

ORDINANCE NO. 83-9

ORDINANCE REGULATING THE USE, STORAGE AND SALE OF
INFLAMMABLE AND VOLATILE SUBSTANCES

BE IT ORDAINED BY THE PRESIDENT AND BOARD OF TRUSTEES OF THE
VILLAGE OF CHAPIN, MORGAN COUNTY, ILLINOIS:

SECTION 1. Prohibition. It shall be unlawful to store, handle or offer for sale any inflammable or volatile liquids in violation of any provision of this Ordinance.

SECTION 2. Enforcement. It shall be the duty of the Fire Chief to see to the enforcement of the provisions of this Ordinance.

SECTION 3. Classification. For the purpose of this Ordinance, flammable liquids are divided into three classes, according to flash point as follows:

Class I - Liquids with a flash point at or below 25 degrees Fahrenheit (-4 degrees Centigrade) closed cup tester.

Class II - Liquids with a flash point above that for Class I and at or below 70 degrees Fahrenheit (21 degrees Centigrade) closed cup tester.

Class III - Liquids with a flash point above that for Class II and at or below 200 degrees Fahrenheit (93 1/3 degrees Centigrade) closed cup tester.

The flash point shall be determined with the Elliott, Abel, Abel Pensky or the Tag Closed Cup tester, but the Tag Closed Cup tester (standardized by the United States Bureau of Standards) shall be authoritative in case of dispute. All tests shall be made in accordance with the methods adopted by the American Society for Testing Materials.

Representative examples of the classes of flammable liquids are:

Class I

Class II

Class III

Ether
Carbon bisulphide
Gasoline
Benzol
Naphtha
Acetone
Collodion

Alcohol
Amylacetate
Toluol
Ethyl acetate
Methyl alcohol

Kerosene
Amyl alcohol
Turpentine
Fuel oil

SECTION 4. Small Storage Limited. Storage of flammable liquids of Classes I, II and III shall be in accordance with the rules governing general storage and service stations except:

- (a) Not to exceed five gallons of crude petroleum, benzine, benzol, gasoline, naphtha, and their compounds may be kept on hand if stored in a proper safety container, remote from flame or open fire. Such storage must not be in any cellar, basement or pit and should be in a room with direct ventilation to the outside and preferably in an outbuilding or garage.
- (b) Ten gallons of kerosene may be stored aboveground in a proper safety can and 60 gallons may be stored for the retail trade within a building, provided storage is in an approved tank. Tank shall set in a metal pan extending at least eight inches beyond outside of tank at sides and rear and 18 inches in front. Tanks should be located on the first floor where the influx of natural light is sufficient to light the room and reasonable ventilation must be provided.

SECTION 5. Gasoline Containers must be Red. All receptacles used for the keeping or storing of gasoline, naphtha, benzine or benzol shall be painted red and no liquids other than gasoline, naphtha, benzine or benzol shall be placed in such containers.

SECTION 6. Empty Drums. Drums or barrels in which liquids of Classes I, II and III have been stored shall have taps, plugs, or bungs replaced immediately after package has been emptied and shall be promptly removed from the premises.

SECTION 7. Use Within Buildings Restricted. The mixing, storing or handling of Classes I and II liquids in open containers is prohibited in any buildings, except in the compounding of medicine and prescriptions in drug stores.

SECTION 8. Pouring into Sewers Prohibited. No liquids of Classes I, II and III or solutions containing such liquids, shall be poured into any sewer or any drain which connects with a sewer system.

SECTION 9. Storage in Public Buildings Restricted. No liquids of Class I or II shall be kept or stored in any schoolhouse, public hall or place of assembly, or in any public building except for demonstrative purposes or for industrial or mechanical uses, and then only under competent supervision.

SECTION 10. Use in Starting Fires. Flammable liquids shall not be used to start or kindle fires in stoves, furnaces or otherwise.

SECTION 11. Fire to be Kept Away from Flammable Liquids. Flammable liquids shall always be kept away from fire or open flame; fire or open flame shall always be kept away from flammable liquids.

SECTION 12. Location of Tanks - Restricted Classes of Property. No storage tank shall be within 300 feet of any schoolhouse, church, hospital or public hall. The distance shall be measured from near the edge of tanks in all directions to near point of buildings.

A public hall is any place which is used at any time for public meetings or the assembling of people for amusement, instruction or religious worship.

SECTION 13. Property Lines and Buildings. The minimum distance from individual tanks to line of adjoining property which is or may be built upon, shall be not less than the following:

- (a) For tanks of 50,000 gallons or less:

Tank Capacity (Gallons)	Minimum Distance (Feet)
3,000 or less	20
21,000 or less	25
31,000 or less	30
45,000 or less	40
50,000 or less	50

In case of tanks for the storage of crude petroleum, the foregoing minimum clearances shall be doubled.

- (b) For tanks of more than 50,000 gallons to be used only for the storage of refined petroleum products or other flammable liquids not subject to boil over.

Group A tanks: If tank is equipped with (1) an approved permanently attached extinguishing system or (2) an approved floating roof, the distance shall be not less than the greatest dimension (diameter, length or height) of tank, but such distance need not exceed 120 feet.

Group B tanks: If tank is not equipped with either (1) an approved permanently attached extinguishing system or (2) an approved floating roof, the distance shall be not less than 1 1/2 times the greatest dimension (diameter, length or height) of the tank, but such distance need not exceed 175 feet.

- (c) For tanks of more than 50,000 gallons to be used for the storage of crude petroleum or other flammable liquid subject to boil over:

Group C tanks: If tank is equipped either with (1) an approved permanently attached extinguishing system or (2) an approved floating roof, the distance shall be not less than twice the greatest dimension (diameter, length or height) of the tank, but such distance need not exceed 175 feet.

Group D tanks: If tank is not equipped either with (1) an approved permanently attached extinguishing system or (2) an approved floating roof, the distance shall not be less than three times the greatest dimension (diameter, length or height) of the tank, but need not exceed 350 feet.

- (d) These distances shall apply also to other buildings on the property except those necessarily connected with the installation (such as oil warehouse, pump house and garage.)
- (e) In particular installations these distances may be increased at the discretion of the Department of Public Safety, after consideration of such special features as topographical conditions, nature of occupancy and proximity of buildings on adjoining property, height and construction of such buildings, capacity and construction of proposed tanks and character of liquids to be stored, degree of private fire protection provided and facilities of fire departments to cope with oil fires.
- (f) Locations of tanks with reference to railroad tracks over which passenger trains are moved shall conform to the regulations of the Bureau of Explosives of the Association of American Railroads (formerly American Railway Association), 30 Vesey Street, New York City.
- (g) When general oil storage is maintained in connection with a filling station, the distance from general storage tanks to filling station buildings, tanks and equipment shall be the same as that required to property lines.

SECTION 14. Distance Between Tanks. The minimum distance from tanks to adjacent tanks shall be as follows:

Tank Capacity (Gallons)	Minimum Distance (Feet)
300 or less	3
500 or less	3
1,000 or less	3
8,000 or less	3
12,000 or less	3
18,000 or less	3
24,000 or less	5
30,000 or less	10
48,000 or less	10
75,000 or less	13
100,000 or less	15
Over 100,000	One tank diameter

If tanks are of different capacities, the capacity of the larger tank shall govern its distance to adjacent tanks.

SECTION 15. High Water. Tanks shall be located so as to avoid possible danger from high water.

SECTION 16. Streams. When tanks are located on a stream without tide they shall, where possible, be downstream from burnable property.

SECTION 17. Tank Construction, Specifications. Factory assembled tanks shall bear the label of underwriters' laboratories or meet equivalent specifications. Field erected tanks shall meet the specifications of the National Fire Protection Association, or those of the American Petroleum Institute. No open tank shall be used.

- (a) Tanks shall be covered with asphaltum or other non-rusting coating or paint.
- (b) All pipe connections shall be made through flanges or reinforcements securely riveted, welded or bolted to the tank and shall be made tight.
- (c) All openings shall be made liquid and vapor-tight, except breather vents. Gaskets used shall be such as are not affected by heat or the contents of tanks.
- (d) Covers for manholes, handholes and gauge holes shall be made tight fitting and normally kept in place.

SECTION 18. Normal Vents in Tanks. Each tank over 100 gallons in capacity shall have vent openings, except safety valves, provided with approved noncorrosible flame arresters, so attached as to completely cover the openings.

Vent openings shall be in no case less than one-fourth inch in diameter, and where a power pump is used in filling tanks and tight connection is made to fill pipe, vent shall not be smaller than fill pipe.

SECTION 19. Special Safety or Emergency Relief Vents in Tanks. Additional vent openings or safety valves adequate to relieve any excessive pressure due to external heat shall be provided, of a type which shall be self-closing when pressure is relieved.

The total area of vents shall not be less than 24 square inches for tanks of 21,000 gallons capacity or less and not less than 18 square inches for tanks of more than 21,000 gallons capacity.

SECTION 20. Setting of Tanks. Tanks more than one foot above the ground shall have a firm foundation and supports of noncombustible materials, bases of which shall rest below the frost line.

Unprotected steel as support for tanks shall not be permitted.

No combustible materials shall be permitted under or within 10 feet of any storage tanks except stairways to and walks on top which shall be of iron or steel.

SECTION 21. Grounding Tanks. All tanks shall be electrically grounded.

SECTION 22. Piping Materials. Piping, valves and fittings for flammable liquids shall be designed for the working pressures and structural stresses to which they may be subjected. They may be of steel or other materials suitable for use with the liquid being handled. Pipe wall thicknesses determined in accordance with section 3 of the American Standard Code for Pressure Piping (A.S.A.B31.1 - 1951) shall be deemed to comply with this section; except that carbon steel pipe shall not be thinner than standard wall thickness listed in the American Standard for Wrought-Steel and Wrought-Iron Pipe.

SECTION 23. Piping Runs. Piping shall be run as directly as possible and proper allowance made for expansion and contraction.

SECTION 24. Piping Above Ground.

- (a) Pipes shall not be surrounded or covered by cinders or other material of corrosive effect, but preferably should be laid in sand, and where carried in conduit, the openings of such conduit must be fully protected to prevent escape of liquid under dangerous conditions.
- (b) Pipelines buried on railroad property shall be laid at a depth of not less than three feet; where they pass under tracks they shall be laid at least four feet below the bottom of the ties.

- (c) Piping buried in city streets or other area where other pipelines are carried shall be placed in conduit. Joints of conduit shall be sealed to prevent leakage and pitch shall be toward tank yard.
- (d) Underground piping shall be coated with asphaltum or corrosion resisting material.

SECTION 25. Joints in Pipes. Joints may be welded or of the ordinary screw type; if the screw type they shall be made with litharge and glycerin, lamp black or shellac.

SECTION 26. Tests of Piping. Piping after installation shall be tested at a pressure of 50 percent in excess of the working pressure and shall be proven tight. Test shall continue 30 minutes.

SECTION 27. Normal Valves in Pipes. Each pipe attached to a tank shall be provided with a valve at the tank, with no branches or outlets between the tank and the valve.

In case two or more tanks are cross-connected, there shall be a valve at each tank in each cross-connection. Tanks with different classes of liquids shall not be cross-connected.

SECTION 28. Emergency Internal Check Valves. In addition to any normal valves, there must be an extra valve at each pipeline connection to any tank below normal liquid level (regardless of when installed) which valve is effective inside the tank shell and is operated both manually and by an effective heat actuated device which, in case of fire, will automatically close the valve to prevent the flow of liquid from the tank even though the pipelines are broken from the tank. These extra valves are not required in crude oil tanks in oil fields, on tanks at refineries, or on tanks at terminals which are equipped with a swing line or where facilities are provided to transfer the contents of the tank to another tank in case of fire.

SECTION 29. Dikes Required. Embankments or dikes are required:

- (a) For each tank containing crude oil or other liquid which has a tendency to boil over.
- (b) For each individual tank exceeding 50,000 gallons (1,200 barrels) in capacity.
- (c) For individual tanks of less than 50,000 gallons, or groups of tanks with individual tank capacity of less than 50,000 gallons, when installed:
 - 1. On the bank of a stream or other body of water, or on land permitting of rapid drainage thereto.
 - 2. When, due to any other special condition, the mayor and city council deems diking to be necessary for the protection of other property.

SECTION 30. Capacity.

- (a) Dikes for refined petroleum products not subject to boilover shall have a capacity of not less than the capacity of the tank or groups of tanks surrounded.
- (b) Dikes surrounding tanks containing crude oil or other flammable liquid subject to boilover, shall have a capacity of not less than the capacity of the tanks surrounded and in addition shall have a suitable coping or deflector pointing inward, so designed and constructed as to minimize the effect of the boilover wave. Dike shall be not less than 50 feet from the shell of the tank surrounded.

SECTION 31. Material and Construction of Dikes. Dikes shall be constructed of earth, clay, masonry or reinforced concrete not higher than one-half the height of the tank or tanks enclosed, so constructed as to afford adequate protection.

Earthwork embankments shall be firmly and compactly built of good earth or clay, free from stones, vegetable matter and other foreign material. They shall have a flat section at the top of not less than two and one half feet wide and a slope of at least 1 to 1 (45 degrees) on both sides.

Masonry or concrete dikes shall have footing below the frost line.

If a concrete floor covering is provided for the area enclosed by a concrete dike, a sump shall be provided at some convenient place, attached to which shall be a pump of approved design, so that any accumulation of water or oil may be removed immediately.

SECTION 32. No Openings in Dikes Permitted. Embankments or dikes shall be continuous, with no openings for piping or roadway.

SECTION 33. Buildings - General Requirements. It shall be unlawful to store, or to sell, or offer for sale, any flammable or volatile liquids as defined in this Ordinance in an amount in excess of one gallon in any building of frame construction, or any building other than a building of fireproof construction as defined in ordinances of the city; provided that this section shall not be construed to prohibit the storage of such liquids in the fuel tanks of automobiles or in tanks for heating systems installed in compliance with the provisions of the city ordinances.

SECTION 34. Pump Houses. Motor and pump or pumps shall be located in a separate, noncombustible building, not less than 10 feet from tanks, warehouses, garage or property lines.

Motor shall be of the polyphase, nonsparking or explosion proof type, and shall be grounded to permanently moist earth.

If pumphouse is electrically lighted, lights shall be of the vaporproof type, wiring shall be in a sealed conduit, and the light switch shall be of the explosion-proof type, or shall be placed outside the building.

Motor starting switches shall be of the explosion-proof type or oil bath type.

Screened openings of not less than 64 square inches shall be constructed in opposite corners at floor line to provide proper ventilation.

All doors of pumphouses shall open outward. Doors shall be left open at all times when pumps are in operation.

SECTION 35. Unenclosed Pumps and Motors. If pumps and motors are located entirely in the open, with no enclosure whatever, they may be located at or under the loading dock. Motors and electrical equipment shall comply otherwise with the provisions of the preceding section.

SECTION 36. Construction of Warehouses. Warehouses shall have noncombustible walls and roofs and be so constructed so that refuse cannot accumulate under the floor.

- (a) Storage of liquids of Class I shall not be permitted in building. Storage of liquids of Class II shall not be permitted except in original sealed containers and no transfer of such liquids in such containers to other containers shall ever be made inside the warehouse.
- (b) Warehouse shall be kept clean, neat and orderly, and free from accumulation of grease and oil spillings.
- (c) Electrical installation. The National Electrical Code as published in N.F.P.A. Pamphlet No. 70 by the National Fire Prevention Association shall govern the electrical installation.

SECTION 37. Garage - Construction of. Floor of garage shall be of concrete or other noncombustible material, laid directly on the ground or on a well-tamped and puddled fill.

- (a) Adequate ventilation shall be provided to carry off any inflammable gases which may accumulate.
- (b) No connection to any house drainage or to any sewer system shall be made from any garage waste basin, sink, floor drain or waste, unless an adequate grease trap is provided ahead of such connection. This does not apply to lavatories, toilets, or wash basins, used exclusively for toilet or personal use, nor to downspouts carrying surface water from the roof.

- (c) Electrical installation. The National Electrical Code as published in N.F.P.A. Pamphlet No. 70, by the National Fire Protection Association shall govern the electrical installation.

SECTION 38. Location of Loading Dock. Truck loading docks and platforms shall be located not less than 10 feet from storage tanks, plant buildings and property lines.

SECTION 39. Location of Unloading Dock. Location of unloading site with reference to railroad tracks over which passenger trains are moved shall be subject at all times to the regulations of the Bureau of Explosives of the Association of American Railroads (formerly American Railway Association), 30 Vesey Street, New York City.

SECTION 40. Electrical Equipment. All electric lights at loading or unloading docks shall be of vapor-proof construction. Electric wiring shall be in sealed conduit at docks and switches shall be of the explosion-proof type or placed at some point remote from the docks.

SECTION 41. Pumps and Pipelines.

- (a) Gasoline and naphtha shall never be handled through the same pump and pipelines as kerosene and fuel oils.
- (b) Pipelines shall have a definite color scheme for painting to indicate the product which is being carried by the respective lines. The color red shall be for gasoline and naphtha. Valves on lines in pump house shall be tagged to denote the product handled and controlled by such valve.
- (c) Pumps delivering to or taking supply from tanks or tank cars shall be provided with valves on both suction and discharge pump.

SECTION 42. Grounding. Before unloading operations are started and before any connection or contact is made with piping or other loading equipment, the tank car shall be electrically grounded in an effective manner. Permanent electrical connection of not less than number 0 copper cable shall be made between the rails on which tank cars stand and the piping system of the storage plant.

(Note: This connection may be accomplished in two ways. The rails may be bonded by means of standard rail bonds and connected to the permanent piping system with number 0 electric cable connections at each end of the loading or unloading section; or a similar connection may be made between each rail on which cars stand and the permanent piping system.)

SECTION 43. No Unloading by Gravity. The withdrawal of liquids from tank cars through bottom outlets shall not be permitted. Tank cars shall be unloaded through dome (manhole) only. Pumps required to accomplish this shall be of an adequate type and securely installed.

- (a) Exception: Fuel oils may be unloaded by gravity.
- (b) The use of compressed air to discharge contents of tank cars is prohibited, but this shall not be construed to prevent the use of a standard system employing an inert gas, such as carbon dioxide or nitrogen, as pressure generating medium for this purpose.

SECTION 44. Unloading to Portable Containers. Unloading from tank cars to tank trucks or to any portable containers shall not be permitted.

SECTION 45. Tank Trucks and Wagons. Compartment tanks shall be constructed with double bulkheads unless they always carry the same class of liquids in the respective compartments (Class I, II or III).

SECTION 46. Different Classes of Liquids. Compartments of tank trucks carrying different classes of liquids shall not be manifolded together. Separate pipeline and meter shall be provided for each class of liquid to eliminate hazard of mixing.

Each compartment or tank shall be numbered and the same number shall appear on pipeline at rear of truck or wagon connected with that compartment.

A serviceable metal tag shall be fastened securely to each faucet, designating the contents of the compartment it controls by lettering not less than one-fourth inch

high. Tags shall be painted according to the same color scheme as the pipeline, red always indicating gasoline or naphtha.

Faucets shall be of the self-closing type.

Heavy bumpers shall be provided across rear, adequate to protect all faucets in case of a rear-end collision.

If buckets are used to deliver gasoline or naphtha, they shall be painted red and properly labeled. They shall be used for delivering gasoline and naphtha only and gasoline and naphtha shall not be delivered in any other buckets.

Cargo tanks and vehicle chassis shall be electrically bonded. Provision shall be made in the tank structure and vehicle for the bonding of the vehicle to the fill pipe during the truck loading operations.

During loading and unloading of tank trucks and tank wagons a competent person shall be present and in charge at all times.

No retail deliveries from tank trucks or tank wagons shall be permitted in any street or alley of the city, except in extreme emergencies for relief purposes, and then only in quantities not to exceed two gallons.

Each tank truck or tank wagon shall carry an approved fire extinguisher suitable for extinguishing gasoline and oil fires, such as carbon tetrachloride, carbon dioxide, foam or powder.

SECTION 47. Dome Covers. After unloading, pipe is inserted into dome of tank car and before any pumping is done, dome shall be tightly covered with set burlap or some other type of cover equally effective.

SECTION 48. Other Restrictions.

- (a) All connections between tank cars and pipelines shall be in good condition and not permit leakage.

- (b) Tank cars shall not be left connected to pipelines except when loading or unloading is going on, and during all such times a competent man shall be present and in charge.
- (c) The presence of flame lanterns, flame switch lights or other exposed flame lights or fires during the process of loading or unloading is prohibited.
- (d) Siding used in connection with tank cars unloading operations shall not be common to other users, or they shall be provided with necessary derails or with warning signs in accordance with section 4, paragraph 697(b) of the Interstate Commerce Commission regulations on the transportation of explosives.
- (e) The unloading of tank cars and all operations in connection therewith shall be in full accord with the rules and regulations of the Interstate Commerce Commission.

SECTION 49. Grounding. Before loading operations begin, tank truck shall be electrically bonded to pipeline by means of a bonding device at loading dock.

SECTION 50. Fencing. The area which embraces the tank gear, including dike and all aboveground piping and pipelines, shall be properly fenced with a metal fence.

SECTION 51. Permits. It shall be unlawful to construct, install or enlarge any tank, pump or piping equipment for the storage or handling of flammable or volatile liquids such as defined in this ordinance without having first obtained a permit therefor. Application for such permits shall be made to the city clerk and shall be accompanied by drawing to scale showing the following:

- (a) Drawings shall show the plot of ground to be utilized and its immediate surroundings on all sides; the complete layout of tanks, loading and unloading docks, equipment and buildings; the capacity of each tank, kind of liquid to be stored; type of tank supports; type of construction of each

building; and all clearances as provided above. In addition, the dimensions of any tank with a capacity of more than 50,000 gallons shall be given.

- (b) Drawings shall show the name of the person, firm or company proposing the installation, the location with respect to city, village or town, and shall name adjacent railroads and streets.
- (c) Drawings shall designate passenger, freight, passing and side tracks and shall show the clearances between tanks and closest passenger tracks, between tracks at point where tank car will be placed for unloading and nearest passenger tracks, and between unloading dock and closest passenger tracks.

SECTION 52. Approval. No such permit shall be issued until the Fire Chief has certified that the contemplated work fully complies with the ordinances of the city.

SECTION 53. Fees. The fees for such permits shall be:

For installation of fuel oil tanks having a capacity of more than 2,000 gallons and less than 20,000 gallons - \$100.00

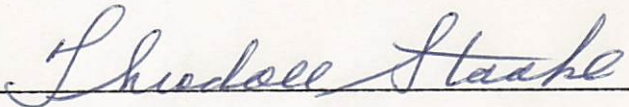
For installation of tanks for storage of gasoline having a capacity of less than 10,000 gallons - \$100.00

For installation of fuel oil tanks having a capacity of 20,000 gallons or more - \$200.00

For installation of gasoline storage tanks having a capacity of 10,000 gallons or over - \$200.00

For installation of tanks for other flammable liquids - \$100.00

PASSED this 1st day of June, 1983.



Village President

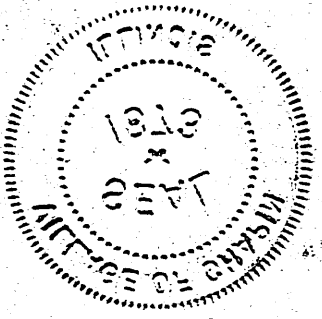
ATTEST:



Village Clerk



(SEAL)



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