Fugitive Emissions Control on Reciprocating Compressors

Dan Hannon
Ariel Corporation
Greenhouse Gasses

Pending Regulations for GHG's
Auditing Leakage Amount
Enforcing Leakage Levels?

Greenhouse Gasses Under Scrutiny Include:
Carbon Dioxide
Methane
Nitrous Oxide
Fluorinated gasses
Fugitive Emissions

Zero Emissions

GHG's

Sour Gas

Purge and Vent

Leakless Packing

Lethal Gas

Flare Gas

Ariel Corporation
Venting to Atmosphere

- Dist Piece Vent
- VVCP Vent
- Packing Vent/Drain
- Drain
- Waste Oil Tank

- Vent to Atmosphere

Ariel Corporation
Long Single Compartment Distance Piece

Dist Pc Vent

Process Gas

Packing Vent/Drain
Reciprocating Compressor Emissions

Process gas leaking into the frame WILL leak to the atmosphere
Long Single Compartment Distance Piece

- Packing Purge
- Dist Piece Vent
- Packing Vent/Drain
- Dist Piece Drain
Pressure Packing

Purge

Packing Case Gas Leakage

Process Gas

Vent / Drain
Long Single Compartment Distance Piece

- Packing Purge
- Dist Pc Vent
- Process Gas
- Packing Vent/Drain
Long Two Compartment Distance Piece

Intermediate and Wiper Purge

Dist Piece Vent

Packing Purge

Packing Vent/Drain

Dist Piece Drain
Long Two Compartment Distance Piece

Intermediate and Wiper Purge

Packing Purge

Dist Piece Vent

Process Gas

Packing Vent/Drain
Long Two Compartment Distance Piece

Intermediate Purge

Wiper Purge

Dist Piece

Vent and Drain

Dist Piece

Vent and Drain

Vent to Collection

Drain

Seal Pot

Packing Vent/Drain

Packing Purge

Ariel Corporation
Long Single Compartment Distance Piece

Sweep Purge for Single Compartment Emissions Retrofits

Dist Piece Sweep Purge
5 scfh regulated flow

Packing Purge
10-15 psi above packing vent

Packing Vent/Drain

Vent to Collection

Drain

Seal Pot

Ariel Corporation
Expected Leakage Rates

5 to 10 SCFH per pressure packing case, new

Up to 100 SCFH per packing case, worn

Purge Gas Usage: 5 to 10 SCFH per purge point. Purge gas pressure should be 5 to 15 psi higher than the vent pressure.
Fugitive Emissions Control on Reciprocating Compressors

Dan Hannon 740-397-0311
Kent Crockett 281-682-8543
Keeping Packing Vent Separate from Drains