

Residential Wastewater Pump Installation Requirements - Residential Application -

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PURPOSE OF DOCUMENT

This document is to advise and guide both existing and future property owners and/or their contractors of the requirements regarding permitting, design, installation, and inspection of a low-pressure sewer system used to tie into the Lakeway Municipal Utility District (LMUD) public wastewater collection system. Although located on private property, these systems shall be regarded as integral components of LMUD's public wastewater system and not as a part of the residence's plumbing system.

In Lakeway, the most common method to transport wastewater from the point of use, such as a sink drain, toilet or washing machine, is to let it flow by gravity into LMUD's public wastewater system. Once in the main collection system, it continues to flow by gravity to a pump station that lifts the wastewater to the water recycling plant for treatment and reuse.

However, locations covered by this document are different: the location requires an on-site pressurized system to sufficiently push the waste from the property into LMUD's public wastewater system.

Locations not included in this document are a mix between the two: where waste from the upper part of the home can flow by gravity to LMUD's main line, but waste from the lower level must be pumped up to the wastewater main; these locations require the use of an effluent or sewage ejector pump which are not managed by LMUD.

Once functional, per LMUD's Rate Order (effective September 2019), the main components of these low-pressure sewer systems are maintained by LMUD, including a collection tank, grinder pump, float switches, and electric control panel. Property owners need only contact LMUD to schedule a service request.

While this document pertains to all applicable LMUD-serviced locations, the majority of the properties to which this document pertains are located in LMUD's "Out of District" service area. This area is un-taxed by LMUD and encompasses the first 17 sections of Lakeway (delineated as "Old Lakeway"), an area that existed before LMUD's inception in 1972. At the time, LMUD passed a bond issue that included the installation of a wastewater system to all Lakeway homes within the LMUD Certificate of Convenience and Necessity, but the homeowners in Old Lakeway chose to opt out since they had just installed their septic systems, which even to this day remain under the regulatory control of the LCRA. LMUD has since primarily serviced this area with potable (drinking) water.

In May 2019, LMUD broke ground for what is known as the Out of District Wastewater (ODWW) Project, a 10-plus year plan to expand their public wastewater system into Old Lakeway. All property owners in this area who either: 1). opt to switch from their existing septic system to public wastewater collection or 2). are building on an empty lot and don't want to install a septic system, must connect to LMUD's public wastewater system through the use of a low-pressure sewer system.

STEPS FOR OBTAINING WASTEWATER SERVICE THROUGH USE OF A LOW-PRESSURE SEWER SYSTEM

STEP 1: A property owner in LMUD's Out of District area makes an inquiry to LMUD about their options for obtaining wastewater service from LMUD.

Correspondence should be directed to Stephanie Threinen, LMUD's Public Information Liaison by phone (512-261-6222 ext. 175), email (stepht@lakewaymud.org), or by stopping by the office (1097 Lohmans Crossing, Lakeway, TX) during regular office hours (M-F 8am to 5pm, closed noon to 1pm). Details should include: your name, contact information, & association to the property (owner, builder, etc.); address of connection request; reason for connection request (new construction, failing septic system, remodel, etc); and date you would like to get connected.

STEP 2: LMUD determines the feasibility of the request and informs the owner.

Considerations include: reason for connection, distance of property from an existing main line, availability to meet preferred connection date, and other project-related factors in LMUD's discretion.

STEP 3: Property owner discusses their connection options with LMUD.

Options may include: 1). the property owner installs the low-pressure sewer system with their contractors of choice; primary materials, specs, and guidance on placement will be supplied by LMUD or 2). LMUD installs the system at their availability. For either

option, LMUD is responsible for setting the tap for the final tie-in of the wastewater service line to the main line. Dependent on availability, decommissioning the existing septic system (if applicable) may be handled by LMUD or property owner. The haul/ disposal of liquid/ solids septic tank waste requires completion of a Manifest Trip Ticket for Hauled Liquid Waste form that will be filed by LMUD with LCRA. All paperwork will be stored in LMUD's account file associated with the Service Address. Decommissioning the septic tank takes it out of service; the tank will not be removed.

STEP 4: Property owner completes paperwork and pays applicable fees through LMUD.

All property owners requesting a connection are required to fill out 1). a new Service Contract, 2). Contract for Installation, and 3) a Grinder Pump System Service and Maintenance Addendum. New customers may owe a service fee and/or security deposit. All ODWW Project "Early", "Late" and/or Install by "Property Owner" (referred to herein as a "Self-install") opt-ins owe a one-time upfront, non-refundable fee due at time of signing; the fee includes: 1). application fee, 2). Capacity Reservation Fee (CRF) which includes the cost of LMUD-supplied materials, and 3). Inspection fee. LMUD-installed systems are no additional cost for labor.

For remodels and new construction, property owner or plumber completes additional paperwork and pays applicable fees through LMUD. Remodels that include plumbing alterations and new construction projects require the property owner or their hired plumber to also complete a Plumbing Permit application and pay the additional inspection fees. New construction may also require a Water Tap fee. Contact LMUD's front desk for details: 512-261-6222 ext. 110.

STEP 5: LMUD conducts a property assessment.

Prior to installation, LMUD will assess the location for the primary components of the low-pressure sewer system for optimal functionality including the location of the grinder pump tank, control panel, and point of discharge into LMUD's main line. This will be drawn up by a member of LMUD's field team and must be followed during installation. Property owners will be consulted after this site visit, before the plans are finalized.

Review site map for properties with existing septic systems. LMUD will request this documentation from LCRA if the property owner does not have a current layout of their septic system available.

Review plans for new construction. The property owner or contractor should provide building plans to LMUD for reference. The plan should indicate the proposed location at which the wastewater plumbing lines exit the foundation.

For Self-installed connections, LMUD provides specs to contractor of property owner's choice. Referencing LMUD's provided specs, including result of property assessment, owner and contractor(s) agree on design and scope of project as well as procedures, schedule, and cost estimate. No submissions to LMUD are needed. To prevent delays, materials should be requested from LMUD at least two (2) weeks in advance of anticipated installation date.

For LMUD-installed connections, LMUD will assess anticipated damages and repair needs. During this assessment, LMUD may ask property owner to test their in-ground irrigation system and/or landscape lightening, if applicable. They will also assess any potential work that the homeowner must perform prior to construction that is beyond our scope of work as well as any potential damage that may be caused during construction to landscaping and solid structures. LMUD will make every effort to repair all damages, but will notify property owner in advance if any anticipated repairs are beyond their scope of work, in which case, the property owner will be responsible for making repairs once construction is complete. LMUD will not be responsible for replacing any ground covering (such as sod, rock, stone, etc.), however will lay topsoil and regrade the area to pre-construction levels.

STEP 6: Perform system installation and electrical connection.

For LMUD-installed systems, property owner must wait for LMUD to notify them of their start date. Self-installed systems may be installed at property owner's convenience, except those requiring an LMUD main line extension, in which case, the property owner must wait for LMUD to notify them of its completion prior to final tie-in to the wastewater main.

For Self-installed connections, LMUD provides materials to contractor of property owner's choice. At no additional expense, LMUD will deliver to the property (or make pickup available) the following materials which must be used in the system installation following LMUD's provided specs: grinder pump tank and contents plus electrical control panel and contents. These materials should be on-hand prior to breaking ground. All other required supplies are the property owner's or their contractor's responsibility to source and provide.

For Self-installed connections, property owner or contractor contacts LMUD to perform required inspections. There should be a total of three (3) inspections (additional charges may apply if system fails an inspection):

1. Tank Set: to ensure the tank is level, secure, and depth is met.
2. Sewer Yard Line: to ensure depth and bedding requirements are met.
3. Final: to verify system is operational and meets all of LMUD's specifications.

The first two inspections will be performed by LMUD's field team representatives. Contact the main office at 512-261-6222 ext. 110 to schedule these inspections. The final inspection will be performed by LMUD's Chief Plumbing Inspector, Troy Gray of IO Inspections, and scheduled by LMUD once final tie-in is complete.

For all "Early" or "Late" connections and Self-installs, the property owner is responsible for hiring an electrician. Even with early or late LMUD-installed systems, property owners opting to connect early or late are responsible for hiring an electrician to bring 240-volt electricity to the control panel for the grinder pump.

LMUD will extend the wastewater main line to property (if applicable) and set tap. For all installation options, LMUD will be responsible for any needed extension of the wastewater main as well as setting the tap for the property's service line to tie into. Timeline is based on such factors as the overall project schedule, cost, labor availability, and other factors affecting LMUD's ability to perform this work.

Decommission existing septic system, if applicable. LMUD or Property Owner (dependent on availability) will be responsible for decommissioning the existing septic tank at a connected Service Address following Texas Administrative Code, Title 30, Part 1, Chapter 285, Subchapter D, RULE §285.36. The haul/disposal of liquid/solids septic tank waste requires completion of a Manifest Trip Ticket for Hauled Liquid Waste form that will be filed by LMUD with LCRA. All paperwork will be stored in LMUD's account file associated with the Service Address. Decommissioning the septic tank takes it out of service; the tank will not be removed.

STEP 7: LMUD administration assigns wastewater charges to property.

Once installation is complete, LMUD's district office must be notified of the change in wastewater service to the property. A completed work order will be sent directly to the main office from LMUD's field team personnel indicating the tie-in date to initiate this change in service adding wastewater charges and a Grinder Pump Service/Maintenance fee to the account.

Switch customer on file, if applicable. With new construction or when there is a renter at the property (among various other reasons), the account should be switched to the name of whomever will be paying the future water and wastewater charges (ie: property owner or tenant).

LMUD is responsible for repair and maintenance work of the system. Once the system is operational, LMUD will take control of any maintenance or repair needs to the main components of the system (grinder pump tank and control panel). The property owner is responsible for following proper maintenance of the system as well as contacting LMUD to schedule any needed repairs. Details can be found in LMUD's Rate Order. LMUD may enter private property without prior notice to inspect or test a private wastewater service line if wastewater is exposed on the property in a manner that creates a potential public health hazard. Otherwise, LMUD will give the customer on file for the account at least 24 hours' notice before utility personnel enter private property to conduct an inspection or test.

DESIGN DETAILS FOR THE LOW-PRESSURE SEWER SYSTEM

The following sections pertain to LMUD's requirements for the components of a residential wastewater low-pressure sewer system. It exists as a summary and, as such, is not comprehensive. This document, as well as LMUD's Standard Details, LMUD's Plumbing Code, pertinent current uniform plumbing and electrical codes, and OSHA safety guidelines should be followed for all self-installed connections in order to pass inspections. After consulting these documents, contact LMUD with any pending technical questions. (512- 261-6222 ext. 110)

Gravity flow pipeline from the house to the pump tank/Cleanouts

All pipes connected to the wastewater main shall be Schedule 40 minimum. Any openings, either temporary or permanent, shall be capped with either rubber or PVC. Tape is unacceptable. All PVC pipe fittings shall be Schedule 40 socket weld fittings. Absolutely no

rubber adapters or couplings are allowed, except with prior approval from LMUD.

A two-way cleanout shall be provided adjacent to the structure and another cleanout shall be installed in direction of flow not more than one foot from the property or easement line. The cleanout stack shall be straight and plumb with no angles and extend six (6) inches above finished grade. Cleanouts shall be at least four (4) inch diameter or same size as yard line. All cleanouts must have female thread-type connections and be visible six (6) inches above the final finish grade.

All gravity wastewater service line cleanouts will have an approved pressure relief valve. This applies to cleanouts near the house and near the street or main line, that are not subject to inundation by surface water and that are below finished floor grade at least six (6) inches.

Single cleanouts on existing lines are acceptable, but if the existing pipe must be substantially rebuilt, a new dual cleanout should be installed. This cleanout (existing or new) must extend at least four (4) inches above finished soil elevation and must be at least two (2) inches below the top of the pump tank. The cleanout must include a pop-up pressure relief cap.

Per UPC, Section 710, new and current structures shall be protected from backflow of wastewater by installing an approved type backwater valve. All new and current structures will have a pressure relief valve at the owner's cleanout, four (4) inches above finished grade.

Pump Tank

The location of the pump tank will be determined by LMUD, but customer input will be considered. It must be installed outdoors, in a location that provides unobstructed access for pump repair. No tank will be allowed to be installed indoors or under any structure (such as a deck). For existing homes, the top of the tank must be above 715 feet mean sea level elevation. For new construction, the top of the tank must be above 722 feet mean sea level elevation. The preferred location will be adjacent to a driveway or sidewalk. When set on top of the ground or if more than 18 inches of the tank is exposed above ground, the tank must be fenced or rocked in per City of Lakeway requirements. The top of the tank must remain accessible with no obstructions such as bushes, fences, etc. The fiberglass fabricated tank shall have minimum inside diameter of 30 inches and a minimum depth of 36 inches. The tank must provide 70 gallons minimum of storage capacity without backing up into the inflow line. Homes with more than three (3) bathrooms require an additional 20 gallons of storage per additional bathroom or half bath. For example, a residence with four and one-half (4 ½) bathrooms will require a minimum working volume of 110 gallons between the tank bottom and the inflow line.

The tank, provided by LMUD, shall be manufactured with a single-wall laminated fiberglass construction. Polyethylene tanks are not acceptable. Resin and reinforcing material shall be commercial grade glass fiber fully bonded with the resin. Inner surfaces shall have a smooth finish and be free of cracks. Exterior tank surface shall be relatively smooth with no exposed fibers or sharp projections. Tank bottom and wall shall be of sufficient thickness and construction to withstand the imposed loads from saturated soils at the specified burial depth when the tank is completely empty. Tank bottom shall be reinforced with a fiberglass plate extending beyond the tank walls to support 400 pounds of concrete anchoring it to counter flotation. Tank shall include a solid fiberglass lid and be secured with threaded stainless fasteners and provide a low profile mounting. The finished surface of the lid must be a minimum of six (6) inches above soil final grade.

Wastewater Pump

A grinder pump, provided by LMUD, is required for discharge into LMUD's pressurized wastewater collection system. This pump acts like a whole-house garbage disposal, chopping up the solids in the wastewater to a slurry that can be pumped longer distances. At time of publication, the grinder pump will be the Barnes 1-1/4-inch centrifugal 2 horsepower (HP) or Razor ZOGP. (Note that older installations may incorporate predecessor models Omni Grind Plus (OGP) or Omni Grind™ (OGVH) pumps.) The pump must be suitable for total dynamic pumping head to 200 feet. This pump will require the GP-2012 control panel, provided by LMUD. For ease of maintenance, LMUD will not accept other pump brands.

Commercial, duplex, and multi-family housing units require duplex pumping units for pump back-up protection from pump failure and from unusual high flows. The commercial and multi-family pump installation shall be sized specifically to the site conditions.

Pump Control Panel

Controls turn the pump on and off and provide an alarm when the pump fails. The pump panel, provided by LMUD, at time of publication, must be GP-2012 for the 2 HP grinder pump. A wiring diagram shall be permanently affixed to the inside of the panel and shall include model number, voltage, phase, and hertz rating for the panel and for the pump. A warning label against electric shock

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shall be permanently affixed to the outer door.

For the 2 HP grinder pump, incoming power shall be 240 volt, 30 amps, 1 phase, 60hz from the main breaker box for the house.

The pump power supply cable and the float cables to the control panel will be in conduit. Buried electrical conduit shall be grey PVC and have a minimum nominal diameter of two (2) inches. Use electrical sweeps for bends or LB type fittings for elbows. The conduit will penetrate the tank a minimum of six (6) inches below ground level using a waterproof hub. Seal the conduit at both ends using Duck Seal flexible clay specifically manufactured for this purpose.

Controls shall include, run-off-auto switch, run light, high water flashing red alarm light mounted on the top of the enclosure, control voltage fuse (120 volts), start relay, appropriately sized circuit breaker to disconnect the pump from the incoming power and current fault protection.

All wiring shall be color coded or numbered to facilitate maintenance and repair. Wire ties shall be used to maintain panel wiring in neat bundles and to prevent interference with operating devices.

The location of the pump control panel will be determined by LMUD, but customer input will be considered. It should be located near to and within sight of the pump tank. If this is not practical, safety code requires a separate power disconnect safety switch installed adjacent to the pump tank to completely disconnect the residential grinder pump station from incoming power. The safety disconnect enclosure shall be a NEMA 3R or other LMUD-approved equivalent.

Float Switches

The water level operating and alarm controls use float switches, provided by LMUD, hanging within the fiberglass pump tank. Mercury float switches shall be sealed in a solid polyurethane float for corrosion and shock resistance. The float switches shall hang near the top of the tank supported by a stainless steel hook specifically for this purpose. Floats may not be attached to the pump or piping.

Pump discharge piping

The 2 HP grinder pumps require 1-1/4-inch discharge piping. Fittings and pipe within the pump tank, including the vertical pump discharge pipe, tee with plug, nipple, pipe union, and tank exit pipe, will be provided by LMUD. All pipe and fittings within the tank shall be 304 stainless steel, schedule 40. The pipe will exit the tank through a waterproof grommet designed specifically for this purpose, also provided by LMUD.

Check Valve and Isolation Valve

Inside the pump tank, install a check valve and isolation valve (provided by LMUD) the same size as the piping. The stainless steel check valve shall be gravity operated flapper-style with full-ported passageway when open. All metal parts shall be series 300 stainless steel. The stainless steel isolation ball valve shall have a straight-through flow passage. Seats and all "O" ring seals shall be lever operated for quarter-turn operation. Lever position shall indicate whether the valve is in the open or closed position. Install a tee in the service line just after the isolation valve for use in pressure testing the line. This tee will be capped after the pressure test.

Manual Air Release Valve

(required in some cases, installed by LMUD)

In cases where the tank and pump are located more than five (5) feet in elevation above the main line (for example, on the high side of the street where the house is above the street), a manual air release valve is required. The air release can be manually opened briefly to remove accumulated gases trapped in the service lateral. This procedure can cure pump air-lock. The air release shall consist of a tee in the service lateral just downstream from the isolation valve located near the pump tank. The tee will then elbow back toward the pump tank. A stainless steel ball valve, identical in construction to the isolation ball valve, will be located in the same equipment box as the isolation valve and check valve. The discharge of the manual air release pipe will be back into the pump tank. The tank penetration will be through a waterproof grommet.

Customer Service Lateral Pipeline

Prior to any construction that requires digging, Texas811 (800-344-8377 or texas811.org) should be contacted to locate all underground utilities. Damage to any marked utility shall be repaired to utility owner's satisfaction and at the property owner or contractor's expense.

The wastewater service line shall exit slab/foundation at least eight (8) inches below grade. The service lateral pipeline from the pump isolation valve to the connection at LMUD's main shall be 2-inch or 1-1/4-inch diameter schedule 40 PVC. For house service laterals in excess of 150 feet, the grinder pump may require a 2-inch diameter line if pipe-friction pressure loss is critical. This will depend on the available pressure at the pump and the pressure at the point of connection. Service lateral pipelines will be white or dark grey in color. Blue pipe is not allowed.

The discharge line leaving the basin shall have a minimum depth of 12 inches of backfill to the first 45-degree bend; the balance of the line shall maintain a depth of 12 inches or deeper to the wastewater tap.

LMUD prohibits the use of 90-degree bends. If that severe of a bend is needed, two (2) Schedule 40 45 degree bends with minimum of six (6) inches of pipe between the bend fittings are required.

The service lateral pipe shall have a #10 copper wire with a PVC jacket attached above it with vinyl electrical tape at two-foot intervals to aid in future pipe location using an electronic instrument. Wire shall be coiled at both ends providing two feet of spare wire at all valve boxes and other access points. Splices in the wire shall be waterproof.

Bedding around the pipe shall be a uniform minimum of four (4) inches of 3/8-inch pea gravel or sand under the pipe and six (6) inches of over the pipe. There will be no rocks larger than one (1) inch allowed in the remaining backfill cover. Backfill shall be placed (which can include rock saw fines) in 8-inch lifts and compacted to the surface.

All sections of pressurized wastewater service lines that will pass under drives, walks, and flatwork are to be installed in PVC sleeves at least two (2) sizes larger than the pressurized wastewater service line, minimum 4-inch diameter.

If a potable water service line and wastewater line are installed in the same trench, the wastewater service line needs to be below the potable water line.

Absolutely clean backfill must be used above the bedding gravel. No household trash, cans, bottles, boards, pieces of wood, building materials shall be mixed into the backfill. Trench excavation spoils can be used for backfill, provided it is free of unsuitable excavation spoils and rocks larger than four (4) inches.

Minimal Lift into a Gravity Mainline

(required in some cases, installed by LMUD)

Where necessary and applicable to discharge into a nearby gravity mainline, as determined acceptable by LMUD, a small ½ HP pump may be used to convey wastewater from the customer tank into the LMUD system. Variances from the prior mentioned specifications for the ½ HP pump include the provided pump panel must be GP-2015, the incoming power 115 VAC, 1 phase, 20 amps, and 2-inch discharge piping is required.

Discharge from Rainwater Systems & Condensate Drains

LMUD requires that no flow from rainwater systems or condensate drains should enter the wastewater system. A primary condensate drain shall discharge to the yard, away from the house foundation and the secondary shall discharge above a sink if practical or to another location such as a porch or walkway that is likely to be observed by the owner.

SYSTEM TESTING & INSPECTION SCHEDULE

Three (3) inspections are required for the low-pressure sewer system installation. The pump system may not be placed in service until all required testing have passed inspection. LMUD will be responsible for performing the first two inspections, which can be scheduled by calling LMUD's main office at 512-261-6222 ext. 110. The final inspection will be scheduled by LMUD with LMUD's Chief Plumbing Inspector after the final tie-in is complete: Troy Gray, IO Inspections (www.ioinspections.com). Most inspection requests require a minimum 48-hour turn-around time. For questions, call LMUD (512-261-6222 ext. 110). A failed inspection may incur additional inspection fees.

Tank Set Inspection

Contact LMUD to inspect the tank once the tank is set (512-261-6222 ext. 110). An LMUD field team representative will check that the tank is set level both front-to-back and side-to-side, and in proper direction, inlet-to-outlet. He will also look at concrete at bottom of tank and verify tank is set at six (6) inches above finished grade. Flood test will be performed if all pipes are installed.

Sewer Yard Line Inspection

Contact LMUD once all lines are laid and remain unburied (512-261-6222 ext. 110). All sections of wastewater line shall be visible for inspection. Inspection will include proper installation of a two-way cleanout, verification of depth and finder wire as well as pipe bedding. Inspector will also observe a pressure test of 50 psi performed by the installer.

For Self-installed connections, contractor must perform pressure testing.

Before contacting LMUD for an inspection and before connecting the service line to LMUD's isolation valve at the main, the service lateral pipelines shall be hydrostatically tested by the contractor for leakage. Test pressure shall be 50 psi maintained for a 4-hour duration after all defective joints, pipe, valves, or breaks have been satisfactorily corrected. Tests shall be made on the line between the main line connection and the pump isolation valve.

Test pressure shall be applied by means of a satisfactory pump installation furnished by the contractor, including pressure regulator, fittings, valves, pipe, water measuring device, pressure gauges, and other apparatus and labor necessary to conduct the tests. The pressure gauge shall read directly in pounds per square inch (psi) with a total range of 0-200 psi with figure intervals of 20 psi and intermediate gradations of five (5) psi. The pump shall be disconnected from the pipeline during the test period.

The pipe will not be accepted until there is no leakage. The contractor should pre-test line to assure that it will pass a test before requesting an official test from LMUD. In the event it is necessary to re-test a line which has failed, LMUD will charge re-inspection fees.

Final Inspection

Once all components of the system install have been tested by the installer, a final inspection should be scheduled. In most cases, LMUD will call in the final inspection with their inspector after final tie-in is complete. The wastewater connection cannot be deemed operational until a passed final inspection has been received by LMUD's Chief Plumbing Inspector: Troy Gray, IO Inspections (www.ioinspections.com).

SERVICE LATERAL CONNECTIONS

In some cases, the tap to LMUD's main will already be in place and ready for customer connection. In cases where the tap does not exist, the contractor will need to schedule with LMUD to extend and/or tap the main (512-261-6222 ext. 110).

Final Tie-In of Service Line to Main

LMUD will install the customer service lateral wastewater connection tie-in location. For self-installs, the customer is responsible for bringing the service line to this location. LMUD's final tie-in to the main will consist of a 1-1/4-inch stainless steel check valve and ball valve inside an equipment box with a cast iron locking lid.

Decommission Septic Tank

LMUD or Property Owner (dependent on availability) will be responsible for decommissioning the existing septic tank at a connected Service Address following Texas Administrative Code, Title 30, Part 1, Chapter 285, Subchapter D, RULE §285.36. The haul/disposal of liquid/solids septic tank waste requires completion of a Manifest Trip Ticket for Hauled Liquid Waste form that will be filed by LMUD with LCRA. All paperwork will be stored in LMUD's account file associated with the Service Address. Decommissioning the septic tank takes it out of service; the tank will not be removed.

ELECTRICIAN'S GRINDER PUMP SYSTEM INSTALLATION CHECK LIST

The following check list applies to all grinder pump systems installed within LMUD's service area. This document represents criteria inspected at each check point. It must be presented to LMUD's field department representative at each inspection and signed off on as complete prior to a final inspection being performed by LMUD's Chief Plumbing Inspector: Troy Gray, IO Inspections (www.ioinspections.com). Failure to properly install a grinder pump to LMUD standards will result in additional fees. ALL GRINDER PUMP INSTALLATIONS MUST BE DONE BY A LICENCED ELECTRICIAN OR SOMEONE WORKING UNDER THE DIRECT SUPERVISION OF A RESPONSIBLE MASTER ELECTRICIAN. All electrical work that affects plumbing systems within LMUD's service area are required to submit proof of valid electrician license to LMUD.

SERVICE INSTALLATION ADDRESS	NAME(S) OF PROPERTY OWNER(S)	
COMPANY NAME	PHONE NUMBER	ELECTRICIAN'S LICENSE NUMBER

Inspection Requirements: **Inspections can be scheduled by calling LMUD's main office at 512-261-6222 ext. 110**

Two (2) check point inspections are required prior to final inspection: 1). Tank Set and 2). Sewer Yard Line. Line from the wastewater tap to tank plus concrete around the basin must remain visible (uncovered) for these inspections. Both plumber and electrician check lists must be presented to LMUD's field team representative during each inspection. Plumber should conduct a pressure test prior to scheduling sewer yard line inspection. Power must be supplied to the electrical disconnect and all backfilling needs to be done around the tank before the final inspection is scheduled.

- The grinder pump panel is a 240 volts single phase system, provided by LMUD
- Panel is installed to a minimum of four (4) feet and maximum of five (5) feet above final grade to bottom of panel at the location as determined by LMUD during assessment. The grinder pump panel is mounted to provide easy and reasonable access. The panel is not obstructed by A/C units, pool equipment, fencing, half walls, propane tanks, etc. It is the responsibility of the electrician to assure easy access to the panel for inspection.
- Panel must be installed on an outside wall or LMUD-approved location and no further than 10 feet from the grinder pump tank. If this cannot be achieved, the electrician is responsible for contacting LMUD for an alternative.
- Each panel should have a separate 240 volt 30 amp minimum 4 wire circuit for simplex installations and 60 amp. This circuit will be terminated into an approved raintight 30 amp minimum disconnect for simplex and 60 amp for duplex. Breakers supplying the disconnect must be two poles. Only a 30A 240 circuit is to be provided.
- Panel shall be mounted within a reasonable distance, with line of sight of the electrical disconnect, per N.E.C. Article 430.102(A). There shall be no other wiring passing through, terminating in, or leaving the panel. Mounting ears or brackets must be used. Do not drill through the back.
- Liquid tight flex conduit or schedule 40 electrical blue pipe is acceptable for use on both the disconnect and the pathway from the panel to the tank. 2 inch conduit is required from the panel to the tank, which is the responsibility of the plumber.
- Electrical sweeps on schedule 40 conduits must be used (no water or short sweep 90s allowed).
- The electrician should connect any wiring, including line side power, to the grinder panel. Line side wiring must be black and black or black and red, the neutral will be white and the grounding conductor will be bare copper or green insulated copper. Wires from the disconnect to grinder panel must have wire nuts installed.
- No side entries allowed into the grinder panel. Bottom entries only.
- 240 volt circuit should be run and connected to each panel. A two (2) inch TALN PB should be cut into panel and left for plumber to finish install.

The following section is to be completed by LMUD representative.

INITIALS	DATE
COMMENTS:	

INITIALS	DATE
COMMENTS:	

PLUMBER'S GRINDER PUMP SYSTEM INSTALLATION CHECK LIST

The following check list applies to all grinder pump systems installed within LMUD's service area. This document represents criteria inspected at each check point. It must be presented to LMUD's field department representative at each inspection and signed off on as complete prior to a final inspection being performed by LMUD's Chief Plumbing Inspector: Troy Gray, IO Inspections (www.ioinspections.com). Failure to properly install a grinder pump to LMUD standards will result in additional fees. ALL GRINDER PUMP INSTALLATIONS MUST BE DONE BY A LICENCED PLUMBER OR SOMEONE WORKING UNDER THE DIRECT SUPERVISION OF A RESPONSIBLE MASTER PLUMBER. The valid plumber's license and associated driver's license must be on file with Lakeway MUD before work begins.

SERVICE INSTALLATION ADDRESS	NAME(S) OF PROPERTY OWNER(S)	
COMPANY NAME	PHONE NUMBER	PLUMBER'S LICENSE NUMBER

Inspection Requirements: **Inspections can be scheduled by calling LMUD's main office at 512-261-6222 ext. 110**

Two (2) check point inspections are required prior to final inspection: 1). Tank Set and 2). Sewer Yard Line. Line from the wastewater tap to tank plus concrete around the basin must remain visible (uncovered) for these inspections. Both plumber and electrician check lists must be presented to LMUD's field team representative during each inspection. Plumber should conduct a pressure test prior to scheduling sewer yard line inspection. Power must be supplied to the electrical disconnect and all backfilling needs to be done around the tank before the final inspection is scheduled.

- All underground utilities have been located prior to construction (Texas811: 800-344-8377 or texas811.org).
- Coordination has been made with LMUD to accommodate time schedule for final tie-in, including running wastewater main and setting tap prior to install.
- Provided grinder pump kit materials have been scheduled for delivery by LMUD.
- Location assessment has been completed by LMUD and is followed in construction planning. Specs and Standard Details have been received from LMUD and are followed in construction planning as well as standard industry codes.
- A two-way cleanout is installed prior to grinder pump tank.
- The grinder pump tank is installed outdoors in a location as determined by LMUD's assessment. If depth is a problem the plumber is to contact LMUD's main office (512-261-6222 ext. 110) to determine an alternative. No tank will be allowed to be installed in or under any structure or set on top of the ground without approval from LMUD.
- The grinder pump tank is installed to a depth so as to maintain a minimum of six (6) inches above final grade. If this cannot be done then an extension can be sourced and purchased by the plumber. All tanks are to be concreted around the bottom of the basin with a minimum of 400 pounds of concrete.
- Discharge lines must be 1 ¼ inches in diameter and be of pressure rated schedule 40 PVC pipe. The top of the discharge line from the house into the tank must not be installed any lower than 24 inches from the bottom of the basin. The discharge line leaving the basin shall have a minimum depth of six (6) inches of backfill at the first 45 degree bend. The balance of the line shall maintain a depth of no less than 12 inches to the wastewater tap. No more than seven (7) 45-degree bends are allowed without prior LMUD approval. All discharge lines must have a minimum of three (3) inches of sand or pea gravel (no rocks) over or under them.
- The plumbing installed inside the basin will be installed in this order: PVC sch 80 female adapter, 1 ¼ inch x 24 inch nipple penetrating through the rubber grommet into the tank, 1 ¼ inch ball valve, 1 ¼ inch close nipple, 1 ¼ inch check valve, 1 ¼ inch close nipple, 1 ¼ inch union, 1 ¼ inch close nipple, threaded, 1 ¼ inch tee set like a 90 with a threaded 1 ¼ inch plug in the top of the tee, 1 ¼ inchx24 inch stand pipe, and pump. Union must be installed after the change of direction horizontally for future removal/service.
- All hubs and rubber boots used for pipe installation must be sealed to a watertight seal.
- Electrical: Plumber should run 2 inch rigid electrical conduit (or acceptable alternate; no white PVC is to be used!) from the panel to the tank. The pump and float wires should be pulled into the grinder pump panel and no wires are to be cut. If any wires are cut, the plumber will pay for replacement of the affected pump component(s). A 2-inch vinyl/rubber grommet is supplied by LMUD for the connection of the conduit from the panel into the tank basin and it must be used. Do not fill the conduit with sealant. All excess wires are to be left in the tank's basin.
- Septic system, if applicable, has been properly decommissioned following Texas Administrative Code, Title 30, Part 1, Chapter 285, Subchapter D, RULE §285.36. A Manifest Trip Ticket for Hauled Liquid Waste form has been completed and sent to LMUD to be filed with LCRA.

The following section is to be completed by LMUD representative at each inspection.

TANK SET INSPECTION

SEWER YARD LINE INSPECTION

INITIALS _____ DATE _____

INITIALS _____ DATE _____

COMMENTS:

COMMENTS:

EXHIBITS

Application for Service

Contract for Installation & Fee Schedule for ODWW Project

Application for Plumbing Permit

LMUD Rate Order, Exhibit 1-A

LMUD Standard Details

LMUD Plumbing Code Amendment