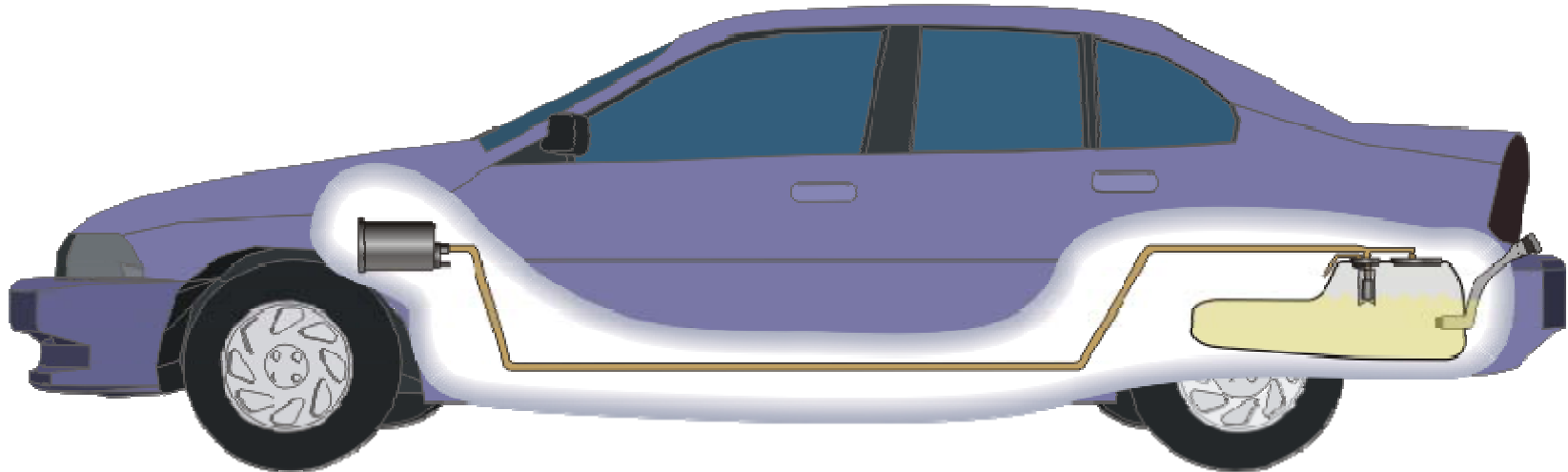




Veeder-Root ORVR Compliance Made Simple May 2007

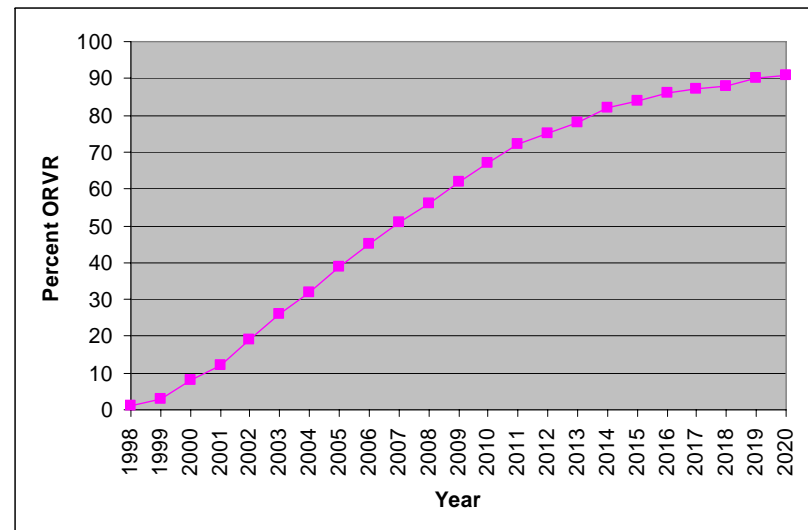


The Issue: ORVR Vehicles



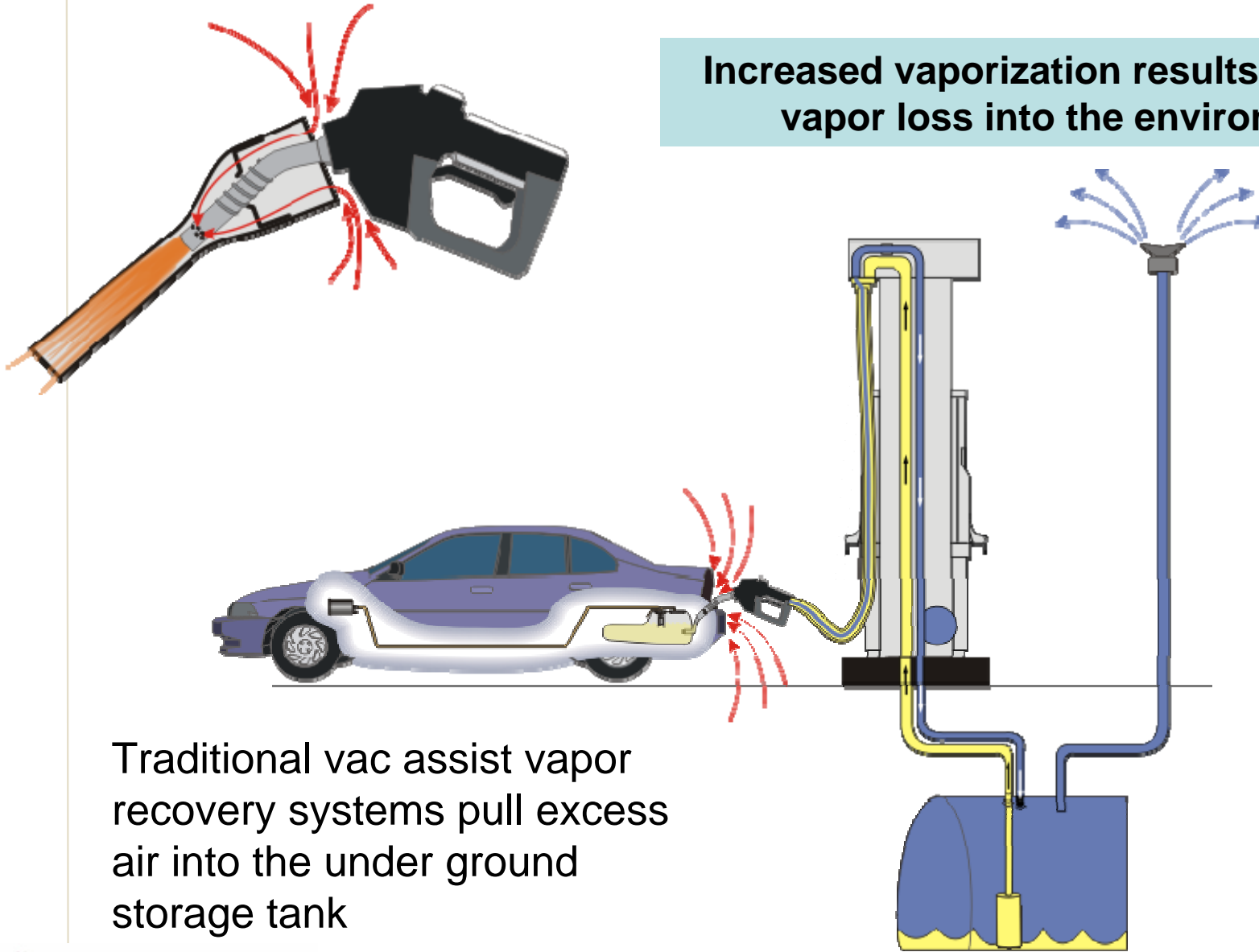
On-Board Refueling
Vapor Recovery (ORVR)
Vehicle Penetration

Vapors are captured in a
canister rather than
emitted out the fill neck of
the vehicle



ORVR & Assist Stage-II Systems

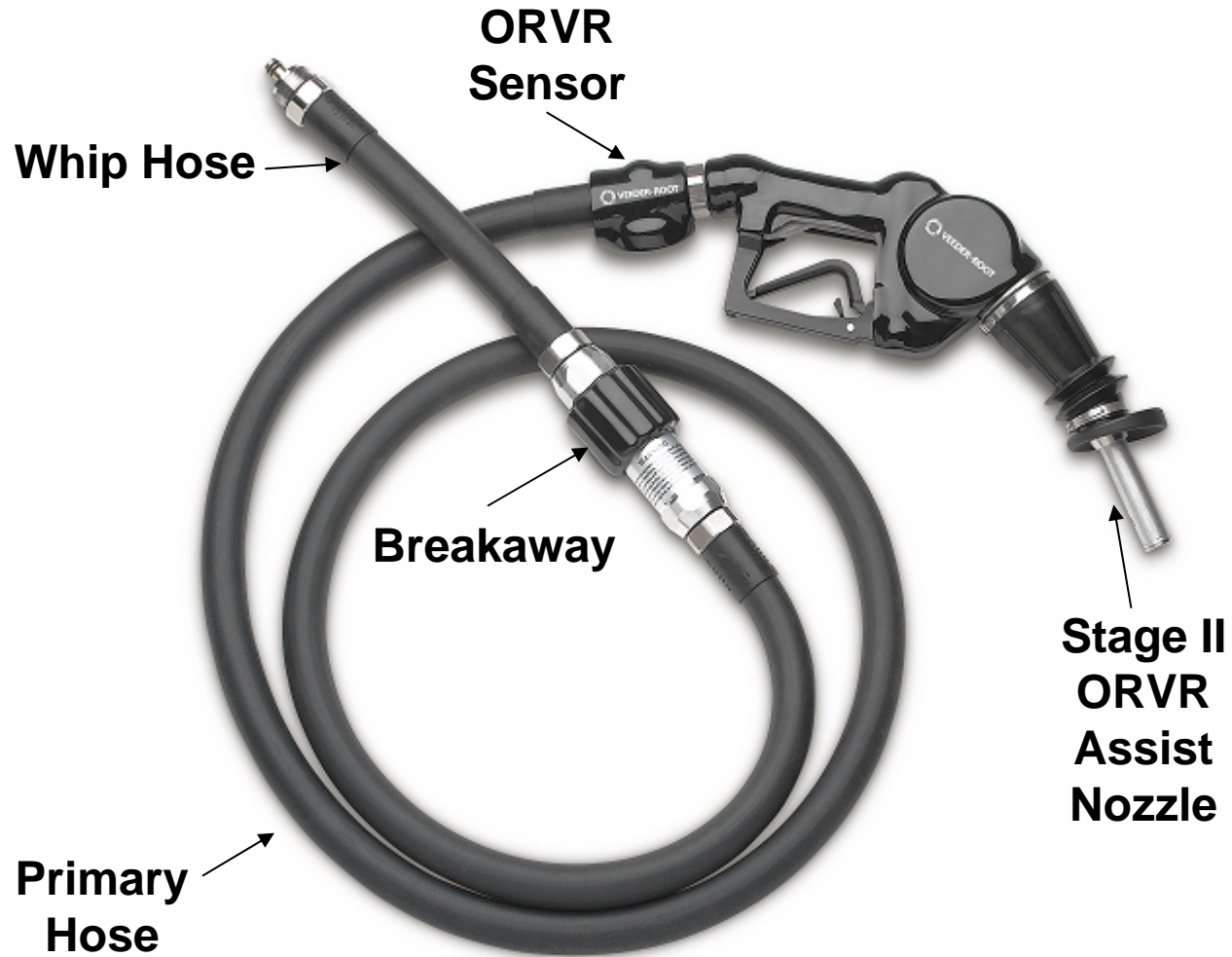
Increased vaporization results in excess vapor loss into the environment



Traditional vac assist vapor recovery systems pull excess air into the under ground storage tank

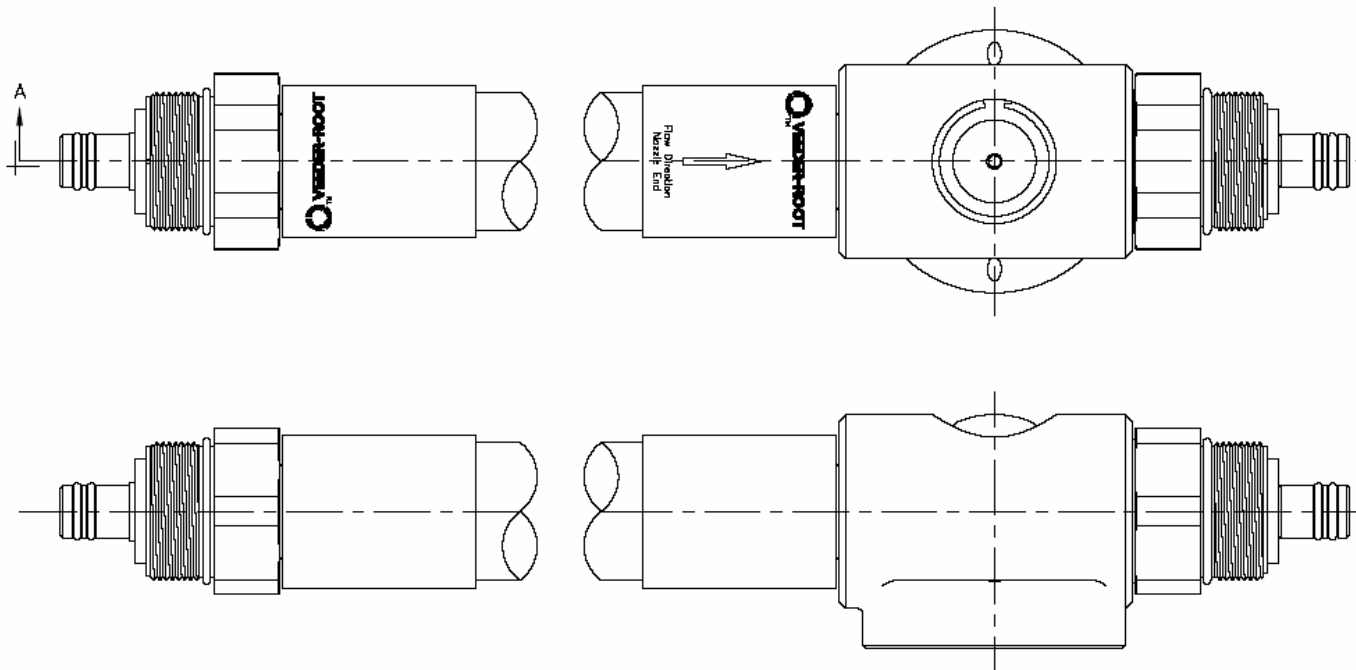
Veeder-Root ORVR System

ORVR Compatibility with a simple hanging hardware swap



Primary Hose with ORVR Sensor

ORVR sensor that is mounted at the nozzle end of the primary hose



System Components



Veeder-Root P/N	Description
900300-001	ORVR Nozzle
900301-XXX	ORVR Primary Hose Assembly*
900302-001	Reusable Vacuum Assist Safety Breakaway
900302-100	Non-reusable Vacuum Assist Safety Breakaway
900303-812	Vacuum Assist Whip Hose With Flow Limiter
900303-912	Vacuum Assist Whip Hose Without Flow Limiter

*Where XXX designates a length in inches (between 7.5' and 12.0' in 0.5' increments), for example an 8.5' ORVR Primary Hose Assembly would be ordered as 900301-102. Available hose lengths are -090, -096, -102, -108, -114, -120, -126, -132, -138, -144.

No vacuum pump or piping replacement required

Example Order

- Example order (4 dispenser site, single hose dispensers)

Quantity	Part Number	Description	Unit Price (\$)	List Price (\$)
8	900300-001	ORVR Nozzle	425.00	3,400.00
8	900301-102	ORVR Primary Hose Assembly (8.5')	280.00	2,240.00
8	900302-001	Reusable Vacuum Assist Safety Breakaway	120.00	960.00
8	900303-912	Vacuum Assist Whip Hose Without Flow Limiter	60.00	480.00
			Total:	7,080.00

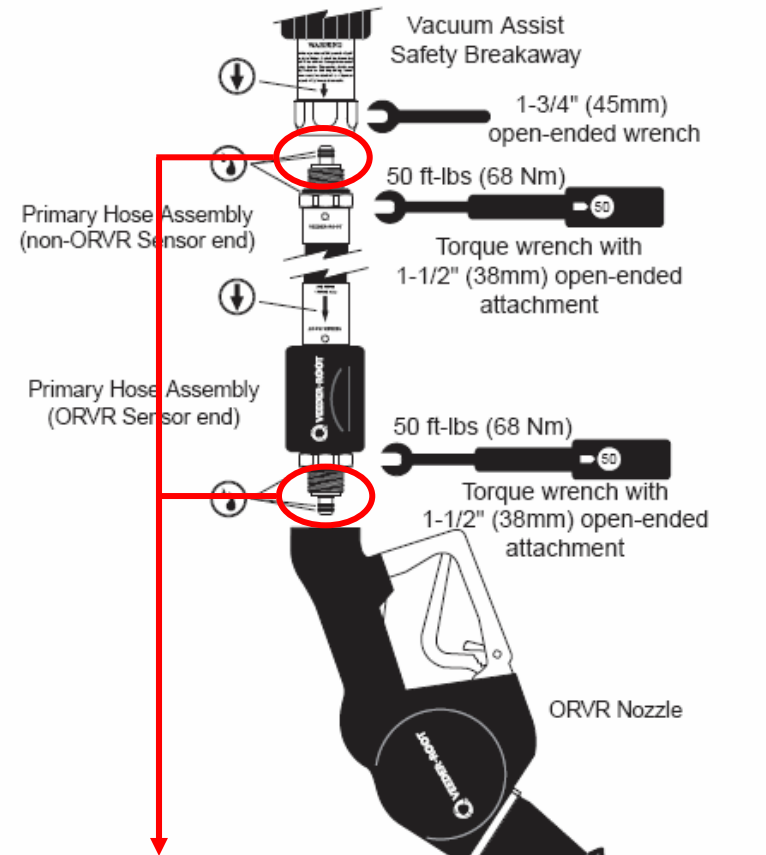
→ Total standard stage-II: ~\$4,440.00

For less than an additional \$350 per fueling position a station owner can convert to ORVR compliance HH and save thousands of dollars a year in vaporized product loss reductions

Manuals & Training

- **Three manuals:**
 - ORVR Nozzle Manual (Describes entire hanging hardware system including A/L testing) (p/n 577013-888)
 - ORVR Primary Hose, Breakaway and Whip Manual (p/n 577013-887)
 - ORVR Troubleshooting Manual (p/n 577013-889)
- **Online Veeder-Root ORVR Hanging Hardware Course:**
 - Installation & Maintenance
 - Troubleshooting
 - Setting and testing A/L

	<p>WARNING FIRE HAZARD</p> <ul style="list-style-type: none"> • Remain Outside vehicle while fueling to avoid generating a dangerous static charge • When filling portable containers fill them on the ground, not in vehicle or truck bed. • Stop engine before refueling and do not restart engine while you are refueling. • No Smoking or Open Flames, e.g., RV pilot lights and generators • Do Not Allow Children to dispense fuel • Do Not Remove Nozzle if fire starts - get away from vehicle and notify station attendant • Do Not Leave Nozzle unattended • Heed other posted warnings
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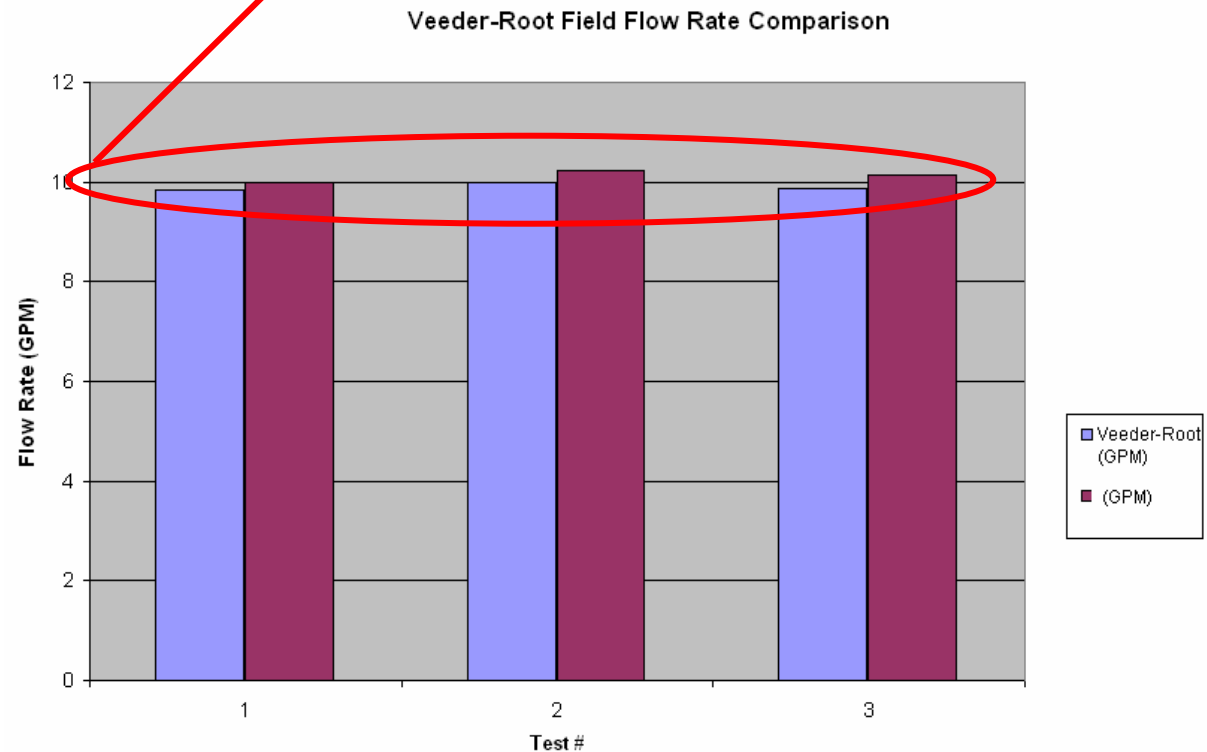
Unique threads (except between whip and dispenser hose casting), can only be connected to V-R ORVR components

V-R vs. Industry Standard Flow Rate Comparison

- Field test comparison V-R vs. industry standard:

Field Flow Rate Comparison			
Test #	Veeder-Root (GPM)	(GPM)	Difference (GPM)
1	9.838	9.988	-0.15
2	9.976	10.236	-0.26
3	9.880	10.128	-0.25
Average	9.9	10.1	-0.2

Slight (0.2 GPM) flow rate loss due to ORVR sensor in primary hose



Summary

ORVR Compliance Made Simple



- ORVR compliance with a simple HH swap – no pumps or piping changes required
- TCEQ approved as a retrofit to CARB EO G-70-150 (VaporVac) and CARB EO G-70-153 (WayneVac) for ORVR compliance
- UL approved
- Thousands installed in TX
- To learn more call toll free 888-561-7942 or visit www.veeder.com