New Mexico Environment Department

Liquid Waste Program

Overview of 2013 Regulation Changes

Note: the information provided in this handout is intended to provide a brief overview of the 2013 revisions to the Liquid Waste Regulations. Please refer to the Liquid Waste Disposal and Treatment Regulations 20.7.3 NMAC which you can find at our website at:
http://www.nmenv.state.nm.us/fod/LiquidWaste/documents/2073-draftfinalversion-2013.pdf

Determining Eligibility: Liquid Waste Permit or Groundwater Discharge Permit? 201(O)

Section 201(O) of the regulations clarifies how to calculate the wastewater flows from a system to determine whether it has an effluent flow of 2000 gallons per day or less. For systems with flows of 2000 gpd or less, the system can be permitted under the Liquid Waste Program. For systems with flows that are determined to be greater than 2000 gpd the applicant shall submit a permit application for a Groundwater Discharge Permit with the Groundwater Quality Bureau.

This Section of the Regulations is only to be used to determine whether a permit will be issued by the Liquid Waste Program or the Groundwater Quality Bureau. To calculate the design flows for a specific system you will use Section 201(P) of the Liquid Waste Regulations.

For Flows from Residential Sources With Multiple Homes the flows shall be based upon the design flow total flow (as calculated in Section P) and then **multiplied by 0.80**. (Note: When you have 5 or more residences, PE calculations nor Water Meter Data cannot be used). This regulation was changed to allow more small mobile home parks to be permitted under the Liquid Waste Program instead of the Groundwater Quality Bureau.

DETERMINING ELIGIBILITY EXAMPLE: Residential Flow with 4 Residences

If you have 3 5-bedroom houses and 1 6-bedroom house on a 5-acre lot, should this system by permitted by the Liquid Waste Program or the Groundwater Quality Bureau? **The Pre-2013 Regulations would have calculated the flow as follows:**

3 residences X 525 gpd =1575gpd PLUS

1 residence X 600 gpd = **2175 gpd Total Flow**

Determination: This permit would have been required to apply for a Groundwater Discharge Permit **The 2013 Regulations calculate this as follows:**

3 Residences X 500 gpd =1500 gpd PLUS

1 Residence X 550 gpd = 2050 gpd

2050 gpd **X 0.8** = **1640 gpd Total Flow**

Determination: This permit would be permittable under the Liquid Waste Program

DETERMINING ELIGIBILITY EXAMPLE: Residential Flow with 5 or More Residences

You have a 4-acre lot with 6 mobile homes on it; each mobile home has 3 bedrooms. Some systems are shared as a cluster system. Who would permit this system? The Liquid Waste Program or GroundwaterQuality Bureau?

Note that this property has "5 or more" residential units on it and the total flow could be calculated by a PE or with Actual Metered Water Use or Effluent Flow Meter data. For this example the applicant chose to calculate the flow using the number of bedrooms

OLD REGS(Pre-2013):the total flow would be calculated as: 375 gpd X 6 trailers **= 2250 gpd**

Determination: *This permit application would have required a Groundwater Discharge Permit through the Groundwater Quality Bureau. It is likely the applicant would contact a PE or use existing meter data*

NEW 2013 REGS: Under the 2013 Regulations the total wastewater flow for this residential cluster system would be reduced by 20%. The calculations would be as follows:

375gpd X 6 trailers **X 0.80 = 1800 gpd**

Determination: *This permit would be permitted under the Liquid Waste Program. Please note that the Total Design Flow for this property would still be 2250 gpd and the tanks and disposal system would need to be designed to handle the 2250 gpd.*

For Flows from Non-Residential Sources

The total flow determinations for non-residential sources may be based upon any of the following:

1. **Table 201.1** or NM Plumbing Code, EPA Design Manual or other accepted references
2. **PE design calculations** with seal and stamp of PE licenses in NM; Department to review calculations as appropriate;
3. **Actual Metered Water Use Data or Effluent Flow Meter Data**
   a. At least one year of actual existing meter data collected within previous 5 years
   b. Formula: A/B=Q; A= highest quarter for meter readings in gallons; B=total number of days in highest metered quarter; Q=daily wastewater flow in gpd
   c. Calibration of Meter; Tamper-proof and Records available to department
   d. If any quarter exceeds 2000 gpd; records for following 2 quarters submitted to department for review

DETERMINING ELIGIBILITY EXAMPLE: High School with 100 Students and 20 staff

For this example we will look at the 3 options available to determine eligibility:

Option #1: Use Table 201.1: 120 persons X20 gpd/student = 2400 gpd

Determination: Using this method, this school must be permitted by Groundwater Quality Bureau

Option #2: A Professional Engineer Designs the system; submits design calculations with estimated system flow of 1850 gpd;

Determination: Since flow is less than 2000 gpd; once calcuulations are verified by NMED, this system can be permitted under the Liquid Waste Regulations

Option #3: Actual Water Meter Use Data submitted for one year period; highest quarter was June, July and August. The Actual Meter Flow in Gallons for Quarter= 111,600 gallons.

Q= 111,600 gallons/62 days = 1800 gpd.

Determination: This system can be permitted under the Liquid Waste Regulations because <2000 gpd.

Determining Treatment and Disposal Design Flow Section 201(P)

1. For Residential Sources:

Please note in the table below that the design flow for a 4 bedroom and 5 bedroom residence has changed as well as the design flow for each additional bedroom.

Number of Bedrooms	**Design Flow** (Prior to 9/1/13)	**New Design Flow** (9/1/13)
1	150	**150**
2	300	**300**
3	375	**375**
4	450	***440***
5	525	***500***
Each Additional Bedroom	75	***50***

2. For Commercial, Non-Residential and Multi-Family Residential Sources:

a. Use Table 201.1 or other acceptable source (NO DESIGN FACTOR REQUIRED)

c. PE Calculations- (NO DESIGN FACTOR REQUIRED)

d. Existing Water Meter or Effluent Flow Date **(DESIGN FACTOR of 1.5 is to be applied)**

DETERMINING DESIGN FLOW EXAMPLE for a Church with 200 seats and a full kitchen

For this example we will look at the 3 options available to determine design flow: **Option #1: Use Table 201.1**: 200 X 7 gpd/seat =1400 gpd

Option #2: A Professional Engineer Designs the system; submits design calculations with estimated system flow of 900 gpd; (calculations are reviewed by NMED)

Option #3: Actual Water Meter Use Data submitted for one year period; highest quarter was April, May and June . The Actual Meter Flow in Gallons for the highest quarter= 51,850 gallons.

Q= 51,850 gallons/61 days in highest quarter = 850 gpd

A Design Factor of 1,5 Must be Applied for Water Meter Use Data: 850 gpd X 1.5 = 1275 gpd

DETERMINING DESIGN FLOW : EXAMPLE Residential Flow- 6 Residences

You have a 4-acre lot with 6 mobile homes on it; each mobile home has 3 bedrooms.

Design Flow: 375 gpd X 6 trailers = 2250 gpd

The system should be designed form a 2250 gpd design flow. Therefore, assuming a Type II Soil; the minimum absorption area for the disposal field for this system is 4500 square feet.

Lot Size Requirement Changes- Section 301

No Deduction for Roadway Easement Section 301(C)

The size of a lot shall be the total area of the lot plus or minus the area of any liquid waste disposal easements granted to or by another lot, respectively. You no longer need to deduct the roadway easement when determining the size of a lot

Exceptions to 0.75 Acre Lot Size limit 301(C) and (F)

A conventional treatment system shall not be installed on a lot sized smaller than 0.75 acres, where there is not an established on-site liquid waste system, except as stated in Subsection F of these Regulations.

Subsection F:

The department may issue permits for lots less than 0,75 acres for areas the department has identified and mapped where groundwater is not at risk from nitrogen loading from on-site liquid waste systems. The following hydrogeologic conditions may be considered when determining if groundwater is not at risk:

1. Groundwater does not exist;
2. The uppermost groundwater contains a total dissolved solids concentration greater than 10,000 mg/l;
3. The uppermost groundwater occurs under confined conditions;
4. The uppermost groundwater occurs at a depth between 400 and 600 feet with one or more geologic strata in the vadose zone that may act as a capillary barrier; and
5. The uppermost groundwater occurs at a depth greater than 600 feet

In areas that have not been identified and mapped by the department, the applicant must demonstrate one of the above conditions exists prior to the issuance of a permit.

Changes to Setback Requirements Section 302

"Single Lot Policy" Revision -Section 302 (C)

Multiple liquid waste systems, each with an actual design flow of 2000 gpd or less may be permitted by the department, even if they are located on a single lot, provided that the disposal systems are setback a minimum distance from eachother in accordance with the following formula: **$R=\sqrt{A/pi}$**

- R= Radius of circular area in feet
- √=square root
- A=area of a circle in square feet (calculated as follows A=design flow X 87.12
- pi= 3.1416

The Following Table has calculated the Radius in feet that a disposal system must be from the radius of an adjacent drainfield.

Number of Bedrooms	Radius in Feet
1	102.0
2	102.0
3	102.0
4	110.5
5	117.8
6	123.5

See Appendix for Some Example Drawings

When a Private Well is Drilled too close to an Existing LW System Section 302(D)

If the department discovers that a private drinking water well has been drilled at a location that is not set back from a pre-existing liquid waste system by the distance required in Table 302.1, the department shall:

1. Send a certified letter to the owners of the water well and the liquid waste system that identifies the subject water well and liquid waste system, and describes the potential hazards created by insufficient setback;
2. Provide the Office of the State Engineer with a copy of the letter; and
3. Not administer the water well setback requirements in Table 302.1 pertaining to the subject well provided that the liquid waste system remains in compliance with the regulations and is not modified

Permitting Process Clarifications Section 401

The "Applicant" is defined as the owner applying for a permit to install, modify or operate an on-site liquid waste system. Once the applicant has been issued a permit, he is then referred to as the "permittee."

Cancelling a Permit Section 401(P)

Only the permittee may request that the department cancel a permit. The request must be made in writing.

Contractor Withdrawing from a Permit Section 401(Q)

- An installer whose CID license number is on permit approved by the department for construction, may upon written notice to both the permittee and to the department, withdraw from the permit.

- Upon permit withdrawl, the permit approval shall be suspended until the permittee amends the permit either to include another licensed installer or to reflect approval as a Qualified Homeowner.

- Construction shall not proceed until the permit amendment is approved by the department.

- If the contractor withdraws after construction has commenced, the owner shall eliminate any public safety hazards posed by open treatment systems, excavations or other conditions related to unfinished construction

When a Permittee wants to Change Installers Section 401(R)

A permittee may amend the permit to change the installer without installer withdrawl, provided the permittee provides written notice to the installer

Property Transfer Evaluations (Inspections) Section 902

Prior to the transfer of a property with an established on-site liquid waste system the transferor of the property shall have the system evaluated. Evaluations shall be conducted by a Qualified Evaluation (See 904(B) utilizing a department-approved form. The Environment Department has new Evaluation Forms and new Procedures on how they will be processing these Property Transfer Evaluation Forms. (See Appendix)

All Property Transfer Evaluations:

- Shall be recorded on forms approved by the department
- Evaluation reports shall be kept on file by the evaluator of the liquid waste system
- Evaluators shall submit to the department copies of all evaluation reports, whether completed or not. Within 15 days of the evaluation
- If modifications are needed to correct any deficiencies or permit violations, a permit or variance application shall be submitted within 15 days of the evaluation by the party who is or will be the owner of the property
- Evaluation reports shall include GPS coordinates of the treatment unit
- Once an evaluation is requested, all results, whether complete or not, shall be submitted to NMED
- If a Final Inspection with final approval for a new or modified system or a property transfer evaluation for an existing system has been done within 180 days of the transfer of property, the property transfer evaluation need not be conducted
- In the event property with an existing on-site liquid waste system is transferred prior to remediation of a failed system, the transferee become responsible for remedying the failed system

Unpermitted System Evaluations

Systems Installed or Modified Prior to February 1. 2002

Unpermitted conventional liquid waste systems installed or modified **prior** to February 1, 2002 may be issued a certificate of registration for continued operation, if after evaluation by **NMED or by an Installer Specialist.** If any of the following conditions cannot be met, a certificate of registration cannot be issued and a modification permit application must be submitted:

1. Septic Tank is pumped by a septage pumper hired by the system owner and the unit is determined: a. To be watertight;

b. To be functioning properly; and
c. To have a liquid capacity within one tank size of the required capacity in 201(Q)

2. The liquid waste system appears to meet setback and clearance requirements based on a non-intrusive evaluation;
3. The disposal system appears to be functioning properly;
4. Meets the lot size requirements of the regulation in effect at the time of the initial installation;
5. The system does not constitute a public health or safety hazard; and
6. The appropriate permit fee is paid for the system installed

Systems Installed or Modified on or after February 1, 2002

Unpermitted conventional liquid waste systems installed **on or after** February 1, 2002 may be permitted if:

1. Septic Tank and disposal system are adequately exposed to allow full inspection **by the department** to determine all relevant aspects of construction and materials, including but not limited to : soil type; pipe size, type and material; proper placement of aggregate and cover; and proper trench size, slope and spacing;
2. The on-site liquid waste system is determined, upon inspection by the department, to meet all the requirements of 20.7.3 NMAC; and
3. The appropriate fee is paid

Permitted Conventional System Evaluations

For permitted conventional liquid waste systems, a non-invasive evaluation shall be conducted, with a report provided to the buyer. The evaluation shall determine whether or not the following are met:

1. Treatment Unit: is watertight, is functioning properly and the existing tank size is within 1 tank size of capacity required;
2. Disposal System: appears to be functioning properly;
3. Setbacks and Clearances: meets setbacks and clearances;
4. Lot Size Requirements: meets lot size requirements in effect at time of installation or most recent permitted modification; and
5. Public Health or Safety Hazard: the system does not pose a threat to public health or a safety hazard

Permitted Advanced Treatment Evaluations

For permitted advanced treatment systems the evaluation shall also include the following:

1. If a sampling event has not occurred within the last 180 days of the evaluation, the system shall be sampled in accordance with permit conditions for compliance with the design and treatment standards stated in Sections 602-604 of these regulations. The sampling results shall be included included with the evaluation report.
2. If a regularly schedule sampling event has occurred within 180 days of the evaluation, the results of the sampling shall be included in the evaluation report

Installer Specialist Section 904(E)

Qualification Requirements: Section 904(E)(1)

If you meet all of the following minimum qualifications you may apply to the department for certification as an installer specialist:

a. Valid CID contractor's license (MM-1, MM-98, MS-1, or MS-3)
b. One of the following:
    1. 3 Years of professional experience installing on-site LW systems in NM; or
    2. Installation or repair or either 100 on-site LW systems in compliance with permits issued by NMED or Bernalillo County; or
    3. 50 on-site LW systems in New Mexico in compliance with LW permits approved by NMED or Bernalillo County, plus certification as an installer of on-site wastewater systems by a national industry or trade organization (CIDW or NAWT)
c. 16 hours of training credits approved by the department completed during the previous 3 calendar years
d. Successful completion of a 20.7.3 NMAC training class and examination provided by the department during the previous 12 months;
e. No Compliance Orders issued to an applicant within the past 3 years
f. No criminal convictions within past 5 years

Application Process for Installer Specialist: Section 904(E)(2)

Application for certification as an installer specialist shall be made in writing on a form provided by the department, and shall include documentation listed above

- NMED shall within 15 working days of receipt of a complete application notify the applicant in writing of approval or disapproval of the application
- NMED disapproval of an application may be appealed in accordance with 20.1.5 NMAC
- Shall be valid for no longer than 3 years, expiring January 31 of the applicable year

Recertification Process for Installer Specialist Section 904(E)(6)

Installer Specialists shall be recertified upon submission to the department, no later than January 31 of each applicable year, of documentation that the installer specialist has received 16 hours of approved training credits completed during the previous 3 calendar years

NMED Responsibilities Section 904(E)

- NMED shall maintain on its internet website a list of training curricula that have been approved for qualification and recertification as installer specialist
- NMED shall accept registrations for a 20.7.3 NMAC training class and exam no less frequently than quarterly within each department district
- NMED shall maintain on its internet website a list of certified installer specialists, along with a description of the minimum qualification requirements for certification

Installer Specialist Inspection Procedures for New Installations/Modifications Section 203(B)(4)

- An Installer Specialist shall notify NMED orally or in writing, of the day and time the work will be ready for inspection
- This notification shall be given at least 2 working days, calculated to the hour, prior to the time of the requested inspection
- If the NMED inspector does not arrive at the site within one hour of the notified time of completion, the installer specialist shall:
  1. Take digital photographs of all components of the installation;
  2. Complete an inspection form provided by NMED; and
  3. May complete the installation
  4. Provide electronic copies of the photographs and inspection form to the NMED within 5 working days

Disposal Field Design and Sizing Changes Section 703

For Pipe and Gravel Disposal Fields

- In pre-2013 regulations we had not included the first 6-inches under the pipe for sidewall credit. The 6-inches is now counted as sidewall credit
- The total absorption area shall be calculated utilizing the total trench bottom and sidewall area below the distribution pipe, with a maximum of 7 Feet

EXAMPLE: Designing a Pipe and Gravel Disposal System for 3 BR House; Type 2 Soil

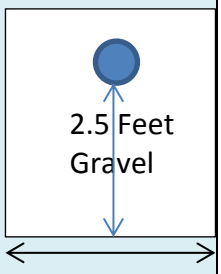
For a 2-Foot wide trench with 2.5 feet of gravel under the pipe

You will receive a full 7 feet credit for absorption area

NOTE: In the previous regulations you would have had to put 3.0 Ft of Gravel under the pipe to receive the full 7 feet or absorption credit

Minimum Absorption Area Calculation: 375 gpd X 2 = 750 SF

750 ÷ 7 Feet/Linear Foot = 107 Feet total length of trench



Maximum Trench Depth and Length

The maximum length of a single trench has changed from 155 feet to 160 feet. The maximum trench depth has been taken out of the regulations and there is no longer a maximum trench depth. Please remember that when you are digging deeper trenches there are more safety hazards and OSHA requirements that will need to be followed.

Seepage Pits Section 702

- The maximum horizontal dimension shall not exceed the vertical dimension

- A 6-inch layer of bentonite clay shall be installed at the bottom of the seepage pit to restrict effluent flow through the bottom area. Alternative material to bentonite clay may be used if approved by the department

Access Risers and Effluent Filters Section 202(E) and Section 502(H) &(D)

Access Risers Required on All Modifications Section 202(E)

Upon modification of any part of the system an approved effluent filter shall be installed in accordance with Section 502(H) and access risers shall be installed over the tank inlet and outlet access openings in accordance with 502(D),

Access Risers Section 502(D)

Access risers shall be constructed of precast concrete, premanufactured plastic made for risers, culvert or double wall high density polyethylene or equivalent plastic with proper cover or lids. Rain barrels, trash cans or 55-gallon drums or other inappropriate materials are not acceptable access riser material.

Effluent Filters Section 502(H)

All septic tanks shall include an effluent filter approved by the department, installed on the outlet of the tank before final discharge, with an access riser installed to grade, **and with a handle extending to within 6-inches of the top of the riser**. The purpose of the handle is for health and safety reasons. Putting your head into a riser could expose you to hydrogen sulfide gases. Also, should the septic tank have a back-up where sewage has filled the riser, having a handle that is easily accessible will allow you to not have to reach down into septic tank wastewater.

Advanced Treatment Systems Sections 602-605

Secondary Treatment Standards Section 602

Secondary treatment systems may be installed to overcome the following site conditions:

- Sites with Type-1a Soil (coarse sand) ; also requires disinfection
- Sites with between 1-4 feet of suitable soil; also requires disinfection

Secondary treatment systems shall produce an effluent that meets the following requirements:

1. 5-Day BOD of 30 mg/l; and
2. TSS of 30 mg/l

Tertiary Treatment Standards Section 603

For lots that exceed the allowable hydraulic loading rate of 500 gpd/acre (see Section 301(C)) a departmentapproved tertiary treatment system may be installed.

- The treatment unit must be capable of removing Total Nitrogen(TN) equal to or less than the level using the following equation: **Total Nitrogen (mg/l) = [Lot Size(acres) ÷ Design Flow (gpd)] X 30,000**

- The TN concentration limit shall be based on a 6-sample rolling average with no single sample exceeding twice the concentration limit

Disinfection Standards Section 604

Systems requiring disinfection shall provide treated effluent that shall not exceed 126 colony forming units (CFUs) of E. coli bacteria per 100 ml (Pre-2013 regulations used 200 CFUs of fecal coliform per 100 ml) When disinfection is required, the effluent shall be subject to a minimum of secondary treatment standards

Minimum Required Treatment Levels for Site Conditions Section 605

The required level of treatment shall be based on the most restrictive combination of siting conditions

Reductions in Disposal Field Setback Distances Section 605(E)

The following are requirements for reduction in the disposal field setback distance (as stated in Table 302.1):

- 50-foot Setback to On-site Well: Tertiary treatment and disinfection are requirements for any reduction in setback distance between 50-100 feet from a private drinking water well located on the same property
- Variance Required: Variance is required and tertiary treatment and disinfection are required for any reduction in setback distance to:
  1. Any private drinking water located on the subject property less than 50 feet from disposal system;
  2. Any private drinking water well not located on the subject property; or
  3. Any public drinking water well
- Sand-lined Trenches: (See Section 812) may be used to reduce clearances or setbacks as follows:
  1. 1 foot to a limiting layer;
  2. 50 feet to waters of the state; or
  3. 50 feet to an irrigation well located on the same property

Monitoring Requirements for Advanced Treatment Systems Section 901

Right of Entry

As a condition to any permit, the owner of an on-site liquid waste system shall allow department personnel or maintenance service provider personnel right of entry to the property at reasonable times to allow for maintenance, system monitoring, effluent sampling or evaluating the general state of repair of the system

Maintenance and Monitoring

Advanced treatment liquid waste systems require maintenance and monitoring. These systems shall be maintained and monitored, at a minimum, semi-annually or more as per manufacturer's recommendations. Monitoring will include all the following parameters:

1. Dissolved oxygen (DO);
2. Temperature;
3. pH;
4. Sludge depth; and
5. Other parameters recommended by the manufacturer

- Parameters should be measured at locations within the treatment unit that will demonstrate the effectiveness of treatment
- Monitoring shall be completed using field instruments including a DO meter, thermometer, pH meter, sludge sampler or other approved instruments
- Parameters and maintenance requirements shall be included in the permit application design statement and be consistent with the manufacturer's recommendations for proper operation
- Field instruments shall be calibrated as per manufacturer's recommendation and a log maintained on the operation and calibration of each instrument. Logs shall be made available to the department upon request

Effluent Sampling Section 901(C)

Effluent sampling shall be required for on-site liquid waste systems that do not conform to any of the following:

- Do not conform to manufacturer's guidelines for field parameters in Section 901(B)
- For systems where the manufacturer has not established guidelines for field parameters; or
- For systems that the department has determined are not operating properly Sampling shall be conducted annually, or as otherwise required by the department

Systems Requiring Primary Treatment Levels: for on-site systems that require primary treatment levels to be achieved may be sampled and analyzed or monitored as specified in the permit;
Systems Requiring Secondary Treatment Levels: for on-site system that require secondary treatment levels be achieved may be sampled and analyzed for 5-day BOD (BOD5) or monitored as specified in the permit. Chemical oxygen demand (COD) may be substituted for BOD5 with a calibration curve acceptable to the department.
Systems Requiring Tertiary Treatment Levels: on-site systems that require tertiary treatment levels be achieved may be sampled and analyzed only for total nitrogen or monitored as specified in the permit
Systems Requiring Disinfection: on-site systems that require disinfection may be sampled and analyzed only for E. coli or monitored as specified in the permit.
When Using Chlorine: When chlorine is used for disinfection, the total chlorine residual, at all times, shall be equal to greater than 1.0 mg/l after 30 minutes detention time at peak flows. Alternative disinfection methods, such as ultraviolet light, ozone or other methods, may be used

Pumps and Alternative Disposal Systems

Pump Stations and Equipment Section 503

All pump stations or pump chambers shall meet the following requirements:

- Shall be watertight (NMED may require watertightness test at their discretion)
- Shall be constructed of concrete, plastic, fiberglass or other approved material
- Shall be appropriate coated to resist corrosion (except for Type V concrete)
- Shall be constructed and designed for their intended purpose
- All valves, motors, pumps, aerators and other mechanical or electrical devices shall be located where they will be accessible for inspection and repair at all times without requiring entry into the tank

- All tanks shall be protected with a locking removable cover on an access port of at least 20 inches minimum dimension; concrete tanks and chambers may have covers of at least 58 pounds in place of a cover and locking mechanisms
- Shall be equipped with both audible and visible alarms, or remote and visual alarms, for high water and pump failure; All alarm and control circuits shall be on a separate circuit from pumps and shall be contained in weather-proof control boxes or located inside a building or other weather-proof structure: Alarms shall be placed in a conspicuous location approved by the department
- Pumps and equipment shall be designed to pump sewage, septic effluent or treated wastewater as appropriate, to prevent freezing and prevent siphoning of the dispersal area back to the tank, and shall be sized to serve their intended purpose

Low Pressure Disposal Systems and Low Pressure Pipe Systems Section 807

Low-Pressure Dosed Disposal Systems (LPD)

Low-pressure dosed (LPD) disposal systems are sued to achieve uniform distribution of wastewater throughout the entire disposal system. Effluent is pumped under low pressure through solid pipe into perforated lateral lines installed within a disposal system

- LPD disposal systems may be sued with any on-site liquid waste system including conventional treatment systems, graywater systems and advanced treatment systems
- LPD disposal systems may be used with any disposal system including trenches, beds, mounds, gravelless systems and evapotranspiration systems
- Lift stations are not classified as LPD disposal systems
- LPD disposal systems may use a timer to equalize the flow over a 24-hour period; they may also be designed to rotate between separate disposal areas by using rotator valves
- All pumps shall be rated by the manufacturer for pumping sewage or effluent
- A single pump may be used for design flows 1000 gpd or less; dual alternating pumps are required for design flows over 1000 gpd
- Design of the system shall include the following:
  a. Design flow;
  b. Soil absorption area sized according to effluent loading rates (Section 703) (except for mound systems);
  c. Total length of header and later pipes;
  d. Diameter of perforated lateral lines used;
  e. Size and spacing of holes or emitters; and
  f. Pump performance sizing with allowances for head and friction losses at rated flows in gallons per minute
- A ball valve shall be located vertically at the end of each lateral line for inspection and flushing (except for proprietary drip irrigation systems

Low Pressure Pipe Disposal Systems (LPP)

A low pressure pipe (LPP) disposal system is a pressurized distribution system placed in shallow, narrow trenches. The effluent discharged to a LPP system must meet, at a minimum primary treatment standards.

LPP Sizing:

- the required absorption area shall be sized in accordance with Section 703(H)
- A sizing credit of 5 square feet per linear foot of lateral pipe shall be applied to the total required absorption area
- Each individual lateral shall not exceed 75 feet in length from the feed point unless the design is such that the discharge rate between any two points in the system does not exceed 10% LPP Design:

a. Trenches shall be 12-18 inches wide and 12 inches deep;
b. When aggregate is used, the lateral pipe shall be embedded at or above the center of the column of aggregate;
c. The aggregate shall be covered with geotextile material to prevent soil intrusion;
d. If a proprietary drainfield product other than aggregate is used, the distribution pipe shall be placed so as to prevent soil intrusion into the pipe;
e. A minimum of 4-inches and a maximum of 18-inches of soil cover over the trench is required;
f. Lateral lines shall be placed parallel to the natural contours of the site;
g. Provisions shall be made for the prevention of siphoning back to the pump tank on upgrade systems and the prevention of draining of the tank on downgrade or flat systems;
h. All requirement for conventional disposal systems shall be met, including but not limited to, setback and clearance requirements, lot size, design flow calculations, septic tank sizing, prohibitions, wastewater characteristics and advanced treatment requirements;
i. Runoff shall be diverted away from the system to avoid oversaturation where possible;
j. A vegetative cover shall be maintained over the disposal area

LPP Materials and Equipment:

a. All treatment units and pump tanks shall meet the structural requirements of Section 501;
b. The pump tank shall be a single compartment with a 500 gallon minimum useful volume, and allowance to be made for tank volume between the pump intake and tank floor. For septic tank effluent, a separate pump tank, in addition to the septic tank, is required
c. Effluent type pumps are required on all systems;
d. A system design shall demonstrate that the system comes to the design pressure during every pumping cycle;
e. An alternating valve or solenoid valve system is required to feed separate laterals with elevation differences resulting in 23 feet (10 psi) or greater head differentials. Manual or automatic flushing valves with turn-ups are required on distal ends of all laterals;
f. In areas of freezing conditions, provisions for the draining of the headers must be made, such as vacuum breakers or vent holes at the system high points;
g. Pipe shall be rated at 160 psi minimum, ASTM compressive drainpipe, schedule 40 or better;
h. The manifold pipe shall be sized appropriately for system size and configuration. The lateral pipe shall be 1-inch to 2-inch in diameter;
i. The orifice size shall be 5/32 inch to ¼ inch for septic effluent and 1/8 inch to ¼ inch for secondary or tertiary treated effluent;
j. The lateral pipe shall be installed with orifices facing upward;

Maintenance Contract:

- A maintenance contract shall be required on all LPP systems;
- Maintenance is to include pump inspection and cleaning; float operation (if applicable), lateral flushing annually at a minimum and septic tank pumping as needed

Alternative LPP Designs:

Designs that do not conform to the design parameters specified in Subsection A and B above must be accompanied by documentation justifying the design submitted, including proprietary software input and output reports, and will be considered on a case-by-case basis

Split-Flow Systems Section 811

A split flow system means a building drain for the conveyance of wastewater that is designed to capture tow waste streams; one waste stream from the toilets and the other stream from all other fixtures including kitchen sinks. Split flow systems may be installed for the purpose of total nitrogen discharges in lieu of installation of non-discharging or tertiary treatment systems. Split flow systems shall consist of a holding tank for the toilet waste only and a disposal system for the remainder of the waste (kitchen plus all other sources).

Minimum Lot Size for Split-Flow Systems:

Based upon the assumption that toilet waste contains 80% of the total nitrogen in domestic liquid waste and that the quantity of liquid waste from toilet waste is 25% of the total domestic waste stream, the following formula shall be used to calculate the minimum lot size allowed for permitting of a split flow system:

Minimum lot size (in acres) = 0.0003 X Design Flow

Reduction in Size of Disposal Field Absorption Area

The size of the disposal field for the non-toilet waste may be reduced by 25% since 25% of the total waste stream (the toilet waste) is going into a holding tank.

Toilet-Waste Only Holding Tank

The toilet waste holding tank shall have a minimum capacity of 1000 gallons and shall meet all requirements of holding tanks described in Section 808 (Except for sections A,B,C,D,E and H).

ET Bed Option for Holding Tank

Effluent from the holding tank waste may be discharged to an ET bed constructed in accordance with Section 895 and sized at 25% of design flow. An effluent filter is required on the waste holding tank.

Sand-Lined Trenches and Bottomless Sand Filters Section 812

Sand-Lined Trenches

A sand lined trench is a combined treatment component and disposal system consisting of 24 inches of sand below of low pressure pipe (LPP) disposal system. The sand shall meet the latest version of ASTM C33-03 specifications or equivalent.

a. Effluent applied to a sand-lined trench shall not exceed primary treatment standards;
b. The required absorption area shall be calculated based on a maximum loading rate of 1.0 gallons per day per square foot of sand surface. No sidewall credit is allowed;
c. The disposal system shall conform to the requirements of Section 807 (Low Pressure Disposal Systems):
d. A minimum of 24-inches of sand (ASTM C33-03) shall be installed beneath the distribution system;
e. Trench width shall be a minimum of 12-inches and a maximum of 36-inches;
f. The effluent dosing-rate shall be at least 4 doses per day and not more than 24 does per day;
g. A sand-lined trench may be sued to reduce setbacks as follows:
    1. 1 foot to a limiting layer;
    2. 50 feet to waters of the state; or
    3. 50 feet to an irrigation well located on the subject property
h. A maintenance contract shall be required. Maintenance is to include pump inspection and cleaning, float operation (if applicable), lateral flushing annually at a minimum and septic tank and pump tank pumping as needed

Bottomless Sand Filters

 A bottomless sand-filter is a special case sand-lined trench consisting of a bottomless containment structure located partially above or at-grade of an existing ground level.

i. A bottomless sand filter must be located parallel to the contours on a sloping site and be as long and narrow as possible to limit the linear loading rate on the disposal areas;
j. A maintenance contract shall be required. Maintenance is to include pump inspection and cleaning, float operation (if applicable), lateral flushing annually at a minimum and septic tank and pump tank pumping as needed.

Definition Revisions and Additions

Absorption Bed: means a conventional disposal bed greater than 3 feet in width and where the minimum horizontal dimension is greater than the vertical dimension

Aggregate: means cleaned washed gravel or crushed rock, having a hardness value of 3 or more on the Mohs scale of hardness, or a synthetic media reviewed by the WTAC and approved by the department; shall have a minimum size of ¾ inches and a maximum size of 2 ½ inches; no greater than 4% fines by weight or volume and provide no less than 35% void space under field conditions; shall be durable, inert, maintain its integrity, not collapse or disintegrate with time, and not be detrimental to the performance of the system or to groundwater quality

Amendment of Permit: means a change that does not affect the permitability of a liquid waste system, including change of ownership or installer, and is not a “modification” as defined

Applicant: means the owner applying for a permit to install, modify, or operate an on-site liquid waste system

Bedroom: means any room within a building that is designated as a sleeping room on drawings submitted to the responsible building permit authority, manufactured housing authority, or in the case of unpermitted systems, to the department

Certificate of Registration: means a permit to operate an unpermitted liquid waste system installed prior to February 1, 2002 after an evaluation is conducted pursuant to Section 401(J) of these regulations

Conditional Approval: means the approval of an on-site treatment or dispersal product that has been reviewed by the WTAC and granted permission by the department to install the product or products on a limited number of sites for the purpose of verifying performance of the product

Disinfected or Disinfected: means the use of any process designed to effectively kill most micro-organisms contained in liquid waste effluent including essentially all pathogenic (disease causing) organisms, as indicated by the reduction of the E. coli concentration to a specific level; these processes include but are not limited to suitable oxidizing agents, such as chlorine, ozone and ultraviolet light

Effluent Irrigation: means the use of wastewater effluent to water landscaped areas, fruit trees or nut trees
Evaluator: "Third Party Evaluator", means a third party who has the qualifications as set forth in Section 904(B)(2)

Experimental Approval: means the approval of an on-site treatment or dispersal product that has been reviewed by the WTAC and granted permission by the department to install the product or products on a very limited number of sites for the purpose of verifying performance and obtaining advancement to conditional approval

Inspector: means a person employed by the department who is competent in the physical examination and evaluation of on-site liquid waste systems

Installer: means any person who holds a valid and appropriate classification of contractor's license issued by the NM CID for the construction of on-site liquid waste systems

Installer Specialist: means a person certified by the department pursuant to Section 904(E)

Liquid Waste: means wastewater generated from any residential or commercial unit where the total wastewater received by a liquid waste system is 2000 gallons per day or less

Non-discharging System: means a watertight system that allows no discharge of wastewater except through evaporation, transpiration, or pumping, including lined evaporation systems, lined ET beds, holding tanks and vaults

Owner: means any person or persons who own: (a) an on-site liquid waste system or any component thereof; or (b) any lot upon which any on-site liquid waste system or component thereof is located.

In the case of property sold or purchased on a real estate contract, the “owner” of the property is the buyer. If the property sold or purchased is owned collectively by multiple owners, the “owner” of the common property is the entity or governing body specifically designated in governance documents for the common property

Primary treatment standards: means the primary treated wastewater does not exceed 200 mg/l BOD; 100 mg/l TSS; 60 mg/l total nitrogen; or 60 mg/l fats, oils and grease

Real Estate Contract: means a contractual document creating rights and obligations between a seller and buyer of real property under which the buyer acquires equitable title to the property at the time the parties enter into the real estate contract and the seller agrees to transfer legal title to the property to the buyer at some date in the future upon buyer’s fulfillment of all terms and conditions of the real estate contract

Sand-lined trench: means a combined treatment component and disposal system consisting of 24 inches of sand, meeting latest version of ASTM C33-03 specifications; below a LPP disposal system

Secondary treatment: means a reduction of the 5-day BOD and TSS concentrations

Seepage pit: means a type of absorption system that uses a vertical, underground receptacle so constructed as to allow the disposal of effluent by soil absorption through the sidewalls; the maximum horizontal dimension shall not exceed the vertical dimension

Soil replacement: means replacement of existing soil with suitable soil in a new or existing disposal system site to overcome limitations of the existing soil

Split-flow: means a building drain for the conveyance of wastewater that is designed to capture two waste streams, one stream from the toilet and the other stream from all other fixtures including kitchen plus all graywater; for the purpose of reducing the total nitrogen discharged from the building; the split flow system shall consist of a holding tank for the toilet waste only and a disposal system for the remainder of the waste

Transfer: means the transfer of equitable or legal title to a property

Waters of the state: means surface waters of the state as defined by 20.6.7S(5) NMAC