting health services and social services (R.S.Q., c. S-5) applies, or an apartment building of five dwellings or more; " "Municipal zone": Boundaries of any town, city or village municipality or of any territory zoned for residential, commercial or mixed (residential and commercial) purposes by a parish, township or united township municipality or by an undesignated munipality, with the exception of land within these boundaries located in agricultural zones under the Act to preserve agricultural land.

" "Exposed": Located within the area formed by two imaginary straight parallel lines beginning 100 metres from the limits of a livestock operation and extending into infinity, in the direction of a prevailing summer wind, i.e. wind blowing in the same direction more than 25 % of the time during June, July and August, as assessed at the weather station which is most representative of the location of the livestock operation.