VOLATILE ORGANIC COMPOUND EMISSION TEST REPORT

OF THE

CHEVRON PRODUCTS COMPANY

PORT EVERGLADES, FLORIDA TRANSPORT LOADING TERMINAL

ON THE

JOHN ZINK CARBON VAPOR RECOVERY UNIT

ON

JULY 14, 2011

Terminal Info:

Chevron Product Company
1400 SE 24th Street
Ft. Lauderdale, Florida 33316
Phone:954-764-2309
Fax: 954-764-2533

Test Performed by:

Tony Fenton
Jordan Technologies, Inc.
2820 South English Station Rd.
Louisville, KY 40299
(502) 267- 8344
E-mail tfenton@jordantech.com

JORDAN® TECHNOLOGIES

In reference to the Chevron Products Air Emission Source Test conducted at the Port Everglades, Florida Transport Loading Facility on July 14, 2011 and described in the following report;

I certify under penalty of law that the information provided in this document is true, accurate and complete. I am aware that there are significant civil and criminal penalties, including fines or imprisonment or both, for submitting false, inaccurate or incomplete information.

by: _____

Tony Fenton
Technical Service Group
Jordan Technologies

TABLE OF CONTENTS

EXECUTIVE SUMMARY

The Chevron Products terminal in Port Everglades, Florida is a bulk transport loading facility for Gasoline Products.

The products are bottom loaded into transport tankers and the displaced hydrocarbon vapors are balanced to a JOHN ZINK CARBON ADSORPTION / ABSORPTION VAPOR RECOVERY UNIT (VRU).

This facility was source tested for air emissions on July 14, 2011. The purpose of this test was to confirm proper operation of the VRU and verify compliance with applicable VOC (Volatile Organic Compound) air emission requirements.

The Gasoline Terminal Air Emission Source Test was conducted in accordance with procedures established, and the test methods referenced, in the Code of Federal Regulations; CFR 40, Part 60, Subpart XX & CFR 40, Part 63, Subpart BBBBBB. Specific procedures used include:

EPA TEST METHOD	MEASUREMENT
Method 2A	Exhaust Vapor Volume
Method 25B	Inlet and Outlet VOC Concentrations
Method 21	Potential Leak Sources
40 CFR 60 Subsection 60.503 (d)	Transport Loading Maximum Backpressure
40 CFR 63 Subpart BBBBBB	GACT Rule Leak Rate (500 PPM)

The results of this air emission test demonstrate that this source is in compliance with all applicable Federal and Local requirements. A summary of the data is presented below:

TEST PARAMETER	MEASURED VALUE	REQUIRED VALUE
VOC Emissions	0.28 mg/liter	12 mg/liter

Method 21 Leak Testing was performed on the day prior to testing. A portable LEL Meter was calibrated using a 500 PPM Methane calibration gas and used to check for Leaks around all fittings, flanges, valves and any other exposed potential leak source. No Leaks above 500 PPM were found.

TERMINAL OPERATION AND DESCRIPTION

Light petroleum products are bottom loaded at five loading racks at the Chevron Products Company, Port Everglades, Florida Terminal.

The terminal is equipped to load Regular, Midgrade, and Premium Unleaded Gasoline onto transports. Diesel Fuel, Jet Fuel, AV Gas and Transmix are also available for loading onto transports.

Each rack is equipped with vapor recovery hoses positioned at the transport loading positions for hook up to the Vapor Control System. The vapor hoses and associated piping transports the vapors to the VRU. The system also employs a liquid knock-out tank and pressure / vacuum relief vent upstream from the VRU.

.

NOTE: The amount of product loaded during the test at the East rack was obtained by taking the meter readings before and after the test. Total Diesel Gallons loaded 55,208. These gallons were added to the West Rack gallons in order to obtain total gallons loaded during the test. This rack loads Diesel and Jet only.

JOHN ZINK VAPOR RECOVERY UNIT

The terminal is equipped with a John Zink Adsorption / Absorption Gasoline Vapor Recovery Unit. Hydrocarbon vapors enter the John Zink VRU into one of two Carbon Adsorbers. The Hydrocarbon - air mixture flows up through the adsorber where the bulk of the hydrocarbons are adsorbed. The air continues through the Carbon Absorber and is vented to the atmosphere. The saturated carbon is then desorbed by employing vacuum regeneration at 27.5" Hg Vacuum, while the second Carbon Absorber is receiving the hydrocarbon - air mixture generated in transport loading activity. The purpose of regeneration is to restore the carbon to a level where it will effectively absorb hydrocarbons again. The two carbon adsorbers alternate between adsorption and regeneration at 15 minute intervals.

When a Carbon Absorber is in the regeneration mode, a liquid ring vacuum pump pulls the hydrocarbon from the carbon. The rich hydrocarbon vapors from the Carbon Absorber are mixed with the vacuum pump seal fluid and are discharged to an Absorber / Separator.

The liquid hydrocarbons are condensed and separated from the seal fluid in the separator compartment and are discharged back to a holding tank. Any remaining hydrocarbons pass up through the packed Absorber tower and are contacted by a fresh stream of gasoline which absorbs most of the remaining hydrocarbons. The small amount of hydrocarbons that is left then leaves the top of the absorber and is directed back to the Carbon Adsorber where the whole process is repeated.

The John Zink Vapor Recovery Unit is illustrated schematically on page 9.

MEASUREMENT AND DATA ANALYSIS

The NonDispersive InfraRed (NDIR) analyzer, turbine flow meter, exhaust vapor thermistor and exhaust pressure transducer are connected to the VRU exhaust stack in order to acquire their respective data. A quad check valve assembly is employed to provide for proper VRU regeneration air flow and allow one turbine meter to satisfy both carbon vessel measurement requirements.

The barometric pressure transducer and ambient thermistor are located in close proximity to the VRU in order to acquire ambient atmospheric conditions for use in subsequent standardization equations. A test schematic depicting general test equipment configuration is included on page 10.

Each transducer data channel is scaled and connected to the computer input board. Using an operations code program each input channel is read 25 times in a 5 second interval and mass, flow, concentration, temperature, and pressure values are averaged and stored in an array for subsequent use.

After sixty 5 second intervals (5 minutes) the hard disk array is polled and average values are determined for concentration, pressure, and temperature. These values along with the flow for the 5 minute period are used to compute the mass emitted for that 5 minute period. These averaged and summed values are then printed out as the 5 minute interval data and are again stored on hard disk until the six hour test period is completed.

Upon completion of the test, the 5 minute interval data is polled to determine test averages for Inlet and Outlet VOC concentration, pressure and temperature data for all test intervals during which VRU exhaust flow was greater than zero and volume and milligram emission data is summed for all 5 minute periods to arrive at a final test period total.

This data acquisition methodology essentially represents a series of very short (5 second) intervals during which VRU operation is measured, averaged and standardized. This effectively removes all judgmental decisions from data reduction processes and provides a technically unbiased analysis of VRU operation.
Additionally, pretest and post test vapor analyzer calibrations are conducted, along with an hourly analyzer calibration drift check verification. Following the conclusion of the six hour test the loading rack volumes are calculated and final mass emission values are determined.Copies of the transport loading rack sheets, hydrocarbon analyzer strip charts and computer print outs are attached as Appendices to this test report.

TEST EQUIPMENT

Quantity	Item
2	Thermistor Temperature Probes
1	IBM Compatible Computer with 16 Channel, 12 bit A/D Input Card
1	RKI Eagle Instrument Combustible Gas Indicator
1	Setra Model #261 (or #264) Variable Differential Pressure Transducer
1	Setraceram Model #361 (or #304) Digital Barometer
1	American Meter Co. 8" Turbine Flow Meter
1 (or 2)	Strip Chart Recorder, either: Yokogawa DX 1000n Paperless Recorder
2	NonDispersive InfraRed Analyzers (NDIR), either: Horiba VIA-510 Enviromax 2010 NDIR Analyzer

All equipment specifications are shown in Appendix B along with available calibration and accuracy information.

EXAMPLE CALCULATIONS

A. Terminology:

T_a = Ambient Temperature (° Celsius).
P_b = Barometric Pressure (mm Hg).
L_t = Total volume of liquid dispensed from all controlled racks during the test period (Liters).
V_e = Volume of air-hydrocarbon mixture exhausted from the processing unit (cubic meters).
V_{es} = Normalized volume of air-hydrocarbon mixture exhausted (Cubic meters at 20° Celsius, 760 mm Hg).
C_e = Volume fraction of hydrocarbons in exhausted mixture (Volume % as C_3H_8/100, corrected for methane content, if required).
T_e = Temperature at process unit exhaust (° Celsius).
P_e = Pressure at processing unit exhaust (mm Hg. absolute).
M_e = Mass of VOC emitted (milligrams).
$(M/L)_e$ = Mass of hydrocarbons exhausted from the processing unit per volume of liquid loaded (mg/liter).
$(M/T)_e$ = Mass of hydrocarbons exhausted from the processing unit per unit time (lb/hour).

Constants:

0.3858 = (273.2° C + 20° C) / (760 mm Hg) Normalization Factor.
1.83×10^6 mg/m^3 = Standard Density of Propane (C^3H^8).
454,000 = Conversion Factor mg/lb.
3.785 = Conversion Factor Liter/Gallon.
264.2 = Conversion Factor gallons / meter^3

B. Calculate the Following Results for Each Period of the Vapor Control System Operation:

(1.) Volume of air-hydrocarbon mixture exhausted from the vapor control system:

$$V_e = (V_{ef} - V_{ei}) \quad \text{(meters}^3\text{)}$$

(where subscript $_f$ refers to final and subscript $_i$ refers to initial)

V_e = Totalized volume from flow rate and time records.

(2.) Normalized volume of exhausted mixture:

$$V_{es} = \frac{(0.3858^\circ \text{ Kelvin/mm Hg}) \times V_e \times P_e}{(T_e + 273.2)} \quad \text{(meter}^3\text{)}$$

(3.) Mass of hydrocarbons exhausted from the vapor control system:

$$M_e = \frac{(1.83 \times 10^6 \text{ mg } C^3H^8)}{\text{meter3}} \times (V_{es}) \times (C_e) \quad \text{(mg) (equation B)}$$

C. Calculate the Average Mass of Hydrocarbons Emitted Per Volume of Gasoline Loaded:

$(M/L)_e = M_e/L_t$ **(mg/liter)**

D. Calculate the Average Mass of Hydrocarbons Emitted Per Unit Time:

$$(M/T)_e = (M/L)_e \times \frac{1 \text{ lb}}{454{,}000 \text{ mg}} \times \frac{3.785 \text{ liter}}{1 \text{ gal}} \times \frac{\text{Acct. Gal}}{\text{Test Time}} \quad \text{(lb/hr)}$$

E. Calculation for Efficiency (if used):

Unit Efficiency = [1-(outlet mg / inlet mg)] x 100%

Where inlet milligrams is derived using inlet concentration and volume of liquid loaded onto transports, assuming a vapor growth ratio of 1:1 and no gross leaks.

F. Example ME Calculation For a Typical Five Minute Interval:

This is an example calculation only, and not an interval from this test. This is intended to clarify the computer method for arriving at the VOC mass emitted data for each test interval.

Barometric Pressure (Baro-P) = 768.4 mm Hg
Exhaust Pressure (Exhaust-P) = 1.0 mm Hg
Ambient Temperature (Ambient-T) = 16.8° C
Exhaust Temperate (Exhaust-T) = 18.3° C
Volume Emitted Standardized (VES) = 43.6 m^3

Volume Emitted (VE) = 42.9 m3
Milligrams Emitted (ME) = 436931.5 mg
Outlet VOC Concentration = 0.55 %
Inlet VOC Concentration = 34.0 %

Please Note: All data fields are rounded to two places following the decimal point for display purposes only.

1.) Therefore, for this calculation:

0.545 % lowest possible value before rounding for display
HCout = 0.55 % value displayed (after rounding)
0.554 % highest possible value before rounding for display

43.55 m^3 lowest possible value before rounding for display
VES = 43.6 m^3 value displayed (after rounding)
43.64 m^3 highest possible value before rounding for display

2.) Using the above values in the previous equation B we have:

(1.83 x 106) x (0.00545) x (43.55) = 434,345.9 mg
436,931.5 mg
(1.83 x 106) x (0.0055) x (43.6) = 438,834.0 mg
(1.83 x 106) x (0.00554) x (43.64) = 442,431.0 mg

Note: The value for ME printed by the computer for this interval is **436,931.5 mg.** While this is not the result produced from entering the printed values for HCout and VES into Equation B, it is the result produced by the calculation carried out on the stored computer data, prior to rounding for display.

DATA SUMMARY

TERMINAL DESCRIPTION	Chevron Products Port Everglades, Florida
VAPOR CONTROL UNIT TYPE	John Zink VRU
TEST DATE	July 14, 2011
TEST PERIOD	07:30–13:30 Six Hrs
AVERAGE AMBIENT TEMPERATURE	32.84 Deg C
AVERAGE OUTLET CONCENTRATION (as Propane)	0.02 % by Volume
AVERAGE INLET CONCENTRATION (as Propane)	33.69 % by Volume
TOTAL PETROLEUM LOADED	267,308 gallons
ACCOUNTABLE PETROLEUM LOADED	216,100 gallons
AVERAGE HYDROCARBON EMISSIONS (Calculated with Total Loaded Product)	0.23 mg/liter 0.08 lb/hr
AVERAGE HYDROCARBON EMISSIONS (Calculated with Accountable Product Loaded)	0.28 mg/liter 0.08 lb/hr
NUMBER OF TRUCKS LOADED	27 Gas Loads Diesel Loads N/A
NUMBER OF LEAKING TRUCKS	0
VOLUME OF LEAKING TRUCKS	0 gallons
MAXIMUM PRESSURE AT TRUCK VAPOR HOSE	11.0" H_20
STRIP CHART RECORDER SPEED	150 mm/hour
UNIT EFFICIENCY	99.95 %

COMPUTER PRINTOUT LEGEND

AMBIENT-T.....Ambient Temperature.....° Celsius

EXHAUST-T..... Exhaust Temperature.....° Celsius

EXHAUST-P.....Exhaust Pressure.....mm Hg

BARO-P.....Barometric Pressure.....mm Hg

HCin.....Inlet VOC Concentration (when used).....% by volume

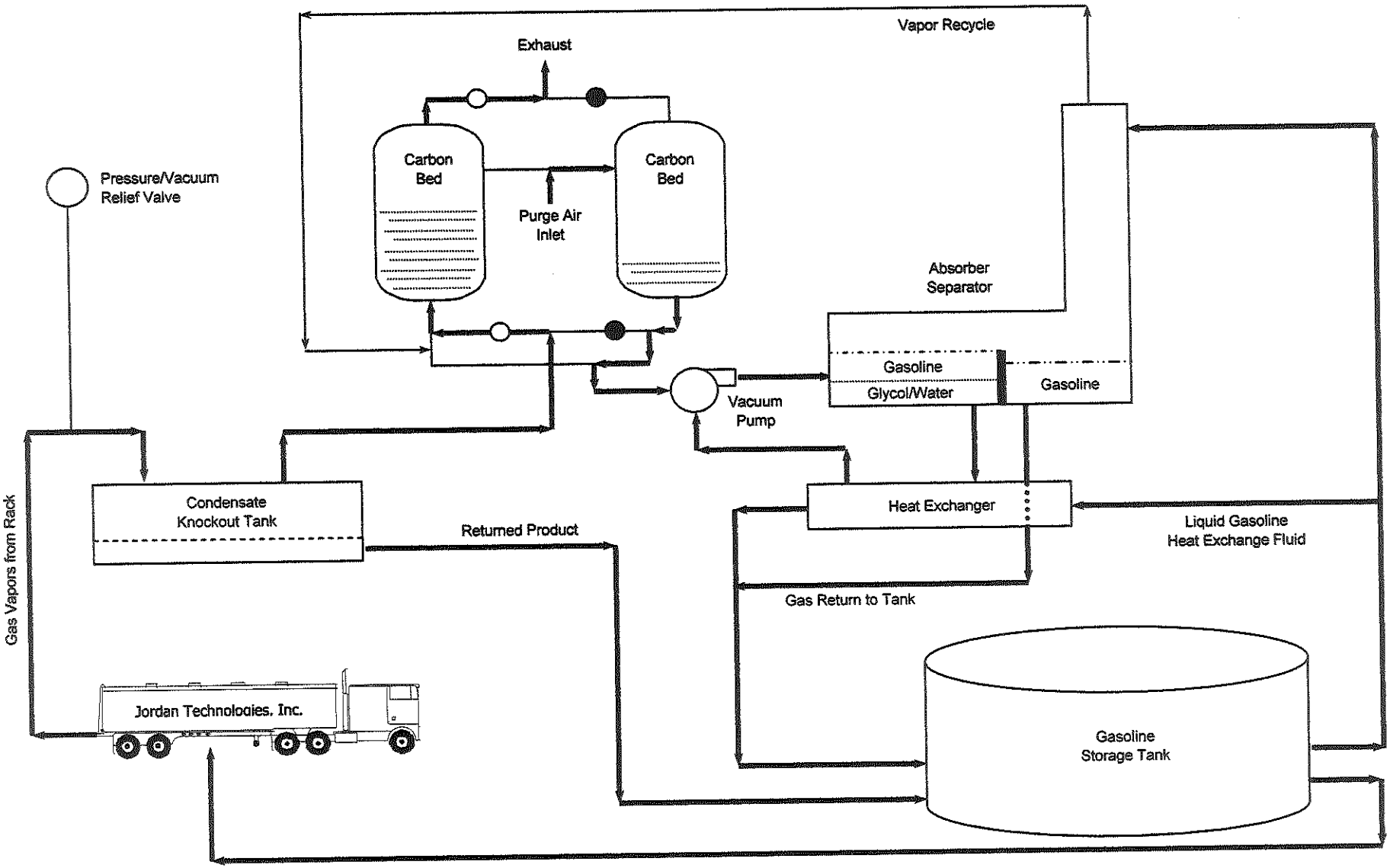
HCout.....Exhaust VOC Concentration.....Vol. Fraction

VES.....Flow Through Turbine Meter.....m^3 std.

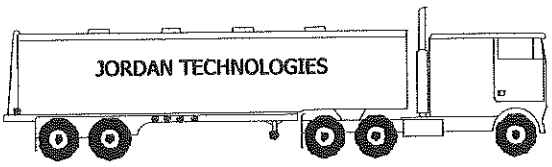
ME.....Total Milligrams Emitted.....mg of VOC

VE.....Flow Through Turbine Meter.....m^3

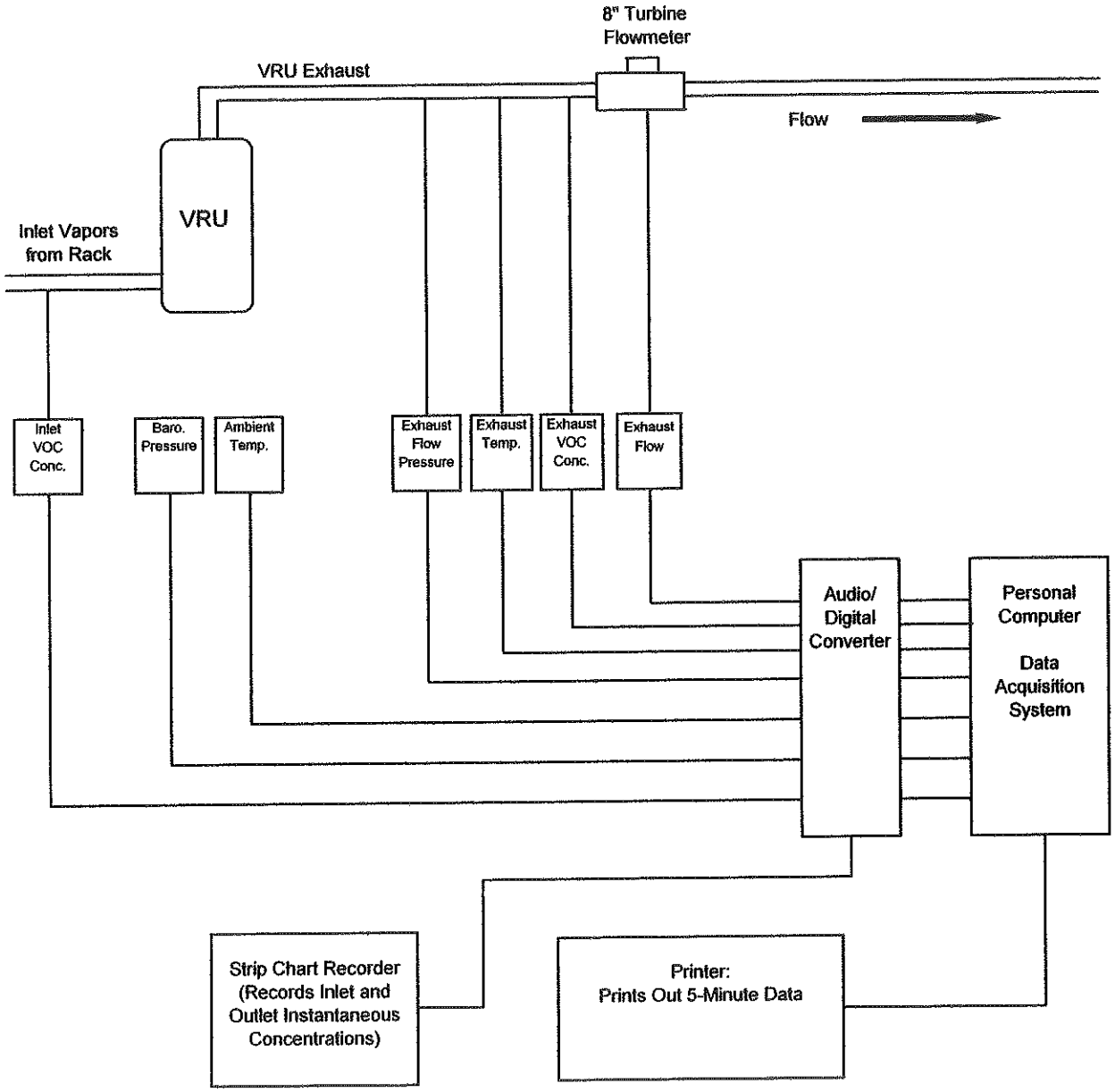
ACTIVATED CARBON VAPOR RECOVERY UNIT SCHEMATIC



VAPOR RECOVERY UNIT TEST SCHEMATIC



Test Equipment Diagram
Note: Not to Scale



APPENDIX A

TRUCK MONITORING DATA SHEETS

Terminal Location Chevron Port Everglades Date 7-14-2011 Page Number 1

Seq. No.	Tanker Name	Load Start Time	Load Stop Time	Bay No.	Trailer Number
1	CWC	7:31 AM	7:42 AM	2	T05

Products Loading	Previous Product	Leak	Accountable Gallons	Non-Acct. Gallons
GAS/Diesel	GAS/Diesel	NO	7800	0

Max. Back Pressure: Reading 1 2 Reading 2 4 Reading 3 5 Reading 4 6 Highest 6

Seq. No.	Tanker Name	Load Start Time	Load Stop Time	Bay No.	Trailer Number
2	DB Trucking	7:34 AM	7:48 AM	1	2417

Products Loading	Previous Product	Leak	Accountable Gallons	Non-Acct. Gallons
GAS	GAS	NO	9000	0

Max. Back Pressure: Reading 1 4 Reading 2 4 Reading 3 3 Reading 4 2 Highest 4

Seq. No.	Tanker Name	Load Start Time	Load Stop Time	Bay No.	Trailer Number
3	Eagle	7:48 AM	8:02 AM	3	2141

Products Loading	Previous Product	Leak	Accountable Gallons	Non-Acct. Gallons
GAS	GAS	NO	7200	0

Max. Back Pressure: Reading 1 4 Reading 2 5 Reading 3 3 Reading 4 4 Highest 5

Seq. No.	Tanker Name	Load Start Time	Load Stop Time	Bay No.	Trailer Number
4	South gate	7:54 AM	8:04 AM	2	338

Products Loading	Previous Product	Leak	Accountable Gallons	Non-Acct. Gallons
GAS	GAS	NO	8000	0

Max. Back Pressure: Reading 1 1 Reading 2 3 Reading 3 2 Reading 4 5 Highest 5

Seq. No.	Tanker Name	Load Start Time	Load Stop Time	Bay No.	Trailer Number
5	Kenan Advantage	8:06 AM	8:21 AM	1	5326

Products Loading	Previous Product	Leak	Accountable Gallons	Non-Acct. Gallons
GAS	GAS		7500	0

Max. Back Pressure: Reading 1 3 Reading 2 5 Reading 3 4 Reading 4 Highest 5

Seq. No.	Tanker Name	Load Start Time	Load Stop Time	Bay No.	Trailer Number
6	Evans Oil	8:06 AM	8:19 AM	3	201

Products Loading	Previous Product	Leak	Accountable Gallons	Non-Acct. Gallons
GAS	GAS/Diesel	NO	7500	0

Max. Back Pressure: Reading 1 3 Reading 2 4 Reading 3 5 Reading 4 7 Highest 7

Accountable Gallons Load 1	7800	Total Gallons Load 1	
Accountable Gallons Load 2	9000	Total Gallons Load 2	
Accountable Gallons Load 3	7200	Total Gallons Load 3	
Accountable Gallons Load 4	8000	Total Gallons Load 4	
Accountable Gallons Load 5	7500	Total Gallons Load 5	
Accountable Gallons Load 6	7500	Total Gallons Load 6	
Total Accountable Gallons This Page	47,500	Total Gallons This Page	0
Acct. Total From Previous Page +		Total Gallons Prev. Page +	
Accountable Gallons Total =		Total Gallons =	

Terminal Location Chevron Port Elizabeth Date 7-14-2011 Page Number 2

Seq. No. 7 Tanker Name PIPELINE Load Start Time 8:39AM
Bay No. 3 Trailer Number 87 Load Stop Time 8:50AM

Products Loading	Previous Product	Leak	Accountable Gallons	Non-Acct. Gallons
GAS	GAS	NO	7000	0

Max. Back Pressure: Reading 1 2 Reading 2 3 Reading 3 5 Reading 4 4 Highest 5

Seq. No. 8 Tanker Name Kenan Advantage Load Start Time 8:44AM
Bay No. 1 Trailer Number 8030 Load Stop Time 8:57AM

Products Loading	Previous Product	Leak	Accountable Gallons	Non-Acct. Gallons
GAS	GAS	NO	6000	0

Max. Back Pressure: Reading 1 1 Reading 2 4 Reading 3 3 Reading 4 4 Highest 4

Seq. No. 9 Tanker Name McKenzie Load Start Time 8:54 AM
Bay No. 2 Trailer Number A463704 Load Stop Time 9:08AM

Products Loading	Previous Product	Leak	Accountable Gallons	Non-Acct. Gallons
GAS	GAS	NO	8800	0

Max. Back Pressure: Reading 1 3 Reading 2 4 Reading 3 6 Reading 4 6 Highest 8

Seq. No. 10 Tanker Name Kenan Advantage Load Start Time 9:03AM
Bay No. 3 Trailer Number 5046 Load Stop Time 9:13AM

Products Loading	Previous Product	Leak	Accountable Gallons	Non-Acct. Gallons
GAS	GAS	NO	8900	0

Max. Back Pressure: Reading 1 3 Reading 2 5 Reading 3 4 Reading 4 4 Highest 5

Seq. No. 11 Tanker Name Pipeline Load Start Time 9:24AM
Bay No. 3 Trailer Number 93 Load Stop Time 9:36AM

Products Loading	Previous Product	Leak	Accountable Gallons	Non-Acct. Gallons
GAS	GAS	NO	8700	0

Max. Back Pressure: Reading 1 4 Reading 2 3 Reading 3 3 Reading 4 5 Highest 5

Seq. No. 12 Tanker Name ABENAKI Load Start Time 9:39AM
Bay No. 1 Trailer Number 955203 Load Stop Time 9:58AM

Products Loading	Previous Product	Leak	Accountable Gallons	Non-Acct. Gallons
AVGAS	AVGAS	NO	8000	0

Max. Back Pressure: Reading 1 2 Reading 2 3 Reading 3 4 Reading 4 6 Highest 6

Accountable Gallons Load 1	7000	Total Gallons Load 1	
Accountable Gallons Load 2	6000	Total Gallons Load 2	
Accountable Gallons Load 3	8800	Total Gallons Load 3	
Accountable Gallons Load 4	8900	Total Gallons Load 4	
Accountable Gallons Load 5	8700	Total Gallons Load 5	
Accountable Gallons Load 6	8000	Total Gallons Load 6	
Total Accountable Gallons This Page	47,400	Total Gallons This Page	
Acct. Total From Previous Page	+ 47,500	Total Gallons Prev. Page	+
Accountable Gallons Total	= 94,900	Total Gallons	=

Terminal Location Chevron Port Everglades Date 2-14-2011 Page Number 3

Seq. No. 13 Tanker Name ~~[illegible]~~ Florida Keys Petro Load Start Time 10:05 AM
Bay No. 3 Trailer Number 04 Load Stop Time 10:21 AM

Products Loading	Previous Product	Leak	Accountable Gallons	Non-Acct. Gallons
GAS	GAS	NO	8500	0

Max. Back Pressure: Reading 1 5 Reading 2 3 Reading 3 4 Reading 4 3 Highest 5

Seq. No. 14 Tanker Name Kenan Advantage Load Start Time 10:05 AM
Bay No. 2 Trailer Number 191201 Load Stop Time 10:22 AM

Products Loading	Previous Product	Leak	Accountable Gallons	Non-Acct. Gallons
GAS	GAS	NO	7900	0

Max. Back Pressure: Reading 1 2 Reading 2 3 Reading 3 5 Reading 4 4 Highest 5

Seq. No. 15 Tanker Name EVANS OIL Load Start Time 10:08 AM
Bay No. 1 Trailer Number 201 Load Stop Time 10:29 AM

Products Loading	Previous Product	Leak	Accountable Gallons	Non-Acct. Gallons
GAS	GAS	NO	6000	0

Max. Back Pressure: Reading 1 3 Reading 2 5 Reading 3 8 Reading 4 10 Highest 10

Seq. No. 16 Tanker Name Petro Chemical Load Start Time 10:36 AM
Bay No. 3 Trailer Number ~~840752~~ 5326 Load Stop Time 10:53 AM

Products Loading	Previous Product	Leak	Accountable Gallons	Non-Acct. Gallons
GAS	GAS	NO	8800	0

Max. Back Pressure: Reading 1 2 Reading 2 3 Reading 3 4 Reading 4 5 Highest 8

Seq. No. 17 Tanker Name Petro Chemical Load Start Time 10:37 AM
Bay No. 2 Trailer Number 8028 Load Stop Time 10:58 AM

Products Loading	Previous Product	Leak	Accountable Gallons	Non-Acct. Gallons
GAS	GAS	NO	8500	0

Max. Back Pressure: Reading 1 3 Reading 2 4 Reading 3 8 Reading 4 15 Highest 15

Seq. No. 18 Tanker Name DB Trucking Load Start Time 10:41 AM
Bay No. 1 Trailer Number 2417 Load Stop Time 10:58 AM

Products Loading	Previous Product	Leak	Accountable Gallons	Non-Acct. Gallons
GAS	GAS	NO	9000	0

Max. Back Pressure: Reading 1 2 Reading 2 4 Reading 3 6 Reading 4 7 Highest 7

Accountable Gallons Load 1	8500	Total Gallons Load 1	
Accountable Gallons Load 2	7900	Total Gallons Load 2	
Accountable Gallons Load 3	6000	Total Gallons Load 3	
Accountable Gallons Load 4	8800	Total Gallons Load 4	
Accountable Gallons Load 5	8500	Total Gallons Load 5	
Accountable Gallons Load 6	9000	Total Gallons Load 6	
Total Accountable Gallons This Page	48,700	Total Gallons This Page	
Acct. Total From Previous Page	+ 94,900	Total Gallons Prev. Page	+
Accountable Gallons Total	= 143,600	Total Gallons	=

Terminal Location Chevron Port Everglades Date 2-14-2011 Page Number 4

Seq. No.	Bay No.	Tanker Name	Trailer Number	Load Start Time	Load Stop Time	Products Loading	Previous Product	Leak	Accountable Gallons	Non-Acct. Gallons
19	3	Pipeline	823	11:00 AM	11:15 AM	GAS	GAS	NO	8800	0

Max. Back Pressure: Reading 1 5 Reading 2 7 Reading 3 10 Reading 4 11 Highest 11

Seq. No.	Bay No.	Tanker Name	Trailer Number	Load Start Time	Load Stop Time	Products Loading	Previous Product	Leak	Accountable Gallons	Non-Acct. Gallons
20		Kenan Advantage	5046	11:02 AM	11:15 AM	GAS	GAS	NO	8900	0

Max. Back Pressure: Reading 1 5 Reading 2 6 Reading 3 4 Reading 4 8 Highest 8

Seq. No.	Bay No.	Tanker Name	Trailer Number	Load Start Time	Load Stop Time	Products Loading	Previous Product	Leak	Accountable Gallons	Non-Acct. Gallons
21	1	Jet Star	155	11:28 AM	11:37 AM	AVGAS	AVGAS	NO	3000	0

Max. Back Pressure: Reading 1 3 Reading 2 4 Reading 3 4 Reading 4 5 Highest 5

Seq. No.	Bay No.	Tanker Name	Trailer Number	Load Start Time	Load Stop Time	Products Loading	Previous Product	Leak	Accountable Gallons	Non-Acct. Gallons
22	3	Kenan Advantage	19691	11:28 AM	11:42 AM	GAS	GAS	NO	8800	0

Max. Back Pressure: Reading 1 4 Reading 2 6 Reading 3 2 Reading 4 6 Highest 7

Seq. No.	Bay No.	Tanker Name	Trailer Number	Load Start Time	Load Stop Time	Products Loading	Previous Product	Leak	Accountable Gallons	Non-Acct. Gallons
23	3	McKenzie	A463704	11:57 AM	12:15 PM	GAS	GAS	NO	8800	0

Max. Back Pressure: Reading 1 4 Reading 2 5 Reading 3 5 Reading 4 7 Highest 7

Seq. No.	Bay No.	Tanker Name	Trailer Number	Load Start Time	Load Stop Time	Products Loading	Previous Product	Leak	Accountable Gallons	Non-Acct. Gallons
24	1	Pipeline	93	12:08 PM	12:26 PM	GAS	GAS	NO	8700	0

Max. Back Pressure: Reading 1 3 Reading 2 3 Reading 3 5 Reading 4 6 Highest 6

Accountable Gallons Load 1	8800	Total Gallons Load 1	
Accountable Gallons Load 2	8900	Total Gallons Load 2	
Accountable Gallons Load 3	3000	Total Gallons Load 3	
Accountable Gallons Load 4	8800	Total Gallons Load 4	
Accountable Gallons Load 5	8800	Total Gallons Load 5	
Accountable Gallons Load 6	8700	Total Gallons Load 6	
Total Accountable Gallons This Page	47,000	Total Gallons This Page	
Acct. Total From Previous Page	+ 143,600	Total Gallons Prev. Page	+
Accountable Gallons Total	= 190,600	Total Gallons	=

Terminal Location Chevron Port Everglades Date 7-14-2011 Page Number 5

Seq. No. 25 Tanker Name Pipeline Load Start Time 12:31 PM
Bay No. 3 Trailer Number 38 Load Stop Time 12:42 PM

Products Loading	Previous Product	Leak	Accountable Gallons	Non-Acct. Gallons
GAS	GAS	NO	8700	0

Max. Back Pressure: Reading 1 4 Reading 2 5 Reading 3 5 Reading 4 6 Highest 6

Seq. No. 26 Tanker Name Eagle Load Start Time 12:35 PM
Bay No. 2 Trailer Number 2334 Load Stop Time 12:50 PM

Products Loading	Previous Product	Leak	Accountable Gallons	Non-Acct. Gallons
GAS	GAS	NO	8800	0

Max. Back Pressure: Reading 1 5 Reading 2 4 Reading 3 7 Reading 4 10 Highest 10

Seq. No. 27 Tanker Name Kenan Advantage Load Start Time 1:14 PM
Bay No. 3 Trailer Number 5046 Load Stop Time 1:25 PM

Products Loading	Previous Product	Leak	Accountable Gallons	Non-Acct. Gallons
GAS	GAS	NO	8000	

Max. Back Pressure: Reading 1 4 Reading 2 3 Reading 3 5 Reading 4 6 Highest 6

Seq. No. ____ Tanker Name ____ Load Start Time ____
Bay No. ____ Trailer Number ____ Load Stop Time ____

Products Loading	Previous Product	Leak	Accountable Gallons	Non-Acct. Gallons

Max. Back Pressure: Reading 1 ____ Reading 2 ____ Reading 3 ____ Reading 4 ____ Highest ____

Seq. No. ____ Tanker Name ____ Load Start Time ____
Bay No. ____ Trailer Number ____ Load Stop Time ____

Products Loading	Previous Product	Leak	Accountable Gallons	Non-Acct. Gallons

Max. Back Pressure: Reading 1 ____ Reading 2 ____ Reading 3 ____ Reading 4 ____ Highest ____

Seq. No. ____ Tanker Name ____ Load Start Time ____
Bay No. ____ Trailer Number ____ Load Stop Time ____

Products Loading	Previous Product	Leak	Accountable Gallons	Non-Acct. Gallons

Max. Back Pressure: Reading 1 ____ Reading 2 ____ Reading 3 ____ Reading 4 ____ Highest ____

Accountable Gallons Load 1	8700	Total Gallons Load 1	
Accountable Gallons Load 2	8800	Total Gallons Load 2	
Accountable Gallons Load 3	8000	Total Gallons Load 3	
Accountable Gallons Load 4		Total Gallons Load 4	
Accountable Gallons Load 5		Total Gallons Load 5	
Accountable Gallons Load 6		Total Gallons Load 6	

DIESEL LOADE
DURING TESTIN
AT DIESEL RAC
FROM CHEVRON
METERS.

Total Accountable Gallons This Page	25,500	Total Gallons This Page	51,208 ←
Acct. Total From Previous Page	+ 190,600	Total Gallons Prev. Page	+ 216100
Accountable Gallons Total	= 216,100	Total Gallons	= 267308

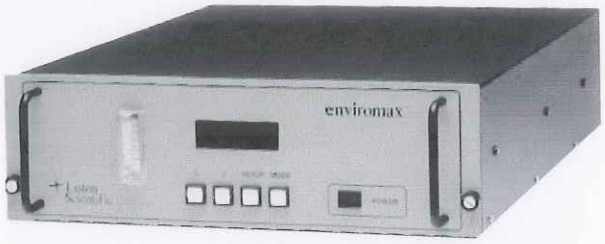
APPENDIX B

INSTRUMENT AND CALIBRATION INFORMATION

enviromax™

THE GOLD STANDARD IN GAS ANALYSIS

MODEL 2010
Nondispersive Infrared Analyzer



Rack Mounted Single Gas Analyzer

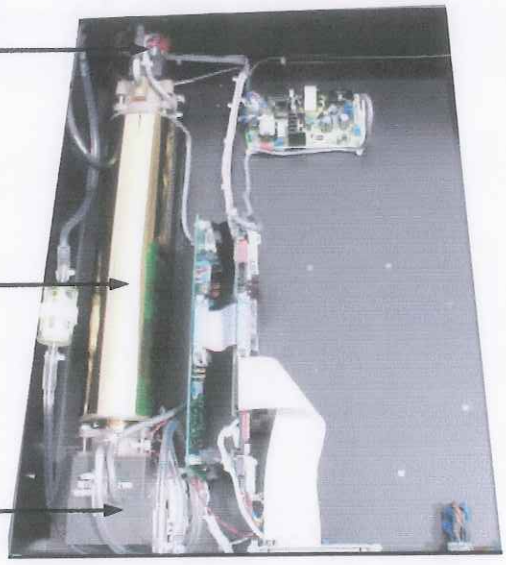
Rack Mounted Dual Gas Analyzer

- Patented Detector Provides Outstanding Selectivity and Sensitivity
- Microprocessor Linearization Increases Accuracy
- All Digital Electronics Improves Performance
- Totally Closed Sample Path is Not Exposed to Ambient Conditions
- No Moving Parts to Adjust or Wear Out Improves Reliability
- Standard Automatic Calibration Assures Your Data is Accurate
- Two or Four Adjustable Analog Chart Recorder Ranges
- Adjustable High and Low Audible Alarms or Limits
- Selectable Voltage Output and Isolated 4-20 mA
- RS-232 and Digital Input/Output Options Available
- Slide-out Drawer Provides Complete Access to All Internal Components
- Optional Oxygen Channel Provides Two or Three Gas Capability in One Analyzer

Liston Scientific

The Model 2010 optical bench consists of the IR source, sample cell, and patented detector. The light source is electronically chopped and replaces the need for a mechanical chopper thereby eliminating all moving parts from the optical bench. The totally closed sample path eliminates interfering absorption from ambient air and the need for periodic purging of the instrument case. The sample cells incorporate a unique design in size and shape allowing the path length of the sample cell to be optimized to the measuring range of the gas of interest, reducing noise and increasing sensitivity. The patented Model 2010 detector consists of two chambers in optical series with a sensitive flow transducer to measure the relative infrared energy absorbed by each chamber. The primary difference between the Model 2010 detector and other NDIR detectors is that the signal between the primary and secondary chambers is balanced. This balancing process greatly improves the sensitivity and selectivity for the gas of interest. Other improvements include very low drift rate and minimal response to vibration and temperature changes.

The Model 2010 is extremely simple and easy to operate. All operating parameters and conditions are controlled from four front panel buttons. The Operator can control such settings as calibration gas concentration, calibration frequency, chart recorder range, flush time, and alarm conditions. All settings are protected by battery backup in case of loss of power. The Model 2010 also has an extensive diagnostic program accessed from the front panel for troubleshooting purposes.



Model 2010 Single Gas Analyzer shown with slide-out drawer open

Standard Gases and Typical Ranges:

Gas	Low Range From:	High Range From:
CO	0-50 PPM	0-100%
CO_2	0-10 PPM	0-100%
SO_2	0-5000 PPM	0-100%
NO	0-500 PPM	0-100%
N_20	0-10 PPM	0-100%
CH_4	0-50 PPM	0-100%
C_3H_8	0-50 PPM	0-100%
C_2F_6	0-50 PPM	0-100%

Other gases available upon request.

Typical Performance*

	Low ppm Ranges	Other Ranges
Resolution	0.1 PPM	0.1%
Repeatability	0.5% or better	0.1% or better
Noise	0.5% or better	0.1% or better
Drift/24 hrs.	1.0% or better	0.3% or better

*Expressed as % of full scale unless otherwise indicated.
At constant ambient conditions and with daily zero calibration.
All specifications are subject to change without notice.

Liston Scientific

18900 Teller Avenue
Irvine, CA 92612-1617
Phones: (949) 756-1632
(800) 927-4572
Fax : (949) 756-1635
e-mail: info@listonscientific.com
Web: www.listonscientific.com

MODEL 2010 Nondispersive Gas Analyzer

General Specifications*

Measuring method: NDIR single beam

Sample flow: Standard, 0.2-2.0 liters/minute
Low ranges, 2.0-10.0 liters/minute
Gas measured: User specified

Sample temperature: -10 to +50° C

Measuring range: See chart on individual product sheets

Dust: Should be dust-free

Display: Vacuum Fluorescent, 2 lines of 16 characters

Moisture: Non-condensing

Alarms: High & Low limit, user selectable

Pressure: Inlet pressure not to exceed 5 PSIG

Analog output: Selectable 1,5 or 10 volts

Exhaust gas: Non-restrictive outlet aperture and hoses

Analog ranges: 4, each with selectable full scale and auto-ranging

Output options: RS-232, Digital Input/Output

Warm-up time: Usable in 1 hour. Optimum in 3 hours

Front panel: 4-button operator interface

Operating temperature: -10 to 50° C

Cal valve actuation: Isolated triac control, maximum load .6 amp

Power source: 120/230 VAC., 50/60 Hz. user specified.
Portable: battery charger, minimum 6 hours operation

Materials in sample path: Glass, Gold, Buna-N, Lexan, Epoxy,
Sapphire, Zinc Sulfide or Calcium Fluoride, 304 SS

Power consumption: 50 watts per channel

* All specifications are subject to change depending upon gas and range; and may be change without prior notice.

Dimensions and Weight

Rack Mounted Version

Length: 22.5 in (57.1 cm)

Width: 17.1 in (43.4 cm)

Height: 5.25 in (13.3 cm)

Weight: 38 lbs (17.3 kg)

Portable Version

Length: 20.0 in (50.8 cm)

Width: 8.5 in (21.6 cm)

Height: 5.25 in (13.3 cm)

Weight: 19 lbs (8.6 kg)

Explosion Proof Version

Electronics Enclosure
Length: 15 in (38.1 cm)
Width: 7.5 in (19.05 cm)
Height: 7.5 in (19.05 cm)
Weight: 13 lbs (5.9 kg)

Explosion Proof Enclosure
Length: 10 in (25.4 cm)
Width: 15 in (38.1 cm)
Height: variable, 15.5 in (39.4 cm) to 27.5 in (69.9 cm)
Weight: variable, 51 lbs (23.2 kg), 63 lbs (28.6 kg) or 75 lbs (34.1kg)

Liston Scientific

18900 Teller Avenue
Irvine, CA 92612
949-756-1632, 800-927-4572
Fax: 949-756-1635
email: info@listonscientific.com
Web: www.listonscientific.com

HORIBA ENVIRONMENTAL AND PROCESS INSTRUMENTS

VIA-510 Gas Analyzer

Features

- Selectable response time
- Selectable outputs: 0–1 VDC or 4–20 mA
- Digital outputs indicate malfunctions or calibration failure)
- Measures CO, CO_2, NOx, SO_2, CH_4, C_2H_4, and NO_2; others upon request

Overview

The VIA-510 series of general-purpose gas analyzers provide continuous monitoring of concentrations of the specific sample gas. The analyzers can be operated from controls on the front panel or by commands from a remote computer. Measurement results are displayed on the front panel and are available to remote data logging systems through an industry-standard interface.

The VIA-510 series can be used for a wide variety of analyses and tests, such as industrial process control and composition analysis, environment-related atmospheric and fixed-source emissions monitoring, and automobile emission analysis.

These analyzers use the infrared absorption method which offers superior sensitivity, selectivity, and stability.
They are compact and compatible with a variety of OEM analysis equipment.

A high level of sensitivity is achieved through the use of a dual-beam NDIR analysis method. Horiba's patented
chopper motor assures continuous long-term stable monitoring. The analysis mechanism and the amplifier are combined in a single unit. The highly accurate performance makes the analyzers suitable for process monitoring
and control.

Specifications

Standard Ranges

Gas	Minimum	Maximum
Carbon monoxide	0-50 ppm	0-100%

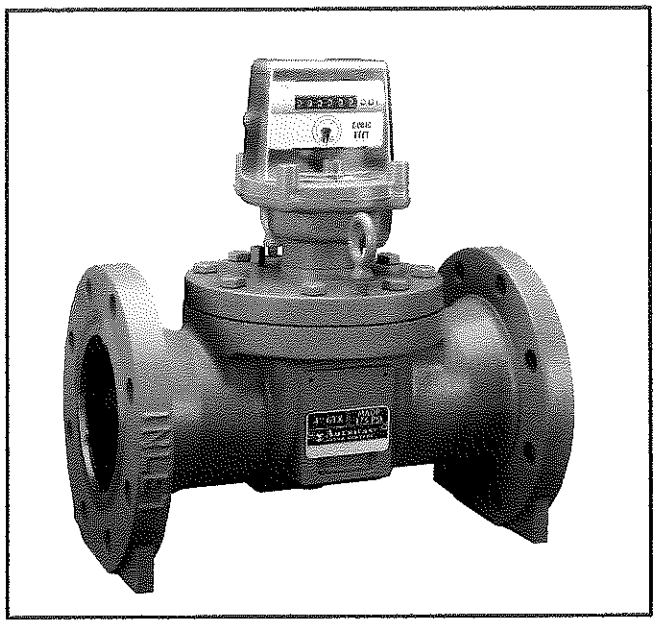
(CO)		
Carbon dioxide (CO_2)	0-50 ppm	0-100%
Nitrogen monoxide (NO)	0-100 ppm	0-100%
Sulfer dioxide (SO_2)	0-100 ppm	0-100%
Methane (CH_4)	0-100 ppm	0-100%
Ethene (C_2H_4)	0-100 ppm	0-100%
Nitrous Oxide (N_2O)	0-100 ppm	0-100%

Performance

Lowest detection limit:	1.0 ppm
Repeatability:	± 1% of full-scale
Response time:	Selectable
Zero drift:	< 1% (full scale) per day
Span drift:	< 2% (full scale) per week

HORIBA

AMERICAN METER
GTX Gas Turbine Meters
Data Sheet



American Meter's gas turbine meters bring together refinements in design learned from years of application experience. GTX turbine meters are based on the standard GTS turbine meter design with the removal of certain features, making them an extremely cost-effective option for industrial applications while maintaining meter accuracy and the quality expected from American Meter products.

GTX meters are available in 4", 6", and 8" sizes with maximum allowable operating pressures up to 175 psig. As shown in the features and benefits listed, many of the optional accessories for GTS turbine meters remain available on the GTX Series, such as medium- and low-frequency pulsers.

Related Bulletins:

Instruction Manual .....IM 4720
Repair Parts List .....RPL 4810
Medium Frequency Pulser .....IMP 6778
Electronic Temp. Comp. .....IM 4730

Features – Benefits – Optional Accessories

- ***Mechanical Drive Output***
- ***Mechanical and Electronic Pulse Outputs***
- ***Temperature Compensation***
- ***Mechanical Drive Models*** for use with P&T Correctors or ***Electronic Pulse Output Models*** to interface directly with popular flow computers.
- ***Electronic Temperature Compensation*** with Fixed Factor Pressure and six-month data storage.
- ***One Output Gear Train*** for all meter sizes; reduces spare parts inventory.
- ***High-Efficiency Inlet Flo-Guide®*** flow conditioners to minimize the effects of flow disturbances in short-coupled installations.
- ***Interchangeable Pre-Calibrated Measurement Cartridges*** for easy maintenance.
  NOTE: GTX cartridges fit only into GTX bodies.
- ***Three-Point Accuracy Curve*** supplied as standard.
- ***Five-Point Accuracy Curve*** (optional).
- ***Medium- and High-Pressure Accuracy Curves*** available.
- ***Cartridge Recertification and Repair Services.***
- ***Mercury or Equimeter Corrector Adapter Plates.***
- ***Output Drive:*** 100 ft (4" and 6")
  Output Drive: 1,000 ft (8")

Comparison Chart

Feature	GTS	GTX
Pressure Ratings	175, 720, 1,440	175
Bearings/ Lubrication	Standard SST Bearings/Oiler	Self-Lubricating Bearings/No Oiler System
Outlet Diffuser	Standard	None
Compatibility	GTS/AccuTest/GT	GTX Only
Rotors	45° or 30° Metal or Plastic	45° Only Plastic Only
Pulsers	High-, Medium-, or Low-Frequency	Medium- or Low-Frequency

Capacity Table

Size	45° Rotor Angle				
	Qmax MSCFH	Qmin MSCFH	Range Qmax/Qmin	Minimum Actual Flow Rate MACFH	Pressure Drop Inches W.C.
4"	18	1.2	15	1.20	2.4
6"	35	1.9	18	1.94	3.3
8"	60	3	20	3.00	1.6

GTX Basic Specifications (Figure 1)

Size	Material AL=aluminum		Dimensions (inches)		Flange (Inches)		Bolts		ANSI	Weight (lbs.)	Cartridge Bolt Torque (lb-ft.)
	Body	Top	A	B	O.D.	*B.D.	No.	Dia. (in.)			
4"	AL	AL	5.85	14.0	9.00	7.50	8	5/8	150 FF	32	20
6"	AL	AL	6.42	16.0	11.00	9.50	8	3/4	150 FF	54	35
8"	AL	AL	7.42	21.0	13.50	11.75	8	3/4	150 RF	90	70

Note: GTX MAOP = 175 psig

*B.D. = Bolt Circle Diameter

B = Standard

Operating Temperature Range:
-40°F to + 140°F
-40°C to -60°C

Manufacturing Standards
ANSI/ASME MFC – 4M – 1986
AGA Report #7

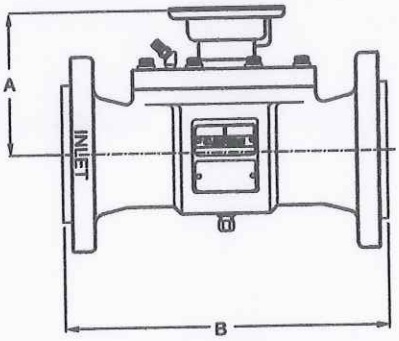


Figure 1
GTX Specifications

GTX Ordering Information

- **Size:**
  - 4" – 100 mm — Maximum Allowable Working Pressure: 175 psi/12 bar
  - 6" – 150 mm — 175 psi/12 bar
  - 8" – 200 mm — 175 psi/12 bar
- **Index:** Clock Type, Odometer Type, None
- **Model:**
  - Mechanical Instrument Drive Output only
  - Mechanical Instrument Drive Output and Medium-Frequency Pulse Output
  - Mechanical Instrument Drive and Low-Frequency Pulse Output
  - Mercury or Equimeter Corrector Adapter Plate

AMERICAN METER

300 Welsh Road
Building One
Horsham, PA 19044-2234 U.S.A.
Phone: 215/830-1800
Fax: 215/830-1890
Website: americanmeter.com

CANADIAN METER

275 Industrial Road
Cambridge, Ontario, N3H 4R7 Canada
Phone: 877/461-2626 (toll free)
Phone: 519/650-1900
Fax: 519/650-1917
Website: canadianmeter.com

AMC Quality System
QMI is Accredited by:

ISO 9002 Registered

Dutch Council for Accreditation

Printed in U.S.A.

ELSTER AMCO

Core – 2000 – 5/02

IMAC Systems, Inc.

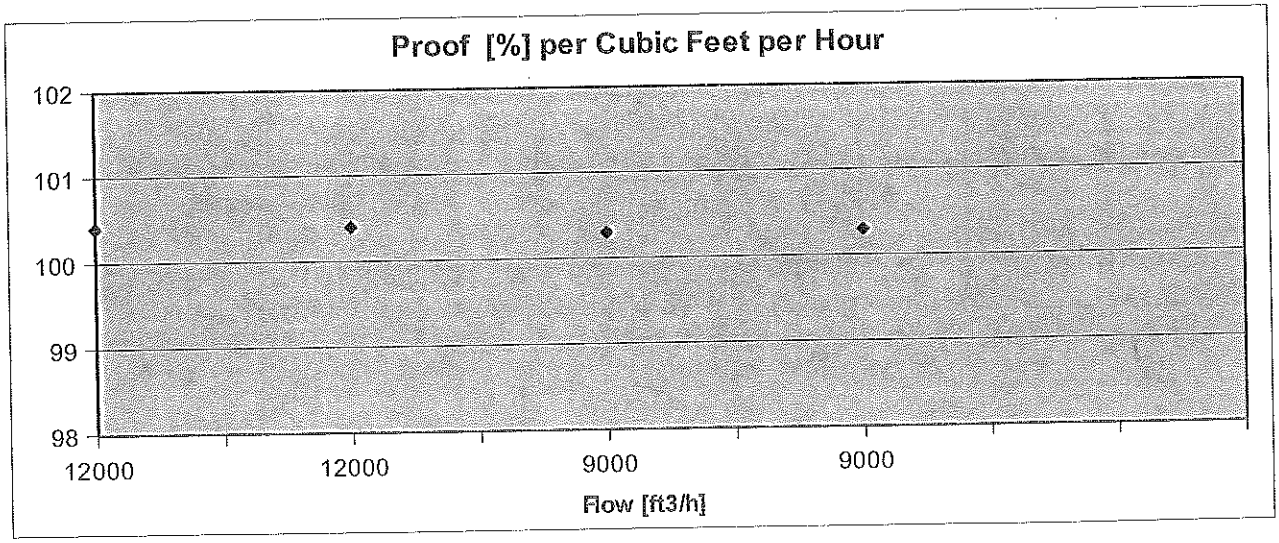
International Measurement and Control Systems

90 Main Street • P.O. Box 1605
Tullytown, Pennsylvania 19007
Tel: 215-946-2200 • Fax: 215-943-2984
E-mail: sales@imacsystems.com
Web site: www.imacsystems.com

GAS METER INSPECTION CERTIFICATE

Meter:	T – 60	Date:	2/24/2011
Serial Number:	813171	Drive Rate:	1000 cu.ft.
Work Order#:	51717	Type of Proof:	I.D.
Leak Test [psi]:	175	Meter Temp [F]:	68
P Max [psi]:	175	As Left - Unc:	N/A
Customer Name:	Jordan Technologies	As Left - Cor:	N/A

Percent of Max. Flow	Flow [ft3/h]	Corrected Proof	Diff. Press. [inW.C.]	Uncorrected Proof
20.0	12000	100.4	1.3	
20.0	12000	100.4	1.3	
15.0	9000	100.3	0.7	
15.0	9000	100.3	0.7	



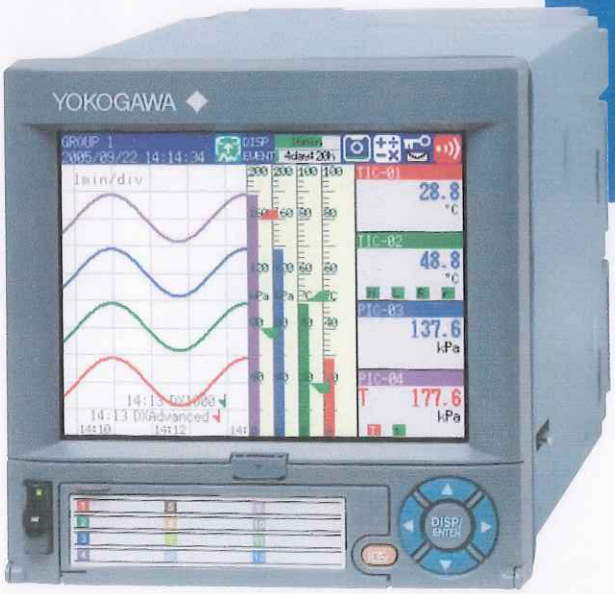
3/15/2010

.....
Attested to by

DXAdvanced®

DXAdvanced DX1000N Removable Chassis Model

A removable chassis model has been added to the Yokogawa's latest DXAdvanced Video Graphic Recorder featuring easy maintenance.



The new DXAdvanced DX1000N features an inner chassis that can be removed from the case via the front panel of the instrument. This provides access to all of the internal components of the DX1000N from the control panel without having to access the rear of the unit or disturb any of the field and power supply wiring. Functionality, appearance, and panel cutout dimensions are the same as those of the standard DX1000.

Advanced Performance
- High-speed measurement

* High-speed measurement of up to 25 ms (DX1002N or DX1004N using fast sampling mode)

Advanced Memory
- High Capacity Internal Memory and Removable Media

* Supports up to 200 MB of non-volatile, internal flash memory for reliable, long-term data storage
* All models include a CompactFlash drive. Rugged and readily available CompactFlash cards (CF cards) serve as the removable media, and are available as optional accessories.
* Supports USB Flash drive with optional USB interface.

Advanced Display and User Interface Functions
- Easy configuration and menu navigation

* USB keyboard & remote control options for text entry
* Versatile, standard display modes
* Jump to your favorite screen with the Favorite key

Advanced Reliability and Security
- Rugged construction and data security

* Water and dust-proof front panel (complies with IEC529-IP65 and NEMA No.250 TYPE4*) *Except for external icing test.
* A mechanical lock with removable key is provided to securely latch the front panel door. This forbids access to the power switch and removable media.
* Reliable, non-volatile flash memory is used for internal data storage operations with ECC* function. * ECC: Error Check and Correct

Advanced Connectivity
- Powerful Ethernet connectivity and convenience functions

* Standard Ethernet interface
* Includes Web server and E-mail messaging functions, time synchronization (SNTP), automatic network setup (DHCP), file transfer (FTP) and more.

Bulletin 04L43B01-01E

vigilantplant.™
The clear path to operational excellence

YOKOGAWA

DXAdvanced DX1000N Removable Chassis Model

DXAdvanced

Application Software (DAQSTANDARD for DXAdvanced)

Every DXAdvanced unit includes a DAQSTANDARD software, which is used for all data file display and reporting functions, including printing and conversion to common file formats. In addition, it includes a configuration tool that is used to fully configure the unit in both on-line (via Ethernet communications) and off-line (saving and loading files from the media) modes. Configuration files can also be archived on the PC.

Models and Suffix Codes

Model code	Suffix code	Optiona code	Description
DX1002N			2 ch, 125 ms (Fast sampling mode: 25 ms)
DX1004N			4 ch, 125 ms (Fast sampling mode: 25 ms)
DX1006N			6 ch, 1 s (Fast sampling mode: 125 ms)
DX1012N			12 ch, 1 s (Fast sampling mode: 125ms)
Internal memory	-1		Standard memory (60 MB)
	-2		Large memory (200 MB)
External media	-4		CF card (with media)
Display language	-2		English/German/French, degF, DST (summer/winter time)
Options		/A1	Alarm output 2 points *1
		/A2	Alarm output 4 points *1
		/A3	Alarm output 6 points *1 *2
		/C2	RS-232 interface *3
		/C3	RS-422A/485 interface *3
		/F1	FAIL/Status output *2
		/H2	Clamped input terminal (detachable)
		/M1	Mathematical functions
		/N1	Cu10, Cu25 RTD input/3 leg isolated RTD
		/N2	3 leg isolated RTD *4
		/N3	Extended input type (PR40-20, Pt50, etc.)
		/P1	24 VDC/AC power supply
		/R1	Remote control
		/TPS2	24VDC transmitter power supply (2 loops) *5
		/TPS4	24VDC transmitter power supply (4 loops) *6
		/KB1	Easy text entry (with input terminal) *7 *8
		/KB2	Easy text entry (without input terminal) *7
		/USB1	USB interface
		/PM1	Pulse input (including remote control and mathematical functions) *9
		/CC1	Calibration correction function

*1 /A1, /A2 and /A3 cannot be specified together. *2 /A3 and /F1 cannot be specified together.
*3 /C2 and /C3 cannot be specified together. *4 /N2 can be specified for only DX1006N and DX1012N.
*5 In case that /TPS2 is specified, /TPS4, /A2, /A3 or /F1 cannot be specified together.
*6 In case that /TPS4 is specified, /TPS2, /A1, /A2, /A3 or /F1 cannot be specified together.
*7 /KB1 and /KB2 cannot be specified together. *8 In case that /KB1 is specified, remote input terminal (438227) is included.
*9 In case that /PM1 is specified, /A3, /M1, /R1, /TPS2 or /TPS4 cannot be specified. And combination of /A2/F1 cannot be specified together.

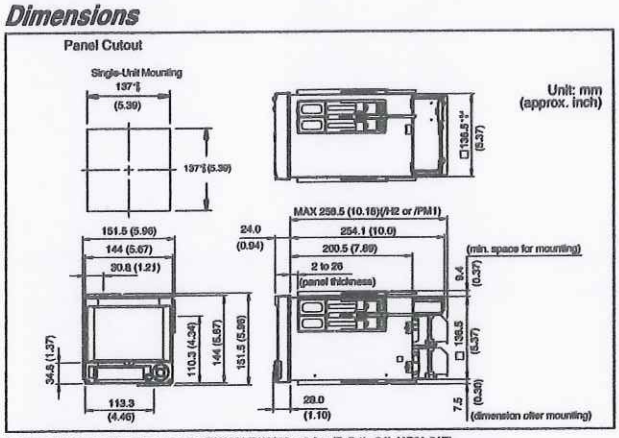
Application Software

Model code	Description	O S
DXA120	DAQSTANDARD for DXAdvanced	Windows 2000/XP

Accessories

Product	Model code (part number)	Specification
Shunt resister (for screw input terminal)	415920	250Ω±0.1%
	415921	100Ω±0.1%
	415922	10Ω±0.1%
Shunt resister (for clamped input terminal)	438920	250Ω±0.1%
	438921	100Ω±0.1%
	438922	10Ω±0.1%
CF card adapter	772090	–
CF card	772091	128 MB
	772092	256 MB
	772093	512 MB
	772094	1 GB
Mounting bracket	B9900BX	–
Door lock key	B8706FX	–
Remote control terminal	438227	For /KB1, /KB2 option

Dimensions



For more details on all functions, see the DX1000/DX2000 catalog (Bulletin 04L41B01-01E).
For more details on all specifications, see the DX1000N General Specifications (GS 04L43B01-01E).

YOKOGAWA ELECTRIC CORPORATION
Network Solutions Business Div./Phone: (81)-422-52-7179, Fax: (81)-422-52-6619
E-mail: ns@cs.jp.yokogawa.com
YOKOGAWA CORPORATION OF AMERICA Phone: 800-888-6400, Fax: (1)-770-251-6427
YOKOGAWA EUROPE B.V. Phone: (31)-33-4641806, Fax: (31)-33-4641807
YOKOGAWA ENGINEERING ASIA PTE. LTD. Phone: (65)-62419933, Fax: (65)-62412606

Vig-RS-1E
Printed in Japan, 702(KP) [Ed : 03/b]

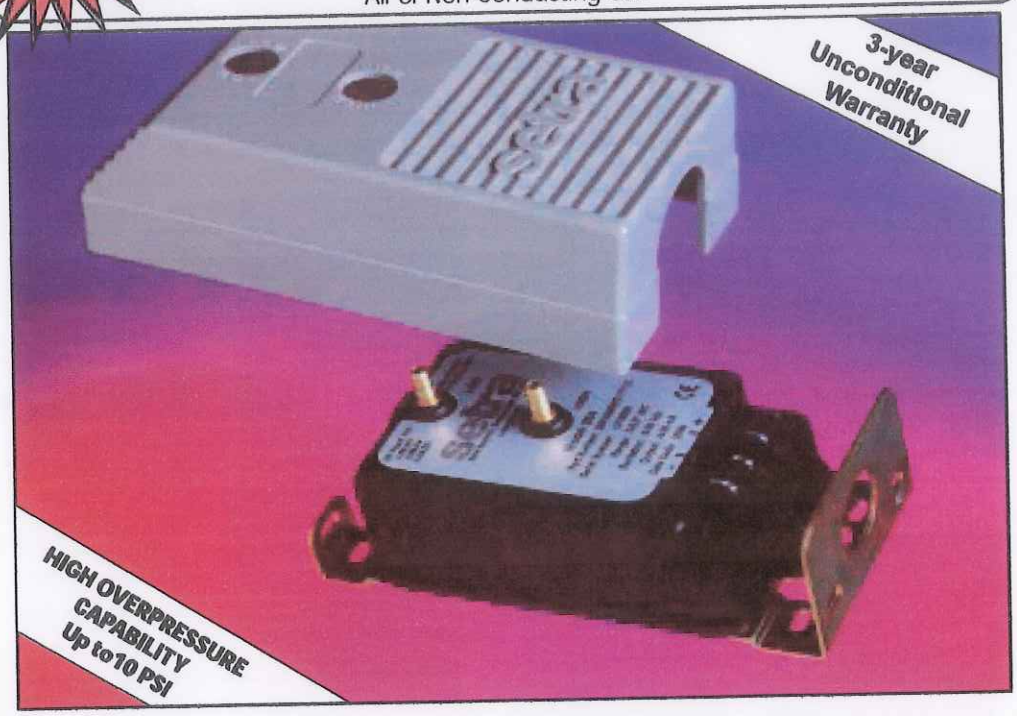
YOKOGAWA

GUARANTEED 3 DAY SHIPMENT FOR STANDARD PARTS (less than 10 pieces)

Model 264

Very Low Differential Pressure Transducer

Unidirectional Ranges: 0 - 0.1 to 0 - 100 in. W.C.
Bidirectional Ranges: 0 - ±0.5 to 0 - ±50 in. W.C.
Air or Non-Conducting Gas



Setra Systems 264 pressure transducers sense differential or gauge (static) pressure and convert this pressure difference to a proportional electrical output for either unidirectional or bidirectional pressure ranges. The 264 Series is offered with a high level analog 0 to 5 VDC or 4 to 20 mA output.

Used in Building Energy Management Systems, these transducers are capable of measuring pressures and flows with the accuracy necessary for proper building pressurization and air flow control.

The 264 Series transducers are available for air pressure ranges as low as 0.1 in. W.C. full scale to 100 in. W.C. full scale. Static standard accuracy is ±1.0% full scale in normal ambient temperature environments, but higher accuracies are available. The units are temperature compensated to 0.033% FS/°F thermal error over the temperature range of 0°F to +150°F.

The Model 264 utilizes an improved all stainless steel micro-tig welded sensor. The tensioned stainless steel diaphragm and insulated stainless steel electrode, positioned close to the diaphragm, form a variable capacitor. Positive pressure moves the diaphragm toward the electrode, increasing the capacitance. A decrease in pressure moves the diaphragm away from the electrode, decreasing the capacitance. The change in capacitance is detected and converted to a linear DC electrical signal by Setra's unique electronic circuit.

The tensioned sensor allows up to 10 PSI overpressure (in either direction) with no damage to the unit. In addition, the parts that make up the sensor have thermally matched coefficients, which promote improved temperature performance and excellent long term stability.

NOTE: Setra quality standards are based on ANSI-Z540-1. The calibration of this product is NIST traceable.

U.S. Patent nos. 4093915; 4358814; 4434203; 6019002; 6014800. Other Patents Pending.

Applications

- Heating, Ventilating and Air Conditioning (HVAC)
- Energy Management Systems
- Variable Air Volume and Fan Control (VAV)
- Environmental Pollution Control
- Lab and Fume Hood Control
- Oven Pressurization and Furnace Draft Controls

Features

- Up to 10 PSI Overpressure on All Ranges
- Installation Time Minimized with Snap Track Mounting and Easy- To-Access Pressure Ports and Electrical Connections
- 0 to 5 VDC or 2-wire 4 to 20 mA Analog Outputs Are Compatible with Energy Management Systems
- Reverse Wiring Protection
- Internal Regulation Permits Use with Unregulated DC Power Supplies
- Meets CE Conformance Standards

When it comes to a product to rely on - choose the Model 264. When it comes to a company to trust - choose Setra.

ISO 9001 Certified

Visit Setra Online:
http://www.setra.com

setra

800-257-3872

159 Swanson Rd., Boxborough, MA 01719/Telephone: 978-263-1400/Fax: 978-264-0292

Model 264 Specifications

Performance Data

	Standard	Optional	
Accuracy* RSS(at constant temp)	±1.0% FS	±0.4% FS	±0.25% FS
Non-Linearity, BFSL	±0.96% FS	±0.38% FS	±0.22% FS
Hysteresis	0.10% FS	0.10% FS	0.10% FS
Non-Repeatability	0.05% FS	0.05% FS	0.05%FS

Thermal Effects**

Compensated Range °F(°C)	0 to +150 (-18 to +65)
Zero/Span Shift %FS/°F(°C)	0.033 (0.06)
Maximum Line Pressure	10 psi
Overpressure	Up to 10 psi in Positive or Negative Direction.
Long Term Stability	0.5% FS/1 YR

Position Effect	Range	Zero Offset (%FS/G)
(Unit is factory calibrated at 0g effect in the vertical position.)	To 0.5 in. WC	0.60
	To 1.0 in.WC	0.50
	To 2.5 in.WC	0.22
	To 5 in. WC	0.14

* RSS of Non-Linearity, Hysteresis, and Non-Repeatability.
**Units calibrated at nominal 70°F. Maximum thermal error computed from this datum.

Environmental Data

Temperature

Operating* °F (°C)	0 to +175 (-18 to +79)
Storage °F (°C)	-65 to +250 (-54 to +121)

*Operating temperature limits of the electronics only. Pressure media temperatures may be considerably higher.

Physical Description

Case	Fire-Retardant Glass Filled Polyester
Mounting	Four screw holes on removable zinc plated steel base (designed for 2.75" snap track)
Electrical Connection	Screw Terminal Strip
Pressure Fittings	3/16" O.D. barbed brass pressure fitting for 1/4" push-on tubing
Zero and Span Adjustments	Accessible on top of case
Weight (approx.)	10 ounces

Pressure Media

Typically air or similar non-conducting gases.

Specifications subject to change without notice.

Electrical Data (Voltage)

Circuit	3-Wire (Com, Exc, Out)
Excitation	9 to 30 VDC
Output*	0 to 5 VDC**
Bidirectional output at zero pressure:	2.5 VDC**
Output Impedance	100 ohms

*Calibrated into a 50K ohm load, operable into a 5000 ohm load or greater.
**Zero output factory set to within ±50mV (±25 mV for optional accuracies).
**Span (Full Scale) output factory set to within ±50mV. (±25 mV for optional accuracies).

Electrical Data (Current)

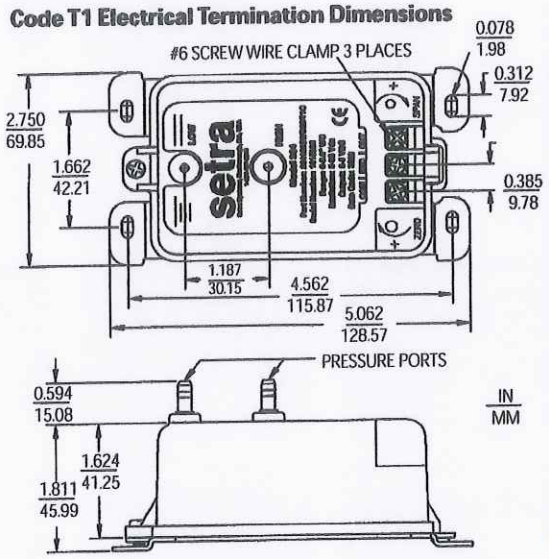
Circuit	2-Wire
Output*	4 to 20mA**
Bidirectional output at zero pressure:	12mA**
External Load	0 to 800 ohms

Minimum supply voltage (VDC) = 9+ 0.02 x (Resistance of receiver plus line).
Maximum supply voltage (VDC) = 30+ 0.004 x (Resistance of receiver plus line).

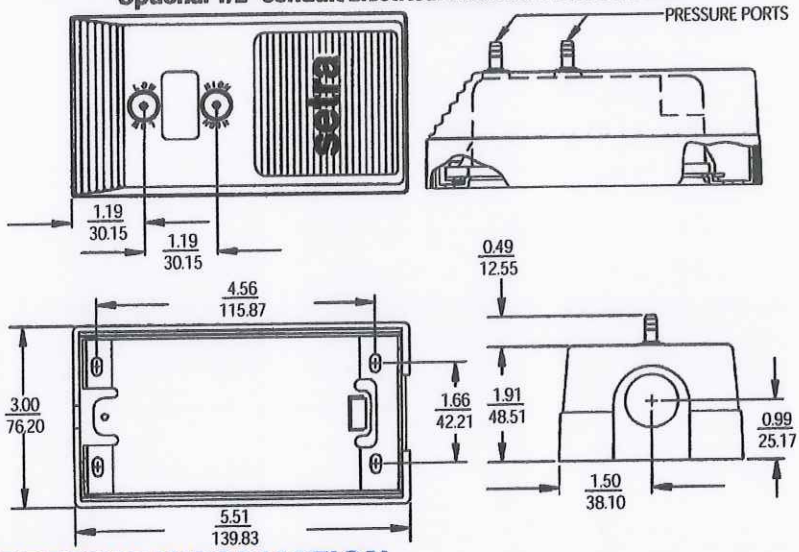
*Calibrated at factory with a 24 VDC loop supply voltage and a 250 ohm load.
**Zero output factory set to within ±0.16mA (±0.08 mA for optional accuracies).
**Span (Full Scale) output factory set to within ±0.16mA (±0.08 mA for optional accuracies).

Outline Drawings

Code T1 Electrical Termination Dimensions



Optional 1/2" Conduit Electrical Enclosure Dimensions



SSP264 Rev.D 04/19/01

ORDERING INFORMATION

Code all blocks in table.

Example: Part No. 26412R5WD11T1C for a 264 Transducer 0 to 2.5 in.WC Range, 4 to 20 mA Output, Terminal Strip Electrical Connection, and ±1% Accuracy.

2 6 4 1 — [ ][ ][ ][ ][ ] — [ ][ ] — [ ][ ] — [ ]

Model
2641 = 264

Ranges

Differential		Bidirectional	
0R1WD	= 0 to 0.1 in.WC	R05WB	= ±0.05 in.WC
R25WD	= 0 to 0.25 in.WC	0R1WB	= ±0.1 in.WC
0R5WD	= 0 to 0.5 in.WC	R25WB	= ±0.25 in.WC
001WD	= 0 to 1 in.WC	0R5WB	= ±0.5 in.WC
2R5WD	= 0 to 2.5 in.WC	001WB	= ±1 in.WC
003WD	= 0 to 3 in.WC	1R5WB	= ±1.5 in.WC
005WD	= 0 to 5 in.WC	2R5WB	= ±2.5 in.WC
010WD	= 0 to 10 in.WC	005WB	= ±5 in.WC
015WD	= 0 to 15 in.WC	7R5WB	= ±7.5 in.WC
025WD	= 0 to 25 in.WC	010WB	= ±10 in.WC
050WD	= 0 to 50 in.WC	025WB	= ±25 in.WC
100WD	= 0 to 100 in.WC	050WB	= ±50 in.WC

Output
11 = 4-20 mA
2D = 0 to 5 VDC

Elec. Termination
Standard
T1 = Terminal Strip
Optional
A1 = 1/2" Conduit Enclosure

Accuracy
Standard
C = ±1% FS
Optional (w/Cal. Cert.)
E = ±0.4% FS
F = ±0.25% FS
G = ±1% FS

Please contact factory for versions not shown.

159 Swanson Road, Boxborough, MA 01719/Tel: 978-263-1400;
Toll Free: 800-257-3872; Fax: 978-264-0292; email: sales@setra.com

DATUM 2000™

Manometer w/Transducer Installed

The *DATUM 2000™* Manometer is a complete system with built-in pressure or vacuum transducer. A wide selection of standard pressure ranges is available for gauge, absolute, differential and vacuum measurements from ±0.25 inches WC to 1000 psi.

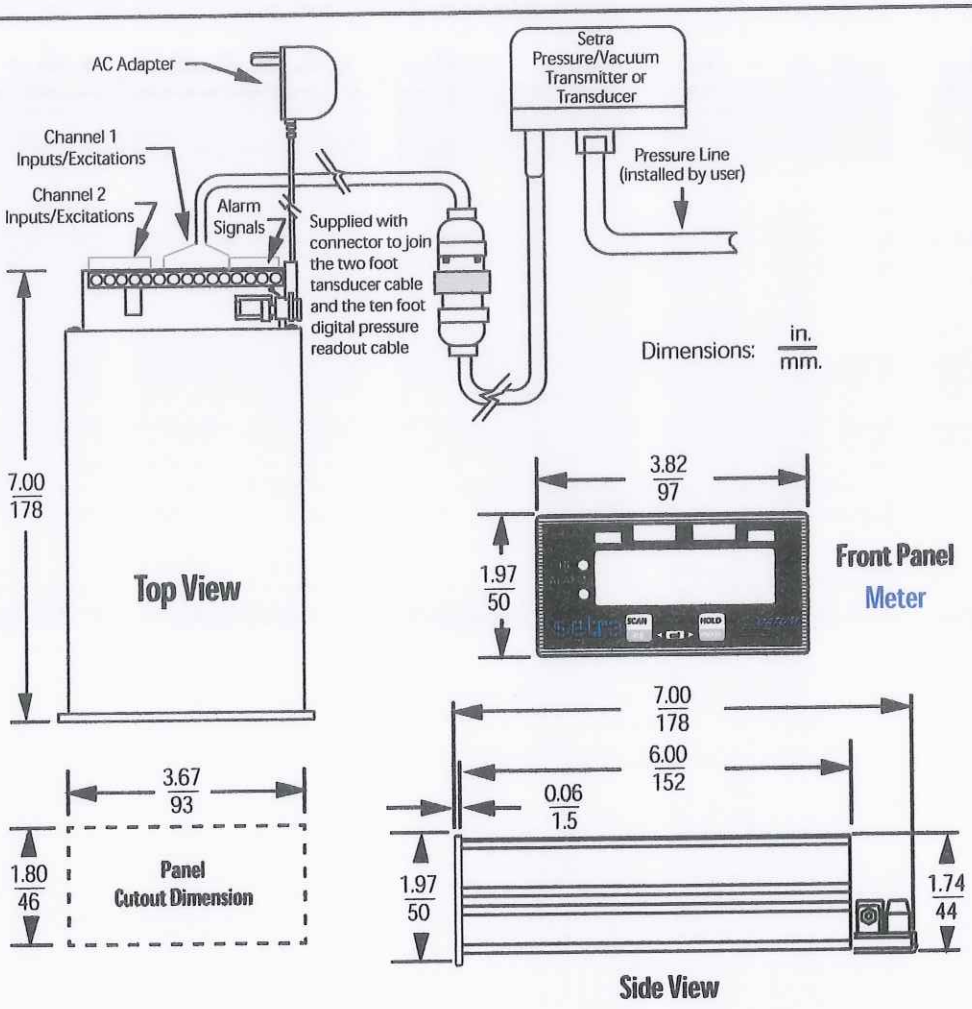
The transducer installed in the Manometer operates on channel one of the two channel meter. Channel two is available for any other voltage or current input from another remote instrument.

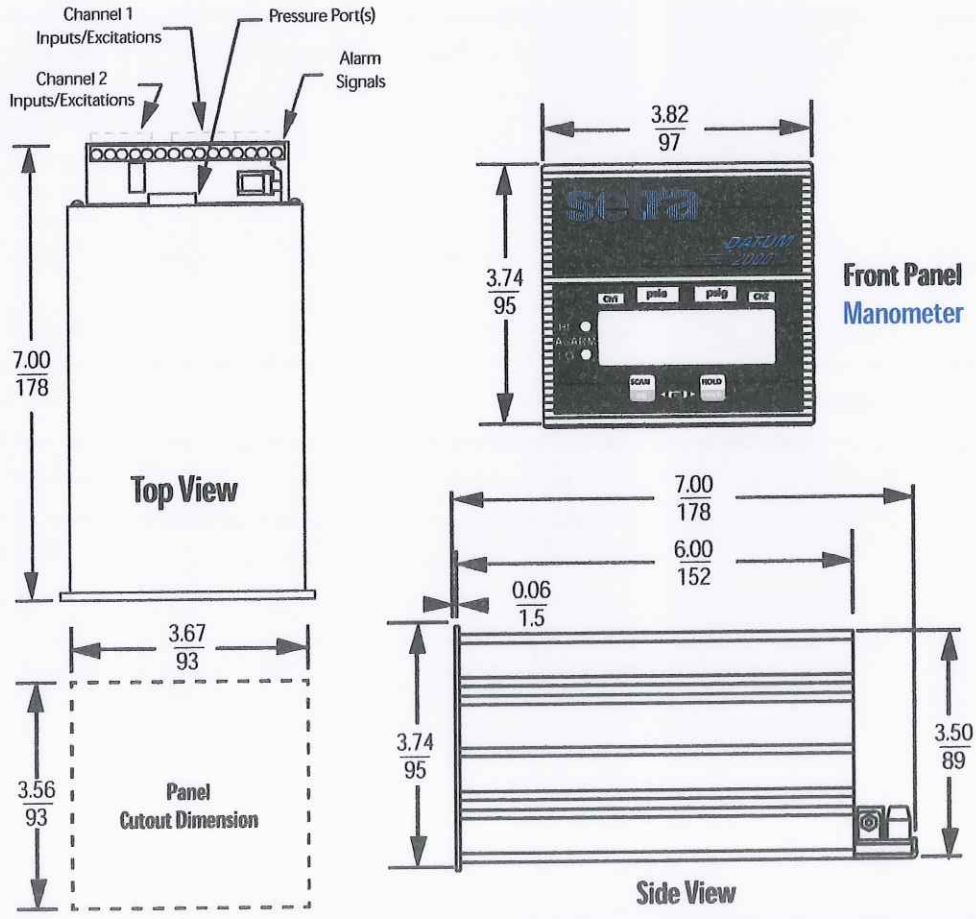
Setra pressure transducer Models 204, 204D, 239 and 270 are available for installation in the 1/4 DIN Datum Manometer.

DATUM 2000™ Manometer Transducer Specifications

	w/Models 204/204D	w/Model 239	w/Model 270
Type of Pressure Measurement	Gauge Absolute Vacuum Differential	Differential Gauge	Gauge Absolute Barometric
Standard Ranges	0 to 25, 50, 100, 250, 500,1000 psig 0 to 25, 50, 100, 250, 500, 1000 psia 0 to 25, 50, 100 psid 0 to 14.7 psiv 0 to ±10, ±25, ±50, ±100 psid	0 to 0.5, 1.0, 2.5, 5, 15, 30 inch WC 0 to ±0.25, ±.5, ±1.0, ±2.5, ±7.5, ±15 inch WC 0 to 5, 10 psid 0 to ±2.5, ±5 psid	0 to 5, 10, 20, 50, 100 psig 0 to 10, 20, 50, 100 psia 600-1100 millibar 800-1100 millibar
System Accuracy (RSS)	±0.11% FS ± 2 digits ±0.22% FS ± 2 digits* * For ±100, ±250, ±500 PSID Ranges	±0.14% FS ± 2 digits	±0.05% FS ± 2 digits
Thermal Effects			
%FS +60° to +95°F			
Thermal Zero Shift	0.14 max. ± 4 digits	0.35 max. ± 4 digits	0.07 max. ± 4 digits
Thermal Span Shift	0.11 max. ± 4 digits	0.35 max. ± 4 digits	0.04 max. ± 4 digits
Pressure Fittings			
Positive	1/4"-18 NPT internal	1/8"-27 NPT internal	1/8"-27 NPT internal
Reference	1/8"-27 NPT internal	1/8"-27 NPT internal	N/A
Pressure Media			
Positive	Gas compatible with 17-4 PH stainless steel.** **Note: Hydrogen not recommended for use with 17-4 PH stainless steel.	Gases compatible with stainless steel, hard anodized 6061 aluminum, Buna N O-ring.	Non-condensing air or gas compatible with aluminum, alumina, ceramics, gold, fluorocarbon elastomer sealant and Buna-N O-Ring.
Reference	Clean dry air or other gases. (Non-corrosive, non-condensable.)	Clean dry air or other gases. (Non-corrosive, non-condensable.)	N/A
Analog Output	Normally 0 to 5 VDC for unidirectional pressure or vacuum ranges. 0 to ±2.5 VDC for bidirectional ranges.	Normally 0 to 5 VDC for unidirectional pressure. 0 to ±2.5 VDC for bidirectional ranges.	0 to 5 VDC for gauge and absolute ranges.

setra





Ordering Instructions

DATUM 2000™ Meter only

Order as DATUM 2000-1 meter for 115 VAC converter or DATUM 2000-2 for 220 VAC converter with European 2-prong turret.

DATUM 2001 Meter with One Transducer or Transmitter Set-up

To order factory set-up with one transducer or transmitter and 10ft. cable/connector assembly, specify option 2001-1 for 115 VAC converter or 2001-2 for 220 VAC European converter. Transducer or transmitter ordered and priced separately.

DATUM 2002 Meter with Two Transducers or Transmitters Set-up

For two factory setups and cable assemblies with two transducers or transmitters, specify option 2002-1 for 115 VAC or 2002-2 for 220 VAC European converter.
Transducers or transmitters ordered and priced separately.

DATUM Manometer with Transducer Installed

To order a manometer with a Model 204 pressure transducer, order part #2204; with a Model 239, order part #2239; with a Model 270, order part #2270. Specify pressure range.

Options:

602:	1-5 VDC Output (2204, 2239 only)
603:	1-6 VDC Output (2204, 2239 only)
607:	0-5 VDC Output (2239 bidirectional only)
653:	220 VAC converter (Manometer only)
654:	RS-232 Output
811-825:	11-25 ft. of cable*

*Consult factory for lengths above 25 ft. of cable.

Specifications subject to change without notice.

setra
159 Swanson Road
Boxborough, Massachusetts 01719
Telephone: 978-263-1400 • Fax: 978-264-0292
800-257-3872

RKI INSTRUMENTS

ONE TO SIX GAS PORTABLE MONITOR

Gas Detection For Life

EAGLE™ Model

Features

- Simultaneous detection of up to 6 different gases
- Over 250 gas monitoring configurations
- Wide range of toxic gases
- PPM / LEL hydrocarbon detection
- Powerful long-life pump up to 125' range with filters
- Low flow pump shut off and alarm
- Methane elimination switch for environmental use
- Security "Adjustment Lockout Switch"
- Up to 30 hours of continuous operation
- Alkaline or Ni-Cad capability
- IR Sensors available for 50% CO_2, 100% LEL CH_4, and 100% volume CH_4
- Transformer testing version available
- Datalogging option
- Autocalibration
- Dual hydrophobic filters (most versions)
- Ergonomic RFI / EMI / chemical / weather resistant enclosure
- Intrinsically safe design, CSA (C / US) & UL Classified (most versions)

RKI is proud to offer the most versatile portable gas detector on the market. Equipped with features that are not available on most competitive units, the EAGLE is a powerful instrument that does more than offer standard confined space protection. Detection combinations never before offered in a portable gas monitor are now available featuring the industry's widest selection of high quality, long life and field proven sensors.

The EAGLE features include PPM or LEL hydrocarbon detection at the push of a button, infrared sensors for CO2 and combustible monitoring including 100%volume methane, a methane elimination switch for environmental applications, a long list of super toxic gases and measurable ranges, and dual hydrophobic filters to increase its water resistant performance. For quick response and recovery from distant sampling locations, the EAGLE has a strong internal pump with a low flow auto shut off and alarm, which can draw samples up to 125 feet even with the dual hydrophobic filters in place. The EAGLE will continuously operate for over 30 hours on alkaline batteries or 18 hours on Ni-Cads. A variety of accessories are also available to help satisfy almost any application such as long sample hoses, special float probes for tank testing, datalogging, continuous operation adapters, remote alarms and strobes, and dilution fittings just to name a few.

With its ergonomic design and large glove friendly buttons, the EAGLE offers easy access to controls such as autocalibration, alarm silence, demand zero, peak hold and a wide variety of other features. Each channel has two alarm levels plus TWA and STEL alarms for toxic channels. The two alarm levels are user adjustable and can be latching or self resetting. Rugged, reliable, easy to operate and maintain, the EAGLE is the solution for just about any portable gas monitoring situation.

RKI Instruments, Inc • 33248 Central Ave. Union City, CA • Phone (800) 754-5165 • (510) 441-5656 • Fax (510) 441-5650

EAGLE™ Model

Enclosure	Weather resistant, chemical resistant, RFI / EMI coated high impact polycarbonate-polyester blend. Can operate in rain or set into 2.5" of water without damage. Ergonomically balanced with rugged top mounted handle.
Dimensions	10.5" L x 5.9" W x 7" H
Weight	5 lbs
Detection Principle	Catalytic combustion, electrochemical cell, galvanic cell, and infrared.
Sensor Life	2 years under normal conditions.
Sampling Method	Powerful, long-life pump (over 6,000 hours) can draw samples over 125 feet. Flow rate approximately 2.0 SCFH.
Display	4 x 20 LCD readout. Viewed through window in case top. Displays readings & status of all channels simultaneously. Backlight, automatic for alarms and by demand with adjustable time.
Alarms	2 alarms per channel plus TWA and STEL alarms for toxics. The two alarms are fully adjustable for levels, latching or self reset and silenceable.
Alarm Method	Buzzer 85 dB at 30 cm, dual high intensity LEDs, and flashing display.
Controls	6 external glove friendly push buttons for operation, demand zero, and autocalibration. Buttons also access LEL / ppm, alarm silence, peak hold, TWA / STEL values, battery status and many other features.
Continuous Operation	30 hours minimum using alkaline batteries, or 18 hours using Ni-Cads.
Power Source	4 alkaline or Ni-Cad, size D batteries. Charger has alkaline recognition to prevent battery damage if charging is attempted with alkalines.
Operating Temp. & Humidity	-10°C to 40°C (14°F to 104°F), 0 to 95% RH, non-condensing.
Indication Accuracy	Maximum variance +/- 5% of full scale.
Response Time	30 seconds to 90% (for most gases) using standard 5 ft hose.
Safety Rating	Intrinsically Safe, Class I, Division 1, Groups A, B, C and D. CSA (C / US) & UL Classified (most versions).
Standard Accessories	Shoulder strap, alkaline batteries, hydrophobic probe and 5 foot hose, Internal hydrophobic filter (most versions) (certain toxic versions equipped with special probe, inlet fitting and 3' teflon hose. For HF and O3 versions, 3' teflon hose used without probe).
Optional Accessories	• Datalogging of up to 4 gases (No datalogging possible on 5 or 6 gas versions or versions with more than 2 toxic sensors) • Remote alarms • Dilution fitting (50/50) • Ni-Cad batteries • Battery charger, 115 VAC, 220 VAC, or 12 VDC • Continous operation adapter, 115 VAC or 12 VDC • Extra loud buzzer • Extension probes • Large internal hydrophobic filter
Warranty	One year material and workmanship

Specifications subject to change without notice.

Gases & Detectable Ranges	
Standard Confined Space Gases	
Hydrocarbons (CH_4, std)	0 - 100% LEL 0 - 50,000 ppm
Oxygen (O_2)	0 - 40% Vol.
Carbon Monoxide (CO)	0 - 500 ppm
Hydrogen Sulfide (H_2S)	0 - 100 ppm
Super Toxics and Other Gases	
Ammonia (NH_3)	0 - 75 ppm
Arsine (AsH_3)	0 - 1 ppm 0 - 200 ppb
Carbon Dioxide (CO_2) (I R Sensor)	0 - 5,000 ppm 0 - 10,000 ppm 0 - 5% Vol. 0 - 20% Vol. 0 - 60% Vol.
Chlorine (Cl_2)	0 - 3 ppm
Chlorine Dioxide (ClO_2)	0 - 1 ppm
Fluorine (F_2)	0 - 5 ppm
Hydrogen Fluoride (HF)	0 - 9 ppm
Hydrogen Chloride (HCl)	0 - 15 ppm
Hydrogen Cyanide (HCN)	0 - 30 ppm
Hydrogen Sulfide (H_2S)	0 - 1 ppm 0 - 30 ppm
Methane (CH_4) (IR Sensor)	0 - 100% LEL 0 - 100% Vol.
Isobutane (C_4H_{10}) (IR Sensor)	0 - 100% LEL 0 - 30% Vol.
Nitrogen Dioxide (NO_2)	0 - 15 ppm
Nitric Oxide (NO)	0 - 100 ppm
Ozone (O_3)	0 - 1 ppm
Phosphine (PH_3)	0 - 1 ppm
Silane (SiH_4)	0 - 15 ppm
Sulfur Dioxide (SO_2)	0 - 10 ppm 0 - 15 ppm

The EAGLE can be configured with up to 6 gas sensors including a maximum of 2 super toxics from the above list.

Special Features

- Low flow alarm shuts pump off to avoid damage to instrument.
- Hydrophobic filter disc in probe.
- Internal hydrophobic filter (most versions).
- Single gas calibration capability.
- Methane elimination switch for environmental applications.
- Security "Adjustment Lockout Switch".
- Confirmation beep (silenceable).
- Meets EPA Method 21 protocol for fugitive emissions testing (most applications).

RKI INSTRUMENTS

A9812 UL REGISTERED FIRM ISO 9001:2000

33248 Central Ave. Union City, CA 94587
Toll Free: (800) 754-5165 • Phone: (510) 441-5656 • Fax: (510) 441-5650
mail4rki@rkiinstruments.com • *www.rkiinstruments.com*

Authorized Distributor:

Specialty Gases
Division

Welders Supply Co. P. O. Box 21007 Louisville, Ky. 40221 (502) 635-7531

Certification of Cylinder Content

Thursday, January 27, 2011

Mix Type:	Primary Standard
Analytic Accuracy:	± 2%
Serial Number:	LL-24367
Cylinder CGA:	350
Approx. PSI:	105
Test Date:	110127
Expiration Date:	27-Jan-14

Analytic Method(s): Gas Chromatography

Cylinder Contents:

Requested	Gas	Actual
bal	Nitrogen	Balance
85 %	Propane	84.44 %

Frank Fogarty
Specialty Gas Lab Manger

30543/29192

Specialty Gases
Division

Welders Supply Co. P. O. Box 21007 Louisville, Ky. 40221 (502) 635-7531

Certification of Cylinder Content

Thursday, January 27, 2011

Mix Type:	Primary Standard
Analytic Accuracy:	± 2%
Serial Number:	LL-36180
Cylinder CGA:	350
Approx. PSI:	160
Test Date:	110127
Expiration Date:	27-Jan-14

Analytic Method(s): Gas Chromatography

Cylinder Contents:

Requested	Gas	Actual
bal	Nitrogen	Balance
50 %	Propane	50.36 %

Frank Fogarty
Specialty Gas Lab Manger

Specialty Gases
Division

Welders Supply Co. P. O. Box 21007 Louisville, Ky. 40221-0007 (502) 635-7531

Certification of Cylinder Content

Monday, October 20, 2008

Mix Type:	Primary Standard
Analytic Accuracy:	± 2%
Serial Number:	LL-36171
Cylinder CGA:	350
Approx. PSI:	2000
Test Date:	081020
Expiration Date:	20-Oct-11
Analytic Method(s):	Gravimetric Gas Chromatography

Cylinder Contents:

Requested	Gas	Actual
25 %	Propane	24.946 %
bal	Nitrogen	Balance

Frank Fogarty
Specialty Gas Lab Manger

27451/5283

Fed. I.D. No. 31-0551082 • D-U-N-S 00-700-7420 • FAX (502) 637-1033

(M) 1-25-11

LIQUID TECHNOLOGY CORPORATION

"INDUSTRY LEADER IN SPECIALTY GASES"

Certificate of Analysis
- EPA PROTOCOL GAS -

Customer:	Welders Supply Company (Louisville, KY)
Date:	May 24, 2010
Delivery Receipt:	DR-29400
Product:	4.50% Propane/Nitrogen - EPA PROTOCOL
Final Analysis Date:	May 17, 2010
Expiration Date:	May 17, 2013 **DO NOT USE BELOW 150 PSIG**

Cylinder Data

Cylinder Serial Number:	FF-29457	Cylinder Outlet:	CGA 350
Cylinder Volume:	30 Cubic Feet	Cylinder Pressure:	2000 psig, 70°F
Expiration Date:	May 17, 2013		

Analytical Data

EPA PROTOCOL, Section No. 2.2, Procedure G-1

Replicate Concentrations

Propane: 4.63% +/- 0.046%

Nitrogen: Balance

Reference Standard(s):

SRM/GMIS:	GMIS
Cylinder Number:	CC-70316
Concentration:	3.52% Propane/Nitrogen
Expiration Date:	June 24, 2011

Certification Instrumentation

Component:	Propane
Make/Model:	Agilent 7890A
Serial Number:	CN10736166
Principal of Measurement:	GC-FID
Last Calibration:	April 26, 2010

Analytical uncertainty and NIST Traceability are in compliance with EPA-600/R-97/121.

Certified by: Mike Duncan

Mike Duncan

2564 PEMBERTON DRIVE APOPKA, FLORIDA 32703 ~ PHONE (407)-292-2990 FAX (407)-292-3313
WWW.LIQUIDTECHCORP.COM

LIQUID TECHNOLOGY CORPORATION
"INDUSTRY LEADER IN SPECIALTY GASES"

Certificate of Analysis

- EPA PROTOCOL GAS -

Customer:	Welders Supply Company (Louisville, KY)
Date:	April 25, 2011
Delivery Receipt:	DR-37004
Product:	2.50% Propane/Nitrogen - EPA PROTOCOL
Final Analysis Date:	April 12, 2011
Expiration Date:	April 12, 2014

DO NOT USE BELOW 150 PSIG

Cylinder Data

Cylinder Serial Number:	FF-24216	Cylinder Outlet:	CGA 350
Cylinder Volume:	30 Cubic Feet	Cylinder Pressure:	2000 psig, 70°F
Expiration Date:	April 12, 2014		

Analytical Data

EPA PROTOCOL, Section No. 2.2, Procedure G-1

Replicate Concentrations

Propane: 2.54% +/- 0.025%

Nitrogen: Balance

Reference Standard(s):

SRM/GMIS:	GMIS
Cylinder Number:	CC-116013
Concentration:	2.465% Propane/Nitrogen
Expiration Date:	05/17/12

Certification Instrumentation

Component:	Propane
Make/Model:	Agilent 7890A
Serial Number:	CN10736166
Principal of Measurement:	GC-FID
Last Calibration:	April 01, 2011

Analytical uncertainty and NIST Traceability are in compliance with EPA-600/R-97/121.

Certified by: *Adam Strickland*

2048 APEX COURT APOPKA, FLORIDA 32703 ~ PHONE (407)-292-2990 FAX (407)-292-3313
WWW.LIQUIDTECHCORP.COM

LIQUID TECHNOLOGY CORPORATION
"INDUSTRY LEADER IN SPECIALTY GASES"

Certificate of Analysis

- EPA PROTOCOL GAS -

Customer	Welders Supply Co (Louisville, KY)
Date	March 14, 2011
Delivery Receipt	DR-36591
Gas Standard	1.50% Propane/Nitrogen - EPA PROTOCOL
Final Analysis Date	March 04, 2011
Expiration Date	March 04, 2014

Component	Propane
Balance Gas	Nitrogen

Analytical Data: **DO NOT USE BELOW 150 psig**

EPA Protocol, Section No. 2.2, Procedure G-1

Reported Concentrations

Propane: 1.59% +/- 0.01%

Nitrogen: Balance

Reference Standards:

SRM/GMIS:	GMIS	GMIS
Cylinder Number:	CC-166394	CC-116013
Concentration:	9709.18 ppm Propane/Nitrogen	2.465% Propane/Nitrogen
Expiration Date:	07/21/11	05/07/12

Certification Instrumentation

Component:	Propane
Make/Model:	Agilent 7890A
Serial Number:	CN10736166
Principal of Measurement:	GC-FID
Last Calibration:	March 03, 2011

Cylinder Data

Cylinder Serial Number:	FF-34583	Cylinder Outlet:	CGA 350
Cylinder Volume:	29 Cubic Feet	Cylinder Pressure:	1950 psig, 70°F
Expiration Date:	March 14, 2014		

Analytical Uncertainty and NIST Traceability are in compliance with EPA-600/R-97/121.

Certified by:

Adam Strickland

"UNMATCHED EXCELLENCE"

2048 APEX COURT APOPKA, FLORIDA 32703 ~ PHONE (407)-292-2990 FAX (407)-292-3313
WWW.LIQUIDTECHCORP.COM

APPENDIX C

COMPUTER PRINTOUT, VOC ANALYZER STRIP CHARTS

Jordan Technologies, Inc.
2820 South English Station Road
Louisville, Kentucky 40299
Phone: (502) 267-8344
Fax: (502) 267-8379

Vapor Recovery Unit Performance Test

Test For:	Chevron Products Port Everglades, Florida
Unit Tested:	Zink VRU
Test Date:	July 14, 2011
Test Personnel:	Tony Fenton
Strip Cart Speed:	150

All data fields are rounded two (2) places following the decimal for display purposes. Internal to the program all data fields are eight (8) digits following the decimal. This will create differences when recalculating the data by hand.

OUTLET CALIBRATION GAS INFORMATION

Outlet analyzer range is 0 - 5%

Allowable range is + or - 5% of actual span gas concentration

Low range span gas concentration	1.59 %	Cylinder	FF34583
Mid range span gas concentration	2.54 %	Cylinder	FF24216
Hi range span gas concentration	4.63 %	Cylinder	FF29547
Zero span analyzer reading	0.00 %		
Low range analyzer reading	1.62 %		
Low range analyzer error	1.89 %		
Mid range analyzer reading	2.52 %		
Mid range analyzer error	-0.79 %		
Hi range analyzer reading	4.61 %		
Hi range analyzer error	-0.43 %		

****

INLET CALIBRATION GAS INFORMATION

Intlet analyzer range is 0 - 100%

Allowable range is + or - 5% of actual span gas concentration

Low range span gas concentration	24.946 %	Cylinder	LL36171
Mid range span gas concentration	50.36 %	Cylinder	LL36180
Hi range span gas concentration	84.44 %	Cylinder	LL24367
Zero span analyzer reading	0.00 %		
Low range analyzer reading	25.3 %		
Low range analyzer error	1.42 %		
Mid range analyzer reading	50 %		
Mid range analyzer error	-0.71 %		
Hi range analyzer reading	84.6 %		
Hi range analyzer error	0.19 %		

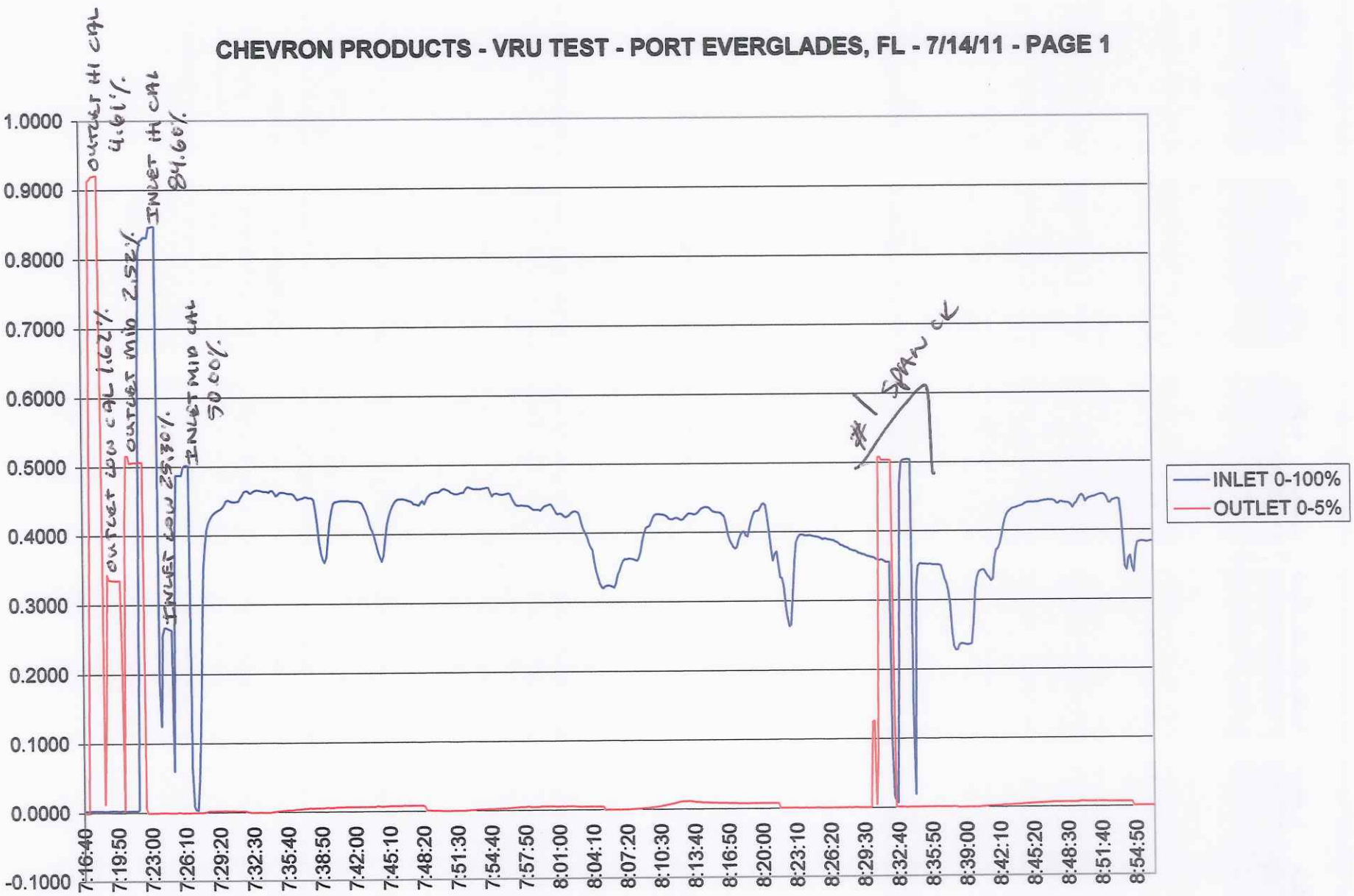
Time	Baro (mm Hg)	Flow P (mm Hg)	Atm T (Deg C)	Exh. T (Deg C)	HCin (Vol %)	HCout (Vol %)	VE (m3)	VES (m3)	ME (mg)
7:35:00	759.70	0.14	27.97	27.93	45.70	0.00	23.67	23.04	1687
7:40:00	759.70	0.00	28.05	28.18	43.50	0.02	16.23	15.78	5255
7:45:00	759.60	0.00	28.20	27.97	42.60	0.03	6.63	6.45	3563
7:50:00	759.70	0.12	28.27	27.95	44.10	0.03	17.13	16.68	8636
7:55:00	759.60	0.01	28.36	28.47	46.20	0.00	19.79	19.23	950
8:00:00	759.60	0.00	28.49	28.48	44.50	0.02	15.91	15.46	4753
8:05:00	759.70	0.00	28.61	28.53	41.40	0.02	11.81	11.47	4198
8:10:00	759.70	0.07	28.79	28.97	35.20	0.00	21.66	21.01	1269
8:15:00	759.80	0.00	28.92	28.98	42.30	0.04	20.98	20.35	14601
8:20:00	759.80	0.00	29.00	29.00	40.90	0.04	10.28	9.97	7298
8:25:00	759.90	0.09	29.18	29.33	36.40	0.01	17.98	17.43	4401
8:30:00	759.90	0.00	29.36	29.08	38.10	0.00	0.99	0.96	0
8:30:00	Outlet Zero Check: Reading was 0%, which is in the acceptable range (-0.15% - 0.15%)								
8:32:00	Inlet Zero Check: Reading was 0.4%, which is in the acceptable range (-3% - 3%)								
8:32:00	Outlet Mid Span Check: Reading was 2.52%, which is in the acceptable range (2.37% - 2.67%)								
8:33:00	Inlet Mid Span Check: Reading was 50.1%, which is in the acceptable range (47% - 53%)								
8:35:00	760.00	0.00	29.52	28.31	29.80	0.66	0.62	0.61	7271
8:40:00	760.00	0.08	29.38	28.77	29.70	0.00	14.64	14.22	0
8:45:00	760.10	0.00	29.66	30.10	37.70	0.01	12.94	12.51	2175
8:50:00	760.10	0.00	29.92	29.98	44.00	0.03	8.58	8.30	4328
8:55:00	760.10	0.08	30.23	30.18	42.30	0.03	11.75	11.36	6008
9:00:00	760.20	0.08	30.47	31.52	37.70	0.00	18.38	17.69	0
9:05:00	760.20	0.00	30.51	31.57	43.10	0.01	13.96	13.43	1573
9:10:00	760.30	0.32	30.34	31.96	32.90	0.02	34.32	33.00	10327
9:15:00	760.20	0.23	30.69	32.26	39.00	0.01	24.24	23.28	2386
9:20:00	760.20	0.00	30.89	31.67	37.90	0.01	1.05	1.01	184
9:25:00	760.10	0.00	30.90	30.82	36.00	0.01	1.36	1.31	240
9:28:00	Outlet Zero Check: Reading was 0%, which is in the acceptable range (-0.15% - 0.15%)								
9:29:00	Outlet Mid Span Check: Reading was 2.52%, which is in the acceptable range (2.37% - 2.67%)								
9:30:00	760.10	0.13	31.21	31.65	28.50	0.01	19.79	19.04	4042
9:30:00	Inlet Zero Check: Reading was 0.4%, which is in the acceptable range (-3% - 3%)								
9:31:00	Inlet Mid Span Check: Reading was 50.2%, which is in the acceptable range (47% - 53%)								
9:35:00	760.20	0.00	30.92	32.93	41.20	0.00	13.45	12.89	731
9:40:00	760.20	0.00	31.07	32.56	42.70	0.01	3.00	2.88	543
9:45:00	760.20	0.17	31.65	32.83	22.40	0.02	15.72	15.06	4245
9:50:00	760.10	0.00	31.74	34.08	18.10	0.00	16.62	15.86	755
9:55:00	760.20	0.00	31.78	33.25	11.30	0.02	9.63	9.21	2546
10:00:00	760.20	0.04	31.75	34.16	4.20	0.03	25.34	24.18	12082
10:05:00	760.20	0.16	32.01	34.77	8.70	0.00	17.87	17.02	872
10:10:00	760.20	0.00	31.63	33.57	19.60	0.00	1.44	1.38	0
10:15:00	760.20	0.04	32.26	34.40	31.90	0.00	24.10	22.98	1808
10:20:00	760.20	0.32	32.43	35.60	32.80	0.00	31.18	29.62	2277
10:25:00	760.20	0.01	32.88	36.14	24.60	0.01	15.35	14.55	2050
10:29:00	Outlet Zero Check: Reading was 0%, which is in the acceptable range (-0.15% - 0.15%)								
10:30:00	760.20	0.75	32.35	35.58	15.20	0.02	51.08	48.57	14220
10:30:00	Inlet Zero Check: Reading was 0.3%, which is in the acceptable range (-3% - 3%)								
10:30:00	Outlet Mid Span Check: Reading was 2.52%, which is in the acceptable range (2.37% - 2.67%)								
10:31:00	Inlet Mid Span Check: Reading was 50.1%, which is in the acceptable range (47% - 53%)								
10:35:00	760.20	0.12	31.63	34.82	13.60	0.03	13.88	13.21	6238
10:40:00	760.20	0.00	33.06	35.76	29.30	0.00	6.34	6.02	0
10:45:00	760.20	0.00	33.08	35.52	38.60	0.00	15.66	14.88	327
10:50:00	760.20	0.01	33.01	35.56	41.70	0.01	11.02	10.46	1915
10:55:00	760.10	0.84	34.09	37.31	35.50	0.01	49.16	46.47	7995

11:00:00	760.10	0.00	34.19	36.97	35.20	0.03	7.99	7.55	3758
11:05:00	760.10	0.00	33.32	35.86	37.60	0.03	7.14	6.77	3878
11:10:00	760.10	0.09	35.63	37.17	44.10	0.01	27.18	25.69	6769
11:15:00	760.10	0.00	35.56	38.07	44.70	0.01	16.54	15.58	2509
11:20:00	760.00	0.00	36.28	36.61	44.20	0.01	1.05	0.99	181
11:25:00	760.00	0.06	37.48	36.47	30.60	0.01	13.88	13.14	1611
11:27:00	Outlet Zero Check: Reading was 0%, which is in the acceptable range (-0.15% - 0.15%)								
11:28:00	Inlet Zero Check: Reading was 0.5%, which is in the acceptable range (-3% - 3%)								
11:28:00	Outlet Mid Span Check: Reading was 2.52%, which is in the acceptable range (2.37% - 2.67%)								
11:29:00	Inlet Mid Span Check: Reading was 50.3%, which is in the acceptable range (47% - 53%)								
11:30:00	760.00	0.00	37.50	38.20	35.90	0.01	8.75	8.24	1116
11:35:00	760.00	0.00	36.46	37.68	34.00	0.01	11.24	10.60	2600
11:40:00	760.00	0.07	35.50	37.82	38.00	0.03	17.27	16.28	7987
11:45:00	760.00	0.02	36.79	38.38	45.50	0.00	13.22	12.44	0
11:50:00	760.00	0.00	38.34	36.66	41.30	0.00	0.20	0.19	0
11:55:00	760.00	0.00	36.60	35.97	36.00	0.00	1.81	1.72	0
12:00:00	760.00	0.06	38.08	38.10	17.50	0.00	20.10	18.94	0
12:05:00	760.00	0.00	38.25	38.22	31.60	0.00	4.93	4.64	68
12:10:00	760.00	0.02	35.03	37.95	38.40	0.02	28.32	26.68	9766
12:15:00	760.00	0.09	34.28	37.51	39.70	0.01	18.60	17.56	4723
12:20:00	760.00	0.00	38.22	39.46	45.30	0.00	12.74	11.95	0
12:25:00	760.00	0.00	34.49	38.61	38.10	0.00	14.92	14.03	360
12:29:00	Outlet Zero Check: Reading was 0%, which is in the acceptable range (-0.15% - 0.15%)								
12:30:00	759.90	0.15	33.09	37.76	5.20	0.06	24.13	22.75	24854
12:30:00	Inlet Zero Check: Reading was 0.2%, which is in the acceptable range (-3% - 3%)								
12:30:00	Outlet Mid Span Check: Reading was 2.51%, which is in the acceptable range (2.37% - 2.67%)								
12:31:00	Inlet Mid Span Check: Reading was 50.1%, which is in the acceptable range (47% - 53%)								
12:35:00	759.90	0.01	32.76	37.76	28.10	0.00	12.63	11.91	436
12:40:00	760.00	0.00	34.31	37.78	7.90	0.00	18.97	17.89	491
12:45:00	760.00	0.00	34.15	37.82	21.30	0.01	13.17	12.41	2272
12:50:00	760.00	0.12	32.63	37.30	45.30	0.00	23.93	22.60	538
12:55:00	760.00	0.00	32.89	36.55	48.00	0.00	3.74	3.54	0
13:00:00	760.00	0.00	36.42	35.77	42.70	0.00	1.10	1.05	33
13:05:00	760.00	0.05	37.02	37.09	20.80	0.00	17.78	16.80	1353
13:10:00	760.00	0.00	37.05	37.98	16.40	0.00	3.45	3.26	0
13:15:00	760.00	0.00	36.93	36.08	17.60	0.00	0.79	0.75	0
13:20:00	760.00	0.10	37.03	36.64	34.10	0.00	14.16	13.40	834
13:21:00	Outlet Mid Span Check: Reading was 2.51%, which is in the acceptable range (2.37% - 2.67%)								
13:25:00	760.00	0.00	37.14	39.77	45.10	0.00	17.67	16.55	0
13:30:00	760.00	0.00	36.63	37.88	44.30	0.00	0.57	0.53	9
13:30:00	Outlet Zero Check: Reading was 0%, which is in the acceptable range (-0.15% - 0.15%)								
13:31:00	Inlet Zero Check: Reading was 0.4%, which is in the acceptable range (-3% - 3%)								
13:32:00	Inlet Mid Span Check: Reading was 50%, which is in the acceptable range (47% - 53%)								
13:35:00									
SUMS							1043.50	995.26	229892.85
AVRGS	760.02	0.06	32.84	34.20	33.69	0.02			

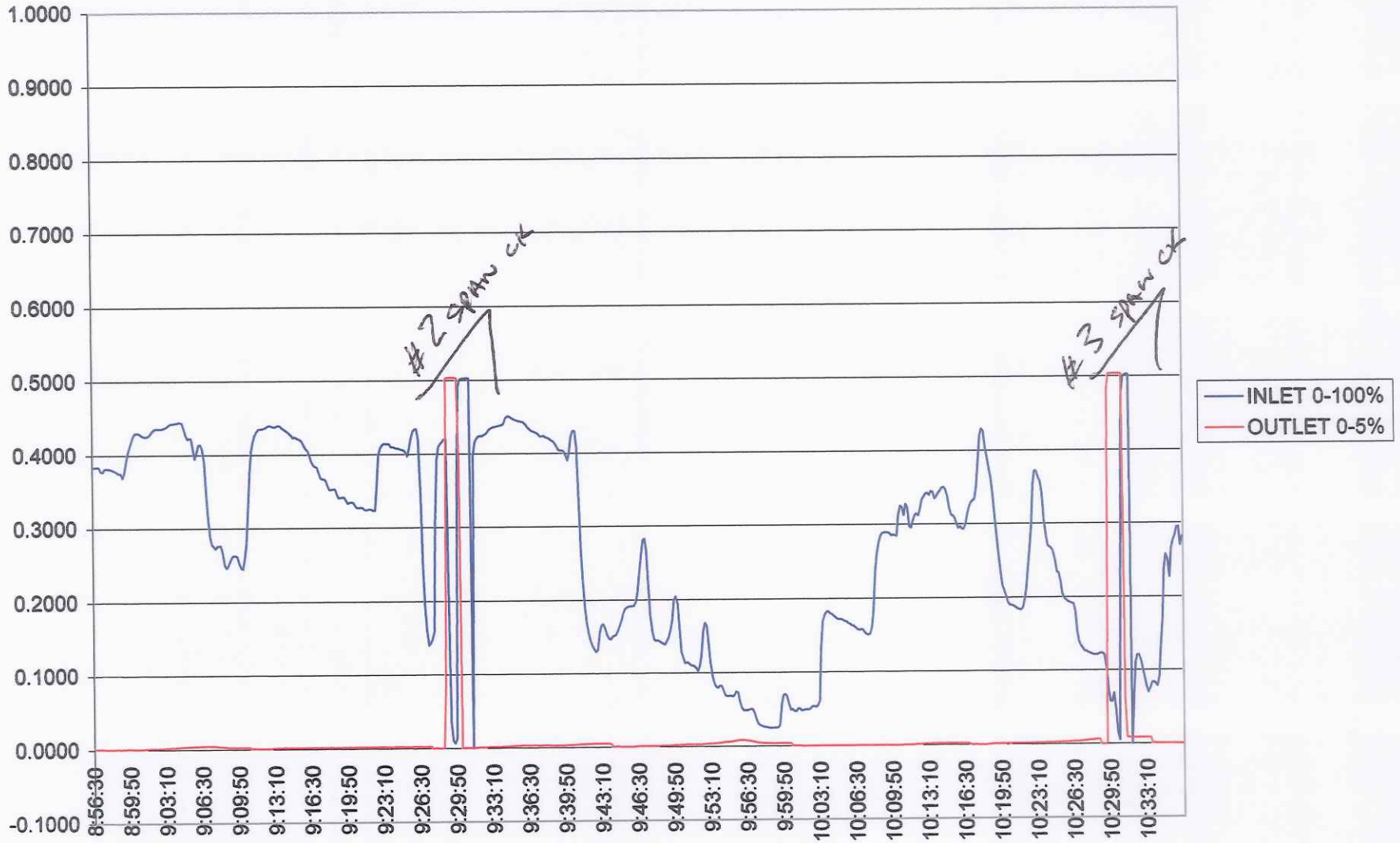
PRELIMINARY TEST RESULTS

There were 72 test intervals, 72 of which had flow

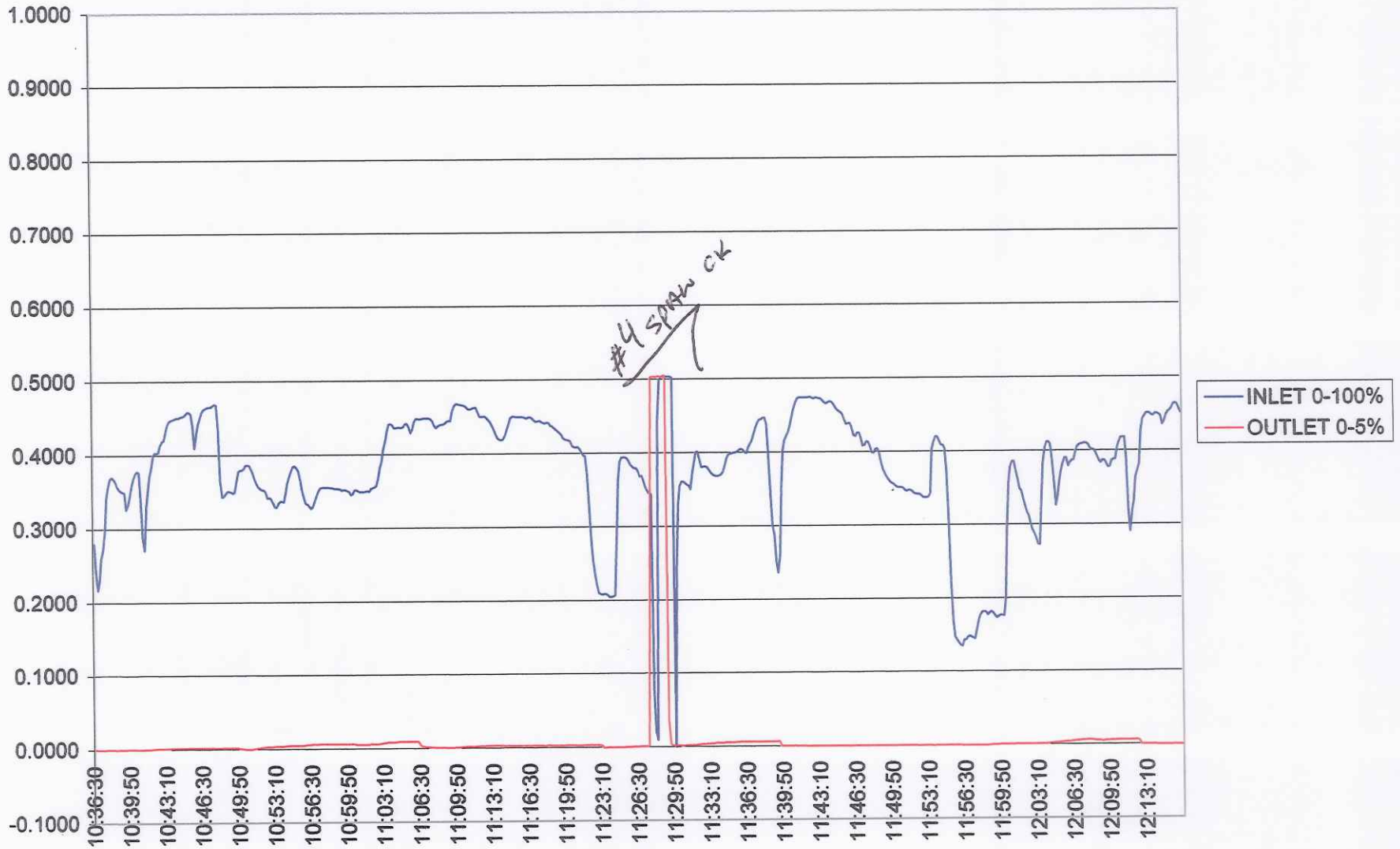
Average Barometric Pressure was	760.02 mm Hg
Average Flow Pressure was	0.06 mm Hg
Average Ambient Temerature was	32.84 Deg C
Average Inlet Concentration was	33.69 Vol. %
Average Outlet Concentration was	0.02 Vol. %
Total volume emitted was	1044 cubic meters
Total Volume Emitted standardized was	995 cubic meters
Total milligrams emitted was	229893 mg
Accountable gallons loaded was	216,100 gallons
Total gallons loaded was	267,308 gallons
Accountable liters loaded was	817,939 liters
Total Liters loaded was	1,011,761 liters
Accountable milligrams emitted per liter loaded was	0.28 mg/L
Total milligrams emitted per liter loaded was	0.23 mg/L
Unit Efficiency accountable was	99.95 %
Unit Efficiency total was	99.96 %


CHEVRON PRODUCTS - VRU TEST - PORT EVERGLADES, FL - 7/14/11 - PAGE 1
OUTLET HI CAL 4.61%
OUTLET LOW CAL 1.62%
OUTLET MID 2.52%
INLET HI CAL 84.66%
INLET LOW 25.30%
INLET MID CAL 50.00%
#1 SPAN OK
INLET 0-100%
OUTLET 0-5%
1.0000
0.9000
0.8000
0.7000
0.6000
0.5000
0.4000
0.3000
0.2000
0.1000
0.0000
-0.1000
7:16:40
7:19:50
7:23:00
7:26:10
7:29:20
7:32:30
7:35:40
7:38:50
7:42:00
7:45:10
7:48:20
7:51:30
7:54:40
7:57:50
8:01:00
8:04:10
8:07:20
8:10:30
8:13:40
8:16:50
8:20:00
8:23:10
8:26:20
8:29:30
8:32:40
8:35:50
8:39:00
8:42:10
8:45:20
8:48:30
8:51:40
8:54:50

CHEVRON PRODUCTS - VRU TEST - PORT EVERGLADES, FL - 7/14/11 - PAGE 2



CHEVRON PRODUCTS - VRU TEST - PORT EVERGLADES, FL - 7/14/11 - PAGE 3



CHEVRON PRODUCTS - VRU TEST - PORT EVERGLADES, FL - 7/14/11 - PAGE 4