Los Alamos Wastewater Plant
Welcome
Los Alamos Wastewater Plant

- 1.4 Million Gallon Per Day (MGD) Activated Sludge Treatment Facility
  - Aeration Basin with fine bubble diffusers and mixers
  - Aerobic Digester
  - Belt Filter Press
  - Ultra Violet Disinfection
Entrance Works

Grit Chamber

Rotoscreen

Hydrogritter
Entrance Works

- Primary Treatment takes place in the plant entrance works
- RotoScreen
  - Removes large solids from the sewage to protect equipment
- Aerated Grit Chamber and Hydrogritter
  - Remove heavy solids and inorganic materials like sand and gravel
Aeration Blower Building
Aeration/Grit Blowers

Blower Bldg                                Centrifugal blowers
• Three multi-staged centrifugal blowers, rated at 1,210 SCFM at 10.7 PSI, powered by 125HP motors
• Provide the air for the fine bubble diffusers, air grit chamber and the recycle airlift pumps.
Aeration Basin

• Secondary Treatment provides biological treatment of wastewater
• Aeration Basins
  – With the use of mechanical mixers and fine bubble diffusers raw wastewater, microorganisms and air are mixed in the aeration basins.
Aeration Basin

Aeration basin empty cells

Fine bubble diffusers at bottom of cells

Full Aeration Basin

Air Lift pumps
Secondary Clarifiers

- Two 58-ft diameter center feed clarifiers.
- Mixed liquor enters from the aeration basin thru the central influent baffle.
- Biological solids are settled out and returned to the aeration basins by the Return Activated Sludge pumps or wasted to the Gravity belt thickener or Digester.
- Scum is removed thru a trough that extends the width of the clarifier.
- Final effluent is sent to the ultra violet disinfection.
Recirculation/Waste Pump Building
Return and Waste Pumps

• Return Sludge pumps return the settled sludge in the Clarifiers back to the influent of the Aeration Basins
• Waste Sludge pumps send the settled sludge in the Clarifiers to the Belt Filter press for thickening and introduction to the digester
Ultra Violet Disinfection
Ultra Violet Disinfection

- Secondary Clarifier effluent goes to the Ultra Violet disinfection channel prior to release into the arroyo or for reuse purposes.
Effluent Discharge Channel
Effluent Discharge Channel

Discharge/Reuse Box

Plant effluent to arroyo

- After treatment and disinfection treated water is sent out the discharge channel to be reused at the county parks, schools, golf course, ball/soccer fields or down the arroyo.
Solids Reduction Process
Aerobic Digesters
Aerobic Digester

• Objectives include
  – Reduction of pathogenic organisms
  – Oxidize sludge organics to stable end products
  – Reduce mass and volume of sludge
  – Condition sludge for further solids handling
Gravity Thickener/Belt Filter Press

Mixing tanks onto belt

Belt Filter Press

Thickened Sludge
Gravity Thickener/Belt Filter Press

Belt Filter Press

Solids to Composting

- The sludge press has a continuous porous filter belt that travels through a gravity thickening zone, followed by a pressure dewatering zone. The belt may be operated in thickening or dewatering modes. Increasing space in the digester and decreasing amount sent to composting.
Belt Sludge Pumps

Thickened Sludge pumps

• Thickened waste sludge pumps, pump the thickened sludge into the digester after going through the gravity thickener

Digested Sludge pumps

• Digested sludge pumps, bring the digested sludge to the belt filter press for dewatering and separating the solids for disposal and composting
The polymer feed unit is the heart of the Belt Filter press unit.

Without the proper feeding of polymer to the press the sludge will not be able to be thickened or dewatered.
• Laboratory tests are the most dependable tool the plant has to monitor the effectiveness of the plant
• Laboratory tests are reported to the State and Federal Environment Department for permit compliance
• Thanks for checking out our site
• You are welcome to visit the plant
• Call 505-662-8269
Los Alamos County Wastewater Plant

Los Alamos New Mexico