STORK®
Materials Technology

AirCO/BL-0042-G/RN101619179/RP

TCEQ PERMIT NO. 5920A
AND PSD/TX-103M3 COMPLIANCE TEST
UNIT 28 SRU INCINERATOR STACK (EPN 28.2-36-2)
TCEQ ACCOUNT ID NO. BL-0042-G
REGULATED ENTITY NO. RN101619179
CUSTOMER NO. CN601674351

ConocoPhillips Company
Sweeny, Texas

December, 2010

STMC Project No. HOU002549P

This study was conducted by
Stork Testing & Metallurgical Consulting, Inc.
Houston, Texas

AIR EMISSIONS SERVICES

February 3, 2011

Failure Analysis • NDE
Metallurgical • Air Emissions

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Re: Compliance Emissions Test
TCEQ Permit No. 5920A and PSD/TX-103M3
Unit 28 SRU Incinerator Stack (EPN 28.2-36-2)
Sweeny, Texas
STMC Project No. HOU002549P

Dear Mr. O'Brien:

In accordance with your purchase order number 4513809209, Stork Testing & Metallurgical Consulting, Inc. (Stork) hereby submits our test report covering the compliance test program on the Unit 28 SRU located at your Sweeny, Texas facility. Compliance testing was performed on December 9, 2010.

This report is for the exclusive use of ConocoPhillips Company and except for submission to regulatory agencies, the use of our name relative to the report must receive our prior written approval. Copies of this report should be submitted to the appropriate regulatory agencies (TCEQ and EPA, if applicable). As per Special Condition 15.F of your permit, copies must be sent to:

- TCEQ Houston regional office
- TCEQ Office of Compliance and Enforcement, Compliance and Support Division, Austin
- TCEQ Environmental Health, Brazoria County Health Department, Angleton

It has been a pleasure working with you and your personnel once again. Please let us know if you have any questions concerning this report, or if we may be of further service.

Sincerely,

STORK TESTING & METALLURGICAL CONSULTING, INC.

Manuel Garcia /pjm

Manuel Garcia
Project Manager
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EXECUTIVE SUMMARY

A compliance air emissions test program was conducted on the Unit 28.2 Sulfur Recovery Unit (SRU) exhaust stack of the ConocoPhillips Company (ConocoPhillips) Sweeny, Texas facility located in Old Ocean, Texas. The test program was conducted by personnel of Stork Testing & Metallurgical Consulting, Inc. on December 9, 2010. The program was conducted to:

- Demonstrate compliance with the emission concentrations and emission limits contained in TCEQ Permit No. 5920A and PSD-TX-103M3 Special Condition 17 requirements to repeat testing every five (5) years. The unit was last tested in June, 2005.

The following is a summary of the results of this test program.

TCEQ Special Condition 8.B			
Pollutant	**Average Concentration**	**Allowable Limit**	**Percent of Allowable Limit**
SO_2, ppmvd @ 0% O_2	123.18	250	49.3
NOx, lb/mmBtu	0.0249	0.06	41.5
CO, ppmvd @ 0% O_2	10.98	100	11.0
H_2S, ppmvd @ 0% O_2	<0.43	10	<4.3
Note: lb/mmBtu is corrected to 0% O_2 and calculated using an F factor based on the higher heating value of the fuel. The EPA published value for natural gas was used (8,710 dscf/mmBtu).			
TCEQ MAERT			
Pollutant, lb/hr	**Average Emission, lb/hr**	**Allowable Limit, lb/hr**	**Percent of Allowable Limit**
SO_2	37.21	115.42	32.2
NOx	5.19	8.13	63.8
CO	1.45	20.20	7.2
H_2S	<0.07	2.45	<2.8
VOC	<0.026	0.93	<2.8

General

- The average sulfur production for the TCEQ compliance test was 550 long tons per day.
- The Unit 28.2 Sulfur Recovery Unit Tail Gas Incinerator stack was tested in accordance with Special Condition 17 of TCEQ Permit 5920A and PSD/TX-103M3. The unit was previously tested in June, 2005 due to an increase in sulfur production and a commencement of an O_2 enrichment process. This test conducted in December, 2010 was performed to satisfy the five year retest requirement of the unit.

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INTRODUCTION

A compliance emissions test sampling program was conducted on the Unit 28.2 sulfur recovery unit (SRU) Tail Gas Incinerator (TGI) (EPN 28.2-36-2) located at the Sweeny, Texas facility of ConocoPhillips Company (ConocoPhillips). Compliance sampling was performed by personnel of the Stork Testing & Metallurgical Consulting, Inc. (Stork). Air Emissions Services (AES) Division on December 9, 2010. Personnel present at times during the test program were Messrs. Sean O'Brien, Peter Parks, Mel Driver and staff of ConocoPhillips, Ms. Narshenna Moore of the TCEQ Region 12 and Messrs. Manuel Garcia, Vicente Gonzalez, Adam Pisio and Gus Gonzalez of Stork.

The test program was conducted to satisfy the following criteria:

- Texas Commission on Environmental Quality (TCEQ) permit compliance emissions test
  - Sampling was conducted to determine the concentration and emission rates, where applicable, of nitrogen oxides (NOx), carbon monoxide (CO), oxygen (O_2), sulfur dioxide (SO_2), hydrogen sulfide (H_2S) and volatile organic hydrocarbons (VOCs).
  - This test was required under Special Condition 17, which states testing on the SRU 28-2 must be performed every five (5) years.

Environmental Protection Agency (EPA) and TCEQ protocols were utilized during the sampling program.

RESULTS

Results of the test program, calculated in accordance with EPA and TCEQ procedures are included in the Tables section of this report, and are summarized as follows.

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Compliance Emissions Test – TCEQ Permit 5920A				
Parameter	**Average Emissions**	**TCEQ Permit Limit**	**% of Allowable**	**Permit Provision Location**
NOx	5.19 lb/hr	8.13 lb/hr	63.8%	MAERT
NOx*	0.0249 lb/mmBtu*	0.06 lb/mmBtu*	41.5%	Sp. Cn. 8.B
CO	1.45 lb/hr	20.20 lb/hr	7.2%	MAERT
CO**	10.98	100 ppmvd**	11.0%	Sp. Cn. 8.B
SO_2	37.21 lb/hr	115.42 lb/hr	32.2%	MAERT
SO_2**	123.18 ppmvd**	250 ppmvd**	49.3%	Sp. Cn. 8.B
H_2S	<0.07 lb/hr	2.45 lb/hr	<2.8%	MAERT
H_2S**	<0.43 ppmvd**	10 ppmvd**	<4.3%	Sp. Cn. 8.B
VOC	<0.026 lb/hr	0.93 lb/hr	<2.8%	MAERT

* Corrected to 0% O_2 and calculated with a F factor based on the higher heating value (HHV) of the fuel. (The EPA published value for natural gas was used).
** Corrected to 0% O_2
Note: MAERT = Maximum Allowable Emission Rate Table (TCEQ Permit).

Unit production rates and operating data is included in the Tables and Field and Laboratory Section of this report. The SRU operated at maximum achievable rates during the test program with an average sulfur production of 550 long tons per day for the TCEQ compliance test program.

PROCEDURE

Sampling equipment and procedures were in conformity, except where noted, with Reference Methods 1, 2, 3, 3A, 4, 6C, 7E, 10, 15, 19 and 25A of the Code of Federal Regulations, Title 40, Part 60 (40 CFR 60) "Standards of Performance for New Stationary Sources", Appendix A - Reference Methods and TCEQ sampling and analytical methodologies. A Compliance Sampling Plan was submitted prior to testing, a copy of which is included in the Appendix of this report. The test program was performed in accordance with this sampling plan.

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Sample and Velocity Traverses - EPA Method 1

The SRU TGI exhaust stack was 129 ½ inches in diameter at the sampling location. Two (2) four (4) inch diameter flanged sampling ports with gate valves, 90° apart were provided on the stack. Upstream distance from flow disturbance (diameter change) to sample ports (Distance A) was 0.9 stack diameters, downstream distance from flow disturbance (diameter change) to sample ports (Distance B) was 3.7 stack diameters. Therefore, a sixteen (16) point traverse for velocity sampling (eight [8] points from each port) was performed on the stack (see Figure No. 1). A check for cyclonic flow within the exhaust stack demonstrated that the flow was parallel to the stack wall (therefore noncyclonic).

Determination of Stack Gas Velocity and Volumetric Flow Rate - EPA Method 2

Stack gas velocity was measured with an "S" type pitot tube constructed in accordance with "proper pitot tube sampling nozzle configuration", as specified in the Environmental Protection Agency, "Standards of Performance for New Stationary Sources - Revision to Reference Method 1-8 (FR Thursday August 18, 1977, Part II)." Pitot tube correction coefficients were determined either by calibration in a wind tunnel or by following the construction guidelines contained in the method. Temperature measurements were determined by means of a calibrated digital thermometer with a Type "K" thermocouple. Flue gas flow rate data were obtained with each TCEQ compliance test run.

Gas Analysis and Molecular Weight Determination - EPA Method 3

Stack gas samples were taken throughout the emission test period and analyzed for CO_2 content by a Fyrite combustion gas analyzer. The CO_2 Fyrite data was used solely in the molecular weight of the flue gas calculations, which were used in the exhaust rate determinations. O_2 was continuously analyzed during

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each test period by an instrumental analyzer. This procedure is described in more detail in a following section. Following the determination of CO_2 and O_2, the balance of the gas was assumed to be nitrogen.

Determination of Moisture Content in Stack Gases - EPA Method 4

Moisture content of the stack gas was determined by volumetric and gravimetric analysis of the impinger catch from each moisture sample run. A sixty (60) minute sample was obtained with each TCEQ compliance sample run. The sample was obtained at the approximate stack midpoint at a constant rate. Data were used in flue gas exhaust rate calculations which were then used to convert pollutant emission concentrations to a lb/hr basis (TCEQ compliance test only).

Determination of Oxygen, Sulfur Dioxide, Nitrogen Oxide and Carbon Monoxide - EPA Methods 3A, 6C, 7E and 10

Stork obtained a total of three (3) NOx, CO, SO_2 and O_2 sample runs of sixty (60) minutes duration. The O_2 results were used in the molecular weight determination, in order to calculate the flue gas exhaust rate and also to correct specific emissions to a 0% O_2 basis, as required by the permit. A summary of the test method is provided below:

Analyzer: The instruments included a Bovar/Western Research Model 721-M for SO_2, Servomex Model 1420B for O_2, ThermoEnvironmental (TECO) Model 42C-HL for NOx and TECO Model 48H for CO.

Analytical Principle: Ultraviolet photometric for SO_2, paramagnetic for O_2, chemiluminescence for NOx and nondispersive infrared gas filter correlation (NDIR-GFC) for CO.

Measurement System Performance: The criteria specified in Methods 3A/6C/7E was used as follows:

- Determined sampling system bias which is critical to accurately determine emissions.

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- Calibration gases were injected at the back of the probe, thereby requiring the gas to pass through the entire sampling system, including sample transport lines, sample conditioning system and metering apparatus. This ensured accurate calibration by more precisely simulating the actual test methodology.

Apparatus/Components: The criteria for Reference Methods 3A/6C/7E were used. The sample system consisted of an inconel probe (due to elevated stack temperature), particulate removal filter, heat traced Teflon transport line, heated stainless steel and Teflon diaphragm pump, chilled conditioning system, metering apparatus, the respective analyzers and a data acquisition system (DAS).

Calibration Gases: The gases specified in Methods 3A/6C/7E/10 were used as follows:

- Zero grade nitrogen for SO_2, O_2, NOx and CO zero gas.
- EPA Protocol mid (40-60% of span) and high level (100% of calibration span) SO_2, O_2, CO and NOx gases (SO_2 in N_2, O_2 in N_2, CO in N_2, NOx in N_2).

Measurement System Performance Test:

- Used EPA Protocol gases for the test program as stated above.
- Performed Calibration Error and Sample System Bias Checks which met the criteria of Methods 3A/6C/7E/10.
- Performed the NO_2 to NO converter efficiency check after the December 7 test. This was done with a Tedlar bag mixture of NO calibration gas and oxygen. Results were 1.25% which meets the 2% criteria.

Initial Performance Test: Methods 3A/6C/7E/10 techniques were used as follows:

- The stratification test sample location points were located 21.6, 64.75 and 107.87 inches from the stack wall, equivalent to 16.7, 50.0 and 83.3% of the stack diameter. The three (3) point stratification test results demonstrated that the stack was not stratified and as a result, compliance sampling was performed at one point (64.75 inches from the stack wall) or at 50.0% of the stack diameter.
- The calibration span of the instruments during the test program were 93.1 ppm CO, 94.0 ppm NOx, 476 ppm SO_2 and 20.7% O_2.
- Determined sample bias.

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- Introduced the calibration gases through the entire sampling system, as discussed above.

Emissions Calculations: Stork used the techniques set forth in Methods 1-4, 3A/6C/7E/10 and 19 as follows:

- The Method 3A/6C/7E/10 requirement to correct the O_2, SO_2, CO and NOx data for calibration drift and bias was applied to each run. Equation 7E-5, as set forth in 40 CFR 60, Appendix A, Method 7E, Section 12.6, was used.

- Stork converted the SO_2, CO and H_2S concentration data to a 0% O_2 emission basis, used EPA Method 19 to calculate the NOx emissions on a lb/mmBtu basis and utilized the flow data measured by Method 1-4 to calculate the lb/hr emissions rates. The equations used are as follows.

$$ppmvd\ @\ 0\%\ O_2 = ppmvd\ x\left(\frac{20.9}{20.9 - \%O_2}\right)$$

Where:

ppmvd =	pollutant concentration, from Stork test.
$\%O_2$ =	stack oxygen, dry basis, from Stork test.

$$pollutant\ Cd\ (lb/dscf) = \frac{ppmvd\ x\ molecular\ weight\ x\ 6.242\ x\ 10^{-8}}{24.04}$$

$$NOx\ E\ lb/mmBtu = Cd\ x\ F\ x\left[\frac{20.9}{20.9 - \%\ O_2}\right]$$

$$Pollutant\ lb/hr = pollutant\ lb/dscf\ x\ Qsd\ in\ dscf/hr$$

Where:

Molecular Weight =	28 for CO, 46 for NOx (as NO_2), 64 for SO_2, 34 for H_2S and 44 for VOC (as propane)
NOx E =	NOx emission rate in lb/mmBtu, corrected to 0% O_2
Cd =	pollutant concentration in lb/dscf
F =	fuel F factor, dscf/mmBtu (the EPA published value of 8,710 was used)
% O_2 =	stack oxygen, dry basis, from Stork's test
Qsd =	stack flow rate, dscf/hr as measured by Stork

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Determination of Hydrogen Sulfide Emissions – EPA Method 15

Stork performed sampling of the Unit 28.2 SRU gas stream to determine hydrogen sulfide (H_2S), content in order to demonstrate compliance. The sampling system consisted of a heated quartz lined probe in an inconel sheath (due to the high stack temperatures), a heated Teflon filter, a chilled citrate buffer impinger train to remove moisture and SO_2, unheated Teflon transport line to the on-site gas chromatograph equipped with a flame photometric detector (GC/FPD). The gas was extracted from the approximate stack midpoint and transported by vacuum pump with Teflon coated heads to the on-site GC equipped with a capillary column, a VICI 10 port gas sampling valve with a 100µL loop and a flame photometric detector. Chromatography conditions are listed on each chromatogram which are contained in the Field and Laboratory Data section of this report. As this test was to satisfy a TCEQ permit requirement only, three (3) two (2) hour samples were obtained, with each run consisting of eight (8) injections (as opposed to the 3 to 6 hour runs, 16 injections stated in Section 8.2.3 of Method 15 and discussed in the Compliance Sampling Plan). This was discussed and approved by ConocoPhillips and the TCEQ prior to the test program.

Determination of Total Gaseous Volatile Organic Compound (VOC) Emissions - EPA Method 25A – ("Hot-Wet" basis)

Analysis of total volatile organic carbon compounds (VOCs) from the SRU TGI stack exhaust were performed on-site using a total hydrocarbon analyzer equipped with a flame ionization detector (FID) (a JUM Model VE-7). The JUM unit produced a total hydrocarbon readout quantitated as propane.

The sample system consisted of, in the following order: inconel probe with particulate removal filter, heated Teflon transport line, heated diaphragm sampling pump, heated metering apparatus, the

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aforementioned analyzer and a data acquisition system. The sample was extracted from the approximate stack midpoint on a "hot-wet" basis. The corresponding moisture run was used to convert the VOC data from a wet to a dry basis.

The JUM analyzer continuously extracted the stack sample. To ensure the collection of accurate data, the JUM unit was calibrated with EPA Protocol propane in nitrogen gas standards.

SAMPLE RECOVERY

Carbon Dioxide, Oxygen and Nitrogen – EPA Methods 3 and 3A

The stack CO_2 analysis was performed on samples taken with each run by use of a standard Fyrite analyzer. O_2 was determined by a continuous paramagnetic oxygen (O_2) analyzer. Prior to sampling, the O_2 analyzer was set and calibrated in accordance with manufacturer and EPA instructions using EPA Protocol calibration gases.

The CO_2 Fyrite contains a potassium hydroxide solution that absorbs CO_2 as it is bubbled through the analyzer. The CO_2 content was measured by the displacement of the solution level against a graded scale affixed to the analyzer. The O_2/CO_2 data, coupled with nitrogen determined by difference, were used in flue gas molecular weight determinations which was subsequently used in the flue gas exhaust rate computations.

To measure O_2 by analyzer, the gas sample is passed through a strong, non-linear magnetic field, which deflects an electromagnetic "dumb-bell" mounted on a torque suspension. This deflection is detected by an optical system and twin photo-cells connected to an amplifier. The "dumb-bell" is wrapped with a coil of wire through which a current is passed to return the "dumb-bell" to its original position. The measured current is proportional to the concentration. Calibration error (linearity),

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response time and system bias checks were performed at the field site prior to use. An upscale gas and zero (N_2) gas were injected after each sample run to determine calibration drift. Copies of field and calculation data are included with this report. The O_2 data were corrected for instrument drift and bias in accordance with calculations presented in Method 6C (SO_2 instrumental method). The O_2 by analyzer data was used in O_2 corrections for NOx, CO, H_2S and SO_2 emissions. The O_2 data from the TCEQ compliance test are shown in Table No. 3.

Sulfur Dioxide - EPA Method 6C

Analysis of the stack gas sulfur dioxide content was performed continuously at the field site utilizing a microprocessor-based photometric SO_2 analyzer (Bovar/Western Research Model 721 M). The unit was calibrated in accordance with manufacture instructions utilizing certified EPA Protocol span gases. Prior to introducing each sample, the analyzer was purged with "zero" nitrogen.

The SO_2 analyzer measures two discrete wavelengths. One wavelength is absorbed by SO_2 and the other is not absorbed by SO_2. The sample flows through the measuring cell while the reference cell contains only non-absorbing gases. As the chopper wheel rotates, a flash of radiation passes through the measuring filter to the beam splitter. After a brief period, a flash of radiation passes through the reference filter to the beam splitter. These flashes of measuring and reference radiation continue at a nominal frequency of 52 times per second per filter. The beam splitter directs half the radiation through the measuring cell and half through the reference cell to the two detectors which develop electrical signals proportional to the amount of radiation that impinged on the detectors. The detector signals are demultiplexed into two measuring signals and two reference signals. The reference signals are used to automatically control the gain of each detector to independently compensate each path for optical

contamination. The detector signal developed from the measuring wavelength radiation that passes through the reference cell is used to control the current to the ultraviolet source. The two detector signals developed from the reference wavelength radiation that pass through the measuring and reference cell are used to produce an analyzer output signal that is proportional to the SO_2 concentration in the measuring cell.

Copies of field and laboratory data are included with this report. Calibration error (linearity), response time and system bias checks were performed at the field site prior to use. An upscale gas and zero (N_2) gas were injected after each sample run to determine calibration drift. The average concentration of each run was calculated using a time weighted average technique. The SO_2 concentration data was corrected to zero percent oxygen. The average emissions rate was calculated using the velocity traverse data. SO_2 compliance test data is shown in Table No. 3.

Nitrogen Oxides – EPA Method 7E

Analysis of the stack gas for nitrogen oxide content was performed continuously on-site utilizing a chemiluminescent NO/NOx analyzer (Thermo Environmental Model 42C-HL). Prior to sampling, the unit was set and calibrated in accordance with manufacturer and EPA instructions.

The NOx instrument is capable of measuring NO and NOx (NO plus NO_2). To measure NO, the gas sample is blended with ozone (O_3) in a reaction chamber. Chemiluminescence from the NO/O_3 reaction is monitored through an optical filter by a high-sensitivity photomultiplier positioned at one end of the chamber. The filter/photomultiplier combination responds to light in a narrow-wavelength band unique to the NO/O_3 reaction. The output from the photomultiplier is linearly proportional to the NO concentration. To measure NOx (NO plus NO_2) concentrations, the sample gas flow is diverted through an

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NO_2 to NO converter. The chemiluminescent response in the reaction chamber to the converter effluent is linearly proportional to the NOx concentration entering the converter. The unit was operated on the NOx mode throughout the emissions test. Calibration error (linearity), response time and system bias checks were performed at the field site prior to use. An upscale gas and zero (N_2) gas were injected after each sample run to determine calibration drift. In addition a NOx converter efficiency was performed.

Copies of field and calculation data are included with this report. The average concentration of each run was calculated using a time weighted average technique. The average emission rate for each run was then calculated using the stack flow rate data obtained from the corresponding flow and moisture sample runs. The NOx mass emissions data is quantitated as NO_2, in accordance with EPA/TCEQ definitions. The NOx emissions data are summarized in Table No. 4.

Carbon Monoxide – EPA Method 10

Analysis of the stack carbon monoxide levels were performed continuously on-site utilizing a nondispersive infrared (NDIR) gas filter correlation (GFC) analyzer (Thermo Environmental Model 48CHL). The unit was calibrated in accordance with manufacturer instructions utilizing EPA Protocol span gases (CO in N_2). Prior to introducing each sample, the analyzer was purged with nitrogen.

To ensure accurate data, Stork determined corrected carbon monoxide results based on zero and calibration drift and bias employing procedures contained in Method 7E (NOx analyzer technique). Calibration error (linearity), response time and system bias checks were performed at the field site prior to use. An upscale gas and zero (N_2) gas were injected after each sample run to determine calibration drift.

Copies of field and calculation data are included with this report. The average concentration of each run was calculated using a time weighted average technique. The average emission rate for each run

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was then calculated using stack flow rate data obtained from the of the corresponding flow determinations. The CO emissions data are summarized in Table No. 4.

Hydrogen Sulfide – EPA Method 15

Stork personnel performed on-site GC analysis of the Unit 28.2 SRU gas stream to determine the hydrogen sulfide (H_2S) content. The H_2S was quantified using the power fit function of Chrom Perfect by Justice Laboratories software. This was necessary because the relationship between concentration and response on the FPD is not linear. The typical exponent for H_2S is 2.235. Three injections of three different concentration gases were used to calibrate the FPD. The calibration gases were generated by passing nitrogen over permeation devices that emit a specific analyte at a fixed rate given a fixed temperature. The temperature was maintained at 30°C ± 0.1°C for Chamber 1. The concentration was changed by altering the amount of diluent nitrogen used.

Hydrogen sulfide results are contained in Table No. 5.

Volatile Organic Compounds (VOCs) – EPA Method 25A: "Hot-Wet" basis

VOCs consisted of total hydrocarbons, quantitated as propane. The VOCs were analyzed on-site using a JUM Model VE-7 total hydrocarbon analyzer equipped with a flame ionization detector (FID).

Individual run averages were obtained by arithmetic average calculations. The total VOCs were quantitated as propane as determined by the JUM analyzer. The total VOC data was not corrected for methane/ethane content as the total VOC results generated by the hydrocarbon analyzer were below the detection limit. The data was then corrected for the moisture content in the stack gas since the VOCs were

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collected on a "hot-wet" basis. The VOC emission rate (as propane) was calculated using the stack flow rate data from the corresponding flow determinations. The equations used are shown as follows.

Convert VOCs as propane to a dry basis:

$$\textit{Equation 1:}\quad \textit{VOC ppmvd as propane} = \textit{VOC ppmv (wet) as propane} \div \left(1 - \frac{\%\, H_2O}{100}\right)$$

Where:

VOC ppmv (wet) as propane = data from Stork analyzer
% H_2O = stack moisture content (from flow run)

Determine VOC emission rate as propane, lb/hr:

$$\textit{Equation 2:}\quad \textit{VOC lb/hr} = \frac{\textit{VOC ppmvd as propane} \times 44 \times 6.242 \times 10^{-8}}{24.04} \times \textit{Qsd}$$

Where:

VOC lb/hr =	VOCs, quantitated as propane
VOC ppmvd =	data for Equation 1
44 =	molecular weight of propane
6.242 x 10^{-8} =	conversion from mg/dscm to lb/dscf
24.04 =	standard molar volume conversion factor (based on 68°F, 29.92" Hg)
Qsd =	stack flow rate, dscf/hr, measured during particulate and/or flow test
Note:	Standard conditions = 68°F, 29.92 Hg

VOC emissions data are summarized in Table No. 4.

Stork Data Acquisition System

Stork utilized a custom developed DAS incorporating an analog to binary converter box to download the analyzer output signals to the data acquisition system (DAS) to record parameters. The DAS programming is based on Visual Basic, version 6.0. The data acquisition system downloads the analyzer output to a PRN file in an ASCII format, with data delineated by commas. The DAS was setup

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to sample information from the analyzers every second and to save one (1) minute averages of these samples (sixty [60] one [1] second samples are averaged for a one [1] minute average). Stork data are presented in a column format with the first column containing the date and the time. Each column is labeled as to which pollutant it is and each file has an initial creation date and time.

CUSTODY OF SAMPLES

After completion of tests, each sample was placed in the custody of the technician for analysis. It was his assigned responsibility to ensure that each sample was recorded and correctly analyzed. Analysis of samples was performed at the field site Stork's Air Emissions Services personnel. It was the duty of the Air Emissions Program Manager and Project Manager to answer any procedural queries from the Laboratory Technician. Final responsibility rested with the Air Emissions Program Manager.

QUALITY ASSURANCE

Stork maintains a strict quality assurance program. A summary of this program follows:

- Equipment Calibrations
  - Sampling Console - annual
  - Wet Test Meter - annual
  - Pitot Tubes - either annual wind tunnel calibration or adherence to EPA construction guidelines.
  - Analyzers - calibration with EPA Protocol gases plus linearity, bias, converter efficiencies
  - Post test sampling console gamma calibration
  - Post test barometer and thermometer calibration

- Analytical QA
  - Use of reagent grade chemicals
  - Use of ASTM Type III deionized water
  - Use of appropriately completed chain of custody forms
  - Adherence to appropriate sample shipping and storage procedures

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- Calculation QA
  - hand check of computer programs
  - check print procedure for data entry
- Report QA
  - peer review

DISCUSSION

All sampling was coordinated with ConocoPhillips personnel to ensure that the unit was operating at stable and desired conditions. The test program proceeded as follows:

Day	Date, 2010	Test Program
Sunday	December 5	Stork mobilized their H_2S emissions test trailer (No. 1) to the jobsite in order to allow sufficient warm-up time for the permeation tube and sampling systems. Received electrical power.
Monday	December 6	Stork mobilized to the site with their second test trailer (No. 3 for the NOx, CO, SO_2 and VOC testing) and their stack equipment. Stork coordinated with ConocoPhillips personnel in the necessary removal and adjustment of scaffolding that was present above the sample location. Electrical hookup was provided. Stork personnel moved the stack equipment to the platform. ConocoPhillips personnel scheduled the flange removal for the following morning. Stork conducted instrument checks (Trailer 1 and Trainer 3), verified the H_2S system was calibrated and left the site for the day.
Tuesday	December 7	Stork arrived on site at ~0730 and completed their pre-test calibrations. A short delay occurred while the ports were opened. Emission testing began at 1240 and proceeded through completion at 1845. The post-test calibrations and leak checks were conducted and Stork proceeded to remove their stack equipment. Trailer 3 electrical power was disconnected. Trailer 1 (H_2S) was still connected while completing the post-test equipment checks. ConocoPhillips informed Stork that the sulfur production rate (499.8 long tons/day) were not at the maximum achievable rate desired for the test program, therefore it was agreed to conduct a second test condition. Stork secured their equipment for the day.
Wednesday	December 8	Stork arrived on site ~0730, finished the H_2S calibrations (Trailer 1) and electrical power was restored on Trailer No. 3. Stork re-setup the stack equipment. Due to a combination of Stork analyzer warm-up requirements (Trailer 3) and the unit lining out at the higher rates, it was agreed to postpone the test until the following day.
Thursday	December 9	Stork personnel arrived on site ~0640, completed their calibrations and leak checks and were ready to test at 0830. The unit reached the desired rates and testing commenced at 1010. Testing proceeded without delays until completion at 1640. The average sulfur production was 550.0 long tons/day. Stork proceeded to remove their stack equipment, Trailer 3 was disconnected and demobilized from the site.
Friday	December 10	Stork completed removal of their equipment and Trailer 1 was disconnected and demobilized from the site.

ConocoPhillips Company **STMC Project No. HOU002549P**

All sample train and pitot leak checks were within acceptable limits. All Stork analyzer drift and bias calculations were within the appropriate ranges for each pollutant constituent. Individual drift and bias calculations for each run may be found in the Field and Laboratory section of this report. NOx converter efficiencies were determined to be below 2 percent, thereby providing acceptable results.

ConocoPhillips recorded the unit temperatures and sulfur production rates throughout the test program. The pertinent operating data are shown in Table No. 6. The remaining data is in the Field and Laboratory Data section of this report.

The summary tables include the compliance test results and unit operating data from the December 9th test. All the data from the December 7th test is included in the Appendix to this report.

SUMMARY

A compliance air pollutant emissions test program was successfully completed at the ConocoPhillips Company facility located in Sweeny, Test. All the emission concentrations and emission rates met the limits contained in TCEQ permit 5920A and PSD/TX-103M3. This test is required every five years by Special Condition 17 of the permit. The SRU 28 operated at an average rate of 550 long tons per day (maximum achievable rates).

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TABLE NO. 1
SOURCE IDENTIFICATION
STMC Project No. HOU002549P

Plant Name:	ConocoPhillips Company			**Phone:**	979/491-2705
Address:	P.O. Box 866				
City:	Sweeny	**State:**	Texas	**Zip:**	77480
Plant Representative:	Mr. Sean O'Brien				
Source Identification:	Unit 28 Sulfur Recovery Unit (SRU) Incinerator				
Source Name:	Unit 28 SRU (EPN 28.2-36-2)				
Stack or Duct Description:	Round, vertical exhaust stack				
Port Height:	~86 feet				
Stack Diameter:	129 1/2 inches				
Stack Temperature:	1,341°F				
Percent Moisture:	11.0%				
Process (Batch or Continuous):	Continuous				
Operational Status :	Average Sulfur Production 550 Long Tons Per Day				
Sampling Parameters:	NOx / CO / O2 / SO2 / H2S / VOC				
	Flow and moisture Compliance Emission Test				
Date Tested :	9-Dec-10				

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TABLE NO. 2

SUMMARY OF SAMPLING RESULTS - Flow Data

ConocoPhillips Company
Sweeny, Texas

Unit 28.2 SRU
STMC Project No. HOU002549P

Run No.	Date	Time Period	Net Time (Mins)	Vm (Std) dscf	Ts Stack Temp °F	Vs Stack Velocity ft/sec	Percent Moisture	ACFM Stack Gas Flow	Qsd Dry Stack Gas Flow dscf/hr
1	9-Dec-2010	1010-1110	60	34.783	1,334	26.15	10.67	143,488.3	2,283,169
2	9-Dec-2010	1215-1315	60	34.220	1,348	26.06	11.53	142,991.6	2,235,947
3	9-Dec-2010	1440-1540	60	34.654	1,342	26.52	10.94	145,520.0	2,291,267

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TABLE NO. 3

SUMMARY OF SAMPLING RESULTS - TCEQ Permit : SO2/O2

ConocoPhillips Company
Sweeny, Texas

Unit 28.2 SRU
STMC Project No. HOU002549P

Run No.	Date	Time Period	Net Time (Mins)	O2 % (dry)	SO2 ppm (dry)	SO2 ppmvd @ 0% O2 (dry)	SO2 lb/hr
1	9-Dec-2010	1010-1110	60	3.98	99.28	122.64	37.67
2	9-Dec-2010	1215-1315	60	4.19	101.36	126.79	37.66
3	9-Dec-2010	1440-1540	60	4.31	95.33	120.11	36.30
			Average:	**4.16**	**98.66**	**123.18**	**37.21**

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TABLE NO. 4

SUMMARY OF SAMPLING RESULTS - CO, NOx and VOC Data

ConocoPhillips
Sweeny, Texas

Unit 28.2 SRU
STMC Project No. HOU002549P

			CO			NOx			VOC		O_2
Run No.	Date	Time Period	ppmvd	ppmvd @ 0% O2	lb/hr	ppmvd	lb/mmBtu	lb/hr	ppmvd	lb/hr	% (dry)
1	9-Dec-2010	1010-1110	8.49	10.49	1.41	18.92	0.0243	5.16	<0.10	<0.026	3.98
2	9-Dec-2010	1215-1315	9.26	11.58	1.51	19.37	0.0252	5.17	<0.10	<0.026	4.19
3	9-Dec-2010	1440-1540	8.62	10.87	1.44	19.10	0.0250	5.23	<0.10	<0.026	4.31
		Average:	**8.79**	**10.98**	**1.45**	**19.13**	**0.0249**	**5.19**	**<0.10**	**<0.026**	**4.16**

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TABLE NO. 5

SUMMARY OF SAMPLING RESULTS - H_2S Data

ConocoPhillips Company
Sweeny, Texas

Unit 28.2 SRU
STMC Project No. HOU002549P

Run No.	Date	Time Period	H_2S ppmvd	H_2S ppmvd @ 0% O2	H_2S lb/hr
1	9-Dec-2010	1010-1210	<0.36	<0.43	<0.07
2	9-Dec-2010	1215-1415	<0.36	<0.43	<0.07
3	9-Dec-2010	1440-1640	<0.36	<0.43	<0.07
		Average:	**<0.36**	**<0.43**	**<0.07**

Note: Data is reported as (less than) as actual run results were nondetectable.

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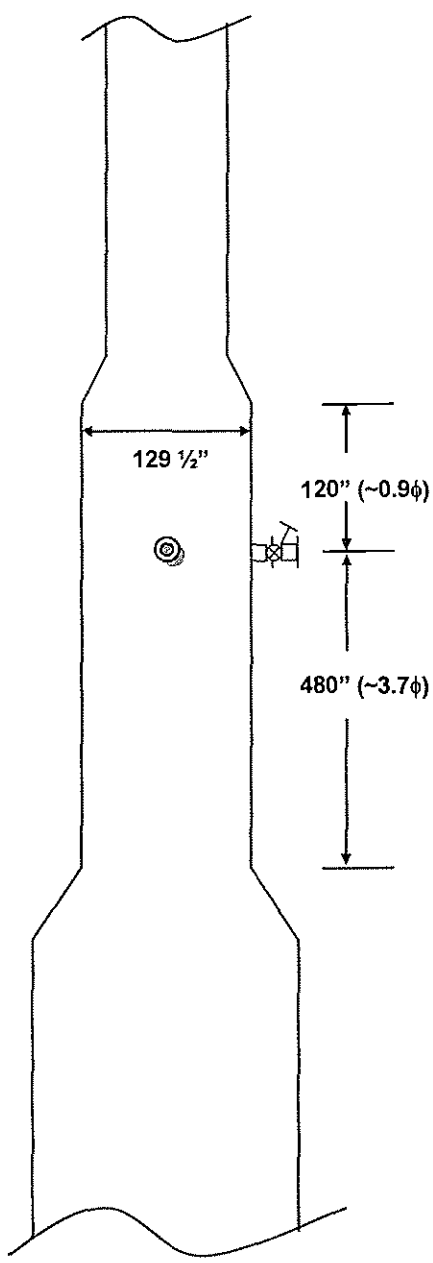
TABLE NO. 6

SUMMARY OF SAMPLING RESULTS - Operating Data

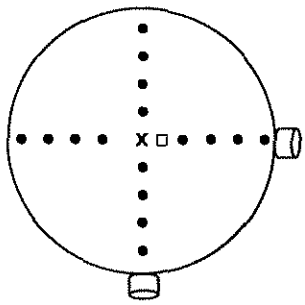
ConocoPhillips Company
Sweeny, Texas

Unit 28.2 SRU
STMC Project No. HOU002549P

Run No.	Date	Time Period	Unit 28 Sulfur Production LTPD
1	9-Dec-2010	1010-1210	549.0
2	9-Dec-2010	1215-1415	552.5
3	9-Dec-2010	1440-1640	548.4
Runs 1-3 Compliance		**Average:**	**550.0**



Cross-sectional View



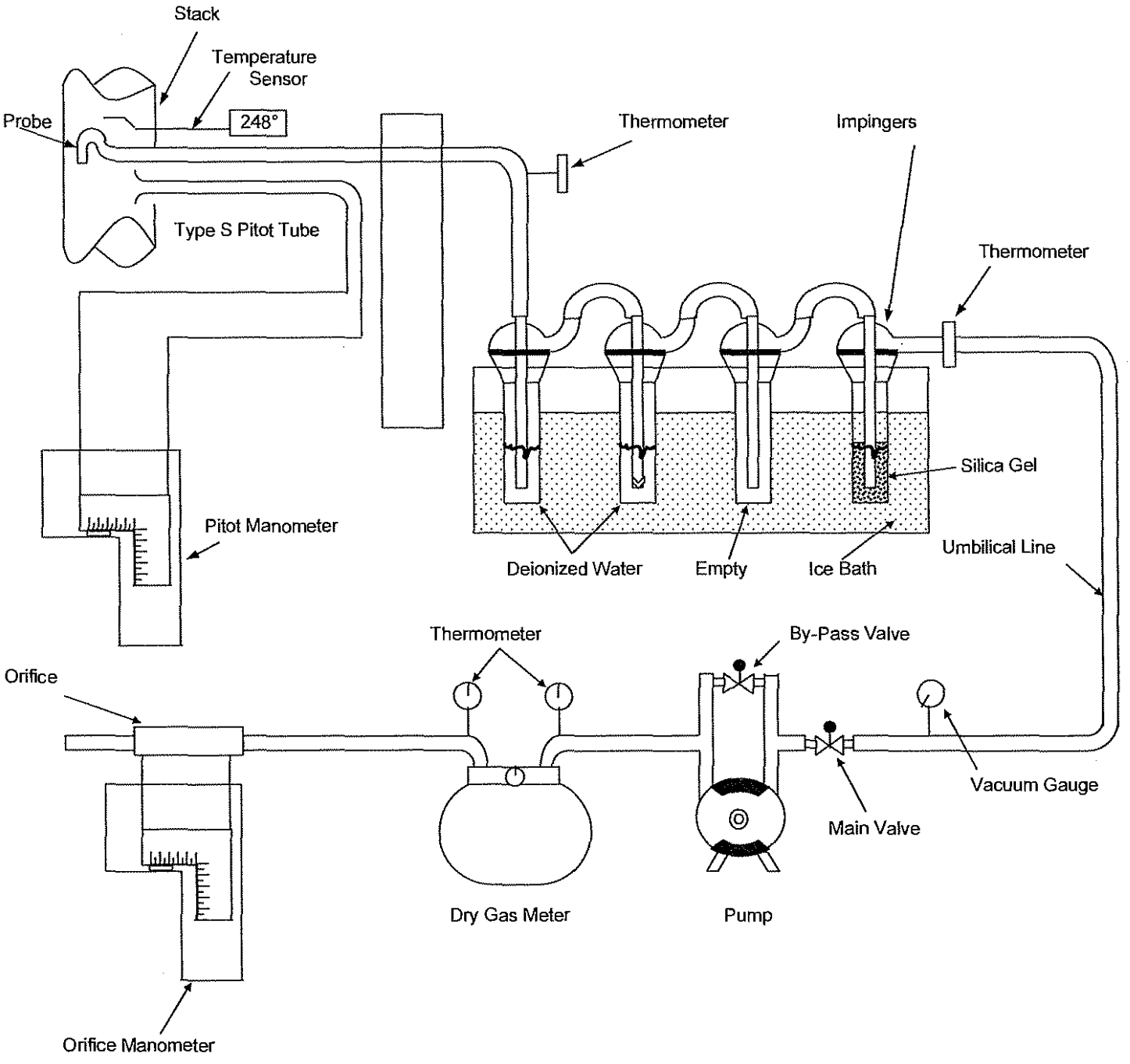
Sample Locations
- • Traverse Velocity Points
- x H_2S
- □ NOx, SO_2, VOC, CO, O_2 and Moisture

Two – four inch ports with gate valves
And monorail brackets

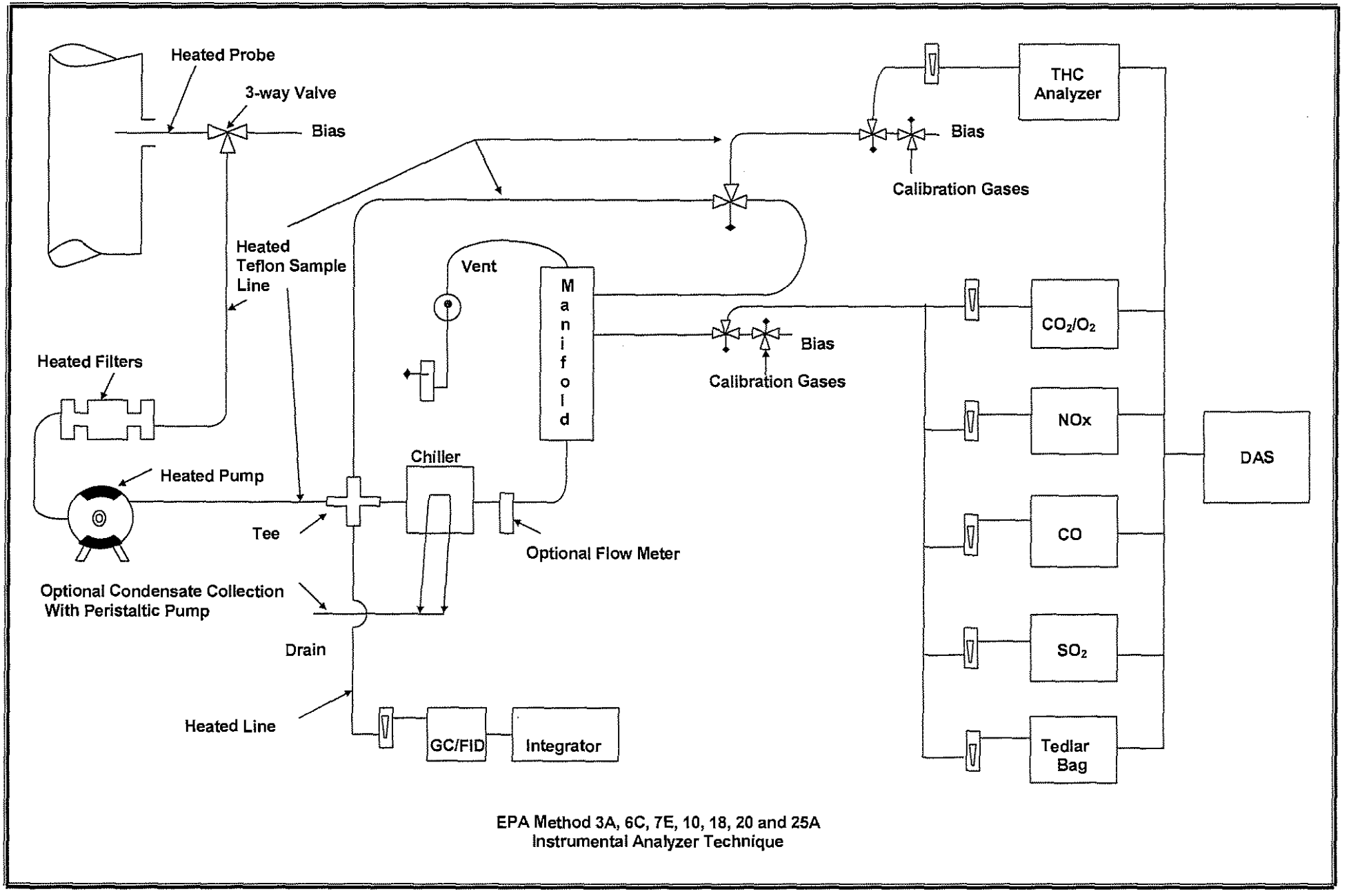
Velocity Traverse Sampling Point Locations

Point No.	Percent of Diameter	Distance in inches
1	3.2	4.14
2	10.5	13.60
3	19.4	25.12
4	32.3	41.83
5	67.7	87.67
6	80.6	104.38
7	89.5	115.90
8	96.8	125.36

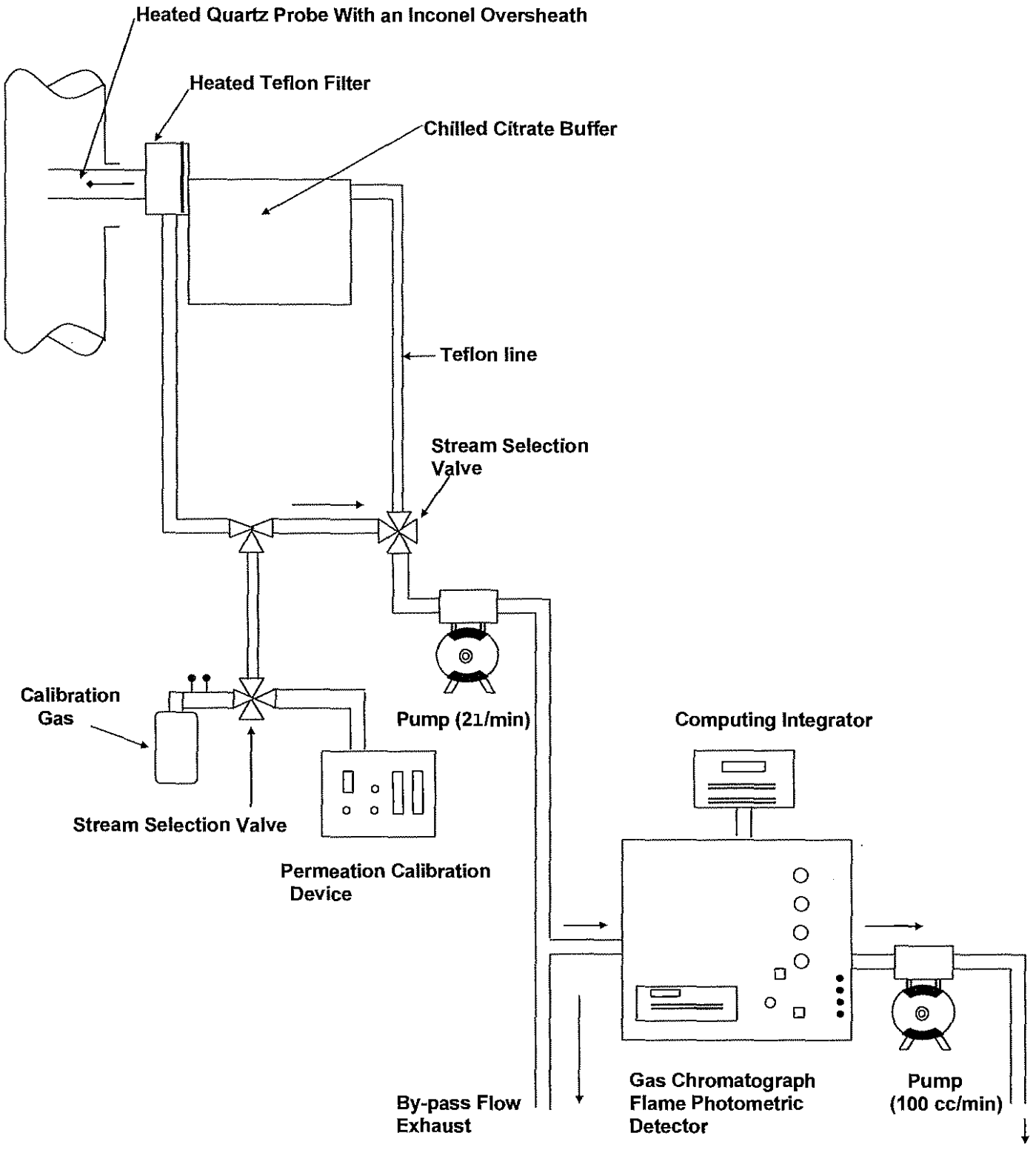
ConocoPhillips Company
Sweeny, Texas
Unit 28 Sulfur Recovery Incinerator Stack
EPN 28.2-36-2



EPA METHODS 1-4 SOURCE SAMPLING TRAIN



EPA Method 3A, 6C, 7E, 10, 18, 20 and 25A
Instrumental Analyzer Technique



EPA Method 15 Sampling Train

Conoco Phillips
Sweeny,Tx
Unit 28 SRU INC.
STMC Project No.: HOU002549P

Stork Testing & Metallurgical Consulting, Inc.
Houston, Texas

Diameter of Stack =	129.50	inches

E. P. A. Method 1-4 Analytical Data

Run No.	Sample Time min	Net Volume ft^3	Average $\sqrt{\Delta P}$ in H_2O	Average ΔH in H_2O	Avg Stack Temp. °F	Avg Meter Temp. °F	Meter P P_m in Hg	Stack P P_s in Hg	DGMCF	Pitot Correction C_p	Stack Area A_s ft^2
1	60	34.783	0.2483	1.00	1,334	70	30.35	30.18	0.9934	0.840	91.4675
2	60	34.220	0.2461	1.00	1,348	65	30.35	30.18	0.9934	0.840	91.4675
3	60	34.654	0.2508	1.00	1,342	68	30.26	30.09	0.9934	0.840	91.4675

Run No.	Date	Pollutant Sample Run Time	Method 2 Flow Run Time
1	12/9/2010	1010-1110	1057-1107
2	12/9/2010	1215-1315	1250-1310
3	12/9/2010	1440-1540	1530-1542

E. P. A. Isokinetic Methods Flow Calculations

1 $Vs\ (ft/sec) = 85.49 \times Cp \times \sqrt{\Delta P} \times \sqrt{(Ts / MWSG \times P_s)}$

2 $ACFM\ (ft^3/min) = V_s \times 60 \times A_s$

3 $Q_{sd} = 60 \times [\ 1 - (\ \%H_2O / 100\ )\ ] \times ACFM \times [\ 528 / (\ T_s + 460\ )\ ] \times (\ P_s / 29.92\ )$

Run No.	Total H_2O Collected ml	Flue Gas Data			Flow Calculations			1	2	3
		% CO_2	% O_2	% N_2	V_m (std) dscf	% H_2O	MWSG g/g mole	Vs ft/sec	ACFM ft^3/min	Qsd dscf/hr
1	88.6	4.0	4.0	92.0	34.918	10.67	27.647	26.15	143,488.32	2,283,169.0
2	96.0	4.0	4.2	91.8	34.680	11.53	27.562	26.06	142,991.55	2,235,947.4
3	90.9	4.0	4.3	91.7	34.816	10.94	27.629	26.52	145,519.99	2,291,267.1

STORK TESTING AND METALLURGICAL CONSULTING, INC.

AIR EMISSIONS SERVICES DIVISION

FACILITY: Conoco Phillips STMC PROJECT NO.: Hous 25491

CITY, STATE: Sweeny, Tx TECHNICIAN: AP, GG.

SOURCE NAME: Unit 28 SRU Incinerator

DATE: 12-9-10 RUN(S): 1-3

BAROMETRIC PRESSURE: 30.28 inches Hg.

STACK I.D.: 129 1/2" STATIC PRESSURE: -1.30 inches H2O

I.D by: Field Measurement ✓ Engineering Drawing ___ Client Information ___

PORT EXTENSIONS: (1) 21" (3) NA

(2) 21" (4) NA

STACK SCHEMATIC

CYCLONIC FLOW CHECK: NEG. Port Description: 2-4" ports/gate valves Monorail Brackets: (Yes) / No

TRAVERSE POINT NO.	% OF STACK DIAMETER	DIST. FROM REFERENCE (inches)	RUN NO. 1 TIME: 1057-1107		RUN NO. 2 TIME: 1250-1310		RUN NO. 3 TIME: 1530-1542	
			ΔP	T_s	ΔP	T_s	ΔP	T_s
1	3.2	4.14	0.07	1330	.06	1328	0.07	1330
2	10.5	13.60	0.07	1331	.06	1334	0.07	1339
3	19.4	25.12	0.06	1337	.06	1340	0.07	1342
4	32.3	41.85	0.06	1342	.06	1344	0.06	1351
5	67.7	87.67	0.07	1353	.06	1351	0.07	1352
6	80.6	104.38	0.06	1351	.06	1353	0.07	1350
7	89.5	115.90	0.05	1343	.06	1355	0.05	1347
8	96.8	125.36	0.05	1262	.05	1360	0.05	1320
1			0.07	1340	.06	1341	0.06	1341
2			0.07	1347	.07	1349	0.07	1343
3			0.07	1352	.06	1353	0.06	1349
4			0.06	1354	.07	1357	0.07	1353
5			0.06	1350	.06	1359	0.07	1353
6			0.06	1338	.06	1349	0.06	1348
7			0.05	1335	.06	1347	0.06	1340
8			0.06	1281	.06	1342	0.05	1313
					✓	✓	✓	✓
AVERAGES: SQ.RT. ΔP, T_s			0.2483 ✓	1334 ✓	0.2461	1348	0.2508	1342 ✓

TEMPERATURE ID: M-8

PROBE ID: PG-15A

PITOT CORRECTION FACTOR: 0.840

UMBILICAL ID: U-25-FA

Run No.	PITOT LEAK CHECK Pretest	PITOT LEAK CHECK Post-test	FYRITE ANALYSIS CO_2	FYRITE ANALYSIS O_2
1	✓@6"	✓@4"	4%	trailer
2	✓@5"	✓@5"	4%	↓
3	✓@7"	✓@6"	4%	↓

Stork Testing & Metallurgical Consulting, Inc.

Facility Conoco Phillips Proj. No. 40V002549P
City, State Sweeny, TX
Source Unit 28 SRU Incinerator
Date 12-9-10 Oper. AP Sample No. 1
Meter No. M-8 DGMCF 0.9934 Umb. ID 0-25-H_2O
ΔH @ Box 1.8215 Filter No. NA Heater ID NA
Stack Press. -1.30 Data H_2O Imp. ID IC-7
Stack ID (Port) 129½" (21") Platform Ht. ~120' Ass. Moist. ?
Silica Gel No. SG-6A Baro. ID MB Bar. Pres. 30.28
Probe No. NA PTCF NA Probe Liner flex
Nozzle No. ↓ Nozzle Area ↓
Store 6 ↓ Store 7 ↓
Leak Rate : Initial <.01 @15" Final <.01 @5"
Pitot Leak Check: Initial NA Final NA
Gas Analysis (Fyrite / Orsat / Analyzer) : CO_2 NA O_2 NA
CO_2 NA O_2 NA ; CO2 ← O2 ←
Avg. Gas Analysis : CO_2 ← O_2 ←

Moisture Data :	Imp. 1	Imp. 2	Imp. 3	Imp. 4	Imp. 5
Impinger Solution :	DI	DI	Empty	SG	
Final Vol or Wt (ml or g)	174	104	0	277.3	
Initial Vol or Wt (ml or g)	100	100	0	266.7	
Net Increase (ml or g)	74	4	0	10.6	

Rinse Data :	Imp. 1	Imp. 2	Imp. 3	Imp. 4	Imp. 5
Rinse Solution :					
Rinse Volume (ml)					
Final Sample Volume, Including Rinse (ml)					

Total Water Collected (TWW) [Imp. + SG*] = 88.6 ml
* Converted to ml by dividing by the density of H_2O (1 g/ml)

Meter Pressure (Pm) = 30.28 + 1.0 = 30.35

Stack Pressure (Ps) = 30.28 + -1.30 (13.6) = 30.18 (13.6)

% Moisture = (0.04707 x TWW) x 100 / Vm(std) + (0.04707 x TWW) = ____

Source Sampling Field Data

Pts	Time Minutes (24 hrs.)	Dry Gas Meter Reading ft^3	Inches H_2O ΔP	Inches H_2O ΔH	Line Vac. " Hg	Temperature °F Stack T_s	Probe	Heater Box	Last Imp.	Meter Inlet	Meter Outlet
1	1010	805.475	NA	1.0	4	NA	NA	NA	63	70	69
2	1015	808.35	↓	↓	4	↓	↓	↓	61	70	71
3	1020	811.23			4				60	71	71
4	1025	814.15			4				61	71	71
5	1030	817.09			4				61	71	71
6	1035	820.00			4				62	70	70
7	1040	822.97			4				62	69	69
8	1045	825.88			4				63	68	68
9	1050	828.62			4				65	70	70
10	1055	831.57			4				65	71	70
11	1100	834.43			4				65	70	68
12	1105	837.28			4				65	70	69
Stop	1110	840.258									
	60 min Sample Time	34.783 Net Volume	NA Avg. √ΔP	1.0 Avg. ΔH		NA Avg. Stack	Check Init:			70 Avg. Meter (AMT)	

Vm(std) = ____ (Net Volume) x ____ (DGMCF) x 528 std Temp (R) x ____ AMT (R) Pm = ____ 29.92 std press. dscf

√ΔP - 0.2483
T_S - 1334
CO_2 - 4

Stork Testing & Metallurgical Consulting, Inc.

Source Sampling Field Data

Facility Conoco Phillips Proj. No. HOU002549P
City, State Sweeny Tx
Source Unit 28 SRU
Date 12-9-10 Oper. GWSG Sample No. 2
Meter No. M-8 DGMCF 0.9934 Umb. ID U-25-H2O
ΔH @ Box 1.8215 Filter No. N/A Heater ID N/A
Stack Press. -1.30 Data H2O Imp. ID IC-7
Stack ID (Port) 129 1/2" (21") Platform Ht. ~90' Ass. Moist. ?
Silica Gel No. SG 1220 Baro. ID MB1 Bar. Pres. 30.28
Probe No. N/A PTCF N/A Probe Liner Flex
Nozzle No. ↓ Nozzle Area ↓
Store 6 ↓ Store 7 ↓
Leak Rate : Initial ≤.01@ 15" Final ≤.01@5"
Pitot Leak Check: Initial N/A Final N/A
Gas Analysis (Fyrite / Orsat / Analyzer) : CO_2 N/A O_2 N/A
CO_2 N/A O_2 N/A ; CO2 N/A O2 N/A
Avg. Gas Analysis : CO_2 N/A O_2 N/A

Moisture Data :	Imp. 1	Imp. 2	Imp. 3	Imp. 4	Imp. 5
Impinger Solution :	DI	DI	Empty	SG	
Final Vol or Wt (ml or g)	178	108	~~0~~	271.4	
Initial Vol or Wt (ml or g)	100	100	~~0~~	261.4	
Net Increase (ml or g)	78	8	~~0~~	10	

Rinse Data :	Imp. 1	Imp. 2	Imp. 3	Imp. 4	Imp. 5
Rinse Solution :					
Rinse Volume (ml)					
Final Sample Volume, Including Rinse (ml)					

Total Water Collected (TWW) [Imp. + SG*] = 96 ml ✓
* Converted to ml by dividing by the density of H_2O (1 g/ml)

Meter Pressure (Pm) = 30.28 + 1.0 = 30.35 ✓

Stack Pressure (Ps) = 30.28 + (-1.30 / 13.6) = 30.18 ✓

% Moisture = (0.04707 x TWW) x 100 / (Vm(std) + (0.04707 x TWW)) = _____

Pts	Time Minutes (24 hrs.)	Dry Gas Meter Reading ft^3	Inches H_2O ΔP	Inches H_2O ΔH	Line Vac. " Hg	Temperature °F Stack T_s	Probe	Heater Box	Last Imp.	Meter Inlet	Meter Outlet
1	12 15	840.425	N/A	1.0	4	N/A	N/A	N/A	64	65	65
2	12 20	843.25			4				63	64	64
3	12 25	846.08			4				62	64	63
4	12 30	848.91			4				61	64	63
5	12 35	851.75			4				60	65	63
6	12 40	854.59			4				61	65	64
7	12 45	857.41			4				61	66	64
8	12 50	860.25			4				63	67	65
9	12 55	863.08			4				64	68	65
10	13 00	866.05			4				65	69	66
11	13 05	868.85			4				66	69	66
12	13 10	871.80	↓	↓	4	↓	↓	↓	67	70	67
stop	13 15	874.645	—	—	—	—	—	—	—	—	—
	✓	✓		✓							✓
	60 mins Sample Time	34.220 Net Volume	N/A Avg. √ΔP	1.0 Avg. ΔH		N/A Avg. Stack	Check Init: GWSG				65 Avg. Meter (AMT)

Vm(std) = _____ (Net Volume) x _____ (DGMCF) x 528 std Temp (R) / AMT (R) x _____ Pm / 29.92 std press. = _____ dscf

RUN 2 = ΔP = 0.2461
Ts = 1348

Stork Testing & Metallurgical Consulting, Inc.

Source Sampling Field Data

Facility Conoco Phillips Proj. No. HOU 002547P
City, State Sweeny, Tx
Source Unit 28 SRU Incinerator
Date 12-9-10 Oper. AP Sample No. 3
Meter No. M-8 DGMCF 0.9934 Umb. ID U-25-H2O
ΔH @ Box 1.8215 Filter No. NA Heater ID NA
Stack Press. -1.30 Data H2O Imp. ID IC-7
Stack ID (Port) 129½" (21") Platform Ht. ~120' Ass. Moist. 7
Silica Gel No. Sg. 2005 Baro. ID Mh Bar. Pres. 30.19
Probe No. NA PTCF NA Probe Liner flex
Nozzle No. ↓ Nozzle Area ↓
Store 6 ↓ Store 7 ↓
Leak Rate : Initial <.01@15" Final <.01@6"
Pitot Leak Check: Initial NA Final NA
Gas Analysis (Fyrite / Orsat / Analyzer) : CO_2 NA O_2 NA
CO_2 NA O_2 NA ; CO2 O2
Avg. Gas Analysis : CO_2 O_2

Pts	Time Minutes (24 hrs.)	Dry Gas Meter Reading ft³	Inches H_2O ΔP	Inches H_2O ΔH	Line Vac. " Hg	Temperature °F Stack T_s	Probe	Heater Box	Last Imp.	Meter Inlet	Meter Outlet
1	1440	874.747	NA	1.0	4	NA	NA	NA	67	69	69
2	1445	877.62			4				58	68	68
3	1450	880.49			4				56	67	67
4	1455	883.38			4				56	66	66
5	1500	886.32			4				57	66	66
6	1505	889.16			4				58	67	67
7	1510	892.04			4				58	67	67
8	1515	894.92			4				58	69	67
9	1520	897.82			4				60	69	68
10	1525	900.74			4				61	70	69
11	1530	903.63			4				61	70	68
12	1535	906.53			4				61	70	69
Stop	1540	909.401									
	60min Sample Time	34.654 Net Volume	NA Avg. √ΔP	1.0 Avg. ΔH		NA Avg. Stack	Check Init: AP			68 Avg. Meter (AMT)	

Moisture Data :	Imp. 1	Imp. 2	Imp. 3	Imp. 4	Imp. 5
Impinger Solution :	DI	DI	Empty	Sh	
Final Vol or Wt (ml or g)	178	106	1	264.7	
Initial Vol or Wt (ml or g)	100	100	0	258.8	
Net Increase (ml or g)	78	6	1	5.9	

Rinse Data :	Imp. 1	Imp. 2	Imp. 3	Imp. 4	Imp. 5
Rinse Solution :					
Rinse Volume (ml)					
Final Sample Volume, Including Rinse (ml)					

Total Water Collected (TWW) [Imp. + SG*] = 90.9 ml
* Converted to ml by dividing by the density of H_2O (1 g/ml)

Meter Pressure (Pm) = 30.19 + 1.0 = 30.26

Stack Pressure (Ps) = 30.19 + (-1.30 / 13.6) = 30.09

% Moisture = (0.04707 x TWW) x 100 / (Vm(std) + (0.04707 x TWW)) =

Vm(std) = ____ (Net Volume) x ____ (DGMCF) x 528 std Temp (R) / AMT (R) x ____ Pm / 29.92 std press. = ____ dscf

Stork Testing & Metallurgical Consulting, Inc.
Houston, Texas

Source: **Conoco Phillips-unit 28 SRU INC. (Sweeny,Tx)** **Analyst:** VG

NO_x, CO, O_2 and SO_2 Calibration - Adjusted for Zero and Span Drift and Bias **STMC Project:** HOU002549P

Analyzer	Calibration Span of Analyzer ppm, % *	Span Gas Concentration ppm, % *	Span Gas Cylinder Number	Expiration Date	Calibration Error Value Zero	Calibration Error Value Mid Level	Fuel F-Factor HHV dscf/mmBtu	Gross Caloric Value HHV Btu/ft^3
CO	93.10	46.20	CC43872	4/15/2013	0.32	46.48	8,710.00	na
NO_x	94.00	51.70	CC261685	2/17/2012	0.21	51.41		
O_2	20.70	11.10	CC92287	10/5/2013	0.05	11.18		
SO_2	476.00	250.00	CC49084	7/15/2012	0.29	253.21		

	CO	NOx	O2	SO2
Initial Zero Bias - % of Span	0.33	-0.01	0.00	0.04
Initial Span Bias - % of Span	0.10	-0.43	-0.72	0.13

Drift and Bias Limits	
Drift	+/- 3% of Span
Bias	+/- 5% of Span

Run No.	Zero Gas Initial Reading	Zero Gas Final Reading	Zero Gas Difference ppm, % *	Zero Gas % Drift	Zero Gas % Bias	Span Gas Initial Reading	Span Gas Final Reading	Span Gas Difference ppm, % *	Span Gas % Drift	Span Gas % Bias
1 CO	0.63	-0.53	-1.16	-1.25	-0.91	46.57	46.01	-0.56	-0.60	-0.50
NO_x	0.20	-0.10	-0.30	-0.32	-0.33	51.01	50.26	-0.75	-0.80	-1.22
O_2	0.05	0.06	0.01	0.05	0.05	11.03	11.02	-0.01	-0.05	-0.77
SO_2	0.47	2.91	2.44	0.51	0.55	253.83	250.76	-3.07	-0.64	-0.51
2 CO	-0.53	0.10	0.63	0.68	-0.24	46.01	47.12	1.11	1.19	0.69
NO_x	-0.10	0.09	0.19	0.20	-0.13	50.26	50.27	0.01	0.01	-1.21
O_2	0.06	0.05	-0.01	-0.05	0.00	11.02	10.99	-0.03	-0.14	-0.92
SO_2	2.91	4.90	1.99	0.42	0.97	250.76	251.39	0.63	0.13	-0.38
3 CO	0.10	0.38	0.28	0.30	0.06	47.12	47.33	0.21	0.23	0.91
NO_x	0.09	0.08	-0.01	-0.01	-0.14	50.27	50.72	0.45	0.48	-0.73
O_2	0.05	0.06	0.01	0.05	0.05	10.99	10.97	-0.02	-0.10	-1.01
SO_2	4.90	4.68	-0.22	-0.05	0.92	251.39	250.19	-1.20	-0.25	-0.63

EQUATIONS: % Drift =[(Final Reading - Initial Reading)/Instrument Span] x 100

% Bias =[(Final Reading - Calibration Error Value) /Instrument Span] x 100

(NOTE: Initial Bias uses Initial Reading in place of Final Reading)

Run No.	Uncorrected Stack Gas Concentration ppm, % *	Average of Zero Gas	Average of Span Gas	Corrected Stack Gas Concentration ppm, % *	C Concentration in lb/dscf	C Concentration ppmvd@0%O2	Date Time
1 CO	8.55	0.05	46.29	8.49	6.174E-07	10.49	12/9/2010
NO_x	18.56	0.05	50.64	18.92	2.260E-06	23.37	1010-1110
O_2	3.99	0.06	11.03	3.98			
SO_2	101.21	1.69	252.30	99.28	1.650E-05	122.64	
2 CO	9.16	-0.22	46.57	9.26	6.731E-07	11.58	12/9/2010
NO_x	18.83	-0.01	50.27	19.37	2.314E-06	24.23	1215-1315
O_2	4.19	0.06	11.01	4.19			
SO_2	104.12	3.91	251.08	101.36	1.684E-05	126.79	
3 CO	9.01	0.24	47.23	8.62	6.269E-07	10.87	12/9/2010
NO_x	18.71	0.09	50.50	19.10	2.281E-06	24.07	1440-1540
O_2	4.30	0.06	10.98	4.31			
SO_2	98.59	4.79	250.79	95.33	1.584E-05	120.11	
Avg. CO				8.79	6.392E-07	10.98	
NO_x				19.13	2.285E-06	23.89	
O_2				4.16			
SO_2				98.66	1.639E-05	123.18	

Run No.	Method 19 Calculations			Methods 1-4 Calculation		Allowable Emission Rate	Percent of Allowable Emission Rate
	Emission Rate lb/mmBtu **	Fuel Flow Rate MSCFH	Emission Rate lb/hr	Q_{sd} dscf/hr	Emission Rate lb/hr	lb/hr	
1 CO	0.0066	NA	NA	2,283,169.0	1.41	20.20	7.0
NO_x	0.0243	NA	NA	2,283,169.0	5.16	8.13	63.5
SO_2	0.1775	NA	NA	2,283,169.0	37.67	115.42	32.6
2 CO	0.0073	NA	NA	2,235,947.4	1.51	20.20	7.5
NO_x	0.0252	NA	NA	2,235,947.4	5.17	8.13	63.6
SO_2	0.1835	NA	NA	2,235,947.4	37.66	115.42	32.6
3 CO	0.0069	NA	NA	2,291,267.1	1.44	20.20	7.1
NO_x	0.0250	NA	NA	2,291,267.1	5.23	8.13	64.3
SO_2	0.1738	NA	NA	2,291,267.1	36.30	115.42	31.4
Avg. CO	0.0070	NA	NA	2,270,127.8	1.45	20.20	7.2
NO_x	0.0249	NA	NA	2,270,127.8	5.19	8.13	63.8
SO_2	0.1783	NA	NA	2,270,127.8	37.21	115.42	32.2

Note * O_2 is expressed in percent. ** lb/mmBtu is calculated using 0% O_2 and the HHV F-Factor.

EQUATIONS: lb/mmBtu = C x F x [20.9/(20.9-%O2)]

Method 19 lb/hr = lb/mmBtu x Fuel Flow Rate x Gross Calorific Value 1x10-6

Method 1-4 lb/hr = C x Qsd

Stork Testing & Metallurgical Consulting, Inc.
Houston, Texas

Source: Conoco Phillips-Unit 28 SRU Inc.(Sweeny,Tx) **Analyst:** VG
VOC Calculation - Adjusted for Zero and Span Drift and Bias **Wet Basis** **STMC Project:** HOU002549P

Span of THC Analyzer =	100	Concentration of THC Span Gas =	50.20
Cylinder Number :	CC58519	Expiration Date:	8/15/2013

Run No.	Zero Gas Initial Reading	Zero Gas Final Reading	Zero Gas Difference ppm, wet	Zero Gas % Drift	Span Gas Initial Reading	Span Gas Final Reading	Span Gas Difference ppm, wet	Span Gas % Drift
1	0.00	0.05	0.05	0.05	50.48	50.19	-0.29	-0.29
2	0.05	-0.01	-0.06	-0.06	50.19	49.97	-0.22	-0.22
3	-0.01	-0.01	0.00	0.00	49.97	50.06	0.09	0.09

Run No. 1			Run No. 2			Run No. 3		
Injection Time or No.	Methane ppmv, wet	Ethane ppmv, wet	Injection Time or No.	Methane ppmv, wet	Ethane ppmv, wet	Injection Time or No.	Methane ppmv, wet	Ethane ppmv, wet
1	NA	NA	1	NA	NA	1	NA	NA
2	NA	NA	2	NA	NA	2	NA	NA
3	NA	NA	3	NA	NA	3	NA	NA

Run No.	Uncorrected Stack Gas Conc. ppmv, wet	Average of Zero Gas ppmv	Average of Span Gas ppmv	Bias Adj. Stack Gas Conc. ppmv, wet	Average Methane Conc. ppmv, wet	Average Ethane Conc. ppmv, wet	Moisture %	Corrected VOC* Conc. ppmv, wet
1	0.02	0.03	50.34	0.00	NA	NA	10.67	0.00
2	-0.03	0.02	50.08	-0.05	NA	NA	11.53	-0.05
3	-0.03	-0.01	50.02	-0.02	NA	NA	10.94	-0.02

Run No.	Corrected VOC** C Conc. ppmv, dry	VOC** C Conc. lb/dscf	Q_{sd} dscf/hr	VOC Emission Rate lb/hr	Allowable Limit lb/hr	Percent of Allowable	Date	Time
1	< 0.10	< 1.142E-08	2,283,169.0	< 0.026	0.93	< 2.8	12/9/2010	1010-1110
2	< 0.10	< 1.142E-08	2,235,947.4	< 0.026	0.93	< 2.7	12/9/2010	1215-1315
3	< 0.10	< 1.142E-08	2,291,267.1	< 0.026	0.93	< 2.8	12/9/2010	1440-1540
Average	< 0.10	< 1.142E-08	2,270,127.8	< 0.026	0.930	< 2.8		

VG, PM

Note:
% Drift = ((Final Reading - Initial Reading) / Span) x 100
Bias Adj. $_{\text{as propane}}$ = (Uncorr. Stack Gas - Avg. Zero) x (Span Gas Conc. / (Avg. Span Gas - Avg. Zero))
* Corr. VOC $_{\text{as propane}}$ = ((Bias Adj. x 3) - (Avg. Methane + (Avg. Ethane x 2))) / 3
** Corr. VOC $_{\text{as propane}}$ = ppm wet / (1 - ($\%H_2O$ / 100))
C (lb / dscf) = (Corr. VOC x 44 x 6.242 x 10^{-8}) / 24.04
VOC (lb/hr) = C x Q_{sd}
Stork calculates emissions based upon a detectable limit of 0.10 ppmvd (result adjusted by drift and bias).
Methane/ethane were not analyzed as the total VOCs determined by the THC analyzer were below the instrument detection limit.

Conoco Phillips
Unit 28 SRU Incinerator
Sweeny, Texas
HOU002549P
File Name: 12-09-10_09-35

Date & Time	CO	NOx	O2	THC	SO2
M/D/Y H:M	ppm	ppm	%	ppm	ppm
12/9/2010 10:11	8.81	18.68	3.99	0.05	95.67
12/9/2010 10:12	7.84	18.75	3.99	0.03	97.33
12/9/2010 10:13	7.08	18.63	3.89	0.04	98.3
12/9/2010 10:14	6.91	18.6	3.96	0.05	97.51
12/9/2010 10:15	9.73	18.58	3.98	0.04	95.71
12/9/2010 10:16	11.87	18.35	4.02	0.04	95.73
12/9/2010 10:17	11.04	18.45	3.88	0.05	98.66
12/9/2010 10:18	7.39	18.66	3.82	0.07	102.13
12/9/2010 10:19	6.56	18.5	3.88	0.07	102.83
12/9/2010 10:20	7.69	18.83	4.05	0.08	100.76
12/9/2010 10:21	11.34	18.27	4.02	0.07	100.36
12/9/2010 10:22	10.47	18.43	4.01	0.07	100.15
12/9/2010 10:23	10.96	18.53	3.9	0.07	100.16
12/9/2010 10:24	9.55	18.71	3.99	0.07	100.9
12/9/2010 10:25	8.26	18.73	4.02	0.07	101.26
12/9/2010 10:26	6.87	18.7	3.95	0.06	101.1
12/9/2010 10:27	8.26	18.45	3.95	0.06	94.81
12/9/2010 10:28	10.89	18.45	4.12	0.06	97.18
12/9/2010 10:29	15.66	18.12	4.09	0.07	98.59
12/9/2010 10:30	15.73	18.47	4.09	0.06	98.05
12/9/2010 10:31	11.43	18.82	4	0.06	99.05
12/9/2010 10:32	9.17	18.81	4.02	0.01	101.21
12/9/2010 10:33	9.12	18.89	4.11	0.01	101.02
12/9/2010 10:34	9.82	18.75	4.1	0.01	100.77
12/9/2010 10:35	9.04	18.68	4.07	0.01	101.64
12/9/2010 10:36	7.52	18.83	3.95	0	103.19
12/9/2010 10:37	7.19	18.59	3.91	0	103.88
12/9/2010 10:38	9.83	18.3	4.06	0	102.77
12/9/2010 10:39	8.63	18.82	3.99	0	102.79
12/9/2010 10:40	6.46	18.76	3.93	0	103.45
12/9/2010 10:41	6.48	18.56	3.99	0	103.18
12/9/2010 10:42	8.09	18.45	4	0	103.26
12/9/2010 10:43	9.73	18.52	4.05	-0.01	102.19
12/9/2010 10:44	8.29	18.51	3.96	0	103.9
12/9/2010 10:45	7.53	18.37	4.02	0	103.36
12/9/2010 10:46	6.44	18.59	3.99	-0.01	103.2
12/9/2010 10:47	6.06	18.36	3.98	0	102.41
12/9/2010 10:48	6.23	18.51	4	-0.01	94.54
12/9/2010 10:49	7.55	18.49	3.98	-0.01	97.81
12/9/2010 10:50	9.64	18.47	3.97	-0.01	101.33
12/9/2010 10:51	9.38	18.45	3.96	-0.01	104.44
12/9/2010 10:52	6.71	18.57	3.94	-0.01	105.44
12/9/2010 10:53	5.13	18.68	3.85	-0.01	106.86
12/9/2010 10:54	5.44	18.76	4.02	0	105.6
12/9/2010 10:55	7.43	18.37	4.05	0	101.76
12/9/2010 10:56	7.14	18.33	3.98	0	97.95
12/9/2010 10:57	6.88	18.73	4	0.01	101.7
12/9/2010 10:58	7.9	18.5	4.06	0.01	102.17
12/9/2010 10:59	9.21	18.35	4.06	0.01	102.34
12/9/2010 11:00	8.61	18.47	3.94	0.01	103.02
12/9/2010 11:01	6.71	18.71	3.89	0.01	103.7
12/9/2010 11:02	7.74	18.53	3.98	0.02	103.29
12/9/2010 11:03	8.63	18.39	4.07	0.02	101.52
12/9/2010 11:04	10.88	18.35	4.01	0.01	100.34
12/9/2010 11:05	8.49	18.77	3.92	0.01	102.61
12/9/2010 11:06	6	18.78	3.87	0	103.88
12/9/2010 11:07	6.33	18.46	3.91	0	104.24
12/9/2010 11:08	8.74	18.32	3.94	0	103.91
12/9/2010 11:09	9.43	18.64	4.12	0	102.61
12/9/2010 11:10	8.93	18.67	4.03	-0.01	102.97
Avg =	**8.55**	**18.56**	**3.99**	**0.02**	**101.21**

Conoco Phillips
Unit 28 SRU Incinerator
Sweeny, Texas
HOU002549P
File Name: 12-09-10_12-13

Date & Time	CO	NOx	O2	THC	SO2
M/D/Y H:M	ppm	ppm	%	ppm	ppm
12/9/2010 12:16	10.19	18.72	4.22	-0.03	100.33
12/9/2010 12:17	9.5	18.88	4.2	-0.04	101.75
12/9/2010 12:18	6.91	19.12	4.14	-0.04	106.91
12/9/2010 12:19	5.41	19.23	4.23	-0.04	109.25
12/9/2010 12:20	6.86	18.93	4.31	-0.05	107.3
12/9/2010 12:21	8.71	18.9	4.28	-0.04	105.59
12/9/2010 12:22	9.36	18.58	4.25	-0.05	104.65
12/9/2010 12:23	7.83	18.73	4.17	-0.05	106.41
12/9/2010 12:24	5.97	19	4.15	-0.05	105.37
12/9/2010 12:25	5.99	18.92	4.19	-0.05	106.92
12/9/2010 12:26	8.06	18.77	4.32	-0.05	105.07
12/9/2010 12:27	9.32	18.78	4.22	-0.05	105.65
12/9/2010 12:28	8.37	18.92	4.21	-0.05	105.86
12/9/2010 12:29	7.26	19.1	4.25	-0.05	105
12/9/2010 12:30	5.81	19.22	4.14	-0.05	104.79
12/9/2010 12:31	4.79	19.08	4.1	-0.05	105.98
12/9/2010 12:32	6.1	19.06	4.17	-0.05	105.43
12/9/2010 12:33	9.06	18.56	4.22	-0.05	104.9
12/9/2010 12:34	10.99	18.58	4.22	-0.05	104.05
12/9/2010 12:35	7.74	19.03	4.12	-0.04	104.77
12/9/2010 12:36	7.65	18.98	4.16	-0.04	104.52
12/9/2010 12:37	6.16	18.96	4.06	-0.04	104.68
12/9/2010 12:38	6.59	18.78	4.04	-0.03	104.41
12/9/2010 12:39	9.08	18.81	4.21	-0.02	102.62
12/9/2010 12:40	12.69	18.51	4.25	-0.02	100.73
12/9/2010 12:41	12.5	19.05	4.25	-0.02	100.01
12/9/2010 12:42	9.92	19.04	4.06	-0.02	102.15
12/9/2010 12:43	9.74	18.93	4.08	0	104.07
12/9/2010 12:44	9.15	18.91	4.09	0.02	103.26
12/9/2010 12:45	9.64	18.68	4.19	0.02	102.28
12/9/2010 12:46	10.75	18.63	4.22	0.02	102
12/9/2010 12:47	11.83	18.47	4.26	0.02	103.02
12/9/2010 12:48	12.24	18.85	4.22	0.01	103.95
12/9/2010 12:49	9.61	18.84	4.14	0.01	103.93
12/9/2010 12:50	8.8	18.93	4.17	0.01	95.51
12/9/2010 12:51	9.38	18.62	4.16	0	99.91
12/9/2010 12:52	10.86	18.58	4.2	0	103.17
12/9/2010 12:53	13.18	18.41	4.18	0	103.5
12/9/2010 12:54	11.58	18.62	4.12	0	104.78
12/9/2010 12:55	9.97	18.67	4.11	-0.01	105.78
12/9/2010 12:56	8.69	19	4.18	-0.01	105.89
12/9/2010 12:57	8.9	18.98	4.2	-0.01	106.47
12/9/2010 12:58	8.31	19	4.19	-0.03	106.28
12/9/2010 12:59	9.75	18.51	4.16	-0.06	107.55
12/9/2010 13:00	9.48	18.61	4.16	-0.06	107.3
12/9/2010 13:01	11.4	18.45	4.19	-0.06	106.79
12/9/2010 13:02	12.33	18.46	4.2	-0.05	105.33
12/9/2010 13:03	10.79	18.96	4.18	-0.05	104.73
12/9/2010 13:04	9.35	19.09	4.23	-0.05	103.79
12/9/2010 13:05	8.31	19.07	4.09	-0.05	105.73
12/9/2010 13:06	8.06	18.61	4.18	-0.04	106
12/9/2010 13:07	9.45	18.7	4.24	-0.04	104
12/9/2010 13:08	11.04	18.71	4.27	-0.04	103.53
12/9/2010 13:09	12.4	18.59	4.27	-0.03	102.8
12/9/2010 13:10	10.1	19.25	4.29	-0.03	103.03
12/9/2010 13:11	9.4	18.93	4.19	-0.03	103.88
12/9/2010 13:12	8.68	19.13	4.25	-0.02	103.01
12/9/2010 13:13	7.94	19.02	4.23	-0.02	102.57
12/9/2010 13:14	9.04	18.72	4.23	-0.02	101.74
12/9/2010 13:15	10.62	18.74	4.22	-0.02	96.28
Avg =	**9.16**	**18.83**	**4.19**	**-0.03**	**104.12**

Conoco Phillips
Unit 28 SRU Incinerator
Sweeny, Texas
HOU002549P
File Name: 12-09-10_14-38

Date & Time	CO	NOx	O2	THC	SO2
M/D/Y H:M	ppm	ppm	%	ppm	ppm
12/9/2010 14:41	10.1	18.77	4.3	0.01	95.99
12/9/2010 14:42	7.87	19.18	4.28	0	96.08
12/9/2010 14:43	6.93	18.91	4.21	-0.01	97.79
12/9/2010 14:44	6.8	18.78	4.25	-0.01	98.55
12/9/2010 14:45	7.85	18.63	4.3	-0.01	97.75
12/9/2010 14:46	8.71	18.93	4.31	-0.01	97.58
12/9/2010 14:47	10.6	18.78	4.3	-0.01	97.59
12/9/2010 14:48	10.62	18.65	4.3	0	98.14
12/9/2010 14:49	9.07	18.98	4.3	0	98.02
12/9/2010 14:50	7	19.06	4.25	0	98.56
12/9/2010 14:51	6.3	19.11	4.29	0	97.89
12/9/2010 14:52	7.92	18.85	4.36	0.01	96.67
12/9/2010 14:53	11.64	18.75	4.37	0.01	96.28
12/9/2010 14:54	12.74	18.66	4.36	0.01	95.55
12/9/2010 14:55	9.3	19.08	4.27	0	96.03
12/9/2010 14:56	5.9	19.2	4.3	-0.03	98.42
12/9/2010 14:57	5.71	19.03	4.28	-0.03	98.24
12/9/2010 14:58	6.22	18.73	4.32	-0.03	98.7
12/9/2010 14:59	5.37	18.91	4.26	-0.03	99.27
12/9/2010 15:00	6.97	18.59	4.32	-0.02	99.16
12/9/2010 15:01	8.64	18.5	4.34	-0.03	91.99
12/9/2010 15:02	12	18.23	4.36	-0.02	91.97
12/9/2010 15:03	12.49	18.32	4.31	-0.03	97.72
12/9/2010 15:04	9.8	18.67	4.31	-0.03	96.97
12/9/2010 15:05	7.84	18.87	4.28	-0.03	98.03
12/9/2010 15:06	7.74	18.62	4.25	-0.04	99.46
12/9/2010 15:07	8.7	18.51	4.28	-0.04	98
12/9/2010 15:08	9.57	18.47	4.24	-0.04	98.57
12/9/2010 15:09	9.45	18.66	4.33	-0.04	99.67
12/9/2010 15:10	10.52	18.44	4.31	-0.04	100.04
12/9/2010 15:11	9.58	18.43	4.27	-0.05	99.89
12/9/2010 15:12	8.21	18.67	4.29	-0.05	100.57
12/9/2010 15:13	8.45	18.57	4.31	-0.05	101.22
12/9/2010 15:14	8.19	18.66	4.31	-0.05	100.74
12/9/2010 15:15	8.96	18.68	4.33	-0.06	100.63
12/9/2010 15:16	10.69	18.5	4.38	-0.06	99.67
12/9/2010 15:17	11.42	18.66	4.4	-0.06	98.82
12/9/2010 15:18	8.34	18.94	4.32	-0.06	100.34
12/9/2010 15:19	6.67	18.89	4.25	-0.07	102.86
12/9/2010 15:20	6.51	18.62	4.25	-0.07	102.91
12/9/2010 15:21	9.16	18.45	4.33	-0.07	101.07
12/9/2010 15:22	12.02	18.37	4.37	-0.07	99.44
12/9/2010 15:23	10.85	18.77	4.31	-0.07	99.82
12/9/2010 15:24	7.76	18.89	4.33	-0.06	100.02
12/9/2010 15:25	6.31	18.97	4.23	-0.06	100.55
12/9/2010 15:26	6.29	18.88	4.22	-0.06	100.73
12/9/2010 15:27	9.5	18.43	4.34	-0.05	99.39
12/9/2010 15:28	10.96	18.37	4.37	-0.05	99.38
12/9/2010 15:29	10.73	18.65	4.34	-0.05	98.86
12/9/2010 15:30	9.54	18.67	4.28	-0.04	99.56
12/9/2010 15:31	8.3	18.64	4.29	-0.04	99.71
12/9/2010 15:32	7.41	18.85	4.24	-0.04	100.01
12/9/2010 15:33	9	18.62	4.33	-0.02	98.62
12/9/2010 15:34	12.63	18.56	4.38	0.02	97.31
12/9/2010 15:35	12.96	18.61	4.35	0.02	97.65
12/9/2010 15:36	9.71	18.81	4.26	0.01	98.69
12/9/2010 15:37	7.52	19.01	4.25	0.02	98.95
12/9/2010 15:38	8.54	18.79	4.24	0.02	97.94
12/9/2010 15:39	10.27	18.62	4.26	0.02	98.26
12/9/2010 15:40	13.54	18.28	4.31	0.02	97.2
Avg =	**9.01**	**18.71**	**4.30**	**-0.03**	**98.59**

oco Phillips
t 28 SRU Incinerator
Sweeny, Texas
HOU002549P
File Name: 12-09-10_07-12

Date and Time	CO	NOx	O2	THC	CO2	SO2	Flow
MM/DD/YY HH:MM	ppm	ppm	%	ppm	%	ppm	lpm
12/9/2010 07:13	-1.17	-0.52	7.79	1.98		1.59	
12/9/2010 07:14	-1.65	-0.52	0.11	1.67		1.29	
12/9/2010 07:15	-1.28	-0.40	0.09	0.21		0.96	
12/9/2010 07:16	0.32	0.21	0.05	0.14		0.71	
12/9/2010 07:17	0.52	0.28	15.14	10.19		0.42	
12/9/2010 07:18	34.95	24.07	20.34	80.95		0.28	
12/9/2010 07:19	92.87	89.32	20.69	81.34		47.75	
12/9/2010 07:20	93.48	96.47	20.69	82.15		463.76	
12/9/2010 07:21	93.73	94.67	19.19	84.75		469.50	
12/9/2010 07:22	83.42	95.30	11.18	84.61		469.96	
12/9/2010 07:23	45.33	94.53	11.18	84.59		483.12	
12/9/2010 07:24	44.37	92.89	8.92	82.49		483.08	
12/9/2010 07:25	44.26	94.07	0.11	30.44		469.00	
12/9/2010 07:26	44.27	88.83	0.11	30.11		479.79	
12/9/2010 07:27	44.64	53.78	0.11	29.87		473.54	
12/9/2010 07:28	45.40	51.41	0.10	29.83		473.67	
12/9/2010 07:29	45.86	51.36	0.08	42.84		479.21	
12/9/2010 07:30	46.48	49.77	0.05	50.96		380.81	
12/9/2010 07:31	46.51	4.74	0.07	50.28		253.21	
/9/2010 07:32	15.53	0.28	0.32	40.44		253.22	
12/9/2010 07:33	1.43	0.20	10.77	0.58		223.86	
12/9/2010 07:34	1.21	0.08	11.02	0.43		12.54	
12/9/2010 07:35	1.03	0.08	11.03	0.39		3.03	
12/9/2010 07:36	0.88	0.71	8.21	0.31		1.70	
12/9/2010 07:37	0.63	38.33	0.09	0.08		0.47	
12/9/2010 07:38	0.39	50.29	0.07	0.07		0.43	
12/9/2010 07:39	0.56	51.01	0.07	0.07		0.41	
12/9/2010 07:40	10.96	59.33	0.06	0.07		0.38	
12/9/2010 07:41	45.41	1.64	0.06	0.07		0.34	
12/9/2010 07:42	46.57	0.25	0.05	0.07		0.35	
12/9/2010 07:43	46.64	0.08	0.05	0.07		0.39	
12/9/2010 07:44	28.75	0.08	0.05	0.04		113.30	
12/9/2010 07:45	1.12	0.08	0.05	0.03		248.73	
12/9/2010 07:46	0.85	0.08	0.04	0.01		256.15	
12/9/2010 07:47	0.56	0.08	0.04	0.01		253.83	

Conoco Phillips
Unit 28 SRU Incinerator
[illegible]ny, Texas
HOU002549P
File Name: 12-09-10_09-35

Date and Time MM/DD/YY HH:MM	CO ppm	NOx ppm	O2 %	THC ppm	CO2 %	SO2 ppm	Flow lpm
12/9/2010 09:36	7.00	-0.31	0.18	0.00		1.23	
12/9/2010 09:37	5.06	-0.32	0.12	-0.02		0.77	
12/9/2010 09:38	0.40	-0.32	0.11	11.97		0.34	
12/9/2010 09:39	-0.41	-0.24	0.09	84.66		0.17	
12/9/2010 09:40	-0.44	-0.05	0.07	85.48		0.06	
12/9/2010 09:41	-0.13	0.08	0.06	85.18		0.11	
12/9/2010 09:42	0.97	0.22	0.05	75.67		-0.14	
12/9/2010 09:43		0.28	0.03	29.90		-0.26	
12/9/2010 09:44		0.28	0.03	29.51		-0.29	
12/9/2010 09:45		0.28	0.02	40.36		-0.40	
12/9/2010 09:46		0.28	0.02	50.48		-0.38	
12/9/2010 09:47		0.28	0.02	50.52		-0.47	
12/9/2010 09:48		0.11	12.20	17.74		-0.17	
12/9/2010 09:49	0.59	0.92	20.74	1.84		0.59	
12/9/2010 09:50	0.32	0.93	20.74	1.79		0.40	
12/9/2010 09:51	0.17	0.53	20.72	1.78		0.53	
12/9/2010 09:52	-0.03	0.27	20.71	1.76		0.51	
12/9/2010 09:53	0.02	0.08	20.71	1.76		0.61	
12/9/2010 09:54	-0.01	0.08	20.71	1.76		0.54	
12/9/2010 09:55	-0.05	-0.10	20.71	1.82		0.67	
[illegible]/9/2010 09:56	-0.01	-0.12	20.71	1.77		0.66	
[illegible]/9/2010 09:57	-0.20	-0.12	20.71	1.70		0.60	
12/9/2010 09:58	29.89	7.55	6.07	0.34		35.00	
12/9/2010 09:59	27.84	18.87	3.99	0.13		91.04	
12/9/2010 10:00	8.80	19.34	3.94	0.19		83.12	
12/9/2010 10:01	7.64	19.19	4.00	0.21		75.32	
12/9/2010 10:02	8.39	18.95	4.07	0.12		78.28	
12/9/2010 10:03	6.44	19.22	3.98	0.08		79.76	
12/9/2010 10:04	5.71	18.97	3.94	0.08		83.81	
12/9/2010 10:05	6.78	18.88	3.99	0.07		88.42	
12/9/2010 10:06	7.85	18.62	3.95	0.06		89.55	
12/9/2010 10:07	10.41	18.28	3.90	0.06		91.97	
12/9/2010 10:08	9:13	18.55	3.99	0.06		94.12	
12/9/2010 10:09	9.73	18.82	4.07	0.06		91.65	
12/9/2010 10:10	10.20	18.70	4.01	0.05		93.40	
12/9/2010 10:11	8.81	18.68	3.99	0.05		95.67	
12/9/2010 10:12	7.84	18.75	3.99	0.03		97.33	
12/9/2010 10:13	7.08	18.63	3.89	0.04		98.30	
12/9/2010 10:14	6.91	18.60	3.96	0.05		97.51	
12/9/2010 10:15	9.73	18.58	3.98	0.04		95.71	
12/9/2010 10:16	11.87	18.35	4.02	0.04		95.73	
12/9/2010 10:17	11.04	18.45	3.88	0.05		98.66	
12/9/2010 10:18	7.39	18.66	3.82	0.07		102.13	
12/9/2010 10:19	6.56	18.50	3.88	0.07		102.83	
12/9/2010 10:20	7.69	18.83	4.05	0.08		100.76	
12/9/2010 10:21	11.34	18.27	4.02	0.07		100.36	
[illegible]2/9/2010 10:22	10.47	18.43	4.01	0.07		100.15	
12/9/2010 10:23	10.96	18.53	3.90	0.07		100.16	
12/9/2010 10:24	9.55	18.71	3.99	0.07		100.90	
12/9/2010 10:25	8.26	18.73	4.02	0.07		101.26	
12/9/2010 10:26	6.87	18.70	3.95	0.06		101.10	
12/9/2010 10:27	8.26	18.45	3.95	0.06		94.81	
12/9/2010 10:28	10.89	18.45	4.12	0.06		97.18	
12/9/2010 10:29	15.66	18.12	4.09	0.07		98.59	

Recal THC due to Test not starting within 24hrs of calibrations

RV ~ 1

12/9/2010 10:31	11.43	18.82	4.00	0.06	99.05
12/9/2010 10:32	9.17	18.81	4.02	0.01	101.21
12/9/2010 10:33	9.12	18.89	4.11	0.01	101.02
12/9/2010 10:34	9.82	18.75	4.10	0.01	100.77
12/9/2010 10:35	9.04	18.68	4.07	0.01	101.64
12/9/2010 10:36	7.52	18.83	3.95	0.00	103.19
12/9/2010 10:37	7.19	18.59	3.91	0.00	103.88
12/9/2010 10:38	9.83	18.30	4.06	0.00	102.77
12/9/2010 10:39	8.63	18.82	3.99	0.00	102.79
12/9/2010 10:40	6.46	18.76	3.93	0.00	103.45
12/9/2010 10:41	6.48	18.56	3.99	0.00	103.18
12/9/2010 10:42	8.09	18.45	4.00	0.00	103.26
12/9/2010 10:43	9.73	18.52	4.05	-0.01	102.19
12/9/2010 10:44	8.29	18.51	3.96	0.00	103.90
12/9/2010 10:45	7.53	18.37	4.02	0.00	103.36
12/9/2010 10:46	6.44	18.59	3.99	-0.01	103.20
12/9/2010 10:47	6.06	18.36	3.98	0.00	102.41
12/9/2010 10:48	6.23	18.51	4.00	-0.01	94.54
12/9/2010 10:49	7.55	18.49	3.98	-0.01	97.81
12/9/2010 10:50	9.64	18.47	3.97	-0.01	101.33
12/9/2010 10:51	9.38	18.45	3.96	-0.01	104.44
12/9/2010 10:52	6.71	18.57	3.94	-0.01	105.44
12/9/2010 10:53	5.13	18.68	3.85	-0.01	106.86
12/9/2010 10:54	5.44	18.76	4.02	0.00	105.60
12/9/2010 10:55	7.43	18.37	4.05	0.00	101.76
12/9/2010 10:56	7.14	18.33	3.98	0.00	97.95
12/9/2010 10:57	6.88	18.73	4.00	0.01	101.70
12/9/2010 10:58	7.90	18.50	4.06	0.01	102.17
12/9/2010 10:59	9.21	18.35	4.06	0.01	102.34
12/9/2010 11:00	8.61	18.47	3.94	0.01	103.02
12/9/2010 11:01	6.71	18.71	3.89	0.01	103.70
12/9/2010 11:02	7.74	18.53	3.98	0.02	103.29
12/9/2010 11:03	8.63	18.39	4.07	0.02	101.52
12/9/2010 11:04	10.88	18.35	4.01	0.01	100.34
12/9/2010 11:05	8.49	18.77	3.92	0.01	102.61
12/9/2010 11:06	6.00	18.78	3.87	0.00	103.88
12/9/2010 11:07	6.33	18.46	3.91	0.00	104.24
12/9/2010 11:08	8.74	18.32	3.94	0.00	103.91
12/9/2010 11:09	9.43	18.64	4.12	0.00	102.61
12/9/2010 11:10	8.93	18.67	4.03	-0.01	102.97
12/9/2010 11:11	7.46	18.63	3.97	-0.01	105.07
12/9/2010 11:12	6.49	18.18	2.92	10.52	98.71
12/9/2010 11:13	0.77	5.46	0.96	19.93	139.50
12/9/2010 11:14	-1.87	-0.70	0.00	20.87	154.47
12/9/2010 11:15	-1.96	-0.12	0.68	29.75	135.74
12/9/2010 11:16	-2.01	-0.28	7.53	11.33	25.09
12/9/2010 11:17	-1.04	-0.32	10.99	0.25	16.69
12/9/2010 11:18	-0.53	-0.32	11.02	0.22	13.60
12/9/2010 11:19	-0.57	0.67	7.98	0.18	13.33
12/9/2010 11:20	-0.58	38.78	0.08	0.05	15.64
12/9/2010 11:21	-0.60	49.15	0.06	0.05	15.70
12/9/2010 11:22	-0.57	50.26	0.04	0.00	10.99
12/9/2010 11:23	16.86	44.61	0.10	0.44	2.91
12/9/2010 11:24	60.52	1.22	0.04	0.07	2.99
12/9/2010 11:25	44.83	0.08	0.04	0.00	2.58
12/9/2010 11:26	45.81	-0.11	0.04	-0.02	2.30
12/9/2010 11:27	46.01	-0.12	0.04	-0.05	2.19
12/9/2010 11:28	20.14	-0.03	0.05	-0.06	112.72
12/9/2010 11:29	-0.09	0.08	0.05	-0.06	247.51
12/9/2010 11:30	0.98	0.08	0.04	-0.06	250.76
12/9/2010 11:31	-0.13	0.11	0.06	19.93	221.37
12/9/2010 11:32	-0.91	0.09	0.07	48.70	19.63
12/9/2010 11:33	0.12	-0.12	0.07	50.03	6.17
12/9/2010 11:34	0.44	0.01	0.07	50.18	1.19
12/9/2010 11:35	0.79	0.80	1.49	28.98	3.07

Conoco Phillips
Unit 28 SRU Incinerator
eny, Texas
av0002549P
File Name: 12-09-10_12-13

Date and Time MM/DD/YY HH:MM	CO ppm	NOx ppm	O2 %	THC ppm	CO2 %	SO2 ppm	Flow lpm
~~12/9/2010 12:14~~	6.26	18.51	4.09	-0.03		98.81	
~~12/9/2010 12:15~~	~~7.93~~	~~18.88~~	~~4.24~~	~~-0.03~~		~~100.67~~	Run 2
12/9/2010 12:16	10.19	18.72	4.22	-0.03		100.33	
12/9/2010 12:17	9.50	18.88	4.20	-0.04		101.75	
12/9/2010 12:18	6.91	19.12	4.14	-0.04		106.91	
12/9/2010 12:19	5.41	19.23	4.23	-0.04		109.25	
12/9/2010 12:20	6.86	18.93	4.31	-0.05		107.30	
12/9/2010 12:21	8.71	18.90	4.28	-0.04		105.59	
12/9/2010 12:22	9.36	18.58	4.25	-0.05		104.65	
12/9/2010 12:23	7.83	18.73	4.17	-0.05		106.41	
12/9/2010 12:24	5.97	19.00	4.15	-0.05		105.37	
12/9/2010 12:25	5.99	18.92	4.19	-0.05		106.92	
12/9/2010 12:26	8.06	18.77	4.32	-0.05		105.07	
12/9/2010 12:27	9.32	18.78	4.22	-0.05		105.65	
12/9/2010 12:28	8.37	18.92	4.21	-0.05		105.86	
12/9/2010 12:29	7.26	19.10	4.25	-0.05		105.00	
12/9/2010 12:30	5.81	19.22	4.14	-0.05		104.79	
12/9/2010 12:31	4.79	19.08	4.10	-0.05		105.98	
12/9/2010 12:32	6.10	19.06	4.17	-0.05		105.43	
12/9/2010 12:33	9.06	18.56	4.22	-0.05		104.90	
[illegible]/9/2010 12:34	10.99	18.58	4.22	-0.05		104.05	
[illegible]/9/2010 12:35	7.74	19.03	4.12	-0.04		104.77	
12/9/2010 12:36	7.65	18.98	4.16	-0.04		104.52	
12/9/2010 12:37	6.16	18.96	4.06	-0.04		104.68	
12/9/2010 12:38	6.59	18.78	4.04	-0.03		104.41	
12/9/2010 12:39	9.08	18.81	4.21	-0.02		102.62	
12/9/2010 12:40	12.69	18.51	4.25	-0.02		100.73	
12/9/2010 12:41	12.50	19.05	4.25	-0.02		100.01	
12/9/2010 12:42	9.92	19.04	4.06	-0.02		102.15	
12/9/2010 12:43	9.74	18.93	4.08	0.00		104.07	
12/9/2010 12:44	9.15	18.91	4.09	0.02		103.26	
12/9/2010 12:45	9.64	18.68	4.19	0.02		102.28	
12/9/2010 12:46	10.75	18.63	4.22	0.02		102.00	
12/9/2010 12:47	11.83	18.47	4.26	0.02		103.02	
12/9/2010 12:48	12.24	18.85	4.22	0.01		103.95	
12/9/2010 12:49	9.61	18.84	4.14	0.01		103.93	
12/9/2010 12:50	8.80	18.93	4.17	0.01		95.51	
12/9/2010 12:51	9.38	18.62	4.16	0.00		99.91	
12/9/2010 12:52	10.86	18.58	4.20	0.00		103.17	
12/9/2010 12:53	13.18	18.41	4.18	0.00		103.50	
12/9/2010 12:54	11.58	18.62	4.12	0.00		104.78	
12/9/2010 12:55	9.97	18.67	4.11	-0.01		105.78	
12/9/2010 12:56	8.69	19.00	4.18	-0.01		105.89	
12/9/2010 12:57	8.90	18.98	4.20	-0.01		106.47	
12/9/2010 12:58	8.31	19.00	4.19	-0.03		106.28	
12/9/2010 12:59	9.75	18.51	4.16	-0.06		107.55	
12/9/2010 13:00	9.48	18.61	4.16	-0.06		107.30	
12/9/2010 13:01	11.40	18.45	4.19	-0.06		106.79	
12/9/2010 13:02	12.33	18.46	4.20	-0.05		105.33	
12/9/2010 13:03	10.79	18.96	4.18	-0.05		104.73	
12/9/2010 13:04	9.35	19.09	4.23	-0.05		103.79	
12/9/2010 13:05	8.31	19.07	4.09	-0.05		105.73	
12/9/2010 13:06	8.06	18.61	4.18	-0.04		106.00	
12/9/2010 13:07	9.45	18.70	4.24	-0.04		104.00	

12/9/2010 13:09	12.40	18.59	4.27	-0.03	102.80
12/9/2010 13:10	10.10	19.25	4.29	-0.03	103.03
12/9/2010 13:11	9.40	18.93	4.19	-0.03	103.88
12/9/2010 13:12	8.68	19.13	4.25	-0.02	103.01
12/9/2010 13:13	7.94	19.02	4.23	-0.02	102.57
12/9/2010 13:14	9.04	18.72	4.23	-0.02	101.74
12/9/2010 13:15	10.69	18.74	4.22	-0.02	96.28
12/9/2010 13:16	8.88	13.50	8.79	0.45	59.94
12/9/2010 13:17	0.22	0.01	10.98	0.17	10.18
12/9/2010 13:18	0.09	-0.12	10.99	0.17	7.69
12/9/2010 13:19	-0.03	17.20	2.65	-0.01	7.28
12/9/2010 13:20	0.10	50.27	0.06	-0.05	6.63
12/9/2010 13:21	0.26	50.62	0.12	-0.04	6.24
12/9/2010 13:22	4.81	17.32	0.13	-0.04	8.29
12/9/2010 13:23	44.51	0.09	0.05	-0.06	6.88
12/9/2010 13:24	47.22	0.08	0.05	-0.06	6.60
12/9/2010 13:25	47.12	0.02	0.05	-0.06	6.37
12/9/2010 13:26	32.56	0.01	0.07	39.51	4.90
12/9/2010 13:27	0.75	-0.11	0.06	49.90	5.45
12/9/2010 13:28	0.32	-0.12	0.06	49.97	5.88
12/9/2010 13:29	0.11	-0.12	0.05	6.28	132.80
12/9/2010 13:30	-0.18	0.08	0.05	-0.02	243.33
12/9/2010 13:31	-0.30	0.08	0.05	-0.06	250.60
12/9/2010 13:32	-0.35	0.08	0.05	-0.08	251.39

Conoco Phillips
Unit 28 SRU Incinerator
eny, Texas
J002549P
File Name: 12-09-10_14-38

Date and Time MM/DD/YY HH:MM	CO ppm	NOx ppm	O2 %	THC ppm	CO2 %	SO2 ppm	Flow lpm
12/9/2010 14:39	10.48	18.32	4.20	-0.02		98.50	
12/9/2010 14:40	10.58	18.90	4.28	-0.01		99.19	
12/9/2010 14:41	10.10	18.77	4.30	0.01		95.99	
12/9/2010 14:42	7.87	19.18	4.28	0.00		96.08	
12/9/2010 14:43	6.93	18.91	4.21	-0.01		97.79	
12/9/2010 14:44	6.80	18.78	4.25	-0.01		98.55	
12/9/2010 14:45	7.85	18.63	4.30	-0.01		97.75	
12/9/2010 14:46	8.71	18.93	4.31	-0.01		97.58	
12/9/2010 14:47	10.60	18.78	4.30	-0.01		97.59	
12/9/2010 14:48	10.62	18.65	4.30	0.00		98.14	
12/9/2010 14:49	9.07	18.98	4.30	0.00		98.02	
12/9/2010 14:50	7.00	19.06	4.25	0.00		98.56	
12/9/2010 14:51	6.30	19.11	4.29	0.00		97.89	
12/9/2010 14:52	7.92	18.85	4.36	0.01		96.67	
12/9/2010 14:53	11.64	18.75	4.37	0.01		96.28	
12/9/2010 14:54	12.74	18.66	4.36	0.01		95.55	
12/9/2010 14:55	9.30	19.08	4.27	0.00		96.03	
12/9/2010 14:56	5.90	19.20	4.30	-0.03		98.42	
12/9/2010 14:57	5.71	19.03	4.28	-0.03		98.24	
12/9/2010 14:58	6.22	18.73	4.32	-0.03		98.70	
12/9/2010 14:59	5.37	18.91	4.26	-0.03		99.27	
/9/2010 15:00	6.97	18.59	4.32	-0.02		99.16	
12/9/2010 15:01	8.64	18.50	4.34	-0.03		91.99	
12/9/2010 15:02	12.00	18.23	4.36	-0.02		91.97	
12/9/2010 15:03	12.49	18.32	4.31	-0.03		97.72	
12/9/2010 15:04	9.80	18.67	4.31	-0.03		96.97	
12/9/2010 15:05	7.84	18.87	4.28	-0.03		98.03	
12/9/2010 15:06	7.74	18.62	4.25	-0.04		99.46	
12/9/2010 15:07	8.70	18.51	4.28	-0.04		98.00	
12/9/2010 15:08	9.57	18.47	4.24	-0.04		98.57	
12/9/2010 15:09	9.45	18.66	4.33	-0.04		99.67	
12/9/2010 15:10	10.52	18.44	4.31	-0.04		100.04	
12/9/2010 15:11	9.58	18.43	4.27	-0.05		99.89	
12/9/2010 15:12	8.21	18.67	4.29	-0.05		100.57	
12/9/2010 15:13	8.45	18.57	4.31	-0.05		101.22	
12/9/2010 15:14	8.19	18.66	4.31	-0.05		100.74	
12/9/2010 15:15	8.96	18.68	4.33	-0.06		100.63	
12/9/2010 15:16	10.69	18.50	4.38	-0.06		99.67	
12/9/2010 15:17	11.42	18.66	4.40	-0.06		98.82	
12/9/2010 15:18	8.34	18.94	4.32	-0.06		100.34	
12/9/2010 15:19	6.67	18.89	4.25	-0.07		102.86	
12/9/2010 15:20	6.51	18.62	4.25	-0.07		102.91	
12/9/2010 15:21	9.16	18.45	4.33	-0.07		101.07	
12/9/2010 15:22	12.02	18.37	4.37	-0.07		99.44	
12/9/2010 15:23	10.85	18.77	4.31	-0.07		99.82	
12/9/2010 15:24	7.76	18.89	4.33	-0.06		100.02	
12/9/2010 15:25	6.31	18.97	4.23	-0.06		100.55	
2/9/2010 15:26	6.29	18.88	4.22	-0.06		100.73	
12/9/2010 15:27	9.50	18.43	4.34	-0.05		99.39	
12/9/2010 15:28	10.96	18.37	4.37	-0.05		99.38	
12/9/2010 15:29	10.73	18.65	4.34	-0.05		98.86	
12/9/2010 15:30	9.54	18.67	4.28	-0.04		99.56	
12/9/2010 15:31	8.30	18.64	4.29	-0.04		99.71	
12/9/2010 15:32	7.41	18.85	4.24	-0.04		100.01	
12/9/2010 15:33	9.00	18.62	4.33	-0.02		98.62	

Rv-3

12/9/2010 15:35	12.96	18.61	4.35	0.02	97.65
12/9/2010 15:36	9.71	18.81	4.26	0.01	98.69
12/9/2010 15:37	7.52	19.01	4.25	0.02	98.95
12/9/2010 15:38	8.54	18.79	4.24	0.02	97.94
12/9/2010 15:39	10.27	18.62	4.26	0.02	98.26
12/9/2010 15:40	13.54	18.28	4.31	0.02	97.20
9/2010 15:41	11.62	18.67	2.71	0.17	101.04
12/9/2010 15:42	1.42	45.45	0.06	-0.01	20.31
12/9/2010 15:43	0.38	50.62	0.05	-0.01	5.99
12/9/2010 15:44	0.44	50.72	0.05	-0.01	5.48
12/9/2010 15:45	0.47	49.92	4.95	0.11	4.95
12/9/2010 15:46	0.61	5.27	10.96	0.21	4.79
12/9/2010 15:47	0.61	0.01	10.97	0.20	4.68
12/9/2010 15:48	18.00	-0.02	2.65	0.02	5.02
12/9/2010 15:49	47.64	0.08	0.07	-0.06	4.68
12/9/2010 15:50	47.33	0.08	0.07	-0.06	4.55
12/9/2010 15:51	42.93	0.11	0.07	-0.06	51.05
12/9/2010 15:52	3.69	0.21	0.08	-0.07	249.69
12/9/2010 15:53	1.03	0.15	0.07	-0.07	258.88
12/9/2010 15:54	1.02	-0.02	0.07	-0.07	249.06
12/9/2010 15:55	1.07	-0.12	0.08	5.75	250.19
12/9/2010 15:56	1.41	-0.22	0.08	49.88	62.25
12/9/2010 15:57	1.54	-0.32	0.08	50.00	9.05

Stork Testing & Metallurgical Consulting, Inc.
Air Emission Services
Houston, Texas

Company:	Conoco Phillips, Sweeny, Texas				Source:	SRU-28.2			Date:	12/8/2010	
Component	Top 3 ppm	Permeation Values Acceptable Drift Limit +/- 5%			GC Calibration Values - Pretest 12/8/2010 Injection 1	Injection 2	Injection 3	Avg. of the 3 Inj.	Acceptable Drift Limit +/- 5%		
H_2S	6.03	5.73	to	6.33	6.02	6.04	6.06	6.04	5.74	to	6.34
					GC Calibration Values - Post Test 12/9/2010 Injection 1	Injection 2	Injection 3	Avg. of the 3 Inj.	Acceptable Drift Limit +/- 5%		
					5.93	5.94	5.95	5.94	5.64	to	6.24

GC Model:	Shimazdu 14A	Serial No.:	T-2
Col. Temp.:	42°C Isothermal	Inj. Temp.:	135°C
H2 flow:	90 kPa	Air flow:	50 kPa

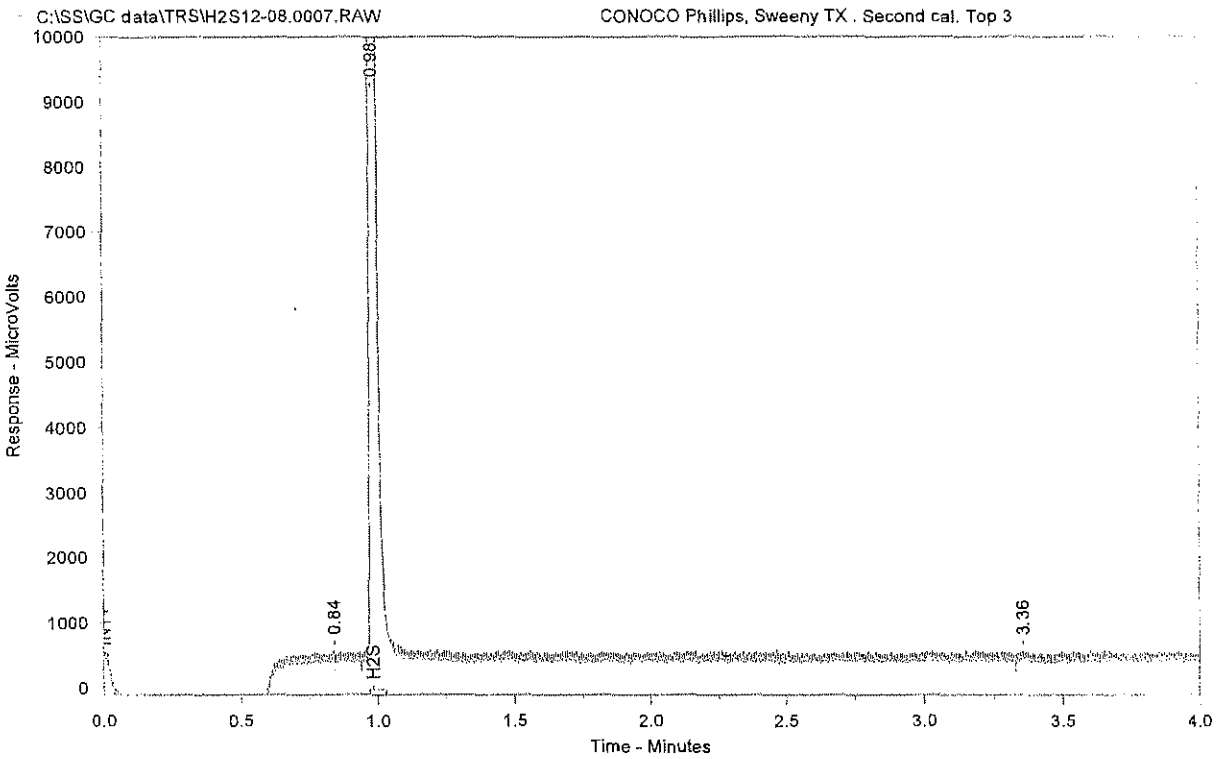
Component	Top 5 ppm	Permeation Values Acceptable Drift Limit +/- 5%			GC Calibration Values - Pretest 12/8/2010 Injection 1	Injection 2	Injection 3	Avg. of the 3 Inj.	Acceptable Drift Limit +/- 5%		
H_2S	3.94	3.74	to	4.14	3.84	3.86	3.89	3.86	3.67	to	4.06
					GC Calibration Values - Post Test 12/9/2010 Injection 1	Injection 2	Injection 3	Avg. of the 3 Inj.	Acceptable Drift Limit +/- 5%		
					4.04	3.92	4.00	3.99	3.79	to	4.19

Chart speed:	NA	Car. Gas flow:	125 kPa
Det. Temp.:	250°C	Inj. Vol.(ml):	100 µl
Sample flow:	100 ml/min	FPD Temp.:	250°C

Component	Top 11 ppm	Permeation Values Acceptable Drift Limit +/- 5%			GC Calibration Values - Pretest 12/8/2010 Injection 1	Injection 2	Injection 3	Avg. of the 3 Inj.	Acceptable Drift Limit +/- 5%		
H_2S	2.01	1.91	to	2.11	2.03	2.00	2.01	2.01	1.91	to	2.11
					GC Calibration Values - Post Test 12/9/2010 Injection 1	Injection 2	Injection 3	Avg. of the 3 Inj.	Acceptable Drift Limit +/- 5%		
					2.12	2.08	2.03	2.08	1.97	to	2.18

VMG

Chrom Perfect Chromatogram Report



Sample Name = **CONOCO Phillips, Sweeny TX . Second cal. Top 3**

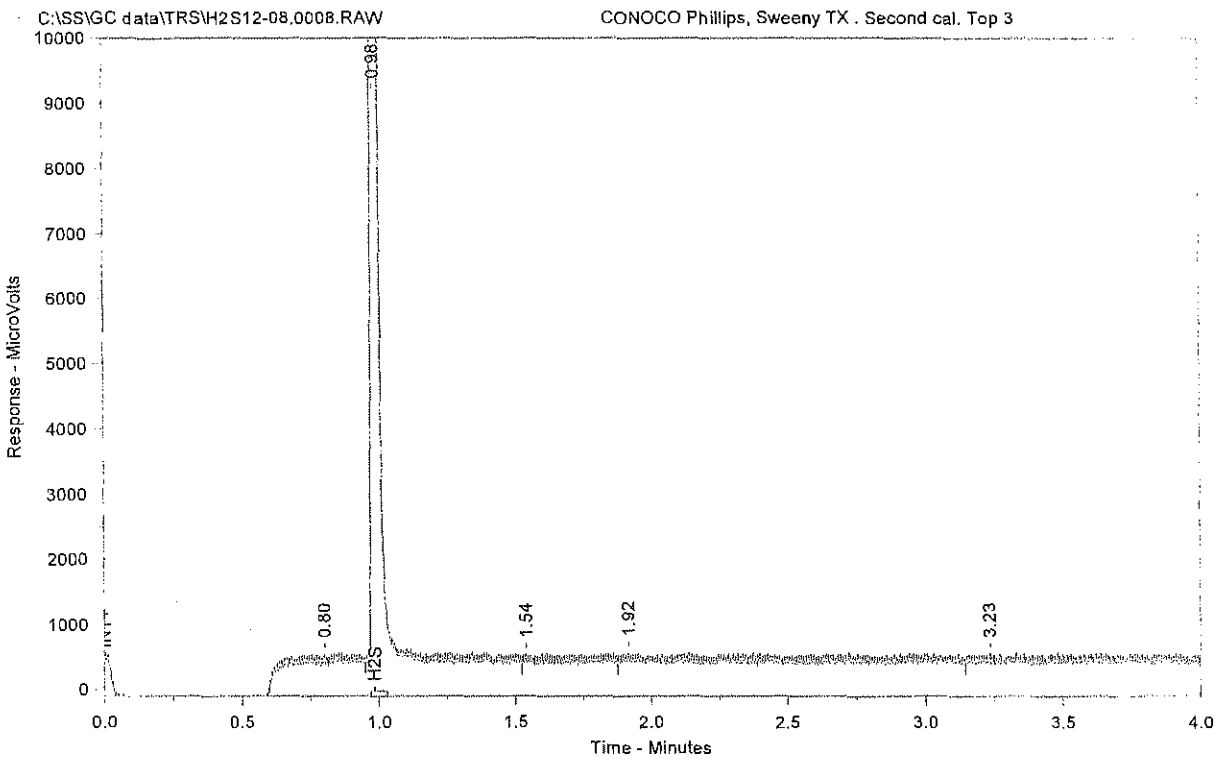
Instrument = Instrument 1
Heading 1 = Air = 100, H2 = 85, He = 113; 125 uL Sample Loop
Heading 2 = 0.0 Evnt 92.0, 0.6 Evnt -92, 5.0 Retn; 42C- Isothermal

Raw File Name = **C:\SS\GC data\TRS\H2S12-08.0007.RAW**
Method File Name = C:\CPData\SampleData\TRS.MET
Calibration File Name = C:\CPData\SampleData\H2S.CAL

Date Taken (end) = 12/8/2010 3:09:05 PM
Method Version = 8
Calibration Version = 1

Peak #	Ret. Time	Name	Amount	Height	Area	Type	Width
1	0.84		0.00	622.5	7950	BV	0.24
2	0.98	H2S	6.02	49429.3	63668	VB	0.02
3	3.36		0.00	194.1	548	BB	0.11

Total Area = 72165.98 Total Height = 50245.93 Total Amount = 6.021492



Sample Name = **CONOCO Phillips, Sweeny TX . Second cal. Top 3**

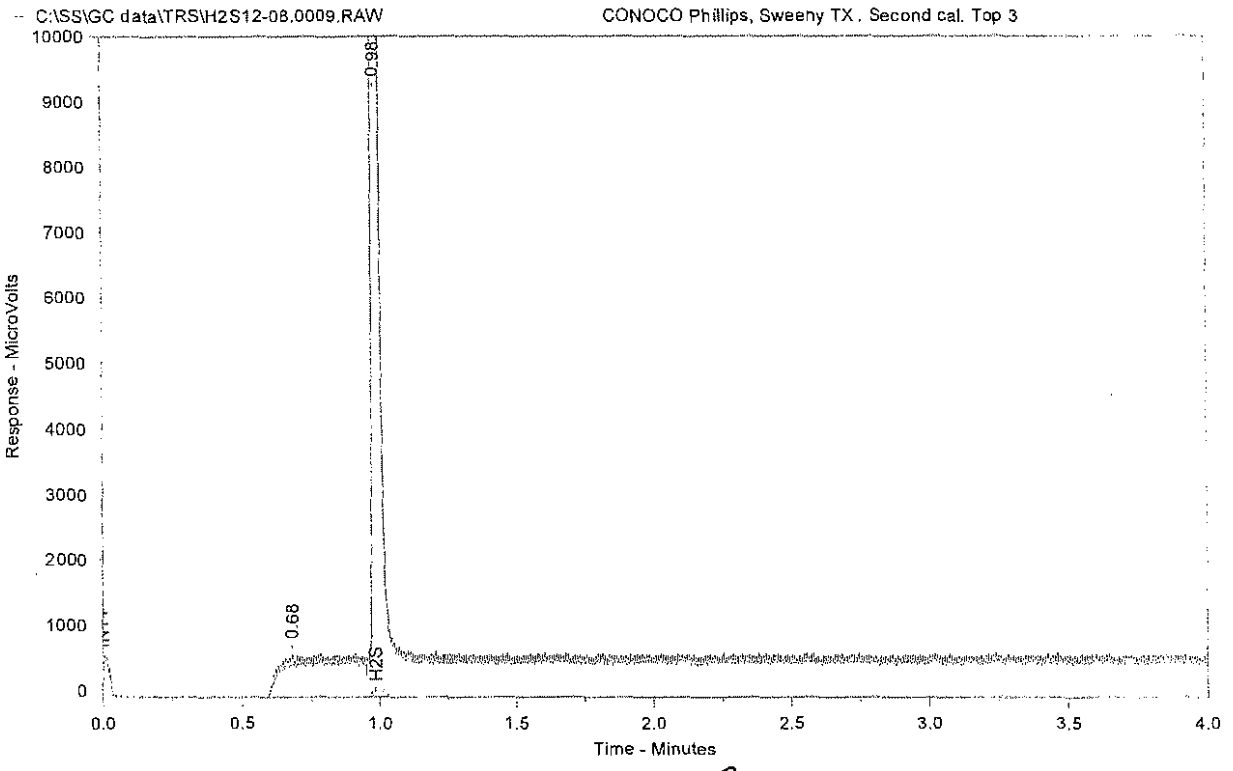
Instrument = Instrument 1
Heading 1 = Air = 100, H2 = 85, He = 113; 125 uL Sample Loop
Heading 2 = 0.0 Evnt 92.0, 0.6 Evnt -92, 5.0 Retn; 42C- Isothermal

Raw File Name = **C:\SS\GC data\TRS\H2S12-08.0008.RAW**
Method File Name = C:\CPData\SampleData\TRS.MET
Calibration File Name = C:\CPData\SampleData\H2S.CAL

Date Taken (end) = 12/8/2010 3:14:05 PM
Method Version = 8
Calibration Version = 1

Peak #	Ret. Time	Name	Amount	Height	Area	Type	Width
1	0.80		0.00	561.5	6474	BV	0.21
2	0.98	H2S	6.04	49754.4	60804	VB	0.02
3	1.54		0.00	190.2	218	BB	0.04
4	1.92		0.00	214.0	901	BB	0.19
5	3.23		0.00	190.5	497	BB	0.10

Total Area = 68893.88 Total Height = 50910.62 Total Amount = 6.039392



Sample Name = **CONOCO Phillips, Sweeny TX . Second cal. Top 3** -3

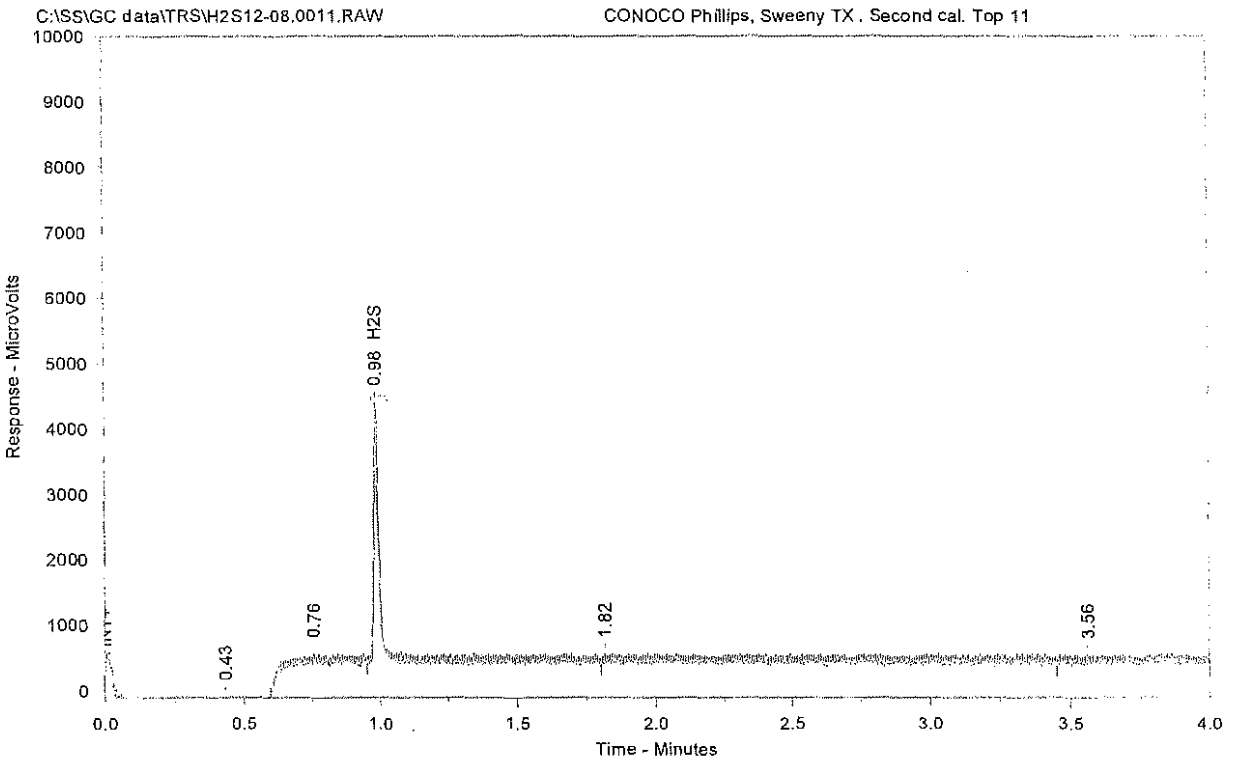
Instrument = Instrument 1
Heading 1 = Air = 100, H2 = 85, He = 113; 125 uL Sample Loop
Heading 2 = 0.0 Evnt 92.0, 0.6 Evnt -92, 5.0 Retn; 42C- Isothermal

Raw File Name = **C:\SS\GC data\TRS\H2S12-08.0009.RAW**
Method File Name = C:\CPData\SampleData\TRS.MET
Calibration File Name = C:\CPData\SampleData\H2S.CAL

Date Taken (end) = 12/8/2010 3:19:05 PM
Method Version = 8
Calibration Version = 1

Peak #	Ret. Time	Name	Amount	Height	Area	Type	Width
1	0.68		0.00	468.3	2685	BB	0.14
2	0.98	H2S	6.06	50086.7	60437	BB	0.02

Total Area = 63122.51 Total Height = 50555.02 Total Amount = 6.057619



Sample Name = **CONOCO Phillips, Sweeny TX . Second cal. Top 11 -** 1

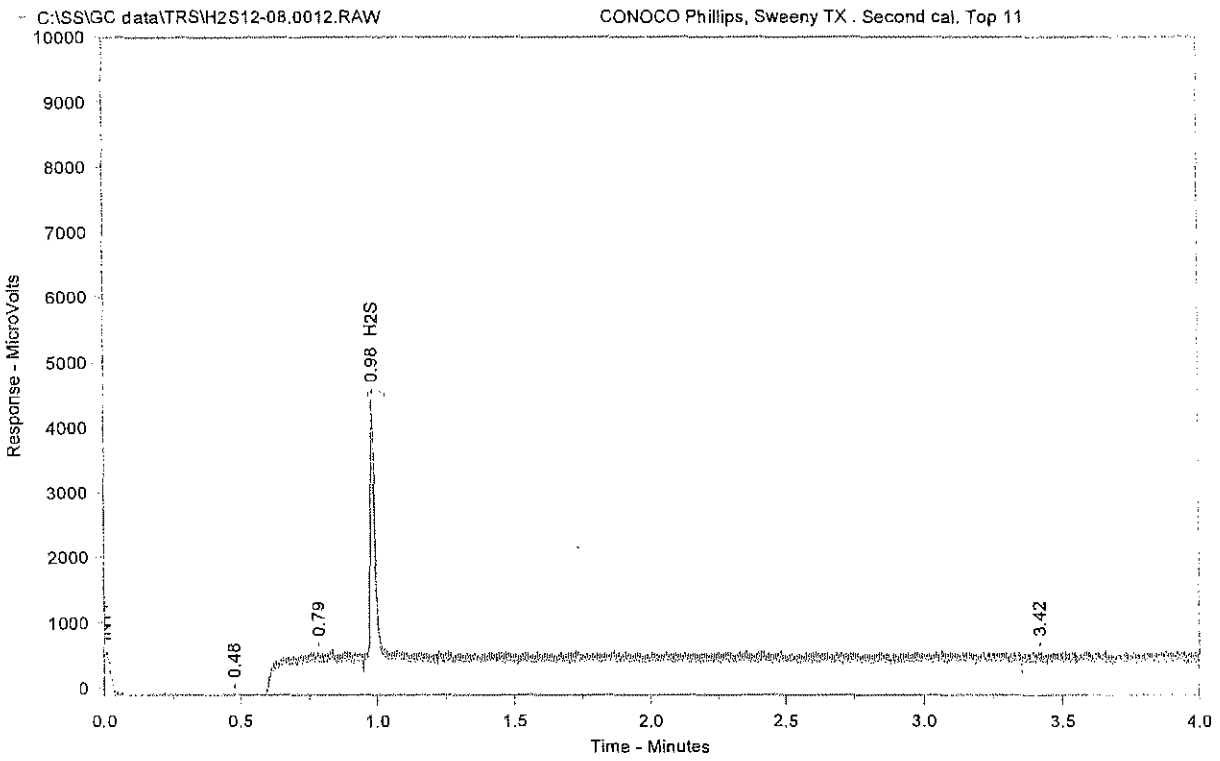
Instrument = Instrument 1
Heading 1 = Air = 100, H2 = 85, He = 113; 125 uL Sample Loop
Heading 2 = 0.0 Evnt 92.0, 0.6 Evnt -92, 5.0 Retn; 42C- Isothermal

Raw File Name = **C:\SS\GC data\TRS\H2S12-08.0011.RAW**
Method File Name = C:\CPData\SampleData\TRS.MET
Calibration File Name = C:\CPData\SampleData\H2S.CAL

Date Taken (end) = 12/8/2010 3:34:23 PM
Method Version = 8
Calibration Version = 1

Peak #	Ret. Time	Name	Amount	Height	Area	Type	Width
1	0.43		0.00	208.4	550	BB	0.09
2	0.76		0.00	751.3	7776	BV	0.20
3	0.98	H2S	2.03	4482.8	18027	VV	0.02
4	1.82		0.00	218.6	443	VB	0.07
5	3.56		0.00	206.9	1444	BB	0.29

Total Area = 28240.86 Total Height = 5867.992 Total Amount = 2.031289



Sample Name = **CONOCO Phillips, Sweeny TX . Second cal. Top 11**

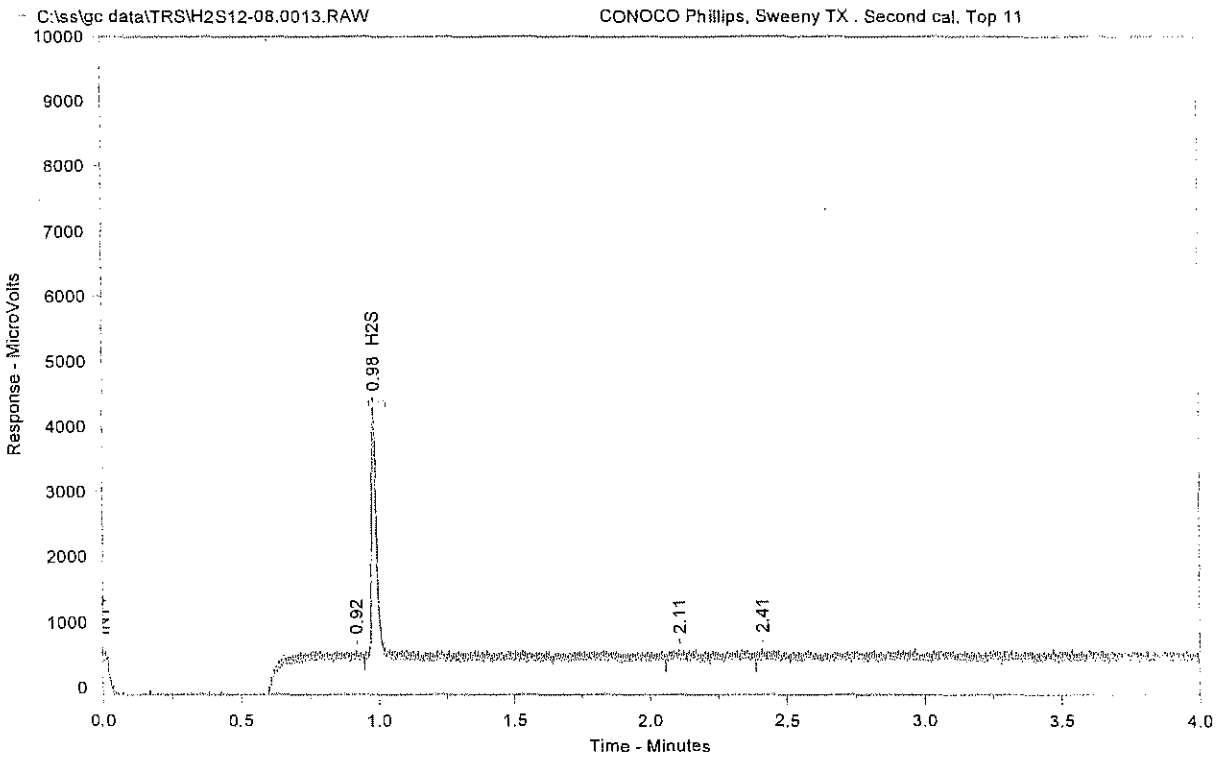
Instrument = Instrument 1
Heading 1 = Air = 100, H2 = 85, He = 113; 125 uL Sample Loop
Heading 2 = 0.0 Evnt 92.0, 0.6 Evnt -92, 5.0 Retn; 42C- Isothermal

Raw File Name = **C:\SS\GC data\TRS\H2S12-08.0012.RAW**
Method File Name = C:\CPData\SampleData\TRS.MET
Calibration File Name = C:\CPData\SampleData\H2S.CAL

Date Taken (end) = 12/8/2010 3:39:23 PM
Method Version = 8
Calibration Version = 1

Peak #	Ret. Time	Name	Amount	Height	Area	Type	Width
1	0.48		0.00	198.1	444	BB	0.09
2	0.79		0.00	631.8	6800	BV	0.20
3	0.98	H2S	2.00	4334.1	8252	VB	0.02
4	3.42		0.00	199.2	425	BB	0.09

Total Area = 15921.09 Total Height = 5363.186 Total Amount = 2.000503



Sample Name = **CONOCO Phillips, Sweeny TX . Second cal. Top 11** -3

Instrument = Instrument 1
Heading 1 = Air = 100, H2 = 85, He = 113; 125 uL Sample Loop
Heading 2 = 0.0 Evnt 92.0, 0.6 Evnt -92, 5.0 Retn; 42C- Isothermal

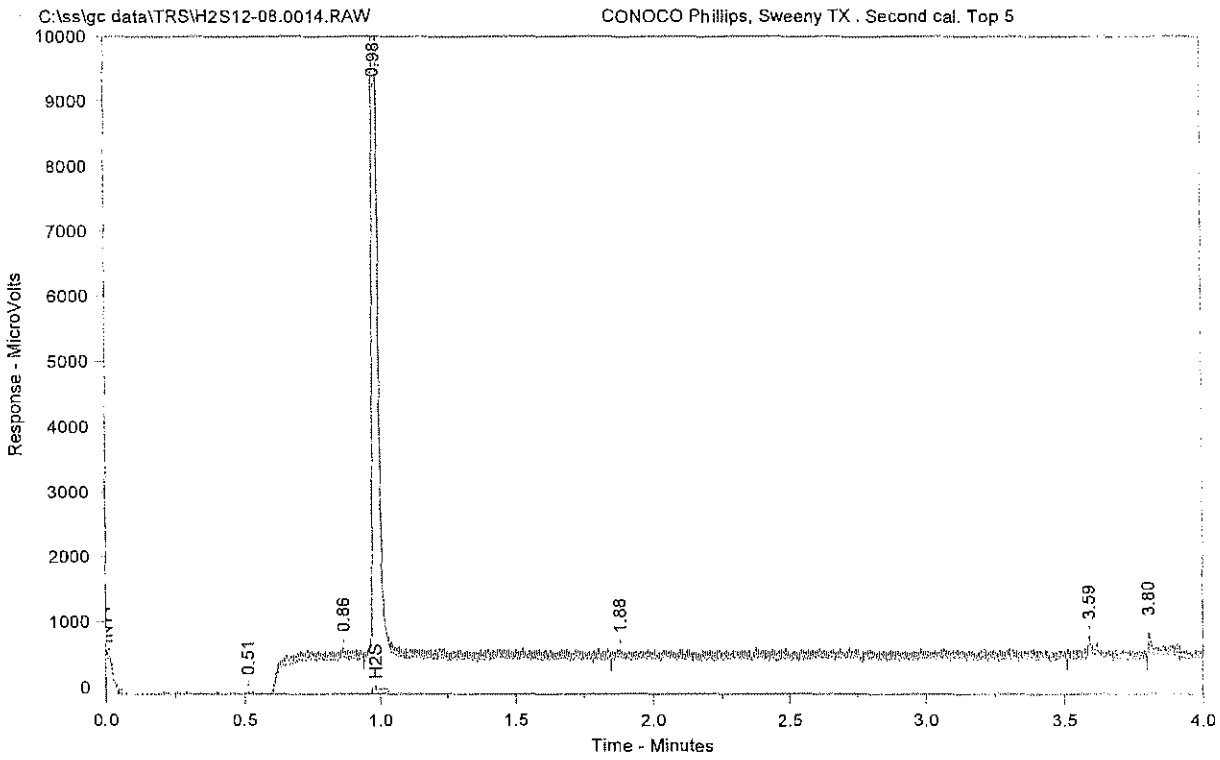
Raw File Name = **C:\ss\gc data\TRS\H2S12-08.0013.RAW**
Method File Name = C:\CPData\SampleData\TRS.MET
Calibration File Name = C:\CPData\SampleData\H2S.CAL

Date Taken (end) = 12/8/2010 3:46:19 PM
Method Version = 8
Calibration Version = 1

Peak #	Ret. Time	Name	Amount	Height	Area	Type	Width
1	0.92		0.00	681.7	12183	BV	0.34
2	0.98	H2S	2.01	4383.1	25049	VV	0.02
3	2.11		0.00	201.4	431	VB	0.07
4	2.41		0.00	222.9	650	BB	0.12

Total Area = 38313.12 Total Height = 5489.147 Total Amount = 2.010713

Chrom Perfect Chromatogram Report



Sample Name = **CONOCO Phillips, Sweeny TX . Second cal. Top 5**

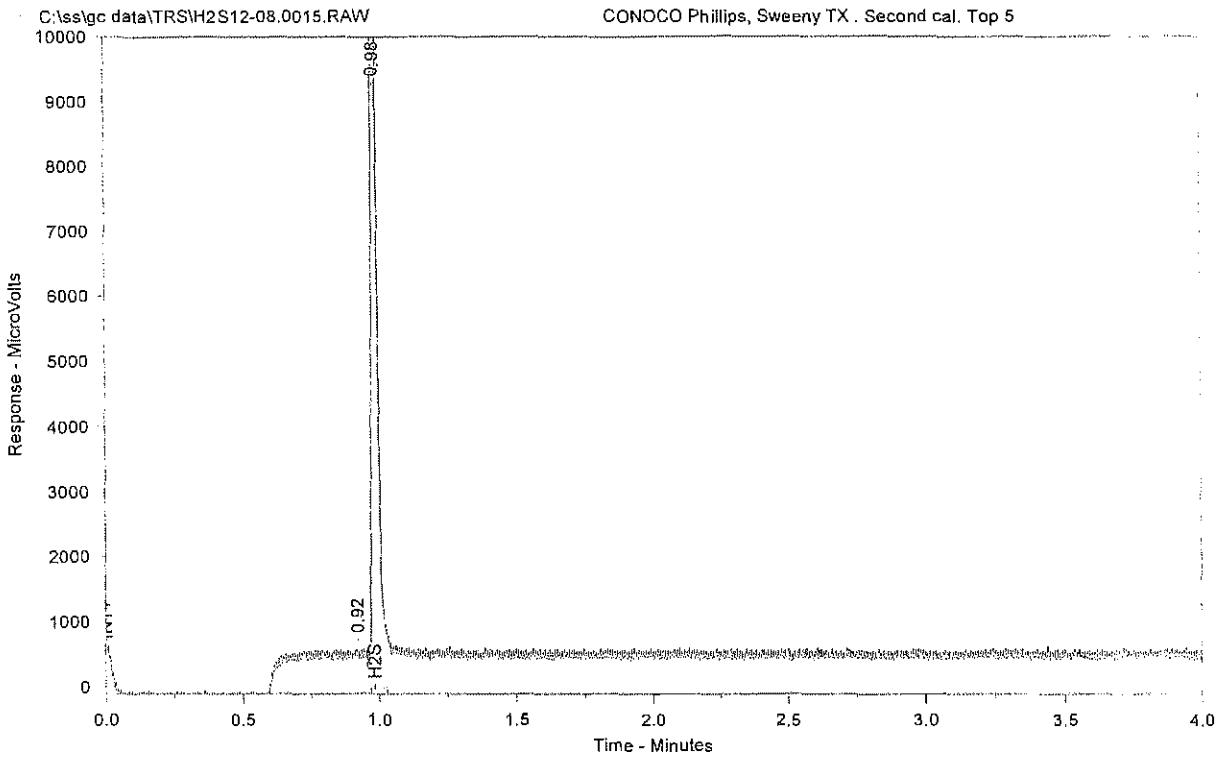
Instrument = Instrument 1
Heading 1 = Air = 100, H2 = 85, He = 113; 125 uL Sample Loop
Heading 2 = 0.0 Evnt 92.0, 0.6 Evnt -92, 5.0 Retn; 42C- Isothermal

Raw File Name = **C:\ss\gc data\TRS\H2S12-08.0014.RAW**
Method File Name = C:\CPData\SampleData\TRS.MET
Calibration File Name = C:\CPData\SampleData\H2S.CAL

Date Taken (end) = 12/8/2010 3:54:48 PM
Method Version = 8
Calibration Version = 1

Peak #	Ret. Time	Name	Amount	Height	Area	Type	Width
1	0.51		0.00	204.9	379	BB	0.08
2	0.86		0.00	492.0	8624	BV	0.33
3	0.98	H2S	3.84	18270.4	22666	VB	0.02
4	1.88		0.00	209.5	1525	BB	0.29
5	3.59		0.00	386.5	1391	BV	0.03
6	3.80		0.00	451.5	1074	VB	0.11

Total Area = 35659.05 Total Height = 20014.79 Total Amount = 3.83726



Sample Name = **CONOCO Phillips, Sweeny TX . Second cal. Top 5** — 2

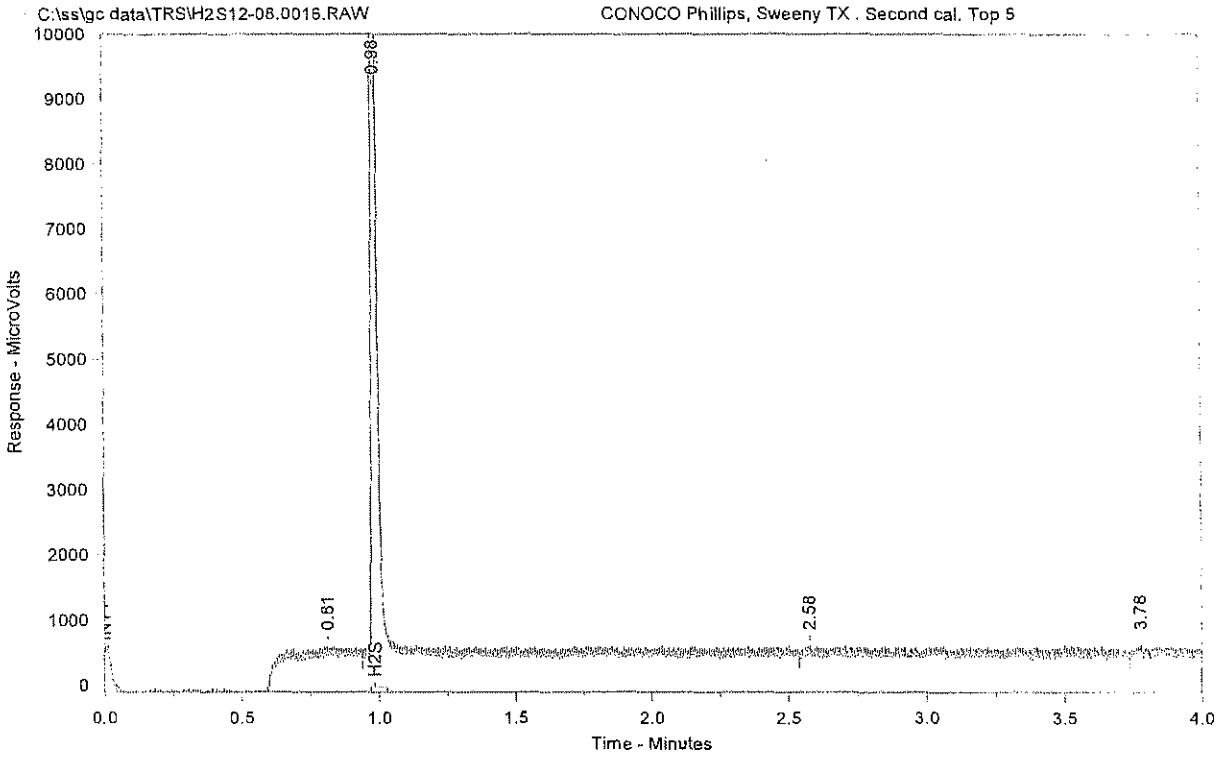
Instrument = Instrument 1
Heading 1 = Air = 100, H2 = 85, He = 113; 125 uL Sample Loop
Heading 2 = 0.0 Evnt 92.0, 0.6 Evnt -92, 5.0 Retn; 42C- Isothermal

Raw File Name = **C:\ss\gc data\TRS\H2S12-08.0015.RAW**
Method File Name = C:\CPData\SampleData\TRS.MET
Calibration File Name = C:\CPData\SampleData\H2S.CAL

Date Taken (end) = 12/8/2010 3:59:49 PM
Method Version = 8
Calibration Version = 1

Peak #	Ret. Time	Name	Amount	Height	Area	Type	Width
1	0.92		0.00	459.9	10048	BV	0.35
2	0.98	H2S	3.86	18550.2	24141	VB	0.02

Total Area = 34188.94 Total Height = 19010.1 Total Amount = 3.863753



Sample Name = **CONOCO Phillips, Sweeny TX . Second cal. Top 5** -3

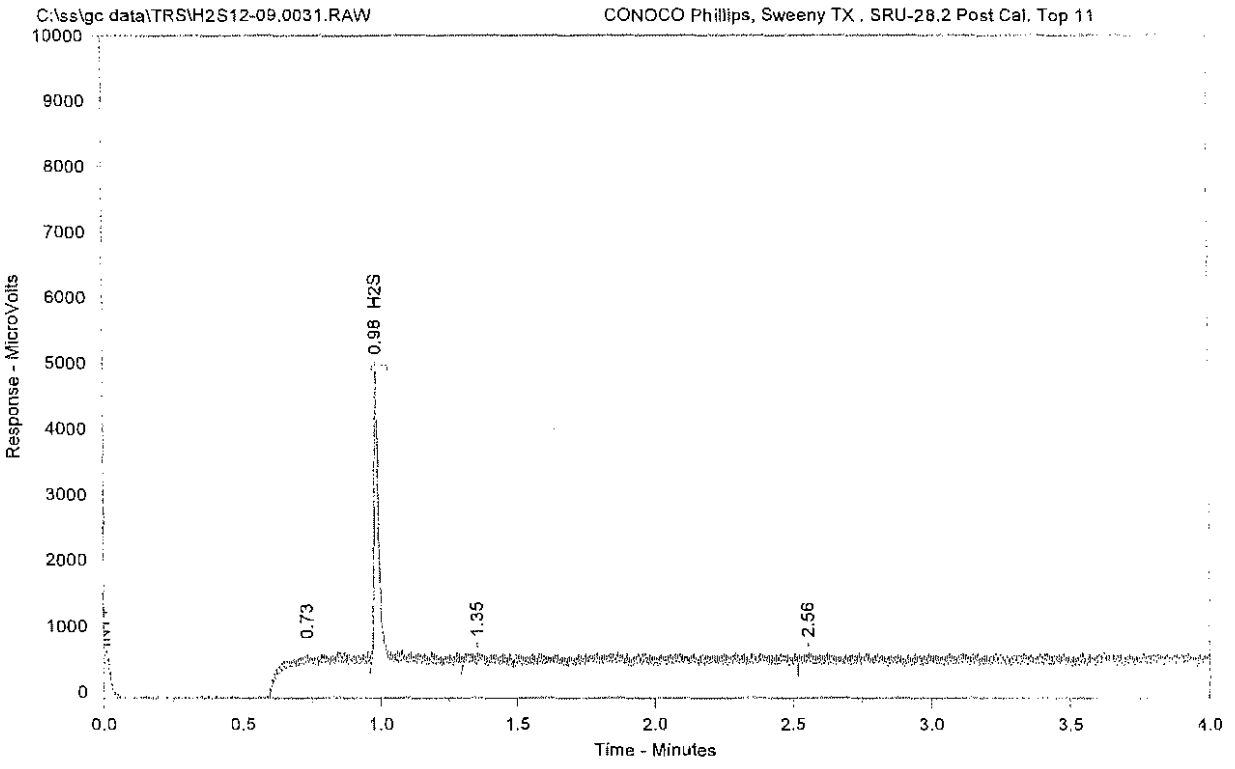
Instrument = Instrument 1
Heading 1 = Air = 100, H2 = 85, He = 113; 125 uL Sample Loop
Heading 2 = 0.0 Evnt 92.0, 0.6 Evnt -92, 5.0 Retn; 42C- Isothermal

Raw File Name = **C:\ss\gc data\TRS\H2S12-08.0016.RAW**
Method File Name = C:\CPData\SampleData\TRS.MET
Calibration File Name = C:\CPData\SampleData\H2S.CAL

Date Taken (end) = 12/8/2010 4:04:49 PM
Method Version = 8
Calibration Version = 1

Peak #	Ret. Time	Name	Amount	Height	Area	Type	Width
1	0.81		0.00	545.1	9105	BV	0.33
2	0.98	H2S	3.89	18814.3	23447	VB	0.02
3	2.58		0.00	206.0	476	BB	0.10
4	3.78		0.00	218.6	361	BB	0.07

Total Area = 33389.73 Total Height = 19784.03 Total Amount = 3.888564



Sample Name = **CONOCO Phillips, Sweeny TX . SRU-28.2 Post Cal. Top 11**

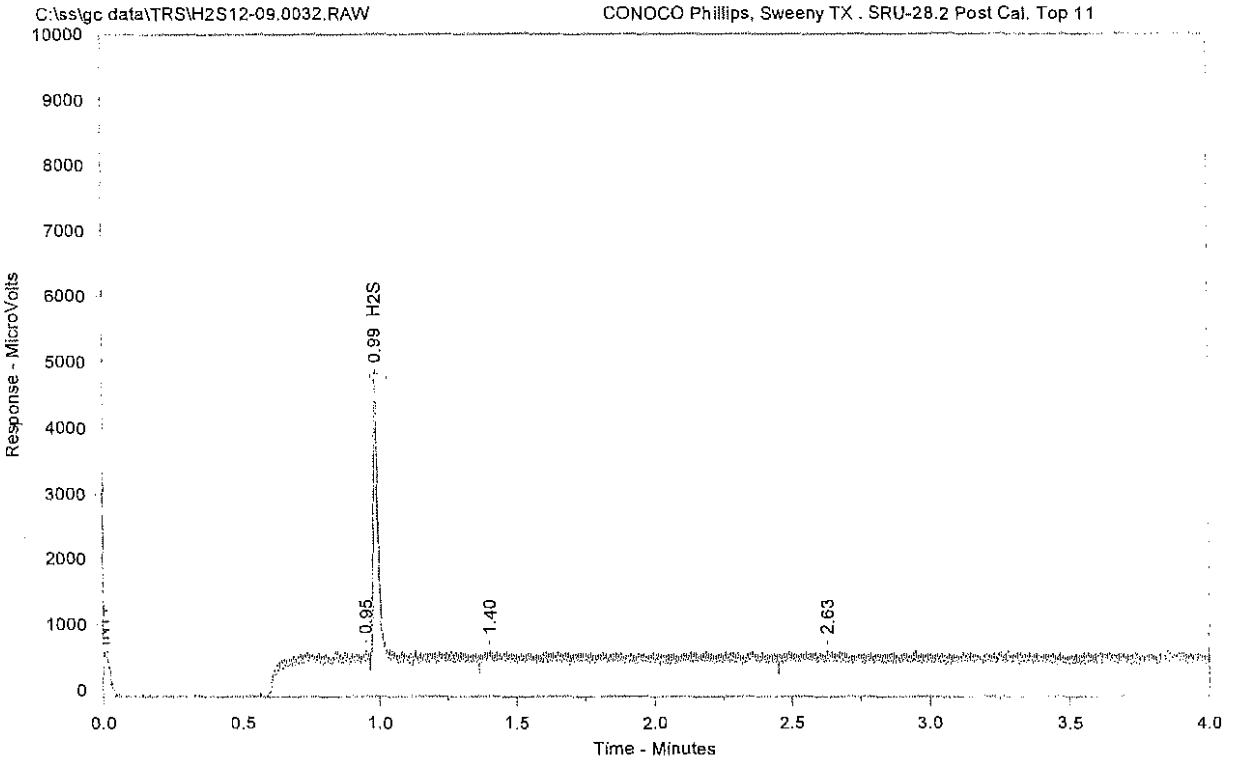
Instrument = Instrument 1
Heading 1 = Air = 100, H2 = 85, He = 113; 125 uL Sample Loop
Heading 2 = 0.0 Evnt 92.0, 0.6 Evnt -92, 15.0 Retn; 42C- Isothermal

Raw File Name = **C:\ss\gc data\TRS\H2S12-09.0031.RAW**
Method File Name = C:\CPData\SampleData\TRS.MET
Calibration File Name = C:\CPData\SampleData\H2S.CAL

Date Taken (end) = 12/9/2010 5:08:01 PM
Method Version = 8
Calibration Version = 1

Peak #	Ret. Time	Name	Amount	Height	Area	Type	Width
1	0.73		0.00	716.8	6014	BV	0.17
2	0.98	H2S	2.12	4904.5	15627	SBB	0.02
3	1.35		0.00	230.3	1149	TBB	0.18
4	2.56		0.00	204.7	888	BB	0.19

Total Area = 23678.46 Total Height = 6056.21 Total Amount = 2.115663



Sample Name = **CONOCO Phillips, Sweeny TX . SRU-28.2 Post Cal. Top 11**

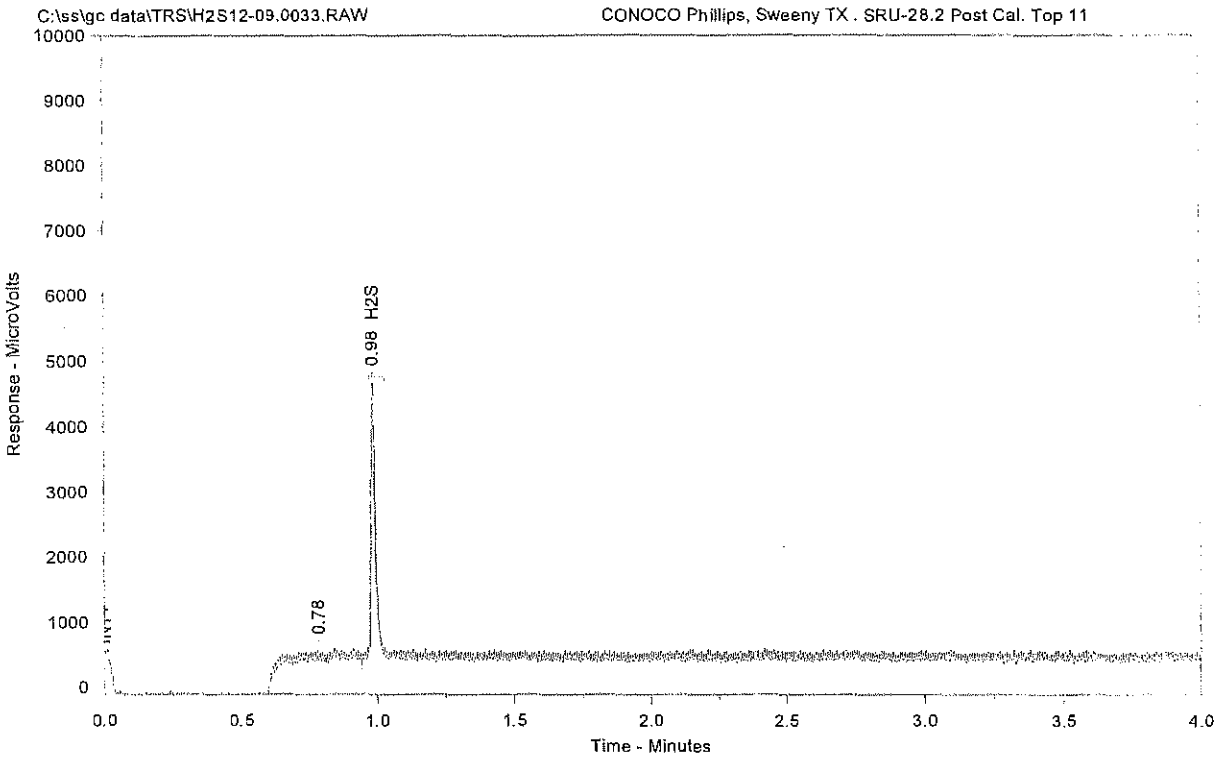
Instrument = Instrument 1
Heading 1 = Air = 100, H2 = 85, He = 113; 125 uL Sample Loop
Heading 2 = 0.0 Evnt 92.0, 0.6 Evnt -92, 15.0 Retn; 42C- Isothermal

Raw File Name = **C:\ss\gc data\TRS\H2S12-09.0032.RAW**
Method File Name = C:\CPData\SampleData\TRS.MET
Calibration File Name = C:\CPData\SampleData\H2S.CAL

Date Taken (end) = 12/9/2010 5:13:01 PM
Method Version = 8
Calibration Version = 1

Peak #	Ret. Time	Name	Amount	Height	Area	Type	Width
1	0.95		0.00	628.6	12128	BV	0.36
2	0.99	H2S	2.08	4725.6	11257	VV	0.02
3	1.40		0.00	317.9	1850	VB	0.21
4	2.63		0.00	234.9	1491	BB	0.27

Total Area = 26725.46 Total Height = 5907.129 Total Amount = 2.080379



Sample Name = **CONOCO Phillips, Sweeny TX . SRU-28.2 Post Cal. Top 11**

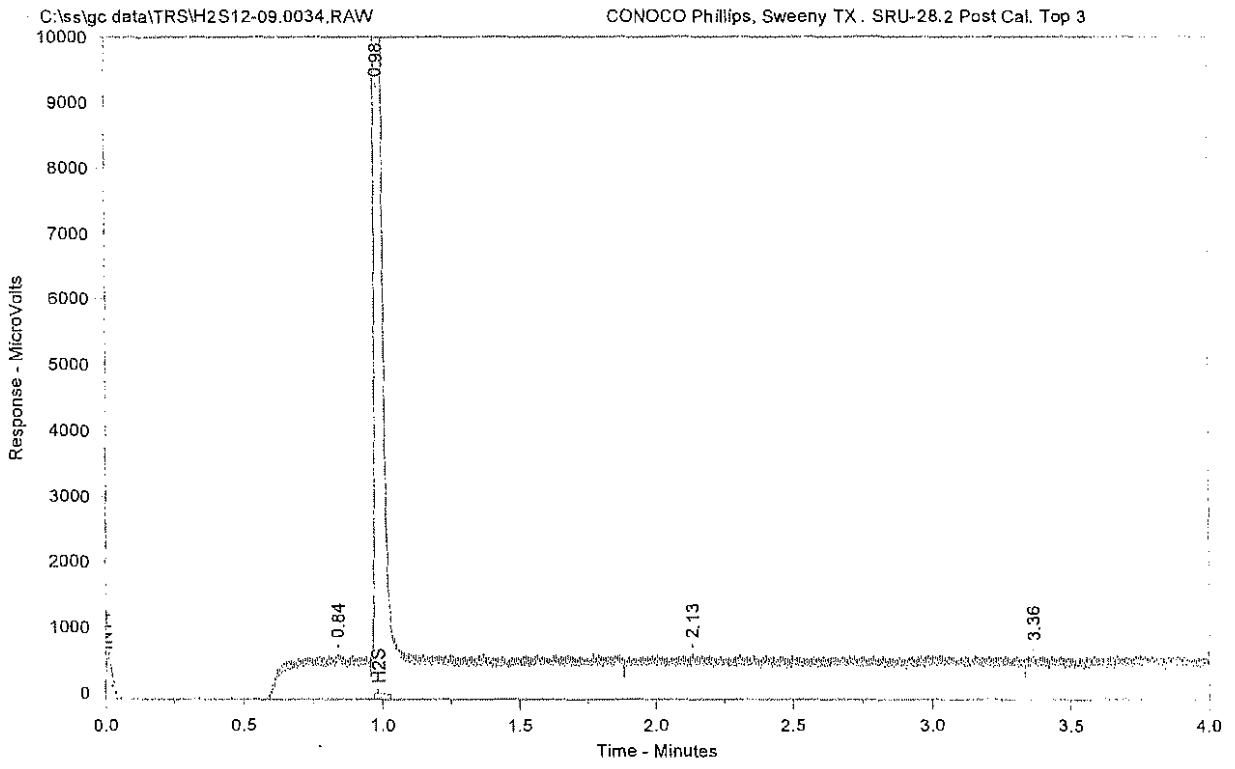
Instrument = Instrument 1
Heading 1 = Air = 100, H2 = 85, He = 113; 125 uL Sample Loop
Heading 2 = 0.0 Evnt 92.0, 0.6 Evnt -92, 15.0 Retn; 42C- Isothermal

Raw File Name = **C:\ss\gc data\TRS\H2S12-09.0033.RAW**
Method File Name = C:\CPData\SampleData\TRS.MET
Calibration File Name = C:\CPData\SampleData\H2S.CAL

Date Taken (end) = 12/9/2010 5:18:01 PM
Method Version = 8
Calibration Version = 1

Peak #	Ret. Time	Name	Amount	Height	Area	Type	Width
1	0.78		0.00	607.6	6693	BV	0.21
2	0.98	H2S	2.03	4487.6	7289	VB	0.02

Total Area = 13981.66 Total Height = 5095.23 Total Amount = 2.032269



Sample Name = **CONOCO Phillips, Sweeny TX . SRU-28.2 Post Cal. Top 3**

Instrument = Instrument 1
Heading 1 = Air = 100, H2 = 85, He = 113; 125 uL Sample Loop
Heading 2 = 0.0 Evnt 92.0, 0.6 Evnt -92, 15.0 Retn; 42C- Isothermal

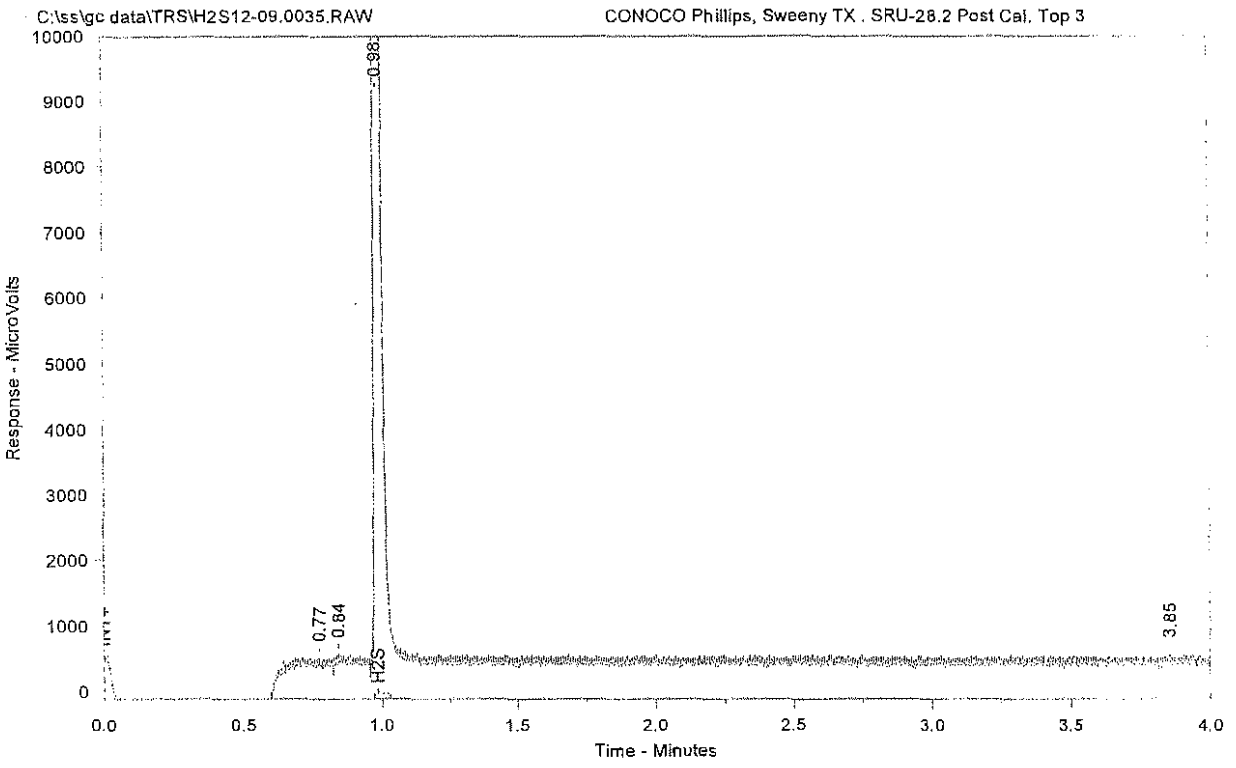
Raw File Name = **C:\ss\gc data\TRS\H2S12-09.0034.RAW**
Method File Name = C:\CPData\SampleData\TRS.MET
Calibration File Name = C:\CPData\SampleData\H2S.CAL

Date Taken (end) = 12/9/2010 5:23:01 PM
Method Version = 8
Calibration Version = 1

Peak #	Ret. Time	Name	Amount	Height	Area	Type	Width
1	0.84		0.00	644.5	11015	BV	0.34
2	0.98	H2S	5.93	47843.6	62698	VB	0.02
3	2.13		0.00	219.2	1970	BB	0.38
4	3.36		0.00	192.4	395	BB	0.08

Total Area = 76077.98 Total Height = 48899.64 Total Amount = 5.933259

Chrom Perfect Chromatogram Report



Sample Name = **CONOCO Phillips, Sweeny TX . SRU-28.2 Post Cal. Top 3**

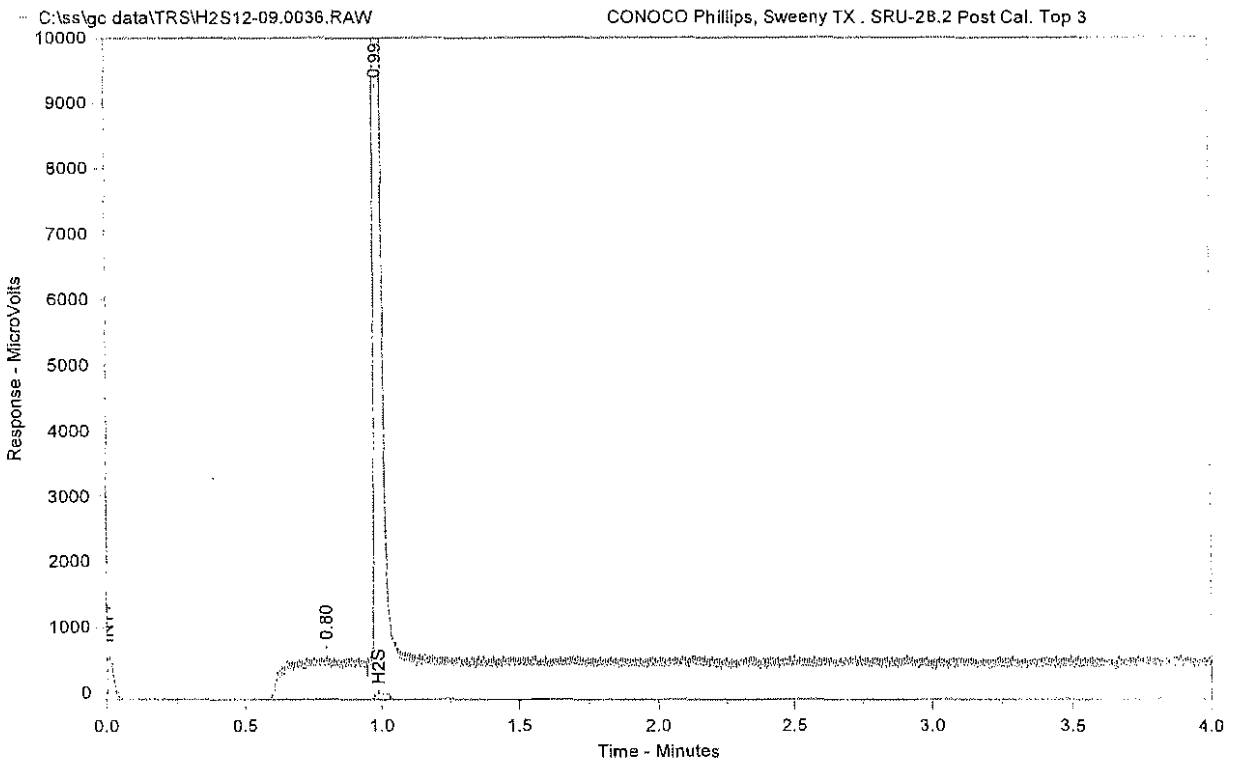
Instrument = Instrument 1
Heading 1 = Air = 100, H2 = 85, He = 113; 125 uL Sample Loop
Heading 2 = 0.0 Evnt 92.0, 0.6 Evnt -92, 15.0 Retn; 42C- Isothermal

Raw File Name = **C:\ss\gc data\TRS\H2S12-09.0035.RAW**
Method File Name = C:\CPData\SampleData\TRS.MET
Calibration File Name = C:\CPData\SampleData\H2S.CAL

Date Taken (end) = 12/9/2010 5:28:01 PM
Method Version = 8
Calibration Version = 1

Peak #	Ret. Time	Name	Amount	Height	Area	Type	Width
1	0.77		0.00	714.3	6492	BV	0.18
2	0.84		0.00	748.0	4838	VV	0.13
3	0.98	H2S	5.94	47969.5	78449	VB	0.02
4	3.85		0.00	222.8	695	BB	0.13

Total Area = 90473.55 Total Height = 49654.65 Total Amount = 5.940323



Sample Name = **CONOCO Phillips, Sweeny TX . SRU-28.2 Post Cal. Top 3**

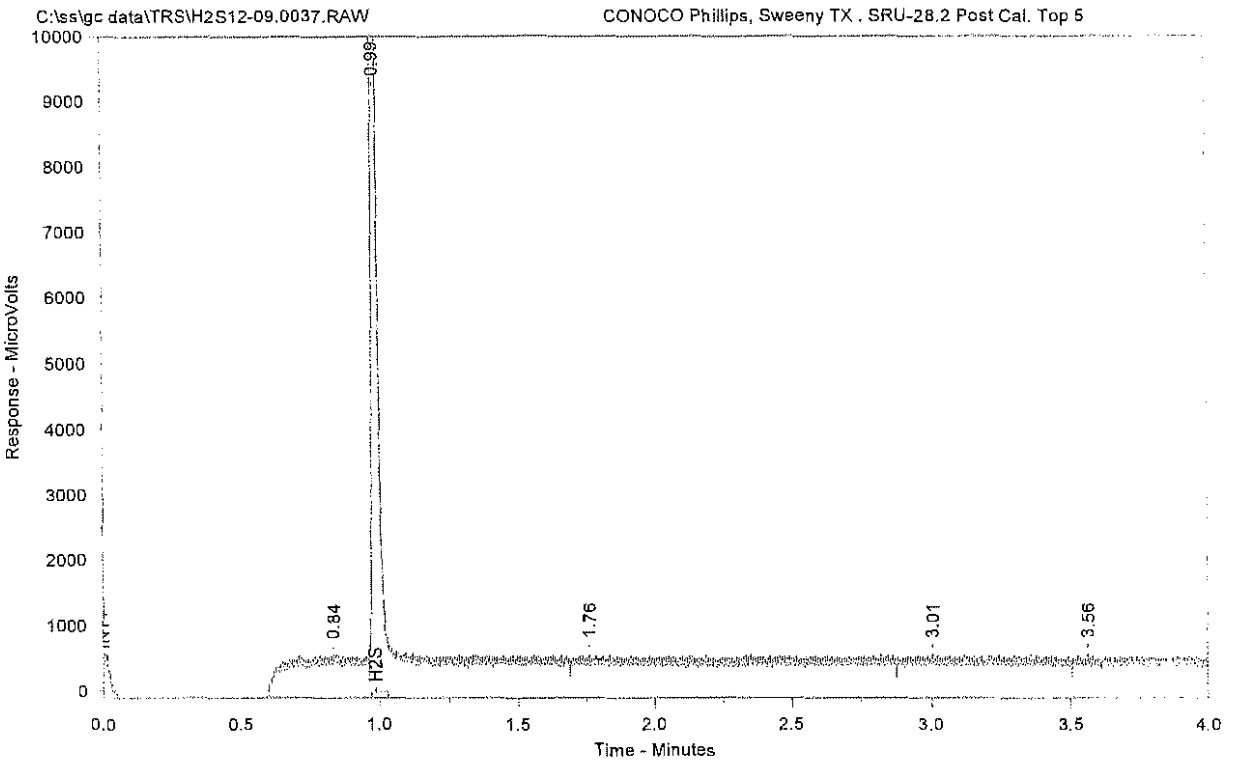
Instrument = Instrument 1
Heading 1 = Air = 100, H2 = 85, He = 113; 125 uL Sample Loop
Heading 2 = 0.0 Evnt 92.0, 0.6 Evnt -92, 15.0 Retn; 42C- Isothermal

Raw File Name = **C:\ss\gc data\TRS\H2S12-09.0036.RAW**
Method File Name = C:\CPData\SampleData\TRS.MET
Calibration File Name = C:\CPData\SampleData\H2S.CAL

Date Taken (end) = 12/9/2010 5:33:01 PM
Method Version = 8
Calibration Version = 1

Peak #	Ret. Time	Name	Amount	Height	Area	Type	Width
1	0.80		0.00	741.0	12479	BV	0.34
2	0.99	H2S	5.95	48173.1	78442	VB	0.02

Total Area = 90921.04 Total Height = 48914.06 Total Amount = 5.951723



Sample Name = **CONOCO Phillips, Sweeny TX . SRU-28.2 Post Cal. Top 5**

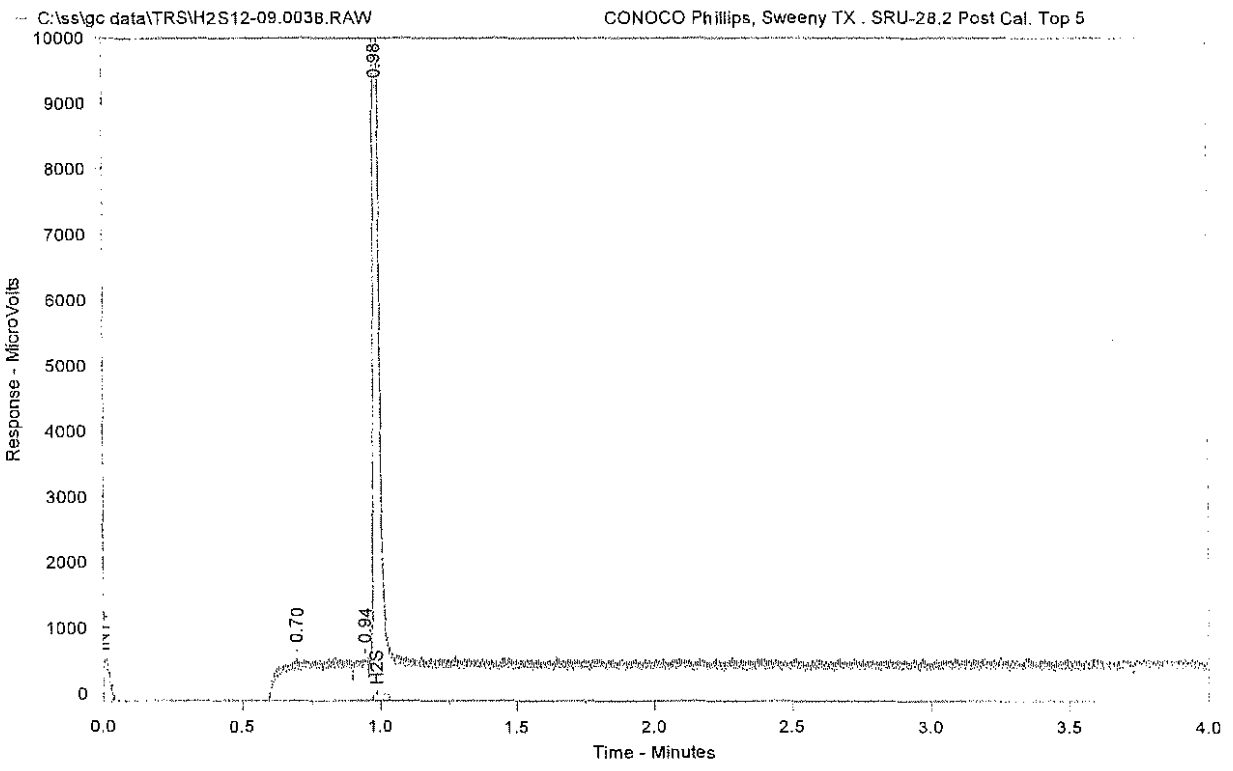
Instrument = Instrument 1
Heading 1 = Air = 100, H2 = 85, He = 113; 125 uL Sample Loop
Heading 2 = 0.0 Evnt 92.0, 0.6 Evnt -92, 15.0 Retn; 42C- Isothermal

Raw File Name = **C:\ss\gc data\TRS\H2S12-09.0037.RAW**
Method File Name = C:\CPData\SampleData\TRS.MET
Calibration File Name = C:\CPData\SampleData\H2S.CAL

Date Taken (end) = 12/9/2010 5:43:01 PM
Method Version = 8
Calibration Version = 1

Peak #	Ret. Time	Name	Amount	Height	Area	Type	Width
1	0.84		0.00	568.6	10277	BV	0.36
2	0.99	H2S	4.04	20415.6	26616	VB	0.02
3	1.76		0.00	204.3	1540	BB	0.33
4	3.01		0.00	221.8	1399	BB	0.27
5	3.56		0.00	226.4	505	BB	0.10

Total Area = 40336.16 Total Height = 21636.72 Total Amount = 4.035055



Sample Name = **CONOCO Phillips, Sweeny TX . SRU-28.2 Post Cal. Top 5**

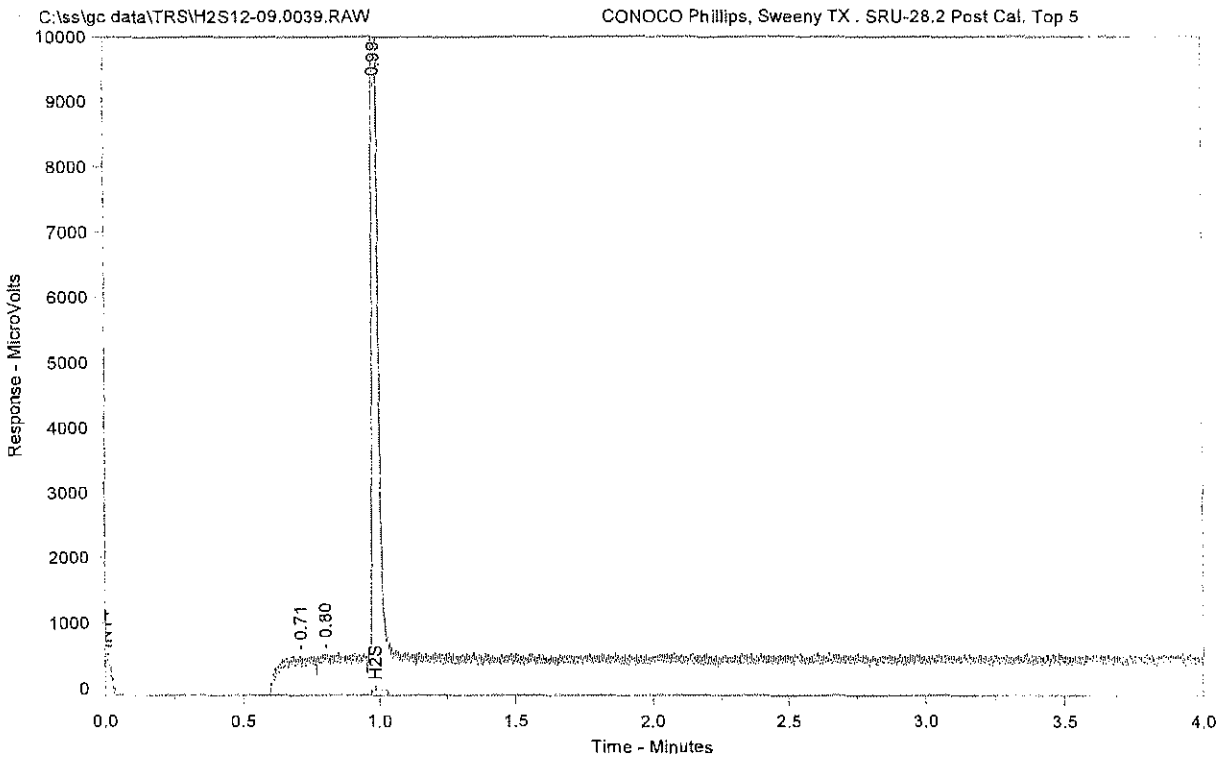
Instrument = Instrument 1
Heading 1 = Air = 100, H2 = 85, He = 113; 125 uL Sample Loop
Heading 2 = 0.0 Evnt 92.0, 0.6 Evnt -92, 15.0 Retn; 42C- Isothermal

Raw File Name = **C:\ss\gc data\TRS\H2S12-09.0038.RAW**
Method File Name = C:\CPData\SampleData\TRS.MET
Calibration File Name = C:\CPData\SampleData\H2S.CAL

Date Taken (end) = 12/9/2010 5:48:01 PM
Method Version = 8
Calibration Version = 1

Peak #	Ret. Time	Name	Amount	Height	Area	Type	Width
1	0.70		0.00	675.6	6029	BV	0.19
2	0.94		0.00	394.0	1085	VV	0.05
3	0.98	H2S	3.92	19204.4	24206	VB	0.02

Total Area = 31319.63 Total Height = 20274.06 Total Amount = 3.924859



Sample Name = **CONOCO Phillips, Sweeny TX . SRU-28.2 Post Cal. Top 5**

Instrument = Instrument 1
Heading 1 = Air = 100, H2 = 85, He = 113; 125 uL Sample Loop
Heading 2 = 0.0 Evnt 92.0, 0.6 Evnt -92, 15.0 Retn; 42C- Isothermal

Raw File Name = **C:\ss\gc data\TRS\H2S12-09.0039.RAW**
Method File Name = C:\CPData\SampleData\TRS.MET
Calibration File Name = C:\CPData\SampleData\H2S.CAL

Date Taken (end) = 12/9/2010 5:53:01 PM
Method Version = 8
Calibration Version = 1

Peak #	Ret. Time	Name	Amount	Height	Area	Type	Width
1	0.71		0.00	454.0	2970	BV	0.11
2	0.80		0.00	225.3	409	VB	0.04
3	0.99	H2S	4.00	20043.0	24219	BB	0.02

Total Area = 27598.31 Total Height = 20722.34 Total Amount = 4.001541

Stork Testing & Metallurgical Consulting
Air Emission Services
Houston, Texas

ConocoPhillips, Sweeny, Texas: SRU 28.2

H_2S											Dil Corr.
Run No.	Inj. 1 ppm	Inj. 2 ppm	Inj. 3 ppm	Inj. 4 ppm	Inj. 5 ppm	Inj. 6 ppm	Inj. 7 ppm	Inj. 8 ppm	Avg ppm	Dilution Factor	Avg ppm
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1	0.00
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1	0.00
3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1	0.00

Run No.	Line Loss Frac.	Line Loss Corr. ppm	O_2 %	H_2S ppm @ 0% O_2	Allowable Limit, ppm @ 0% O_2	% of Allowable Limit
1	1.043	0.00	3.98	0.00	10	0.00
2	1.043	0.00	4.19	0.00	10	0.00
3	1.043	0.00	4.31	0.00	10	0.00

Run No.	Date	Time	H_2S lb/dscf	Qsd dscf/hr	H_2S lb/hr	Allowable Limit lb/hr	% of Allowable Limit
1	12/9/10	1010-1210	0.000E+00	2,283,169.0	0.00	2.45	0.00
2	12/9/10	1215-1415	0.000E+00	2,235,947.4	0.00	2.45	0.00
3	12/9/10	1440-1640	0.000E+00	2,291,267.1	0.00	2.45	0.00

Note: No H_2S peaks were observed during any of the individual 24 compliance test injections

✓ MG. PM

Stork Testing & Metallurgical Consulting
Air Emission Services
Houston, Texas

ConocoPhillips: Sweeny, Texas - SRU 28.2

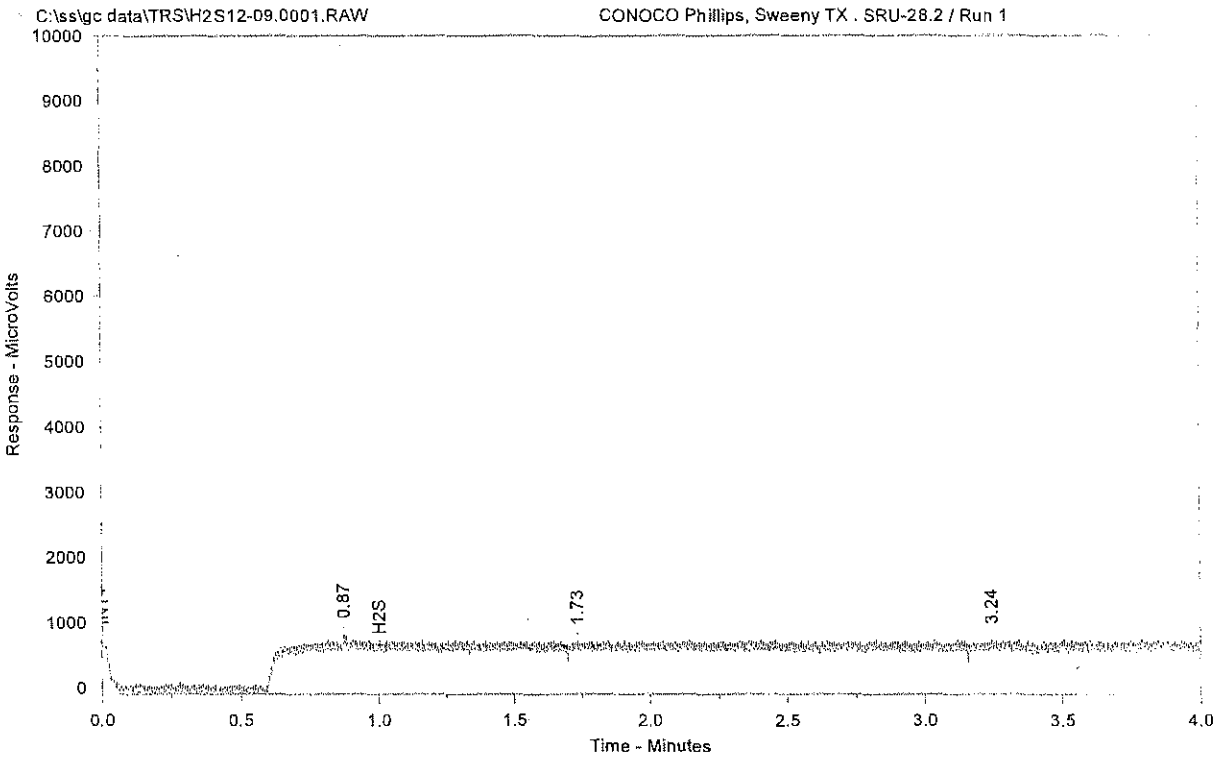
H_2S											Dil Corr.
Run No.	Inj. 1 ppm	Inj. 2 ppm	Inj. 3 ppm	Inj. 4 ppm	Inj. 5 ppm	Inj. 6 ppm	Inj. 7 ppm	Inj. 8 ppm	Avg ppm	Dilution Factor	Avg ppm
1	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	1	0.36
2	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	1	0.36
3	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	1	0.36

Run No.	Line Loss Frac.	Line Loss Corr. ppm	O_2 %	H_2S ppm @ 0% O_2	Allowable Limit, ppm @ 0% O_2	% of Allowable Limit
1	1.043	0.35	3.98	0.43	10	4.3
2	1.043	0.35	4.19	0.43	10	4.3
3	1.043	0.35	4.31	0.43	10	4.3

Run No.	Date	Time	H_2S lb/dscf	Qsd dscf/hr	H_2S lb/hr	Allowable Limit lb/hr	% of Allowable Limit
1	12/9/10	1010-1210	3.046E-08	2,283,169.0	0.070	2.45	2.8
2	12/9/10	1215-1415	3.046E-08	2,235,947.4	0.068	2.45	2.8
3	12/9/10	1440-1640	3.046E-08	2,291,267.1	0.070	2.45	2.8

MG, PM

Note: All injections were nondetectable. The calculated minimum detection limit is 0.36 ppm.
All subsequent calculated values (lb/dscf and lb/hr) are based on the 0.36 ppm detection limit and the results should be considered "less than" values.



Sample Name = **CONOCO Phillips, Sweeny TX . SRU-28.2 / Run 1**

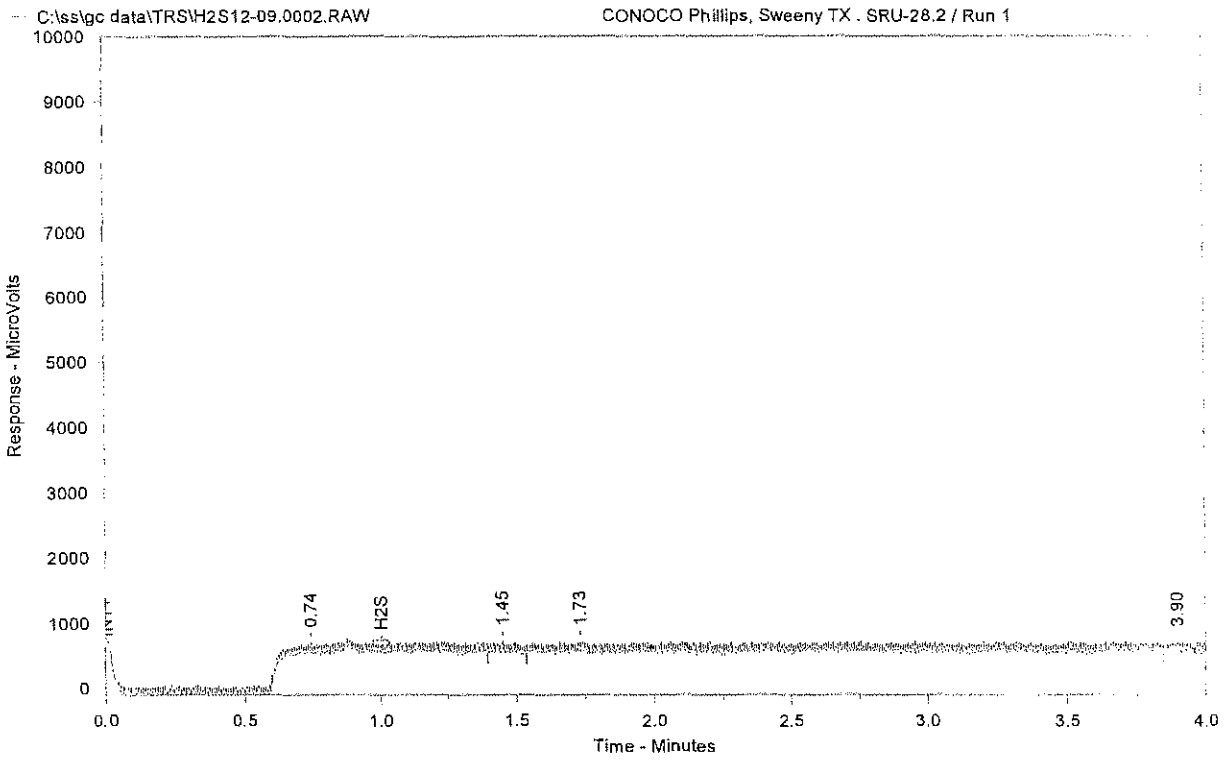
Instrument = Instrument 1
Heading 1 = Air = 100, H2 = 85, He = 113; 125 uL Sample Loop
Heading 2 = 0.0 Evnt 92.0, 0.6 Evnt -92, 15.0 Retn; 42C- Isothermal

Raw File Name = **C:\ss\gc data\TRS\H2S12-09.0001.RAW**
Method File Name = C:\CPData\SampleData\TRS.MET
Calibration File Name = C:\CPData\SampleData\H2S.CAL

Date Taken (end) = 12/9/2010 10:16:58 AM
Method Version = 8
Calibration Version = 1

Peak #	Ret. Time	Name	Amount	Height	Area	Type	Width
1	0.87		0.00	531.9	9852	BB	0.41
2	1.73		0.00	208.2	759	BB	0.15
3	3.24		0.00	201.8	764	BB	0.15

Total Area = 11374.76 Total Height = 942.0114 Total Amount = 0



Sample Name = **CONOCO Phillips, Sweeny TX . SRU-28.2 / Run 1** – 2

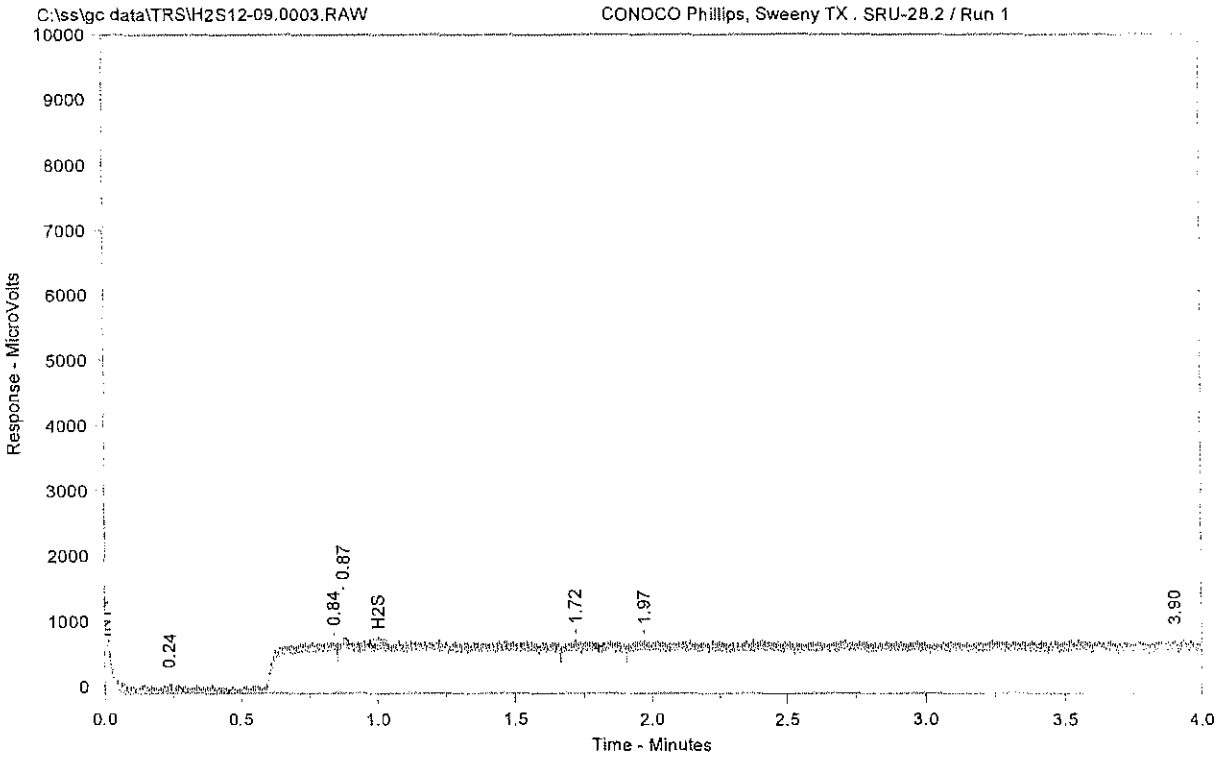
Instrument = Instrument 1
Heading 1 = Air = 100, H2 = 85, He = 113; 125 uL Sample Loop
Heading 2 = 0.0 Evnt 92.0, 0.6 Evnt -92, 15.0 Retn; 42C- Isothermal

Raw File Name = **C:\ss\gc data\TRS\H2S12-09.0002.RAW**
Method File Name = C:\CPData\SampleData\TRS.MET
Calibration File Name = C:\CPData\SampleData\H2S.CAL

Date Taken (end) = 12/9/2010 10:31:59 AM
Method Version = 8
Calibration Version = 1

Peak #	Ret. Time	Name	Amount	Height	Area	Type	Width
1	0.74		0.00	400.3	4203	BB	0.21
2	1.45		0.00	209.0	373	BB	0.08
3	1.73		0.00	216.2	1257	BB	0.23
4	3.90		0.00	193.1	570	BB	0.10

Total Area = 6402.692 Total Height = 1018.644 Total Amount = 0



Sample Name = **CONOCO Phillips, Sweeny TX . SRU-28.2 / Run 1** –3

Instrument = Instrument 1
Heading 1 = Air = 100, H2 = 85, He = 113; 125 uL Sample Loop
Heading 2 = 0.0 Evnt 92.0, 0.6 Evnt -92, 15.0 Retn; 42C- Isothermal

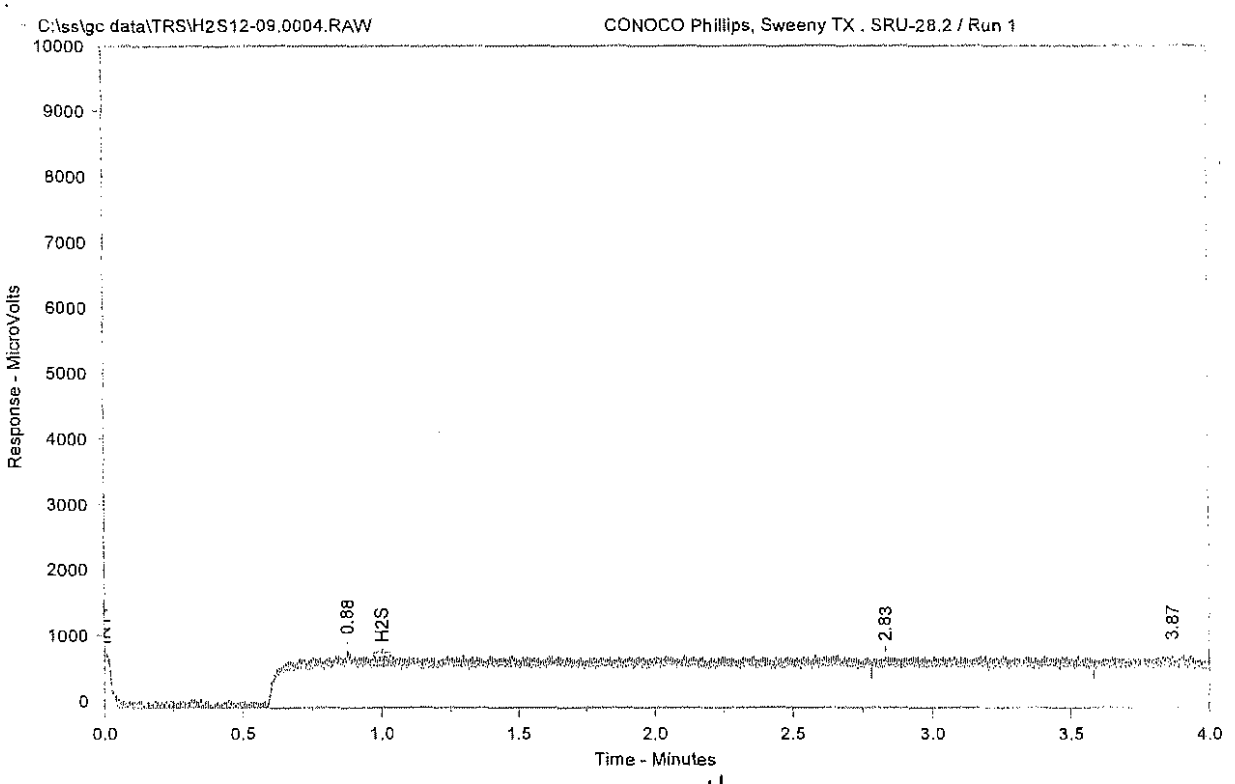
Raw File Name = **C:\ss\gc data\TRS\H2S12-09.0003.RAW**
Method File Name = C:\CPData\SampleData\TRS.MET
Calibration File Name = C:\CPData\SampleData\H2S.CAL

Date Taken (end) = 12/9/2010 10:46:59 AM
Method Version = 8
Calibration Version = 1

Peak #	Ret. Time	Name	Amount	Height	Area	Type	Width
1	0.24		0.00	216.4	1266	BB	0.26
2	0.84		0.00	354.5	6134	BV	0.24
3	0.87		0.00	351.4	846	VB	0.08
4	1.72		0.00	229.2	753	BB	0.14
5	1.97		0.00	205.5	725	BB	0.15
6	3.90		0.00	205.7	580	BB	0.10

Total Area = 10303.77 Total Height = 1562.68 Total Amount = 0

Chrom Perfect Chromatogram Report



Sample Name = **CONOCO Phillips, Sweeny TX . SRU-28.2 / Run 1** -4

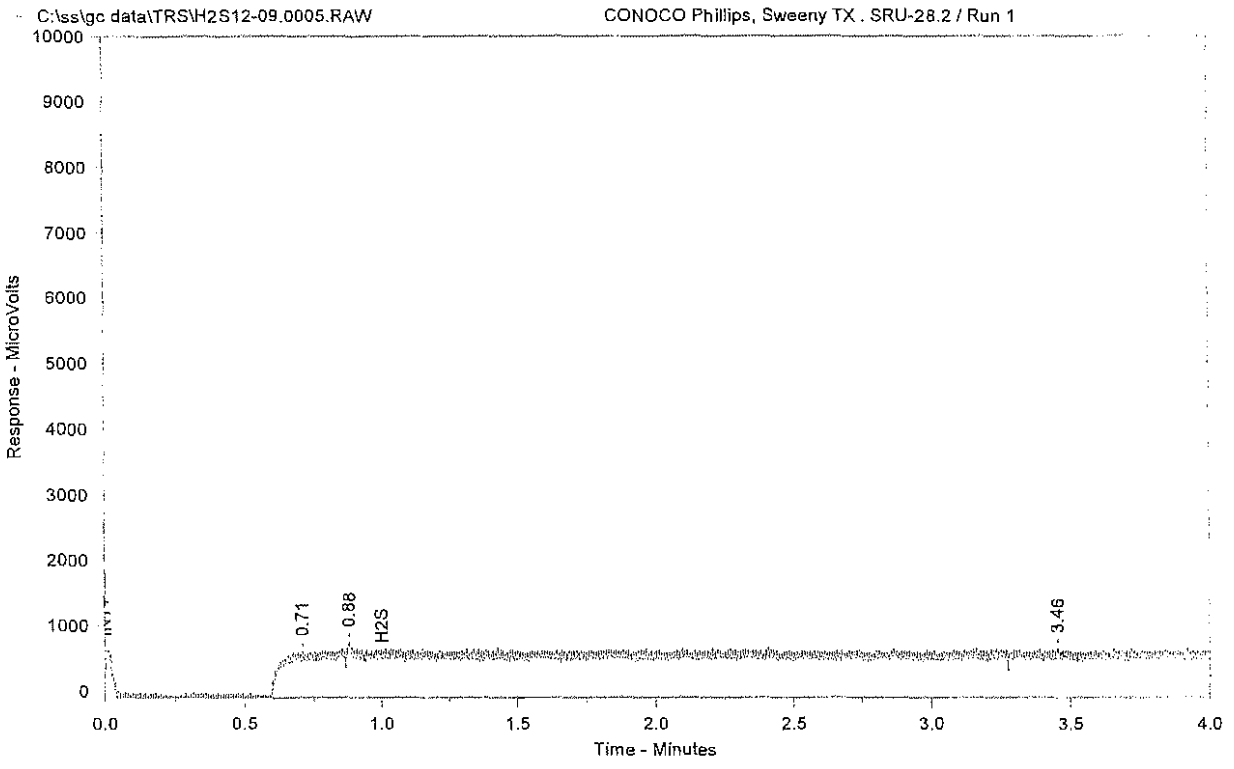
Instrument = Instrument 1
Heading 1 = Air = 100, H2 = 85, He = 113; 125 uL Sample Loop
Heading 2 = 0.0 Evnt 92.0, 0.6 Evnt -92, 15.0 Retn; 42C- Isothermal

Raw File Name = **C:\ss\gc data\TRS\H2S12-09.0004.RAW**
Method File Name = C:\CPData\SampleData\TRS.MET
Calibration File Name = C:\CPData\SampleData\H2S.CAL

Date Taken (end) = 12/9/2010 11:01:59 AM
Method Version = 8
Calibration Version = 1

Peak #	Ret. Time	Name	Amount	Height	Area	Type	Width
1	0.88		0.00	482.6	8754	BB	0.39
2	2.83		0.00	185.7	481	BB	0.10
3	3.87		0.00	211.2	1406	BB	0.30

Total Area = 10641.23 Total Height = 879.5249 Total Amount = 0



Sample Name = **CONOCO Phillips, Sweeny TX . SRU-28.2 / Run 1** –5

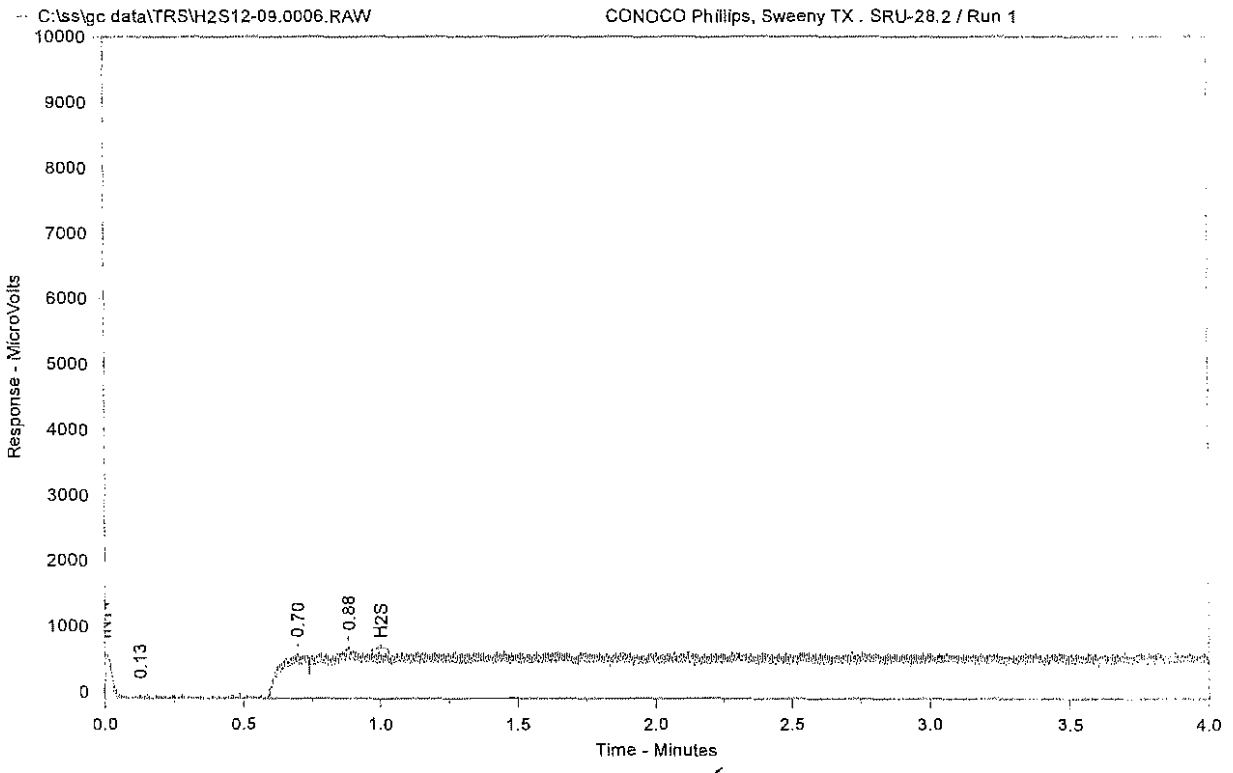
Instrument = Instrument 1
Heading 1 = Air = 100, H2 = 85, He = 113; 125 uL Sample Loop
Heading 2 = 0.0 Evnt 92.0, 0.6 Evnt -92, 15.0 Retn; 42C- Isothermal

Raw File Name = **C:\ss\gc data\TRS\H2S12-09.0005.RAW**
Method File Name = C:\CPData\SampleData\TRS.MET
Calibration File Name = C:\CPData\SampleData\H2S.CAL

Date Taken (end) = 12/9/2010 11:16:59 AM
Method Version = 8
Calibration Version = 1

Peak #	Ret. Time	Name	Amount	Height	Area	Type	Width
1	0.71		0.00	574.1	4542	BV	0.15
2	0.88		0.00	420.5	763	VB	0.06
3	3.46		0.00	211.9	1206	BB	0.24

Total Area = 6511.765 Total Height = 1206.438 Total Amount = 0



Sample Name = **CONOCO Phillips, Sweeny TX . SRU-28.2 / Run 1** -6

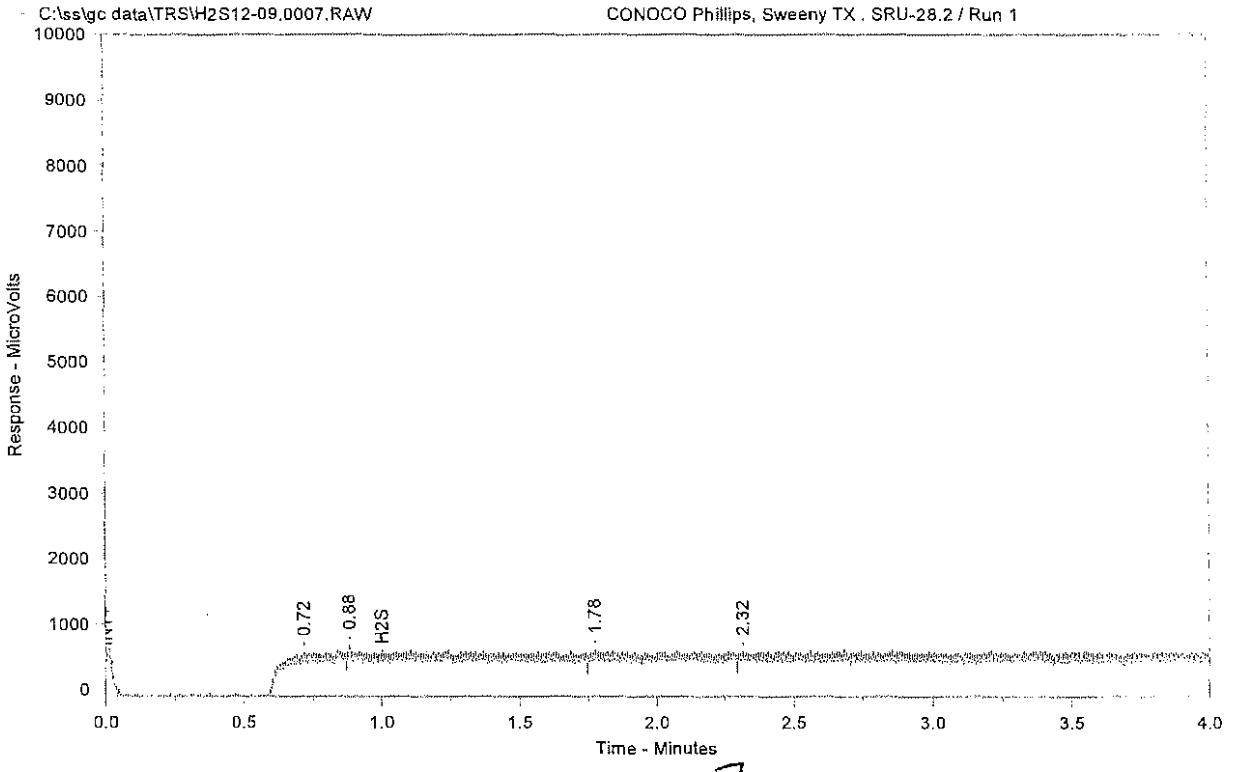
Instrument = Instrument 1
Heading 1 = Air = 100, H2 = 85, He = 113; 125 uL Sample Loop
Heading 2 = 0.0 Evnt 92.0, 0.6 Evnt -92, 15.0 Retn; 42C- Isothermal

Raw File Name = **C:\ss\gc data\TRS\H2S12-09.0006.RAW**
Method File Name = C:\CPData\SampleData\TRS.MET
Calibration File Name = C:\CPData\SampleData\H2S.CAL

Date Taken (end) = 12/9/2010 11:32:00 AM
Method Version = 8
Calibration Version = 1

Peak #	Ret. Time	Name	Amount	Height	Area	Type	Width
1	0.13		0.00	199.6	357	BB	0.07
2	0.70		0.00	664.0	4329	BV	0.13
3	0.88		0.00	506.4	5343	VB	0.28

Total Area = 10029.41 Total Height = 1370.004 Total Amount = 0



Sample Name = **CONOCO Phillips, Sweeny TX . SRU-28.2 / Run 1** ~7

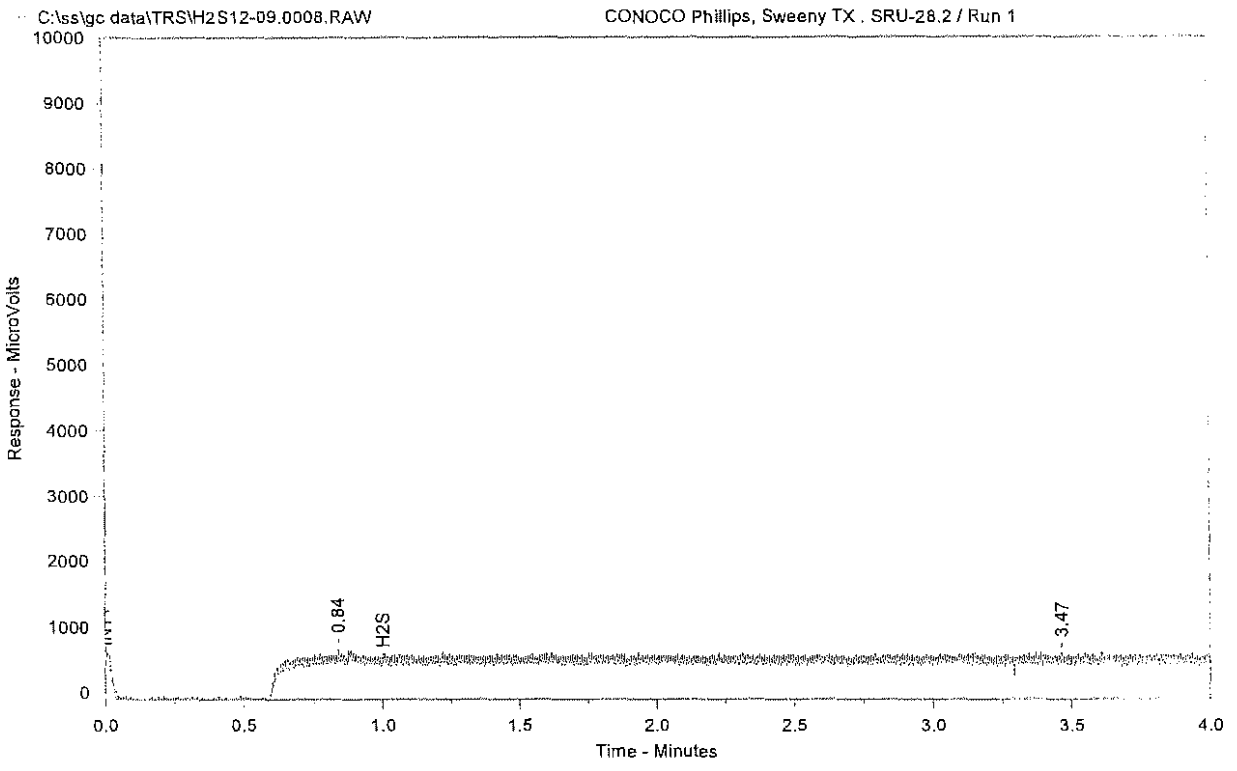
Instrument = Instrument 1
Heading 1 = Air = 100, H2 = 85, He = 113; 125 uL Sample Loop
Heading 2 = 0.0 Evnt 92.0, 0.6 Evnt -92, 15.0 Retn; 42C- Isothermal

Raw File Name = **C:\ss\gc data\TRS\H2S12-09.0007.RAW**
Method File Name = C:\CPData\SampleData\TRS.MET
Calibration File Name = C:\CPData\SampleData\H2S.CAL

Date Taken (end) = 12/9/2010 11:47:00 AM
Method Version = 8
Calibration Version = 1

Peak #	Ret. Time	Name	Amount	Height	Area	Type	Width
1	0.72		0.00	606.6	5076	BV	0.16
2	0.88		0.00	452.0	1253	VB	0.11
3	1.78		0.00	229.0	1108	BB	0.19
4	2.32		0.00	187.6	460	BB	0.10

Total Area = 7896.597 Total Height = 1475.261 Total Amount = 0



Sample Name = **CONOCO Phillips, Sweeny TX . SRU-28.2 / Run 1**

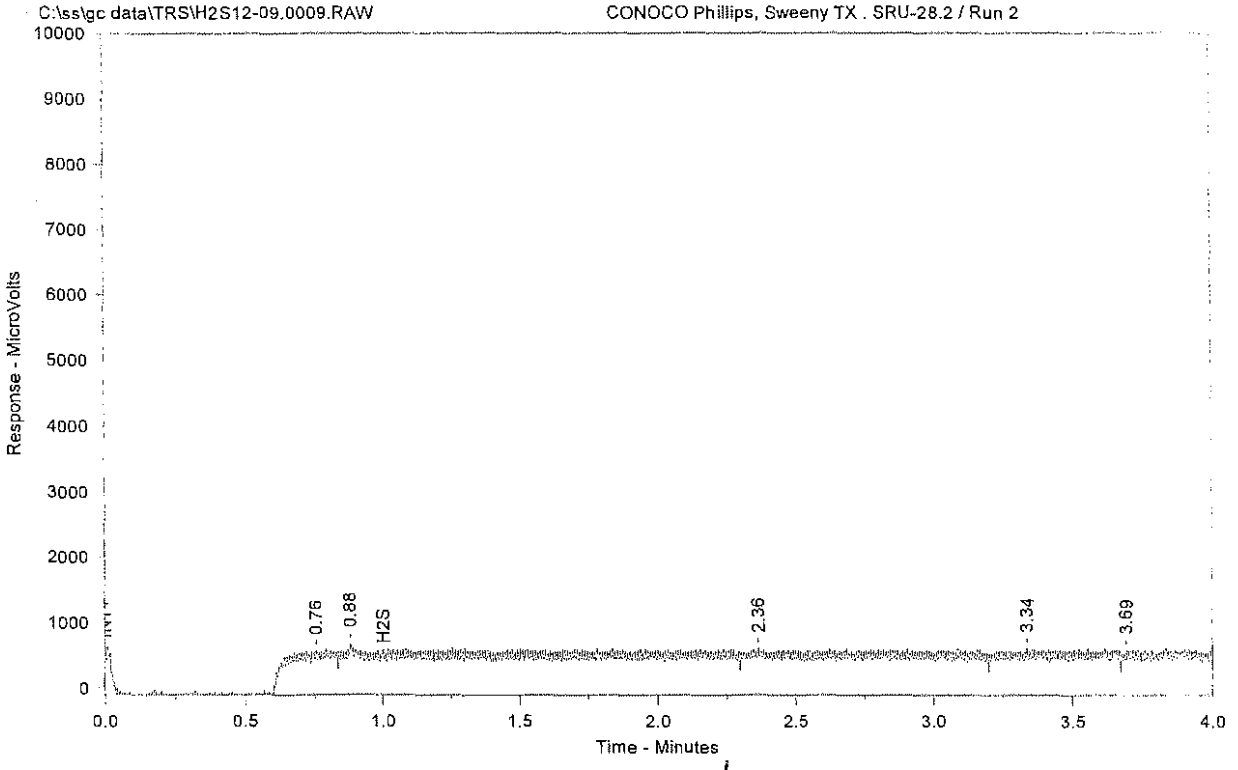
Instrument = Instrument 1
Heading 1 = Air = 100, H2 = 85, He = 113; 125 uL Sample Loop
Heading 2 = 0.0 Evnt 92.0, 0.6 Evnt -92, 15.0 Retn; 42C- Isothermal

Raw File Name = **C:\ss\gc data\TRS\H2S12-09.0008.RAW**
Method File Name = C:\CPData\SampleData\TRS.MET
Calibration File Name = C:\CPData\SampleData\H2S.CAL

Date Taken (end) = 12/9/2010 12:02:00 PM
Method Version = 8
Calibration Version = 1

Peak #	Ret. Time	Name	Amount	Height	Area	Type	Width
1	0.84		0.00	693.3	16220	BB	0.70
2	3.47		0.00	219.2	962	BB	0.20

Total Area = 17181.95 Total Height = 912.4133 Total Amount = 0



Sample Name = **CONOCO Phillips, Sweeny TX . SRU-28.2 / Run 2**

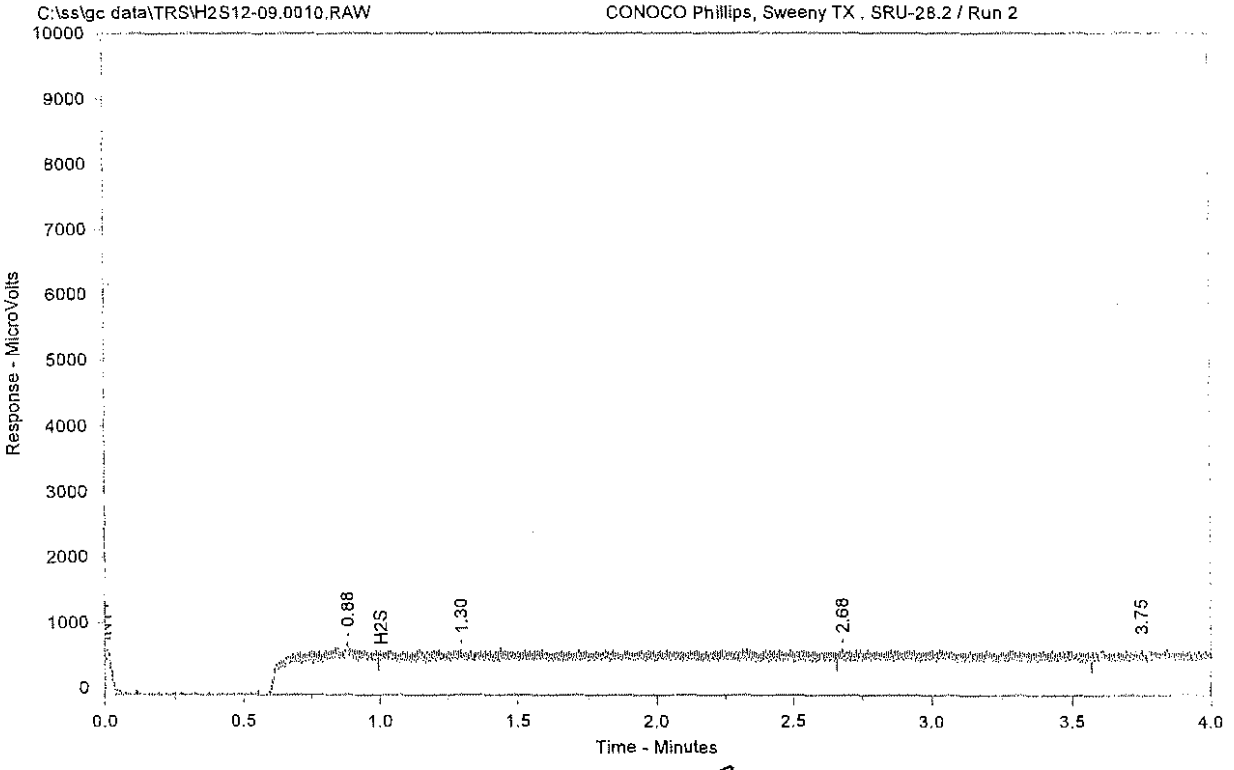
Instrument = Instrument 1
Heading 1 = Air = 100, H2 = 85, He = 113; 125 uL Sample Loop
Heading 2 = 0.0 Evnt 92.0, 0.6 Evnt -92, 15.0 Retn; 42C- Isothermal

Raw File Name = **C:\ss\gc data\TRS\H2S12-09.0009.RAW**
Method File Name = C:\CPData\SampleData\TRS.MET
Calibration File Name = C:\CPData\SampleData\H2S.CAL

Date Taken (end) = 12/9/2010 12:19:19 PM
Method Version = 8
Calibration Version = 1

Peak #	Ret. Time	Name	Amount	Height	Area	Type	Width
1	0.76		0.00	627.2	5434	BV	0.16
2	0.88		0.00	618.2	5796	VB	0.35
3	2.36		0.00	195.8	664	BB	0.15
4	3.34		0.00	217.0	1051	BB	0.21
5	3.69		0.00	195.1	358	BB	0.07

Total Area = 13302.91 Total Height = 1853.288 Total Amount = 0



Sample Name = **CONOCO Phillips, Sweeny TX . SRU-28.2 / Run 2** — 2

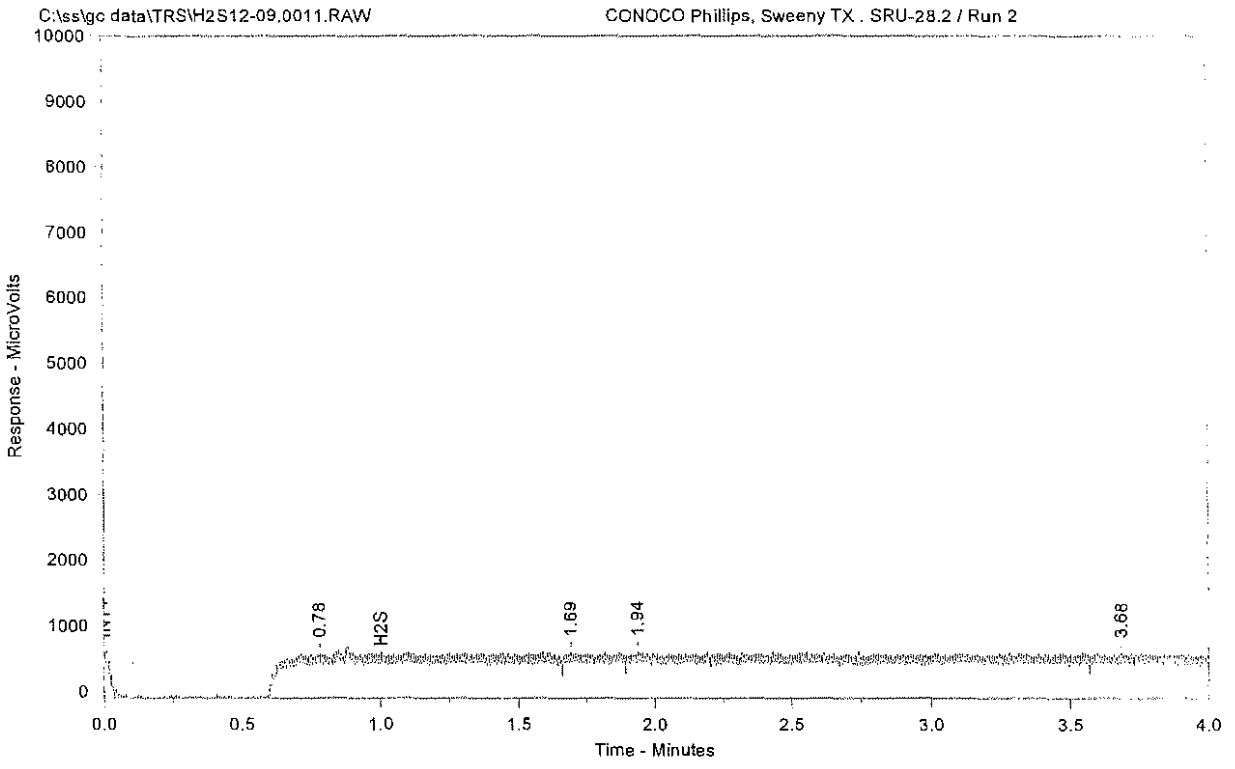
Instrument = Instrument 1
Heading 1 = Air = 100, H2 = 85, He = 113; 125 uL Sample Loop
Heading 2 = 0.0 Evnt 92.0, 0.6 Evnt -92, 15.0 Retn; 42C- Isothermal

Raw File Name = **C:\ss\gc data\TRS\H2S12-09.0010.RAW**
Method File Name = C:\CPData\SampleData\TRS.MET
Calibration File Name = C:\CPData\SampleData\H2S.CAL

Date Taken (end) = 12/9/2010 12:34:20 PM
Method Version = 8
Calibration Version = 1

Peak #	Ret. Time	Name	Amount	Height	Area	Type	Width
1	0.88		0.00	695.6	11475	BV	0.35
2	1.30		0.00	242.4	4673	VB	0.35
3	2.68		0.00	213.2	238	BB	0.04
4	3.75		0.00	195.1	879	BB	0.19

Total Area = 17264.45 Total Height = 1346.32 Total Amount = 0



Sample Name = **CONOCO Phillips, Sweeny TX . SRU-28.2 / Run 2** – 3

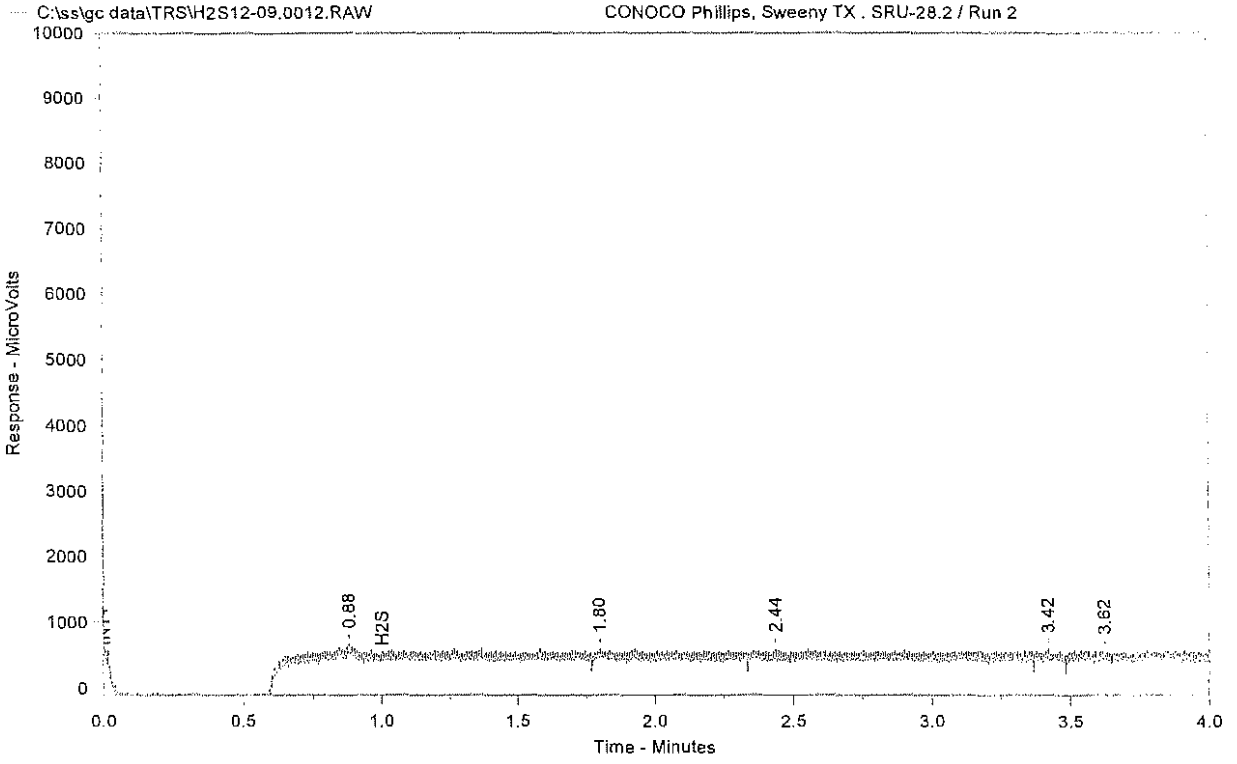
Instrument = Instrument 1
Heading 1 = Air = 100, H2 = 85, He = 113; 125 uL Sample Loop
Heading 2 = 0.0 Evnt 92.0, 0.6 Evnt -92, 15.0 Retn; 42C- Isothermal

Raw File Name = **C:\ss\gc data\TRS\H2S12-09.0011.RAW**
Method File Name = C:\CPData\SampleData\TRS.MET
Calibration File Name = C:\CPData\SampleData\H2S.CAL

Date Taken (end) = 12/9/2010 12:49:20 PM
Method Version = 8
Calibration Version = 1

Peak #	Ret. Time	Name	Amount	Height	Area	Type	Width
1	0.78		0.00	309.6	4424	BB	0.22
2	1.69		0.00	223.2	724	BV	0.11
3	1.94		0.00	239.7	1999	VB	0.31
4	3.68		0.00	205.0	758	BB	0.16

Total Area = 7905.184 Total Height = 977.5076 Total Amount = 0



Sample Name = **CONOCO Phillips, Sweeny TX . SRU-28.2 / Run 2** ~ 4

Instrument = Instrument 1
Heading 1 = Air = 100, H2 = 85, He = 113; 125 uL Sample Loop
Heading 2 = 0.0 Evnt 92.0, 0.6 Evnt -92, 15.0 Retn; 42C- Isothermal

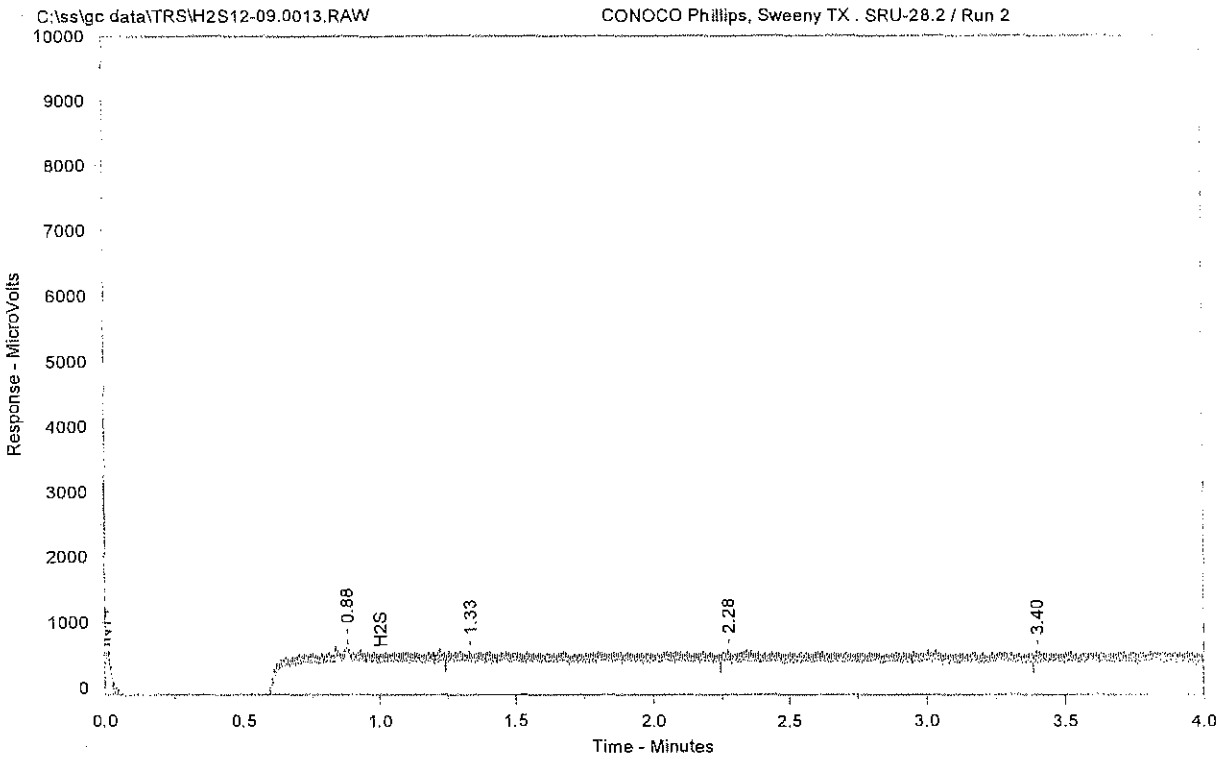
Raw File Name = **C:\ss\gc data\TRS\H2S12-09.0012.RAW**
Method File Name = C:\CPData\SampleData\TRS.MET
Calibration File Name = C:\CPData\SampleData\H2S.CAL

Date Taken (end) = 12/9/2010 1:04:20 PM
Method Version = 8
Calibration Version = 1

Peak #	Ret. Time	Name	Amount	Height	Area	Type	Width
1	0.88		0.00	468.2	8612	BB	0.38
2	1.80		0.00	206.0	414	BB	0.07
3	2.44		0.00	241.3	739	BB	0.14
4	3.42		0.00	229.2	605	BB	0.10
5	3.62		0.00	235.3	1043	BB	0.15

Total Area = 11413.24 Total Height = 1380.073 Total Amount = 0

Chrom Perfect Chromatogram Report



Sample Name = **CONOCO Phillips, Sweeny TX . SRU-28.2 / Run 2** -5

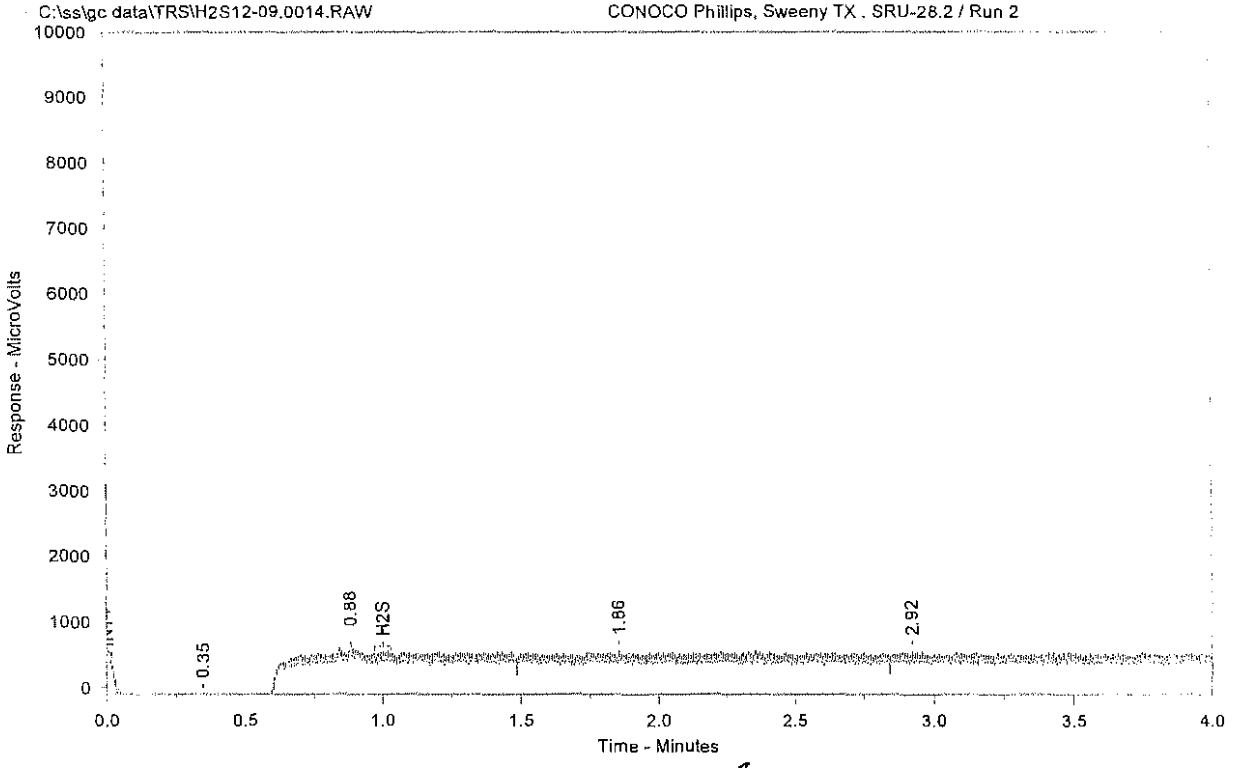
Instrument = Instrument 1
Heading 1 = Air = 100, H2 = 85, He = 113; 125 uL Sample Loop
Heading 2 = 0.0 Evnt 92.0, 0.6 Evnt -92, 15.0 Retn; 42C- Isothermal

Raw File Name = **C:\ss\gc data\TRS\H2S12-09.0013.RAW**
Method File Name = C:\CPData\SampleData\TRS.MET
Calibration File Name = C:\CPData\SampleData\H2S.CAL

Date Taken (end) = 12/9/2010 1:19:20 PM
Method Version = 8
Calibration Version = 1

Peak #	Ret. Time	Name	Amount	Height	Area	Type	Width
1	0.88		0.00	795.4	11522	BV	0.34
2	1.33		0.00	283.6	1746	VB	0.19
3	2.28		0.00	227.8	3322	BB	0.70
4	3.40		0.00	204.2	511	BB	0.11

Total Area = 17101.72 Total Height = 1510.911 Total Amount = 0



Sample Name = **CONOCO Phillips, Sweeny TX . SRU-28.2 / Run 2** — 6

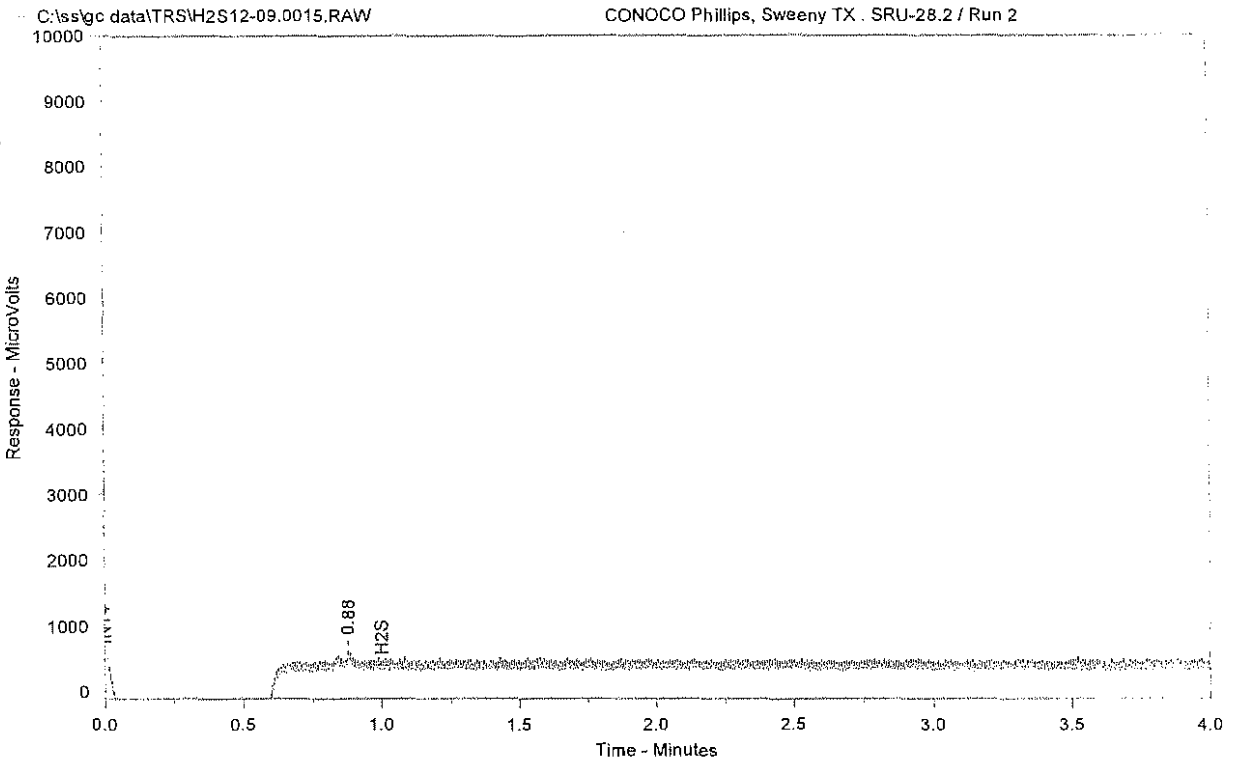
Instrument = Instrument 1
Heading 1 = Air = 100, H2 = 85, He = 113; 125 uL Sample Loop
Heading 2 = 0.0 Evnt 92.0, 0.6 Evnt -92, 15.0 Retn; 42C- Isothermal

Raw File Name = **C:\ss\gc data\TRS\H2S12-09.0014.RAW**
Method File Name = C:\CPData\SampleData\TRS.MET
Calibration File Name = C:\CPData\SampleData\H2S.CAL

Date Taken (end) = 12/9/2010 1:34:21 PM
Method Version = 8
Calibration Version = 1

Peak #	Ret. Time	Name	Amount	Height	Area	Type	Width
1	0.35		0.00	200.9	678	BB	0.14
2	0.88		0.00	857.9	23360	BV	0.73
3	1.86		0.00	252.7	4955	VB	0.46
4	2.92		0.00	215.7	1701	BB	0.31

Total Area = 30694.21 Total Height = 1527.118 Total Amount = 0



Sample Name = **CONOCO Phillips, Sweeny TX . SRU-28.2 / Run 2** -7

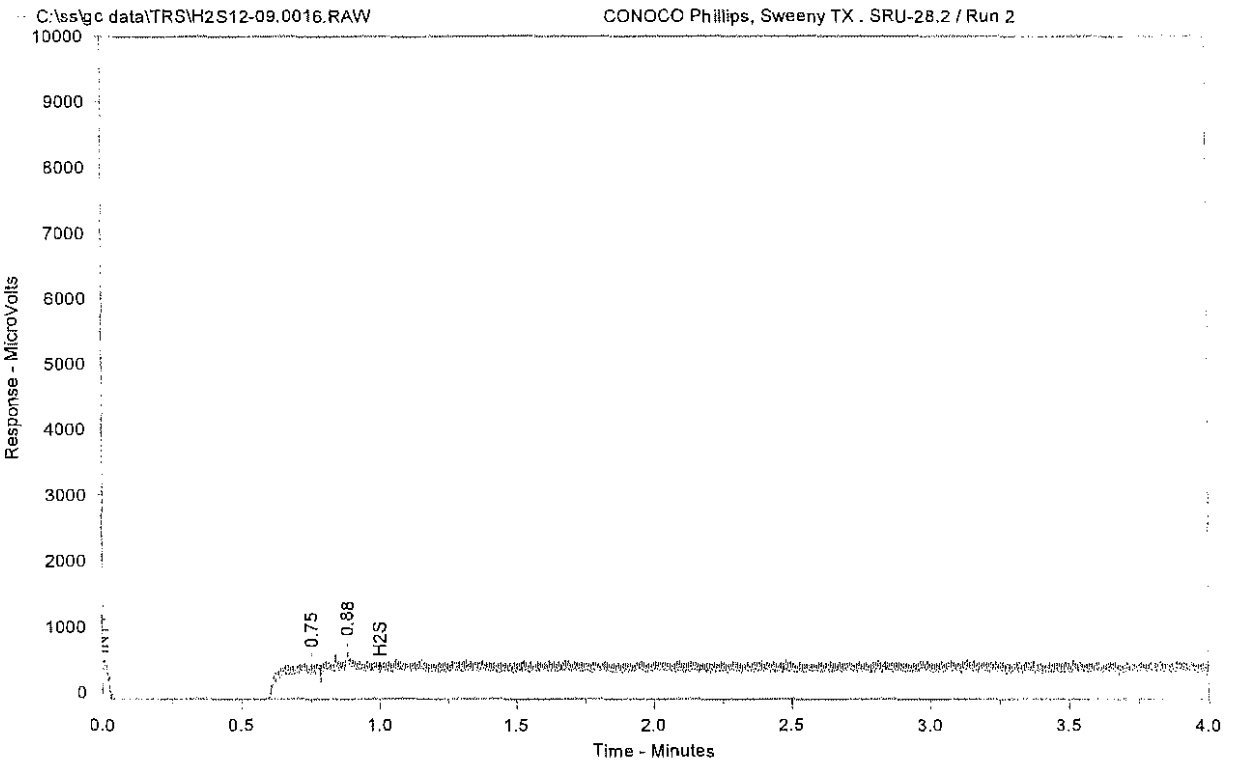
Instrument = Instrument 1
Heading 1 = Air = 100, H2 = 85, He = 113; 125 uL Sample Loop
Heading 2 = 0.0 Evnt 92.0, 0.6 Evnt -92, 15.0 Retn; 42C- Isothermal

Raw File Name = **C:\ss\gc data\TRS\H2S12-09.0015.RAW**
Method File Name = C:\CPData\SampleData\TRS.MET
Calibration File Name = C:\CPData\SampleData\H2S.CAL

Date Taken (end) = 12/9/2010 1:49:21 PM
Method Version = 8
Calibration Version = 1

Peak #	Ret. Time	Name	Amount	Height	Area	Type	Width
1	0.88		0.00	438.6	7694	BB	0.35

Total Area = 7694.202 Total Height = 438.6049 Total Amount = 0



Sample Name = **CONOCO Phillips, Sweeny TX . SRU-28.2 / Run 2**

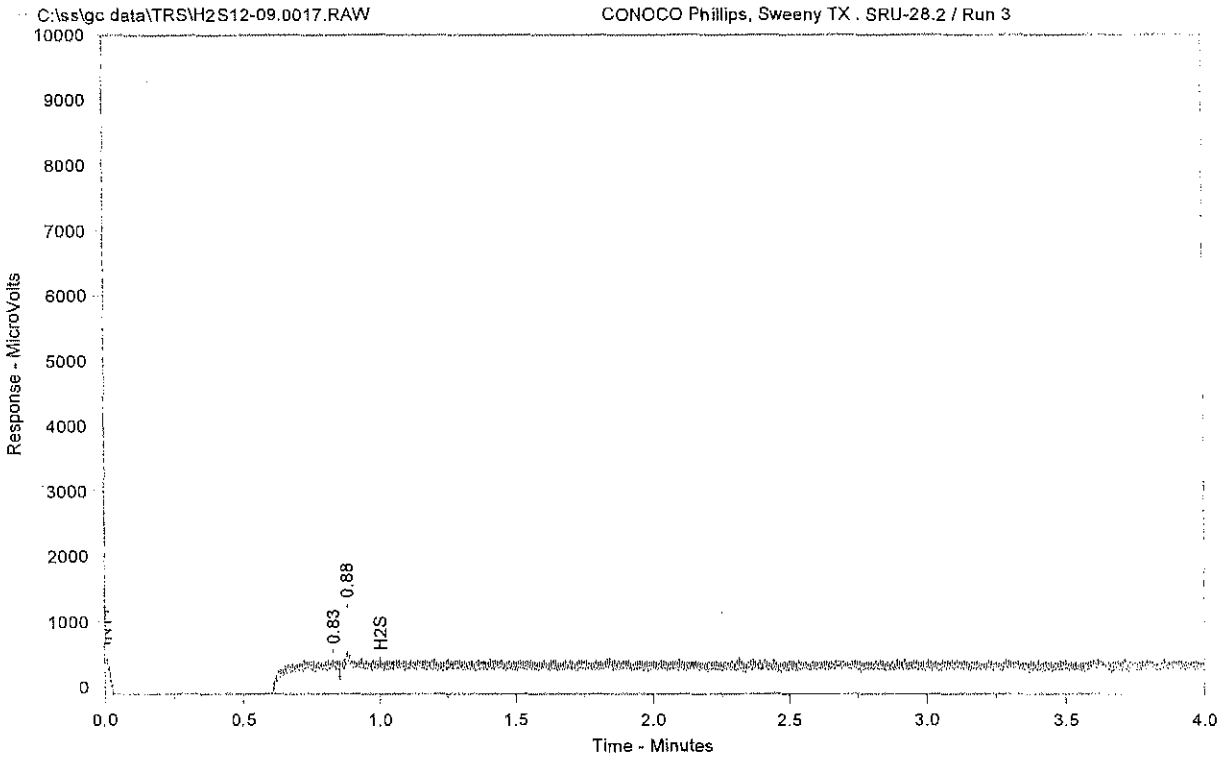
Instrument = Instrument 1
Heading 1 = Air = 100, H2 = 85, He = 113; 125 uL Sample Loop
Heading 2 = 0.0 Evnt 92.0, 0.6 Evnt -92, 15.0 Retn; 42C- Isothermal

Raw File Name = **C:\ss\gc data\TRS\H2S12-09.0016.RAW**
Method File Name = C:\CPData\SampleData\TRS.MET
Calibration File Name = C:\CPData\SampleData\H2S.CAL

Date Taken (end) = 12/9/2010 2:04:21 PM
Method Version = 8
Calibration Version = 1

Peak #	Ret. Time	Name	Amount	Height	Area	Type	Width
1	0.75		0.00	522.0	5071	BV	0.18
2	0.88		0.00	502.8	3345	VB	0.19

Total Area = 8416.154 Total Height = 1024.737 Total Amount = 0



Sample Name = **CONOCO Phillips, Sweeny TX . SRU-28.2 / Run 3**

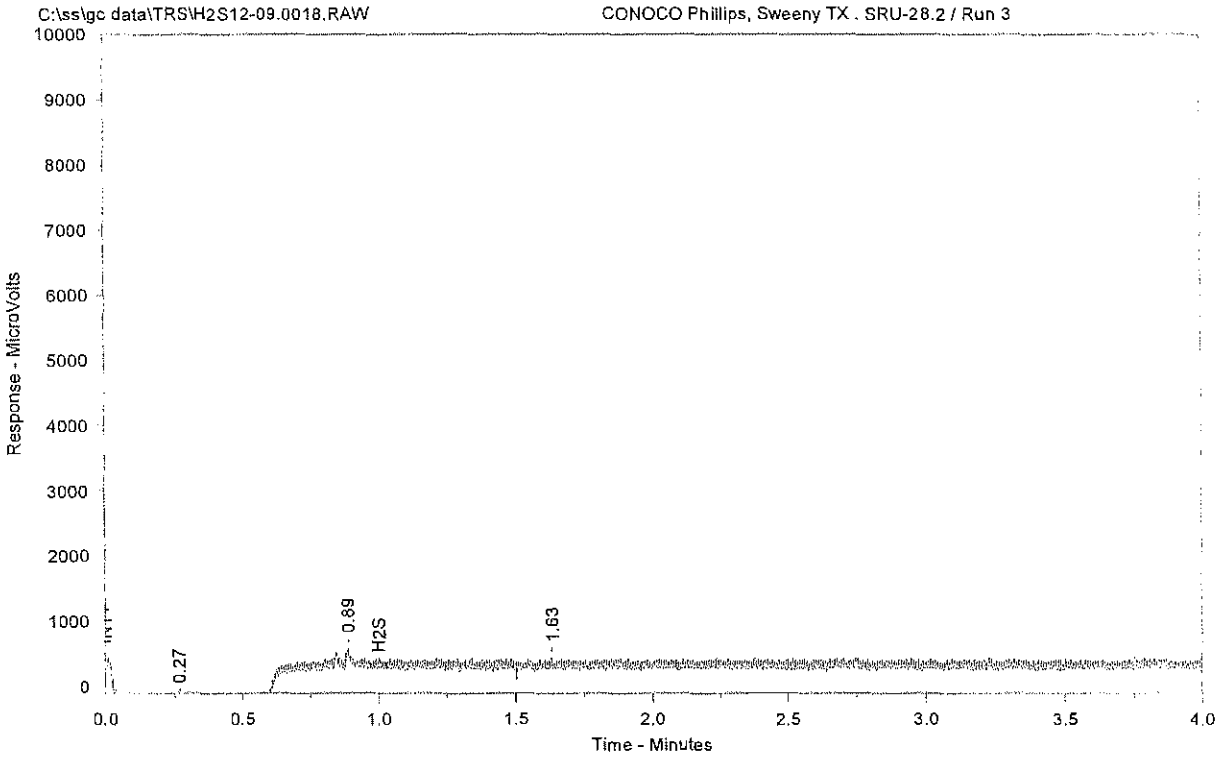
Instrument = Instrument 1
Heading 1 = Air = 100, H2 = 85, He = 113; 125 uL Sample Loop
Heading 2 = 0.0 Evnt 92.0, 0.6 Evnt -92, 15.0 Retn; 42C- Isothermal

Raw File Name = **C:\ss\gc data\TRS\H2S12-09.0017.RAW**
Method File Name = C:\CPData\SampleData\TRS.MET
Calibration File Name = C:\CPData\SampleData\H2S.CAL

Date Taken (end) = 12/9/2010 2:44:38 PM
Method Version = 8
Calibration Version = 1

Peak #	Ret. Time	Name	Amount	Height	Area	Type	Width
1	0.83		0.00	465.0	6726	BV	0.24
2	0.88		0.00	526.2	2432	VB	0.17

Total Area = 9158.404 Total Height = 991.2379 Total Amount = 0



Sample Name = **CONOCO Phillips, Sweeny TX . SRU-28.2 / Run 3** ~ 2

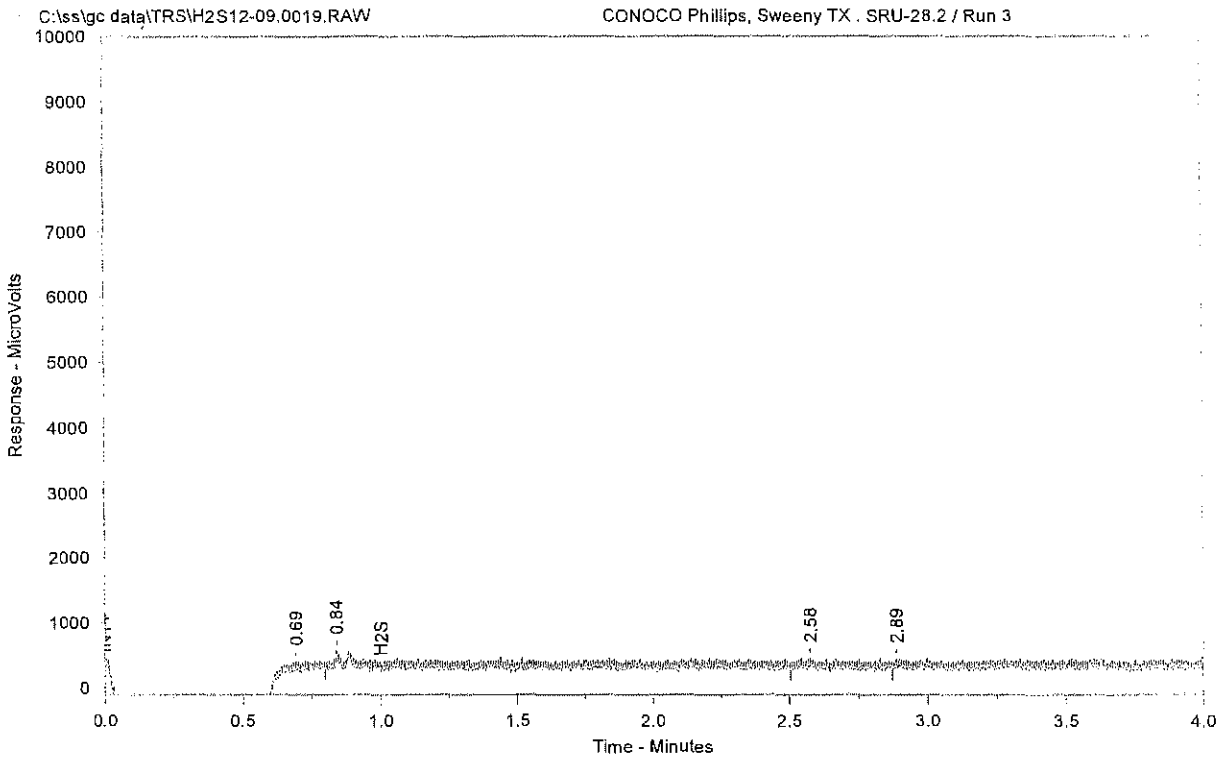
Instrument = Instrument 1
Heading 1 = Air = 100, H2 = 85, He = 113; 125 uL Sample Loop
Heading 2 = 0.0 Evnt 92.0, 0.6 Evnt -92, 15.0 Retn; 42C- Isothermal

Raw File Name = **C:\ss\gc data\TRS\H2S12-09.0018.RAW**
Method File Name = C:\CPData\SampleData\TRS.MET
Calibration File Name = C:\CPData\SampleData\H2S.CAL

Date Taken (end) = 12/9/2010 2:59:38 PM
Method Version = 8
Calibration Version = 1

Peak #	Ret. Time	Name	Amount	Height	Area	Type	Width
1	0.27		0.00	209.9	854	BB	0.16
2	0.89		0.00	808.5	20155	BV	0.63
3	1.63		0.00	358.8	4795	VB	0.45

Total Area = 25804.64 Total Height = 1377.176 Total Amount = 0



Sample Name = **CONOCO Phillips, Sweeny TX . SRU-28.2 / Run 3** ~ 3

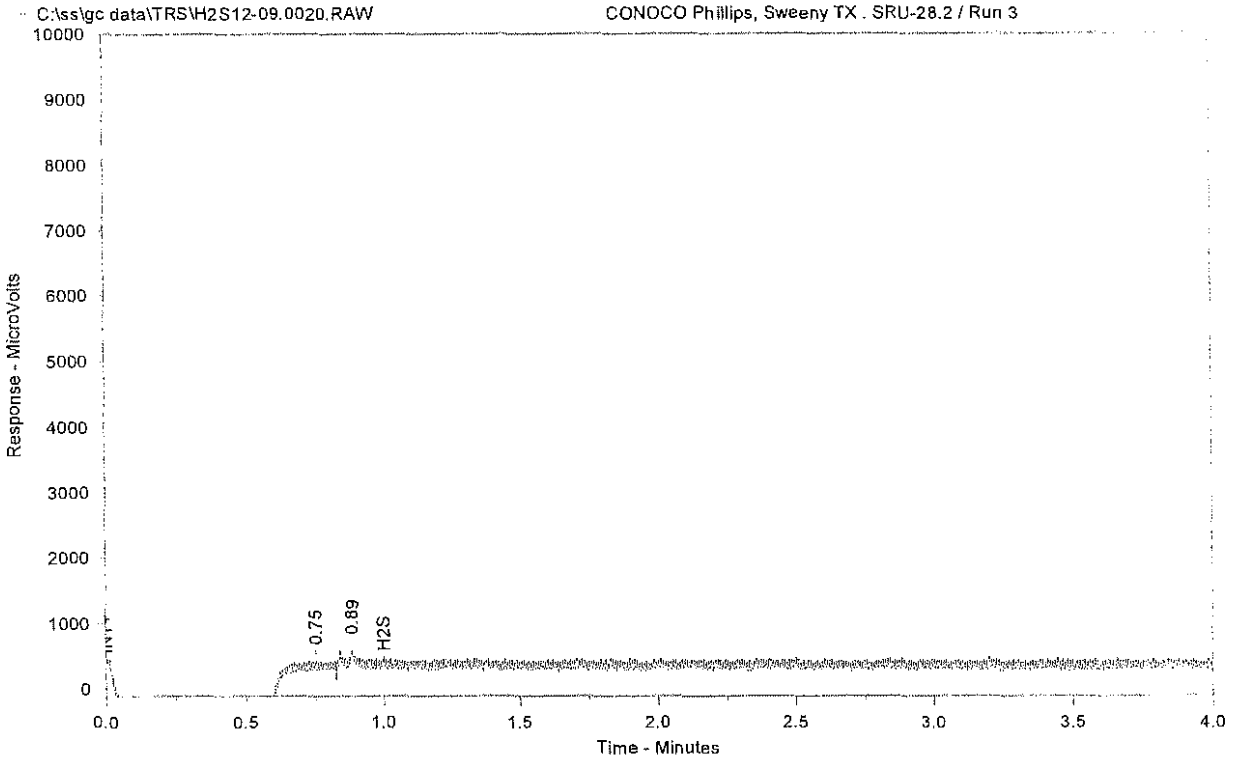
Instrument = Instrument 1
Heading 1 = Air = 100, H2 = 85, He = 113; 125 uL Sample Loop
Heading 2 = 0.0 Evnt 92.0, 0.6 Evnt -92, 15.0 Retn; 42C- Isothermal

Raw File Name = **C:\ss\gc data\TRS\H2S12-09.0019.RAW**
Method File Name = C:\CPData\SampleData\TRS.MET
Calibration File Name = C:\CPData\SampleData\H2S.CAL

Date Taken (end) = 12/9/2010 3:14:38 PM
Method Version = 8
Calibration Version = 1

Peak #	Ret. Time	Name	Amount	Height	Area	Type	Width
1	0.69		0.00	643.3	4292	BV	0.13
2	0.84		0.00	618.5	4504	VB	0.27
3	2.58		0.00	215.5	709	BB	0.14
4	2.89		0.00	195.4	338	BB	0.07

Total Area = 9843.561 Total Height = 1672.615 Total Amount = 0



Sample Name = **CONOCO Phillips, Sweeny TX . SRU-28.2 / Run 3** -4

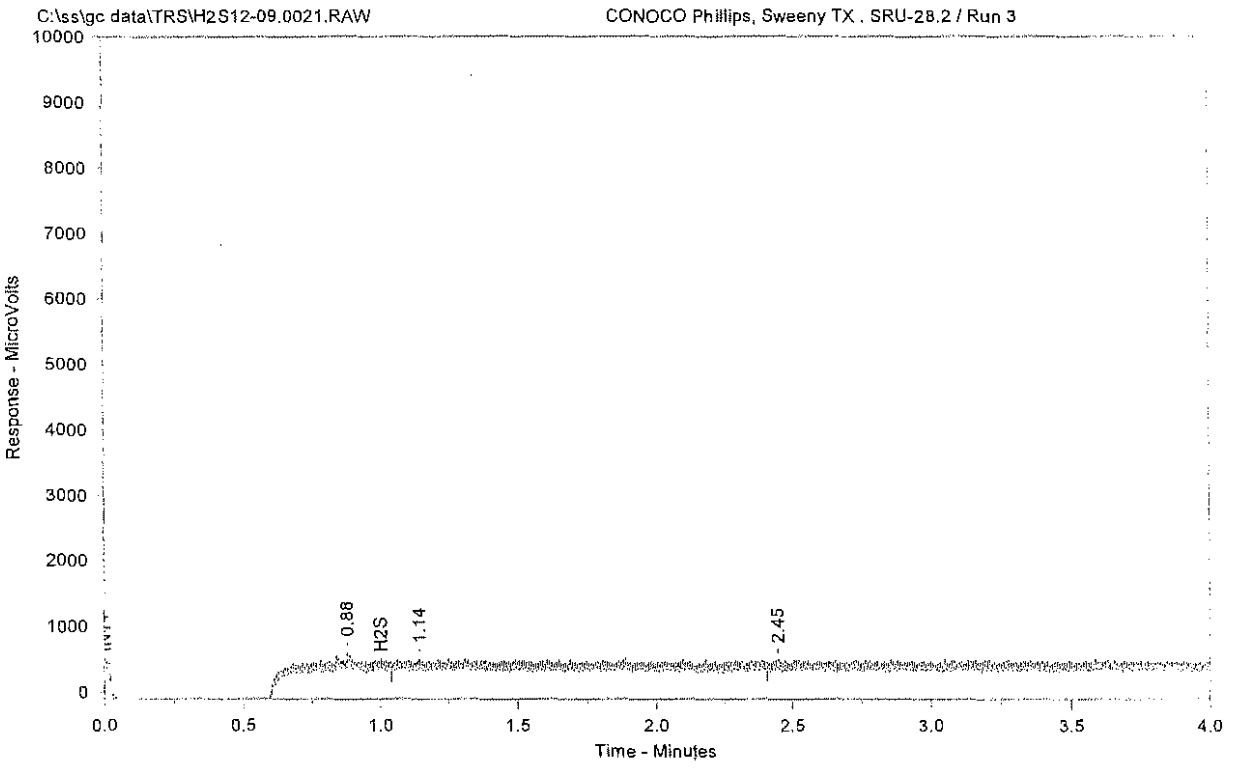
Instrument = Instrument 1
Heading 1 = Air = 100, H2 = 85, He = 113; 125 uL Sample Loop
Heading 2 = 0.0 Evnt 92.0, 0.6 Evnt -92, 15.0 Retn; 42C- Isothermal

Raw File Name = **C:\ss\gc data\TRS\H2S12-09.0020.RAW**
Method File Name = C:\CPData\SampleData\TRS.MET
Calibration File Name = C:\CPData\SampleData\H2S.CAL

Date Taken (end) = 12/9/2010 3:29:39 PM
Method Version = 8
Calibration Version = 1

Peak #	Ret. Time	Name	Amount	Height	Area	Type	Width
1	0.75		0.00	581.4	6577	BV	0.22
2	0.89		0.00	565.1	4002	VB	0.24

Total Area = 10578.86 Total Height = 1146.51 Total Amount = 0



Sample Name = **CONOCO Phillips, Sweeny TX . SRU-28.2 / Run 3** ← 5

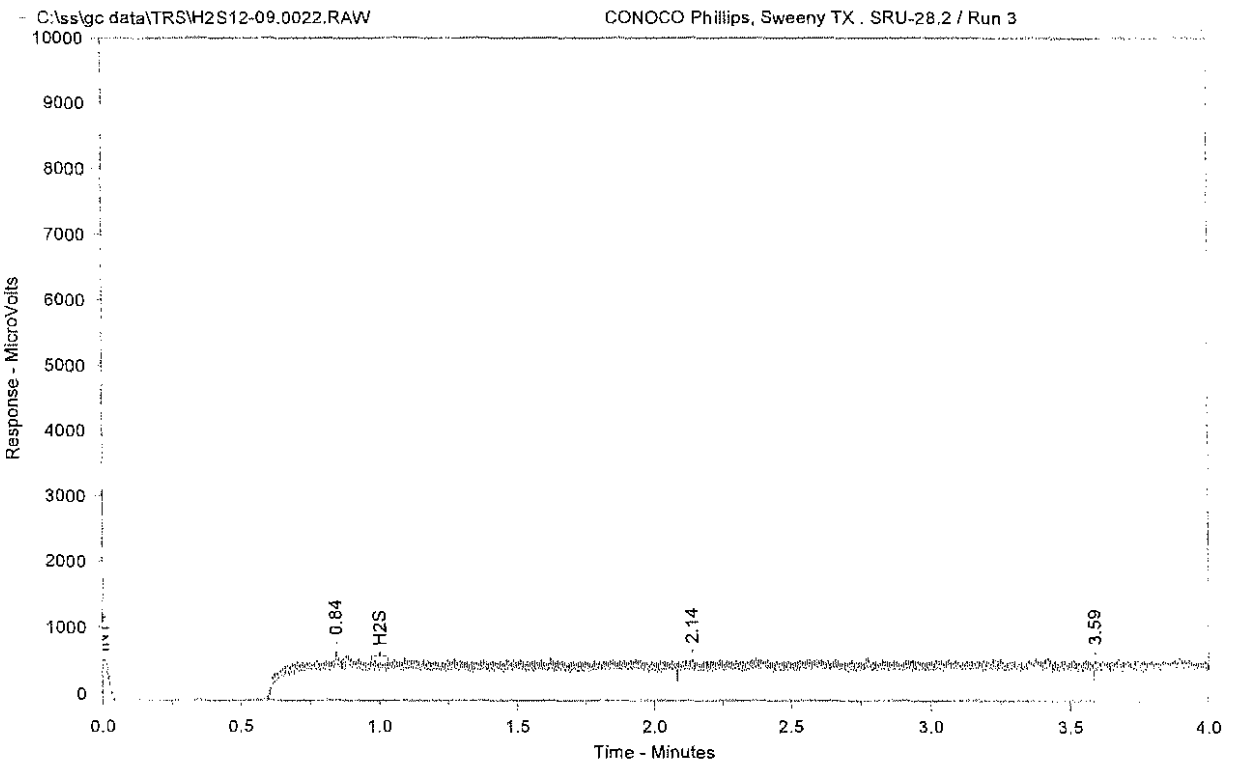
Instrument = Instrument 1
Heading 1 = Air = 100, H2 = 85, He = 113; 125 uL Sample Loop
Heading 2 = 0.0 Evnt 92.0, 0.6 Evnt -92, 15.0 Retn; 42C- Isothermal

Raw File Name = **C:\ss\gc data\TRS\H2S12-09.0021.RAW**
Method File Name = C:\CPData\SampleData\TRS.MET
Calibration File Name = C:\CPData\SampleData\H2S.CAL

Date Taken (end) = 12/9/2010 3:44:39 PM
Method Version = 8
Calibration Version = 1

Peak #	Ret. Time	Name	Amount	Height	Area	Type	Width
1	0.88		0.00	685.4	11487	BV	0.36
2	1.14		0.00	314.4	2346	VB	0.22
3	2.45		0.00	211.2	1192	BB	0.24

Total Area = 15024.58 Total Height = 1210.928 Total Amount = 0



Sample Name = **CONOCO Phillips, Sweeny TX . SRU-28.2 / Run 3** ~6

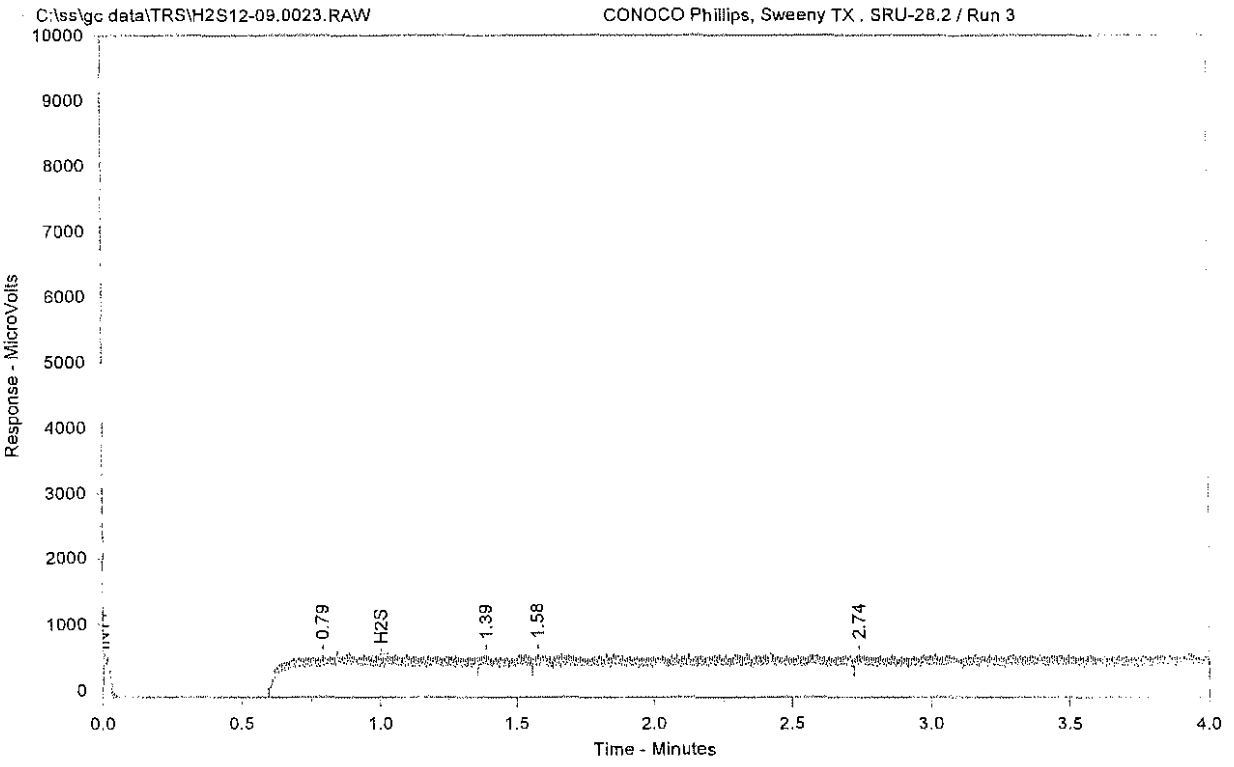
Instrument = Instrument 1
Heading 1 = Air = 100, H2 = 85, He = 113; 125 uL Sample Loop
Heading 2 = 0.0 Evnt 92.0, 0.6 Evnt -92, 15.0 Retn; 42C- Isothermal

Raw File Name = **C:\ss\gc data\TRS\H2S12-09.0022.RAW**
Method File Name = C:\CPData\SampleData\TRS.MET
Calibration File Name = C:\CPData\SampleData\H2S.CAL

Date Taken (end) = 12/9/2010 3:59:39 PM
Method Version = 8
Calibration Version = 1

Peak #	Ret. Time	Name	Amount	Height	Area	Type	Width
1	0.84		0.00	332.5	5103	BB	0.25
2	2.14		0.00	189.4	393	BB	0.10
3	3.59		0.00	174.6	231	BB	0.05

Total Area = 5727.387 Total Height = 696.5092 Total Amount = 0



Sample Name = **CONOCO Phillips, Sweeny TX . SRU-28.2 / Run 3** – 7

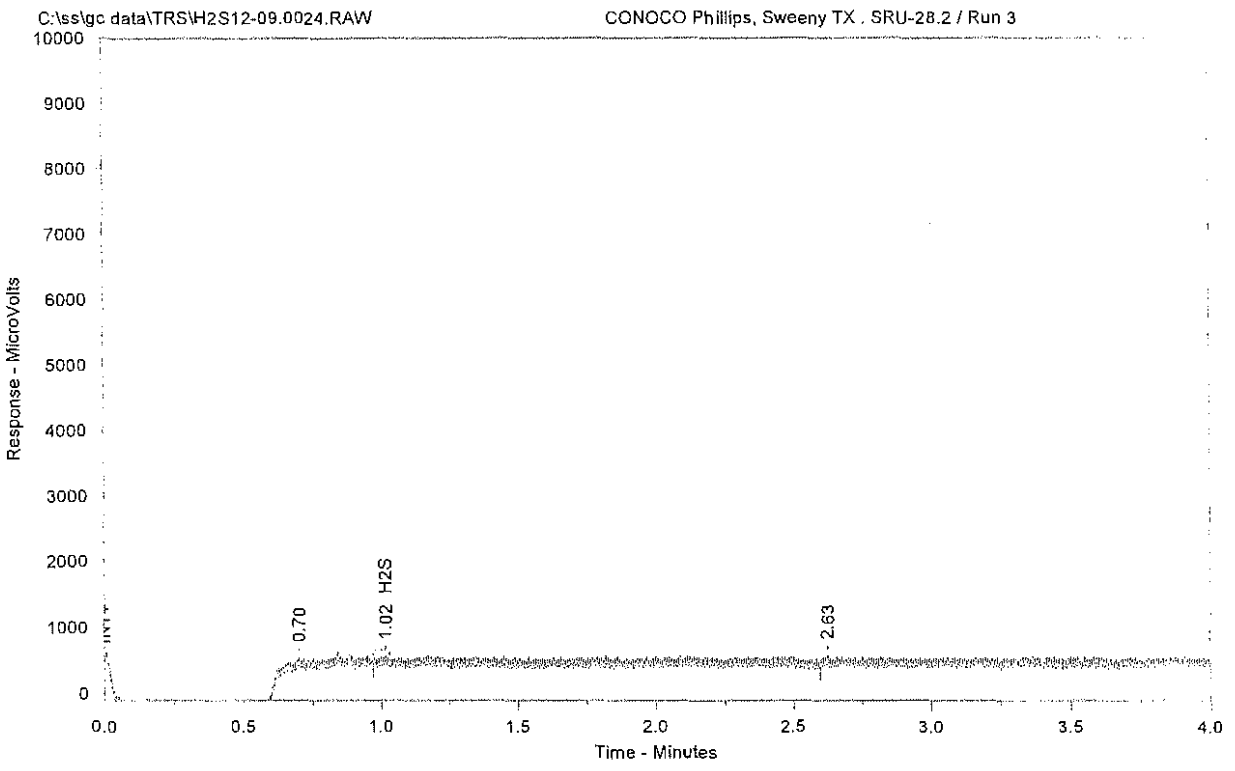
Instrument = Instrument 1
Heading 1 = Air = 100, H2 = 85, He = 113; 125 uL Sample Loop
Heading 2 = 0.0 Evnt 92.0, 0.6 Evnt -92, 15.0 Retn; 42C- Isothermal

Raw File Name = **C:\ss\gc data\TRS\H2S12-09.0023.RAW**
Method File Name = C:\CPData\SampleData\TRS.MET
Calibration File Name = C:\CPData\SampleData\H2S.CAL

Date Taken (end) = 12/9/2010 4:14:39 PM
Method Version = 8
Calibration Version = 1

Peak #	Ret. Time	Name	Amount	Height	Area	Type	Width
1	0.79		0.00	173.0	3653	BB	0.19
2	1.39		0.00	215.0	587	BV	0.11
3	1.58		0.00	217.9	453	VB	0.07
4	2.74		0.00	203.7	914	BB	0.19

Total Area = 5606.861 Total Height = 809.6483 Total Amount = 0



Sample Name = **CONOCO Phillips, Sweeny TX . SRU-28.2 / Run 3** ~ 8

Instrument = Instrument 1
Heading 1 = Air = 100, H2 = 85, He = 113; 125 uL Sample Loop
Heading 2 = 0.0 Evnt 92.0, 0.6 Evnt -92, 15.0 Retn; 42C- Isothermal

Raw File Name = **C:\ss\gc data\TRS\H2S12-09.0024.RAW**
Method File Name = C:\CPData\SampleData\TRS.MET
Calibration File Name = C:\CPData\SampleData\H2S.CAL

Date Taken (end) = 12/9/2010 4:29:40 PM
Method Version = 8
Calibration Version = 1

Peak #	Ret. Time	Name	Amount	Height	Area	Type	Width
1	0.70		0.00	394.6	2787	BB	0.15
2	1.02	H2S	0.50	202.0	524	BB	0.11
3	2.63		0.00	240.0	5039	BB	0.87

Total Area = 8349.029 Total Height = 836.6174 Total Amount = 0.4992794

File Name: C:\CPData\SampleData\H2S.CAL
Version: 1

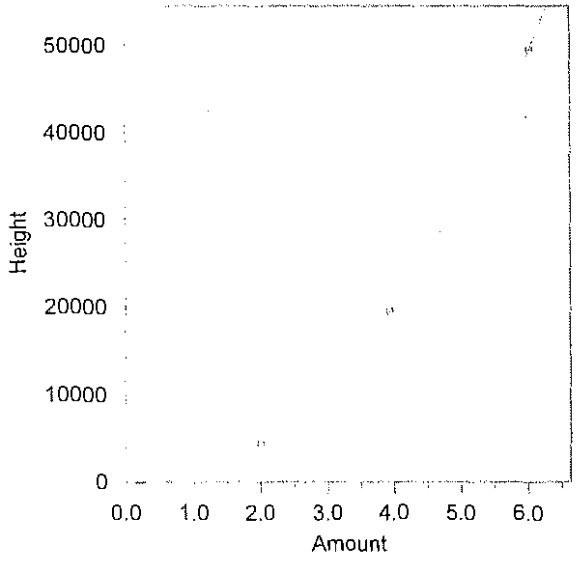
Creator: John Johnston
Description:
Reason for change:

External standard calibration
Standard injection volume: 1
Standard sample weight: 1
Area reject threshold: 100
Reference peak area reject threshold: 100
Amount units: ppm
No default component

Method of calculating data point averages: Equal weight for all updates
Print calibration update report

All levels are normal data points.

1 H2S



Expected retention time: 1 minutes
Search window: 0.03 minutes
No retention time reference component
Group number: 0

High alarm limit: 0.1
Low alarm limit: 100
Component constant: 0.23

Single peak quantification by height

$Y = 936.9683 X^{2.208863}$

Power fit with equal weighting, forced to origin
Coefficient of determination: 0.9999906
Average error: 0.184%
Average CF: 5105.004
RSD: 59.158%

Level	Amount	Response	Cal Factor	Error, %	Source	Date and time
1	2.01	4375	2176.617	-0.107	Manual	12/8/2010 3:41:32 PM
2	3.94	19422	4929.441	0.277	Manual	12/8/2010 3:41:44 PM
3	6.03	49500	8208.955	-0.169	Manual	12/8/2010 3:41:55 PM

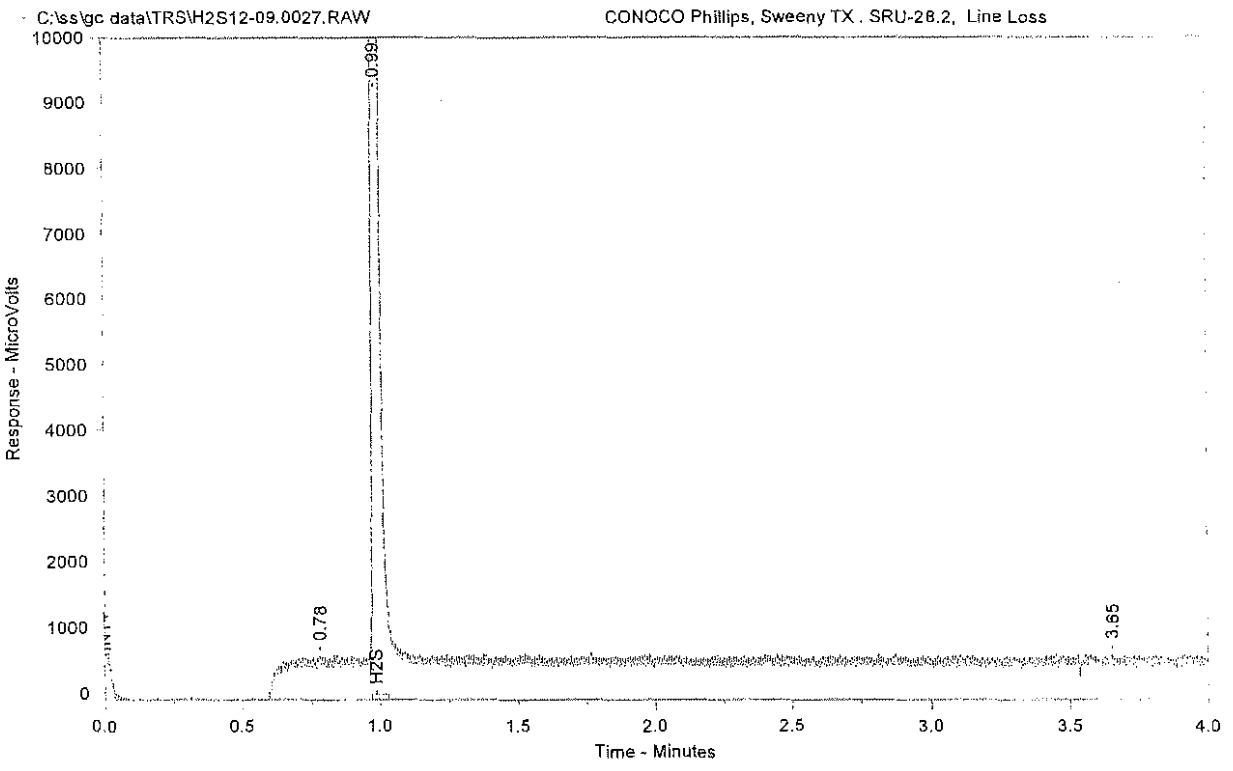
Minimum Detection Limit (MDL)

Solve for X, $Y = \frac{0.23}{100}$ mG

$X = \sqrt[2.208863]{\frac{Y}{936.9683}}$

$= \cancel{0.0132} \simeq \cancel{0.02}$ mG 12/15/10

$= 0.3631 = \underline{0.36}$ mdL ppm.



Sample Name = **CONOCO Phillips, Sweeny TX . SRU-28.2, Line Loss**

Instrument = Instrument 1
Heading 1 = Air = 100, H2 = 85, He = 113; 125 uL Sample Loop
Heading 2 = 0.0 Evnt 92.0, 0.6 Evnt -92, 15.0 Retn; 42C- Isothermal

Raw File Name = **C:\ss\gc data\TRS\H2S12-09.0027.RAW**
Method File Name = C:\CPData\SampleData\TRS.MET
Calibration File Name = C:\CPData\SampleData\H2S.CAL

Date Taken (end) = 12/9/2010 4:48:00 PM
Method Version = 8
Calibration Version = 1

Peak #	Ret. Time	Name	Amount	Height	Area	Type	Width
1	0.78		0.00	655.0	7155	BV	0.21
2	0.99	H2S	6.15	51766.0	65413	VB	0.02
3	3.65		0.00	215.6	1779	BB	0.35

Total Area = 74346.44 Total Height = 52636.56 Total Amount = 6.148737

Line loss test for [12-9-10 testday]

3 injection average TRS\H2S 12-09.0027.Raw 6.15
12-09.0028 6.15
12-09.0029 6.17

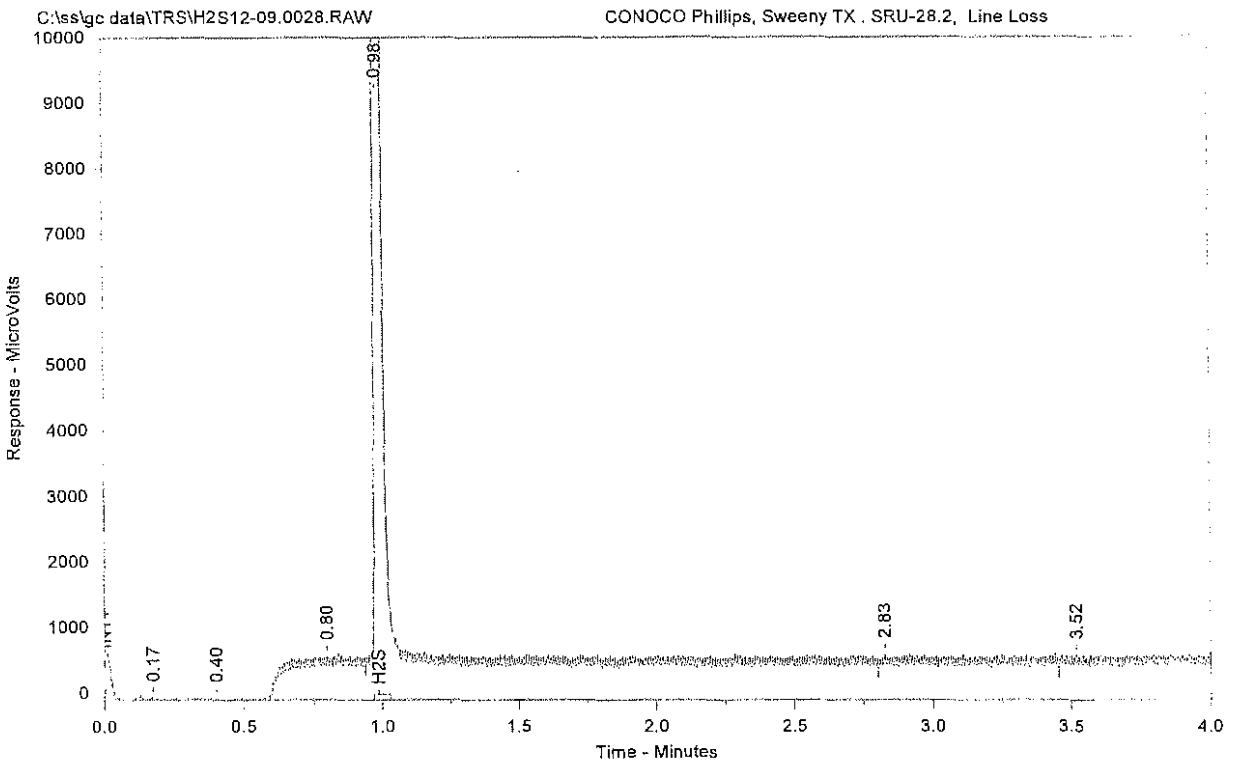
Average = 6.16

Line loss recovery

$\frac{6.16\ ppm}{5.9\ ppm} = 1.04349$ or 104.35%

± 5% of Average = 5.85 – 6.47

± 20% of Calgas(5.9ppm) = 4.72 – 7.08



Sample Name = **CONOCO Phillips, Sweeny TX . SRU-28.2, Line Loss**

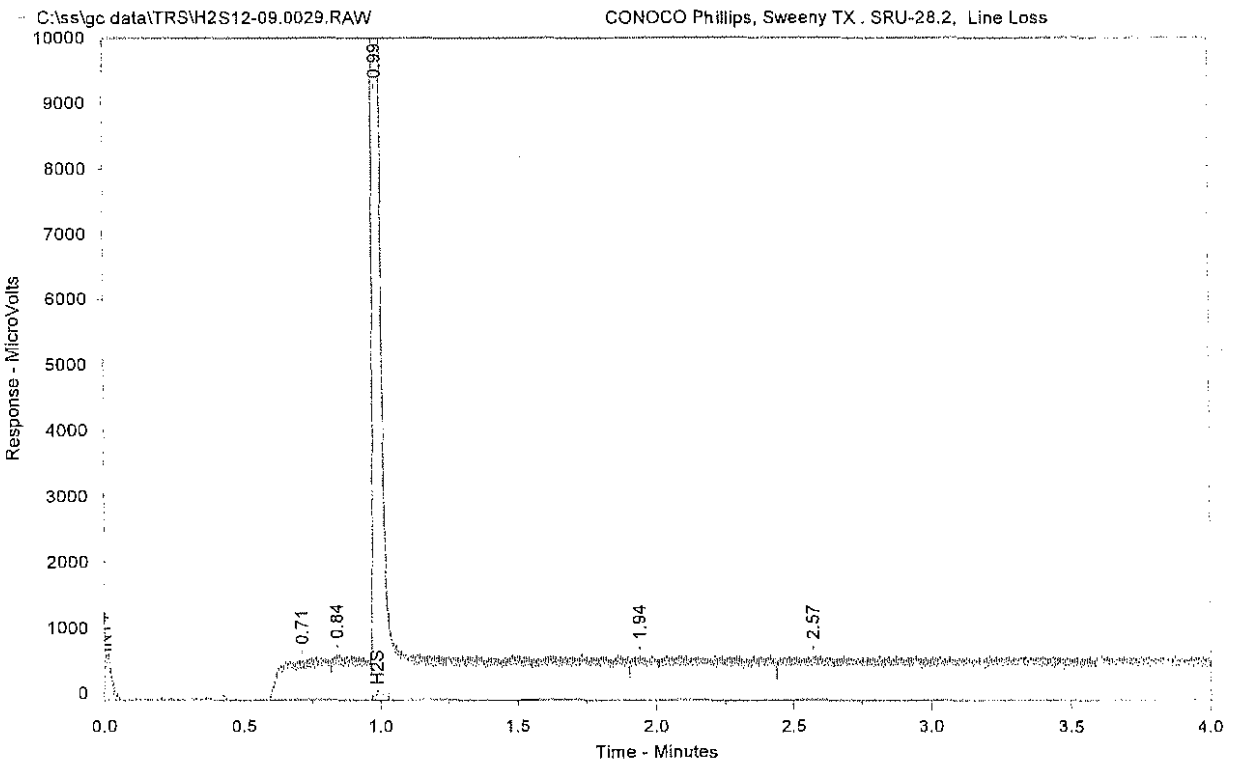
Instrument = Instrument 1
Heading 1 = Air = 100, H2 = 85, He = 113; 125 uL Sample Loop
Heading 2 = 0.0 Evnt 92.0, 0.6 Evnt -92, 15.0 Retn; 42C- Isothermal

Raw File Name = **C:\ss\gc data\TRS\H2S12-09.0028.RAW**
Method File Name = C:\CPData\SampleData\TRS.MET
Calibration File Name = C:\CPData\SampleData\H2S.CAL

Date Taken (end) = 12/9/2010 4:53:00 PM
Method Version = 8
Calibration Version = 1

Peak #	Ret. Time	Name	Amount	Height	Area	Type	Width
1	0.17		0.00	206.7	410	BB	0.07
2	0.40		0.00	205.5	307	BB	0.05
3	0.80		0.00	620.1	6986	BV	0.21
4	0.98	H2S	6.15	51773.8	67448	VB	0.02
5	2.83		0.00	214.2	1135	BB	0.20
6	3.52		0.00	185.0	538	BB	0.11

Total Area = 76824.04 Total Height = 53205.13 Total Amount = 6.149154



Sample Name = **CONOCO Phillips, Sweeny TX . SRU-28.2, Line Loss**

Instrument = Instrument 1
Heading 1 = Air = 100, H2 = 85, He = 113; 125 uL Sample Loop
Heading 2 = 0.0 Evnt 92.0, 0.6 Evnt -92, 15.0 Retn; 42C- Isothermal

Raw File Name = **C:\ss\gc data\TRS\H2S12-09.0029.RAW**
Method File Name = C:\CPData\SampleData\TRS.MET
Calibration File Name = C:\CPData\SampleData\H2S.CAL

Date Taken (end) = 12/9/2010 4:58:00 PM
Method Version = 8
Calibration Version = 1

Peak #	Ret. Time	Name	Amount	Height	Area	Type	Width
1	0.71		0.00	701.2	4094	BV	0.11
2	0.84		0.00	743.2	5163	VV	0.14
3	0.99	H2S	6.17	52104.4	75605	VV	0.02
4	1.94		0.00	231.6	683	VB	0.10
5	2.57		0.00	198.1	1079	BB	0.20

Total Area = 86624.2 Total Height = 53978.49 Total Amount = 6.166902

28.2 Sulfur Make Long Tons Per Day
Dec 9, Run 1

Start	12/9/10 10:10
Stop	12/9/10 12:10
Interval	5m

Sulfur Make	Tag Description	28FC5400.PV	28FC6400.PV	28FC8400.PV	28FC5301.PV	28FC6301.PV	282AL007.COM P(8)	28CSACID_H2O.PV	28FI4426.PV	28FI9420.PV	28CSSWS_H2O.PV	28FC8403.PV
LTD		MSCF/D ACID GAS A CLAUS	MSCF/D B- CLAUS ACID GAS	MMSCF/D ACID GAS TO C CLAUS	MSCF/D SWS Gas to A Claus	MSCF/D SWS Gas to B Claus	ACID_GAS -- GC H2S ML%	MOL % ACID GAS WATER CONTENT	MSCF/D SCOT ACID GAS FLOW	MSCF/D #2 TGTU RECYCLE GAS	MOL % SWS WATER CONTENT	MMSCF/D SWS GAS TO C CLAUS
	Timestamp	28FC5400.PV - Average	28FC6400.PV - Average	28FC8400.PV - Average	28FC5301.PV - Average	28FC6301.PV - Average	282AL007.COM P(8) - Average	28CSACID_H2O.PV - Average	28FI4426.PV - Average	28FI9420.PV - Average	28CSSWS_H2O.PV - Average	28FC8403.PV - Average
531.5	12/9/10 10:10 AM	7.43	7.24	1.20	2.38	2.18	95.56	0.14	0.83	207.50	0.27	0.06
532.1	12/9/10 10:15 AM	7.40	7.33	1.20	2.36	2.17	95.56	0.14	0.85	212.88	0.27	0.09
535.4	12/9/10 10:20 AM	7.41	7.41	1.20	2.40	2.16	95.56	0.14	0.85	208.36	0.27	0.11
538.7	12/9/10 10:25 AM	7.43	7.52	1.20	2.33	2.09	95.56	0.14	0.83	212.62	0.27	0.10
540.3	12/9/10 10:30 AM	7.41	7.66	1.20	2.32	1.98	95.56	0.14	0.82	211.80	0.26	0.22
538.8	12/9/10 10:35 AM	7.42	7.63	1.20	2.34	2.07	95.56	0.14	0.83	225.81	0.26	0.10
540.4	12/9/10 10:40 AM	7.48	7.65	1.20	2.34	2.06	95.56	0.14	0.84	222.38	0.26	0.16
542.1	12/9/10 10:45 AM	7.50	7.65	1.20	2.34	2.10	95.56	0.14	0.83	224.81	0.26	0.18
542.8	12/9/10 10:50 AM	7.53	7.68	1.20	2.32	2.11	95.56	0.14	0.85	229.13	0.26	0.06
545.6	12/9/10 10:55 AM	7.57	7.71	1.20	2.35	2.13	95.56	0.14	0.86	230.90	0.26	0.09
549.1	12/9/10 11:00 AM	7.61	7.76	1.20	2.35	2.13	95.56	0.14	0.85	233.78	0.27	0.06
552.1	12/9/10 11:05 AM	7.64	7.83	1.20	2.35	2.12	95.56	0.14	0.84	242.04	0.27	0.08
554.0	12/9/10 11:10 AM	7.66	7.88	1.20	2.35	2.11	95.56	0.14	0.86	235.24	0.27	0.03
558.0	12/9/10 11:15 AM	7.69	7.92	1.20	2.35	2.11	95.56	0.14	0.84	198.06	0.27	0.02
559.8	12/9/10 11:20 AM	7.69	7.96	1.20	2.34	2.10	95.56	0.14	0.83	183.61	0.27	0.05
557.5	12/9/10 11:25 AM	7.67	7.93	1.20	2.35	2.13	95.56	0.14	0.85	184.25	0.27	0.01
554.8	12/9/10 11:30 AM	7.61	7.88	1.20	2.36	2.17	95.56	0.14	0.85	182.45	0.27	0.01
553.6	12/9/10 11:35 AM	7.61	7.86	1.20	2.37	2.17	95.56	0.14	0.87	184.56	0.27	0.01
554.8	12/9/10 11:40 AM	7.63	7.90	1.20	2.36	2.17	95.56	0.14	0.87	186.92	0.27	0.01
555.3	12/9/10 11:45 AM	7.64	7.93	1.20	2.36	2.17	95.56	0.14	0.89	184.74	0.27	0.00
558.6	12/9/10 11:50 AM	7.69	7.98	1.20	2.36	2.16	95.56	0.14	0.89	183.23	0.27	0.00
559.1	12/9/10 11:55 AM	7.70	7.99	1.20	2.35	2.14	95.56	0.14	0.88	184.30	0.27	0.00
556.5	12/9/10 12:00 PM	7.66	7.96	1.20	2.35	2.14	95.56	0.14	0.89	183.44	0.27	0.01
556.8	12/9/10 12:05 PM	7.67	7.94	1.20	2.36	2.15	95.56	0.14	0.88	179.91	0.27	0.05
556.5	12/9/2010 12:10	7.65	7.94	1.20	2.36	2.17	95.56	0.14	0.88	176.02	0.27	0.11

549.0 **average**

28.2 Sulfur Make Long Tons Per Day
Dec 9, Run 2

Start 12/9/10 12:15
Stop 12/9/10 14:15
Interval 5m

Sulfur Make LTD	Tag Description / Timestamp	28FC5400.PV MSCF/D ACID GAS A CLAUS 28FC5400.PV - Average	28FC6400.PV MSCF/D B- CLAUS ACID GAS 28FC6400.PV - Average	28FC8400.PV MMSCF/D ACID GAS TO C CLAUS 28FC8400.PV - Average	28FC5301.PV MSCF/D SWS Gas to A Claus 28FC5301.PV - Average	28FC6301.PV MSCF/D SWS Gas to B Claus 28FC6301.PV - Average	282AL007.COMP(8) ACID_GAS -- GC H2S ML% 282AL007.COMP(8) - Average	28CSACID_H2O.PV MOL % ACID GAS WATER CONTENT 28CSACID_H2O.PV - Average	28FI4426.PV MSCF/D SCOT ACID GAS FLOW 28FI4426.PV - Average	28FI9420.PV MSCF/D #2 TGTU RECYCLE GAS 28FI9420.PV - Average	28CSSWS_H2O.PV MOL % SWS WATER CONTENT 28CSSWS_H2O.PV - Average	28FC8403.PV MMSCF/D SWS GAS TO C CLAUS 28FC8403.PV - Average
557.9	12/9/10 12:15 PM	7.67	7.98	1.20	2.34	2.14	95.56	0.14	0.88	177.91	0.27	0.10
558.4	12/9/10 12:20 PM	7.68	7.98	1.20	2.36	2.18	95.56	0.14	0.89	183.23	0.27	0.05
557.6	12/9/10 12:25 PM	7.68	7.95	1.20	2.38	2.19	95.56	0.14	0.90	179.72	0.27	0.04
556.2	12/9/10 12:30 PM	7.67	7.93	1.20	2.38	2.19	95.56	0.14	0.90	181.70	0.28	0.01
555.1	12/9/10 12:35 PM	7.64	7.89	1.20	2.39	2.22	95.56	0.14	0.90	179.70	0.28	0.02
552.1	12/9/10 12:40 PM	7.58	7.86	1.20	2.37	2.23	95.56	0.14	0.88	180.28	0.28	0.03
552.4	12/9/10 12:45 PM	7.58	7.87	1.20	2.35	2.19	95.56	0.14	0.87	177.03	0.28	0.03
551.5	12/9/10 12:50 PM	7.64	7.83	1.20	2.35	2.11	95.56	0.14	0.88	176.21	0.27	0.09
552.9	12/9/10 12:55 PM	7.61	7.90	1.20	2.34	2.14	95.56	0.14	0.88	174.76	0.27	0.08
551.2	12/9/10 1:00 PM	7.61	7.87	1.20	2.33	2.10	95.56	0.14	0.87	174.42	0.27	0.15
549.4	12/9/10 1:05 PM	7.59	7.84	1.20	2.35	2.14	95.56	0.15	0.88	181.38	0.27	0.10
548.8	12/9/10 1:10 PM	7.58	7.85	1.20	2.33	2.14	95.56	0.14	0.90	177.54	0.27	0.08
548.1	12/9/10 1:15 PM	7.59	7.82	1.20	2.35	2.15	95.56	0.15	0.89	180.14	0.27	0.16
547.2	12/9/10 1:20 PM	7.57	7.82	1.20	2.33	2.15	95.56	0.15	0.90	178.85	0.27	0.16
548.0	12/9/10 1:25 PM	7.56	7.82	1.20	2.33	2.16	95.56	0.14	0.87	179.10	0.27	0.15
547.5	12/9/10 1:30 PM	7.54	7.81	1.20	2.34	2.18	95.56	0.15	0.88	175.73	0.27	0.10
549.5	12/9/10 1:35 PM	7.57	7.83	1.20	2.35	2.17	95.56	0.15	0.86	177.04	0.27	0.05
551.5	12/9/10 1:40 PM	7.60	7.84	1.20	2.37	2.19	95.56	0.14	0.86	178.55	0.27	0.00
553.1	12/9/10 1:45 PM	7.61	7.84	1.20	2.38	2.21	95.56	0.14	0.86	173.50	0.27	0.01
553.8	12/9/10 1:50 PM	7.61	7.88	1.20	2.37	2.19	95.56	0.14	0.87	176.74	0.27	0.02
553.3	12/9/10 1:55 PM	7.61	7.88	1.20	2.36	2.20	95.56	0.14	0.87	175.89	0.28	0.04
555.1	12/9/10 2:00 PM	7.66	7.90	1.20	2.37	2.18	95.56	0.14	0.86	174.68	0.28	0.04
554.8	12/9/10 2:05 PM	7.64	7.89	1.20	2.38	2.20	95.56	0.15	0.85	171.85	0.28	0.04
554.2	12/9/10 2:10 PM	7.62	7.89	1.20	2.38	2.23	95.56	0.15	0.86	173.53	0.28	0.14
552.4	12/9/2010 14:15	7.64	7.89	1.20	2.37	2.17	95.56	0.15	0.87	178.36	0.28	0.22

552.5 **average**

28.2 Sulfur Make Long Tons Per Day
Dec 9, Run 3

Start 12/9/10 14:40
Stop 12/9/10 16:40
Interval 5m

Sulfur Make	Tag Description	28FC5400.PV	28FC6400.PV	28FC8400.PV	28FC5301.PV	28FC6301.PV	282AL007.COMP(8)	28CSACID_H2O.PV	28FI4426.PV	28FI9420.PV	28CSSWS_H2O.PV	28FC8403.PV
LTD		MSCF/D ACID GAS A CLAUS	MSCF/D B- CLAUS ACID GAS	MMSCF/D ACID GAS TO C CLAUS	MSCF/D SWS Gas to A Claus	MSCF/D SWS Gas to B Claus	ACID_GAS -- GC H2S ML%	MOL % ACID GAS WATER CONTENT	MSCF/D SCOT ACID GAS FLOW	MSCF/D #2 TGTU RECYCLE GAS	MOL % SWS WATER CONTENT	MMSCF/D SWS GAS TO C CLAUS
	Timestamp	28FC5400.PV - Average	28FC6400.PV - Average	28FC8400.PV - Average	28FC5301.PV - Average	28FC6301.PV - Average	282AL007.COMP(8) - Average	28CSACID_H2O.PV - Average	28FI4426.PV - Average	28FI9420.PV - Average	28CSSWS_H2O.PV - Average	28FC8403.PV - Average
549.0	12/9/10 2:40 PM	7.62	7.89	1.20	2.33	2.14	95.56	0.15	0.88	177.43	0.27	0.15
547.1	12/9/10 2:45 PM	7.59	7.87	1.20	2.33	2.15	95.56	0.15	0.88	178.48	0.27	0.13
544.5	12/9/10 2:50 PM	7.54	7.83	1.20	2.33	2.17	95.56	0.15	0.88	177.21	0.27	0.05
545.3	12/9/10 2:55 PM	7.55	7.80	1.20	2.37	2.19	95.56	0.15	0.87	174.30	0.27	0.10
548.0	12/9/10 3:00 PM	7.63	7.83	1.20	2.38	2.16	95.56	0.15	0.87	176.32	0.27	0.18
548.5	12/9/10 3:05 PM	7.62	7.84	1.20	2.38	2.19	95.56	0.15	0.86	176.36	0.27	0.21
547.1	12/9/10 3:10 PM	7.62	7.84	1.20	2.36	2.17	95.56	0.15	0.89	182.43	0.27	0.12
547.1	12/9/10 3:15 PM	7.63	7.88	1.20	2.35	2.17	95.56	0.15	0.91	190.74	0.27	0.01
546.9	12/9/10 3:20 PM	7.62	7.91	1.20	2.35	2.16	95.56	0.15	0.92	177.46	0.27	0.05
547.8	12/9/10 3:25 PM	7.62	7.89	1.20	2.36	2.17	95.56	0.16	0.86	173.96	0.27	0.05
548.4	12/9/10 3:30 PM	7.64	7.90	1.20	2.38	2.19	95.56	0.16	0.85	175.99	0.27	0.10
548.0	12/9/10 3:35 PM	7.64	7.90	1.20	2.38	2.21	95.56	0.16	0.86	176.61	0.27	0.07
549.4	12/9/10 3:40 PM	7.65	7.94	1.20	2.38	2.21	95.56	0.16	0.86	176.15	0.27	0.07
550.1	12/9/10 3:45 PM	7.66	7.95	1.20	2.37	2.20	95.56	0.16	0.86	176.42	0.27	0.06
547.7	12/9/10 3:50 PM	7.63	7.94	1.20	2.36	2.19	95.56	0.16	0.87	178.39	0.27	0.05
546.9	12/9/10 3:55 PM	7.64	7.93	1.20	2.36	2.17	95.56	0.16	0.88	179.65	0.27	0.02
546.0	12/9/10 4:00 PM	7.64	7.87	1.20	2.39	2.19	95.56	0.16	0.86	176.29	0.27	0.03
546.7	12/9/10 4:05 PM	7.64	7.88	1.20	2.39	2.21	95.56	0.16	0.85	174.88	0.27	0.02
546.6	12/9/10 4:10 PM	7.64	7.89	1.20	2.38	2.21	95.56	0.16	0.86	176.69	0.27	0.05
547.3	12/9/10 4:15 PM	7.64	7.91	1.20	2.39	2.22	95.56	0.16	0.86	175.95	0.28	0.05
548.9	12/9/10 4:20 PM	7.66	7.93	1.20	2.37	2.21	95.56	0.16	0.86	175.57	0.28	0.02
550.4	12/9/10 4:25 PM	7.67	7.91	1.20	2.39	2.22	95.56	0.16	0.85	177.45	0.28	0.01
553.5	12/9/10 4:30 PM	7.71	7.96	1.20	2.40	2.23	95.56	0.16	0.85	175.31	0.28	0.01
555.0	12/9/10 4:35 PM	7.75	7.98	1.20	2.41	2.21	95.56	0.16	0.86	176.24	0.28	0.02
555.1	12/9/2010 16:40	7.73	8.00	1.20	2.40	2.21	95.56	0.16	0.86	177.93	0.28	0.02

548.4 **average**

DEFINITIONS

Standard Conditions: 68° and 29.92 inches of mercury

Stack Conditions: Stack temperature, pressure and moisture

NOMENCLATURE

ACFM	Volumetric stack gas flow in cubic feet per minute at stack conditions
AMT	Average temperature at meter in degrees Rankin
An	Area of nozzle in square feet
As	Area of stack in square feet
C	Total pollutant concentration in grains per dry standard cubic feet
CEMS	Continuous emission monitoring system
CFM	Cubic feet per minute
CGA	Cylinder gas audit
CO_2	Carbon dioxide
CO	Carbon monoxide
Cp	Pitot tube correction factor (PTCF)
Cs	Partial pollutant concentration in grains or grams per dry standard cubic foot (total less impinger catch)
De	Equivalent stack diameter of rectangular stack

$$De = \left[\frac{2LW}{L+W} \right]$$

DGMCF	Dry gas meter correction factor
DI	Deionized water
dscf	dry standard cubic feet

NOMENCLATURE (Continued)

EA	Excess Air (expressed as percent)
FPD	Flame photometric detector
FID	Flame ionization detector
°F	Temperature in degrees Fahrenheit
GC	Gas chromatograph
GPC	Grams of particulate caught (total)
g	Grams
gr	Grains
Hg	Mercury
H_2O	Water
H_2SO_4	Sulfuric Acid
I	Isokinetics as percent
IMPI	Grams of particulate caught in impinger
IMPP	Grams of particulate caught before impinger (total less impinger catch)
MWSG	Molecular weight of stack gas in grams/gram-mole (g/g-mole) or pounds/pound-mole (lb/lb-mole)
N_2	Nitrogen
NOx	Total oxides of nitrogen
O_2	Oxygen
Pb	Barometric pressure in inches of mercury
PM	Particulate Matter
PM_{10}	Particulate Matter less than 10 microns

NOMENCLATURE (Continued)

Pm	Meter pressure in inches of mercury
ppm	Parts per million (Volume/Volume or mass/mass)
P_r	Barometric pressure of reference barometer
Ps	Absolute pressure in stack in inches of mercury
PMR	True pollutant mass rate in pounds per hour
PMRs	Pollutant mass rate for the "front half" in pounds per hour (total less impinger catch)
Qsd	Dry volumetric stack gas flow rate corrected to standard conditions in dscf/hr
°R	Temperature in degrees Rankin (equivalent to °F + 460°)
RA	Relative accuracy
RATA	Relative accuracy test audit
Std.P	Pressure at standard conditions (29.92 inches of mercury)
SO_2	Sulfur dioxide
SO_3	Sulfur trioxide
Std.T	Temperature at standard conditions (528°R)
THC	Total Hydrocarbons
TG	Total weight of water collected in silica gel, in grams
TRS	Total Reduced Sulfur Compounds
T_r	Temperature of reference thermometer
Ts	Stack gas temperature in degrees Rankin
T_t	Temperature of test thermometer

NOMENCLATURE (Continued)

TWW	Total water wash volume collected in impingers and silica gel, in milliliters (ml) NOTE: Density of H_2O equals 1 g/ml
VOC	Total Volatile Organic Compounds
Vm(Std)	Total gas sampled converted to standard conditions, dry basis, in cubic feet
Vs	Stack gas velocity in feet per second
ΔH	Pressure differential across the orifice meter in inches of water
ΔP	Stack gas velocity head in inches of water
Θ	Sample time in minutes

SOURCE SAMPLING CALCULATIONS

FLOW CALCULATIONS

Pitot Tube Constant; Stack Temperature

$$Vs\ ft/sec = 85.49 \times Cp \times \sqrt{\Delta P}\ avg.\ (in\ H_2O) \times \sqrt{\frac{Ts\ avg.\ (°R)}{MWSG\ (lb/lb\text{-}mole) \times Ps\ (in\ Hg)}}$$

Pitot Tube Correction Factor; Molecular Weight of the Stack Gas; Stack Pressure

Pitot Tube Constant

$$85.49 \frac{ft}{sec} \left[\frac{(lb/lb\text{-}mole)(in\ Hg)}{(R)(in\ H_2O)} \right]^{1/2}$$

$$ACFM\ ft^3/min = Vs\ (ft/sec) \times 60\ sec/min \times As\ (ft^2)$$

Area of the Stack

68°F = 528°R Standard Temperature; Stack Pressure; Percent Moisture

$$Qsd\ dscf/hr = 60\ min/hr \times \left(1.00 - \frac{\%H_2O}{100}\right) \times ACFM\ (ft^3/min) \times \frac{528}{Ts\ avg.\ (°R)} \times \frac{Ps\ (in\ Hg)}{29.92}$$

Stack Temperature; Standard Pressure

DERIVATIONS OF EQUATIONS

Fuel and Operations Data

Fuel F Factor (dscf/MMBtu) = $\frac{10^6[3.64(\%H) + 1.53(\%C) + 0.57(\%S) + 0.14(\%N) - 0.46(\%O_2)]}{\text{Gross Calorific Value (BTU/lb)}}$

Density (lb/ft^3) = Gas Mixture Molecular Weight/385

Gross Calorific Value - GCV (BTU/lb) = High Heat of Combustion (BTU/ft^3) x (1/mixture density (lb/ft^3))

Fuel Flow Rate (FFR) = Fuel Flow Rate in ft^3/hr, lb/hr or gal/hr

FFR (lb/hr) = FFR (ft^3/hr) x Gas Mixture Density (lb/ft^3)

FFR (lb/hr) = FFR (gal/hr) x Liquid Density (lb/gal)

Operating Rate (MMBtu/hr) = FFR (ft^3/hr) x Gross Calorific Value (BTU/ft^3) x 1 x 10^{-6}

Operating Rate (MMBtu/hr) = FFR (lb/hr) x Gross Calorific Value (Btu/lb) x 1 x 10^{-6}

Pollutant Emissions Equations

lb/dscf = (ppmvd x MW x 6.242 x 10^{-8})/24.04 (Note: MW for NOx = 46, MW for CO = 28, MW for SO_2 = 64 , H_2S = 34)

lb/MMBtu @ 0% O_2 = lb/dscf x Fuel F Factor (dscf/MMBtu) x [20.9/20.9 - %O_2 (dry)]

Emission Rate (lb/hr) = lb/MMBtu x GCV x FFR x 1 x 10^{-6}
Note: if FFR is ft^3/hr, GCV is Btu/ft^3
if FFR is lb/hr, GCV is Btu/lb

SO_2, ppm (dry) @ 0% O_2 = SO_2 ppm (dry) x [20.9/20.9-%O_2(dry)]

Grams/Horsepower - Hour (g/hp-hr) = (Emission Rate lb/hr x 454)/Horsepower

Stork Testing & Metallurgical Consulting, Inc.
Air Emissions Services Division
Houston, Texas

ANNUAL METER BOX CALIBRATION

Box No. M-8 Vacuum 5 in Hg. Date 7/12/2010

Wet Test Meter No. 11547 Barometric Pressure, Pb 29.87 in. Hg

Inputs										Results	
Orifice Manometer setting Delta H in H2O	Gas Volume of wet test meter Vw ft³	Gas Volume of dry gas meter Vd ft³	Temperature Wet test meter Tw °F	Dry Gas Meter Inlet Tdi °F	Dry Gas Meter Outlet Tdo °F	Average Td °F	Time Min.	Time Sec.	Time ø Min.	Y	Delta H@
0.25	3.000	3.035	75 / 75	74 / 76	74 / 75	74.75	10	39	10.650	0.9874	1.7897
0.50	5.000	5.044	75 / 75	77 / 79	76 / 76	77.00	12	45	12.750	0.9938	1.8391
1.00	5.000	5.039	75 / 75	77 / 78	76 / 77	77.00	9	0	9.000	0.9935	1.8327
2.00	10.000	10.026	75 / 75	78 / 82	77 / 77	78.50	12	43	12.717	0.9990	1.8244
									Average:	0.9934	1.8215

Equations

Delta H: $\frac{\text{Delta H}}{13.6}$

Y: $\frac{Vw * Pb * (Td + 460)}{Vd * (Pb + \text{Delta H}/13.6) * (Tw + 460)}$

Delta H@: $\frac{0.0317 * \text{Delta H} * Pb * (Td + 460)}{Pb * (Td + 460)} \left[\frac{(Tw + 460)ø}{Vw} \right]^{*}$

Is the Delta H@ within ±0.15 of $\overline{\text{Delta H @}}$

[x] yes, then $\overline{\text{Delta H@}}$ is valid.

[ ] no, then repair and recalibrate.

Is the Ý within ±0.02 of $\overline{Y}$

[x] yes, then $\overline{Y}$ is valid.

[ ] no, then repair and recalibrate.

Randy Moore

Stork Testing & Metallurgical Consulting Inc.

Stork Testing and Metallurgical Consulting, Inc.
Air Emission Services

GAMMA CALIBRATION FORM

PROJECT ConocoPhillips PROJECT NO. Hou002549P DATE 12/22/10

UNIT SRU 28.2 Incin.

METER BOX NO. M-8 CURRENT GAMMA 0.9934

AVERAGE Δ H 1.0 ACCEPTABLE LIMITS

MAXIMUM VACUUM 5 0.9437 TO 1.0431

BAROMETRIC PRESSURE 30.17 in. Hg

WET TEST METER ID 11547

DRY GAS METER VOLUME Vd	TEMPERATURES				GAMMAS
	WET TEST METER Tw °F	DRY GAS METER			
		INLET Tdi °F	OUTLET Tdo °F	AVERAGE Td °F	
121.733	73	74	72	73	0.9556
120.689	73	74	72		
122.770	73	74	72	73	0.~~9721~~ 98621
121.733	73	74	72		
123.795	73	74.5	72	74	0.9752
122.770	73	74	72		
			AVERAGE GAMMA		0.9643 ✓

$$\frac{Vw\ Pb\ (Td + 460)}{Vd\ (Pb + \Delta H/13.6)\ (Tw + 460)} = GAMMA$$

$$\frac{1}{1.044} \quad \frac{30.17}{30.24} \quad \frac{533}{533} = 0.9556 \checkmark$$

$$\frac{1}{1.037} \quad \frac{30.17}{30.24} \quad \frac{533}{533} = 0.98621 \checkmark$$

$$\frac{1}{1.025} \quad \frac{30.17}{30.24} \quad \frac{534}{533} = 0.9752 \checkmark$$

Manuel Garcia / Gus G.

Stork Testing & Metallurgical Consulting Inc.

Stork Testing & Metallurgical Consulting, Inc.

THERMOMETER AND BAROMETER POST TEST QA

Project: ConocoPhillips Company	Source: SRV-28-2	Analyst: Manuel
Project No.: HOU 002549P	City, State: Sweeny, TX.	Date: Dec 19, 2010

Thermometer Calibration

Thermocouple		Thermometer		Reference	**
Temperatures	ID No.	ID No.	Temperature °R (Tt)	Temperature °R (Tr)*	Percent Difference
Stack @ Temp. 1 (Amb.):	PG-75A	M-8	530	530	0.00
Stack @ Temp. 2 (Mid):	↓	↓	662	658.2	0.57%
Stack @ Temp. 3 (Stack):	↓	↓	864	854.5	1.10%
Last Impinger @ Ambient:	IC-7	↓	531	530	0.19%
Filter Box @ 250°F:	N/A	\			
Probe Heater @ 250°F:	↓	\			
Dry Gas Meter @ Ambient:	↓	\			
Dry Gas Meter Inlet:	M-8	↓	530.5	530	0.09%
Dry Gas Meter Outlet:	M-8	↓	530.4	530	0.08%
Aux. @ <5°C (41°F):					

*Mercury-in-Glass Thermometer ID Number: S/N 61851

** Percent Difference = $\frac{Tt - Tr}{Tr}$ x 100 = < or = 1.5%

Are Values Within Specification? Yes Initials MG

Barometer Calibration

	Aneroid "Hg (Pb) - Field	Reference "Hg (Pr)* - Lab
Values:	29.85	29.93

Field Barometer ID Number: T-2

*Mercurial Barometer (Serial No. W12861)

Difference = Pb - Pr

29.85 - 29.93 = 0.08 < or = 0.1 "Hg

Is The Value Within Specification? Yes Initials MG

Stork Testing and Metallurgical Consulting, Inc.
Houston, Texas

ANNUAL PITOT TUBE CALIBRATION

Pitot Tube Identification Number: PG-15A Date: 12/6/2010

Calibrated By: By Construction Guidelines

	"A" Side Calibration			
Run No.	ΔP_{std} In. H_2O	ΔP_s In. H_2O	$C_{p(s)}$	Absolute Deviation $C_{p(s)} - C_{p(A)}$
1	N/A	N/A	0.840	N/A
2	N/A	N/A	0.840	N/A
3	N/A	N/A	0.840	N/A
		$C_{p(A)}$	0.840	

Average Deviation $C_{p(A)}$ = N/A

	"B" Side Calibration			
Run No.	ΔP_{std} In. H_2O	ΔP_s In. H_2O	$C_{p(s)}$	Absolute Deviation Cp (s) - Cp (B)
1	N/A	N/A	0.840	N/A
2	N/A	N/A	0.840	N/A
3	N/A	N/A	0.840	N/A
		Cp (B)	0.840	

Average Deviation $C_{p(B)}$ = N/A

NOTE: 0.84 assigned by adherence to construction guidelines

Deviation between $C_{p(A)}$ and $C_{p(B)}$ = 0.000
The Deviation between $C_{p(A)}$ and $C_{p(B)}$ is <= 0.01 and therefore is valid.

CERTIFICATE OF CALIBRATION

This certifies that your American AL-20 Wet Test Meter
Serial No. 11547
Has been calibrated with a American Bell Prover
Serial No. 1763
It is traceable to the N.I.S.T., Reference No. 12169734

Rate of Flow	% of Proof
60 CFH	**100.0 %**

Calibrated by Carl Poe Co., Inc.
4600 Allen Street Houston, Texas 77007
(713) 861-3816 * Fax: (713) 861-8299

March 11, 2010
Date

Charles Cook
Signature

Stork Testing & Metallurgical Consulting, Inc.

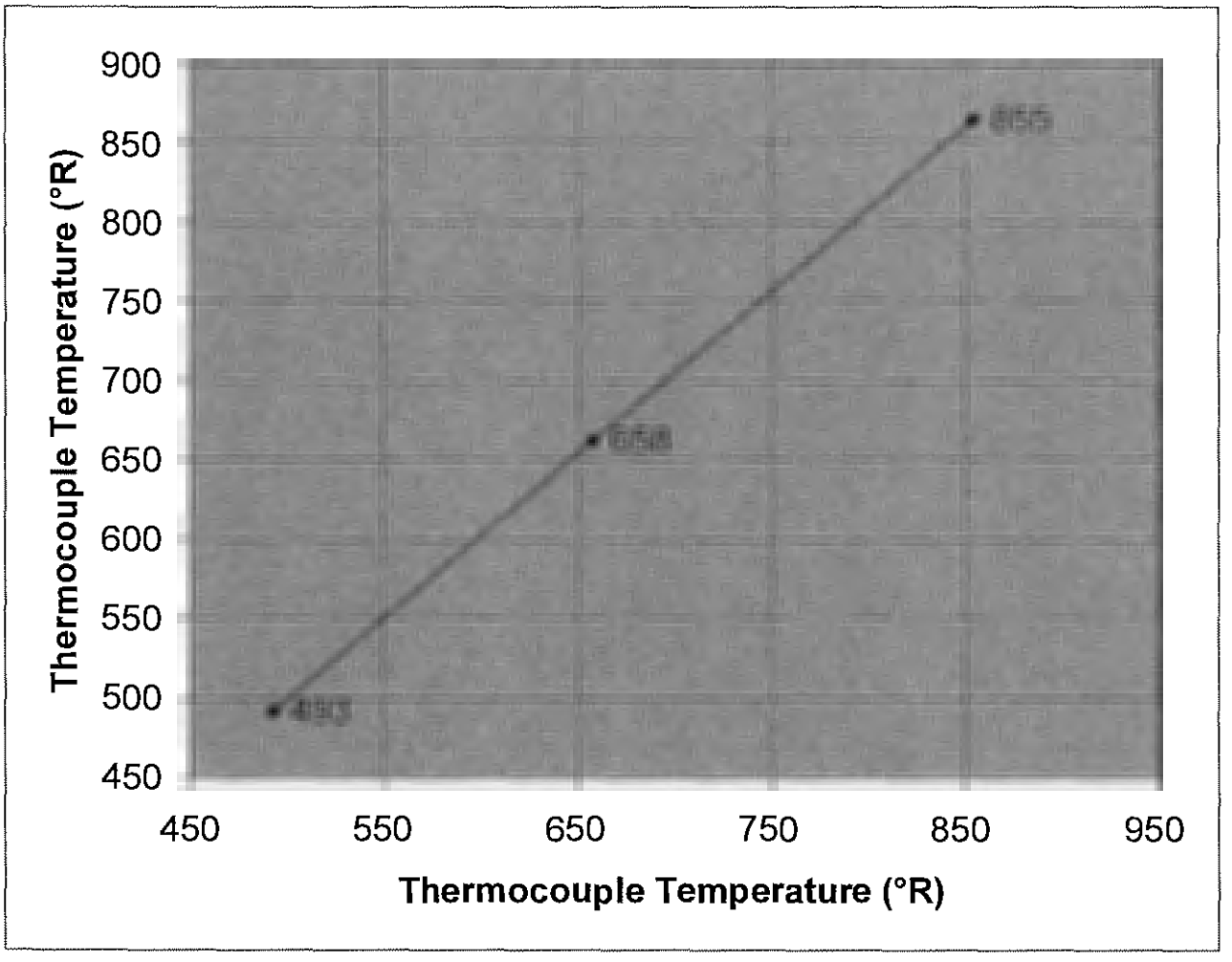
Temperature Sensor Calibration Data

Date: 1/20/2011 Thermocouple No. : PG-15A

Ambient Temperature: 69 °F Barometric Pressure: 29.93 Inches Hg

Calibrator: Manuel Reference (mercury-in-glass) : S/N 61851

Reference Point Source	Reference Thermometer Temperature			Thermocouple Temperature		Temperature Difference *
	°C	°F	°R	°F	°R	%
Ice Water	0.0	32	492	33	493	-0.2
Boiling Water	94.4	202	662	198	658	0.6
Boiling Oil	206.7	404	864	395	855	1.1



* [(Ref. Temp. (°R) - Thermocouple Temp. (°R)) / Ref. Temp. (°R)] x 100 ≤ 1.5% Absolute Value

MTE
6975

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The world leader in serving science

ISO 17025 ACCREDITED

ACCREDITED

Thermometer Calibration Report

CALIBRATION CERT # 2373.01

This is to certify that the instrument described below has been examined and tested by direct measurement of generated temperatures in our calibration laboratory using high precision temperature calibration equipment. Environmental conditions appropriate for temperature calibrations are continuously maintained. The calibration methods used are based on the technical information contained in NIST Technical note 1265, "Guidelines for Realizing the International Temperature Scale of 1990 (ITS-90)" and NIST Special Publication 250-23, "Liquid in Glass Thermometer Calibration Services". This calibration meets the requirements of the ISO 9001 series of quality standards.

RECALIBRATION INSTRUCTIONS
All Thermo Fisher Scientific ERTCO thermometer recalibrations will be moving to our authorized ISO17025 accredited calibration provider, INNOCAL. Calibrations will no longer be performed in Dubuque Iowa. Please Contact INNOCAL at 866-466-6225 or you can visit them at www.innocalsolutions.com.

SHIPPING ADDRESS
INNOCAL
625 E. BUNKER CT., M/S 14
VERNON HILLS, IL 60061-1844

Customer Information

STORK TESTING & METALLURGICAL CONSULTING
222 CAVALCADE ST
HOUSTON
TX, 77009
PURCHASE ORDER: 14112716

Instrument Description

Serial Number: 61851 **Inscription:** FISHERBRAND 14-990E **Immersion:** 76MM
Product: 500FW-3-BF **Scale Range:** 20 TO 500 **Scale Divisions:** 2 **Units:** °F

Results of Physical Examination

This instrument has been examined under a polariscope for strains in the glass. If any, were judged to be minimal and of no detriment to the functionality of the instrument.
The capillary of this thermometer has been examined under magnification and no foreign material, moisture, or other evidence of contamination were discovered. No discernible capillary irregularities were noted.
Upon completion of physical examination, it has been determined the instrument is in good working order and is therefore suitable for calibration.

Calibration Results

Unless otherwise noted, these results are considered "as found" and "as left".

Results in Engineering Units: °F	Target Test Temperature	Actual Test Temperature	Reading Of This Instrument	Correction	Emergent Column Temperature	System Uncertainty
	32.0	32.000	30.000	2.000	NA	0.743
	75.0	75.000	74.000	1.000	NA	0.745
	250.0	250.007	250.000	0.007	NA	0.763
	350.0	349.994	349.000	0.994	NA	0.763

="***IMPORTANT NOTE***
If no sign is given on the correction, the true temperature is higher then the indicated temperature. If the sign given is negative, the true temperature is lower than the indicated temperature.
The estimated system uncertainties as stated above (k = 2) were determined in accordance with the guidelines given in NIST Publication IR 5341, take into account the type of thermometer tested, the precision with which its reading can be resolved, and the degree of confidence one can have in its indications under similar conditions of usage.
For further discussion of accuracies attainable with such thermometers, see NIST Special Publication 250-23 and NIST Publication IR 5341.
The calibration performed and documented by this report of test is a full scale calibration and no limitations of use are imposed on this instrument.
The instrument mentioned in this report was tested in accordance with Thermo Fisher Scientific Dubuque procedure number CPM105 which is based upon standard test method ASTM E-77 and N.I.S.T. Special Publication SP250-23."

Calibration Traceability No.: 1282766512
Form No.: CC-300
Revision: 10/05

2555 Kerper Blvd. Dubuque, IA 52001 (563) 556-2241 (563) 589-0516 fax www.thermofisher.com

Traceability Information

The measurement standards used in this calibration are given below:

Test Point:	32.00	Model No.	Serial Number	Description	Recall Date
		2563	A36152	Thermister Meter	5/30/2010
		S-10	1047	Thermister	5/30/2010
		N/A	N/A	Ice Bath	
Test Point:	75.00	**Model No.**	**Serial Number**	**Description**	**Recall Date**
		1590	A27184	Super Thermometer II	4/16/2010
		5628	1476	PRT Thermometer	11/4/2010
		7007	A33016	Calibration Bath	
Test Point:	250.00 350.00	**Model No.**	**Serial Number**	**Description**	**Recall Date**
		1590	A27184	Super Thermometer II	4/16/2010
		5628	1477	PRT Thermometer	11/4/2010
		6054	A33014	Calibration Bath	

The results indicated in this report relate only to the item(s) calibrated. If additional information regarding this calibration is required, please contact this laboratory.

Results of this calibration are traceable to NIST.

Appoved By:

Rodney Carroll

Calibration Date: 01/14/2010

Calibration Due: 1/14/2011

Batch No.: 1853828

End Of Report

Stork Analyzer QA

Project Name:	Conoco Phillips (Unit 28 SRU INC.)	Date:	12/9/2010
Project No.:	HOU002549P	Initials:	VG

EPA Protocol Gases			
Cylinder Pollutant	Cylinder Value	Cylinder Number	Expiration Date
NOx - Low			
NOx - Mid	51.7	CC261685	2/17/2012
NOx - High	94.0	CC204615	8/25/2011
CO - Low			
CO - Mid	46.2	CC43872	4/15/2013
CO - High	93.1	AAL19679	2/11/2013
O2 - Low			
O2 - Mid	11.1	CC92287	10/5/2013
O2 - High	20.7	ALM012723	6/23/2012

Parameter:	NOx	CALIBRATION ERROR			
Analyzer:	Thermo Environmental Instruments, Inc.			Span:	94.00
Model:	42 CHL Chemiluminescent			Serial:	42CHL72773372
GASES	Cylinder Value	Analyzer Response	Difference	% Difference	Is Linearity Within +or- 2%
Zero	0.00	0.21	0.2	0.22%	Yes
EPA Protocol No. 1					
Low-Level	0.00	###	0.00	0.00%	Yes
Mid-Level	51.70	51.41	-0.29	-0.31%	Yes
High-Level	94.00	94.53	0.53	0.56%	Yes

Parameter:	CO	CALIBRATION ERROR			
Analyzer:	Thermo Environmental Instruments, Inc.			Span:	93.10
Model:	48H Gas Filter Correlation			Serial:	48CHL74682377
GASES	Cylinder Value	Analyzer Response	Difference	% Difference	Is Linearity Within +or- 2%
Zero	0.00	0.32	0.3	0.34%	Yes
EPA Protocol					
Low-Level	0.00	#	0.00	0.00%	Yes
Mid-Level	46.20	46.48	0.28	0.30%	Yes
High-Level	93.10	93.48	0.38	0.41%	Yes

Parameter:	O2	CALIBRATION ERROR			
Analyzer:	Servomex			Span:	20.70
Model:	1420B Paramagnetic			Serial:	01420/B701/819
GASES	Cylinder Value	Analyzer Response	Difference	% Difference	Is Linearity Within +or- 2%
Zero	0.00	0.05	0.1	0.24%	Yes
EPA Protocol					
Low-Level	0.00	###	0.00	0.00%	Yes
Mid-Level	11.10	11.18	0.08	0.39%	Yes
High-Level	20.70	20.69	-0.01	-0.05%	Yes

* % Difference = Difference/Span Value x 100

NOx - SYSTEM BIAS

Bias = (System Response - Analyzer Response) / Span

Span Value	94.0

	Zero	Span
Analyzer Cal. Response	0.21	51.41
System Cal. Response	0.20	51.01

The Zero Bias (	-0.01%)	is	within +/- 5%
The Span Bias (	-0.43%)	is	within +/- 5%

Manifold Pressure	
Sampling	5 psi
Calibration	5 psi
Temperatures	
Sample Line	295 F
Knockout	39 F

CONVERSION EFFICIENCY

Span Value	94	Highest Peak Value	36.12	% Difference
Analyzer Mode	NOx	Ending Value	35.67	1.25%
				must be <= 2%

CO - SYSTEM BIAS

Bias = (System Response - Analyzer Response) / Span

Span Value	93.1

	Zero	Span
Analyzer Cal. Response	0.32	46.48
System Cal. Response	0.63	46.57

The Zero Bias (	0.33%)	is	within +/- 5%
The Span Bias (	0.10%)	is	within +/- 5%

O2 - SYSTEM BIAS

Bias = (System Response - Analyzer Response) / Span

Span Value	20.7

	Zero	Span
Analyzer Cal. Response	0.05	11.18
System Cal. Response	0.05	11.03

The Zero Bias (	0.00%)	is	within +/- 5%
The Span Bias (	-0.72%)	is	within +/- 5%

✓ VH

Stork SO_2 Analyzer QA

Project Name:	Conoco Phillips (Unit 28 SRU INC.)	Date	12/9/2010
Project No.:	HOU002549P	Initials	VG

EPA Protocol No. 1 Gases			
Cylinder Pollutant	Cylinder Value	Cylinder Number	Expiration Date
SO_2 - Low			
SO_2 - Mid	250	CC49084	7/15/2012
SO_2 - High	476	CC196886	6/9/2011

Parameter:	SO_2	CALIBRATION ERROR			
Analyzer:	BOVAR Western Research			Scale:	476
Model:	721-M			Serial:	94-721M8119-6
GASES	Cylinder Value	Analyzer Response	Difference	% Difference	Is CE Within +or- 2%
Zero	0.00	0.29	0.3	0.06%	Yes
EPA Protocol No. 1					
Low-Level	0.00	###	0.00	0.00%	Yes
Mid-Level	250.00	253.21	3.21	0.67%	Yes
High-Level	476.00	473.67	-2.33	-0.49%	Yes

SO_2 - SYSTEM BIAS				
Bias = (System Response - Analyzer Response) / Span				
Span Value		476.0		
		Zero	Span	
Analyzer Cal. Response		0.29	253.21	
System Cal. Response		0.47	253.83	
The Zero Bias (	0.04%)		is	within +/- 5%
The Span Bias (	0.13%)		is	within +/- 5%

Manifold Pressure	
Sampling	5 psi
Calibration	5 psi
Temperatures	
Sample Line	295 F
Knockout	39 F

/MG

* % Difference = Difference/Span Value x 100

Stork Analyzer QA - EPA Method 25A

Parameter: Total Hydrocarbons (VOCs)

Analyzer:	JUM	Source:	Unit 28 SRU INC.
Model:	VE-7 FID	Project No.:	HOU002549P
Serial #:	10660292	Crew:	VG,AP,& GG

EPA Protocol Gases	Cylinder Number	Cylinder Value	Expiration Date
Low-Level	CC122200	29.9	1/18/2013
Mid-Level	CC58519	50.2	8/15/2013
High-Level	CC20350	84.8	2/9/2013

CALIBRATION ERROR - Pretest Date: 12/9/2010

Span Value 100

GASES	Cylinder Value	Analyzer Response	Difference	Predicted Response	Calibration Error	Is Linearity Within +or- 5%
Zero	0	0	0.0			
EPA Protocol						
Low-Level	29.9	29.9	0.00	29.85	-0.17%	Yes
Mid-Level	50.2	50.48	0.28	50.12	-0.72%	Yes
High-Level	84.8	84.66	-0.14			

CALIBRATION ERROR - Pretest Date: ###

Span Value ###

GASES	Cylinder Value	Analyzer Response	Difference	Predicted Response	Calibration Error	Is Linearity Within +or- 5%
Zero	0	###	0.0			
EPA Protocol						
Low-Level	29.9	###	-29.90	0.00	0.00%	Yes
Mid-Level	50.2	###	-50.20	0.00	0.00%	Yes
High-Level	84.8	###	-84.80			

jvh

File: EAS\air\analqa\vocjum

Conoco Phillips
Unit 28 SRU Incinerator
Sweeny, Texas
HOU002549P
File Name: 12-09-10_07-12

Date and Time	CO	NOx	O2	THC	CO2	SO2	Flow
MM/DD/YY HH:MM	ppm	ppm	%	ppm	%	ppm	lpm
12/9/2010 07:13	-1.17	-0.52	7.79	1.98		1.59	
12/9/2010 07:14	-1.65	-0.52	0.11	1.67		1.29	
12/9/2010 07:15	-1.28	-0.40	0.09	0.21		0.96	
12/9/2010 07:16	0.32	0.21	0.05	0.14		0.71	
12/9/2010 07:17	0.52	0.29	15.14	10.19		0.42	
12/9/2010 07:18	34.95	24.07	20.34	80.95		0.25	
12/9/2010 07:19	92.87	89.32	20.69	81.34		47.75	
12/9/2010 07:20	95.48	96.47	20.88	82.15		463.76	
12/9/2010 07:21	97.77	94.67	19.19	84.75		469.50	
12/9/2010 07:22	83.42	95.30	11.18	84.61		469.96	
12/9/2010 07:23	45.33	94.52	11.18	84.59		483.12	
12/9/2010 07:24	44.37	92.89	8.92	82.49		483.08	
12/9/2010 07:25	44.26	94.07	0.11	30.44		469.00	
12/9/2010 07:26	44.27	88.83	0.11	30.11		479.79	
12/9/2010 07:27	44.64	53.78	0.11	29.87		473.54	
12/9/2010 07:28	45.40	51.41	0.10	29.83		473.67	
12/9/2010 07:29	45.86	51.36	0.08	42.84		473.21	
12/9/2010 07:30	46.48	49.77	0.05	50.96		380.81	
12/9/2010 07:31	46.51	4.74	0.07	50.28		353.20	
12/9/2010 07:32	15.53	0.28	0.32	40.44		253.22	
12/9/2010 07:33	1.43	0.20	10.77	0.58		223.86	
12/9/2010 07:34	1.21	0.08	11.02	0.43		12.54	
12/9/2010 07:35	1.03	0.08	11.03	0.39		3.03	
12/9/2010 07:36	0.88	0.71	8.21	0.31		1.70	
12/9/2010 07:37	0.63	38.33	0.09	0.08		0.47	
12/9/2010 07:38	0.54	50.29	0.07	0.07		0.43	
12/9/2010 07:39	0.56	51.01	0.07	0.07		0.41	
12/9/2010 07:40	10.96	52.33	0.06	0.07		0.38	
12/9/2010 07:41	45.41	1.64	0.06	0.07		0.34	
12/9/2010 07:42	46.57	0.25	0.05	0.07		0.35	
12/9/2010 07:43	42.84	0.08	0.05	0.07		0.39	
12/9/2010 07:44	28.75	0.08	0.05	0.04		113.30	
12/9/2010 07:45	1.12	0.08	0.05	0.03		248.73	
12/9/2010 07:46	0.85	0.08	0.04	0.01		256.15	
12/9/2010 07:47	0.56	0.08	0.04	0.01		253.85	

3 Point Stratification Test

Plant: Conoco Phillips
Source: Unit 28 SRU INC.
STMC Project No.: HOU002549P

Pollutant: Point No.		O2 % Emissions	Difference from Average
1		3.99	
1		3.94	
1		4.00	
Pt. 1 Avg.	**21.5 in.**	**3.98**	**0.00**
2		3.98	
2		3.94	
2		3.99	
Pt. 2 Avg.	**64.5 in.**	**3.97**	**-0.01**
3		3.90	
3		3.99	
3		4.07	
Pt. 3 Avg.	**107.5 in.**	**3.99**	**0.01**
3 Point Average:		**3.98**	
	5% =	**0.20**	
	10% =	**0.40**	

Criteria 1:
1) Each traverse point less than 5% of Average? [Yes]
Alternate: Each traverse point is within +/- 0.5 ppm pollutant or +/- 0.3% O_2 from the 3 point average
(If Yes to either - Select point closest to the 3 point Average)

Criteria 2 :
2) Each traverse point less than 10% of Average? [Yes]
Alternate: Each traverse point is within +/- 1.0 ppm pollutant or +/- 0.5% O_2 from the 3 point average
(If criteria 1 is No and criteria 2 is Yes, do 3 point traverse)

Criteria 3:
3.) If 1 and 2 are both No, do Method 1 Traverse

N/A

Conoco Phillips
Unit 28 SRU Incinerator
ny, Texas
[illegible]002549P
File Name: 12-09-10_09-35

Date and Time	CO	NOx	O2	THC	CO2	SO2	Flow
MM/DD/YY HH:MM	ppm	ppm	%	ppm	%	ppm	lpm
12/9/2010 09:36	7.00	-0.31	0.18	[illegible]		1.23	
12/9/2010 09:37	5.06	-0.32	0.12	-0.02		0.77	
12/9/2010 09:38	0.40	-0.32	0.11	11.97		0.34	
12/9/2010 09:39	-0.41	-0.24	0.09	84.66		0.17	
12/9/2010 09:40	-0.44	-0.05	0.07	[illegible]		0.06	
12/9/2010 09:41	-0.13	0.08	0.06	85.18		0.11	
12/9/2010 09:42	0.97	0.22	0.05	75.67		-0.14	
12/9/2010 09:43		0.28	0.03	59.30		-0.26	
12/9/2010 09:44		0.28	0.03	55.51		-0.29	
12/9/2010 09:45		0.28	0.02	40.36		-0.40	
12/9/2010 09:46		0.28	0.02	50.48		-0.38	
12/9/2010 09:47		0.28	0.02	50.52		-0.47	
12/9/2010 09:48		0.11	12.20	17.74		-0.17	
12/9/2010 09:49	0.59	0.92	20.74	1.84		0.59	
12/9/2010 09:50	0.32	0.93	20.74	1.79		0.40	
12/9/2010 09:51	0.17	0.53	20.72	1.78		0.53	
12/9/2010 09:52	-0.03	0.27	20.71	1.76		0.51	
12/9/2010 09:53	0.02	0.08	20.71	1.76		0.61	
12/9/2010 09:54	-0.01	0.08	20.71	1.76		0.54	
12/9/2010 09:55	-0.05	-0.10	20.71	1.82		0.67	
[illegible]9/2010 09:56	-0.01	-0.12	20.71	1.77		0.66	
[illegible]/2010 09:57	-0.20	-0.12	20.71	1.70		0.60	
12/9/2010 09:58	29.89	7.55	6.07	0.34		35.00	
12/9/2010 09:59	27.84	18.87	3.99	0.13		91.04	
12/9/2010 10:00	8.80	19.34	3.94	0.19		83.12	
12/9/2010 10:01	7.64	19.19	4.00	0.21		75.32	
12/9/2010 10:02	8.39	18.95	4.07	0.12		78.28	
12/9/2010 10:03	6.44	19.22	3.98	0.08		79.76	
12/9/2010 10:04	5.71	18.97	3.94	0.08		83.81	
12/9/2010 10:05	6.78	18.88	3.99	0.07		88.42	
12/9/2010 10:06	7.85	18.62	3.95	0.06		89.55	
12/9/2010 10:07	10.41	18.28	3.90	0.06		91.97	
12/9/2010 10:08	9.13	18.55	3.99	0.06		94.12	
12/9/2010 10:09	9.73	18.82	4.07	0.06		91.65	
12/9/2010 10:10	10.20	18.70	4.01	0.05		93.40	
12/9/2010 10:11	8.81	18.68	3.99	0.05		95.07	
12/9/2010 10:12	7.84	18.75	3.99	0.03		97.33	
12/9/2010 10:13	7.08	18.63	3.89	0.04		98.30	
12/9/2010 10:14	6.91	18.60	3.96	0.05		97.51	
12/9/2010 10:15	9.73	18.58	3.98	0.04		95.71	
12/9/2010 10:16	11.87	18.35	4.02	0.04		95.73	
12/9/2010 10:17	11.04	18.45	3.88	0.05		98.66	
12/9/2010 10:18	7.39	18.66	3.82	0.07		102.13	
12/9/2010 10:19	6.56	18.50	3.88	0.07		102.83	
12/9/2010 10:20	7.69	18.83	4.05	0.08		100.76	
12/9/2010 10:21	11.34	18.27	4.02	0.07		100.36	
[illegible]9/2010 10:22	10.47	18.43	4.01	0.07		100.15	
[illegible]9/2010 10:23	10.96	18.53	3.90	0.07		100.16	
12/9/2010 10:24	9.55	18.71	3.99	0.07		100.90	
12/9/2010 10:25	8.26	18.73	4.02	0.07		101.26	
12/9/2010 10:26	6.87	18.70	3.95	0.06		101.10	
12/9/2010 10:27	8.26	18.45	3.95	0.06		94.81	

Recal THC due to Test not starting within 24hrs of Calibrations

RV = 1

NOX CONV.

done after 1st set.

12/7/2010 18:20	35.36
[illegible] 18:21	35.48
7/2010 18:22	35.65
/2010 18:23	35.95
12/7/2010 18:24	36.43
12/7/2010 18:25	36.85
12/7/2010 18:26	36.92
12/7/2010 18:27	36.80
12/7/2010 18:28	36.70
12/7/2010 18:29	36.62
12/7/2010 18:30	36.57
12/7/2010 18:31	36.50
12/7/2010 18:32	36.35
12/7/2010 18:33	36.44
12/7/2010 18:34	36.33
12/7/2010 18:35	36.21
12/7/2010 18:36	36.19
12/7/2010 18:37	36.17
12/7/2010 18:38	[illegible]
12/7/2010 18:39	[illegible].03
12/7/2010 18:40	36.01
12/7/2010 18:41	35.99
12/7/2010 18:42	36.01
12/7/2010 18:43	35.91
12/7/2010 18:44	35.91
12/7/2010 18:45	35.87
12/7/2010 18:46	35.89
12/7/2010 18:47	35.89
7/2010 18:48	35.81
7/2010 18:49	35.81
12/7/2010 18:50	35.85
12/7/2010 18:51	35.77
12/7/2010 18:52	35.74
12/7/2010 18:53	35.74
12/7/2010 18:54	35.68
12/7/2010 18:55	35.73
12/7/2010 18:56	35.67
12/7/2010 18:57	35.61
12/7/2010 18:58	35.65
12/7/2010 18:59	35.64
12/7/2010 19:00	35.60
12/7/2010 19:01	35.58
12/7/2010 19:02	35.56
12/7/2010 19:03	35.49
12/7/2010 19:04	35.49
12/7/2010 19:05	35.38
12/7/2010 19:06	35.47
12/7/2010 19:07	[illegible].07

AIR LIQUIDE Air Liquide America Specialty Gases LLC | Scott™

RATA CLASS

Dual-Analyzed Calibration Standard

11426 FAIRMONT PKWY, LA PORTE, TX 77571 Phone: 800-248-1427 Fax: 281-474-8419

CERTIFICATE OF ACCURACY: EPA Protocol Gas

Assay Laboratory

AIR LIQUIDE AMERICA SPECIALTY GASES LLC
11426 FAIRMONT PKWY
LA PORTE, TX 77571

P.O. No.: HOU002064PO
Document # : 39030825-004

Customer

STORK TESTING & METALLURGICAL CONSU

222 CAVALCADE ST
HOUSTON TX 77009
US

ANALYTICAL INFORMATION

This certification was performed according to EPA Traceability Protocol For Assay & Certification of Gaseous Calibration Standards; Procedure G-1; September, 1997.

Cylinder Number: CC92287 **Certification Date:** 05Oct2010 **Exp. Date:** 05Oct2013
Cylinder Pressure*:** 2000 PSIG **Batch No:** LAP0027008

COMPONENT	CERTIFIED CONCENTRATION (Moles)	ACCURACY**	TRACEABILITY
OXYGEN	11.1 %	+/- 1%	Direct NIST and VSL
NITROGEN	BALANCE		

*** Do not use when cylinder pressure is below 150 psig.
** Analytical accuracy is based on the requirements of EPA Protocol Procedure G1, September 1997.

REFERENCE STANDARD

TYPE/SRM NO.	EXPIRATION DATE	CYLINDER NUMBER	CONCENTRATION	COMPONENT
NTRM 2350	01May2013	K026427	23.50 %	OXYGEN

INSTRUMENTATION

ISTRUMENT/MODEL/SERIAL#	DATE LAST CALIBRATED	ANALYTICAL PRINCIPLE
SERVOMEX/MODEL 244A/701/716	16Sep2010	PARAMAGNETIC

ANALYZER READINGS

(Z=Zero Gas R=Reference Gas T=Test Gas r=Correlation Coefficient)

First Triad Analysis

OXYGEN

Date: 05Oct2010 Response Unit: VOLTS
Z1=0.00000 R1=0.94200 T1=0.44440
R2=0.94150 Z2=0.00000 T2=0.44410
Z3=0.00000 T3=0.44410 R3=0.94100
Avg. Concentration: 11.07 %

Second Triad Analysis

Calibration Curve

Concentration=A+Bx+Cx2+Dx3+Ex4
r=0.9999946
Constants: A=-0.01654844
B=24.9425248 C=
D= E=

APPROVED BY: Nora Pike for DAVID KELLY

AIR LIQUIDE Air Liquide America Specialty Gases LLC | Scott™

RATA CLASS

Dual-Analyzed Calibration Standard

9810 BAY AREA BLVD, PASADENA, TX 77507 Phone: 281-474-5800 Fax: 281-474-5857

CERTIFICATE OF ACCURACY: EPA Protocol Gas

Assay Laboratory

AIR LIQUIDE AMERICA SPECIALTY GASES LLC
9810 BAY AREA BLVD
PASADENA, TX 77507

P.O. No.: 14112647
Project No.: 04-74687-008

Customer

STORK SOUTHWESTERN LABORATORIES
PHIL YOKLEY
222 CAVALCADE ST
HOUSTON TX 77009

ANALYTICAL INFORMATION

This certification was performed according to EPA Traceability Protocol For Assay & Certification of Gaseous Calibration Standards; Procedure G-1; September, 1997.

Cylinder Number: ALM012723 **Certification Date:** 24Jun2009 **Exp. Date:** 23Jun2012
Cylinder Pressure*:** 1900 PSIG

COMPONENT	CERTIFIED CONCENTRATION (Moles)		ANALYTICAL ACCURACY**	TRACEABILITY
OXYGEN	20.7	%	+/- 1%	Direct NIST and NMi
NITROGEN		BALANCE		

*** Do not use when cylinder pressure is below 150 psig.

** Analytical accuracy is based on the requirements of EPA Protocol Procedure G1, September 1997.

REFERENCE STANDARD

TYPE/SRM NO.	EXPIRATION DATE	CYLINDER NUMBER	CONCENTRATION	COMPONENT
NTRM 2350	01Apr2012	A6820	23.51 %	OXYGEN

INSTRUMENTATION

INSTRUMENT/MODEL/SERIAL#	DATE LAST CALIBRATED	ANALYTICAL PRINCIPLE
SERVOMEX/MODEL 244A/701/716	26May2009	PARAMAGNETIC

ANALYZER READINGS

(Z=Zero Gas R=Reference Gas T=Test Gas r=Correlation Coefficient)

First Triad Analysis | **Second Triad Analysis** | **Calibration Curve**

OXYGEN

First Triad Analysis		
Date: 24Jun2009	Response Unit:%	
Z1=0.00000	R1=0.09902	T1=0.87160
R2=0.98980	Z2=0.00060	T2=0.87090
Z3=0.00160	T3=0.86990	R3=0.98830
Avg. Concentration:	20.66	%

Second Triad Analysis

Calibration Curve	
Concentration=A+Bx+Cx2+Dx3+Ex4	
r=0.9999978	
Constants:	A=-0.00318856
B=23.71796956	C=
D=	E=

APPROVED BY: ROGER NGUYEN

AIR LIQUIDE Air Liquide America Specialty Gases LLC | SCOTT™

RATA CLASS

Dual-Analyzed Calibration Standard

11426 FAIRMONT PKWY, LA PORTE, TX 77571 Phone: 800-248-1427 Fax: 281-474-8419

CERTIFICATE OF ACCURACY: EPA Protocol Gas

Assay Laboratory

AIR LIQUIDE AMERICA SPECIALTY GASES LLC
11426 FAIRMONT PKWY
LA PORTE, TX 77571

P.O. No.: HOU001266PO
Project No.: 04-86323-001

Customer

STORK TESTING & METALLURGICAL CONS

Phil Yokley
SO2 BIN
222 CAVALCADE ST
HOUSTON TX 77009

ANALYTICAL INFORMATION

This certification was performed according to EPA Traceability Protocol For Assay & Certification of Gaseous Calibration Standards; Procedure G-1; September, 1997.

Cylinder Number: CC49084 **Certification Date:** 16Jul2010 **Exp. Date:** 15Jul2012
Cylinder Pressure*:** 2000 PSIG **Batch No:** LAP0020779

COMPONENT	CERTIFIED CONCENTRATION (Moles)		ACCURACY**	TRACEABILITY
SULFUR DIOXIDE *	250	PPM	+/- 1%	Direct NIST and VSL
NITROGEN		BALANCE		

*** Do not use when cylinder pressure is below 150 psig.
** Analytical accuracy is based on the requirements of EPA Protocol Procedure G1, September 1997.

REFERENCE STANDARD

TYPE/SRM NO.	EXPIRATION DATE	CYLINDER NUMBER	CONCENTRATION	COMPONENT
NTRM 0260	15Jan2012	KAL003740	255.5 PPM	SULFUR DIOXIDE

INSTRUMENTATION

INSTRUMENT/MODEL/SERIAL#	DATE LAST CALIBRATED	ANALYTICAL PRINCIPLE
FTIR//000929060	25Jun2010	FTIR

ANALYZER READINGS

(Z = Zero Gas R = Reference Gas T = Test Gas r = Correlation Coefficient)

First Triad Analysis

SULFUR DIOXIDE *

Date: 07Jul2010 Response Unit: PPM

Z1 = 0.01628	R1 = 253.7570	T1 = 249.3888
R2 = 253.7815	Z2 = 0.08539	T2 = 249.5437
Z3 = 0.08885	T3 = 249.5549	R3 = 253.9641

Avg. Concentration: 250.1 PPM

Second Triad Analysis

Date: 16Jul2010 Response Unit: PPM

Z1 = -0.00478	R1 = 255.3736	T1 = 250.0355
R2 = 255.3970	Z2 = 0.06993	T2 = 250.0819
Z3 = 257.1147	T3 = 256.5080	R3 = 255.5100

Avg. Concentration: 250.1 PPM

Calibration Curve

Concentration = A + Bx + Cx2 + Dx3 + Ex4
r = 9.99981E-1

Constants:	A = 0.00000E+0	
B = 1.00235E+0	C = 0.00000E+0	
D = 0.00000E+0	E = 0.00000E+0	

Special Notes: ALAS DOC# 37854348 Stencil: 250 M SO2

APPROVED BY: Ron Stitt

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RATA CLASS

Dual-Analyzed Calibration Standard

9810 BAY AREA BLVD, PASADENA, TX 77507 Phone: 281-474-5800 Fax: 281-474-5857

CERTIFICATE OF ACCURACY: EPA Protocol Gas

Assay Laboratory

AIR LIQUIDE AMERICA SPECIALTY GASES LLC
9810 BAY AREA BLVD
PASADENA, TX 77507

P.O. No.: 14112645
Project No.: 04-74206-002

Customer

STORK SOUTHWESTERN LABORATORIES
PHIL YOKLEY
SO2 BIN
222 CAVALCADE ST
HOUSTON TX 77009

ANALYTICAL INFORMATION

This certification was performed according to EPA Traceability Protocol For Assay & Certification of Gaseous Calibration Standards; Procedure G-1; September, 1997.

Cylinder Number: CC196886 **Certification Date:** 09Jun2009 **Exp. Date:** 09Jun2011
Cylinder Pressure*:** 1924 PSIG

COMPONENT	CERTIFIED CONCENTRATION (Moles)		ANALYTICAL ACCURACY**	TRACEABILITY
SULFUR DIOXIDE *	476	PPM	+/- 1%	Direct NIST and NMi
NITROGEN		BALANCE		

*** Do not use when cylinder pressure is below 150 psig.

** Analytical accuracy is based on the requirements of EPA Protocol Procedure G1, September 1997.

* This Protocol has been certified using corrected NIST SO2 standard values, per EPA guidance dated 7/24/96 and will not correlate with uncorrected Pr

REFERENCE STANDARD

TYPE/SRM NO.	EXPIRATION DATE	CYLINDER NUMBER	CONCENTRATION	COMPONENT
NTRM 1661	15Aug2009	ALM045949	506.4 PPM	SULFUR DIOXIDE

INSTRUMENTATION

INSTRUMENT/MODEL/SERIAL#	DATE LAST CALIBRATED	ANALYTICAL PRINCIPLE
FTIR//000929060	14May2009	FTIR

ANALYZER READINGS

(Z=Zero Gas R=Reference Gas T=Test Gas r=Correlation Coefficient)

First Triad Analysis

SULFUR DIOXIDE *

Date: 02Jun2009 Response Unit:PPM
Z1=0.18451 R1=506.3533 T1=476.2005
R2=507.3013 Z2=0.36869 T2=476.6219
Z3=0.56080 T3=477.4412 R3=507.3313
Avg. Concentration: 476.2 PPM

Second Triad Analysis

Date: 09Jun2009 Response Unit: PPM
Z1=0.09914 R1=507.0907 T1=477.9394
R2=508.2860 Z2=0.13998 T2=478.1475
Z3=0.52547 T3=478.2280 R3=508.3509
Avg. Concentration: 476.7 PPM

Calibration Curve

Concentration=A+Bx+Cx2+Dx3+Ex4
r=9.99991E-1
Constants: A=0.00000E+0
B=1.00180E+0 C=3.00000E-6
D=0.00000E+0 E=0.00000E+0

APPROVED BY: _____
Ramien JR

AIR LIQUIDE Air Liquide America Specialty Gases LLC SCOTT™

RATA CLASS

Dual-Analyzed Calibration Standard

11426 FAIRMONT PKWY, LA PORTE, TX 77571 Phone: 800-248-1427 Fax: 281-474-8419

CERTIFICATE OF ACCURACY: EPA Protocol Gas

Assay Laboratory

AIR LIQUIDE AMERICA SPECIALTY GASES LLC
11426 FAIRMONT PKWY
LA PORTE, TX 77571

P.O. No.: HOU000769PO
Project No.: 04-84809-001

Customer

STORK TESTING & METALLURGICAL CONS
PO# HOU000769PO
222 CAVALCADE ST
HOUSTON TX 77009

ANALYTICAL INFORMATION

This certification was performed according to EPA Traceability Protocol For Assay & Certification of Gaseous Calibration Standards; Procedure G-1; September, 1997.

Cylinder Number: CC261685 **Certification Date:** 17Feb2010 **Exp. Date:** 17Feb2012
Cylinder Pressure*:** 2000 PSIG **Batch No:** LAP0018955

COMPONENT	CERTIFIED CONCENTRATION (Moles)		ANALYTICAL ACCURACY**	TRACEABILITY
NITRIC OXIDE	51.6	PPM	+/- 1%	Direct NIST and VSL
NITROGEN - OXYGEN FREE		BALANCE		
TOTAL OXIDES OF NITROGEN	51.7	PPM		Reference Value Only

*** Do not use when cylinder pressure is below 150 psig.

** Analytical accuracy is based on the requirements of EPA Protocol Procedure G1, September 1997.

REFERENCE STANDARD

TYPE/SRM NO.	EXPIRATION DATE	CYLINDER NUMBER	CONCENTRATION		COMPONENT
NTRM 1683	25Jul2012	KAL004263	50.96	PPM	NITRIC OXIDE

INSTRUMENTATION

INSTRUMENT/MODEL/SERIAL#	DATE LAST CALIBRATED	ANALYTICAL PRINCIPLE
FTIR//000929080	13Feb2010	FTIR

ANALYZER READINGS

(Z=Zero Gas R=Reference Gas T=Test Gas r=Correlation Coefficient)

NITRIC OXIDE

First Triad Analysis			Second Triad Analysis			Calibration Curve	
Date: 10Feb2010	Response Unit: PPM		Date: 17Feb2010	Response Unit: PPM		Concentration=A+Bx+Cx2+Dx3+Ex4	
Z1=0.08043	R1=225.2417	T1=51.84644	Z1=-0.02924	R1=51.10753	T1=51.64441	r=9.99994E-1	
R2=225.2730	Z2=0.09089	T2=51.89057	R2=51.11834	Z2=0.02542	T2=51.67623	Constants:	A=0.00000E+0
Z3=0.16263	T3=51.90285	R3=225.4542	Z3=0.05031	T3=51.77412	R3=51.17819	B=9.72343E-1	C=2.10000E-4
Avg. Concentration:	51.55	PPM	Avg. Concentration:	51.56	PPM	D=0.00000E+0	E=0.00000E+0

APPROVED BY: for Ron Stitt

AIR LIQUIDE Air Liquide America Specialty Gases LLC | Scott™

RATA CLASS

Dual-Analyzed Calibration Standard

9810 BAY AREA BLVD, PASADENA, TX 77507 Phone: 281-474-5800 Fax: 281-474-5857

CERTIFICATE OF ACCURACY: EPA Protocol Gas

Assay Laboratory

AIR LIQUIDE AMERICA SPECIALTY GASES LLC
9810 BAY AREA BLVD
PASADENA, TX 77507

P.O. No.: 14112661
Project No.: 04-76054-002

Customer

STORK SOUTHWESTERN LABORATORIES
Phil Yokley
222 CAVALCADE ST
HOUSTON TX 77009

ANALYTICAL INFORMATION

This certification was performed according to EPA Traceability Protocol For Assay & Certification of Gaseous Calibration Standards; Procedure G-1; September, 1997.

Cylinder Number: CC204615 **Certification Date:** 25Aug2009 **Exp. Date:** 25Aug2011
Cylinder Pressure*:** 1834 PSIG

COMPONENT	CERTIFIED CONCENTRATION (Moles)		ANALYTICAL ACCURACY**	TRACEABILITY
NITRIC OXIDE	93.9	PPM	+/- 1%	Direct NIST and NMi
NITROGEN - OXYGEN FREE		BALANCE		
TOTAL OXIDES OF NITROGEN	94.0	PPM		Reference Value Only

*** Do not use when cylinder pressure is below 150 psig.

** Analytical accuracy is based on the requirements of EPA Protocol Procedure G1, September 1997.

REFERENCE STANDARD

TYPE/SRM NO.	EXPIRATION DATE	CYLINDER NUMBER	CONCENTRATION	COMPONENT
NTRM 1684 1	15Oct2012	KAL004395	95.84 PPM	NITRIC OXIDE

INSTRUMENTATION

INSTRUMENT/MODEL/SERIAL#	DATE LAST CALIBRATED	ANALYTICAL PRINCIPLE
FTIR//000929060	20Aug2009	FTIR

ANALYZER READINGS

(Z=Zero Gas R=Reference Gas T=Test Gas r=Correlation Coefficient)

NITRIC OXIDE

First Triad Analysis

Date: 18Aug2009 Response Unit:PPM
Z1=-0.10430 R1=95.17276 T1=93.23454
R2=95.32589 Z2=0.08682 T2=93.69994
Z3=0.13620 T3=93.71118 R3=95.53641
Avg. Concentration: 94.03 PPM

Second Triad Analysis

Date: 25Aug2009 Response Unit: PPM
Z1=-0.09643 R1=95.94934 T1=93.87841
R2=96.01547 Z2=-0.06324 T2=94.05019
Z3=-0.03601 T3=94.08583 R3=96.12401
Avg. Concentration: 93.82 PPM

Calibration Curve

Concentration=A+Bx+CxZ+Dx3+Ex4
r=9.99995E-1
Constants: A=0.00000E+0
B=9.77862E-1 C=1.80000E-4
D=0.00000E+0 E=0.00000E+0

Special Notes: CYL LOT# PAS01043

APPROVED BY: GARY WRIGHT

AIR LIQUIDE Air Liquide America Specialty Gases LLC | Scott™

RATA CLASS

Dual-Analyzed Calibration Standard

11426 FAIRMONT PKWY, LA PORTE, TX 77571 Phone: 800-248-1427 Fax: 281-474-8419

CERTIFICATE OF ACCURACY: EPA Protocol Gas

Assay Laboratory

AIR LIQUIDE AMERICA SPECIALTY GASES LLC
11426 FAIRMONT PKWY
LA PORTE, TX 77571

P.O. No.: HOU001810PO-1
Document # : 38708306-001

Customer

STORK TESTING & METALLURGICAL CONSU

222 CAVALCADE ST
CGA BIN
HOUSTON TX 77009
US

ANALYTICAL INFORMATION

This certification was performed according to EPA Traceability Protocol For Assay & Certification of Gaseous Calibration Standards; Procedure G-1; September, 1997.

Cylinder Number: CC43872 **Certification Date:** 16Apr2010 **Exp. Date:** 15Apr2013
Cylinder Pressure*:** 2000 PSIG **Batch No:** LAP0024251

COMPONENT	CERTIFIED CONCENTRATION (Moles)	ACCURACY**	TRACEABILITY
CARBON MONOXIDE	46.2 PPM	+/- 1%	Direct NIST and VSL
NITROGEN	BALANCE		

*** Do not use when cylinder pressure is below 150 psig.
** Analytical accuracy is based on the requirements of EPA Protocol Procedure G1, September 1997.

REFERENCE STANDARD

TYPE/SRM NO.	EXPIRATION DATE	CYLINDER NUMBER	CONCENTRATION	COMPONENT
NTRM 1678	15Dec2011	KAL004177	48.60 PPM	CARBON MONOXIDE

INSTRUMENTATION

INSTRUMENT/MODEL/SERIAL#	DATE LAST CALIBRATED	ANALYTICAL PRINCIPLE
FTIR//MG-09-149	01Apr2010	FTIR

ANALYZER READINGS

(Z=Zero Gas R=Reference Gas T=Test Gas r=Correlation Coefficient)

First Triad Analysis

CARBON MONOXIDE

Date: 09Apr2010 Response Unit: PPM

Z1=0.01461	R1=48.23220	T1=45.95519
R2=48.40121	Z2=0.05362	T2=46.00450
Z3=0.07640	T3=46.11509	R3=48.42478

Avg. Concentration: 46.26 PPM

Second Triad Analysis

Date: 16Apr2010 Response Unit: PPM

Z1=-0.03081	R1=48.56976	T1=46.16357
R2=48.60553	Z2=0.01631	T2=46.24921
Z3=0.03037	T3=46.32109	R3=48.66453

Avg. Concentration: 46.23 PPM

Calibration Curve

Concentration=A+Bx+Cx2+Dx3+Ex4
r=9.99995E-1

Constants:	A=0.00000E+0
B=8.30444E-1	C=5.00000E-4
D=1.00000E-6	E=0.00000E+0

APPROVED BY: GARY WRIGHT

AIR LIQUIDE Air Liquide America Specialty Gases LLC SCOTT™

RATA CLASS

Dual-Analyzed Calibration Standard

11426 FAIRMONT PKWY, LA PORTE, TX 77571 Phone: 800-248-1427 Fax: 281-474-8419

CERTIFICATE OF ACCURACY: EPA Protocol Gas

Assay Laboratory

AIR LIQUIDE AMERICA SPECIALTY GASES LLC
11426 FAIRMONT PKWY
LA PORTE, TX 77571

P.O. No.: 14112729
Project No.: 04-80570-008

Customer

STORK SOUTHWESTERN LABORATORIES
Phil Yokley
222 CAVALCADE ST
HOUSTON TX 77009

ANALYTICAL INFORMATION

This certification was performed according to EPA Traceability Protocol For Assay & Certification of Gaseous Calibration Standards; Procedure G-1; September, 1997.

Cylinder Number: AAL19679 **Certification Date:** 12Feb2010 **Exp. Date:** 11Feb2013
Cylinder Pressure*:** 2000 PSIG **Batch No:** LAP0009591

COMPONENT	CERTIFIED CONCENTRATION (Moles)	ANALYTICAL ACCURACY**	TRACEABILITY
CARBON MONOXIDE	93.1 PPM	+/- 1%	Direct NIST and VSL
NITROGEN	BALANCE		

*** Do not use when cylinder pressure is below 150 psig.

** Analytical accuracy is based on the requirements of EPA Protocol Procedure G1, September 1997.

REFERENCE STANDARD

TYPE/SRM NO.	EXPIRATION DATE	CYLINDER NUMBER	CONCENTRATION	COMPONENT
NTRM 1679	02Oct2010	KAL003147	101.0 PPM	CARBON MONOXIDE

INSTRUMENTATION

INSTRUMENT/MODEL/SERIAL#	DATE LAST CALIBRATED	ANALYTICAL PRINCIPLE
FTIR//MG-09-149	29Jan2010	FTIR

ANALYZER READINGS

(Z=Zero Gas R=Reference Gas T=Test Gas r=Correlation Coefficient)

CARBON MONOXIDE

First Triad Analysis			Second Triad Analysis			Calibration Curve	
Date: 05Feb2010	Response Unit: PPM		Date: 12Feb2010	Response Unit: PPM		Concentration = A + Bx + Cx2 + Dx3 + Ex4	
Z1=0.02250	R1=101.9640	T1=93.85222	Z1=-0.01453	R1=101.6345	T1=93.69351	r=9.99999E-1	
R2=102.1105	Z2=0.03175	T2=94.02937	R2=101.7570	Z2=0.03463	T2=93.80492	Constants:	A=0.00000E+0
Z3=0.04587	T3=94.03850	R3=102.1236	Z3=0.05754	T3=93.92604	R3=101.7876	B=9.22600E-1	C=6.57000E-4
Avg. Concentration:	92.99 PPM		Avg. Concentration:	93.14 PPM		D=1.00000E-6	E=0.00000E+0

Special Notes: ALAS DOC# 36103979

APPROVED BY: _____
GARY WRIGHT

AIR LIQUIDE Air Liquide America Specialty Gases LLC SCOTT™

RATA CLASS

Dual-Analyzed Calibration Standard

11426 FAIRMONT PKWY, LA PORTE, TX 77571 Phone: 800-248-1427 Fax: 281-474-8419

CERTIFICATE OF ACCURACY: EPA Protocol Gas

Assay Laboratory

AIR LIQUIDE AMERICA SPECIALTY GASES LLC
11426 FAIRMONT PKWY
LA PORTE, TX 77571

P.O. No.: 14112723
Project No.: 04-79916-003

Customer

STORK SOUTHWESTERN LABORATORIES
PO# 14112723
222 CALVACADE STREET
HOUSTON TX 77009

ANALYTICAL INFORMATION

This certification was performed according to EPA Traceability Protocol For Assay & Certification of Gaseous Calibration Standards; Procedure G-1; September, 1997.

Cylinder Number: CC122200 **Certification Date:** 19Jan2010 **Exp. Date:** 18Jan2013
Cylinder Pressure*:** 2000 PSIG **Batch No:** LAP0008162

COMPONENT	CERTIFIED CONCENTRATION (Moles)	ANALYTICAL ACCURACY**	TRACEABILITY
PROPANE	29.9 PPM	+/- 1%	Direct NIST and VSL
NITROGEN	BALANCE		

*** Do not use when cylinder pressure is below 150 psig.

** Analytical accuracy is based on the requirements of EPA Protocol Procedure G1, September 1997.

REFERENCE STANDARD

TYPE/SRM NO.	EXPIRATION DATE	CYLINDER NUMBER	CONCENTRATION	COMPONENT
NTRM 1668	02Oct2012	ALM020070	98.80 PPM	PROPANE

INSTRUMENTATION

INSTRUMENT/MODEL/SERIAL#	DATE LAST CALIBRATED	ANALYTICAL PRINCIPLE
HP-Y/HP 6890/US00000974	22Dec2009	GAS CHROMATOGRAPHY

ANALYZER READINGS

(Z=Zero Gas R=Reference Gas T=Test Gas r=Correlation Coefficient)

First Triad Analysis

PROPANE

Date: 19Jan2010 Response Unit: PPM
Z1=0.00000 R1=33765.00 T1=10265.00
R2=33778.00 Z2=0.00000 T2=10285.00
Z3=0.00000 T3=10234.00 R3=33764.00
Avg. Concentration: 29.94 PPM

Second Triad Analysis

Calibration Curve

Concentration=A+Bx+Cx2+Dx3+Ex4
r=0.99999743
Constants: A=-0.05999562
B=0.002848878 C=
D= E=

Special Notes: LAP0008162

APPROVED BY: ROGER NGUYEN

AIR LIQUIDE Air Liquide America Specialty Gases LLC | Scott™

RATA CLASS

Dual-Analyzed Calibration Standard

11426 FAIRMONT PKWY, LA PORTE, TX 77571 Phone: 800-248-1427 Fax: 281-474-8419

CERTIFICATE OF ACCURACY: EPA Protocol Gas

Assay Laboratory

AIR LIQUIDE AMERICA SPECIALTY GASES LLC
11426 FAIRMONT PKWY
LA PORTE, TX 77571

P.O. No.: HOU001482PO
Document # : 38267991-001

Customer

STORK TESTING & METALLURGICAL CONS

PROPANE BIN
222 CAVALCADE ST
HOUSTON TX 77009
US

ANALYTICAL INFORMATION

This certification was performed according to EPA Traceability Protocol For Assay & Certification of Gaseous Calibration Standards; Procedure G-1; September, 1997.

Cylinder Number: CC58519 **Certification Date:** 16Aug2010 **Exp. Date:** 15Aug2013
Cylinder Pressure*:** 1940 PSIG **Batch No:** LAP0023248

COMPONENT	CERTIFIED CONCENTRATION (Moles)	ACCURACY**	TRACEABILITY
PROPANE	50.2 PPM	+/- 1%	Direct NIST and VSL
NITROGEN	BALANCE		

*** Do not use when cylinder pressure is below 150 psig.
** Analytical accuracy is based on the requirements of EPA Protocol Procedure G1, September 1997.

REFERENCE STANDARD

TYPE/SRM NO.	EXPIRATION DATE	CYLINDER NUMBER	CONCENTRATION	COMPONENT
NTRM 1668	02Oct2012	ALM013540	98.80 PPM	PROPANE

INSTRUMENTATION

INSTRUMENT/MODEL/SERIAL#	DATE LAST CALIBRATED	ANALYTICAL PRINCIPLE
HP-Y/HP 6890/US00000974	29Jul2010	GAS CHROMATOGRAPHY

ANALYZER READINGS

(Z = Zero Gas R = Reference Gas T = Test Gas r = Correlation Coefficient)

First Triad Analysis

PROPANE
Date: 16Aug2010 Response Unit: PPM
Z1 = 0.00000 R1 = 36338.00 T1 = 18434.00
R2 = 36356.00 Z2 = 0.00000 T2 = 18536.00
Z3 = 0.00000 T3 = 18571.00 R3 = 36365.00
Avg. Concentration: 50.24 PPM

Second Triad Analysis

Calibration Curve

Concentration = A + Bx + Cx2 + Dx3 + Ex4
r = 0.999998053
Constants: A = -0.04402805
B = 0.002680519 C =
D = E =

Special Notes: LAP0023248

APPROVED BY: ROGER NGUYEN

AIR LIQUIDE Air Liquide America Specialty Gases LLC SCOTT™

RATA CLASS

Dual-Analyzed Calibration Standard

11426 FAIRMONT PKWY, LA PORTE, TX 77571 Phone: 800-248-1427 Fax: 281-474-8419

CERTIFICATE OF ACCURACY: EPA Protocol Gas

Assay Laboratory

AIR LIQUIDE AMERICA SPECIALTY GASES LLC
11426 FAIRMONT PKWY
LA PORTE, TX 77571

P.O. No.: 14112729
Project No.: 04-80570-012

Customer

STORK SOUTHWESTERN LABORATORIES
Phil Yokley
222 CAVALCADE ST
HOUSTON TX 77009

ANALYTICAL INFORMATION

This certification was performed according to EPA Traceability Protocol For Assay & Certification of Gaseous Calibration Standards; Procedure G-1; September, 1997.

Cylinder Number: CC20350 **Certification Date:** 10Feb2010 **Exp. Date:** 09Feb2013
Cylinder Pressure*:** 1900 PSIG **Batch No:** LAP0010120

COMPONENT	CERTIFIED CONCENTRATION (Moles)	ANALYTICAL ACCURACY**	TRACEABILITY
PROPANE	84.8 PPM	+/- 1%	Direct NIST and VSL
NITROGEN	BALANCE		

*** Do not use when cylinder pressure is below 150 psig.

** Analytical accuracy is based on the requirements of EPA Protocol Procedure G1, September 1997.

REFERENCE STANDARD

TYPE/SRM NO.	EXPIRATION DATE	CYLINDER NUMBER	CONCENTRATION	COMPONENT
NTRM 1668	02Oct2012	ALM013540	98.80 PPM	PROPANE

INSTRUMENTATION

INSTRUMENT/MODEL/SERIAL#	DATE LAST CALIBRATED	ANALYTICAL PRINCIPLE
HP-Y/HP 6890/US00000974	25Jan2010	GAS CHROMATOGRAPHY

ANALYZER READINGS

(Z=Zero Gas R=Reference Gas T=Test Gas r=Correlation Coefficient)

First Triad Analysis | **Second Triad Analysis** | **Calibration Curve**

PROPANE

Date: 10Feb2010 Response Unit: PPM
Z1=0.00000 R1=33897.00 T1=29085.00
R2=33772.00 Z2=0.00000 T2=29037.00
Z3=0.00000 T3=29121.00 R3=33798.00
Avg. Concentration: 84.83 PPM

Concentration=A+Bx+Cx2+Dx3+Ex4
r=0.999996053
Constants: A=-0.14318826
B=0.002893401 C=
D= E=

Special Notes: REPORT MOL% AND EXP DATE LAP0010120

APPROVED BY: ROGER NGUYEN

AIR LIQUIDE Air Liquide America Specialty Gases LLC SCOTT™

CERTIFIED MASTER CLASS

Single-Certified Calibration Standard

11426 FAIRMONT PKWY, LA PORTE, TX 77571 Phone: 800-248-1427 Fax: 281-474-8419

CERTIFICATE OF ACCURACY: Certified Master Class Calibration Standard

Product Information
Project No.: 04-78540-001
Item No.: 6 M H2S
P.O. No.: 14112710
Folio #: 6 M H2S
Cylinder Number: ALM029989
Cylinder Size: AL
Certification Date: 10Dec2009
Expiration Date: 10Dec2010
Lot Number: LAP0005926

Customer

STORK SOUTHWESTERN LABORATORIES
PHIL YOKLEY
MSC BIN
222 CAVALCADE ST
HOUSTON, TX 77009

CERTIFIED CONCENTRATION

Component Name	Concentration (Moles)		Accuracy (+/-%)
HYDROGEN SULFIDE	5.9	PPM	2
NITROGEN		BALANCE	

TRACEABILITY

Traceable To

Scott Reference Standard

APPROVED BY: RON STITT DATE: 12/10/09

CERTIFICATE

The permeation rate of the DYNACAL® PERMEATION DEVICE listed below is certified traceable to N.I.S.T. standards.

Serial Number : 10-34887

Certification Date : Nov. 06,2009

Certificate Expires: Jan. 06, 2010

Chemical: Hydrogen Sulfide
Device Type: Standard #10
Rate: 9201 ng/min

Part Number: 111-175-0110-10-C30
Length/Geometry: 17.5 cm
Temperature: 30°C

True Accuracy: ± 0.31 %

Max Allowed Accuracy: ± 2 %

Certification Method: Gravimetric

Order No.: 101506

Customer: Stork TM & E Consulting
Notes:

Approved By:

VICI Metronics, Inc.
26295 Twelve Trees Lane NW
Poulsbo, WA 98370
(360) 697-9199 Fax: (360) 697-6682

Stork Testing & Metallurgical Consulting, Inc.
Air Emission Services
Houston, Texas

TRS Permeation Device - VICI Metronics Dynacalibrator

Dilution with Chambers 1 and 2

Pollutant	Pollutant Permeation Rate	Molecular Weight	Top 0	Top 1	Top 2	Top 3	Top 4	Top 5	Top 6	Top 7	Top 8	Top 9	Top 10	Top 11	Top 12	Top 13	Top 14	Top 15
Name	ng/min	g/g-mole	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
H_2S	9,201 @ 30°C	34	17.94	13.51	8.36	6.03	4.74	3.94	3.37	2.94	2.64	2.38	2.19	2.01	1.87	1.76	1.65	1.55

Dilution with Chambers 1 and 2

	Bottom 0	Bottom 1	Bottom 2	Bottom 3	Bottom 4	Bottom 5	Bottom 6	Bottom 7	Bottom 8	Bottom 9	Bottom 10	Bottom 11	Bottom 12	Bottom 13	Bottom 14	Bottom 15
Pollutant	370	967	1,772	2,568	3380	4,153	4,960	5,707	6,455	7,222	7,962	8,676	9,335	10,067	10,763	11,525
Name	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
H2S	17.89	6.85	3.74	2.58	1.96	1.59	1.33	1.16	1.03	0.92	0.83	0.76	0.71	0.66	0.62	0.57

H_2S	9,201	0	9,201	H2S Certificate No. 10-34887 , 2010

STORK®
Materials Technology

STORK TESTING & METALLURGICAL CONSULTING, INC.

PROJECT: ConocoPhillips Company, H_2S SRU-28.2 PROJECT NO.: H00 002549P 5

CALCD. BY: Manuel CHKD BY: DATE Jan. 23, 2010

VICI Metronics Dynacalibrator Flowmeter

Model: 500-166b-YD S/N: MU-1410

	Flow Setting Chamber 1+2			Temperature Setting	
Pass	Top 3 cc/min	Top 2 5 cc/min	Top 3, 11 cc/min	chamber 1	Chamber 2
1	1,078	1660	3275	In F° 86°F	84°F
2	1,080	1662	3276	= 30°C	= 28.9°C
3	1,080	1661	3276		
Average	1079.3	1661	3275.6		
Standard Setting	1,098	1,679	3,301	Set to C° 30°	30° 29°
% Diffrence	-0.017	= -0.0107	= 0.007674	0.0	-0.0034
	= -1.7%	= 1.07%	= 0.77%	0.0%	= 0.34%

% Difference is less than 2%

% Difference = ((Average − Standard) ÷ Standard)

Certificate of Calibration

A.P. BUCK, INC. mini-BUCK CALIBRATOR™

Serial No: 052171 **Date Calibrated :** 5-28-10 **Next Calibration due date :** 5-28-11

Model No : ☐ M-1 ☑ M-5 ☐ M-30 ☐ M-30B

Applicable Measurement Standards

Description	MFR.	Model	Serial #	N. I. S. T.
☐ 100ml Burette	Kimble	17027F-100	1220	SPECIAL17027F
☐ 1000ml Burette	Kimble	17081	0002	ASTM E542
☐ 1000ml Burette	Kimble	17081	0003	ASTM E542
☑ 1000ml Burette	Kimble	17081	1003	ASTM E542
☐ 1000ml Burette	Kimble	17081	1004	ASTM E542
☐ 1000ml Burette	Kimble	17081	2087	ASTM E542
☐ Stopwatch	Fisher	14-649-5	72495994	EL015
☑ Stopwatch	Fisher	14-649-5	230268455	EL015

AMBIENT CONDITIONS: Temperature 74±3° F Relative Humidity 50±10%

This instrument as received on 5-27-10 at A.P. Buck Inc.'s facility was found to be:

☐ Unable to calibrate as received due to condition of unit.
☐ Within specification of ± 0.5% of the display reading.
☑ Not in specification by 0.79 % High.____.____ % Low of the display

The instrument listed above has been adjusted to nominal, utilizing a 1,000ml burette, and an electronic digital stop watch, which are traceable to the National Institute of Standards & Technology (NIST). The accuracy of the instruments used to perform calibration is greater than 4 to 1. The A.P. Buck, Inc. Calibration system is in compliance with ANSI Z540-1 and IEC guide 25.

☑ Unit within specifications after calibration.

Calibration was conducted with A.P. Buck, Inc. Calibration Procedure APB-I Rev. 6.2 with a constant flow pump using the Bubble-meter method. A.P. Buck, Inc. guarantees the accuracy and repeatability of ± 0.5% for any display reading as described under the instruction manual "Principles of Operation". Responsibilities shall in no event, nor for any cause whatsoever, exceed the price charged for the calibration represented by this certification.

QA APPROVAL BY: Pedro A Vargas

A.P. BUCK, INC.
7101 Presidents Drive, Suite 110
Orlando, FL 32809
Phone: 407-851-8602 · Fax: 407-851-8910

BUCK
A.P. BUCK, INC.

File Name: C:\CPData\SampleData\H2S.CAL
Version: 1

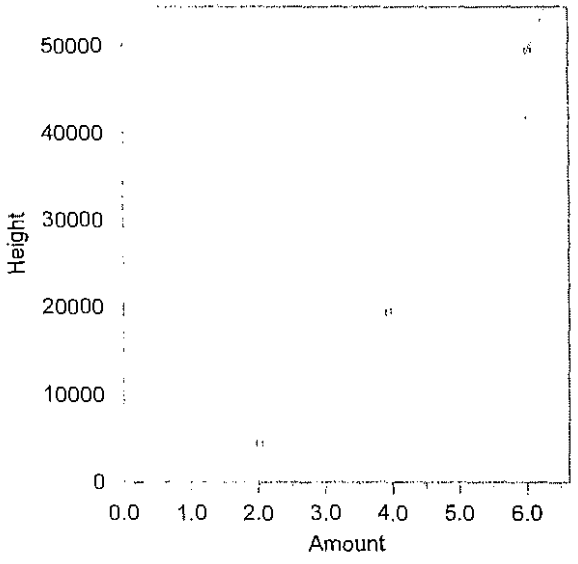
Creator: John Johnston
Description:
Reason for change:

External standard calibration
Standard injection volume: 1
Standard sample weight: 1
Area reject threshold: 100
Reference peak area reject threshold: 100
Amount units: ppm
No default component

Method of calculating data point averages: Equal weight for all updates
Print calibration update report

All levels are normal data points.

1 H2S



Expected retention time: 1 minutes
Search window: 0.03 minutes
No retention time reference component
Group number: 0

High alarm limit: 0.1
Low alarm limit: 100
Component constant: 0.23

Single peak quantification by height

$Y = 936.9683 X^{2.208863}$

Power fit with equal weighting, forced to origin
Coefficient of determination: 0.9999906
Average error: 0.184%
Average CF: 5105.004
RSD: 59.158%

Level	Amount	Response	Cal Factor	Error, %	Source	Date and time
1	2.01	4375	2176.617	-0.107	Manual	12/8/2010 3:41:32 PM
2	3.94	19422	4929.441	0.277	Manual	12/8/2010 3:41:44 PM
3	6.03	49500	8208.955	-0.169	Manual	12/8/2010 3:41:55 PM

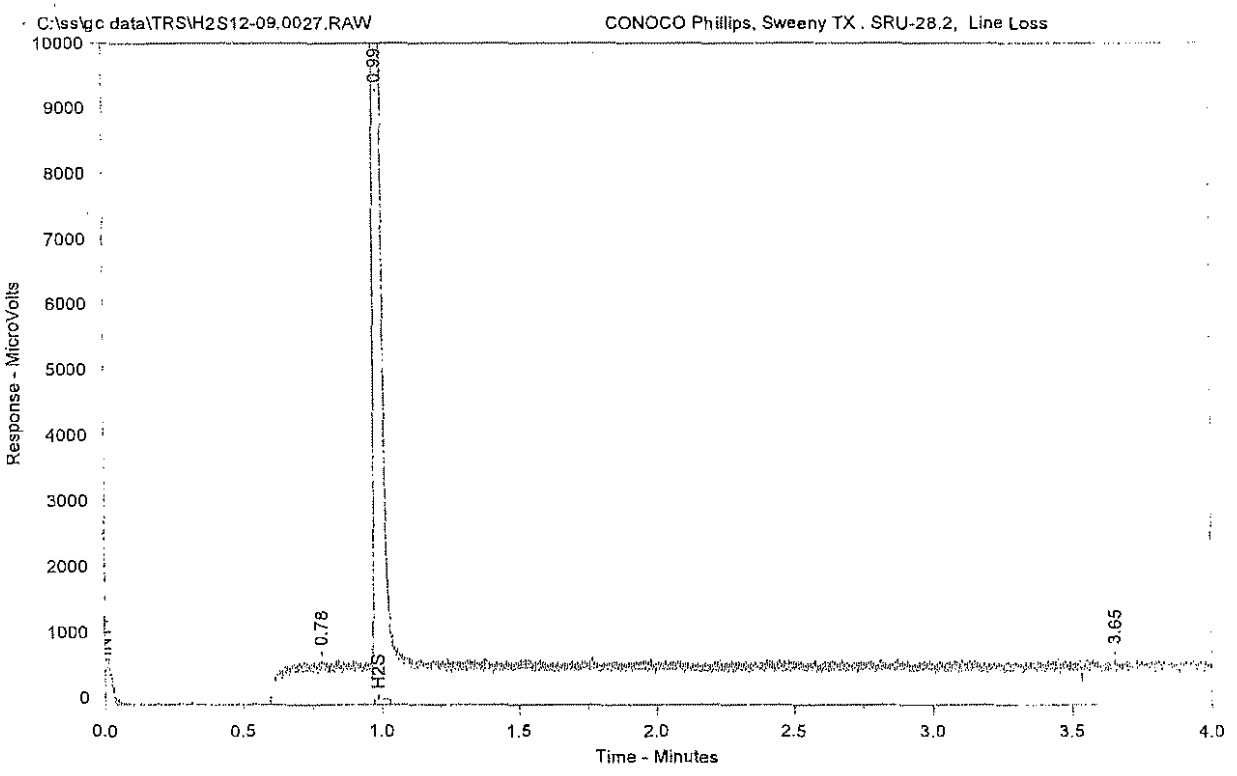
Minimum Detection Limit (MDL)

Solve for X, $Y = \frac{0.23}{100}$ MG

$X = \sqrt[2.208863]{\frac{Y}{936.9683}}$

$= \cancel{0.0132} \simeq \cancel{0.02}$ MG 12/15/10

$= 0.3631 = \underline{0.36}$ mdL ppm.



Sample Name = **CONOCO Phillips, Sweeny TX . SRU-28.2, Line Loss**

Instrument = Instrument 1
Heading 1 = Air = 100, H2 = 85, He = 113; 125 uL Sample Loop
Heading 2 = 0.0 Evnt 92.0, 0.6 Evnt -92, 15.0 Retn; 42C- Isothermal

Raw File Name = **C:\ss\gc data\TRS\H2S12-09.0027.RAW**
Method File Name = C:\CPData\SampleData\TRS.MET
Calibration File Name = C:\CPData\SampleData\H2S.CAL

Date Taken (end) = 12/9/2010 4:48:00 PM
Method Version = 8
Calibration Version = 1

Peak #	Ret. Time	Name	Amount	Height	Area	Type	Width
1	0.78		0.00	655.0	7155	BV	0.21
2	0.99	H2S	6.15	51766.0	65413	VB	0.02
3	3.65		0.00	215.6	1779	BB	0.35

Total Area = 74346.44 Total Height = 52636.56 Total Amount = 6.148737

Line loss test for [12-9-10 testday]

3 injection average TRS\H2S 12-09.0027.Raw 6.15
12-09.0028 6.15
12-09.0029 6.17

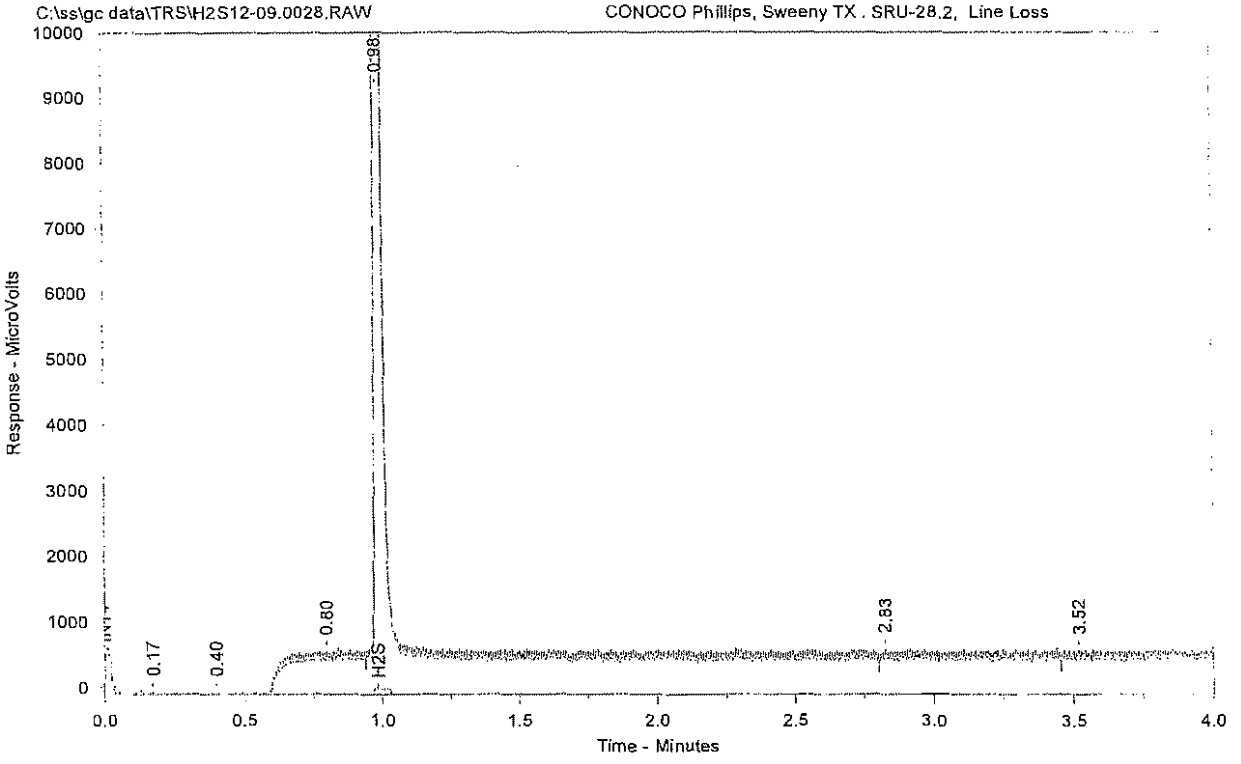
Average = 6.16

Line loss recovery

$\frac{6.16\ ppm}{5.9\ ppm} = 1.04349$ or 104.35%

± 5% of Average = 5.85 — 6.47

± 20% of Calgas (5.9ppm) = 4.72 — 7.08



Sample Name = **CONOCO Phillips, Sweeny TX . SRU-28.2, Line Loss**

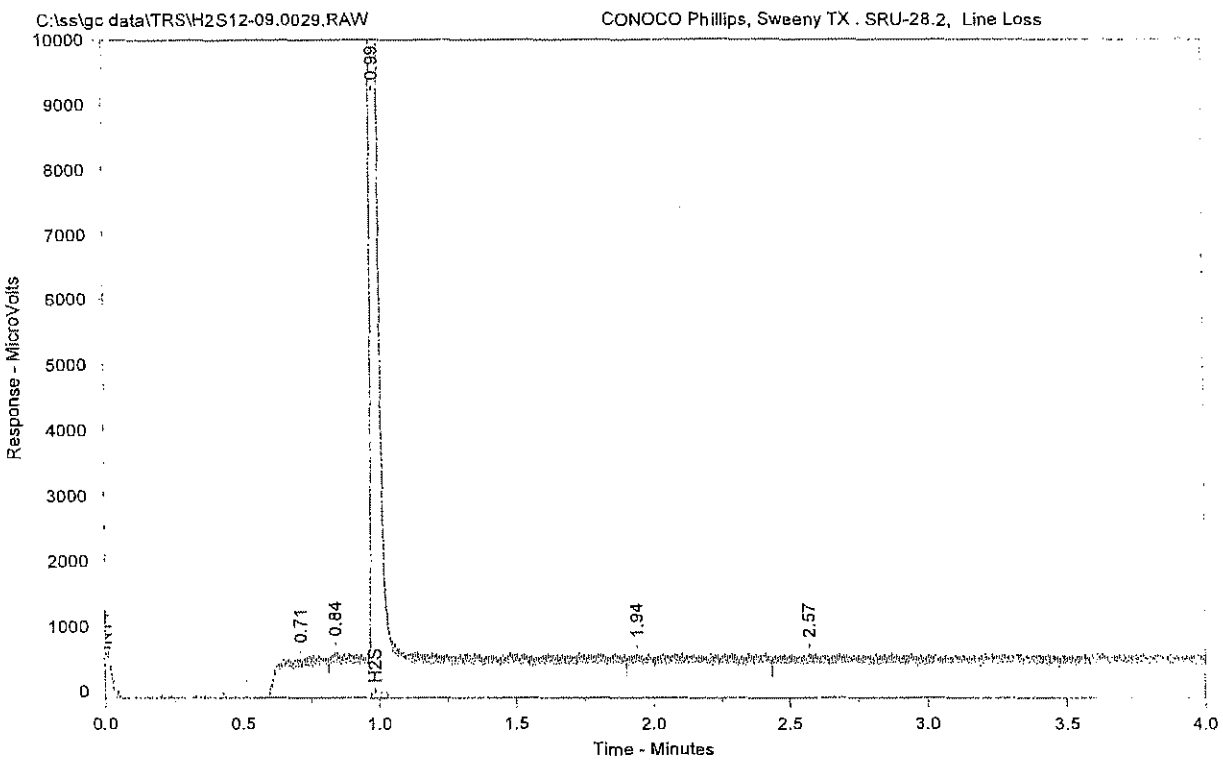
Instrument = Instrument 1
Heading 1 = Air = 100, H2 = 85, He = 113; 125 uL Sample Loop
Heading 2 = 0.0 Evnt 92.0, 0.6 Evnt -92, 15.0 Retn; 42C- Isothermal

Raw File Name = **C:\ss\gc data\TRS\H2S12-09.0028.RAW**
Method File Name = C:\CPData\SampleData\TRS.MET
Calibration File Name = C:\CPData\SampleData\H2S.CAL

Date Taken (end) = 12/9/2010 4:53:00 PM
Method Version = 8
Calibration Version = 1

Peak #	Ret. Time	Name	Amount	Height	Area	Type	Width
1	0.17		0.00	206.7	410	BB	0.07
2	0.40		0.00	205.5	307	BB	0.05
3	0.80		0.00	620.1	6986	BV	0.21
4	0.98	H2S	6.15	51773.8	67448	VB	0.02
5	2.83		0.00	214.2	1135	BB	0.20
6	3.52		0.00	185.0	538	BB	0.11

Total Area = 76824.04 Total Height = 53205.13 Total Amount = 6.149154



Sample Name = **CONOCO Phillips, Sweeny TX . SRU-28.2, Line Loss**

Instrument = Instrument 1
Heading 1 = Air = 100, H2 = 85, He = 113; 125 uL Sample Loop
Heading 2 = 0.0 Evnt 92.0, 0.6 Evnt -92, 15.0 Retn; 42C- Isothermal

Raw File Name = **C:\ss\gc data\TRS\H2S12-09.0029.RAW**
Method File Name = C:\CPData\SampleData\TRS.MET
Calibration File Name = C:\CPData\SampleData\H2S.CAL

Date Taken (end) = 12/9/2010 4:58:00 PM
Method Version = 8
Calibration Version = 1

Peak #	Ret. Time	Name	Amount	Height	Area	Type	Width
1	0.71		0.00	701.2	4094	BV	0.11
2	0.84		0.00	743.2	5163	VV	0.14
3	0.99	H2S	6.17	52104.4	75605	VV	0.02
4	1.94		0.00	231.6	683	VB	0.10
5	2.57		0.00	198.1	1079	BB	0.20

Total Area = 86624.2 Total Height = 53978.49 Total Amount = 6.166902

STORK TESTING AND METALLURGICAL CONSULTING, INC.

EMISSION RATE CALCULATIONS

FACILITY : Conoco Phillips Company

CITY, STATE : Sweeny, Texas

SOURCE NAME : SRV 28.2 Incinerator Stack

DATE : Dec. 9, 2010 RUN NO. : 2

STMC PROJECT NO. : Hou 002549P

% MOISTURE = 11.53 % (See Moisture Sample Data)

GAS ANALYSIS : % CO2 4.0 % O2 4.2 % N2 91.8

MOLECULAR WEIGHT (MWSG) g/g mole :

H_2O - 0.1153 X 18 = 2.0754

CO_2 - 0.04 X 0.8847 X 44 = 1.5571

O_2 - 0.042 X 0.8847 X 32 = 1.1890

N_2 - 0.918 X 0.8847 X 28 = 22.7403

MWSG = 27.5618

VELOCITY TRAVERSE DATA :

Cp = 0.840 $\sqrt{\text{AVE. DELTA P}}$ = 0.2461 Ts AVG. = 1808 °R Ps = 30.18

STACK DIAMETER = 129.5 inches $A = \frac{\pi r^2}{144}$ As = 91.467525

CALCULATIONS :

$$Vs = 85.49 \times Cp \times \sqrt{\text{avg Delta P}} \times \sqrt{\frac{1.4743}{(\text{Ts avg.} / (\text{MWSG} \times \text{Ps}))}} = 26.0551$$

$1808 / (27.5618 \times 30.18) = 2.17336$, $\sqrt{2.17336} = 1.4743$

$$ACFM = Vs \times 60 \times As = 26.0551 \times 60 \times 91.467525 = 142,991.49$$

$$Qsd = 60 \times (1.00 - (\%H2O / 100)) \times ACFM \times (528 / \text{Ts avg.}) \times (Ps / 29.92) = 60 \times (1.00 - (11.53/100)) \times 142,991.49 \times (528/1808) \times (30.18/29.92) = 2,235,890.97$$

(0.8847 = 1.00 − 11.53/100; 0.292035 = 528/1808; 1.00869 = 30.18/29.92)

ISOKINETIC DATA : (if applicable) N/A

Vm (std) = _____ NOZZLE DIA. = _____ An = _____ Θ = _____

$$\text{PERCENT ISOKINETIC} = \frac{0.09450 \times Ts \times Vm(std)}{Ps \times Vs \times An \times \Theta \times (1 - \%H2O/100)} =$$

Revised April, 2009

AirExcel-forms-CalculationQA-Flow

Stork Testing & Metallurgical Consulting, Inc. Analyzer Drift and Calculation QA

Hand Check Calculations

FACILITY: ConocoPhillips Company	ANALYST: Manuel	DATE: Dec. 9, 2010
SOURCE NAME: SRU-28.2 Incin.	CITY, STATE: Sweeny, Texas	STMC PROJECT NO. H00025491

	CO	NOx	O_2	CO_2	THC	SO_2
Span gas - C_{ma}	46.2	51.70	11.10	~~250.0~~	50.2	250.0
Scale (ppm,%) *	93.1	94.00	20.70	~~476.0~~	100.0	476.0

Difference = Final Reading - Initial Reading %Zero = (Zero difference / Scale)*100 %Span = (Span difference / Scale)*100

Run No. and Pollutant		ZERO Initial Reading	ZERO Final Reading	ZERO Difference (ppm, %) *	ZERO % Zero Drift	SPAN Initial Reading	SPAN Final Reading	SPAN Difference (ppm, %) *	SPAN % Span Drift
2	CO	-0.53	0.10	0.63	~~0.678~~ 0.676	46.01	47.12	1.11	1.192
2	NOx	-0.10	0.09	0.19	0.201	50.26	50.27	0.01	0.00
2	O_2	0.06	0.05	-0.01	0.048	11.02	10.99	-0.03	-0.145
N/A	CO_2								
2	THC	0.05	-0.01	-0.06	0.06	50.19	49.97	-0.22	~~-0.232~~ -0.232
2	SO_2	2.91	4.90	1.99	0.418	250.76	251.39	0.63	0.132

F-Factor dscf/mmBtu	GCV	Fuel Flow Rate	Conversion Factor	Qsd dscf/hr
8710	N/A	N/A	~~0.001~~ N/A	2,235,947.4

C_o = (Initial Zero Reading + Final Zero Reading)/2

C_m = (Initial Span Reading + Final Span Reading)/2

C_{gas} = ($C_{avg.}$ - C_o) * (C_{ma} / (C_m-C_o))

ppmvd @" x"% O2 = ppmvd * [(20.9-"x")/(20.9-%O2)]

$= 20.9/16.708 = 1.2509$

C = (C_{gas} * M.W. * 6.242e-8) / 24.04

lb/mmBtu = C * F-Factor * (20.9 / (20.9 - %O2 dry)) $= 1.2509$

lb/hr = lb/mmBtu * GCV * Fuel Flow Rate * Conversion Factor

lb/hr = lb/dscf x Qsd in dscf/hr

Run No. and Pollutant		C_{avg} Uncorrected Stack Gas Concentration (ppm, %) *	C_o Average of Zero Air	C_m Average of Span Gas	C_{gas} Corrected Stack Gas Concentration (ppm, %) *	M.W. Molecular Weight	C Concentration in lb/dscf	lb/mmBtu Emission Rate lb/mmBtu	lb/hr Emission Rate lb/hr
2	CO	9.8655	-0.215	46.565	9.2588	28	7313 $6.6178e^{-7}$	0.00734	1.5051
2	NOx	18.53	-0.005	50.265	19.371	46	$2.3136e^{-6}$	0.02521	5.1732
2	O_2	4.19	0.055	11.005	4.192	NA	NA	NA	NA
N/A	CO_2					NA	NA	NA	NA
2	THC	-0.03	0.02	50.08	~~-0.050~~ <0.10	44.092 (as C_3H_8)	$<1.1449e^{-8}$	N/A	<0.0256
2	SO_2	104.12	3.905	251.075	100.36	64	$1.6844e^{-5}$	0.18352	37.662

Note * O_2 and CO_2 are expressed in percent.

$CO@0\%O_2 = 11.582$ $NO_x@0\%O_2 = 24.231$ $SO_2@0\%O_2 = 126.79$

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STORK TESTING & METALLURGICAL CONSULTING, INC.

PROJECT: Conoco Phillips Company, H2S: SRU-28.2 PROJECT NO.: HOU002549P

CALCD. BY Manuel CHKD BY: DATE January 21, 2011

Run 2: H_2S injections were all non-detect, will use MDL

$\%O_2 = 4.192$ Minimum Detection Limit = (0.36ppm) for calculations.

Molecular weight of $H_2S = 34$ $H_2S = <0.36$ppm No sample dilution was performed

Line loss calculation was 106%

QSD = 2,235,947.4

Correction for H_2S = $\frac{H_2S_{ppm}}{\text{Fac. Line loss}} = \frac{<0.36}{1.06/mg} = \frac{<0.345\ ppm}{1.0435} = 0.3396$ ~~0.3~~ ✓mg

H_2S_{ppm} @0% O_2 = Corrected $H_2S_{ppmvd} \times ((20.9/(20.9-\%O_2))$

$= <0.345 \times (20.9/(20.9-4.192))$

$= <0.345 \times 1.2509$

$= \boxed{<0.4316\ @0\%O_2}$

H_2S ~~lb/hr~~ ✓mg / lb/dscf (Not at 0% O_2) $= \frac{H_2S_{ppmvd} \times \text{Molecular Weight} \times 6.242e^{-8}}{24.04}$

$= \frac{<0.4316 \times 34 \times 6.242e^{-8}}{24.04} = \boxed{3.8102e^{-8}\ \text{lb/dscf}}$ ~~3.0457e-8 /mg~~ (0.345)

H_2S lb/hr = H_2S lb/dscf $\times$ Qsd dscf

$= <3.0457e^{-8}$ ✓mg $\times$ 2,235,947.4

$= \boxed{0.0681\ \text{lb/ds ft lb/hr}}$

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SOURCE IDENTIFICATION
STMC Project No. HOU002549P

Plant Name:	ConocoPhillips Company			**Phone:**	979/491-2705
Address:	P.O. Box 866				
City:	Sweeny	**State:**	Texas	**Zip:**	77480
Plant Representative:	Mr. Sean O'Brien				
Source Identification:	Unit 28 Sulfur Recovery Unit (SRU) Incinerator				
Source Name:	Unit 28 SRU (EPN 28.2-36-2)				
Stack or Duct Description:	Round, vertical exhaust stack				
Port Height:	~86 feet				
Stack Diameter:	129 1/2 inches				
Stack Temperature:	1,339°F				
Percent Moisture:	11.0%				
Process (Batch or Continuous):	Continuous				
Operational Status :	Average Sulfur Production 500 Long Tons Per Day				
Sampling Parameters:	NOx / CO / O2 / SO2 / H2S / VOC / Flow / Moisture				
Date Tested :	7-Dec-10				

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SUMMARY OF SAMPLING RESULTS - Flow Data

ConocoPhillips Company
Sweeny, Texas

Unit 28.2 SRU
STMC Project No. HOU002549P

Run No.	Date	Time Period	Net Time (Mins)	Vm (Std) dscf	Ts Stack Temp, °F	Vs Stack Velocity ft/sec	Percent Moisture	ACFM Stack Gas Flow	Qsd Dry Stack Gas Flow dscf/hr
1	7-Dec-2010	1240-1340	60	34.115	1,336	23.30	9.88	127,865.4	2,038,059
2	7-Dec-2010	1445-1545	60	34.577	1,342	23.78	11.77	130,531.5	2,030,073
3	7-Dec-2010	1650-1750	60	34.155	1,336	23.61	11.47	129,590.4	2,025,659

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SUMMARY OF SAMPLING RESULTS - TCEQ Permit : SO2/O2

ConocoPhillips Company
Sweeny, Texas

Unit 28.2 SRU
STMC Project No. HOU002549P

Run No.	Date	Time Period	Net Time (Mins)	O2 % (dry)	SO2 ppm (dry)	SO2 ppmvd @ 0% O2 (dry)	SO2 lb/hr
1	7-Dec-2010	1240-1340	60	3.83	73.25	89.70	24.81
2	7-Dec-2010	1445-1545	60	3.85	65.19	79.90	21.99
3	7-Dec-2010	1650-1750	60	3.94	61.23	75.47	20.61
			Average:	**3.87**	**66.56**	**81.69**	**22.47**

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SUMMARY OF SAMPLING RESULTS - CO, NOx and VOC Data

ConocoPhillips
Sweeny, Texas

Unit 28.2 SRU
STMC Project No. HOU002549P

Run No.	Date	Time Period	CO			NOx			VOC*		O_2
			ppmvd	ppmvd @ 0% O2	lb/hr	ppmvd	lb/mmBtu	lb/hr	ppmvd	lb/hr	% (dry)
1	7-Dec-2010	1240-1340	9.93	12.16	1.47	19.27	0.0245	4.69	<0.10	<0.023	3.83
2	7-Dec-2010	1445-1545	6.22	7.63	0.92	18.89	0.0241	4.58	<0.10	<0.023	3.85
3	7-Dec-2010	1650-1750	4.42	5.45	0.65	19.93	0.0256	4.82	<0.10	<0.023	3.94
		Average:	**6.86**	**8.41**	**1.01**	**19.37**	**0.0247**	**4.70**	**<0.10**	**<0.023**	**3.87**

Note: * Total nonmethane, nonethane volatile organic hydrocarbons, as propane.

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SUMMARY OF SAMPLING RESULTS - H2S Data

ConocoPhillips Company
Sweeny, Texas

Unit 28.2 SRU
STMC Project No. HOU002549P

Run No.	Date	Time Period	H_2S ppmvd @ 0% O2	H_2S lb/hr
1	7-Dec-2010	1240-1440	<0.50	<0.07
2	7-Dec-2010	1445-1645	<0.50	<0.07
3	7-Dec-2010	1645-1845	<0.50	<0.07
		Average:	**<0.50**	**<0.07**

Note: Data is reported as (less than) as actual run results were nondetectable.

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SUMMARY OF SAMPLING RESULTS - Operating Data

ConocoPhillips Company
Sweeny, Texas

Unit 28.2 SRU
STMC Project No. HOU002549P

Run No.	Date	Time Period	Unit 28 Sulfur Production LTPD
1	7-Dec-2010	1240-1440	503.2
2	7-Dec-2010	1445-1645	492.8
3	7-Dec-2010	1645-1845	503.4
Runs 1-3		**Average:**	**499.8**

Conoco Phillips
Sweeny,Tx
Unit 28 SRU INC.
STMC Project No.: HOU002549P

Stork Testing & Metallurgical Consulting, Inc.
Houston, Texas

Diameter of Stack =	129.50	inches

E. P. A. Method 1-4 Analytical Data

Run No.	Sample Time min	Net Volume ft^3	Average $\sqrt{\Delta P}$ in H_2O	Average ΔH in H_2O	Avg Stack Temp. °F	Avg Meter Temp. °F	Meter P P_m in Hg	Stack P P_s in Hg	DGMCF	Pitot Correction C_p	Stack Area A_s ft^2
1	60	34.115	0.2208	1.00	1,336	62	30.17	30.00	0.9934	0.840	91.4675
2	60	34.577	0.2242	1.00	1,342	61	30.17	30.00	0.9934	0.840	91.4675
3	60	34.155	0.2232	1.00	1,336	61	30.12	29.95	0.9934	0.840	91.4675

Run No.	Date	Pollutant Sample Run Time	Method 2 Flow Run Time
1	12/7/2012	1240-1340	1240-1400
2	12/7/2012	1445-1545	1540-1548
3	12/7/2012	1650-1750	1740-1755

E. P. A. Isokinetic Methods Flow Calculations

1 $Vs\ (ft/sec) = 85.49 \times Cp \times \sqrt{\Delta P} \times \sqrt{(Ts / MWSG \times P_s)}$

2 $ACFM\ (ft^3/min) = V_s \times 60 \times A_s$

3 $Q_{sd} = 60 \times [\ 1 - (\ \%H_2O / 100\ )\ ] \times ACFM \times [\ 528 / (\ T_s + 460\ )\ ] \times (\ P_s / 29.92\ )$

Run No.	Total H_2O Collected ml	Flue Gas Data			Flow Calculations			1	2	3
		% CO_2	% O_2	% N_2	V_m (std) dscf	% H_2O	MWSG g/g mole	Vs ft/sec	ACFM ft^3/min	Qsd dscf/hr
1	80.5	4.0	3.8	92.2	34.566	9.88	27.727	23.30	127,865.35	2,038,059.0
2	99.5	4.0	3.8	92.2	35.101	11.77	27.523	23.78	130,531.49	2,030,072.5
3	95.3	4.5	3.9	91.6	34.615	11.47	27.630	23.61	129,590.40	2,025,659.1

STORK TESTING AND METALLURGICAL CONSULTING, INC.
AIR EMISSIONS SERVICES DIVISION

FACILITY: Conoco Phillips STMC PROJECT NO.: HOU002549P
CITY, STATE: Sweeny TX TECHNICIAN: GW&G, AP
SOURCE NAME: Unit 28 SRU Incinerator
DATE: 12-7-10 RUN(S): 1-3
BAROMETRIC PRESSURE: 30.10 inches Hg.
STACK I.D.: 129 1/2 STATIC PRESSURE: -1.30 inches H2O
I.D by: Field Measurement ✓ Engineering Drawing ___ Client Information ___
PORT EXTENSIONS: (1) 21" (3) NA STACK SCHEMATIC
(2) 21" (4) NA
CYCLONIC FLOW CHECK: NA Port Description: 2-4" ports w/gate valve Monorail Brackets: ~~Yes~~ / No

TRAVERSE POINT NO.	% OF STACK DIAMETER	DIST. FROM REFERENCE (inches)	RUN NO. 1 TIME: 1240-1400		RUN NO. 2 TIME: 1540-1548		RUN NO. 3 TIME: 1740-1755	
			ΔP	T_s	ΔP	T_s	ΔP	T_s
1	3.2	4.14	.07	1302	0.06	1307	0.05	1310
2	10.5	13.60	.06	1314	0.06	1312	0.05	1319
3	19.4	25.12	.06	1320	0.05	1321	0.05	1324
4	32.3	41.83	.06	1328	0.05	1333	0.05	1331
5	67.7	87.67	.05	1342	0.06	1353	0.06	1346
6	80.6	104.38	.04	1348	0.05	1351	0.05	1349
7	89.5	115.90	.04	1346	0.04	1349	0.05	1345
8	96.8	125.36	.03	1342	0.04	1346	0.04	1339
1			.03	1333	0.06	1353	0.06	1349
2			.04	1336	0.06	1352	0.06	1351
3			.05	1339	0.05	1353	0.05	1355
4			.05	1342	0.05	1352	0.06	1350
5			.05	1345	0.06	1347	0.05	1341
6			.05	1346	0.04	1345	0.05	1337
7			.05	1344	0.04	1345	0.04	1333
8			.06	1342	0.04	1346	0.04	1329
							✓ 0.2232	✓
AVERAGES: SQ.RT. ΔP, T_s			✓ 0.2208	1336	0.2242 ✓	1342 ✓	~~0.2245~~	1338

TEMPERATURE ID: M-8
PROBE ID: PG 15-A
PITOT CORRECTION FACTOR: 0.840
UMBILICAL ID: U-25-F2

Run No.	PITOT LEAK CHECK Pretest	Post-test	FYRITE ANALYSIS CO_2	O_2
1	✓ @ 6"	✓ @ 4"	4%	trailer
2	✓ @ 5"	✓ @ 4"	4%	↓
3	✓ @ 6"	✓ @ 4"	4.5%	

Stork Testing & Metallurgical Consulting, Inc.

Source Sampling Field Data

Facility Conoco Phillips Proj. No. H0000254981
City, State Sweeny TX
Source SRU - unit 28
Date 12-7-10 Oper. GUSG Sample No. 1
Meter No. M-8 DGMCF 0.9934 Umb. ID U-25-H2O
ΔH @ Box 1.8215 Filter No. N/A Heater ID N/A
Stack Press. -1.30 Data H2O Imp. ID IC-
Stack ID (Port) 129½ (21") Platform Ht. 90' Ass. Moist. ?
Silica Gel No. SG1 Baro. ID T-3 Bar. Pres. 30.10
Probe No. N/A PTCF N/A Probe Liner FLEX
Nozzle No. ↓ Nozzle Area ↓
Store 6 ↓ Store 7 ↓
Leak Rate : Initial <.01 @ 15" Final <.01 @ 5"
Pitot Leak Check: Initial N/A Final N/A
Gas Analysis (Fyrite / Orsat / Analyzer) : CO_2 N/A O_2 N/A
CO_2 N/A O_2 N/A ; CO2 N/A O2 N/A
Avg. Gas Analysis : CO_2 N/A O_2 N/A

Pts	Time Minutes (24 hrs.)	Dry Gas Meter Reading ft³	Inches H_2O ΔP	Inches H_2O ΔH	Line Vac. " Hg	Temperature °F Stack T_s	Probe	Heater Box	Last Imp.	Meter Inlet	Meter Outlet
1	1240	701.128	N/A	1.0	N/A	N/A	N/A	N/A	50	61	61
2	1245	703.92			1				50	62	62
3	1250	706.76			1				50	62	62
4	1255	709.58			1				51	63	62
5	1300	712.41			1				51	63	62
6	1305	715.26			1				51	63	61
7	1310	718.08			1				52	63	61
8	1315	720.92			1				52	64	61
9	1320	723.76			1				53	64	61
10	1325	726.58			1				53	64	61
11	1330	729.53			1				53	64	61
12	1335	732.36	↓	↓	↓ 1	↓	↓	↓	54	64	61
stop	1340	735.243	—	—	—	—	—	—	—	—	—
	✓	✓		✓						✓	
	60 Mins Sample Time	34.115 Net Volume	N/A Avg. √ΔP	1.0 Avg. ΔH		N/A Avg. Stack	Check Init:			62 Avg. Meter (AMT)	

Moisture Data :	Imp. 1	Imp. 2	Imp. 3	Imp. 4	Imp. 5
Impinger Solution :	DI	DI	Empty	SG1	
Final Vol or Wt (ml or g)	176	100	0	263.4	
Initial Vol or Wt (ml or g)	100	100	0	258.9	
Net Increase (ml or g)	76	~~100~~	0	4.5	

Rinse Data :	Imp. 1	Imp. 2	Imp. 3	Imp. 4	Imp. 5
Rinse Solution :					
Rinse Volume (ml)					
Final Sample Volume, Including Rinse (ml)					

Total Water Collected (TWW) [Imp. + SG*] = 80.5 ml ✓ MA
* Converted to ml by dividing by the density of H_2O (1 g/ml)

Meter Pressure (Pm) = 30.10 + 1.0 = 30.17 ✓
Stack Pressure (Ps) = 30.10 + (13.6 / 13.6) -1.30 = 30.00 ✓
% Moisture = (0.04707 x TWW) x 100 / Vm(std) + (0.04707 x TWW) = 9.879 ✓ MA

Vm(std) = 34.115 (Net Volume) x 0.9934 (DGMCF) x 528 / 522 std Temp (R) AMT (R) x 30.17 / 29.92 Pm std press. = 34.5658 dscf

Stork Testing & Metallurgical Consulting, Inc.

Facility Conoco Phillips Proj. No. H&I002549P
City, State Sweeny, Tx
Source Unit 28 SRU Incinerator
Date 12-7-10 Oper. AP Sample No. 2
Meter No. M-8 DGMCF 0.9934 Umb. ID V-25-H2O
ΔH @ Box 1.8215 Filter No. NA Heater ID NA
Stack Press. -1.30 Data H2O Imp. ID IC-7
Stack ID (Port) 129½" (21") Platform Ht ~160' Ass. Moist. ?
Silica Gel No. SG 267 Baro. ID MH Bar. Pres. 30.10
Probe No. NA PTCF NA Probe Liner Flex
Nozzle No. ↓ Nozzle Area ↓
Store 6 ↓ Store 7 ↓
Leak Rate : Initial <.01 @ 15" Final <.01 @ 6"
Pitot Leak Check: Initial NA Final NA
Gas Analysis (Fyrite / Orsat / Analyzer) : CO_2 NA O_2 NA
CO_2 NA O_2 NA ; CO2 ↙ O2 ↙
Avg. Gas Analysis : CO_2 ↙ O_2 ↙

Moisture Data :	Imp. 1	Imp. 2	Imp. 3	Imp. 4	Imp. 5
Impinger Solution :	DI	DI	Empty	SG	
Final Vol or Wt (ml or g)	194	100	0	264.8	
Initial Vol or Wt (ml or g)	100	100	0	259.3	
Net Increase (ml or g)	94	0	0	5.5	

Rinse Data :	Imp. 1	Imp. 2	Imp. 3	Imp. 4	Imp. 5
Rinse Solution :					
Rinse Volume (ml)					
Final Sample Volume, Including Rinse (ml)					

Total Water Collected (TWW) [Imp. + SG*] = 99.5 ml
* Converted to ml by dividing by the density of H_2O (1 g/ml)

Meter Pressure (Pm) = 30.10 + 1.0 = 30.17
Stack Pressure (Ps) = 30.10 + (−1.30 / 13.6) = 30.00
% Moisture = (0.04707 x TWW) x 100 / Vm(std) + (0.04707 x TWW) =

Source Sampling Field Data

Pts	Time Minutes (24 hrs.)	Dry Gas Meter Reading ft³	Inches H_2O ΔP	Inches H_2O ΔH	Line Vac. "Hg	Temperature °F Stack T_s	Probe	Heater Box	Last Imp.	Meter Inlet	Meter Outlet
1	1445	735.557	NA	1.0	4	NA	NA	NA	50	60	59
2	1450	738.38			4				47	60	60
3	1455	741.26			4				49	61	60
4	1500	744.65			4				50	61	59
5	1505	747.02			4				51	62	59
6	1510	750.17			4				51	62	60
7	1515	752.96			4				51	62	60
8	1520	755.24			4				51	62	60
9	1525	758.03			4				51	62	60
10	1530	761.72			4				52	62	59
11	1535	764.43			4				52	62	59
12	1540	767.24	↓	↓	4	↓	↓	↓	53	63	60
Stop	1545	770.134									
	60 min	34.577	NA	1.0		NA				61	
	Sample Time	Net Volume	Avg. √ΔP	Avg. ΔH		Avg. Stack	Check Init: AP			Avg. Meter (AMT)	

Vm(std) = ____ (Net Volume) x ____ (DGMCF) x 528 std Temp (R) / AMT (R) x ____ Pm / 29.92 std press. = ____ dscf

√ΔP - 0.2242
T_s - 1342

Stork Testing & Metallurgical Consulting, Inc.

Source Sampling Field Data

Facility Conoco Phillips Proj. No. H0000
City, State Sweeny TX
Source Unit 28 SRU
Date 12-7-10 Oper. GWSG Sample No. 3
Meter No. M-8 DGMCF 0.9934 Umb. ID V-25-H2O
ΔH @ Box 1.8215 Filter No. N/A Heater ID N/A
Stack Press. -1.3 Data H2O Imp. ID IC-7
Stack ID (Port) 129 1/2" (21") Platform Ht. 90' Ass. Moist. ?
Silica Gel No. SG 14 Baro. ID MG Bar. Pres. 30.05
Probe No. N/A PTCF N/A Probe Liner Flex
Nozzle No. ↓ Nozzle Area ↓
Store 6 ↓ Store 7 ↓
Leak Rate : Initial < .01 @ 15" Final < .01 @ 5"
Pitot Leak Check: Initial N/A Final N/A
Gas Analysis (Fyrite / Orsat / Analyzer) : CO_2 N/A O_2 N/A
CO_2 N/A O_2 N/A ; CO2 N/A O2 N/A
Avg. Gas Analysis : CO_2 N/A O_2 N/A

Moisture Data :	Imp. 1	Imp. 2	Imp. 3	Imp. 4	Imp. 5
Impinger Solution :	DI	DI	Empty	SG	
Final Vol or Wt (ml or g)	188	102	-0-	264.1	
Initial Vol or Wt (ml or g)	100	100	-0-	250.8	
Net Increase (ml or g)	88	2	-0-	5.3	

Rinse Data :	Imp. 1	Imp. 2	Imp. 3	Imp. 4	Imp. 5
Rinse Solution :					
Rinse Volume (ml)					
Final Sample Volume, Including Rinse (ml)					

Total Water Collected (TWW) [Imp. + SG*] = 95.3 ml
* Converted to ml by dividing by the density of H_2O (1 g/ml)

Meter Pressure (Pm) = 30.05 + 1.0 = 30.12
Stack Pressure (Ps) = 30.05 + -1.30 (13.6) = 29.95 (13.6)
% Moisture = (0.04707 x TWW) x 100 / Vm(std) + (0.04707 x TWW) =

Pts	Time Minutes (24 hrs.)	Dry Gas Meter Reading ft^3	Inches H_2O ΔP	Inches H_2O ΔH	Line Vac. "Hg	Temperature °F Stack T_s	Probe	Heater Box	Last Imp.	Meter Inlet	Meter Outlet
1	16 40	770.324	N/A	1.0	3	N/A	N/A	N/A	53	60	60
2	16 45	773.20			3				52	60	60
3	16 50	776.04			3				52	61	60
4	16 55	778.89			3				53	61	61
5	17 00	781.74			3				53	60	61
6	17 05	784.57			3				54	60	61
7	17 10	787.42			3				54	61	62
8	17 15	790.24			3				55	60	62
9	17 20	793.09			3				56	60	62
10	17 25	795.93			3				57	60	62
11	17 30	798.76			3				57	60	62
12	17 35	801.60	↓	↓	3	↓	↓	↓	58	60	62
stop	17 40	804.479	—	—	—	—	—	—	—	—	—
	✓	✓		✓						✓	
	60 mins Sample Time	34.155 Net Volume	N/A Avg. √ΔP	1.0 Avg. ΔH		N/A Avg. Stack	Check Init:			61 Avg. Meter (AMT)	

Vm(std) = ____ (Net Volume) x ____ (DGMCF) x 528 std Temp (R) x ____ AMT (R) Pm = ____ / 29.92 std press. dscf

Stork Testing & Metallurgical Consulting, Inc.
Houston, Texas

Source: **Conoco Phillips-unit 28 SRU INC. (Sweeny,Tx)** **Analyst:** VG

NO_x, CO, O_2 and SO_2 Calibration - Adjusted for Zero and Span Drift and Bias **STMC Project:** HOU002549P

Analyzer	Calibration Span of Analyzer ppm, % *	Span Gas Concentration ppm, % *	Span Gas Cylinder Number	Expiration Date	Calibration Error Value Zero	Calibration Error Value Mid Level	Fuel F-Factor HHV dscf/mmBtu	Gross Caloric Value HHV Btu/ft^3
CO	93.10	46.20	CC43872	4/15/2013	-0.01	47.01	8,710.00	na
NO_x	94.00	51.70	CC261685	2/17/2012	0.09	51.39		
O_2	20.70	11.10	CC92287	10/5/2013	0.08	11.06		
SO_2	476.00	250.00	CC49084	7/15/2012	-0.22	252.84		

	CO	NOx	O2	SO2
Initial Zero Bias - % of Span	-0.37	0.72	0.05	-0.03
Initial Span Bias - % of Span	-0.35	-0.53	0.05	0.44

Drift and Bias Limits	
Drift	+/- 3% of Span
Bias	+/- 5% of Span

Run No.	Zero Gas Initial Reading	Zero Gas Final Reading	Zero Gas Difference ppm, % *	Zero Gas % Drift	Zero Gas % Bias	Span Gas Initial Reading	Span Gas Final Reading	Span Gas Difference ppm, % *	Span Gas % Drift	Span Gas % Bias
1 CO	-0.35	0.34	0.69	0.74	0.38	46.68	47.04	0.36	0.39	0.03
NO_x	0.77	0.34	-0.43	-0.46	0.27	50.89	50.96	0.07	0.07	-0.46
O_2	0.09	0.12	0.03	0.14	0.19	11.07	10.95	-0.12	-0.58	-0.53
SO_2	-0.36	2.17	2.53	0.53	0.50	254.92	254.06	-0.86	-0.18	0.26
2 CO	0.34	0.21	-0.13	-0.14	0.24	47.04	47.00	-0.04	-0.04	-0.01
NO_x	0.34	0.19	-0.15	-0.16	0.11	50.96	50.84	-0.12	-0.13	-0.59
O_2	0.12	0.18	0.06	0.29	0.48	10.95	10.87	-0.08	-0.39	-0.92
SO_2	2.17	5.02	2.85	0.60	1.10	254.06	255.30	1.24	0.26	0.52
3 CO	0.21	-0.22	-0.43	-0.46	-0.23	47.00	46.71	-0.29	-0.31	-0.32
NO_x	0.19	0.37	0.18	0.19	0.30	50.84	50.36	-0.48	-0.51	-1.10
O_2	0.18	0.10	-0.08	-0.39	0.10	10.87	11.03	0.16	0.77	-0.14
SO_2	5.02	5.89	0.87	0.18	1.28	255.30	255.39	0.09	0.02	0.54

EQUATIONS: % Drift =[(Final Reading - Initial Reading)/Instrument Span] x 100

% Bias =[(Final Reading - Calibration Error Value) /Instrument Span] x 100

(NOTE: Initial Bias uses Initial Reading in place of Final Reading)

Run No.	Uncorrected Stack Gas Concentration ppm, % *	Average of Zero Gas	Average of Span Gas	Corrected Stack Gas Concentration ppm, % *	C Concentration in lb/dscf	C Concentration ppmvd@0%O2	Date Time
1 CO	10.07	0.00	46.86	9.93	7.221E-07	12.16	12/7/2010
NO_x	19.33	0.56	50.93	19.27	2.302E-06	23.60	1240-1340
O_2	3.87	0.11	11.01	3.83			
SO_2	75.21	0.91	254.49	73.25	1.217E-05	89.70	
2 CO	6.57	0.28	47.02	6.22	4.523E-07	7.63	12/7/2010
NO_x	18.77	0.27	50.90	18.89	2.257E-06	23.16	1445-1545
O_2	3.88	0.15	10.91	3.85			
SO_2	69.07	3.60	254.68	65.19	1.083E-05	79.90	
3 CO	4.48	-0.01	46.86	4.42	3.215E-07	5.45	12/7/2010
NO_x	19.68	0.28	50.60	19.93	2.381E-06	24.57	1650-1750
O_2	3.98	0.14	10.95	3.94			
SO_2	66.66	5.46	255.35	61.23	1.018E-05	75.47	
Avg. CO				6.86	4.986E-07	8.41	
NO_x				19.37	2.313E-06	23.77	
O_2				3.87			
SO_2				66.56	1.106E-05	81.69	

Run No.	Method 19 Calculations: Emission Rate lb/mmBtu **	Fuel Flow Rate MSCFH	Emission Rate lb/hr	Methods 1-4 Calculation: Q_{sd} dscf/hr	Emission Rate lb/hr	Allowable Emission Rate lb/hr	Percent of Allowable Emission Rate
1 CO	0.0077	NA	NA	2,038,059.0	1.47	20.20	7.3
NO_x	0.0245	NA	NA	2,038,059.0	4.69	8.13	57.7
SO_2	0.1298	NA	NA	2,038,059.0	24.81	115.42	21.5
2 CO	0.0048	NA	NA	2,030,072.5	0.92	20.20	4.5
NO_x	0.0241	NA	NA	2,030,072.5	4.58	8.13	56.4
SO_2	0.1157	NA	NA	2,030,072.5	21.99	115.42	19.1
3 CO	0.0035	NA	NA	2,025,659.1	0.65	20.20	3.2
NO_x	0.0256	NA	NA	2,025,659.1	4.82	8.13	59.3
SO_2	0.1092	NA	NA	2,025,659.1	20.61	115.42	17.9
Avg. CO	0.0053	NA	NA	2,031,263.5	1.01	20.20	5.0
NO_x	0.0247	NA	NA	2,031,263.5	4.70	8.13	57.8
SO_2	0.1182	NA	NA	2,031,263.5	22.47	115.42	19.5

Note * O_2 is expressed in percent. ** lb/mmBtu is calculated using 0% O_2 and the HHV F-Factor.

EQUATIONS: lb/mmBtu = C x F x [20.9/(20.9-%O2)]

Method 19 lb/hr = lb/mmBtu x Fuel Flow Rate x Gross Calorific Value 1x10-6

Method 1-4 lb/hr = C x Qsd

Stork Testing & Metallurgical Consulting, Inc.
Houston, Texas

Source: Conoco Phillips-Unit 28 SRU Inc. (Sweeny,Tx) **Analyst:** VG
VOC Calculation - Adjusted for Zero and Span Drift and Bias **Wet Basis** **STMC Project:** HOU002549P

Span of THC Analyzer =	100	Concentration of THC Span Gas =	50.20
Cylinder Number :	CC58519	Expiration Date:	8/15/2013

Run No.	Zero Gas Initial Reading	Zero Gas Final Reading	Zero Gas Difference ppm, wet	Zero Gas % Drift	Span Gas Initial Reading	Span Gas Final Reading	Span Gas Difference ppm, wet	Span Gas % Drift
1	0.01	0.11	0.10	0.10	50.59	49.88	-0.71	-0.71
2	0.11	0.13	0.02	0.02	49.88	50.39	0.51	0.51
3	0.13	0.10	-0.03	-0.03	50.39	51.44	1.05	1.05

Run No. 1 Injection Time or No.	Run No. 1 Methane ppmv, wet	Run No. 1 Ethane ppmv, wet	Run No. 2 Injection Time or No.	Run No. 2 Methane ppmv, wet	Run No. 2 Ethane ppmv, wet	Run No. 3 Injection Time or No.	Run No. 3 Methane ppmv, wet	Run No. 3 Ethane ppmv, wet
1	NA	NA	1	NA	NA	1	NA	NA
2	NA	NA	2	NA	NA	2	NA	NA
3	NA	NA	3	NA	NA	3	NA	NA

Run No.	Uncorrected Stack Gas Conc. ppmv, wet	Average of Zero Gas ppmv	Average of Span Gas ppmv	Bias Adj. Stack Gas Conc. ppmv, wet	Average Methane Conc. ppmv, wet	Average Ethane Conc. ppmv, wet	Moisture %	Corrected VOC* Conc. ppmv, wet
1	0.10	0.06	50.24	0.04	NA	NA	9.88	0.04
2	0.09	0.12	50.14	-0.03	NA	NA	11.77	-0.03
3	0.09	0.12	50.92	-0.02	NA	NA	11.47	-0.02

Run No.	Corrected VOC** Conc. ppmv, dry	VOC** C Conc. lb/dscf	Q_{sd} dscf/hr	VOC Emission Rate lb/hr	Allowable Limit lb/hr	Percent of Allowable	Date	Time
1	< 0.10	< 1.142E-08	2,038,059.0	< 0.023	0.93	< 2.5	12/7/2012	1240-1340
2	< 0.10	< 1.142E-08	2,030,072.5	< 0.023	0.93	< 2.5	12/7/2012	1445-1545
3	< 0.10	< 1.142E-08	2,025,659.1	< 0.023	0.93	< 2.5	12/7/2012	1650-1750
Average	< 0.10	< 1.142E-08	2,031,263.5	< 0.023	0.930	< 2.5		

Note:
% Drift = ((Final Reading - Initial Reading) / Span) x 100
Bias Adj. $_{\text{as propane}}$ = (Uncorr. Stack Gas - Avg. Zero) x (Span Gas Conc. / (Avg. Span Gas - Avg. Zero))
* Corr. VOC $_{\text{as propane}}$ = ((Bias Adj. x 3) - (Avg. Methane + (Avg. Ethane x 2))) / 3
** Corr. VOC $_{\text{as propane}}$ = ppm wet / (1 - ($\%H_2O$ / 100))
C (lb / dscf) = (Corr. VOC x 44 x 6.242 x 10^{-8}) / 24.04
VOC (lb/hr) = C x Q_{sd}
Stork calculates emissions based upon a detectable limit of 0.10 ppmvd (result adjusted by drift and bias).
Methane/ethane were not analyzed as the total VOCs determined by the THC analyzer were below the instrument detection limit.

Conoco Phillips
Unit 28 SRU Incinerator
Sweeny, Texas
HOU002549P
File Name: 12-07-10_12-31

Date & Time	CO	NOx	O2	THC	SO2
M/D/Y H:M	ppm	ppm	%	ppm	ppm
12/7/2010 12:41	12.33	19.83	3.89	0.12	60.74
12/7/2010 12:42	10.96	19.83	3.8	0.12	63.4
12/7/2010 12:43	10.76	19.58	3.87	0.12	62.9
12/7/2010 12:44	11.39	19.76	3.84	0.12	63.09
12/7/2010 12:45	11.99	19.58	3.91	0.12	64.93
12/7/2010 12:46	12.09	19.64	3.81	0.12	66.23
12/7/2010 12:47	10.23	19.67	3.82	0.11	68.42
12/7/2010 12:48	8.83	20.03	3.87	0.11	70.04
12/7/2010 12:49	9.79	19.53	3.93	0.11	70.38
12/7/2010 12:50	9.66	19.55	3.91	0.11	71.01
12/7/2010 12:51	9.69	19.32	3.87	0.11	71.64
12/7/2010 12:52	10.68	19.31	3.85	0.11	71.88
12/7/2010 12:53	10.96	19.25	3.93	0.11	72.16
12/7/2010 12:54	10.44	19.54	3.88	0.11	72
12/7/2010 12:55	8.94	19.48	3.85	0.11	73.45
12/7/2010 12:56	9.18	19.36	3.89	0.11	73.73
12/7/2010 12:57	10.27	19.12	3.91	0.11	73.38
12/7/2010 12:58	10.93	19.24	3.94	0.1	73.63
12/7/2010 12:59	12.02	19.28	3.96	0.1	73.27
12/7/2010 13:00	11.24	19.45	3.92	0.1	73.69
12/7/2010 13:01	10.9	19.3	3.86	0.1	73.77
12/7/2010 13:02	10.72	19.35	3.89	0.1	74.15
12/7/2010 13:03	10.89	19.38	3.84	0.1	73.9
12/7/2010 13:04	9.35	19.57	3.87	0.09	74.58
12/7/2010 13:05	9.01	19.44	3.84	0.09	75.3
12/7/2010 13:06	8.76	19.39	3.79	0.1	75.29
12/7/2010 13:07	9.31	19.19	3.84	0.09	76.28
12/7/2010 13:08	10.28	19.31	3.89	0.1	76.11
12/7/2010 13:09	11.47	19.17	3.93	0.1	75.99
12/7/2010 13:10	11.49	19.51	3.89	0.1	76.64
12/7/2010 13:11	9.59	19.52	3.89	0.1	77.56
12/7/2010 13:12	9.18	19.22	3.83	0.09	78.32
12/7/2010 13:13	9	19.31	3.86	0.1	79.11
12/7/2010 13:14	9.12	19.31	3.88	0.09	79.45
12/7/2010 13:15	10.67	19.06	3.93	0.09	78.77
12/7/2010 13:16	12.08	18.97	3.93	0.09	78.89
12/7/2010 13:17	11.02	19.21	3.85	0.09	79.76
12/7/2010 13:18	8.55	19.42	3.74	0.09	81.14
12/7/2010 13:19	6.97	19.35	3.73	0.09	81.94
12/7/2010 13:20	9.15	19.15	3.85	0.09	81.23
12/7/2010 13:21	11.42	19.04	3.93	0.09	80.49
12/7/2010 13:22	12.33	19.18	3.9	0.09	80.26
12/7/2010 13:23	10.11	19.31	3.8	0.09	80.96
12/7/2010 13:24	7.59	19.21	3.66	0.08	82.39
12/7/2010 13:25	6.91	19.38	3.83	0.09	82.38
12/7/2010 13:26	8.09	19.08	3.87	0.08	80.65
12/7/2010 13:27	9.99	19.14	3.92	0.08	79.59
12/7/2010 13:28	10.89	19.14	3.89	0.08	78.33
12/7/2010 13:29	9.82	19.38	3.86	0.08	78.29
12/7/2010 13:30	9.34	19.41	3.85	0.08	77.29
12/7/2010 13:31	8.49	19.21	3.82	0.08	77.85
12/7/2010 13:32	9.87	19.02	3.87	0.08	77.06
12/7/2010 13:33	9.8	19.21	3.9	0.08	75.86
12/7/2010 13:34	10.65	19.28	3.9	0.09	78.84
12/7/2010 13:35	11.23	19.01	3.87	0.09	78
12/7/2010 13:36	10.01	19.35	3.85	0.1	75.99
12/7/2010 13:37	9.44	18.95	3.83	0.09	76.88
12/7/2010 13:38	8.94	19.18	3.88	0.09	78.92
12/7/2010 13:39	9.39	19.15	3.86	0.1	77.43
12/7/2010 13:40	9.83	18.98	3.89	0.1	76.95
Avg =	**10.07**	**19.33**	**3.87**	**0.10**	**75.21**

Conoco Phillips
Unit 28 SRU Incinerator
Sweeny, Texas
HOU002549P
File Name: 12-07-10_12-31

Date & Time	CO	NOx	O2	THC	SO2
M/D/Y H:M	ppm	ppm	%	ppm	ppm
12/7/2010 14:46	8.33	18.66	3.75	0.06	76.45
12/7/2010 14:47	8.39	18.86	3.79	0.06	76.31
12/7/2010 14:48	8.26	18.84	3.79	0.06	75.25
12/7/2010 14:49	8.36	18.82	3.82	0.06	75.09
12/7/2010 14:50	9.29	18.57	3.82	0.06	75.2
12/7/2010 14:51	8.38	18.79	3.85	0.06	75.34
12/7/2010 14:52	7.74	18.83	3.82	0.06	75.53
12/7/2010 14:53	7.14	18.71	3.78	0.06	76.4
12/7/2010 14:54	6.21	18.89	3.77	0.05	77.29
12/7/2010 14:55	7.83	18.82	3.84	0.06	76.97
12/7/2010 14:56	8.88	18.85	3.9	0.06	76.36
12/7/2010 14:57	7.91	18.83	3.87	0.06	76.39
12/7/2010 14:58	6.08	19.03	3.84	0.06	77.24
12/7/2010 14:59	5.19	19.05	3.8	0.05	77.65
12/7/2010 15:00	5.44	18.87	3.93	0.06	74.88
12/7/2010 15:01	6.14	18.97	3.88	0.06	72.4
12/7/2010 15:02	7.88	18.57	3.96	0.06	70.91
12/7/2010 15:03	9.04	18.64	3.95	0.06	70.21
12/7/2010 15:04	9.29	18.67	3.88	0.05	70.53
12/7/2010 15:05	7.05	19.01	3.83	0.06	71.71
12/7/2010 15:06	5.76	19.11	3.88	0.05	72.22
12/7/2010 15:07	6	18.98	3.85	0.06	71.57
12/7/2010 15:08	6.73	18.85	3.95	0.06	71.47
12/7/2010 15:09	7.65	18.81	4.03	0.06	70.64
12/7/2010 15:10	8.25	18.78	4.04	0.06	69.89
12/7/2010 15:11	8.09	18.73	3.99	0.06	70.08
12/7/2010 15:12	6.42	18.78	3.86	0.06	70.95
12/7/2010 15:13	5.77	19.18	3.9	0.08	71.97
12/7/2010 15:14	6.23	18.76	3.91	0.1	71.9
12/7/2010 15:15	7.23	18.71	3.9	0.1	71.34
12/7/2010 15:16	6.69	18.61	3.93	0.11	71.74
12/7/2010 15:17	6.25	19.11	3.83	0.26	70.35
12/7/2010 15:18	4.78	18.94	3.87	0.17	69.77
12/7/2010 15:19	5.83	18.8	3.87	0.08	68.48
12/7/2010 15:20	6.4	18.74	3.86	0.1	67.44
12/7/2010 15:21	6.05	18.87	3.83	0.08	67.94
12/7/2010 15:22	6.13	18.58	3.85	0.08	67.51
12/7/2010 15:23	6.15	18.7	3.89	0.17	68.73
12/7/2010 15:24	5.61	18.63	3.85	0.14	67.01
12/7/2010 15:25	5.48	19.03	3.78	0.09	66.9
12/7/2010 15:26	5.29	18.81	3.85	0.07	69.48
12/7/2010 15:27	5.34	18.85	3.93	0.11	70
12/7/2010 15:28	4.62	18.58	3.89	0.11	67.66
12/7/2010 15:29	5.07	18.83	3.92	0.14	63.79
12/7/2010 15:30	4.72	18.63	3.84	0.11	61.1
12/7/2010 15:31	6.68	18.11	3.84	0.11	60.94
12/7/2010 15:32	5.43	18.41	3.87	0.12	62.48
12/7/2010 15:33	5.59	18.61	3.85	0.1	62.16
12/7/2010 15:34	4.77	18.55	3.84	0.1	61.7
12/7/2010 15:35	5	18.68	3.91	0.1	60.49
12/7/2010 15:36	5.28	18.6	3.89	0.08	61.14
12/7/2010 15:37	6.81	18.6	3.97	0.08	62.71
12/7/2010 15:38	6.83	18.7	3.93	0.19	63.04
12/7/2010 15:39	5.36	18.58	3.88	0.18	60.79
12/7/2010 15:40	5.62	18.66	3.9	0.14	57.88
12/7/2010 15:41	5.17	18.83	3.86	0.21	60.09
12/7/2010 15:42	4.98	18.97	3.9	0.19	60.12
12/7/2010 15:43	5.75	18.79	3.94	0.14	56.65
12/7/2010 15:44	7.4	18.59	3.88	0.09	61.26
12/7/2010 15:45	8.25	18.61	3.91	0.13	64.41
Avg =	**6.57**	**18.77**	**3.88**	**0.09**	**69.07**

Conoco Phillips
Unit 28 SRU Incinerator
Sweeny, Texas
HOU002549P
File Name: 12-07-10_12-31

Date & Time	CO	NOx	O2	THC	SO2
M/D/Y H:M	ppm	ppm	%	ppm	ppm
12/7/2010 16:51	3.78	19.58	3.9	0.14	68.57
12/7/2010 16:52	3.36	19.52	3.91	0.14	66.58
12/7/2010 16:53	3.23	19.32	3.94	0.12	63.35
12/7/2010 16:54	3.13	19.81	3.96	0.1	61.01
12/7/2010 16:55	3.12	19.78	3.94	0.08	60.4
12/7/2010 16:56	3.49	19.58	3.98	0.06	63.4
12/7/2010 16:57	4.93	19.41	3.99	0.11	66.31
12/7/2010 16:58	4.57	19.92	4.01	0.13	66.61
12/7/2010 16:59	4.35	19.75	3.96	0.12	63.59
12/7/2010 17:00	4.83	19.75	4	0.1	61.38
12/7/2010 17:01	4.49	19.82	3.95	0.08	63.9
12/7/2010 17:02	4.97	19.78	4.01	0.06	66.6
12/7/2010 17:03	5.32	19.72	3.94	0.06	67.81
12/7/2010 17:04	4.39	19.92	3.95	0.06	67.35
12/7/2010 17:05	4.79	19.65	3.92	0.06	67.86
12/7/2010 17:06	5.43	19.65	3.98	0.07	68.6
12/7/2010 17:07	4.63	19.45	4	0.13	67.77
12/7/2010 17:08	4.93	19.48	3.99	0.13	65.23
12/7/2010 17:09	5.39	19.48	3.99	0.11	59.58
12/7/2010 17:10	4.86	19.68	3.94	0.09	58.11
12/7/2010 17:11	5.16	19.42	3.99	0.06	61.69
12/7/2010 17:12	7.06	19.55	4.03	0.06	65.86
12/7/2010 17:13	5.06	19.85	3.97	0.1	67.09
12/7/2010 17:14	3.56	19.68	3.96	0.13	66.59
12/7/2010 17:15	3.26	19.78	3.99	0.12	62.42
12/7/2010 17:16	4.09	19.52	3.99	0.11	61.13
12/7/2010 17:17	4.5	19.58	4	0.08	63.5
12/7/2010 17:18	6.06	19.48	3.97	0.06	67.46
12/7/2010 17:19	6.89	19.45	3.97	0.07	70.9
12/7/2010 17:20	5.66	19.58	3.98	0.08	71.16
12/7/2010 17:21	4.16	19.69	3.97	0.08	70.67
12/7/2010 17:22	3.89	19.58	4.01	0.07	69.05
12/7/2010 17:23	4.09	19.69	3.97	0.08	69.05
12/7/2010 17:24	3.73	19.74	3.99	0.11	68.98
12/7/2010 17:25	3.33	19.45	3.99	0.1	66.51
12/7/2010 17:26	3.66	19.45	4.05	0.09	65.01
12/7/2010 17:27	4.43	19.42	3.97	0.07	65.35
12/7/2010 17:28	5.2	19.58	4.05	0.06	67.75
12/7/2010 17:29	6.46	19.45	3.98	0.06	70.44
12/7/2010 17:30	6.14	19.59	4.03	0.06	71.66
12/7/2010 17:31	6	19.76	4.02	0.06	71.83
12/7/2010 17:32	6.21	19.81	4.01	0.06	72.02
12/7/2010 17:33	5.41	19.68	4.01	0.06	71.75
12/7/2010 17:34	5.62	19.52	4.01	0.06	71.86
12/7/2010 17:35	4.16	19.6	3.97	0.06	72.14
12/7/2010 17:36	4.63	19.49	4.01	0.06	71.89
12/7/2010 17:37	4.72	19.65	4.02	0.06	71.97
12/7/2010 17:38	4.79	19.42	3.99	0.07	70.76
12/7/2010 17:39	4.67	19.28	4	0.06	67.6
12/7/2010 17:40	5.2	19.41	3.97	0.06	66.7
12/7/2010 17:41	5.31	19.32	3.95	0.06	67.74
12/7/2010 17:42	4.6	19.54	3.99	0.09	68.16
12/7/2010 17:43	3.54	19.46	3.95	0.14	66.88
12/7/2010 17:44	2.43	20.66	3.92	0.13	64.96
12/7/2010 17:45	2.69	19.81	4	0.11	61.57
12/7/2010 17:46	2.47	19.58	3.99	0.11	62.56
12/7/2010 17:47	2.78	19.55	4	0.11	67.52
12/7/2010 17:48	3.32	19.23	3.98	0.13	70.81
12/7/2010 17:49	2.75	23.23	3.95	0.13	66.78
12/7/2010 17:50	2.96	19.92	4	0.09	57.52
Avg =	**4.48**	**19.68**	**3.98**	**0.09**	**66.66**

Conoco Phillips
Unit 28 SRU Incinerator
Sweeny, Texas
HOU002549P
File Name: 12-07-10_01-37

Date and Time MM/DD/YY HH:MM	CO ppm	NOx ppm	O2 %	THC ppm	CO2 %	SO2 ppm	Flow lpm
12/7/2010 01:37							
12/7/2010 01:38	-0.72	1.69	-0.02	291.03		-0.92	
12/7/2010 01:39	-0.38	0.09	-0.02	-274.57		-1.04	
12/7/2010 01:40	0.36	0.09	-0.03	-2.58		-1.01	
12/7/2010 01:41	0.08	0.09	-0.02	-2.46		-1.08	
12/7/2010 01:42	-0.08	0.09	-0.02	-2.48		-1.19	
12/7/2010 01:43	0.02	0.09	-0.03	-2.49		-0.21	
12/7/2010 01:44	0.19	0.09	-0.02	-2.84		-0.22	
12/7/2010 01:45	2.49	16.77	12.61	-2.01		-0.22	
12/7/2010 01:46	70.75	96.89	20.31	53.71		-0.23	
12/7/2010 01:47	102.52	100.83	20.65	-1.31		-0.22	

Conoco Phillips
Unit 28 SRU Incinerator
Sweeny, Texas
HOU002549P
File Name: 12-07-10_07-06

Date and Time MM/DD/YY HH:MM	CO ppm	NOx ppm	O2 %	THC ppm	CO2 %	SO2 ppm	Flow lpm
12/7/2010 07:06	97.21	96.74	9.66	0.02		-0.23	
12/7/2010 07:07	33.74	13.91	0.31	0.00		-0.22	
12/7/2010 07:08	4.13	0.36	0.08	-0.01		-0.21	
12/7/2010 07:09	4.51	0.29	0.08	-0.01		-0.24	
12/7/2010 07:10	2.41	0.09	0.08	-0.01		-0.22	
12/7/2010 07:11	0.42	47.74	17.89	49.00		-0.24	
12/7/2010 07:12	-0.07	100.43	20.59	93.97		-0.23	
12/7/2010 07:13	-0.01	100.80	20.61	90.23		-0.23	
12/7/2010 07:14	-0.32	100.70	12.66	84.63		-0.39	
12/7/2010 07:15	-0.33	100.57	6.53	84.28		29.82	
12/7/2010 07:16	17.58	99.50	9.87	83.91		448.84	
12/7/2010 07:17	90.19	94.22	11.04	78.85		473.01	
12/7/2010 07:18	93.69	94.29	11.06	29.91		473.23	
12/7/2010 07:19	94.15	94.36	10.04	29.73		470.80	
12/7/2010 07:20	94.27	94.22	-0.02	29.42		469.93	
12/7/2010 07:21	94.19	43.79	0.09	41.63		469.81	
12/7/2010 07:22	94.55	50.19	-0.07	50.48		473.89	
12/7/2010 07:23	94.10	49.76	-0.08	50.30		477.08	
12/7/2010 07:24	68.88	49.22	-0.05	50.12		477.36	
12/7/2010 07:25	36.07	49.89	2.41	32.32		477.51	
12/7/2010 07:26	42.01	51.13	11.02	0.23		477.45	
12/7/2010 07:27	43.51	51.39	11.07	0.13		471.39	
12/7/2010 07:28	47.29	50.85	11.08	0.17		276.14	
12/7/2010 07:29	48.73	46.12	2.50	0.26		252.84	
12/7/2010 07:30	47.15	14.91	0.13	0.16		253.04	
12/7/2010 07:31	49.13	5.18	0.12	0.16		253.19	
12/7/2010 07:32	46.74	2.44	0.11	0.14		253.17	
12/7/2010 07:33	47.01	1.63	0.11	0.14		253.12	
12/7/2010 07:34	47.01	1.33	0.10	0.14		253.12	
12/7/2010 07:35	47.11	1.06	0.10	0.15		253.16	
12/7/2010 07:36	47.24	0.89	0.10	0.14		253.07	
12/7/2010 07:37	42.27	0.79	0.08	0.12		246.08	
12/7/2010 07:38	24.94	0.69	0.09	0.39		30.89	
12/7/2010 07:39	-0.05	5.20	11.65	0.81		1.13	
12/7/2010 07:40	-2.44	21.96	0.33	0.48		2.27	

Response
@ 85 sec
to 90 sec

12/7/2010 07:41	-2.56	17.25	0.24	0.40		1.20
12/7/2010 07:42	-2.81	16.52	0.22	0.47		0.63
12/7/2010 07:43	-2.87	19.12	0.22	0.47		0.59
12/7/2010 07:44	-2.81	19.83	0.22	0.48		0.52
12/7/2010 07:45	-2.80	20.03	0.22	0.49		0.41
12/7/2010 07:46	-2.58	20.09	0.22	0.49		0.48
12/7/2010 07:47	-2.59	20.16	0.22	0.49		0.49
12/7/2010 07:48	-2.61	20.23	0.22	0.48		0.56
12/7/2010 07:49	-2.66	20.29	0.21	0.49		0.39
12/7/2010 07:50	-2.74	20.33	0.22	0.46		0.47
12/7/2010 07:51	-2.73	20.39	1.59	0.53		0.28
12/7/2010 07:52	-2.74	21.39	0.21	0.48		0.37
12/7/2010 07:53	-2.66	20.43	0.21	0.47		0.26
12/7/2010 07:54	-2.67	20.77	0.21	0.43		0.32
12/7/2010 07:55	13.57	13.66	0.09	0.21		0.05
12/7/2010 07:56	45.96	1.36	0.06	0.23		-0.36
12/7/2010 07:57	46.17	0.83	0.06	0.05		-0.64
12/7/2010 07:58	46.68	0.77	0.06	0.05		-0.69
12/7/2010 07:59	43.81	1.47	0.14	0.16		-0.53
12/7/2010 08:00	3.10	44.22	0.21	0.23		0.16
12/7/2010 08:01	-1.21	49.70	0.21	0.26		0.09
12/7/2010 08:02	3.51	50.40	0.21	0.22		-0.03
12/7/2010 08:03	0.08	50.89	0.21	0.21		0.02
12/7/2010 08:04	0.36	50.88	0.20	0.17		-0.07
12/7/2010 08:05	0.33	23.23	0.07	0.03		128.84
12/7/2010 08:06	0.26	0.95	0.07	0.03		240.28
12/7/2010 08:07	-0.07	0.69	0.07	0.03		255.54
12/7/2010 08:08	-0.01	0.69	0.06	0.03		273.23
12/7/2010 08:09	-0.35	0.66	0.06	0.03		245.05
12/7/2010 08:10	-3.12	0.49	0.06	0.03		254.92
12/7/2010 08:11	-3.24	0.49	0.06	0.03		246.86
12/7/2010 08:12	-3.41	0.49	0.06	-2.27		258.57
12/7/2010 08:13	-3.48	0.50	0.11	0.92		247.67
12/7/2010 08:14	-3.75	1.19	0.32	1.82		248.65
12/7/2010 08:15	-3.65	1.45	1.32	1.31		243.22
12/7/2010 08:16	-2.71	1.61	0.20	0.15		28.81
12/7/2010 08:17	-2.05	0.50	0.18	0.15		1.65
12/7/2010 08:18	0.98	0.69	0.19	0.16		1.21
12/7/2010 08:19	1.11	0.69	0.24	0.16		0.19
12/7/2010 08:20	1.39	0.69	0.24	0.07		-0.71
12/7/2010 08:21	1.36	0.69	0.24	0.04		-0.80
12/7/2010 08:22	1.09	0.62	0.24	0.05		-0.89
12/7/2010 08:23	0.96	0.49	0.24	0.04		-0.93
12/7/2010 08:24	1.53	0.49	0.24	0.04		-1.07
12/7/2010 08:25	2.29	0.49	0.23	0.05		-1.06
12/7/2010 08:26	2.56	0.49	0.23	0.05		-1.15
12/7/2010 08:27	2.43	0.49	0.23	0.05		-1.16
12/7/2010 08:28	0.72	0.49	0.23	0.05		-1.14

Conoco Phillips
Unit 28 SRU Incinerator
Sweeny, Texas
HOU002549P
File Name: 12-07-10_10-14

Date and Time	CO	NOx	O2	THC	CO2	SO2	Flow
MM/DD/YY HH:MM	ppm	ppm	%	ppm	%	ppm	lpm
12/7/2010 10:15				0.94			
12/7/2010 10:16				0.99			
12/7/2010 10:17				1.12			
12/7/2010 10:18				0.17			
12/7/2010 10:19				0.10			
12/7/2010 10:20				0.10			
12/7/2010 10:21				0.10			
12/7/2010 10:22				0.10			
12/7/2010 10:23				0.10			
12/7/2010 10:24				0.39			

Recal
Zero Drift
Testing not
starting within
2hrs of first
Cal.

12/7/2010 10:26	1.17
12/7/2010 10:27	0.36
12/7/2010 10:28	0.47
12/7/2010 10:29	-0.01
12/7/2010 10:30	0.01
12/7/2010 10:31	43.34
12/7/2010 10:32	83.27
12/7/2010 10:33	84.73
12/7/2010 10:34	84.83
12/7/2010 10:35	56.40
12/7/2010 10:36	29.97
12/7/2010 10:37	29.98
12/7/2010 10:38	42.35
12/7/2010 10:39	50.78
12/7/2010 10:40	50.99
12/7/2010 10:41	51.15
12/7/2010 10:42	50.59

Conoco Phillips
Unit 28 SRU Incinerator
Sweeny, Texas
HOU002549P
File Name: 12-07-10_10-55

Date and Time	CO	NOx	O2	THC	CO2	SO2	Flow
MM/DD/YY HH:MM	ppm	ppm	%	ppm	%	ppm	lpm
12/7/2010 10:56	-2.50	0.27	20.19	1.12		-1.38	
12/7/2010 10:57	-1.96	0.28	20.77	1.17		-1.32	
12/7/2010 10:58	-1.63	0.28	20.77	1.21		-1.52	
12/7/2010 10:59	-0.73	0.28	20.76	1.15		-1.49	
12/7/2010 11:00	-0.48	0.28	20.76	1.17		-1.39	
12/7/2010 11:01	-0.44	0.28	20.76	1.18		-1.37	
12/7/2010 11:02	-0.35	0.28	20.76	1.18		-1.45	
12/7/2010 11:03	-0.26	0.28	20.76	1.20		-1.37	
12/7/2010 11:04	-0.19	0.28	20.76	1.19		-1.40	
12/7/2010 11:05	-0.16	0.28	20.75	1.20		-1.41	
12/7/2010 11:06	-0.12	0.28	20.76	1.15		-1.45	
12/7/2010 11:07	-0.12	0.28	20.76	1.12		-1.42	
12/7/2010 11:08	-0.14	0.28	20.76	1.14		-1.38	
12/7/2010 11:09	-0.15	0.28	20.76	1.13		-1.44	
12/7/2010 11:10	-0.13	0.28	20.76	1.12		-1.44	
12/7/2010 11:11	-0.21	0.28	20.76	1.12		-1.46	
12/7/2010 11:12	-0.25	0.28	20.76	1.10		-1.51	
12/7/2010 11:13	-0.16	0.28	20.76	1.11		-1.46	
12/7/2010 11:14	-0.24	0.28	20.76	1.10		-1.54	
12/7/2010 11:15	-0.29	0.28	20.76	1.09		-1.53	
12/7/2010 11:16	-0.29	0.28	20.76	1.07		-1.59	
12/7/2010 11:17	-0.25	0.28	20.76	1.08		-1.59	
12/7/2010 11:18	-0.23	0.28	20.76	1.10		-1.59	
12/7/2010 11:19	-0.22	0.25	20.76	1.05		-1.59	
12/7/2010 11:20	-0.20	0.21	20.76	1.14		-1.44	
12/7/2010 11:21	-0.17	0.11	20.76	1.10		-1.58	
12/7/2010 11:22	-0.07	0.08	20.76	1.09		-1.54	
12/7/2010 11:23	-0.05	0.08	20.76	1.16		-1.59	
12/7/2010 11:24	0.01	0.08	20.75	1.15		-1.55	
12/7/2010 11:25	0.03	0.08	20.75	1.05		-1.61	
12/7/2010 11:26	0.05	0.08	20.76	1.07		-1.60	
12/7/2010 11:27	0.09	0.08	20.76	1.06		-1.61	
12/7/2010 11:28	0.05	0.08	20.76	1.07		-1.71	
12/7/2010 11:29	0.06	0.08	20.75	1.05		-1.61	
12/7/2010 11:30	0.02	0.08	20.75	1.03		-1.61	
12/7/2010 11:31	0.03	0.08	20.75	1.06		-1.57	
12/7/2010 11:32	0.04	0.08	20.75	1.04		-1.54	
12/7/2010 11:33	0.01	0.08	20.75	1.05		-1.64	
12/7/2010 11:34	0.01	0.08	20.75	1.05		-1.54	
12/7/2010 11:35	0.05	0.08	20.75	1.05		-1.52	

ɔco Phillips
.t 28 SRU Incinerator
Sweeny, Texas
H0U002549P
File Name: 12-07-10_12-31

Date and Time	CO	NOx	O2	THC	CO2	SO2	Flow
MM/DD/YY HH:MM	ppm	ppm	%	ppm	%	ppm	lpm
12/7/2010 12:32	25.05	20.88	3.57	0.26		237.17	
12/7/2010 12:33	18.66	20.99	3.69	0.18		156.39	
12/7/2010 12:34	13.76	20.21	3.79	0.15		97.10	
12/7/2010 12:35	13.63	19.94	3.78	0.14		81.52	
12/7/2010 12:36	12.79	19.90	3.69	0.14		78.68	
12/7/2010 12:37	12.39	19.75	3.64	0.13		76.79	
12/7/2010 12:38	12.99	19.70	3.73	0.13		73.59	
12/7/2010 12:39	15.03	19.57	3.87	0.13		69.81	
12/7/2010 12:40	15.23	19.59	3.87	0.12		64.54	
12/7/2010 12:41	12.33	19.83	3.89	0.12		60.74	
12/7/2010 12:42	10.96	19.83	3.80	0.12		63.40	
12/7/2010 12:43	10.76	19.58	3.87	0.12		62.90	
12/7/2010 12:44	11.39	19.76	3.84	0.12		63.09	
12/7/2010 12:45	11.99	19.58	3.91	0.12		64.93	
12/7/2010 12:46	12.09	19.64	3.81	0.12		66.23	
12/7/2010 12:47	10.23	19.67	3.82	0.11		68.42	
12/7/2010 12:48	8.83	20.03	3.87	0.11		70.04	
12/7/2010 12:49	9.79	19.53	3.93	0.11		70.38	
12/7/2010 12:50	9.66	19.55	3.91	0.11		71.01	
/7/2010 12:51	9.69	19.32	3.87	0.11		71.64	
2/7/2010 12:52	10.68	19.31	3.85	0.11		71.88	
12/7/2010 12:53	10.96	19.25	3.93	0.11		72.16	
12/7/2010 12:54	10.44	19.54	3.88	0.11		72.00	
12/7/2010 12:55	8.94	19.48	3.85	0.11		73.45	
12/7/2010 12:56	9.18	19.36	3.89	0.11		73.73	
12/7/2010 12:57	10.27	19.12	3.91	0.11		73.38	
12/7/2010 12:58	10.93	19.24	3.94	0.10		73.63	
12/7/2010 12:59	12.02	19.28	3.96	0.10		73.27	
12/7/2010 13:00	11.24	19.45	3.92	0.10		73.69	
12/7/2010 13:01	10.90	19.30	3.86	0.10		73.77	
12/7/2010 13:02	10.72	19.35	3.89	0.10		74.15	
12/7/2010 13:03	10.89	19.38	3.84	0.10		73.90	
12/7/2010 13:04	9.35	19.57	3.87	0.09		74.58	
12/7/2010 13:05	9.01	19.44	3.84	0.09		75.30	
12/7/2010 13:06	8.76	19.39	3.79	0.10		75.29	
12/7/2010 13:07	9.31	19.19	3.84	0.09		76.28	
12/7/2010 13:08	10.28	19.31	3.89	0.10		76.11	
12/7/2010 13:09	11.47	19.17	3.93	0.10		75.99	
12/7/2010 13:10	11.49	19.51	3.89	0.10		76.64	
12/7/2010 13:11	9.59	19.52	3.89	0.10		77.56	
12/7/2010 13:12	9.18	19.22	3.83	0.09		78.32	
12/7/2010 13:13	9.00	19.31	3.86	0.10		79.11	
12/7/2010 13:14	9.12	19.31	3.88	0.09		79.45	
12/7/2010 13:15	10.67	19.06	3.93	0.09		78.77	
12/7/2010 13:16	12.08	18.97	3.93	0.09		78.89	
2/7/2010 13:17	11.02	19.21	3.85	0.09		79.76	
12/7/2010 13:18	8.55	19.42	3.74	0.09		81.14	
12/7/2010 13:19	6.97	19.35	3.73	0.09		81.94	
12/7/2010 13:20	9.15	19.15	3.85	0.09		81.23	
12/7/2010 13:21	11.42	19.04	3.93	0.09		80.49	
12/7/2010 13:22	12.33	19.18	3.90	0.09		80.26	
12/7/2010 13:23	10.11	19.31	3.80	0.09		80.96	
12/7/2010 13:24	7.59	19.21	3.66	0.08		82.39	

Run 1 Start (12)

12/7/2010 13:26	8.09	19.08	3.87	0.08	80.65
12/7/2010 13:27	9.99	19.14	3.92	0.08	79.59
12/7/2010 13:28	10.89	19.14	3.89	0.08	78.33
12/7/2010 13:29	9.82	19.38	3.86	0.08	78.29
12/7/2010 13:30	9.34	19.41	3.85	0.08	77.29
12/7/2010 13:31	8.49	19.21	3.82	0.08	77.85
12/7/2010 13:32	9.87	19.02	3.87	0.08	77.06
12/7/2010 13:33	9.80	19.21	3.90	0.08	75.86
12/7/2010 13:34	10.65	19.28	3.90	0.09	78.84
12/7/2010 13:35	11.23	19.01	3.87	0.09	78.00
12/7/2010 13:36	10.01	19.35	3.85	0.10	75.99
12/7/2010 13:37	9.44	18.95	3.83	0.09	76.88
12/7/2010 13:38	8.94	19.18	3.88	0.09	78.92
12/7/2010 13:39	9.39	19.15	3.86	0.10	77.43
12/7/2010 13:40	9.83	18.98	3.89	0.10	76.95
12/7/2010 13:41	10.44	12.39	7.14	4.92	70.97
12/7/2010 13:42	1.96	0.34	10.95	0.17	23.60
12/7/2010 13:43	1.54	0.92	10.33	0.15	12.39
12/7/2010 13:44	0.44	2.55	10.96	0.14	13.28
12/7/2010 13:45	0.34	0.28	10.97	0.13	6.70
12/7/2010 13:46	0.37	17.31	2.81	0.18	2.17
12/7/2010 13:47	0.38	50.62	0.38	0.15	2.32
12/7/2010 13:48	0.36	52.66	0.37	0.15	2.40
12/7/2010 13:49	0.37	50.96	0.36	0.15	2.40
12/7/2010 13:50	15.64	44.04	0.21	0.16	2.19
12/7/2010 13:51	48.98	2.02	0.13	0.14	1.48
12/7/2010 13:52	16.57	0.48	0.14	0.12	1.54
12/7/2010 13:53	23.24	0.35	0.12	0.11	1.54
12/7/2010 13:54	49.57	0.28	0.12	0.11	1.39
12/7/2010 13:55	47.04	0.28	0.11	0.10	1.45
12/7/2010 13:56	40.51	0.28	0.10	0.10	1.41
12/7/2010 13:57	33.98	0.28	0.06	39.02	1.32
12/7/2010 13:58	1.96	0.18	0.05	48.78	1.07
12/7/2010 13:59	1.39	0.08	0.05	49.78	0.93
12/7/2010 14:00	1.66	0.08	0.09	49.88	1.13
12/7/2010 14:01	2.04	0.12	0.05	10.31	3.90
12/7/2010 14:02	1.68	0.28	0.01	0.19	144.79
12/7/2010 14:03	1.67	0.28	0.00	0.13	220.02
12/7/2010 14:04	1.76	0.28	-0.02	0.11	227.54
12/7/2010 14:05	1.82	0.28	-0.05	0.10	226.47
12/7/2010 14:06	1.78	0.28	-0.05	0.09	236.09
12/7/2010 14:07	1.69	0.35	-0.06	0.10	251.89
12/7/2010 14:08	1.76	0.34	-0.06	0.09	254.06
12/7/2010 14:09	2.67	0.33	1.04	0.10	255.35
12/7/2010 14:10	8.75	14.48	3.76	0.09	139.76
12/7/2010 14:11	5.48	19.28	3.78	0.08	99.73
12/7/2010 14:12	6.45	19.10	3.73	0.09	93.40
12/7/2010 14:13	6.27	19.02	3.79	0.09	89.25
12/7/2010 14:14	7.46	18.94	3.83	0.08	84.99
12/7/2010 14:15	8.01	19.01	3.80	0.08	81.52
12/7/2010 14:16	6.73	19.09	3.76	0.09	78.34
12/7/2010 14:17	5.99	19.18	3.78	0.08	77.19
12/7/2010 14:18	6.57	19.21	3.73	0.07	78.99
12/7/2010 14:19	6.97	19.18	3.84	0.07	79.14
12/7/2010 14:20	7.58	18.98	3.88	0.07	77.40
12/7/2010 14:21	6.67	18.85	3.79	0.07	77.45
12/7/2010 14:22	5.29	18.95	3.70	0.07	77.67
12/7/2010 14:23	4.73	18.95	3.83	0.07	76.52
12/7/2010 14:24	7.41	18.70	3.84	0.06	76.90
12/7/2010 14:25	8.86	18.61	3.84	0.06	76.41
12/7/2010 14:26	9.07	18.68	3.82	0.06	75.83
12/7/2010 14:27	8.77	18.78	3.81	0.06	75.19
12/7/2010 14:28	7.19	18.74	3.76	0.06	73.72
12/7/2010 14:29	6.65	18.88	3.76	0.06	74.59
12/7/2010 14:30	7.57	18.91	3.79	0.06	74.49

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12/7/2010 14:32	7.53	18.75	3.80	0.06	73.06
12/7/2010 14:33	7.79	18.64	3.78	0.06	71.58
12/7/2010 14:34	8.06	18.80	3.79	0.07	71.45
12/7/2010 14:35	7.81	18.84	3.84	0.06	70.58
12/7/2010 14:36	8.61	18.82	3.79	0.06	71.59
12/7/2010 14:37	8.56	18.71	3.75	0.06	73.45
12/7/2010 14:38	8.39	18.88	3.76	0.06	72.74
12/7/2010 14:39	8.45	18.75	3.63	0.06	74.67
12/7/2010 14:40	8.13	18.86	3.80	0.06	75.56
12/7/2010 14:41	8.41	18.73	3.83	0.06	74.10
12/7/2010 14:42	9.86	18.56	3.89	0.06	74.33
12/7/2010 14:43	9.76	18.85	3.83	0.06	74.82
12/7/2010 14:44	9.11	18.82	3.82	0.06	75.48
12/7/2010 14:45	8.78	18.92	3.81	0.06	76.22
12/7/2010 14:46	8.33	18.66	3.75	0.06	76.45
12/7/2010 14:47	8.39	18.86	3.79	0.06	76.31
12/7/2010 14:48	8.26	18.84	3.79	0.06	75.25
12/7/2010 14:49	8.36	18.82	3.82	0.06	75.09
12/7/2010 14:50	9.29	18.57	3.82	0.06	75.20
12/7/2010 14:51	8.38	18.79	3.85	0.06	75.34
12/7/2010 14:52	7.74	18.83	3.82	0.06	75.53
12/7/2010 14:53	7.14	18.71	3.78	0.06	76.40
12/7/2010 14:54	6.21	18.89	3.77	0.05	77.29
12/7/2010 14:55	7.83	18.82	3.84	0.06	76.97
12/7/2010 14:56	8.88	18.85	3.90	0.06	76.36
12/7/2010 14:57	7.91	18.83	3.87	0.06	76.39
12/7/2010 14:58	6.08	19.03	3.84	0.06	77.24
12/7/2010 14:59	5.19	19.05	3.80	0.05	77.65
12/7/2010 15:00	5.44	18.87	3.93	0.06	74.88
12/7/2010 15:01	6.14	18.97	3.88	0.06	72.40
12/7/2010 15:02	7.88	18.57	3.96	0.06	70.91
12/7/2010 15:03	9.04	18.64	3.95	0.06	70.21
12/7/2010 15:04	9.29	18.67	3.88	0.05	70.53
12/7/2010 15:05	7.05	19.01	3.83	0.06	71.71
12/7/2010 15:06	5.76	19.11	3.88	0.05	72.22
12/7/2010 15:07	6.00	18.98	3.85	0.06	71.57
12/7/2010 15:08	6.73	18.85	3.95	0.06	71.47
12/7/2010 15:09	7.65	18.81	4.03	0.06	70.64
12/7/2010 15:10	8.25	18.78	4.04	0.06	69.89
12/7/2010 15:11	8.09	18.73	3.99	0.06	70.08
12/7/2010 15:12	6.42	18.78	3.86	0.06	70.95
12/7/2010 15:13	5.77	19.18	3.90	0.08	71.97
12/7/2010 15:14	6.23	18.76	3.91	0.10	71.90
12/7/2010 15:15	7.23	18.71	3.90	0.10	71.34
12/7/2010 15:16	6.69	18.61	3.93	0.11	71.74
12/7/2010 15:17	6.25	19.11	3.83	0.26	70.35
12/7/2010 15:18	4.78	18.94	3.87	0.17	69.77
12/7/2010 15:19	5.83	18.80	3.87	0.08	68.48
12/7/2010 15:20	6.40	18.74	3.86	0.10	67.44
12/7/2010 15:21	6.05	18.87	3.83	0.08	67.94
12/7/2010 15:22	6.13	18.58	3.85	0.08	67.51
12/7/2010 15:23	6.15	18.70	3.89	0.17	68.73
12/7/2010 15:24	5.61	18.63	3.85	0.14	67.01
12/7/2010 15:25	5.48	19.03	3.78	0.09	66.90
12/7/2010 15:26	5.29	18.81	3.85	0.07	69.48
12/7/2010 15:27	5.34	18.85	3.93	0.11	70.00
12/7/2010 15:28	4.62	18.58	3.89	0.11	67.66
12/7/2010 15:29	5.07	18.83	3.92	0.14	63.79
12/7/2010 15:30	4.72	18.63	3.84	0.11	61.10
12/7/2010 15:31	6.68	18.11	3.84	0.11	60.94
12/7/2010 15:32	5.43	18.41	3.87	0.12	62.48
12/7/2010 15:33	5.59	18.61	3.85	0.10	62.16
12/7/2010 15:34	4.77	18.55	3.84	0.10	61.70
12/7/2010 15:35	5.00	18.68	3.91	0.10	60.49
12/7/2010 15:36	5.28	18.60	3.89	0.08	61.14

out Run

12/7/2010 15:38	6.83	18.70	3.93	0.19	63.04
12/7/2010 15:39	5.36	18.58	3.88	0.18	60.79
12/7/2010 15:40	5.62	18.66	3.90	0.14	57.88
12/7/2010 15:41	5.17	18.83	3.86	0.21	60.09
12/7/2010 15:42	4.98	18.97	3.90	0.19	60.12
12/7/2010 15:43	5.75	18.79	3.94	0.14	56.65
12/7/2010 15:44	7.40	18.59	3.88	0.09	61.26
12/7/2010 15:45	8.25	18.61	3.91	0.13	64.41
12/7/2010 15:46	6.13	18.29	5.00	0.43	63.95
12/7/2010 15:47	2.70	2.85	10.80	0.18	51.80
12/7/2010 15:48	2.06	0.28	10.85	0.16	22.23
12/7/2010 15:49	1.95	0.19	10.87	0.13	9.97
12/7/2010 15:50	1.30	0.25	8.37	0.13	7.48
12/7/2010 15:51	1.28	39.42	0.28	0.11	9.30
12/7/2010 15:52	0.40	49.67	0.24	0.11	9.01
12/7/2010 15:53	0.21	50.82	0.23	0.11	8.93
12/7/2010 15:54	0.01	50.84	0.27	0.11	9.60
12/7/2010 15:55	0.16	36.35	0.19	43.15	8.30
12/7/2010 15:56	0.38	0.70	0.18	50.39	6.84
12/7/2010 15:57	0.27	0.46	0.18	50.33	6.54
12/7/2010 15:58	12.86	0.34	0.34	13.48	7.59
12/7/2010 15:59	49.26	0.93	0.79	0.99	9.12
12/7/2010 16:00	47.00	0.95	-0.06	0.15	9.40
12/7/2010 16:01	49.17	0.45	0.05	0.14	9.33
12/7/2010 16:02	43.39	0.28	0.13	0.12	8.23
12/7/2010 16:03	46.22	0.28	0.17	0.11	5.02
12/7/2010 16:04	48.09	0.30	0.48	0.39	7.41
12/7/2010 16:05	22.30	0.42	0.44	0.12	25.97
12/7/2010 16:06	-0.52	0.28	-0.14	0.07	126.77
12/7/2010 16:07	-0.71	0.28	-0.13	0.06	186.19
12/7/2010 16:08	-0.79	0.28	-0.07	0.06	216.68
12/7/2010 16:09	-0.73	0.28	-0.14	0.07	214.93
12/7/2010 16:10	-0.62	0.28	-0.07	0.06	238.32
12/7/2010 16:11	-0.67	0.28	0.07	0.06	243.71
12/7/2010 16:12	-0.67	0.28	0.17	0.06	260.12
12/7/2010 16:13	-0.47	0.28	0.09	0.05	249.41
12/7/2010 16:14	-0.51	0.28	0.14	0.05	255.30
12/7/2010 16:15	2.41	9.30	3.60	0.12	214.20
12/7/2010 16:16	3.75	19.67	4.18	0.13	133.46
12/7/2010 16:17	3.51	19.87	4.18	0.12	99.57
12/7/2010 16:18	3.87	19.42	4.13	0.12	84.97
12/7/2010 16:19	2.95	19.50	4.08	0.11	79.71
12/7/2010 16:20	3.08	19.66	4.14	0.10	77.55
12/7/2010 16:21	3.55	19.55	4.15	0.08	76.89
12/7/2010 16:22	4.27	19.54	4.21	0.07	77.51
12/7/2010 16:23	4.13	19.69	4.19	0.07	77.50
12/7/2010 16:24	4.19	19.60	4.19	0.06	77.57
12/7/2010 16:25	4.59	19.76	4.20	0.07	77.52
12/7/2010 16:26	3.72	19.89	4.17	0.07	76.56
12/7/2010 16:27	3.99	19.63	4.16	0.08	75.77
12/7/2010 16:28	4.45	19.61	4.16	0.07	74.98
12/7/2010 16:29	5.07	19.57	4.11	0.06	74.06
12/7/2010 16:30	5.29	19.74	4.15	0.15	75.58
12/7/2010 16:31	4.26	19.65	4.14	0.16	74.48
12/7/2010 16:32	3.41	19.87	4.15	0.13	71.91
12/7/2010 16:33	2.88	19.83	4.05	0.09	71.37
12/7/2010 16:34	3.65	19.51	4.13	0.07	74.38
12/7/2010 16:35	3.68	19.67	4.07	0.16	75.40
12/7/2010 16:36	2.25	19.61	4.11	0.18	73.04
12/7/2010 16:37	2.99	19.62	4.07	0.17	71.34
12/7/2010 16:38	3.13	19.55	4.01	0.13	68.96
12/7/2010 16:39	3.80	19.38	4.03	0.10	65.07
12/7/2010 16:40	4.25	19.52	4.02	0.08	65.74
12/7/2010 16:41	4.58	19.42	4.07	0.07	67.81
12/7/2010 16:42	4.61	19.38	4.11	0.07	68.40
12/7/2010 16:43	4.27	19.65	4.04	0.07	67.82

12/7/2010 16:45	2.81	19.41	4.01	0.11	67.27
12/7/2010 16:46	3.04	19.42	3.93	0.11	65.92
12/7/2010 16:47	3.38	19.32	3.96	0.10	64.85
12/7/2010 16:48	4.65	19.25	4.02	0.09	65.31
12/7/2010 16:49	5.09	19.54	4.01	0.07	66.27
12/7/2010 16:50	6.08	19.45	3.95	0.12	69.40
12/7/2010 16:51	3.78	19.58	3.90	0.14	68.57
12/7/2010 16:52	3.36	19.52	3.91	0.14	66.58
12/7/2010 16:53	3.23	19.32	3.94	0.12	63.35
12/7/2010 16:54	3.13	19.81	3.96	0.10	61.01
12/7/2010 16:55	3.12	19.78	3.94	0.08	60.40
12/7/2010 16:56	3.49	19.58	3.98	0.06	63.40
12/7/2010 16:57	4.93	19.41	3.99	0.11	66.31
12/7/2010 16:58	4.57	19.92	4.01	0.13	66.61
12/7/2010 16:59	4.35	19.75	3.96	0.12	63.59
12/7/2010 17:00	4.83	19.75	4.00	0.10	61.38
12/7/2010 17:01	4.49	19.82	3.95	0.08	63.90
12/7/2010 17:02	4.97	19.78	4.01	0.06	66.60
12/7/2010 17:03	5.32	19.72	3.94	0.06	67.81
12/7/2010 17:04	4.39	19.92	3.95	0.06	67.35
12/7/2010 17:05	4.79	19.65	3.92	0.06	67.86
12/7/2010 17:06	5.43	19.65	3.98	0.07	68.60
12/7/2010 17:07	4.63	19.45	4.00	0.13	67.77
12/7/2010 17:08	4.93	19.48	3.99	0.13	65.23
12/7/2010 17:09	5.39	19.48	3.99	0.11	59.58
12/7/2010 17:10	4.86	19.68	3.94	0.09	58.11
12/7/2010 17:11	5.16	19.42	3.99	0.06	61.69
12/7/2010 17:12	7.06	19.55	4.03	0.06	65.86
12/7/2010 17:13	5.06	19.85	3.97	0.10	67.09
12/7/2010 17:14	3.56	19.68	3.96	0.13	66.59
12/7/2010 17:15	3.26	19.78	3.99	0.12	62.42
12/7/2010 17:16	4.09	19.52	3.99	0.11	61.13
12/7/2010 17:17	4.50	19.58	4.00	0.08	63.50
12/7/2010 17:18	6.06	19.48	3.97	0.06	67.46
12/7/2010 17:19	6.89	19.45	3.97	0.07	70.90
12/7/2010 17:20	5.66	19.58	3.98	0.08	71.16
12/7/2010 17:21	4.16	19.69	3.97	0.08	70.67
12/7/2010 17:22	3.89	19.58	4.01	0.07	69.05
12/7/2010 17:23	4.09	19.69	3.97	0.08	69.05
12/7/2010 17:24	3.73	19.74	3.99	0.11	68.98
12/7/2010 17:25	3.33	19.45	3.99	0.10	66.51
12/7/2010 17:26	3.66	19.45	4.05	0.09	65.01
12/7/2010 17:27	4.43	19.42	3.97	0.07	65.35
12/7/2010 17:28	5.20	19.58	4.05	0.06	67.75
12/7/2010 17:29	6.46	19.45	3.98	0.06	70.44
12/7/2010 17:30	6.14	19.59	4.03	0.06	71.66
12/7/2010 17:31	6.00	19.76	4.02	0.06	71.83
12/7/2010 17:32	6.21	19.81	4.01	0.06	72.02
12/7/2010 17:33	5.41	19.68	4.01	0.06	71.75
12/7/2010 17:34	5.62	19.52	4.01	0.06	71.86
12/7/2010 17:35	4.16	19.60	3.97	0.06	72.14
12/7/2010 17:36	4.63	19.49	4.01	0.06	71.89
12/7/2010 17:37	4.72	19.65	4.02	0.06	71.97
12/7/2010 17:38	4.79	19.42	3.99	0.07	70.76
12/7/2010 17:39	4.67	19.28	4.00	0.06	67.60
12/7/2010 17:40	5.20	19.41	3.97	0.06	66.70
12/7/2010 17:41	5.31	19.32	3.95	0.06	67.74
12/7/2010 17:42	4.60	19.54	3.99	0.09	68.16
12/7/2010 17:43	3.54	19.46	3.95	0.14	66.88
12/7/2010 17:44	2.43	20.66	3.92	0.13	64.96
12/7/2010 17:45	2.69	19.81	4.00	0.11	61.57
12/7/2010 17:46	2.47	19.58	3.99	0.11	62.56
12/7/2010 17:47	2.78	19.55	4.00	0.11	67.52
12/7/2010 17:48	3.32	19.23	3.98	0.13	70.81
12/7/2010 17:49	2.75	23.23	3.95	0.13	66.78

Run 3

12/7/2010 17:51	4.15	19.49	3.99	0.13	63.42
12/7/2010 17:52	3.17	8.57	8.97	0.18	64.96
12/7/2010 17:53	-0.91	0.37	11.03	0.11	40.42
12/7/2010 17:54	-0.91	0.46	11.04	0.13	22.44
12/7/2010 17:55	-0.24	0.54	11.04	0.12	9.92
12/7/2010 17:56	-0.22	11.71	5.07	0.14	12.47
12/7/2010 17:57	-0.21	50.36	0.11	0.08	2.87
12/7/2010 17:58	-0.19	51.50	0.10	0.08	6.38
12/7/2010 17:59	1.65	49.99	0.15	0.11	13.25
12/7/2010 18:00	36.08	4.88	0.20	0.11	13.45
12/7/2010 18:01	47.20	0.64	0.19	0.10	12.69
12/7/2010 18:02	46.71	0.48	0.20	0.10	9.21
12/7/2010 18:03	47.99	0.50	0.23	15.44	2.37
12/7/2010 18:04	11.78	0.52	0.15	51.44	2.10
12/7/2010 18:05	0.40	0.28	0.17	51.58	2.05
12/7/2010 18:06	0.53	0.28	0.20	51.26	1.96
12/7/2010 18:07	0.53	0.28	0.66	16.92	2.27
12/7/2010 18:08	1.71	0.38	2.73	7.71	5.89
12/7/2010 18:09	1.31	0.42	0.08	0.17	56.65
12/7/2010 18:10	0.09	0.28	0.09	0.23	142.21
12/7/2010 18:11	0.26	0.30	1.16	0.79	223.10
12/7/2010 18:12	1.51	0.64	14.29	0.90	205.58
12/7/2010 18:13	0.29	0.51	0.11	0.08	126.02
12/7/2010 18:14	-0.07	0.28	0.08	0.07	224.66
12/7/2010 18:15	0.30	0.08	0.09	0.07	207.83
12/7/2010 18:16	-0.21	0.08	0.08	0.06	218.97
12/7/2010 18:17	-0.31	0.08	0.07	0.06	257.09
12/7/2010 18:18	-0.49	0.08	0.06	0.06	255.39
12/7/2010 18:19	-0.34	22.22	0.06	0.05	257.36

NOX CONV.

done after 1st set.

12/7/2010 18:20	35.30
12/7/2010 18:21	35.48
'7/2010 18:22	35.65
,7/2010 18:23	35.95
12/7/2010 18:24	36.43
12/7/2010 18:25	36.85
12/7/2010 18:26	36.92
12/7/2010 18:27	36.80
12/7/2010 18:28	36.70
12/7/2010 18:29	36.62
12/7/2010 18:30	36.57
12/7/2010 18:31	36.50
12/7/2010 18:32	36.35
12/7/2010 18:33	36.44
12/7/2010 18:34	36.33
12/7/2010 18:35	36.21
12/7/2010 18:36	36.19
12/7/2010 18:37	36.17
12/7/2010 18:38	36.12
12/7/2010 18:39	36.03
12/7/2010 18:40	36.01
12/7/2010 18:41	35.99
12/7/2010 18:42	36.01
12/7/2010 18:43	35.91
12/7/2010 18:44	35.91
12/7/2010 18:45	35.87
12/7/2010 18:46	35.89
12/7/2010 18:47	35.89
/7/2010 18:48	35.81
./7/2010 18:49	35.81
12/7/2010 18:50	35.85
12/7/2010 18:51	35.77
12/7/2010 18:52	35.74
12/7/2010 18:53	35.74
12/7/2010 18:54	35.68
12/7/2010 18:55	35.73
12/7/2010 18:56	35.67
12/7/2010 18:57	35.61
12/7/2010 18:58	35.65
12/7/2010 18:59	35.64
12/7/2010 19:00	35.60
12/7/2010 19:01	35.58
12/7/2010 19:02	35.56
12/7/2010 19:03	35.49
12/7/2010 19:04	35.49
12/7/2010 19:05	35.38
12/7/2010 19:06	35.47
12/7/2010 19:07	35.67

File Name: C:\CPData\SampleData\H2S.CAL
Version: 1

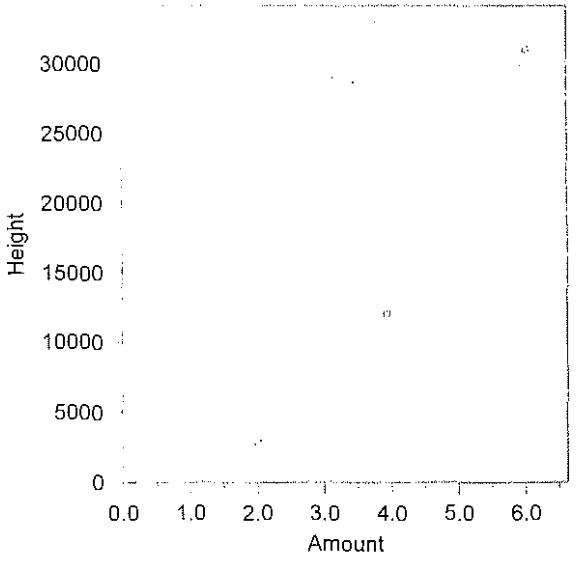
Creator: John Johnston
Description:
Reason for change:

External standard calibration
Standard injection volume: 1
Standard sample weight: 1
Area reject threshold: 100
Reference peak area reject threshold: 100
Amount units: ppm
No default component

Method of calculating data point averages: Equal weight for all updates
Print calibration update report

All levels are normal data points.

1 H2S



Expected retention time: 1 minutes
Search window: 0.03 minutes
No retention time reference component
Group number: 0

High alarm limit: 0.1
Low alarm limit: 100
Component constant: 0.23

Single peak quantification by height

Y = 617.7982 X^2.175603

Power fit with equal weighting, forced to origin
Coefficient of determination: 0.9998401
Average error: 0.760%
Average CF: 3204.914
RSD: 58.370%

Level	Amount	Response	Cal Factor	Error, %	Source	Date and time
1	2.01	2834	1409.95	0.443	Manual	12/6/2010 3:56:07 PM
2	3.94	12063	3061.675	-1.134	Manual	12/6/2010 3:56:13 PM
3	6.03	31013	5143.118	0.702	Manual	12/6/2010 3:56:21 PM

Minimum Detection Limit (MDL): Solve for X, $Y = \frac{100}{0.23}$ mV

VMG 12-15-10

$X = \sqrt[2.175603]{\frac{Y}{617.7982}}$ $= \cancel{0.0265} \sim \cancel{0.03}$ ppm

$= 0.4330 = 0.43$ ppm MDL

Stork Testing & Metallurgical Consulting, Inc.
Air Emission Services
Houston, Texas

Company:	Conoco Phillips, Sweeny, Texas				Source:	SRU-28.2			Date:	12/6/2010	
Component	Top 3 ppm	Permeation Values Acceptable Drift Limit +/- 5%			GC Calibration Values - Pretest 12/6/2010 Injection 1	Injection 2	Injection 3	Avg. of the 3 Inj.	Acceptable Drift Limit +/- 5%		
H_2S	6.03	5.73	to	6.33	6.10	6.27	6.29	6.22	5.91	to	6.53

				GC Calibration Values - Post Test 12/7/2010 Injection 1	Injection 2	Injection 3	Avg. of the 3 Inj.	Acceptable Drift Limit +/- 5%		
GC Model:	Shimazdu 14A	Serial No.:	T-2							
Col. Temp.:	42°C Isothermal	Inj. Temp.:	135°C							
H2 flow:	90 kPa	Air flow:	50 kPa	6.39	6.45	6.36	6.40	6.08	to	6.72

Component	Top 5 ppm	Permeation Values Acceptable Drift Limit +/- 5%			GC Calibration Values - Pretest 12/6/2010 Injection 1	Injection 2	Injection 3	Avg. of the 3 Inj.	Acceptable Drift Limit +/- 5%		
H_2S	3.94	3.74	to	4.14	3.95	3.98	4.01	3.98	3.78	to	4.18

				GC Calibration Values - Post Test 12/7/2010 Injection 1	Injection 2	Injection 3	Avg. of the 3 Inj.	Acceptable Drift Limit +/- 5%		
Chart speed:	NA	Car. Gas flow:	125 kPa							
Det. Temp.:	250°C	Inj. Vol.(ml):	100 µl							
Sample flow:	100 ml/min	FPD Temp.:	250°C	4.10	4.03	4.07	4.07	3.86	to	4.27

Component	Top 11 ppm	Permeation Values Acceptable Drift Limit +/- 5%			GC Calibration Values - Pretest 12/6/2010 Injection 1	Injection 2	Injection 3	Avg. of the 3 Inj.	Acceptable Drift Limit +/- 5%		
H_2S	2.01	1.91	to	2.11	2.04	2.08	2.01	2.04	1.94	to	2.15

GC Calibration Values - Post Test 12/7/2010 Injection 1	Injection 2	Injection 3	Avg. of the 3 Inj.	Acceptable Drift Limit +/- 5%		
2.16	2.17	2.10	2.14	2.04	to	2.25

Stork Testing & Metallurgical Consulting, Inc.
Air Emission Services
Houston, Texas

TRS Permeation Device - VICI Metronics Dynacalibrator

Dilution with Chambers 1 and 2

	Pollutant		Top	Top	Top	[illegible]	Top	[illegible]	Top	Top	Top	Top	Top	[illegible]	Top	Top	Top	Top
	Permeation	Molecular	0	1	2		4		6	7	8	9	10		12	13	14	15
Pollutant	Rate	Weight	369	490	792		1,396		1,966	2,251	2,506	2,782	3,025		3,532	3,770	4,011	4,262
Name	ng/min	g/g-mole	ppm	ppm	ppm		ppm		ppm	ppm	ppm	ppm	ppm		ppm	ppm	ppm	ppm
H_2S	9,201 @ 30°C	34	17.94	13.51	8.36		4.74		3.37	2.94	2.64	2.38	2.19		1.87	1.76	1.65	1.55

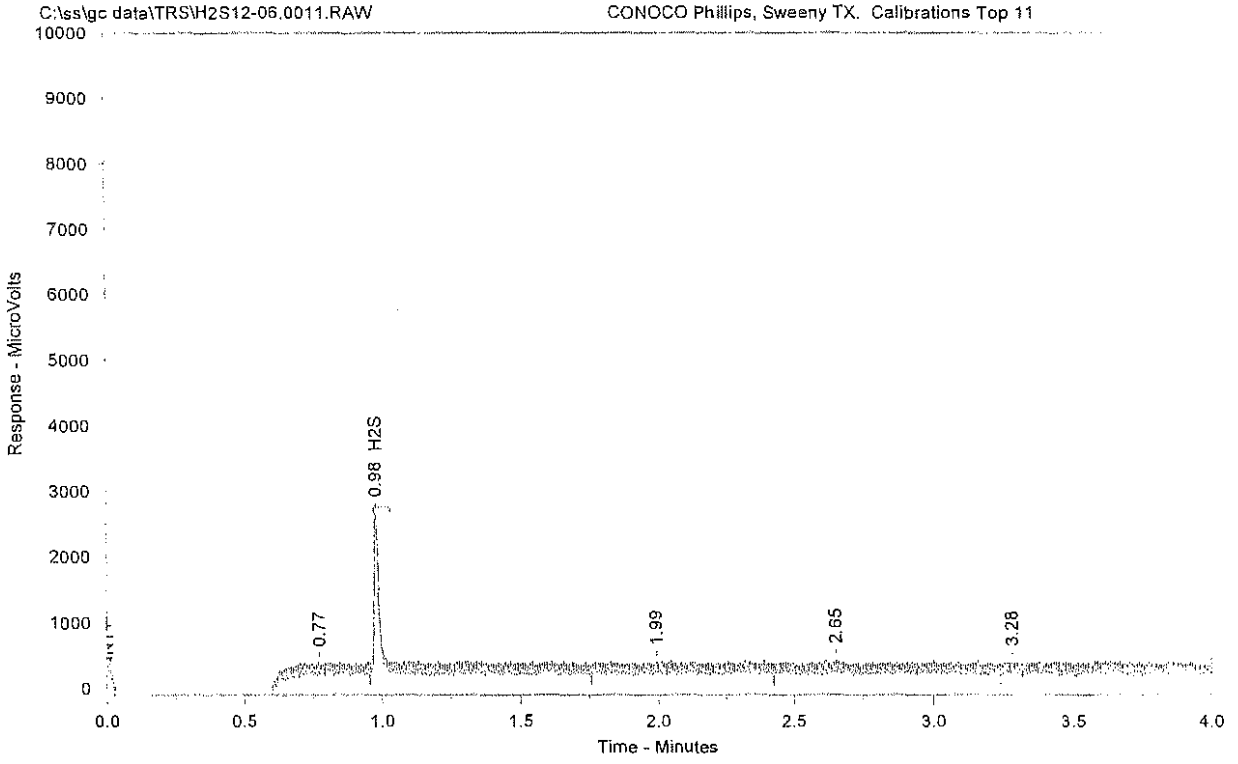
Dilution with Chambers 1 and 2

		Bottom	Bottom	Bottom	Bottom	Bottom	Bottom	Bottom	Bottom	Bottom	Bottom	Bottom	Bottom	Bottom	Bottom	Bottom	Bottom
		0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
	Pollutant	370	967	1,772	2,568	3380	4,153	4,960	5,707	6,455	7,222	7,962	8,676	9,335	10,067	10,763	11,525
	Name	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
	H2S	17.89	6.85	3.74	2.58	1.96	1.59	1.33	1.16	1.03	0.92	0.83	0.76	0.71	0.66	0.62	0.57

H_2S 9,201 0 9,201 H2S Certificate No. 10-34887 , 2010

Chrom Perfect Chromatogram Report

C:\ss\gc data\TRS\H2S12-06.0011.RAW CONOCO Phillips, Sweeny TX. Calibrations Top 11



Sample Name = **CONOCO Phillips, Sweeny TX. Calibrations Top 11**

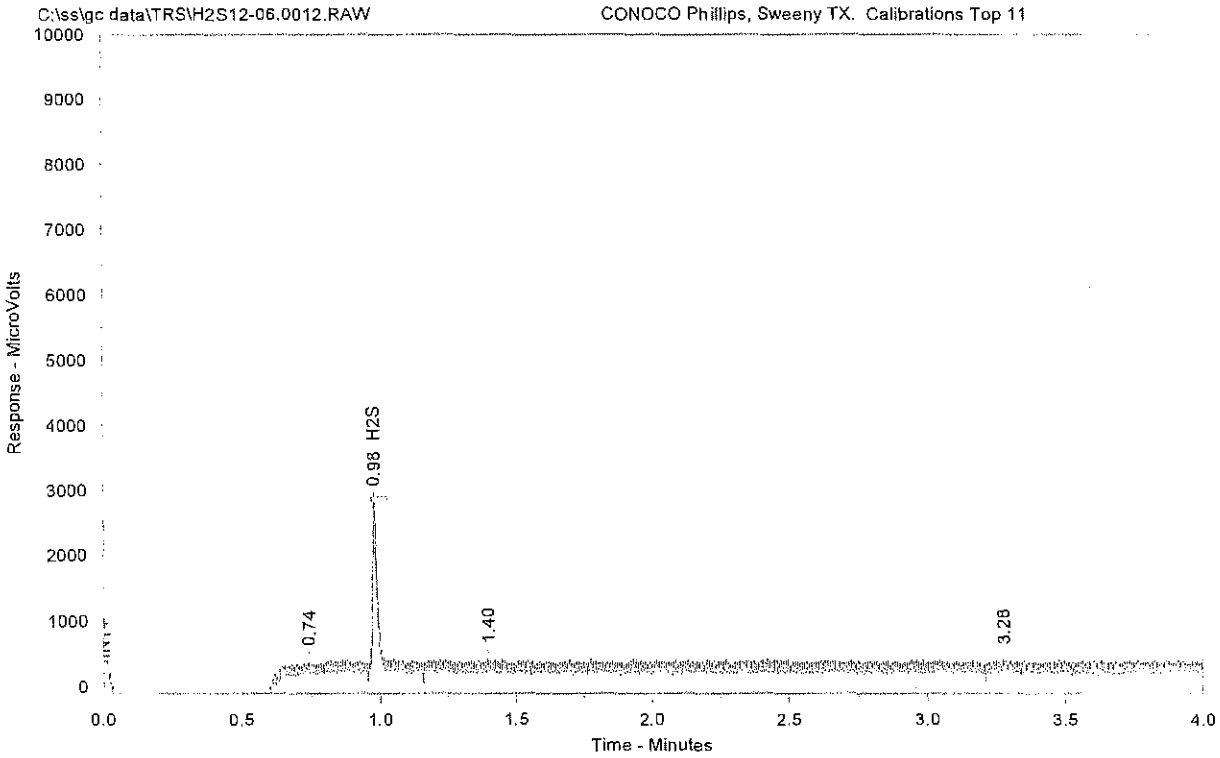
Instrument = Instrument 1
Heading 1 = Air = 100, H2 = 85, He = 113; 125 uL Sample Loop
Heading 2 = 0.0 Evnt 92.0, 0.6 Evnt -92, 5.0 Retn; 42C- Isothermal

Raw File Name = **C:\ss\gc data\TRS\H2S12-06.0011.RAW**
Method File Name = C:\CPData\SampleData\TRS.MET
Calibration File Name = C:\CPData\SampleData\H2S.CAL

Date Taken (end) = 12/6/2010 4:01:08 PM
Method Version = 8
Calibration Version = 1

Peak #	Ret. Time	Name	Amount	Height	Area	Type	Width
1	0.77		0.00	722.6	6728	BV	0.19
2	0.98	H2S	2.04	2906.9	13760	VV	0.02
3	1.99		0.00	231.8	2220	VB	0.27
4	2.65		0.00	252.2	2977	BV	0.51
5	3.28		0.00	232.0	512	VB	0.07

Total Area = 26195.95 Total Height = 4345.528 Total Amount = 2.037743



Sample Name = **CONOCO Phillips, Sweeny TX. Calibrations Top 11**

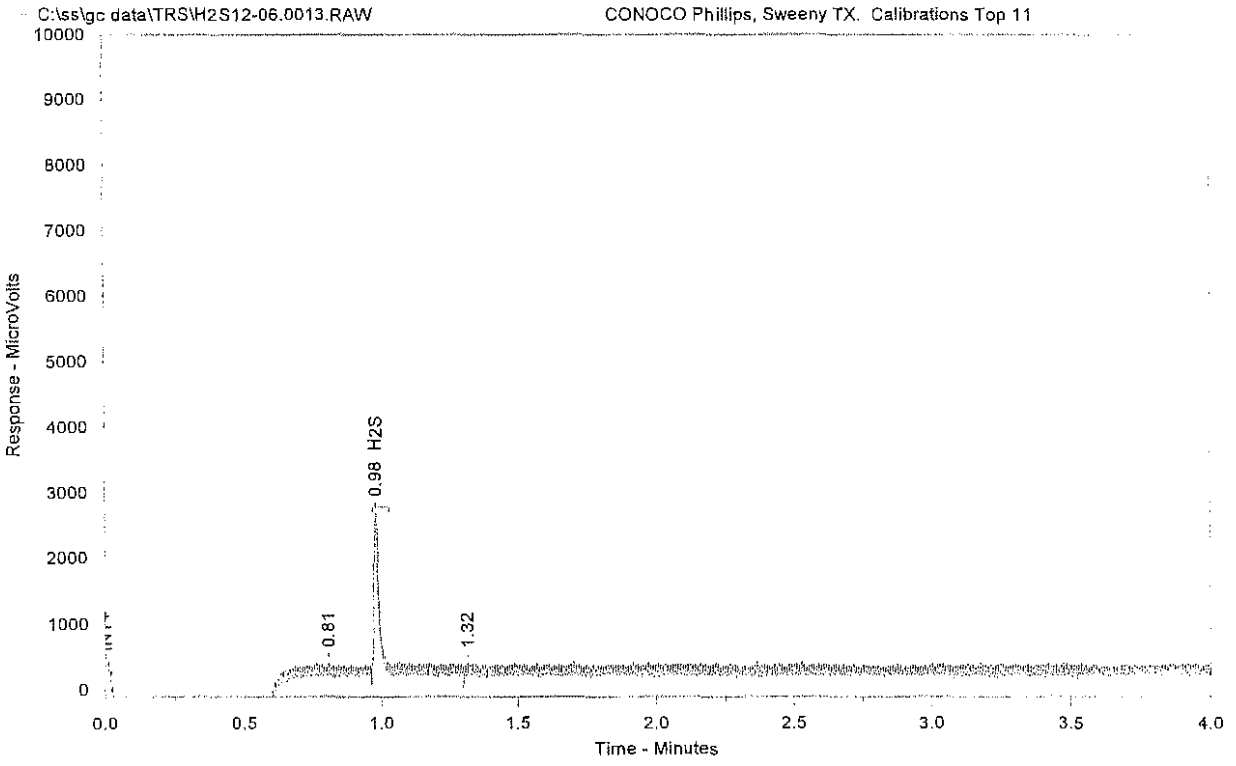
Instrument = Instrument 1
Heading 1 = Air = 100, H2 = 85, He = 113; 125 uL Sample Loop
Heading 2 = 0.0 Evnt 92.0, 0.6 Evnt -92, 5.0 Retn; 42C- Isothermal

Raw File Name = **C:\ss\gc data\TRS\H2S12-06.0012.RAW**
Method File Name = C:\CPData\SampleData\TRS.MET
Calibration File Name = C:\CPData\SampleData\H2S.CAL

Date Taken (end) = 12/6/2010 4:06:08 PM
Method Version = 8
Calibration Version = 1

Peak #	Ret. Time	Name	Amount	Height	Area	Type	Width
1	0.74		0.00	716.1	6674	BV	0.20
2	0.98	H2S	2.08	3045.2	13578	SBB	0.02
3	1.40		0.00	249.9	2308	TBB	0.39
4	3.28		0.00	225.8	686	BB	0.12

Total Area = 23244.94 Total Height = 4237.063 Total Amount = 2.081727



Sample Name = **CONOCO Phillips, Sweeny TX. Calibrations Top 11**

Instrument = Instrument 1
Heading 1 = Air = 100, H2 = 85, He = 113; 125 uL Sample Loop
Heading 2 = 0.0 Evnt 92.0, 0.6 Evnt -92, 5.0 Retn; 42C- Isothermal

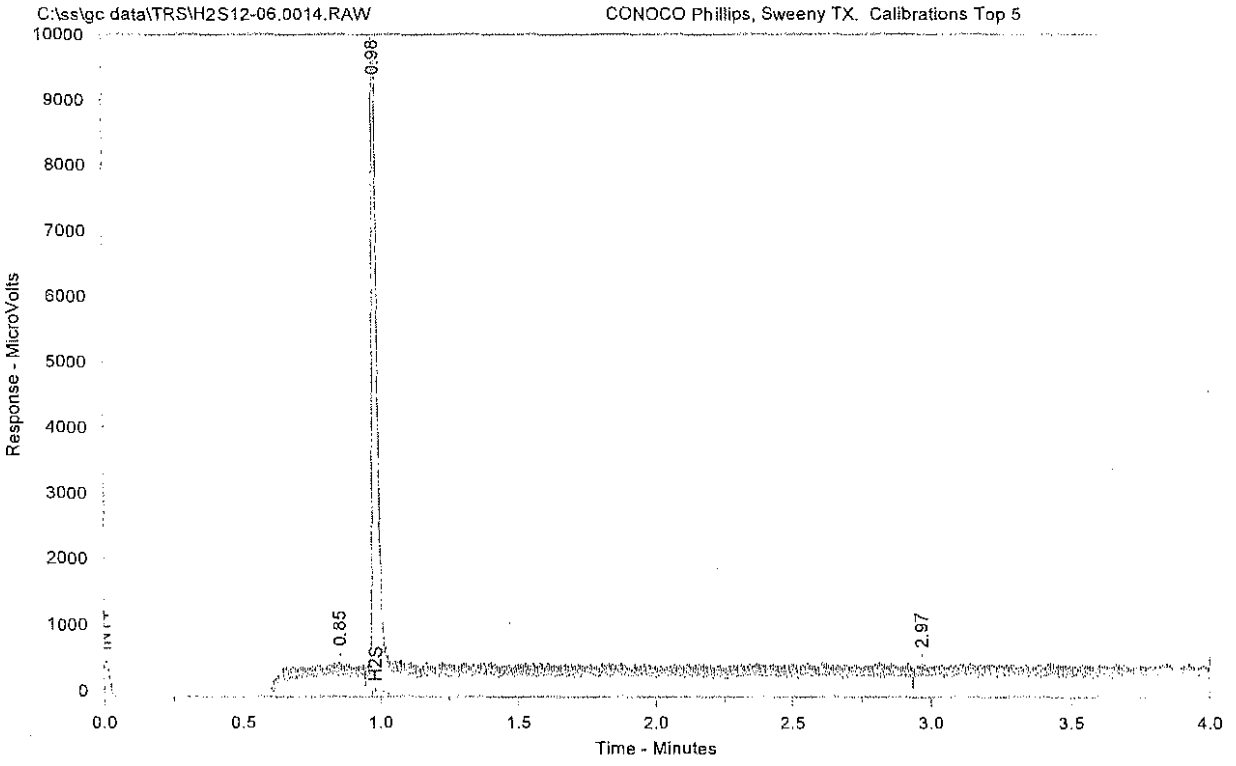
Raw File Name = **C:\ss\gc data\TRS\H2S12-06.0013.RAW**
Method File Name = C:\CPData\SampleData\TRS.MET
Calibration File Name = C:\CPData\SampleData\H2S.CAL

Date Taken (end) = 12/6/2010 4:11:08 PM
Method Version = 8
Calibration Version = 1

Peak #	Ret. Time	Name	Amount	Height	Area	Type	Width
1	0.81		0.00	658.0	10835	BV	0.35
2	0.98	H2S	2.01	2822.0	6972	VV	0.02
3	1.32		0.00	283.4	628	VB	0.07

Total Area = 18434.23 Total Height = 3763.386 Total Amount = 2.010163

Chrom Perfect Chromatogram Report



Sample Name = **CONOCO Phillips, Sweeny TX. Calibrations Top 5**

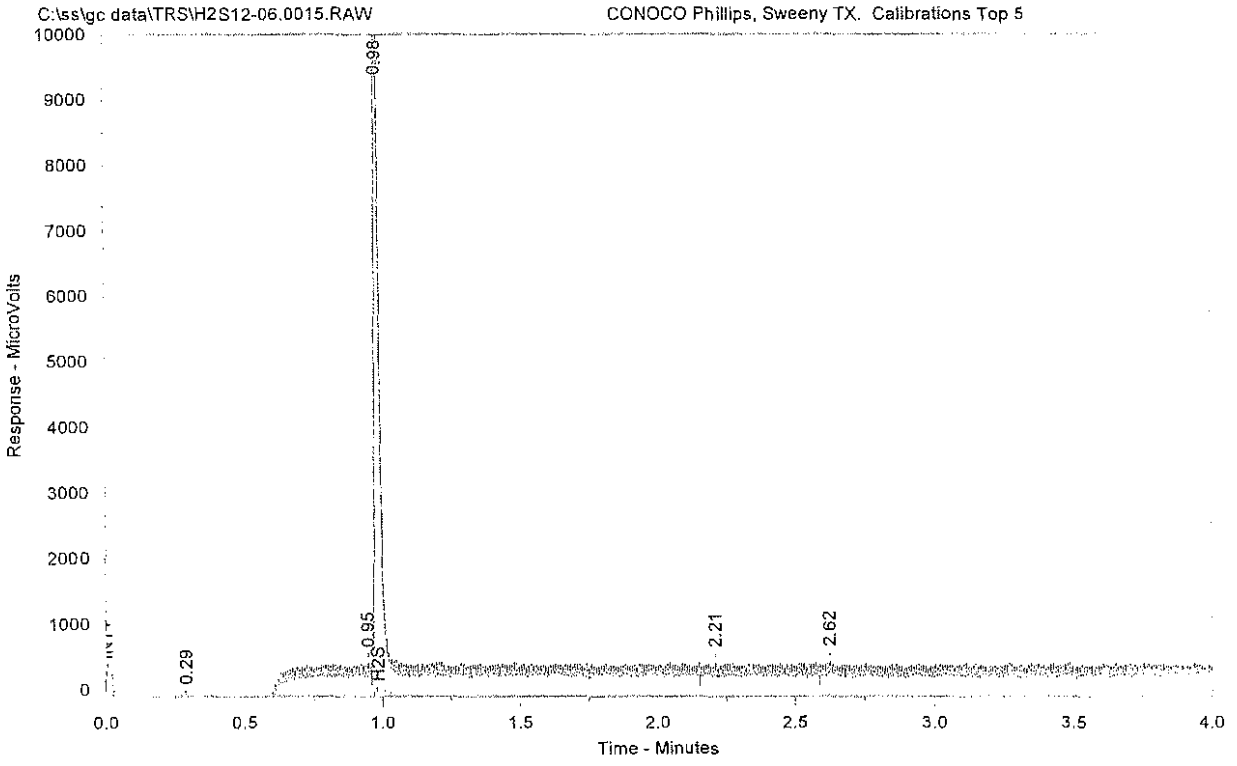
Instrument = Instrument 1
Heading 1 = Air = 100, H2 = 85, He = 113; 125 uL Sample Loop
Heading 2 = 0.0 Evnt 92.0, 0.6 Evnt -92, 5.0 Retn; 42C- Isothermal

Raw File Name = **C:\ss\gc data\TRS\H2S12-06.0014.RAW**
Method File Name = C:\CPData\SampleData\TRS.MET
Calibration File Name = C:\CPData\SampleData\H2S.CAL

Date Taken (end) = 12/6/2010 4:16:08 PM
Method Version = 8
Calibration Version = 1

Peak #	Ret. Time	Name	Amount	Height	Area	Type	Width
1	0.85		0.00	613.6	10056	BV	0.34
2	0.98	H2S	3.95	12254.2	19738	VB	0.02
3	2.97		0.00	234.6	617	BB	0.10

Total Area = 30410.47 Total Height = 13102.38 Total Amount = 3.947829



Sample Name = **CONOCO Phillips, Sweeny TX. Calibrations Top 5**

Instrument = Instrument 1
Heading 1 = Air = 100, H2 = 85, He = 113; 125 uL Sample Loop
Heading 2 = 0.0 Evnt 92.0, 0.6 Evnt -92, 5.0 Retn; 42C- Isothermal

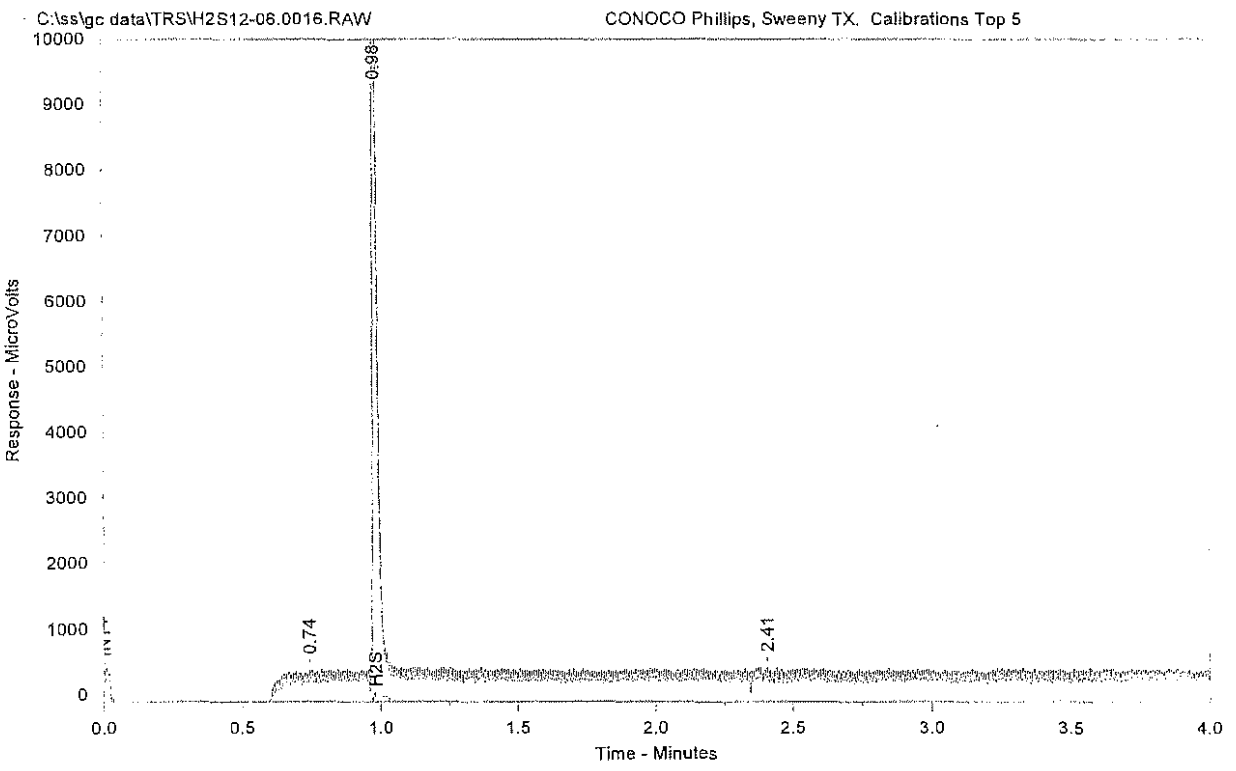
Raw File Name = **C:\ss\gc data\TRS\H2S12-06.0015.RAW**
Method File Name = C:\CPData\SampleData\TRS.MET
Calibration File Name = C:\CPData\SampleData\H2S.CAL

Date Taken (end) = 12/6/2010 4:21:08 PM
Method Version = 8
Calibration Version = 1

Peak #	Ret. Time	Name	Amount	Height	Area	Type	Width
1	0.29		0.00	278.6	1557	BB	0.22
2	0.95		0.00	399.5	8898	BV	0.35
3	0.98	H2S	3.98	12473.3	15412	VB	0.02
4	2.21		0.00	228.7	335	BB	0.06
5	2.62		0.00	232.2	463	BB	0.09

Total Area = 26665.74 Total Height = 13612.33 Total Amount = 3.980121

Chrom Perfect Chromatogram Report



Sample Name = **CONOCO Phillips, Sweeny TX. Calibrations Top 5**

Instrument = Instrument 1
Heading 1 = Air = 100, H2 = 85, He = 113; 125 uL Sample Loop
Heading 2 = 0.0 Evnt 92.0, 0.6 Evnt -92, 5.0 Retn; 42C- Isothermal

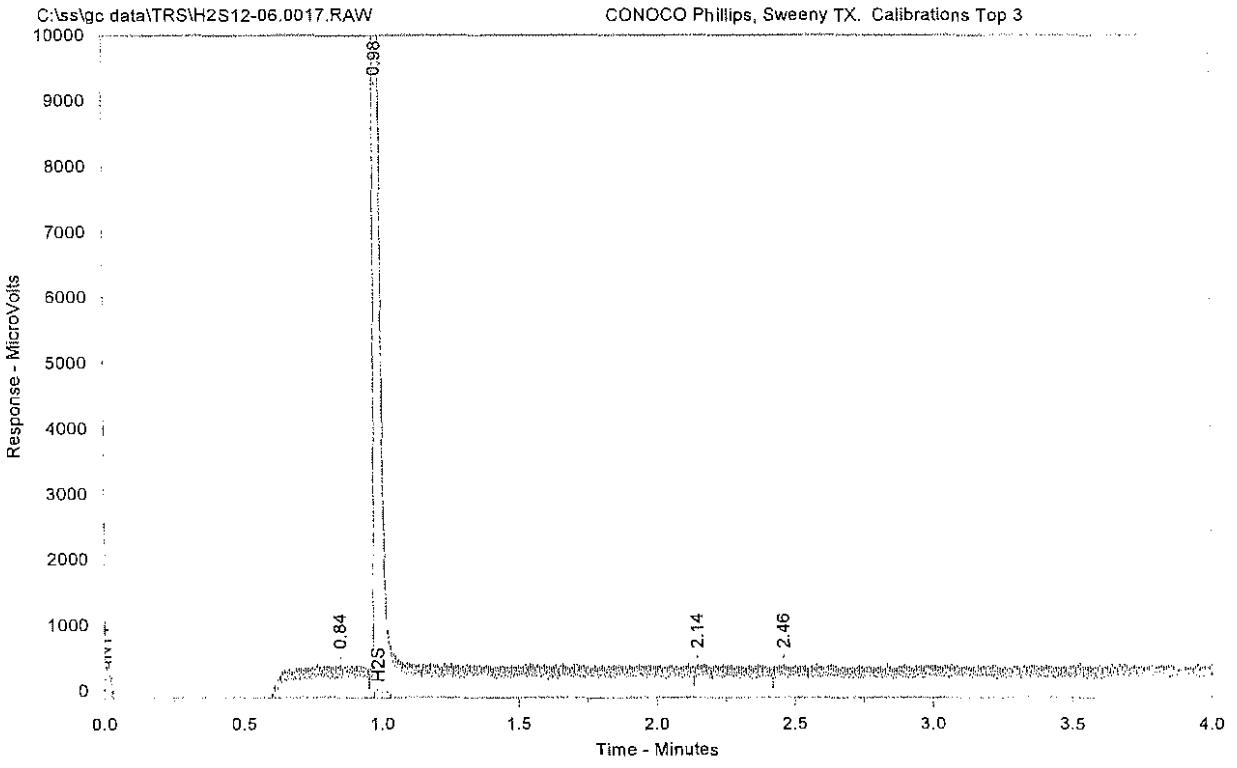
Raw File Name = **C:\ss\gc data\TRS\H2S12-06.0016.RAW**
Method File Name = C:\CPData\SampleData\TRS.MET
Calibration File Name = C:\CPData\SampleData\H2S.CAL

Date Taken (end) = 12/6/2010 4:26:08 PM
Method Version = 8
Calibration Version = 1

Peak #	Ret. Time	Name	Amount	Height	Area	Type	Width
1	0.74		0.00	658.8	5206	BV	0.16
2	0.98	H2S	4.01	12706.9	19168	VB	0.02
3	2.41		0.00	264.4	526	BB	0.08

Total Area = 24900.25 Total Height = 13630.04 Total Amount = 4.0142

Chrom Perfect Chromatogram Report



Sample Name = **CONOCO Phillips, Sweeny TX. Calibrations Top 3**

Instrument = Instrument 1
Heading 1 = Air = 100, H2 = 85, He = 113; 125 uL Sample Loop
Heading 2 = 0.0 Evnt 92.0, 0.6 Evnt -92, 5.0 Retn; 42C- Isothermal

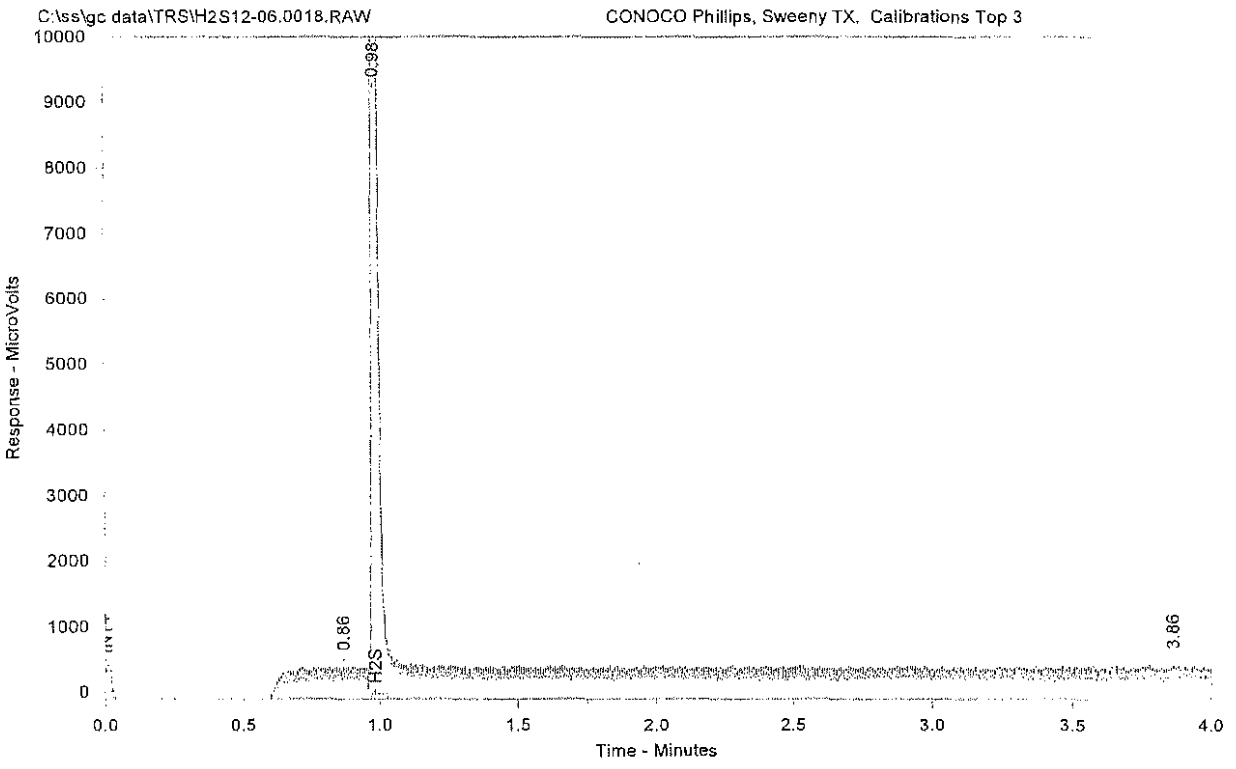
Raw File Name = **C:\ss\gc data\TRS\H2S12-06.0017.RAW**
Method File Name = C:\CPData\SampleData\TRS.MET
Calibration File Name = C:\CPData\SampleData\H2S.CAL

Date Taken (end) = 12/6/2010 5:01:03 PM
Method Version = 8
Calibration Version = 1

Peak #	Ret. Time	Name	Amount	Height	Area	Type	Width
1	0.84		0.00	528.0	8965	BV	0.34
2	0.98	H2S	6.10	31629.7	38240	VB	0.02
3	2.14		0.00	204.9	331	BB	0.06
4	2.46		0.00	225.7	644	BB	0.12

Total Area = 48179.16 Total Height = 32588.23 Total Amount = 6.104403

Chrom Perfect Chromatogram Report



Sample Name = **CONOCO Phillips, Sweeny TX. Calibrations Top 3**

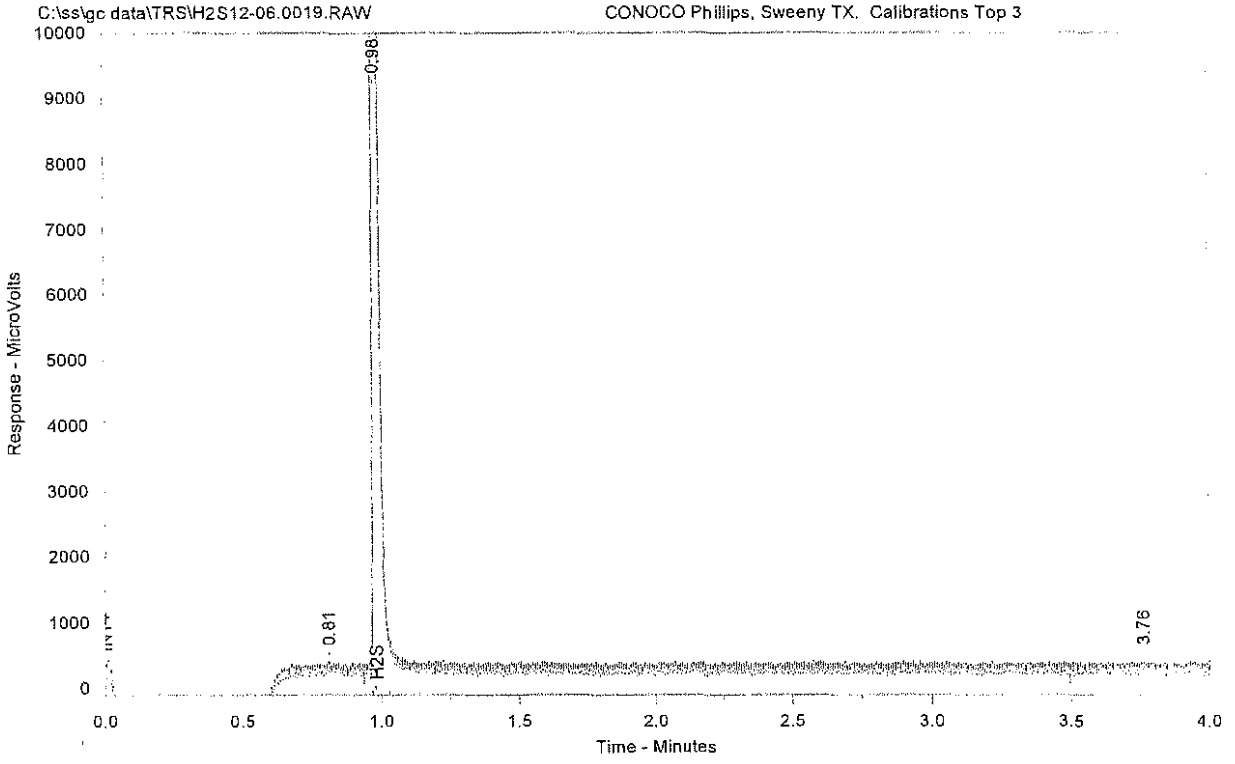
Instrument = Instrument 1
Heading 1 = Air = 100, H2 = 85, He = 113; 125 uL Sample Loop
Heading 2 = 0.0 Evnt 92.0, 0.6 Evnt -92, 5.0 Retn; 42C- Isothermal

Raw File Name = **C:\ss\gc data\TRS\H2S12-06.0018.RAW**
Method File Name = C:\CPData\SampleData\TRS.MET
Calibration File Name = C:\CPData\SampleData\H2S.CAL

Date Taken (end) = 12/6/2010 5:06:03 PM
Method Version = 8
Calibration Version = 1

Peak #	Ret. Time	Name	Amount	Height	Area	Type	Width
1	0.86		0.00	641.8	11439	BV	0.34
2	0.98	H2S	6.27	33515.8	46332	VB	0.02
3	3.86		0.00	247.1	865	BB	0.15

Total Area = 58635.25 Total Height = 34404.75 Total Amount = 6.269107



Sample Name = **CONOCO Phillips, Sweeny TX. Calibrations Top 3**

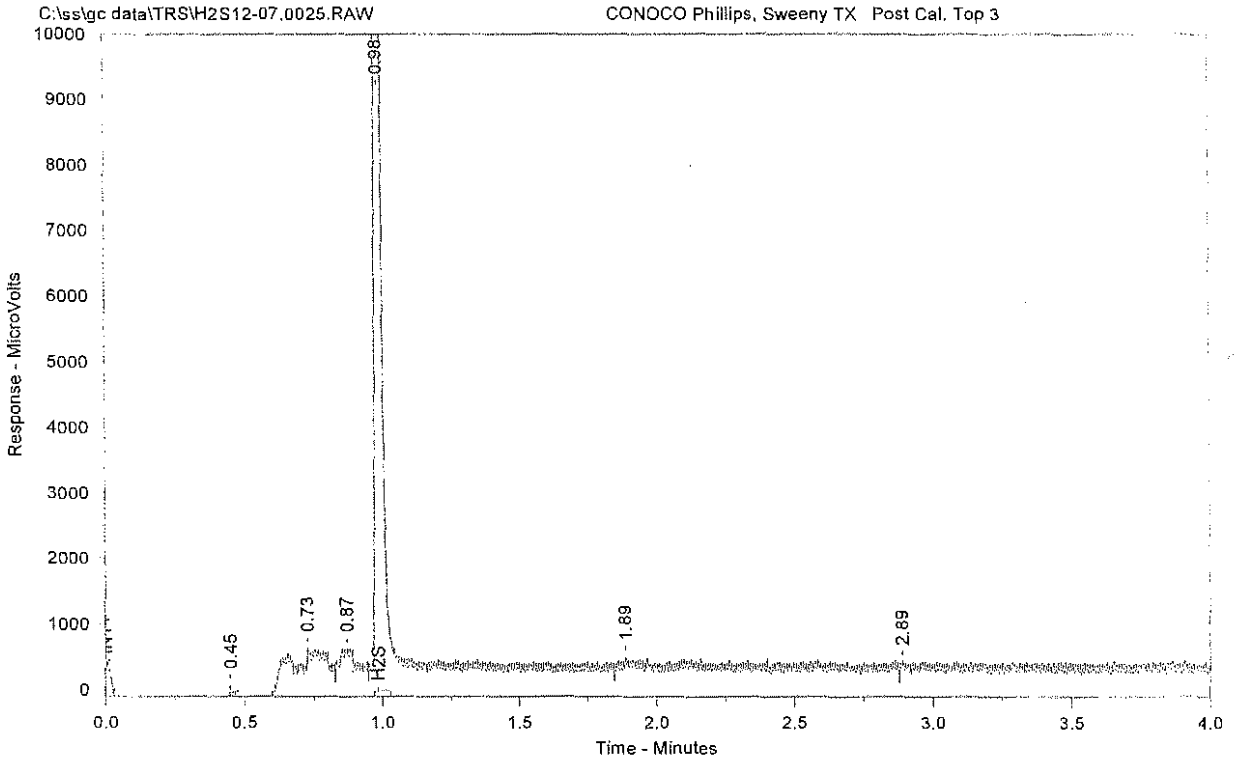
Instrument = Instrument 1
Heading 1 = Air = 100, H2 = 85, He = 113; 125 uL Sample Loop
Heading 2 = 0.0 Evnt 92.0, 0.6 Evnt -92, 5.0 Retn; 42C- Isothermal

Raw File Name = **C:\ss\gc data\TRS\H2S12-06.0019.RAW**
Method File Name = C:\CPData\SampleData\TRS.MET
Calibration File Name = C:\CPData\SampleData\H2S.CAL

Date Taken (end) = 12/6/2010 5:11:03 PM
Method Version = 8
Calibration Version = 1

Peak #	Ret. Time	Name	Amount	Height	Area	Type	Width
1	0.81		0.00	604.8	7958	BV	0.27
2	0.98	H2S	6.29	33806.1	42007	VB	0.02
3	3.76		0.00	257.9	2038	BB	0.34

Total Area = 52002.55 Total Height = 34668.81 Total Amount = 6.294003



Sample Name = **CONOCO Phillips, Sweeny TX Post Cal. Top 3**

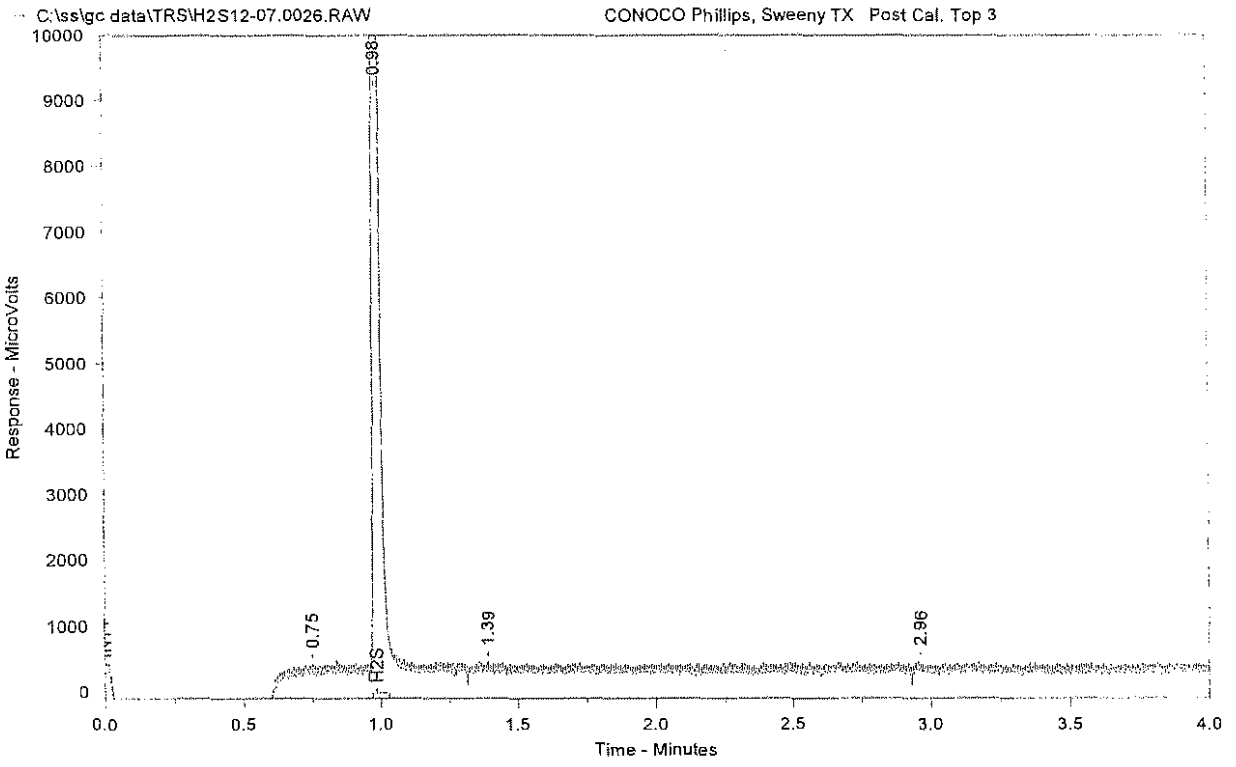
Instrument = Instrument 1
Heading 1 = Air = 100, H2 = 85, He = 113; 125 uL Sample Loop
Heading 2 = 0.0 Evnt 92.0, 0.6 Evnt -92, 5.0 Retn; 42C- Isothermal

Raw File Name = **C:\ss\gc data\TRS\H2S12-07.0025.RAW**
Method File Name = C:\CPData\SampleData\TRS.MET
Calibration File Name = C:\CPData\SampleData\H2S.CAL

Date Taken (end) = 12/7/2010 6:54:46 PM
Method Version = 8
Calibration Version = 1

Peak #	Ret. Time	Name	Amount	Height	Area	Type	Width
1	0.45		0.00	447.9	690	BB	0.03
2	0.73		0.00	842.5	8143	BV	0.21
3	0.87		0.00	696.8	3134	VV	0.05
4	0.98	H2S	6.39	34924.4	43040	VB	0.02
5	1.89		0.00	244.3	899	BB	0.15
6	2.89		0.00	199.7	218	BB	0.04

Total Area = 56123 Total Height = 37355.6 Total Amount = 6.388862



Sample Name = **CONOCO Phillips, Sweeny TX Post Cal. Top 3**

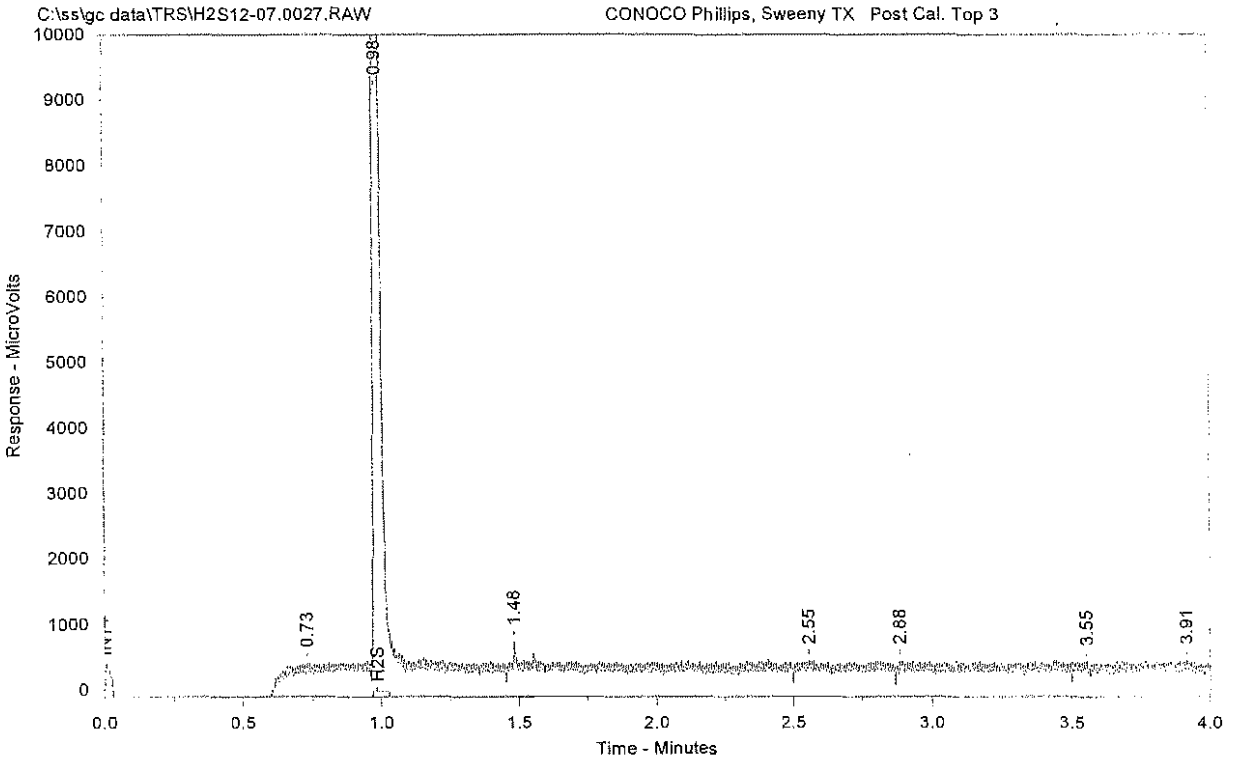
Instrument = Instrument 1
Heading 1 = Air = 100, H2 = 85, He = 113; 125 uL Sample Loop
Heading 2 = 0.0 Evnt 92.0, 0.6 Evnt -92, 5.0 Retn; 42C- Isothermal

Raw File Name = **C:\ss\gc data\TRS\H2S12-07.0026.RAW**
Method File Name = C:\CPData\SampleData\TRS.MET
Calibration File Name = C:\CPData\SampleData\H2S.CAL

Date Taken (end) = 12/7/2010 6:59:46 PM
Method Version = 8
Calibration Version = 1

Peak #	Ret. Time	Name	Amount	Height	Area	Type	Width
1	0.75		0.00	672.1	5872	BV	0.17
2	0.98	H2S	6.45	35625.1	47463	VV	0.02
3	1.39		0.00	250.7	1089	VB	0.13
4	2.96		0.00	216.4	514	BB	0.09

Total Area = 54937.3 Total Height = 36764.23 Total Amount = 6.447464



Sample Name = **CONOCO Phillips, Sweeny TX Post Cal. Top 3**

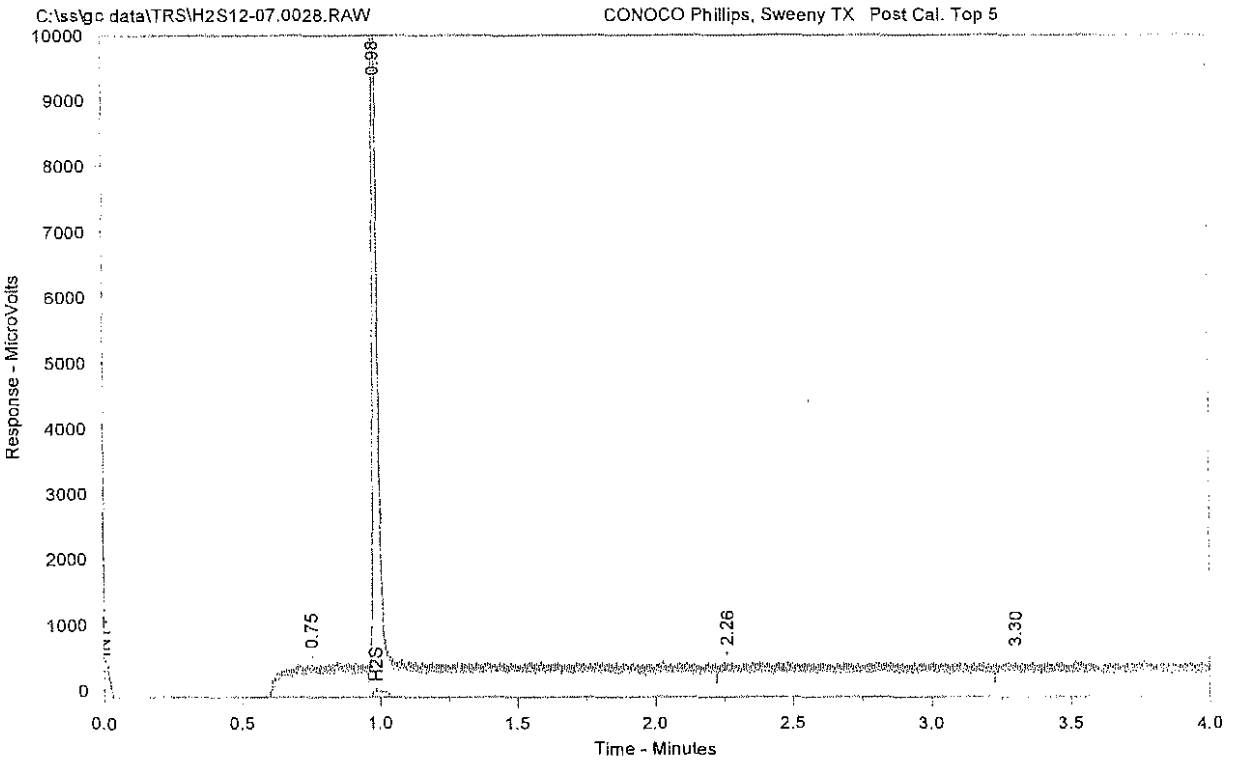
Instrument = Instrument 1
Heading 1 = Air = 100, H2 = 85, He = 113; 125 uL Sample Loop
Heading 2 = 0.0 Evnt 92.0, 0.6 Evnt -92, 5.0 Retn; 42C- Isothermal

Raw File Name = **C:\ss\gc data\TRS\H2S12-07.0027.RAW**
Method File Name = C:\CPData\SampleData\TRS.MET
Calibration File Name = C:\CPData\SampleData\H2S.CAL

Date Taken (end) = 12/7/2010 7:04:46 PM
Method Version = 8
Calibration Version = 1

Peak #	Ret. Time	Name	Amount	Height	Area	Type	Width
1	0.73		0.00	679.3	5822	BV	0.17
2	0.98	H2S	6.36	34611.4	47984	VV	0.02
3	1.48		0.00	565.2	1303	VB	0.07
4	2.55		0.00	208.7	688	BB	0.13
5	2.88		0.00	241.6	858	BB	0.13
6	3.55		0.00	223.1	406	BB	0.06
7	3.91		0.00	207.2	447	BB	0.09

Total Area = 57508.79 Total Height = 36736.47 Total Amount = 6.362482



Sample Name = **CONOCO Phillips, Sweeny TX Post Cal. Top 5**

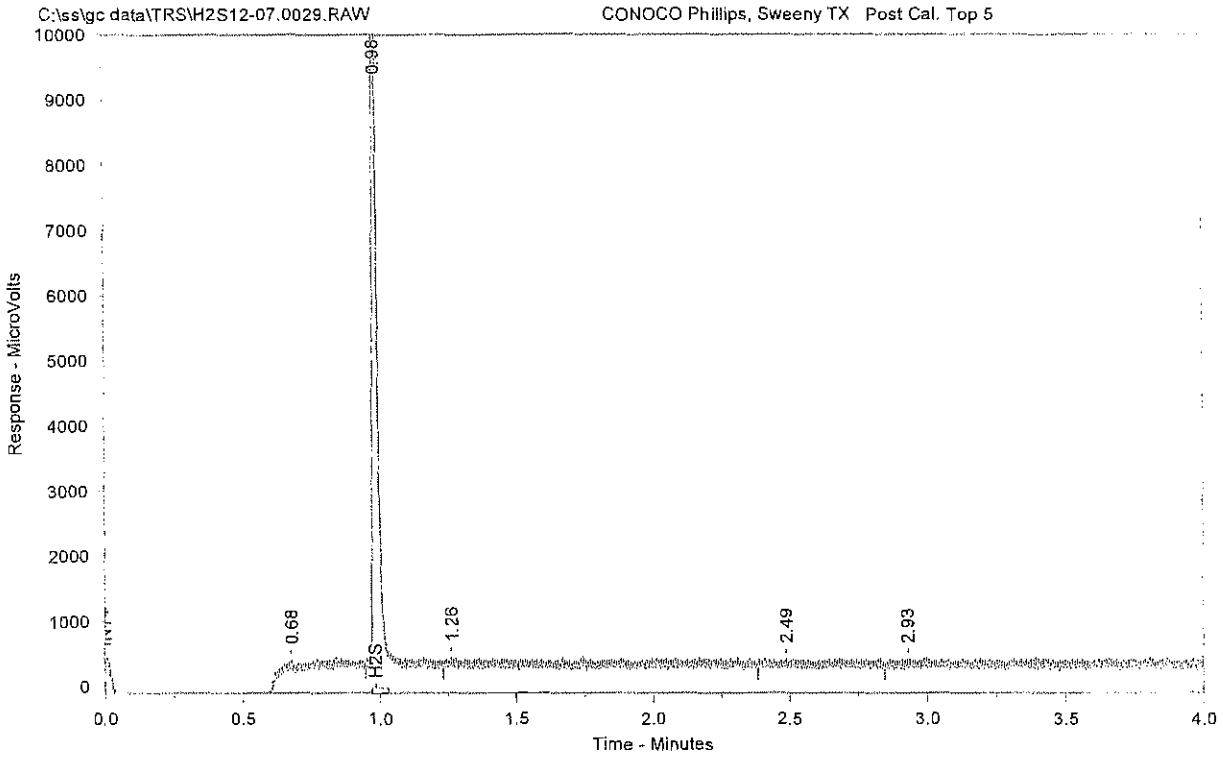
Instrument = Instrument 1
Heading 1 = Air = 100, H2 = 85, He = 113; 125 uL Sample Loop
Heading 2 = 0.0 Evnt 92.0, 0.6 Evnt -92, 5.0 Retn; 42C- Isothermal

Raw File Name = **C:\ss\gc data\TRS\H2S12-07.0028.RAW**
Method File Name = C:\CPData\SampleData\TRS.MET
Calibration File Name = C:\CPData\SampleData\H2S.CAL

Date Taken (end) = 12/7/2010 7:14:46 PM
Method Version = 8
Calibration Version = 1

Peak #	Ret. Time	Name	Amount	Height	Area	Type	Width
1	0.75		0.00	729.9	6378	BV	0.17
2	0.98	H2S	4.10	13280.3	33960	VV	0.02
3	2.26		0.00	282.5	2025	VB	0.32
4	3.30		0.00	192.4	830	BB	0.16

Total Area = 43192.49 Total Height = 14484.99 Total Amount = 4.096466



Sample Name = **CONOCO Phillips, Sweeny TX Post Cal. Top 5**

Instrument = Instrument 1
Heading 1 = Air = 100, H2 = 85, He = 113; 125 uL Sample Loop
Heading 2 = 0.0 Evnt 92.0, 0.6 Evnt -92, 5.0 Retn; 42C- Isothermal

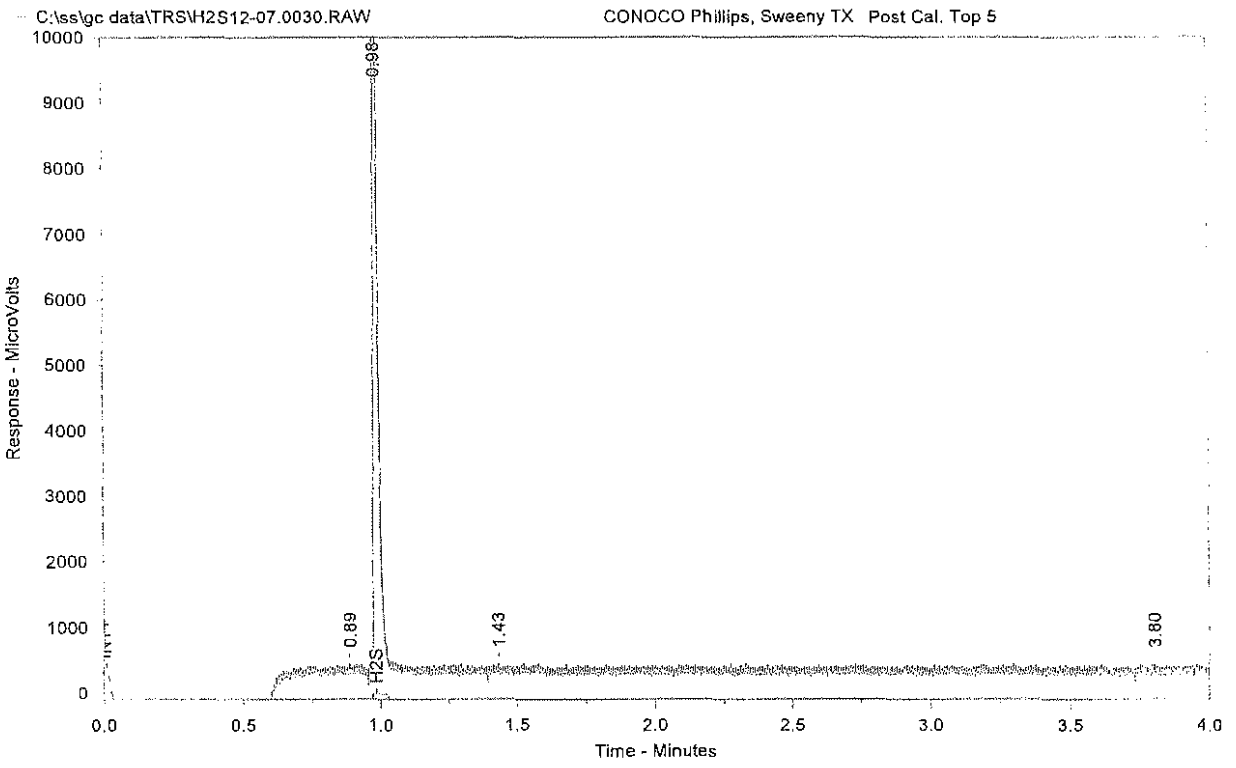
Raw File Name = **C:\ss\gc data\TRS\H2S12-07.0029.RAW**
Method File Name = C:\CPData\SampleData\TRS.MET
Calibration File Name = C:\CPData\SampleData\H2S.CAL

Date Taken (end) = 12/7/2010 7:19:47 PM
Method Version = 8
Calibration Version = 1

Peak #	Ret. Time	Name	Amount	Height	Area	Type	Width
1	0.68		0.00	347.5	1758	BB	0.11
2	0.98	H2S	4.03	12786.9	15542	BV	0.02
3	1.26		0.00	213.5	1419	VB	0.27
4	2.49		0.00	189.4	1019	BB	0.21
5	2.93		0.00	171.3	509	BB	0.12

Total Area = 20247.44 Total Height = 13708.62 Total Amount = 4.025804

Chrom Perfect Chromatogram Report



Sample Name = **CONOCO Phillips, Sweeny TX Post Cal. Top 5**

Instrument = Instrument 1
Heading 1 = Air = 100, H2 = 85, He = 113; 125 uL Sample Loop
Heading 2 = 0.0 Evnt 92.0, 0.6 Evnt -92, 5.0 Retn; 42C- Isothermal

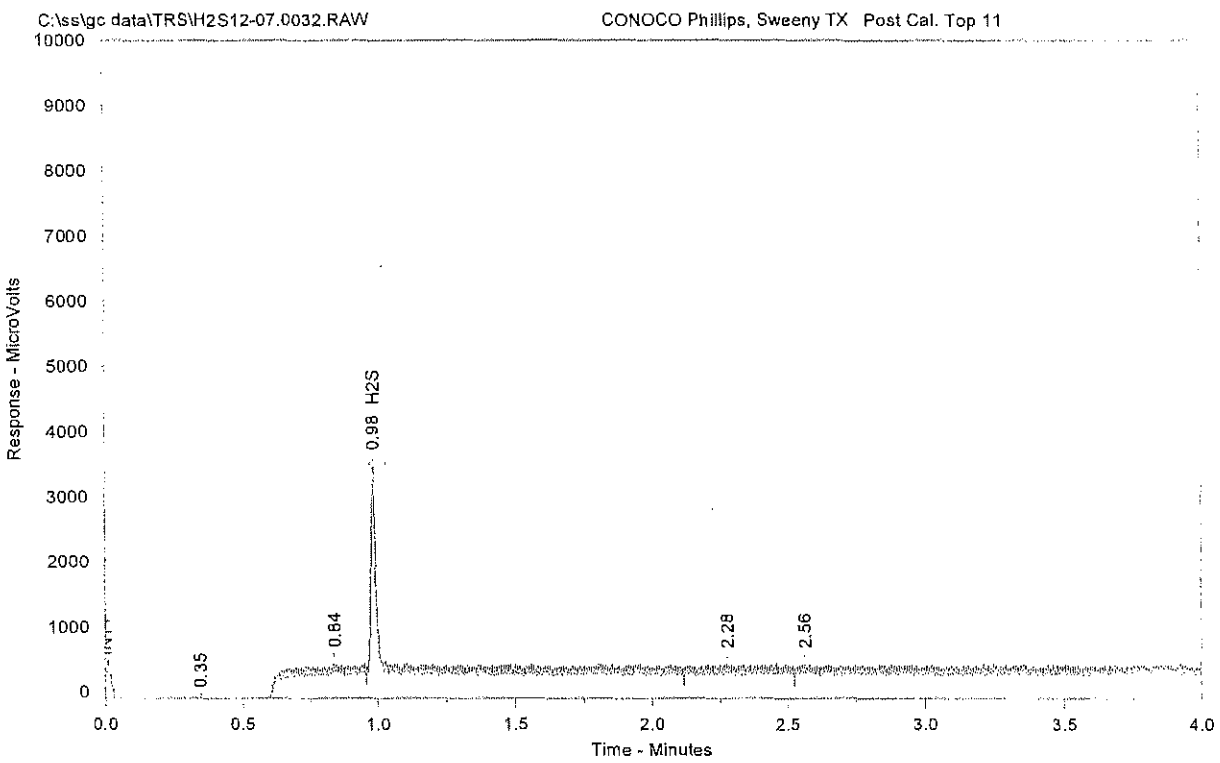
Raw File Name = **C:\ss\gc data\TRS\H2S12-07.0030.RAW**
Method File Name = C:\CPData\SampleData\TRS.MET
Calibration File Name = C:\CPData\SampleData\H2S.CAL

Date Taken (end) = 12/7/2010 7:24:47 PM
Method Version = 8
Calibration Version = 1

Peak #	Ret. Time	Name	Amount	Height	Area	Type	Width
1	0.89		0.00	407.8	8344	BV	0.34
2	0.98	H2S	4.07	13094.0	15773	VB	0.02
3	1.43		0.00	201.3	405	BB	0.09
4	3.80		0.00	210.3	1044	BB	0.21

Total Area = 25566.1 Total Height = 13913.47 Total Amount = 4.069959

Chrom Perfect Chromatogram Report



Sample Name = **CONOCO Phillips, Sweeny TX Post Cal. Top 11**

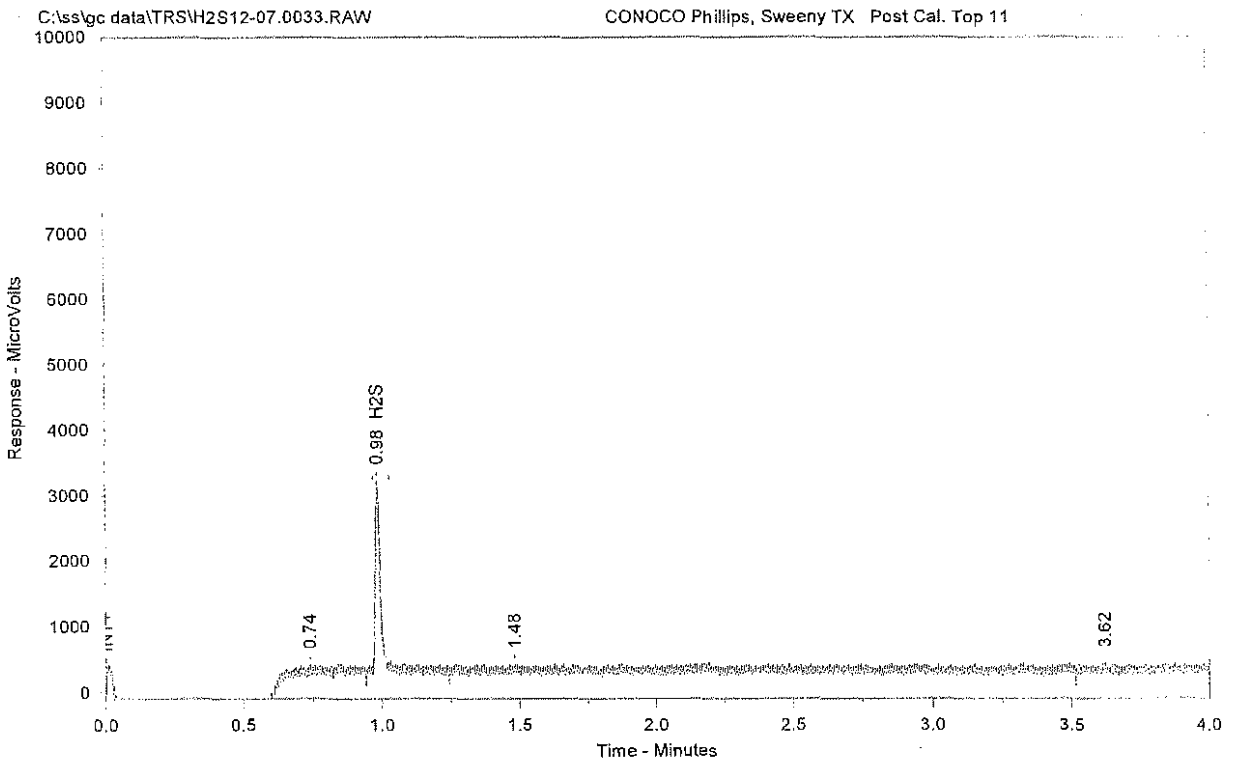
Instrument = Instrument 1
Heading 1 = Air = 100, H2 = 85, He = 113; 125 uL Sample Loop
Heading 2 = 0.0 Evnt 92.0, 0.6 Evnt -92, 5.0 Retn; 42C- Isothermal

Raw File Name = **C:\ss\gc data\TRS\H2S12-07.0032.RAW**
Method File Name = C:\CPData\SampleData\TRS.MET
Calibration File Name = C:\CPData\SampleData\H2S.CAL

Date Taken (end) = 12/7/2010 7:39:47 PM
Method Version = 8
Calibration Version = 1

Peak #	Ret. Time	Name	Amount	Height	Area	Type	Width
1	0.35		0.00	222.9	539	BB	0.12
2	0.84		0.00	474.1	7351	BV	0.27
3	0.98	H2S	2.16	3296.2	4175	VB	0.02
4	2.28		0.00	200.9	1717	BV	0.34
5	2.56		0.00	204.6	471	VB	0.09

Total Area = 14253.09 Total Height = 4398.685 Total Amount = 2.15893



Sample Name = **CONOCO Phillips, Sweeny TX Post Cal. Top 11**

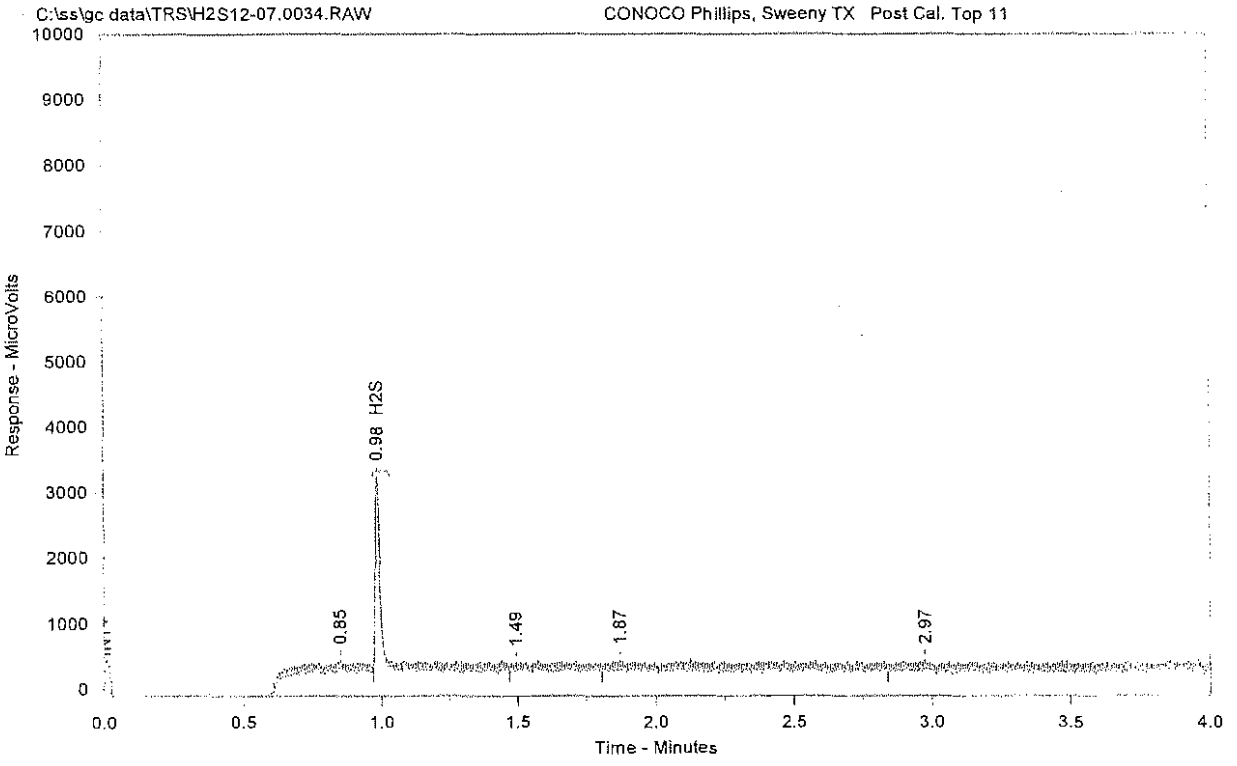
Instrument = Instrument 1
Heading 1 = Air = 100, H2 = 85, He = 113; 125 uL Sample Loop
Heading 2 = 0.0 Evnt 92.0, 0.6 Evnt -92, 5.0 Retn; 42C- Isothermal

Raw File Name = **C:\ss\gc data\TRS\H2S12-07.0033.RAW**
Method File Name = C:\CPData\SampleData\TRS.MET
Calibration File Name = C:\CPData\SampleData\H2S.CAL

Date Taken (end) = 12/7/2010 7:44:47 PM
Method Version = 8
Calibration Version = 1

Peak #	Ret. Time	Name	Amount	Height	Area	Type	Width
1	0.74		0.00	693.7	7227	BV	0.21
2	0.98	H2S	2.17	3332.7	8048	VV	0.02
3	1.48		0.00	194.7	2450	VB	0.26
4	3.62		0.00	216.3	740	BB	0.15

Total Area = 18464.13 Total Height = 4437.379 Total Amount = 2.169866



Sample Name = **CONOCO Phillips, Sweeny TX Post Cal. Top 11**

Instrument = Instrument 1
Heading 1 = Air = 100, H2 = 85, He = 113; 125 uL Sample Loop
Heading 2 = 0.0 Evnt 92.0, 0.6 Evnt -92, 5.0 Retn; 42C- Isothermal

Raw File Name = **C:\ss\gc data\TRS\H2S12-07.0034.RAW**
Method File Name = C:\CPData\SampleData\TRS.MET
Calibration File Name = C:\CPData\SampleData\H2S.CAL

Date Taken (end) = 12/7/2010 7:49:47 PM
Method Version = 8
Calibration Version = 1

Peak #	Ret. Time	Name	Amount	Height	Area	Type	Width
1	0.85		0.00	497.4	8743	BV	0.36
2	0.98	H2S	2.10	3091.7	4151	VB	0.02
3	1.49		0.00	167.6	345	BB	0.07
4	1.87		0.00	214.9	903	BB	0.20
5	2.97		0.00	223.2	930	BB	0.17

Total Area = 15071.55 Total Height = 4194.808 Total Amount = 2.096301

Stork Testing & Metallurgical Consulting
Air Emission Services
Houston, Texas

H_2S		SRU 28.2									Dil Corr.
Run NO.	Inj. 1 ppm	Inj. 2 ppm	Inj. 3 ppm	Inj. 4 ppm	Inj. 5 ppm	Inj. 6 ppm	Inj. 7 ppm	Inj. 8 ppm	Avg ppm	Dilution Factor	Avg ppm
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1	0.00
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1	0.00
3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1	0.00

Run NO.	Line Loss Frac.	Line Loss Corr. ppm	O_2 %	H_2S ppm @ 0% O_2	Allowable Limit, ppm @ 0% O_2	% of Allowable Limit
1	1.063	0.00	3.83	0.00	10	0.00
2	1.063	0.00	3.85	0.00	10	0.00
3	1.063	0.00	3.94	0.00	10	0.00

Run NO.	Date	Time	H_2S lb/dscf	Qsd dscf/hr	H_2S lb/hr	Allowable Limit lb/hr	% of Allowable Limit
1	12/7/10	1240-1440	0.000E+00	2,038,059.0	0.00	2.45	0.00
2	12/7/10	1445-1645	0.000E+00	2,030,072.5	0.00	2.45	0.00
3	12/7/10	1645-1845	0.000E+00	2,025,659.1	0.00	2.45	0.00

Note: Non-dectects treated as zero.

VMG

Stork Testing & Metallurgical Consulting
Air Emission Services
Houston, Texas

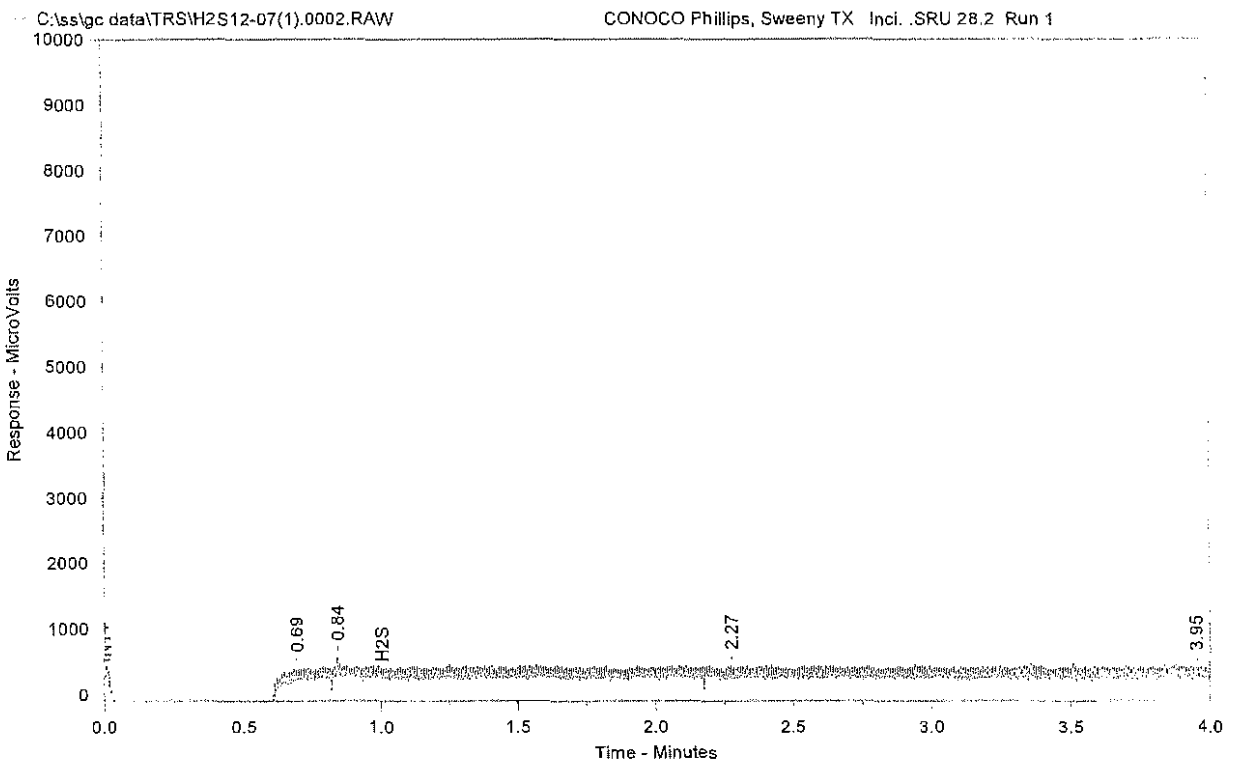
H_2S		SRU 28.2									Dil Corr.
Run NO.	Inj. 1 ppm	Inj. 2 ppm	Inj. 3 ppm	Inj. 4 ppm	Inj. 5 ppm	Inj. 6 ppm	Inj. 7 ppm	Inj. 8 ppm	Avg ppm	Dilution Factor	Avg ppm
1	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	1	0.43
2	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	1	0.43
3	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	1	0.43

Run NO.	Line Loss Frac.	Line Loss Corr. ppm	O_2 %	H_2S ppm @ 0% O_2	Allowable Limit, ppm @ 0% O_2	% of Allowable Limit
1	1.063	0.40	3.83	0.50	10	5.0
2	1.063	0.40	3.85	0.50	10	5.0
3	1.063	0.40	3.94	0.50	10	5.0

Run NO.	Date	Time	H_2S lb/dscf	Qsd dscf/hr	H_2S lb/hr	Allowable Limit lb/hr	% of Allowable Limit
1	12/7/10	1240-1440	3.572E-08	2,038,059.0	0.073	2.45	3.0
2	12/7/10	1445-1645	3.572E-08	2,030,072.5	0.073	2.45	3.0
3	12/7/10	1645-1845	3.572E-08	2,025,659.1	0.072	2.45	3.0

Note: Non-dectects treated as < 0.43 the Minimum Detection Limit. All stated values ppm and lb/hr are less than as they were all nondetectable.

JMG



Sample Name = **CONOCO Phillips, Sweeny TX Inci. .SRU 28.2 Run 1**

Instrument = Instrument 1
Heading 1 = Air = 100, H2 = 85, He = 113; 125 uL Sample Loop
Heading 2 = 0.0 Evnt 92.0, 0.6 Evnt -92, 5.0 Retn; 42C- Isothermal

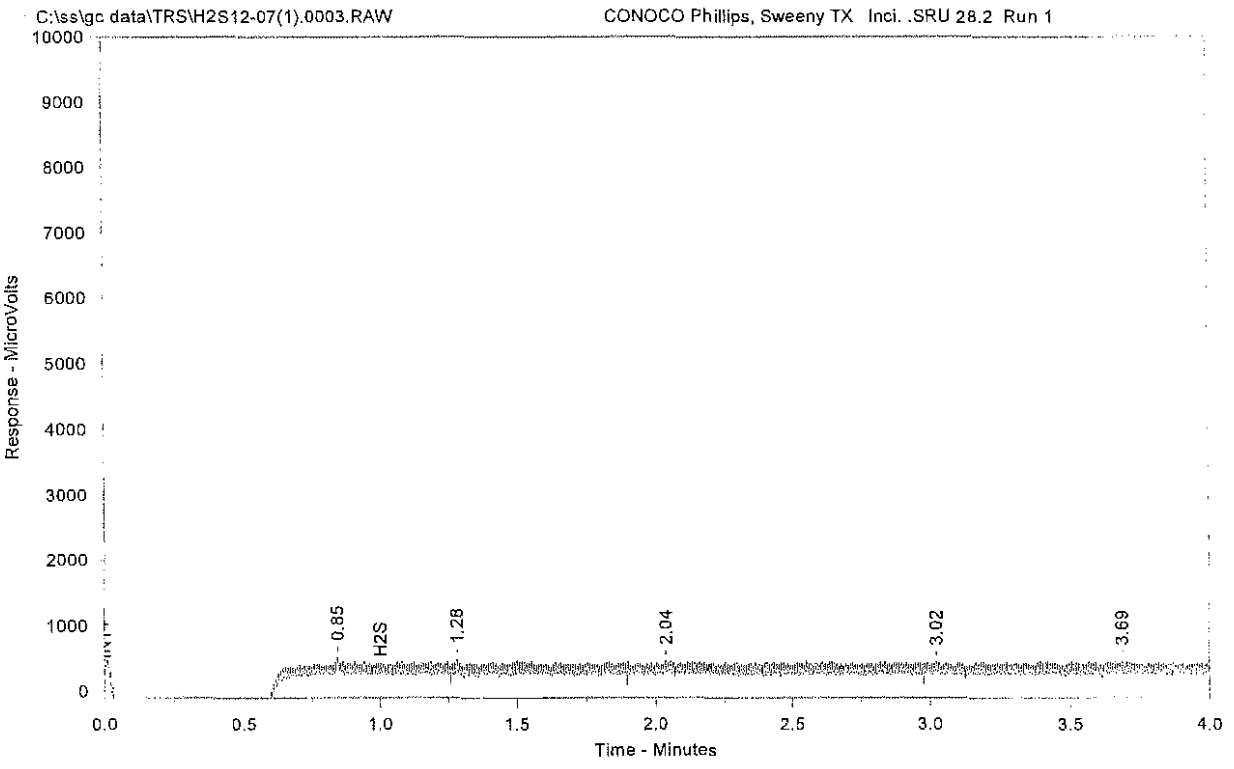
Raw File Name = **C:\ss\gc data\TRS\H2S12-07(1).0002.RAW**
Method File Name = C:\CPData\SampleData\TRS.MET
Calibration File Name = C:\CPData\SampleData\H2S.CAL

Date Taken (end) = 12/7/2010 1:04:18 PM
Method Version = 8
Calibration Version = 1

Peak #	Ret. Time	Name	Amount	Height	Area	Type	Width
1	0.69		0.00	770.1	5683	BV	0.16
2	0.84		0.00	896.4	30093	VV	1.06
3	2.27		0.00	324.1	3745	VB	0.42
4	3.95		0.00	187.0	118	BB	0.02

Total Area = 39637.97 Total Height = 2177.483 Total Amount = 0

RI-1



Sample Name = **CONOCO Phillips, Sweeny TX Inci. .SRU 28.2 Run 1**

Instrument = Instrument 1
Heading 1 = Air = 100, H2 = 85, He = 113; 125 uL Sample Loop
Heading 2 = 0.0 Evnt 92.0, 0.6 Evnt -92, 5.0 Retn; 42C- Isothermal

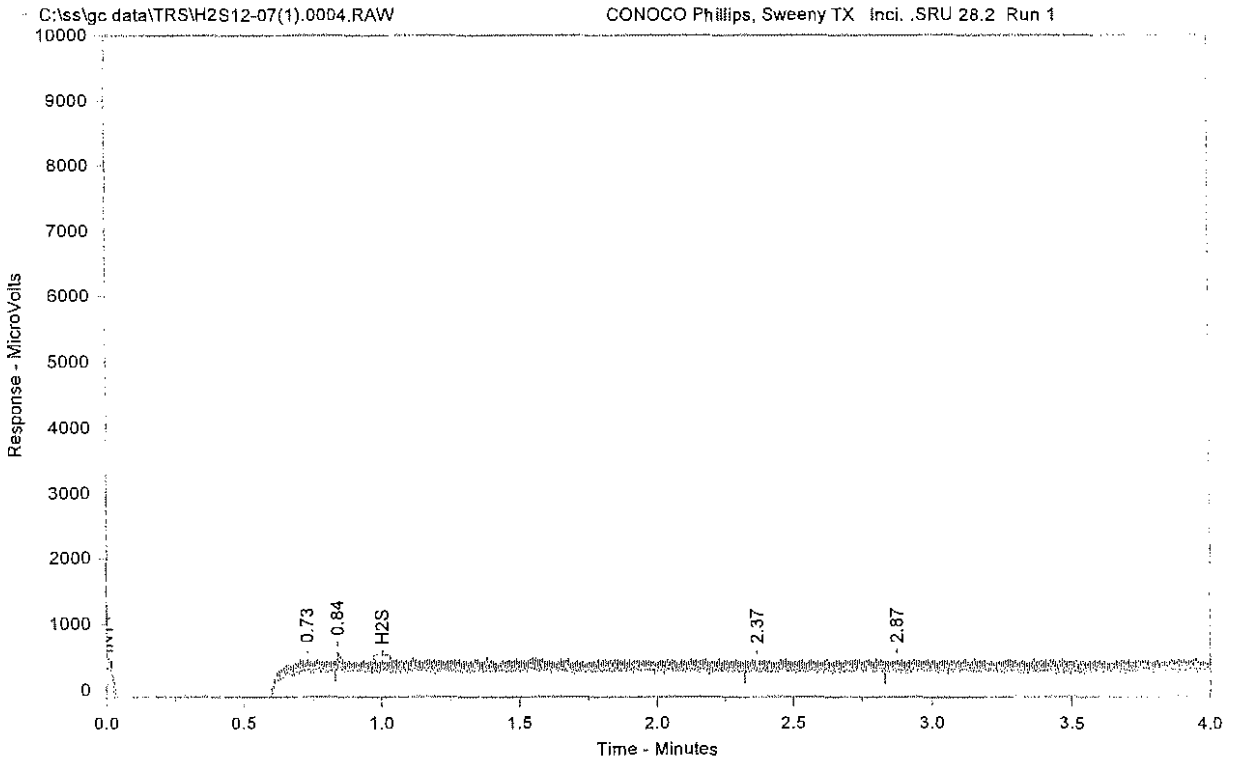
Raw File Name = **C:\ss\gc data\TRS\H2S12-07(1).0003.RAW**
Method File Name = C:\CPData\SampleData\TRS.MET
Calibration File Name = C:\CPData\SampleData\H2S.CAL

Date Taken (end) = 12/7/2010 1:19:18 PM
Method Version = 8
Calibration Version = 1

Peak #	Ret. Time	Name	Amount	Height	Area	Type	Width
1	0.85		0.00	810.4	13068	BV	0.36
2	1.28		0.00	588.8	10056	VV	0.53
3	2.04		0.00	274.2	1357	VB	0.17
4	3.02		0.00	227.3	845	BB	0.15
5	3.69		0.00	238.0	1335	BB	0.24

Total Area = 26661.08 Total Height = 2138.742 Total Amount = 0

R1-2



Sample Name = **CONOCO Phillips, Sweeny TX Incl. .SRU 28.2 Run 1**

Instrument = Instrument 1
Heading 1 = Air = 100, H2 = 85, He = 113; 125 uL Sample Loop
Heading 2 = 0.0 Evnt 92.0, 0.6 Evnt -92, 5.0 Retn; 42C- Isothermal

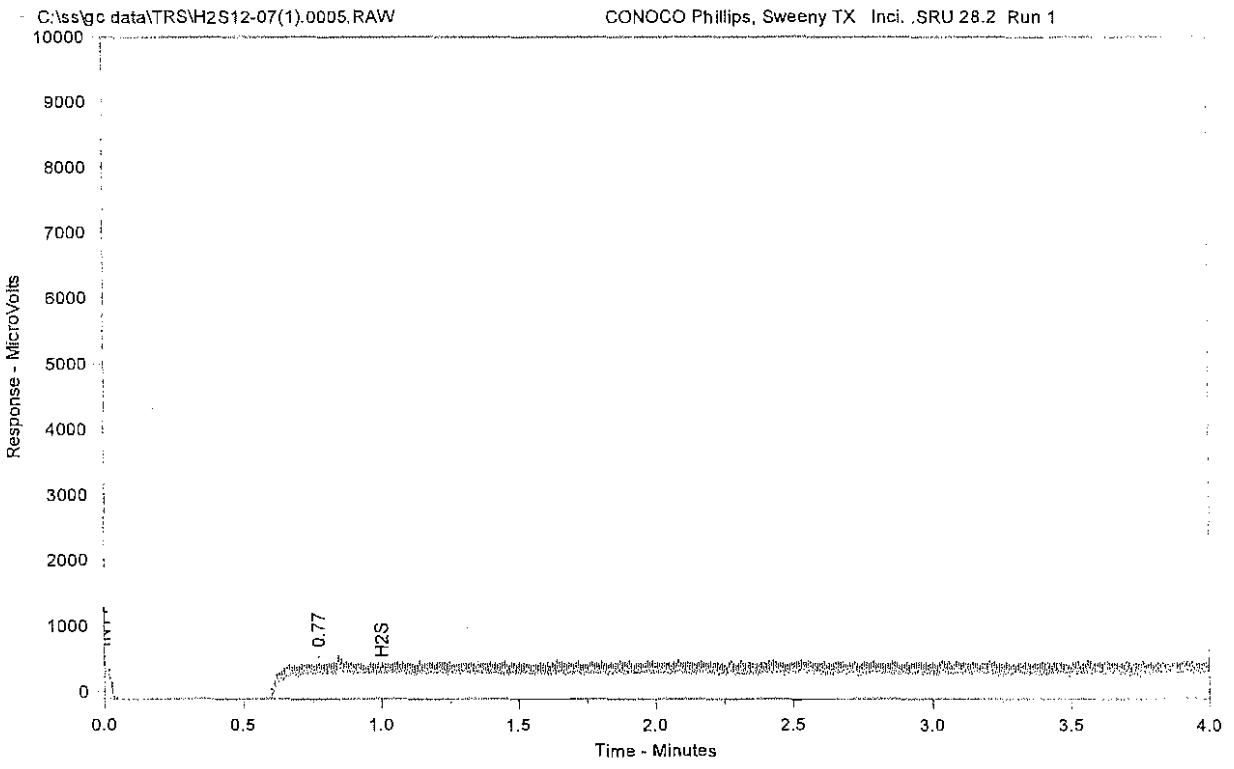
Raw File Name = **C:\ss\gc data\TRS\H2S12-07(1).0004.RAW**
Method File Name = C:\CPData\SampleData\TRS.MET
Calibration File Name = C:\CPData\SampleData\H2S.CAL

Date Taken (end) = 12/7/2010 1:34:19 PM
Method Version = 8
Calibration Version = 1

Peak #	Ret. Time	Name	Amount	Height	Area	Type	Width
1	0.73		0.00	608.4	6156	BV	0.22
2	0.84		0.00	557.2	1685	VB	0.13
3	2.37		0.00	228.1	453	BB	0.08
4	2.87		0.00	248.1	1413	BB	0.22

Total Area = 9707.898 Total Height = 1641.741 Total Amount = 0

R1-3



Sample Name = **CONOCO Phillips, Sweeny TX Inci. .SRU 28.2 Run 1**

Instrument = Instrument 1
Heading 1 = Air = 100, H2 = 85, He = 113; 125 uL Sample Loop
Heading 2 = 0.0 Evnt 92.0, 0.6 Evnt -92, 5.0 Retn; 42C- Isothermal

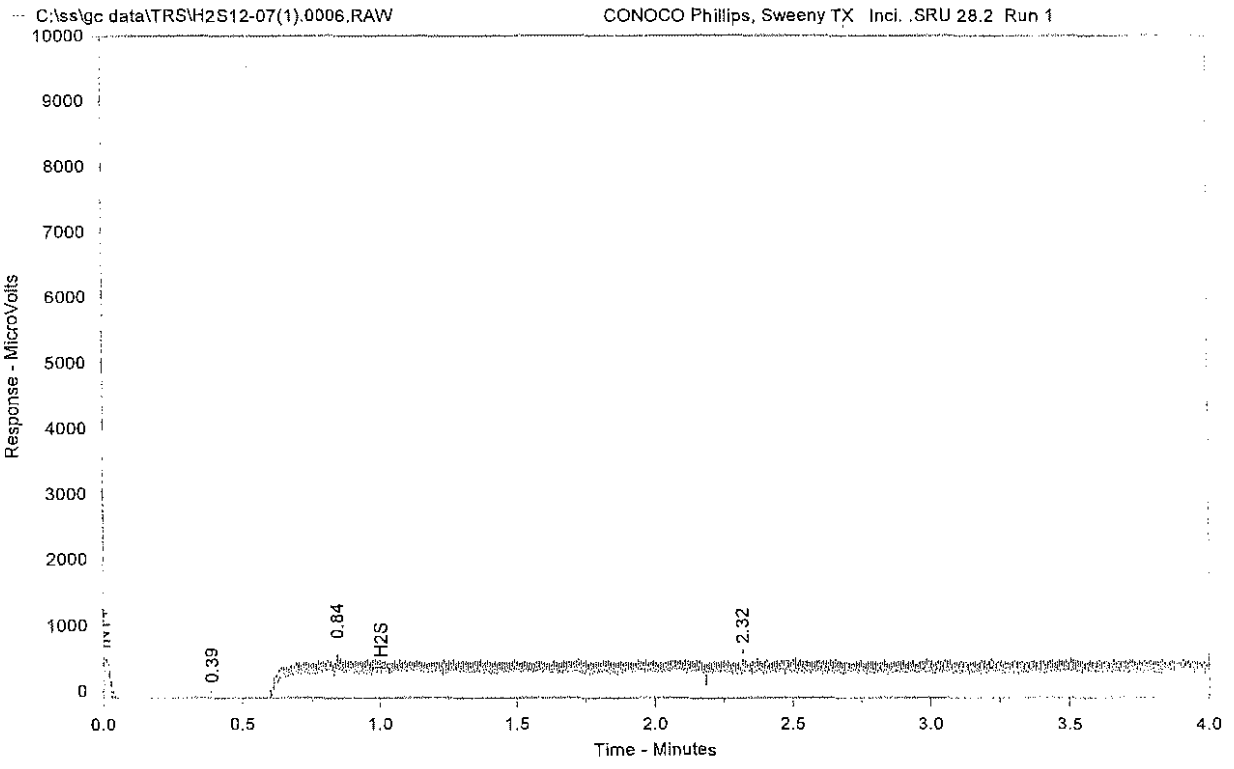
Raw File Name = **C:\ss\gc data\TRS\H2S12-07(1).0005.RAW**
Method File Name = C:\CPData\SampleData\TRS.MET
Calibration File Name = C:\CPData\SampleData\H2S.CAL

Date Taken (end) = 12/7/2010 1:49:19 PM
Method Version = 8
Calibration Version = 1

Peak #	Ret. Time	Name	Amount	Height	Area	Type	Width
1	0.77		0.00	276.3	3896	BB	0.20

Total Area = 3895.758 Total Height = 276.2603 Total Amount = 0

R1-4



Sample Name = **CONOCO Phillips, Sweeny TX Inci. .SRU 28.2 Run 1**

Instrument = Instrument 1
Heading 1 = Air = 100, H2 = 85, He = 113; 125 uL Sample Loop
Heading 2 = 0.0 Evnt 92.0, 0.6 Evnt -92, 5.0 Retn; 42C- Isothermal

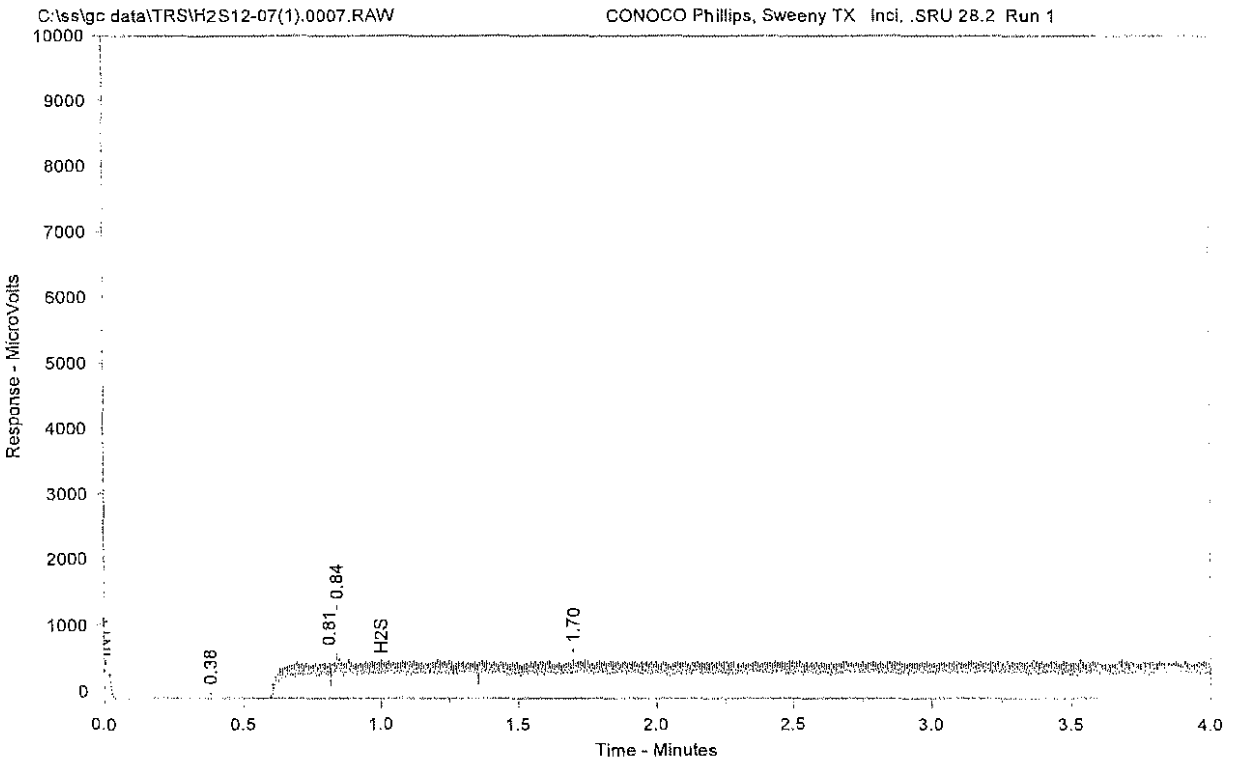
Raw File Name = **C:\ss\gc data\TRS\H2S12-07(1).0006.RAW**
Method File Name = C:\CPData\SampleData\TRS.MET
Calibration File Name = C:\CPData\SampleData\H2S.CAL

Date Taken (end) = 12/7/2010 2:04:19 PM
Method Version = 8
Calibration Version = 1

Peak #	Ret. Time	Name	Amount	Height	Area	Type	Width
1	0.39		0.00	271.1	767	BB	0.12
2	0.84		0.00	670.6	13615	BB	0.62
3	2.32		0.00	242.7	914	BB	0.16

Total Area = 15296.17 Total Height = 1184.437 Total Amount = 0

R1-5



Sample Name = **CONOCO Phillips, Sweeny TX Incl. .SRU 28.2 Run 1**

Instrument = Instrument 1
Heading 1 = Air = 100, H2 = 85, He = 113; 125 uL Sample Loop
Heading 2 = 0.0 Evnt 92.0, 0.6 Evnt -92, 5.0 Retn; 42C- Isothermal

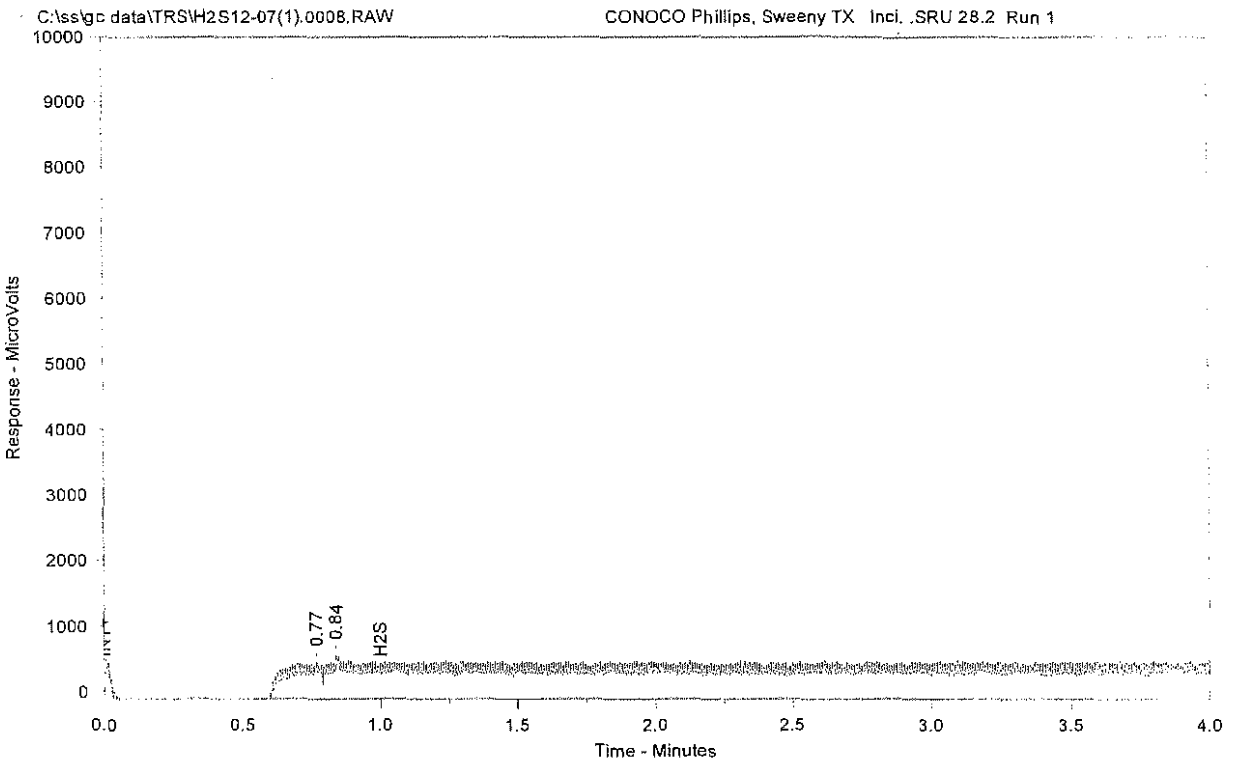
Raw File Name = **C:\ss\gc data\TRS\H2S12-07(1).0007.RAW**
Method File Name = C:\CPData\SampleData\TRS.MET
Calibration File Name = C:\CPData\SampleData\H2S.CAL

Date Taken (end) = 12/7/2010 2:19:19 PM
Method Version = 8
Calibration Version = 1

Peak #	Ret. Time	Name	Amount	Height	Area	Type	Width
1	0.38		0.00	244.4	1652	BB	0.28
2	0.81		0.00	710.2	7528	BV	0.21
3	0.84		0.00	823.6	13132	VV	0.44
4	1.70		0.00	349.0	7318	VB	0.59

Total Area = 29629.86 Total Height = 2127.104 Total Amount = 0

R1-6



Sample Name = **CONOCO Phillips, Sweeny TX Inci. .SRU 28.2 Run 1**

Instrument = Instrument 1
Heading 1 = Air = 100, H2 = 85, He = 113; 125 uL Sample Loop
Heading 2 = 0.0 Evnt 92.0, 0.6 Evnt -92, 5.0 Retn; 42C- Isothermal

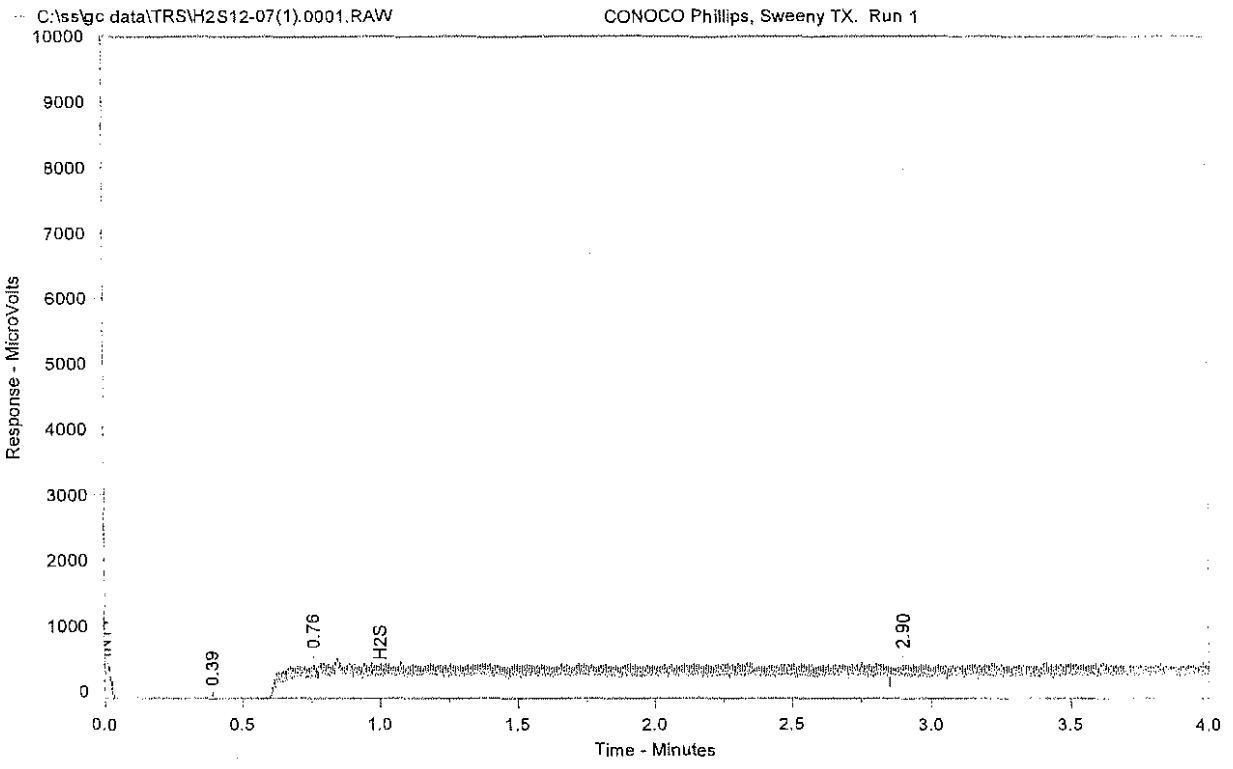
Raw File Name = **C:\ss\gc data\TRS\H2S12-07(1).0008.RAW**
Method File Name = C:\CPData\SampleData\TRS.MET
Calibration File Name = C:\CPData\SampleData\H2S.CAL

Date Taken (end) = 12/7/2010 2:34:20 PM
Method Version = 8
Calibration Version = 1

Peak #	Ret. Time	Name	Amount	Height	Area	Type	Width
1	0.77		0.00	585.8	5519	BV	0.18
2	0.84		0.00	618.5	4925	VB	0.29

Total Area = 10444.3 Total Height = 1204.331 Total Amount = 0

R1-7



Sample Name = **CONOCO Phillips, Sweeny TX. Run 1**

Instrument = Instrument 1
Heading 1 = Air = 100, H2 = 85, He = 113; 125 uL Sample Loop
Heading 2 = 0.0 Evnt 92.0, 0.6 Evnt -92, 5.0 Retn; 42C- Isothermal

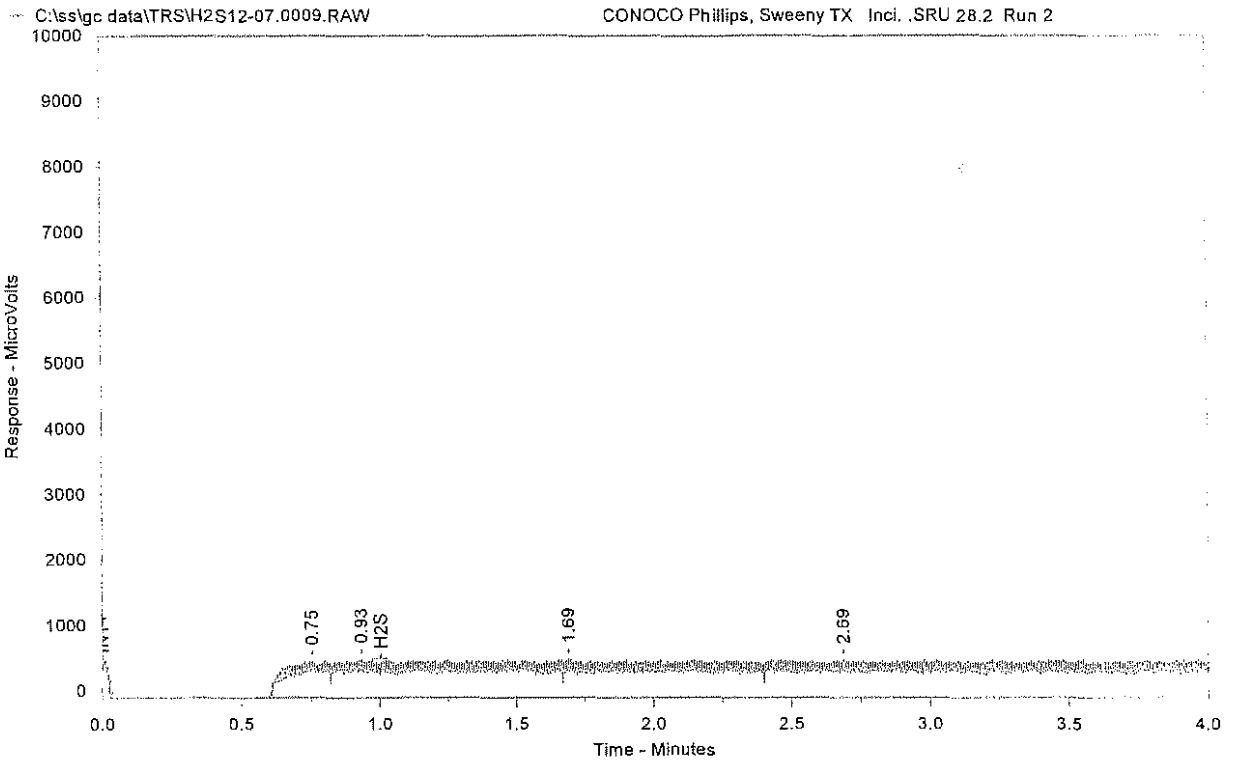
Raw File Name = **C:\ss\gc data\TRS\H2S12-07(1).0001.RAW**
Method File Name = C:\CPData\SampleData\TRS.MET
Calibration File Name = C:\CPData\SampleData\H2S.CAL

Date Taken (end) = 12/7/2010 12:49:18 PM
Method Version = 8
Calibration Version = 1

Peak #	Ret. Time	Name	Amount	Height	Area	Type	Width
1	0.39		0.00	255.2	663	BB	0.10
2	0.76		0.00	276.8	3141	BB	0.17
3	2.90		0.00	233.4	1173	BB	0.20

Total Area = 4977.186 Total Height = 765.4854 Total Amount = 0

R1-8



Sample Name = **CONOCO Phillips, Sweeny TX Inci. .SRU 28.2 Run 2**

Instrument = Instrument 1
Heading 1 = Air = 100, H2 = 85, He = 113; 125 uL Sample Loop
Heading 2 = 0.0 Evnt 92.0, 0.6 Evnt -92, 5.0 Retn; 42C- Isothermal

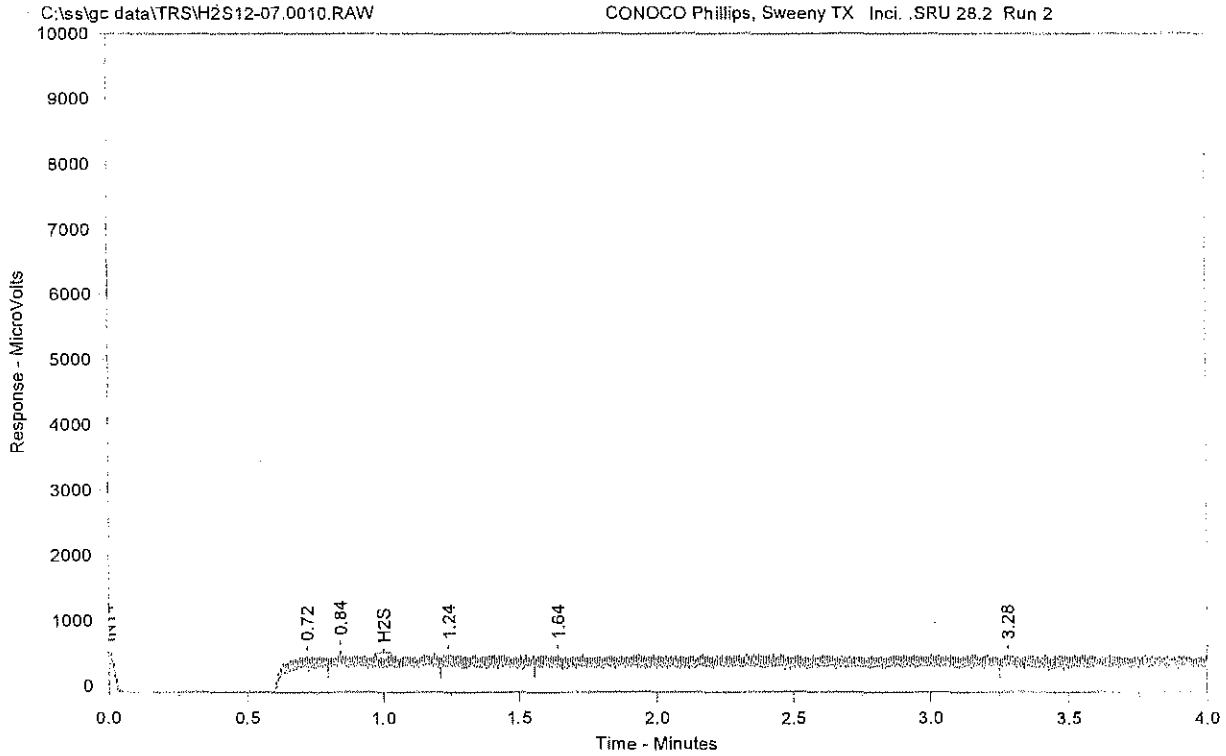
Raw File Name = **C:\ss\gc data\TRS\H2S12-07.0009.RAW**
Method File Name = C:\CPData\SampleData\TRS.MET
Calibration File Name = C:\CPData\SampleData\H2S.CAL

Date Taken (end) = 12/7/2010 2:49:20 PM
Method Version = 8
Calibration Version = 1

Peak #	Ret. Time	Name	Amount	Height	Area	Type	Width
1	0.75		0.00	573.1	4874	BV	0.17
2	0.93		0.00	347.3	2480	VB	0.17
3	1.69		0.00	242.3	1381	BB	0.26
4	2.69		0.00	241.7	3077	BB	0.57

Total Area = 11812.19 Total Height = 1404.402 Total Amount = 0

R2-1



Sample Name = **CONOCO Phillips, Sweeny TX Inci. .SRU 28.2 Run 2**

Instrument = Instrument 1
Heading 1 = Air = 100, H2 = 85, He = 113; 125 uL Sample Loop
Heading 2 = 0.0 Evnt 92.0, 0.6 Evnt -92, 5.0 Retn; 42C- Isothermal

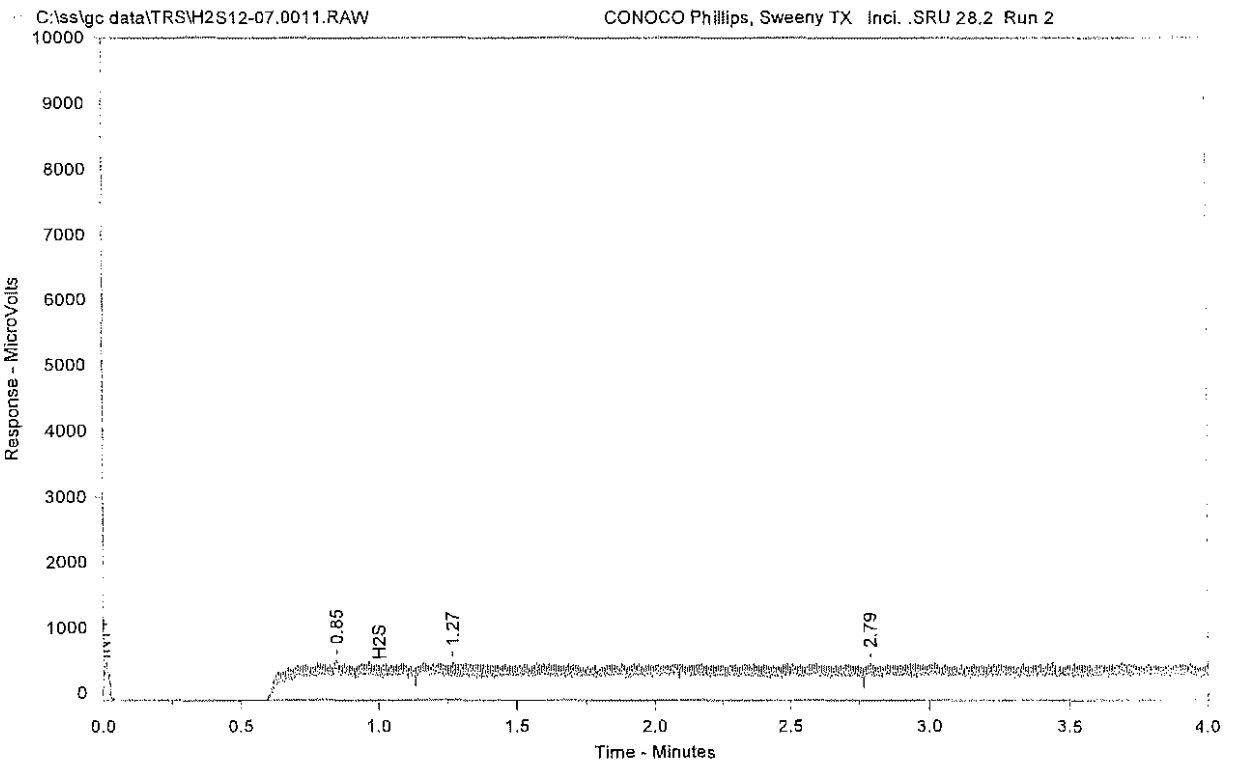
Raw File Name = **C:\ss\gc data\TRS\H2S12-07.0010.RAW**
Method File Name = C:\CPData\SampleData\TRS.MET
Calibration File Name = C:\CPData\SampleData\H2S.CAL

Date Taken (end) = 12/7/2010 3:04:21 PM
Method Version = 8
Calibration Version = 1

Peak #	Ret. Time	Name	Amount	Height	Area	Type	Width
1	0.72		0.00	727.5	6692	BV	0.19
2	0.84		0.00	693.2	6751	VV	0.26
3	1.24		0.00	282.2	745	VB	0.09
4	1.64		0.00	239.2	557	BB	0.09
5	3.28		0.00	223.4	458	BB	0.08

Total Area = 15203.64 Total Height = 2165.577 Total Amount = 0

R 2-2



Sample Name = **CONOCO Phillips, Sweeny TX Incl. .SRU 28.2 Run 2**

Instrument = Instrument 1
Heading 1 = Air = 100, H2 = 85, He = 113; 125 uL Sample Loop
Heading 2 = 0.0 Evnt 92.0, 0.6 Evnt -92, 5.0 Retn; 42C- Isothermal

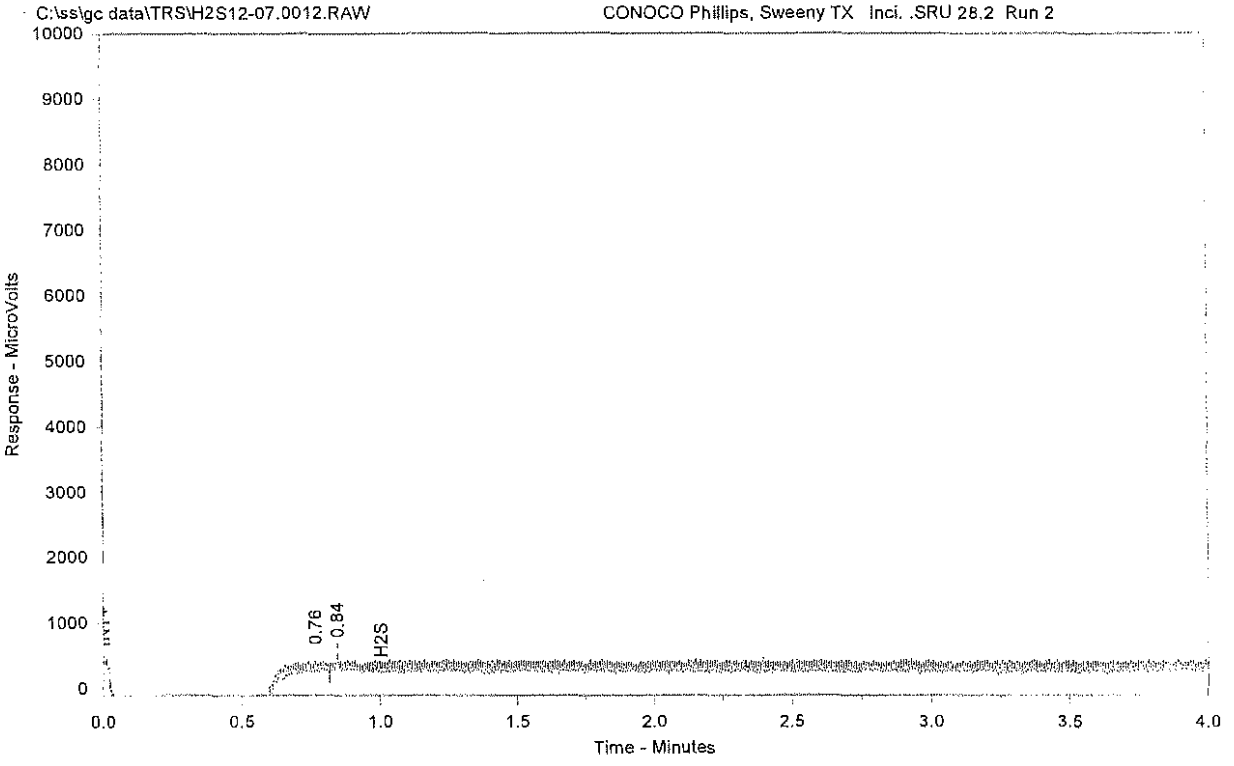
Raw File Name = **C:\ss\gc data\TRS\H2S12-07.0011.RAW**
Method File Name = C:\CPData\SampleData\TRS.MET
Calibration File Name = C:\CPData\SampleData\H2S.CAL

Date Taken (end) = 12/7/2010 3:19:21 PM
Method Version = 8
Calibration Version = 1

Peak #	Ret. Time	Name	Amount	Height	Area	Type	Width
1	0.85		0.00	681.3	9866	BV	0.31
2	1.27		0.00	333.0	2797	VB	0.24
3	2.79		0.00	239.5	932	BB	0.16

Total Area = 13595.43 Total Height = 1253.869 Total Amount = 0

R2-3



Sample Name = **CONOCO Phillips, Sweeny TX Inci. .SRU 28.2 Run 2**

Instrument = Instrument 1
Heading 1 = Air = 100, H2 = 85, He = 113; 125 uL Sample Loop
Heading 2 = 0.0 Evnt 92.0, 0.6 Evnt -92, 5.0 Retn; 42C- Isothermal

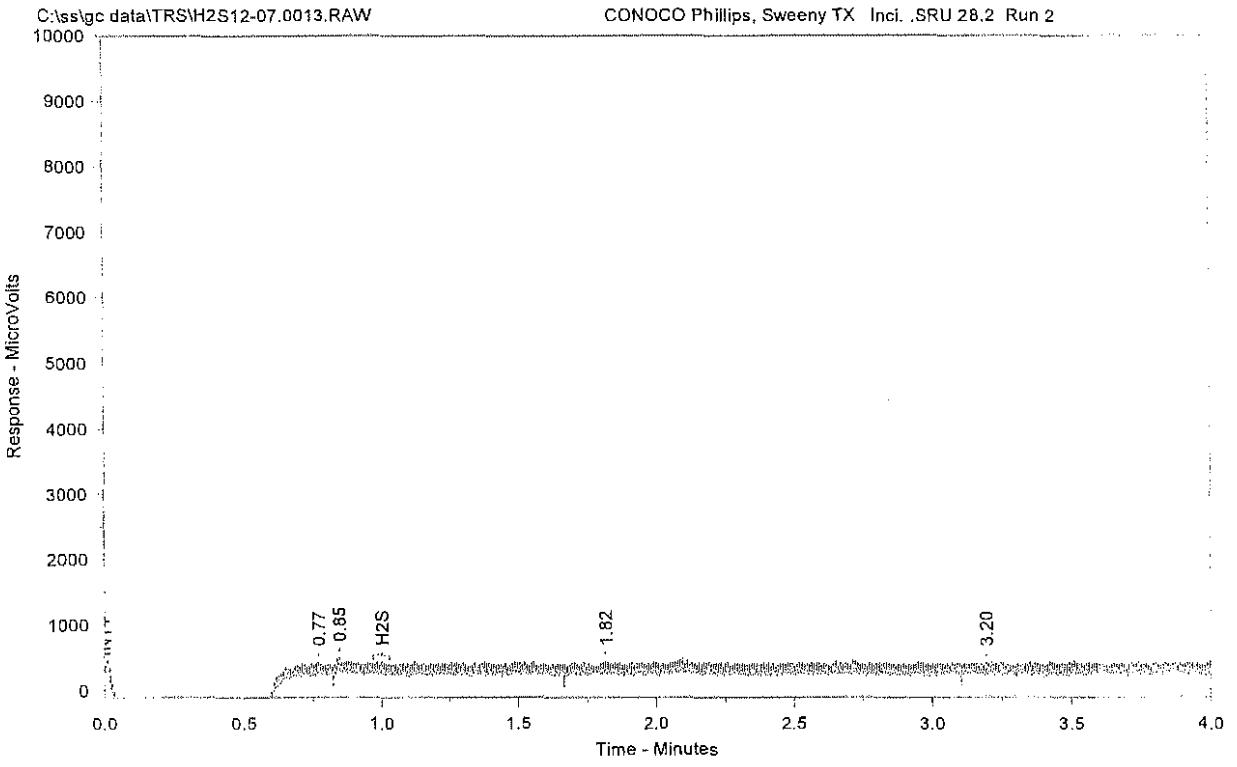
Raw File Name = **C:\ss\gc data\TRS\H2S12-07.0012.RAW**
Method File Name = C:\CPData\SampleData\TRS.MET
Calibration File Name = C:\CPData\SampleData\H2S.CAL

Date Taken (end) = 12/7/2010 3:34:21 PM
Method Version = 8
Calibration Version = 1

Peak #	Ret. Time	Name	Amount	Height	Area	Type	Width
1	0.76		0.00	505.2	5579	BV	0.21
2	0.84		0.00	483.6	1685	VB	0.14

Total Area = 7263.893 Total Height = 988.7147 Total Amount = 0

R2-4



Sample Name = **CONOCO Phillips, Sweeny TX Inci. .SRU 28.2 Run 2**

Instrument = Instrument 1
Heading 1 = Air = 100, H2 = 85, He = 113; 125 uL Sample Loop
Heading 2 = 0.0 Evnt 92.0, 0.6 Evnt -92, 5.0 Retn; 42C- Isothermal

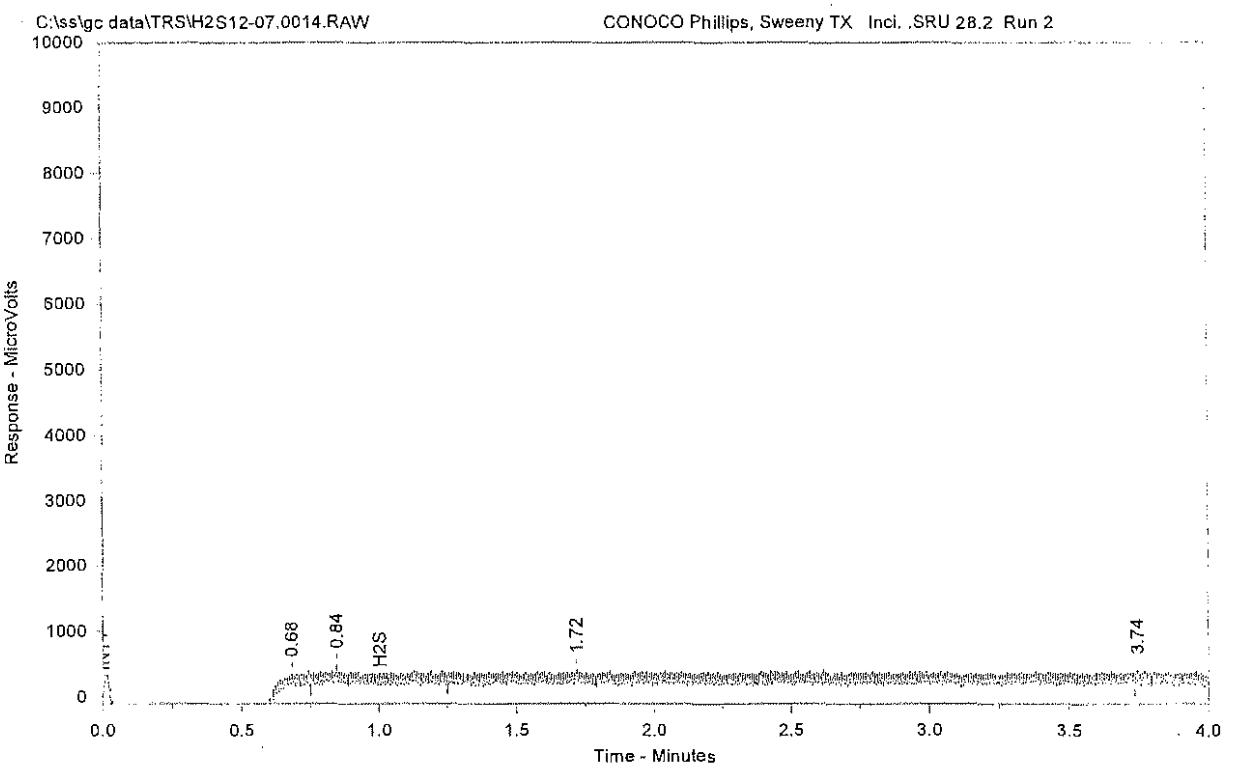
Raw File Name = **C:\ss\gc data\TRS\H2S12-07.0013.RAW**
Method File Name = C:\CPData\SampleData\TRS.MET
Calibration File Name = C:\CPData\SampleData\H2S.CAL

Date Taken (end) = 12/7/2010 3:49:21 PM
Method Version = 8
Calibration Version = 1

Peak #	Ret. Time	Name	Amount	Height	Area	Type	Width
1	0.77		0.00	508.5	5187	BV	0.19
2	0.85		0.00	445.6	1336	VB	0.10
3	1.82		0.00	236.9	1246	BB	0.21
4	3.20		0.00	241.1	1210	BB	0.19

Total Area = 8979.485 Total Height = 1432.15 Total Amount = 0

R2-5



Sample Name = **CONOCO Phillips, Sweeny TX Incl. .SRU 28.2 Run 2**

Instrument = Instrument 1
Heading 1 = Air = 100, H2 = 85, He = 113; 125 uL Sample Loop
Heading 2 = 0.0 Evnt 92.0, 0.6 Evnt -92, 5.0 Retn; 42C- Isothermal

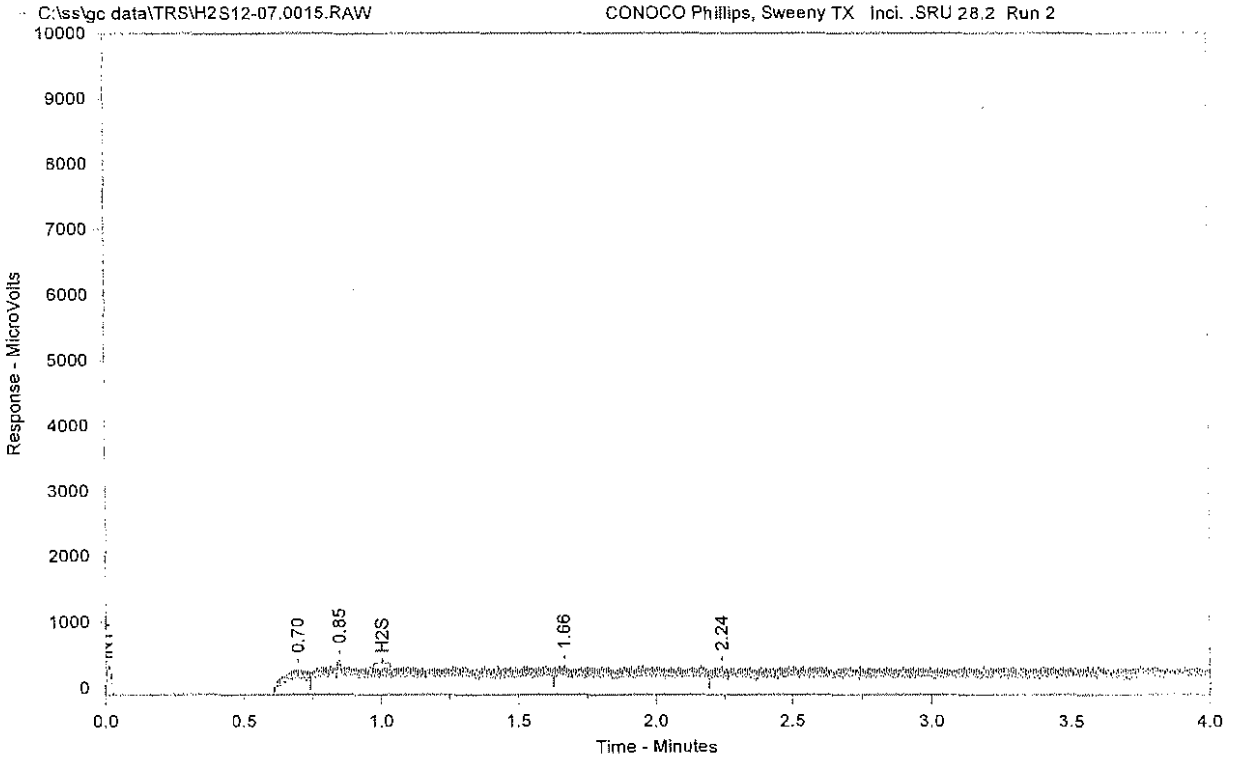
Raw File Name = **C:\ss\gc data\TRS\H2S12-07.0014.RAW**
Method File Name = C:\CPData\SampleData\TRS.MET
Calibration File Name = C:\CPData\SampleData\H2S.CAL

Date Taken (end) = 12/7/2010 4:04:22 PM
Method Version = 8
Calibration Version = 1

Peak #	Ret. Time	Name	Amount	Height	Area	Type	Width
1	0.68		0.00	608.0	3037	BV	0.11
2	0.84		0.00	425.5	1976	VB	0.13
3	1.72		0.00	263.7	3110	BB	0.53
4	3.74		0.00	255.3	375	BB	0.05

Total Area = 8498.513 Total Height = 1552.501 Total Amount = 0

R2-6



Sample Name = **CONOCO Phillips, Sweeny TX Inci. .SRU 28.2 Run 2**

Instrument = Instrument 1
Heading 1 = Air = 100, H2 = 85, He = 113; 125 uL Sample Loop
Heading 2 = 0.0 Evnt 92.0, 0.6 Evnt -92, 5.0 Retn; 42C- Isothermal

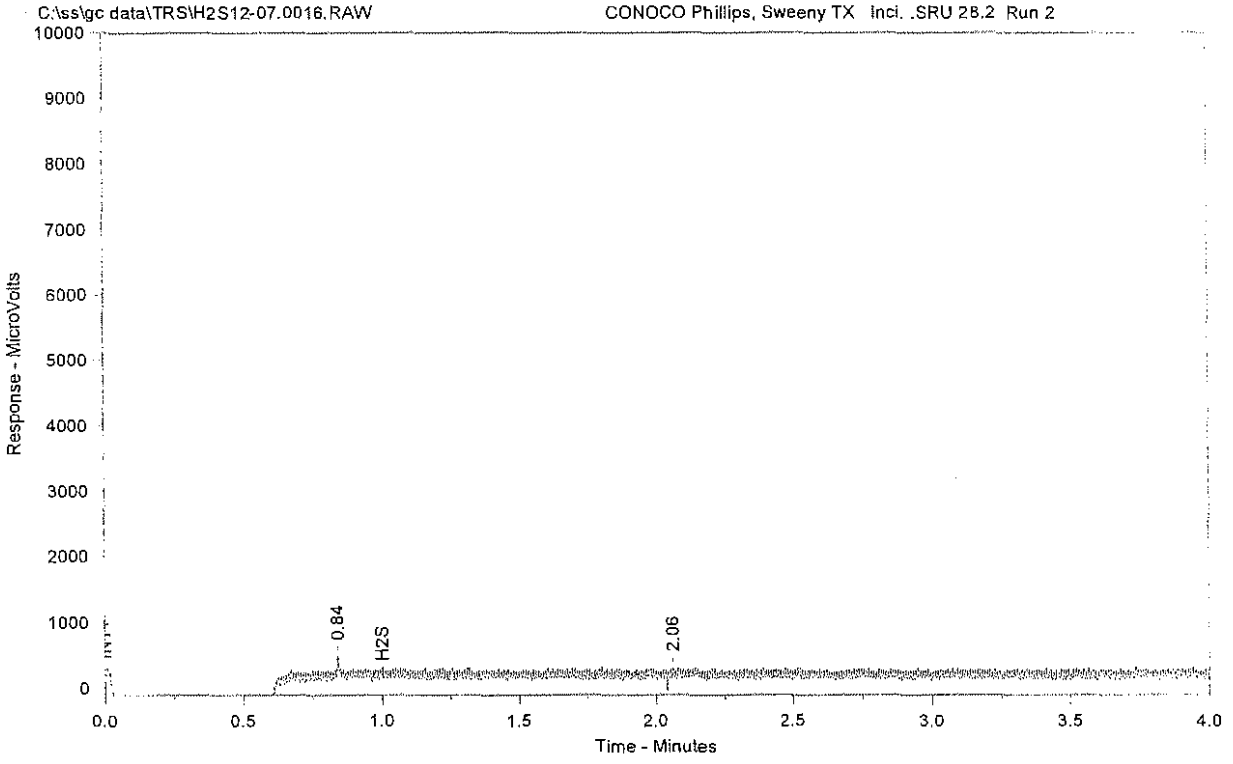
Raw File Name = **C:\ss\gc data\TRS\H2S12-07.0015.RAW**
Method File Name = C:\CPData\SampleData\TRS.MET
Calibration File Name = C:\CPData\SampleData\H2S.CAL

Date Taken (end) = 12/7/2010 4:19:22 PM
Method Version = 8
Calibration Version = 1

Peak #	Ret. Time	Name	Amount	Height	Area	Type	Width
1	0.70		0.00	669.0	4529	BV	0.13
2	0.85		0.00	654.0	7883	VB	0.39
3	1.66		0.00	205.9	295	BB	0.06
4	2.24		0.00	211.2	310	BB	0.06

Total Area = 13015.94 Total Height = 1740.137 Total Amount = 0

R2-7



Sample Name = **CONOCO Phillips, Sweeny TX Incl. .SRU 28.2 Run 2**

Instrument = Instrument 1
Heading 1 = Air = 100, H2 = 85, He = 113; 125 uL Sample Loop
Heading 2 = 0.0 Evnt 92.0, 0.6 Evnt -92, 5.0 Retn; 42C- Isothermal

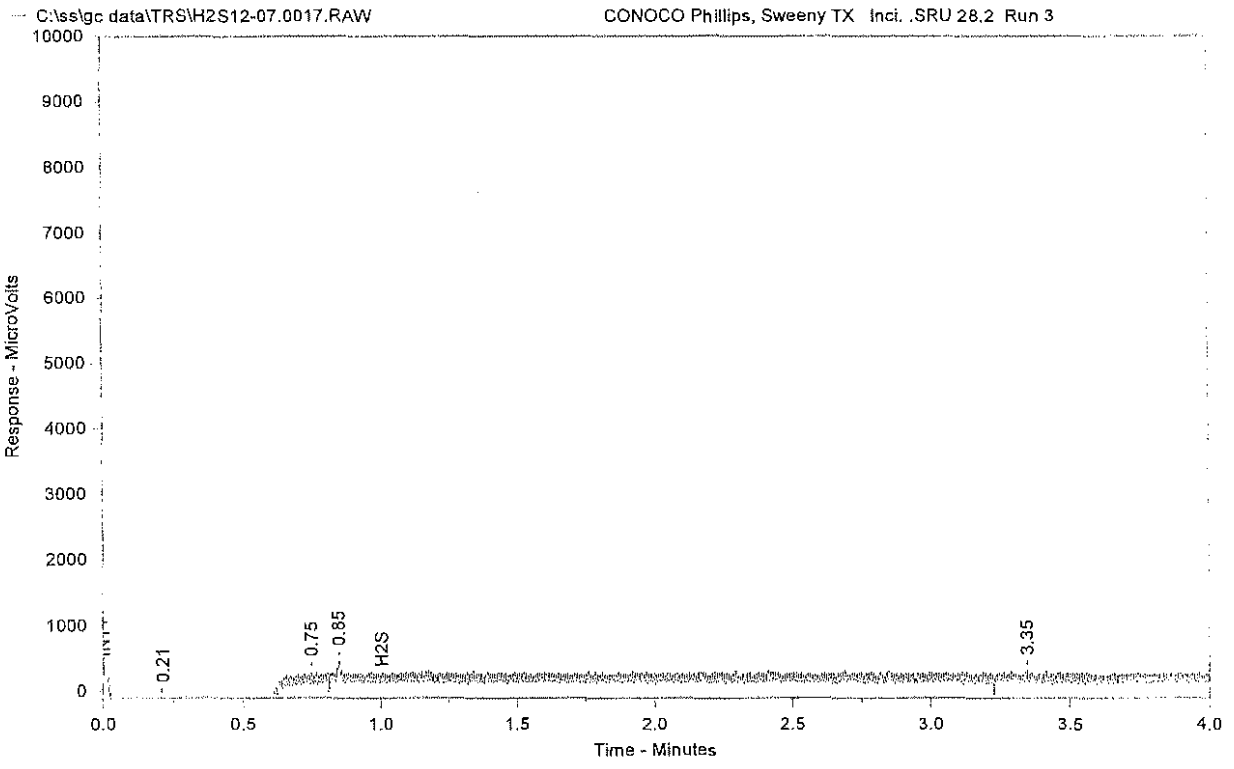
Raw File Name = **C:\ss\gc data\TRS\H2S12-07.0016.RAW**
Method File Name = C:\CPData\SampleData\TRS.MET
Calibration File Name = C:\CPData\SampleData\H2S.CAL

Date Taken (end) = 12/7/2010 4:34:22 PM
Method Version = 8
Calibration Version = 1

Peak #	Ret. Time	Name	Amount	Height	Area	Type	Width
1	0.84		0.00	825.3	24631	BB	1.17
2	2.06		0.00	215.4	366	BB	0.07

Total Area = 24996.29 Total Height = 1040.754 Total Amount = 0

R2-8



Sample Name = **CONOCO Phillips, Sweeny TX Inci. .SRU 28.2 Run 3**

Instrument = Instrument 1
Heading 1 = Air = 100, H2 = 85, He = 113; 125 uL Sample Loop
Heading 2 = 0.0 Evnt 92.0, 0.6 Evnt -92, 5.0 Retn; 42C- Isothermal

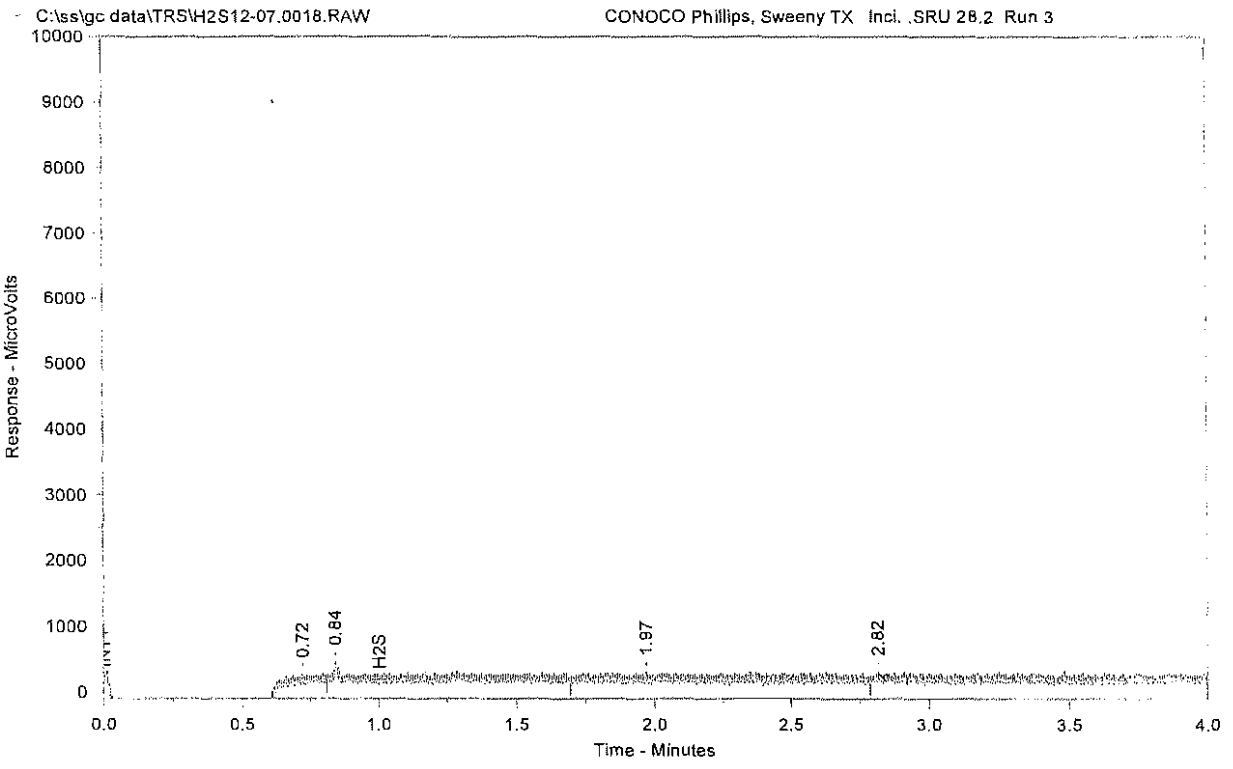
Raw File Name = **C:\ss\gc data\TRS\H2S12-07.0017.RAW**
Method File Name = C:\CPData\SampleData\TRS.MET
Calibration File Name = C:\CPData\SampleData\H2S.CAL

Date Taken (end) = 12/7/2010 4:49:47 PM
Method Version = 8
Calibration Version = 1

Peak #	Ret. Time	Name	Amount	Height	Area	Type	Width
1	0.21		0.00	203.3	1477	BB	0.32
2	0.75		0.00	648.0	6461	BV	0.21
3	0.85		0.00	746.9	9699	VB	0.50
4	3.35		0.00	221.8	2325	BB	0.44

Total Area = 19962.43 Total Height = 1820.016 Total Amount = 0

R3-1



Sample Name = **CONOCO Phillips, Sweeny TX Inci. .SRU 28.2 Run 3**

Instrument = Instrument 1
Heading 1 = Air = 100, H2 = 85, He = 113; 125 uL Sample Loop
Heading 2 = 0.0 Evnt 92.0, 0.6 Evnt -92, 5.0 Retn; 42C- Isothermal

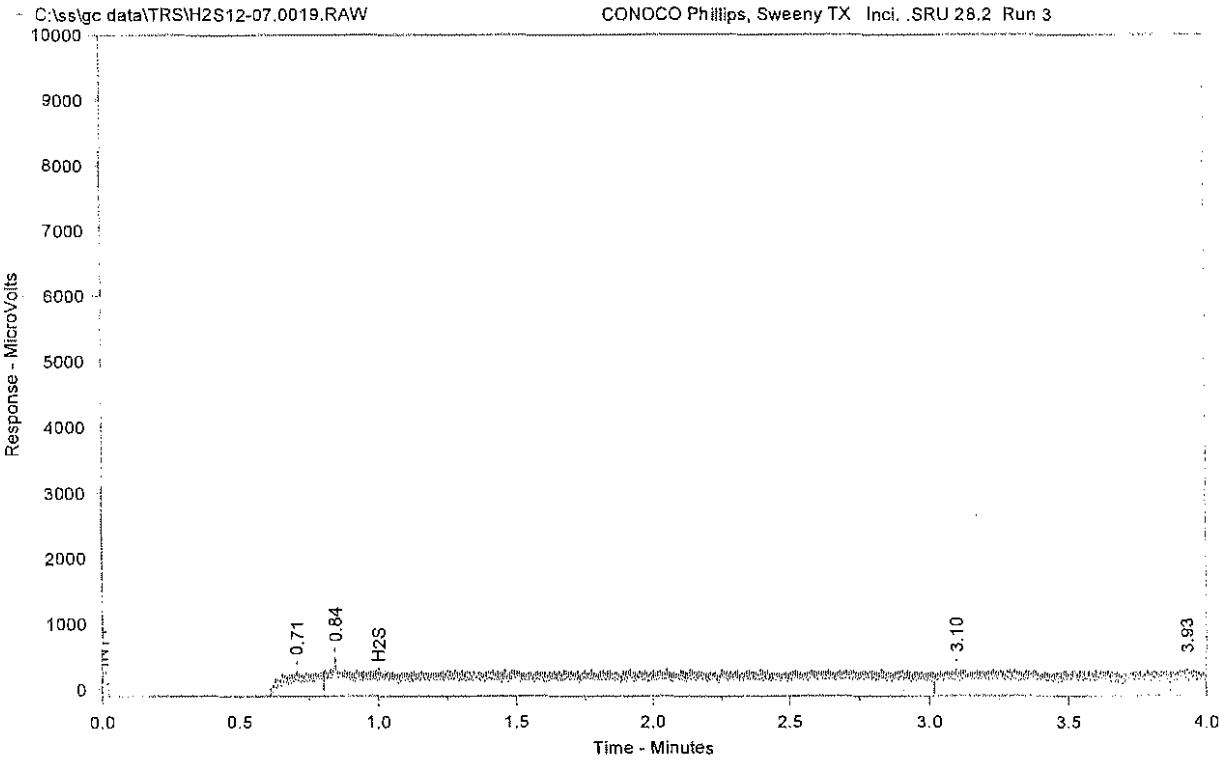
Raw File Name = **C:\ss\gc data\TRS\H2S12-07.0018.RAW**
Method File Name = C:\CPData\SampleData\TRS.MET
Calibration File Name = C:\CPData\SampleData\H2S.CAL

Date Taken (end) = 12/7/2010 5:04:47 PM
Method Version = 8
Calibration Version = 1

Peak #	Ret. Time	Name	Amount	Height	Area	Type	Width
1	0.72		0.00	463.3	4364	BV	0.20
2	0.84		0.00	402.7	569	VB	0.02
3	1.97		0.00	212.9	2340	BB	0.49
4	2.82		0.00	210.0	623	BB	0.13

Total Area = 7896.59 Total Height = 1288.938 Total Amount = 0

R3-2



Sample Name = **CONOCO Phillips, Sweeny TX Inci. .SRU 28.2 Run 3**

Instrument = Instrument 1
Heading 1 = Air = 100, H2 = 85, He = 113; 125 uL Sample Loop
Heading 2 = 0.0 Evnt 92.0, 0.6 Evnt -92, 5.0 Retn; 42C- Isothermal

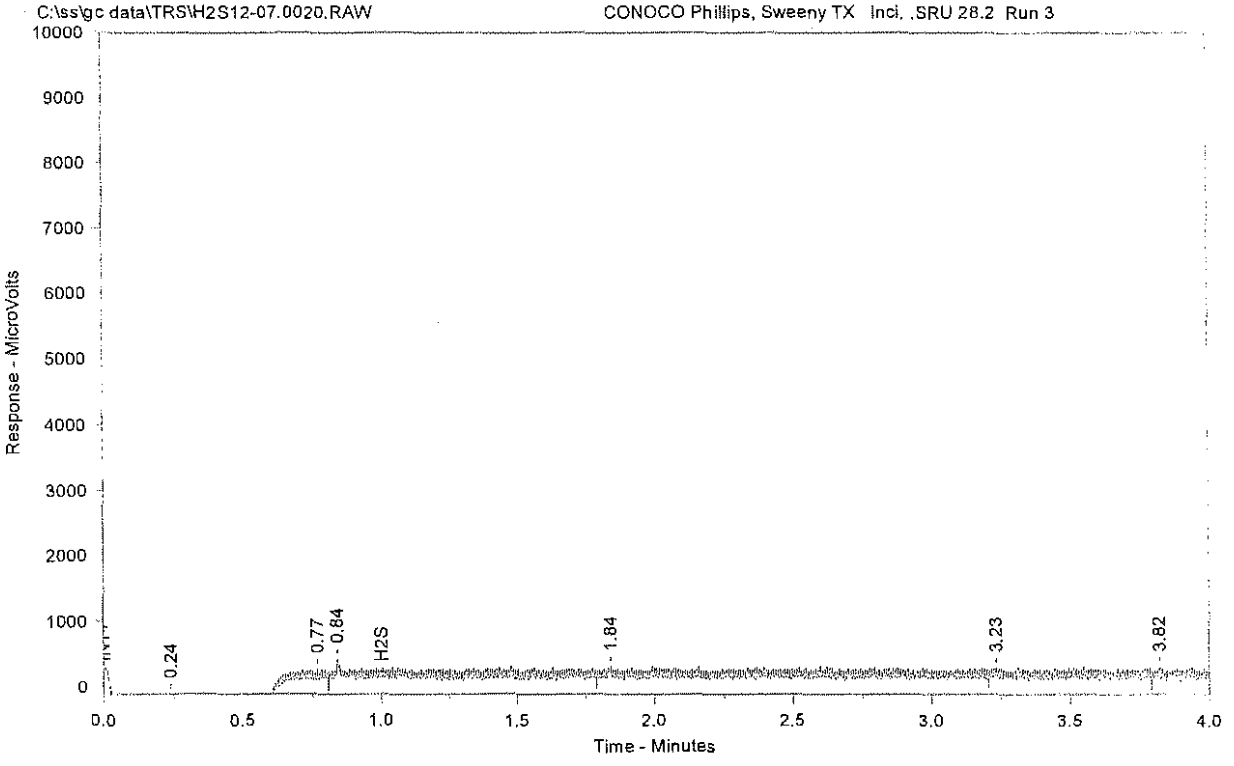
Raw File Name = **C:\ss\gc data\TRS\H2S12-07.0019.RAW**
Method File Name = C:\CPData\SampleData\TRS.MET
Calibration File Name = C:\CPData\SampleData\H2S.CAL

Date Taken (end) = 12/7/2010 5:19:47 PM
Method Version = 8
Calibration Version = 1

Peak #	Ret. Time	Name	Amount	Height	Area	Type	Width
1	0.71		0.00	556.9	4928	BV	0.19
2	0.84		0.00	526.3	1670	VB	0.02
3	3.10		0.00	221.7	933	BB	0.19
4	3.93		0.00	203.5	475	BB	0.09

Total Area = 8005.251 Total Height = 1508.266 Total Amount = 0

R3-3



Sample Name = **CONOCO Phillips, Sweeny TX Inci. .SRU 28.2 Run 3**

Instrument = Instrument 1
Heading 1 = Air = 100, H2 = 85, He = 113; 125 uL Sample Loop
Heading 2 = 0.0 Evnt 92.0, 0.6 Evnt -92, 5.0 Retn; 42C- Isothermal

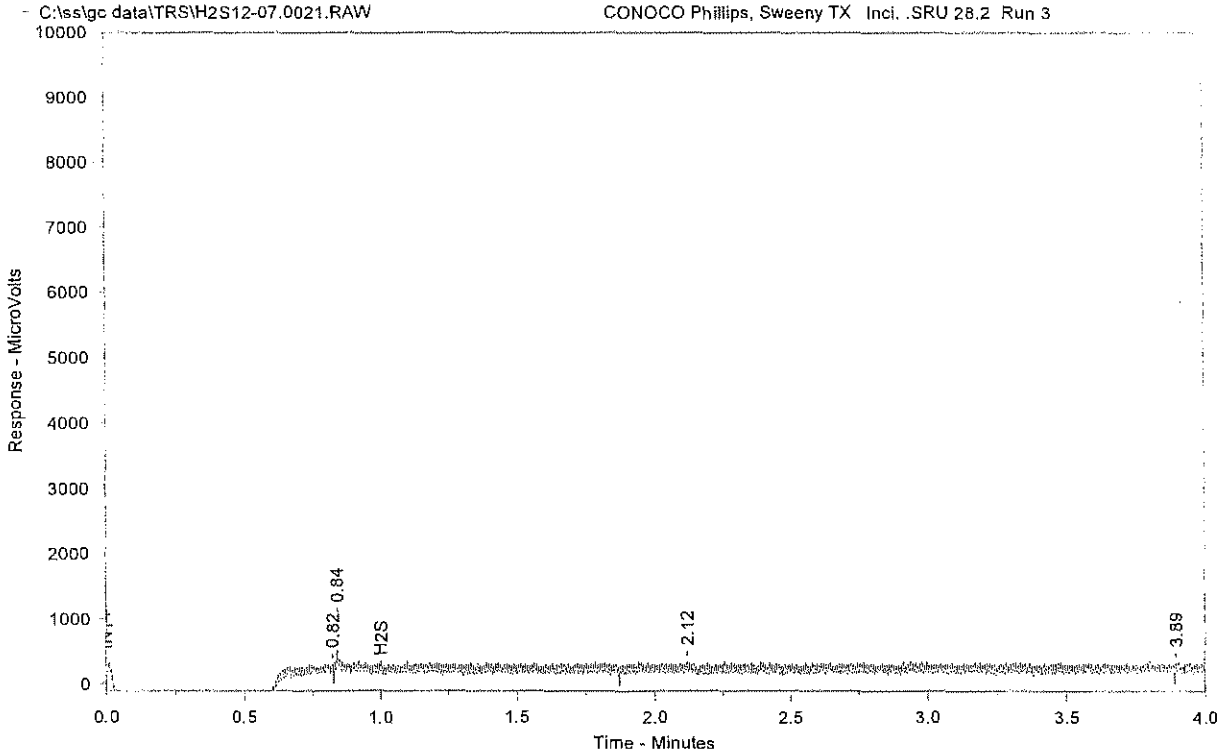
Raw File Name = **C:\ss\gc data\TRS\H2S12-07.0020.RAW**
Method File Name = C:\CPData\SampleData\TRS.MET
Calibration File Name = C:\CPData\SampleData\H2S.CAL

Date Taken (end) = 12/7/2010 5:34:48 PM
Method Version = 8
Calibration Version = 1

Peak #	Ret. Time	Name	Amount	Height	Area	Type	Width
1	0.24		0.00	193.8	615	BB	0.13
2	0.77		0.00	467.5	5308	BV	0.20
3	0.84		0.00	498.4	1635	VB	0.11
4	1.84		0.00	210.7	445	BB	0.09
5	3.23		0.00	176.5	422	BB	0.10
6	3.82		0.00	222.5	255	BB	0.05

Total Area = 8680.783 Total Height = 1769.353 Total Amount = 0

R 3-4



Sample Name = **CONOCO Phillips, Sweeny TX Inci. .SRU 28.2 Run 3**

Instrument = Instrument 1
Heading 1 = Air = 100, H2 = 85, He = 113; 125 uL Sample Loop
Heading 2 = 0.0 Evnt 92.0, 0.6 Evnt -92, 5.0 Retn; 42C- Isothermal

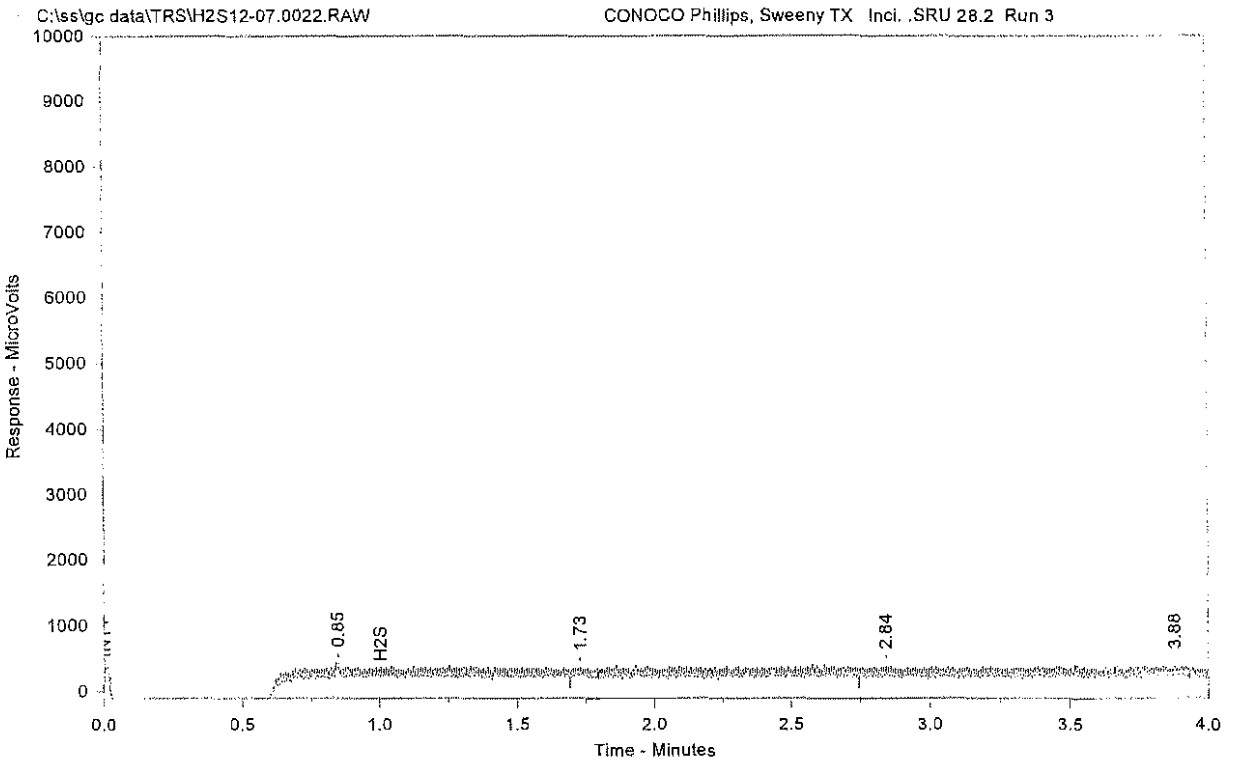
Raw File Name = **C:\ss\gc data\TRS\H2S12-07.0021.RAW**
Method File Name = C:\CPData\SampleData\TRS.MET
Calibration File Name = C:\CPData\SampleData\H2S.CAL

Date Taken (end) = 12/7/2010 5:49:48 PM
Method Version = 8
Calibration Version = 1

Peak #	Ret. Time	Name	Amount	Height	Area	Type	Width
1	0.82		0.00	296.7	5072	BV	0.22
2	0.84		0.00	461.5	634	VB	0.03
3	2.12		0.00	224.6	3135	BB	0.59
4	3.89		0.00	184.8	136	BB	0.03

Total Area = 8977.577 Total Height = 1167.526 Total Amount = 0

R3-5



Sample Name = **CONOCO Phillips, Sweeny TX Inci. .SRU 28.2 Run 3**

Instrument = Instrument 1
Heading 1 = Air = 100, H2 = 85, He = 113; 125 uL Sample Loop
Heading 2 = 0.0 Evnt 92.0, 0.6 Evnt -92, 5.0 Retn; 42C- Isothermal

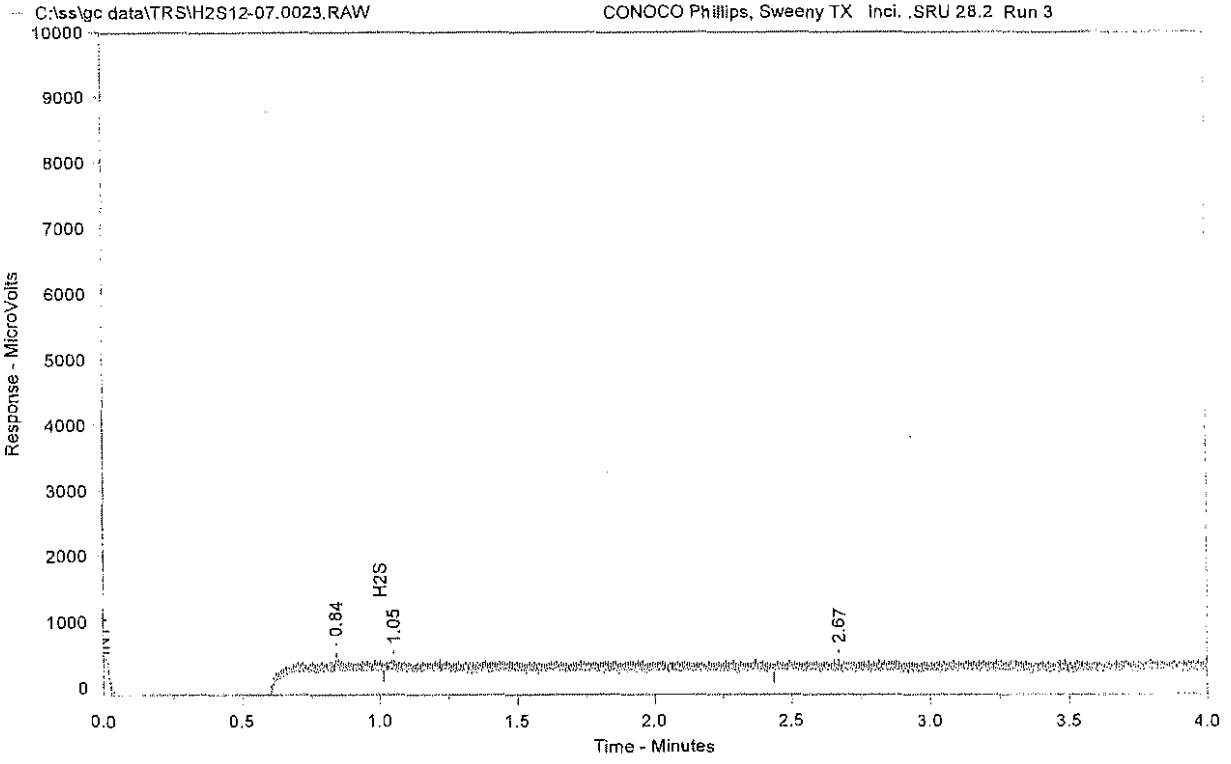
Raw File Name = **C:\ss\gc data\TRS\H2S12-07.0022.RAW**
Method File Name = C:\CPData\SampleData\TRS.MET
Calibration File Name = C:\CPData\SampleData\H2S.CAL

Date Taken (end) = 12/7/2010 6:04:48 PM
Method Version = 8
Calibration Version = 1

Peak #	Ret. Time	Name	Amount	Height	Area	Type	Width
1	0.85		0.00	327.9	5705	BB	0.29
2	1.73		0.00	180.2	451	BB	0.10
3	2.84		0.00	195.6	643	BB	0.15
4	3.88		0.00	203.1	360	BB	0.07

Total Area = 7159.334 Total Height = 906.8327 Total Amount = 0

R3-6



Sample Name = **CONOCO Phillips, Sweeny TX Incl. .SRU 28.2 Run 3**

Instrument = Instrument 1
Heading 1 = Air = 100, H2 = 85, He = 113; 125 uL Sample Loop
Heading 2 = 0.0 Evnt 92.0, 0.6 Evnt -92, 5.0 Retn; 42C- Isothermal

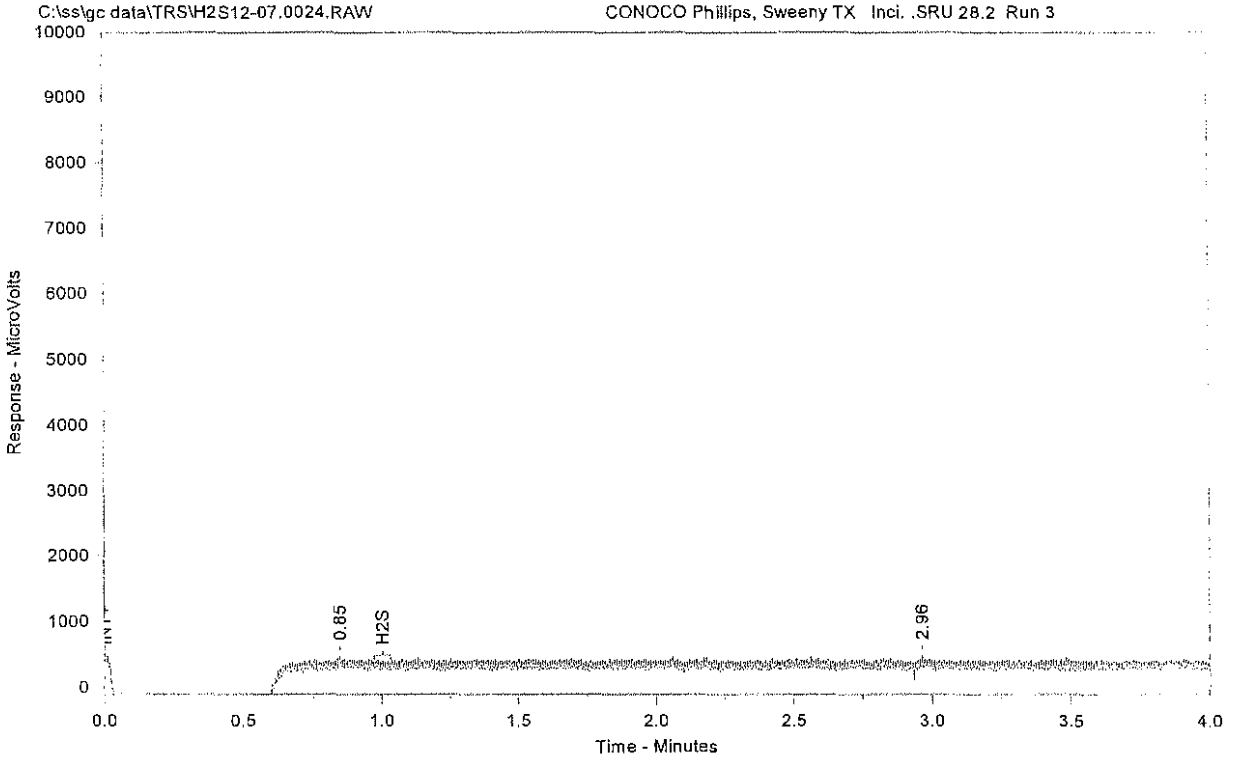
Raw File Name = **C:\ss\gc data\TRS\H2S12-07.0023.RAW**
Method File Name = C:\CPData\SampleData\TRS.MET
Calibration File Name = C:\CPData\SampleData\H2S.CAL

Date Taken (end) = 12/7/2010 6:19:48 PM
Method Version = 8
Calibration Version = 1

Peak #	Ret. Time	Name	Amount	Height	Area	Type	Width
1	0.84		0.00	684.4	9738	BV	0.32
2	1.05		0.00	361.7	1959	VB	0.20
3	2.67		0.00	220.1	2504	BB	0.48

Total Area = 14201.32 Total Height = 1266.122 Total Amount = 0

R3-7



Sample Name = **CONOCO Phillips, Sweeny TX Incl. .SRU 28.2 Run 3**

Instrument = Instrument 1
Heading 1 = Air = 100, H2 = 85, He = 113; 125 uL Sample Loop
Heading 2 = 0.0 Evnt 92.0, 0.6 Evnt -92, 5.0 Retn; 42C- Isothermal

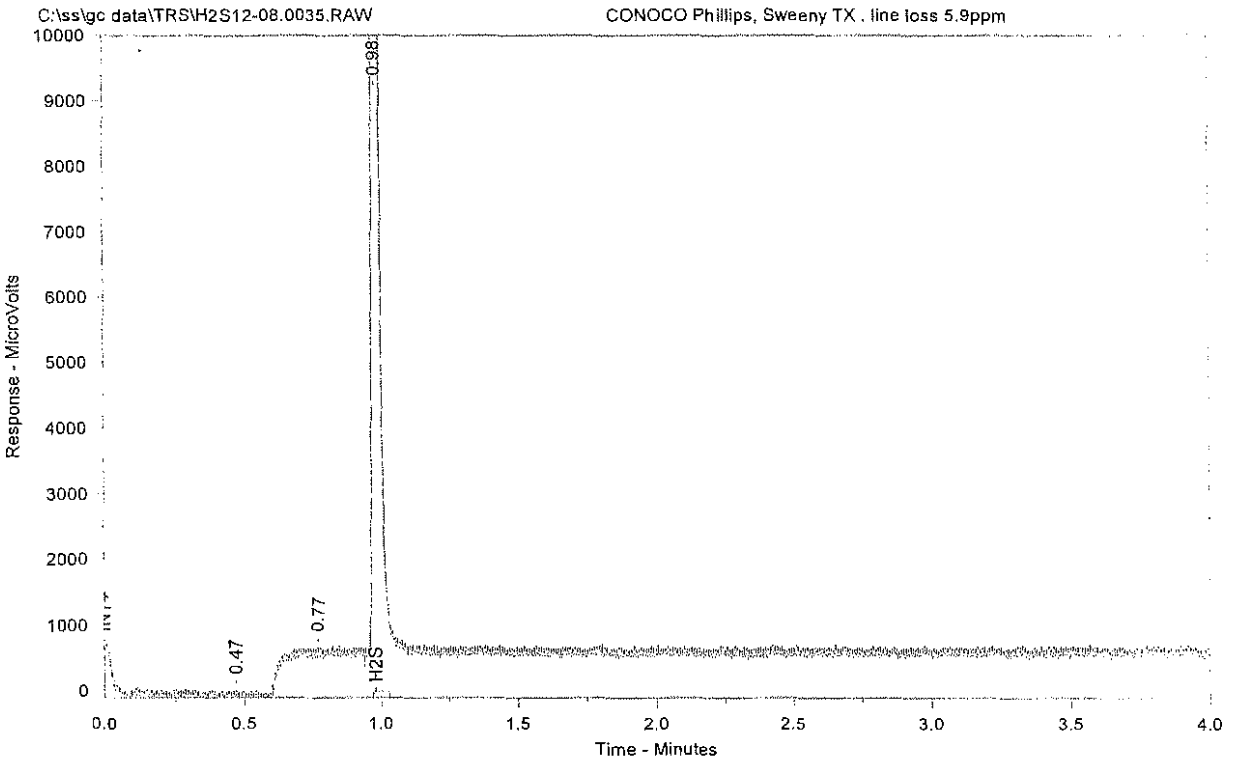
Raw File Name = **C:\ss\gc data\TRS\H2S12-07.0024.RAW**
Method File Name = C:\CPData\SampleData\TRS.MET
Calibration File Name = C:\CPData\SampleData\H2S.CAL

Date Taken (end) = 12/7/2010 6:34:49 PM
Method Version = 8
Calibration Version = 1

Peak #	Ret. Time	Name	Amount	Height	Area	Type	Width
1	0.85		0.00	238.0	4735	BB	0.25
2	2.96		0.00	243.9	410	BB	0.07

Total Area = 5144.929 Total Height = 481.9594 Total Amount = 0

R3-8



Sample Name = **CONOCO Phillips, Sweeny TX . line loss 5.9ppm**

Instrument = Instrument 1
Heading 1 = Air = 100, H2 = 85, He = 113; 125 uL Sample Loop
Heading 2 = 0.0 Evnt 92.0, 0.6 Evnt -92, 5.0 Retn; 42C- Isothermal

Raw File Name = **C:\ss\gc data\TRS\H2S12-08.0035.RAW**
Method File Name = C:\CPData\SampleData\TRS.MET
Calibration File Name = C:\CPData\SampleData\H2S.CAL

Date Taken (end) = 12/8/2010 9:39:27 AM
Method Version = 8
Calibration Version = 1

Peak #	Ret. Time	Name	Amount	Height	Area	Type	Width
1	0.47		0.00	198.6	685	BB	0.13
2	0.77		0.00	592.4	5717	BV	0.17
3	0.98	H2S	6.23	53213.0	63517	VB	0.02

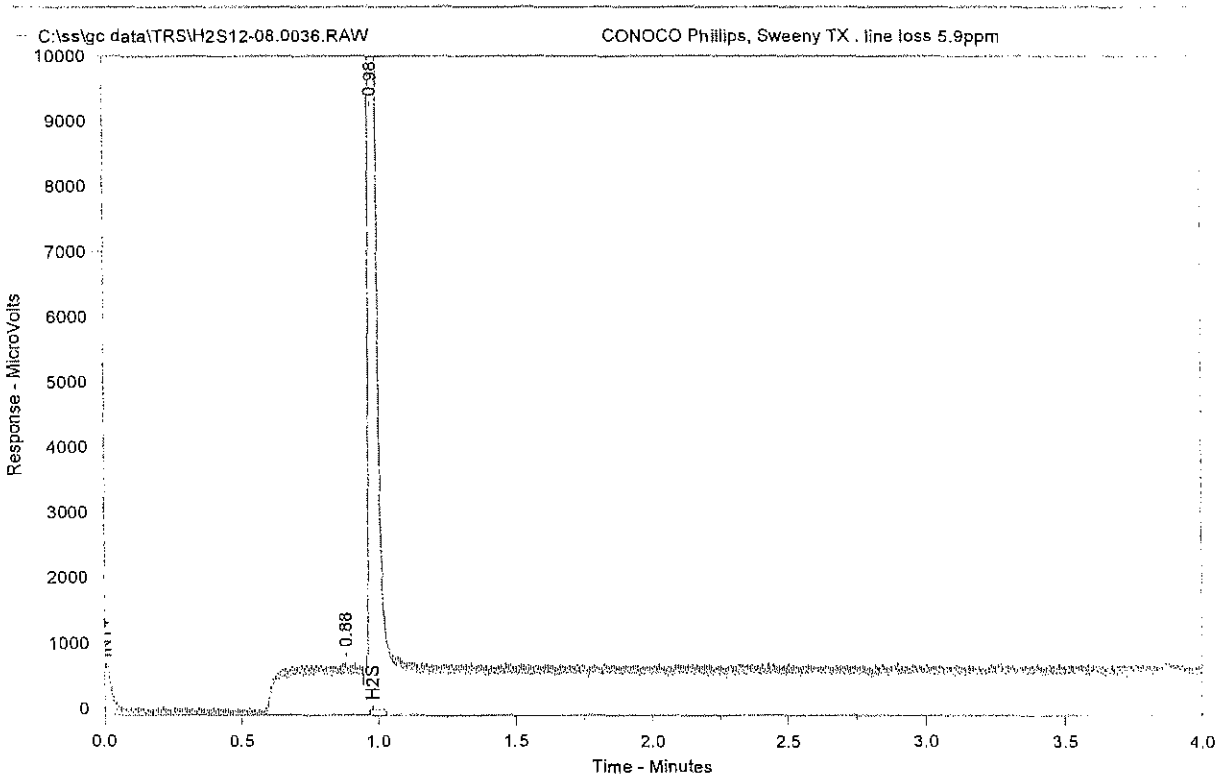
Total Area = 69919.16 Total Height = 54003.98 Total Amount = 6.225959

Line loss test [testday 12-7-10]
on 12-8-10

3 injection average. TRS\H2S 12-08.0035 RT 6.23
12-08.0036 6.31
12-08.0037 6.27
Average = 6.27
±5% of Average. = 5.96 – 6.58
±20% of Calgas (5.9ppm) = 4.72 – 7.08

Line Loss Recovery
$\frac{6.27\ ppm}{5.9\ ppm} = 1.0627\%$ or 106.27%

Chrom Perfect Chromatogram Report



Sample Name = **CONOCO Phillips, Sweeny TX . line loss 5.9ppm**

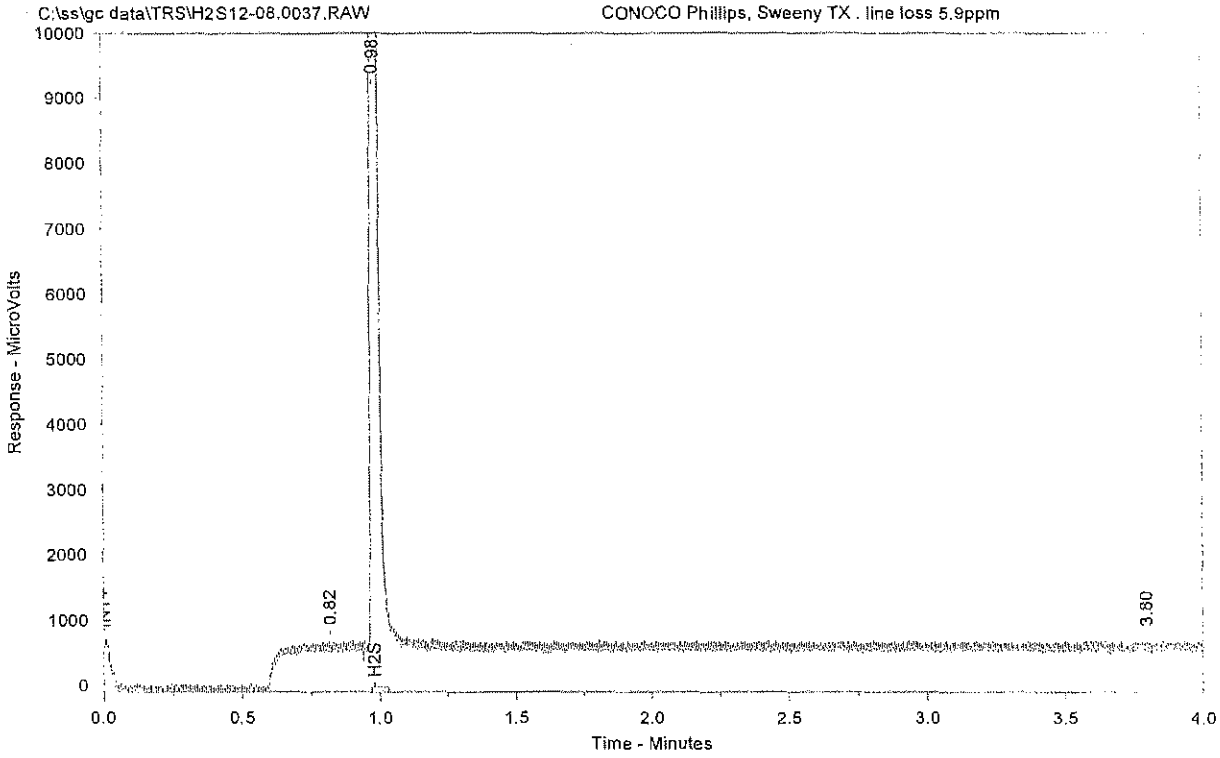
Instrument = Instrument 1
Heading 1 = Air = 100, H2 = 85, He = 113; 125 uL Sample Loop
Heading 2 = 0.0 Evnt 92.0, 0.6 Evnt -92, 5.0 Retn; 42C- Isothermal

Raw File Name = **C:\ss\gc data\TRS\H2S12-08.0036.RAW**
Method File Name = C:\CPData\SampleData\TRS.MET
Calibration File Name = C:\CPData\SampleData\H2S.CAL

Date Taken (end) = 12/8/2010 9:44:28 AM
Method Version = 8
Calibration Version = 1

Peak #	Ret. Time	Name	Amount	Height	Area	Type	Width
1	0.88		0.00	695.1	12410	BV	0.34
2	0.98	H2S	6.31	54810.2	79748	VB	0.02

Total Area = 92157.88 Total Height = 55505.3 Total Amount = 6.30988



Sample Name = **CONOCO Phillips, Sweeny TX . line loss 5.9ppm**

Instrument = Instrument 1
Heading 1 = Air = 100, H2 = 85, He = 113; 125 uL Sample Loop
Heading 2 = 0.0 Evnt 92.0, 0.6 Evnt -92, 5.0 Retn; 42C- Isothermal

Raw File Name = **C:\ss\gc data\TRS\H2S12-08.0037.RAW**
Method File Name = C:\CPData\SampleData\TRS.MET
Calibration File Name = C:\CPData\SampleData\H2S.CAL

Date Taken (end) = 12/8/2010 9:49:28 AM
Method Version = 8
Calibration Version = 1

Peak #	Ret. Time	Name	Amount	Height	Area	Type	Width
1	0.82		0.00	613.4	8929	BV	0.27
2	0.98	H2S	6.27	54126.1	67563	VB	0.02
3	3.80		0.00	192.1	435	BB	0.08

Total Area = 76926.8 Total Height = 54931.56 Total Amount = 6.2741

28.2 Sulfur Make Long Tons Per Day
Dec 7, Run 1

Start 12/7/10 12:40
Stop 12/7/10 14:40
Interval 5m

Sulfur Make	Tag Description	28FC5400.PV	28FC6400.PV	28FC8400.PV	28FC5301.PV	28FC6301.PV	282AL007.COMP(8)	28CSACID_H2O.PV	28FI4426.PV	28FI9420.PV	28CSSWS_H2O.PV	28FC8403.PV
LTD		MSCF/D ACID GAS A CLAUS	MSCF/D B- CLAUS ACID GAS	MMSCF/D ACID GAS TO C CLAUS	MSCF/D SWS Gas to A Claus	MSCF/D SWS Gas to B Claus	ACID_GAS -- GC H2S ML%	MOL % ACID GAS WATER CONTENT	MSCF/D SCOT ACID GAS FLOW	MSCF/D #2 TGTU RECYCLE GAS	MOL % SWS WATER CONTENT	MMSCF/D SWS GAS TO C CLAUS
	Timestamp	28FC5400.PV - Average	28FC6400.PV - Average	28FC8400.PV - Average	28FC5301.PV - Average	28FC6301.PV - Average	282AL007.COMP(8) - Average	28CSACID_H2O.PV - Average	28FI4426.PV - Average	28FI9420.PV - Average	28CSSWS_H2O.PV - Average	28FC8403.PV - Average
505.4	12/7/10 12:40 PM	6.93	7.20	1.20	2.37	1.90	92.34	0.12	0.81	173.70	0.25	0.06
503.3	12/7/10 12:45 PM	6.87	7.19	1.20	2.37	1.90	92.34	0.12	0.79	171.50	0.25	0.03
504.8	12/7/10 12:50 PM	6.93	7.18	1.20	2.31	1.97	92.34	0.12	0.80	169.76	0.25	0.05
505.9	12/7/10 12:55 PM	7.06	7.11	1.20	2.20	2.05	92.34	0.12	0.81	169.43	0.25	0.05
503.9	12/7/10 1:00 PM	7.04	7.11	1.20	2.13	2.06	92.34	0.12	0.82	172.77	0.25	0.06
507.1	12/7/10 1:05 PM	7.14	7.09	1.20	2.17	2.07	92.34	0.12	0.82	170.76	0.25	0.03
506.1	12/7/10 1:10 PM	7.11	7.05	1.20	2.14	2.11	92.34	0.12	0.80	167.74	0.25	0.03
507.4	12/7/10 1:15 PM	7.11	7.06	1.20	2.16	2.12	92.34	0.12	0.78	172.12	0.25	0.07
507.4	12/7/10 1:20 PM	7.14	7.06	1.20	2.14	2.12	92.34	0.12	0.81	170.50	0.25	0.09
508.2	12/7/10 1:25 PM	7.15	7.07	1.20	2.17	2.08	92.34	0.12	0.81	171.22	0.25	0.04
508.0	12/7/10 1:30 PM	7.12	7.12	1.20	2.18	2.02	92.34	0.12	0.82	170.83	0.25	0.03
507.2	12/7/10 1:35 PM	7.08	7.14	1.20	2.21	2.00	92.34	0.12	0.82	173.75	0.25	0.05
507.0	12/7/10 1:40 PM	7.08	7.15	1.20	2.21	1.98	92.34	0.12	0.82	171.09	0.24	0.06
507.1	12/7/10 1:45 PM	7.09	7.12	1.20	2.24	1.97	92.34	0.12	0.82	170.56	0.24	0.08
506.2	12/7/10 1:50 PM	7.09	7.09	1.20	2.22	1.99	92.34	0.12	0.82	170.66	0.24	0.07
503.1	12/7/10 1:55 PM	7.04	7.01	1.20	2.24	1.97	92.34	0.12	0.79	168.52	0.24	0.04
497.9	12/7/10 2:00 PM	7.00	6.90	1.20	2.27	1.93	92.34	0.12	0.79	169.48	0.24	0.05
494.1	12/7/10 2:05 PM	7.05	6.78	1.20	2.28	1.89	92.34	0.12	0.81	168.69	0.24	0.04
492.5	12/7/10 2:10 PM	7.07	6.68	1.20	2.25	1.94	92.34	0.12	0.80	165.04	0.24	0.03
495.2	12/7/10 2:15 PM	7.14	6.68	1.20	2.15	2.00	92.34	0.12	0.79	166.03	0.24	0.04
497.3	12/7/10 2:20 PM	7.21	6.68	1.20	2.14	2.02	92.34	0.12	0.81	166.14	0.24	0.03
499.8	12/7/10 2:25 PM	7.17	6.71	1.20	2.12	2.17	92.34	0.12	0.80	166.86	0.23	0.04
502.5	12/7/10 2:30 PM	7.19	6.70	1.20	2.14	2.27	92.34	0.12	0.78	169.01	0.24	0.05
501.6	12/7/10 2:35 PM	7.21	6.70	1.20	2.10	2.26	92.34	0.12	0.79	169.55	0.24	0.01
501.2	12/7/2010 14:40	7.19	6.72	1.20	2.15	2.19	92.34	0.12	0.79	170.44	0.24	0.01

503.2 **average**

28.2 Sulfur Make Long Tons Per Day
Dec 7, Run 2

Start 12/7/10 14:45
Stop 12/7/10 16:45
Interval 5m

Sulfur Make LTD	Tag Description / Timestamp	28FC5400.PV MSCF/D ACID GAS A CLAUS 28FC5400.PV - Average	28FC6400.PV MSCF/D B- CLAUS ACID GAS 28FC6400.PV - Average	28FC8400.PV MMSCF/D ACID GAS TO C CLAUS 28FC8400.PV - Average	28FC5301.PV MSCF/D SWS Gas to A Claus 28FC5301.PV - Average	28FC6301.PV MSCF/D SWS Gas to B Claus 28FC6301.PV - Average	282AL007.COMP(8) ACID_GAS -- GC H2S ML% 282AL007.COMP(8) - Average	28CSACID_H2O.PV MOL % ACID GAS WATER CONTENT 28CSACID_H2O.PV - Average	28FI4426.PV MSCF/D SCOT ACID GAS FLOW 28FI4426.PV - Average	28FI9420.PV MSCF/D #2 TGTU RECYCLE GAS 28FI9420.PV - Average	28CSSWS_H2O.PV MOL % SWS WATER CONTENT 28CSSWS_H2O.PV - Average	28FC8403.PV MMSCF/D SWS GAS TO C CLAUS 28FC8403.PV - Average
501.0	12/7/10 2:45 PM	7.18	6.71	1.20	2.20	2.17	92.34	0.12	0.80	165.64	0.24	0.06
502.1	12/7/10 2:50 PM	7.18	6.73	1.20	2.17	2.19	92.34	0.12	0.79	166.26	0.24	0.03
498.3	12/7/10 2:55 PM	7.12	6.69	1.20	2.20	2.14	92.34	0.12	0.79	166.76	0.25	0.03
493.6	12/7/10 3:00 PM	7.07	6.60	1.20	2.29	2.05	92.34	0.12	0.80	165.39	0.25	0.04
491.6	12/7/10 3:05 PM	7.04	6.54	1.20	2.31	2.04	92.34	0.12	0.78	165.65	0.25	0.06
487.2	12/7/10 3:10 PM	7.03	6.42	1.20	2.30	2.00	92.34	0.12	0.77	164.76	0.25	0.03
489.3	12/7/10 3:15 PM	7.14	6.40	1.20	2.24	2.05	92.34	0.12	0.79	164.73	0.25	0.06
492.6	12/7/10 3:20 PM	7.20	6.43	1.20	2.18	2.14	92.34	0.12	0.78	164.98	0.25	0.03
491.5	12/7/10 3:25 PM	7.19	6.39	1.20	2.15	2.19	92.34	0.12	0.77	166.82	0.25	0.02
490.9	12/7/10 3:30 PM	7.16	6.40	1.20	2.15	2.18	92.34	0.12	0.78	166.01	0.25	0.01
491.9	12/7/10 3:35 PM	7.11	6.45	1.20	2.16	2.18	92.34	0.12	0.78	164.79	0.25	0.01
490.2	12/7/10 3:40 PM	7.09	6.43	1.20	2.20	2.11	92.34	0.12	0.77	166.73	0.25	0.03
489.3	12/7/10 3:45 PM	7.10	6.42	1.20	2.18	2.11	92.34	0.12	0.79	166.05	0.25	0.02
489.4	12/7/10 3:50 PM	7.10	6.40	1.20	2.24	2.07	92.34	0.12	0.77	163.39	0.25	0.01
492.5	12/7/10 3:55 PM	7.11	6.47	1.20	2.18	2.13	92.34	0.12	0.76	161.31	0.24	0.01
495.1	12/7/10 4:00 PM	7.11	6.54	1.20	2.20	2.14	92.34	0.12	0.77	163.54	0.24	0.03
494.5	12/7/10 4:05 PM	7.09	6.58	1.20	2.16	2.18	92.34	0.12	0.80	163.27	0.25	0.04
492.5	12/7/10 4:10 PM	7.09	6.53	1.20	2.18	2.11	92.34	0.12	0.79	165.15	0.25	0.01
491.8	12/7/10 4:15 PM	7.08	6.51	1.20	2.22	2.07	92.34	0.12	0.78	162.49	0.25	0.02
492.2	12/7/10 4:20 PM	7.10	6.46	1.20	2.22	2.14	92.34	0.12	0.76	163.39	0.25	0.07
489.9	12/7/10 4:25 PM	7.10	6.40	1.20	2.24	2.12	92.34	0.12	0.77	162.28	0.25	0.10
489.3	12/7/10 4:30 PM	7.11	6.38	1.20	2.21	2.15	92.34	0.12	0.78	162.66	0.25	0.07
490.1	12/7/10 4:35 PM	7.11	6.41	1.20	2.23	2.13	92.34	0.12	0.79	162.91	0.25	0.05
494.5	12/7/10 4:40 PM	7.13	6.53	1.20	2.15	2.16	92.34	0.12	0.79	160.63	0.25	0.05
497.5	12/7/2010 16:45	7.09	6.66	1.20	2.15	2.15	92.34	0.12	0.78	164.81	0.25	0.08

492.8 **average**

28.2 Sulfur Make Long Tons Per Day
Dec 7, Run 3

Start 12/7/10 16:45
Stop 12/7/10 18:45
Interval 5m

Sulfur Make LTD	Tag Description	28FC5400.PV MSCF/D ACID GAS A CLAUS	28FC6400.PV MSCF/D B- CLAUS ACID GAS	28FC8400.PV MMSCF/D ACID GAS TO C CLAUS	28FC5301.PV MSCF/D SWS Gas to A Claus	28FC6301.PV MSCF/D SWS Gas to B Claus	282AL007.COMP(8) ACID_GAS -- GC H2S ML%	28CSACID_H2O.PV MOL % ACID GAS WATER CONTENT	28FI4426.PV MSCF/D SCOT ACID GAS FLOW	28FI9420.PV MSCF/D #2 TGTU RECYCLE GAS	28CSSWS_H2O.PV MOL % SWS WATER CONTENT	28FC8403.PV MMSCF/D SWS GAS TO C CLAUS
	Timestamp	28FC5400.PV - Average	28FC6400.PV - Average	28FC8400.PV - Average	28FC5301.PV - Average	28FC6301.PV - Average	282AL007.COMP(8) - Average	28CSACID_H2O.PV - Average	28FI4426.PV - Average	28FI9420.PV - Average	28CSSWS_H2O.PV - Average	28FC8403.PV - Average
497.5	12/7/10 4:45 PM	7.09	6.66	1.20	2.15	2.15	92.34	0.12	0.78	164.81	0.25	0.08
500.1	12/7/10 4:50 PM	7.10	6.75	1.20	2.12	2.15	92.34	0.12	0.79	165.33	0.25	0.04
500.6	12/7/10 4:55 PM	7.09	6.77	1.20	2.18	2.12	92.34	0.12	0.78	165.71	0.25	0.03
501.4	12/7/10 5:00 PM	7.10	6.79	1.20	2.17	2.10	92.34	0.12	0.77	163.38	0.25	0.02
502.0	12/7/10 5:05 PM	7.10	6.81	1.20	2.24	2.06	92.34	0.12	0.78	162.99	0.25	0.02
500.5	12/7/10 5:10 PM	7.09	6.82	1.20	2.19	2.06	92.34	0.12	0.80	162.84	0.25	0.02
501.5	12/7/10 5:15 PM	7.10	6.83	1.20	2.22	2.06	92.34	0.12	0.80	165.08	0.25	0.02
501.2	12/7/10 5:20 PM	7.10	6.86	1.20	2.17	2.07	92.34	0.12	0.83	162.45	0.25	0.03
501.9	12/7/10 5:25 PM	7.09	6.84	1.20	2.21	2.08	92.34	0.12	0.79	165.18	0.25	0.07
501.5	12/7/10 5:30 PM	7.09	6.82	1.20	2.20	2.08	92.34	0.12	0.78	163.54	0.25	0.12
502.4	12/7/10 5:35 PM	7.11	6.80	1.20	2.21	2.11	92.34	0.12	0.77	164.99	0.25	0.13
500.8	12/7/10 5:40 PM	7.09	6.81	1.20	2.19	2.11	92.34	0.12	0.78	165.76	0.25	0.12
501.0	12/7/10 5:45 PM	7.11	6.80	1.20	2.21	2.09	92.34	0.12	0.78	166.20	0.25	0.14
501.2	12/7/10 5:50 PM	7.10	6.82	1.20	2.19	2.10	92.34	0.12	0.79	164.17	0.25	0.18
505.1	12/7/10 5:55 PM	7.12	6.89	1.20	2.18	2.14	92.34	0.12	0.79	164.29	0.25	0.15
507.0	12/7/10 6:00 PM	7.10	7.01	1.20	2.13	2.08	92.34	0.12	0.78	164.85	0.25	0.07
507.2	12/7/10 6:05 PM	7.10	7.06	1.20	2.15	2.01	92.34	0.12	0.79	167.24	0.25	0.11
505.8	12/7/10 6:10 PM	7.07	7.08	1.20	2.22	1.94	92.34	0.12	0.80	165.16	0.24	0.21
505.0	12/7/10 6:15 PM	7.09	7.05	1.20	2.23	1.90	92.34	0.12	0.78	166.98	0.24	0.22
505.6	12/7/10 6:20 PM	7.09	7.05	1.20	2.26	1.85	92.34	0.12	0.76	166.71	0.24	0.13
507.5	12/7/10 6:25 PM	7.09	7.06	1.20	2.27	1.93	92.34	0.12	0.77	165.48	0.24	0.09
507.8	12/7/10 6:30 PM	7.08	7.06	1.20	2.25	2.04	92.34	0.12	0.80	167.04	0.24	0.13
507.2	12/7/10 6:35 PM	7.11	7.02	1.20	2.19	2.13	92.34	0.12	0.83	170.56	0.24	0.04
506.8	12/7/10 6:40 PM	7.11	7.00	1.20	2.18	2.15	92.34	0.12	0.83	170.76	0.25	0.09
505.6	12/7/2010 18:45	7.10	6.97	1.20	2.12	2.15	92.34	0.12	0.81	169.21	0.25	0.06

503.4 **average**

Stork Analyzer QA

Project Name:	Conoco Phillips (Unit 28 SRU INC.)	Date:	12/7/2010
Project No.:	HOU002549P	Initials:	VG

EPA Protocol Gases			
Cylinder Pollutant	Cylinder Value	Cylinder Number	Expiration Date
NOx - Low			
NOx - Mid	51.7	CC261685	2/17/2012
NOx - High	94.0	CC204615	8/25/2011
CO - Low			
CO - Mid	46.2	CC43872	4/15/2013
CO - High	93.1	AAL19679	2/11/2013
O2 - Low			
O2 - Mid	11.1	CC92287	10/5/2013
O2 - High	20.7	ALM012723	6/23/2012

Parameter:	NOx	CALIBRATION ERROR			
Analyzer:	Thermo Environmental Instruments, Inc.			Span:	94.00
Model:	42 CHL Chemiluminescent			Serial:	42CHL72773372
GASES	Cylinder Value	Analyzer Response	Difference	% Difference	Is Linearity Within +or- 2%
Zero	0.00	0.09	0.1	0.10%	Yes
EPA Protocol No. 1					
Low-Level	0.00	###	0.00	0.00%	Yes
Mid-Level	51.70	51.39	-0.31	-0.33%	Yes
High-Level	94.00	94.22	0.22	0.23%	Yes

Parameter:	CO	CALIBRATION ERROR			
Analyzer:	Thermo Environmental Instruments, Inc.			Span:	93.10
Model:	48H Gas Filter Correlation			Serial:	48CHL74682377
GASES	Cylinder Value	Analyzer Response	Difference	% Difference	Is Linearity Within +or- 2%
Zero	0.00	(0.01)	0.0	-0.01%	Yes
EPA Protocol					
Low-Level	0.00	#	0.00	0.00%	Yes
Mid-Level	46.20	47.01	0.81	0.87%	Yes
High-Level	93.10	93.69	0.59	0.63%	Yes

Parameter:	O2	CALIBRATION ERROR			
Analyzer:	Servomex			Span:	20.70
Model:	1420B Paramagnetic			Serial:	01420/B701/819
GASES	Cylinder Value	Analyzer Response	Difference	% Difference	Is Linearity Within +or- 2%
Zero	0.00	0.08	0.1	0.39%	Yes
EPA Protocol					
Low-Level	0.00	###	0.00	0.00%	Yes
Mid-Level	11.10	11.06	-0.04	-0.19%	Yes
High-Level	20.70	20.61	-0.09	-0.43%	Yes

* % Difference = Difference/Span Value x 100

NOx - SYSTEM BIAS

Bias = (System Response - Analyzer Response) / Span

Span Value	94.0

	Zero	Span
Analyzer Cal. Response	0.09	51.39
System Cal. Response	0.77	50.89

The Zero Bias (	0.72%)	is	within +/- 5%
The Span Bias (	-0.53%)	is	within +/- 5%

Manifold Pressure	
Sampling	5 psi
Calibration	5 psi
Temperatures	
Sample Line	295 F
Knockout	39 F

CONVERSION EFFICIENCY

Span Value	94	Highest Peak Value	36.12	% Difference
Analyzer Mode	NOx	Ending Value	35.67	1.25%
				must be <= 2%

CO - SYSTEM BIAS

Bias = (System Response - Analyzer Response) / Span

Span Value	93.1

	Zero	Span
Analyzer Cal. Response	-0.01	47.01
System Cal. Response	-0.35	46.68

The Zero Bias (	-0.37%)	is	within +/- 5%
The Span Bias (	-0.35%)	is	within +/- 5%

O2 - SYSTEM BIAS

Bias = (System Response - Analyzer Response) / Span

Span Value	20.7

	Zero	Span
Analyzer Cal. Response	0.08	11.06
System Cal. Response	0.09	11.07

The Zero Bias (	0.05%)	is	within +/- 5%
The Span Bias (	0.05%)	is	within +/- 5%

Stork SO_2 Analyzer QA

Project Name:	Conoco Phillips (Unit 28 SRU INC.)	Date	12/7/2010
Project No.:	HOU002549P	Initials	VG

EPA Protocol No. 1 Gases			
Cylinder Pollutant	Cylinder Value	Cylinder Number	Expiration Date
SO_2 - Low			
SO_2 - Mid	250	CC49084	7/15/2012
SO_2 - High	476	CC196886	6/9/2011

Parameter:	SO_2	CALIBRATION ERROR			
Analyzer:	BOVAR Western Research			Scale:	476
Model:	721-M			Serial:	94-721M8119-6
GASES	Cylinder Value	Analyzer Response	Difference	% Difference	Is CE Within +or- 2%
Zero	0.00	-0.22	-0.2	-0.05%	Yes
EPA Protocol No. 1					
Low-Level	0.00	###	0.00	0.00%	Yes
Mid-Level	250.00	252.84	2.84	0.60%	Yes
High-Level	476.00	477.08	1.08	0.23%	Yes

SO_2 - SYSTEM BIAS				
Bias = (System Response - Analyzer Response) / Span				
Span Value		476.0		
		Zero	Span	
Analyzer Cal. Response		-0.22	252.84	
System Cal. Response		-0.36	254.92	
The Zero Bias (	-0.03%)		is	within +/- 5%
The Span Bias (	0.44%)		is	within +/- 5%

Manifold Pressure	
Sampling	5 psi
Calibration	5 psi
Temperatures	
Sample Line	295 F
Knockout	39 F

* % Difference = Difference/Span Value x 100

Stork Analyzer QA - EPA Method 25A

Parameter: Total Hydrocarbons (VOCs)

Analyzer:	JUM	Source:	Unit 28 SRU INC.
Model:	VE-7 FID	Project No.:	HOU002549P
Serial #:	10660292	Crew:	VG,AP,& GG

EPA Protocol Gases	Cylinder Number	Cylinder Value	Expiration Date
Low-Level	CC122200	29.9	1/18/2013
Mid-Level	CC58519	50.2	8/15/2013
High-Level	CC20350	84.8	2/9/2013

CALIBRATION ERROR - Pretest Date: 12/7/2010

Span Value 100

GASES	Cylinder Value	Analyzer Response	Difference	Predicted Response	Calibration Error	Is Linearity Within +or- 5%
Zero	0	0.01	0.0			
EPA Protocol						
Low-Level	29.9	29.97	0.07	29.92	-0.18%	Yes
Mid-Level	50.2	50.59	0.39	50.22	-0.73%	Yes
High-Level	84.8	84.83	0.03			

CALIBRATION ERROR - Pretest Date: ###

Span Value ###

GASES	Cylinder Value	Analyzer Response	Difference	Predicted Response	Calibration Error	Is Linearity Within +or- 5%
Zero	0	###	0.0			
EPA Protocol						
Low-Level	29.9	###	-29.90	0.00	0.00%	Yes
Mid-Level	50.2	###	-50.20	0.00	0.00%	Yes
High-Level	84.8	###	-84.80			

√VM

3 Point Stratification Test

Plant: Conoco Phillips
Source: Unit 28 SRU INC.
STMC Project No.: HOU002549P

Pollutant: Point No.		O2 % Emissions	Difference from Average
1		3.57	
1		3.69	
1		3.79	
Pt. 1 Avg.	**21.5 in.**	**3.68**	**-0.06**
2		3.69	
2		3.64	
2		3.73	
Pt. 2 Avg.	**64.5 in.**	**3.69**	**-0.05**
3		**3.87**	
3		3.89	
3		3.80	
Pt. 3 Avg.	**107.5 in.**	**3.85**	**0.11**

3 Point Average:		**3.74**
	5% =	**0.19**
	10% =	**0.37**

Criteria 1:
1) Each traverse point less than 5% of Average? [Yes]
Alternate: Each traverse point is within +/- 0.5 ppm pollutant or +/- 0.3% O_2 from the 3 point average
(If Yes to either - Select point closest to the 3 point Average)

Criteria 2 :
2) Each traverse point less than 10% of Average? [Yes]
Alternate: Each traverse point is within +/- 1.0 ppm pollutant or +/- 0.5% O_2 from the 3 point average
(If criteria 1 is No and criteria 2 is Yes, do 3 point traverse)

Criteria 3:
3.) If 1 and 2 are both No, do Method 1 Traverse

Conoco Phillips
Unit 28 SRU Incinerator
Sweeny, Texas
ROU002549P
File Name: 12-07-10_01-37

Date and Time MM/DD/YY HH:MM	CO ppm	NOx ppm	O2 %	THC ppm	CO2 %	SO2 ppm	Flow lpm
12/7/2010 01:37							
12/7/2010 01:38	-0.72	1.69	-0.02	291.03		-0.92	
12/7/2010 01:39	-0.38	0.09	-0.02	-274.57		-1.04	
12/7/2010 01:40	0.36	0.09	-0.03	-2.58		-1.01	
12/7/2010 01:41	0.08	0.09	-0.02	-2.46		-1.09	
12/7/2010 01:42	-0.08	0.09	-0.02	-2.48		-1.19	
12/7/2010 01:43	0.02	0.09	-0.03	-2.49		-0.21	
12/7/2010 01:44	0.19	0.09	-0.02	-2.84		-0.22	
12/7/2010 01:45	2.49	16.77	12.61	-2.01		-0.22	
12/7/2010 01:46	70.75	96.89	20.31	53.71		-0.23	
12/7/2010 01:47	102.52	100.83	20.65	-1.31		-0.22	

Conoco Phillips
Unit 28 SRU Incinerator
Sweeny, Texas
ROU002549P
File Name: 12-07-10_07-06

Date and Time MM/DD/YY HH:MM	CO ppm	NOx ppm	O2 %	THC ppm	CO2 %	SO2 ppm	Flow lpm
12/7/2010 07:06	97.21	96.74	9.66	0.02		-0.23	
12/7/2010 07:07	33.74	13.91	0.31	0.00		-0.22	
12/7/2010 07:08	4.13	0.36	0.08	-0.01		-0.21	
12/7/2010 07:09	4.51	0.29	0.08	-0.01		-0.24	
12/7/2010 07:10	2.41	0.09	0.08	-0.01		-0.22	
12/7/2010 07:11	0.42	47.74	17.89	49.00		-0.24	
12/7/2010 07:12	-0.07	100.43	20.59	93.97		-0.23	
12/7/2010 07:13	-0.01	100.80	20.61	90.23		-0.23	
12/7/2010 07:14	-0.32	100.70	12.66	84.63		-0.39	
12/7/2010 07:15	-0.33	100.57	6.53	84.28		29.82	
12/7/2010 07:16	17.58	99.50	9.87	83.91		448.84	
12/7/2010 07:17	90.19	94.22	11.04	78.85		473.01	
12/7/2010 07:18	93.69	94.29	11.06	29.91		473.23	
12/7/2010 07:19	94.41	94.36	10.04	29.73		470.80	
12/7/2010 07:20	94.27	94.22	-0.02	29.42		469.93	
12/7/2010 07:21	94.19	43.79	0.09	41.63		469.81	
12/7/2010 07:22	94.55	50.19	-0.07	50.48		473.89	
12/7/2010 07:23	94.10	49.76	-0.08	50.30		477.08	
12/7/2010 07:24	68.88	49.22	-0.05	50.12		477.36	
12/7/2010 07:25	36.07	49.89	2.41	32.32		477.51	
12/7/2010 07:26	42.01	51.13	11.02	0.23		477.45	
12/7/2010 07:27	43.51	51.39	11.07	0.13		471.39	
12/7/2010 07:28	47.29	50.85	11.08	0.17		276.14	
12/7/2010 07:29	48.73	46.12	2.50	0.26		252.84	
12/7/2010 07:30	47.15	14.91	0.13	0.16		253.04	
12/7/2010 07:31	49.13	5.18	0.12	0.16		253.19	
12/7/2010 07:32	46.74	2.44	0.11	0.14		253.17	
12/7/2010 07:33	47.01	1.63	0.11	0.14		253.12	
12/7/2010 07:34	47.01	1.33	0.10	0.14		253.12	
12/7/2010 07:35	47.11	1.06	0.10	0.15		253.16	
12/7/2010 07:36	47.24	0.89	0.10	0.14		253.07	
12/7/2010 07:37	42.27	0.79	0.08	0.12		246.08	
12/7/2010 07:38	24.94	0.69	0.09	0.39		30.89	
12/7/2010 07:39	-0.05	5.20	11.65	0.81		1.13	
12/7/2010 07:40	-2.44	21.96	0.33	0.48		2.27	

Response
↑ 85 sec
↓ 90 sec

12/7/2010 07:41	-2.56	17.23	0.24	0.46		1.20
12/7/2010 07:42	-2.81	16.52	0.22	0.47		0.63
12/7/2010 07:43	-2.87	19.12	0.22	0.47		0.59
12/7/2010 07:44	-2.81	19.83	0.22	0.48		0.52
12/7/2010 07:45	-2.80	20.03	0.22	0.49		0.41
12/7/2010 07:46	-2.58	20.09	0.22	0.49		0.48
12/7/2010 07:47	-2.59	20.16	0.22	0.49		0.49
12/7/2010 07:48	-2.61	20.23	0.22	0.48		0.56
12/7/2010 07:49	-2.66	20.29	0.21	0.49		0.39
12/7/2010 07:50	-2.74	20.33	0.22	0.46		0.47
12/7/2010 07:51	-2.73	20.39	1.59	0.53		0.28
12/7/2010 07:52	-2.74	21.39	0.21	0.48		0.37
12/7/2010 07:53	-2.66	20.43	0.21	0.47		0.26
12/7/2010 07:54	-2.67	20.77	0.21	0.43		0.32
12/7/2010 07:55	13.57	13.66	0.09	0.21		0.05
12/7/2010 07:56	45.96	1.36	0.06	0.23		-0.36
12/7/2010 07:57	46.17	0.83	0.06	0.05		-0.64
12/7/2010 07:58	46.68	0.77	0.06	0.05		-0.69
12/7/2010 07:59	43.81	1.47	0.14	0.16		-0.53
12/7/2010 08:00	3.10	44.22	0.21	0.23		0.16
12/7/2010 08:01	-1.21	49.70	0.21	0.26		0.09
12/7/2010 08:02	3.51	50.40	0.21	0.22		-0.03
12/7/2010 08:03	0.08	50.89	0.21	0.21		0.02
12/7/2010 08:04	0.36	50.86	0.20	0.17		-0.07
12/7/2010 08:05	0.33	23.23	0.07	0.03		128.84
12/7/2010 08:06	0.26	0.95	0.07	0.03		240.28
12/7/2010 08:07	-0.07	0.69	0.07	0.03		255.54
12/7/2010 08:08	-0.01	0.69	0.06	0.03		273.23
12/7/2010 08:09	-0.35	0.66	0.06	0.03		245.95
12/7/2010 08:10	-3.12	0.49	0.06	0.03		254.92
12/7/2010 08:11	-3.24	0.49	0.06	0.03		246.86
12/7/2010 08:12	-3.41	0.49	0.06	-2.27		258.57
12/7/2010 08:13	-3.48	0.50	0.11	0.92		247.67
12/7/2010 08:14	-3.75	1.19	0.32	1.82		248.65
12/7/2010 08:15	-3.65	1.45	1.32	1.31		243.22
12/7/2010 08:16	-2.71	1.61	0.20	0.15		28.81
12/7/2010 08:17	-2.05	0.50	0.18	0.15		1.65
12/7/2010 08:18	0.98	0.69	0.19	0.16		1.21
12/7/2010 08:19	1.11	0.69	0.24	0.16		0.19
12/7/2010 08:20	1.39	0.69	0.24	0.07		-0.71
12/7/2010 08:21	1.36	0.69	0.24	0.04		-0.80
12/7/2010 08:22	1.09	0.62	0.24	0.05		-0.89
12/7/2010 08:23	0.96	0.49	0.24	0.04		-0.93
12/7/2010 08:24	1.53	0.49	0.24	0.04		-1.07
12/7/2010 08:25	2.29	0.49	0.23	0.05		-1.06
12/7/2010 08:26	2.56	0.49	0.23	0.05		-1.15
12/7/2010 08:27	2.43	0.49	0.23	0.05		-1.16
12/7/2010 08:28	0.72	0.49	0.23	0.05		-1.14

Conoco Phillips
Unit 28 SRU Incinerator
Sweeny, Texas
HOU002549P
File Name: 12-07-10_10-14

Date and Time	CO	NOx	O2	THC	CO2	SO2	Flow
MM/DD/YY HH:MM	ppm	ppm	%	ppm	%	ppm	lpm
12/7/2010 10:15				0.94			
12/7/2010 10:16				0.99			
12/7/2010 10:17				1.12			
12/7/2010 10:18				0.17			
12/7/2010 10:19				0.10			
12/7/2010 10:20				0.10			
12/7/2010 10:21				0.10			
12/7/2010 10:22				0.10			
12/7/2010 10:23				0.10			
12/7/2010 10:24				0.39			

Recal Time Due
Testing not starting within 2 hrs of first Cal.

12/7/2010 10:26	1.17
12/7/2010 10:27	0.36
12/7/2010 10:28	0.47
12/7/2010 10:29	-0.01
12/7/2010 10:30	0.01
12/7/2010 10:31	43.34
12/7/2010 10:32	83.27
12/7/2010 10:33	84.73
12/7/2010 10:34	84.83
12/7/2010 10:35	56.40
12/7/2010 10:36	29.97
12/7/2010 10:37	29.98
12/7/2010 10:38	42.35
12/7/2010 10:39	50.78
12/7/2010 10:40	50.99
12/7/2010 10:41	51.15
12/7/2010 10:42	50.59

Conoco Phillips
Unit 28 SRU Incinerator
Sweeny, Texas
HOU002549P
File Name: 12-07-10_10-55

Date and Time	CO	NOx	O2	THC	CO2	SO2	Flow
MM/DD/YY HH:MM	ppm	ppm	%	ppm	%	ppm	lpm
12/7/2010 10:56	-2.50	0.27	20.19	1.12		-1.38	
12/7/2010 10:57	-1.96	0.28	20.77	1.17		-1.32	
12/7/2010 10:58	-1.63	0.28	20.77	1.21		-1.52	
12/7/2010 10:59	-0.73	0.28	20.76	1.15		-1.49	
12/7/2010 11:00	-0.48	0.28	20.76	1.17		-1.39	
12/7/2010 11:01	-0.44	0.28	20.76	1.18		-1.37	
12/7/2010 11:02	-0.35	0.28	20.76	1.18		-1.45	
12/7/2010 11:03	-0.26	0.28	20.76	1.20		-1.37	
12/7/2010 11:04	-0.19	0.28	20.76	1.19		-1.40	
12/7/2010 11:05	-0.16	0.28	20.75	1.20		-1.41	
12/7/2010 11:06	-0.12	0.28	20.76	1.15		-1.45	
12/7/2010 11:07	-0.12	0.28	20.76	1.12		-1.42	
12/7/2010 11:08	-0.14	0.28	20.76	1.14		-1.38	
12/7/2010 11:09	-0.15	0.28	20.76	1.13		-1.44	
12/7/2010 11:10	-0.13	0.28	20.76	1.12		-1.44	
12/7/2010 11:11	-0.21	0.28	20.76	1.12		-1.46	
12/7/2010 11:12	-0.25	0.28	20.76	1.10		-1.51	
12/7/2010 11:13	-0.16	0.28	20.76	1.11		-1.46	
12/7/2010 11:14	-0.24	0.28	20.76	1.10		-1.54	
12/7/2010 11:15	-0.29	0.28	20.76	1.09		-1.53	
12/7/2010 11:16	-0.29	0.28	20.76	1.07		-1.59	
12/7/2010 11:17	-0.25	0.28	20.76	1.08		-1.59	
12/7/2010 11:18	-0.23	0.28	20.76	1.10		-1.59	
12/7/2010 11:19	-0.22	0.25	20.76	1.05		-1.59	
12/7/2010 11:20	-0.20	0.21	20.76	1.14		-1.44	
12/7/2010 11:21	-0.17	0.11	20.76	1.10		-1.58	
12/7/2010 11:22	-0.07	0.08	20.76	1.09		-1.54	
12/7/2010 11:23	-0.05	0.08	20.76	1.16		-1.59	
12/7/2010 11:24	0.01	0.08	20.75	1.15		-1.55	
12/7/2010 11:25	0.03	0.08	20.75	1.05		-1.61	
12/7/2010 11:26	0.05	0.08	20.76	1.07		-1.60	
12/7/2010 11:27	0.09	0.08	20.76	1.06		-1.61	
12/7/2010 11:28	0.05	0.08	20.76	1.07		-1.71	
12/7/2010 11:29	0.06	0.08	20.75	1.05		-1.61	
12/7/2010 11:30	0.02	0.08	20.75	1.03		-1.61	
12/7/2010 11:31	0.03	0.08	20.75	1.06		-1.57	
12/7/2010 11:32	0.04	0.08	20.75	1.04		-1.54	
12/7/2010 11:33	0.01	0.08	20.75	1.05		-1.64	
12/7/2010 11:34	0.01	0.08	20.75	1.05		-1.54	
12/7/2010 11:35	0.05	0.08	20.75	1.05		-1.52	

oco Phillips
t 28 SRU Incinerator
Sweeny, Texas
#0U0025495
File Name: 12-07-10_12-31

Date and Time	CO	NOx	O2	THC	CO2	SO2	Flow
MM/DD/YY HH:MM	ppm	ppm	%	ppm	%	ppm	lpm
12/7/2010 12:32	25.05	20.88	3.57	0.26		237.17	
12/7/2010 12:33	18.66	20.99	3.69	0.18		156.39	
12/7/2010 12:34	13.76	20.21	3.79	0.15		97.10	
12/7/2010 12:35	13.63	19.94	3.78	0.14		81.52	
12/7/2010 12:36	12.79	19.90	3.69	0.14		78.68	
12/7/2010 12:37	12.39	19.75	3.64	0.13		76.79	
12/7/2010 12:38	12.99	19.70	3.73	0.13		73.59	
12/7/2010 12:39	15.03	19.57	3.87	0.13		69.81	
12/7/2010 12:40	15.23	19.59	3.87	0.12		64.54	
12/7/2010 12:41	12.33	19.83	3.89	0.12		60.74	
12/7/2010 12:42	10.96	19.83	3.80	0.12		63.40	
12/7/2010 12:43	10.76	19.58	3.87	0.12		62.90	
12/7/2010 12:44	11.39	19.76	3.84	0.12		63.09	
12/7/2010 12:45	11.99	19.58	3.91	0.12		64.93	
12/7/2010 12:46	12.09	19.64	3.81	0.12		66.23	
12/7/2010 12:47	10.23	19.67	3.82	0.11		68.42	
12/7/2010 12:48	8.83	20.03	3.87	0.11		70.04	
12/7/2010 12:49	9.79	19.53	3.93	0.11		70.38	
12/7/2010 12:50	9.66	19.55	3.91	0.11		71.01	
/7/2010 12:51	9.69	19.32	3.87	0.11		71.64	
4/7/2010 12:52	10.68	19.31	3.85	0.11		71.88	
12/7/2010 12:53	10.96	19.25	3.93	0.11		72.16	
12/7/2010 12:54	10.44	19.54	3.88	0.11		72.00	
12/7/2010 12:55	8.94	19.48	3.85	0.11		73.45	
12/7/2010 12:56	9.18	19.36	3.89	0.11		73.73	
12/7/2010 12:57	10.27	19.12	3.91	0.11		73.38	
12/7/2010 12:58	10.93	19.24	3.94	0.10		73.63	
12/7/2010 12:59	12.02	19.28	3.96	0.10		73.27	
12/7/2010 13:00	11.24	19.45	3.92	0.10		73.69	
12/7/2010 13:01	10.90	19.30	3.86	0.10		73.77	
12/7/2010 13:02	10.72	19.35	3.89	0.10		74.15	
12/7/2010 13:03	10.89	19.38	3.84	0.10		73.90	
12/7/2010 13:04	9.35	19.57	3.87	0.09		74.58	
12/7/2010 13:05	9.01	19.44	3.84	0.09		75.30	
12/7/2010 13:06	8.76	19.39	3.79	0.10		75.29	
12/7/2010 13:07	9.31	19.19	3.84	0.09		76.28	
12/7/2010 13:08	10.28	19.31	3.89	0.10		76.11	
12/7/2010 13:09	11.47	19.17	3.93	0.10		75.99	
12/7/2010 13:10	11.49	19.51	3.89	0.10		76.64	
12/7/2010 13:11	9.59	19.52	3.89	0.10		77.56	
12/7/2010 13:12	9.18	19.22	3.83	0.09		78.32	
12/7/2010 13:13	9.00	19.31	3.86	0.10		79.11	
12/7/2010 13:14	9.12	19.31	3.88	0.09		79.45	
12/7/2010 13:15	10.67	19.06	3.93	0.09		78.77	
12/7/2010 13:16	12.08	18.97	3.93	0.09		78.89	
2/7/2010 13:17	11.02	19.21	3.85	0.09		79.76	
12/7/2010 13:18	8.55	19.42	3.74	0.09		81.14	
12/7/2010 13:19	6.97	19.35	3.73	0.09		81.94	
12/7/2010 13:20	9.15	19.15	3.85	0.09		81.23	
12/7/2010 13:21	11.42	19.04	3.93	0.09		80.49	
12/7/2010 13:22	12.33	19.18	3.90	0.09		80.26	
12/7/2010 13:23	10.11	19.31	3.80	0.09		80.96	
12/7/2010 13:24	7.59	19.21	3.66	0.08		82.39	

Run 1 Run 2 Run 3 Run 1

12/7/2010 13:26	8.09	19.08	3.87	0.08	80.65
12/7/2010 13:27	9.93	19.14	3.92	0.08	79.59
12/7/2010 13:28	10.89	19.14	3.89	0.08	78.33
12/7/2010 13:29	9.82	19.38	3.86	0.08	78.29
12/7/2010 13:30	9.34	19.41	3.85	0.08	77.29
12/7/2010 13:31	8.49	19.21	3.82	0.08	77.85
/2010 13:32	9.87	19.02	3.87	0.08	77.06
12/7/2010 13:33	9.80	19.21	3.90	0.08	75.86
12/7/2010 13:34	10.65	19.28	3.90	0.09	78.84
12/7/2010 13:35	11.23	19.01	3.87	0.09	78.00
12/7/2010 13:36	10.01	19.35	3.85	0.10	75.99
12/7/2010 13:37	9.44	18.95	3.83	0.09	76.88
12/7/2010 13:38	8.94	19.18	3.88	0.09	78.92
12/7/2010 13:39	9.39	19.15	3.86	0.10	77.43
12/7/2010 13:40	9.83	18.98	3.89	0.10	76.95
12/7/2010 13:41	10.44	12.39	7.14	4.92	10.97
12/7/2010 13:42	1.96	0.34	10.95	0.17	23.60
12/7/2010 13:43	1.54	0.92	10.33	0.15	12.39
12/7/2010 13:44	0.44	2.55	10.96	0.14	13.28
12/7/2010 13:45	0.34	0.28	10.97	0.13	6.70
12/7/2010 13:46	0.37	17.31	2.81	0.18	2.17
12/7/2010 13:47	0.38	50.62	0.38	0.15	2.32
12/7/2010 13:48	0.36	52.66	0.37	0.15	2.40
12/7/2010 13:49	0.37	50.96	0.36	0.15	2.40
12/7/2010 13:50	15.64	44.04	0.21	0.16	2.19
12/7/2010 13:51	48.98	2.02	0.13	0.14	1.48
12/7/2010 13:52	16.57	0.48	0.14	0.12	1.54
12/7/2010 13:53	23.24	0.35	0.12	0.11	1.54
12/7/2010 13:54	49.57	0.28	0.12	0.11	1.39
12/7/2010 13:55	47.04	0.28	0.11	0.10	1.45
12/7/2010 13:56	40.31	0.28	0.10	0.10	1.41
12/7/2010 13:57	33.98	0.28	0.06	39.02	1.32
/2010 13:58	1.96	0.18	0.05	48.78	1.07
12/7/2010 13:59	1.39	0.08	0.05	49.78	0.93
12/7/2010 14:00	1.66	0.08	0.09	49.88	1.13
12/7/2010 14:01	2.04	0.12	0.05	16.31	3.90
12/7/2010 14:02	1.68	0.28	0.01	0.19	144.79
12/7/2010 14:03	1.67	0.28	0.00	0.13	220.02
12/7/2010 14:04	1.76	0.28	-0.02	0.11	227.54
12/7/2010 14:05	1.82	0.28	-0.05	0.10	226.47
12/7/2010 14:06	1.78	0.28	-0.05	0.09	236.09
12/7/2010 14:07	1.69	0.35	-0.06	0.10	251.89
12/7/2010 14:08	1.76	0.34	-0.06	0.09	254.06
12/7/2010 14:09	2.67	0.33	1.04	0.10	255.35
12/7/2010 14:10	8.75	14.48	3.76	0.09	139.76
12/7/2010 14:11	5.48	19.28	3.78	0.08	99.73
12/7/2010 14:12	6.45	19.10	3.73	0.09	93.40
12/7/2010 14:13	6.27	19.02	3.79	0.09	89.25
12/7/2010 14:14	7.46	18.94	3.83	0.08	84.99
12/7/2010 14:15	8.01	19.01	3.80	0.08	81.52
12/7/2010 14:16	6.73	19.09	3.76	0.09	78.34
12/7/2010 14:17	5.99	19.18	3.78	0.08	77.19
12/7/2010 14:18	6.57	19.21	3.73	0.07	78.99
12/7/2010 14:19	6.97	19.18	3.84	0.07	79.14
12/7/2010 14:20	7.58	18.98	3.88	0.07	77.40
12/7/2010 14:21	6.67	18.85	3.79	0.07	77.45
12/7/2010 14:22	5.29	18.95	3.70	0.07	77.67
2/7/2010 14:23	4.73	18.95	3.83	0.07	76.52
12/7/2010 14:24	7.41	18.70	3.84	0.06	76.90
12/7/2010 14:25	8.86	18.61	3.84	0.06	76.41
12/7/2010 14:26	9.07	18.68	3.82	0.06	75.83
12/7/2010 14:27	8.77	18.78	3.81	0.06	75.19
12/7/2010 14:28	7.19	18.74	3.76	0.06	73.72
12/7/2010 14:29	6.65	18.88	3.76	0.06	74.59
12/7/2010 14:30	7.57	18.91	3.79	0.06	74.49

cal

12/7/2010 14:32	7.53	18.75	3.80	0.06	73.06
12/7/2010 14:33	7.79	18.64	3.78	0.06	71.58
12/7/2010 14:34	8.06	18.80	3.79	0.07	71.45
12/7/2010 14:35	7.81	18.84	3.84	0.06	70.58
12/7/2010 14:36	8.61	18.82	3.79	0.06	71.59
12/7/2010 14:37	8.56	18.71	3.75	0.06	73.45
12/7/2010 14:38	8.39	18.88	3.76	0.06	72.74
12/7/2010 14:39	8.45	18.75	3.63	0.06	74.67
12/7/2010 14:40	8.13	18.86	3.80	0.06	75.56
12/7/2010 14:41	8.41	18.73	3.83	0.06	74.10
12/7/2010 14:42	9.86	18.56	3.89	0.06	74.33
12/7/2010 14:43	9.76	18.85	3.83	0.06	74.82
12/7/2010 14:44	9.11	18.82	3.82	0.06	75.48
12/7/2010 14:45	8.78	18.92	3.81	0.06	76.22
12/7/2010 14:46	8.33	18.66	3.75	0.06	76.45
12/7/2010 14:47	8.39	18.86	3.79	0.06	76.31
12/7/2010 14:48	8.26	18.84	3.79	0.06	75.25
12/7/2010 14:49	8.36	18.82	3.82	0.06	75.09
12/7/2010 14:50	9.29	18.57	3.82	0.06	75.20
12/7/2010 14:51	8.38	18.79	3.85	0.06	75.34
12/7/2010 14:52	7.74	18.83	3.82	0.06	75.53
12/7/2010 14:53	7.14	18.71	3.78	0.06	76.40
12/7/2010 14:54	6.21	18.89	3.77	0.05	77.29
12/7/2010 14:55	7.83	18.82	3.84	0.06	76.97
12/7/2010 14:56	8.88	18.85	3.90	0.06	76.36
12/7/2010 14:57	7.91	18.83	3.87	0.06	76.39
12/7/2010 14:58	6.08	19.03	3.84	0.06	77.24
12/7/2010 14:59	5.19	19.05	3.80	0.05	77.65
12/7/2010 15:00	5.44	18.87	3.93	0.06	74.88
12/7/2010 15:01	6.14	18.97	3.88	0.06	72.40
12/7/2010 15:02	7.88	18.57	3.96	0.06	70.91
12/7/2010 15:03	9.04	18.64	3.95	0.06	70.21
12/7/2010 15:04	9.29	18.67	3.88	0.05	70.53
12/7/2010 15:05	7.05	19.01	3.83	0.06	71.71
12/7/2010 15:06	5.76	19.11	3.88	0.05	72.22
12/7/2010 15:07	6.00	18.98	3.85	0.06	71.57
12/7/2010 15:08	6.73	18.85	3.95	0.06	71.47
12/7/2010 15:09	7.65	18.81	4.03	0.06	70.64
12/7/2010 15:10	8.25	18.78	4.04	0.06	69.89
12/7/2010 15:11	8.09	18.73	3.99	0.06	70.08
12/7/2010 15:12	6.42	18.78	3.86	0.06	70.95
12/7/2010 15:13	5.77	19.18	3.90	0.08	71.97
12/7/2010 15:14	6.23	18.76	3.91	0.10	71.90
12/7/2010 15:15	7.23	18.71	3.90	0.10	71.34
12/7/2010 15:16	6.69	18.61	3.93	0.11	71.74
12/7/2010 15:17	6.25	19.11	3.83	0.26	70.35
12/7/2010 15:18	4.78	18.94	3.87	0.17	69.77
12/7/2010 15:19	5.83	18.80	3.87	0.08	68.48
12/7/2010 15:20	6.40	18.74	3.86	0.10	67.44
12/7/2010 15:21	6.05	18.87	3.83	0.08	67.94
12/7/2010 15:22	6.13	18.58	3.85	0.08	67.51
12/7/2010 15:23	6.15	18.70	3.89	0.17	68.73
12/7/2010 15:24	5.61	18.63	3.85	0.14	67.01
12/7/2010 15:25	5.48	19.03	3.78	0.09	66.90
12/7/2010 15:26	5.29	18.81	3.85	0.07	69.48
12/7/2010 15:27	5.34	18.85	3.93	0.11	70.00
12/7/2010 15:28	4.62	18.58	3.89	0.11	67.66
12/7/2010 15:29	5.07	18.83	3.92	0.14	63.79
12/7/2010 15:30	4.72	18.63	3.84	0.11	61.10
12/7/2010 15:31	6.68	18.11	3.84	0.11	60.94
12/7/2010 15:32	5.43	18.41	3.87	0.12	62.48
12/7/2010 15:33	5.59	18.61	3.85	0.10	62.16
12/7/2010 15:34	4.77	18.55	3.84	0.10	61.70
12/7/2010 15:35	5.00	18.68	3.91	0.10	60.49
12/7/2010 15:36	5.28	18.60	3.89	0.08	61.14

cast Runs

12/7/2010 15:38	6.83	18.70	3.93	0.19	63.04
12/7/2010 15:39	5.36	18.58	3.88	0.18	60.79
12/7/2010 15:40	5.62	18.66	3.90	0.14	57.88
12/7/2010 15:41	5.17	18.83	3.86	0.21	60.09
12/7/2010 15:42	4.98	18.97	3.90	0.19	60.12
12/7/2010 15:43	5.75	18.79	3.94	0.14	56.65
12/7/2010 15:44	7.40	18.59	3.88	0.09	61.26
12/7/2010 15:45	8.25	18.61	3.91	0.13	64.41
12/7/2010 15:46	6.13	18.29	5.00	0.43	63.95
12/7/2010 15:47	2.70	2.85	10.80	0.18	51.80
12/7/2010 15:48	2.06	0.28	10.85	0.16	22.23
12/7/2010 15:49	1.95	0.19	10.87	0.13	9.97
12/7/2010 15:50	1.30	0.25	8.37	0.13	7.48
12/7/2010 15:51	1.28	39.42	0.28	0.11	9.30
12/7/2010 15:52	0.40	49.67	0.24	0.11	9.01
12/7/2010 15:53	0.21	50.82	0.23	0.11	8.93
12/7/2010 15:54	0.01	50.84	0.27	0.11	9.60
12/7/2010 15:55	0.16	36.35	0.19	43.15	8.30
12/7/2010 15:56	0.38	0.70	0.18	50.39	6.84
12/7/2010 15:57	0.27	0.46	0.18	50.33	6.51
12/7/2010 15:58	12.86	0.34	0.34	13.48	7.59
12/7/2010 15:59	49.26	0.93	0.79	0.99	9.12
12/7/2010 16:00	47.00	0.95	-0.06	0.15	9.40
12/7/2010 16:01	49.17	0.45	0.05	0.14	9.33
12/7/2010 16:02	43.39	0.28	0.13	0.12	8.93
12/7/2010 16:03	46.22	0.28	0.17	0.11	5.02
12/7/2010 16:04	48.09	0.30	0.48	0.39	7.41
12/7/2010 16:05	22.30	0.42	0.44	0.12	25.97
12/7/2010 16:06	-0.52	0.28	-0.14	0.07	126.77
12/7/2010 16:07	-0.71	0.28	-0.13	0.06	186.19
12/7/2010 16:08	-0.79	0.28	-0.07	0.06	216.68
12/7/2010 16:09	-0.73	0.28	-0.14	0.07	214.93
12/7/2010 16:10	-0.62	0.28	-0.07	0.06	238.32
12/7/2010 16:11	-0.67	0.28	0.07	0.06	243.71
12/7/2010 16:12	-0.67	0.28	0.17	0.06	260.12
12/7/2010 16:13	-0.47	0.28	0.09	0.05	269.41
12/7/2010 16:14	-0.51	0.28	0.14	0.05	255.30
12/7/2010 16:15	2.41	9.30	3.60	0.12	214.20
12/7/2010 16:16	3.75	19.67	4.18	0.13	133.46
12/7/2010 16:17	3.51	19.87	4.18	0.12	99.57
12/7/2010 16:18	3.87	19.42	4.13	0.12	84.97
12/7/2010 16:19	2.95	19.50	4.08	0.11	79.71
12/7/2010 16:20	3.08	19.66	4.14	0.10	77.55
12/7/2010 16:21	3.55	19.55	4.15	0.08	76.89
12/7/2010 16:22	4.27	19.54	4.21	0.07	77.51
12/7/2010 16:23	4.13	19.69	4.19	0.07	77.50
12/7/2010 16:24	4.19	19.60	4.19	0.06	77.57
12/7/2010 16:25	4.59	19.76	4.20	0.07	77.52
12/7/2010 16:26	3.72	19.89	4.17	0.07	76.56
12/7/2010 16:27	3.99	19.63	4.16	0.08	75.77
12/7/2010 16:28	4.45	19.61	4.16	0.07	74.98
12/7/2010 16:29	5.07	19.57	4.11	0.06	74.06
12/7/2010 16:30	5.29	19.74	4.15	0.15	75.58
12/7/2010 16:31	4.26	19.65	4.14	0.16	74.48
12/7/2010 16:32	3.41	19.87	4.15	0.13	71.91
12/7/2010 16:33	2.88	19.83	4.05	0.09	71.37
12/7/2010 16:34	3.65	19.51	4.13	0.07	74.38
12/7/2010 16:35	3.68	19.67	4.07	0.16	75.40
12/7/2010 16:36	2.25	19.61	4.11	0.18	73.04
12/7/2010 16:37	2.99	19.62	4.07	0.17	71.34
12/7/2010 16:38	3.13	19.55	4.01	0.13	68.96
12/7/2010 16:39	3.80	19.38	4.03	0.10	65.07
12/7/2010 16:40	4.25	19.52	4.02	0.08	65.74
12/7/2010 16:41	4.58	19.42	4.07	0.07	67.81
12/7/2010 16:42	4.61	19.38	4.11	0.07	68.40
12/7/2010 16:43	4.27	19.65	4.04	0.07	67.82

12/7/2010 16:45	2.81	19.41	4.01	0.11	67.27
12/7/2010 16:46	3.04	19.42	3.93	0.11	65.92
12/7/2010 16:47	3.38	19.32	3.96	0.10	64.85
12/7/2010 16:48	4.65	19.25	4.02	0.09	65.31
12/7/2010 16:49	5.09	19.54	4.01	0.07	66.27
12/7/2010 16:50	6.08	19.45	3.95	0.12	69.40
12/7/2010 16:51	3.78	19.58	3.90	0.14	68.57
12/7/2010 16:52	3.36	19.52	3.91	0.14	66.58
12/7/2010 16:53	3.23	19.32	3.94	0.12	63.35
12/7/2010 16:54	3.13	19.81	3.96	0.10	61.01
12/7/2010 16:55	3.12	19.78	3.94	0.08	60.40
12/7/2010 16:56	3.49	19.58	3.98	0.06	63.40
12/7/2010 16:57	4.93	19.41	3.99	0.11	66.31
12/7/2010 16:58	4.57	19.92	4.01	0.13	66.61
12/7/2010 16:59	4.35	19.75	3.96	0.12	63.59
12/7/2010 17:00	4.83	19.75	4.00	0.10	61.38
12/7/2010 17:01	4.49	19.82	3.95	0.08	63.90
12/7/2010 17:02	4.97	19.78	4.01	0.06	66.60
12/7/2010 17:03	5.32	19.72	3.94	0.06	67.81
12/7/2010 17:04	4.39	19.92	3.95	0.06	67.35
12/7/2010 17:05	4.79	19.65	3.92	0.06	67.86
12/7/2010 17:06	5.43	19.65	3.98	0.07	68.60
12/7/2010 17:07	4.63	19.45	4.00	0.13	67.77
12/7/2010 17:08	4.93	19.48	3.99	0.13	65.23
12/7/2010 17:09	5.39	19.48	3.99	0.11	59.58
12/7/2010 17:10	4.86	19.68	3.94	0.09	58.11
12/7/2010 17:11	5.16	19.42	3.99	0.06	61.69
12/7/2010 17:12	7.06	19.55	4.03	0.06	65.86
12/7/2010 17:13	5.06	19.85	3.97	0.10	67.09
12/7/2010 17:14	3.56	19.68	3.96	0.13	66.59
12/7/2010 17:15	3.26	19.78	3.99	0.12	62.42
12/7/2010 17:16	4.09	19.52	3.99	0.11	61.13
12/7/2010 17:17	4.50	19.58	4.00	0.08	63.50
12/7/2010 17:18	6.06	19.48	3.97	0.06	67.46
12/7/2010 17:19	6.89	19.45	3.97	0.07	70.90
12/7/2010 17:20	5.66	19.58	3.98	0.08	71.16
12/7/2010 17:21	4.16	19.69	3.97	0.08	70.67
12/7/2010 17:22	3.89	19.58	4.01	0.07	69.05
12/7/2010 17:23	4.09	19.69	3.97	0.08	69.05
12/7/2010 17:24	3.73	19.74	3.99	0.11	68.98
12/7/2010 17:25	3.33	19.45	3.99	0.10	66.51
12/7/2010 17:26	3.66	19.45	4.05	0.09	65.01
12/7/2010 17:27	4.43	19.42	3.97	0.07	65.35
12/7/2010 17:28	5.20	19.58	4.05	0.06	67.75
12/7/2010 17:29	6.46	19.45	3.98	0.06	70.44
12/7/2010 17:30	6.14	19.59	4.03	0.06	71.66
12/7/2010 17:31	6.00	19.76	4.02	0.06	71.83
12/7/2010 17:32	6.21	19.81	4.01	0.06	72.02
12/7/2010 17:33	5.41	19.68	4.01	0.06	71.75
12/7/2010 17:34	5.62	19.52	4.01	0.06	71.86
12/7/2010 17:35	4.16	19.60	3.97	0.06	72.14
12/7/2010 17:36	4.63	19.49	4.01	0.06	71.89
12/7/2010 17:37	4.72	19.65	4.02	0.06	71.97
12/7/2010 17:38	4.79	19.42	3.99	0.07	70.76
12/7/2010 17:39	4.67	19.28	4.00	0.06	67.60
12/7/2010 17:40	5.20	19.41	3.97	0.06	66.70
12/7/2010 17:41	5.31	19.32	3.95	0.06	67.74
12/7/2010 17:42	4.60	19.54	3.99	0.09	68.16
12/7/2010 17:43	3.54	19.46	3.95	0.14	66.88
12/7/2010 17:44	2.43	20.66	3.92	0.13	64.96
12/7/2010 17:45	2.69	19.81	4.00	0.11	61.57
12/7/2010 17:46	2.47	19.58	3.99	0.11	62.56
12/7/2010 17:47	2.78	19.55	4.00	0.11	67.52
12/7/2010 17:48	3.32	19.23	3.98	0.13	70.81
12/7/2010 17:49	2.75	23.23	3.95	0.13	66.78

Run 3

12/7/2010 17:51	4.15	19.49	3.99	0.13	63.42
12/7/2010 17:52	3.17	8.57	8.87	0.18	64.96
12/7/2010 17:53	-0.91	0.37	11.03	0.11	40.42
12/7/2010 17:54	-0.91	0.46	11.04	0.13	22.44
12/7/2010 17:55	-0.24	0.54	11.04	0.12	9.92
12/7/2010 17:56	-0.22	11.71	5.07	0.14	12.47
12/7/2010 17:57	-0.21	50.36	0.11	0.08	2.87
12/7/2010 17:58	-0.19	51.30	0.10	0.08	6.38
12/7/2010 17:59	1.65	49.99	0.15	0.11	13.25
12/7/2010 18:00	36.08	4.88	0.20	0.11	13.45
12/7/2010 18:01	47.20	0.64	0.19	0.10	12.69
12/7/2010 18:02	46.71	0.48	0.20	0.10	9.21
12/7/2010 18:03	47.99	0.50	0.23	15.44	2.37
12/7/2010 18:04	11.78	0.52	0.15	51.44	2.10
12/7/2010 18:05	0.40	0.28	0.17	51.58	2.05
12/7/2010 18:06	0.53	0.28	0.20	51.26	1.96
12/7/2010 18:07	0.53	0.28	0.66	16.92	2.27
12/7/2010 18:08	1.71	0.38	2.73	7.71	5.89
12/7/2010 18:09	1.31	0.42	0.08	0.17	56.65
12/7/2010 18:10	0.09	0.28	0.09	0.23	142.21
12/7/2010 18:11	0.26	0.30	1.16	0.79	223.10
12/7/2010 18:12	1.51	0.64	14.29	0.90	205.58
12/7/2010 18:13	0.29	0.51	0.11	0.08	126.02
12/7/2010 18:14	-0.07	0.28	0.08	0.07	224.66
12/7/2010 18:15	0.30	0.08	0.09	0.07	207.83
12/7/2010 18:16	-0.21	0.08	0.08	0.06	218.97
12/7/2010 18:17	-0.31	0.08	0.07	0.06	257.09
12/7/2010 18:18	-0.49	0.08	0.06	0.06	255.39
12/7/2010 18:19	-0.34	22.22	0.06	0.05	257.36

NOX CONV.

done after 1st set.

12/7/2010 18:20	35.30
12/7/2010 18:21	35.48
'7/2010 18:22	35.65
.7/2010 18:23	35.95
12/7/2010 18:24	36.43
12/7/2010 18:25	36.85
12/7/2010 18:26	36.92
12/7/2010 18:27	36.80
12/7/2010 18:28	36.70
12/7/2010 18:29	36.62
12/7/2010 18:30	36.57
12/7/2010 18:31	36.50
12/7/2010 18:32	36.35
12/7/2010 18:33	36.44
12/7/2010 18:34	36.33
12/7/2010 18:35	36.21
12/7/2010 18:36	36.19
12/7/2010 18:37	36.17
12/7/2010 18:38	36.12
12/7/2010 18:39	36.03
12/7/2010 18:40	36.01
12/7/2010 18:41	35.99
12/7/2010 18:42	36.01
12/7/2010 18:43	35.91
12/7/2010 18:44	35.91
12/7/2010 18:45	35.87
12/7/2010 18:46	35.89
12/7/2010 18:47	35.89
/7/2010 18:48	35.81
./7/2010 18:49	35.81
12/7/2010 18:50	35.85
12/7/2010 18:51	35.77
12/7/2010 18:52	35.74
12/7/2010 18:53	35.74
12/7/2010 18:54	35.68
12/7/2010 18:55	35.73
12/7/2010 18:56	35.67
12/7/2010 18:57	35.61
12/7/2010 18:58	35.65
12/7/2010 18:59	35.64
12/7/2010 19:00	35.60
12/7/2010 19:01	35.58
12/7/2010 19:02	35.56
12/7/2010 19:03	35.49
12/7/2010 19:04	35.49
12/7/2010 19:05	35.38
12/7/2010 19:06	35.47
12/7/2010 19:07	35.67

Cynthia W. Jordy
Environmental Team Leader

ConocoPhillips Company
Sweeny Refinery
P. O. Box 866
Sweeny, TX 77480
Phone: 979.491.2707

ConocoPhillips

August 11, 2010

CERTIFIED MAIL #7006 0100 0002 7585 5482

Ms. Linda Vasse
Air Section Manager
Texas Commission on Environmental Quality
5425 Polk Ave., Suite H
Houston, TX 77023-1486

Re: **Unit 28.2 SRU Tail Gas Incinerator (EPN 28.2-36-2)**
45 Days Testing Notification of 5 Year Compliance Test
ConocoPhillips Sweeny Refinery
Permit 5920
Regulated Entity Number RN101619179
Customer Reference Number CN601674351
Acct No. BL-0042-G

Dear Ms. Vasse:

Special Provision 17 of Permit 5920 requires that all sources described in Section 15 be tested once every 5 years. The Unit 28.2 Sulfur Recovery Unit (SRU) Tail Gas Incinerator was last tested in 2005 and we are planning to do the testing on this unit the week of October 4, 2010. As required by Special Provision 15A of Permit, the ConocoPhillips (COP), Sweeny Refinery hereby submits 45 notice of our intent to conduct compliance testing. The test parameters shall be those requested in Provision 15B (VOC, NOx, CO, SO2 and H2S). Stork Testing & Metallurgical Consulting, Inc. out of Houston, TX has been contracted to perform the required testing. This same firm did the testing for COP on this unit back in 2005 and we intend to follow the same test protocol as was performed during those tests. Please find attached for your review a test protocol prepared by Stork.

COP does wish to schedule a meeting at your office or our refinery to discuss the test approach that we plan to follow that is described in the attached test protocol. We will make an effort to contact your office in a few days to schedule a date for a pre-test meeting.

If you have any questions or need any additional information, please contact Sean O'Brien at (979) 491-2705 or sean.b.obrien@conocophillips.com.

Sincerely,

Cindy W. Jordy

CWJ/SBO/jfd

STORK®
Materials Technology

COMPLIANCE SAMPLING PLAN
AIR POLLUTANT EMISSIONS TEST
TCEQ PERMIT NO. 5920A AND PSD/TX-103M3
UNIT 28 SRU INCINERATOR STACK (EPN 28.2-36-2)
TCEQ ACCOUNT ID NO. BL-0042-G
REGULATED ENTITY NO. RN101619179
CUSTOMER NO. CN601674351

Prepared For

ConocoPhillips Company
Sweeny, Texas

Prepared By

STORK TESTING & METALLURGICAL CONSULTING, INC.
Air Emissions Services Division
Houston, Texas

STMC Project No. HOU002549P

STORK®
Materials Technology

Stork Testing & Metallurgical Consulting, Inc.

Failure Analysis • NDE
Metallurgical • Air Emissions

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August 3, 2010

Mr. Sean O'Brien
ConocoPhillips Company
P. O. Box 866
Sweeny, Texas 77480

Phone: 979/491-2705
Email: sean.b.obrien@conocophillips.com

Re: Compliance Sampling Plan
Air Pollutant Emissions Test
TCEQ Permit No. 5920A and PSD-TX-103M3
EPN 28.3-36-2 and 25.2-CS
STMC Project No. HOU002549P

Dear Mr. O'Brien:

Stork Testing & Metallurgical Consulting, Inc. is pleased to submit this Compliance Sampling Plan (CSP) for the TCEQ Permit air pollution emission test program at your Sweeny, Texas facility.

Stork has extensive experience in providing Environmental Protection Agency (EPA) and Texas Commission on Environmental Quality (TCEQ) compliance emissions test programs for the chemical industry in this region since the early 1970s.

Please note when reviewing this plan that:

- Testing of the Unit 28 SRU Incinerator stack (EPN 28.2-36-2) is required to satisfy the TCEQ permit requirement to repeat testing every five years. The unit was last tested in June of 2005.

- Please review the Proposed Deviations to the Test Methods section, which includes performing the H_2S using Method 15 over three (3) one (1) hour runs (instead of three [3] to six [6] hour runs).

We appreciate the opportunity to provide this service to you and look forward to working with you. Should you have any questions or if we may be of further service, please feel free to contact me at 713/696-6269.

Sincerely,

STORK TESTING & METALLURGICAL CONSULTING, INC.

phillip yokley

Phillip Yokley
Air Emissions Program Manager
Air Emissions Services Division

PY:pjm

TABLE OF CONTENTS

SCOPE OF WORK

A compliance air pollutant emissions test program will be performed at the ConocoPhillips Company (ConocoPhillips) facility located in Sweeny, Texas. Testing will be performed to determine the emission rates of various pollutants from the Unit 28.2 Sulfur Recovery Unit (SRU) Tail Gas Incinerator (TGI) stack (EPN 28.2-36-2). The test program is being performed to satisfy the TCEQ permit Special Condition 17 requirement to repeat testing every five years. The unit was last tested in June, 2005.

The test program is summarized as follows:

TABLE NO. 1 – Parameters/Emission Limits: TCEQ Permit Test

Parameter	Limits	Permit Condition
Unit 28.2 SRU Incinerator Stack		
SO_2	250 ppmvd @ 0% O_2	Special Condition 8.B
SO_2	115.42 lb/hr	MAERT
H_2S	10 ppmvd @ 0% O_2	Special Condition 8.B
H_2S	2.45 lb/hr	MAERT
CO	100 ppmvd @ 0% O_2	Special Condition 8.B
CO	20.20 lb/hr	MAERT
NOx	0.06 lb/mmBtu[1]	Special Condition 8.B
NOx	8.13 lb/hr	MAERT
VOC	0.93 lb/hr	MAERT

[1] Based on F factor using the HHV of the fuel.

PROCEDURES

The test methodologies to be used are shown in Table No. 2 as follows:

TABLE NO. 2 – Test Methods

Component	Test Methods
Unit 28.2 SRU TGI	
Flow Rate	EPA Methods 1-4 (modified as noted)
O_2	EPA Method 3A or 3B
CO	EPA Method 10
NOx	EPA Method 7E
SO_2	EPA Method 6 or 6C
"total" VOCs	EPA Method 25A
H_2S	EPA Method 15 (modified) or Method 11

Note: The test methods are contained in 40 CFR 60, Appendix A.

- **lb/mmBtu:** Stork will use the EPA published F factor for natural gas (8,610 dscf/mmBtu) to compute the NOx emissions on a lb/mmBtu basis. The following equation will be used:

$$E\ lb/mmBtu = C_d \times F_d \times \left[\frac{20.9}{20.9 - \%O_2 d}\right] \qquad \textit{Equation 19-1}$$

Where:

E =	pollutant emission rate in lb/mmBtu, corrected to 0% O_2
C_d =	pollutant concentration in lb/dscf
F_d =	fuel F factor, dscf/mmBtu (calculated using the EPA published F factor for natural gas [8,610 dscf/mmBtu])
% O_{2d} =	stack oxygen, dry basis, from Stork emissions test

- **Flow Rate:** For the SRU Incinerator stack, Stork will use EPA Methods 1-4 (modified as noted). The upstream/downstream distances will be measured in the field and Figure 1-2 of EPA Method 1 will be used to determine the number and location of the flow sample points. The maximum number of traverse points will be sixteen (16). Flow will be measured using an S-type pitot tube and Type K thermocouple. The stack moisture will be obtained using a single point sample (at the approximate stack midpoint or a point at least one meter from the stack wall). This data, coupled with CO_2 (by Fyrite) and O_2 (by analyzer/Orsat) will be used to determine the stack flue gas molecular weight, velocity and flow rate (acfm and dscf/hr). The Qsd (flow in dscf/hr) will then be used to convert the pollutant concentration data to a lb/hr basis as follows:

$$lb/hr = pollutant\ lb/dscf \times Qsd\ in\ dscf/hr$$

- **NOx, CO, SO_2, O_2:** Three (3) sample runs for NOx, CO, SO_2 and O_2 will be performed on the 28.2 SRU. Each run will be for a duration of one (1) hour.

  O_2, NOx, SO_2 and CO will be determined utilizing continuous analyzer techniques. Stack gas will be continuously extracted from the stack midpoint or at a point at least one (1) meter from the stack wall, using a probe heated to prevent condensation, pass through heated teflon transport line, a minimum contact chilled condenser system, a leak free teflon diaphragm pump, manifold apparatus and the aforementioned analyzers. The analyzers will be calibrated with EPA Protocol calibration gases (CO, NO, SO_2 and O_2 in N_2). As an alternate, wet chemistry for SO_2 may be used (EPA Method 6/8 followed by titration). CO_2 will be determined by Fyrite. A NOx converter efficiency will be performed. Please note that Stork intends to use instruments on typical span ranges (i.e. expected to be 100, 250 or 1,000 ppm NOx, 200 or 500 ppm CO, 500, 1,000 or 5,000 ppm SO_2 and 25% O_2).

  Note: In accordance with the updated Continuous Instrumental Test Methods (as contained in the Federal Register dated May 15, 2006, with an effective date of August 14, 2006), Stork will conduct a stratification test on three (3) points, located at 16.7, 50.0 and 83.3% of diameter using either NOx, CO, SO_2 or O_2. The stratification will be determined with the following criteria:

  - If the concentration at each traverse point is within either ± 5.0% of the mean or ± 0.5 ppm NOx, SO_2 or CO, or 0.3% O_2 (whichever is less restrictive), the gas stream is

unstratified and single point samples are allowed from the point most closely matching the mean value. This point will be used for all pollutants of interest.

- If the concentration at each traverse point is greater than ± 5.0% of the mean or ± 0.5 ppm NOx, SO_2 or CO or 0.3% O_2, but within 10.0% of the mean or ± 1.0 ppm NOx, SO_2 or CO or 0.5% O_2 (whichever is less restrictive), the gas stream is considered minimally stratified and the three (3) points will be sampled for each run for all pollutants of interest.

- If the concentration of the selected gas exceeds the above criteria, then twelve (12) traverse points located in accordance with Table 1-2 of Method 1 are required.

For the SRU, the SO_2 and CO emissions will be corrected to 0% using the O_2 measured by Stork and the following equation:

$$ppmvd\ @\ 0\%\ O_2 = ppmvd\ x\left(\frac{20.9}{20.9 - \%\ O_2}\right)$$

- **VOC:** VOC emission samples will be obtained and analyzed following the continuous analyzer technique contained in EPA Method 25A. Three (3) one (1) hour (minimum) sample runs will be obtained. The sample system will be identical to the NOx and CO system except the sample will be diverted from the condenser and be routed to both a continuous flame ionization analyzer (JUM Model VE-7) and a gas chromatograph equipped with a flame ionization detector (GC/FID). Therefore the sample will be obtained on a "hot-wet" basis (unless the moisture content dictates the removal prior to being routed to the JUM). Please note that Stork intends to use typical span ranges for the JUM (i.e. 10 or 100 ppm if needed) which will take into account the potential for VOC "spikes" during the runs and therefore being on a span that is 1.5 to 2.5 times the "expected concentration" may not be achieved. If the VOCs exceed 100 ppm, the JUM will be operated on the 1,000 ppm span range. The JUM will determine "total" hydrocarbons and will be calibrated with EPA Protocol propane standards. The GC/FID will be calibrated with one (1) certified methane/ethane gas standard and will be utilized to periodically analyze the gas stream for methane/ethane content either on site or off site from an integrated tedlar bag sample. Should moisture be too high to route to the analyzers, Stork will capture the condensate and have the condensate analyzed by GC (by Enthalpy Analytical, Inc., Durham, North Carolina) to determine propane equivalent VOC. The total VOC mass emission rates will then include the gaseous plus condensate and being defined as nonmethane, nonethane hydrocarbons, quantitated as propane.

- **H_2S:** Stork will obtain the H_2S samples using either a gas chromatograph equipped with a flame photometric detector (GC/FPD) as contained in EPA Method 15 or the wet chemistry technique contained in EPA Method 11. EPA Method 15, if used, will utilize a quartz lined probe (in an inconel sheath), a cooling coil (to cool the stack gas from the expected ~1320°F to below 400°F), teflon citrate buffer impingers to remove SO_2, teflon sample line, sample pump and the GC/FPD.

The sample will be taken from the stack midpoint or a point at least one (1) meter from the stack wall. As this test is to satisfy a TCEQ permit requirement only, three (3) one (1) hour samples will be obtained, with each run consisting of a minimum of five (5) injections (please note that this is a deviation from Section 8.2.3 which stipulates 3 to 6 hour sample runs, 16 injections).

As an option, Stork may elect to perform the H_2S sampling using EPA Method 11. If this option is chosen, three (3) one (1) hour sample runs will be taken using a midget impinger train prepared with cadmium sulfate solution to capture the H_2S. The samples will be field titrated iodometrically.

The H_2S shall be corrected to 0% O_2 using the O_2 content measured by Stork as follows:

$$ppmvd\ @\ 0\%\ O_2 = ppmvd\ x\left(\frac{20.9}{20.9 - \%\ O_2}\right)$$

DESCRIPTION OF EQUIPMENT

The following instruments/equipment are expected to be used by Stork (or equivalent):

TABLE NO. 3

Parameter	Make/Model	Detection Principle
O_2	Servomex 1420B/1440 or Orsat	Paramagnetic or wet chemistry
NOx	ThermoEnvironmental (TECO) 42C	Chemiluminescence
CO	TECO Model 48	Nondispersive Infrared Gas Filter Correlation (NDIR-GFC)
SO_2	Western Research 721 or Impinger Train	Photometric or titration
VOC	JUM Model VE-7/Shimadzu GC/FID	Flame ionization analysis
H_2S	Shimadzu GC/FPD or Impinger Train	Flame photometric analysis or titration
Flow	S type Pitot/Type K Thermocouple or Calculation	Manometer, thermocouple
Moisture	Graesby Nutech/Impinger Train	Volumetric and gravimetric

PROPOSED DEVIATIONS TO TEST METHODS

- The use of typical span ranges for the VOC instrument (10, 100 or 1000 ppm) dependent upon the maximum VOCs encountered during the run, which may not be 1.5 to 2.5 times the expected concentration or the emission limit.

- The recovery, analysis and computation of condensate VOCs if the moisture needs to be removed in the Method 25A train. As the condensates are liquid, a 30 day holding time would apply (i.e. similar to a VOA sample in water). The gas volume related to the condensate will be recorded by Stork using a calibrated gas mass flow meter. This technique has been approved by the TCEQ prior to compliance test programs conducted on various sources throughout Texas.

- One (1) hour sample duration (with a minimum of 5 injections per run) for H_2S by Method 15 (if selected).

TURNAROUND TIME

NOx, CO, O_2, SO_2 (if by analyzer), H_2S, VOC (gaseous portion) and flow preliminary data results will be available in the field. VOC condensate (if required) will generally be available within three (3) weeks of completion of field testing and receipt of samples in the laboratory.

TEST SCHEDULING AND REPORT

Scheduling for this work will be coordinated through ConocoPhillips, the TCEQ and Stork's Air Emissions Services Division. Currently this work is scheduled to be performed the week of October 4, 2010. A tentative schedule is as follows:

TABLE NO. 4: Tentative Schedule	
Day 1, Monday, October 4, 2010	Setup/Preliminaries
Day 2, Tuesday, October 5, 2010	Test
Day 3, Wednesday, October 6, 2010	Spillover (if needed)

Upon completion of testing, personnel will return to their office to complete the evaluation of test data. Preliminary sample data will be reported orally, followed by the final test report within 60 days after completion of field testing as per Special Condition No. 15.F. The test report will contain:

1. Letter of Transmittal
2. Test Objective
3. Description of Test Procedures
4. Discussion
5. Summary
6. Tabulated Summary of Sampling Results
7. Diagram of Test Locations

8. Field and Laboratory Data Sheets, including Calculation Sheets
9. Applicable Calibration Sheets
10. Process Operating Data (provided by ConocoPhillips – unless it is considered confidential)

QUALITY ASSURANCE

Stork maintains a strict quality assurance program. A summary of this program follows:

- Equipment Calibrations
  - Sampling Console - annual
  - Wet Test Meter - annual
  - Pitot Tubes - either annual wind tunnel calibration or adherence to EPA construction guidelines.
  - Analyzers - calibration with EPA Protocol gases plus linearity, bias, converter efficiencies
  - Post test sampling console gamma calibration
  - Post test barometer and thermometer calibration
  - Balance calibration - biannual plus daily check when in use

- Analytical QA
  - Spike sample analysis - SO_2
  - Constant weights for PM - within ±0.5 mg
  - Use of reagent grade chemicals
  - Use of ASTM Type III deionized water

- Calculation QA
  - Hand check of computer programs
  - Check print procedure for data entry

- Report QA
  - Peer review

CONTACT PERSONS

Name	Firm	Phone	Email
Sean O'Brien	ConocoPhillips	979/491-2705	Sean.b.obrien@conocophillips.com
Phillip Yokley	Stork	713/696-6269	phil.yokley@us.stork.com

SPECIAL CONDITIONS

Permit Numbers 5920A and PSD-TX-103M3

EMISSION LIMITATIONS

1. This permit authorizes emissions only from those points listed in the attached table entitled "Emission Sources - Maximum Allowable Emission Rates," (MAERT) and the facilities covered by this permit are authorized to emit subject to the emission rate limits on that table and other operating conditions specified in this permit. **(PSD) (11/04)**

2. Non-fugitive emissions from relief valves, safety valves, or rupture discs of gases containing volatile organic compounds (VOC) at a concentration of greater than 1 percent are not authorized by this permit unless authorized on the maximum allowable emission rates table (MAERT). Any releases directly to atmosphere from relief valves, safety valves, or rupture discs of gases containing VOC at a concentration greater than 1 percent are not consistent with good practices for minimizing emissions. **(11/04)**

OPERATIONAL LIMITATIONS, WORK PRACTICES, AND PLANT DESIGN

3. Combustion units shall be fired with either fuel gas containing no more than 160 parts per million by volume (ppmv) of hydrogen sulfide (H_2S) or sweet natural gas containing no more than 5 grains of total sulfur per 100 dry standard cubic feet. Fuel gas H_2S content shall be monitored and recorded in accordance with New Source Performance Standards (NSPS) Subpart J. **(PSD) (11/04)**

4. Flares shall be designed and operated in accordance with the following requirements:

   A. The combined natural gas and waste stream to the flare tip shall meet the Title 40 Code of Federal Regulation (40 CFR) § 60.18 specifications for minimum net heating value and maximum tip velocity under normal, upset, and maintenance flow conditions. Flare testing per 40 CFR § 60.18(f) may be required by the Texas Commission on Environmental Quality (TCEQ) Houston Regional Office to demonstrate compliance with this condition.

   B. The flare shall be operated with a flame present at all times and have a constant pilot flame. The pilot flame shall be monitored by a thermocouple or an infrared monitor.

   C. The flare shall be operated with no visible emissions except for periods not to exceed a total of five minutes during any two consecutive hours. Such operation shall be ensured by the use of steam or air assist to the flare.

D. As an indicator of flow rate and net heating value of the gas routed to the Expansion Low Pressure Flare (Emission Point No. [EPN] 56-61-17), the holder of this permit shall monitor the rich caustic rate from the Caustic Contactor 95-210. The average hourly values of flow shall be recorded. **(5/01)**

5. Tanks must comply with the following requirements. The control requirements specified in paragraphs A through D of this condition shall not apply (1) where the VOC has an aggregate partial pressure of less than 0.5 pound per square inch, absolute (psia) at the maximum expected operating temperature or (2) to storage tanks smaller than 25,000 gallons.

A. An internal floating deck or roof or equivalent control shall be installed in all tanks. The floating roof shall be equipped with one of the following closure devices between the wall of the storage vessel and the edge of the internal floating roof (IFR): (1) a liquid-mounted seal, (2) two continuous seals mounted one above the other, or (3) a mechanical shoe seal. Installation of equivalent control requires prior review and approval by the TCEQ Executive Director.

B. An external floating roof tank which uses double seal or secondary seal technology shall be an approved control alternative to an IFR tank provided the primary seal consists of either a mechanical shoe seal or a liquid-mounted seal, and the secondary seal is rim-mounted. A weathershield is not approvable as a secondary seal unless specifically reviewed and determined to be vapor-tight.

C. For floating roof tanks, the holder of this permit shall follow 40 CFR § 60.113b, Testing and Procedures, to verify seal integrity. Additionally, the permit holder shall follow 40 CFR § 60.115b, Reporting and Recordkeeping Requirements, to provide records of the dates seals were inspected, seal integrity, and corrective actions taken.

D. The floating roof design shall incorporate sufficient flotation to conform to the requirements of American Petroleum Institute (API) Code 650, or an equivalent degree of flotation, except that an internal floating cover need not be designed to meet rainfall support requirements and the materials of construction may be steel or other materials.

E. Uninsulated tank exterior surfaces exposed to the sun shall be white or aluminum.

F. For purposes of assuring compliance with VOC emission limitations, the holder of this permit shall maintain a monthly emissions record which describes calculated emissions of VOC from all storage tanks. The record shall include tank identification number, control method used, tank or vessel capacity in gallons, name of the material stored,

VOC molecular weight, VOC monthly average temperature in degrees Fahrenheit, VOC vapor pressure at the monthly average material temperature in psia, and VOC throughput for the previous month and year-to-date. Records of VOC monthly average temperature are not required to be kept for unheated tanks which receive liquids that are at or below ambient temperatures. These records shall be maintained at the plant site for at least two years and be made available to representatives of the TCEQ or local programs having jurisdiction, upon request.

G. Emissions for tanks shall be calculated using equations and parameters in the following versions of these documents: (a) AP-42 "Compilation of Air Pollutant Emission Factors, Chapter 7 - Liquid Storage Tanks" (9/97 version) and (b) the TCEQ publication titled "Technical Guidance Package for Chemical Sources - Storage Tanks" (dated February 1995). In accordance with this document, emissions for Tanks 99A, 99B, 99C, 418, and 419 shall be calculated using four turnovers per year as long as these tanks continue to operate as "constant level" or surge tanks such that tank level changes are minimal relative to the actual throughput. **(2/00)**

6. The Reactor Feed Furnace and Stripper Reboiler (EPNs 38-36-251 and 38-36-252) shall not exceed a maximum hourly average firing rate of 99.0 MMBtu/hour (hr) high heating value (HHV) each. The fuel flow to each shall be monitored and the hourly average flow rates recorded. Nitrogen oxides (NO_x) emissions from each shall not exceed 0.027 pound (lb)/MMBtu on a daily average. **(11/04)**

7. Coke dust emissions from the coke pit, coke crusher, coke conveying, coke storage, and coke product loading shall be controlled by adding additional water, as necessary, to minimize particulate emissions.

8. The Tail Gas Incinerator (TGI) Stacks (EPN 28.2-36-2 and EPN 39.1-95-118) shall comply with the following:

   A. There shall be no visible emissions from EPN 28.2-36-2 or EPN 39.1-95-118 exceeding 30 seconds in any six-minute period as determined using U.S. Environmental Protection Agency (EPA) Test Method 22.

B. The in-stack concentration of the following pollutants in each TGI stack shall not exceed the following:

Pollutant	Emission Limitation (hourly average)	Basis
Sulfur dioxide (SO_2)	250 ppmv	Dry and zero excess air
H_2S	10 ppmv	Dry and zero excess air
Carbon monoxide (CO)	100 ppmv	Dry and zero excess air
NO_x	0.06 lb/MMBtu	HHV

(PSD) (8/07)

9. The sulfur recovery efficiency of Sulfur Recovery Units (SRUs) 28.2 and 39.1 shall meet the following requirements:

A. The sulfur recovery efficiency from the SRUs shall be at least 99.8 percent.

B. The actual sulfur recovery efficiency shall be determined by the following calculation:

$$\text{Efficiency} = \frac{(\text{S recovered})*(100)}{(\text{S recovered}) + (\text{S incinerators})}$$

Where: Efficiency = sulfur recovery efficiency, percent

S recovered = (elemental sulfur in pits), lb/hr

S incinerators = sulfur emitted from TGI stacks (EPN 28.2-36-2 and EPN 39.1-95-118), lb/hr

C. The average sulfur recovery efficiency shall be demonstrated for each 24-hour period by a mass balance calculation using data obtained from the incinerator stack SO_2 monitors, sulfur production records, and other process flow data. The daily sulfur recovery efficiencies shall be calculated on a monthly basis. Records and copies of the compliance calculations shall be maintained on-site. **(PSD) (8/07)**

10. Vapors from the sulfur pits, sulfur tank, and sulfur loading operations shall be routed to the TGIs or routed to the front end of the Claus Reactors. **(PSD) (8/07)**

11. Detailed sulfur load shedding plans shall be developed and maintained at the site. **(8/07)**

12. The permit holder shall maintain reserve sulfur recovery capacity as follows:

    A. SRU 39.1 shall be constructed and be available as reserve sulfur recovery capacity by July 31, 2009.

    B. Upon start-up of SRU 39.1, the sulfur recovery complex consisting of SRUs 28 and 39.1 shall be operated and maintained such that there is no period greater than 24 hours where at least 225 long tons per day (LTPD) of sulfur recovery capacity is held in reserve and immediately available, except as noted below.

    Operation for greater than 24 hours without the reserve sulfur recovery capacity is only allowed during periods of maintenance and repair of sulfur recovery equipment. The TCEQ Houston Regional Office shall be informed prior to all such periods of operation.

    C. The reserve sulfur recovery capacity of SRUs 28 and 39.1 shall be determined as follows:

    Reserve Sulfur Recovery Capacity (LTPD) = S capacity (LTPD) - S recovered (LTPD)

    Where: S capacity = total available sulfur recovery capacity of SRUs 28 and 39.1

    S recovered = elemental sulfur in pits

    The reserve sulfur recovery capacity shall be calculated and provided to representatives of the TCEQ or any local air pollution control program having jurisdiction upon request. **(PSD) (8/07)**

13. All sour water storage tanks shall be subject to the following conditions:

    A. Tank Nos. 28-95-302, 38-95-305, 28-95-316, 68-95-91, and 68-95-97 shall be used as sour water storage tanks.

    B. Tank No. 68-95-91 shall be equipped with redundant interface level detection devices which will provide sour water/hydrocarbon interface level detection. These detectors shall alarm immediately should the sour water/hydrocarbon interface go below 12 feet.

C. Twelve feet of sour water shall be maintained in Tank No. 68-95-91 at any given time. If hydrocarbons are discovered at or below the above indicated level, steps shall be taken to restore the sour water level back to the 12-foot level.

D. Records of all alarms shall be maintained.

E. The sour water storage system shall have a minimum on-line retention time of three days based on a maximum sour water flow rate of 99,000 gallons/hr into the tanks. **(PSD) (8/07)**

14. There shall be at least 94,000 barrels of holdup (excess) capacity maintained for sour water storage. This capacity shall only be used for sour water storage when necessary to avoid flaring of acid gases due to reduced SRU complex capacity. It shall be restored as soon as possible, not to exceed 30 days, after the return of the sulfur recovery complex to normal operations. **(PSD) (8/07)**

INITIAL AND PERIODIC STACK SAMPLING

15. The holder of this permit shall perform stack sampling and other testing as required to establish the actual pattern and quantities of air contaminants being emitted into the atmosphere from the Distillate Hydrodesulfurization Unit Heaters (EPN 25.2-CS), Cat Feed Hydrotreater Unit Charge Heaters and Recycle Heaters (EPN 26-CS), SRU TGIs (EPNs 28.2-36-2 and 39.1-95-118), Vacuum Unit Heater (EPN 29.1-36-001), Delayed Coker Heaters A and B (EPN 29.2-CS), Reactor Feed Furnace (EPN 38-36-251), and Stripper Reboiler (EPN 38-36-252).

For Heaters with combined stacks (EPNs 25.2-CS, 26-CS, and 29.2-CS), compliance testing shall be performed on the combined stack flow unless testing of individual heaters is specifically requested by the TCEQ Executive Director. When testing the combined stack flows, compliance with allowable rates shall be evaluated by adding up the allowable rates for the various heaters contributing to the combined stack flow.

Flare testing per 40 CFR § 60.18(f) shall be performed on the Expansion Low Pressure Flare (EPN 56-61-17).

The holder of this permit is responsible for providing sampling and testing facilities and conducting the sampling and testing operations at his expense.

A. The TCEQ Houston Regional Office shall be contacted as soon as testing is scheduled, but not less than 45 days prior to sampling to schedule a pretest meeting.

The notice shall include:

(1) Date for pretest meeting.
(2) Date sampling will occur.
(3) Name of firm conducting sampling.
(4) Type of sampling equipment to be used.
(5) Method or procedure to be used in sampling.

The purpose of the pretest meeting is to review the necessary sampling and testing procedures, to provide the proper data forms for recording pertinent data, and to review the format procedures for submitting the test reports.

A written proposed description of any deviation from sampling procedures specified in permit conditions or the TCEQ or U.S. Environmental Protection Agency (EPA) sampling procedures shall be made available to the TCEQ prior to the pretest meeting. The TCEQ Houston Regional Director or the TCEQ Compliance Support Division in Austin shall approve or disapprove of any deviation from specified sampling procedures.

Requests to waive testing for any pollutant specified in B of this condition shall be submitted to the TCEQ Office of Permitting, Remediation, and Registration, Air Permits Division. Test waivers and alternate or equivalent procedure proposals for NSPS testing which must have the EPA approval shall be submitted to the TCEQ Compliance Support Division in Austin.

B. Air contaminants emitted from the EPNs to be tested for include (but are not limited to) the following:

EPNs 25.2-CS, 26-CS, 29.1-36-001, 29.2-CS, 38-36-251, and 38-36-252: NO_x and CO.

EPN 28.2-36-2: VOC, NO_x, CO, SO_2, and H_2S.

EPN 39.1-95-118: VOC, NO_x, CO, SO_2, PM_{10}, and H_2S

C. Sampling of each of the new and modified facilities listed above shall occur within 180 days after start-up of each individual facility and at such other times as may be required by the Executive Director of the TCEQ. Sampling of EPN 28.2-36-2 shall take

place within 120 days of the commencement of O_2 enrichment operations. Requests to reschedule sampling shall be subject to approval by the Executive Director of the TCEQ. Requests to reschedule any sampling requirements shall be submitted to the TCEQ Houston Regional Office.

D. The units shall operate at maximum production or firing rates (as applicable) during stack emission testing. Primary operating parameters that enable determination of production rate shall be monitored and recorded during the stack test. These parameters are to be determined at the pretest meeting. If the units or facilities are unable to operate at maximum production or firing rates (as applicable) during testing, the units are subject to interim production rate limits, and additional stack testing requirements to authorize operation at higher production rates, as outlined in Special Condition No. 16. Such subsequent stack testing shall be subject to the same pretest notification, pretest meeting, and sampling report submittal requirements specified in Special Condition No. 15A and F.

E. If the post-stack test hourly average firing rates for the Reactor Feed Furnace (EPN 38-36-251) and Stripper Reboiler (EPN 38-36-252) exceed the rate maintained during the stack test, a stack test at the higher firing rate shall be performed on the unit within 120 days. The stack test may be waived by the TCEQ Houston Regional Office Air Section Manager.

F. Copies of the final sampling report shall be forwarded to the TCEQ within 60 days after sampling is completed. Sampling reports shall comply with the attached provisions of Chapter 14 of the TCEQ Sampling Procedures Manual. The reports shall be distributed as follows:

One copy to the TCEQ Houston Regional Office.
One copy to the TCEQ Office of Compliance and Enforcement, Compliance Support Division.
One copy to the Director of Environmental Health, Brazoria County Health Department, Angleton. **(8/07)**

16. In the event that the monthly average production rates of the Unit 25.2 Distillate Hydrodesulfurization Unit, Unit 29.1 Vacuum Unit, Unit 29.2 Coker Unit, Cat Feed Hydrotreater Unit, or Unit 28 Sulfur Recovery Complex will exceed by more than 10 percent the rates demonstrated during previous stack testing, the company shall provide prior written notice to the TCEQ Houston Regional Office, and emission sources for the appropriate units shall be subject to additional sampling pursuant to Special Condition No. 15 to demonstrate

continuing compliance. The additional sampling for a unit shall be conducted within 90 days of increasing the monthly average production rate more than 10 percent above the rates demonstrated during previous stack testing. Records shall be kept of the monthly production rates of these units along with the corresponding 12-month rolling average. **(PSD) (11/04)**

17. Stack sampling of the sources specified in Special Condition No. 15 shall be repeated every five years after the initial sampling. Such testing shall be conducted as specified in Special Condition No. 15A, B, D, E, and F. **(11/04)**

ON-GOING MONITORING REQUIREMENTS

18. The holder of this permit shall install, calibrate, and maintain a CEMS to measure and record the in-stack concentrations of the following compounds from the following:

    A. Unit 9 Crude Heater and the Unit 25.1 Crude Charge Heater: NO_x and CO.

    B. Heavy Oil Cracking Unit Regenerator Stack (EPN 27.1-36-RE): NO_x, SO_2, O_2, and CO. **(7/05)**

    C. TGI Stacks (EPNs 28.2-36-2 and 39.1-95-118): SO_2 and O_2.

19. All CEMS monitoring systems shall meet the following requirements:

    A. Each CEMS shall meet the design and performance specifications, pass the field tests, and meet the installation requirements and the data and reporting requirements specified in the applicable Performance Specifications, 40 CFR Part 60, Appendix B. If there are no applicable performance specifications in 40 CFR Part 60, Appendix B, the TCEQ Office of Permitting, Remediation, and Registration, Air Permits Division in Austin shall be contacted to determine the requirements to be met.

    B. Each system shall be zeroed and spanned daily and corrective action taken when the 24-hour span drift exceeds two times the amount specified in 40 CFR Part 60, Appendix B, or as specified by the TCEQ if not specified in Appendix B. Zero and span are not required on weekends and plant holidays if instrument technicians are not normally scheduled to work on these days, unless the zero and span are required by a subpart of the NSPS or NESHAPS, in which case zero and span checks shall be done daily without exception.

A relative accuracy test audit (RATA) shall be performed on each CEMS upon initial installation. Each monitor shall be quality-assured at least quarterly in accordance with 40 CFR Part 60, Appendix F, Procedure 1, § 5.1, with the following exception: a cylinder gas audit (CGA) shall be conducted in each successive quarter and subsequent RATA shall not be required once every four quarters. An equivalent quality-assurance method approved by the TCEQ may also be used. Successive quarterly audits shall occur no closer than two months.

The CGAs of CEMS with exceedances of ±15 percent accuracy shall be reported to the TCEQ Houston Regional Director, and necessary corrective action taken. The TCEQ Houston Regional Director shall be notified as soon as possible after the discovery of any CEMS malfunction which is expected to result in more than 24 hours of lost data. At the discretion of the TCEQ Houston Regional Director, the permit holder may be required to take supplemental stack concentration measurements.

C. Data covering periods of CEMS breakdowns, repairs, calibration, sample line purges, checks, and zero and span adjustments shall not be included in the computed data averages.

D. All monitoring data and quality-assurance data shall be maintained by the permit holder for a period of two years and shall be made available to the Executive Director of the TCEQ or designated representative upon request. The data from the CEMS may, at the discretion of the TCEQ, be used to determine compliance with the conditions of this permit.

E. The monitoring data shall be reduced to average hourly concentrations at least once everyday, using a *minimum* of one data point every 15 minutes. The individual concentrations shall be converted to lbs/hr at least once everyday and cumulative tons per year (tpy) at least once every month. Compliance with the annual allowable contained on the MAERT shall be based on a 12-month rolling average. **(11/04)**

20. TGI operation and H_2S emissions shall be monitored and maintained in accordance with A or B below.

A. The TGI firebox exit temperatures and O_2 concentrations shall be continuously monitored and recorded. The temperature measurement device shall reduce the temperature readings to an averaging period of 6 minutes or less and record it at that frequency. The temperature monitor shall be installed, calibrated at least annually, and maintained according to the manufacturer's specifications. The device shall have an

accuracy of the greater of ±2 percent of the temperature being measured expressed in degrees Celsius or ±2.5°C.

Quality-assured (or valid) data must be generated when waste gas is being fed to the TGI except during the performance of a daily zero and span check. Loss of valid data due to periods of monitor break down, out-of-control operation (producing inaccurate data), repair, maintenance, or calibration may be exempted provided it does not exceed 5 percent of the time (in minutes) that the TGI operated over the previous rolling 12-month period. The measurements missed shall be estimated using engineering judgement and the methods used recorded.

The TGI shall be operated with not less than the O_2 concentration maintained during the last satisfactory stack test performed in accordance with Special Condition No. 15. The firebox chamber six-minute average temperature shall be maintained above the hourly average temperature maintained during the last satisfactory stack test performed in accordance with Special Condition No. 15

B. The permit holder shall operate a continuous emissions monitoring system (CEMS) to monitor H_2S concentrations and emission rates. The CEMS shall meet the requirements of Special Condition No. 19. The hourly average H_2S exhaust concentration shall be maintained at less than 10.0 ppmv (dry, corrected to 0 percent O_2) when monitoring the incinerator this way. **(PSD) (8/07)**

21. The hydrogen concentration in the tailgas treatment unit (TGTU) absorber over head streams and the process feed and fuel flow rates (excluding eductors) to the tailgas incinerators (TGI) shall be continuously monitored and recorded. The flows shall be recorded at least every 15 minutes and the hourly average flow rates shall be recorded. Each flow monitoring device shall be calibrated at a frequency in accordance with the manufacturer's specifications, or at least annually, whichever is more frequent, and shall be accurate to within 2 percent of span or 5 percent of the design value.

Up to 5 percent invalid monitoring data on a rolling 12-month basis is acceptable provided it is only generated when the monitor is broken down, out-of-control (producing inaccurate data), being repaired, having maintenance performed, or being calibrated. The data availability shall be calculated as the total SRU operating minutes for which quality-assured data was recorded divided by the SRU operating minutes. The measurements missed shall be estimated using engineering judgement and the methods used recorded. **(PSD) (8/07)**

22. Cooling tower water shall be monitored monthly for VOC leakage from heat exchangers in accordance with the requirements of the TCEQ Sampling Procedures Manual, Appendix P (dated January 2003 or a later edition) or another air stripping method approved by the TCEQ Executive Director.

    Equipment shall be maintained so as to minimize VOC emissions into the cooling water. Cooling water VOC concentrations above 0.08 part per million by weight (ppmw) indicate faulty equipment. Faulty equipment shall be repaired at the earliest opportunity but no later than the next scheduled shutdown of the process unit in which the leak occurs.

    Emissions from the cooling tower are not authorized if the VOC concentration of the water returning to the cooling tower exceeds 0.50 ppmw. Operations with VOC concentrations above 0.50 ppmw are not subject to extensions for delay of repair under this permit condition. The results of the monitoring and maintenance efforts shall be recorded. **(11/04)**

23. Piping, Valves, Connectors, Pumps, and Compressors in VOC Service - Intensive Directed Maintenance - 28MID

    Except as may be provided for in the special conditions of this permit, the following requirements apply to the above-referenced equipment:

    A. These conditions shall not apply where the VOC has an aggregate partial pressure or vapor pressure of less than 0.044 psia at 68 °F. Equipment excluded from this condition shall be identified in a list to be made available upon request.

    B. Construction of new and reworked piping, valves, pump systems, and compressor systems shall conform to applicable American National Standards Institute, API, American Society of Mechanical Engineers, or equivalent codes.

    C. New and reworked underground process pipelines shall contain no buried valves such that fugitive emission monitoring is rendered impractical.

    D. To the extent that good engineering practice will permit, new and reworked valves and piping connections shall be so located to be reasonably accessible for leak-checking during plant operation. Non-accessible valves, as defined by Title 30 Texas Administrative Code (30 TAC) Chapter 115, shall be identified in a list to be made available upon request.

E. New and reworked piping connections shall be welded or flanged. Screwed connections are permissible only on piping smaller than two-inch diameter. No later than the next scheduled quarterly monitoring after initial installation or replacement, all new or reworked connections shall be gas-tested or hydraulically-tested at no less than normal operating pressure and adjustments made as necessary to obtain leak-free performance. Connectors shall be inspected by visual, audible, and/or olfactory means at least weekly by operating personnel walk-through.

Each open-ended valve or line shall be equipped with a cap, blind flange, plug, or a second valve. Except during sampling, the second valve shall be closed.

F. Accessible valves shall be monitored by leak-checking for fugitive emissions at least quarterly using an approved gas analyzer with a directed maintenance program. Sealless/leakless valves (including, but not limited to, welded bonnet bellows and diaphragm valves) and relief valves equipped with a rupture disc upstream or venting to a control device are not required to be monitored. For valves equipped with rupture discs, a pressure-sensing device shall be installed between the relief valve and rupture disc to monitor disc integrity. All leaking discs shall be replaced at the earliest opportunity but no later than the next process shutdown.

An approved gas analyzer shall conform to requirements listed in 40 CFR § 60.485(a)-(b).

A directed maintenance program shall consist of the repair and maintenance of components assisted simultaneously by the use of an approved gas analyzer such that a minimum concentration of leaking VOC is obtained for each component being maintained. Replaced components shall be re-monitored within 15 days of being placed back into VOC service.

G. All new and replacement pumps and compressors shall be equipped with a shaft sealing system that prevents or detects emissions of VOC from the seal. These seal systems need not be monitored and may include (but are not limited to) dual pump seals with barrier fluid at higher pressure than process pressure, seals degassing to vent control systems kept in good working order, or seals equipped with an automatic seal failure detection and alarm system. Submerged pumps or sealless pumps (including, but not limited to, diaphragm, canned, or magnetic-driven pumps) may be used to satisfy the requirements of this condition and need not be monitored.

All other pump and compressor seals emitting VOC shall be monitored with an approved gas analyzer at least quarterly.

H. Damaged or leaking valves, connectors, drains, compressor seals, and pump seals found to be emitting VOC in excess of 500 ppmv or found by visual inspection to be leaking (e.g., dripping process fluids) shall be tagged and replaced or repaired. Every reasonable effort shall be made to repair a leaking component, as specified in this paragraph, within 15 days after the leak is found. If the repair of a component would require a unit shutdown, the repair may be delayed until the next scheduled shutdown. All leaking components which cannot be repaired until a scheduled shutdown shall be identified for such repair by tagging. At the discretion of the TCEQ Executive Director or designated representative, early unit shutdown or other appropriate action may be required based on the number and severity of tagged leaks awaiting shutdown.

I. In lieu of the monitoring frequency specified in paragraph F, valves in gas and light liquid service may be monitored on a semiannual basis if the percent of valves leaking for two consecutive quarterly monitoring periods is less than 0.5 percent. Valves in gas and light liquid service may be monitored on an annual basis if the percent of valves leaking for two consecutive semiannual monitoring periods is less than 0.5 percent. If the percent of valves leaking for any semiannual or annual monitoring period is 0.5 percent or greater, the facility shall revert to quarterly monitoring until the facility again qualifies for the alternative monitoring schedules previously outlined in this paragraph.

J. The percent of valves leaking used in paragraph I shall be determined using the following formula:

$$(Vl + Vs) \times 100/Vt = Vp$$

Where:

Vl = the number of valves found leaking by the end of the monitoring period, either by Method 21 or sight, sound, and smell.

Vs = the number of valves for which repair has been delayed and are listed on the facility shutdown log.

Vt = the total number of valves in the facility subject to the monitoring requirements, as of the last day of the monitoring period, not including nonaccessible and unsafe-to-monitor valves.

Vp = the percentage of leaking valves for the monitoring period.

K. The results of the required fugitive instrument monitoring and maintenance program shall be made available to the TCEQ Executive Director or designated representative upon request. Records shall indicate appropriate dates, test methods, instrument readings, repair results, justification for delay of repairs, and corrective actions taken for all components. Records of physical inspections are not required unless a leak is detected.

L. Compliance with the requirements of this condition does not assure compliance with requirements of 30 TAC Chapter 115, an applicable NSPS, or an applicable National Emission Standards for Hazardous Air Pollutants (NESHAPS) and does not constitute approval of alternative standards for these regulations. **(8/07)**

24. Process drains emitting VOC shall be monitored as follows:

A. All process drains emitting VOC in Process Units 3, 4, 5, 15, and 20 shall be monitored with an approved gas analyzer at least quarterly at a leak definition of 500 ppmv.

B. Process drains emitting VOC in all other process units shall be monitored with an approved gas analyzer at least annually at a leak definition of 500 ppmv. **(8/07)**

25. Piping, Valves, Pumps, and Compressors in H_2S and Ammonia Service

A. Audio, olfactory, and visual checks for H_2S and ammonia leaks within the SRUs 28 and 39.1 areas shall be made every six hours.

B. Immediately, but no later than one hour upon detection of a leak, plant personnel shall take the following actions:
(1) Isolate the leak.

(2) Commence repair or replacement of the leaking component.

(3) Use a leak collection or containment system to prevent the emissions to the atmosphere until repair or replacement can be made if immediate repair is not possible.

Date and time of each inspection shall be noted in the operator's log or equivalent. Records shall be maintained at the plant site of all repairs and replacements made due to leaks. These records shall be made available to representatives of the TCEQ upon request. **(8/07)**

PREVENTION OF SIGNIFICANT DETERIORATION (PSD)/NONATTAINMENT

26. Total combined annual emissions of NO_x from the Sweet Crude Heater (EPN 9-36-4), Reformer Heater (EPN 35-36-1), Reformer Heater (EPN 14-36-3), Regenerator Exhaust (EPN 27.1-36-RE), SRU Incinerator Stack (EPN 28.2-36-2), Vacuum Unit Heater (EPN 29.1-36-001), Coker Heater A (EPN 29.2-36-CS), and Coker Heater B (EPN 29.2-36-CS), shall not exceed 910.47 tpy. In order to demonstrate compliance with this limit, the holder of this permit shall maintain records of the monthly NO_x emissions and the rolling 12-month average emissions for each of these emissions points. Such records shall be maintained for at least two years and made available to the Executive Director or designated representative upon request. The NO_x emissions for these sources shall be determined as follows:

    A. For emissions having NO_x emissions data from the CEMS, NO_x emissions shall be calculated from the CEMS data.

    B. For heaters lacking CEMS data pursuant to paragraph A of this condition, but having fuel gas consumption monitoring data, NO_x emissions shall be calculated from the monitored fuel gas consumption, fuel gas heating value in lb/MMBtu, and the heater's NO_x emissions factor as determined by the most recent stack test performed within the last five years.

    C. Where the data listed in paragraphs A and B of this condition is not available, the monthly NO_x emissions shall be calculated by multiplying the short-term permit allowable emission rate (lb/hr) for each source times the number of hours of operation in that month. **(5/01)**

CONSENT DECREE (CD) H-05-0258 SPECIAL CONDITIONS

27. The maximum allowable concentration of CO in the Heavy Oil Cracking Unit (HOC) Unit Regenerator Stack (EPN 27.1-36-RE) averaged over a one hour period is 500 parts per million by volume dry at 0 percent O_2. **(CD H-05-0258) (7/05)**

28. The sulfur recovery complex (Unit 28) is an affected facility under the EPA regulations in 40 CFR Part 60 (NSPS) and is subject to the requirements of Subpart A and Subpart J (40 CFR Part 60, Subparts A and J). **(PSD) (CD H-05-0258) (9/06)**

29. The HOC Unit Regenerator Stack (EPN 27.1-36-RE) is an affected facility under the EPA regulations in 40 CFR Part 60 on the NSPS and is subject to the requirements of Subpart A and Subpart J (40 CFR Part 60, Subparts A and J) for CO, sulfur dioxide, and particulate matter. **(CD H-05-0258) (9/06)**

30. The Expansion LP Flare (EPN 56-61-17), the Expansion HP Flare (EPN 56-61-16), the VDU/CDU Flare (EPN 29-61-1), the DEA Stripper Flare (EPN 28.1-61-9), and the Sour Water Stripper Flare (EPN 28.1-61-10) are affected facilities under the EPA regulations in 40 CFR Part 60 (NSPS) and are subject to the requirements of Subpart A and Subpart J (40 CFR 60, Subparts A and J) for sulfur dioxide. **(CD-H-05-0258) (04/08)**

DEMONSTRATION OF COMPLIANCE WITH EMISSION LIMITATIONS

31. The permit holder shall calculate emissions from each emission point on the MAERT monthly to show compliance with the rolling 12-month annual emission limits. Piping fugitive emission points are exempt from this requirement. Individual emission points which have allowable emissions on the MAERT of less than 1 TPY are exempt from this requirement. **(8/07)**

Dated April 30, 2008

EMISSION SOURCES - MAXIMUM ALLOWABLE EMISSION RATES

Permit Numbers 5920A and PSD-TX-103M3

This table lists the maximum allowable emission rates and all sources of air contaminants on the applicant's property covered by this permit. The emission rates shown are those derived from information submitted as part of the application for permit and are the maximum rates allowed for these facilities. Any proposed increase in emission rates may require an application for a modification of the facilities covered by this permit.

		AIR CONTAMINANTS DATA		
Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates* lb/hr	TPY**
Unit 38 - Distillate Hydrotreater				
38-0-0	DHT Fugitives (4)	VOC	3.83	16.77
		H_2S	0.03	0.14
		NH_3	0.01	0.04
38-36-251	Reactor Charge Heater	VOC	0.53	1.06
		NO_x	2.67	5.32
		CO	7.13	14.19
		SO_2	3.24	6.44
		PM_{10}	0.74	1.47
38-36-252	Stripper Reboiler	VOC	0.53	2.34
		NO_x	2.67	11.71
		CO	7.13	31.22
		SO_2	3.24	14.18
		PM_{10}	0.74	3.23
54-22-21	Cooling Tower (4)	VOC	0.32	1.38

EMISSION SOURCES - MAXIMUM ALLOWABLE EMISSION RATES

AIR CONTAMINANTS DATA

Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates * lb/hr	TPY**
Unit 9 - Crude Unit				
9-0-0	Fugitives (4)	VOC	7.04	30.88
		Benzene	0.20	1.00
9-36-4	Crude Heater	VOC	0.30	1.40
		NO_x	21.10	73.90
		CO	9.20	40.10
		SO_2	6.20	8.50
		PM_{10}	1.20	5.00
54-22-2	Cooling Tower No. 2	VOC	1.20	5.00
Unit 25.1 Sour Crude Unit				
25.1-0-0	Sour Crude Unit Fugitives (4)	VOC	3.37	14.74
		H_2S	0.001	0.004
25.1-36-1	Crude Charge Heater	VOC (7)	0.16	0.71
		NO_x (7)	93.40	409.09
		CO	18.68	81.82
		SO_2 (7)	15.25	66.81
		PM_{10} (7)	2.34	10.23
54-22-14	Cooling Tower (4)	VOC	3.36	14.72
56-61-16	Expansion HP Flare	NO_x	0.11	0.49
		CO	0.96	4.20
		SO_2	0.07	0.33

EMISSION SOURCES - MAXIMUM ALLOWABLE EMISSION RATES

AIR CONTAMINANTS DATA

Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates * lb/hr	TPY**
Unit 25.2 - Distillate Hydrotreater Unit				
25.2-0-0	DHT Unit Fugitives (4)	VOC	2.47	10.81
		H_2S	0.01	0.03
		NH_3	0.01	0.01
25.2-CS	Reactor Charge Heater	VOC (7)	0.07	0.31
		NO_x (7)	10.14	41.53
		CO	2.17	8.91
		SO_2 (7)	2.07	8.50
		PM_{10} (7)	0.87	3.60
	Combo Tower Reboiler	VOC (7)	0.08	0.31
		NO_x (7)	11.39	41.53
		CO	2.44	8.91
		SO_2 (7)	2.33	8.50
		PM_{10} (7)	0.98	3.60
Unit 26.1 Cat Feed Hydrotreater				
26-CS	Charge Heater 1	VOC (7)	0.05	0.16
		NO_x (7)	16.08	54.23
		CO	5.36	18.08
		SO_2 (7)	4.38	19.17
		PM_{10} (7)	0.67	2.26
26-CS	Charge Heater 2	VOC (7)	0.05	0.16
		NO_x (7)	13.40	45.19
		CO	5.36	18.08
		SO_2 (7)	4.38	19.17
		PM_{10} (7)	0.67	2.26
26-CS	Recycle Heater 1	VOC (7)	0.05	0.21
		NO_x (7)	4.20	17.68
		CO	2.56	10.78
		SO_2 (7)	1.37	6.01
		PM_{10} (7)	0.59	2.47

EMISSION SOURCES - MAXIMUM ALLOWABLE EMISSION RATES

AIR CONTAMINANTS DATA

Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates * lb/hr	TPY**
26-CS	Recycle Heater 2	VOC (7)	0.05	0.21
		NO_x (7)	4.20	17.68
		CO	2.56	10.78
		SO_2 (7)	1.37	6.01
		PM_{10} (7)	0.59	2.47
26.1-0-0	CFHT Fugitives (4)	VOC	6.87	30.06
		H_2S	0.04	0.15
		NH_3	0.01	0.02
Unit 26.2 Hydrogen Purification Unit				
26.2-0-0	HPU Fugitives (4)	VOC	2.90	12.70
		H_2S	0.02	0.07
Unit 27 - Fluid Catalytic Cracking Unit				
27.1-0-0	FCC Fugitives (4)	VOC	8.27	36.22
		H_2S	0.01	0.06
		Benzene	0.02	0.09
27.1-36-RE	FCC Regenerator Exhaust	VOC (7)	7.50	32.85
		NO_x (7)	402.0	730.51
		CO	608.91	1282.49
		SO_2 (7)	833.27	3649.74
		PM_{10} (7)	72.98	319.63
		H_2SO_4	26.44	115.80
27.2-0-0	FCC Gas Plant Fugitives (4)	VOC	0.94	4.12
		H_2S	0.001	0.01
56-61-17	Expansion LP Flare	VOC	0.61	2.70
		NO_x	0.06	0.30
		CO	0.12	0.50
		SO_2	21.25	46.50
		R-SH	0.33	0.70

EMISSION SOURCES - MAXIMUM ALLOWABLE EMISSION RATES

AIR CONTAMINANTS DATA

Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates * lb/hr	TPY**
Unit 28 and Unit 39.1 - Sulfur Recovery Units				
28.1-0-0	ARU/SWS Fugitives (4)	VOC	0.64	2.79
		H_2S	0.15	0.66
		NH_3	0.08	0.36
28.1-61-9	DEA Stripper Flare	VOC	0.01	0.01
		NO_x	0.03	0.13
		CO	0.25	1.10
		SO_2	0.85	3.74
		H_2S	0.01	0.01
28.1-61-10	Sour Water Stripper Flare	VOC	0.01	0.01
		NO_x	0.03	0.13
		CO	0.25	1.09
		SO_2	0.40	1.76
		H_2S	0.01	0.01
28.2-0-0	SRU Fugitives (4)	VOC	0.65	2.84
		H_2S	0.11	0.50
		NH_3	0.03	0.14
28.2-36-2	Unit 28 Incinerator Stack	VOC (7)	0.93	4.09
		NO_x (7)	8.13	35.62
		CO	20.20	88.47
		SO_2 (7)	115.42	505.55
		PM_{10} (7)	2.50	6.95
		H_2S	2.45	10.74
39.1-95-118	Unit 39.1 Incinerator Stack	VOC (7)	0.24	1.04
		NO_x (7)	2.37	10.37
		CO	8.95	39.22
		SO_2 (7)	51.17	224.12
		PM_{10} (7)	0.29	1.29
		H_2S	1.09	4.76

EMISSION SOURCES - MAXIMUM ALLOWABLE EMISSION RATES

AIR CONTAMINANTS DATA

Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates * lb/hr	TPY**
28.2-36-2 and 39.1-95-118	Unit 28 and Unit 39.1 Incinerator Stacks Combined Emissions	VOC (7)		4.09
		NO_x (7)		35.62
		CO		88.47
		SO_2 (7)		505.55
		PM_{10} (7)		6.95
		H_2S		10.74
28-95-300	DEA Tank	VOC	0.01	0.01
28-95-302, 28-95-305, 28-95-316, and 28-95-97	Sour Water Surge Tanks	VOC	0.01	0.02
		H_2S	0.53	2.32
		NH_3	0.01	0.01
28-95-306	MDEA Tank	VOC	0.01	0.01
39.1-0-0	Piping Fugitives (4)	VOC	0.14	0.36
		CO	0.01	0.01
		SO_2	0.01	0.01
		H_2S	0.12	0.52
		NH_3	0.01	0.05
		Ethylene (8)	0.01	0.01
		Propylene (8)	0.01	0.01
39.1-95-114	MDEA Tank	VOC	0.03	0.01
39.1-95-121	Process Sewer Sump	VOC	0.01	0.01
39.1-X-X	Cooling Tower	VOC	0.11	0.43

EMISSION SOURCES - MAXIMUM ALLOWABLE EMISSION RATES

AIR CONTAMINANTS DATA

Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates * lb/hr	TPY**
Unit 29.1 - Vacuum Unit				
29-61-1	Flare	NO_x	0.11	0.50
		CO	0.83	3.64
		SO_2	0.06	0.25
29.1-0-0	Vacuum Fugitives (4)	VOC	1.31	5.72
		H_2S	0.02	0.07
29.1-36-001	Vacuum Unit Heater	VOC	0.21	0.74
		NO_x	22.65	79.37
		CO	15.10	52.92
		SO_2	7.65	26.79
		PM_{10}	1.13	3.97
54-22-20	Cooling Tower (4)	VOC	1.60	6.99
Unit 29.2 - Delayed Coker				
29.2-0-0	Coker Fugitives (4)	VOC	2.98	13.06
		H_2S	0.04	0.17
29.2-0-1	Coke Handling Fugitives (4)	PM	3.73	3.17
		PM_{10}	1.77	1.52
29.2-36-CS	Coker Heater A	VOC	0.04	0.14
		NO_x	14.77	51.74
		CO	9.84	34.49
		SO_2	5.85	20.49
		PM/PM_{10}	0.74	2.59
29.2-36-CS	Coker Heater B	VOC	0.04	0.14
		NO_x	14.77	51.74
		CO	9.84	34.49
		SO_2	5.85	20.49
		PM/PM_{10}	0.74	2.59

EMISSION SOURCES - MAXIMUM ALLOWABLE EMISSION RATES

AIR CONTAMINANTS DATA

Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates * lb/hr	TPY**
Storage Tanks				
68-95-61	Storage Tank	VOC	1.35	3.59
68-95-62	Storage Tank	VOC	1.35	3.59
68-95-91	Sour Water Tank	VOC	1.11	4.78
		H_2S	0.01	0.01
		NH_3	0.01	0.01
68-95-98	Cat. Gasoline Storage Tank	VOC	1.30	7.50
95-99A	Sweet Gas Oil Storage Tank	VOC	1.69	7.40
68-95-99B	Sweet Gas Oil Storage Tank	VOC	1.69	7.40
68-95-99C	Sour Gas Oil Storage Tank	VOC	1.70	7.43
68-95-213	Alkylate Storage Tank	VOC	3.36	10.46
68-95-228	Gasoline Storage Tank	VOC	1.16	2.43
68-95-246	Storage Tank	VOC	0.16	0.53
68-95-418	Vacuum Resid Storage Tank	VOC	4.31	18.90
68-95-419	Sweet Gas Oil Storage Tank	VOC	3.20	14.03

EMISSION SOURCES - MAXIMUM ALLOWABLE EMISSION RATES

AIR CONTAMINANTS DATA

Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates * lb/hr	TPY**
Miscellaneous Fugitive Areas				
3-0-0	Unit 3 Fugitives (4)	VOC	2.91	12.74
4-0-0	Unit 4 Fugitives (4)	VOC	2.55	11.19
5-0-0	Unit 5 Fugitives (4)	VOC	1.45	6.36
8-0-0	Unit 8 Fugitives (4)	VOC	0.85	3.73
15-0-0	Unit 15 Fugitives (4)	VOC	3.55	15.56
0-0	Unit 20 Fugitives (4)	VOC	2.28	9.98
68.1-0-0	Refinery Tank Farm Fugitives (4)	VOC	9.46	41.46
68.2-0-2	Refinery Tank Farm Fugitives (4)	VOC	1.55	6.75
BASELINE EMISSIONS FOR EPNS LISTED IN TABLE 1				
		VOC (initial)(5)		850.20
		VOC (final)(6)		776.38
		NO_x		1775.1
		CO		1417.6
		PM_{10}		755.7

EMISSION SOURCES - MAXIMUM ALLOWABLE EMISSION RATES

(1) Emission point identification - either specific equipment designation or emission point number from plot plan.
(2) Specific point source name. For fugitive sources use area name or fugitive source name.
(3) VOC - volatile organic compounds as defined in Title 30 Texas Administrative Code § 101.1
NO_x - total oxides of nitrogen
CO - carbon monoxide
SO_2 - sulfur dioxide
PM - particulate matter, suspended in the atmosphere, including PM_{10}
PM_{10} - particulate matter, equal to or less than 10 microns in diameter. Where PM is not listed, it shall be assumed that no PM greater than 10 microns is emitted.
H_2S - hydrogen sulfide
NH_3 - ammonia
H_2SO_4 - sulfuric acid mist
R-SH - mercaptan
(4) Emission rate is an estimate and is enforceable through compliance with the applicable special condition(s) and permit application representations.
(5) The sum of all normal operational emissions from all emission points in Table 1 shall not exceed the specified emission caps on a rolling 12-month average. The caps will become effective July 1, 2006.
(6) The VOC final emission cap will be applied after December 31, 2006.
(7) Emissions are covered under PSD-TX-103M3.
(8) Ethylene and propylene emissions are included in VOC emissions.

* Emission rates are based on a continuous operating schedule.

** Compliance with annual emission limits is based on a rolling 12-month period.

Dated August 31, 2007

RUSSELL J. DIRAIMO, P.E.

Vice President
Air Emissions Division
Stork Testing & Metallurgical Consulting, Inc.

EDUCATION

B.S. Civil and Environmental Engineering - University of Rhode Island, 1977

CONTINUING EDUCATION

- Cause and Prevention of Grain Elevator Fires and Explosions, Texas A&M University, 1978.
- International Symposium on Grain Dust, Kansas State University, 1979
- "Controlling Exposure to Asbestos in the Office Environment", Houston Building Owners and Managers Association, Inc., 1985
- "Practices and Procedures for Asbestos Control", The National Asbestos Training Center, 1986
- "Hazardous Waste Site Operations and Emergency Response", 29 CFR 1910.120 40-hour training course, Industrial Hygiene & Safety Technology, Inc., 1987
- "Asbestos Hazardous Emergency Response Act", 40 CFR 763 Subpart D, Certified Inspector, Certified Management Planner, Texas A&M Extension Course, 1988
- OSHA 1910.119(h) Process Safety Management Training

AWARDS AND HONORS:

Graduated High Distinction
Tau Beta Pi Honor Society
Phi Kappa Phi Honor Society

PROFESSIONAL ENGINEERING REGISTRATION

Texas No. 53580

PROFESSIONAL AFFILIATIONS

National Society of Professional Engineers (NSPE)
Texas Society of Professional Engineers (TSPE)
Air and Waste Management Association (AWMA)
Source Evaluation Society

RUSSELL J. DIRAIMO, P.E.

QUALIFICATIONS SUMMARY

Throughout his career with Stork. (formerly Southwestern Laboratories, Huntingdon Engineering and Environmental and Maxim Technologies, Inc.), Mr. DiRaimo has been involved with stationary source air pollution emissions testing first as a project engineer performing field work, followed by project management, and currently as Vice President in charge of the Air Emissions Services Division.

Mr. DiRaimo's experience includes projects located in Texas, Louisiana, New Mexico, Oklahoma, Alabama, Georgia, Mississippi, Arkansas and Puerto Rico, with the great majority of the projects centered in Texas.

Mr. DiRaimo has participated in over a thousand air pollution projects, including several hundred involving the determination of compliance with Texas Commission on Environmental Quality (TCEQ) and EPA permits and regulations.

Mr. DiRaimo's experience includes field experience performing air emissions tests of stationary sources including particulate matter, NOx, CO, VOCs, speciated VOCs, NH_3, HCl, Cl_2, SOx and H_2SO_4. In addition, he has project and department management experience involving source testing projects for the above listed pollutants plus speciated volatile organics, semivolatile organics, aldehydes, ketones, metals, dioxins and furans. Also included are several projects involving Continuous Emission Monitor System (CEMS) certifications and BIF related testing.

As VP of the Air Emissions Division, Mr. DiRaimo prepares Compliance Sampling Plans, performs Quality Assurance review of field, laboratory and calculation data, prepares compliance emissions test reports, and performs peer review of test reports prepared by others. In addition, he managed Stork's Analytical Chemistry laboratories which provided him with experience in the review of analytical data and the associated QA/QC requirements.

Mr. DiRaimo served as Stork's Project Manager of the BIF Trial Burn performed at the Solutia (formerly Monsanto) Chocolate Bayou, Texas facility. His responsibilities included assisting in the planning and scheduling, coordination of Stork's field crews and review and compilation of the field and QA/QC equipment data.

PHILLIP YOKLEY

Air Emissions Program Manager - Air Emissions Services Division
Stork Testing & Metallurgical Consulting, Inc.

EDUCATION

B.S. - Environmental Health, East Tennessee State University - 1981

CONTINUING EDUCATION

- Asbestos Abatement Training Program, the University of Texas, Arlington, Texas - May, 1987.
- Asbestos Technique Workshop, American Industrial Hygiene Association, Houston, Texas - April, 1987.
- Identification of Asbestos Utilizing Polarized Light Microscopy, McCrone Research Institute, Chicago, Illinois - 1986.
- In-Stack Opacity Monitor Audit Procedures, Environmental Protection Agency Regional Office, Annapolis, Maryland.
- Texas A & M Extension Course - "Asbestos Hazardous Emergency Response Act", 40 CFR 763 Subpart D, April, 1988. Certified Inspector; Certified Management Planner.
- Workshop on Sampling and Analysis Methods for Compliance with the "BIF" Regulation, USEPA, Durham, N.C., April, 1991.
- Attended 40 hour Occupational and Environmental Training Program on Hazardous Materials (CFR 1910.120) Houston, Texas, September, 1992 (including annual refresher courses).

PROFESSIONAL AFFILIATIONS

Source Evaluation Society

QUALIFICATIONS SUMMARY

Mr. Yokley has performed stationary source air emissions testing services with Stork since 1985, initially as a field technician, then as a field supervisor, and currently as a project manager and air emissions program manager. He has performed testing in numerous states, with the great majority of sources being in Texas.

Mr. Yokley's direct field experience includes routine procedures such as particulates, NOx, CO, VOCs, as well as the specialized Trial Burn procedures including VOST, modified method 5, HCl/Cl_2, multiple metals, aldehydes/ketones, dioxins and furans. In addition, Mr. Yokley has performed particle size distribution sampling and analysis on numerous sources.

Mr. Yokley has performed project management, field supervision and on site testing for numerous types of sources including boilers, furnaces, incinerators, dryers, baghouse outlets, turbines, compressor engines and fluid catalytic cracking units. His experience includes involvement on several BIF interim status and recertification emissions test projects.

PHILLIP YOKLEY

Overall, Mr. Yokley has over 25 years experience in stationary source sampling and analysis for air emissions. His experience includes direct field experience, plus compliance sampling plan preparations and presentations, scheduling, field work, laboratory analysis, data reduction/emission calculations, QA/QC of field instrument and laboratory data, report preparation, and peer review of air emissions reports prepared by others.

MANUEL A. GARCIA

Project Manager - Air Emissions Services Division
Stork Testing & Metallurgical Consulting, Inc.

CONTINUING EDUCATION

40 HAZWOPER – Hazardous Waste Operations and Emergency Response, February, 1999
80 Hour Hazardous Waste Worker Course Certificate, March 1999

QUALIFICATIONS SUMMARY

Mr. Garcia has been involved in source sampling and analysis with Stork since 2000, and currently holds the position of Environmental Technician. He has participated in source emission test projects involving measurements for flow, particulate, sulfur oxides, fluorides and various other pollutants. Mr. Garcia has progressed from an Environmental Technician to a Field Supervisor to a Project Manager, where he is responsible for the operation of a mobile emissions test trailer, the coordination of the field crew, data reduction, and the preparation of the emission test report.

Mr. Garcia's other responsibilities include particulate analysis, equipment calibration and maintenance and related QA/QC procedures.

VICENTE GONZALEZ

Project Manager - Air Emissions Services Division
Stork Testing & Metallurgical Consulting, Inc.

QUALIFICATIONS SUMMARY

Mr. Gonzalez has been involved in source sampling and analysis with Stork since 2004, and currently holds the position of Environmental Technician. He has participated in source emission test projects involving measurements for flow, particulate, sulfur oxides, fluorides and various other pollutants. Mr. Gonzalez has progressed from an Environmental Technician to a Field Supervisor to a Project Manager, where he is responsible for the operation of a mobile emissions test trailer, the coordination of the field crew, data reduction, and the preparation of the emission test report.

Mr. Gonzalez's other responsibilities include particulate analysis, equipment calibration and maintenance and related QA/QC procedures.

ADAM PISIO

Field Supervisor - Air Emissions Services Division
Stork Testing & Metallurgical Consulting, Inc.

QUALIFICATIONS SUMMARY

Mr. Pisio has been involved in source sampling and analysis with Stork since 2007, and currently holds the position of Environmental Technician. He has participated in source emission test projects involving measurements for flow, particulate, sulfur oxides, fluorides and various other pollutants.

Mr. Pisio's other responsibilities include particulate analysis, equipment calibration and maintenance and related QA/QC procedures.

GUSTAVO GONZALEZ

Environmental Technician - Air Emissions Services Division
Stork Testing & Metallurgical Consulting, Inc.

QUALIFICATIONS SUMMARY

Mr. Gonzalez has been involved in source sampling and analysis with Stork since 2008, and currently holds the position of Environmental Technician. He has participated in source emission test projects involving measurements for flow, particulate, sulfur oxides, fluorides and various other pollutants.

Mr. Gonzalez's other responsibilities include particulate analysis, equipment calibration and maintenance and related QA/QC procedures.

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