

# Kalamazoo County Sanitary Code



KALAMAZOO COUNTY GOVERNMENT

*In the Pursuit of Extraordinary Governance*

Health and Community Services Department



**KALAMAZOO COUNTY SANITARY CODE  
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## **KALAMAZOO COUNTY SANITARY CODE**

### **ARTICLE I: PURPOSE, GENERAL PROVISIONS AND DEFINITIONS**

#### **CHAPTER 1: PURPOSE**

The Kalamazoo County Sanitary Code, herein referred to as the Code, is a codification of the existing rules, regulations and policies, which govern the conditions that affect the environmental health of Kalamazoo County residents and protect the health, safety and welfare of the public.

#### **CHAPTER 2: GENERAL PROVISIONS**

##### **SECTION 2.01: AUTHORITY**

The Kalamazoo County Board of Commissioners hereby adopts the revised Kalamazoo County Sanitary Code pursuant to provisions of Part 127 and Part 24 of the Michigan Public Health Code, being Act 368 of the Public Acts of 1978, as amended, located at Sections 333.12701-333.12771 and Sections 333.2441-333.2442 of the Michigan Compiled Laws; and the “Thomas J. Anderson, Gordon Rockwell Environmental Protection Act of 1970”, Act 127 of the Public Acts of 1970, as amended, being Sections 324.11701-324.11719 of the Michigan Compiled Laws. The Kalamazoo County Board of Commissioners hereby adopts the addition of ARTICLE X: Body Art pursuant to Act 2010 Public Acts 375; MCL 333.13101, as amended. [Revised 2013]

The Kalamazoo County Board of Commissioners hereby adopts the revised Onsite Sewage Treatment and revised Clean Up of Methamphetamine Laboratories Regulations contained in this Code pursuant to the provisions of Part 127 and Part 24 of the Michigan Public Health Code, being Act 368 of the Public Acts of 1978, as amended, located at Sections 333.12701-333.12771 and Sections 333.2441-333.2442 of the Michigan Compiled Laws; and the “Thomas J. Anderson, Gordon Rockwell Environmental Protection Act of 1970”, Act 127 of the Public Acts of 1970, as amended, being Sections 324.11701-324.11719 of the Michigan Compiled Laws. [Revised 2007]

The Kalamazoo County Board of Commissioners hereby adopts the Sewage Disposal, Water Supply and Housing Regulations, contained in this Code pursuant to the provisions of Part 127 and Part 24 of the Michigan Public Health Code, being Act 368 of the Public Acts of 1978, as amended, located at Sections 333.12701-333.12771 and Sections 333.2441-333.2442 of the Michigan Compiled Laws; and the “Thomas J. Anderson, Gordon Rockwell Environmental Protection Act of 1970”, Act 127 of the Public Acts of 1970, as amended, being Sections 324.11701-324.11719 of the Michigan Compiled Laws.

The Kalamazoo County Board of Commissioners hereby adopts the Food Protection Enforcement Policy contained in this Code pursuant to the provisions of the Michigan Food Law of 2000, Act 92 of the Public Acts of 2000.

The Kalamazoo County Board of Commissioners hereby adopts the Noncommunity Water Supply Regulations contained in this Code pursuant to the provisions of Act 399 of the Public Acts of 1976, as amended, being Sections 325.1001-325.1023 of the Michigan Compiled Laws; and pursuant to the provisions of the Administrative Procedures Act, Act 306 of the Public Acts of 1969, as amended, being Sections 24.201-24.313 of the Michigan Compiled Laws.



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The Kalamazoo County Board of Commissioners hereby adopts the Public Swimming Pool Water Quality Testing Regulations contained in this Code pursuant to the provisions in Part 24 of the Michigan Public Health Code, being Act 368 of the Public Acts of 1978, as amended, located at Sections 333.2441-333.2442 of the Michigan Compiled Laws; and Part 125 of the Michigan Public Health Code, being Act 368 of the Public Acts of 1978, as amended, located at Sections 333.12501-333.12563 of the Michigan Compiled Laws.

### **SECTION 2.02: JURISDICTION**

The Department shall administer and enforce this Code throughout all of Kalamazoo County except for those areas within the territorial boundaries of a governmental unit that has lawfully adopted and enforces regulations equal to or more stringent than those contained in this Code.

### **SECTION 2.03: RIGHT OF ENTRY AND INSPECTION**

The Department may inspect or investigate any dwelling, property, issue, thing, premise, person, record, vehicle, incident or event, in order to administer and enforce this Code.

No person shall refuse to allow the Department, or the Department's designated representative, after proper identification, to inspect any premise at reasonable hours of the day, nor shall any person unlawfully hinder, oppose or resist the Department, or the Department's authorized representative, in the discharge of the Department's duty and the protection of the public health. Sections 2241-2247 of Act 368 of the Public Acts of 1978, as amended, being sections 333.2441-333.2447 of the Michigan Compiled laws, apply to an inspection or investigation made by the Department or his/her authorized representative.

### **SECTION 2.04: INTERFERENCE WITH NOTICES**

No person shall remove, mutilate or conceal any notice or placard posted by the Department except by written permission of the Department.

### **SECTION 2.05: ABATEMENT OF PUBLIC HEALTH NUISANCES**

Nothing stated in this Code shall limit the power of the Department's legal authority to order the immediate and complete abatement of a public health nuisance that is harmful to the environment or a menace to the public's health, safety or welfare.

### **SECTION 2.06: FEE SCHEDULE**

The Kalamazoo County Board of Commissioners shall establish the fees charged for services and registration/permit applications identified in this Code by adopting a written Fee Schedule at a regular or special meeting of the Board of Commissioners. The Kalamazoo County Board of Commissioners may revise the Fee Schedule by adopting a written amendment to the Fee Schedule at a special or regular meeting of the Board of Commissioners.

### **SECTION 2.07: VALIDITY AND SEVERABILITY**

The County of Kalamazoo declares that the requirements and the various parts, sections, and clauses of this Code are valid. If a court of competent jurisdiction determines that any part, sentence, paragraph, section or clause is unconstitutional or invalid, the remaining parts, portions and provisions of this Code shall remain in full force and effect.



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### **SECTION 2.08: OTHER LAWS AND REGULATIONS**

This Code supplements the rules and regulations duly enacted by the Michigan Department of Agriculture and Rural Development (MDARD), Michigan Department of Environmental Quality (MDEQ) and the Michigan Department of Community Health (MDCH); laws of the State of Michigan relating to public health; and federal laws relating to public health. This Code supersedes inconsistent or conflicting local regulations or ordinances.

### **SECTION 2.09: EFFECTIVE DATE**

This Code shall take effect 45 days after the Kalamazoo County Board of Commissioners adopts the Code at a regular or special meeting of the Board of Commissioners unless the Board of Commissioners specifically provides for the Code to take effect on a date more than 45 days after the Board of Commissioners adopts the Code.

### **SECTION 2.10: REPEAL OF OTHER REGULATIONS**

Subject to the provisions of SECTION 2.11 of this Code, all other Codes, Ordinances and Regulations and parts of Codes, Ordinances and Regulations, which conflict with the provisions of this Code, are repealed.

### **SECTION 2.11: PRE-EXISTING VIOLATIONS**

Any act, situation or condition of premises or things which, when created or first allowed to exist, violated any provision of the existing Kalamazoo County Sanitary Code, shall continue to be a violation of this Code if a similar section or provision is a part of this Code. Any action, issuance of permit, or maintenance of a condition that was mandatory, under the provisions of the chapters now repealed, shall continue to be required if the same or similar provision is contained in this Code.

### **SECTION 2.12: INJUNCTIVE PROCEEDING**

Notwithstanding the existence or pursuit of any other remedy, the Department, without posting bond, may maintain an action in a court of competent jurisdiction for the entry of an injunction or other process against any person to restrain, prevent, or correct violations of this regulation.



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### **CHAPTER 3: DEFINITIONS**

#### **SECTION 3.01: ALTERNATIVE ONSITE TREATMENT SYSTEM**

“Alternative Onsite Treatment System” means any onsite sewage treatment system other than the following: a holding tank, septic tank with soil absorption tile trenches or drainbeds, stoneless chamber or tubing, mound system, dry wells or other system as approved by the Department.

#### **SECTION 3.02: ALTERNATOR VALVE**

“Alternator Valve” means a watertight device that switches effluent flow from one soil absorption system to another separate soil absorption system and allows alternate periods of loading and resting.

#### **SECTION 3.03: APPEAL**

“Appeal” means a request for a hearing to review facts and/or actions in connection with the public enforcement of this Code.

#### **SECTION 3.04: APPROVED**

“Approved” means the Department, based on duly promulgated public health rules, regulations and technical data, has determined that a mechanical device, system or piece of equipment is acceptable for its intended use at the time of inspection.

#### **SECTION 3.05: AVAILABLE PUBLIC SANITARY SEWER SYSTEM**

“Available Public Sanitary Sewer System” means a public or municipal sanitary sewer system located in a right-of-way, easement, highway, street or public way which crosses; adjoins or abuts upon a property and which is located within 200 feet, at the nearest point of a dwelling in which sanitary sewage originates.

#### **SECTION 3.06: BAFFLE**

“Baffle” means a component of septic tanks which prevent damage to the soil absorption system by reducing effluent agitation as sewage enters the septic tank, and by preventing solids from flowing out of the tank to the soil absorption system; a concrete baffle, sanitary tee, vented elbow, and an effluent filter are forms of baffles.

#### **SECTION 3.07: BASEMENT**

“Basement” means the portion of a building that is located partly underground and at least half of its clear floor-to-ceiling height is below the average grade of the adjoining ground surface.

#### **SECTION 3.08: BEDROOM**

“Bedroom” means a room designed primarily for sleeping or a room expected to routinely provide sleeping accommodations for occupants. A bedroom may or may not contain a closet.

#### **SECTION 3.09: BLACKWATER**

“Blackwater” means all solids and liquids emanating from a toilet, urinal, or bidet.



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### **SECTION 3.10: BUILDING**

“Building” means any structure or portion thereof used, in whole or in part, as a home, residence or work place.

### **SECTION 3.11: CHECK VALVE**

“Check Valve” is a mechanical device that only allows liquid to flow in one direction.

### **SECTION 3.12: CONTINUING EDUCATION**

“Continuing Education” means a form of ongoing learning and/or informational exchanges to promote professional development on a specific topic as approved by the Department.

### **SECTION 3.13: CONTINUING EDUCATION UNIT (CEU)**

“Continuing Education Unit (CEU)” means a measurement of one CEU is equivalent to one hour of education unless otherwise approved by the Department.

### **SECTION 3.14: CHRONIC VIOLATION**

“Chronic Violation” as used in ARTICLE VI of this Code, means a specific violation that is observed during a routine inspection, is documented, is corrected, and recurs on three out of five consecutive routine inspections, but the violation is corrected after each inspection.

### **SECTION 3.15: CONTINUOUS VIOLATION**

“Continuous Violation” as used in ARTICLE VI of this Code, means a specific violation that is observed during a routine inspection, is documented, and persists on the next two follow up inspections without correction (Example- routine/follow-up/follow-up.).

### **SECTION 3.16: CUT AND FILL OR FILL SOIL ABSORPTION SYSTEM**

“Cut and Fill” or “Fill Soil Absorption System” means a type of soil absorption system where soils or materials may be removed to a specific depth and replaced to a specific level with approved fill material prior to installing the soil absorption system.

### **SECTION 3.17: DEPARTMENT OR HEALTH OFFICER**

“Department” or “Health Officer” means the director or acting director of the Kalamazoo County Health and Community Services Department and/or his or her authorized representative.

### **SECTION 3.18: DETENTION BASIN**

“Detention Basin” means a reservoir, which temporarily contains storm water runoff and releases it gradually into a watercourse or storm water facility.

### **SECTION 3.19: DEVIATION**

“Deviation” means written or verbal approval to alter from the onsite sewage treatment system permitting criteria contained in ARTICLE II of this code.



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### **SECTION 3.20: DOSING TANK OR PUMP CHAMBER**

“Dosing Tank” or “Pump Chamber” means a watertight manufactured container which retains the overflow to or effluent from a septic tank until discharged to a selected point by a pump.

### **SECTION 3.21: DRAINBED**

“Drainbed” means a soil absorption system consisting of a distribution system of perforated sewer pipes that lie over six inches layer of stone.

### **SECTION 3.22: DRY WELL OR BLOCK TRENCH**

“Dry Well” or “Block Trench” means an underground enclosure connected to the outlet of a septic tank constructed of concrete blocks, bricks, pre-cast material or similar material, loosely laid with open joints and surrounded with stone to allow the surrounding soil to directly absorb septic tank effluent.

### **SECTION 3.23: DWELLING OR DWELLING UNIT**

“Dwelling” or “Dwelling Unit” means any house, building, structure, shelter, or portion thereof used, in whole or in part, as a home, residence, or living and sleeping place for one or more human beings.

### **SECTION 3.24: EFFLUENT**

“Effluent” means sewage, water, or other liquid, partially or completely treated or in its natural state, flowing out of a septic tank, soil absorption system, or other treatment system or system component.

### **SECTION 3.25: EFFLUENT FILTER**

“Effluent Filter” means a device designed for installation at the outlet pipe of a septic tank or dosing chamber that serves to filter out solids and limit the amount of suspended solids that may otherwise reach the soil absorption system.

### **SECTION 3.26: ENGINEERED SYSTEM**

“Engineered System” means an onsite sewage treatment system which has stringent specifications and is typically designed by an engineer or other qualified designer and may or may not be alternative sewage treatment systems. A pressure-dosed system is an example of an engineered system.

### **SECTION 3.27: EXTERMINATION**

“Extermination” means the control and elimination of insects, rodents, or other pests by eliminating their harborage places; by removing, or making inaccessible, materials that may serve as their food; by poisoning, spraying, fumigating or trapping; or by any other recognized and legal elimination method approved by the Department.

### **SECTION 3.28: FAILURE**

“Failure” means a condition existing within an onsite sewage treatment system which prohibits the system from functioning in a sanitary manner which may include, but is not limited to, the discharge of effluent onto the ground surface, into surface water, into groundwater or backing up into the dwelling or premise.



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### **SECTION 3.29: FILL SAND**

“Fill Sand” means the type of material to be used when creating a mounded or cut and fill or fill soil absorption system. Fill sand shall meet Michigan Department of Transportation 2NS specifications or be otherwise approved by the Department.

### **SECTION 3.30: FILTER FABRIC**

“Filter Fabric” means textile of relatively small mesh or pore size material used to allow water to pass through while keeping sediment out.

### **SECTION 3.31: GARBAGE**

“Garbage” means all animal, fruit, or vegetable waste matter connected with the preparation, use, cooking, or storing of food. Garbage also means any can, container or wrapper waste connected with the preparation, use, cooking, or storing of food. Garbage also means any kitchen and table wastes of every kind, except waste water; and all other refuse or waste matter of any nature or kind, mixed, handled or included therewith.

### **SECTION 3.32: GARBAGE CONTAINER**

“Garbage Container” means a reasonably weather tight and watertight container used to temporarily store garbage and which prevents access by vermin and rodents.

### **SECTION 3.33: GRAY WATER**

“Gray Water” means all domestic water except blackwater. Gray water includes, but is not limited to, waste water from laundry, bathing, cooking, cleaning, sink waste and dish washing activities.

### **SECTION 3.34: HABITABLE BUILDING**

“Habitable Building” means any building, or other dwelling, suitable for human residency, occupation or use.

### **SECTION 3.35: HABITABLE ROOM**

“Habitable Room” means a room or enclosed floor space suitable for human living, sleeping, cooking, or eating purposes. A habitable room does not include bathrooms, water closet compartments, laundries, pantries, foyers, or communicating corridors, closets and storage spaces.

### **SECTION 3.36: HEADER PIPE**

“Header Pipe” means a sewer pipe that is typically perpendicular to lateral piping (down the length of a trench or drainbed).

### **SECTION 3.37: HEALTH DEPARTMENT**

“Health Department” means the Kalamazoo County Health and Community Services Department.



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### **SECTION 3.38: HEALTH AND COMMUNITY SERVICES DEPARTMENT**

“Health and Community Services Department” means the Kalamazoo County Health and Community Services Department.

### **SECTION 3.39: HEAT EXCHANGE WELL**

“Heat exchange well” means a well for the purpose of utilizing the geothermal properties of earth formations for heating or cooling.

### **SECTION 3.40: HIGH GROUNDWATER**

“High Groundwater” means the elevation that water is found at or where there is evidence of long-term saturation in the soil material when performing a site evaluation. High groundwater may be determined by the presence of redoximorphic features, otherwise known as mottling.

### **SECTION 3.41: HOLDING TANK**

“Holding Tank” means a watertight manufactured container without a discharge outlet; equipped with an alarm device; and used solely for temporarily holding waste water.

### **SECTION 3.42: IMMINENT HAZARD OR SUBSTANTIAL HAZARD**

“Imminent Hazard” or “Substantial Hazard” as used in ARTICLE VI of this Code, means a condition that constitutes an immediate threat to public health including, but not limited to, a food establishment’s loss of power; a food establishment’s loss of its water supply; the backup of sewage wastes into the building; severe structural damage to the food service establishment building; an ongoing foodborne illness caused by the conditions in the food establishment; a severe vermin infestation that threatens the integrity of the establishment’s food supply; or any other condition which, in the Department’s opinion, constitutes an immediate threat to the public’s health. Also see, Michigan Administrative Code Rule 325.101(1)(f).

### **SECTION 3.43: INDUSTRIAL WELL**

“Industrial well” means a well that is used to supply water for industrial processes, fire protection, or similar nonpotable uses.

### **SECTION 3.44: INFESTATION**

“Infestation” means the presence, within or around a dwelling, of vermin, rodents or other pests.

### **SECTION 3.45: IRRIGATION WELL**

“Irrigation well” means a well that is used to provide water for plants, livestock, or other agricultural processes.

### **SECTION 3.46: MOTTLING**

“Mottling” means a condition found in soil profiles that consist of irregular spots of varying color number and/or size. Mottling indicates water is seasonally present or has been historically present at the elevation where the features are found. Mottling can also be an indication of poor aeration and impeded drainage.



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### **SECTION 3.47: MOUND SYSTEM**

“Mound System” means a soil absorption system constructed at a prescribed location and elevation above the surrounding ground surface in a prepared area of acceptable material.

### **SECTION 3.48: MULTIPLE DWELLING**

“Multiple Dwelling” means any building or structure, which contains two or more dwelling units.

### **SECTION 3.49: NATIVE SOIL**

“Native Soil” means the top layer of the earth's surface, consisting of rock and mineral particles, often mixed with organic matter and unaltered by mechanical processes (excluding accepted agricultural practices).

### **SECTION 3.50: NEW CONSTRUCTION SITE**

“New Construction Site” is a vacant site where a new dwelling or business is being constructed. This can also be a site that previously had a dwelling or business that has been completely rebuilt, including the foundation. The local building authority may also make a determination that a re-construction is deemed new rather than remodeling or renovation.

### **SECTION 3.51: NUISANCE**

“Nuisance” means any annoying, obnoxious or unpleasant condition, which results from a violation of any provision of this Code.

### **SECTION 3.52: ONSITE SEWAGE TREATMENT SYSTEM (OSTS) OR SEWAGE DISPOSAL SYSTEM**

“Onsite Sewage Treatment System” or “Sewage Disposal System” means the methods and devices including septic tanks, holding tanks, pump chambers, piping, pumps, vents, distribution systems and soil absorption systems used to treat and/or dispose of sewage emanating from a dwelling or premise.

### **SECTION 3.53: OPERATION AND MAINTENANCE**

“Operation and Maintenance” means a process to insure an onsite sewage treatment system is maintained and functional in the manner it was intended so that it remains protective of the environment and human health, safety and welfare.

### **SECTION 3.54: OPERATOR**

“Operator” means any person who owns or has charge, care or control of a building, or part thereof, in which dwelling units are rented.

“Operator” as used in ARTICLE IIIa of this code means any person who owns or has charge, care or control of a public swimming pool.



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### **SECTION 3.55: OWNER AND OCCUPANT**

“Owner” means the owner of title or record of any property, premise or business. “Occupant” means any person(s) occupying or in possession of any property or premise. Financial institutions holding titles of foreclosed properties are considered to be the “Owner”.

### **SECTION 3.56: PERMEABILITY**

“Permeability” means the characteristic that enables soil to transmit water or air, measured as the number of inches per hour that water moves through the soil. Terms describing permeability are very slow, slow, moderately slow, moderate, moderately rapid, rapid and very rapid.

### **SECTION 3.57: PERSON**

“Person” means an individual, firm, partnership, co-partnership, cooperative, party, public or private corporation, personal representative, society, association, receiver, trustee, assignee, club, joint venture, estate, trust, governmental unit or agency and/or any other group or combination acting as a unit, and the individuals constituting such group or unit or any other legal entity.

### **SECTION 3.58: PLUMBING**

“Plumbing” means the pipes, fixtures or other apparatus in a dwelling which transport water, gas or sewage.

### **SECTION 3.59: PREMISE**

“Premise” means any tract or parcel of land where persons may reside, are employed or congregate and includes any other dwellings, structures, buildings or accessory structures located on the parcel.

### **SECTION 3.60: PRIORITY FOUNDATION ITEM**

“Priority Foundation Item” means a provision in the Michigan Food Law, Act 92, of the Public Acts of 2000, as amended, whose application supports, facilitates or enables one or more priority items.

### **SECTION 3.61: PRIORITY ITEM**

“Priority Item” means a provision in the Michigan Food Law, Act 92, of the Public Acts of 2000, as amended, whose application contributes directly to the elimination, prevention or reduction to an acceptable level, hazards associated with foodborne illness or injury and there is no other provision that more directly controls the hazard.

### **SECTION 3.62: PRIVY OR outhouse**

“Privy” or “Outhouse” means a building or other dwelling not connected to a public sewer system or a properly installed and operating onsite sewage treatment system, and is used for the temporary or permanent reception, disposition, or storage of human excrement. A self-contained portable, temporary restroom facility is not a privy or an outhouse.



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### **SECTION 3.63: PROPERTY**

“Property” means anything that may be the subject of ownership or possession, including, but not limited to, land, buildings, structures, recreational vehicles (motorized and non-motorized campers, trailers, motor homes), and personal belongings.

### **SECTION 3.64: PUBLIC SWIMMING POOL**

“Public Swimming Pool” means an artificial body of water used collectively by a number of individuals primarily for the purpose of swimming, wading, recreation, or instruction and includes equipment, dressing, locker, showers and toilet rooms. Public swimming pools include those which are for parks, schools, motels, camps, resorts, apartments, clubs, hotels, mobile home parks, subdivisions, and the like. A pool or portable pool located on the same premises with a one, two, three or four family dwelling and for the benefit of the occupants and their guests, a natural bathing area such as a stream, lake, river, or man-made lake, an exhibitor’s swimming pool built as a model at the site of the seller and in which swimming by the public is not permitted, or a pool serving not more than four motel units is not a public swimming pool.

### **SECTION 3.65: PUMP AND HAUL**

“Pump and Haul” means a method of sewage collection and disposal for sewage generated at a dwelling or premise, which utilizes onsite storage in a holding tank. The stored sewage is pumped as necessary by an approved tanker vehicle and transported to an approved offsite-receiving facility for final disposal.

### **SECTION 3.66 RECHARGE WELL**

“Recharge well” means a well used to discharge groundwater into an aquifer.

### **SECTION 3.67: REDOXIMORPHIC FEATURES**

“Redoximorphic Features” means a type of mottling that is associated with periodic moisture in a soil.

### **SECTION 3.68: REPLACEMENT ONSITE SEWAGE TREATMENT SYSTEM**

“Replacement Onsite Sewage Treatment System” means new construction, expansion or modification of an onsite sewage treatment system at a property that previously contained an onsite sewage treatment system.

### **SECTION 3.69: RESERVE AREA**

“Reserve Area” means a designated location of sufficient area to install a replacement onsite sewage treatment system on a piece of property.

### **SECTION 3.70: RETENTION BASIN**

“Retention Basin” means a storm water management basin that captures storm water runoff and does not discharge directly to a surface water body. The water is "discharged" by infiltration or evaporation.



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### **SECTION 3.71: RUBBISH**

“Rubbish” means waste materials, except garbage. Rubbish includes, but is not limited to, paper, rags, cartons, boxes, wood excelsior, rubber, leather, tree branches, yard trimmings, tin cans, metals, mineral matter, glass crockery, plastics and the residue from the burning of wood, coal, coke, and other combustible material.

### **SECTION 3.72: SANITARY TEE OR TEE**

“Sanitary Tee” or “Tee” means a “T” shaped fitting that allows sewage to flow into the horizontal outlet pipe by entering through the lower end of a vertical pipe. A sanitary tee is a form of a baffle.

### **SECTION 3.73: SEPTIC TANK**

“Septic Tank” means a watertight manufactured container used to receive and store sewage emanating from a dwelling or premise, which biologically treats the organic matter and discharges the resulting clarified liquids.

### **SECTION 3.74: SEWAGE**

“Sewage” means a combination of all domestic and/or organic waste from any dwelling or premise where persons reside, are employed or congregate. Sewage includes, but is not limited to, gray and blackwaters. Sewage does not include discharge water from water softeners; backwash from swimming pool or spa filters; or run-off from roofs, footings or storm drains.

### **SECTION 3.75: SEWER OR SEWER PIPE**

“Sewer” or “Sewer Pipe” means a watertight conduit for carrying sewage.

### **SECTION 3.76: SOIL ABSORPTION SYSTEM**

“Soil Absorption System” means that part of an onsite sewage treatment system that distributes septic tank effluent through an arrangement of tile trenches, drainbeds, dry wells or other approved method(s) by the Department and which allows the surrounding soil to absorb and treat the effluent.

### **SECTION 3.77: SOIL EVALUATION**

“Soil Evaluation” means a process to determine and evaluate soil properties. Soil evaluations are used to estimate percolation rates and to identify absorption capabilities of the soil.

### **SECTION 3.78: SOIL LOADING RATE**

“Soil Loading Rate” means the volume of effluent in gallons per square feet that is applied to a soil surface and is dependent on soil texture, structure, and effluent quality.

### **SECTION 3.79: STONE**

“Stone” means natural, washed and graded stone, aggregate, crushed stone or crushed rock used as filter material in a soil absorption system approved by the Department.



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### **SECTION 3.80: STONELESS CHAMBER OR STONELESS TUBING**

“Stoneless Chamber” or “Stoneless Tubing” means a soil absorption system of chambers or tubing that is installed directly in an excavation of open soil and does not use stone. Stoneless soil absorption systems consist of two or three feet wide chambers or eight or ten inch diameter tubing covered with filter fabric laid in trenches that are generally two feet to three feet in width.

### **SECTION 3.81: STRUCTURE**

“Structure” means any built or constructed item attached to the ground.

### **SECTION 3.82: TEST WELL**

“Test Well” means a well that is used to obtain information on groundwater quantity, quality, or aquifer characteristics for the purpose of designing or operating a water supply well.

### **SECTION 3.83: TRENCH**

“Trench” means a soil absorption system consisting of individual distribution systems of perforated sewer pipe that lies over a minimum of six inches to a maximum of 24 inches of stone. Trenches are generally two feet to three feet in width.

### **SECTION 3.84: UL**

“UL” means Underwriter Laboratory.

### **SECTION 3.85: UNACCEPTABLE WATER QUALITY**

“Unacceptable Water Quality” means public swimming pool water, which contains a detectable presence of Coliform bacteria or pathogenic organisms.

### **SECTION 3.86: UNSANITARY CONDITIONS**

“Unsanitary Conditions” as used in ARTICLE VI of this Code means conditions which constitute a violation(s) of Act 92, of the Public Acts of 2000, as amended at the time of an inspection but do not constitute priority item or priority foundation item but which are violations.

### **SECTION 3.87: VARIATION**

“Variation” means approved modification(s) of required conditions of this Code.

### **SECTION 3.88: VENTED ELBOW**

“Vented Elbow” means an inverted “L” shaped fitting that allows sewage into the horizontal outlet pipe by entering through the lower end of “L” shaped pipe. The elbow is vented at the top so as not to act as a siphon. Vented elbow is an example of a baffle.



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### **SECTION 3.89: VIOLATION**

“Violation” means a violation of the food code which the MDARD has determined is more likely than other violations to contribute to food contamination, illness to humans, or environmental health hazard, as per SECTION 1105 (g) of Act 92, of the Public Acts of 2000 as amended, Michigan’s Food Law of 2000 as amended.

### **SECTION 3.90: WATER SUPPLY SYSTEM**

“Water Supply System” means a well, pump, and pumping equipment.

### **SECTION 3.91: WATER SUPPLY WELL**

“Water Supply Well” means a well used to provide potable water for drinking or domestic purposes.

### **SECTION 3.92: WELL**

“Well” means an opening in the surface of the earth for the purpose of removing fresh water for a water supply well, test well, irrigation well, recharge well, industrial well, and heat exchange well.



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### **CHAPTER 4: RULES OF CONSTRUCTION**

The following rules of construction and guidelines apply to the administration, enforcement and interpretation of the provisions of this Code.

#### **SECTION 4.01: INTERPRETATION**

- a. When consistent with the context in which they appear in the text of this Code:
  - i. Words used in the present tense include the future; and,
  - ii. Words in the singular number include the plural number; and,
  - iii. Words in the plural number include the singular number.
- b. The word “shall” is always mandatory, and not merely directory.
- c. “He” shall also mean “she” or “it” and “she” shall also mean “he” or “it”.
- d. Words importing the singular number may be extended to embrace the plural number, and words importing the plural number may be applied and limited to the singular number.
- e. Words and terms not defined in this Code shall be interpreted in accordance with their commonly understood meaning.
- f. If any provision of this Code is susceptible to more than one meaning, it shall be construed or interpreted so as to provide the greatest protection to the health, safety and welfare of the public.
- g. The regulations in this Code, and any future amendments of those regulations, are intended to be consistent with applicable Federal and State laws and shall be construed, when necessary, to achieve that consistency. If any provision of this code is susceptible to more than one meaning, it shall be construed or interpreted so as to be consistent with Federal and State laws.

#### **SECTION 4.02: HEADINGS**

The Headings of the ARTICLES, CHAPTERS and SECTIONS of this Code are provided for reference purposes only. If any discrepancy or disagreement exists between a Heading and the text of an ARTICLE, CHAPTER or SECTION, the text shall control.

#### **SECTION 4.03: MEANING OF CERTAIN WORDS**

Whenever the words “dwelling”, “dwelling unit”, or “premises” appear in this Code, they shall be construed as though they were followed by the words “or any part thereof.”



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### **ARTICLE II:      ONSITE SEWAGE TREATMENT REGULATIONS**

#### **CHAPTER 5:       PURPOSE AND APPLICABILITY**

##### **SECTION 5.01:     SINGLE FAMILY DWELLINGS, DUPLEXES AND OUTBUILDINGS**

ARTICLE II of the Code pertains to: 1) the installation of onsite sewage treatment systems for single family dwellings, duplexes and outbuildings in areas where public, municipal or community sanitary sewer facilities are unavailable; 2) establishing the minimum criteria pertaining to onsite sewage treatment system design, permit issuance and installation approval of onsite sewage treatment systems and; 3) the operation and maintenance of such onsite sewage treatment systems.

##### **SECTION 5.02:     PUBLIC AND SEMI-PUBLIC ONSITE SEWAGE TREATMENT SYSTEMS**

Onsite sewage treatment systems for dwellings other than single family homes, duplexes or outbuildings serviced with sanitary facilities shall comply with the design, construction and use specifications contained in the MDEQ document entitled "Michigan Criteria for On-site Wastewater Treatment".

##### **SECTION 5.03:     CONSTRUCTION AND MAINTENANCE OF PRIVIES AND SIMILAR TOILET DEVICES**

- a.    A person shall construct and maintain all privies and other toilets in accordance with Act 368 of the Public Acts of 1978, as amended.
- b.    No person shall maintain, construct or move a privy onto any premise where a public sanitary sewer is available, or if state or local ordinances prohibit the use of a privy on the premise.
- c.    Location of privies in relation to other dwellings and property lines: a privy shall serve only one dwelling; it shall be located at least 100 feet from all dwellings other than the dwelling it serves; and it shall be at least ten feet from any property line.
- d.    A privy is not considered a sewage treatment system.

##### **SECTION 5.04:     PUMPING OF SEPTAGE**

A person engaged in the business of pumping sewage and/or effluent shall obtain the appropriate license. The licensing and handling of domestic Septage is regulated under the 2004 Public Act 381, which amended Part 117, Septage Waste Servicers, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended. The MDEQ administers the Septage program.



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### **CHAPTER 6:        ONSITE SEWAGE TREATMENT SYSTEM PERMITTING CRITERIA**

#### **SECTION 6.01:       CONNECTIONS REQUIRED**

All toilets, urinals, lavatories, sinks, bathtubs, showers, laundry washing facilities and any other premise plumbing fixture from which sewage emanates, must be connected to an approved onsite sewage treatment system, or to a public sanitary sewer.

#### **SECTION 6.02:       PERMITS**

An owner or owner's designated representative shall obtain a permit from the Department before constructing or replacing any onsite sewage treatment system or part thereof as required.

#### **SECTION 6.03:       APPLICATION FOR PERMIT**

- a. An application for a permit to construct or replace an onsite sewage treatment system shall be completed in full and signed by the owner or the owner's designated representative.
- b. The submittal must include the required fee as specified in the current Fee Schedule as approved by the Kalamazoo County Board of Commissioners.
- c. The Department shall review the application and conduct a site evaluation before issuing a permit. The Department may also require the property owner or the property owners' designated representative to submit substantiating data including, but not limited to: engineering drawings, soil analysis, soil borings, soil loading rates, groundwater and flow elevations, existing or proposed well locations and detailed plans for the proposed onsite sewage treatment system.
- d. A permit shall not be required for servicing or replacing with similar mechanical or electrical parts to an approved existing onsite sewage treatment system, for pumping of the septic or holding tank contents, the installation of an approved outlet filter device or alternator valve where the soil absorption area is not disturbed, replacement of a broken lid or addition of a riser to any tank. The applicant should contact the Department to determine if other servicing requires a permit.

#### **SECTION 6.04:       PRIORITY OVER BUILDING PERMITS**

No municipality, township or other agency shall issue a building permit for a building with plumbing, or allow commencement of construction on land where public sewers are unavailable unless the Department has issued a permit to construct an onsite sewage treatment system on that land.

#### **SECTION 6.05:       TERM OF PERMITS, RENEWAL**

A permit to construct or replace an onsite sewage treatment system is valid for a one year period beginning on the date of issuance. No construction shall continue after the permit expires. Upon written request, the Department may extend the permit, at no additional charge, for an additional six months.



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### **SECTION 6.06: VOID PERMITS**

The Department may declare a permit to construct or replace an onsite sewage treatment system void and terminated if:

- a. The applicant did not provide accurate information on the permit application; or,
- b. If major filling, excavating, paving or flooding has disturbed the area designated for the soil absorption system; or,
- c. Public sanitary sewer becomes available after the issuance of the permit, or a renewal of the permit; or,
- d. A water supply well, or other feature that may impact the onsite sewage treatment system, encroaches on any required isolation distance; or,
- e. The property owner, or the property owner's designated representative changes or increases the scope of the authorized project without first securing the Department's approval of the change or increase in scope; or,
- f. The conditions on the permit are not followed.

### **SECTION 6.07: TRANSFER OF PERMITS**

If a property owner transfers title of the property to another person prior to the expiration of a permit to construct or replace an onsite sewage treatment system on the property, the Department may transfer the permit to the new owner of the property if the new owner submits a written request to the Department for the transfer. The new owner must also agree, in writing, not to change the scope of the project without the Department's approval. If the Department authorizes the transfer of a permit, the act of transferring the permit does not change the permit's expiration date.

### **SECTION 6.08: DENIAL OF PERMITS**

- a. The Department may deny an application for a permit to construct or replace an onsite sewage treatment system if the Department determines that one or more of the following conditions exist:
  - i. Where a public sewer is available to the property, as defined by Act 368, P.A. of 1978 as amended and this Code; or,
  - ii. Where the proposed location of a septic tank would render the septic tank inaccessible for cleaning or inspection purposes; or,
  - iii. Where the property to be served by the onsite sewage treatment system is too small to allow for proper isolation distances between the onsite sewage treatment system which includes the replacement area and any existing or proposed water wells, or surface waters; or,
  - iv. Where the property lacks sufficient drainage area and/or replacement area; or,



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- v. Where the property's high groundwater and/or mottling is 24 inches or less of the natural ground surface elevation for installation of an onsite sewage treatment system on new construction sites; or,
  - vi. Where the Department determines that the property's soil characteristic and/or physical conditions are unsatisfactory for the treatment of sewage effluent; or,
  - vii. Where conditions exist upon the property, or may occur upon the property, which may endanger the public health or the environment; or,
  - viii. Where the proposed site is subject to flooding and/or is included within the 100-year flood plain.
- b. If the Department denies an application for a permit to construct or replace an onsite sewage treatment system, the Department shall provide the applicant with a written explanation of the reasons why the Department denied the application. The denial shall include options for filing an appeal and/or processes for appealing professional disagreements on soil classification, high groundwater, and mottling in the soil.

### SECTION 6.09: BUILDING SITE ACCEPTANCE CRITERIA

The Department shall consider the following information to determine whether a property provides a suitable location for the construction of an onsite sewage treatment system:

- a. Soil Survey: The United States Department of Agriculture, Soil Conservation Service, soil classification and interpretations for the property, including any use limitations pertaining to the soil classification.
- b. Soil Evaluation: The Department may conduct soil borings or require excavations within the area proposed for the onsite sewage treatment system to determine if high groundwater and/or mottling and soil formations comply with this Code. Additionally, in order to inspect and evaluate the property's soil conditions and type, the Department may direct the property owner or the owner's designated representative to conduct soil borings or excavations.
- c. High Groundwater and soil classification for new onsite sewage treatment system installations shall meet the following requirements:
  - i. The property's high groundwater or mottling shall be greater than 24 inches below the natural ground surface; and,
  - ii. The soil classification shall be acceptable within 20 feet of the ground surface and a cut and fill or fill soil absorption system can be designed; and,
  - iii. Four feet of vertical isolation to high groundwater or mottling can be maintained.
- d. High Groundwater and soil classification for replacement onsite sewage treatment system installations shall meet the following requirements:
  - i. The property's high groundwater or mottling is below the ground surface; and,



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- ii. The soil classification is acceptable or a cut and fill or fill soil absorption system can be designed; and,
  - iii. Four feet of vertical isolation to high groundwater or mottling can be maintained.
- e. Filled Ground: The Department may approve the use of filled ground or “made land” as the site for an onsite sewage treatment system. The Department may require mechanical compaction of the filled ground as a condition of approval of the use of filled ground or “made land” as the site for an onsite sewage treatment system. In no event shall the Department allow filled ground or “made land” to be located over unstable soil, peat, muck or organic material. All fill below the absorption area shall meet the requirements of SECTION 7.07 of ARTICLE II.
- f. Replacement Area for New Construction Sites: A portion of the property shall be set aside or put on reserve for the installation of a future replacement onsite sewage treatment system. The replacement area shall:
  - i. Meet other site acceptance criteria contained in SECTION 6.09 of ARTICLE II;
  - ii. Be located in an area that will be accessible in the future; and,
  - iii. Meet all setback and sizing requirements of ARTICLE II.
- g. Slopes: If the property’s slopes exceed 12%, the Department shall not issue a permit to construct or replace an onsite sewage treatment system until the property owner or the property owner’s designated representative reduces the slopes in the location proposed for the absorption system to an acceptable level through the use of “land balancing” and maintains an adequate area for final grading to deter surface water from ponding. The Department may choose to issue a permit with land balancing requirements as a condition of the permit.

### **SECTION 6.10: INSPECTION AND VERIFICATION REQUIRED**

- a. After completing the installation of all septic tanks, dosing tanks, sewer pipes, and soil absorption system, and before covering any portion of the onsite sewage treatment system or placing any portion of the onsite sewage treatment system into operation, the permit holder or the permit holder’s designated representative shall request that the Department inspect the onsite sewage treatment system.
- b. If the Department approves the onsite sewage treatment system (OSTS), the permit holder or the permit holder’s designated representative shall cover the OSTs within 72 hours of the approval unless the Department requires the permit holder or the permit holder’s designated representative to cover the OSTs sooner. If the OSTs is not properly covered within 72 hours or the time specified by the Department, OSTs approval may be withheld or withdrawn.



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- c. The Department may waive the requirements for a final inspection if the permit holder or the permit holder's designated representative provides the Department with proper verification that the permit holder or the permit holder's designated representative installed the onsite sewage treatment system in accordance with the conditions of the permit. Proper verification may include an affidavit from a registered onsite sewage treatment system installer that he or she installed the onsite sewage treatment system in accordance with the conditions of the permit. Approval of a final inspection waiver must be granted before system is covered.

### **SECTION 6.11: PREMISE OCCUPANCY**

- a. No person shall occupy, offer for occupancy, or allow the occupancy of any premise, which does not have an adequate onsite sewage treatment system, which treats all forms of sewage and/or effluent in a sanitary manner.
- b. All onsite sewage treatment systems permitted after the effective date of this Code shall be in accordance with the provisions of this Code.
- c. No owner or occupant of a premise shall cause or allow the discharge or deposit of sewage and/or effluent upon the surface of the ground, or into any lake, river, county drain, retention or detention basin, storm sewer or stream, or any other body of water.

### **SECTION 6.12: CONDEMNATION OF EXISTING INSTALLATIONS**

The Department may declare any premise constructed or maintained in violation of any provision of ARTICLE II of this Code as unfit for human habitation; order the vacating of the premise and post placard on the dwellings exterior walls which declare the premise unfit for human habitation. The Department may condemn any premise where sewage or effluent emanates when:

- a. Sewage or effluent is exposed to, or drains onto, the surface of the ground; or,
- b. Sewage or effluent drains into any lake, river, county drain, retention or detention basin, storm sewer or stream, or any other body of water; or,
- c. Sewage or effluent seepage may endanger a public or private water supply; or,
- d. An improperly constructed, located or maintained onsite sewage treatment system creates a nuisance.

### **SECTION 6.13: CONNECTION TO PUBLICLY OPERATED SANITARY SEWER SYSTEM**

Pursuant to Act 368 of the Public Acts of 1978, as amended, a local city, village or township can require an existing premise to connect to available public sanitary sewers. Availability is declared as a matter of legislative determination by the governing local city, village, or township. Available public sanitary sewer system means a public sanitary sewer system located in a right of way, easement, highway, street, or public way which crosses, adjoins, or abuts upon the property and passing not more than 200 feet at the nearest point from a dwelling in which sanitary sewage originates. Additionally, the Department shall require a premise to connect to available public sewer if the premise's onsite sewage treatment system creates a public health problem. Public health problems shall include, but not be limited to, the discharge of sewage and/or effluent onto the surface of the ground and/or sewage backing up into a premise. If a premise's onsite sewage treatment system creates a public health problem, the Department may issue a written order directing the owner of the premise to pump the sewage and/or effluent immediately and/or to immediately



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connect to the public sewer, but in any case the premise's owner must connect to the public sanitary sewer within 18 months of the issuance of the Department's order to connect to the public sanitary sewer. After the premise connects to the public sanitary sewer, the Department may require the premise's owner to pump out the septic tank and dry well/block trench and then fill the empty septic tank and dry well/block trench with sand or other suitable materials. Pumping and filling of discontinued onsite sewage treatment system components serves the public interest by preventing ground collapse.

### **SECTION 6.14: DEVIATIONS**

The Department shall thoroughly consider the physical limitations of the property; the protection of the public health, the environment; and the prevention of any nuisance, before approving the construction of an individual onsite sewage treatment system.

The Department may permit, upon receipt of a written request, a deviation from the application of the requirements of ARTICLE II, of this Code when the physical size or shape of a premise renders the application of the permit requirements. The Department is also authorized to issue a deviation at time of permit issuance or at final onsite sewage treatment system inspection without a written request if deemed necessary.

The Department may approve other methods of sewage treatment than the minimum requirements established in this Code upon submission and approval by the Appeals Board. The Department shall keep a written record of applications for deviations; the granting or denial of the application; and any conditions imposed upon the construction or use of an individual onsite sewage treatment system.



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### CHAPTER 7: REQUIREMENTS FOR THE CONSTRUCTION AND MAINTENANCE OF INDIVIDUAL ONSITE SEWAGE TREATMENT SYSTEMS

The requirements set forth in this section establish minimum criteria and shall be met unless the Department determines that more restrictive requirements are needed or when other laws and regulations would be violated.

#### SECTION 7.01: SEWER PIPE

- a. Material: All sewer pipes used in the construction and operation of an individual onsite sewage treatment system shall meet the requirements of the Michigan Plumbing Code or other nationally recognized uniform plumbing code.
- b. Sewer lines shall meet the following:
  - i. All sewer lines located under any drive, parking area or utility right of way (i.e. overhead lines) must be double cased with schedule 40 PVC, SDR 35 PVC or similar materials as approved by the Department.
  - ii. Any buried gravity sewer pipe shall be located at least ten feet from any well, spring, or potable water line.
  - iii. Any buried pressure sewer pipe shall be located at least 50 feet from any non-public well, spring, or potable water line or 75 feet from a Type III well.
  - iv. Inlet and outlet sewer lines to the septic tank shall be constructed of cast-iron soil pipe with sealed joints, schedule 40 PVC, SDR 35 PVC or similar materials approved by the Department.
- c. Size: Sewer pipes more than four feet from the outside wall of any premise shall be four inch diameter pipe.
- d. Grade: The sewer pipe from the dwelling to a septic tank shall be at a grade of at least one eighth inch per foot but not more than one half inch per foot unless the Department approves of a different grade. If a major change in grade is necessary from the elevation that the sewer line exits the dwelling and enters the septic tank, the grade of one eighth inch per foot but not more than one half inch per foot shall be installed a minimum of ten linear feet immediately prior to the septic tank.

#### SECTION 7.02: SEPTIC TANKS

- a. Location:
  - i. A septic tank shall be located in an area that allows access to the septic tank for cleaning or inspection purposes.
  - ii. No dwelling or structure shall be placed over a septic tank if the dwelling or structure makes the septic tank inaccessible for cleaning and inspection purposes.
  - iii. The septic tank shall be placed in a level position, on a firm base, and backfilled so that settling is minimized.



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### b. Inspection Port, Riser and Cover:

- i. Septic tanks with more than a 500-gallon capacity shall contain two inspection ports, one located at the tank's outlet and one located at the tank's inlet.
- ii. Septic tanks with a 500-gallon capacity, or less, shall contain at least one inspection port.
- iii. When a new or replacement onsite sewage treatment system permit is issued, it shall be required to install a riser on one inspection port per compartment for both the existing and/or new septic tanks. The construction of the inspection port and riser for all installations shall meet the following minimum requirements:
  - (1) The inspection port to the tank shall be a minimum of 15 inches in diameter; and,
  - (2) The riser and cover shall be of watertight construction; and,
  - (3) The cover shall have acceptable protection with a padlock, a twist lock or other cover requiring a special tool for removal, a weight of 60 pounds or a similar tamper resistant, childproof type device approved by the Department; and,
  - (4) The cover shall be within three inches of the finished grade.

### c. Inlets and Outlets:

- i. All septic tank sewer pipe connections shall be watertight and sturdy.
- ii. The bottom of the septic tank inlet line shall be at least two inches above the operating water level of the septic tank.
- iii. The septic tank inlet pipe must permit gas above the liquid level to pass through the inlet pipe and out the vent pipe, which serves the sewer pipe and leads to the septic tank.
- iv. The septic tank outlet shall permit withdrawal of liquid from the middle third of the septic tank and prevent the escape of floating or settled solids with use of an approved sanitary tee or baffle, constructed of schedule 40 PVC, SDR 35 PVC or similar materials as approved by the Department.
- v. The septic tank outlet must have a minimum scum clearance of eight inches.

### d. Construction material:

- i. Septic tank(s) shall be constructed of sound and durable materials, which do not excessively corrode or decay, and which are structurally capable of supporting the stress to which they will be subjected.



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- ii. Septic tank(s) shall be watertight and the materials used to construct the septic tank shall prevent water from surrounding soils from flowing into the septic tank. Acceptable materials include reinforced concrete, cement blocks, or similar materials approved by the Department.
- e. Number and Capacities: Septic tanks installed for premises after the effective date of this Code shall have a liquid capacity equal to, or greater than, the average volume of sewage flowing into it during any 24 hour period; or 1000 gallons, whichever is larger.
- f. Flow is based on 200 gallons per day per bedroom. A home with three bedrooms or less shall require 1000 minimum gallon capacity and an additional 500 gallons for each bedroom up to five bedrooms. Each bedroom over five in a dwelling shall require an additional 250 gallons. In all cases, a home with a garbage disposal requires an additional 500 gallons of capacity.
- g. Existing Septic Tanks: When a replacement onsite sewage treatment system permit is issued, the existing septic tank shall be brought into compliance as set forth in this Code. If an existing 1500 gallon tank is not compartmentalized and is in sound condition and meets isolation requirements, it may be used, but risers and other appurtenances must be updated.

### SEPTIC TANK SIZES FOR SINGLE AND TWO FAMILY DWELLINGS

Total Number of Bedrooms (Flow in Gallons Per Day)	Minimum Septic Tank Capacity (Without Garbage Grinder) (Gallons)	Minimum Septic Tank Capacity (With Garbage Grinder) (Gallons)
0-3 (600 or less)	1000	* 1500
4 (601 – 800)	* 1500	* 2000
5 (801 and greater) or more	* 2000 for 5 bedrooms, plus 250 for each bedroom over 5	* 2500 for 5 bedrooms, plus 250 for each bedroom over 5

\* Flows of 800 gallons or more per day and/or dwellings with a garbage disposal must use multiple or compartmental septic tanks for new construction. The outlet of all compartments and septic tanks shall have a baffle which allows for the drawing of liquid from the middle 1/3rd of the septic tank. In compartmental septic tanks, the first compartment must equal 2/3rds of the total capacity of the septic tank. In multiple tank settings, larger tanks and compartments must precede smaller tanks and compartments.

### SECTION 7.03: DOSING TANK, ALTERNATOR VALVE AND PUMPS

- a. Onsite sewage treatment systems with flow and soil conditions requiring greater than 1200 square feet (1201 square feet and greater) of soil absorption system for a drained or trench shall include the following:
  - i. Dosing tanks and/or pumping chambers equipped with a riser, which comply with provisions of SECTION 7.02.b. of ARTICLE II.



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- ii. An effluent filter installed prior to the pump, following manufactures installation requirements.
- b. Alternator Valve: The Department may require the installation of an alternator valve. If the Department requires the installation of an alternator valve, the following criteria shall be met:
  - i. The construction and design must be watertight, schedule 40 PVC or similar materials as approved by the Department. Paddle valves shall be prohibited.
  - ii. A riser to grade shall be installed over the alternator valve to allow future access.
  - iii. If an alternator valve will be installed and the onsite sewage treatment system includes a pump, the pressure line from the pump shall be connected to a minimum of ten feet of four inch schedule 40 PVC or SDR 35 PVC piping that will be installed prior to the valve unless pressure rated gate valves are utilized. This ten feet section of pipe shall be installed from the pump chamber pressure line to the alternator valve to attain gravity feed in and out of the alternator valve.
  - iv. When entering and exiting an approved alternator valve, the sewer line exiting an alternator valve shall be a minimum of two feet in length; this pipe can then be connected to an approved crush pipe or a header pipe leading to the absorption area which must be isolated three feet from the alternator valve.
- c. Effluent Pumps: If the Department requires the installation of a pump, then following criteria shall be met:
  - i. Effluent pump shafts and the pump's fasteners shall be constructed of corrosion proof material such as stainless steel or PVC. An effluent pump shall meet system design requirements and have a minimum pumping capability that permits the discharge of 25% of estimated daily flow in 20 minutes.
  - ii. The pump shall be UL approved.
  - iii. The effluent pump discharge line shall have an acceptable union that allows for the easy removal of the pump from the dosing chamber.
  - iv. All effluent pump connections shall be watertight.
  - v. All effluent pump electrical connections shall be enclosed in conduit and meet applicable electrical codes.
  - vi. A check valve shall be installed on the discharge line unless otherwise permitted by the Department.

### SECTION 7.04: SOIL ABSORPTION SYSTEMS

- a. Location: A soil absorption system shall not be constructed under any drive, parking area, paved surface, building, or in an area subject to surface water collection.
- b. Trenches shall be the preferred soil absorption system design over drainbeds. Drainbeds may be used in lieu of trenches based upon topographical and space constraints on a property.



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Trenches and drainbeds shall be designed to achieve maximum distribution and minimize depth. Drainbed shall be designed to achieve maximum length and shall not be designed to exceed 30 feet in width.

- c. Distribution System: The soil absorption system shall be constructed of perforated sewer and drainpipe or other materials certified as complying with MDEQ standards. Soil absorption system stone shall be covered with filter fabric prior to the placement of final soil cover.

### SECTION 7.05: STONE REQUIREMENTS

Stone used in a soil absorption system shall meet Michigan Department of Transportation (MDOT) 6A requirements or equivalent and be approved by the Department. When in the opinion of the Department the stone installed does not meet MDOT 6A requirements, a sieve analysis may be required by the Department at the cost of the contractor installing the onsite sewage treatment system. Float stone and limestone shall be prohibited.

### SECTION 7.06: MINIMUM REQUIRED ISOLATION DISTANCES IN FEET

Specific Land Division, Subdivision and/or Site Condominium isolation requirements in accordance with Section 105(g), Act 288 of 1967, as amended and/or with Section 71a of Act 59, Public Acts of 1978, as amended may be more stringent. Additionally, distances to non-residential wells and water supplies must meet applicable laws and rules.

From	To Septic Tank (Horizontal Feet)	To Soil Absorption System (Horizontal Feet from Edge of Stone)
Well *	50	50
Property Line	5	5
Basement Wall/Crawl Space Below Grade	10	15
Walkout/Crawl Space Above Grade/Slab	5	5
Water Line *	10	10
Dry Well	5	5
Bank/Drop Off	10	20
Lake/Stream	50	50
High Groundwater and Mottling	--	4 (Vertical)
In ground Swimming Pools	10	15
Septic Tank	--	5
Closed Storm Drain	10	10
Open Storm Drain or Storm Drywell	25	25
Retention Basin / Detention Basin / County Drain	50	50
Alternator Valve	3	3



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\* See SECTION 7.01b for isolation of gravity and pressurized sewer lines to residential wells, spring or potable water line

### **SECTION 7.07: CRITERIA FOR FILL SAND**

- a. To ensure both the performance and longevity of an onsite sewage treatment system, fill sand that will be approved for the soil absorption system must meet the following criteria:
  - i. MDOT 2NS gradation or equivalent and approved by the Department.
  - ii. Placement of fill sand shall be done in manner that will eliminate or minimize soil compaction within the prescribed soil absorption area.
- b. When in the opinion of the Department the fill sand does not meet MDOT 2NS requirements or equivalent, a test may be required by the Department at the cost of the contractor who installed the onsite sewage treatment system.

### **SECTION 7.08: CRITERIA FOR CUT AND FILL OR FILL SOIL ABSORPTION SYSTEMS**

- a. A cut and fill or fill soil absorption system may be required when:
  - i. Unacceptable soils (clay, silt, mottled clay, mottled silt, marl) are within 20 feet of the ground surface and a minimum of 1 foot of consecutive native permeable soils found below the impermeable soil layer; and/or,
  - ii. Removal of heavier permeable soils (loam, sandy clay loam, silty clay loam) is deemed necessary by the Department.
- b. When a cut and fill or fill soil absorption system design is necessary the following criteria must be met:
  - i. Removal of the impermeable soils to the permeable soils level will be required and approved fill sand shall be placed down to the permeable soil as needed to allow soil absorption system installation.
  - ii. The sizing of the soil absorption system area for these types of site conditions will be based upon the application rate for the most restrictive consecutive native permeable soils within four feet of the bottom of the soil absorption system however, the minimum size for a soil absorption system will be no less than 900 square feet for a drainbed or trench soil absorption system or 600 square feet for a drywell soil disposal system.



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### SECTION 7.09: CRITERIA FOR MOUND/RAISED DRAINBED SYSTEMS

- a. A mound/raised drainbed system may be required when:
  - i. Impermeable soils are observed for a replacement system.
  - ii. High groundwater or mottling restricts the system from being installed below grade.
  - iii. A mound/raised drainbed system is deemed necessary by the Department.
- b. When a mound/raised drainbed system design is necessary the following criteria must be met:
  - i. Bottom of the absorption system must be isolated a minimum of four feet from mottling.
  - ii. The sizing of the soil absorption system area for these types of site conditions will be based upon the application rate for the most restrictive permeable soils within four feet of the bottom of the soil absorption system however, the minimum size for a soil absorption system will be no less than 900 square feet for a drainbed or trench soil sewage treatment system.
  - iii. Soil cover/taper must be loam or lighter material.
  - iv. Side slope must be at least four to one taper; the existing grade below the side slope area must be cleared of trees and structures prior to installation.

### SECTION 7.10a: TRENCH CONSTRUCTION SPECIFICATIONS

Permit conditions may be more stringent. These specifications are for traditional gravity-fed systems, not engineered or pressure-dosed systems.

Item	Minimum	Maximum
Number of Trenches	2	--
Pipe Size (Non-pressurized)	4 Inches	--
Pipe Size (Pressurized)	1.5 Inches	--
Length of Trench	--	100 Feet
Width of Trench	18 Inches	36 Inches
Space Between Trenches (Stone to Stone)	4 Feet	--
Amount of Soil Cover Over Filter Fabric	6 Inches	24 Inches
Slope of Pipe	Level	2 Inches per 100 Feet
Stone Under Pipe Trench	6 Inches	24 Inches
Stone Over Pipe and Level Across Trench	2 Inches	--



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### SECTION 7.10b: SIZING CRITERIA FOR TRENCHES

Standard sizing for trenches is based on flow of 200 gallons per bedroom. The soil loading rate falls within the ranges for moderate to strong soil structure presented in United States Environmental Protection Agency (USEPA) Onsite Wastewater Treatment Systems Manual for residential strength waste. Soil loading rate should be further evaluated for alternative and engineered systems.

Type of Soil	Soil Loading Rate (Gallons Per Day Per Square Feet)	Size of Tile Trench (Square Feet Per Bedroom)
Sand, Gravel or Loamy Sand	1.0	200
Sandy Loam	0.80	250
Loam	0.67	300
Sandy or Silty Clay Loam	0.57	350
Clay Loam, Clay and Silt	--	Unacceptable
Mottled Silt, Mottled Clay, Marl	--	Unacceptable

- a. All trench soil absorption systems must be at least 600 square feet in size.
- b. Loam, Sandy Clay Loam, Silty Clay Loam, soils may be required to be removed from the soil absorption system area as a permit requirement. See SECTION 7.08.

### SECTION 7.11a: DRAINBED CONSTRUCTION SPECIFICATIONS

Permit conditions may be more stringent. These specifications are for traditional gravity-fed systems, not engineered or pressure-dosed systems.

Item	Minimum	Maximum
Distance Between Lines (On Center)	--	36 Inches
Distance Between Lines and Earth Wall (edge to edge)	--	18 Inches
Pipe Diameter (Non-pressurized)	4 Inches	--
Pipe Diameter (Pressurized)	1.5 Inches	--
Slope of Pipe	Level	2 Inches per 100 Feet
Stone Under Pipe in Bed	6 Inches	6 Inches
Stone Over Pipe and Level Across Bed	2 Inches	--
Space Between Drainbeds (Stone to Stone)	4 Feet	--
Amount of Soil Cover Over Filter Fabric	6 Inches	24 Inches



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### SECTION 7.11b: SIZING CRITERIA FOR DRAINBEDS

Standard sizing for drainbeds is based on a flow of 200 gallons per bedroom. The soil loading rate falls within the ranges for moderate to strong soil structure presented in USEPA Onsite Wastewater Treatment Systems Manual for residential strength waste. Soil loading rate should be further evaluated for alternative and engineered systems.

Type of Soil	Soil Loading Rate (Gallons Per Day Per Square Feet)	Size of Drainbed (Square Feet Per Bedroom)
Sand, Gravel or Loamy Sand	0.80	250
Sandy Loam	0.67	300
Loam	0.57	350
Sandy or Silty Clay Loam	0.50	400
Clay Loam, Clay and Silt	--	Unacceptable
Mottled Silt, Mottled Clay, Marl	--	Unacceptable

- a. All drainbed soil absorption systems must be at least 800 square feet in size.
- b. Removal of Loam, Sandy Clay Loam and Silty Clay Loam soils may be required from the soil absorption system area as a permit requirement. See SECTION 7.08, ARTICLE II.

### SECTION 7.12: STONELESS CHAMBERS OR STONELESS TUBING

The installation of stoneless chambers or stoneless tubing soil absorption systems may be considered by the Department based upon site limitations such as access to the property with large equipment, soil conditions, slopes or other site factors. The Department will also consider requests for stoneless chambers or tubing from a property owner. Prior to installing a stoneless chamber soil absorption system, a Kalamazoo County registered sewage contractor must first obtain a certification from the manufacturer to install the specific stoneless product. Manufacturer Certification is not required to install a stoneless tubing soil absorption system. The contractor or product manufacturer must supply the certification information to the Department. All stoneless system shall be installed as per manufacturer's instructions.



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### SECTION 7.13a: STONELESS CHAMBER OR STONELESS TUBING CONSTRUCTION SPECIFICATIONS

Permit conditions may be more stringent.

Item	Minimum	Maximum
Number of Stoneless Trenches	2	--
Length of Stoneless Trenches	--	100 Feet
Space Between Stoneless Trenches	4 Feet	--
Amount of Soil Cover	18 Inches	24 Inches
Slope of Chamber or Tubing	Level	2 Inches per 100 Feet
Risers	Two - 4 Inch risers to grade (1 at each end on each stoneless trench)	--

### SECTION 7.13b: SIZING CRITERIA FOR STONELESS CHAMBERS OR STONELESS TUBING

Type of Soil	Soil Loading Rate (Gallons Per Day Per Square Feet)	Size of Stoneless Chamber/Tubing (Square Feet Per Bedroom)
Sand, Gravel or Loamy Sand	0.80	250
Sandy Loam	0.67	300
Loam	--	Unacceptable
Sandy or Silty Clay Loam	--	Unacceptable
Clay Loam, Clay and Silt	--	Unacceptable
Mottled Silt, Mottled Clay, Marl	--	Unacceptable

- a. The sizing allowance for stoneless soil absorption systems will be specifically as follows:
  - i. Three square feet of soil absorption system area per linear foot of a three feet wide chamber; or,
  - ii. Two square feet of soil absorption system area per linear foot of a two feet wide chamber; or,
  - iii. Two square feet of soil absorption system area per linear foot of a eight inch or ten inch diameter tubing.

### SECTION 7.14: BACKFILLING OF SOIL ABSORPTION SYSTEMS

Soil absorption systems other than drywells shall be backfilled after installation and approval with loam soil texture or material otherwise approved by the Department. Backfilling with soils heavier than loam shall be prohibited.



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### SECTION 7.15: DRY WELL PERMITTING AND CONSTRUCTION SPECIFICATIONS

- a. New Construction Dry Wells: The use of dry wells for onsite sewage treatment system installations for new construction sites will not be allowed.
- b. Replacement Dry Wells: The use of dry wells for a replacement onsite sewage disposal system installation shall be acceptable if there is insufficient area on a property or other atypical site constraints with an existing dwelling to install a trench or drained soil absorption system.
- c. Prior to issuing a deviation permitting the installation of dry wells the Department shall consider factors such as, but not limited to, the following:
  - i. Whether an impermeable barrier or sufficient isolation exists between the installation area and any aquifer; and/or,
  - ii. Drinking water quality in the surrounding area; and/or,
  - iii. Any other factors relating to the protection of groundwater, such as soil texture, residential density and down gradient water use.
- d. Construction Materials:
  - i. Materials utilized for the construction of a dry well shall be durable and shall possess sufficient structural strength to prevent collapse or cave in of the excavation. Acceptable materials include cement blocks, pre-cast concrete or similar materials if approved by the Department.
  - ii. Materials must allow free passage of sewage effluent to surrounding infiltrative surfaces while preventing stone or soil from entering the drywell.
  - iii. Stone used in the installation of a drywell sewage treatment system shall meet the requirements as stated in SECTION 7.05 of ARTICLE II and as outlined on the permit.
- e. Inspection Port:
  - i. Inspection port shall be located on the top of the dry well in order to facilitate inspection.
  - ii. Inspection port shall be made out of material with strength and durability equivalent to that of reinforced concrete and shall be a minimum diameter of 12 inches.
- f. Construction Limitations: eight feet is the maximum permissible distance between the ground surface and the bottom of a drywell unless the Department issues a deviation.



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g. Dry Well Sizes:

Type of Soil	Size Including Bottom and Side Wall Area (Square Feet Per Bedroom)
Sand & Gravel, Loamy Sand	140
Sandy Loam	175
Loam	210
Sandy or Silty Clay Loam	Unacceptable
Clay and Silt	Unacceptable
Mottled Silt, Mottled Clay, Marl	Unacceptable

- h. All dry wells must have at least 420 square feet of soil absorption system area, and the sizing allowance will be specifically as follows:
- 172 square feet for a 3 feet by 10 feet drywell
  - 267 square feet for a 6 feet by 10 feet drywell
  - 125 square feet for a 3 feet by 8 feet drywell
  - 200 square feet for a 6 feet by 8 feet drywell
- i. Pumped onsite sewage treatment systems must have an even number of dry wells if an alternator valve is required.

### SECTION 7.16: PROTECTION OF INFILTRATION SURFACES

- The Department may stop the installation of a soil absorption system when the soils in the installation area are in a wet or saturated condition. The Department may also require allowable specific installation times based upon weather conditions on the permit.
- As a condition of issuing a permit for the installation of an individual onsite sewage treatment system, the Department shall require the permit holder and installer to exercise precautions when excavating, moving machinery or walking in the proposed or permitted soil absorption area, so as to minimize the smearing or compaction or sealing of infiltrative surfaces. Excessive compaction or smearing of soil may be cause for a permit to be voided and rescinded.

### SECTION 7.17: OPERATION AND MAINTENANCE

The owner of a premise, which utilizes an onsite sewage treatment system, shall maintain the onsite sewage treatment system in a satisfactory operating condition at all times. The Department may require additional conditions on a construction permit or require deed restrictions pertaining to required operation and maintenance work that may be necessary by the owner of the property for an existing or newly permitted onsite sewage treatment system. It shall be the owner's responsibility to inform future owners that operation and maintenance requirements exist.



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### **CHAPTER 8:        ONSITE SEWAGE TREATMENT SYSTEM INSTALLER REGISTRATION REQUIREMENTS**

#### **SECTION 8.01:        REQUIRED REGISTRATION AND CONTINUING EDUCATION**

- a. Any person engaging in the business of installing onsite sewage treatment systems, or any parts thereof, within Kalamazoo County, must first secure a certificate of registration from the Department.
- b. A certificate of registration shall be valid from January 1 until December 31 of the current year.
- c. Before the Department issues a person his/her initial certificate of registration, the business owner must achieve a minimum score of 70% on a written examination. The written examination is based on the contents of ARTICLE I and ARTICLE II of this Code. An applicant can retake the test as many times as necessary to achieve the minimum score. A minimum of 24 hours duration is required between taking the test and retaking the test and any subsequent retakes.
- d. After completion of the examination with a passing score and the initial paid registration for a one year period, proof of completion of a minimum of eight continuing education units (CEU's) related to sewage treatment must be submitted to the Department and approved prior to the Department issuing a renewing certificate of registration. A minimum of four CEU's shall be obtained by the business owner and four may be obtained by one or more of the owner's employees. In the case of the owner being the sole operator of the business, all eight CEU's will be earned by the owner.
  - i. Four CEU's shall be available per person by attendance at the Department sponsored annual educational half-day seminar.
  - ii. CEU's are also available by attendance at any sewage related State education training session. It shall be the responsibility of the applicant to submit proof of CEU's to the Department when applying to renew their onsite sewage treatment system installer's registration.
  - iii. Failure to obtain and submit the required eight CEU's after initial registration will result in an onsite sewage treatment system installer's registration not being re-issued until such time the eight CEU's are obtained, submitted and approved by the Department. Retaking the test will not negate the requirement for eight CEU's to be earned prior to re-registration.
- e. A homeowner may install an onsite sewage treatment for their own primary residence and is exempt from the testing and registration requirements.

#### **SECTION 8.02:        SUSPENSION OF REGISTRATION**

- a. The Department may suspend the certificate of registration of any installer who engages in practices that violate the provisions of ARTICLE II of this Code.



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- b. An installer who receives a notice of intended suspension shall have the right to an Informal Hearing, conducted in accordance with ARTICLE VII of this Code, to review the validity of the suspension. The installer must submit a written request for an Informal Hearing to the Department within 30 days of the date the Department mailed the notice of suspension.
- c. If the Department determines an installer's certificate of registration must be suspended, the Department shall provide the installer with a written notice of the suspension; the reason(s) for the suspension; the length of the suspension; and how the installer can request an Informal Hearing to have their registration reinstated.

### **CHAPTER 9: APPEALS**

- a. A permit holder, applicant or designated representative directly affected by the Department's implementation, interpretation and/or enforcement of this Code may file an appeal with the Appeals Board.
- b. An Appeals Board shall exist to provide interpretations and/or exceptions of the provisions of the regulations contained in ARTICLE II of this Code. The Appeals Board shall consist of three members who shall be recommended by the Kalamazoo County Health & Community Services Department to the Kalamazoo County Board of Commissioners for appointment to the Appeals Board. The three members shall consist of: 1) an onsite sewage treatment installer registered in accordance with these regulations; 2) an active builder and member of the Home Builders Association of Greater Kalamazoo; and 3) a resident of Kalamazoo County. The term of office of a Board member shall be three years. The Board of Appeals shall hear any appeal presented in accordance with the rules of procedure established by the Board of Appeals. The Board of Appeals shall furnish the applicant with a written report of its findings and decisions.
- c. Appeals shall be submitted in writing and must be accompanied by the appropriate fee. Appeals shall be addressed to the Kalamazoo County Health & Community Services Department, Environmental Health Manager. Within 60 days of the appeal being submitted, the Board of Appeals shall hold a hearing. The Board of Appeals may grant individual deviations from the requirements of ARTICLE II of the Code for onsite sewage treatment systems for single family residences and duplexes including alternative onsite treatment systems, when the Board of Appeals has adequately determined that all of the following conditions exist: 1) no substantial health hazard or nuisance is likely to occur; 2) compliance with the regulations requirements would result in unnecessary or unreasonable hardship; 3) no state statute or other applicable laws would be violated under such deviation; and, 4) the proposed deviation would provide essentially equivalent protection of the public interest.
- d. In reaching its decision, the Board of Appeals may utilize the hearing procedures set forth for Informal Hearings or Formal Hearings in ARTICLE VII of this Code and the Board of Appeals shall act as the Hearing Officer.



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**CHAPTER 10-12: RESERVED FOR FUTURE USE**



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### **ARTICLE III: WATER SUPPLY REGULATIONS**

#### **CHAPTER 13: PURPOSE**

ARTICLE III of the Code seeks to assure that all wells as defined in this Code are in compliance with Part 127 of Public Act 368 and the provisions of this Code via the review and issuance of a water well drilling permit including final inspection of the water supply system.

#### **CHAPTER 14: GENERAL PROVISIONS**

##### **SECTION 14.01: FACILITIES REQUIRED**

Every building used for human habitation must have an approved water supply well or be connected to a community water supply. The Department shall have the duty and responsibility of approving or denying, upon receiving an Application for a Private/Type III Water Supply Permit, all water supply systems.

##### **SECTION 14.02: WELL CONSTRUCTION**

The construction of water supply systems shall comply with the requirements set forth in the Groundwater Quality Control Rules, Part 127 of Act 368 of the Public Acts of 1978, as amended, being MCL 333.12701-333.12771; Act 399 of the Public Acts of 1976, as amended, being MCL 325.101 et. seq; and/or Part 201 of Act 451 of the public Acts of 1994, as amended, being MCL 324.20101-324.20142.

##### **SECTION 14.03: PERMIT FOR WATER SUPPLY SYSTEMS**

From and after the effective date of this Code, no person shall construct any new water supply well within the County of Kalamazoo unless the owner of the water supply system, or his/her/its representative, obtains a water supply system construction permit from the Department. Additionally, no person shall construct a heat exchange well, industrial well, irrigation well, recharge well, or test well where the installed pumping equipment produces less than 70 gallons per minute without obtaining a water supply system construction permit from the Department.

##### **SECTION 14.04: PRIORITY OVER BUILDING PERMITS**

No municipality, township or other agency shall issue a building permit or otherwise allow commencement of construction on any land which requires the installation of a water supply well unless the Department has issued a Permit to Construct a Water Supply System for that land.

##### **SECTION 14.05: APPLICATION, PERMIT AND FEES**

The Department shall prepare and provide, to all applicants, a standard water supply system construction permit application. Any person who wants to construct a water supply system must submit a signed and completed application (Application for a Private/Type III Water Supply Permit), with the fee contained in the Schedule of Fees, to the Department.



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### **SECTION 14.06: DENIAL OF PERMITS**

After reviewing an Application for a Private/Type III Water Supply Permit, the Department may deny the application or issue a restricted construction permit if the Department determines that one or more of the following conditions exist:

- a. The applicant provided incomplete, inaccurate or false information; or,
- b. The proposed water supply system will not comply with Part 127 of Act 368 of the Public Acts of 1978, as amended, or Act 399 of the Public Acts of 1976, as amended; or,
- c. Where the proposed location of the proposed water supply system is in an area where the MDEQ has issued an advisory against the use of water supply systems; or,
- d. Where the proposed location of the proposed water supply system is within a service area defined by the MDEQ pursuant to R299.5409 as amended unless special well construction techniques or screening of a well at a depth not affected by contamination would allow the well to be isolated from the contamination which resulted in the issuance of an advisory to the establishment of a service area by the MDEQ; or,
- e. Where a water supply system is proposed to be served by groundwater which the Department has knowledge is contaminated or likely to be contaminated by hazardous substance in excess of the residential drinking water criteria unless special well construction techniques or screening of a well at a depth not affected by contamination would allow the well to be isolated from the contamination. Hazardous substance and residential drinking water criteria have the same meaning as when those terms are used in Part 201, Environmental Remediation, of the Natural Resources and Environmental Protection Act, Act 451 of the Public Acts of 1994, as amended, being MCL 324.20101 et seq. When the Department has made such a determination, the Department shall make available to the public, upon request, a map of the area affected by this determination.

### **SECTION 14.07: VOID PERMITS**

The Department may declare a previously issued Permit to Construct a Water Supply System to be null and void for any of the following reasons:

- a. False, inaccurate, or incomplete information was supplied by the permit applicant, permit holder, or their representative; or,
- b. A change in the plans of the permit holder affects the water supply system design, location or use; or,
- c. Current facts, data, or conditions which affect the previously issued permit in a manner that now prevents compliance with this Code or may endanger public health, or degrade groundwater quality; or,
- d. Isolation distances required by this Code cannot be satisfied.



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### **SECTION 14.08:      TERMINATION OF PERMITS; RENEWAL**

A permit issued pursuant to the requirements of the preceding sections shall be valid for one year from the date of issuance. No construction shall continue after the permit expires. Upon written request, the Department may extend the permit, at no additional charge, for an additional six months.

### **SECTION 14.09:      TRANSFER OF PERMITS**

If a property owner transfers title of the property to another person prior to the expiration of a Permit to Construct a Water Supply System, the Department may transfer the permit to the new owner of the property if the new owner submits a written request to the Department for the transfer. The new owner must also agree, in writing, not to change the scope of the project without the Department's approval. Both the original permit holder and the new owner of the land must sign the request to transfer the permit. If the Department authorizes the transfer of a permit, the act of transferring the permit does not change the permit's expiration date.

### **SECTION 14.10:      INSPECTION AND APPROVAL**

The Department shall inspect all new water supply system installations to determine if the construction complies with the provisions of this Code.

### **SECTION 14.11:      NOTICE TO THE MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

The Department shall provide MDEQ with written notice of any modification to, or revocation of, the provisions of ARTICLE III of this Code. No modification or revocation shall take effect until 30 days after the MDEQ receives the notice of the modification or revocation.



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### **CHAPTER 15: VARIATIONS AND APPEALS**

#### **SECTION 15.01: VARIATIONS**

- a. The Department may grant a variation in the tests, standards, or general requirements contained in ARTICLE III of this Code if the Department receives a written application for a variation and the Department determines:
  - i. The strict application of these rules/regulations will result in unnecessary or unreasonable hardship; and,
  - ii. The Department can place conditions upon the variation which will adequately protect the public's health, safety and welfare; and,
  - iii. That the action/inaction of the applicant, or any of the applicant's predecessors in interest, did not cause the need for the variation (e.g. that condition necessitating the variation is not a self-created hardship).
- b. If the Department issues a variance, the Department shall record the variation in writing and include a description of the actual variation; the section of the Code from which the variation was granted; the reasons for granting the variation; and any time limit imposed upon the variation.
- c. Under no circumstances may the Department grant a variation which may jeopardize the public health, safety, or welfare, or which violates any local, state or federal law.

#### **SECTION 15.02: APPEALS**

A person may appeal the Department's denial/suspension of a permit or the denial of an application for a variation under this ARTICLE of the Code pursuant to the provisions contained in ARTICLE VII of this Code. A person may also appeal from the decision contained in a Declaratory Ruling from the Department. Appeals from Declaratory Rulings shall also be conducted in accordance with the provisions of ARTICLE VII of this Code.



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### **ARTICLE IIIa: PUBLIC SWIMMING POOL WATER QUALITY TESTING**

#### **CHAPTER 16a: WEEKLY TESTING; QUARTERLY TESTING; AND UNACCEPTABLE WATER QUALITY**

##### **SECTION 16.01a: WEEKLY TESTING**

All persons, firms, companies or corporations who own, operate or maintain a public swimming pool shall collect water samples from the public swimming pool on a weekly basis unless the public swimming pool qualifies for quarterly testing pursuant to SECTION 16.03a of ARTICLE IIIa. The samples shall be analyzed for total Coliform bacteria levels at the Kalamazoo County Health and Community Services Department Laboratory or a laboratory certified to analyze drinking water by the MDEQ or the USEPA.

##### **SECTION 16.02a: REPORTING SAMPLE RESULTS**

If the public swimming pool operator and/or owner have the water samples tested at a laboratory other than the Kalamazoo County Health and Community Services Department Laboratory, the operator and/or owner shall provide the Department with the results of the water analysis within two business days of the completion of the analysis.

##### **SECTION 16.03a: REDUCED POOL/SPA WATER TESTING FREQUENCY**

Any person, who owns, operates or maintains a public swimming pool may apply to the Department for authorization to reduce the frequency of water sample collection to a quarterly (once every three months) basis. The Department shall permit the person to collect samples on a quarterly basis if the following conditions are met:

- a. The person responsible for operating and maintaining the public swimming pool must maintain a current, valid, Certified Pool Operators Certificate issued by a nationally recognized governing body; or attend an annual training session sponsored by the Department.
- b. The water samples from the public swimming pool for the four weeks immediately preceding the application were negative for total Coliform bacteria.
- c. The public swimming pool is in compliance with all other laws, regulations and rules applicable to the operation of a public swimming pool.
- d. The person responsible for operating and maintaining the public swimming pool must submit a Monthly Pool/Spa Report to the Department. The Monthly Pool/Spa Report must be submitted within ten calendar days after the end of the month to which the report pertains.
- e. If the owner or operator of a public swimming pool has been authorized to reduce the frequency of water sample collection and fails to comply with the conditions set forth in SECTION 16.03a, then the owner or operator shall be informed that weekly water samples in accordance with SECTION 16.01a of this ARTICLE IIIa must be reinstated.



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### **ARTICLE IIIb: WATER SUPPLY REGULATIONS - RESTRICTED ZONES**

#### **CHAPTER 17b: PURPOSE**

The County of Kalamazoo has determined that the use of certain groundwater wells and the water supplies from such wells, for human consumption or other purposes may constitute a public health risk and endanger the safety of the residents of the County. These identified public health risks affect premises that are located on or in the vicinity of sites that are the source, or location, of Contaminated Groundwater, or where there is a known threat from Contaminated Groundwater. The County has determined it is in the best interests of the public health, safety and welfare to prohibit certain uses of groundwater from wells at properties located in the vicinity of such contaminated sites.

#### **CHAPTER 18b: DEFINITIONS SPECIFIC TO ARTICLE IIIb**

##### **SECTION 18b.01: AFFECTED PREMISES**

“Affected Premises” means a parcel of property, which is located within a Restricted Zone.

##### **SECTION 18b.02: APPLICANT**

“Applicant” means a person who applies for the establishment of a Restricted Zone.

##### **SECTION 18b.03: CONTAMINATED GROUNDWATER**

“Contaminated Groundwater” means groundwater that contains concentrations of materials in excess of the residential drinking water criteria established by the MDEQ in operational memoranda or rules promulgated pursuant to Part 201, Environmental Remediation (MCL 324.20101 et seq.), or Part 213, Leaking Underground Storage Tanks (MCL 324.21301a et seq.) of the Natural Resources and Environmental Protection Act, 1994 PA 45 1, as amended, MCL 324.101 et seq.

##### **SECTION 18b.04: GROUNDWATER**

“Groundwater” means underground water within the zone of saturation.

##### **SECTION 18b.05: RESTRICTED ZONE**

“Restricted Zone” means an area or areas described in CHAPTER 19b and 19c of this Code.

##### **SECTION 18b.06: WATER DIVISION**

“Water Division” means the Water Division, or its successor, of the MDEQ.



## **KALAMAZOO COUNTY SANITARY CODE**

### **CHAPTER 19b: RESTRICTED ZONES**

Established Restricted Zones: The following described areas in the County shall be Restricted Zones under this CHAPTER. They may be referred to by reference to the names provided in the caption preceding their descriptions. A map of each Restricted Zone will be located in an appendix to the Kalamazoo County Sanitary Code when applicable.

#### **SECTION 19b.01: GOODWILL COMPANY/MEIJER INC. APPROVED BY KALAMAZOO COUNTY BOARD OF COMMISSIONERS FEBRUARY 2014**

The Restricted Zone affects approximately 42 properties within the City of Kalamazoo. The Restricted Zone is generally bound by Douglas Street on the west, Cadillac Street on the south, Hawley Street on the east and the southern edge of the Christian Life Center parking lot on the north.

#### **SECTION 19b.02: SUMMARY OF GROUNDWATER CONTAMINATION AND ZONE**

Groundwater in the Restricted Zone contains gasoline-related contaminants in concentrations exceeding residential drinking water criteria developed by the Michigan Department of Environmental Quality (MDEQ). The sources of these contaminants are underground storage tanks at two gas station locations near Douglas and Alamo Avenue. The gas station on the northeast corner of this intersection was closed in 1976.

Work has been done in cooperation with the MDEQ since 1996 to investigate the proposed Restricted Zone and determine the most appropriate manner in which to remediate this area. Based on the nature and extent of the ground water impact and the number of affected properties, the MDEQ generally agrees that the most technically and economically feasible closure scenario would rely on the creation of a Restricted Zone to restrict water well installation in the impacted area.

The properties within the Restricted Zone have been provided with municipal water service since the 1930's. Therefore, residents have not been exposed to the impacted ground water through their drinking water. Furthermore, ground water quality will continue to be monitored to confirm that the contaminant plume is stable or shrinking due to natural attenuation and the delineation of the Restricted Zone is sufficient. In the event that ground water monitoring shows that the plume is expanding, the MDEQ and County would be notified accordingly.

#### **SECTION 19b.03: LEGAL DESCRIPTION OF RESTRICTED ZONE**

Description: Part of the Northwest ¼ and the Northeast ¼ of Section 16, Town 2 South, Range 11 West, City of Kalamazoo, Kalamazoo County, Michigan, described as: Commencing at the North ¼ corner of said Section South 01 degrees 00 minutes 50 seconds East 33 feet along the North-South ¼ line of said Section to the South line of West Paterson Street and the Point of Beginning; thence North 89 degrees 59 minutes 38 seconds West 761.91 feet along said South line; thence South 12 degrees 45 minutes 13 seconds West 60.08 feet to a point on the Easterly line of Douglas Avenue, which is 64 feet from its intersection with the South line of West Paterson Street; thence South 23 degrees 42 minutes 43 seconds East 205.97 feet along said Easterly line of Douglas Avenue; thence South 89 degrees 59 minutes 38 seconds East parallel with the North line of said Section, 153.96 feet; thence South 01 degrees 01 minutes 36 seconds East 78.0 feet; thence North 89 degrees 59 minutes 38 seconds West, 121.1 feet to the Easterly line of Douglas Avenue; thence South 23 degrees 42 minutes 43 seconds East along said Easterly line, 1578.61 feet to the Northwest corner of Lot 61, Brown and Hoekstra's Addition, as recorded in Liber 8 of Plats, Page 30; thence North 89 degrees 08 minutes 23 seconds East 46.77 feet along the North line of said Lot to the North-South ¼ line of said Section; thence continuing North 89 degrees 08 minutes 23 seconds East 168.7 feet



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along the North line of Lots 60 and 61 to the Northeast corner of Lot 60 of said Addition; thence North 01 degrees 07 minutes 46 seconds West 132.0 feet to the Southeast corner of Lot 67 of said Addition; thence continuing North 01 degrees 07 minutes 46 seconds West 329.99 feet; thence North 89 degrees 08 minutes 17 seconds East 102.19 feet to the West line of Hawley Street; thence North 01 degrees 00 minutes 50 seconds West, parallel with the North-South  $\frac{1}{4}$  line of said Section, 181.50 feet; thence North 89 degrees 08 minutes 17 seconds East 16.50 feet; thence North 01 degrees 00 minutes 50 seconds

West, parallel with the North-South  $\frac{1}{4}$  line of said Section, 471.17 feet; thence North 01 degrees 01 minutes 36 seconds West 274.01 feet to the Southerly Right-of-Way line of the former Michigan Central Railroad; thence North 36 degrees 34 minutes 54 seconds West 469.45 feet along said Southerly line to the South line of West Paterson Street; thence North 89 degrees 59 minutes 38 seconds West 5.51 feet along said South line to the Point of Beginning. Also including all of Cadillac and Mason Streets and a portion of Conant Street, described as: Commencing at the intersection of the South line of West Paterson Street and Douglas Avenue; thence South 23 degrees 42 minutes 43 seconds East along the Easterly line of Douglas Avenue, 1432.45 feet to the Point of Beginning; thence North 89 degrees 08 minutes 17 seconds East 407.99 feet; thence South 01 degrees 07 minutes 46 seconds East 50.0 feet; thence South 89 degrees 08 minutes 17 seconds West 387.15 feet to the Easterly line of Douglas Avenue; thence North 23 degrees 42 minutes 43 seconds West 54.26 feet along said Easterly line to the Point of Beginning.

### SECTION 19b.04: STREET ADDRESSES WITHIN RESTRICTED ZONE

Cadillac Street: 1109, 1112, 1113, 1116, 1117, 1122

Conant Street: 1102, 1106, 1109, 1110, 1113, 1117, 1128, 1132, 1135, 1136

Douglas Avenue: 732, 736, 740, 744, 748, 802, 806, 810, 814, 904, 912, 1004, 1100, 1114

Hawley Street: 729, 731, 735, 741, 745, 801, 805, 809, 813, 917, 935

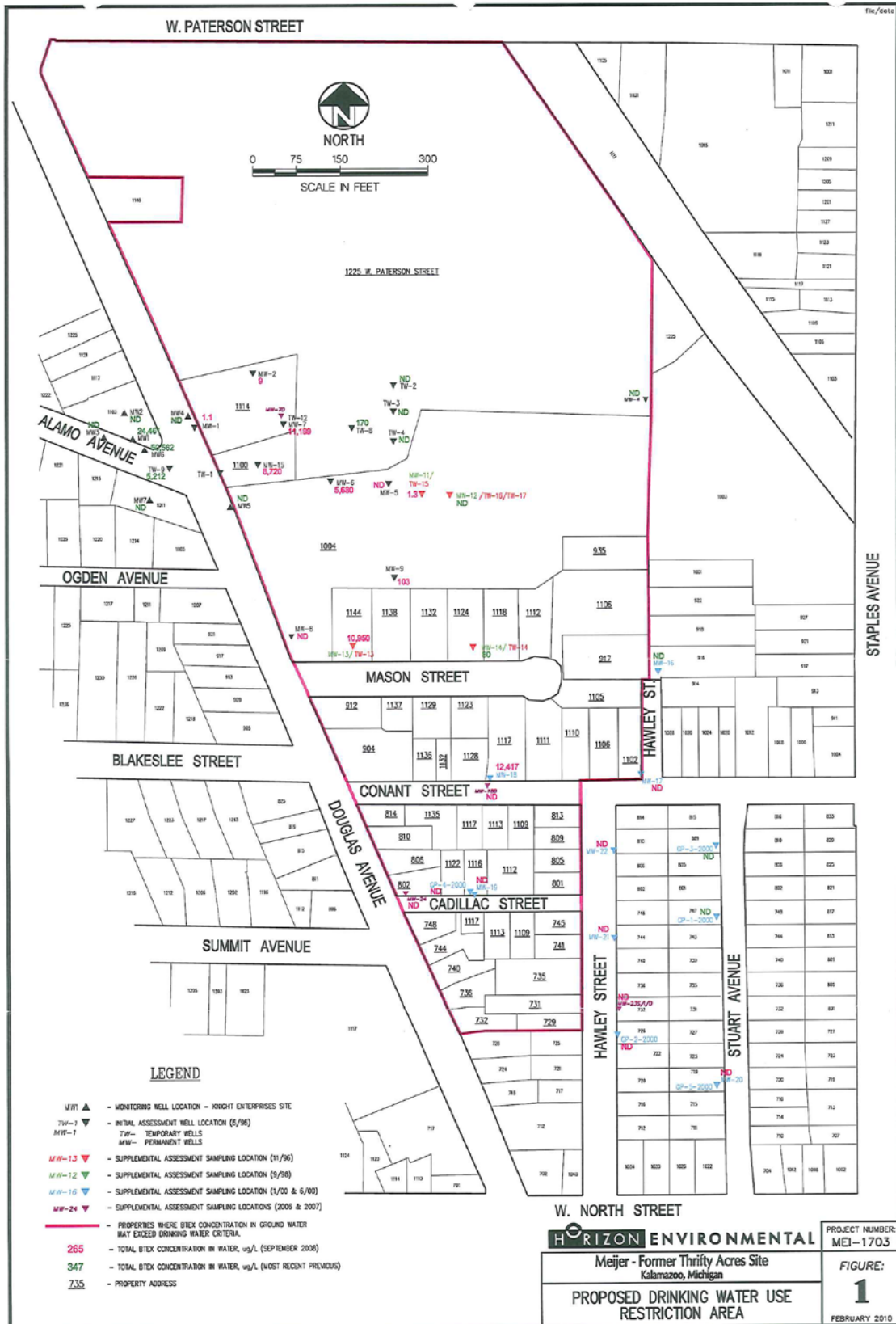
Mason Street: 1105, 1106, 1111, 1112, 1117, 1118, 1123, 1124, 1129, 1132, 1137, 1138, 1144

West Patterson Street: 1225



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## SECTION 19b.05: MAP OF RESTRICTED ZONE





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**SECTION 19c.01: PNEUMO ABEX APPROVED BY KALAMAZOO COUNTY BOARD OF COMMISSIONERS FEBRUARY 2014**

**SECTION 19c.02: SUMMARY OF GROUNDWATER CONTAMINATION AND ZONE**

Chlorinated solvents are present in soil and light non-aqueous phase liquid (LNAPL) beneath the Parker Facility at 2220 Palmer Avenue, Kalamazoo, Michigan. Parker acquired the Facility from Pneumo Abex LLC (Pneumo Abex) in 1996. Pneumo Abex used industrial oils, lubricants, and solvents (including chlorinated solvents that contain perchloroethene [PCE], 1,1,1-trichloroethane [TCA], and trichloroethene [TCE]) for their industrial operations. The following contaminants of concern (COC) are determined to have migrated off-Site at concentrations that exceed the Michigan Department of Environmental Protection (MDEQ) Part 201 Generic Residential Drinking Water Clean-up Criteria: chloroethane (CA); 1,1-dichloroethane (1,1-DCA); 1,2-DCA; 1,1-dichloroethene (1,1-DCE); cis-1,2-DCE; TCA; TCE; and vinyl chloride (VC).

Pneumo Abex has conducted several soil and groundwater remediation activities at the Facility under the supervision and to the satisfaction of the MDEQ. The contaminant source abatement activities include soil excavations, LNAPL recovery, soil vapor extraction, enhanced in-situ bioremediation, and addition of backfill amendments for enhanced degradation of residual COCs.

In addition, several natural attenuation processes have been identified at the Site that have reduced COC concentrations and are expected to continue to reduce COC concentrations, restrict the migration of dissolved COCs, and eliminate toxicity by degrading COCs to ethene and ethane. Pneumo Abex has demonstrated to the satisfaction of MDEQ that these natural microbiological mechanisms are active at the Facility and are expected to continue to restrict the migration of dissolved contaminants, reduce concentrations, and eliminate toxicity.

The GURZ will serve as an institutional control until the remediation is completed. Groundwater within the GURZ cannot be used for human consumption until the COC concentrations are attenuated to levels that meet the applicable MDEQ Part 201 criteria. The GURZ comprises approximately 398 parcels in the southeastern portion of Kalamazoo Charter Township and the eastern portion of the City of Kalamazoo.

**SECTION 19c.03: LEGAL DESCRIPTION OF RESTRICTED ZONE**

PART OF THE EAST HALF OF SECTION 23, PART OF THE WEST HALF OF SECTION 24, PART OF THE SOUTHEAST QUARTER OF SECTION 24, PART OF THE NORTH HALF OF SECTION 25, AND PART OF THE EAST HALF OF SECTION 26, TOWNSHIP 2 SOUTH, RANGE 11 WEST, IN THE CITY OF KALAMAZOO AND KALAMAZOO TOWNSHIP, KALAMAZOO COUNTY, MICHIGAN, DESCRIBED AS: COMMENCING AT THE EAST QUARTER CORNER OF SAID SECTION 26; THENCE SOUTH 00°49'21" WEST 33.01 FEET TO THE SOUTH RIGHT OF WAY LINE OF MILLER ROAD AND THE POINT OF BEGINNING OF THE LAND HEREIN DESCRIBED; THENCE NORTH 89°19'33" WEST ON SAID SOUTH RIGHT OF WAY LINE AND PARALLEL WITH THE EAST AND WEST QUARTER LINE OF SAID SECTION 26 A DISTANCE OF 824.68 FEET; THENCE NORTH 00°49'21" EAST 1123.59 FEET TO THE SOUTH RIGHT OF WAY LINE OF PALMER AVENUE; THENCE NORTH 89°13'33" WEST ON SAID SOUTH RIGHT OF WAY LINE 582.43 FEET TO THE WEST RIGHT OF WAY LINE OF FACTORY STREET; THENCE NORTH 00°48'40" EAST ON SAID WEST RIGHT OF WAY LINE 861.00 FEET TO THE SOUTH RIGHT OF WAY LINE OF LANE BOULEVARD; THENCE NORTH 89°13'28" WEST ON SAID SOUTH RIGHT OF WAY LINE 226.77 FEET TO THE WEST RIGHT OF WAY LINE OF SAID FACTORY STREET; THENCE NORTH 00°52'47" EAST ON SAID WEST RIGHT OF WAY LINE 732.51 FEET TO THE



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NORTH RIGHT OF WAY LINE OF REED STREET; THENCE SOUTH 89°10'56" EAST ON SAID NORTH RIGHT OF WAY LINE 743.97 FEET TO THE SOUTHERLY EXTENSION OF THE WEST RIGHT OF WAY LINE OF SCHUSTER AVENUE; THENCE NORTH 00°58'05" EAST ON SAID WEST RIGHT OF WAY LINE EXTENDED AND ON SAID WEST RIGHT OF WAY LINE 1206.01 FEET; THENCE NORTH 00°41'49" EAST ON SAID WEST RIGHT OF WAY LINE 1040.88 FEET TO THE NORTH RIGHT OF WAY LINE OF LAKE STREET; THENCE SOUTH 81°10'48" EAST ON SAID NORTH RIGHT OF WAY LINE 186.71 FEET TO THE WESTERLY RIGHT OF WAY LINE OF AMVET PARKWAY (BUSINESS LOOP 1-94); THENCE NORTH 01°24'38" EAST ON SAID WESTERLY RIGHT OF WAY LINE 39.79 FEET; THENCE NORTHWESTERLY 733.09 FEET ON SAID WESTERLY RIGHT OF WAY LINE AND ON A 2161.83 FOOT RADIUS CURVE TO THE LEFT WHOSE CHORD BEARS NORTH 08°18'15" WEST 729.58 FEET TO THE EAST RIGHT OF WAY LINE OF SAID SCHUSTER AVENUE; THENCE NORTH 01°27'16" EAST AND ON SAID EAST RIGHT OF WAY LINE EXTENDED 1034.83 FEET TO THE NORTH RIGHT OF WAY LINE OF KING HIGHWAY; THENCE SOUTH 85°18'06" EAST ON SAID NORTH RIGHT OF WAY LINE 77.86 FEET TO MEANDER CORNER "A"; THENCE SOUTH 01°04'25" WEST ON A MEANDER LINE ALONG THE SOUTHWESTERLY BANK OF THE KALAMAZOO RIVER 295.51 FEET TO A MEANDER CORNER; THENCE SOUTH 28°12'55" EAST ON SAID MEANDER LINE 387.54 FEET TO A MEANDER CORNER; THENCE SOUTH 51°19'37" EAST ON SAID MEANDER LINE 585.13 FEET TO A MEANDER CORNER; THENCE NORTH 84°56'27" EAST ON SAID MEANDER LINE 2458.08 FEET TO A MEANDER CORNER ALONG THE SOUTHWESTERLY BANK OF THE KALAMAZOO RIVER AND ALONG THE WESTERLY BANK OF DAVIS CREEK; THENCE SOUTH 00°50'34" EAST ON A MEANDER LINE ALONG THE WESTERLY BANK OF SAID DAVIS CREEK 1262.47 FEET TO A MEANDER CORNER; THENCE SOUTH 77°53'13" EAST ON SAID MEANDER LINE 424.79 FEET TO A MEANDER CORNER; THENCE SOUTH 04°19'01" EAST ON SAID MEANDER LINE 195.71 FEET TO A MEANDER CORNER; THENCE SOUTH 60°58'12" EAST ON SAID MEANDER LINE 144.35 FEET TO A MEANDER CORNER; THENCE SOUTH 04°31'43" WEST ON SAID MEANDER LINE 290.69 FEET TO A MEANDER CORNER; THENCE SOUTH 86°11'23" EAST ON SAID MEANDER LINE 312.21 FEET TO A MEANDER CORNER; THENCE SOUTH 01°33'10" EAST ON SAID MEANDER LINE 297.01 FEET TO A MEANDER CORNER; THENCE SOUTH 63°45'13" WEST ON SAID MEANDER LINE 169.55 FEET TO A MEANDER CORNER; THENCE SOUTH 55°31'07" EAST ON SAID MEANDER LINE 151.53 FEET TO A MEANDER CORNER; THENCE SOUTH 41°38'12" WEST ON SAID MEANDER LINE 353.44 FEET TO A MEANDER CORNER; THENCE SOUTH 29°10'09" EAST ON SAID MEANDER LINE 695.61 FEET TO A MEANDER CORNER; THENCE SOUTH 55°33'59" WEST ON SAID MEANDER LINE 176.80 FEET TO A MEANDER CORNER; THENCE SOUTH 88°30'36" WEST ON SAID MEANDER LINE 530.85 FEET TO A MEANDER CORNER; THENCE SOUTH 03°39'41" WEST ON SAID MEANDER LINE 478.20 FEET TO A MEANDER CORNER; THENCE SOUTH 51°52'37" WEST ON SAID MEANDER LINE 365.28 FEET TO A MEANDER CORNER; THENCE SOUTH 29°03'07" WEST ON SAID MEANDER LINE 2065.40 FEET TO A MEANDER CORNER; THENCE SOUTH 00°59'23" WEST ON SAID MEANDER LINE 146.60 FEET TO MEANDER CORNER "B" AND THE SOUTH RIGHT OF WAY LINE OF MILLER ROAD; THENCE NORTH 89°00'37" WEST ON SAID SOUTH RIGHT OF WAY LINE AND PARALLEL WITH THE EAST AND WEST QUARTER LINE OF SAID SECTION 25 A DISTANCE OF 1403.42 FEET TO THE POINT OF BEGINNING. ALSO ALL THAT LAND LYING BETWEEN THE MEANDER LINE ALONG THE SOUTHWESTERLY BANK OF THE KALAMAZOO RIVER, THE SOUTHWESTERLY BANK OF THE KALAMAZOO RIVER, AND A LINE RUNNING SOUTH 85° 18' 06" EAST FROM SAID MEANDER CORNER "A". ALSO ALL THAT LAND LYING BETWEEN THE MEANDER LINE ALONG THE WESTERLY BANK OF SAID DAVIS CREEK, THE CENTERLINE OF SAID DAVIS CREEK, AND A LINE RUNNING SOUTH 89



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DEGREES 00' 37" EAST FROM SAID MEANDER CORNER "B". CONTAINING 500.99 ACRES MORE OR LESS. SUBJECT TO ANY AND ALL EASEMENTS AND RESTRICTIONS OF RECORD OR OTHERWISE. SUBJECT TO ANY FACTS WHICH MAY BE DISCLOSED IN A FULL AND ACCURATE TITLE SEARCH. SUBJECT TO THE RIGHTS OF THE PUBLIC AND OF ANY GOVERNMENTAL UNIT IN ANY PART THEREOF TAKEN, USED OR DEEDED FOR STREET, ROAD, OR HIGHWAY PURPOSES.

### SECTION 19c.04: STREET ADDRESSES WITHIN RESTRICTED ZONE

Street No.	Street Name	City, State Zip	Parcel No.
BL - I94		Kalamazoo, MI 49048	06-24-365-010
1231	Boardman St.	Kalamazoo, MI 49001	06-23-440-090
1239	Boardman St.	Kalamazoo, MI 49001	06-23-440-210
1245	Boardman St.	Kalamazoo, MI 49048	06-23-440-220
1105	Bronson Ave.	Kalamazoo, MI 49048	06-24-305-050
1111	Bronson Ave.	Kalamazoo, MI 49048	06-24-305-041
1116	Bronson Ave.	Kalamazoo, MI 49048	06-24-306-790
1119	Bronson Ave.	Kalamazoo, MI 49048	06-24-305-021
1119	Bronson Ave.	Kalamazoo, MI 49048	06-90-080-275
3214	Brookfield Ave.	Kalamazoo, MI 49048	06-24-405-492
3214	Brookfield Ave.	Kalamazoo, MI 49048	06-90-040-040
3227	Brookfield Ave.	Kalamazoo, MI 49048	06-24-405-562
3308	Brookfield Ave.	Kalamazoo, MI 49048	06-24-405-440
	Brookfield Ave.	Kalamazoo, MI 49048	06-24-405-470
	Brookfield Ave.	Kalamazoo, MI 49048	06-24-405-480
	Brookfield Ave.	Kalamazoo, MI 49048	06-24-405-563
	Brookfield Ave.	Kalamazoo, MI 49048	06-24-405-450
2305	Carleton Ave.	Kalamazoo, MI 49048	06-23-430-020
2337	Carleton Ave.	Kalamazoo, MI 49048	06-24-306-020
	Carleton Ave.	Kalamazoo, MI 49048	06-24-306-010
	Carleton Ave.	Kalamazoo, MI 49048	06-24-306-030
2409	Carleton Ave.	Kalamazoo, MI 49048	06-24-305-780
2505	Carleton Ave.	Kalamazoo, MI 49048	06-24-305-730
2511	Carleton Ave.	Kalamazoo, MI 49048	06-24-305-720
2517	Carleton Ave.	Kalamazoo, MI 49048	06-24-305-702
2523	Carleton Ave.	Kalamazoo, MI 49048	06-24-305-701
2607	Carleton Ave.	Kalamazoo, MI 49048	06-24-305-560
2615	Carleton Ave.	Kalamazoo, MI 49048	06-24-305-550
2621	Carleton Ave.	Kalamazoo, MI 49048	06-24-305-540
2622	Carleton Ave.	Kalamazoo, MI 49048	06-24-306-430
2713	Carleton Ave.	Kalamazoo, MI 49048	06-24-305-260
2721	Carleton Ave.	Kalamazoo, MI 49048	06-24-305-270
2805	Carleton Ave.	Kalamazoo, MI 49048	06-24-305-230
2819	Carleton Ave.	Kalamazoo, MI 49048	06-24-305-200
	Carleton Ave.	Kalamazoo, MI 49048	06-24-305-210
	Carleton Ave.	Kalamazoo, MI 49048	06-24-305-220
2825	Carleton Ave.	Kalamazoo, MI 49048	06-24-305-191
2905	Carleton Ave.	Kalamazoo, MI 49048	06-24-305-170
2909	Carleton Ave.	Kalamazoo, MI 49048	06-24-305-160



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2915	Carleton Ave.	Kalamazoo, MI 49048	06-24-305-150
	Carleton Ave.	Kalamazoo, MI 49048	06-24-305-130
2920	Carleton Ave.	Kalamazoo, MI 49048	06-24-306-771
2929	Carleton Ave.	Kalamazoo, MI 49048	06-24-305-121
3005	Carleton Ave.	Kalamazoo, MI 49048	06-24-305-110
3011	Carleton Ave.	Kalamazoo, MI 49048	06-24-305-100
3015	Carleton Ave.	Kalamazoo, MI 49048	06-24-305-090
3019	Carleton Ave.	Kalamazoo, MI 49048	06-24-305-082
3105	Carleton Ave.	Kalamazoo, MI 49048	06-24-305-072
3111	Carleton Ave.	Kalamazoo, MI 49048	06-24-305-060
	Carleton Ave.	Kalamazoo, MI 49048	06-24-305-770
2026	Clinton Dr.	Kalamazoo, MI 49001	06-23-480-160
2112	Clinton Dr.	Kalamazoo, MI 49001	06-23-480-180
	Clinton Dr.	Kalamazoo, MI 49001	06-23-480-170
932	Dupont Ave.	Kalamazoo, MI 49048	06-24-305-890
1001	Dupont Ave.	Kalamazoo, MI 49048	06-24-305-801
1002	Dupont Ave.	Kalamazoo, MI 49048	06-24-305-870
1010	Dupont Ave.	Kalamazoo, MI 49048	06-24-306-040
1108	Dupont Ave.	Kalamazoo, MI 49048	06-24-306-130
	Dupont Ave.	Kalamazoo, MI 49048	06-24-306-050
	Dupont Ave.	Kalamazoo, MI 49048	06-24-306-120
1115	Dupont Ave.	Kalamazoo, MI 49048	06-24-306-150
	Dupont Ave.	Kalamazoo, MI 49048	06-24-306-140
1120	Dupont Ave.	Kalamazoo, MI 49048	06-24-306-110
	Dupont Ave.	Kalamazoo, MI 49048	06-24-305-880
	Dupont Ave.	Kalamazoo, MI 49048	06-24-306-160
2110	E. Vine St.	Kalamazoo, MI 49048	06-23-282-001
2108	Egleston	Kalamazoo, MI 49001	06-23-436-020
2112	Egleston	Kalamazoo, MI 49001	06-26-436-010
	Egleston	Kalamazoo, MI 49001	06-23-445-130
	Egleston	Kalamazoo, MI 49001	06-23-445-140
1801	Factory St.	Kalamazoo, MI 49001	06-26-204-001
1811	Factory St.	Kalamazoo, MI 49001	06-26-204-002
1901	Factory St.	Kalamazoo, MI 49001	06-26-204-003
1915	Factory St.	Kalamazoo, MI 49001	06-26-209-001
1919	Factory St.	Kalamazoo, MI 49001	06-26-230-001
2005	Factory St.	Kalamazoo, MI 49001	06-26-240-002
2025	Factory St.	Kalamazoo, MI 49001	06-26-247-001
900	Field Ave.	Kalamazoo, MI 49001	06-23-293-001
939	Field Ave.	Kalamazoo, MI 49001	06-24-305-970
	Field Ave.	Kalamazoo, MI 49001	06-24-305-960
1002	Field Ave.	Kalamazoo, MI 49001	06-23-430-030
1115	Field Ave.	Kalamazoo, MI 49001	06-24-306-060
1120	Field Ave.	Kalamazoo, MI 49001	06-23-430-040
	Field Ave.	Kalamazoo, MI 49001	06-24-305-940
	Field Ave.	Kalamazoo, MI 49001	06-24-305-950
2000	Glendening Rd.	Kalamazoo, MI 49048	06-26-234-001
2004	Glendening Rd.	Kalamazoo, MI 49048	06-25-110-001



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2005	Glendening Rd.	Kalamazoo, MI 49048	06-25-116-001
2019	Glendening Rd.	Kalamazoo, MI 49001	06-25-123-001
2036	Glendening Rd.	Kalamazoo, MI 49048	06-25-121-001
2105	Glendening Rd.	Kalamazoo, MI 49001	06-25-153-001
2222	Glendening Rd.	Kalamazoo, MI 49001	06-25-157-002
2225	Glendening Rd.	Kalamazoo, MI 49048	06-25-158-002
2230	Glendening Rd.	Kalamazoo, MI 49001	06-25-162-002
2230	Glendening Rd.	Kalamazoo, MI 49001	06-91-009-270
2230	Glendening Rd.	Kalamazoo, MI 49001	06-91-052-161
2300	Glendening Rd.	Kalamazoo, MI 49001	06-25-167-001
	Healy St.	Kalamazoo, MI 49048	06-23-440-100
1201	Healy St.	Kalamazoo, MI 49001	06-23-445-020
1224	Healy St.	Kalamazoo, MI 49001	06-23-440-110
1228	Healy St.	Kalamazoo, MI 49048	06-23-440-120
1233	Healy St.	Kalamazoo, MI 49001	06-23-445-030
1240	Healy St.	Kalamazoo, MI 49001	06-23-440-250
1241	Healy St.	Kalamazoo, MI 49001	06-23-445-040
1305	Healy St.	Kalamazoo, MI 49001	06-23-445-070
1311	Healy St.	Kalamazoo, MI 49048	06-23-445-083
1315	Healy St.	Kalamazoo, MI 49048	06-23-445-082
1330	Healy St.	Kalamazoo, MI 49001	06-23-445-100
1339	Healy St.	Kalamazoo, MI 49001	06-23-445-110
1421	King Hwy.	Kalamazoo, MI 49001	06-23-445-120
	King Hwy.	Kalamazoo, MI 49001	06-24-195-010
2110	Lake St.	Kalamazoo, MI 49001	06-23-435-010
	Lake St.	Kalamazoo, MI 49001	06-23-435-160
	Lake St.	Kalamazoo, MI 49001	06-23-430-051
2200	Lake St.	Kalamazoo, MI 49048	06-23-440-062
2207	Lake St.	Kalamazoo, MI 49048	06-23-430-010
2222	Lake St.	Kalamazoo, MI 49001	06-23-440-070
2222	Lake St.	Kalamazoo, MI 49001	06-90-170-185
2310	Lake St.	Kalamazoo, MI 49048	06-23-445-010
2311	Lake St.	Kalamazoo, MI 49048	06-23-430-061
	Lake St.	Kalamazoo, MI 49048	06-23-430-070
2328	Lake St.	Kalamazoo, MI 49048	06-24-315-011
2335	Lake St.	Kalamazoo, MI 49048	06-24-306-081
2341	Lake St.	Kalamazoo, MI 49048	06-24-306-090
2345	Lake St.	Kalamazoo, MI 49048	06-24-306-100
2405	Lake St.	Kalamazoo, MI 49048	06-24-306-170
2419	Lake St.	Kalamazoo, MI 49048	06-24-306-180
2505	Lake St.	Kalamazoo, MI 49048	06-24-306-280
2509	Lake St.	Kalamazoo, MI 49048	06-24-306-290
2513	Lake St.	Kalamazoo, MI 49048	06-24-306-300
2519	Lake St.	Kalamazoo, MI 49048	06-24-306-310
2605	Lake St.	Kalamazoo, MI 49048	06-24-306-400
2615	Lake St.	Kalamazoo, MI 49048	06-24-306-410
2625	Lake St.	Kalamazoo, MI 49048	06-24-306-420
2725	Lake St.	Kalamazoo, MI 49048	06-24-306-500



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2805	Lake St.	Kalamazoo, MI 49048	06-24-306-580
2809	Lake St.	Kalamazoo, MI 49048	06-24-306-590
2815	Lake St.	Kalamazoo, MI 49048	06-24-306-600
2819	Lake St.	Kalamazoo, MI 49048	06-24-306-610
2825	Lake St.	Kalamazoo, MI 49048	06-24-306-620
2900	Lake St.	Kalamazoo, MI 49048	06-24-320-011
2903	Lake St.	Kalamazoo, MI 49048	06-24-306-690
2909	Lake St.	Kalamazoo, MI 49048	06-24-306-701
2915	Lake St.	Kalamazoo, MI 49048	06-24-306-711
2925	Lake St.	Kalamazoo, MI 49048	06-24-306-720
3005	Lake St.	Kalamazoo, MI 49048	06-24-306-810
3015	Lake St.	Kalamazoo, MI 49048	06-24-306-831
3100	Lake St.	Kalamazoo, MI 49048	06-24-345-010
3100	Lake St.	Kalamazoo, MI 49048	06-24-345-020
3100	Lake St.	Kalamazoo, MI 49048	06-24-345-030
3103	Lake St.	Kalamazoo, MI 49048	06-24-340-023
3111	Lake St.	Kalamazoo, MI 49048	06-24-340-022
3122	Lake St.	Kalamazoo, MI 49048	06-24-345-040
	Lake St.	Kalamazoo, MI 49001	06-24-315-030
	Lake St.	Kalamazoo, MI 49001	06-24-315-040
	Lake St.	Kalamazoo, MI 49048	06-24-306-190
	Lake St.	Kalamazoo, MI 49048	06-24-340-021
938	Lamont Ave.	Kalamazoo, MI 49048	06-24-305-820
941	Lamont Ave.	Kalamazoo, MI 49048	06-24-305-660
1005	Lamont Ave.	Kalamazoo, MI 49048	06-24-305-740
1010	Lamont Ave.	Kalamazoo, MI 49048	06-24-305-750
1115	Lamont Ave.	Kalamazoo, MI 49048	06-24-306-261
1116	Lamont Ave.	Kalamazoo, MI 49048	06-24-306-200
1500	Lamont Ave.	Kalamazoo, MI 49001	06-24-356-001
	Lamont Ave.	Kalamazoo, MI 49048	06-24-306-210
	Lamont Ave.	Kalamazoo, MI 49048	06-24-306-220
	Lamont Ave.	Kalamazoo, MI 49048	06-24-306-230
	Lamont Ave.	Kalamazoo, MI 49048	06-24-306-270
2002	Lane Blvd.	Kalamazoo, MI 49001	06-26-240-001
2042	Lane Blvd.	Kalamazoo, MI 49001	06-26-242-001
2220	Lane Blvd.	Kalamazoo, MI 49001	06-26-243-001
3227	Market St.	Kalamazoo, MI 49048	06-24-405-030
3228	Market St.	Kalamazoo, MI 49048	06-24-460-020
3233	Market St.	Kalamazoo, MI 49048	06-24-405-040
3302	Market St.	Kalamazoo, MI 49048	06-24-460-030
3303	Market St.	Kalamazoo, MI 49048	06-24-405-051
3306	Market St.	Kalamazoo, MI 49048	06-24-460-040
3310	Market St.	Kalamazoo, MI 49001	06-24-460-050
3314	Market St.	Kalamazoo, MI 49048	06-24-460-060
3315	Market St.	Kalamazoo, MI 49048	06-24-405-080
3322	Market St.	Kalamazoo, MI 49048	06-24-460-080
3327	Market St.	Kalamazoo, MI 49048	06-24-405-100
3414	Market St.	Kalamazoo, MI 49048	06-24-460-095



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	Market St.	Kalamazoo, MI 49048	06-24-460-070
	Market St.	Kalamazoo, MI 49048	06-24-460-120
	Market St.	Kalamazoo, MI 49048	06-24-405-070
1022	Melrose Ave.	Kalamazoo, MI 49048	06-24-305-310
1023	Melrose Ave.	Kalamazoo, MI 49048	06-24-305-240
1106	Melrose Ave.	Kalamazoo, MI 49048	06-24-306-530
1110	Melrose Ave.	Kalamazoo, MI 49048	06-24-306-520
1121	Melrose Ave.	Kalamazoo, MI 49048	06-24-306-570
	Melrose Ave.	Kalamazoo, MI 49048	06-24-306-540
	Melrose Ave.	Kalamazoo, MI 49048	06-24-306-550
	Melrose Ave.	Kalamazoo, MI 49048	06-24-306-560
1130	Melrose Ave.	Kalamazoo, MI 49048	06-24-306-510
2205	Miller Rd.	Kalamazoo, MI 49001	06-26-287-001
2211	Miller Rd.	Kalamazoo, MI 49001	06-26-293-001
2225	Miller Rd.	Kalamazoo, MI 49001	06-26-294-001
2315	Miller Rd.	Kalamazoo, MI 49001	06-25-160-001
2525	Miller Rd.	Kalamazoo, MI 49001	06-25-172-001
2525	Miller Rd.	Kalamazoo, MI 49001	06-25-901-001
2619	Miller Rd.	Kalamazoo, MI 49001	06-25-168-001
2631	Miller Rd.	Kalamazoo, MI 49001	06-25-169-001
2715	Miller Rd.	Kalamazoo, MI 49001	06-25-178-002
1135	Olmstead Rd.	Kalamazoo, MI 49048	06-24-405-533
1211	Olmstead Rd.	Kalamazoo, MI 49048	06-24-405-511
1215	Olmstead Rd.	Kalamazoo, MI 49048	06-24-405-501
1223	Olmstead Rd.	Kalamazoo, MI 49048	06-24-405-260
1307	Olmstead Rd.	Kalamazoo, MI 49048	06-24-405-240
1311	Olmstead Rd.	Kalamazoo, MI 49048	06-24-405-230
1315	Olmstead Rd.	Kalamazoo, MI 49048	06-24-405-220
1319	Olmstead Rd.	Kalamazoo, MI 49048	06-24-405-020
1323	Olmstead Rd.	Kalamazoo, MI 49048	06-24-407-020
1329	Olmstead Rd.	Kalamazoo, MI 49048	06-24-405-010
1403	Olmstead Rd.	Kalamazoo, MI 49048	06-24-460-010
	Olmstead Rd.	Kalamazoo, MI 49048	06-24-460-100
1408	Olmstead Rd.	Kalamazoo, MI 49048	06-24-455-010
1419	Olmstead Rd.	Kalamazoo, MI 49001	06-24-460-110
1420	Olmstead Rd.	Kalamazoo, MI 49048	06-24-455-020
1421	Olmstead Rd.	Kalamazoo, MI 49001	06-24-460-130
1424	Olmstead Rd.	Kalamazoo, MI 49048	06-24-455-030
1429	Olmstead Rd.	Kalamazoo, MI 49048	06-24-460-141
1434	Olmstead Rd.	Kalamazoo, MI 49048	06-24-455-050
1442	Olmstead Rd.	Kalamazoo, MI 49048	06-24-455-060
1502	Olmstead Rd.	Kalamazoo, MI 49048	06-24-455-070
1503	Olmstead Rd.	Kalamazoo, MI 49001	06-24-465-010
1519	Olmstead Rd.	Kalamazoo, MI 49001	06-24-470-010
1622	Olmstead Rd.	Kalamazoo, MI 49048	06-24-455-120
1701	Olmstead Rd.	Kalamazoo, MI 49048	06-24-470-021
1710	Olmstead Rd.	Kalamazoo, MI 49048	06-24-455-130
1722	Olmstead Rd.	Kalamazoo, MI 49048	06-24-455-140



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1910	Olmstead Rd.	Kalamazoo, MI 49048	06-25-201-001
	Olmstead Rd.	Kalamazoo, MI 49048	06-24-407-030
	Olmstead Rd.	Kalamazoo, MI 49048	06-24-407-010
	Olmstead Rd.	Kalamazoo, MI 49048	06-24-455-040
	Olmstead Rd.	Kalamazoo, MI 49048	06-24-455-080
	Olmstead Rd.	Kalamazoo, MI 49048	06-24-455-090
	Olmstead Rd.	Kalamazoo, MI 49048	06-24-455-100
	Olmstead Rd.	Kalamazoo, MI 49048	06-24-455-110
	Olmstead Rd.	Kalamazoo, MI 49048	06-24-405-532
2025	Palmer Ave.	Kalamazoo, MI 49001	06-26-247-001
2220	Palmer Ave.	Kalamazoo, MI 49001	06-26-288-001
2235	Palmer Ave.	Kalamazoo, MI 49001	06-26-279-001
2245	Palmer Ave.	Kalamazoo, MI 49001	06-25-150-001
1940	Reed Ave.	Kalamazoo, MI 49001	06-26-225-001
2005	Reed Ave.	Kalamazoo, MI 49001	06-23-495-001
938	Riverside Ave.	Kalamazoo, MI 49048	06-24-305-490
939	Riverside Ave.	Kalamazoo, MI 49048	06-24-305-401
1003	Riverside Ave.	Kalamazoo, MI 49048	06-24-305-390
1006	Riverside Ave.	Kalamazoo, MI 49048	06-24-305-500
1014	Riverside Ave.	Kalamazoo, MI 49048	06-24-305-510
1017	Riverside Ave.	Kalamazoo, MI 49048	06-24-305-350
1105	Riverside Ave.	Kalamazoo, MI 49048	06-24-306-440
1109	Riverside Ave.	Kalamazoo, MI 49048	06-24-306-450
1115	Riverside Ave.	Kalamazoo, MI 49048	06-24-306-460
1119	Riverside Ave.	Kalamazoo, MI 49048	06-24-306-470
1133	Riverside Ave.	Kalamazoo, MI 49048	06-24-306-490
	Riverside Ave.	Kalamazoo, MI 49048	06-24-305-420
	Riverside Ave.	Kalamazoo, MI 49048	06-24-305-430
	Riverside Ave.	Kalamazoo, MI 49048	06-24-306-480
1110	Roy Ave.	Kalamazoo, MI 49048	06-24-306-641
1120	Roy Ave.	Kalamazoo, MI 49048	06-24-306-630
	Roy Ave.	Kalamazoo, MI 49048	06-24-306-660
	Roy Ave.	Kalamazoo, MI 49048	06-24-306-670
	Roy Ave.	Kalamazoo, MI 49048	06-24-306-681
	Roy Ave.	Kalamazoo, MI 49048	06-24-306-682
1343	Schuster St.	Kalamazoo, MI 49001	06-23-435-721
1419	Schuster St.	Kalamazoo, MI 49048	06-23-435-901
	Schuster St.	Kalamazoo, MI 49001	06-23-435-750
1431	Schuster St.	Kalamazoo, MI 49001	06-23-435-920
1523	Schuster St.	Kalamazoo, MI 49001	06-23-480-130
1533	Schuster St.	Kalamazoo, MI 49001	06-23-480-140
	Schuster St.	Kalamazoo, MI 49001	06-23-435-170
	Schuster St.	Kalamazoo, MI 49001	06-23-435-240
	Schuster St.	Kalamazoo, MI 49001	06-23-435-250
	Schuster St.	Kalamazoo, MI 49001	06-23-435-480
	Schuster St.	Kalamazoo, MI 49001	06-23-435-570
	Schuster St.	Kalamazoo, MI 49001	06-23-480-120
	Schuster St.	Kalamazoo, MI 49001	06-23-435-910



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	Schuster St.	Kalamazoo, MI 49001	06-23-280-010
	Schuster St.	Kalamazoo, MI 49001	06-23-435-330
	Schuster St.	Kalamazoo, MI 49001	06-23-435-410
3223	Springfield Ave.	Kalamazoo, MI 49001	06-24-405-280
3224	Springfield Ave.	Kalamazoo, MI 49001	06-24-405-210
3225	Springfield Ave.	Kalamazoo, MI 49001	06-24-405-300
3230	Springfield Ave.	Kalamazoo, MI 49048	06-24-405-190
3233	Springfield Ave.	Kalamazoo, MI 49048	06-24-405-310
	Springfield Ave.	Kalamazoo, MI 49048	06-24-405-320
3311	Springfield Ave.	Kalamazoo, MI 49048	06-24-405-341
3312	Springfield Ave.	Kalamazoo, MI 49048	06-24-405-160
3316	Springfield Ave.	Kalamazoo, MI 49048	06-24-405-150
3324	Springfield Ave.	Kalamazoo, MI 49048	06-24-405-131
3330	Springfield Ave.	Kalamazoo, MI 49048	06-24-405-120
2716	St. Joe Ave.	Kalamazoo, MI 49048	06-24-305-330
2723	St. Joe Ave.	Kalamazoo, MI 49048	06-24-305-370
	St. Joe Ave.	Kalamazoo, MI 49048	06-24-305-360
	St. Joe Ave.	Kalamazoo, MI 49048	06-24-305-340
3330	Stewart	Kalamazoo, MI 49048	06-24-465-020
	Stewart	Kalamazoo, MI 49048	06-24-460-142
1109	Surprise Ave.	Kalamazoo, MI 49048	06-24-306-780
1116	Surprise Ave.	Kalamazoo, MI 49048	06-24-306-750
1120	Surprise Ave.	Kalamazoo, MI 49048	06-24-306-740
	Surprise Ave.	Kalamazoo, MI 49048	06-24-306-800
2215	Washington Ave.	Kalamazoo, MI 49048	06-23-440-230
2222	Washington Ave.	Kalamazoo, MI 49048	06-23-445-090
2303	Washington Ave.	Kalamazoo, MI 49001	06-23-445-050
2305	Washington Ave.	Kalamazoo, MI 49001	06-23-445-060
931	Willis Ave.	Kalamazoo, MI 49048	06-24-305-470
1001	Willis Ave.	Kalamazoo, MI 49048	06-24-305-600
1005	Willis Ave.	Kalamazoo, MI 49048	06-24-305-580
1010	Willis Ave.	Kalamazoo, MI 49048	06-24-305-670
1105	Willis Ave.	Kalamazoo, MI 49048	06-24-306-350
1106	Willis Ave.	Kalamazoo, MI 49048	06-24-306-340
1109	Willis Ave.	Kalamazoo, MI 49048	06-24-306-360
1110	Willis Ave.	Kalamazoo, MI 49048	06-24-306-330
1115	Willis Ave.	Kalamazoo, MI 49048	06-24-306-370
1118	Willis Ave.	Kalamazoo, MI 49048	06-24-306-320
1127	Willis Ave.	Kalamazoo, MI 49048	06-24-306-390
	Willis Ave.	Kalamazoo, MI 49048	06-24-305-690
	Willis Ave.	Kalamazoo, MI 49048	06-24-306-240
	Willis Ave.	Kalamazoo, MI 49048	06-24-306-380
	Willow Blvd	Kalamazoo, MI 49001	06-24-306-980
2336	Willow Blvd	Kalamazoo, MI 49048	06-24-305-921
2418	Willow Blvd	Kalamazoo, MI 49048	06-24-305-840
2510	Willow Blvd	Kalamazoo, MI 49048	06-24-305-651
2526	Willow Blvd	Kalamazoo, MI 49048	06-24-305-621
	Willow Blvd	Kalamazoo, MI 49048	06-24-305-440



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Willow Blvd	Kalamazoo, MI 49048	06-24-305-450
Willow Blvd	Kalamazoo, MI 49048	06-24-305-460
Willow Blvd	Kalamazoo, MI 49048	06-24-305-830
Willow Blvd	Kalamazoo, MI 49048	06-24-305-901
	Kalamazoo, MI	RR-25-112-001
	Kalamazoo, MI	RR-25-120-001
	Kalamazoo, MI	06-23-480-GAP
	Kalamazoo, MI	06-24-315-GAP
	Kalamazoo, MI	06-23-440-GAP
	Kalamazoo, MI	06-24-305-GAP

### SECTION 19c.05: WATER USE EXCEPTIONS

The Kalamazoo County Jail Well is approved to remain in place by the MDEQ. This well was determined to be necessary as a secondary/emergency water supply to provide water for flushing toilets. This well cannot be approved at any time as a potable water supply as it is documented to be contaminated with 1,1-dichloroethene (DCE), cis 1,2 DCE and vinyl chloride in excess of the Part 201 MDEQ drinking water criteria. Additionally, the Sheriff of Kalamazoo County has agreed to the following in the event the well must be placed into service:

- a. An emergency message will be posted on all video screens in addition to verbal and written notification to staff and inmates of the water restrictions.
- b. The County and MDEQ will be notified by telephone or other method that the well is being placed into use.
- c. Necessary restrictions will be documented in jail policy.



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## SECTION 19c.06: MAP OF RESTRICTED ZONE





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**SECTION 19d.01: KL AVENUE LANDFILL ZONE APPROVED BY KALAMAZOO COUNTY BOARD OF COMMISSIONERS DECEMBER 1, 2015**

**SECTION 19d.02: SUMMARY OF GROUNDWATER CONTAMINATION AND ZONE**

The West KL Avenue Landfill, also formerly known as the Oshtemo Township Dump or the Kalamazoo City Landfill, is located approximately 3 miles west of the incorporated boundary of the City of Kalamazoo, Michigan. The Site comprises approximately 87 acres. The West KL Avenue Landfill was originally a private landfill in the 1950s, and then a 20 acre landfill operated by Oshtemo Township from approximately 1960 through 1968. In 1968, Kalamazoo County started leasing the Site from Oshtemo Township for use as a county-wide landfill. The County purchased surrounding land to form the present 87 acre site and operated the landfill from 1968 through 1979.

An estimated five million cubic yards of refuse, and an unknown amount of bulk liquid and drummed chemicals, were disposed of at the landfill between 1960 and 1979. In November 1978 and January 1979, samples taken from residential wells near the landfill showed hazardous substance impacts and in May 1979, the Michigan Department of Environmental Quality ordered the landfill to cease operations and ordered the County to provide an alternate water supply to affected residents. The West KL Avenue Landfill remains closed and has not received any wastes since May 1979. In 1982 the Site was added to the United States Environmental Protection Agency's National Priorities List, primarily due to risks posed by the release of hazardous substances from the Site to the groundwater. The Site is currently under USEPA oversight.

Groundwater studies have shown that groundwater impacts emanating from the Site includes tetrahydrofuran (THF), 1,4-diethylene dioxide (1,4-DD) and benzene, in concentrations that exceed Michigan Part 201 Drinking Water Criteria.

The KL Avenue Group, comprised of the The Upjohn Company, the City of Kalamazoo, the County of Kalamazoo, and Oshtemo Charter Township, has worked in cooperation with the EPA and MDEQ since 1992 to investigate the Site and determine the most appropriate manner in which to address Site impacts. Based on the nature and extent of the ground water impact and the number of affected properties, the EPA agrees that the most feasible scenario will rely, in part, on the creation of a Restricted Zone to restrict water well installation in the impacted area to protect human health. EPA has approved of the use of both this ordinance and the restricted Zone as an institutional control. Ground water quality will continue to be monitored to confirm that the Restricted Zone is sufficient and will be amended, if warranted.

**SECTION 19d.03: LEGAL DESCRIPTION OF RESTRICTED ZONE**

Except for the area of the Restricted Zone that includes Chadds Ford Way, the Restricted Zone should include all groundwater aquifers, regardless of depth. For the Chadds Ford Way subdivision, the Restricted Zone is limited to aquifers below 100 feet. There is a clay layer that is present at approximately 90 to 130 feet below the ground surface that separates the shallow aquifer from the deeper impacted aquifer in the Chadds Ford Way area. Water supply wells in the shallow aquifer will be sampled for landfill related contaminants on an annual basis to show that the wells are contaminant free as a condition to this exception.

Entire proposed Restricted Zone: A parcel of land situated in Sections 16, 17, 18, 19, 20 and 21, T. 2 S., R. 12 W., Oshtemo Township, Kalamazoo County, Michigan being more particularly described as follows:



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Commencing at the East quarter corner of Section 20, T. 2 S., R. 12 W.; thence Southerly 328.0 feet along the East line of the Southeast quarter of said Section 20 to the Place of Beginning; thence Westerly 247.5 feet parallel with the East and West quarter line of said Section 20; thence Southerly 332 feet parallel with said East line of the Southeast quarter of Section 20 to the South line of the North half of the Northeast quarter of the Southeast quarter of said Section 20; thence Westerly 1072.5 feet along said South line to the West line of the East half of said Southeast quarter of Section 20; thence Southerly 660 feet along said West line to the South line of the North half of said Southeast quarter of Section 20; thence Westerly 1320 feet along said South line to North and South quarter line of said Section 20; thence Northerly 264 feet along said North and South quarter line to the South line of the North 10 acres of the East 25 acres of the Southwest quarter of said Section 20; thence Westerly 412.5 feet along said South line to West line of the East 25 rods of said Southwest quarter of Section 20; thence Northerly 523.4 feet along said West line to the South line of the North 10 acres of the East 50 acres of said Southwest quarter of Section 20; thence Westerly 412.5 feet along said South line to the West line of the East 50 rods of said Southwest quarter of Section 20; thence Southerly 516.4 feet along said West line to North line of the South 1584 feet of said Southwest quarter of Section 20; thence Westerly 617.12 feet along said North line to the East line of the West 200 feet of the East half of the East half of the West half of said Southwest quarter of Section 20; thence Northerly 244 feet along said East line to the South line of the North 800.0 feet of said Southwest quarter of Section 20; thence Westerly 200 feet along said South line to the West line of said East half of the East half of the West half of said Southwest quarter of Section 20; thence Northerly 567 feet along said West line to the South line of "Veracres" subdivision according to the plat thereof as recorded in Liber 24 of Plats on Page 32, Kalamazoo County Records; thence Westerly 1162.7 feet along the South line of said subdivision to the West line of the East half of Lot 2 of said "Veracres" subdivision; thence Northerly 332.0 feet along said West line and its extension Northerly to the center line of West "KL" Avenue; thence Westerly 503.3 feet along said center line to the West line of the East 41.5 rods of the Northeast quarter of Section 19, T. 2 S., R. 12 W.; thence Northerly 778.5 feet along said West line to the center line of Almena Drive; thence Southwesterly 741 feet along said center line of Almena Drive to the Southwest corner of "Skyview Estates" Kalamazoo County Condominium Subdivision Plan No. 110 according to the Master Deed thereof as recorded in Docket No. 1999-043669 and amended Docket No. 2002-058856 Kalamazoo County Records; thence Northerly about 1461 feet along a West line of said "Skyview Estates" condominium to the South line of the North 20 Acres of the Northwest quarter of the Northeast quarter of Section 19; thence Westerly along said South line about 1320 feet to the North and South quarter line of Section 19; thence Northerly along said North and South quarter line 659.25 feet to the South quarter post of Section 18, T. 2 S., R. 12 W.; thence continuing Northerly 300 feet along the North and South quarter line of Section 18 to the North line of the South 300 feet of the Southeast quarter of the Southwest quarter of Section 18; thence Westerly along said North line 1315.94 feet to the West line of the East half of the Southwest quarter of Section 18; thence Northerly along said West line 1234.12 feet to the South line of the North 1109 feet of the Northwest fractional quarter of the Southwest fractional quarter of Section 18; thence Westerly along said South line 942.53 feet to the Southwest corner of Lot 11, Chadds Ford, as recorded in Liber 31 of Plats on Page 29, Kalamazoo County Records; thence Northerly 1191.73 feet along the West line of said Chadds Ford Plat and its Northerly extension to the Northerly right-of-way line of Highway M-43; thence Westerly about 85 feet along said Northerly line to the East line of the West 570 feet of the Northwest fractional quarter of Section 18; thence Northerly 100 feet along said East line; thence Easterly parallel to said Northerly right-of-way line of Highway M-43 519.98 feet; thence Northerly parallel to the West line of Section 18 150.37 feet; thence North 21°-25'-35" West 107.70 feet; thence Northerly parallel to the West line of Section 18, 1047.63 feet to the South line of the North 1160 feet of the Northwest fractional quarter of Section 18; thence Easterly along said South line 548 feet to the West line of Wickford Plat as recorded in Liber 34 of Plats on Page 9, Kalamazoo County Records; thence Northerly along said West line 261.88 feet to the Northwest corner of Lot 40, said Wickford Plat; thence Easterly along the North line of said Lot



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40, 372.83 feet to the Northeast corner of said Lot 40; thence Southeasterly about 66.2 feet to the Northwest corner of Lot 9, said Wickford Plat; thence Southwesterly along the Westerly line of Lots 9, 10 & 11, said Wickford Plat 315.69 feet to the Northwest corner of Lot 12, said Wickford Plat; thence Easterly along the North line of said Lot 12, 314.37 feet to the Northeast corner of said Lot 12; thence Southerly along the Easterly line of said Wickford Plat about 757 feet to the North line of the South 10 Acres of the East half of the East half of the Northwest quarter of Section 18; thence Easterly along said North line 660 feet to the North and South quarter line of Section 18; thence Southerly along said North and South quarter line 750 feet to a line 100 feet south, perpendicular measure, from the construction center line of West Main Street, Highway M-43; thence Easterly about 5032 feet along said line 100 foot South and parallel with the construction center line of West Main Street to a point 232 feet from the North and South quarter line of Section 17, T. 2 S., R. 12 W.; thence Northerly 20 feet parallel with said North and South quarter line of Section 17 to a line 80 feet South, perpendicular measure, from said construction center line of West Main Street; thence Easterly 232.7 feet along said line 80 foot South and parallel with said center line to said North and South quarter line of Section 17; thence Southerly 20 feet along said North and South quarter line of Section 17 to the Southerly right-of-way line of said Highway M-43; thence Easterly along said Southerly right-of-way line 1001.45 feet; thence Southerly parallel to the East line of the West half of the Southeast quarter about 1215 feet to the North line of the South half of the Southeast quarter of said Section 17; thence Easterly 1638.75 feet along said North line to the East line of said Southeast quarter of Section 17; thence Southerly 350 feet along said East line to the center line of said Almena Drive; thence Northeasterly about 560.6 feet along said center line to the East line of the West 535 feet of the Southwest quarter of Section 16, T. 2 S., R. 12 W.; thence Southerly about 795 feet parallel with said West line of the Southwest quarter of Section 16 to the North line of the South half of the South half of the Southwest quarter of said Southwest quarter of Section 16; thence Easterly 785 feet along said North line to the East line of the West half of said Southwest quarter of Section 16; thence Southerly 330 feet along said East line to the South line of said Southwest quarter of Section 16; thence Easterly 1320 feet along said South line to the South quarter corner of said Section 16; thence Easterly 627 feet along the South line of the Southeast quarter of said Section 16 to the West line of the East 693 feet of the West half of the Northeast quarter of Section 21, T. 2 S., R. 12 W.; thence Southerly 2640 feet along said West line to the East and West quarter line of said Section 21; thence Westerly 109 feet along said East and West quarter line to a point 2127.9 feet West of the East quarter corner of said Section 21; thence Southerly 660 feet perpendicular with said East and West quarter line of Section 21; thence Westerly 200 feet parallel with said East and West quarter line of Section 21; thence Southerly 200 feet perpendicular with said East and West quarter line of Section 21; thence Easterly 50 feet parallel with said East and West quarter line of Section 21; thence Southerly 420 feet perpendicular with said East and West quarter line of Section 21; thence Westerly 378 feet parallel with said East and West quarter line of Section 17 to the North and South quarter line of said Section 21; thence Southerly 40 feet along said North and South quarter line to the South line of the North half of the Southwest quarter of said Section 21; thence Westerly 2475 feet along said South line to the East line of the West 165 feet of said Southwest quarter of Section 21; thence Northerly 588 feet along said East line of the West 165 feet of said Southwest quarter to a line extending perpendicular with the West line of said Southwest quarter of Section 21 from a point 732.2 feet South of the West quarter corner of said Section 21; thence Westerly 165 feet perpendicular with said West line of the Southwest quarter of Section 21 to said West line of the Southwest quarter of Section 21; thence Northerly 404.2 feet along said West line of the Southwest quarter of Section 21 to the Place of Beginning.



## KALAMAZOO COUNTY SANITARY CODE

Chadds Ford Way Subdivision: "Chadds Ford", located in the Southwest fractional quarters of Section 18, T. 2 S., R. 12 W.; Township of Oshtemo, County of Kalamazoo, State of Michigan, being more particularly described as follows:

Commencing at the West quarter post of said Section 18; thence N. 89°-47'-51"E., 659.35 feet along the East and West quarter line of said Section 18: thence S.00°-08'-00"W., 67.04 feet to a point on the Southerly line of M-43, said point being the place of beginning: thence S.89°-40'00"E.. 455.19 feet along said Southerly line of M-43; thence 5.00°-08'-12" W., 258.63 feet: thence N.89°-47'-43"E.. 131.88 feet: thence 5.00°-08'-05"W., 778.79 feet: thence S.89°-47'-27"W 587.03 feet; thence N.00°-08'-00"E., 1041.73 feet to the place of beginning. (This Plat Contains 19 Lots Numbered 1 Thru 19.)

### SECTION 19d.04: STREET ADDRESSES WITHIN RESTRICTED ZONE

8939 ALMENA DR KALAMAZOO, MI 49009 05-16-355-021  
8951 ALMENA DR KALAMAZOO, MI 49009 05-16-355-010  
9050 ALMENA DR KALAMAZOO, MI 49009 05-17-430-232  
9069 ALMENA DR KALAMAZOO, MI 49009 05-17-485-045  
9100 ALMENA DR KALAMAZOO, MI 49009 05-17-430-236  
9125 ALMENA DR KALAMAZOO, MI 49009 05-17-485-038  
9140 ALMENA DR KALAMAZOO, MI 49009 05-17-430-240  
9143 ALMENA DR KALAMAZOO, MI 49009 05-17-485-036  
9150 ALMENA DR KALAMAZOO, MI 49009 05-17-430-250  
9159 ALMENA DR KALAMAZOO, MI 49009 05-17-485-018  
9160 ALMENA DR KALAMAZOO, MI 49009 05-17-430-260  
9169 ALMENA DR KALAMAZOO, MI 49009 05-17-485-016  
9179 ALMENA DR KALAMAZOO, MI 49009 05-17-485-012  
9180 ALMENA DR KALAMAZOO, MI 49009 05-17-430-270  
9200 ALMENA DR KALAMAZOO, MI 49009 05-17-430-280  
9222 ALMENA DR KALAMAZOO, MI 49009 05-17-430-290  
9244 ALMENA DR KALAMAZOO, MI 49009 05-17-430-300  
9311 ALMENA DR KALAMAZOO, MI 49009 05-17-455-030  
9316 ALMENA DR KALAMAZOO, MI 49009 05-17-455-020  
9490 ALMENA DR KALAMAZOO, MI 49009 05-17-455-010  
9501 ALMENA DR KALAMAZOO, MI 49009 05-20-205-011  
9520 ALMENA DR KALAMAZOO, MI 49009 05-20-130-060  
9630 ALMENA DR KALAMAZOO, MI 49009 05-20-130-020  
9630 ALMENA DR KALAMAZOO, MI 49009 05-20-130-021  
9670 ALMENA DR KALAMAZOO, MI 49009 05-20-130-011  
9670 ALMENA DR KALAMAZOO, MI 49009 05-20-130-012  
9679 ALMENA DR KALAMAZOO, MI 49009 05-20-130-030  
9697 ALMENA DR KALAMAZOO, MI 49009 05-20-105-050  
9740 ALMENA DR KALAMAZOO, MI 49009 05-20-105-019  
9745 ALMENA DR KALAMAZOO, MI 49009 05-20-105-029  
9790 ALMENA DR KALAMAZOO, MI 49009 05-20-105-018  
9791 ALMENA DR KALAMAZOO, MI 49009 05-20-105-022  
9803 ALMENA DR KALAMAZOO, MI 49009 05-20-105-061  
9810 ALMENA DR KALAMAZOO, MI 49009 05-20-105-017  
9825 ALMENA DR KALAMAZOO, MI 49009 05-20-105-070  
9830 ALMENA DR KALAMAZOO, MI 49009 05-20-105-016



## KALAMAZOO COUNTY SANITARY CODE

9855 ALMENA DR KALAMAZOO, MI 49009 05-20-155-025  
9883 ALMENA DR KALAMAZOO, MI 49009 05-20-155-011  
10047 ALMENA DR KALAMAZOO, MI 49009 05-19-285-051  
10054 ALMENA DR KALAMAZOO, MI 49009 05-19-280-040  
10090 ALMENA DR KALAMAZOO, MI 49009 05-19-280-039  
10125 ALMENA DR KALAMAZOO, MI 49009 05-19-285-053  
10130 ALMENA DR KALAMAZOO, MI 49009 05-19-280-031  
9532 AMBER CIR KALAMAZOO, MI 49009 05-17-335-160  
9535 AMBER CIR KALAMAZOO, MI 49009 05-17-335-170  
9546 AMBER CIR KALAMAZOO, MI 49009 05-17-335-150  
9557 AMBER CIR KALAMAZOO, MI 49009 05-17-335-180  
9578 AMBER CIR KALAMAZOO, MI 49009 05-17-335-141  
9583 AMBER CIR KALAMAZOO, MI 49009 05-17-335-190  
9528 AUTUMNWOOD CIR KALAMAZOO, MI 49009 05-17-335-250  
9531 AUTUMNWOOD CIR KALAMAZOO, MI 49009 05-17-335-260  
9539 AUTUMNWOOD CIR KALAMAZOO, MI 49009 05-17-335-270  
9548 AUTUMNWOOD CIR KALAMAZOO, MI 49009 05-17-335-240  
9559 AUTUMNWOOD CIR KALAMAZOO, MI 49009 05-17-335-280  
9581 AUTUMNWOOD CIR KALAMAZOO, MI 49009 05-17-335-290  
9586 AUTUMNWOOD CIR KALAMAZOO, MI 49009 05-17-335-230  
9607 AUTUMNWOOD CIR KALAMAZOO, MI 49009 05-17-335-300  
9616 AUTUMNWOOD CIR KALAMAZOO, MI 49009 05-17-335-220  
9918 BREKKE LN KALAMAZOO, MI 49009 05-17-355-018  
9920 BREKKE LN KALAMAZOO, MI 49009 05-17-355-015  
9922 BREKKE LN KALAMAZOO, MI 49009 05-17-355-015  
BREKKE LN KALAMAZOO, MI 49009 05-17-355-016  
(KALAMAZOO COUNTY ROAD COMMISSION)  
190 GOLDEN POND CIR KALAMAZOO, MI 49009 05-17-385-090  
195 GOLDEN POND CIR KALAMAZOO, MI 49009 05-17-385-050  
210 GOLDEN POND CIR KALAMAZOO, MI 49009 05-17-385-080  
225 GOLDEN POND CIR KALAMAZOO, MI 49009 05-17-385-060  
230 GOLDEN POND CIR KALAMAZOO, MI 49009 05-17-385-070  
160 LAGUNA CIR KALAMAZOO, MI 49009 05-17-385-220  
180 LAGUNA CIR KALAMAZOO, MI 49009 05-17-385-210  
199 LAGUNA CIR KALAMAZOO, MI 49009 05-17-385-110  
200 LAGUNA CIR KALAMAZOO, MI 49009 05-17-385-200  
222 LAGUNA CIR KALAMAZOO, MI 49009 05-17-385-190  
223 LAGUNA CIR KALAMAZOO, MI 49009 05-17-385-123  
274 LAGUNA CIR KALAMAZOO, MI 49009 05-17-385-180  
275 LAGUNA CIR KALAMAZOO, MI 49009 05-17-385-134  
294 LAGUNA CIR KALAMAZOO, MI 49009 05-17-385-170  
295 LAGUNA CIR KALAMAZOO, MI 49009 05-17-385-145  
314 LAGUNA CIR KALAMAZOO, MI 49009 05-17-385-160  
10 N 2ND ST KALAMAZOO, MI 49009 05-20-101-120  
21 N 2ND ST KALAMAZOO, MI 49009 05-18-480-049  
36 N 2ND ST KALAMAZOO, MI 49009 05-20-101-130  
55 N 2ND ST KALAMAZOO, MI 49009 05-18-480-046  
66 N 2ND ST KALAMAZOO, MI 49009 05-20-101-140



## KALAMAZOO COUNTY SANITARY CODE

96 N 2ND ST KALAMAZOO, MI 49009 05-20-101-150  
150 N 2ND ST KALAMAZOO, MI 49009 05-20-101-160  
165 N 2ND ST KALAMAZOO, MI 49009 05-18-480-041  
180 N 2ND ST KALAMAZOO, MI 49009 05-20-101-170  
210 N 2ND ST KALAMAZOO, MI 49009 05-20-101-200  
212 N 2ND ST KALAMAZOO, MI 49009 05-20-101-180  
239 N 2ND ST KALAMAZOO, MI 49009 05-18-480-030  
244 N 2ND ST KALAMAZOO, MI 49009 05-20-101-190  
363 N 2ND ST KALAMAZOO, MI 49009 05-18-480-020  
439 N 2ND ST KALAMAZOO, MI 49009 05-18-430-070  
444 N 2ND ST KALAMAZOO, MI 49009 05-17-301-090  
474 N 2ND ST KALAMAZOO, MI 49009 05-17-301-080  
505 N 2ND ST KALAMAZOO, MI 49009 05-18-430-067  
512 N 2ND ST KALAMAZOO, MI 49009 05-17-301-070  
522 N 2ND ST KALAMAZOO, MI 49009 05-17-301-061  
575 N 2ND ST KALAMAZOO, MI 49009 05-18-430-065  
579 N 2ND ST KALAMAZOO, MI 49009 05-18-430-065  
630 N 2ND ST KALAMAZOO, MI 49009 05-17-301-042  
645 N 2ND ST KALAMAZOO, MI 49009 05-18-430-061  
666 N 2ND ST KALAMAZOO, MI 49009 05-17-301-030  
690 N 2ND ST KALAMAZOO, MI 49009 05-17-301-020  
- N 2ND ST KALAMAZOO, MI 49009 05-17-301-051  
56 NAPLES CT KALAMAZOO, MI 49009 05-17-385-360  
59 NAPLES CT KALAMAZOO, MI 49009 05-17-385-370  
91 NAPLES CT KALAMAZOO, MI 49009 05-17-385-380  
94 NAPLES CT KALAMAZOO, MI 49009 05-17-385-350 J  
120 NAPLES CT KALAMAZOO, MI 49009 05-17-385-340  
121 NAPLES CT KALAMAZOO, MI 49009 05-17-385-390  
140 NAPLES CT KALAMAZOO, MI 49009 05-17-385-330  
160 NAPLES CT KALAMAZOO, MI 49009 05-17-385-320  
9044 NATURE WAY KALAMAZOO, MI 49009 05-20-282-010  
9064 NATURE WAY KALAMAZOO, MI 49009 05-20-282-020  
9065 NATURE WAY KALAMAZOO, MI 49009 05-20-282-081  
9084 NATURE WAY KALAMAZOO, MI 49009 05-20-282-030  
9085 NATURE WAY KALAMAZOO, MI 49009 05-20-282-070  
9104 NATURE WAY KALAMAZOO, MI 49009 05-20-282-040  
9105 NATURE WAY KALAMAZOO, MI 49009 05-20-282-060  
9114 NATURE WAY KALAMAZOO, MI 49009 05-20-282-050  
90 N 1ST ST KALAMAZOO, MI 49009 05-18-455-056  
185 N 1ST ST KALAMAZOO, MI 49009 05-18-380-011  
258 N 1ST ST KALAMAZOO, MI 49009 05-18-455-051  
260 N 1ST ST KALAMAZOO, MI 49009 05-18-455-048  
260 N 1ST ST KALAMAZOO, MI 49009 05-18-455-049  
291 N 1ST ST KALAMAZOO, MI 49009 05-18-380-006  
320 N 1ST ST KALAMAZOO, MI 49009 05-18-455-041  
331 N 1ST ST KALAMAZOO, MI 49009 05-18-380-002  
334 N 1ST ST KALAMAZOO, MI 49009 05-18-455-030  
404 N 1ST ST KALAMAZOO, MI 49009 05-18-455-011



## KALAMAZOO COUNTY SANITARY CODE

422 N 1ST ST KALAMAZOO, MI 49009 05-18-405-050  
499 N 1ST ST KALAMAZOO, MI 49009 05-18-330-095  
504 N 1ST ST KALAMAZOO, MI 49009 05-18-405-045  
527 N 1ST ST KALAMAZOO, MI 49009 05-18-330-029  
591 N 1ST ST KALAMAZOO, MI 49009 05-18-330-026  
649 N 1ST ST KALAMAZOO, MI 49009 05-18-330-024  
690 N 1ST ST KALAMAZOO, MI 49009 05-18-405-041  
715 N 1ST ST KALAMAZOO, MI 49009 05-18-332-010  
- N 1ST ST KALAMAZOO, MI 49009 05-18-405-011  
- N 1ST ST KALAMAZOO, MI 49009 05-18-330-101  
- N 1ST ST KALAMAZOO, MI 49009 05-18-460-016  
54 N 4TH ST KALAMAZOO, MI 49009 05-17-485-040  
150 N 4TH ST KALAMAZOO, MI 49009 05-17-485-042  
151 N 4TH ST KALAMAZOO, MI 49009 05-16-355-060  
385 N 4TH ST KALAMAZOO, MI 49009 05-17-430-235  
9808 OAK FOREST CIR KALAMAZOO, MI 49009 05-17-307-110  
9820 OAK FOREST CIR KALAMAZOO, MI 49009 05-17-307-100  
9836 OAK FOREST CIR KALAMAZOO, MI 49009 05-17-307-090  
9856 OAK FOREST CIR KALAMAZOO, MI 49009 05-17-307-080  
9860 OAK FOREST CIR KALAMAZOO, MI 49009 05-17-307-070  
9861 OAK FOREST CIR KALAMAZOO, MI 49009 05-17-307-035  
9875 OAK FOREST CIR KALAMAZOO, MI 49009 05-17-307-060  
31 S 1ST ST KALAMAZOO, MI 49009 05-19-205-011  
101 S 1ST ST KALAMAZOO, MI 49009 05-19-205-021  
25 S 2ND ST KALAMAZOO, MI 49009 05-20-101-110  
30 S 2ND ST KALAMAZOO, MI 49009 05-19-280-051  
53 S 2ND ST KALAMAZOO, MI 49009 05-20-101-100  
81 S 2ND ST KALAMAZOO, MI 49009 05-20-101-090  
133 S 2ND ST KALAMAZOO, MI 49009 05-20-101-080  
165 S 2ND ST KALAMAZOO, MI 49009 05-20-101-070  
180 S 2ND ST KALAMAZOO, MI 49009 05-19-280-053  
193 S 2ND ST KALAMAZOO, MI 49009 05-20-101-060  
227 S 2ND ST KALAMAZOO, MI 49009 05-20-101-050  
257 S 2ND ST KALAMAZOO, MI 49009 05-20-101-040  
270 S 2ND ST KALAMAZOO, MI 49009 05-19-280-055  
289 S 2ND ST KALAMAZOO, MI 49009 05-20-101-030  
317 S 2ND ST KALAMAZOO, MI 49009 05-20-101-020  
351 S 2ND ST KALAMAZOO, MI 49009 05-20-101-010  
400 S 2ND ST KALAMAZOO, MI 49009 05-19-280-057  
551 S 2ND ST KALAMAZOO, MI 49009 05-20-155-019  
622 S 2ND ST KALAMAZOO, MI 49009 05-19-285-051  
624 S 2ND ST KALAMAZOO, MI 49009 05-19-285-053  
25 S 4TH ST KALAMAZOO, MI 49009 05-16-355-071  
91 S 4TH ST KALAMAZOO, MI 49009 05-21-105-016  
250 S 4TH ST KALAMAZOO, MI 49009 05-20-230-011  
263 S 4TH ST KALAMAZOO, MI 49009 05-21-105-020  
371 S 4TH ST KALAMAZOO, MI 49009 05-21-105-040  
375 S 4TH ST KALAMAZOO, MI 49009 05-21-105-030



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379 S 4TH ST KALAMAZOO, MI 49009 05-21-155-010  
434 S 4TH ST KALAMAZOO, MI 49009 05-20-285-012  
515 S 4TH ST KALAMAZOO, MI 49009 05-21-155-021  
544 S 4TH ST KALAMAZOO, MI 49009 05-20-285-015  
581 S 4TH ST KALAMAZOO, MI 49009 05-21-155-031  
634 S 4TH ST KALAMAZOO, MI 49009 05-20-285-030  
691 S 4TH ST KALAMAZOO, MI 49009 05-21-155-050  
710 S 4TH ST KALAMAZOO, MI 49009 05-20-285-040  
745 S 4TH ST KALAMAZOO, MI 49009 05-21-155-060  
81 SKYVIEW DR KALAMAZOO, MI 49009 05-18-460-010  
142 SKYVIEW DR KALAMAZOO, MI 49009 05-18-460-008  
142 SKYVIEW DR KALAMAZOO, MI 49009 05-18-460-009  
173 SKYVIEW DR KALAMAZOO, MI 49009 05-18-460-011  
234 SKYVIEW DR KALAMAZOO, MI 49009 05-18-460-007  
265 SKYVIEW DR KALAMAZOO, MI 49009 05-18-460-012  
357 SKYVIEW DR KALAMAZOO, MI 49009 05-18-460-013  
449 SKYVIEW DR KALAMAZOO, MI 49009 05-18-460-014  
531 SKYVIEW DR KALAMAZOO, MI 49009 05-18-460-015  
10216 SKYVIEW DR KALAMAZOO, MI 49009 05-18-460-006  
10216 SKYVIEW DR KALAMAZOO, MI 49009 05-18-460-106  
10216 SKYVIEW DR KALAMAZOO, MI 49009 05-18-460-206  
10273 SKYVIEW DR KALAMAZOO, MI 49009 05-18-460-003  
10292 SKYVIEW DR KALAMAZOO, MI 49009 05-18-460-005  
10330 SKYVIEW DR KALAMAZOO, MI 49009 05-18-460-004  
10339 SKYVIEW DR KALAMAZOO, MI 49009 05-18-460-002  
10405 SKYVIEW DR KALAMAZOO, MI 49009 05-18-460-001  
405 SPRINGWOOD DR KALAMAZOO, MI 49009 05-17-335-010  
425 SPRINGWOOD DR KALAMAZOO, MI 49009 05-17-335-025  
428 SPRINGWOOD DR KALAMAZOO, MI 49009 05-17-335-320  
488 SPRINGWOOD DR KALAMAZOO, MI 49009 05-17-335-310  
541 SPRINGWOOD DR KALAMAZOO, MI 49009 05-17-335-040  
579 SPRINGWOOD DR KALAMAZOO, MI 49009 05-17-335-050  
594 SPRINGWOOD DR KALAMAZOO, MI 49009 05-17-335-210  
607 SPRINGWOOD DR KALAMAZOO, MI 49009 05-17-335-060  
631 SPRINGWOOD DR KALAMAZOO, MI 49009 05-17-335-070  
655 SPRINGWOOD DR KALAMAZOO, MI 49009 05-17-335-080  
670 SPRINGWOOD DR KALAMAZOO, MI 49009 05-17-335-200  
677 SPRINGWOOD DR KALAMAZOO, MI 49009 05-17-335-090  
694 SPRINGWOOD DR KALAMAZOO, MI 49009 05-17-335-131  
697 SPRINGWOOD DR KALAMAZOO, MI 49009 05-17-335-100  
742 SPRINGWOOD DR KALAMAZOO, MI 49009 05-17-335-120  
745 SPRINGWOOD DR KALAMAZOO, MI 49009 05-17-335-110  
9756 SPRINGWOOD DR KALAMAZOO, MI 49009 05-17-307-130  
9763 SPRINGWOOD DR KALAMAZOO, MI 49009 05-17-307-140  
9775 SPRINGWOOD DR KALAMAZOO, MI 49009 05-17-307-150  
9789 SPRINGWOOD DR KALAMAZOO, MI 49009 05-17-307-160  
9841 SPRINGWOOD DR KALAMAZOO, MI 49009 05-17-307-170  
9865 SPRINGWOOD DR KALAMAZOO, MI 49009 05-17-307-180



## KALAMAZOO COUNTY SANITARY CODE

9897 SPRINGWOOD DR KALAMAZOO, MI 49009 05-17-307-190  
9919 SPRINGWOOD DR KALAMAZOO, MI 49009 05-17-307-200  
9920 SPRINGWOOD DR KALAMAZOO, MI 49009 05-17-307-020  
9944 SPRINGWOOD DR KALAMAZOO, MI 49009 05-17-307-010  
9951 SPRINGWOOD DR KALAMAZOO, MI 49009 05-17-307-210  
- SPRINGWOOD DR KALAMAZOO, MI 49009 05-17-307-220  
- SPRINGWOOD DR KALAMAZOO, MI 49009 05-17-335-330  
- SPRINGWOOD DR KALAMAZOO, MI 49009 05-17-355-014  
66 SUMMERSET DR KALAMAZOO, MI 49009 05-17-385-230  
116 SUMMERSET DR KALAMAZOO, MI 49009 05-17-385-100  
209 SUMMERSET DR KALAMAZOO, MI 49009 05-17-385-401  
226 SUMMERSET DR KALAMAZOO, MI 49009 05-17-385-040  
237 SUMMERSET DR KALAMAZOO, MI 49009 05-17-385-420  
266 SUMMERSET DR KALAMAZOO, MI 49009 05-17-385-030  
281 SUMMERSET DR KALAMAZOO, MI 49009 05-17-385-430  
308 SUMMERSET DR KALAMAZOO, MI 49009 05-17-385-020  
335 SUMMERSET DR KALAMAZOO, MI 49009 05-17-385-440  
368 SUMMERSET DR KALAMAZOO, MI 49009 05-17-385-010  
130 SUNNYWOOD DR KALAMAZOO, MI 49009 05-17-360-040  
163 SUNNYWOOD DR KALAMAZOO, MI 49009 05-17-360-050  
182 SUNNYWOOD DR KALAMAZOO, MI 49009 05-17-360-030  
201 SUNNYWOOD DR KALAMAZOO, MI 49009 05-17-360-060  
232 SUNNYWOOD DR KALAMAZOO, MI 49009 05-17-360-020  
239 SUNNYWOOD DR KALAMAZOO, MI 49009 05-17-360-070  
274 SUNNYWOOD DR KALAMAZOO, MI 49009 05-17-360-010  
277 SUNNYWOOD DR KALAMAZOO, MI 49009 05-17-360-080  
370 SUNNYWOOD DR KALAMAZOO, MI 49009 05-17-307-120  
375 SUNNYWOOD DR KALAMAZOO, MI 49009 05-17-307-040  
9742 SUNNYWOOD DR KALAMAZOO, MI 49009 05-20-103-131  
9754 SUNNYWOOD DR KALAMAZOO, MI 49009 05-20-103-121  
9757 SUNNYWOOD DR KALAMAZOO, MI 49009 05-20-103-141  
9766 SUNNYWOOD DR KALAMAZOO, MI 49009 05-20-103-111  
9778 SUNNYWOOD DR KALAMAZOO, MI 49009 05-20-103-101  
9787 SUNNYWOOD DR KALAMAZOO, MI 49009 05-20-103-151  
9790 SUNNYWOOD DR KALAMAZOO, MI 49009 05-20-103-091  
9802 SUNNYWOOD DR KALAMAZOO, MI 49009 05-20-103-081  
9803 SUNNYWOOD DR KALAMAZOO, MI 49009 05-20-103-161  
9814 SUNNYWOOD DR KALAMAZOO, MI 49009 05-20-103-071  
9815 SUNNYWOOD DR KALAMAZOO, MI 49009 05-20-103-171  
9826 SUNNYWOOD DR KALAMAZOO, MI 49009 05-20-103-061  
9827 SUNNYWOOD DR KALAMAZOO, MI 49009 05-20-103-181  
9836 SUNNYWOOD DR KALAMAZOO, MI 49009 05-20-103-051  
9839 SUNNYWOOD DR KALAMAZOO, MI 49009 05-20-103-191  
9849 SUNNYWOOD DR KALAMAZOO, MI 49009 05-20-103-201  
9850 SUNNYWOOD DR KALAMAZOO, MI 49009 05-20-103-041  
9862 SUNNYWOOD DR KALAMAZOO, MI 49009 05-20-103-031  
9863 SUNNYWOOD DR KALAMAZOO, MI 49009 05-20-103-211  
9874 SUNNYWOOD DR KALAMAZOO, MI 49009 05-20-103-021



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9881 SUNNYWOOD DR KALAMAZOO, MI 49009 05-20-103-221  
9886 SUNNYWOOD DR KALAMAZOO, MI 49009 05-20-103-011  
- SUNNYWOOD DR KALAMAZOO, MI 49009 05-17-360-090  
8424 W KL AVE KALAMAZOO, MI 49009 05-21-255-030  
8443 W KL AVE KALAMAZOO, MI 49009 05-21-405-008  
8495 W KL AVE KALAMAZOO, MI 49009 05-21-405-001  
8565 W KL AVE KALAMAZOO, MI 49009 05-21-330-050  
8580 W KL AVE KALAMAZOO, MI 49009 05-21-255-010  
8710 W KL AVE KALAMAZOO, MI 49009 05-21-180-017  
8740 W KL AVE KALAMAZOO, MI 49009 05-21-180-011  
8766 W KL AVE KALAMAZOO, MI 49009 05-21-155-099  
8794 W KL AVE KALAMAZOO, MI 49009 05-21-155-091  
8880 W KL AVE KALAMAZOO, MI 49009 05-21-155-080  
8900 W KL AVE KALAMAZOO, MI 49009 05-21-155-070  
8971 W KL AVE KALAMAZOO, MI 49009 05-21-305-011  
9024 W KL AVE KALAMAZOO, MI 49009 05-20-285-050  
9033 W KL AVE KALAMAZOO, MI 49009 05-20-430-041  
9060 W KL AVE KALAMAZOO, MI 49009 05-20-285-060  
9067 W KL AVE KALAMAZOO, MI 49009 05-20-430-030  
9089 W KL AVE KALAMAZOO, MI 49009 05-20-430-020  
9112 W KL AVE KALAMAZOO, MI 49009 05-20-282-100  
9132 W KL AVE KALAMAZOO, MI 49009 05-20-255-010  
9135 W KL AVE KALAMAZOO, MI 49009 05-20-430-010  
9237 W KL AVE KALAMAZOO, MI 49009 05-20-405-050  
9305 W KL AVE KALAMAZOO, MI 49009 05-20-405-040  
9355 W KL AVE KALAMAZOO, MI 49009 05-20-405-030  
9365 W KL AVE KALAMAZOO, MI 49009 05-20-405-020  
9445 W KL AVE KALAMAZOO, MI 49009 05-20-405-010  
9495 W KL AVE KALAMAZOO, MI 49009 05-20-330-032  
9498 W KL AVE KALAMAZOO, MI 49009 05-20-185-070  
9555 W KL AVE KALAMAZOO, MI 49009 05-20-330-031  
9568 W KL AVE KALAMAZOO, MI 49009 05-20-185-040  
9574 W KL AVE KALAMAZOO, MI 49009 05-20-185-030  
9605 W KL AVE KALAMAZOO, MI 49009 05-20-330-022  
9643 W KL AVE KALAMAZOO, MI 49009 05-20-330-021  
9654 W KL AVE KALAMAZOO, MI 49009 05-20-185-010  
9679 W KL AVE KALAMAZOO, MI 49009 05-20-330-019  
9696 W KL AVE KALAMAZOO, MI 49009 05-20-155-038  
9777 W KL AVE KALAMAZOO, MI 49009 05-20-330-016  
9801 W KL AVE KALAMAZOO, MI 49009 05-20-330-014  
9806 W KL AVE KALAMAZOO, MI 49009 05-20-155-035  
9825 W KL AVE KALAMAZOO, MI 49009 05-20-301-092  
9887 W KL AVE KALAMAZOO, MI 49009 05-20-301-080  
9898 W KL AVE KALAMAZOO, MI 49009 05-20-155-040  
9919 W KL AVE KALAMAZOO, MI 49009 05-20-301-070  
9942 W KL AVE KALAMAZOO, MI 49009 05-20-155-033  
9967 W KL AVE KALAMAZOO, MI 49009 05-20-301-050  
9981 W KL AVE KALAMAZOO, MI 49009 05-20-301-040



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10015 W KL AVE KALAMAZOO, MI 49009 05-20-301-030  
10146 W KL AVE KALAMAZOO, MI 49009 05-19-285-056  
- W KL AVE KALAMAZOO, MI 49009 05-21-180-020  
- W KL AVE KALAMAZOO, MI 49009 05-21-180-030  
- W KL AVE KALAMAZOO, MI 49009 05-21-255-020  
- W KL AVE KALAMAZOO, MI 49009 05-20-155-036  
- W KL AVE KALAMAZOO, MI 49009 05-20-255-020  
- W KL AVE KALAMAZOO, MI 49009 05-21-185-020  
- W KL AVE KALAMAZOO, MI 49009 05-21-305-019  
9419 W MAIN ST KALAMAZOO, MI 49009 05-17-405-016  
9471 W MAIN ST KALAMAZOO, MI 49009 05-17-405-012  
9501 W MAIN ST KALAMAZOO, MI 49009 05-17-330-030  
9527 W MAIN ST KALAMAZOO, MI 49009 05-17-330-021  
9533 W MAIN ST KALAMAZOO, MI 49009 05-17-330-021  
9697 W MAIN ST KALAMAZOO, MI 49009 05-17-330-016 K  
9739 W MAIN ST KALAMAZOO, MI 49009 05-17-330-011  
9777 W MAIN ST KALAMAZOO, MI 49009 05-17-305-020  
9821 W MAIN ST KALAMAZOO, MI 49009 05-17-305-017  
9881 W MAIN ST KALAMAZOO, MI 49009 05-17-305-014 F  
9979 W MAIN ST KALAMAZOO, MI 49009 05-17-301-010  
10147 W MAIN ST KALAMAZOO, MI 49009 05-18-430-050  
10179 W MAIN ST KALAMAZOO, MI 49009 05-18-430-040 G  
10209 W MAIN ST KALAMAZOO, MI 49009 05-18-430-021  
10209 W MAIN ST KALAMAZOO, MI 49009 05-18-430-022  
10241 W MAIN ST KALAMAZOO, MI 49009 05-18-430-012  
10241 W MAIN ST KALAMAZOO, MI 49009 05-18-430-013  
10285 W MAIN ST KALAMAZOO, MI 49009 05-18-405-030  
10335 W MAIN ST KALAMAZOO, MI 49009 05-18-405-020  
10361 W MAIN ST KALAMAZOO, MI 49009 05-18-405-015  
10575 W MAIN ST KALAMAZOO, MI 49009 05-18-332-020  
10577 W MAIN ST KALAMAZOO, MI 49009 05-18-332-020  
10611 W MAIN ST KALAMAZOO, MI 49009 05-18-332-030  
10639 W MAIN ST KALAMAZOO, MI 49009 05-18-332-049  
10640 W MAIN ST KALAMAZOO, MI 49009 05-18-180-040  
10645 W MAIN ST KALAMAZOO, MI 49009 05-18-332-041  
10679 W MAIN ST KALAMAZOO, MI 49009 05-18-332-050  
10695 W MAIN ST KALAMAZOO, MI 49009 05-18-330-095  
10711 W MAIN ST KALAMAZOO, MI 49009 05-18-330-010  
10725 W MAIN ST KALAMAZOO, MI 49009 05-18-305-060  
10753 W MAIN ST KALAMAZOO, MI 49009 05-18-305-050  
10791 W MAIN ST KALAMAZOO, MI 49009 05-18-305-040  
10819 W MAIN ST KALAMAZOO, MI 49009 05-18-305-030  
10848 W MAIN ST KALAMAZOO, MI 49009 05-18-155-070  
- W MAIN ST KALAMAZOO, MI 49009 05-17-405-030  
- W MAIN ST KALAMAZOO, MI 49009 05-18-155-080  
- W MAIN ST KALAMAZOO, MI 49009 05-18-180-050  
826 WICKFORD DR KALAMAZOO, MI 49009 05-18-175-241  
839 WICKFORD DR KALAMAZOO, MI 49009 05-18-175-250



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864 WICKFORD DR KALAMAZOO, MI 49009 05-18-175-231  
869 WICKFORD DR KALAMAZOO, MI 49009 05-18-175-260  
896 WICKFORD DR KALAMAZOO, MI 49009 05-18-175-220  
901 WICKFORD DR KALAMAZOO, MI 49009 05-18-175-270  
928 WICKFORD DR KALAMAZOO, MI 49009 05-18-175-210  
933 WICKFORD DR KALAMAZOO, MI 49009 05-18-175-280  
960 WICKFORD DR KALAMAZOO, MI 49009 05-18-175-200  
965 WICKFORD DR KALAMAZOO, MI 49009 05-18-175-290  
990 WICKFORD DR KALAMAZOO, MI 49009 05-18-175-190  
995 WICKFORD DR KALAMAZOO, MI 49009 05-18-175-300  
1020 WICKFORD DR KALAMAZOO, MI 49009 05-18-175-180  
1025 WICKFORD DR KALAMAZOO, MI 49009 05-18-175-310  
1050 WICKFORD DR KALAMAZOO, MI 49009 05-18-175-170  
1055 WICKFORD DR KALAMAZOO, MI 49009 05-18-175-320  
1082 WICKFORD DR KALAMAZOO, MI 49009 05-18-175-160  
1087 WICKFORD DR KALAMAZOO, MI 49009 05-18-175-330  
1104 WICKFORD DR KALAMAZOO, MI 49009 05-18-175-150  
1119 WICKFORD DR KALAMAZOO, MI 49009 05-18-175-340  
1144 WICKFORD DR KALAMAZOO, MI 49009 05-18-175-140  
1149 WICKFORD DR KALAMAZOO, MI 49009 05-18-175-350  
1174 WICKFORD DR KALAMAZOO, MI 49009 05-18-175-130  
1179 WICKFORD DR KALAMAZOO, MI 49009 05-18-175-360  
1204 WICKFORD DR KALAMAZOO, MI 49009 05-18-175-120  
1209 WICKFORD DR KALAMAZOO, MI 49009 05-18-175-370  
1241 WICKFORD DR KALAMAZOO, MI 49009 05-18-175-381  
1305 WICKFORD DR KALAMAZOO, MI 49009 05-18-175-401  
42 WINTERWOOD LN KALAMAZOO, MI 49009 05-17-385-270  
45 WINTERWOOD LN KALAMAZOO, MI 49009 05-17-385-280  
85 WINTERWOOD LN KALAMAZOO, MI 49009 05-17-385-290  
123 WINTERWOOD LN KALAMAZOO, MI 49009 05-17-385-300  
142 WINTERWOOD LN KALAMAZOO, MI 49009 05-17-385-260  
153 WINTERWOOD LN KALAMAZOO, MI 49009 05-17-385-310

Notes: "-" indicates no available street number listed with Township and/or County.



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### Chadds Ford Way Subdivision

510 CHADDS FORD WAY KALAMAZOO, MI 49009 05-18-306-100  
525 CHADDS FORD WAY KALAMAZOO, MI 49009 05-18-306-110  
530 CHADDS FORD WAY KALAMAZOO, MI 49009 05-18-306-090  
545 CHADDS FORD WAY KALAMAZOO, MI 49009 05-18-306-120  
550 CHADDS FORD WAY KALAMAZOO, MI 49009 05-18-306-080  
575 CHADDS FORD WAY KALAMAZOO, MI 49009 05-18-306-130  
578 CHADDS FORD WAY KALAMAZOO, MI 49009 05-18-306-070  
608 CHADDS FORD WAY KALAMAZOO, MI 49009 05-18-306-060  
611 CHADDS FORD WAY KALAMAZOO, MI 49009 05-18-306-140  
636 CHADDS FORD WAY KALAMAZOO, MI 49009 05-18-306-050  
655 CHADDS FORD WAY KALAMAZOO, MI 49009 05-18-306-150  
664 CHADDS FORD WAY KALAMAZOO, MI 49009 05-18-306-040  
681 CHADDS FORD WAY KALAMAZOO, MI 49009 05-18-306-160  
698 CHADDS FORD WAY KALAMAZOO, MI 49009 05-18-306-030  
705 CHADDS FORD WAY KALAMAZOO, MI 49009 05-18-306-170  
732 CHADDS FORD WAY KALAMAZOO, MI 49009 05-18-306-020  
733 CHADDS FORD WAY KALAMAZOO, MI 49009 05-18-306-180  
764 CHADDS FORD WAY KALAMAZOO, MI 49009 05-18-306-010  
765 CHADDS FORD WAY KALAMAZOO, MI 49009 05-18-306-190

### SECTION 19d.05: GROUNDWATER USE EXCEPTIONS AND VARIANCES

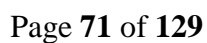
- a. No groundwater use exceptions or variances exist in the Groundwater Restricted Zone as of October 1, 2015. Use exceptions and variances may be granted in the future by the Kalamazoo County Board of Commissioners pursuant to the provisions of Chapter 25b of the Kalamazoo County Sanitary Code.

### SECTION 19d.06: ADDITIONAL PROVISIONS

The KL Avenue Group, as a condition for the approval of this Groundwater Use Restricted Zone has agreed, and is required, to assist property owners within the Zone to collect and present information to the Michigan Department of Environmental Quality in support of requests for waivers to retain certain groundwater wells for non-potable purposes, and to provide the County with an annual report on water quality issues experienced by property owners within the Zone.



SECTION 19d.07: MAP OF THE GROUNDWATER USE RESTRICTED ZONE





## **KALAMAZOO COUNTY SANITARY CODE**

**SECTION 19e.01: BORROUGHS CORPORATION APPROVED BY KALAMAZOO COUNTY BOARD OF COMMISSIONERS ON OCTOBER 20, 2020**

**SECTION 19e.02: SUMMARY OF GROUNDWATER CONTAMINATION AND ZONE**

Historical manufacturing operations at the Borroughs Corporation property at 3002 North Burdick Street has caused groundwater contamination with vinyl chloride. The plume of groundwater contaminated by vinyl chloride has migrated to the southeast, beyond the Borroughs property boundaries. The concentrations detected exceed the Michigan Department of Environment, Great Lakes, and Energy (EGLE) Part 201 Generic Residential Cleanup Criterion for protection of drinking water. The only potential risk to human health is the ingestion of drinking water.

Borroughs conducted remedial operations to address the contamination. This work was completed under the supervision and to the satisfaction of EGLE. Remedial activities included removal of known sources of contamination, contaminated soil excavation/disposal and air sparging/soil vapor extraction beneath the manufacturing facility. The remedial efforts were successful in removing a significant portion of the contamination; however, residual concentrations of vinyl chloride migrated in groundwater in the upper aquifer past the Borroughs site boundaries onto adjacent parcels to the southeast. Due to the remedial actions conducted by Borroughs and results of long-term groundwater monitoring, Borroughs has demonstrated to the satisfaction of EGLE that the vinyl chloride plume is stable or shrinking over time and is not continuing to migrate hydraulically downgradient in groundwater. Due to the success of the remedial actions in reducing the levels of contamination in groundwater, no additional remedial actions are planned by Borroughs to address the drinking water exposure pathway.

The Restricted Zone encompasses the possible offsite migration extent of the Borroughs vinyl chloride plume. This Restricted Zone will prevent the use of groundwater for drinking purposes from the Borroughs property east to the Canadian National Railway and south to Mosel Avenue.

**SECTION 19e.03: LEGAL DESCRIPTION OF RESTRICTED ZONE**

**A PARCEL OF LAND SITUATED IN THE SOUTH HALF OF SECTION 3, TOWN 2 SOUTH, RANGE 11 WEST, KALAMAZOO TOWNSHIP, KALAMAZOO COUNTY, MICHIGAN, FURTHER DESCRIBED AS FOLLOWS:**

COMMENCING AT THE SOUTH QUARTER POST OF SECTION 3, TOWN 2 SOUTH, RANGE 11 WEST, KALAMAZOO COUNTY, MICHIGAN; THENCE WEST ON THE SOUTH LINE OF SAID SECTION 45.13 FEET, MORE OR LESS TO A POINT IN THE CENTER LINE OF PITCHER STREET (BEING DESCRIBED IN LIBER NUMBER 1891, PAGE 445); THENCE NORTH 10 DEGREES 28 MINUTES 23 SECONDS WEST (BEING THE BEARING DESCRIBED IN SAID LIBER NUMBER AND PAGE, AND ALSO BEING RECORDED AS NORTH 10 DEGREES 39 MINUTES WEST) 33 FEET, MORE OR LESS, TO THE NORTH RIGHT-OF-WAY LINE OF MOSEL AVENUE AND THE POINT OF BEGINNING; THENCE WEST ALONG SAID NORTH RIGHT-OF-WAY LINE PARALLEL TO THE SOUTH LINE OF SAID SECTION 946.09 FEET, MORE OR LESS TO A POINT IN NORTH BURDICK STREET; THENCE NORTH 00 DEGREES 17 MINUTES 08 MINUTES WEST PARALLEL TO THE CENTER LINE OF NORTH BURDICK STREET (BEING THE SAME BEARING DESCRIBED IN INSTRUMENT NUMBER 2015-035526) 2,616.03 FEET, MORE OR LESS TO THE NORTHWEST CORNER OF THE PARCEL RECORDED AS TAX PARCEL NUMBER 06-03-335-011; THENCE NORTH 89 DEGREES 37 MINUTES 49 SECONDS EAST ALONG THE NORTH LINE SAID PARCEL 474.99 FEET, MORE OR LESS TO THE CENTER LINE OF NORTH PITCHER STREET;



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THENCE SOUTH 10 DEGREES 28 MINUTES 23 SECONDS EAST ALONG SAID CENTER LINE 1,058.21 FEET, MORE OR LESS TO THE NORTHWEST CORNER OF THE PARCEL RECORDED AS TAX PARCEL NUMBER 06-03-410-021; THENCE ALONG THE NORTH LINE OF SAID PARCEL NORTH 80 DEGREES 56 MINUTES 03 SECONDS EAST 1,122.95 FEET, MORE OR LESS TO THE EAST LINE OF SAID PARCEL; THENCE ALONG SAID EAST LINE OF SAID PARCEL SOUTH 00 DEGREES 40 MINUTES 11 SECONDS WEST 268.77 FEET, MORE OR LESS; THENCE CONTINUING ALONG SAID EAST LINE OF SAID PARCEL SOUTH 29 DEGREES 03 MINUTES 48 SECONDS EAST 446.00 FEET, MORE OR LESS; THENCE CONTINUING ALONG SAID EAST LINE OF SAID PARCEL SOUTH 00 DEGREES 40 MINUTES 11 SECONDS WEST 36.88 FEET, MORE OR LESS; THENCE SOUTH 89 DEGREES 48 MINUTES 00 SECONDS EAST 146.67 FEET, MORE OR LESS TO THE EAST RIGHT-OF-WAY LINE OF CANADIAN NATIONAL RAILWAY (FORMERLY THE GRAND TRUNK WESTERN RAILROAD AS DESCRIBED IN INSTRUMENT NUMBER 2016-029115); THENCE ALONG SAID RIGHT-OF-WAY LINE SOUTH 00 DEGREES 30 MINUTES 21 SECONDS WEST 1,059.48 FEET, MORE OR LESS TO THE NORTH RIGHT-OF-WAY LINE OF MOSEL AVENUE; THENCE WEST ALONG SAID NORTH RIGHT-OF-WAY LINE PARALLEL TO THE SOUTH LINE OF SAID SECTION 1,167.53 FEET, MORE OR LESS TO THE POINT OF BEGINNING.

THE ABOVE DESCRIPTION INCLUDES THE FOLLOWING TAX PARCEL NUMBERS: 06-03-385-040, 06-03-385-061, 06-03-385-030, 06-03-385-020, 06-03-385-010, 06-03-335-011, 06-03-410-021, 06-03-410-022, 06-03-460-010, 06-03-460-030, 06-03-460-020, 06-03-460-040

### SECTION 19e.04: STREET ADDRESSES WITHIN RESTRICTED ZONE

Address No.	Street Name	City, State Zip	Parcel No.
2722	North Burdick Street	Kalamazoo, MI 49004	06-03-385-020
2810	North Burdick Street	Kalamazoo, MI 49004	06-03-385-010
3002	North Burdick Street	Kalamazoo, MI 49004	06-03-335-011
2650	North Pitcher Street	Kalamazoo, MI 49004	06-03-460-020
2700	North Pitcher Street	Kalamazoo, MI 49004	06-03-460-010
2710	North Pitcher Street	Kalamazoo, MI 49004	06-03-410-021, 06-03-410-022
247	East Mosel Avenue	Kalamazoo, MI 49004	06-03-385-030
521	East Mosel Avenue	Kalamazoo, MI 49004	06-03-460-030
(no address)	East Mosel Avenue Vac	Kalamazoo, MI 49004	06-03-385-040
(no address)	East Mosel Avenue	Kalamazoo, MI 49004	06-03-385-061
(no address)	Mosel Ave Vac	Kalamazoo, MI 49004	06-03-460-040
(no address)	Gap Parcel	Kalamazoo, MI 49004	06-03-300-GAP
(no address)	Grand Elk RR	Kalamazoo, MI 49004	02-99-999-RR
(no address)	Canadian National Railway	Kalamazoo, MI 49004	(no parcel number)

### SECTION 19e.05: GROUNDWATER USE EXCEPTIONS AND VARIANCES

No groundwater use exceptions or variances exist in the Restricted Zone as of October 20, 2020. Use exceptions and variances may be granted in the future by the Kalamazoo County Board of Commissioners pursuant to the provisions of Chapter 25b of the Kalamazoo County Sanitary Code.







## **KALAMAZOO COUNTY SANITARY CODE**

### **CHAPTER 20b:     ADDING NEW RESTRICTED ZONES; PRELIMINARY CONSIDERATION**

The County Board of Commissioners may amend this Code to add new Restricted Zones in accordance with the following procedure.

SECTION 20b.01:     A Person seeking the establishment of a Restricted Zone shall first file with the County Administrator a request that the County establish a Restricted Zone pursuant to this Code. The Request must include a written Notice that identifies the proposed general boundaries of the Restricted Zone, the reason for establishing the Restricted Zone, a preliminary map of the Restricted Zone, and the proposed time schedule for implementing the Restricted Zone. The Person submitting the request to the County Administrator shall also provide a copy of the Notice to the local unit of government (city, township and/or village) having jurisdiction over the proposed Restricted Zone. When the proposed Restricted Zone is located with/in more than one local unit of government, the Person shall provide copies of the Notice to all of the local units of government.

SECTION 20b.02:     The County Administrator shall notify the County Board of Commissioners of the receipt of the Request for the Establishment of a Restricted Zone by the Board of Commissioners' first regularly scheduled meeting after the Administrator receives the Request.

SECTION 20b.03:     The County Board of Commissioners shall not consider establishing a Restricted Zone unless the Person submitting the Request demonstrates that creation of the Restricted Zone would eliminate the need to impose environmental restrictive covenants on property or would otherwise provide a tangible or quantifiable benefit.

SECTION 20b.04:     The County Board of Commissioners shall not consider establishing a Restricted Zone unless the Person requesting the establishment of the Restricted Zone guarantees and provides for municipal water service, unless the Board of Commissioners determines that providing municipal water service is technically unreasonable from an engineering perspective, or is otherwise impractical.

SECTION 20b.05:     The County Board of Commissioners shall not consider establishing a Restricted Zone unless the Applicant guarantees, and provides the County Board of Commissioners with the identification or location of all non-conforming wells on any affected premises, and provides for the proper abandoning and plugging of all nonconforming wells on any Affected Premises without cost to the owners or occupants, other than the person requesting the establishment of the Restricted Zone, of the Affected Premises and in compliance with CHAPTER 26b "Water Sources for Human Consumption" of this Code. To meet this guarantee, the Person shall either provide the County Administrator with written Proof of the provision of such service and the plugging/abandonment of such wells; or establish an escrow account, letter of credit, performance bond, or other acceptable form of financial assurance, in an amount and form acceptable to the County Board of Commissioners, to ensure that the Person making the Request will provide such service and the plugging/abandonment of such wells.

SECTION 20b.06:     If, after reviewing the Person's request for consideration of the establishment of a Restricted Zone and considering the standards set forth in SECTIONS 20b.01-20b.05, and after taking into consideration whether the establishment of a Restricted Zone will benefit the health safety and/or welfare of the residents of Kalamazoo County, the County Board of Commissioners is willing to consider the request for the establishment of a Restricted Zone, the Administrator shall provide the Person making the request with a written, preliminary, and non-binding, indication of the County's willingness to consider the Application.



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### **CHAPTER 21b:     ADDING NEW RESTRICTED ZONES; FORMAL CONSIDERATION AND APPROVAL**

SECTION 21b.01:     After receiving the County's preliminary indication of its willingness to consider the establishment of a Restricted Zone, a Person may submit an application for the formal establishment of a Restricted Zone to the County Administrator. The formal application can be in the form of a proposed remedial action plan or other appropriate documentation if appropriate cross-references are made for ease of reference.

SECTION 21b.02:     The application for the formal establishment of a Restricted Zone shall include, at a minimum, the following information, together with any escrow deposit as required under this SECTION.

- a.     The name, address, and phone number of the Applicant, as well as each person having an interest as owner, tenant easement holder or mortgagee of record in the real property which is the source or site of the contaminated groundwater, if known.
- b.     The street address and legal description of the real property which is the source or site of the contaminated groundwater, if known, and the nature of the Applicant's relationship to that property and involvement concerning the contaminated groundwater.
- c.     The nature and extent of the groundwater contamination and the substances causing the contamination, both in summary form and in plain English. These disclosures should also include a description in detail and in technical terms, stating the types and concentrations of contaminants', a map or survey showing the contaminants' current location- a statement of the contaminants' likely or anticipated impact on groundwater and the nature of the risks presented by the use of the groundwater, as well as the likely or anticipated path of the contaminants' migration if not remediated or corrected and a detailed statement of any plan to remediate, correct and/or contain the contamination.
- d.     A detailed map and legal description of the proposed Restricted Zone.
- e.     The street addresses and general description of the proposed Restricted Zone.
- f.     The names, addresses (mailing and street), and phone numbers (if readily available) of all persons with an interest as owner, tenant, easement holder, or mortgagee of record in any of the Affected Premises.
- g.     The location, current status, and usage characteristics of all existing groundwater wells within the proposed Restricted Zone.
- h.     The MDEQ's or USEPA's (as appropriate) written approval of the proposed Restricted Zone as an alternative to imposing restrictive covenants on property on which no release has occurred; and,
- i.     A copy of the information submitted to the MDEQ or USEPA concerning the proposed Restricted Zone, along with a written statement from an MDEQ or USEPA representative with approval authority stating that the proposed Restricted Zone and use regulations have received MDEQ or USEPA approval as part of the response actions for the groundwater contamination. The MDEQ or USEPA approval may be contingent upon the County's establishment of the proposed Restricted Zone pursuant to this CHAPTER.



## KALAMAZOO COUNTY SANITARY CODE

- j. Applicant shall provide a detailed statement or description of any contemplated exemptions from the prohibitions contained in this Code concerning the use of existing and future wells within the Restricted Zone.
- k. A description and time schedule for any actions the Applicant will take to implement any remediation plan, to mitigate the adverse impact of the implementation of the Restricted Zone (e.g. providing substitute water service), and to properly close and abandon any existing wells subject to the use prohibition within the proposed Restricted Zone.
- l. Copies of the notices provided to the owners of Affected Property within the Restricted Zone, together with a sworn statement that such notices were provided to all such owners with details of the manner in which such notices were provided. At a minimum, the notice must:
  - i. Identify the sender of the notice including the sender's name, address, contact person and telephone number.
  - ii. Identify the owner of the property which is the source of the contamination or who is seeking the creation of the Restricted Zone including the owner's name and property address.
  - iii. State what the effects of the Restricted Zone will be, i.e. how use of the groundwater will be restricted.
  - iv. Identify the Person who can be contacted at the County, the MDEQ or USEPA, and the Applicant for more information.
  - v. A description of the groundwater plume and a brief description of the nature of the contamination, and
  - vi. Any other information reasonably requested by the County Administrator.

SECTION 21b.03: In addition to the formal application provided for in SECTION 18b.01-18b.02, the Applicant shall also submit a written statement to the County Administrator in which Applicant agrees to pay all costs incurred by the County in the establishment of the proposed Restricted Zone, including without limitation, reimbursement for staff time, the fees of environmental consultants and legal counsel, the cost of publication, any per them or other amounts paid to public officials for attending any special meetings, etc. This statement shall also consent to the placement of a lien on the Applicant's premises if the amounts due under this SECTION are not timely paid (i.e. paid within 30 days of the issuance by the County of an invoice). That statement shall be in a form acceptable to the County's legal counsel and shall be in a form so as to be recordable in the records of the Kalamazoo County Register of Deeds.



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SECTION 21b.04: Along with the Application, the Applicant shall pay a deposit, or create an escrow account, in an amount equal to the costs the County Administrator estimates the County will incur in establishing the Restricted Zone, including without limitation, reimbursement for staff time, the fees of environmental consultants and legal counsel, the cost of publication, any per them or other amounts paid to public officials for attending any special meetings, etc. The deposit shall not bear interest and the County may use the funds pay for costs as they are incurred. If the Applicant elects to establish an escrow account, the Applicant shall continuously maintain a minimum balance of \$500.00 in that escrow account. If the Applicant fails to maintain the escrow as required by this provision, the County may, but is not required to, discontinue its processing of the request to establish a Restricted Zone and the County is authorized to file a lien against the premises of the Applicant.

SECTION 21b.05: Once the County Administrator or his or her designee determines that the application is complete, the County Administrator shall present the completed Application to the Board of County Commissioners at a regular or special meeting of the Board and request that the Board set a time, date, and place to hold a public hearing on the application.

SECTION 21b.06: After the Board of Commissioners sets the date for the public hearing; the Applicant shall send a written notice of the hearing, by first class mail, to all persons having an interest as owner, tenant, easement holder, or mortgagee of record in any of the Affected Premises. The notice shall include a brief statement regarding the application that fairly informs the recipients of the Restricted Zone's main features and the potential impacts the Restricted Zone may have on the recipients' in general. The Applicant shall mail the Notice at least ten days prior to the hearing. The Applicant shall also publish the Notice in a newspaper of general circulation within the County at least seven days before the hearing. The Applicant shall also mail the Notice to the MDEQ and USEPA representative, as appropriate, who issued the approval of the proposed Restricted Zone and use regulations; and to the MDEQ District Supervisor of the regulatory program with jurisdiction over the contaminated site. For each Notice required under this SECTION, the Applicant shall file one copy of each Notice, an affidavit of publication for each Notice, an affidavit of publication for each Notice and an affidavit of mailing for each Notice, with the County Administrator prior to the hearing.

SECTION 21b.07: If, after the public hearing, the Board of Commissioners determines that there is a need to establish a new Restricted Zone, the Board of Commissioners shall amend this Code to establish the new Restricted Zone. The County Clerk shall publish a Notice of the amendment to this Code in the same manner required by law for Ordinance amendments.

SECTION 21b.08: The Applicant shall notify all owners and occupants of real property within the newly established Restricted Zone of the need to close and abandon wells located on property located within the Restricted Zone. The Applicant shall also inform the owners and occupants of real property within the newly established Restricted Zone of who will be financially responsible for closing and abandoning the wells.



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**CHAPTER 22b-23b: RESERVED FOR FUTURE USE**



## **KALAMAZOO COUNTY SANITARY CODE**

### **CHAPTER 24b: EFFECT OF RESTRICTED ZONES, WELLS AND GROUNDWATER USE PROHIBITED**

Except as provided in CHAPTER 22b of this Code, no person shall install or utilize, or allow, permit, or provide for the installation or utilization of a well in any Restricted Zone. Except as provided in SECTION 22b of this Code, no person shall use any groundwater from any well located within a Restricted Zone.

### **CHAPTER 25b: EXCEPTIONS TO PROHIBITION**

A Person may install, utilize, allow, permit, or provide for the installation or utilization of, a well within a Restricted Zone identified in this Code, if one of the following exceptions applies and the individual complies with the requirements set forth in this SECTION.

#### **SECTION 25b.01: EXISTING WELLS - WATER SERVICE UNAVAILABLE**

The owners and/or occupants of property within a Restricted Zone that contained a working well(s) on the date that the County established the Restricted Zone under this Code, may continue to use the well(s) if it is safe and suitable for use and municipal water service is unavailable to the property.

- a. For purposes of this Subsection, a well will be considered safe and suitable for use if the Person wishing to use the well provides the County with a written annual certification, or more frequent certification if required by the County, that the well is safe and suitable. A Person wishing to use the well must secure certification, at his/her own expense, from a MDEQ-approved laboratory, that the well produces water that is within maximum contaminant levels as defined in Part 201. The Person wishing to use the well must arrange for the testing laboratory to promptly submit the results of the test to the MDEQ or the Department for review and determination that the well is safe and suitable for use and that use of the well does not exacerbate the contamination.
- b. For purposes of ARTICLE IIIb, municipal water service is unavailable only if it is technically unreasonable, from an engineering perspective, or otherwise impractical to supply the premises with municipal water. No split or conveyance of property shall be effective to render municipal water unavailable.

#### **SECTION 25b.02: PROOF OF NO INFLUENCE**

After the establishment of a Restricted Zone under this Code, the Department shall not issue a well permit for the installation of any water supply well within the Restricted Zone unless all of the following conditions are present:

- a. Municipal water service is unavailable to the property; and,
- b. The MDEQ determines, in writing, that the contaminated groundwater shall not influence or potentially influence the use of the well; and,



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- c. The MDEQ determines, in writing, that future migration of contaminated groundwater shall not affect the use of the well. Such terms and conditions may include, but are not limited to, hydrogeological evaluations including pump tests, an analysis of the degree of protection from vertical migration of contaminants through geologic barriers, and groundwater modeling. The person requesting to install the well shall be responsible for the costs of providing the MDEQ with the information the MDEQ deems necessary to determine whether it will issue a waiver. The Applicant shall provide the person requesting to install the well with all technical and practical information, in the Applicant's possession, that may reasonably aid the person in providing necessary information to the MDEQ; and,
- d. The individual wanting to install the water supply well submits copies of the MDEQ's determinations to the County and,
- e. The County Administrator, upon review of the written determinations of the MDEQ, and in consultation with the Department and such other technical experts as the Administrator deems necessary, may execute a waiver allowing the installation and use of the water supply well; and,
- f. Any water supply well approved under this Subsection must be installed using well construction techniques (e.g. double casing) that will maintain the integrity of the aquifer to be used as the supply source and prevent migration of contaminants to the aquifer to be used as the supply source. The individual must also provide the County Administrator with a written description of the proposed well construction techniques for review and approval prior to the installation of the well; and
- g. After the well is installed, the owner of the property on which the well is located, shall comply with the annually sampling and testing protocol set forth in SECTION 22a.01 of this Code; and,
- h. If the sampling and testing protocol indicate that the groundwater contaminants are influencing the water supply well, the owner of the property shall immediately abandon and plug the well.

### SECTION 25b.03: GROUNDWATER MONITORING

A well within a Restricted Zone may be used for groundwater monitoring and/or remediation as part of a MDEQ or USEPA approved response activity.

### SECTION 25b.04: CONSTRUCTION DE-WATERING

A well within a Restricted Zone may be used for construction de-watering, if the individual(s) installing and using the well complies with the following conditions:

- a. Use of the de-watering well will not expose an uncontaminated aquifer to contaminated groundwater; result in the Possible cross-contamination between saturated zones, or exacerbate the contamination; and,
- b. The water generated by that activity is properly handled and disposed of in compliance with all applicable laws, rules, regulations, permit and licensing requirements, orders and directives of any governmental entity or agency of competent jurisdiction.



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Any exacerbation of the contamination caused by the use of the well under this exception shall be the responsibility of the person operating the dewatering well, as provided in Part 201 of the Natural Resources and Environmental Protection Act, MCL 324.20101 to 324.20142.

### **SECTION 25b.05: EXISTING, SPECIFIC NON-CONTACT WELLS**

For purposes of the ARTICLE IIIb of this Code, a “non-contact” water supply system means a water supply system designed and utilized so as to prohibit the use of the water within the system for human ingestion. After the establishment of a Restricted Zone, an existing water supply well within the Restricted Zone shall not be used for non-contact heating, cooling or processing activities unless all of the following conditions are present:

- a. The MDEQ determines, in writing, that the use of a well for non-contact heating, cooling or processing activities will not cause the future migration of contaminated groundwater; and,
- b. The Person requesting the continued utilization or installation of the well submits a copy of the MDEQ’s written determination to the County Administrator; and,
- c. The County Administrator, upon review of the written determination of the MDEQ, and in consultation with the Department and such other technical experts as the Administrator deems necessary, may execute a waiver allowing the continued utilization, or installation, and use of the well upon such terms and conditions that the MDEQ may identify or require. Such terms and conditions may include, but are not limited to, hydrogeological evaluations including pump tests, an analysis of the degree of protection from vertical migration of contaminants through geologic barriers, and groundwater modeling. The person requesting to continue to utilize the well shall be responsible for the costs of providing the MDEQ with the information the MDEQ deems necessary to determine whether it will issue a waiver. The Applicant shall provide the person requesting to continue to utilize the well with all technical and practical information, in the Applicant’s possession, that may reasonably aid the person in providing necessary information to the MDEQ.

### **SECTION 25b.06: NEW, SPECIFIC NON-CONTACT WELLS**

After the establishment of a Restricted Zone under this Code, the Department an individual shall not install a new well to be used for noncontact heating, cooling or processing activities within a Restricted Zone unless all of the following conditions are present:

- a. The MDEQ determines, in writing, that the use of a well for noncontact heating, cooling or processing activities will not cause the future migration of contaminated groundwater; and,
- b. The Person requesting the installation of the well submits a copy of the MDEQ’s written determination to the County Administrator; and,



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- c. The County Administrator, upon review of the written determination of the MDEQ, and in consultation with the Department and such other technical experts as the Administrator deems necessary, may execute a waiver allowing the continued utilization, or installation, and use of the well upon such terms and conditions that the MDEQ may identify or require. Such terms and conditions may include, but are not limited to, hydrogeological evaluations including pump tests, an analysis of the degree of protection from vertical migration of contaminants through geologic barriers, and groundwater modeling. The person requesting the installation of the well shall be responsible for the costs of providing the MDEQ with the information the MDEQ deems necessary to determine whether it will issue a waiver. The Applicant shall provide the person requesting the installation of the well with all technical and practical information, in the Applicant's possession, that may reasonably aid the person in providing necessary information to the MDEQ.

### SECTION 25b.07: SPECIFIC NON-CONTACT IRRIGATION WELLS

After the establishment of a Restricted Zone under this Code, no new well shall be installed, within the Restricted Zone, for use as an irrigation well. An individual may continue to utilize an existing well for non-contact irrigation within a Restricted Zone if all of the following conditions are present:

- a. The MDEQ determines, in writing, that the use of a well for non-contact irrigation will not cause the future migration of contaminated groundwater; and,
- b. The Person requesting the continued utilization or installation of the well submits a copy of the MDEQ's written determination to the County Administrator; and,
- c. The County Administrator, upon review of the written determination of the MDEQ, and in consultation with the Department and such other technical experts as the Administrator deems necessary, may execute a waiver allowing the continued use of the well upon such terms and conditions that the MDEQ may identify or require. Such terms and conditions may include, but are not limited to, hydrogeological evaluations including pump tests, an analysis of the degree of protection from vertical migration of contaminants through geologic barriers, and groundwater modeling. The person requesting to continue to utilize the well shall be responsible for the costs of providing the MDEQ with the information the MDEQ deems necessary to determine whether it will issue a waiver. The Applicant shall provide the person requesting to continue to utilize the well with all technical and practical information, in the Applicant's possession, that may reasonably aid in providing necessary information to the MDEQ.

Any exacerbation of the contamination caused by the use of the well under this exception shall be the responsibility of the person operating the dewatering well, as provided in Part 201 of the Natural Resources and Environmental Protection Act MCL 324.20101 to 324.20142.

### SECTION 25b.08: PUBLIC EMERGENCIES

A well may be used within a Restricted Zone in the event of a public emergency.



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### **CHAPTER 26b: WATER SOURCES FOR HUMAN CONSUMPTION**

Except as provided in CHAPTER 22b of this Code, the water supply delivered for human consumption to any property located within a Restricted Zone shall be delivered only from a Municipal water system or by the use of bottled water delivered and purchased in containers under conditions approved by the State of Michigan. For the purposes of this subsection, the term "Human Consumption" means use in food or drink intended for human ingestion, use in food preparation or food service, use in the interior of a dwelling or dwelling unit for household purposes, and use in any building for personal washing.

### **CHAPTER 27b: NON-CONFORMING WELLS**

Any existing well, the use of which is prohibited by CHAPTER 21a, shall be plugged or abandoned in conformance with all applicable laws, rules, regulations, permit and license requirements, orders and directives of any governmental entity or agency of competent jurisdiction, or, in conformance with the protocol developed consistent with the American Standards for Testing and Materials standard #D5299-92.

### **CHAPTER 28b: WELLS AFFECTING CONTAMINATED GROUNDWATER**

Except as provided in CHAPTER 22b, no well may be used or installed at any place in the County if the use of the well will have the effect of causing the migration of contaminated groundwater or a contaminated groundwater plume to previously un-impacted groundwater, or adversely impacting any groundwater treatment system, unless the well is part of a MDEQ or USEPA approved groundwater monitoring or remediation system.

### **CHAPTER 29b: VIOLATIONS**

Any violation or suspected violation of the provisions of ARTICLE IIIb of this Code shall be addressed under ARTICLE VII: Declaratory Rulings and Hearing Procedures and ARTICLE VI: Criminal Penalties, of this Code.

SECTION 2. The County Clerk/Register is hereby directed to publish a summary copy of the Amendment to the Kalamazoo County Sanitary Code in the Kalamazoo Gazette promptly after passage of this Amendment.

SECTION 3. Upon passage, this Amendment shall become effective November 6, 2003.

Timothy A. Snow

County Clerk/Register



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### **ARTICLE IV: HOUSING REGULATIONS**

#### **CHAPTER 16: PURPOSE AND APPLICABILITY**

ARTICLE IV of the Code establishes the minimum standards governing the condition and maintenance of dwellings; establishes the minimum standards governing supplied utilities and facilities and other physical things and conditions essential to making such dwellings safe, sanitary and fit for human habitation; establishes the minimum standards governing the condition of dwellings offered for rent; fixes certain responsibilities and duties upon owners and occupants of dwellings; authorizes the Department to inspect dwellings; and authorizes the Department to condemn any dwelling which are found unfit for human habitation.

Any person who fails or refuses to comply with the provisions of ARTICLE IV will be subject to the penalties described in ARTICLE VIII of this Code.

#### **CHAPTER 17: INSPECTION OF DWELLINGS, DWELLING UNITS AND PREMISES**

##### **SECTION 17.01: INSPECTION**

The Department shall have the authority to inspect and determine the condition of dwellings, dwelling units, and premises located within the County of Kalamazoo, in order to safeguard the health and safety of the occupants of dwellings, and of the general public. The Department may enter, examine, and survey, at all reasonable times, all dwellings, dwelling units and premises. The owner or occupant of every dwelling, dwelling unit, or the person in charge thereof, shall give the Department free access to such dwelling, dwelling unit and its premises, at all reasonable times, for the purpose of such inspection, examination, and survey. Every occupant of a dwelling or a dwelling unit shall give the owner thereof, or his agent or employee, access to any such dwelling, dwelling unit, or premises, at all reasonable times for the purpose of making repairs or alterations which are necessary to effect compliance with the provisions of this ordinance or with any lawful order issued pursuant to the provisions of this ordinance.

#### **CHAPTER 18: MINIMUM STANDARDS**

##### **SECTION 18.01: BASIC EQUIPMENT AND FACILITIES**

No person shall occupy, or allow the occupancy of, any dwelling or dwelling unit, for the purpose of living, sleeping, cooking, or eating therein, unless the dwelling or dwelling unit complies with the following requirements:

- a. Every dwelling unit shall have an adequate onsite water supply well and an adequate onsite sewage treatment system which complies with the design, construction and operation provisions contained in this Code, or be connected to municipal water and/or sewer.
- b. Every dwelling unit shall contain a kitchen sink in working condition and properly connected to an adequate onsite water supply well and an adequate onsite sewage treatment system, or be connected to municipal water and/or sewer.
- c. Every dwelling or dwelling unit shall contain at least one properly functioning flush toilet, a sink, a bathtub or shower, which are properly connected to an adequate onsite water supply well and an adequate onsite sewage treatment system or be connected to municipal water and/or sewer.



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- d. Every dwelling unit shall have adequate garbage receptacles and disposal capabilities. Garbage storage containers must be water proof and vermin resistant.

### **SECTION 18.02: VENTILATION AND HEATING**

No person shall occupy, or allow the occupancy of, any dwelling or dwelling unit unless the dwelling or dwelling unit complies with the following requirements:

- a. Every habitable room shall have at least one easily opened window, skylight or similar device, which adequately ventilates the room.
- b. Every window or door used, or intended to be used, for ventilation; and any other opening capable of allowing the entry of rodents and insects; shall be properly screened or modified to prevent the entry of rodents and insects.
- c. All habitable rooms shall have properly installed and maintained heating facilities capable of providing temperatures of at least 68 Degrees Fahrenheit.

## **CHAPTER 19: GENERAL REQUIRMENTS RELATING TO THE SAFE AND SANITARY MAINTENANCE OF PARTS OF DWELLINGS AND DWELLING UNITS**

### **SECTION 19.01: REQUIREMENTS**

- a. No person shall occupy, or allow the occupancy of, a dwelling or dwelling unit unless the dwelling or dwelling unit meets the following requirements:
  - i. Every foundation, floor, wall, ceiling, roof, window, exterior door and basement hatchway is reasonably weather tight, vermin and insect resistant and is kept in proper working condition.
  - ii. Every plumbing fixture, waste pipe, and water pipe is properly installed and maintained in a good sanitary working condition.
  - iii. The floor surface of every bathroom is reasonably impervious to water and shall be constructed to permit the easy cleaning and maintenance of the floor surface.
- b. No owner, operator or occupant of a dwelling or dwelling unit shall shut off, or discontinue any utility necessary for the occupancy of the dwelling or dwelling unit except:
  - i. To permit the completion of necessary repairs or alterations; or,
  - ii. When the Department orders the discontinuance during temporary emergencies.

## **CHAPTER 20: RESPONSIBILITY OF OWNERS AND OCCUPANTS**

### **SECTION 20.01: RESPONSIBILITY**

- a. Owner(s) of dwellings or dwelling units shall be responsible to maintain the shared or public areas of the dwelling and premises in a clean condition.
- b. Occupant(s) shall keep that part of the dwelling where they reside in a clean condition.
- c. Owner/occupant(s) shall not allow filth, garbage or other rubbish which could be determined a danger to public health, to accumulate in the dwelling unit or on the premises.



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- d. Owners(s) of dwelling or dwelling units shall provide adequate garbage storage facilities.
- e. Owner(s) of dwellings or dwelling units shall assure removal of garbage and rubbish is required at regular intervals to avoid excessive accumulation and/or a public health nuisance.
- f. Owner(s) of dwellings or dwelling units shall be responsible to exterminate insects, rodents, or other pest infestations that are known to be capable of carrying disease.
- g. Owner(s) of dwellings or dwelling units shall maintain all water and sewer lines in sanitary manner.
- h. Owner(s) of vacant and/or condemned dwellings or dwelling units shall maintain the dwelling or dwellings units to prevent casual entry and the accumulation of garbage or rubbish on the premise. Financial institutions holding titles of foreclosed properties are considered to be the "Owner".

### **CHAPTER 21: DESIGNATION OF UNFIT DWELLINGS AND CONDEMNATION PROCEDURE**

#### **SECTION 21.01: UNFIT DWELLINGS**

The Department shall designate owner occupied or rental dwellings or dwelling units as unfit for human habitation and proceed to condemn such units if the Department finds any of the following:

- a. Dwelling or dwelling unit fails to provide the basic amenities essential to healthful living because it is so damaged, decayed, dilapidated, insanitary, unsafe, vermin infested; is likely to cause sickness or disease and/or likely to negatively impact the health or safety of the occupants or the public and/or,
- b. The owner or occupant of the dwelling fails to comply with ARTICLE IV of this Code or the Department issued orders under the provisions of this Code or rules pursuant thereto.

#### **SECTION 21.02: PLACARDING OF UNFIT DWELLINGS OR DWELLING UNITS; VACATING PREMISES (DEALING WITH A DANGEROUS BUILDING)**

- a. If the Department determines that a dwelling or dwelling unit is unfit for human habitation, the Department shall condemn the dwelling or dwelling unit; post a placard(s) (at least 7.5 inches by 9.5 inches in size) at a conspicuous place(s) on the dwelling or dwelling unit which notifies the public that the Department has condemned the dwelling or dwelling unit as unfit for human habitation. Occupants of the dwelling or dwelling unit will be ordered to vacate the premise within a reasonable time as determined by the Department based upon risk to occupants and/or public.
- b. No person shall reoccupy any dwelling or dwelling unit which the Department has condemned and placarded until the dwelling or dwelling unit is in compliance with all applicable provisions of this Code; and the Department authorizes the removal of the placard(s).



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- c. No person shall deface or remove a placard from any dwelling or dwelling unit that the Department has condemned and placarded unless the Department or a court of competent jurisdiction authorizes the removal of the placard(s).

### **SECTION 21.03: EMERGENCY ACTION**

- a. Whenever the Department finds that an emergency exists which requires immediate action to protect public health, the Department may, without notice or hearing, issue an Emergency Order which recites the existence of the emergency and directs the actions which a dwelling or dwelling unit's owner or occupant must take to address the emergency. Notwithstanding any other provision of this Code, an Emergency Order shall take effect immediately.
- b. Any person who fails or refuses to comply with the provisions of an Emergency Order is in violation of this Code and subject to the penalties described in ARTICLE VIII of this Code.



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**CHAPTER 22:        RESERVED FOR FUTURE USE**



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### **ARTICLE V: NONCOMMUNITY WATER SUPPLY ENFORCEMENT POLICY**

#### **CHAPTER 23: PURPOSE AND APPLICABILITY**

ARTICLE V applies to all Noncommunity Water Supplies as defined in Act 399 of the Public Acts of 1976, as amended, and seeks to assure compliance with the construction and sampling requirements promulgated under that Act.

#### **CHAPTER 24: GENERAL PROVISIONS**

##### **SECTION 24.01: AUTHORITY**

Act 399 of the Public Acts of 1976, as amended, gives the MDEQ authority to designate an authorized agent or representative to administer the Act and the Rules promulgated under the Act. Pursuant to this authority, the MDEQ has designated the Department as authorized agents and representatives.

##### **SECTION 24.02: POLICY**

The Department shall enforce the provisions of the Noncommunity Water Supplies Act 399 of the Public Acts of 1976, as amended, and Act 306 of the Public Acts of 1969, as amended, consistent with the procedures established by MDEQ. The Department shall initiate enforcement activities when one or more of the following deficiencies occur:

- a. A monitoring violation is detected.
- b. A construction deficiency exists in a new onsite water supply system.
- c. There is an improperly located new onsite water supply system.
- d. There is a failure to comply with the Department's order to correct an existing well construction or location deficiency.

##### **SECTION 24.03: PROCEDURE**

- a. When one or more of the deficiencies listed in SECTION 24.02 of this Code takes place, the Department shall:
  - i. Mail a letter of noncompliance to the owner of the Noncommunity Water Supply System. This letter shall describe why the Noncommunity Water Supply System is noncompliant and provide the owner with a specific schedule for bringing the Noncommunity Water Supply System into compliance with a correction schedule. The Department may consider the severity of the violation when preparing the correction schedule.
  - ii. Confirm that the owner has complied with an order and correction schedule. The Department may confirm that the owner has complied with an order and correction schedule, by re-inspecting the system and/or receiving written documentation that conclusively demonstrates that the owner took the necessary corrective action.



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- iii. If the owner of a Noncommunity Water Supply fails to comply with the correction schedule and correct the violations as directed, the Department may initiate an informal hearing pursuant to the procedure set forth in ARTICLE VII of this Code.
- b. An owner of a Type II Noncommunity Water Supply System, or the owner's designated representative, who disagrees with a Notice of Deficiency, an Order to take Corrective Action, a correction schedule or the Department's interpretation of the provisions of this CHAPTER, may request an informal hearing pursuant to the procedure set forth in ARTICLE VII of this Code.



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### **ARTICLE VI: FOOD PROTECTION PROGRAM; INSPECTION AND ENFORCEMENT**

#### **CHAPTER 25: PURPOSE AND APPLICABILITY**

ARTICLE VI of the Code concerns the administration and enforcement of Act 92, of the Public Acts of 2000 as amended, Michigan's Food Law 2000, and Sections 2441 and 2442 of the State of Michigan Public Health Code.

##### **SECTION 25.01: INSPECTION SCHEDULES**

The Department shall inspect each food service establishment within Kalamazoo County in compliance with requirements of Act 92, of the Public Acts of 2000, as amended.

##### **SECTION 25.02: COMPLIANCE AT THE TIME OF AN INSPECTION (ROUTINE OR FOLLOW-UP)**

- a. If a food service establishment is in compliance with the provisions of this Code at the time of a routine inspection, the Department shall continue to conduct routine inspections of the establishment according to the requirements of Act 92, of the Public Acts of 2000, as amended.
- b. If an inspection pursuant to CHAPTER 25.01 shows that:
  - i. No Imminent or Substantial Hazards exist at the food establishment; and,
  - ii. There are no Priority Item or Priority Foundation Item violations present at the food establishment, or the violations are corrected immediately if present or according to an agreed upon correction schedule, and any Priority Item or Priority Foundation Item violation found is not a chronic violation; and,
  - iii. If unsanitary conditions are present, they are corrected according to an agreed upon schedule(s); and the violations are not a chronic violation.

The Department shall continue to conduct routine inspections of the establishment according to the requirements of Act 92, of the Public Acts of 2000, as amended.

##### **SECTION 25.03: NON-COMPLIANCE AT THE TIME OF INSPECTION**

- a. If an inspection shows that a food service establishment is in violation of the provisions of this Code and the violation(s) constitutes an Imminent or Substantial Hazard to the public's health, the Department shall take action as provided in SECTION 25.04.5. of this Code; and Section 2113 of Act 92, of the Public Acts of 2000, as amended.
- b. If an inspection shows the presence of Priority Item or Priority Foundation Item violation(s) and the violation(s) are not corrected prior to the conclusion of the inspection or according to an agreed upon correction schedule, or if the violation(s) also constitute a chronic violation(s), the Department shall:



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- i. Take action as provided in SECTION 25.04.2 of this Code unless the violation(s) were the subject of a previous compliance agreement/correction schedule between the owner/operator and the Department, or the violation(s) were the subject of an Informal Hearing; or,
  - ii. If the violation(s) were the subject of a previous compliance agreement or correction schedule between the owner/operator and the Department; the Department shall take action as provided in SECTION 25.04.3 of this Code; or,
  - iii. If the violation(s) were the subject of an Informal Hearing, Department shall take action as provided in SECTION 25.04.4 of this Code and Section 4125 of Act 92, of the Public Acts of 2000, as amended.
- c. If an inspection shows that unsanitary conditions at the food service establishment constitute chronic or continuous violations of this Code, Department shall take action as provided in SECTION 25.04.2 of this Code and Sections 4125 and 3117 of Act 92, of the Public Acts of 2000, as amended.
- d. If an inspection shows that a person is operating a food service establishment without a license, the Department shall take action as provided in SECTION 25.04.6 of this Code and Sections 2117 and 4101 of Act 92, of the Public Acts of 2000, as amended.
- e. If any person interferes with an agent of the Department in the performance of his/her duties, Department shall take action as provided in SECTION 25.04.3 of this Code and Sections 4125 and 3117 of Act 92, of the Public Acts of 2000, as amended.
- f. If any person constructs, or begins construction of, a new food service establishment without an approved plan, the Department shall take action as provided in SECTION 25.04.9 of this Code and Section 3117 of Act 92, of the Public Acts of 2000, as amended.
- g. If any person remodels an existing food service establishment without an approved plan, the Department shall take action as provided in SECTION 25.04.9 of this Code and Section 3117 of Act 92, of the Public Acts of 2000, as amended.
- h. If any person operates a Temporary Food Service Establishment without a license, the Department shall take action as provided in SECTION 25.04.6 of this Code and Section 3117 of Act 92, of the Public Acts of 2000, as amended.
- i. If the Department determines that a food source is unapproved, adulterated or contaminated, the Department shall issue an Order to hold, test or destroy a food product in addition to any action which the Department may take under SECTION 25.04.10 of this Code and Section 2105 of Act 92, of the Public Acts of 2000, as amended.
- j. After a proper inspection, and in accordance with SECTION 25.04.8 of this Code and Section 2121 of Act 92, of the Public Acts of 2000, as amended, the Department shall impose License limitations, limiting the extent of food preparation or the menu items, which a food service establishment may prepare and serve. If the Department imposes license limitations, the establishment's owner is entitled to an informal hearing.



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### SECTION 25.04: ENFORCEMENT STEPS

When enforcing the provisions of ARTICLE VI of the Code, and specifically in conjunction with SECTION 25.03, the Department shall utilize the following steps or procedures:

25.04.1 Conduct subsequent inspection(s) to determine compliance with a mandated or agreed upon correction schedule. The correction schedule may occur as a result of a routine inspection, office conference, Informal Hearing, or Formal Hearing. If the establishment exhibits non-compliance with such orders or agreements, the Department shall proceed to the next appropriate enforcement step (for example, a Formal Hearing, if the follow-up inspection is the result of a failure to comply with a correction schedule established at an Informal Hearing).

25.04.2 Office Conference. If an inspection reveals that a food service establishment is not in compliance with the provisions of this Code, the Department shall hold an Office Conference at the Kalamazoo County Health and Community Services Department with the owner or designated agent of the food service establishment. If the Office Conference results in an agreed upon schedule of compliance, the Department shall reduce the schedule in writing and conduct necessary inspections. If the Office Conference does not result in an agreed upon schedule of compliance, the Department shall institute an Informal Hearing pursuant to the provisions of ARTICLE VII of this Code.

25.04.3 Informal Hearing. An Informal Hearing is held for the purpose of determining whether there is sufficient evidence to mandate a compliance schedule for certain violations. An Informal Hearing is to be conducted in accordance with the procedures set forth in ARTICLE VII of this Code and the Department may direct that an Informal Hearing take place for any or all of the following reasons:

- a. A person fails to comply with an order of the Department; or,
- b. A person interferes with an agent of the Department in the performance of his/her official duties; or,
- c. A person fails to correct a Priority Item or Priority Foundation Item violation(s) as agreed to in a compliance schedule; or,
- d. A person fails to correct a food service establishment's chronic, repeated or continuous Priority Item or Priority Foundation Item violation(s).
- e. A food service establishment licensee requests an Informal Hearing in writing. A Licensee's written request for an Informal Hearing must contain a description of the reason for, or subject of, the Informal Hearing.

25.04.4 Formal Hearing. A Formal Hearing is to be conducted in accordance with the procedures set forth in ARTICLE VII of this Code and is held for the purpose of:

- a. Determining whether a food service license should be suspended or revoked; or,
- b. Determining whether to reverse or end an order from the Department to suspend food service; or,



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- c. A food service establishment licensee requests a Formal Hearing in writing. A Licensee's written request for a Formal Hearing must contain a description of the reason for, or subject of, the Formal Hearing.

25.04.5 If the Department determines that conditions in a food service establishment constitute an imminent hazard, the Department shall order the food service establishment to immediately cease all food service operations until the hazard is removed or corrected. The owner and/or licensee of a food service establishment must immediately comply with the order to cease food service operations. The owner and/or licensee may request that the Department conduct a Formal Hearing to determine if the order to cease food service operations should be reversed or terminated, and the food service operation shall remain closed to the public pending the outcome of the Formal Hearing.

25.04.6 If the Department determines that a food service establishment is operating without a valid food service license, the Department shall order the owner and/or operator of the food service establishment to immediately cease all food preparation and service. No food service preparation or operations may resume until the owner and/or operator fully complies with all of the food service licensing requirements contained in this Code.

25.04.7 Late fees. The Department shall assess fees for late food service establishment license applications in accordance with the fee schedule promulgated by the Kalamazoo County Board of Commissioners under ARTICLE I, CHAPTER 2, SECTION 2.06, of this Code.

25.04.8 License Limitations. The Department may place restrictions on a food service establishment license, which limits the preparation of food if the Department determines that such limitations are necessary to protect the public's health. Unless the owner/licensee voluntarily agrees to the implementation of the limitations at the time of a plan review, the Department must offer the owner/licensee the opportunity to have the necessity of the limitations addressed in an Informal Hearing.

25.04.9 If the Department determines that any person is constructing or remodeling a food service establishment in violation of the provisions of this Code, the Department shall order the immediate cessation of the construction, alterations, conversions, or remodeling until the owner/licensee submits appropriate and acceptable to plans and specifications to the Department.

25.04.10 If the Department determines that a food product constitutes a potential threat to public health, the Department shall order the person(s) in control of such food to hold, test, or destroy the food product. Failure to comply with an order to hold, test or destroy a food product will result in an imminent hazard.

Any violation or suspected violation of the provisions of ARTICLE VI of this Code shall be addressed under ARTICLE VII: Declaratory Rulings and hearing Procedures and ARTICLE VI: Criminal Penalties, of this Code.



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### **ARTICLE VII: DECLARATORY RULING AND HEARING PROCEDURES**

#### **CHAPTER 26: PURPOSE**

ARTICLE VII of the Code sets out the type of declaratory ruling and hearing procedures which Kalamazoo County will use to interpret and enforce the provisions of this Code; to obtain the voluntary correction of Code violations; and to provide a review of actions taken by the Department in administering and enforcing this Code. The Hearing procedures contained in this ARTICLE are also intended to comply with the Administrative Procedures Act.

#### **CHAPTER 27: DEFINITIONS SPECIFIC FOR ARTICLE VII**

##### **SECTION 27.01: FORMAL HEARING**

“Formal Hearing” means a hearing to obtain compliance with the provisions of this Code; to correct a violation of this Code and/or as an appellate review of the decision from an Informal Hearing.

##### **SECTION 27.02: FORMAL HEARING BOARD**

“Formal Hearing Board” means a board of three people: one member of the Kalamazoo County Board of Commissioners; the Director of the Kalamazoo County Health and Community Services Department or his/her designated representative, who shall also serve as the Chairperson of the Formal Hearing Board; and the County Clerk or his/her designated representative.

##### **SECTION 27.03: INFORMAL HEARING**

“Informal Hearing” means a hearing to determine if a person is in compliance with this Code and other applicable laws. During an Informal Hearing schedules for correcting violations of this Code will be set, and license requirements/limitations necessary to insure compliance with state mandated laws and this Code will be reviewed.

##### **SECTION 27.04: INFORMAL HEARING OFFICER**

“Informal Hearing Officer” means the Manager of the Environmental Health Division or his/her designated representative.

##### **SECTION 27.05: RESPONDENT**

“Respondent” means the individual who is alleged to have violated a provision of this Code and has received a notice to appear at either an Informal Hearing or a Formal Hearing. A person who initiates an Informal Hearing or a Formal Hearing for purposes including, but not limited to, the review of a decision from an Informal Hearing, the review of a denial of a variation application, or the review of a declaratory ruling, shall also be identified as the Respondent.

#### **CHAPTER 28: DECLARATORY RULINGS**

##### **SECTION 28.01: DECLARATORY RULINGS; PURPOSE**

On request of an interested person, the Department may issue a Declaratory Ruling concerning the applicability of the provisions of this Code to an actual state of facts.



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### **SECTION 28.02: DECLARATORY RULINGS; PROCEDURE**

- a. A person requesting the issuance of a Declaratory Ruling must submit the request, in writing, to the Department. The submission must sufficiently identify the facts forming the basis for the request for a Declaratory Ruling; the SECTION(s) of the Code which apply to the factual situation; and any argument or authority which the applicant wishes the Department to consider when issuing a Declaratory Ruling.
- b. Within 30 days of receiving a written request to issue a Declaratory Ruling, the Department shall deny, in writing, the request to issue a Declaratory Ruling; issue a written Declaratory Ruling; or send a written request to the application which describes what additional information the Department needs to render a decision on the application for the issuance of a Declaratory Ruling.

### **SECTION 28.03: DECLARATORY RULINGS; BINDING EFFECT**

A written Declaratory Ruling issued by the Kalamazoo County Health and Community Services Department is binding upon the Department, and the person requesting the Declaratory Ruling, unless:

- a. A Court of competent jurisdiction alters or sets aside the Declaratory Ruling; or,
- b. The Department alters or sets aside the Declaratory Ruling, but such action by the Department shall only have a prospective effect and no retroactive effect.

### **SECTION 28.04: DECLARATORY RULINGS; APPEAL**

An interested person who disagrees with a written Declaratory Ruling issued by the Department may have the Declaratory Ruling reviewed at an Informal Hearing held in accordance with the provisions of CHAPTER 29 of this ARTICLE.

## **CHAPTER 29: INFORMAL HEARINGS**

### **SECTION 29.01: INFORMAL HEARING; NOTIFICATION**

- a. The Department shall provide all parties to an Informal Hearing with reasonable notice of the hearing and the written notice shall include:
  - i. A statement of the date, hour, place and nature of the hearing. Unless otherwise specified in the Notice, the hearing shall take place at the principal offices of the Environmental Health Division.
  - ii. A statement of the legal authority and jurisdiction under which the hearing is to be held.
  - iii. A reference to the particular SECTION(s) of the code, which will be addressed at the hearing.



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- iv. A detailed statement of the matters or violations asserted by the Department. If the Department cannot provide a detailed statement at the time the first notice is sent to the Respondent, the Department shall provide a general statement of the issues involved. If the Department initially provides a general statement, it shall provide the Respondent with a detailed statement as soon as practical.
- v. A statement that the Respondent may request an adjournment of the Informal Hearing date if the Respondent submits a written request for an adjournment to the Department at least 48 hours prior to the scheduled hearing. The Department shall respond to the adjournment request prior to the scheduled hearing and if they grant the adjournment request they shall provide all parties involved in the hearing with a written notice of adjournment that contains the new date, and time, of the hearing.

### SECTION 29.02: INFORMAL HEARING; RESPONSE TO NOTICE OF HEARING; EVIDENCE; ATTORNEYS

- a. A respondent who receives a Notice of Informal Hearing may, but is not required to, file a written answer to the Notice with the Department at any time prior to the completion of the Informal Hearing.
- b. All parties involved in the Informal Hearing shall have the right to present oral and written arguments on issues of law and policy during the hearing.
- c. All parties involved in the Informal Hearing shall have the right to present evidence and argument on issues of fact during the hearing.
- d. A party shall have the right to cross-examine a witness, including the author of any document offered into evidence, which was prepared by, on behalf of, or for the use of the Department.
- e. The Informal Hearing Officer shall, as far as practicable, require the parties to comply with the Rules of Evidence which apply in non-jury civil cases in a Circuit Court, but the Informal Hearing Officer may also admit and give probative effect to evidence which does not comply with the Rules of Evidence if it is a type commonly relied upon reasonably prudent persons of the conduct of their affairs. The Informal Hearing Officer may exclude irrelevant, immaterial or unduly repetitious evidence. The Informal Hearing Officer shall give effect to legally recognized privileges such as Attorney-Client, Physician-Patient, Priest-Penitent, etc.
- f. All parties may, but are not required to, have an attorney represent their interests at an Informal Hearing.

### SECTION 29.03: INFORMAL HEARING; FORMAT AND PROCEEDINGS; BURDEN OF PROOF

The Informal Hearing shall proceed, as much as practicable, according to the following sequence of events:

- a. The Informal Hearing Officer shall call the proceeding to order and provide the parties with a brief summary of information concerning the Informal Hearing. This statement can be oral or written and shall include:
  - i. The date, time and reason for the Informal Hearing.



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- ii. An introduction of those present, including their names, titles and the agency or person they represent.
  - iii. A description of the Informal Hearing format and that the hearing will be recorded.
  - iv. An acknowledgment that the Informal Hearing Officer has either received, or has not received any written statements or responses from the Respondent prior to the start of the Informal Hearing.
- b. After the Informal Hearing Officer completes all introductory remarks, the staff of the Environmental Health Division shall:
  - i. Present an overview/introductory statement which briefly describes the reason(s) why the Department has directed the holding of the Informal Hearing; the provision(s) of the Code or compliance schedule which the Respondent has alleged violated; and the evidence the staff intends to introduce during the Informal Hearing.
  - ii. After the staff completes its introductory statement, the Respondent may, but is not required to, make a statement in which the Respondent states his/her position and what evidence the Respondent intends to introduce during the Informal Hearing.
  - iii. The staff then shall present its evidence, including the testimony of witnesses, to the Informal Hearing Officer.
  - iv. After the staff finishes with its presentation of evidence, the Respondent has the opportunity to make an introductory statement if he/she/it has not already made such a statement and present his/her/its evidence, including the testimony of witnesses, to the Informal Hearing Officer. The respondent is not required to present any evidence.
  - v. After the Respondent finishes his/her/its presentation of evidence, the staff shall have the opportunity to make a final argument in support of its position.
  - vi. After the staff completes its final argument, the respondent shall have the opportunity to make a final argument in support of his/her/its position.
- c. The staff bears the “burden of proof” in an Informal Hearing, which requires the staff to prove its allegations against the respondent by a preponderance of the evidence (e.g. that the evidence shows that it is more likely than not that the respondent violated the provisions of this Code or a compliance schedule).

### **SECTION 29.04: INFORMAL HEARING; DECISION OF INFORMAL HEARING OFFICER**

- a. After the conclusion of the final arguments, the Informal Hearing Officer shall issue an oral or written decision. If the Informal Hearing Officer issues an oral decision, he/she shall issue the decision immediately after the conclusion of final arguments and with all parties present. The Informal Hearing Officer shall reduce an oral decision to writing and send a copy of the decision to all parties within 14 working days of the completion of final arguments.



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- b. All decisions, whether oral or written, must include a brief recap of testimony and evidence presented to the Informal Hearing Officer; the Informal Hearing Officer's finding of facts concerning the allegations raised by the staff and Department; and a determination of whether the staff has met its burden of proof and showed that the violations exist or occurred; and, if the staff has proven a violation, the action the respondent must take to correct the violation. Such action can include, but is not limited to, creation of a compliance schedule.

### **SECTION 29.05: APPEAL**

Any party who disagrees with the decision of the Informal Hearing Officer may appeal the decision by requesting that the decision be reviewed through a Formal Hearing. A Respondent must submit a written request for a Formal Hearing within 35 days of the date on which the Informal Hearing Officer made his/her decision. The request for a Formal Hearing must contain a photocopy of the Informal Hearing Officer's written decision and any fee required by the Board of Commissioners.

## **CHAPTER 30: FORMAL HEARINGS**

### **SECTION 30.01: REQUESTS FOR FORMAL HEARINGS**

The Department may request a Formal Hearing if an individual fails to comply with a decision from an Informal Hearing, including failure to adhere to a compliance schedule. An individual may request a Formal Hearing for purposes of reviewing/appealing a decision from an Informal Hearing. All requests for Formal Hearings shall be in writing and contain a description of the reason why the individual or staff is requesting the Formal Hearing and a copy of the written decision of the Informal Hearing Officer if the Formal Hearing Board is being asked to review or enforce such a decision. Any person requesting a Formal Hearing shall provide the other parties with a copy of the request.

### **SECTION 30.02: FORMAL HEARINGS; SCHEDULING; PUBLIC NOTICE; OPEN TO THE PUBLIC**

- a. The Manager of the Environmental Health Division shall schedule a Formal Hearing to start within 30 working days after the Department receives a Formal Hearing request.
- b. Formal Hearings shall be open to the public and notice of such shall be posted in the principal office of the Kalamazoo County Health and Community Services Department and the County Clerk at least 24 hours before the scheduled hearing. Such notice shall include the date, time, and location of hearing and the telephone number of the Department.

### **SECTION 30.03: FORMAL HEARINGS; NOTIFICATION**

- a. The Manager of the Environmental Health Division shall serve a Notice of Formal Hearing on the Respondent through personal delivery or certified mail, restricted delivery. The Manager of the Environmental Health Division shall serve the Notice upon the respondent at least five business days before the date scheduled for the Formal Hearing unless an immediate hearing is required by this Code. The Notice shall include:
  - i. A statement of the date, hour, place and nature of the hearing. Unless otherwise specified in the Notice, the hearing shall take place at the principal offices of the Environmental Health Division.
  - ii. A statement of the legal authority and jurisdiction under which the hearing is to be held.



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- iii. A reference to the particular section(s) of the code, which will be addressed at the hearing.
- iv. A detailed statement of the matters or violations asserted by the Department. If the Department cannot provide a detailed statement at the time the first notice is sent to the Respondent, the Department shall provide a general statement of the issues involved. If the Department initially provides a general statement, it shall provide the Respondent with a detailed statement as soon as practicable.
- v. A statement that the Respondent may request an adjournment of the Formal Hearing if the Respondent submits a written request for an adjournment to the Manager of the Environmental Health Division at least 48 hours prior to the scheduled hearing. The Manager of the Environmental Health Division shall respond to the adjournment request prior to the scheduled hearing and if he/she grants the adjournment request he/she shall provide all parties involved in the hearing with a written notice of adjournment that contains the new date, and time, of the hearing.

### **SECTION 30.04: FORMAL HEARING; FORMAL HEARING OFFICER; DUTIES**

The Formal Hearing Officer in a Formal Hearing acts as moderator of the proceedings but does not have the authority to render any final decisions as to whether the staff has sustained its burden of proof and proven its allegations. The Formal Hearing Board shall have the sole authority to enter final decisions as to whether the staff has sustained its burden of proof and proven its allegations.

### **SECTION 30.05: FORMAL HEARING; RESPONSE TO NOTICE OF HEARING; EVIDENCE; ATTORNEYS**

- a. A Respondent who receives a Notice of Formal Hearing may, but is not required to, file a written answer to the Notice with the Manager of the Environmental Health Division at any time prior to the completion of the Informal Hearing.
- b. All parties involved in the Formal Hearing shall have the right to present oral and written arguments on issues of law and policy during the Formal Hearing.
- c. All parties involved in the Formal Hearing shall have the right to present evidence and argument on issues of fact during the Formal Hearing.
- d. A party shall have the right to cross-examine a witness, including the author of any document offered into evidence, which was prepared by, on behalf of, or for the use of the Department.
- e. The Formal Hearing Officer shall, as far as practicable, require the parties to comply with the Rules of Evidence which apply in non-jury civil cases in a Circuit Court, but the Formal Hearing Officer may also admit and give probative effect to evidence which does not comply with the Rules of Evidence if it is a type commonly relied upon by reasonably prudent persons of the conduct of their affairs. The Formal Hearing Officer may exclude irrelevant, immaterial or unduly repetitious evidence. The Formal Hearing Officer shall give effect to legally recognized privileges such as Attorney-Client, Physician-Patient, Priest-Penitent, etc.
- f. All parties may but are not required to have an attorney at a Formal Hearing.



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- g. The Department shall make all records in a case, including statements by the Department witnesses, available to Respondent for use on cross-examination.
- h. The Formal Hearing Officer shall be responsible for calling on appropriate members of the staff or outside professionals to act as witnesses on behalf of the Department.
- i. All evidence to be presented at a hearing shall be entered only at the time of the hearing. No evidence will be added or deleted after the hearing.
- j. A deposition may be used in lieu of other evidence, if taken in accordance with the Michigan Court Rules.
- k. Documentary evidence may be received in the form of a copy or excerpt. All documentary evidence incorporated by reference must be made available to the Respondent and Respondent's counsel prior to the Formal Hearing.

### **SECTION 30.06: FORMAL HEARINGS; FORMAT AND PROCEEDINGS; BURDEN OF PROOF; FORMAL HEARING BOARD'S RIGHT TO ASK QUESTIONS**

The formal hearing shall proceed, as much as practicable, according to the following sequence of events:

- a. The Formal Hearing Officer shall call the proceeding to order and provide the parties with a brief summary of information concerning the hearing. This statement can be oral or written and shall include:
  - i. The date, time and reason for the hearing.
  - ii. An introduction of those present, including their names, titles and the agency or person they represent.
  - iii. A description of the hearing format and that the hearing will be recorded.
  - iv. An acknowledgment that the Formal Hearing Officer has either received, or has not received any written statements or responses from the Respondent prior to the start of the Formal Hearing.
  - v. At this time the Formal Hearing Officer shall also question the Formal Hearing Board Members as to any conflict of interest in the case before them.
- b. After the Formal Hearing Officer completes all introductory remarks, the staff of the Environmental Health Division shall:
  - i. Present an overview/introductory statement which briefly describes the reason(s) why the Department has directed the holding of the Formal Hearing; the provision(s) of the Code or Compliance Schedule which the Respondent has alleged violated; and the evidence the staff intends to introduce during the hearing.
  - ii. After the staff completes its introductory statement, the Respondent may, but is not required to, make a statement in which the Respondent states his/her position and what evidence the Respondent intends to introduce during the hearing.



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- iii. The staff then shall present its evidence, including the testimony of witnesses, to the Formal Hearing Officer.
  - iv. After the staff finishes with its presentation of evidence, the Respondent has the opportunity to make an introductory statement if he/she/it has not already made such a statement and present his/her/its evidence, including the testimony of witnesses, to the Formal Hearing Officer. The respondent is not required to present any evidence.
  - v. After the Respondent finishes his/her/its presentation of evidence, the staff shall have the opportunity to make a final argument in support of its position.
  - vi. After the staff completes its final argument, the respondent shall have the opportunity to make a final argument in support of his/her/its position.
- c. The staff bears the “burden of proof” in a Formal Hearing, which requires the staff to prove its allegations against the respondent by a preponderance of the evidence (e.g. that the evidence shows that it is more likely than not that the respondent violated the provisions of this Code or a compliance schedule).
  - d. The members of the Formal Hearing Board may ask questions of the parties and witnesses at any time. The Formal Hearing Board may also ask one or all parties to submit written proposed findings of fact for the Board’s review and possible adoption.

### **SECTION 30.07: FORMAL HEARINGS; DECISION OF FORMAL HEARING BOARD**

- a. After the conclusion of the final arguments, the Formal Hearing Board shall issue an oral or written decision within thirty days of the completion of the Hearing. The Board shall announce its final decision to all parties at a meeting open to the public.
- b. All decisions, whether oral or written, must include a brief recap of testimony and evidence presented to the Formal Hearing Board; the Formal Hearing Board’s finding of facts concerning the allegations raised by the staff, Department; and a determination of whether the staff has met its burden of proof and showed that the violations exist or occurred; and, if the staff has proven a violation, the action the respondent must take to correct the violation. Such action can include, but is not limited to, creation of a compliance schedule.
- c. The decision of the Formal hearing Board is final concerning the issue(s) addressed in the Board’s decision.

### **SECTION 30.08: APPEAL**

Any party who disagrees with the decision of the Formal Hearing Board may appeal the decision to the appropriate Circuit Court. A party must submit his/her/its written appeal to the Circuit Court within 60 days of the date on which the Formal Hearing Board mailed or personally served its written final decision to the parties.



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### **SECTION 30.09: FORMAL HEARINGS; PREPARATION AND MAINTENANCE OF AN OFFICIAL RECORD**

The Department shall prepare an official record of all hearings that shall include the following:

- a. Notices, inspection reports, correspondence and conversations.
- b. Questions and offers of proof made during the Formal Hearing and the objections and rulings thereon.
- c. Evidence presented.
- d. Matters officially noticed by the Formal Hearing Board except matters so obvious that a statement of them would serve no useful purpose.
- e. Proposed findings of fact if the Formal Hearing Board requested them.
- f. Any decisions, opinions, orders, or findings of fact by the Formal Hearing Officer presiding at the hearing and by the Department.

## **ARTICLE VIII: CRIMINAL PENALTIES**

### **CHAPTER 31: MAXIMUM PENALTIES; SEPARATE VIOLATIONS**

- a. In addition to the enforcement procedures, civil penalties and hearing procedures contained in ARTICLES II-VII of this Code, the violation of any provision of this Code shall also be criminal misdemeanor. Any individual convicted in a court of law of violating any provision of this Code shall be imprisoned in the County jail for up to Ninety (90) Days, or fined up to Two Hundred Dollars (\$200.00), or both.
- b. Each day that a violation exists constitutes a separate and distinct violation of this Code.



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### **ARTICLE IX: RESIDUAL METHAMPHETAMINE CONTAMINATION CLEANUP REGULATIONS**

#### **CHAPTER 23a: PURPOSE**

The Kalamazoo County Board of Commissioners has determined that it is necessary to ensure that buildings that have been used for methamphetamine activities are “safe” to reoccupy and has authorized the Kalamazoo County Health and Community Services Department to establish standards for the cleanup of methamphetamine laboratories used to manufacture and/or use methamphetamine. Pursuant to these regulations, property owners or any person seeking to occupy a building or to offer for occupancy a building, are required to meet all of the requirements set forth in these regulations before permitting the use of a building that has been used for methamphetamine activities, except that a property owner may elect instead to demolish the affected building.

#### **CHAPTER 24a: APPLICABILITY**

The requirements of ARTICLE IX apply: (1) when an owner of property has received notification from the Department that chemicals, equipment, or supplies indicative of a methamphetamine laboratory or smoking of methamphetamine have been identified at the property, or (2) when a methamphetamine laboratory is otherwise discovered, and the owner of the property has received notice.

#### **CHAPTER 25a: DEFINITIONS SPECIFIC FOR ARTICLE IX**

##### **SECTION 25a.01: CHEMICAL STORAGE AREA**

“Chemical Storage Area” means any area where chemicals used in the manufacture of methamphetamine are stored or have come to be located.

##### **SECTION 25a.02: CLEANUP LEVEL**

“Cleanup Level” means the numerical value, established in SECTION 30a of this regulation, that causes the consultant to determine if an area is compliant or noncompliant based on the results of sampling conducted in accordance with the sampling procedures presented in Appendix A of these regulations.

##### **SECTION 25a.03: CONSULTANT**

“Consultant” means an Environmental Professional, (as described in SECTION 25a.14 of these definitions), who conducts the preliminary and post-decontamination assessments.

##### **SECTION 25a.04: CONTAMINANT**

“Contaminant” means a chemical, chemical residue or compound that may be present and may pose an immediate or long-term threat to human health and the environment.

##### **SECTION 25a.05: CONTAMINATION or CONTAMINATED**

“Contamination” or “Contaminated” means the presence of chemical residues, which may present an immediate or long-term threat to human health or the environment.

##### **SECTION 25a.06: CONTRACTOR**

“Contractor” means one or more individuals or commercial entities hired to perform decontamination work in accordance with the requirements of this regulation.



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### **SECTION 25a.07: COOKING AREA**

“Cooking area” means any area where methamphetamine manufacturing is occurring or has occurred.

### **SECTION 25a.08: DECISION LEVEL**

“Decision Level” means that concentration, relative to the cleanup level, that shall be used to distinguish between compliant and non-compliant areas. The calculation for the decision level for composite samples is found in Appendix A, Composite Decision Level.

### **SECTION 25a.09: DECONTAMINATION**

“Decontamination” means the process of reducing the level of contamination to a level as low as reasonably achievable (ALARA) using currently available methods. At a minimum, decontamination must reduce contamination of specified substances below the concentrations described in SECTION 30a of these regulations.

### **SECTION 25a.10: DEMOLITION**

“Demolition” means the wrecking or taking out of any load-supporting structural member, including any related handling operations.

### **SECTION 25a.11: DISPOSAL**

“Disposal” means handling, transportation and ultimate disposition of materials removed from contaminated properties.

### **SECTION 25a.12: DOCUMENTATION**

“Documentation” means preserving a record of an observation through writings, drawings, photographs, or other appropriate means.

### **SECTION 25a.13: ENCAPSULATION**

“Encapsulation” means applying a surface sealant to create a physical barrier intended to decrease or to eliminate the potential for exposure to residual contaminants that may exist beneath the physical barrier even after decontamination.

### **SECTION 25a.14: ENVIRONMENTAL PROFESSIONAL**

“Environmental Professional” means a person who possesses sufficient specific education, training, and experience necessary to exercise professional judgment to develop opinions, recommendations and conclusions regarding contamination conditions indicative of the use or manufacture of methamphetamine on, at, or in a building sufficient to meet the objectives and performance factors of these regulations.

### **SECTION 25a.15: METHAMPHETAMINE ACTIVITY**

“Methamphetamine Activity” means the illegal manufacturing or use by smoking or heating of methamphetamine.



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### **SECTION 25a.16: METHAMPHETAMINE LABORATORY**

“Methamphetamine Laboratory” means a building, property or structure that is used or has been used for the manufacturing or storage of methamphetamine.

### **SECTION 25a.17: MEDIA**

“Media” means the physical material onto which a sample substrate is collected. Media includes cotton gauze, glass fiber filters, MCE membranes, etc.

### **SECTION 25a.18: METHAMPHETAMINE**

“Methamphetamine” means dextro-methamphetamine, levo-methamphetamine, and unidentified isomers of the same, any racemic mixture of dextro/levo methamphetamine, or any mixture of unidentified isomers of methamphetamine. The term includes derivatives, conjugates, oxides, and reduced forms of the basic structure of Methamphetamine.

### **SECTION 25a.19: NON-POROUS SURFACE**

“Non-porous Surface” means a surface that does not readily admit the passage of gas, residue, or liquid through its pores or interstices.

### **SECTION 25a.20: POROUS SURFACE**

“Porous Surface” means a surface that readily admits the passage of gas, residue or liquid through its pores or interstices.

### **SECTION 25a.21: PUBLICLY OWNED TREATMENT WORKS (POTW)**

“Publicly Owned Treatment Works (POTW)” means a publicly owned domestic wastewater treatment facility.

### **SECTION 25a.22: PRELIMINARY ASSESSMENT**

“Preliminary assessment” means an evaluation of a property to determine the current condition, including the nature and extent of observable or detectable contamination.

### **SECTION 25a.23: REMOVAL**

“Removal” means the taking out or stripping of material or surfaces to eliminate the potential for exposure to contaminants on or in the material or surfaces.

### **SECTION 25a.24: SUBSTRATE**

“Substrate” means the material being collected. Substrates may include soils, water, painted surfaces, carpet debris, unidentified powders, dust, etc.

### **SECTION 25a.25: WASTE DISPOSAL AREA**

“Waste Disposal Area” means any area where chemicals used or generated in the manufacture of methamphetamine are disposed or have come to be located.



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### **SECTION 25a.26: WIPE SAMPLE**

“Wipe sample” means a surface sample collected by wiping a sample media on the surface being sampled in accordance with Appendix A of these regulations.

### **CHAPTER 26a: CONDEMNATION PROCEDURES**

Whenever the Department receives notice from a local law enforcement agency about the existence of any property or building that is or has been identified as having suspected methamphetamine activities, the Department shall institute the procedures set forth in these regulations. Notification from a law enforcement agency should include the property location by street address or other identifiable locators and date of discovery of methamphetamine activity.

If written notice is not provided and the Department is informed by other means or agencies, the Department shall contact the law enforcement agency that discovered the suspected methamphetamine activity and secure the necessary information.

**SECTION 26a.01:** The Department shall not be responsible for the initial removal and inventory of any chemicals found at a site of methamphetamine activity.

**SECTION 26a.02:** After a law enforcement agency completes its investigative work and prepares to leave a site of suspected methamphetamine activity, it may leave a Department condemnation sign (at least 7.5 inches by 9.5 inches) conspicuously posted on the entrance of the affected part of the building. If the condemnation sign is not posted by the law enforcement agency, the Department shall post the condemnation sign on the entrance of the affected building upon receipt of notification. Once this sign is posted, it shall be unlawful for any person to enter the site except by permission of the Department. This proscription shall not apply to law enforcement officers, health officials, or their agents or the owners’ consultants and/or contractors who have been hired to assess or decontaminate the building. It shall be unlawful for any person, other than the Department or those given permission by the Department to remove this sign.

**SECTION 26a.03:** After the Department receives information from law enforcement that it has identified suspected methamphetamine activities and posted the appropriate condemnation sign, or after the Department has posted the condemnation sign, the Department shall contact the Owner, Occupant and Property Agent, if applicable, to inform the Owner and Occupant of their responsibilities relative to the condemnation notice. The Department shall issue a notice and Order requiring the Owner and Occupant to perform testing and/or clean up pursuant to this regulation. The Department shall include the following in the notice and order:

- a. Information about the potential health hazard;
- b. A summary of the Owner’s and Occupant’s responsibilities under this Code;
- c. Information that can assist the Owner and Occupant to locate appropriate services necessary to abate the potential health hazard.

**SECTION 26a.04:** Notice for Abatement or Removal must be served on the Owner, Occupant and Property Agent, if applicable, in one of the following ways:

- a. By registered or certified mail using the last known address of record;
- b. By a law enforcement officer authorized to serve a warrant;



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- c. By the Department in person.

SECTION 26a.05: The Department shall send written notice about the condemnation within three business days of service of a notice for abatement describing the condition of the property and the action required to the following parties:

- a. The respective township/municipality in which the building is located;
- b. Local law enforcement agency;
- c. MDCH, if applicable.

SECTION 26a.06: Pursuant to this regulation, Owner(s) and/or Occupant(s) provided with a notice, including a posted notice informing them of the suspected methamphetamine activities, shall promptly act to vacate the Occupant(s) within 24 hours or proceed with eviction if necessary.

### CHAPTER 27a: PRELIMINARY ASSESSMENT

A preliminary assessment shall be conducted by the consultant, in accordance with this regulation, prior to the commencement of property decontamination. Information gained during the preliminary assessment shall be the basis for property decontamination and clearance sampling. Access to the property shall be limited to those with appropriate training and personal protective equipment. The preliminary assessment report must be completed and signed by the Environmental Professional as defined in SECTION 25a.18 of these regulations. Information collected during the preliminary assessment shall include, but not be limited to, the following:

- a. Property description including physical address, legal description, number and type of buildings present, description of adjacent and/or surrounding properties, and any other observations made.
- b. Review of available law enforcement reports that provide information regarding the manufacturing method, chemicals present, cooking areas, chemical storage areas, and observed areas of contamination or waste disposal.
- c. Identification of structural features that may indicate separate functional spaces, such as attics, false ceilings and crawl spaces, basements, closets, and cabinets.
- d. Identification and documentation of areas of contamination. This identification will be based on assessment sampling necessary to verify the presence or absence of residual contamination.
- e. Identification and documentation of cooking areas if available.
- f. Identification and documentation of signs of contamination such as staining, etching, fire damage, or outdoor areas of dead vegetation.
- g. Identification of adjacent units and common areas where contamination may have spread or been tracked.
- h. Identification and documentation of common ventilation systems with adjacent units or common areas.



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- i. Photographic documentation of property conditions, including cooking areas, chemical storage areas, waste disposal areas, and areas of obvious contamination.
- j. All assessment sampling shall be conducted as part of the preliminary assessment to characterize the presence, nature and extent of contamination. Assessment sampling and laboratory analysis shall be conducted in accordance with CHAPTER 29a and Appendix A of these regulations.
- k. The number and type of samples shall be based on the size of the area or material, the chemical or contaminant being tested for, and the purpose of the sample (i.e., initial assessment or final clearance). Composite sampling will be allowed for preliminary assessment purposes.
- l. The consultant may determine that some areas should be deemed to be contaminated based on data other than assessment sampling. Areas that are deemed to be contaminated do not need to be sampled as part of the preliminary assessment.

The property owner has the option of waiving the preliminary assessment process. In the event that the property owner elects to waive the preliminary assessment process, a verbal and/or written request shall be submitted to the Department indicating that the homeowner has elected to waive this portion of the preliminary assessment process. Verbal notification of intent to waive will be noted in Department files.

### **CHAPTER 28a: DECONTAMINATION PROCEDURES**

If the results of the preliminary assessment identify that the building is contaminated as a result of methamphetamine activity or if the property owner elects to waive the preliminary assessment, decontamination shall be conducted to reduce the concentration of contaminants to the levels specified in CHAPTER 30a of this regulation. Decontamination shall be conducted in accordance with procedures designed to protect workers, future occupants, neighbors and the general public, and shall include, but not be limited to, the following:

SECTION 28a.01: Detergent water washing of non-porous, porous and semi porous surfaces that are contaminated, or that are reasonably expected to be contaminated, that will not be removed. It is strongly recommended that all carpet and padding suspected of being contaminated be discarded.

SECTION 28a.02: Removal of all contaminated material that will not or cannot be decontaminated to cleanup levels specified in CHAPTER 30a of this regulation. If sampling cannot demonstrate that cleanup levels have been met on any contaminated material, said material shall be removed and properly disposed of in accordance with these regulations. Any removal of asbestos or lead based paint must be conducted in accordance with all applicable Federal, State and Local requirements.



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SECTION 28a.03: Encapsulation of porous and semi-porous surfaces may be conducted after detergent water washing and after clearance sampling has demonstrated that cleanup levels have been achieved.

SECTION 28a.04: Decontamination of ventilation systems by a trained contractor. It is recommended that the contractor use the National Air Duct Cleaners Association (NADCA) Guidelines for the decontamination of ventilation systems.

SECTION 28a.05: Water flushing of plumbing systems connected to the sanitary sewer to eliminate any residual chemicals.

SECTION 28a.06: Personal Property

- a. Personal property and items not attached to the building should be decontaminated to the cleanup levels specified in CHAPTER 30a of this regulation, or properly disposed in accordance with these regulations.
- b. Personal property that will not be disposed of should be sampled in accordance with procedures described in Appendix A of these regulations.
- c. Composite samples may be collected in accordance with the following procedure. Composite samples must be taken from items constructed of like materials that are contained within the same individual functional space (e.g., clothing from a bedroom closet may be sampled as a composite, fabric furniture within a living room may be sampled as a composite, draperies within an individual room may be sampled as a composite, non-porous goods such as wood or metal tables, shelves, cabinets, etc. in the same room may be sampled as a composite, etc.). A composite sample is considered representative of contaminant levels on all personal property of that type material within the same functional space. No more than four individual items may be included in any one composite sample. Should analysis of composite samples from multiple items indicate methamphetamine levels in excess of the cleanup level, all items comprising the composite sample will be considered to be in excess.

SECTION 28a.07: Any demolition, removal and disposal of all or part of a building, including waste generated from decontamination, shall be conducted in accordance with all local, State and Federal requirements.

### **CHAPTER 29a: POST-DECONTAMINATION SAMPLING AND ANALYTICAL PROCEDURES**

SECTION 29a.01: Assessment sampling and laboratory analysis shall be conducted in accordance with Appendix A of these regulations.

SECTION 29a.02: Post-decontamination clearance sampling shall be conducted to verify that cleanup standards have been met. Sample collection and laboratory analysis shall be conducted in accordance with the procedures set forth in Appendix A of these regulations.



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SECTION 29a.03: If preliminary assessment sampling was not performed, sampling shall be performed at all locations likely or possibly to have been contaminated, including all areas connected by shared ventilation systems. Otherwise, locations of samples shall be based on information gathered during the preliminary assessment. Samples shall be collected from:

- a. Areas expected to have the highest levels of contamination, such as cooking areas, chemical storage areas, and waste disposal areas.
- b. Areas where contamination may have migrated, such as adjacent rooms or units, common areas, and ventilation systems.

SECTION 29a.04: The number and type of samples shall be based on the size of the area or material, the chemical or contaminant being tested for, and the purpose of the sample.

- a. Discrete sampling is required in all cases;
- b. Composite sampling may only be conducted in situations where contamination is expected to be relatively evenly dispersed throughout a given area, and composite sampling will provide an accurate representation of the area sampled, as described in Appendix A.

SECTION 29a.05: Sample handling, including labeling, preservation, documentation, and chain-of-custody, shall be conducted in a manner consistent with the requirements of the analytical method being used.

SECTION 29a.06: Analytical methods shall be appropriate based on the compound being sampled.

SECTION 29a.07: Quality Control/Quality Assurance (QA/QC) samples, including sample blanks, matrix spike and matrix spike duplicates, shall be collected and/or analyzed as specified in the sampling and analysis protocols presented in Appendix A of these regulations.

SECTION 29a.08: If the property has an onsite sewage treatment system (OSTS), evaluation and potential sampling of the OSTs may be necessary. The investigation and cleanup of soil, surface water and groundwater contamination resulting from disposal of methamphetamine waste into a OSTs shall be conducted in accordance with all applicable rules and requirements imposed by the MDEQ Remediation and Redevelopment Division.

### **CHAPTER 30a: CLEAN UP LEVELS**

The following cleanup levels shall be used to determine if a building has been adequately decontaminated. They may also be used during the preliminary assessment to demonstrate that a building, or portion of a building, is not contaminated. All properties must meet the cleanup level for methamphetamine. Additional cleanup levels that may be applied to a property shall be based on information gained during the preliminary assessment.

SECTION 30a.01: Surface wipe samples for methamphetamine shall not exceed a concentration of 0.5  $\mu\text{g}/100\text{ cm}^2$ .



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SECTION 30a.02: The investigation and cleanup of outdoor contamination, including soil, surface water and groundwater, shall be conducted in accordance with the MDEQ Remediation and Redevelopment Division.

### **CHAPTER 31a: POST-DECONTAMINATION REPORTING**

A final report shall be prepared by the consultant to document the decontamination process and demonstrate that the property has been decontaminated to the cleanup levels listed in CHAPTER 30a of these regulations. The final report shall be complete and signed by the Environmental Professional and include, but not be limited to, the following:

SECTION 31a.01: Property description including physical address, legal description, ownership, number and type of buildings present, description of adjacent and/or surrounding properties, and any other observations made.

SECTION 31a.02: Description of manufacturing methods and chemicals used, based on observations, law enforcement reports and knowledge of manufacturing method, if available.

SECTION 31a.03: If available, copies of law enforcement reports that provide information regarding the manufacturing method, chemicals present, cooking areas, chemical storage areas, and observed areas of contamination or waste disposal.

SECTION 31a.04: A description of cooking areas.

SECTION 31a.05: A description of areas with signs of contamination such as staining, etching, fire damage, or outdoor areas of dead vegetation, with a figure documenting location(s).

SECTION 31a.06: The results of inspection of plumbing system integrity and identification of sewage disposal mechanism.

SECTION 31a.07: If applicable, a description of adjacent units and common areas where contamination may have spread or been tracked.

SECTION 31a.08: If applicable, an identification of common ventilation systems with adjacent units or common areas.

SECTION 31a.09: A description of the sampling procedures used, including sample collection, handling, and QA/QC.

SECTION 31a.10: A description of the analytical methods used and laboratory QA/QC requirements.

SECTION 31a.11: A description of the location and results of initial sampling (if any), including a description of sample locations and a figure with sample locations and identification.

SECTION 31a.12: A description of the decontamination procedures used and a description of each area that was decontaminated.

SECTION 31a.13: If applicable, a description of the removal procedures used and a description of areas where removal was conducted, and the materials removed.

SECTION 31a.14: If applicable, a description of the encapsulation procedures used and a description of the areas and/or materials where encapsulation was performed.



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SECTION 31a.15: A description of the waste management procedures used, including handling and final disposition of wastes.

SECTION 31a.16: A description of the location and results of post-decontamination samples, including a description of sample locations and a figure with sample locations and identification.

SECTION 31a.17: Photographic documentation of pre- and post-decontamination property conditions, including cooking areas, chemical storage areas, waste disposal areas, areas of obvious contamination, sampling and decontamination procedures, and post-decontamination conditions.

SECTION 31a.18: Consultant statement of qualifications, including professional certifications or qualifications within the Environmental Profession and description of experience in assessing contamination associated with methamphetamine activity.

SECTION 31a.19: Certification of procedures and results, and variations from standard practices.

SECTION 31a.20: A signed certification statement in one of the following forms, as appropriate:

“I do hereby certify that I conducted an assessment of the subject property in accordance with the Kalamazoo County Residual Methamphetamine Contamination Cleanup Regulations. I further certify that the property has been decontaminated in accordance with the procedures set forth in the Kalamazoo County Residual Methamphetamine Contamination Cleanup Regulations and that the cleanup standards established by Kalamazoo County have been met as evidenced by testing I conducted.”

“I do hereby certify that I conducted an assessment of the subject property in accordance with the Kalamazoo County Residual Methamphetamine Contamination Cleanup Regulations. I further certify that the cleanup standards established by Kalamazoo County have been met as evidenced by testing I conducted.”

SECTION 31a.21: Signature of the Environmental Professional.

SECTION 31a.22: The property owner and consultant shall each retain a copy of the report for a period of seven years.

### **CHAPTER 32a: LIFTING OF CONDEMNATION**

Upon receipt of a copy of the Post-Decontamination Report or a Preliminary Assessment Report that states that contamination no longer remains or is not present in the building, the Department shall lift the condemnation and vacancy order by sending written notification to the property owner. Copies of the written notification shall also be sent to the township/municipality and consultant.



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### CHAPTER 33a: REFERENCE MATERIALS

American Society for Testing and Materials (ASTM) Method D3278-96e1 (October 1997), Standard Test Methods for Flash Point of Liquids by Setaflash Closed Tester.

American Society for Testing and Materials (ASTM) Method D5756-02 (November 2002), Standard Test Method for Microvacuum Sampling and Indirect Analysis of Dust by Transmission Electron Microscopy for Asbestos Mass Concentration.

American Society for Testing and Materials (ASTM) Method D93-02a (December 2002), Standard Test Methods for Flash Point by Pensky-Martens Closed Tester.

Field Manual for Grid Sampling of PCB Spill Sites to Verify Cleanup, EPA-560/5-86-017 (May 1986). National Institute for Occupational Safety and Health (NIOSH), U.S. Department of Health and Human Services (DHHS), NIOSH Manual of Analytical Methods (NMAM), 4th. Ed., DHHS (NIOSH)

Publication No. 94-113 (August, 1994), 1<sup>st</sup> supplemental publication 96-135 (1996), 2<sup>nd</sup> supplement publication 98-119 (1998):

Method 6009, Mercury (Issue 2, August 1994).

Method 9100, Lead in Surface Wipe Samples (Issue 2, May 1996).

Regulations Pertaining to the Cleanup of Methamphetamine Laboratories, Colorado Department of Public Health and Environment, Department of Public Health and Environment, 6 CCR 1014-3, (Adopted January 19, 2005)

Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, EPA Publication SW-846 [Third Edition (November 1986), as amended by Updates I (dated July 1992), II (dated September 1994), IIA (dated August 1993), IIB (dated January 1995), III (dated December 1996) and IIIA (dated April 1998)]:

Method 1010, Pensky-Martens Closed-Cup Method for Determining Ignitability (Revision O, September 1986).

Method 1020A, Setaflash Close-Cup Method for Determining Ignitability (Revision 1, July 1992).

Method 1110, Corrosivity Toward Steel (Revision O, September 1986).

Method 6020, Inductively Coupled Plasma – Mass Spectrometry (Revision O, September 1994).

Method 8260B, Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS) (Revision 2, December 1996).

Method 9014, Titrimetric and Manual Spectrophotometric Determinative Methods for Cyanide (Revision O, December 1996).

Method 9021, Purgeable Organic Halides (POX) (Revision O, December 1996).

Method 9034, Titrimetric Procedure for Acid-Soluble and Acid Insoluble Sulfides (Revision O, December 1996).

Method 9040B, pH Electrometric Measurement (Revision 2, January 1995).



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### APPENDIX A: SAMPLING METHODS AND PROCEDURES

#### **Purpose**

The purpose of this appendix is to provide a procedure for reducing variability in sample collection for methamphetamine activities.

#### **Pre-Decontamination sampling**

In pre-decontamination sampling, the assumption (hypothesis) is made that the area is clean i.e.

“compliant,” and data will be collected to find support for the hypothesis. Data (such as samples) are

collected to “prove” the area is compliant. Sampling, if it is performed, is conducted in the areas with the highest probability of containing the highest possible concentrations of contaminants. Any data that disproves the hypothesis, including police records, visual clues of production, storage, or use or documentation of drug paraphernalia being present, is considered conclusive, and leads the consultant to accept the null hypothesis and declare the area non-compliant.

#### **Post-Decontamination sampling**

In post-decontamination sampling, the hypothesis is made that the area is non-compliant, and data are collected to test the hypothesis. The role of the consultant in post decontamination sampling is not to

demonstrate that the area is “clean,” but rather, using biased sampling, to diligently attempt to prove that the area is not clean. The lack of data supporting the hypothesis leads the consultant to accept the null hypothesis and conclude that the area is compliant.

#### **Decision Statement**

If, based on the totality of the circumstances, the consultant finds that insufficient evidence exists to

support the hypothesis that any given area is non-compliant, that area shall be deemed to be compliant with CHAPTER 30a of these regulations and shall be released. If objective sampling data indicate contamination is less than the cleanup level, that data may be used as *prima facie* evidence that insufficient evidence exists to support the hypothesis that any given area is non-compliant.

#### **Area Samples**

##### **Buildings**

##### **Wipe Sample**

For methamphetamine laboratories or buildings where methamphetamine activity has occurred, as defined in these regulations whose structural floor plan is not greater than 1,500 square feet, surface sampling shall be collected according to the following schedule.

Exception: for pre-decontamination scenarios, any and all other data may be used in lieu of sampling to reject the hypothesis and deem the area to be contaminated.

At least 1000 cm<sup>2</sup> of surface shall be sampled, unless the area is assumed to be non-compliant.



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- At least 1,000 cm<sup>2</sup> of total surface area must be sampled for any single laboratory identified pursuant to these regulations
- An additional 100 cm<sup>2</sup> must be sampled for every additional 400 square feet of structural floor space.
- A minimum of four samples shall be collected from any building where methamphetamine activity has occurred.

The required sample area shall be composed of no fewer than three discrete samples. Should composite samples be collected, each composite shall consist of no greater than five discrete samples collected in accordance with the procedures outlined in the section in this appendix on Composite Sampling.

Where the methamphetamine activity is located in a building other than a single-family dwelling, the potential of fugitive emissions must be considered. For example, if the area was located in a hotel room, and evidence of contamination extended into the corridor, the elevator, the lobby, and one adjacent room, there would be four separate areas to evaluate: 1) The primary hotel room, 2) the corridor/elevator complex 3) the lobby, 4) the adjacent hotel room.

Every area exhibiting indication of contamination shall be sampled. For example, where a single-family dwelling meets the definition of a methamphetamine laboratory, and an associated detached apartment contains indications of contamination, the dwelling and the apartment shall be evaluated separately.

### **Recreational Vehicles**

#### **Wipe Sample**

For methamphetamine laboratories in recreational vehicles, surface sampling shall be collected according to the following schedule. Exception: for pre-decontamination scenarios, any and all other data may be used in lieu of sampling to reject the hypothesis and deem the area to be contaminated.

- A minimum of 500 cm<sup>2</sup> of surface shall be sampled, unless the area is assumed to be noncompliant.
- An additional 100 cm<sup>2</sup> must be sampled for every 50 square feet of structural floor space for any recreational vehicle, such as a motor home, trailer, or camper.
- A minimum of three samples shall be collected from any laboratory identified in a recreational vehicle.

The required sample area shall be composed of no fewer than three discrete samples. Should composite samples be collected, each composite shall consist of no greater than five discrete samples collected in accordance with the procedures outlined in the section in this appendix on Composite Sampling.

### **Sampling Procedures**

#### **Non-Porous Surfaces - Wipe Samples**

Wipe sampling shall be used to determine the extent of contamination on non-porous surfaces. Wipe samples shall be collected in accordance with the procedures set forth below for either discrete or composite samples.

Sample media may consist of one of the following:



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- Gauze material, including Johnson & Johnson cotton squares or equivalent.
- Filter paper, including Whatman 40, 41, 42, 43, 44, 540, 541, Ahlstrom 54, VWR 454, S&S WH Medium, or other filter paper with equivalent performance.

The following procedure is for collecting discrete wipe samples from non-porous surfaces.

1. Attach disposable templates or masking tape to the area(s) to be sampled, being careful not to touch the area within the template. The sample area shall be 100 cm<sup>2</sup> (10cm by 10cm) or a multiple of 100 cm<sup>2</sup>.
2. Prepare a rough sketch of the area(s) to be sampled.
3. The sample media should be wetted with distilled water or solvent (isopropyl alcohol or methanol) to enhance collection efficiency.
4. Use a new set of clean, non-powdered impervious gloves for each sample to avoid contamination of the sample media by previous samples and to prevent contact with the substance.
5. Press the sample media down firmly, but not excessively, with the fingers, being careful not to touch the sample surface with the thumb. Blot rough surfaces uniformly instead of wiping. Wipe smooth surfaces as described below.
6. Wiping may be done by one of the following methods:
  - a. Square method: Start at the outside edge and progress toward the center of the surface area by wiping in concentric squares of decreasing size.
  - b. "S" method: Wipe horizontally from side-to-side in an overlapping "S"-like pattern as necessary to completely cover the entire wipe area.
7. Without allowing the sample media to come into contact with any other surface, fold the sample media with the sampled side in.
8. Use the same sample media to repeat the sampling of the same area. If using the "S" method, the second pass shall be sampled by wiping with overlapping "S"-like motions in a top-to-bottom direction.
9. Fold the sample media over again so that the sampled side is folded in. Place the sample media in a sample container, cap and number it, and note the number at the sample location on the sketch. Include notes with the sketch giving any further description of the sample.
10. At least one sample media blank, treated in the same fashion but without wiping, should be submitted for every 10 samples collected.

When collecting composite samples, the procedure outlined above shall be used with the following exceptions:

1. A single pair of gloves may be used to collect each single sample that will be part of a composite sample. However, a new pair of gloves must be used for each set of composite samples.



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2. All individual samples that make up a composite sample must be placed in one sample container.

### **Porous Surfaces - Wipe Samples**

Wipe sampling of porous surfaces may be conducted during the preliminary assessment, in lieu of vacuum sampling, in order to obtain a qualitative (absence or presence) identification of a chemical. Wipe sampling shall not be used to demonstrate that cleanup levels have been met on porous surfaces.

### **Outdoors**

For laboratories with outdoor components, or laboratories which are exclusively outdoors, the following sampling must be performed when conditions indicate the potential for soil contamination. Sampling must be conducted in accordance with the grid sampling method as described in the Midwest Research Institute's publication titled "Field Manual for Grid Sampling of PCB Spill Sites to Verify Cleanup" (referenced in 40 CFR § 761.130), which is incorporated herein by reference. Surface samples shall be taken to a depth of no greater than 8 cm. Sample volumes should be at least 100 cm<sup>3</sup> and no more than 250 cm<sup>3</sup>. (Guidance on soil sampling can be found in ASTM D5730, ASTM E1727, ASTM D4700, and the EPA Environmental Investigations Standard Operating Procedures and Quality Assurance (EISOPQA) Manual. Additional subsurface samples may be required.

Other outdoor surfaces should be evaluated based on best professional judgment. Wipe samples and destructive samples may be required.

### **Composite Sampling**

Composite sampling is permitted by this regulation, as described herein. The consultant may not use composite sampling unless in their professional judgment, contamination is expected to be relatively evenly dispersed throughout a given area, such that the sampling will accurately represent the conditions of the methamphetamine activities. If compositing is used, then the composite shall consist of no greater than five discrete samples. Any composite sampling must consist of like media, matrices or substrates. The mixing of media, matrices or substrates is not permitted. All individual samples (designated as *g*), from which any single composite is formed must be of equal volume (for liquids), equal surface area (for surface wipe sampling or vacuum sampling) or equal weight (for solids).

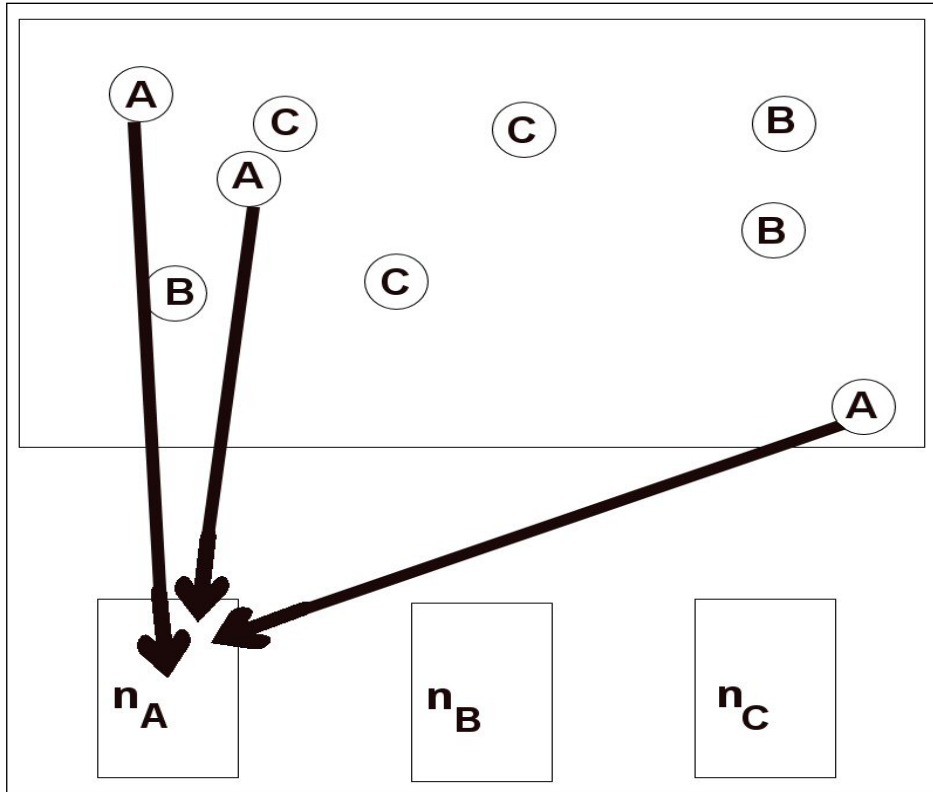
Composite sampling may be implemented using one of the following sampling designs. The consultant shall chose the sampling design based upon the specific conditions of the drug laboratory being assessed.

### **Simple Random Composite Sampling**

Figure 1A below illustrates a simple random composite sampling design. In this figure, the sampled area could represent any surface or media about which a decision must be made (such as a series of walls, or carpeting or even contaminated soils).



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**Figure 1A Example of Random Sample Composites**

In the above example, nine individual samples ( $n \cdot g = 9$ ) are composited into three samples for submission to a laboratory ( $XA$ ,  $XB$ ,  $XC$ ).

The individual sample locations can be selected by any number of methods such as those as described in American Society for Testing and Materials (ASTM) Method D6051-96 (2001), *Standard Guide for Composite Sampling and Field Subsampling for Environmental Waste Management Activities*. The “system of halves” as described in 40 CFR § 761.306 may also be used.

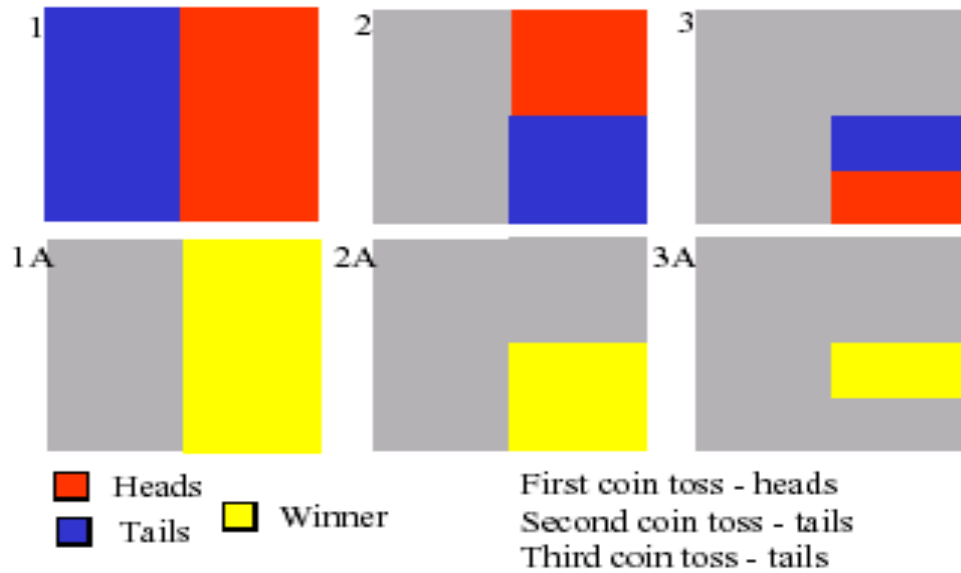
An example of the “system of halves” is provided below and illustrated in Figures 1B and 1C.

1. Select the surface which represents the area of highest possible contamination
2. Delineate one square meter within the area
3. Divide the one square meter area in half with an imaginary line in any direction
4. Assign each half “heads” or “tails”
5. Flip a coin
6. Divide the “winning side” in half with an imaginary line in any direction
7. Flip a coin

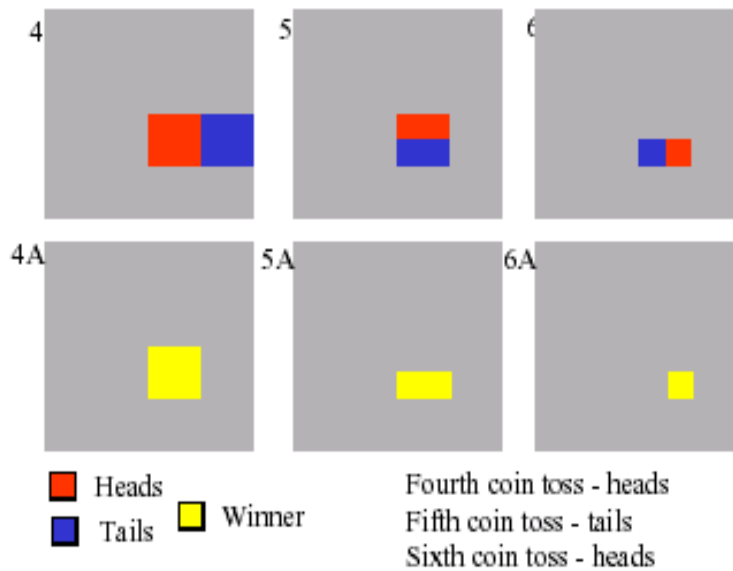


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8. Continue dividing the “winning” side until the winning side is between 100 cm<sup>2</sup> and 200 cm<sup>2</sup> and collect the wipe sample from that area
9. The method is repeated for each individual (*g*) of the composite



**Figure 1B Example of Random Sample Composites**



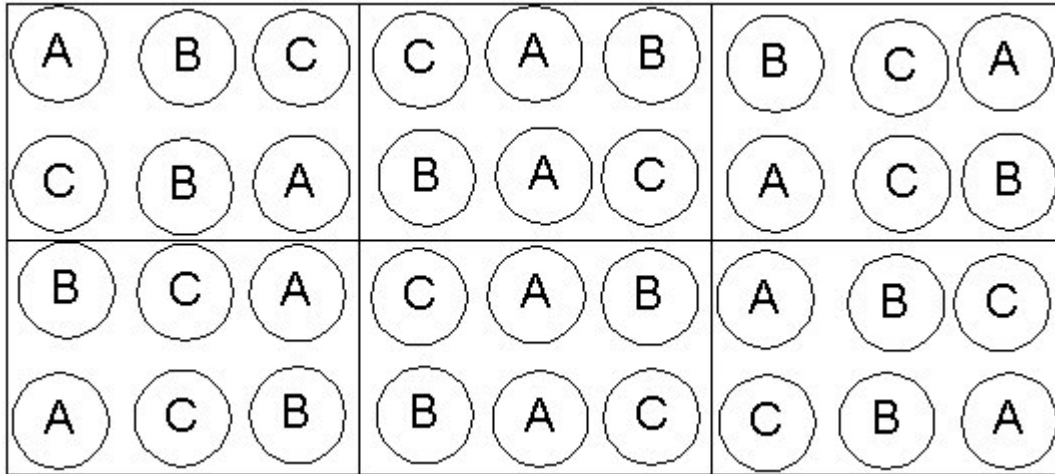
**Figure 1C Example of Random Sample Composites**

### Systematic Composite Sampling



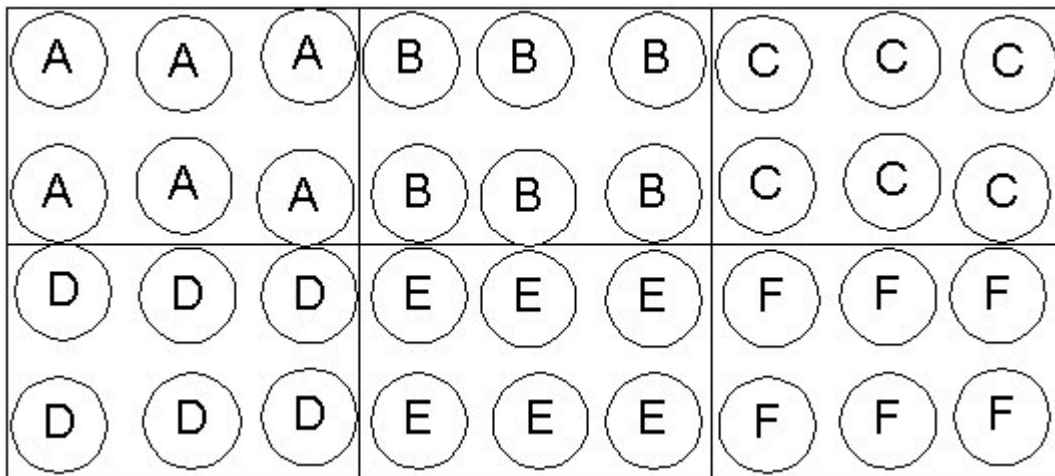
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A systematic composite sampling design is illustrated in Figure 2. Each field sample collected at the “A” locations is pooled and mixed into one composite sample. The process is then repeated for “B,” “C,” “D” locations and so on. The relative location and size of each individual field sample (such as “A”) should be the same within each block.



**Figure 2 Example “A” of Systematic Sample Composites**

A second systematic composite design is illustrated in Figure 3. This sample design involves collecting and pooling samples from *within* a grid (See Figure 3). Each field sample collected at the “A” locations is pooled and mixed into one composite sample. The process is then repeated for “B,” “C,” “D” locations and so on. The relative location and size of each individual field sample (such as “A”) should be the same within each block.



**Figure 3 Example “B” of Systematic Sample Composites**

For both assessment and post-decontamination sampling, either simple random composite sampling or systematic composite sampling may be used where contamination is expected to be relatively evenly dispersed throughout a given area, as described above, except the consultant shall selectively choose sample



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locations that represent the highest potential contamination, in accordance with the hypothesis being tested.

### Composite Decision Level

If composite sampling is used, the following procedure shall be used for detecting hot spots to determine if one or more of the individual samples making up the composite could exceed the cleanup level, but remain undetected due to “dilution” that results from the compositing process.

The approach assumes the underlying distribution is normal and the composite samples were formed from equal-sized individual samples. In the following equations, CL represents the cleanup level that cannot be exceeded in any individual sample. It is assumed that the analytical limit of quantification, or quantitation limit (QL), is less than the cleanup level. For any laboratory result ( $X_i$ ) from a composite sample formed from individual samples ( $g$ ), the following rules shall be assumed:

- 1) If  $X_i < CL/g$  then no individual sample ( $g$ ) shall be deemed greater than the CL
- 2) If  $X_i > CL$  then at least one sample *must* be, and as many as all individual samples *may* be greater than the CL

If it is determined that one or more individual samples making up the composite exceeds the cleanup level, all areas represented by the composite sample shall be considered to exceed the cleanup level unless a discrete sample of any individual area demonstrates that the cleanup level has been met in that area.



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### **ARTICLE X: BODY ART**

#### **CHAPTER 32: PURPOSE AND APPLICABILITY**

ARTICLE X applies to all Body Art Facilities as defined in the Public Acts 2010, Act 375 and seeks to assure body art businesses are in compliance with State Law.

#### **CHAPTER 33: GENERAL PROVISIONS**

##### **SECTION 33.01: AUTHORITY**

Under the Public Health Code Act 368 of 1978 and most recently with the enactment of the Body Art Facilities Act, Act No. 375 Public Acts of 2010 MCL 333.13101, MDCH has the authority to designate an authorized agent or representative to administer the Act and the Rules promulgated under the Act. Pursuant to this authority, MDCH has designated the Department as authorized agents and representatives.

##### **SECTION 33.02: POLICY**

The Department shall enforce the provisions of Act No. 375 Public Acts of 2010 MCL 333.13101, as amended, consistent with ARTICLE VII of this Code. The Department shall initiate enforcement activities when the Department determines that the continued operation of a body art facility is an imminent danger under Public Health Code Act No. 368 of 1978 Section 2451. The Department shall order the immediate cessation of the operation of that facility in the manner prescribed in this act or there is a failure to comply with the Department's order to correct an existing deficiency.

##### **SECTION 33.03: PROCEDURE**

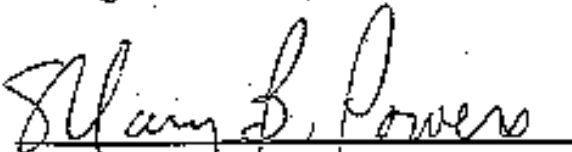
- a. When one or more of the deficiencies listed in SECTION 33.02 of this Code takes place, the Department shall:
  - i. Cite any observed violation(s), consider the severity of the violation and develop a written correction schedule; and,
  - ii. Re-inspect the facility to confirm that the owner has complied with the correction schedule.
  - iii. If the owner of the Body Art Facility fails to comply with the correction schedule and correct the violations as directed, the Department may order closure and/or initiate an informal hearing pursuant to the procedure set forth in ARTICLE VII of this Code.
- b. An owner of the Body Art Facility, or the owner's designated representative, who disagrees with a Notice of Deficiency, an Order to take Corrective Action, a correction schedule or the Department's interpretation of the provisions of the State Law, may request an informal hearing pursuant to the procedure set forth in ARTICLE VII of this Code.



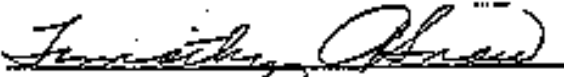
## KALAMAZOO COUNTY SANITARY CODE

### KALAMAZOO COUNTY SANITARY CODE APPROVALS

These regulations were approved by the Kalamazoo County Board of Commissioners at a regular meeting on October 17, 2000.

  
Lorence Wenke, Chairperson  
Kalamazoo County Board of Commissioners

10/17/2000  
Date

  
Timothy A. Snow, County Clerk/Register

10/17/2000  
Date

These regulations were amended at a regular meeting of the Kalamazoo County Board of Commissioners on May 15, 2001. ARTICLE I, CHAPTER 2, SECTION 2.01 was amended; ARTICLE I, CHAPTER 3, SECTION 3.30 was amended; ARTICLE I, CHAPTER 3, SECTION 3.31 was amended; SECTION 3.36a was added to ARTICLE I, CHAPTER 3; SECTION 3.46a was added to ARTICLE I, CHAPTER 3; ARTICLE IIIa, "Public Swimming Pool Water Quality Testing" was added.

These regulations were amended at a regular meeting of the Kalamazoo County Board of Commissioners on October 7, 2003. ARTICLE IIIb, "Water Supply Regulations – Restricted Zones" was added. ARTICLE IIIb becomes effective November 6, 2003.

These regulations were amended at a regular meeting of the Kalamazoo County Board of Commissioners on May 16, 2006. ARTICLE IX, "Regulations Pertaining to the Clean Up of Methamphetamine Laboratories" was added. ARTICLE IX becomes effective May 16, 2006.

These regulations were amended at a regular meeting of the Kalamazoo County Board of Commissioners on September 18, 2007. ARTICLE I, "Purpose, General Provisions & Definitions", ARTICLE II, "Onsite Sewage Treatment Regulations", and ARTICLE IX, "Illegal Methamphetamine Laboratories Cleanup Regulations" were added. ARTICLE I, II and IX become effective November 12, 2007.

  
Timothy A. Snow  
County Clerk/Register



## KALAMAZOO COUNTY SANITARY CODE

### KALAMAZOO COUNTY SANITARY CODE

#### KALAMAZOO COUNTY SANITARY CODE APPROVALS

These regulations were approved by the Kalamazoo County Board of Commissioners at a regular meeting on January 15, 2013.



David C. Maturen, Chairperson  
Kalamazoo County Board of Commissioners

1.15.13

Date



Timothy A. Snow, Clerk/Register of Deeds

1.15.13

Date

Article I "Purpose, General Provisions and Definitions": Amend Sections 3.01, 3.14, 3.15, 3.17, 3.21, 3.23, 3.29, 3.31, 3.32, 3.38, 3.39, 3.42, 3.44, 3.49, 3.52, 3.61, 3.62, 3.65, 3.68, 3.72, 3.76, 3.78, 3.80 and 3.81: add new definitions for Baffle, Building Check Valve, Engineered System, Header pipe, Native Soil, New Construction Site, Priority Foundation Item, Priority item, Property, Soil Loading Rate, Vented Elbow, Structure and Violation; Delete existing definitions for Automatic Siphon, Cellar, Daylight Window, Imminent Danger, and Percolation Rate.

Article II "On-site Sewage Treatment Regulations": Chapter 5 "Purpose and Applicability" Amend Sections 5.02, 5.03, 5.04; Chapter 6 Onsite Sewage Treatment System Permitting Criteria" Amend Sections 6.03, 6.06, 6.08, 6.09, 6.10, 6.11, 6.12, 6.14; Chapter 7 "Requirements for the Construction and Maintenance of Individual Onsite Sewage Treatment Systems" Amend Sections 7.01, 7.02, 7.03, 7.04, 7.05, 7.06, 7.07, 7.08, 7.09, 7.10, 7.11, 7.12, 7.13, 7.14, 7.15, 7.16, 7.17; Chapter 8 "Onsite Sewage Treatment System Installer Registration Requirements" Amend Section 8.01.

Article IIIa "Public Swimming Pool Water Quality Testing": Amend Chapter 16a "Weekly Testing; Quarterly Testing; and Unacceptable Water Quality."

Article IV "Housing Regulations": Amend Chapter 16 "Purpose and Applicability"; Chapter 17 "Inspection of Dwellings, Dwelling Units and premises" Amend Section 17.01; Chapter 18 "Minimum Standards" Amend Sections 18.01 and 18.02; Chapter 19 "General Requirements" Amend Section 19.01; Replace the former Chapter 20 "Minimum Space, Use and Location Requirements" with a new Chapter 20 "Responsibility of Owners and Occupants"; Replace the former Chapter 21 "Responsibility of Owners and Occupants" with a new Chapter 21 "Designation of Unfit Dwellings and Condemnation Procedure"; Replace the former Chapter 22 "Designation of Unfit Dwellings and Condemnation Procedure" with a new Chapter 22 "Reserved for Future Use."



## KALAMAZOO COUNTY SANITARY CODE

### KALAMAZOO COUNTY SANITARY CODE APPROVALS

These regulations were approved by the Kalamazoo County Board of Commissioners at a regular meeting on February 18, 2014.



David C. Maturen, Chairperson  
Kalamazoo County Board of Commissioners

2.18.14  
Date



Timothy A. Snow, Clerk/Register of Deeds

2.18.14  
Date

Article IIIb "Water Supply Regulations – Restricted Zones" Chapter 19b Restriction Zones, added Section 19b.01 to 19b.05 and Section 19c.01 to 19c.06.

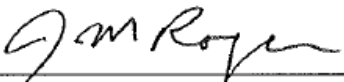
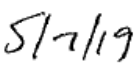


## KALAMAZOO COUNTY SANITARY CODE

### KALAMAZOO COUNTY SANITARY CODE

#### KALAMAZOO COUNTY SANITARY CODE APPROVALS

These regulations were approved by the Kalamazoo County Board of Commissioners at a regular meeting on June 19, 2018.

   
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Julie Rogers, Board Chairperson Date

   
\_\_\_\_\_  
Timothy A. Snow, County Clerk/Register Date

Chapter 3. Definitions – Added Section 3.39, 3.43, 3.45, 3.66, 3.82 and amended 3.90, 3.91, and 3.92. Article III (Water Supply Regulations) – Amended Chapter 13, Chapter 14 – Section 14.01, 14.02, 14.03, 14.04, 14.05, 14.06, 14.07, and 14.09. Article IV (Housing Regulations) – Amended Chapter 18 – Section 18.01.




# KALAMAZOO COUNTY SANITARY CODE

## KALAMAZOO COUNTY SANITARY CODE

### KALAMAZOO COUNTY SANITARY CODE APPROVALS

These regulations were approved by the Kalamazoo County Board of Commissioners at a regular meeting on October 20, 2020

  
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Tracy Hall, Board Chairperson  
10.20.20  
\_\_\_\_\_  
Date

  
\_\_\_\_\_  
Timothy A. Snow, County Clerk/Register  
10.20.20  
\_\_\_\_\_  
Date

SECTION 19e.01: BORROUGHS CORPORATION APPROVED BY KALAMAZOO COUNTY  
BOARD OF COMMISSIONERS  
SECTION 19e.02: SUMMARY OF GROUNDWATER CONTAMINATION AND ZONE  
SECTION 19e.03: LEGAL DESCRIPTION OF RESTRICTED ZONE  
SECTION 19e.04: STREET ADDRESSES WITHIN RESTRICTED ZONE  
SECTION 19e.05: GROUNDWATER USE EXCEPTIONS AND VARIANCES  
SECTION 19e.05: MAP OF RESTRICTED ZONE