Lamnaflo™

SUCTION FLOW CONTROL SYSTEM

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Water Well Solutions

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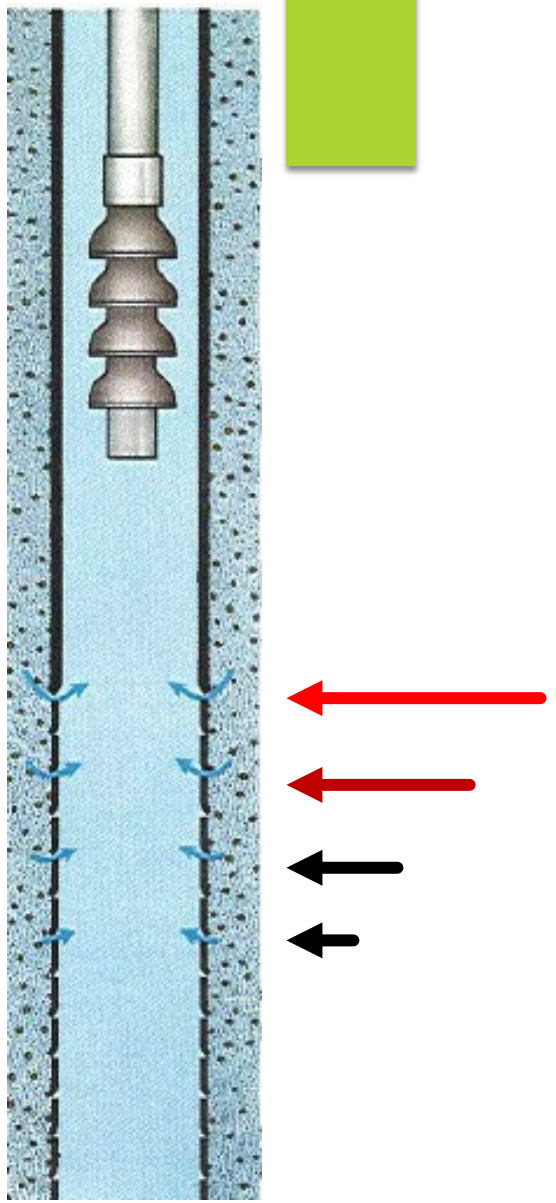
Pump Suction Energy

- Suction Energy is Localized at Pump Intake
  - With Pump inside casing – Casing inlet
  - With Pump below casing – Pump Suction Inlet
- Well Wants to Satisfy Pumps Demand
  - Water Takes Path of Least Resistance
  - High Velocity – Turbulent Flow
- High Energy Flow Causes Disruption and Damage
  - Erodes Formation and Entrains Sands and Silts
  - High Velocity Water and Sand Erode Screen Openings
  - Pressure Drop through Formation/Screen causes Precipitation of Minerals



Well Development:
Properly Prepare the Well for Suction Flow Dissipation

- It is critical the well is first prepared to allow dissipation of suction energy:
  - New wells must be fully "developed" to assure the entire open water bearing strata can produce flow.
    - Airburst Technology allows pinpoint placement of development energy to remove any drilling muds or formation damaged caused by the drilling process to maximize formation efficiency
  - Old wells must be "rehabilitated" to achieve a fully developed state to assure the entire open water bearing strata can produce flow.
    - Airburst Technology allows pinpoint placement of development energy to remove any mineralogical or bacteriological build up and expose native, clean formation to maximize formation efficiency

www.airbursttechnology.com

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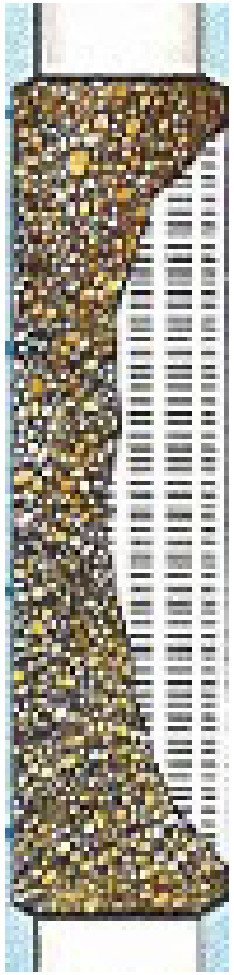
Lamnaflo Construction

- Schedule 40 PVC Construction
- Certa-Lok Coupling Connections
  - Easy Installation/Removal
  - Reusable Design
- Engineered Slot Patterns
  - Calculated Hydrodynamic Flow
- Wire Reinforced Epoxy Coated Silica Sand
  - Final Dissipation of Entrance Velocities
- Stainless Steel Shrouds and Thread Adapters
- NSF 60 Certified



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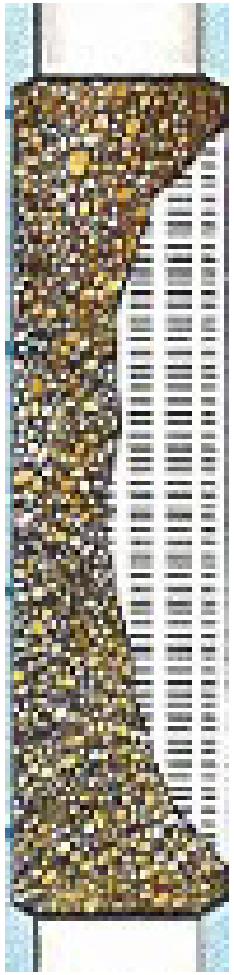
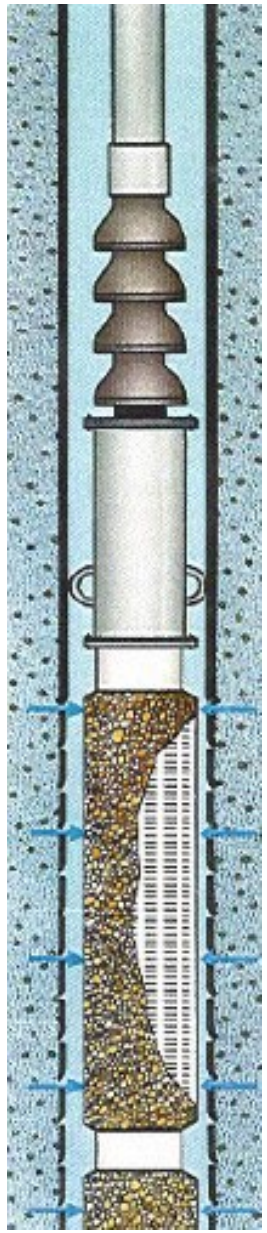
- Lamnaflo Elements are “Not” a filter!!
- These Elements are “Flow Restrictors”
- Each Element is specifically designed to allow the entrance of only a calculated amount of flow
- The calculated flow is based upon the suction energy at each Element



Dissipation of Suction Energy

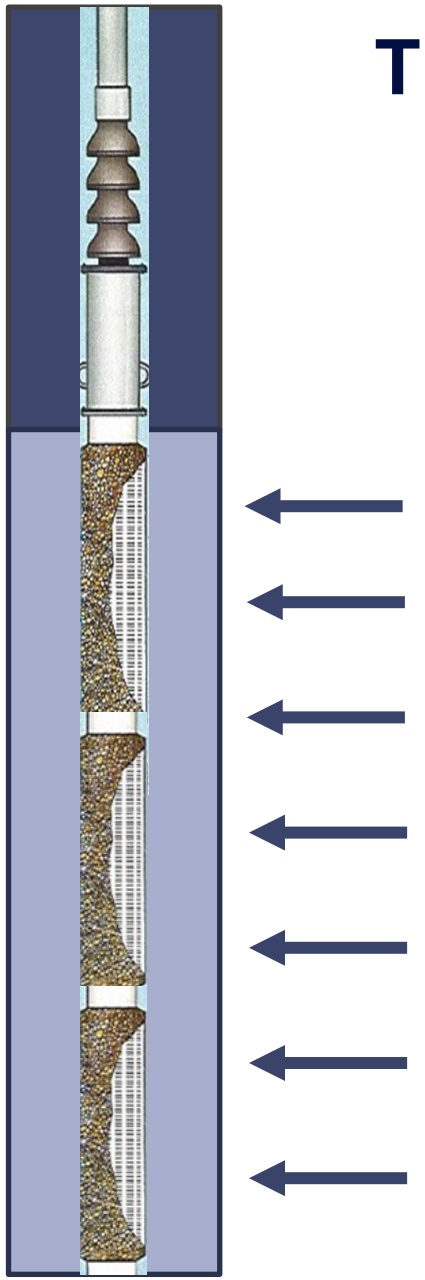
- Suction Flow Control Elements
  - Engineered to Restrict Flow
  - Designed Safety Factor to Avoid Negative Pressure
  - Effective at Full Flow Range of Pump Cycle
- Engineered Placement
  - Elements distributed through water Bearing Zone
  - Even Distribution of Flow to Achieve a Laminar State
- EPiC Design
  - Elements can also be specifically placed to Promote Flow from desired Formation
  - Flow Control Discs can be added to further Inhibit Vertical Flow within Annular Space
  - Promote Higher Water Quality



Theoretical Flow – Lamnaflo

Well Casing

Screen or Open Borehole



Uniform/Laminar Flow:

- Dissipation of Suction Energy throughout Well
- Flow has Insufficient Energy to Entrain Sand
- Reduced Entrance Velocities = Reduced Formation or Screen Erosion
- Reduced Entrance Velocities = Reduced Mineral Precipitation
- Blend of Water from Entire Well

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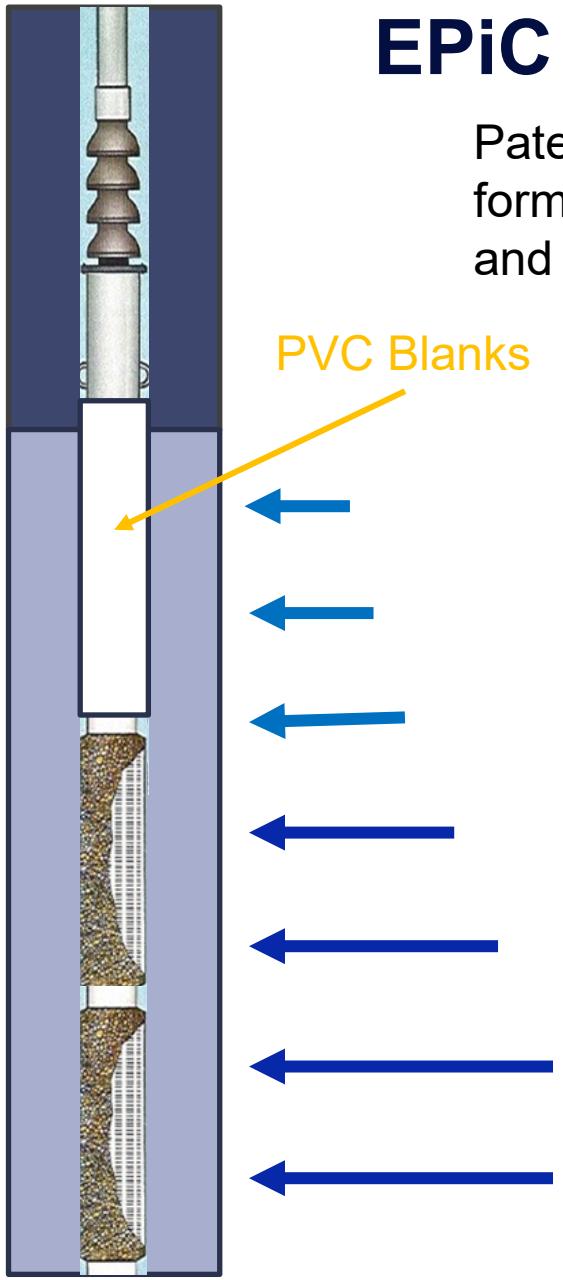
Additional Benefits to Laminar Flow

- Laminar "Low Energy" Flow Preserves Well Condition
  - Low Energy Flow Cannot Entrain Sand Particles
    - Loose Sediments Remain in Formation
    - Minimal Deposition to Well Bottom
  - Minimized Pressure Drops through Formation/Screen
    - Formation to Gravel Pack, Gravel Pack to Screen
    - Reduce or Eliminate Mineral Precipitation/Deposition
  - Distribution of Flow through Entire Well
    - Eliminate low flow Sump in Well Bottom
    - Less Suitable Biological Environment

EPiC Solution

Patented Technology to place Elements adjacent to the formations where we choose to promote additional flow, and blank PVC to demote flow from undesirable zones.

Well Casing



Screen or Open Borehole

Element Placement to Promote Flow:

- Create a natural blend of water higher in the quality of water adjacent to the elements
- We use this technology to avoid high sanding areas
- We have also successfully reduced the levels of a contaminant in wells through dilution

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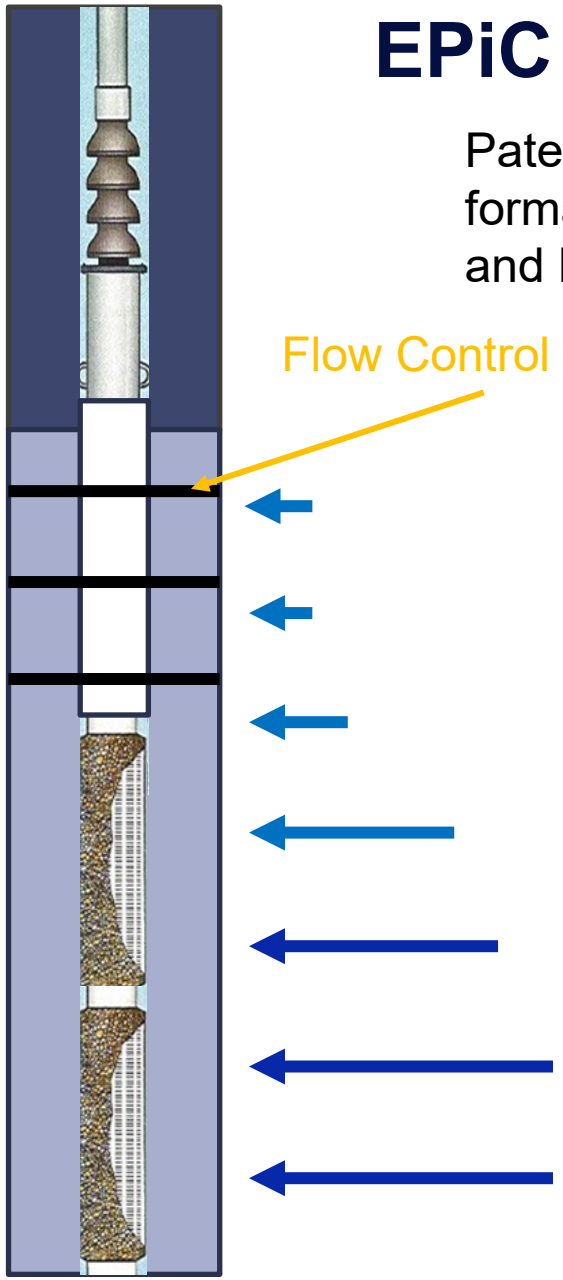
EPiC Solution

Patented Technology to place Elements adjacent to the formations where we choose to promote additional flow, and blank PVC to demote flow from undesirable zones.

Well Casing



Screen or Open Borehole

Flow Control Discs to further Inhibit Annular Flow:

- Further minimize the vertical migration of water within the annular space.
- We use this technology to avoid high sanding areas.
- We have also successfully reduced the levels of air entrained in water from cascading water in limestone wells.

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Conclusions:

- Suction Flow Control to Promote Laminar Flow
  - Mimics the flow within a formation in Natural State
- Increased Longevity of Well Life
  - Reduced Formation and Screen Degradation
  - Reduce need for repeated Aggressive Rehabilitation
- Increased Longevity of Pump Life
  - Reduce Sand Erosion to Wear Surfaces and Protective Coatings
- Increase Efficiency
  - Reduce Impeller Wear Causing Flow Reduction and Loss of Efficiency
  - Improve Well Performance and Efficiencies and Quality

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QUESTIONS??

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