GOLDEN SPECIALTY

The *GOLD STANDARD* in Air Testing

Air Quality Test Report

Compliance Test Program

BP Products North America Inc.

Texas City, Texas

Sulfur Recovery Unit (SRU) Incinerator Exhaust Stack

TCEQ Flexible Permit No.: 47256; EPN: 384

Report Number: 10BPTC1288
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BP Products North America Inc.
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Sulfur Recovery Unit (SRU) Incinerator Exhaust Stack

This report is supported by GOLDEN's Quality Assurance Manual and ASTM D7036 Interim Accreditation as an Air Emission Testing Body. The information included in the report is authentic and accurate to the best of our knowledge.

Certified by:

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EXECUTIVE SUMMARY

On December 22, 2010, and January 6, 2011, Golden Specialty, Inc. (GOLDEN) was contracted by BP Products North America Inc. (BP) to perform air testing at their facility located in Texas City, Texas. GOLDEN was contracted to perform a compliance test program on the Sulfur Recovery Unit (SRU) Incinerator Exhaust Stack. The testing was conducted in accordance with all appropriate United States Environmental Protection Agency (USEPA) Methodologies including 40 CFR 60, Appendix A, as well as requirements outlined in the Texas Commission on Environmental Quality (TCEQ) Flexible Permit No. 47256, Special Condition 39.

Compliance testing on the source was performed for the determination of concentrations and mass emission rates of sulfur dioxide (SO_2), nitrogen oxides (NO_x), carbon monoxide (CO), hydrogen sulfide (H_2S) and volatile organic compounds (VOCs). Testing consisted of three (3) 60-minute runs (12/22/2010) and three (3) 3-hour runs (1/6/2011), performed in accordance with USEPA Methods 1, 2, 3A, 4, 6C, 7E, 10, 15 and 25A. Testing and analysis procedures used for this project are presented in the United States Environmental Protection Agency (USEPA) document Title 40, Code of Federal Regulations, Part 60 (40 CFR 60), Appendix A, the Quality Assurance Handbook for Air Pollution Measurement Systems, Volume III, Stationary Source Specific Methods, and on the USEPA Technology Transfer Network Emission Measurement Center (EPA-TTN-EMC) website, Test Methods Section (http://www.epa.gov/ttn/emc/).

The SRU Incinerator Exhaust Stack was operating at or near 565.2 Long Tons per Day during the test program performed on December 22, 2010 (47.1% of maximum), and was operating at or near 689.4 Long Tons per Day during the test program performed on January 6, 2011 (57.4% of maximum). The maximum production rate for SRU Incinerator Exhaust Stack is 1,200.0 Long Tons per Day.

Table 1-1 is the summary of the results for this test program.

Run Number	1	2	3	Average
Test Date	12/22/2010	12/22/2010	12/22/2010	
Run Start Time	10:45	12:05	13:30	
Run Finish Time	11:45	13:05	14:30	
Carbon Dioxide, %	5.72	6.26	5.66	5.88
Oxygen, %	1.91	1.94	1.86	1.90
Dry Stack Volumetric Flow Rate, dscfm	52,594	52,290	52,964	52,616
Sulfur Dioxide Concentration, ppmvd	122.81	118.19	118.14	119.72
Sulfur Dioxide Concentration, ppmvd @ 0% O_2	135.14	130.27	129.71	131.71
Sulfur Dioxide Emission Rate, lb/hr	64.38	61.60	62.37	62.78
Nitrogen Oxides Concentration, ppmvd	14.63	14.57	14.57	14.59
Nitrogen Oxides Emission Rate, lb/hr	5.514	5.458	5.528	5.500
Carbon Monoxide Concentration, ppmvd	192.98	188.88	206.88	196.24
Carbon Monoxide Emission Rate, lb/hr	44.26	43.07	47.78	45.04
VOC Concentration, as propane, ppmvw	11.36	12.73	11.10	11.73
VOC Emission Rate, as propane, lb/hr	4.596	5.184	4.529	4.770
Test Date	1/6/2011	1/6/2011	1/6/2011	
Run Start Time	12:50	15:50	18:50	
Run Finish Time	15:50	18:50	21:50	
Carbon Dioxide, %	5.0	5.0	5.0	5.0
Oxygen, %	1.0	1.0	1.0	1.0
Dry Stack Volumetric Flow Rate, dscfm	48,712	52,187	52,521	51,140
Hydrogen Sulfide Concentration, ppmvd	1.88	1.81	1.95	1.88
Hydrogen Sulfide Emission Rate, lb/hr	0.485	0.501	0.543	0.510

Table 1-1. Summary of Compliance Test Results

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INTRODUCTION

Purpose of Test

The primary objective of this compliance test program was to measure specific pollutants outlined in this report. Mr. Dan Loubiere managed the project and performed the tests, with the assistance of Dr. Sidney Bonnette and Messrs. Matt Brumley and Bryan Johnson, according to all applicable state and federal regulations.

For this compliance test program, gas concentrations of O_2, CO_2, SO_2, NO_x, CO and VOCs were measured with reference method (RM) analyzers. The measured concentrations of SO_2, NO_x and CO were on a part per million by volume, dry basis (ppmvd), and wet basis (ppmvw) for VOCs. All concentrations were then converted to emission rates in pounds per hour (lb/hr) using the measured airflow.

Airflow was determined using USEPA Methods 1 and 2. Testing for O_2 and CO_2 was performed using USEPA Method 3A. SO_2, NO_x, CO and VOC testing was conducted using USEPA Methods 6C, 7E, 10 and 25A, respectively. The moisture content of the stack gas was measured using Method 4. USEPA Method 15 uses the principle of gas chromatographic (GC) separation with a flame photometric detector (FPD) for quantifying levels of H_2S in stationary sources. Testing procedures are discussed in more detail in the test methods section. All calculated reference method data is provided in Appendix E, and examples of all calculations are presented in the Sample Calculation section of this report.

Problems, Deviations and/or Exceptions

No problems were encountered during this test program.

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PERFORMANCE TEST PROCEDURES

USEPA Reference Methods

This section provides a detailed description of the individual USEPA Reference Methods employed in this test (40 CFR 60, Appendix A). A schematics of the various sampling systems used to perform the test program on the source can be found in Figures 1-1 through 1-3. Specifics for the test equipment utilized in this program are presented in Appendix A.

USEPA Method 1: Sample and Velocity Traverses for Stationary Sources

Sampling traverse points were determined based on the ratio of the stack diameter to the upstream and downstream distances of the sampling plane to the closest disturbances. The minimum number of traverse points on the sampling plane is determined from Figure 1-2 and Table 1-2 of 40CFR60, Appendix A, Method 1.

USEPA Method 2: Determination of Stack Gas Velocity and Volumetric Flow Rate (Type S Pitot Tube)

Velocity and volumetric flow rates were determined from the measurement of the stack gas velocity head with a Type-S Pitot tube and inclined manometer. The Pitot tube was constructed per USEPA Method 2 design specifications. Based on the face opening alignments, external tubing diameter, and base-to-opening plane distances, a coefficient value of 0.84 was assigned to the Pitot tube.

USEPA Method 3A: Oxygen and Carbon Dioxide Analysis (Instrumental Procedure)

This method was employed to determine the concentrations of O_2 and CO_2 in the flue gas stream with the use of analytical instruments. A sample was continuously extracted from the stack and introduced to a RM analyzer for determination of concentration. The minimum detection limit for this instrument is one-hundredth of one percent (0.01%). The instrument is connected to a DAS computer via an analog-to-digital converter for recording resulting values, and the data was recorded in one-minute averages. Zero-grade nitrogen and USEPA Protocol-1 calibration standards were used to calibrate the analytical instrument. The general guidelines for the calibration of a RM analyzer are described above, with the specifics pertaining to the calibration of an O_2 and CO_2 analyzer being set forth in USEPA Method 3A (40 CFR Part 60, Appendix A).

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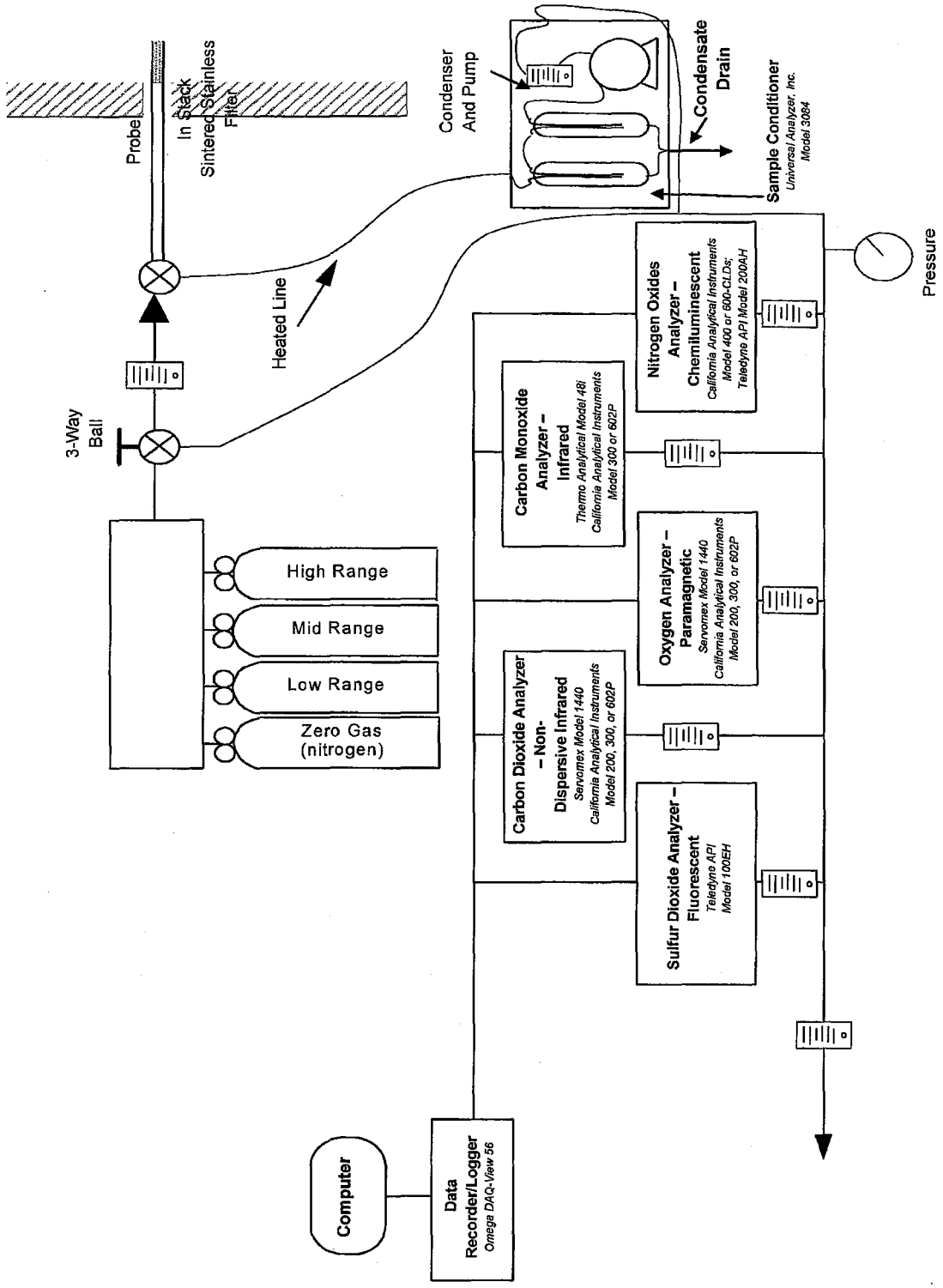

Figure 1-1. Sampling System Schematic

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USEPA Method 4: Determination of Moisture Content in Stack Gases

The stack gas moisture content was determined in accordance with USEPA Method 4 as shown in Figure 1-2. Specifically, stack gas was extracted at a constant rate through a glass condenser train consisting of four impingers connected in series with leak free, glass U-tube connections. The extracted stack gas sample temperature was maintained at a temperature below 68°F by use of an ice bath surrounding the glass impingers. The gas sample was extracted through the impinger train using a rotary vane vacuum pump, and the amount of gas sampled was measured with a calibrated dry gas meter. The pump flow was adjusted to maintain flow rate through the dry gas meter in order to obtain at least 21.0 dry, standard cubic feet (dscf) of sample gas during the test run. At the end of each run, the pump was turned off and the final readings were recorded. The amount of moisture in the gas stream was determined by measuring the volume of condensed moisture in impingers one through three and weighing the silica gel impinger to calculate percent moisture in the stack flue gas stream.

USEPA Method 6C: Sulfur Dioxide Analysis (Instrumental Procedure)

USEPA Method 6C was performed to quantify emissions of sulfur dioxide (SO_2) using an ultraviolet (UV) analyzer. SO_2 concentrations were recorded in dry parts per million (ppmd) at least once per minute using a data acquisition system and averaged. Prior to testing, a calibration error check was performed using low, mid, and high-range calibration gases. Before and after each test run, a system calibration bias and drift test was performed to check the drift of the analyzer and biases correct the data.

USEPA Method 7E: Nitrogen Oxides Analysis (Instrumental Procedure)

This method was employed to determine the concentration of total NO_x present in the exhaust gas stream. A gas sample was continuously extracted from the stack, and a portion of the sample was introduced to a RM analyzer for analysis.

Following calibration, a NO_2 to NO converter efficiency test was performed with a certified standard of NO_2 in nitrogen. The results of this test were considered acceptable of the analyzer response was within 10% of the certified value of the NO_2 standard. The results of the converter efficiency test are included in Appendix C.

The instrument is connected to a DAS computer via an analog-to-digital converter for recording the resulting values, and the data was recorded in one-minute averages. Zero-grade nitrogen and USEPA Protocol-1 calibration standards were used to calibrate the analytical instrument. The general guidelines for the calibration of a RM analyzer are described above, with the specifics pertaining to the calibration of a NO_x analyzer being set forth in USEPA Method 7E (40 CFR 60, Appendix A).

The analyzers used to perform this compliance test have been in use prior to 2006. Based on a presentation by Mr. Foston Curtis with the USEPA, the analyzers are "grandfathered", and are not required to comply with the current full requirements of the interference checks. An interference check was conducted by the manufacturer and can be provided upon request.

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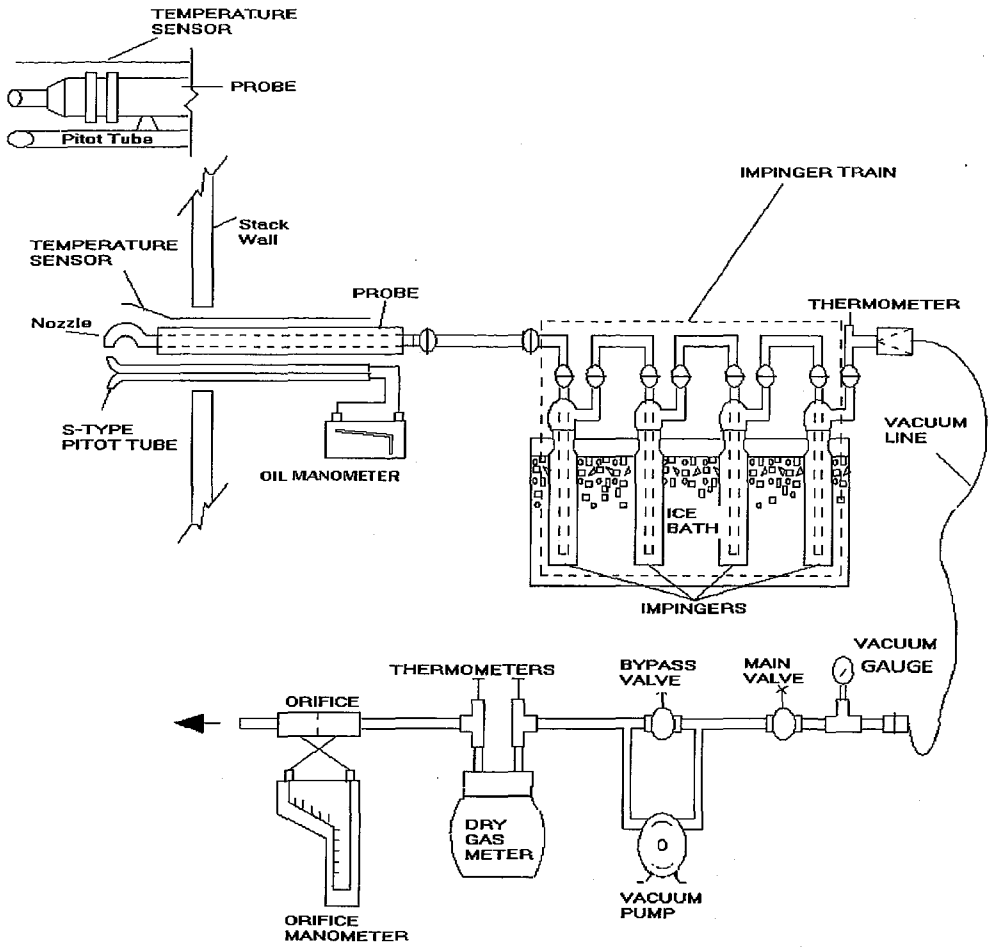

Figure 1-2. Method 4 Sampling Train

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USEPA Method 10: Carbon Monoxide Analysis (Instrumental Procedure)

This method was employed to determine the concentration of CO in emissions from stationary sources. A gas sample was continuously extracted from the stack, and a portion of the sample was introduced to a RM analyzer for analysis. The instrument is connected to a DAS computer via an analog-to-digital converter for recording resulting values, and the data was recorded in one-minute averages. Zero-grade nitrogen and USEPA Protocol Standard calibration standards were used to calibrate the analytical instrument. The general guidelines for the calibration of a RM analyzer are described above, with the specifics pertaining to the calibration of a CO analyzer being set forth in USEPA Method 10 (40 CFR Part 60, Appendix A).

USEPA Method 15: Determination of Hydrogen Sulfide for Stationary Sources

The Shimadzu Model 14B gas chromatograph utilizing a flame photometric detector (GC/FPD) was calibrated before and after the test series. The calibration consists of a series of three injections of three or more known concentrations within the linear range of the GC/FPD. A 3-point calibration series was used for this test project. At each calibration point, the three injections must fall within ±5 % of the average of the three injections. A copy of this calibration precision test is included in the Appendix C of this report.

A single USEPA Protocol No. 1 calibration gas was utilized to calibrate the GC/FPD system. A calibration gas divider was utilized to perform a multi-point calibration of the GC/FPD. The calibration documents for the gas divider and the Certificate of Analysis for the gas used are provided in Appendix C of this report.

USEPA Method 15, Section 13.4 requires that the calibration drift must not exceed 5% from the initial calibration to the final calibration in any test series. A sample line loss test, also called a recovery check, must be performed at the end of a series of tests. For this sample line loss test, an H_2S calibration gas is injected at the probe inlet to the sampling system. The results must be within 20% of the H_2S concentration measured when the calibration gas was injected. The results for the recovery check are located in Appendix C of this report.

Demonstration of Separation

To demonstrate that adequate resolution can be achieved, a chromatogram of a calibration gas containing H_2S, CS_2, and COS was completed for this chromatography column and temperature program prior to the compliance test. The results for the demonstration of separation are provided in Appendix C of this report.

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USEPA Method 15 Sampling System

The sample was extracted through a heated probe, maintained at a temperature above 248°F, at a constant rate, and transported by heated Teflon® sample line, also maintained at a temperature above 248°F. After passing through a citrate buffer, chilled to below 68°F, to remove any SO_2 and moisture, sample gas from the source was injected into the RM gas chromatograph by continually flowing stack gas into the GC inlet port during the test period. Figure 1-3 provides a detailed diagram of the test equipment.

Gas Chromatograph with Flame Photometric Detector (GC/FPD) Analysis

Following sample injection, the GC sample valve was switched to allow carrier gas to flow through a 2.0 mL volume sample loop and onto the column. After the compound peak had reached the detector and the area had been recorded, the column was back-flushed with carrier gas to remove any remaining sample.

The GC/FPD chromatograph peak areas produced by the calibration gases were plotted in the Class VP Shimadzu software. A best-fit exponential curve was created and ensured to be greater than or equal to 0.99. The resulting curve was used to relate H_2S concentrations to the GC output areas thereby generating parts per million (ppm) values for each analyte peak in the sample run. The initial calibration curve was also used to quantify peaks for both the pre and post-test calibration check.

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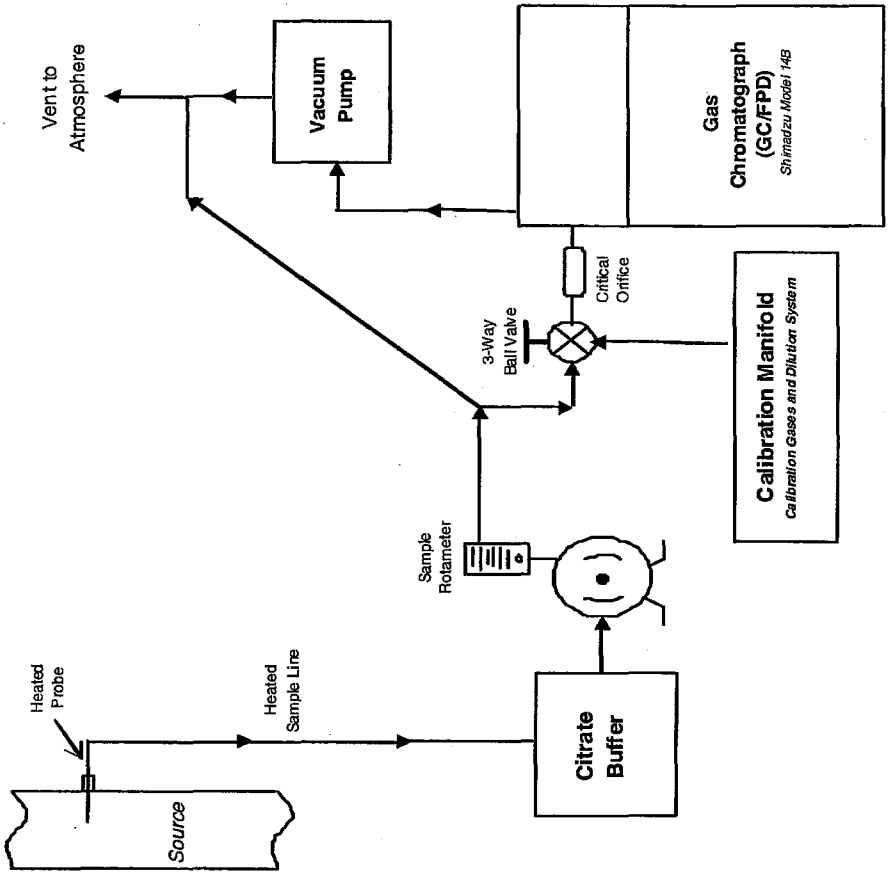

Figure 1-3. USEPA Method 15 Sampling System Schematic

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USEPA Method 25A: Volatile Organic Compounds as Total Hydrocarbons

USEPA Method 25A was performed to quantify emissions of volatile organic compounds (VOC) measured as total hydrocarbons (THC), as propane, using a flame ionization analyzer (FIA). For Method 25A, a heated sample line introduced gas to the FIA analyzer on a hot, wet basis. THC concentrations were recorded in wet parts per million (ppm) at least once per minute, using a data acquisition system, and averaged. Prior to testing, an analyzer calibration error test was performed using zero, low, mid, and high-range calibration gases. Before and after each test run, a system calibration bias and drift test was performed to check the drift of the analyzer. Figure 1-4 provides a detailed diagram of the test equipment.

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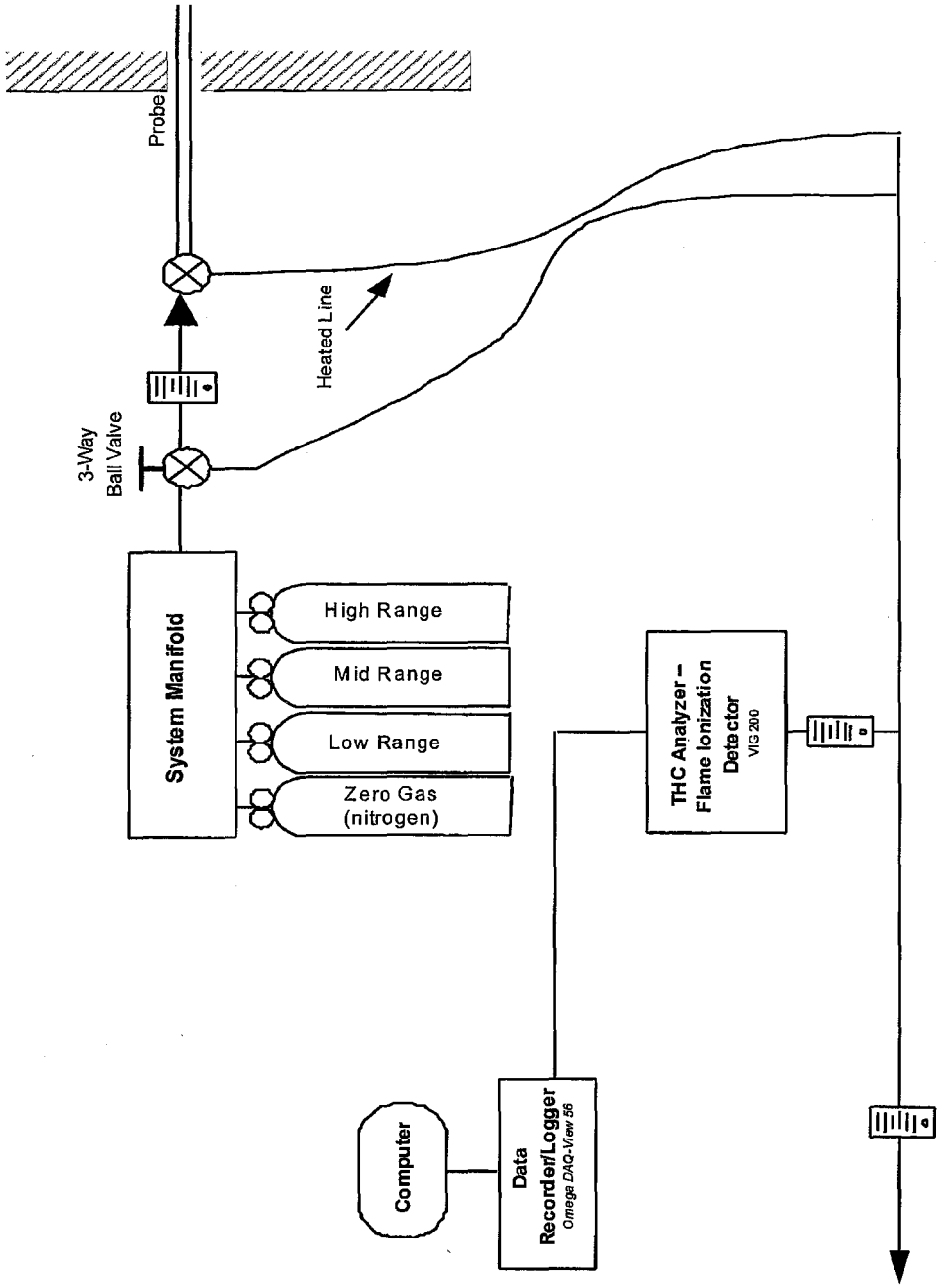

Figure 1-4. Sampling System Schematic for Method 25A

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Instrumental Analyzer Procedure

Stack gas emissions of O_2, CO_2, SO_2, NO_x, CO and VOCs from the source was measured with RM analyzers. These tests were performed in accordance with the applicable regulations, as outlined in Title 40, Part 60, Appendix A of the Code of Federal Regulations. All field data collected during the testing and photocopies of the actual O_2, CO_2, SO_2, NO_x, CO and VOCs one-minute averaging are provided in this report.

Sampling System

A gas sample was continuously extracted from the source with a stainless steel probe and channeled through a heated sample line to a gas sample conditioner. Slipstreams of gas were taken off just prior to the sample conditioner and routed to the Method 25A total hydrocarbon analyzer that measures on a hot, wet, basis. The entire sample extraction and delivery system was maintained at a temperature above 300°F to the point the sample enters the sample conditioner. The sample conditioner was employed to decrease the dewpoint of the combustion gases to a repeatable, stable, low dew point. Condensed moisture was continuously removed from the sample conditioner by peristaltic pump and drained. The conditioned gas then traveled through a network of ¼-inch Teflon® tubing to a manifold in the mobile laboratory. From the manifold, the sample was directed to a set of rotometers, where the flow of the sample gas into the analyzers was maintained at approximately 1 liter per minute (L/min).

Analyzer Calibration

The calibration of the instruments was performed using Protocol certified gas standards composed of a known concentration of the given component in zero-grade nitrogen. A copy of the certification standards for each of the certified calibration standards used during the testing is included in Appendix C. All of the values obtained during the calibration process, including analyzer calibration, system bias analysis, and drift values, can be found in Appendix C of this report. The analyzer calibration procedures are identical, regardless of the constituent being evaluated by each analyzer. The range used for each analyzer was determined based on the expected concentration levels of the flue gas stream.

The first step in the analyzer calibration was to set the zero point on the analyzer using zero-grade nitrogen. The nitrogen is introduced directly to the back of each analyzer, and the zero potentiometer on the analyzer is adjusted until the proper output from the analyzer is realized. Next, a high-range calibration gas is introduced to each analyzer, with a concentration within the appropriate range of the instrument. The span potentiometer on each analyzer is then adjusted until the output from the analyzer corresponds to the value of the calibration standard. Finally, a mid-range calibration standard with a concentration approximately one-half of the high-range calibration standard is used to determine the linearity of the analyzer within the given range. For certain constituents, more than one mid-range value is required. The specific requirements for each constituent are discussed later in this section.

Analyzer Calibration Error

The Analyzer Calibration Error (ACE) is the difference between the gas concentration exhibited by the gas analyzer and the concentration of the calibration gas when introduced directly to the analyzer. The maximum allowable variance for the zero, mid-range, and high-range calibration gases is ± 2% of the calibration span (± 5% of the recorder span for Method 25A). The calibration values and corresponding percent errors

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associated with this project can be found in Appendix C of this report, and is determined by the following equation for USEPA Methods 3A, 6C,7E and 10.

$$ACE = \left(\frac{Analyzer\ Response - Cylinder\ Value}{Calibration\ Span} \right) x100$$

USEPA Method 25A's calibration error is determined measuring the analyzer (measurement system) response and the predicted response. The predicted response is determined in the following equation, using the appropriate low or mid level calibration standard.

$$Predicted\ Response = \left(\frac{High\ Analyzer\ Response - ZeroResponse}{(High\ Cal.Standard - Zero\ Standard) * Cal.Standard_{\ (Low\ or\ Mid)}} \right) + Zero\ Response$$

Calibration error for Method 25A is determined using the following equation.

$$CE = \left(\frac{Predicted\ Response - Analyzer\ Response\ Value}{Cylinder\ Standard\ Value} \right) x100$$

System Bias Check

Following the analyzer calibration procedure, a second test is required to determine the amount of bias the sampling system has on the calibration standard concentrations. In this procedure, the same calibration standards that were used to perform the analyzer calibration error test are introduced to the sampling system via a separate network of ¼-inch Teflon® tubing. The calibration gases are allowed to flood the system via a "t" connection at the end of the sample probe at a rate of approximately 2 L/min higher than the sample rate. The excess calibration gas flows out the tip of the probe, preventing stack gas from being drawn into the sampling system during calibrations. The gas is then drawn back through the system by the conditioning pumps, and is introduced to the analyzers. The output from the analyzers is recorded, without adjusting the zero or span potentiometers. The bias created by the sampling system is then determined by the following equation.

$$Bias = \left(\frac{System\ Response - Calibration\ Error\ Response}{Calibration\ Span} \right) x100$$

The maximum allowable system bias for any one analyzer is ±5% of the corresponding span value. The values determined for this portion of the calibration procedure can be found in Appendix C of this report.

Analyzer Drift

Utilizing the data obtained during the post-test bias check, a third test is performed to determine the amount of drift experienced during the test run. The analyzer response from the post-test system bias check is compared to the pre-test response for the same calibration standard for drift determinations. If the drift value is greater than the allowable value, the test run is considered invalid and the analyzers must be re-calibrated before continuing the test. The drift for each constituent is determined using the equation below.

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$$Drift = \left(\frac{|Final\ System\ Calibration\ Response - Initial\ System\ Calibration\ Response|}{Calibration\ Span} \right) x100$$

Calibration drift for Method 25A is determined using the following equation.

$$Drift = \left(\frac{|Final\ System\ Calibration\ Response - Initial\ System\ Calibration\ Response|}{Span} \right) x100$$

The maximum allowable calibration drift for any one analyzer is 3% of the span over the period of each run. The values determined for this portion of the calibration procedure can be found in Appendix C of this report.

Stratification Test

For the compliance portion of this test program, stratification was performed in order to determine the minimum number of sample points required. The stratification was performed using one sampling system. The difference between the concentrations measured during the time the sample system was at each point, and the mean average of the entire traverse period, was considered a variation due to process and used to normalize the traversed data. Following the normalization of the data, the absolute difference and the percent difference from the mean average was determined for each sample point. The results of the stratification test, with the tolerances of the stratification determinations are included in Appendix E of this report.

Response Time

System response times for each analyzer were determined during the initial pretest bias prior to run number 1. The response time is determined by the length of time it takes the analyzer response to be within 95% or 0.5 ppm (whichever is less restrictive) of the certified gas concentration. The start of each run was a minimum of twice the response time following the completion of calibration checks.

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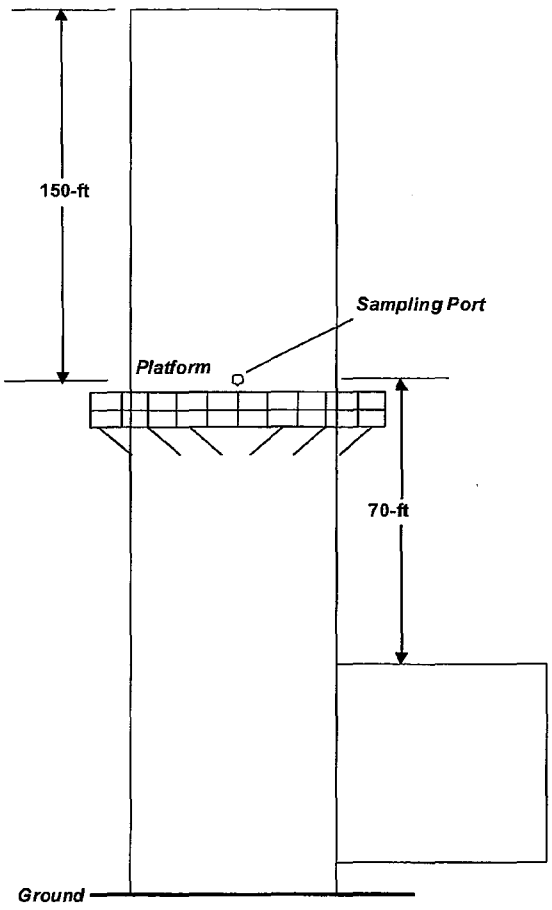
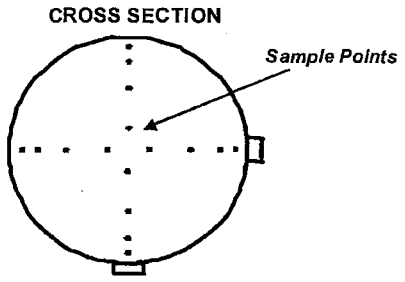
SOURCE INFORMATION

The testing location on the SRU Incinerator Exhaust Stack consisted of a single 4.0-inch diameter port on a 92.0-inch diameter circular stack. The sample port was positioned at a distance of 150-feet upstream and 70-feet downstream from the nearest disturbances. This meets the requirements established in the Code of Federal Regulations for sample locations. A diagram of the sampling locations is shown below in Figure 1-5.





TRAVERSE POINTS: 16
NUMBER OF PORTS: 2
POINTS/PORT: 8
STACK ID: 92.0 in.
PORT LENGTH: 6.0 in.

TRAVERSE POINT NO.	DISTANCE FROM INSIDE WALL, in.
1	2.9
2	9.7
3	17.8
4	29.7
5	62.3
6	74.2
7	82.3
8	89.1

Figure 1-5. Diagram of Testing Location for the SRU Incinerator Exhaust Stack

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SAMPLE CALCULATIONS

The following calculations were used in the determination of emission rates for the unit's exhaust.

Absolute Stack Gas Pressure (P_s)

$$P_s = P_{bar} + \frac{P_{static}}{13.6}$$

Where:

P_{bar} = Barometric pressure (in. Hg)
P_{static} = Static pressure of stack gas (in. H_2O)

Gas Volume Sampled at Standard Conditions ($V_{m(std)}$)

$$V_{m(std)} = \left(\frac{528}{29.92}\right) x V_m x Y \left[\frac{P_{bar} + \left(\frac{\Delta H}{13.6}\right)}{T_m}\right]$$

Where:

V_m = Actual gas volume sampled (ft^3)
Y = Gas meter calibration factor
P_{bar} = Measured barometric pressure (in. Hg)
ΔH = Average differential pressure (in. H_2O)
T_m = Absolute average meter temperature (°R)

Water Vapor Collected at Standard Conditions ($V_{w(std)}$)

$$V_{w(std)} = 0.04707 \ x \ V_{lc}$$

Where:

V_{lc} = Liquid collected in impingers (ml)

Measured Stack Gas Moisture Content (B_{ws})

$$B_{ws} = \frac{V_{w(std)}}{\left(V_{w(std)} + V_{m(std)}\right)}$$

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Wet Molecular Weight of Stack Gas

$$M_s = M_d(1 - B_{ws}) + 18B_{ws}$$

Stack Gas Velocity

$$v_s = (85.49)(C_p)(avg\sqrt{\Delta P})\sqrt{\frac{T_s}{(P_s)(M_s)}}$$

Where:
C_p = Pitot coefficient (0.84)
T_s = Average stack temperature (°R)
P_s = Absolute stack gas pressure (in. Hg)
M_s = Molecular weight of stack gas (lb/lb-mole)

Volumetric Flow Rate (Actual cubic feet per min)

$$Q_{aw} = v_S \; x \; A_S \; x \, 60$$

Where:
Q_{aw} = Volumetric flow rate (acfm)
v_s = Stack gas velocity (ft/sec)
A_s = Stack area (ft^2)

Volumetric Flow Rate (Standard Conditions, dry basis)

$$Q_{std} = \left(\frac{528}{29.92}\right) x (Q_{aw}) x \left(\frac{P_s}{T_s}\right) x (1 - B_{ws})$$

Where:
Q_{std} = Volumetric flow rate (dscfm)
P_s = Absolute stack gas pressure (in. Hg)
T_s = Average stack temperature (°R)
B_{ws} = Stack moisture content

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Calibration Correction

$$C_{gas} = (\overline{C} - C_o)(\frac{C_{ma}}{C_m - C_o})$$

Where:

C_{gas} = Effluent gas concentration (ppmvd)
C = Average gas concentration of gas analyzer (ppmvd)
C_o = Average of initial and final system calibration bias check responses for zero gas (ppmvd)
C_m = Average of initial and final system calibration bias check responses for the upscale calibration gas (ppmvd)
C_{ma} = Actual concentration of the upscale calibration gas (ppmvd)

Concentration (lb/dscf)

$$C_d = C_{ppm}\left(\frac{MW\ (lb\ /\ lb\ mole\ )}{385\ .26\ x\,10^{6}}\right)$$

Emission Rate (lb/hr)

$$E_r = \left(C_d\ x\ Q_{std}\ x\ 60\right)$$

Where:

E_r = Emission rate (lb/hr)
C_d = Pollutant concentration (lb/dscf)
Q_{std} = Volumetric flow rate (dscfm)

Emission Rate (tons/yr)

$$E_t = E_r\ x\ 8{,}760 \div 2{,}000$$

Where:

E_t = Emission rate (tons/yr)
E_r = Emission rate (lb/hr)
8,760 = Hours per year
2,000 = Pounds per ton

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Emission Rate (tons/yr)

$$E_t = E_r \, x \, 8{,}760 \div 2{,}000$$

Where:

E_t = Emission rate (tons/yr)
E_r = Emission rate (lb/hr)
8,760 = Hours per year
2,000 = Pounds per ton

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GOLDEN SPECIALTY

Air Quality Test Report

TEST RESULTS

A comprehensive summary of results for the testing performed on the SRU Incinerator Exhaust Stack are listed below in Tables 1-2 and 1-3. All supporting calibration and field data collected for this project are provided in the following Appendices.

Plant	BPTC	Address	Texas City, TX	Job #	10BPTC1288
Location	SRU Incinerator Exhaust Stack	Personnel	DL/MB/BJ	Date	12/22/2010

	Run Number	1	2	3	Average
Date	Test Date	12/22/2010	12/22/2010	12/22/2010	
Start	Run Start Time	10:45	12:05	13:30	
End	Run Finish Time	11:45	13:05	14:30	
Θ	Net Run Time, min.	60.0	60.0	60.0	60.0
C_p	Pitot Tube Coefficient	0.84	0.84	0.84	0.84
Y	Dry Gas Meter Calibration Factor	0.992	0.992	0.992	0.992
P_{Br}	Barometric Pressure, in. Hg	30.20	30.20	30.20	30.20
ΔH	Average orifice meter Differential, in. H_2O	1.000	1.000	1.000	1.000
V_m	Dry Gas Meter Volume Sampled, ft^3	33.048	33.075	33.080	33.068
t_m	Average Dry Gas Meter Temperature, °F	69.9	71.3	75.5	72.3
V_{mstd}	Dry Gas Meter Volume Sampled, dscf	33.051	32.990	32.736	32.926
V_{lc}	Total Moisture Liquid collected, ml	84.1	94.2	84.6	87.6
V_{wstd}	Volume of Water Vapor, scf	3.97	4.44	3.99	4.13
% H_2O	Moisture Content of Stack Gas, %	10.70	11.85	10.85	11.13
M_{fd}	Dry Mole Fraction	0.893	0.882	0.892	0.889
%CO_2	Carbon Dioxide, %	5.72	6.26	5.66	5.88
%O_2	Oxygen, %	1.91	1.94	1.86	1.90
M_s	Wet Molecular weight, lb/lb-Mole	27.82	27.77	27.79	27.79
P_g	Flue Gas Static Pressure, in. H_2O	-0.265	-0.265	-0.265	-0.265
P_s	Absolute Flue Gas Pressure, in. Hg	30.18	30.18	30.18	30.18
t_s	Average Stack Gas Temperature, °F	1048.8	1048.6	1048.4	1048.6
$\sqrt{\Delta P_{avg}}$	Average Square-Root Velocity Head, in H_2O	0.626	0.630	0.631	0.629
v_s	Average Stack Gas Velocity, ft/sec	60.23	60.66	60.74	60.55
A_s	Stack Crossectional Area, ft^2	46.16	46.16	46.16	46.16
Q_{aw}	Actual Volumetric Flue Gas Flow Rate, acfm	166,840	168,024	168,247	167,704
Q_{std}	Dry Volumetric Flow Rate, dry scfm	52,594	52,290	52,964	52,616
$SO_{2\ ppmvd}$	Sulfur Dioxide Concentration, ppmvd	122.81	118.19	118.14	119.72
$SO_{2\ ppm\ @\ 0\%\ O2}$	Sulfur Dioxide Concentration, ppmvd @ 0% O_2	135.14	130.27	129.71	131.71
$SO_{2\ lb/dscf}$	Sulfur Dioxide Concentration, lb/dscf x 10^{-6}	20.40	19.63	19.63	19.89
$SO_{2\ lb/hr}$	Sulfur Dioxide Emission Rate, lb/hr	64.38	61.60	62.37	62.78
$SO_{2\ tons/yr}$	Sulfur Dioxide Emission Rate, tons/yr	281.99	269.80	273.18	274.99
$NO_{x\ ppmvd}$	Nitrogen Oxides Concentration, ppmvd	14.63	14.57	14.57	14.59
$NO_{x\ lb/dscf}$	Nitrogen Oxides Concentration, lb/dscf x 10^{-6}	1.747	1.740	1.740	1.742
$NO_{x\ lb/hr}$	Nitrogen Oxides Emission Rate, lb/hr	5.514	5.458	5.528	5.500
$NO_{x\ tons/yr}$	Nitrogen Oxides Emission Rate, tons/yr	24.15	23.91	24.21	24.09
CO_{ppmvd}	Carbon Monoxide Concentration, ppmvd	192.98	188.88	206.88	196.24
$CO_{lb/dscf}$	Carbon Monoxide Concentration, lb/dscf x 10^{-6}	14.03	13.73	15.04	14.26
$CO_{lb/hr}$	Carbon Monoxide Emission Rate, lb/hr	44.26	43.07	47.78	45.04
$CO_{tons/yr}$	Carbon Monoxide Emission Rate, tons/yr	193.85	188.64	209.28	197.26
VOC_{ppmvw}	VOC Concentration, as propane, ppmvw	11.36	12.73	11.10	11.73
VOC_{ppmvd}	VOC Concentration, as propane, ppmvd	12.72	14.44	12.45	13.20
$VOC_{lb/dscf}$	VOC Concentration, as propane, lb/dscf x 10^{-6}	1.456	1.652	1.425	1.511
$VOC_{lb/hr}$	VOC Emission Rate, as propane, lb/hr	4.596	5.184	4.529	4.770
$VOC_{tons/yr}$	VOC Emission Rate, as propane, tons/yr	20.13	22.71	19.84	20.89

Table 1-2. SRU Incinerator Exhaust Stack Compliance Test Results – 12/22/2010

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GOLDEN SPECIALTY

Air Quality Test Report

Plant	BPTC	Address	Texas City, TX	Job #	11BPTC1508
Location	SRU Incinerator Exhaust Stack	Personnel	DL/MB	Date	1/6/2011

	Run Number	1	2	3	Average
Date	Test Date	1/6/2011	1/6/2011	1/6/2011	
Start	Run Start Time	12:50	15:50	18:50	
End	Run Finish Time	15:50	18:50	21:50	
Θ	Net Run Time, min.	180.0	180.0	180.0	180.0
C_p	Pitot Tube Coefficient	0.84	0.84	0.84	0.84
Y	Dry Gas Meter Calibration Factor	0.989	0.989	0.989	0.989
P_{Br}	Barometric Pressure, in. Hg	29.98	29.98	29.98	29.98
ΔH	Average orifice meter Differential, in. H_2O	1.000	1.000	1.000	1.000
V_m	Dry Gas Meter Volume Sampled, ft^3	33.114	33.075	33.090	33.093
t_m	Average Dry Gas Meter Temperature, °F	64.5	72.2	78.4	71.7
V_{mstd}	Dry Gas Meter Volume Sampled, dscf	33.118	32.601	32.238	32.652
V_{lc}	Total Moisture Liquid collected, ml	85.4	79.1	77.4	80.6
V_{wstd}	Volume of Water Vapor, scf	4.03	3.73	3.65	3.80
% H_2O	Moisture Content of Stack Gas, %	10.82	10.25	10.15	10.41
M_{fd}	Dry Mole Fraction	0.892	0.897	0.898	0.896
$\%CO_2$	Carbon Dioxide, %	5.0	5.0	5.0	5.0
$\%O_2$	Oxygen, %	1.0	1.0	1.0	1.0
M_s	Wet Molecular weight, lb/lb-Mole	27.67	27.73	27.74	27.71
P_g	Flue Gas Static Pressure, in. H_2O	-0.262	-0.262	-0.262	-0.262
P_s	Absolute Flue Gas Pressure, in. Hg	29.96	29.96	29.96	29.96
t_s	Average Stack Gas Temperature, °F	1057.6	1057.0	1057.4	1057.4
$\sqrt{\Delta P}_{avg}$	Average Square-Root Velocity Head, in H_2O	0.583	0.621	0.624	0.609
v_s	Average Stack Gas Velocity, ft/sec	56.61	60.23	60.57	59.14
A_s	Stack Crossectional Area, ft^2	36.23	36.23	36.23	36.23
Q_{aw}	Actual Volumetric Flue Gas Flow Rate, acfm	123,047	130,926	131,662	128,545
Q_{std}	Dry Volumetric Flow Rate, dry scfm	38,228	40,954	41,217	40,133
H_2S_{ppmvd}	H_2S Concentration, ppmvd	1.88	1.81	1.95	1.88
$H_2S_{lb/dscf}$	H_2S Concentration, lb/dscf x 10^{-6}	0.166	0.160	0.172	0.166
$H_2S_{lb/hr}$	H_2S Emission Rate, lb/hr	0.381	0.393	0.426	0.400
$H_2S_{tons/yr}$	H_2S Emission Rate, tons/yr	1.668	1.723	1.867	1.753

Table 1-3. SRU Incinerator Exhaust Stack H_2S Compliance Test Results – 1/6/2011

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APPENDIX A – Testing Equipment

Testing Equipment

Provided in the Table 1-3 below is a list of all testing equipment used in the emission test.

Golden Specialty, Inc.			
Trailer No. 10			
Constituent	**Make/ Model**	**Operating Range**	**Serial Number**
Velocity / Pitot	Environmental Supply	∞	GSCP029
Moisture / Meter	Apex	∞	0904021
O_2-1	Servomex 1440	0-25%	01440D1/4034
CO_2-1	Servomex 1440	0-20%	01440D1/4034
SO_2-1	Teledyne/API 100EH	0-500 ppm	269
NO_x-1	CAI 400-CLD	0-100 ppm	6L09003
CO-1	Thermo 48i	0-500 ppm	0708021118
THC-1	VIG 200	0-100 ppm	4091009
Gas Divider	Environics/4040	NA	3100
GC/FPD	Shimadzu/GC-14B	NA	GC #1

Table 1-3. Testing Equipment Used in the Compliance Testing

APPENDIX B – Resumes

SCOTT B. SWIGGARD, Ph.D., QSTI (#2006-025)
PRESIDENT / TECHNICAL DIRECTOR

Professional Experience Summary

- Broad background in environmental compliance and regulatory issues. Has directed projects associated with air permitting, groundwater contamination, air toxins emissions control, hazardous materials control and reporting, wastewater process control (metals removal), energy conservation, industrial ventilation, noise control, bioremediation, and storm water control.
- Extensive background in emission testing, with over 1,600 tests personally conducted and/or supervised.
- Responsible for the continued development of testing capabilities and their research and development.
- Provides project management for testing at assigned client's facilities. Provides field support to the project managers on testing protocols and methods.
- Responsible for verification and validation on test data as part of a Quality Assurance/ Quality Control Program.

Selected Publications/Presentations

Swiggard, Scott and Spellicy, Robert, PhD., FTIR Monitoring in High Water and Carbon Dioxide Environments. Presented at the 2003 Air and Waste Management Association 96th Annual Conference and Exhibition, San Diego, CA, June 22-26, 2003.

Swiggard, Scott B., Comparative study of NH3 analysis and methods for SCR Slippage. Presented at Source Evaluation Society Annual Meeting, Kiawah Island, North Carolina, 2004

Swiggard, Scott B., Identifying In-Stack Detection Limits and Handling of Non-Detect Data, Presented at Source Evaluation Society Annual Meeting, Rohnert Park California, 2005

Swiggard, Scott B., Why Cooling Towers and Vents matter in Texas!, Presented at Source Evaluation Society Annual Meeting, Hilton Head North Carolina, 2006

Swiggard, Scott B., How accurate are your standards?, Presented at Source Evaluation Society Annual Meeting, Hilton Head North Carolina, 2006

Swiggard, Scott B., Bonnette Sidney, PhD., and Palomarez Jorge., Gas Chromatography (GC) Analysis of HRVOC's in Cooling Towers and Vents; including degradation 1,3-Butadiene in the presence of NOx compounds, Presented at the GAS2006 Conference, Galveston, Texas, April 2006

Professional Affiliations

Source Evaluation Society (SES) and Air and Waste Management Association (AWMA)
Source Testing Accreditation Council (STAC) – Member and Board of Directors
ASTM International, Voting Member D22, #395691

KAREN L. SWIGGARD

VICE PRESIDENT / DIRECTOR OF QUALITY ASSURANCE

Professional Work Summary

- Broad background in safety, environmental compliance and regulatory issues. Has managed projects associated with Hazard Communication, Blood borne pathogens, Tuberculosis Infection Control, Respiratory Projection, Personal Protective Equipment, Life Safety Code, Fire Safety, Electrical Safety, Back Injury Protection, Workplace Violence, Employee Injury and Illness Reporting, Emergency Response, Hazardous Drugs, Ventilation and Indoor Air Quality, and Joint Commission on Accreditation of Healthcare Organizations (JCAHO).
- Extensive background in employee Training in areas of: Hazard Communication, Blood borne pathogens, Tuberculosis Infection Control, Respiratory Projection, Personal Protective Equipment, Fire Safety, Electrical Safety, Back Injury Prevention, Emergency Response, and Computer Ergonomics.
- Developed and presented intensive training courses for Health and Safety professionals at all NASA centers including: Occupational Ergonomics and Blood borne Pathogens.
- While working for Texas Water Commission (now Texas Commission on Environmental Quality, TCEQ), she was responsible for the enforcement of RCRA program in Texas including the inspection and evaluation of RCRA programs at various chemical plants and other facilities handling hazardous waste. Was a key member for emergency response for chemical spills and accidents.
- Extensive experience in Quality Assurance programs including serving as Quality Assurance Officer for the Environmental Health Laboratory for NASA-Johnson Space Center for 5 years, and managing the environment of care accreditation process of Kelsey-Seybold, Houston Texas, for JCAHO in which it was awarded.

Work Experience

Golden Specialty, Inc. (February 1999 - present)
Position: Vice President / Director of Quality Assurance

Kelsey-Seybold Clinic (June 1995 – February 1999)
Position: Manager of Environmental Health and Safety

NASA-Johnson Space Center (April 1986 - June 1995)
Position: Health & Safety Training Specialist/Industrial Hygienist/Quality Assurance Officer

Texas Water Commission (February 1984 – April 1986)
Position: Environmental Quality Specialist

Professional Affiliations

Source Evaluation Society (SES)
National Environmental Laboratory Accreditation Commission (NELAC)
Air and Waste Management Association (AWMA)
American Industrial Hygiene Association (AIHA)

Education

Studies towards Masters in Science in Environmental Science, University of Houston
Bachelor of Science in Environmental Management, University of Houston, 1984
Source Sampling and CEMS Workshop, Walter Smith & Associates, 2002
NIOSH Quality Assurance Officer Training, 1990

DANIEL A. LOUBIERE, QSTI (#2008-128)
PROJECT MANAGER

Professional Experience Summary

- Responsible for designing, planning and managing sampling programs, daily assignments of field testing crews, sample analysis, data reduction, QA/QC reviews, and reporting activities.
- Broad background in environmental compliance and regulatory issues. Extensive experience designing and managing test programs to meet federal, state and local compliance demonstration requirements.
- Participated in or supervised over 1,700 tests across the United States, including hazardous waste incinerator trial burns, continuous emission monitoring systems (CEMS) certification, and compliance testing.
- Sampling experience includes flow stream characterization and monitoring of a number of types of flow streams for engineering purposes; emissions sampling for regulatory compliance demonstration; emissions sampling for systems audit requirements of continuous emission monitoring systems (CEMS) and predictive emissions monitoring systems (PEMS).
- Developed and manufactured equipment to perform sampling for highly reactive volatile organic compounds (HRVOC) to comply with TCEQ Chapter 115 Subchapter H requirements. Experienced in modified El Paso Method, Appendix P, (Cooling Tower Sampling for Volatile Organic Compounds); applicable to sampling and troubleshooting leaks in process systems.
- Assist clients in troubleshooting and repairing existing emissions monitoring systems, or designing and implementing new systems.

Work Experience

Golden Specialty, Inc. (June 2007 - Present)
Position: Project Manager

ARI Environmental, Inc. (March 1994 – June 2007)
Position: South Central Regional Manager

Professional Affiliations

Source Evaluation Society (SES)
Air and Waste Management Association (AWMA)

Professional Education

24 Hour Hazwoper Training 29 CFR 1910.120
Preparation for the SES QSTI Exam Workshop, Walter Smith and Associates, 2007
Working on general education to be credited to a BS Degree in Environmental Science
Visible Emissions Certified (EPA Method 9)
Qualified Individual – Cylinder Gas Audits
Man-Lift Training, August 2006
QSTI Certification, Feb 2008

JOHNDUNN B. JOHNSTON, QI (Groups I-IV)
PROJECT SUPERVISOR

Professional Experience Summary

- Responsible for designing, planning and managing sampling programs, daily assignments of field testing crews, sample analysis, data reduction, QA/QC reviews, and reporting activities.
- Broad background in environmental compliance and regulatory issues. Extensive experience designing and managing test programs to meet federal, state and local compliance demonstration requirements.
- Participated in or supervised over 2,000 tests in Alabama, Kansas, Louisiana, Mississippi, Oklahoma, Pennsylvania and Texas, as well as Puerto Rico and Mexico, including hazardous waste incinerator trial burns, continuous emission monitoring systems (CEMS) certification, and compliance testing.
- Sampling experience includes flow stream characterization and monitoring of a number of types of flow streams for engineering purposes; emissions sampling for regulatory compliance demonstration; emissions sampling for system audit requirements of continuous emission monitoring systems (CEMS) and predictive emissions monitoring systems (PEMS). Testing experience also includes numerous tests for particulates, sulfur oxides, multi-metals, H_2S, fluorides, H_2SO_4, HCl, formaldehyde and other hydrocarbons.
- Assist clients in troubleshooting and repairing existing emissions monitoring systems, or designing and implementing new systems.
- Written data acquisition systems for use in mobile laboratories, including continuous gas chromatograph (GC) monitoring.

Work Experience

Golden Specialty, Inc. (February 2010 - Present)
Position: Project Supervisor

Stork Southwest Laboratories (January 1991 – February 2010)
Position: Senior Project Manager – Air Emissions Services Division

Professional Education

Bachelor of Science in Meteorology, Texas A&M University, 1989
40 Hour Occupational and Environmental Testing Program - Hazwoper Training 29 CFR 1910.120 (1992)
Man-lift Training, October 1999
20-hour Mine Safety and Health Administration (MSHA) Training, February 2008
Supplied Air Training, February 2009
Aerial-lift Training, March 2010

PAULA M. METZ, QSTI (#2006-026)

REPORTS DEPARTMENT MANAGER

Professional Experience Summary

- Experience with EPA testing regulations, including 40 CFR, Part 60, Part 75, and Part 266, and TCEQ testing regulations, including 30TAC115, 30TAC117, and TCEQ Sampling Procedures Manual.
- Over 6 years of experience and participation in over 500 tests in Texas, Arkansas, Ohio, Mississippi, and Louisiana.
- CEM instrumentation projects include continuous analysis for carbon monoxide (CO), total oxides of nitrogen (NO_x), oxygen (O_2), carbon dioxide (CO_2), total hydrocarbons (THC), and sulfur dioxide (SO_2).
- Sampling experience includes flow stream characterization and monitoring of a number of types of flow streams for engineering purposes; including analysis using 3-D spherical probes per Method 2F, emissions sampling for regulatory compliance demonstration; emissions sampling for systems audit requirements of continuous emission monitoring systems (CEMS).
- Conducted isokinetic sampling and calculations for Methods 1, 1A, 2, 2A, 2F, 3, 3B, 4, and 5, including sample recovery, preservation, and storage at the test site with associate sample custody requirements for the methods listed.
- Knowledgeable in the testing requirements and procedures for the testing and analysis of Predictive Emissions Monitoring Systems (PEMS). Participated in several new source performance standards (NSPS) for development of new PEMS, including initial data collection of emissions.
- Experienced in modified El Paso Method, Appendix P, (Cooling Tower Sampling for Volatile Organic Compounds); applicable to monthly sampling and troubleshooting leaks in Process systems.
- Experienced in report writing, review, and finished product.

Work Experience

Golden Specialty, Inc. (February 2001 - Present)
Position: Reports Department Manager

Professional Affiliations

Source Evaluation Society (SES)

Education

Associate of Arts – Chemistry, San Jacinto Community College, December 2010
Visible Emissions Certified (EPA Method 9), 2004-2007
12 Hour Basic Instrumentation Training, California Analytical Instruments, January 2003
Source Sampling and CEMS Workshop, Walter Smith & Associates, 2002, 2003 and 2004
Preparation for the SES QSTI Exam Workshop, Walter Smith and Associates, 2005
SkillPath® Seminars, Employee Management and Supervision Workshop, 2003
Hazardous Materials Shipping Qualified, 2006
QSTI Certification, June 2006
Man-Lift Training, August 2006
Fred Pryor®:Team Building Seminar, 2007
Fred Pryor®:Excel: Beyond the Basics" Seminar, 2007

JENNIFER A. DUNNING
REPORTS CLERK

Professional Experience Summary

- Over 20 years of Accounting, Administrative, Collections, Billing and Finance experience, including customer service responsibilities.
- Responsible for documenting and maintaining the tracking of project data and test reports for both Consulting and Laboratory divisions.
- Experienced in data importation for PEMS and CEMS RATAs, as well as multiple compliance test projects.
- Experienced in report writing, review and finished product.
- Proficient in Microsoft Word, Excel, Power Point and Access.

Work Experience

Golden Specialty, Inc. (June 2008 – Present)
Position: Reports Clerk

EDS/Continental Airlines (August 1988 – April 2001, March 2007 - May 2008)
Position: International Collections Specialist – Europe and Spain

Gowan, Incorporated / AppleOne Agency (July 2003 – December 2006)
Position: Billing Specialist

NextiraOne, LLC / Accounting Solutions (October 2002 – July 2003)
Position: Collections Analyst / Senior Finance Associate

Education

San Jacinto College, Central Campus – Certificate in Occupational Health and Safety
Software Certifications: Microsoft Word, Excel, Power Point and Access.
Basic Plus Training (H.A.C.S.C.)

GOLDEN SPECIALTY

Air Quality Test Report

MATTHEW S. BRUMLEY, QSTI (#2008-159)
ENVIRONMENTAL TECHNICIAN

Professional Experience Summary

- Proficient with instrumentation methods: carbon monoxide (CO), total oxides of nitrogen (NO_x), oxygen (O_2), and carbon dioxide (CO_2), total hydrocarbons (THC), ammonia (NH_3), and sulfur dioxide (SO_2).
- Knowledgeable in source compliance testing and emission sampling methodologies for stack gas velocity, moisture, and a variety of isokinetic (wet chemistry/particulate) testing.
- Experience in performing maintenance and calibrations on a variety of air testing equipment.
- Experience with EPA testing regulations, including 40 CFR, Part 60 and Part 75.
- Knowledgeable in testing requirements and procedures for the testing and analysis of Predictive Emissions monitoring systems (PEMS) in accordance with Title 30 of the Texas Administrative Code, Chapter 117.
- Knowledgeable in OSHA, ISO 9001 regulations.
- Computer skills include: Windows 9x, Windows 2000, Excel, Word

Work Experience

Golden Specialty, Inc. (April 2006-present)
Position: Environmental Technician

UPS-(May 2005- March 2006)
Position: Shifter-loaded/unloaded trucks

Grifco Transportation (May 2002-August 2005)
Position: Deckhand-transported oil; assisted with duties on the vessel

Professional Affiliations

Source Evaluation Society (SES)

Education

Clear Brook High School - Graduated
San Jacinto College South - Acquired 40 Hours with concentration in Business Administration
Houston Baptist University – Acquired 16 Hours and is currently attending
Basic Plus Training (H.A.C.S.C.)
Man-Lift Training (6/06)
Visible Emissions Certified (EPA Method 9), 2006-2007
Qualified Individual – Cylinder Gas Audits
Qualified Individual – Portable Combustion Analyzer
Qualified Individual – EPA Method 30B
QSTI Certification, June 2008

GOLDEN SPECIALTY

Air Quality Test Report

BRYAN JOHNSON
ENVIRONMENTAL TECHNICIAN

Professional Experience Summary

- Experience with EPA testing regulations, including 40 CFR, Part 60 and Part 75.
- CEM instrumentation projects include continuous analysis for carbon monoxide (CO), total oxides of nitrogen (NO_x), oxygen (O_2), and carbon dioxide (CO_2).
- Knowledgeable in all required regulations and methodologies for the testing and analysis of stack gas velocity and moisture content analysis.
- Knowledgeable in testing requirements and procedures for the testing and analysis of Predictive Emissions monitoring systems (PEMS) in accordance with Title 30 of the Texas Administrative Code, Chapter 117.
- Knowledgeable in OSHA, ISO 9001 regulations.

Work Experience

Golden Specialty, Inc. (September 2003-present)
Position: Environmental Technician

Texas Department of Criminal Justice (August 2002-June 2003)
Position: Correctional Officer (COIII)

TASC Environmental Services (February 1999-October 2001)
Position: Environmental Specialist

Baker Hughes Petrolite Corporation (May 1991-February 1999)
Position: Chemical Operator

Professional Affiliations

Source Evaluation Society (SES)

Education

Source Sampling and CEMS Workshop, Walter Smith & Associates, 2003 and 2004
Correctional Officer Training Program, College of the Mainland, 2002
ISO 9000 Course, San Jacinto College, 1996
Lamar Industrial Fire School, Lamar University, 1995
Chemical Process Technician Course, Petrolite Corporation, 1992
Man-Lift Training (3/1/05)
Source Sampling and CEMS Workshop, Walter Smith & Associates, 2004
Preparation for the SES QSTI Exam Workshop, Walter Smith and Associates, 2005
Fred Pryor®:Team Building Seminar, 2007
Qualified Individual – Cylinder Gas Audits
Qualified Individual – Instrumental Methods
Qualified Individual – Portable Combustion Analyzer

APPENDIX C – Calibration Data

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BP Products North America Inc.
Texas City Refinery
Texas City, TX

Calibration Data

SRU Incinerator Exhaust Stack
December 22, 2010

Calibration Gas & Analyzer Configuration Data		O_2_1	CO_2_1	SO_2_1	NO_x_1	CO_1	THC_1
Trailer 10	Mfg. And Model No.:	Servomex 1440	Servomex 1440	Teledyne 100EH	CAI 400-CLD	Thermo 48i	VIG 200
	Serial Number:	01440D1/4034	01440D1/4034	269	6L09003	0708021118	4091009
	Range Setting:	25	20	500	100	500	100
	Calibration span:	20.00	19.50	221.0	93.0	393.0	83.5
		O_2_1	CO_2_1	SO_2_1	NO_x_1	CO_1	THC_1
Zero Gas	Cyl #:	Nitrogen	Nitrogen	Nitrogen	Nitrogen	Nitrogen	Nitrogen
	value:	0.00	0.00	0.0	0.0	0.0	0.0
Low Calibration Gas	Cyl #:						ALM064197
	value:						29.9
Mid Calibration Gas	Cyl #:	ALM054154	ALM054154	ALM058548	CC160947	ALM054154	ALM047768
	value:	9.58	9.61	97.5	50.9	198.0	49.7
High Calibration Gas	Cyl #:	ALM053126	ALM053126	ALM004243	CC62922	ALM053126	ALM050961
	value:	20.00	19.50	221.0	93.0	393.0	83.5
Bias Gas Used	Run 1	MID	MID	MID	MID	MID	MID
Calibration Error							
	Zero Reading	**-0.03**	**-0.05**	**-0.1**	**-0.1**	**0.5**	**0.1**
	Low Gas Predicted Response (THC)						**29.96**
	Low Reading						**29.6**
	Mid Gas Predicted Response (THC)						**49.74**
	Mid Reading	**9.62**	**9.60**	**98.5**	**49.5**	**198.7**	**50.7**
	High Reading	**20.05**	**19.58**	**220.6**	**93.6**	**394.2**	**83.5**
Percent Error	Zero Reading	**0.15**	**0.26**	**0.05**	**0.11**	**0.13**	
	Low Reading						**1.22**
	Mid Reading	**0.20**	**0.05**	**0.45**	**1.51**	**0.18**	**-1.93**
	High Reading	**0.25**	**0.41**	**0.18**	**0.65**	**0.31**	
Run 1		O_2_1	CO_2_1	SO_2_1	NO_x_1	CO_1	THC_1
Pretest Bias	Zero Reading	**0.03**	**-0.04**	**0.5**	**-0.1**	**0.8**	**0.1**
	Upscale Reading	**9.56**	**9.60**	**97.8**	**49.1**	**198.2**	**50.7**
	Zero Bias	0.30	0.05	0.27	0.00	0.08	NA
	Span Bias	-0.30	0.00	-0.32	-0.43	-0.13	NA
Post Test Bias	Zero Reading	**0.01**	**-0.04**	**0.4**	**0.0**	**0.8**	**0.1**
	Upscale Reading	**9.55**	**9.63**	**97.7**	**49.2**	**198.5**	**50.0**
	Zero Bias	0.20	0.05	0.23	0.11	0.08	NA
	Span Bias	-0.35	0.15	-0.36	-0.32	-0.05	NA
	Zero Drift	0.10	0.00	0.05	0.11	0.00	0.00
	Span Drift	0.05	0.15	0.05	0.11	0.08	-0.70
Calculated Data							
	Avg. Zero Bias (C_o)=	0.02	-0.04	0.45	-0.05	0.80	0.10
	Avg. Upscale Bias(C_m)=	9.56	9.62	97.75	49.15	198.35	50.35
	Actual Upscale Concentration (C_{ma})=	9.58	9.61	97.50	50.90	198.00	49.70
	Measured Concentration (C) = Run 1	1.917	5.704	122.984	14.098	193.309	11.610
	Corrected Concentration (C_{gas}) = C_{gas}= (C-C_o) x (C_{ma}/(C_m-C_o)) Run 1	**1.906**	**5.717**	**122.79**	**14.64**	**192.95**	**11.38**
Run 2		O_2_1	CO_2_1	SO_2_1	NO_x_1	CO_1	THC_1
Pretest Bias	Zero Reading	**0.01**	**-0.04**	**0.4**	**0.0**	**0.8**	**0.1**
	Upscale Reading	**9.55**	**9.63**	**97.7**	**49.2**	**198.5**	**50.0**
	Zero Bias	0.20	0.05	0.23	0.11	0.08	NA
	Span Bias	-0.35	0.15	-0.36	-0.32	-0.05	NA
Post Test Bias	Zero Reading	**0.01**	**-0.04**	**0.8**	**0.0**	**0.8**	**0.1**
	Upscale Reading	**9.59**	**9.60**	**97.4**	**49.2**	**197.9**	**50.1**
	Zero Bias	0.20	0.05	0.41	0.11	0.08	NA
	Span Bias	-0.15	0.00	-0.50	-0.32	-0.20	NA
	Zero Drift	0.00	0.00	0.18	0.00	0.00	0.00
	Span Drift	0.20	0.15	0.14	0.00	0.15	0.10
Calculated Data							
	Avg. Zero Bias (C_o)=	0.01	-0.04	0.60	0.00	0.80	0.10
	Avg. Upscale Bias(C_m)=	9.57	9.62	97.55	49.20	198.20	50.05
	Actual Upscale Concentration (C_{ma})=	9.58	9.61	97.50	50.90	198.00	49.70
	Measured Concentration (C) = Run 2	1.945	6.245	118.140	14.081	189.037	12.968
	Corrected Concentration (C_{gas}) = C_{gas}= (C-C_o) x (C_{ma}/(C_m-C_o)) Run 2	**1.939**	**6.256**	**118.21**	**14.57**	**188.81**	**12.80**

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BP Products North America Inc.
Texas City Refinery
Texas City, TX

Calibration Data

SRU Incinerator Exhaust Stack
December 22, 2010

Run 3		O_2_1	CO_2_1	SO_2_1	NO_x_1	CO_1	THC_1
Pretest Bias	Zero Reading	**0.01**	**-0.04**	**0.8**	**0.0**	**0.8**	**0.1**
	Upscale Reading	**9.59**	**9.60**	**97.4**	**49.2**	**197.9**	**50.1**
	Zero Bias	0.20	0.05	0.41	0.11	0.08	NA
	Span Bias	-0.15	0.00	-0.50	-0.32	-0.20	NA
Post Test Bias	Zero Reading	**0.00**	**-0.04**	**0.7**	**0.0**	**0.7**	**0.1**
	Upscale Reading	**9.61**	**9.65**	**98.2**	**49.1**	**197.3**	**50.5**
	Zero Bias	0.15	0.05	0.36	0.11	0.05	NA
	Span Bias	-0.05	0.26	-0.14	-0.43	-0.36	NA
	Zero Drift	0.05	0.00	0.05	0.00	0.03	0.00
	Span Drift	0.10	0.26	0.36	0.11	0.15	0.40
Calculated Data							
	Avg. Zero Bias (C_0)=	0.01	-0.04	0.75	0.00	0.75	0.10
	Avg. Upscale Bias(C_m)=	9.60	9.63	97.8	49.15	197.60	50.30
	Actual Upscale Concentration (C_{ma})=	9.58	9.61	97.5	50.90	198.00	49.70
	Measured Concentration (C) = Run 3	1.872	5.651	118.35	14.068	206.266	11.296
	Corrected Concentration (C_{gas}) = C_{gas}= (C-C_o) x (C_{ma}/(C_m-C_o)) Run 3	**1.864**	**5.659**	**118.15**	**14.57**	**206.72**	**11.08**

Golden Specialty, Inc.

NO_2 Converter Efficiency

Trailer 10

Date	Time	O_2_1	NO_x_1	CO_1
		System 1		
		%	ppm	ppm
12/22/2010	9:55:00	0.051	49.47	0.53
12/22/2010	9:56:00	0.164	44.46	0.54
12/22/2010	9:57:00	0.165	44.41	0.54
12/22/2010	9:58:00	0.073	23.79	0.61
	400-CLD		**SN -**	**6L09003**
	Converter Efficiency		**91.38%**	
Cylinder #	**ALM014874**	**Cylinder Value**	**48.6**	**ppm**
Converter Efficiency must be equal to or greater than 90%				

Method 7E in Appendix A of 40 CFR Part 60.

GOLDEN SPECIALTY

SITE **BP Texas City** **Project 11BPTC1508**
Location **SRU** **Date** **1/6/2011**

METHOD 15 H2S ANALYSIS

CALIBRATION CURVE DATA

File Name	Date	Time	H2S (ppm)
2ppmH2SCal032	1/6/2011	9:47:52	2.00
2ppmH2SCal033	1/6/2011	9:51:30	2.00
2ppmH2SCal034	1/6/2011	9:55:10	2.00
4.5ppmH2SCal020	1/6/2011	9:09:38	4.50
4.5ppmH2SCal021	1/6/2011	9:13:16	4.50
4.5ppmH2SCal022	1/6/2011	9:16:54	4.50
9.93ppmH2SCal012	1/6/2011	8:45:59	9.93
9.93ppmH2SCal013	1/6/2011	8:49:38	9.93
9.93ppmH2SCal014	1/6/2011	8:53:18	9.93

CALIBRATION CHECK DATA

Pre-Test

File Name	Date	Time		H2S Conc. 2ppm	Std. Deviation (<5% required)
2ppmH2SChk035	1/6/2011	9:59:40		2.075	
2ppmH2SChk036	1/6/2011	10:03:19		2.049	
2ppmH2SChk037	1/6/2011	10:06:58		2.075	
			Avg.	2.066	3.30%
				H2S Conc. 4.5ppm	
4.5ppmH2SChk039	1/6/2011	10:15:16		4.288	
4.5ppmH2SChk040	1/6/2011	10:18:54		4.437	
4.5ppmH2SChk041	1/6/2011	10:22:32		4.385	
			Avg.	4.370	2.88%

GOLDEN SPECIALTY

SITE **BP Texas City** **Project 11BPTC1508**
Location **SRU** **Date** **1/6/2011**

File Name	Date	Time		H2S Conc. 9.93ppm	Std. Deviation (<5% required)
9.93ppmH2SChk043	1/6/2011	10:31:07		9.865	
9.93ppmH2SChk044	1/6/2011	10:34:45		9.927	
9.93ppmH2SChk045	1/6/2011	10:38:23		9.906	
			Avg.	9.899	0.31%

Post Test

File Name	Date	Time		H2S Conc. 2.066ppm	Std. Deviation (<5% required)
2ppmH2SChk1050	1/7/2011	9:39:16		2.026	
2ppmH2SChk1051	1/7/2011	9:44:11		2.013	
2ppmH2SChk1052	1/7/2011	9:47:49		2.042	
			Avg.	2.027	1.89%
				H2S Conc. 4.370ppm	
4.5ppmH2SChk1042	1/7/2011	9:13:05		4.652	
4.5ppmH2SChk1043	1/7/2011	9:16:43		4.575	
4.5ppmH2SChk1044	1/7/2011	9:20:21		4.528	
			Avg.	4.585	4.92%
				H2S Conc. 9.899ppm	
9.93ppmH2SChk1056	1/7/2011	9:57:36		10.137	
9.93ppmH2SChk1057	1/7/2011	10:01:14		10.165	
9.93ppmH2SChk1058	1/7/2011	10:04:52		10.299	
			Avg.	10.200	3.04%

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GOLDEN SPECIALTY

SITE **BP Texas City** **Project 11BPTC1508**
Location **SRU** **Date** **1/7/2011**

LINE LOSS DATA

File Name	Date	Time	Calibrated H2S Conc.	Line Loss H2S Conc.	Std. Deviation (<20%
9.93ppmH2SLineLoss12	1/7/2011	12:57:55	9.930	8.063	
9.93ppmH2SLineLoss13	1/7/2011	13:00:33	9.930	8.199	
9.93ppmH2SLineLoss14	1/7/2011	13:03:10	9.930	7.900	
			Avg.	8.054	18.89%

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GOLDEN SPECIALTY

SITE **BP Texas City** **Project 11BPTC1508**
Location **SRU** **Date** **1/6/2011**

PURGE DATA

Purge 12:24 - 12:39			
File Name	Date	Time	H2S (ppm)
H2S SRU Sampling005	1/6/2011	12:24:44	1.887
H2S SRU Sampling006	1/6/2011	12:28:22	1.864
H2S SRU Sampling007	1/6/2011	12:32:01	1.678
H2S SRU Sampling008	1/6/2011	12:35:40	1.643
H2S SRU Sampling009	1/6/2011	12:39:18	1.521

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United Specialty Gases

1301 Lathrop
Houston, TX 77020
713-675-6251

Date: 1/3/2011
Product: USG-M02B47K03AL
Fill Pressure: 2000 psig
Grade: Certified
Expiration: 1/3/2012

Customer: Golden Specialty
Lot Number: N/A
UN#: 1954
Analytical Accuracy: +/- 5 %
Cylinder: EB0020021

Product	Requested Specification	Certified Specification
Hydrogen Sulfide	*10 ppm*	*9.93 ppm*
Nitrogen	*Balance*	*Balance*

This mixture was manufactured gravimetrically on laboratory balances
Calibrated with N.I.S.T. traceable weights.

Analyst:

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.: SBS081602CONSULTING
Project No.: 04-78361-002

Customer
GOLDEN SPECIALTY CONSULTING, LTD

931 SEACO COURT
DEER PARK TX 77536

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: ALM053126 **Certification Date:** 09Jul2009 **Exp. Date:** 09Jul2012
Cylinder Pressure*:** 1800 PSIG **Batch No:** LAP0004531

COMPONENT	CERTIFIED CONCENTRATION (Moles)		ACCURACY**	TRACEABILITY
CARBON DIOXIDE	19.5	%	+/- 1%	Direct NIST and VSL
CARBON MONOXIDE	393	PPM	+/- 1%	Direct NIST and VSL
OXYGEN	20.0	%	+/- 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 1675	02Oct2012	K002502	13.93	%	CARBON DIOXIDE
NTRM 1679	02Oct2010	KAL003168	101.0	PPM	CARBON MONOXIDE
NTRM 2350	01Apr2012	A6820	23.51	%	OXYGEN

INSTRUMENTATION

INSTRUMENT/MODEL/SERIAL#	DATE LAST CALIBRATED	ANALYTICAL PRINCIPLE
MTIA/M200/171109	26Jun2009	GAS CHROMATOGRAPHY
SIEMENS CO/ULTRAMAT 6E-HIGH/WO355	23Jun2009	NDIR
SERVOMEX/MODEL 244A/701/716	29Jun2009	PARAMAGNETIC

ANALYZER READINGS

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

First Triad Analysis	Second Triad Analysis	Calibration Curve
CARBON DIOXIDE		
Date: 26Jun2009 Response Unit: AREA		Concentration=A+Bx+Cx2+Dx3+Ex4
Z1=398.0000 R1=1755262. T1=1489408.		r=0.9999946
R2=1753494. Z2=588.0000 T2=1490733.		Constants: A=-0.03633782
Z3=463.0000 T3=1491815. R3=1756603.		B=.0000132179 C=
Avg. Concentration: 19.51 %		D= E=
CARBON MONOXIDE		
Date: 26Jun2009 Response Unit: PPM	Date: 09Jul2009 Response Unit: PPM	Concentration=A+Bx+Cx2+Dx3+Ex4
Z1=0.00000 R1=100.4000 T1=392.1000	Z1=0.00000 R1=100.4000 T1=392.9000	r=0.9999984
R2=100.4000 Z2=0.00000 T2=392.1000	R2=100.5000 Z2=0.00000 T2=392.9000	Constants: A=0.413018185
Z3=0.00000 T3=392.1000 R3=100.4000	Z3=0.00000 T3=392.8000 R3=100.5000	B=1.000137677 C=
Avg. Concentration: 393.0 PPM	Avg. Concentration: 393.5 PPM	D= E=
OXYGEN		
Date: 30Jun2009 Response Unit: VOLTS		Concentration=A+Bx+Cx2+Dx3+Ex4
Z1=0.00000 R1=0.99140 T1=0.84330		r=0.9999961
R2=0.99240 Z2=0.00170 T2=0.84410		Constants: A=-0.01708637
Z3=0.00190 T3=0.84440 R3=0.99280		B=23.72151747 C=
Avg. Concentration: 19.95 %		D= E=

APPROVED BY: DAVID KELLY

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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: Interference Free Multi-Component EPA Protocol Gas

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

P.O. No.: SBS081602
Document # : 38974627-003

Customer
GOLDEN SPECIALTY CONSULTING, LTD

931 SEACO COURT
DEER PARK TX 77536
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: ALM054154 **Certification Date:** 23Aug2010 **Exp. Date:** 24Aug2013
Cylinder Pressure*:** 1900 PSIG **Batch No:** LAP0025365

COMPONENT	CERTIFIED CONCENTRATION (Moles)		ACCURACY**	TRACEABILITY
CARBON MONOXIDE	198	PPM	+/- 1%	Direct NIST and VSL
CARBON DIOXIDE	9.61	%	+/- 1%	Direct NIST and VSL
OXYGEN	9.58	%	+/- 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 2636	02Oct2011	KAL003851	240.8	PPM	CARBON MONOXIDE
NTRM 1675	02Oct2012	K002502	13.93	%	CARBON DIOXIDE
NTRM 2350	01May2013	K026427	23.50	%	OXYGEN

INSTRUMENTATION

INSTRUMENT/MODEL/SERIAL#	DATE LAST CALIBRATED	ANALYTICAL PRINCIPLE
FTIR//MG-09-149	17Aug2010	FTIR
SIEMENS CO/ULTRAMAT 6E-HIGH/WO355	02Aug2010	NDIR
BIG SERVOMEX/1101-4605C/4605C	16Aug2010	PARAMAGNETIC

ANALYZER READINGS

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

CARBON MONOXIDE

First Triad Analysis
Date: 23Aug2010 Response Unit: PPM
Z1 = 0.00000 R1 = 239.1000 T1 = 196.9500
R2 = 239.1000 Z2 = 0.00000 T2 = 197.1500
Z3 = 0.00000 T3 = 197.3500 R3 = 239.1000
Avg. Concentration: 198.5 PPM

Second Triad Analysis
Date: 31Aug2010 Response Unit: PPM
Z1 = 0.00000 R1 = 239.0000 T1 = 196.8500
R2 = 239.0000 Z2 = 0.00000 T2 = 196.8500
Z3 = 0.00000 T3 = 196.8500 R3 = 239.0000
Avg. Concentration: 198.3 PPM

Calibration Curve
Concentration = A + Bx + Cx2 + Dx3 + Ex4
r = 0.9999999
Constants: A = -0.04141391
B = 1.007199913 C =
D = E =

CARBON DIOXIDE

First Triad Analysis
Date: 23Aug2010 Response Unit: %
Z1 = 0.00039 R1 = 13.87398 T1 = 9.58746
R2 = 13.91076 Z2 = 0.00054 T2 = 9.58943
Z3 = 0.00224 T3 = 9.59616 R3 = 13.91757
Avg. Concentration: 9.611 %

Second Triad Analysis
Z1 = 0.00000 R1 = 0.00000 T1 = 0.00000
R2 = 0.00000 Z2 = 0.00000 T2 = 0.00000
Z3 = 0.00000 T3 = 0.00000 R3 = 0.00000
Avg. Concentration: 0.000

Calibration Curve
Concentration = A + Bx + Cx2 + Dx3 + Ex4
r = 9.99988E-1
Constants: A = 0.00000E+0
B = 9.08172E-1 C = 1.23160E-2
D = E =

OXYGEN

First Triad Analysis
Date: 31Aug2010 Response Unit: VOLTS
Z1 = 0.00000 R1 = 0.88200 T1 = 0.36000
R2 = 0.88150 Z2 = 0.00000 T2 = 0.36000
Z3 = 0.00000 T3 = 0.36000 R3 = 0.88110
Avg. Concentration: 9.575 %

Calibration Curve
Concentration = A + Bx + Cx2 + Dx3 + Ex4
r = 0.9999978
Constants: A = -0.02323424
B = 26.57933266 C =
D = E =

APPROVED BY: Nora Pike for DAVID KELLY

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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

SCOTT SPECIALTY GASES
9810 BAY AREA BLVD
PASADENA, TX 77507

P.O. No.: SBS081602CONSULTING
Project No.: 04-71247-001

Customer

GOLDEN SPECIALTY CONSULTING, LTD

931 SEACO COURT
DEER PARK TX 77536

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: ALM004243 **Certification Date:** 05Feb2009 **Exp. Date:** 05Feb2011
Cylinder Pressure*:** 1796 PSIG **Prev Certification Date:** 18Jun2008

COMPONENT	CERTIFIED CONCENTRATION (Moles)		ANALYTICAL ACCURACY**	TRACEABILITY
SULFUR DIOXIDE *	221	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 Prot

REFERENCE STANDARD

TYPE/SRM NO.	EXPIRATION DATE	CYLINDER NUMBER	CONCENTRATION	COMPONENT
NTRM 0260	02Oct2012	ALM038827	254.4 PPM	SULFUR DIOXIDE

INSTRUMENTATION

INSTRUMENT/MODEL/SERIAL#	DATE LAST CALIBRATED	ANALYTICAL PRINCIPLE
FTIR//000929060	12Jan2009	FTIR

ANALYZER READINGS

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

SULFUR DIOXIDE *

First Triad Analysis

Date: 18Jun2008	Response Unit:PPM	
Z1=0.00000	R1=0.00000	T1=0.00000
R2=0.00000	Z2=0.00000	T2=0.00000
Z3=0.00000	T3=0.00000	R3=0.00000
Avg. Concentration:	221.0	PPM

Second Triad Analysis

Date: 05Feb2009	Response Unit: PPM	
Z1=-0.02940	R1=252.7838	T1=219.3824
R2=252.8226	Z2=-0.00443	T2=219.4279
Z3=0.06677	T3=219.4371	R3=252.8336
Avg. Concentration:	220.8	PPM

Calibration Curve

Concentration=A+Bx+Cx2+Dx3+Ex4	
r=9.99992E-1	
Constants:	A=0.00000E+0
B=9.97091E-1	C=0.00000E+0
D=0.00000E+0	E=0.00000E+0

APPROVED BY: _____
Ramien JR

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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.: SBS081602CONSULTING
Project No.: 04-75617-003

Customer

GOLDEN SPECIALTY CONSULTING, LTD
931 SEACO COURT
DEER PARK TX 77536

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: ALM058548 **Certification Date:** 26Jan2009 **Exp. Date:** 26Jan2011
Cylinder Pressure*:** 2015 PSIG

COMPONENT	CERTIFIED CONCENTRATION (Moles)		ANALYTICAL ACCURACY**	TRACEABILITY
SULFUR DIOXIDE *	97.5	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 Pro

REFERENCE STANDARD

TYPE/SRM NO.	EXPIRATION DATE	CYLINDER NUMBER	CONCENTRATION	COMPONENT
NTRM 1694	02Oct2011	ALM050779	98.10 PPM	SULFUR DIOXIDE

INSTRUMENTATION

INSTRUMENT/MODEL/SERIAL#	DATE LAST CALIBRATED	ANALYTICAL PRINCIPLE
FTIR//000929060	12Jan2009	FTIR

ANALYZER READINGS

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

SULFUR DIOXIDE *

First Triad Analysis

Date: 19Jan2009	Response Unit:PPM	
Z1=-0.01751	R1=97.94716	T1=97.37774
R2=97.98020	Z2=-0.00595	T2=97.38296
Z3=0.00318	T3=97.40009	R3=97.99152
Avg. Concentration:	97.51	PPM

Second Triad Analysis

Date: 26Jan2009	Response Unit: PPM	
Z1=-0.02672	R1=97.83111	T1=97.09487
R2=97.86152	Z2=-0.01364	T2=97.10987
Z3=-0.00983	T3=97.46669	R3=97.86439
Avg. Concentration:	97.47	PPM

Calibration Curve

Concentration=A+Bx+Cx2+Dx3+Ex4	
r=9.99992E-1	
Constants:	A=0.00000E+0
B=9.97091E-1	C=0.00000E+0
D=0.00000E+0	E=0.00000E+0

APPROVED BY: _____
Ramlen JR

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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.: SBS081602CONSULTING
Project No.: 04-83273-001

Customer

GOLDEN SPECIALTY CONSULTING, LTD
931 SEACO COURT
DEER PARK TX 77536

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: CC62922 **Certification Date:** 23Feb2010 **Exp. Date:** 23Feb2012
Cylinder Pressure*:** 2000 PSIG **Batch No:** LAP0014162

COMPONENT	CERTIFIED CONCENTRATION (Moles)		ANALYTICAL ACCURACY**	TRACEABILITY
NITRIC OXIDE	92.9	PPM	+/- 1%	Direct NIST and VSL
NITROGEN - OXYGEN FREE		BALANCE		
TOTAL OXIDES OF NITROGEN	93.0	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	15Oct2012	KAL004343	95.84 PPM	NITRIC OXIDE

INSTRUMENTATION

INSTRUMENT/MODEL/SERIAL#	DATE LAST CALIBRATED	ANALYTICAL PRINCIPLE
FTIR//000929060	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: 16Feb2010	Response Unit: PPM		Date: 23Feb2010	Response Unit: PPM		Concentration=A+Bx+Cx2+Dx3+Ex4	
Z1=-0.12369	R1=96.00847	T1=93.28321	Z1=-0.03650	R1=96.02930	T1=93.04333	r=9.99999E-1	
R2=96.28699	Z2=0.08545	T2=93.30925	R2=96.31809	Z2=0.01416	T2=93.06258	Constants:	A=0.00000E+0
Z3=0.46473	T3=93.37207	R3=96.31014	Z3=0.25979	T3=93.41361	R3=96.38727	B=9.69864E-1	C=1.81000E-4
Avg. Concentration:	92.97	PPM	Avg. Concentration:	92.78	PPM	D=0.00000E+0	E=0.00000E+0

Special Notes: NOX CERTIFIED ON CHEMI

APPROVED BY: Nora Pike
for Ron Stitt

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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.: SBS081602
Document # : 40060248-001

Customer
GOLDEN SPECIALTY CONSULTING, LTD

931 SEACO COURT
DEER PARK TX 77536
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: CC160947 **Certification Date:** 12Aug2010 **Exp. Date:** 11Aug2012
Cylinder Pressure*:** 2000 PSIG **Batch No:** LAP0030585

COMPONENT	CERTIFIED CONCENTRATION (Moles)		ACCURACY**	TRACEABILITY
NITRIC OXIDE	49.8	PPM	+/- 1%	Direct NIST and VSL
NITROGEN - OXYGEN FREE		BALANCE		
TOTAL OXIDES OF NITROGEN.	50.9	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	KAL004260	50.98 PPM	NITRIC OXIDE

INSTRUMENTATION

INSTRUMENT/MODEL/SERIAL#	DATE LAST CALIBRATED	ANALYTICAL PRINCIPLE
FTIR//MG-09-149	28Jul2010	FTIR

ANALYZER READINGS

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

First Triad Analysis

NITRIC OXIDE
Date: 04Aug2010 Response Unit: PPM
Z1=0.16570 R1=50.60713 T1=49.49725
R2=50.67173 Z2=0.19709 T2=49.61049
Z3=0.27382 T3=49.72198 R3=50.92724
Avg. Concentration: 49.82 PPM

Second Triad Analysis

Date: 12Aug2010 Response Unit: PPM
Z1=-0.09572 R1=50.90925 T1=49.48475
R2=50.93635 Z2=0.02566 T2=49.71321
Z3=0.10303 T3=49.86343 R3=51.07304
Avg. Concentration: 49.67 PPM

Calibration Curve

Concentration=A+Bx+Cx2+Dx3+Ex4
r=9.99986E-1
Constants: A=0.00000E+0
B=9.60141E-1 C=1.89000E-4
D=0.00000E+0 E=0.00000E+0

Special Notes: NOx VALUE FROM CHEM-E

APPROVED BY: for Nora P. Ike
GARY WRIGHT

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AIR LIQUIDE Air Liquide America Specialty Gases LLC Scott™

COMPLIANCE CLASS

Dual-Analyzed Calibration Standard

500 WEAVER PARK RD, LONGMONT, CO 80501 Phone: 888-253-1635 Fax: 303-772-7673

CERTIFICATE OF ACCURACY: EPA Protocol Gas

Assay Laboratory

AIR LIQUIDE AMERICA SPECIALTY GASES LLC
500 WEAVER PARK RD
LONGMONT, CO 80501

P.O. No.: SBS081602
Project No.: 08-90280-001

Customer

GOLDEN SPECIALTY CONSULTING, LTD
931 SEACO COURT
DEER PARK TX 77536

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: ALM014874 **Certification Date:** 09Jul2010 **Exp. Date:** 07Jan2011
Cylinder Pressure*:** 1900 PSIG

COMPONENT	CERTIFIED CONCENTRATION (Moles)		ANALYTICAL ACCURACY**	TRACEABILITY
NITROGEN DIOXIDE	48.6	PPM	+/- 2%	VSL and NIST
NITROGEN		BALANCE		

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

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

REFERENCE STANDARD

TYPE/SRM NO.	EXPIRATION DATE	CYLINDER NUMBER	CONCENTRATION	COMPONENT
NMI PRM	15Dec2010	767381	100.1 PPM	NITROGEN DIOXIDE

INSTRUMENTATION

INSTRUMENT/MODEL/SERIAL#	DATE LAST CALIBRATED	ANALYTICAL PRINCIPLE
NONOX/CLA-220/41528750062	09Jul2010	CHEMILUMINESCENT

APPROVED BY: JW
JON WITZAK

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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.: SBS081602CONSULTING
Project No.: 04-83516-003

Customer

GOLDEN SPECIALTY CONSULTING, LTD
931 SEACO COURT
DEER PARK TX 77536

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: ALM050961 **Certification Date:** 19Apr2010 **Exp. Date:** 19Apr2013
Cylinder Pressure*:** 2000 PSIG **Batch No:** LAP0015267

COMPONENT	CERTIFIED CONCENTRATION (Moles)		ANALYTICAL ACCURACY**	TRACEABILITY
PROPANE	83.5	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	19Apr2010	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: 19Apr2010 Response Unit: PPM

Z1=0.00000	R1=38125.00	T1=32186.00
R2=37858.00	Z2=0.00000	T2=32112.00
Z3=0.00000	T3=32077.00	R3=38002.00

Avg. Concentration: 83.50 PPM

Concentration=A+Bx+Cx2+Dx3+Ex4
r=0.999999196 1668
Constants: A=-0.02589997
B=0.002606169 C=
D= E=

APPROVED BY: CRISSA MARTIN

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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.: SBS081602CONSULTING
Project No.: 04-85371-007

Customer

GOLDEN SPECIALTY CONSULTING, LTD
931 SEACO COURT
DEER PARK TX 77536

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: ALM047768 **Certification Date:** 21Jun2010 **Exp. Date:** 20Jun2013
Cylinder Pressure*:** 1940 PSIG **Batch No:** LAP0019395

COMPONENT	CERTIFIED CONCENTRATION (Moles)		ANALYTICAL ACCURACY**	TRACEABILITY
PROPANE	49.7	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	18Jun2010	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: 21Jun2010 Response Unit: PPM

Z1=0.00000	R1=36134.00	T1=18106.00
R2=35957.00	Z2=0.00000	T2=18128.00
Z3=0.00000	T3=18140.00	R3=36067.00

Avg. Concentration: 49.66 PPM

Concentration=A+Bx+Cx2+Dx3+Ex4
r=0.999999711
Constants: A=0.003809582
B=0.002737885 C=
D= E=

Special Notes: LAP0019395

APPROVED BY: ROGER NGUYEN

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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.: SBS081602CONSULTING
Project No.: 04-85371-003

Customer

GOLDEN SPECIALTY CONSULTING, LTD

931 SEACO COURT
DEER PARK TX 77536

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: ALM064197 **Certification Date:** 21Jun2010 **Exp. Date:** 20Jun2013
Cylinder Pressure*:** 1980 PSIG **Batch No:** LAP0019385

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	ALM013540	98.80 PPM	PROPANE

INSTRUMENTATION

INSTRUMENT/MODEL/SERIAL#	DATE LAST CALIBRATED	ANALYTICAL PRINCIPLE
HP-Y/HP 6890/US00000974	18Jun2010	GAS CHROMATOGRAPHY

ANALYZER READINGS

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

First Triad Analysis

PROPANE

Date: 21Jun2010 Response Unit: PPM

Z1=0.00000	R1=36134.00	T1=10903.00
R2=35957.00	Z2=0.00000	T2=10919.00
Z3=0.00000	T3=10942.00	R3=36067.00

Avg. Concentration: 29.92 PPM

Second Triad Analysis

Calibration Curve

Concentration=A+Bx+Cx2+Dx3+Ex4
r=0.999999711
Constants: A=0.003809582
B=0.002737885 C=
D= E=

Special Notes: LAP0019385

APPROVED BY: ROGER NGUYEN

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APEX INSTRUMENTS
EPA Method 5
522 Series Meter Box Calibration
Pre-Test Orifice Method
English Meter Box Units, English K' Factor

Model #: Apex
Serial #: 0904021

Date: 1/4/10
Barometric Pressure: 30.46 (in. Hg)
Theoretical Critical Vacu 14.37 (in. Hg)

!!!!!!!!!
IMPORTANT For valid test results, the Actual Vacuum should be 1 to 2 in. Hg greater than the Theoretical Critical Vacuum shown above.
IMPORTANT The Critical Orifice Coefficient, K', must be entered in English units, (ft)^3*(deg R)^0.5/((in.Hg)*(min)).
!!!!!!!!!

DRY GAS METER READINGS										CRITICAL ORIFICE READINGS							
					Initial Temps.		Final Temps.					-- Ambient Temperature --			-- Average Temperatures --		
ΔH (in H_2O)	Time (min)	Volume Initial (ft³)	Volume Final (ft³)	Volume Total (ft³)	Inlet (°F)	Outlet (°F)	Inlet (°F)	Outlet (°F)	Orifice Serial #	K' Orifice Coefficient (see above)	Actual Vacuum (in Hg)	Inicial (°F)	Final (°F)	Average (°F)	DGM Outlet (°K)	DGM Overall (°K)	Ambient Temp (°K)
0.68	11.30	936.200	941.200	5.000		55.0		54.0	48	0.3418	23.5	46.3	46.5	46.4	514.5	514.5	506.4
1.20	8.45	942.200	947.200	5.000		53.0		53.0	55	0.4575	22.0	46.4	46.2	46.3	513.0	513.0	506.3
2.00	6.53	948.800	953.800	5.000		52.0		53.0	63	0.5507	20.0	46.0	46.2	46.1	512.5	512.5	506.1
3.70	4.77	955.400	960.400	5.000		53.0		53.0	73	0.8089	17.5	45.8	46.1	46.0	513.0	513.0	506.0
5.60	3.87	963.100	968.100	5.000		54.0		56.0	81	0.9956	15.0	46.7	47.0	46.9	515.0	515.0	506.9

********** RESULTS **********

--- DRY GAS METER ---		--------- ORIFICE ---------			-- DRY GAS METER --			--------- ORIFICE ---------			
					CALIBRATION FACTOR Y				CALIBRATION FACTOR ΔH@		
VOLUME CORRECTED Vm(std) (dscf)	VOLUME CORRECTED Vm(std) (liters)	VOLUME CORRECTED Vcr(std) (dscf)	VOLUME CORRECTED Vcr(std) (liters)	VOLUME NOMINAL Vcr (dscf)	Value (number)	Variation (number)	Pass / Fail	Value (in H2O)	Value (mm H2O)	Variation (in H2O)	Pass / Fail
5.230	148.1	5.228	148.1	4.927	1.000	0.007	Pass	1.867	47.42	0.030	Pass
5.252	148.7	5.233	148.2	4.931	0.996	0.004	Pass	1.844	46.84	0.007	Pass
5.267	149.2	5.225	148.0	4.922	0.992	0.000	Pass	1.845	46.85	0.008	Pass
5.264	149.6	5.221	147.9	4.917	0.988	-0.004	Pass	1.817	46.16	-0.020	Pass
5.287	149.7	5.208	147.5	4.913	0.985	-0.007	Pass	1.812	46.02	-0.025	Pass

Average Y -------> 0.992

Average ΔH@ -------> 1.837 46.66

Note: For Calibration Factor Y, the ratio of the reading of the calibration meter to the dry gas meter, acceptable tolerance of individual values from the average is +-0.02.

For Orifice Calibration Factor ΔH@, the orifice differential pressure in inches of H_2O that equates to 0.75 cfm of air at 68 F and 29.92 inches of Hg, acceptable tolerance of individual values from the average is +-0.2. SIGNED: Gordon L. Bossett Date: 1/04/10

EPA Method 5
Meter Box Calibration
Post-Test Orifice Method
English Meter Box Units, English K' Factor

Version: 2.3

Model #: Apex
Serial # 904021

Date: ----------> 01/26/11
Barometric Pressure: ----------> 30.22 (in. Hg)

Annual Factor of Acutal Orifice: 0.992

IMPORTANT: Select the Post-Test orifice serial number that closely assimilates measured ΔH during the last test.

---------- DRY GAS METER READINGS ----------									-CRITICAL ORIFICE READINGS-					
		Volume	Volume	Volume	Initial Temps.		Final Temps.		Orifice	K' Orifice	Actual -- Ambient Temperature --			
dH	Time	Initial	Final	Total	Inlet	Outlet	Inlet	Outlet	Serial#	Coefficient	Vacuum	Initial	Final	Average
(in H2O)	(min)	(cu ft)	(cu ft)	(cu ft)	(deg F)	(deg F)	(deg F)	(deg F)	(number)	(see above)	(in Hg)	(deg F)	(deg F)	(deg F)
2.00	7.42	855.900	861.500	5.600		52.0		53.0	63	0.5861	19.0	48.0	48.0	48.0
2.00	8.10	861.700	867.800	6.100		53.0		53.0	63	0.5861	19.0	48.0	48.0	48.0
2.00	9.80	868.000	875.400	7.400		53.0		54.0	63	0.5861	19.0	48.0	48.0	48.0

********** RESULTS **********

--- DRY GAS METER ---		--------- ORIFICE ---------			-- DRY GAS METER --		--------- ORIFICE ---------			
VOLUME	VOLUME	VOLUME	VOLUME	VOLUME	CALIBRATION FACTOR		CALIBRATION FACTOR			
CORRECTED	CORRECTED	CORRECTED	CORRECTED	NOMINAL	Y		dH@			
Vm(std)	Vm(std)	Vcr(std)	Vcr(std)	Vcr	Value	Variation	Value	Value	Variation	
(cu ft)	(liters)	(cu ft)	(liters)	(cu ft)	(number)	(number)	(in H2O)	(mm H2O)	(in H2O)	
5.853	165.8	5.831	165.1	5.557	0.996	-0.002	1.896	48.15	0.002	
6.370	180.4	6.365	180.3	6.066	0.999	0.002	1.894	48.10	0.000	
7.720	218.6	7.701	218.1	7.339	0.998	0.000	1.892	48.05	-0.002	
		Average Y ------->			0.998		1.894	48.10	<------- Average dH@	

0.23% % Error

$$\% Error = \left(\frac{Y_{average} - Y_{orifice}}{Y_{orifice}} \right) \times 100$$

Note: DGM Calibration Factor must not deviate more than 5%.

SIGNED: Dan Loubiere

Date: 1/26/2011

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BPTXC-00003482

C:\Documents and Settings\rgossett\Desktop\Annual Cal Template 2009
Revised: 12/05/03
Version: 2.3

APEX INSTRUMENTS
EPA Method 5
522 Series Meter Box Calibration
Pre-Test Orifice Method
English Meter Box Units, English K' Factor

Model #: APEX 522
Serial #: 904021

Date: ——> 1/4/11
Barometric Pressure: ——> 30.16 (in. Hg)
Theoretical Critical Vacuum:—> 14.23 (in. Hg)

!!!!!!!!
IMPORTANT For valid test results, the Actual Vacuum should be 1 to 2 in. Hg greater than the Theoretical Critical Vacuum shown above.
IMPORTANT The Critical Orifice Coefficient, K', must be entered in English units, (ft)^3*(deg R)^0.5/((in.Hg)*(min)).
!!!!!!!!

DRY GAS METER READINGS									CRITICAL ORIFICE READINGS								
					Initial Temps.		Final Temps.					– Ambient Temperature –			– Average Temperatures –		
ΔH (in H_2O)	Time (min)	Volume Initial (ft^3)	Volume Final (ft^3)	Volume Total (ft^3)	Inlet (°F)	Outlet (°F)	Inlet (°F)	Outlet (°F)	Orifice Serial #	K' Orifice Coefficient (see above)	Actual Vacuum (in Hg)	Initial (°F)	Final (°F)	Average (°F)	DGM Outlet (°R)	DGM Overall (°R)	Ambient Temp (°R)
0.67	11.30	121.000	125.000	5.000	66.0	66.0	66.0	66.0	48	0.3389	22.5	66.0	66.0	66.0	526.0	526.0	526.0
1.20	8.45	127.000	132.000	5.000	66.0	66.0	66.0	67.0	55	0.4539	21.0	66.0	67.0	66.5	526.5	526.3	526.5
2.00	6.53	133.000	138.000	5.000	66.0	67.0	67.0	67.0	63	0.5861	19.5	67.0	67.0	67.0	527.0	526.8	527.0
3.60	4.75	139.000	144.000	5.000	67.0	67.0	67.0	68.0	73	0.8008	16.5	67.0	67.0	67.0	527.5	527.3	527.0
5.50	3.87	145.000	150.000	5.000	67.0	68.0	68.0	69.0	81	0.9864	15.0	67.0	67.0	67.0	526.5	528.0	527.0

RESULTS

— DRY GAS METER —		— ORIFICE —		
VOLUME CORRECTED Vm(std) (dscf)	VOLUME CORRECTED Vm(std) (liters)	VOLUME CORRECTED Vcr(std) (dscf)	VOLUME CORRECTED Vcr(std) (liters)	VOLUME NOMINAL Vcr (dscf)
5.068	143.5	5.036	142.6	4.979
5.070	143.6	5.041	142.8	4.989
5.075	143.7	5.028	142.4	4.981
5.090	144.1	4.997	141.5	4.950
5.106	144.6	5.025	142.3	4.978

– DRY GAS METER – CALIBRATION FACTOR Y		
Value (number)	Variation (number)	Pass / Fail
0.994	0.005	Pass
0.994	0.005	Pass
0.991	0.002	Pass
0.982	-0.007	Pass
0.984	-0.005	Pass
Average Y ——> 0.989		

— ORIFICE — CALIBRATION FACTOR ΔH@			
Value (in H2O)	Value (mm H2O)	Variation (in H2O)	Pass / Fail
1.920	48.77	0.031	Pass
1.917	48.69	0.028	Pass
1.916	48.67	0.027	Pass
1.846	46.88	-0.043	Pass
1.848	46.93	-0.042	Pass
Average ΔH@ ——> 1.889	47.99		

Note: For Calibration Factor Y, the ratio of the reading of the calibration meter to the dry gas meter, acceptable tolerance of individual values from the average is +-0.02.

For Orifice Calibration Factor ΔH@, the orifice differential pressure in inches of H_2O that equates to 0.75 cfm of air at 68 F and 29.92 inches of Hg, acceptable tolerance of individual values from the average is +-0.2.

SIGNED: Gordon L. Gossett Date: 1-04-2011

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BPTXC-00003483

EPA Method 5
Meter Box Calibration
Post-Test Orifice Method
English Meter Box Units, English K' Factor

Version: 2.3

Model #: Apex
Serial # 904021

Date: ----------> 01/26/11
Barometric Pressure: ----------> 30.22 (in. Hg)

Annual Factor of Acutal Orifice: 0.989

IMPORTANT: Select the Post-Test orifice serial number that closely assimilates measured ΔH during the last test.

---------- DRY GAS METER READINGS ----------									-CRITICAL ORIFICE READINGS-					
		Volume	Volume	Volume	Initial Temps.		Final Temps.		Orifice	K' Orifice	Actual	-- Ambient Temperature --		
dH	Time	Initial	Final	Total	Inlet	Outlet	Inlet	Outlet	Serial#	Coefficient	Vacuum	Initial	Final	Average
(in H2O)	(min)	(cu ft)	(cu ft)	(cu ft)	(deg F)	(deg F)	(deg F)	(deg F)	(number)	(see above)	(in Hg)	(deg F)	(deg F)	(deg F)
2.00	7.42	855.900	861.500	5.600		52.0		53.0	63	0.5861	19.0	48.0	48.0	48.0
2.00	8.10	861.700	867.800	6.100		53.0		53.0	63	0.5861	19.0	48.0	48.0	48.0
2.00	9.80	868.000	875.400	7.400		53.0		54.0	63	0.5861	19.0	48.0	48.0	48.0

********** RESULTS **********

--- DRY GAS METER ---		--------- ORIFICE ---------			-- DRY GAS METER --		--------- ORIFICE ---------		
					CALIBRATION FACTOR Y		CALIBRATION FACTOR dH@		
VOLUME CORRECTED Vm(std) (cu ft)	VOLUME CORRECTED Vm(std) (liters)	VOLUME CORRECTED Vcr(std) (cu ft)	VOLUME CORRECTED Vcr(std) (liters)	VOLUME NOMINAL Vcr (cu ft)	Value (number)	Variation (number)	Value (in H2O)	Value (mm H2O)	Variation (in H2O)
5.853	165.8	5.831	165.1	5.557	0.996	-0.002	1.896	48.15	0.002
6.370	180.4	6.365	180.3	6.066	0.999	0.002	1.894	48.10	0.000
7.720	218.6	7.701	218.1	7.339	0.998	0.000	1.892	48.05	-0.002
			Average Y ------->		0.998		1.894	48.10	<------- Average dH@

0.23% % Error

$$\% \, Error = \left(\frac{Y_{average} - Y_{orifice}}{Y_{orifice}} \right) \times 100$$

Note: DGM Calibration Factor must not deviate more than 5%.

SIGNED: Dan Loubiere

Date: 1/26/2011

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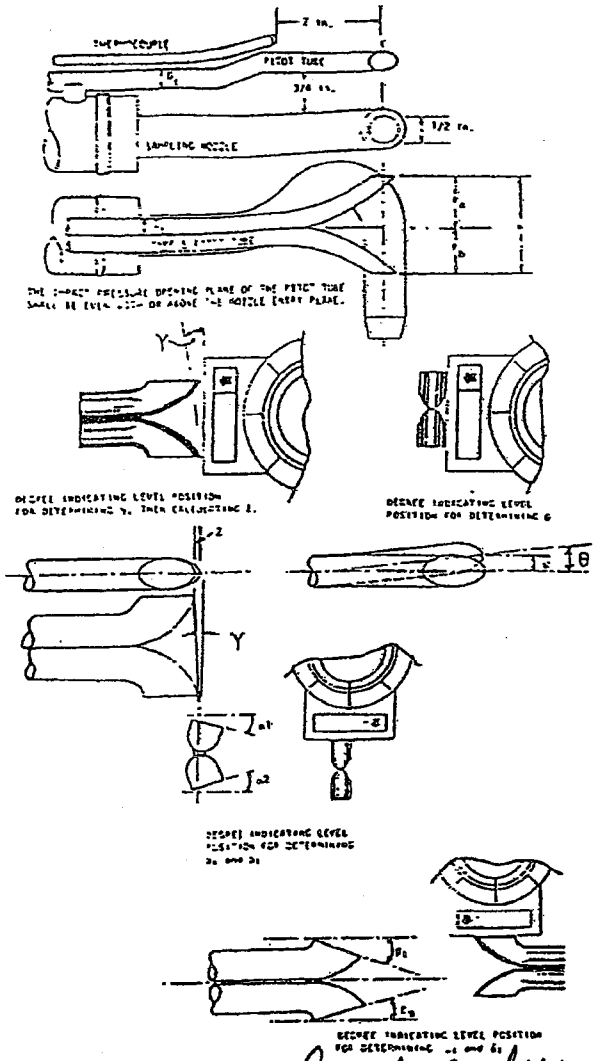
BPTXC-00003484

PITOT TUBE INSPECTION DATA SHEET

Company Name: BPTC

Pre-sample Date 12/22/10

Post Sample Date 12/22/10



Y	level?	Y
N	obstructions?	N
N	damaged?	N
0°	$-10° < \alpha_1 < +10°$	0°
0°	$-10° < \alpha_2 < +10°$	0°
0°	$-5° < \beta_1 < +5°$	0°
0°	$-5° < \beta_2 < +5°$	0°
0°	γ	0°
0°	θ	0°
3/8	A	3/8
Y	$1.05\ D_t < P_a < 1.5\ D_t$	Y
Y	$1.05\ D_t < P_b < 1.5\ D_t$	Y
Y	$3/16" \leq D_t \leq 3/8"$	Y
Y	$A \tan \gamma < 0.125"$	Y
Y	$A \tan \theta < 0.03125"$	Y
Y	$P_a = P_b \pm 0.063"$	Y

Comments: Good Condition

Pitot tube/probe number GSCF1029 meets or exceeds all specifications criteria and/or applicable design features* and is hereby assigned a pitot tube calibration factor of 0.84.

Signature Matt R

Date 12/22/10

*See 40 CFR 60, Vol. 42, No. 160, Method 2. Verify the minimum 2 inch setback of the thermocouple and the minimum 3/4 inch separation between the pitot tube and the nozzle as shown at the top of this page.

Form GSC-TM003c

Rev. A, 2001

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Method 205 Validation

Gas Mixing System	Maker/Model	Environics 4040	Serial No	3100	Range	0-100%	
O_2 Analyzer	Maker/Model	Servomex 1440	Serial No	01440D1/4034	Range	0-25%	
High O_2 (%)	20.0	Cylinder No.	ALM053126	Expiration Date		7/1/2012	
Mid O_2 (%)	9.58	Cylinder No.	ALM054154	Expiration Date		8/7/2013	
Date	1/6/2011	Time	NA				
Personnel	Dan Loubiere						

Validation Data

Target Concentration	Allow Range (%)		Run	Concentration (%)	Average (%)	Allow Range (%)		Within 2% Average (?)	Meet Requirement (?)
14.0	13.72	14.28	1	13.99	13.99	13.71	14.27	YES	YES
			2	13.99				YES	
			3	13.98				YES	
8.0	7.84	8.16	1	8.01	8.02	7.86	8.18	YES	YES
			2	8.03				YES	
			3	8.01				YES	

Mid-Gas Check

Target Concentration	Allow Range (%)		Run	Concentration (%)	Average (%)	Allow Range (%)		Within 2% Average (?)	Meet Requirement (?)
9.58	9.39	9.77	1	9.62	9.62	9.43	9.81	YES	YES
			2	9.62				YES	
			3	9.62				YES	

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BPTXC-00003486

Environics®

Series 4040

System S/N 3100

ENVIRONICS FLOW CONTROLLER CALIBRATION SHEET

MFC#: 1 Size: 10000 SCCM

SERIAL NUMBER 1624200001

This flow controller was calibrated using a Sierra Cal Bench ™, a NIST traceable Primary Flow Standard Calibration System. This calibration was performed with Nitrogen at a standard reference temperature and pressure of 32° and 29.92 in.HG. This is not performance data. This data is used by the system operating modes to improve the flow accuracy.

		Set Flow		True Flow	
5	%	500.0	SCCM	509.712	SCCM
10	%	1000.0	SCCM	1037.837	SCCM
20	%	2000.0	SCCM	2078.148	SCCM
30	%	3000.0	SCCM	3094.303	SCCM
40	%	4000.0	SCCM	4093.270	SCCM
50	%	5000.0	SCCM	5077.013	SCCM
60	%	6000.0	SCCM	6066.992	SCCM
70	%	7000.0	SCCM	7060.785	SCCM
80	%	8000.0	SCCM	8066.520	SCCM
90	%	9000.0	SCCM	9109.262	SCCM
100	%	10000.0	SCCM	10199.650	SCCM

Verified by: Terrie Lundmark Date: 9-2-10

Computerized Gas Mixing / Dilution / Calibration Systems
Environics Inc. • 69 Industrial Park Road East • Tolland, CT 06084 • (860) 872-1111 • Fax (860) 870-9333
World Wide Web: http://www.environics.com E-mail: info@environics.com

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Environics®

Series 4040

System S/N 3100

ENVIRONICS FLOW CONTROLLER CALIBRATION SHEET

MFC#: 2 Size: 10000 SCCM

SERIAL NUMBER 1624200002

This flow controller was calibrated using a Sierra Cal Bench ™, a NIST traceable Primary Flow Standard Calibration System. This calibration was performed with Nitrogen at a standard reference temperature and pressure of 32° and 29.92 in.HG. This is not performance data. This data is used by the system operating modes to improve the flow accuracy.

		Set Flow		True Flow	
5	%	500.0	SCCM	499.366	SCCM
10	%	1000.0	SCCM	1026.006	SCCM
20	%	2000.0	SCCM	2064.177	SCCM
30	%	3000.0	SCCM	3083.228	SCCM
40	%	4000.0	SCCM	4084.034	SCCM
50	%	5000.0	SCCM	5075.287	SCCM
60	%	6000.0	SCCM	6063.246	SCCM
70	%	7000.0	SCCM	7053.937	SCCM
80	%	8000.0	SCCM	8053.221	SCCM
90	%	9000.0	SCCM	9077.212	SCCM
100	%	10000.0	SCCM	10141.138	SCCM

Verified by: Terie Lundmark Date: 9-2-10

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System S/N 3100

ENVIRONICS FLOW CONTROLLER CALIBRATION SHEET

MFC#: 3 Size: 1000 SCCM

SERIAL NUMBER 1624300001

This flow controller was calibrated using a Sierra Cal Bench ™, a NIST traceable Primary Flow Standard Calibration System. This calibration was performed with Nitrogen at a standard reference temperature and pressure of 32° and 29.92 in.HG. This is not performance data. This data is used by the system operating modes to improve the flow accuracy.

	Set Flow	True Flow
5 %	50.0 SCCM	49.784 SCCM
10 %	100.0 SCCM	100.451 SCCM
20 %	200.0 SCCM	201.382 SCCM
30 %	300.0 SCCM	300.675 SCCM
40 %	400.0 SCCM	399.626 SCCM
50 %	500.0 SCCM	498.321 SCCM
60 %	600.0 SCCM	598.548 SCCM
70 %	700.0 SCCM	698.544 SCCM
80 %	800.0 SCCM	802.884 SCCM
90 %	900.0 SCCM	908.186 SCCM
100 %	1000.0 SCCM	1019.160 SCCM

Verified by: Lenie Lundmark Date: 9-2-10

Computerized Gas Mixing / Dilution / Calibration Systems
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Series 4040

System S/N 3100

ENVIRONICS FLOW CONTROLLER CALIBRATION SHEET

MFC#: 4 Size: 100 SCCM

SERIAL NUMBER 1624400001

This flow controller was calibrated using a Sierra Cal Bench ™, a NIST traceable Primary Flow Standard Calibration System. This calibration was performed with Nitrogen at a standard reference temperature and pressure of 32° and 29.92 in.HG. This is not performance data. This data is used by the system operating modes to improve the flow accuracy.

	Set Flow	True Flow
5 %	5.0 SCCM	5.074 SCCM
10 %	10.0 SCCM	10.364 SCCM
20 %	20.0 SCCM	20.864 SCCM
30 %	30.0 SCCM	31.351 SCCM
40 %	40.0 SCCM	41.530 SCCM
50 %	50.0 SCCM	51.701 SCCM
60 %	60.0 SCCM	61.833 SCCM
70 %	70.0 SCCM	71.802 SCCM
80 %	80.0 SCCM	81.867 SCCM
90 %	90.0 SCCM	91.747 SCCM
100 %	100.0 SCCM	101.839 SCCM

Verified by: Terri Lundmark Date: 9-2-10

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GOLDEN SPECIALTY

Hand Check Calculations

FACILITY:	BP TC	DATE:	2/9/11
SOURCE NAME:	SRU Incinerator	CITY, STATE:	Texas City, TX

	O_2	CO_2	SO_2	NO_x	CO	THC
Span gas - C_{ma}	9.58	9.61	97.50	50.90	198	49.70
Span (ppm,%) *	20.00	19.50	221	93	393	~~83.5~~ 100

Difference = Final Reading - Initial Reading %Zero = (Zero difference / Span)*100 %Span = (Span difference / Span)*100

Run No. and Pollutant	ZERO Initial Reading	ZERO Final Reading	ZERO Average (C_o) (ppm, %) *	SPAN Initial Reading	SPAN Final Reading	SPAN Average (C_m) (ppm, %) *
O_2	0.03	0.01	0.02	9.56	9.55	9.555
CO_2	-0.04	-0.04	-0.04	9.60	9.63	9.635
SO_2	0.5	0.4	0.45	97.8	97.7	97.75
NO_x	-0.1	0.0	-0.05	49.1	49.2	49.15
CO	0.8	0.8	0.8	198.2	198.5	198.35
THC	0.1	0.1	0.1	50.7	50.0	50.35

O_2 for Correction %	F-Factor dscf/mmBtu	GCV	Fuel Flow Rate	Source Firing Rate MMBtu/hr	Conversion Factor	Q_{sd} dscf/hr
0						52,594

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))
C_{gas} Corrected= C_{gas} * ((20.9 - Corr. %O_2)/ (20.9 - %O_2))

C_d = (C_{gas} * M.W. * 6.242e-8) / 24.04
lb/MMBtu = C_d * F-Factor * (20.9 / (20.9 - %O_2 dry))
lb/hr = lb/MMBtu * GCV * Fuel Flow Rate * Conversion Factor
lb/hr = lb/dscf x Q_{std} (dscf/hr)

Run No. and Pollutant	$C_{avg.}$ Uncorrected Stack Gas Concentration (ppm, %) *	C_o Average of Zero Gas	C_m Average of Span Gas	C_{gas} Corrected Stack Gas Concentration (ppm, %) *	M.W. Molecular Weight	C_{gas} Corrected Concentration in ppm @ 0 % O_2	C_d Concentration in lb/dscf	lb/MMBtu Emission Rate lb/MMBtu	lb/hr Emission Rate lb/hr
O_2	1.916			1.91	NA	NA	NA	NA	NA
CO_2	5.702			5.72	NA	NA	NA	NA	NA
SO_2	123.01			122.8	64	135.1	2.04E-05	—	64.38
NO_x	14.096			14.63	46	—	1.75E-06	—	5.52
CO	193.34			192.98	28	—	1.40E-05	—	44.22
THC	11.59			11.36	44.092 (as C_3H_8)	—	1.46E-06	—	4.556

Note * O_2 and CO_2 are expressed in percent.

1273

Calc QA Performed by

GOLDEN SPECIALTY

EMISSION RATE CALCULATIONS

FACILITY : BP

CITY, STATE : Texas City

SOURCE NAME : SRU Incinerator

DATE : 2/9/11 **RUN NO. :** 1

MOISTURE (B_{ws}) = 10.70 (See Moisture Sample Data)

GAS ANALYSIS : % CO_2 5.72 % O_2 1.91 % N_2 92.37 % CO 0

MOLECULAR WEIGHT, dry basis (M_d) g/g mole :

M_d = (0.440 x %CO_2) + (0.320 x %O_2) + (0.28 x (%N_2 + %CO))

M_d = (0.440 x 5.72) + (0.320 x 1.91) + (0.28 x (92.37 + 0)) = 28.99

M_s = M_d (1 - B_{ws}) + (18.0 x B_{ws})

M_s = 28.99 (1 - 0.1070) + (18.0 x 0.1070) = 27.81

VELOCITY TRAVERSE DATA :

C_p = 0.84 AVG.$\sqrt{\Delta P}$ = 0.626 T_s AVG. = ~~1046.8~~ MP 2/9/11 1509 °R P_s = 30.18

STACK DIAMETER = 42" A_s = 46.16 M_s = 27.82

CALCULATIONS :

V_s = 85.49 X C_p X AVG. $\sqrt{\Delta P}$ X $\sqrt{(T_s \text{ AVG.} / (M_s \times P_s))}$ = 60.27

ACFM = Vs X 60 X As = 166,923

Q_{sd} = (1.00 - B_{ws}) X ACFM X (528 / T_s AVG.) X (P_s / 29.92) = 52,610

ISOKINETIC DATA : (if applicable) N/A

$V_{m(std)}$ = _____ NOZZLE DIA. = _____ A_n = _____ Θ = _____

PERCENT ISOKINETIC = $\dfrac{0.09450 \times T_s \times V_{m(std)}}{P_s \times V_s \times A_n \times \Theta \times (1-B_{ws}/100)}$ =

Calc QA Performed by MP

APPENDIX D – Field Data

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FIELD DATA SHEET 1
Sampling and Velocity Traverse Points

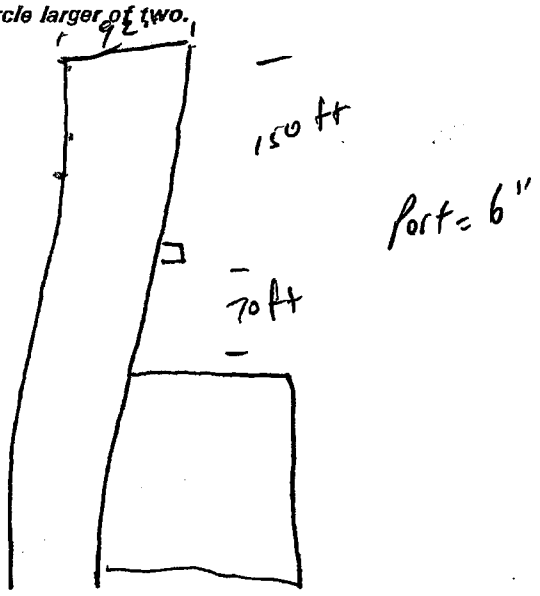
Client/Plant Name BPTC Job # 10BPTC1288

City/State Texas City, TX Date/Time 12/22/10

Test Location SRU Incinerator Personnel MB, BJ, AL

Port I.D.			
Distance from Far Wall to Outside of Port			98"
Nipple Length and/or Wall Thickness			6"
Stack/Duct (✓) Blue Print ( ) Measured (✓)			
Depth/Diameter *(>12 in. ?)*			92"
Width (if rectangular)			
Equiv. Diameter (if rect.) $D_e = 2\,D\,W/(D + W)$			
Area (A) *(>113 in.^{2} ?)* $A = \pi D_2/4$ or D W			
	Distance	D_e	No. Pts*
Upstream *(≥2 D_e?)*	840"	9.1	8
Downstream *(≥0.5 D_e?)*	1800"	19.5	8
Rectangular Matrix			

* *Circle larger of two.*



Pt.	% Duct Depth	Dist. from Inside Wall*	Dist. from Outside of Port
1	3.2	2.9	8.9
2	10.5	9.6	15.6
3	19.4	17.8	23.8
4	32.3	29.7	35.7
5	67.7	62.2	68.2
6	80.6	74.1	80.1
7	89.5	82.3	88.3
8	96.8	89.1	95.1
9			
10			
11			
12			
13			
14			
15			
16			
17			
18			
19			
20			

* Do not place closer to stack walls than:
1.0 in. for stack dia. >24 in.
0.5 in. for stack dia. 12 to ≤24 in.

Sketch of Location: In the space above, sketch a flow diagram of the test location; show the distance from the ports to flow disturbances before and after. Sketch the cross-sectional area; show sampling port locations. In horizontal ducts, check for dust buildups and measure or estimate the depth.

QA/QC Check
Completeness ✓ Legibility ✓ Accuracy ✓ Specifications ✓ Reasonableness ✓

Checked by: [signature] Personnel (Signature/Date) [signature] Team Leader (Signature/Date)

FIELD DATA SHEET

Facility:	BPTC	Meter Box No.:	0904021	Static Pressure:	-0.265	Heater Box Number:	—
Source:	SRV Incinerator	Barometric Pressure:	30.20	Pitot Number:	GSCFP029	Impinger Connector:	2969
City, State:	Texas City, TX	Barometer ID:	TWC	Probe Number:	GSCFP029	Probe Liner:	—
Date:	12/22/10	Assumed Moisture:	—	Pitot Correction:	0.84	Umbilical ID:	—
Operator(s):	MB, BS, DL	Stack Diameter:	92"	Nozzle Diameter:	—	Port Extension:	6"
Run No.:	1	Meter Box ΔH:	1.837	Y factor:	0.992	Nozzle Area:	—
Method:	4						
Filter No:	—						
Filter Tare:	—						

Traverse Point No.	Clock Time (24 hrs) MB 12/22/10	Sample Time (Min)	Dry Gas Meter Reading (ft³)	Inches H_2O Δp	Inches H_2O Δh	Pump Vacuum in., Hg	Stack Temp. (Ts) °F	Probe Temp. °F	Heater Box °F	Last Imp. Temp. °F	Dry Gas Meter Temp. Inlet	Dry Gas Meter Temp. Outlet
A-1	1105 1045	0	011.725	0.365	1.0	-1	1048	N/A	N/A	60	69	N/A
2	1110 1050	5	014.47	0.391	1.0	-1	1047			57	69	
3	1115 1055	10	017.22	0.405	1.0	-1	1048			53	69	
4	1120 1100	15	019.97	0.403	1.0	-1	1049			53	69	
5	1125 1105	20	022.74	0.399	1.0	-1	1050			52	70	
6	1130 1110	25	025.50	0.387	1.0	-1	1049			52	70	
7	1135 1115	30	028.26	0.384	1.0	-1	1049			49	70	
8	1140 1120	35	031.01	0.384	1.0	-1	1049			49	70	
B-1	1145 1125	40	033.76	0.381	1.0	-1	1046			49	70	
2	1150 1130	45	036.51	0.377	1.0	-1	1049			50	71	
3	1155 1135	50	039.26	0.394	1.0	-1	1050			50	71	
4	1200 1140	55	042.02	0.411	1.0	-1	1050			50	71	
5	1205 1145	60	044.773	0.423	1.0	-1	1050			50	71	
6				0.405			1049					
7				0.382			1049					
8				0.374			1049					
		Sample Time	33.05 Net Volume	Avg √ΔP	1.0 Avg ΔH	-1 Max Vac	Avg Ts				70 Avg. Meter Temp	

Volume or Weight of Liquid Collected	Imp 1	Imp 2	Imp 3	Imp 4	Imp 5
Imp. Contents	H_2O	H_2O	MT	SG	
Final Vol or Wt	168	106	0	936.7	
Initial Vol or Wt	100	100	0	936.6	
Vol or Wt Collected	68	6	0	10.1	
Total Collected (TWW)	84.1				

Orsat / Fyrite Data	Time	CO_2	O_2
1			
2			
3			
AVG			
Fyrite/Orsat ID:			

Leak Check			
System	Pre:	0.000	CFM@15"Hg
	Post:	0.000	CFM@15"Hg
Pitot	Pre:	✓	3" H_2O 15 Sec
	Post:	✓	3" H_2O 15 Sec

QA/QC Check
Completeness — Legibility — Accuracy — Specifications — Reasonableness —
Checked By: Matt Brumley (Personnel) (Signature/Date) — Team Leader (Signature/Date)

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FIELD DATA SHEET

Facility:	BPTC	Meter Box No.:	0904021	Static Pressure:	-0.265	Heater Box Number:	—
Source:	SRU Incenerator	Barometric Pressure:	30.20	Pitot Number:	65CF/029	Impinger Connector:	2969
City, State:	Texas City, TX	Barometer ID:	TWC	Probe Number:	65CF/029	Probe Liner:	—
Date:	12/22/10	Operator(s):	MB/BT, DC	Assumed Moisture:	—	Pitot Correction:	0.84	Umbilical ID:	—
Run No.:	2	Method:	4	Stack Diameter:	92"	Nozzle Diameter:	—	Port Extension:	64"
Filter No:	—	Filter Tare:	—	Meter Box ΔH:	1.937	Y factor:	0.992	Nozzle Area:	—

Traverse Point No.	Clock Time (24 hrs) MB 12/22/10	Sample Time (Min)	Dry Gas Meter Reading (ft³)	Inches H_2O Δp	Inches H_2O Δh	Pump Vacuum in., Hg	Stack Temp. (Ts) °F	Probe Temp. °F	Heater Box °F	Last Imp. Temp. °F	Dry Gas Meter Temp. Inlet	Dry Gas Meter Temp. Outlet
A-1	1226 1205	0	047.455	0.350	1.0	-1	1048	N/A	N/A	60	70	N/A
2	1231 1210	5	050.21	0.394	1.0	-1	1048			58	70	
3	1236 1215	10	052.98	0.407	1.0	-1	1049			54	70	
4	1241 1220	15	055.73	0.418	1.0	-1	1049			54	70	
5	1246 1225	20	058.48	0.409	1.0	-1	1049			54	71	
6	1251 1230	25	061.23	0.398	1.0	-1	1049			53	71	
7	1256 1235	30	063.98	0.391	1.0	-1	1048			54	72	
8	1301 1240	35	066.73	0.374	1.0	-1	1048			55	72	
B-1	1306 1245	40	069.49	0.369	1.0	-1	1048			55	72	
2	1311 1250	45	072.25	0.391	1.0	-1	1048			55	72	
3	1316 1255	50	075.00	0.401	1.0	-1	1049			57	73	
4	1321 1300	55	077.77	0.418	1.0	-1	1049			57	73	
5	1326 1305	60	080.530	0.411	1.0	-1	1049	—	—	57	73	—
6				0.403			1049					
7				0.392			1049					
8				0.388			1049					
		Sample Time	33.08 Net Volume	Avg √ ΔP	1.0 Avg ΔH	-1 Max Vac	Avg Ts				72 Avg. Meter Temp	

Volume or Weight of Liquid Collected	Imp 1	Imp 2	Imp 3	Imp 4	Imp 5
Imp. Contents	H_2O	H_2O	MT	SG	
Final Vol or Wt	174	110	0	984.3	
Initial Vol or Wt	180	100	0	954.1	
Vol or Wt Collected	94	10	0	10.2	
Total Collected (TWW)	94.2				

Orsat / Fyrite Data	Time	CO_2	O_2
1			
2			
3			
AVG			
Fyrite/Orsat ID:			

Leak Check			
System	Pre:	0.000	CFM@15"Hg
	Post:	0.000	CFM@15"Hg
Pitot	Pre:	✓	3" H_2O 15 Sec
	Post:	✓	3" H_2O 15 Sec

QA/QC Check
Completeness ____ Legibility ____ Accuracy ____ Specifications ____ Reasonableness ____
Checked By: Matt Binney
Personnel (Signature/Date) Team Leader (Signature/Date)

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FIELD DATA SHEET

Facility:	BATC	Meter Box No.:	0904021	Static Pressure:	-0.265	Heater Box Number:	—
Source:	SRU Incinerator	Barometric Pressure:	30.20	Pitot Number:	GSCFP029	Impinger Connector:	2969
City, State:	Texas City, TX	Barometer ID:	TWC	Probe Number:	GSCFP029	Probe Liner:	—
Date:	12/22/10	Assumed Moisture:	—	Pitot Correction:	0.84	Umbilical ID:	—
Operator(s):	MB, BJ, AC	Stack Diameter:	92"	Nozzle Diameter:	—	Port Extension:	6"
Run No.:	3	Meter Box ΔH:	1.837	Y factor:	0.992	Nozzle Area:	—
Method:	4						
Filter No:	—						
Filter Tare:	—						

Traverse Point No.	Clock Time (24 hrs)	Sample Time (Min)	Dry Gas Meter Reading (ft³)	Inches H_2O Δp	Inches H_2O Δh	Pump Vacuum In., Hg	Stack Temp. (Ts) °F	Probe Temp. °F	Heater Box °F	Last Imp. Temp. °F	Dry Gas Meter Temp. Inlet	Dry Gas Meter Temp. Outlet
A-1	1330	0	081.010	0.376	1.0	-1	1048	N/A	N/A	59	73	N/A
2	1335	5	083.76	0.394	1.0	-1	1048			56	72	
3	1340	10	086.51	0.394	1.0	-1	1048			58	73	
4	1345	15	089.28	0.407	1.0	-1	1050			58	74	
5	1350	20	092.05	0.420	1.0	-1	1049			52	74	
6	1355	25	094.80	0.413	1.0	-1	1049			52	75	
7	1400	30	097.56	0.387	1.0	-1	1048			52	76	
8	1405	35	100.31	0.385	1.0	-1	1048			53	77	
B-1	1410	40	103.06	0.388	1.0	-1	1048			56	77	
2	1415	45	105.81	0.397	1.0	-1	1048			56	77	
3	1420	50	108.57	0.400	1.0	-1	1049			59	77	
4	1425	55	111.33	0.416	1.0	-1	1049			60	78	
5	1430	60	114.09	0.411	1.0	-1	1048	—	—	60	78	—
6				0.407			1048					
7				0.398			1048					
8				0.374			1048					
		Sample Time	Net Volume	Avg √ ΔP	Avg ΔH	Max Vac	Avg Ts				Avg. Meter Temp	

Volume or Weight of Liquid Collected	Imp 1	Imp 2	Imp 3	Imp 4	Imp 5
Imp. Contents	H2O	H2O	MT	SC	
Final Vol or Wt	164	110	0	988.5	
Initial Vol or Wt	100	100	0	977.9	
Vol or Wt Collected	64	10	0	10.6	
Total Collected (TWW)	84.6				

Orsat / Fyrite Data	Time	CO_2	O_2
1			
2			
3			
AVG			
Fyrite/Orsat ID:			

Leak Check			
System	Pre:	0.000	CFM@15"Hg
	Post:	0.000	CFM@15"Hg
Pitot	Pre:	✓	3" H_2O 15 Sec
	Post:	✓	3" H_2O 15 Sec

QA/QC Check
Completeness ✓ Legibility — Accuracy — Specifications ✓ Reasonableness —

Checked By: Mark Bruney (Personnel) (Signature/Date) [signature] Team Leader (Signature/Date)

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GOLDEN SPECIALTY

Operating Discipline Checklist

Project ID: BPTC	Test Date: 12/22/10
Plant: Source: STM INCINERATOR FLEX PERMIT	Team Members: [illegible], MB, BJ
Description: 10 BPTC 1788	Trailer Unit: T-10

	Item to Check	(Initials Required)
1	EPA Protocol 1 Gases Used	[illegible]
2	Fully Redundant Sampling System System 1 ✓ System 2 N/A	[illegible]
3	Stratification Test Conducted an Documented Start time: 1037 Finish Time: 1043 File Name:	[illegible]
4	Documentation of Probe Geometry and Location (on form GSC-TM001K)	[illegible]
5	Measurement of Ambient Conditions: Barometer: 30.20 Rel.Humidity: 75% Temperature: 70°F	[illegible]
6	Flanged Sample Probe or Port Closures	[illegible]
7	Heated Sample Lines Set Temperature: 265°F Measured Temperature: 264°F	[illegible]
8	Grounding and electrical requirements	[illegible]
9	Data Exclusion Log (form # GSC-TM001B)	[illegible]
10	Data Communication List (form GSC-TM001K)	[illegible]
11	Staggered Calibrations	N/A
12	Data Storage and Formatting: Headers on and checked? ✓ Yes ___ No Data Logging ON? ✓ Yes ___ No	[illegible]
13	Gas Conditioning System Temperature System 1: 4.1°C System 2: N/A	[illegible]
14	Reasons for any exceptions:	

Signature of Person Recording Information:	[illegible]	Date:	12/22/10
Approval of Client to Proceed with Testing:		Date:	

Form # GSC-TM001D (Rev. 7/2004)

GOLDEN SPECIALTY

Data Exclusion Log

Project ID: BPTC Plant: Source: Sam Incineration Flex Permit Description: 10BPTC12SX	Test Dates From: 12/22/10 Trailer #: T-10 Data for Filename:	To: Analysts: DR

Date	System #	Time Start	Time End	Reason
12/22/10	1	945		start cals
		957		NOx Converter check
		1018		system bias
		1037		strat check
		1045		start Run 1

Form # GSC-TM001B (Rev. 04Jul) Page ___ of ___

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REFERENCE METHOD
Analyzer Calibration Error

SPECIALTY

Project ID: BMTC Plant: SRU INCINERATOR FLEX PERMIT Source: Description: 10 BMTC 1288	Test Date: 12/22/10	Analyst: DAL	
	Trailer Unit: T-10	Analyzer System: 1	
	Assigned Data:		

Component	Cylinder Number	Range	Analyzer Response System 1	Analyzer Response System 2	Actual Conc.	Cylinder Exp. Date
Oxides of Nitrogen	CC62922	*High*	93.6		93.0 ppm	2/12
	CC160947	*Mid*	49.5		50.9 ppm	11/12
	N2	*Zero*	-0.1		0 ppm	-
Nitrogen Dioxide	ALM014874	*n/a*	44.4		48.6 ppm	1/11
Carbon Monoxide	ALM053126	*High*	394.2		393 ppm	7/12
	ALM054154	*Mid*	198.7		198 ppm	8/13
	N2	*Zero*	0.5		0 ppm	-
Oxygen	ALM053126	*High*	20.05		20.0 %	7/12
	ALM054154	*Mid*	9.62		9.58 %	8/13
	N2	*Zero*	-0.03		0 %	-
Total Hydrocarbons	ALM050961	*High*	83.5		83.5 ppm	4/13
	ALM047768	*Mid*	58.7		49.7 ppm	6/13
	ALM064197	*Low*	29.6		29.9 ppm	6/13
	N2	*Zero*	0.1		0 ppm	-
Sulfur Dioxide	ALM004243	*High*	220.6		221 ppm	2/11
	ALM058548	*Mid*	98.5		97.5 ppm	1/11
	N2	*Zero*	-0.1		0 ppm	-
Carbon Dioxide	ALM053126	*High*	19.58		19.5 %	7/12
	ALM054154	*Mid*	9.60		9.61 %	8/13
	N2	*Zero*	-0.05		0 %	-

ANALYZER INFORMATION

Analyzer Type	SYSTEM #1 Model	SYSTEM #1 Serial #	SYSTEM #1 Range	SYSTEM #2 Model	SYSTEM #2 Serial #	SYSTEM #2 Range
NO_x	CAI 400	6L09003	0 – 100 ppm	CAI 400	U02021	0 – 100 ppm
CO	Thermo 48i	0708021118	0 – 500 ppm	CAI 602P	W12010-MZ	0 – 500 ppm
O2	Servomex 1440	4034	0 – 25 %	CAI 602P	W12010-MZ	0 – 25 %
CO_2	Servomex 1440	4034	0 -20 %	CAI 602P	W12010-MZ	0 -20 %
SO_2	Teledyne 100EH	269	0 – 500 ppm	Teledyne 100EH	265	0 – 100 ppm
VOC	VIG 200	4091009	0 – 100 ppm	VIG 20	3980809	0 – 100 ppm

Form # GSC-WP007-005
REV 2010-01, EFF 10/6/10

Page ____ of ____

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GOLDEN SPECIALTY

REFERENCE METHOD
Analyzer System Bias

Project ID: BPTC Plant: Source: SRU Incineration Flex Permit Description:		Test Date(s): 12/22/10	Analyst:
		Trailer Unit: T-10	Analyzer System: 1
10EBSC1288		Assigned Data:	

RUN NO: 1	Calibration Gas / Conc.	Pre-Test Calibration ZERO	Pre-Test Calibration SPAN	Post Test Calibration ZERO	Post Test Calibration SPAN	Bias <5% (Check)	**Response Time (Zero and Span)
Date: 12/22/10	NO_x	-0.1	49.1	0.0	49.2		40/41
	CO	0.8	198.2	0.8	198.5		40/41
Start Time: 1045	O_2	0.03	9.56	0.01	9.55		40/41
	CO_2	-0.04	9.60	-0.04	9.63		40/41
End Time: 1145	THC	0.1	50.7	0.1	50.0		32/32
	SO_2	0.5	97.8	0.4	97.7		56/59

RUN NO: 2	Calibration Gas / Conc.	Pre-Test Calibration ZERO	Pre-Test Calibration SPAN	Post Test Calibration ZERO	Post Test Calibration SPAN	Bias <5% (Check)	Drift <3% Of Span
Date: 12/22/10	NO_x			0.0	49.2		
	CO			0.8	197.9		
Start Time: 1205	O_2			0.01	9.59		
	CO_2			-0.04	9.60		
End Time: 1305	THC			0.1	50.1		
	SO_2			0.8	97.4		

RUN NO: 3	Calibration Gas / Conc.	Pre-Test Calibration ZERO	Pre-Test Calibration SPAN	Post Test Calibration ZERO	Post Test Calibration SPAN	Bias <5% (Check)	Drift <3% Of Span
Date: 12/22/10	NO_x			0.0	49.1		
	CO			0.7	197.3		
Start Time: 1330	O_2			0.00	9.61		
	CO_2			-0.04	9.65		
End Time: 1430	THC			0.1	50.5		
	SO_2			0.7	98.2		

RUN NO:	Calibration Gas / Conc.	Pre-Test Calibration ZERO	Pre-Test Calibration SPAN	Post Test Calibration ZERO	Post Test Calibration SPAN	Bias <5% (Check)	Drift <3% Of Span
Date:	NO_x						
	CO						
Start Time:	O_2						
	CO_2						
End Time:	THC						
	SO_2						

RUN NO:	Calibration Gas / Conc.	Pre-Test Calibration ZERO	Pre-Test Calibration SPAN	Post Test Calibration ZERO	Post Test Calibration SPAN	Bias <5% (Check)	Drift <3% Of Span
Date:	NO_x						
	CO						
Start Time:	O_2						
	CO_2						
End Time:	THC						
	SO_2						

Comments:
**Response times required for run 1 only. (Each component tested)

Form # GSC-TM001F (Rev. 9/06) PAGE _____ of _____

Stratification Testing

Plant: BPC
Source: SRU INCINERATOR

Test Date: 12/22/10
Personnel: DL, MB

Number of Systems Used 1 / 2 *(circle)*

Reference or Stationary Probe Sampling System Conc. (C_r)				
Sample Points	**1**	**2**	**3**	
Time	1037	1040	1043	

Compounds Tested: **NO_x** *(circle all that apply)*
CO
O_2
CO_2
SO_2
THC

Source Stratified? **YES** **NO**

Analyst Signature

Team Leader Signature

Form #GSC-WP007-008
Version 7.1, Effective Date 10/1/09

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FIELD DATA SHEET 1
Sampling and Velocity Traverse Points

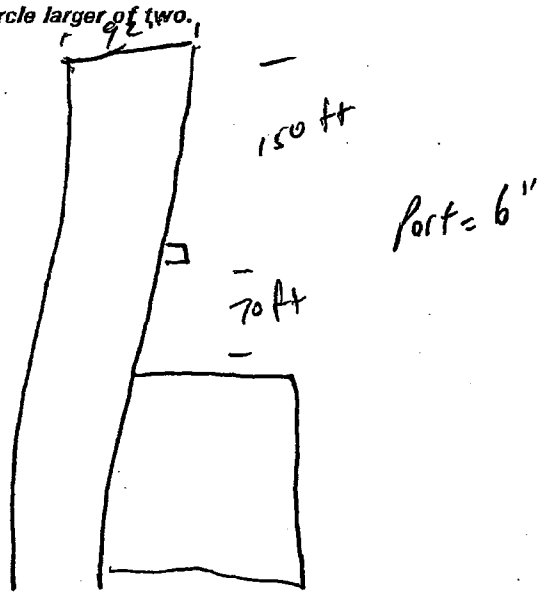
Client/Plant Name BPTC Job # 10BPTC ~~1288~~ 1508 12/22/10

City/State Texas City, TX Date/Time 12/22/10

Test Location SRU Enchorator Personnel MB, BJ, AL

Port I.D.			
Distance from Far Wall to Outside of Port			98"
Nipple Length and/or Wall Thickness			6"
Stack/Duct (✓) Blue Print ( ) Measured (✓)			
Depth/Diameter *(>12 in. ?)*			92"
Width (if rectangular)			
Equiv. Diameter (if rect.) $D_e = 2\,D\,W/(D + W)$			
Area (A) *(>113 in.^{2} ?)* $A = \pi D_2/4$ or D W			
	Distance	D_e	No. Pts*
Upstream *(≥2 D_e?)*	840"	9.1	8
Downstream *(≥0.5 D_e?)*	1800"	19.5	8
Rectangular Matrix			

* *Circle larger of two.*



Pt.	% Duct Depth	Dist. from Inside Wall*	Dist. from Outside of Port
1	3.2	2.9	8.9
2	10.5	9.6	15.6
3	19.4	17.8	23.8
4	32.3	29.7	35.7
5	67.7	62.2	68.2
6	80.6	74.1	80.1
7	89.5	82.3	88.3
8	96.8	89.1	95.1
9			
10			
11			
12			
13			
14			
15			
16			
17			
18			
19			
20			

* Do not place closer to stack walls than:
1.0 in. for stack dia. >24 in.
0.5 in. for stack dia. 12 to ≤24 in.

Sketch of Location: In the space above, sketch a flow diagram of the test location; show the distance from the ports to flow disturbances before and after. Sketch the cross-sectional area; show sampling port locations. In horizontal ducts, check for dust buildups and measure or estimate the depth.

QA/QC Check
Completeness ✓ Legibility ✓ Accuracy ✓ Specifications ✓ Reasonableness ✓

Checked by: Matt [signature] Personnel (Signature/Date) [signature] Team Leader (Signature/Date)

FIELD DATA SHEET

Facility: BITC
Source: SRU Incinerator
City, State: Texas City, TX
Date: 1/6/18 Operator(s): MB, DC
Run No.: 1 Method: 4
Filter No: — Filter Tare: —

Meter Box No.: 0904021
Barometric Pressure: 29.98
Barometer ID: FWC
Assumed Moisture: —
Stack Diameter: 92"
Meter Box ΔH: 1.889

Static Pressure: -0.262
Pitot Number: 65CFP015
Probe Number: 65CFP015
Pitot Correction: 0.84
Nozzle Diameter: —
Y factor: 0.989

Heater Box Number: —
Impinger Connector: 2969
Probe Liner: —
Umbilical ID: —
Port Extension: 6'
Nozzle Area: —

Traverse Point No.	Clock Time (24 hrs)	Sample Time (Min)	Dry Gas Meter Reading (ft³)	Inches H_2O Δp	Inches H_2O Δh	Pump Vacuum in., Hg	Stack Temp. (Ts) °F	Probe Temp. °F	Heater Box °F	Last Imp. Temp. °F	Dry Gas Meter Temp. Inlet	Dry Gas Meter Temp. Outlet
A-1	1350	0	151.352	0.259	1.0	-2	1057	N/A	N/A	62	63	N/A
2	1355	5	154.11	0.343	1.0	-2	1057			60	63	
3	1300	10	156.88	0.369	1.0	-2	1058			57	63	
4	1305	15	159.64	0.378	1.0	-2	1059			57	64	
5	1310	20	162.41	0.391	1.0	-2	1058			55	64	
6	1315	25	165.16	0.374	1.0	-2	1058			52	64	
7	1320	30	167.92	0.246	1.0	-2	1056			52	64	
8	1325	35	170.68	0.246	1.0	-2	1058			52	65	
B-1	1330	40	173.43 MB 1/6/18	0.291	1.0	-2	1056			53	65	
2	1335	45	~~176.03~~ 176.19	0.363	1.0	-2	1056			53	65	
3	1340	50	178.95	0.394	1.0	-2	1058			53	66	
4	1345	55	181.71	0.401	1.0	-2	1058			55	66	
5	1350	60	184.466	0.405	1.0	-2	1058			55	66	
6	14			0.367			1058					
7				0.314			1058					
8				0.307			1057					
		Sample Time	Net Volume	Avg √ΔP	Avg ΔH	Max Vac	Avg Ts				Avg. Meter Temp	

Volume or Weight of Liquid Collected

	Imp 1	Imp 2	Imp 3	Imp 4	Imp 5
Imp. Contents	H_2O	H_2O	MT	SG	
Final Vol or Wt	160	116	0	295.6	
Initial Vol or Wt	100	100	0	286.2	
Vol or Wt Collected	60	16	0	9.4	
Total Collected (TWW)	85.4				

Orsat / Fyrite Data

	Time	CO_2	O_2
1	1515	5	1
2	1515	5	1
3	1515	5	1
AVG			
Fyrite/Orsat ID: 10-5020		5	1

Leak Check

System	Pre:	0.00	CFM@15"Hg
	Post:	0.00	CFM@15"Hg
Pitot	Pre:	✓	3" H_2O 15 Sec
	Post:		3" H_2O 15 Sec

QA/QC Check
Completeness ✓ Legibility ✓ Accuracy ✓ Specifications ✓ Reasonableness ✓
Checked By: [signature] Personnel (Signature/Date) [signature] Team Leader (Signature/Date)

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Page: ___ of ___
FORM GSCF TM017-001
Form # GSCF TM017-001, EFF 5/31/10
REV 2010-01, EFF 5/31/10

FIELD DATA SHEET

Facility:	BPTC	Meter Box No.:	0904021	Static Pressure:	-0.262	Heater Box Number:	—
Source:	SRU Incenterator	Barometric Pressure:	29.98	Pitot Number:	GSCF1025	Impinger Connector:	2469
City, State:	Texas City, TX	Barometer ID:	TWC	Probe Number:	GSCF1025	Probe Liner:	—
Date:	1/6/11	Assumed Moisture:	—	Pitot Correction:	0.84	Umbilical ID:	—
Operator(s):	MB, AC	Stack Diameter:	92"	Nozzle Diameter:	—	Port Extension:	6"
Run No.:	2	Meter Box ΔH:	1.889	Y factor:	0.989	Nozzle Area:	—
Method:	4						
Filter No:	—						
Filter Tare:	—						

Traverse Point No.	Clock Time (24 hrs)	Sample Time (Min)	Dry Gas Meter Reading (ft³)	Inches H_2O Δp	Inches H_2O Δh	Pump Vacuum in., Hg	Stack Temp. (Ts) °F	Probe Temp. °F	Heater Box °F	Last Imp. Temp. °F	Dry Gas Meter Temp. Inlet	Dry Gas Meter Temp. Outlet
A-1	1650	0	184.795	0.348	1.0	-2	1054	N/A	N/A	60	70	N/A
2	1655	5	187.55	0.369	1.0	-2	1056			60	70	
3	1700	10	190.31	0.395	1.0	-2	1057			60	70	
4	1705	15	193.07	0.401	1.0	-2	1057			58	71	
5	1710	20	195.82	0.413	1.0	-2	1058			54	71	
6	1715	25	198.58	0.410	1.0	-2	1058			54	72	
7	1720	30	201.34	0.387	1.0	-2	1057			55	72	
8	1725	35	204.09	0.365	1.0	-2	1057			56	72	
B-1	1730	40	206.84	0.366	1.0	-2	1056			56	73	
2	1735	45	209.60	0.374	1.0	-2	1056			56	74	
3	1740	50	212.36	0.391	1.0	-2	1057			56	74	
4	1745	55	215.12	0.403	1.0	-2	1057			56	74	
5	1750	60	217.870	0.400	1.0	-2	1058			59	75	
6				0.401			1058					
7				0.374			1058					
8				0.371			1058					
		Sample Time	Net Volume	Avg √ΔP	Avg ΔH	Max Vac	Avg Ts				Avg. Meter Temp	

Volume or Weight of Liquid Collected

	Imp 1	Imp 2	Imp 3	Imp 4	Imp 5
Imp. Contents	H_2O	H_2O	MT	58	
Final Vol or Wt	152	118	0	295.4	
Initial Vol or Wt	100	100	0	286.3	
Vol or Wt Collected	52	18	0	9.1	
Total Collected (TWW)	79.1				

Orsat / Fyrite Data

	Time	CO_2	O_2
1	1810	5	1
2	1810	5	1
3	1810	5	1
AVG			
Fyrite/Orsat ID:	10-5020	5	1

Leak Check

System	Pre:	0.000	CFM@15"Hg
	Post:	0.000	CFM@15"Hg
Pitot	Pre:	✓	3" H_2O 15 Sec
	Post:		3" H_2O 15 Sec

QA/QC Check
Completeness ✓ Legibility ✓ Accuracy ✓ Specifications ✓ Reasonableness ✓
Checked By: [signature] Personnel (Signature/Date) [signature] Team Leader (Signature/Date)

FIELD DATA SHEET

Facility:	BPTC	Meter Box No.:	0904021	Static Pressure:	-0.262	Heater Box Number:	—
Source:	SRU Incinerator	Barometric Pressure:	29.88	Pitot Number:	GSC FP025	Impinger Connector:	2969
City, State:	Texas City, TX	Barometer ID:	TWC	Probe Number:	GSC FP025	Probe Liner:	—
Date:	1/6/11	Assumed Moisture:	—	Pitot Correction:	0.84	Umbilical ID:	—
Operator(s):	MB, PL	Stack Diameter:	92"	Nozzle Diameter:	—	Port Extension:	6"
Run No.:	3	Meter Box ΔH:	1.889	Y factor:	0.989	Nozzle Area:	—
Method:	4						
Filter No:	—						
Filter Tare:	—						

Traverse Point No.	Clock Time (24 hrs)	Sample Time (Min)	Dry Gas Meter Reading (ft³)	Inches H_2O Δp	Inches H_2O Δh	Pump Vacuum in., Hg	Stack Temp. (Ts) °F	Probe Temp. °F	Heater Box °F	Last Imp. Temp. °F	Dry Gas Meter Temp. Inlet	Dry Gas Meter Temp. Outlet
A-1	1950	0	218.135	0.369	1.0	-1	1057	N/A	N/A	59	75	N/A
2	1955	5	220.88	0.385	1.0	-1	1057			60	75	
3	2000	10	223.69	0.403	1.0	-1	1057			61	76	
4	2005	15	226.40	0.411	1.0	-1	1058			61	77	
5	2010	20	229.17	0.418	1.0	-1	1059			63	77	
6	2015	25	231.93	0.406	1.0	-1	1058			61	77	
7	2020	30	234.69	0.382	1.0	-1	1058			60	79	
8	2025	35	237.45	0.371	1.0	-1	1058			60	80	
B-1	2030	40	240.21	0.364	1.0	-1	1056			58	80	
2	2035	45	242.96	0.391	1.0	-1	1057			58	80	
3	2040	50	245.71	0.395	1.0	-1	1057			55	81	
4	2045	55	248.46	0.395	1.0	-1	1058			55	81	
5	2050	60	251.225	0.410	1.0	-1	1058	N/A	N/A	55	81	N/A
6				0.407			1057					
7				0.378			1057					
8				0.353			1057					
		Sample Time	Net Volume	Avg √ΔP	Avg ΔH	Max Vac	Avg Ts				Avg. Meter Temp	

Volume or Weight of Liquid Collected

	Imp 1	Imp 2	Imp 3	Imp 4	Imp 5
Imp. Contents	H_2O	H_2O	MT	SC	
Final Vol or Wt	154	114	0	301.0	
Initial Vol or Wt	100	100	0	291.6	
Vol or Wt Collected	54	14	0	9.4	
Total Collected (TWW)	77.4				

Orsat / Fyrite Data

	Time	CO_2	O_2
1	2100	5	1
2	2100	5	1
3	2100	5	1
AVG			
Fyrite/Orsat ID:	10-5020	5	1

Leak Check

System	Pre:	0.000	CFM@15"Hg
	Post:	0.000	CFM@15"Hg
Pitot	Pre:	✓	3" H_2O 15 Sec
	Post:	✓	3" H_2O 15 Sec

QA/QC Check
Completeness ✓ Legibility ____ Accuracy ✓ Specifications — Reasonableness ✓

Checked By: [signature] Personnel (Signature/Date) [signature] Team Leader (Signature/Date)

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M7E5 VERIFICATION

BP – TEXAS CITY

SRU INCINERATOR

CUMMINS MODEL 4040 S/N 300

SERVOMEX O_2 MODEL 1440 S/N 4034

20% O_2 CYL # ALM053126 EXP. 7/12

CR ERROR	CEMS RESPONSE
20.0	20.02
10.0	10.01
0.0	-0.04

TRIAL	DILUTION 1 14.0% O_2	DILUTION 2 8.0% O_2	EPA PROTOCOL ALM054154 EXP. 8/13 9.58% O_2
1	13.99	8.01	9.62
2	13.99	8.03	9.62
3	13.98	8.01	9.62

APPENDIX E – Reference Method Data

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USEPA Methods 3A, 6C, 7E, 10, and 25A
Summary of Test Results

Plant	BPTC	Address	Texas City, TX	Job #	10BPTC1288
Location	SRU Incinerator Exhaust Stack	Personnel	DL/MB/BJ	Date	12/22/2010

	Run Number	1	2	3	Average
Date	Test Date	12/22/2010	12/22/2010	12/22/2010	
Start	Run Start Time	10:45	12:05	13:30	
End	Run Finish Time	11:45	13:05	14:30	
Θ	Net Run Time, min.	60.0	60.0	60.0	60.0
C_p	Pitot Tube Coefficient	0.84	0.84	0.84	0.84
Y	Dry Gas Meter Calibration Factor	0.992	0.992	0.992	0.992
P_{Br}	Barometric Pressure, in. Hg	30.20	30.20	30.20	30.20
ΔH	Average orifice meter Differential, in. H_2O	1.000	1.000	1.000	1.000
V_m	Dry Gas Meter Volume Sampled, ft^3	33.048	33.075	33.080	33.068
t_m	Average Dry Gas Meter Temperature, °F	69.9	71.3	75.5	72.3
V_{mstd}	Dry Gas Meter Volume Sampled, dscf	33.051	32.990	32.736	32.926
V_{lc}	Total Moisture Liquid collected, ml	84.1	94.2	84.6	87.6
V_{wstd}	Volume of Water Vapor, scf	3.97	4.44	3.99	4.13
% H_2O	Moisture Content of Stack Gas, %	10.70	11.85	10.85	11.13
M_{fd}	Dry Mole Fraction	0.893	0.882	0.892	0.889
$\%CO_2$	Carbon Dioxide, %	5.72	6.26	5.66	5.88
$\%O_2$	Oxygen, %	1.91	1.94	1.86	1.90
M_s	Wet Molecular weight, lb/lb-Mole	27.82	27.77	27.79	27.79
P_g	Flue Gas Static Pressure, in. H_2O	-0.265	-0.265	-0.265	-0.265
P_s	Absolute Flue Gas Pressure, in. Hg	30.18	30.18	30.18	30.18
t_s	Average Stack Gas Temperature, °F	1048.8	1048.6	1048.4	1048.6
$\sqrt{\Delta P}_{avg}$	Average Square-Root Velocity Head, in H_2O	0.626	0.630	0.631	0.629
v_s	Average Stack Gas Velocity, ft/sec	60.23	60.66	60.74	60.55
A_s	Stack Crossectional Area, ft^2	46.16	46.16	46.16	46.16
Q_{aw}	Actual Volumetric Flue Gas Flow Rate, acfm	166,840	168,024	168,247	167,704
Q_{std}	Dry Volumetric Flow Rate, dry scfm	52,594	52,290	52,964	52,616
$SO_{2\ ppmvd}$	Sulfur Dioxide Concentration, ppmvd	122.81	118.19	118.14	119.72
$SO_{2\ ppm\ @\ 0\%\ O2}$	Sulfur Dioxide Concentration, ppmvd @ 0% O_2	135.14	130.27	129.71	131.71
$SO_{2\ lb/dscf}$	Sulfur Dioxide Concentration, lb/dscf x 10^{-6}	20.40	19.63	19.63	19.89
$SO_{2\ lb/hr}$	Sulfur Dioxide Emission Rate, lb/hr	64.38	61.60	62.37	62.78
$SO_{2\ tons/yr}$	Sulfur Dioxide Emission Rate, tons/yr	281.99	269.80	273.18	274.99
$NO_{x\ ppmvd}$	Nitrogen Oxides Concentration, ppmvd	14.63	14.57	14.57	14.59
$NO_{x\ lb/dscf}$	Nitrogen Oxides Concentration, lb/dscf x 10^{-6}	1.747	1.740	1.740	1.742
$NO_{x\ lb/hr}$	Nitrogen Oxides Emission Rate, lb/hr	5.514	5.458	5.528	5.500
$NO_{x\ tons/yr}$	Nitrogen Oxides Emission Rate, tons/yr	24.15	23.91	24.21	24.09
CO_{ppmvd}	Carbon Monoxide Concentration, ppmvd	192.98	188.88	206.88	196.24
$CO_{lb/dscf}$	Carbon Monoxide Concentration, lb/dscf x 10^{-6}	14.03	13.73	15.04	14.26
$CO_{lb/hr}$	Carbon Monoxide Emission Rate, lb/hr	44.26	43.07	47.78	45.04
$CO_{tons/yr}$	Carbon Monoxide Emission Rate, tons/yr	193.85	188.64	209.28	197.26
VOC_{ppmvw}	VOC Concentration, as propane, ppmvw	11.36	12.73	11.10	11.73
VOC_{ppmvd}	VOC Concentration, as propane, ppmvd	12.72	14.44	12.45	13.20
$VOC_{lb/dscf}$	VOC Concentration, as propane, lb/dscf x 10^{-6}	1.456	1.652	1.425	1.511
$VOC_{lb/hr}$	VOC Emission Rate, as propane, lb/hr	4.596	5.184	4.529	4.770
$VOC_{tons/yr}$	VOC Emission Rate, as propane, tons/yr	20.13	22.71	19.84	20.89

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Method 1
Data Sheet

Method 1 Data Sheet

Plant	BPTC	Time	Date	12/22/2010	Job # 10BPTC1288
Address	Texas City, TX	C_p	Wetbulb temp	Md	$\%CO_2$
Location	SRU Incinerator Exhaust Stack	P_{Br} in "Hg	% moisture	Ms 0.00	$\%O_2$
Personnel	DL/MB/BJ	P static in H_2O			Fo -

Distance from Far Wall to Outside of Port, inches		98.0
Width (if Rectangular)		
Nipple Length and/or Wall Thickness, inches		6.0
Diameter, inches		92.0
Equivalent Diameter (only when rectangular)		
Area in square feet		46.16
Straight Distance before sampling location, inches		840.0
Number of Diameters Before Location*		9.1
Straight Distance after sampling location, inches		1800.0
Number of Diameters After Location*		19.6
Enter "P" for Particulate or "V" for velocity		V
Minimum Number of Total Points		12
Number of Total Points Chosen	OK	16
Number of Ports	OK	2
Number of Points per Port	OK	8

Draw sampling location, plan & top view.

Points	% Duct Depth	Distance from Outside of Port	Stack Yaw & Velocity Data: Yaw Angle Degrees	ΔP inch H_2O	Temp °F	Velocity Feet/sec
A1	3.2%	2.9				
A2	10.5%	9.7				
A3	19.4%	17.8				
A4	32.3%	29.7				
A5	67.7%	62.3				
A6	80.6%	74.2				
A7	89.5%	82.3				
A8	96.8%	89.1				
B1	3.2%	2.9				
B2	10.5%	9.7				
B3	19.4%	17.8				
B4	32.3%	29.7				
B5	67.7%	62.3				
B6	80.6%	74.2				
B7	89.5%	82.3				
B8	96.8%	89.1				
		Average				

dscfm

QA/QC Check
Completeness ✓ Legibility ✓ Accuracy ✓ Specifications ✓ Reasonableness ✓

Checked By: Matt [signature] Personnel (Signature/Date) [signature] Leader (Signature/Date)

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USEPA Method 4
Run 1

Method 4 Data Sheet

Plant	BPTC	Run No.	1	Date	12/22/2010	Job #	10BPTC1288
Address	Texas City, TX						
Location	SRU Incinerator Exhaust Stack						
Personnel	DL/MB/BJ						
% Moisture	10.70 Meas						
P_{Br} in "Hg	30.20						
P_{static} in H_2O	-0.265						
K factor							
Filter #							
Filter Wt.							

Equipment ID	Cal		Constants		Checks	Pre	Mid	Post
Reag. Box	Samp. box		A_s foot^2	46.16	Vacuum	15		15
Umbical	Meter box	0904021	Y	0.992	Initial DGM			
Stack TC	TC Readout		$\Delta H_@$	1.837	Final DGM			
Tedlar Bag	Probe	GSCFP029	C_p	0.84	Leak rate	0.000		0.000
Orsat Pump	Nozzle	NA	D_N in inches	NA	Pitot			
Est. Moisture	mL H_2O	84.1	M3A	5.717 %CO_2	Nozzle			
	$B_w$meas	10.7		1.906 %O_2	Stack TC			
	$B_w$sat	100.0	Fo=		F_d=	Ms 27.62	M_d	28.99

Traverse Point No.	Elapsed Time In Minutes Begin	End	Clock Time 24 hr	Gas Meter Reading	Velocity ΔP	Stack Temp. °F	Dry Gas Meter Temperature Inlet		Orifice Pressure ΔH in. H_2O Desired	Actual	Probe Temp. °F	Oven Temp. °F		Imping. Temp. °F	Pump Vac. Hg	Notes
A-1	0.0	5.0	10:45:00	011.725	0.365	1048	69			1.0				60	-1	
2	5.0	10.0		014.470	0.391	1047	69			1.0				57	-1	
3	10.0	15.0		017.220	0.405	1048	69			1.0				53	-1	
4	15.0	20.0		019.970	0.403	1049	69			1.0				53	-1	
5	20.0	25.0		022.740	0.399	1050	70			1.0				52	-1	
6	25.0	30.0		025.500	0.387	1049	70			1.0				52	-1	
7	30.0	35.0		028.260	0.384	1049	70			1.0				49	-1	
8	35.0	40.0		031.010	0.384	1049	70			1.0				49	-1	
B-1	40.0	45.0		033.760	0.381	1046	70			1.0				49	-1	
2	45.0	50.0		036.510	0.377	1049	71			1.0				50	-1	
3	50.0	55.0		039.260	0.394	1050	71			1.0				50	-1	
4	55.0	60.0		042.020	0.411	1050	71			1.0				50	-1	
5	60.0		11:45:00	044.773	0.423	1050										
6					0.405	1049										
7					0.382	1049										
8					0.374	1049										
Final			11:45	44.773												
Sum or avg		60.0		33.048	0.3914	1048.8	69.9			1.000				Max	-1	

Sample Volume	33.048
Sample Volume Std	33.051
SRW	
Total Time	60.23
Total Vacuum	52,593.6
Total Volume	166,839.5

Particulate	grams	lb/hr	gr/scf	lb/MMBtu
Front	NA	NA	NA	
Back	NA	NA	NA	
Total				

Impinger	Contents	Vol. (mL)	Post (mL/g)	Pre (mL/g)	Net gain
1	H_2O	100	168.0	100.0	68.0
2	H_2O	100	106.0	100.0	6.0
3	M_T	0	0.0	0.0	0.0
4	SG	250	946.7	936.6	10.1

QA/QC Check

Completeness _____ Legibility _____ Accuracy _____ Specifications _____ Reasonableness _____

Checked By: _____ _____

Personnel (Signature/Date) Team Leader (Signature/Date)

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USEPA Method 4
Run 2

Method 4 Data Sheet

Plant	BPTC	Run No. 2	Date 12/22/2010	Job # 10BPTC1288	
Address	Texas City, TX				
Location	SRU Incinerator Exhaust Stack				
Personnel	DL/MB/BJ				
% Moisture	11.85 Meas				
P_{Bar} in "Hg	30.20				
P static in H_2O	-0.265				
K factor					
Filter #					
Filter Wt.					

Equipment ID	Cal	Constants		Checks	Pre	Mid	Post
Reag. Box	Samp. box	A_s foot^2	46.16	Vacuum	15		15
Umbical	Meter box 0904021	Y	0.992	Init DGM			
Stack TC	TC Readout	$\Delta H_@$	1.837	Final DGM			
Tedlar Bag	Probe GSCFP029	C_p	0.84	Leak rate	0.000		0.000
Orsat Pump	Nozzle NA	D_N in inches	NA	Pitot			
Est. Moisture	mL H_2O 94.2	M3A	6.256 %CO_2	Nozzle			
	$B_w$meas 11.8		1.939 %O_2	Stack TC			
	$B_w$sat 100.0	Fo=	F_d=	Ms 27.77	M_d 29.08		

Traverse Point No.	Elapsed Time In Minutes Begin	End	Clock Time 24 hr	Gas Meter Reading	Velocity ΔP	Stack Temp. °F	Dry Gas Meter Temperature Inlet		Orifice Pressure ΔH in. H_2O Desired	Actual	Probe Temp. °F	Oven Temp. °F		Imping. Temp. °F	Pump Vac. Hg	Notes
A-1	0.0	5.0	12:05:00	047.455	0.380	1048	70			1.0				60	-1	
2	5.0	10.0		050.210	0.394	1048	70			1.0				58	-1	
3	10.0	15.0		052.980	0.407	1049	70			1.0				54	-1	
4	15.0	20.0		055.730	0.418	1049	70			1.0				54	-1	
5	20.0	25.0		058.480	0.409	1049	71			1.0				54	-1	
6	25.0	30.0		061.230	0.398	1049	71			1.0				53	-1	
7	30.0	35.0		063.980	0.391	1048	72			1.0				54	-1	
8	35.0	40.0		066.730	0.374	1048	72			1.0				55	-1	
B-1	40.0	45.0		069.490	0.369	1048	72			1.0				55	-1	
2	45.0	50.0		072.250	0.391	1048	72			1.0				55	-1	
3	50.0	55.0		075.000	0.401	1049	73			1.0				57	-1	
4	55.0	60.0		077.770	0.418	1049	73			1.0				57	-1	
5	60.0		13:05:00	080.530	0.411	1049										
6					0.403	1049										
7					0.392	1049										
8					0.388	1049										
Final			13:05	80.530												
Sum or avg		60.0		33.075	0.3964	1048.6	71.3			1.000				Max	-1.0	

Sample Vol.	33.075
Sample Vol. std	32.990
Flow	
Total time	60.66
Total vol.	52,290.5
Total wt.	168,024.8

Particulate	grams	lb/hr	gr/scf	lb/MMBtu
Front	NA	NA	NA	
Back	NA	NA	NA	
Total				
Percent				

Impingers	Contents	Vol. (mL)	Post (mL/g)	Pre (mL/g)	Net gain
1	H_2O	100	174.0	100.0	74.0
2	H_2O	100	110.0	100.0	10.0
3	M_T	0	0.0	0.0	0.0
4	SG	250	964.3	954.1	10.2

QA/QC Check
Completeness ____ Legibility ____ Accuracy ____ Specifications ____ Reasonableness ____

Checked By: ____ Personnel (Signature/Date) ____ Team Leader (Signature/Date)

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USEPA Method 4
Run 3

Method 4 Data Sheet

Plant	BPTC	Run No.	3	Date	12/22/2010
Address	Texas City, TX				
Location	SRU Incinerator Exhaust Stack				
Personnel	DL/MB/BJ				

% Moisture	10.85	Meas
P_{Br} in "Hg	30.20	
P_{static} in H_2O	-0.265	
K factor		
Filter #		
Filter Wt.		

Equipment ID	Cal	
Reag. Box	Samp. box	
Umbical	Meter box	0904021
Stack TC	TC Readout	
Tedlar Bag	Probe	GSCFP029
Orsat Pump	Nozzle	NA
Est. Moisture	mL H_2O	84.6
	$B_w$meas	10.8
	$B_w$sat	100.0

Constants		
A_s foot^2	46.16	
Y	0.992	
$\Delta H_@$	1.837	
C_p	0.84	
D_N in inches	NA	
M3A	5.659	%CO_2
	1.864	%O_2
Fo=	Fc=	

Checks	Pre	Mid	Post
Vacuum	15		15
Init DGM			
Final DGM			
Leak rate	0.000		0.000
Pitot			
Nozzle			
Stack TC			

Job #	10BPTC1288
Ms	27.79
M_d	28.98

Traverse Point No.	Elapsed Time In Minutes Begin	End	Clock Time 24 hr	Gas Meter Reading	Velocity ΔP	Stack Temp. °F	Dry Gas Meter Temperature Inlet		Orifice Pressure ΔH in. H_2O Desired	Actual	Probe Temp. °F	Oven Temp. °F		Imping. Temp. °F	Pump Vac. Hg	Notes
A-1	0.0	5.0	13:30:00	081.010	0.376	1048	73			1.0				59	-1	
2	5.0	10.0		083.760	0.394	1048	73			1.0				58	-1	
3	10.0	15.0		086.510	0.394	1048	73			1.0				58	-1	
4	15.0	20.0		089.280	0.407	1050	74			1.0				58	-1	
5	20.0	25.0		092.050	0.420	1049	74			1.0				52	-1	
6	25.0	30.0		094.800	0.413	1049	75			1.0				52	-1	
7	30.0	35.0		097.560	0.387	1048	76			1.0				52	-1	
8	35.0	40.0		100.310	0.385	1048	77			1.0				53	-1	
B-1	40.0	45.0		103.060	0.388	1048	77			1.0				56	-1	
2	45.0	50.0		105.810	0.397	1048	77			1.0				56	-1	
3	50.0	55.0		108.570	0.400	1049	77			1.0				59	-1	
4	55.0	60.0		111.330	0.416	1049	78			1.0				60	-1	
5	60.0		14:30:00	114.090	0.411	1048	78									
6					0.407	1048										
7					0.398	1048										
8					0.374	1048										
Final			14:30	114.090												
Sum or avg	60.0			33.080	0.3978	1048.4	75.5			1.000				Max	-1.0	

Sample Vol.	33.080
Sample Vol. std	32.736
Flow	
Avg. Vel.	60.74
Flow	52,964.2
Flow	168,247.4

Particulate	grams	lb/hr	gr/scf	lb/MMBtu
Front	NA	NA	NA	
Back	NA	NA	NA	
Total				
Avg.				

Impingers	Contents	Vol. (mL)	Post (mL/g)	Pre (mL/g)	Net gain
1	H_2O	100	164.0	100.0	64.0
2	H_2O	100	110.0	100.0	10.0
3	M_T	0	0.0	0.0	0.0
4	SG	250	988.5	977.9	10.6

QA/QC Check
Completeness _____ Legibility _____ Accuracy _____ Specifications _____ Reasonableness _____

Checked By: _____ _____
Personnel (Signature/Date) Team Leader (Signature/Date)

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BP Products North America Inc.
Texas City Refinery
Texas City, TX

One-Minute Reference Method Data
Trailer 10

SRU Incinerator Exhaust Stack

Date	Time	System 1						Calibration Status
		O_2-1	CO_2-1	SO_2-1	NO_x-1	CO-1	THC-1	
		%	%	ppm	ppm	ppm	ppm	
12/22/2010	9:42:00	9.479	-0.036	-1.39	-0.09	-4.06	0.06	Calibrating
12/22/2010	9:43:00	0.010	-0.050	-1.30	-0.11	-4.28	0.06	Calibrating
12/22/2010	9:44:00	0.009	-0.050	-1.27	-0.11	-4.28	0.06	Calibrating
12/22/2010	9:45:00	-0.001	-0.050	-0.07	-0.12	0.54	0.06	Calibrating
12/22/2010	9:46:00	-0.005	-0.050	-0.07	-0.11	0.54	0.06	Calibrating
12/22/2010	9:47:00	-0.008	-0.050	-0.06	-0.11	0.54	0.06	Calibrating
12/22/2010	9:48:00	-0.011	-0.050	-0.07	-0.11	0.54	0.06	Calibrating
12/22/2010	9:49:00	0.049	-0.050	8.55	67.12	0.54	0.06	Calibrating
12/22/2010	9:50:00	-0.014	-0.050	18.16	94.90	0.54	0.06	Calibrating
12/22/2010	9:51:00	-0.015	-0.051	18.28	93.46	0.54	0.06	Calibrating
12/22/2010	9:52:00	-0.015	-0.050	18.06	93.55	0.53	0.06	Calibrating
12/22/2010	9:53:00	0.161	-0.049	12.59	47.07	0.53	0.07	Calibrating
12/22/2010	9:54:00	-0.022	-0.050	-0.02	49.46	0.53	0.06	Calibrating
12/22/2010	9:55:00	0.051	-0.049	5.76	49.47	0.53	0.07	Calibrating
12/22/2010	9:56:00	0.164	-0.050	-0.03	44.46	0.54	0.07	Calibrating
12/22/2010	9:57:00	0.165	-0.050	0.01	44.41	0.54	0.07	Calibrating
12/22/2010	9:58:00	0.073	-0.050	86.12	23.79	0.61	0.07	Calibrating
12/22/2010	9:59:00	-0.025	-0.050	197.30	0.55	0.84	0.07	Calibrating
12/22/2010	10:00:00	-0.027	-0.049	220.04	0.40	0.84	0.07	Calibrating
12/22/2010	10:01:00	-0.041	-0.049	220.63	0.01	0.76	0.07	Calibrating
12/22/2010	10:02:00	-0.010	-0.049	195.49	0.33	0.62	0.07	Calibrating
12/22/2010	10:03:00	-0.028	-0.049	97.96	0.24	0.54	0.07	Calibrating
12/22/2010	10:04:00	-0.026	-0.050	98.46	0.22	0.54	0.07	Calibrating
12/22/2010	10:05:00	14.624	14.293	27.30	0.02	123.93	0.07	Calibrating
12/22/2010	10:06:00	20.045	19.561	-0.02	-0.06	394.14	0.07	Calibrating
12/22/2010	10:07:00	20.049	19.577	-0.08	-0.06	394.23	0.07	Calibrating
12/22/2010	10:08:00	14.025	12.036	-0.02	-0.07	354.73	0.07	Calibrating
12/22/2010	10:09:00	9.619	9.730	-0.06	-0.07	214.29	0.07	Calibrating
12/22/2010	10:10:00	9.616	9.606	-0.04	-0.08	198.58	0.07	Calibrating
12/22/2010	10:11:00	9.616	9.604	-0.08	-0.07	198.71	0.07	Calibrating
12/22/2010	10:12:00	17.685	2.414	0.58	-0.03	136.25	0.07	Calibrating
12/22/2010	10:13:00	15.210	1.737	6.61	3.82	23.20	2.60	
12/22/2010	10:14:00	0.216	-0.010	9.70	0.06	42.18	0.07	Calibrating
12/22/2010	10:15:00	0.059	-0.032	1.89	-0.01	0.84	0.09	Calibrating
12/22/2010	10:16:00	0.042	-0.036	1.95	29.93	0.83	0.07	Calibrating
12/22/2010	10:17:00	0.027	-0.038	2.68	49.06	0.83	0.07	Calibrating
12/22/2010	10:18:00	0.029	-0.043	2.18	49.13	0.83	0.07	Calibrating
12/22/2010	10:19:00	0.031	-0.037	2.36	35.90	0.59	0.07	Calibrating
12/22/2010	10:20:00	9.305	9.186	2.13	0.38	121.39	0.07	Calibrating
12/22/2010	10:21:00	9.556	9.599	2.21	0.25	198.16	0.07	Calibrating
12/22/2010	10:22:00	9.556	9.599	2.50	0.23	198.16	0.07	Calibrating
12/22/2010	10:23:00	0.254	0.200	2.45	0.20	89.63	0.07	Calibrating
12/22/2010	10:24:00	0.014	-0.041	90.72	0.15	0.83	0.07	Calibrating
12/22/2010	10:25:00	0.008	-0.043	97.28	0.11	0.83	0.07	Calibrating
12/22/2010	10:26:00	0.003	-0.043	97.53	0.10	0.83	0.07	Calibrating
12/22/2010	10:27:00	0.008	-0.042	97.79	0.00	0.75	40.89	Calibrating
12/22/2010	10:28:00	0.009	-0.044	14.66	-0.07	0.83	83.51	Calibrating
12/22/2010	10:29:00	0.009	-0.044	2.55	-0.06	0.68	83.53	Calibrating
12/22/2010	10:30:00	0.033	-0.044	1.46	-0.07	0.82	58.01	Calibrating
12/22/2010	10:31:00	0.002	-0.045	1.10	-0.08	0.82	29.69	Calibrating
12/22/2010	10:32:00	-0.003	-0.045	0.78	-0.08	0.82	29.62	Calibrating
12/22/2010	10:33:00	0.019	-0.045	0.64	-0.08	0.82	36.17	Calibrating
12/22/2010	10:34:00	0.006	-0.045	0.53	-0.09	0.75	50.77	Calibrating
12/22/2010	10:35:00	0.007	-0.045	0.43	-0.09	0.83	50.66	Calibrating
12/22/2010	10:36:00	1.560	4.977	68.77	13.39	97.82	13.06	
12/22/2010	10:37:00	1.893	5.706	120.99	14.28	190.54	13.58	
12/22/2010	10:38:00	1.872	5.742	121.27	14.14	191.60	13.58	
12/22/2010	10:39:00	1.934	5.723	121.52	14.03	190.54	13.55	
12/22/2010	10:40:00	1.952	5.709	121.44	14.22	189.42	13.46	
12/22/2010	10:41:00	1.945	5.712	121.20	14.31	190.55	13.05	
12/22/2010	10:42:00	1.944	5.722	121.48	14.23	189.98	13.06	
12/22/2010	10:43:00	1.937	5.732	121.32	14.17	188.97	13.00	
12/22/2010	10:44:00	1.951	5.759	121.47	14.22	189.42	13.09	
12/22/2010	10:45:00	1.932	5.761	121.28	14.23	189.77	12.92	
12/22/2010	10:46:00	1.920	5.757	120.95	14.22	189.75	13.10	
12/22/2010	10:47:00	1.926	5.753	120.81	14.22	197.37	13.36	
12/22/2010	10:48:00	1.926	5.748	120.87	14.21	192.69	13.58	
12/22/2010	10:49:00	1.955	5.759	120.23	14.28	191.22	13.20	
12/22/2010	10:50:00	1.948	5.764	120.04	14.31	192.99	13.32	
12/22/2010	10:51:00	1.990	5.744	120.92	14.23	192.68	13.42	
12/22/2010	10:52:00	1.960	5.765	121.30	14.19	195.86	12.91	
12/22/2010	10:53:00	1.933	5.809	121.26	14.17	189.65	13.00	
12/22/2010	10:54:00	1.924	5.836	120.55	14.24	191.58	12.52	

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Texas City Refinery
Texas City, TX

One-Minute Reference Method Data
Trailer 10

SRU Incinerator Exhaust Stack

Date	Time	System 1						Calibration Status
		O_2-1	CO_2-1	SO_2-1	NO_x-1	CO-1	THC-1	
		%	%	ppm	ppm	ppm	ppm	
12/22/2010	10:55:00	1.917	5.649	122.22	14.07	188.69	10.41	
12/22/2010	10:56:00	1.904	5.701	121.32	14.30	192.85	11.37	
12/22/2010	10:57:00	1.893	5.706	120.99	14.28	190.54	11.58	
12/22/2010	10:58:00	1.872	5.742	121.67	14.14	197.60	11.58	
12/22/2010	10:59:00	1.890	5.744	122.41	14.26	188.02	11.63	
12/22/2010	11:00:00	1.893	5.705	122.78	14.06	187.82	11.72	
12/22/2010	11:01:00	1.889	5.678	123.08	13.93	189.58	11.53	
12/22/2010	11:02:00	1.904	5.673	123.72	14.03	190.54	11.55	
12/22/2010	11:03:00	1.898	5.687	124.04	13.93	199.79	12.01	
12/22/2010	11:04:00	1.921	5.701	124.07	14.04	201.88	12.59	
12/22/2010	11:05:00	1.925	5.700	123.82	13.99	198.13	12.18	
12/22/2010	11:06:00	1.944	5.702	124.03	14.17	194.16	11.90	
12/22/2010	11:07:00	1.958	5.701	124.18	14.12	191.28	12.83	
12/22/2010	11:08:00	1.935	5.729	123.98	14.07	189.58	12.37	
12/22/2010	11:09:00	1.930	5.720	124.44	14.15	185.68	11.72	
12/22/2010	11:10:00	1.922	5.724	124.06	14.13	196.70	11.22	
12/22/2010	11:11:00	1.907	5.732	123.70	14.26	193.51	11.07	
12/22/2010	11:12:00	1.892	5.727	124.18	14.24	183.86	11.07	
12/22/2010	11:13:00	1.880	5.711	124.63	14.31	180.12	11.41	
12/22/2010	11:14:00	1.901	5.699	125.91	14.35	178.01	10.57	
12/22/2010	11:15:00	1.903	5.685	124.27	14.25	179.97	10.73	
12/22/2010	11:16:00	1.910	5.678	124.23	14.08	181.24	11.35	
12/22/2010	11:17:00	1.914	5.676	124.10	14.17	189.18	10.49	
12/22/2010	11:18:00	1.917	5.690	123.94	14.04	189.35	12.16	
12/22/2010	11:19:00	1.925	5.697	123.88	14.10	188.39	11.78	
12/22/2010	11:20:00	1.924	5.688	124.25	14.08	193.29	11.71	
12/22/2010	11:21:00	1.928	5.699	124.08	14.09	197.45	10.63	
12/22/2010	11:22:00	1.918	5.690	123.95	13.95	195.82	8.76	
12/22/2010	11:23:00	1.920	5.690	123.92	13.94	197.66	11.50	
12/22/2010	11:24:00	1.893	5.705	123.66	14.03	195.37	11.47	
12/22/2010	11:25:00	1.867	5.699	124.06	14.08	192.98	10.72	
12/22/2010	11:26:00	1.879	5.676	123.91	13.94	200.89	11.41	
12/22/2010	11:27:00	1.892	5.676	123.01	13.97	198.58	11.05	
12/22/2010	11:28:00	1.895	5.662	123.44	14.00	190.69	11.04	
12/22/2010	11:29:00	1.915	5.649	123.18	14.12	195.06	12.03	
12/22/2010	11:30:00	1.910	5.653	122.81	13.88	195.38	12.40	
12/22/2010	11:31:00	1.915	5.664	122.79	13.94	197.50	12.20	
12/22/2010	11:32:00	1.928	5.669	122.83	13.92	194.32	12.23	
12/22/2010	11:33:00	1.954	5.655	123.18	14.04	200.98	12.21	
12/22/2010	11:34:00	1.947	5.663	122.75	13.94	200.12	12.91	
12/22/2010	11:35:00	1.934	5.682	122.45	13.90	204.14	9.93	
12/22/2010	11:36:00	1.913	5.698	122.42	14.07	199.00	4.50	
12/22/2010	11:37:00	1.904	5.689	123.12	13.97	199.71	9.32	
12/22/2010	11:38:00	1.896	5.687	123.10	14.06	198.49	10.92	
12/22/2010	11:39:00	1.895	5.691	123.15	14.02	203.78	12.38	
12/22/2010	11:40:00	1.910	5.680	122.98	14.11	198.53	11.89	
12/22/2010	11:41:00	1.923	5.667	123.02	13.99	190.76	10.11	
12/22/2010	11:42:00	1.922	5.674	123.08	13.98	197.19	11.57	
12/22/2010	11:43:00	1.925	5.679	123.25	13.93	195.58	11.77	
12/22/2010	11:44:00	1.941	5.669	122.79	14.14	195.21	11.75	
12/22/2010	11:45:00	1.969	5.678	122.94	14.12	191.51	11.62	
12/22/2010	11:46:00	2.555	5.969	113.17	13.82	198.27	10.16	
12/22/2010	11:47:00	2.151	5.369	120.00	11.90	183.27	12.76	
12/22/2010	11:48:00	9.505	9.605	11.59	0.18	184.39	0.06	Calibrating
12/22/2010	11:49:00	9.546	9.622	2.30	0.03	198.49	0.06	Calibrating
12/22/2010	11:50:00	9.552	9.634	1.23	-0.01	198.47	0.06	Calibrating
12/22/2010	11:51:00	5.512	5.229	0.93	12.91	189.35	0.06	
12/22/2010	11:52:00	0.030	0.021	2.48	49.18	16.74	0.06	Calibrating
12/22/2010	11:53:00	0.021	-0.009	2.76	49.25	0.92	0.06	Calibrating
12/22/2010	11:54:00	0.024	-0.016	2.47	36.20	0.91	20.17	Calibrating
12/22/2010	11:55:00	0.009	-0.028	0.58	0.08	0.83	44.05	Calibrating
12/22/2010	11:56:00	0.005	-0.032	0.47	0.00	0.83	49.43	Calibrating
12/22/2010	11:57:00	0.003	-0.036	0.39	-0.04	0.84	49.98	Calibrating
12/22/2010	11:58:00	0.007	-0.034	38.20	0.23	0.76	13.35	Calibrating
12/22/2010	11:59:00	0.005	-0.038	97.45	0.19	1.13	0.07	Calibrating
12/22/2010	12:00:00	0.005	-0.040	97.66	0.16	1.13	0.07	Calibrating
12/22/2010	12:01:00	0.105	1.742	102.22	4.10	21.87	3.15	Calibrating
12/22/2010	12:02:00	1.818	6.215	119.30	14.04	121.53	10.78	
12/22/2010	12:03:00	1.960	6.220	119.12	13.89	184.02	12.96	
12/22/2010	12:04:00	1.959	6.244	119.05	14.03	186.14	12.69	
12/22/2010	12:05:00	1.945	6.238	119.31	14.10	182.74	12.51	
12/22/2010	12:06:00	1.943	6.231	118.62	14.06	182.09	12.24	
12/22/2010	12:07:00	1.940	6.238	118.97	14.03	182.07	13.65	

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One-Minute Reference Method Data
Trailer 10

SRU Incinerator Exhaust Stack

Date	Time	System 1						Calibration Status
		O_2-1	CO_2-1	SO_2-1	NO_x-1	CO-1	THC-1	
		%	%	ppm	ppm	ppm	ppm	
12/22/2010	12:08:00	1.962	6.217	119.52	14.02	179.60	12.24	
12/22/2010	12:09:00	1.988	6.203	118.71	13.95	183.27	14.56	
12/22/2010	12:10:00	2.008	6.205	118.05	14.06	184.78	14.36	
12/22/2010	12:11:00	1.994	6.204	118.04	14.06	187.12	14.44	
12/22/2010	12:12:00	1.987	6.224	117.70	14.06	192.33	14.97	
12/22/2010	12:13:00	1.996	6.270	117.99	14.02	187.80	14.50	
12/22/2010	12:14:00	2.002	6.257	117.95	14.03	187.58	15.40	
12/22/2010	12:15:00	2.004	6.219	118.41	14.15	185.70	14.65	
12/22/2010	12:16:00	2.005	6.211	117.80	14.10	187.28	14.69	
12/22/2010	12:17:00	1.981	6.238	118.20	14.11	187.65	14.38	
12/22/2010	12:18:00	1.975	6.218	119.10	14.07	184.70	14.57	
12/22/2010	12:19:00	1.954	6.217	118.67	14.04	186.45	15.04	
12/22/2010	12:20:00	1.962	6.221	118.52	14.13	185.83	14.53	
12/22/2010	12:21:00	1.957	6.191	117.57	14.07	186.02	14.27	
12/22/2010	12:22:00	1.946	6.202	117.03	13.91	189.07	12.48	
12/22/2010	12:23:00	1.952	6.218	118.29	14.14	183.10	13.60	
12/22/2010	12:24:00	1.952	6.216	118.45	13.99	181.85	14.65	
12/22/2010	12:25:00	1.964	6.223	118.48	14.09	185.64	13.83	
12/22/2010	12:26:00	1.972	6.203	117.56	14.08	184.95	14.21	
12/22/2010	12:27:00	1.977	6.219	117.07	14.05	188.93	14.76	
12/22/2010	12:28:00	1.974	6.235	118.10	14.03	185.98	13.70	
12/22/2010	12:29:00	1.948	6.249	118.56	14.04	191.29	12.37	
12/22/2010	12:30:00	1.931	6.250	119.01	13.94	187.06	11.03	
12/22/2010	12:31:00	1.917	6.237	118.87	14.01	190.12	13.17	
12/22/2010	12:32:00	1.929	6.240	118.13	14.09	185.17	13.62	
12/22/2010	12:33:00	1.935	6.233	118.15	14.04	178.48	13.33	
12/22/2010	12:34:00	1.916	6.234	119.45	14.07	188.84	12.95	
12/22/2010	12:35:00	1.915	6.230	119.34	14.15	192.78	12.52	
12/22/2010	12:36:00	1.900	6.235	119.32	14.18	193.00	10.67	
12/22/2010	12:37:00	1.918	6.231	118.44	14.07	192.93	9.13	
12/22/2010	12:38:00	1.918	6.233	118.49	14.09	197.12	10.62	
12/22/2010	12:39:00	1.918	6.245	119.12	14.09	198.31	12.34	
12/22/2010	12:40:00	1.908	6.268	119.75	14.18	195.37	12.58	
12/22/2010	12:41:00	1.904	6.258	119.09	13.98	201.36	11.64	
12/22/2010	12:42:00	1.931	6.232	117.94	14.00	199.50	12.45	
12/22/2010	12:43:00	1.917	6.229	117.75	14.13	190.72	12.49	
12/22/2010	12:44:00	1.905	6.262	118.53	13.98	194.27	13.32	
12/22/2010	12:45:00	1.924	6.261	118.93	14.01	195.32	14.10	
12/22/2010	12:46:00	1.933	6.238	118.59	14.19	189.08	14.15	
12/22/2010	12:47:00	1.934	6.229	117.85	14.05	189.95	13.19	
12/22/2010	12:48:00	1.934	6.235	117.34	14.05	195.96	8.79	
12/22/2010	12:49:00	1.909	6.250	117.49	13.97	199.85	11.58	
12/22/2010	12:50:00	1.924	6.250	117.87	14.01	199.80	13.88	
12/22/2010	12:51:00	1.937	6.256	117.94	14.03	203.72	13.50	
12/22/2010	12:52:00	1.936	6.270	116.88	14.00	199.86	12.51	
12/22/2010	12:53:00	1.943	6.274	117.17	14.10	201.66	12.57	
12/22/2010	12:54:00	1.956	6.266	117.16	14.09	194.63	12.98	
12/22/2010	12:55:00	1.934	6.287	117.45	14.06	191.74	12.81	
12/22/2010	12:56:00	1.921	6.283	117.31	14.11	191.74	13.61	
12/22/2010	12:57:00	1.918	6.280	117.38	14.17	182.82	11.94	
12/22/2010	12:58:00	1.918	6.299	116.66	14.28	182.54	11.74	
12/22/2010	12:59:00	1.909	6.296	116.97	14.23	183.58	11.84	
12/22/2010	13:00:00	1.915	6.294	117.48	14.20	181.93	11.65	
12/22/2010	13:01:00	1.949	6.295	118.04	14.24	179.03	12.02	
12/22/2010	13:02:00	1.953	6.301	117.75	14.23	179.69	12.01	
12/22/2010	13:03:00	1.949	6.318	117.02	14.25	182.45	10.81	
12/22/2010	13:04:00	1.921	6.346	117.06	14.20	188.00	9.90	
12/22/2010	13:05:00	1.940	6.332	118.12	14.30	186.97	7.84	
12/22/2010	13:06:00	1.951	6.333	118.09	14.34	185.92	12.32	
12/22/2010	13:07:00	4.578	5.639	94.77	8.07	171.64	8.04	
12/22/2010	13:08:00	9.531	9.164	6.13	0.17	173.91	0.07	Calibrating
12/22/2010	13:09:00	9.553	9.604	1.98	0.04	198.02	0.07	Calibrating
12/22/2010	13:10:00	9.590	9.604	1.08	0.00	197.88	0.07	Calibrating
12/22/2010	13:11:00	9.591	9.614	0.85	-0.03	197.66	0.07	Calibrating
12/22/2010	13:12:00	4.857	4.876	0.91	17.74	163.84	0.08	
12/22/2010	13:13:00	0.038	0.016	2.51	48.92	5.72	0.07	Calibrating
12/22/2010	13:14:00	0.030	-0.009	2.77	49.08	0.92	0.07	Calibrating
12/22/2010	13:15:00	0.026	-0.020	2.82	49.16	0.84	0.07	Calibrating
12/22/2010	13:16:00	0.023	-0.025	43.57	14.47	1.01	0.07	Calibrating
12/22/2010	13:17:00	0.011	-0.032	96.09	0.27	1.15	0.07	Calibrating
12/22/2010	13:18:00	0.011	-0.034	97.15	0.21	1.15	0.06	Calibrating
12/22/2010	13:19:00	0.013	-0.036	97.40	0.21	1.15	0.06	Calibrating
12/22/2010	13:20:00	0.137	0.098	81.70	0.57	12.26	23.09	Calibrating

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BP Products North America Inc.
Texas City Refinery
Texas City, TX

One-Minute Reference Method Data
Trailer 10

SRU Incinerator Exhaust Stack

Date	Time	System 1						Calibration Status
		O_2-1	CO_2-1	SO_2-1	NO_x-1	CO-1	THC-1	
		%	%	ppm	ppm	ppm	ppm	
12/22/2010	13:21:00	0.011	-0.036	6.09	-0.03	3.86	49.97	Calibrating
12/22/2010	13:22:00	0.008	-0.038	2.06	-0.05	0.71	50.09	Calibrating
12/22/2010	13:23:00	0.946	3.106	45.32	6.94	40.71	25.12	
12/22/2010	13:24:00	1.885	6.282	109.67	13.89	195.45	13.97	
12/22/2010	13:25:00	1.892	6.282	112.94	13.82	199.30	14.66	
12/22/2010	13:26:00	1.888	6.272	114.66	13.91	203.47	14.85	
12/22/2010	13:27:00	1.920	6.280	115.17	13.99	206.65	14.60	
12/22/2010	13:28:00	1.920	6.289	114.82	14.03	206.53	14.28	
12/22/2010	13:29:00	1.907	5.658	117.26	14.14	203.67	10.36	
12/22/2010	13:30:00	1.886	5.653	117.10	13.97	200.12	12.09	
12/22/2010	13:31:00	1.867	5.672	116.79	14.10	218.43	11.85	
12/22/2010	13:32:00	1.858	5.660	117.11	14.14	216.53	12.35	
12/22/2010	13:33:00	1.846	5.664	117.26	14.07	215.27	12.57	
12/22/2010	13:34:00	1.844	5.665	116.80	14.01	222.07	12.56	
12/22/2010	13:35:00	1.847	5.669	116.69	14.03	207.83	11.81	
12/22/2010	13:36:00	1.834	5.656	117.47	14.04	203.75	12.19	
12/22/2010	13:37:00	1.858	5.654	117.20	14.03	197.47	12.22	
12/22/2010	13:38:00	1.851	5.640	117.34	13.97	204.17	11.99	
12/22/2010	13:39:00	1.862	5.643	117.09	14.02	204.10	12.21	
12/22/2010	13:40:00	1.869	5.633	117.48	13.97	204.55	11.99	
12/22/2010	13:41:00	1.857	5.627	117.92	13.92	217.14	12.47	
12/22/2010	13:42:00	1.865	5.619	117.53	13.92	214.20	12.93	
12/22/2010	13:43:00	1.868	5.635	117.82	13.96	218.67	12.94	
12/22/2010	13:44:00	1.881	5.643	117.73	13.96	218.80	12.76	
12/22/2010	13:45:00	1.874	5.635	118.00	13.94	210.37	12.58	
12/22/2010	13:46:00	1.850	5.624	118.09	13.88	222.09	12.00	
12/22/2010	13:47:00	1.847	5.631	117.95	13.91	224.36	12.40	
12/22/2010	13:48:00	1.851	5.641	117.83	13.85	223.45	12.67	
12/22/2010	13:49:00	1.855	5.618	117.83	13.91	215.54	12.10	
12/22/2010	13:50:00	1.840	5.616	118.27	13.98	214.32	11.82	
12/22/2010	13:51:00	1.859	5.587	118.17	13.94	211.77	12.24	
12/22/2010	13:52:00	1.854	5.607	117.57	13.91	215.20	11.98	
12/22/2010	13:53:00	1.856	5.628	117.75	13.84	211.33	12.13	
12/22/2010	13:54:00	1.882	5.613	118.47	13.98	207.99	12.33	
12/22/2010	13:55:00	1.909	5.577	119.75	13.94	210.51	12.91	
12/22/2010	13:56:00	1.941	5.596	120.46	14.00	211.56	12.73	
12/22/2010	13:57:00	1.915	5.605	121.17	14.12	212.17	12.86	
12/22/2010	13:58:00	1.894	5.628	123.27	14.17	210.43	13.00	
12/22/2010	13:59:00	1.864	5.633	123.97	14.06	207.03	13.11	
12/22/2010	14:00:00	1.852	5.632	123.31	14.11	204.09	13.06	
12/22/2010	14:01:00	1.845	5.636	122.53	14.06	211.69	13.12	
12/22/2010	14:02:00	1.849	5.625	122.46	14.12	205.91	12.86	
12/22/2010	14:03:00	1.863	5.612	121.12	14.29	198.46	12.69	
12/22/2010	14:04:00	1.838	5.620	120.35	13.98	208.32	13.36	
12/22/2010	14:05:00	1.848	5.612	119.85	13.94	211.04	12.77	
12/22/2010	14:06:00	1.871	5.612	119.52	13.98	211.81	12.57	
12/22/2010	14:07:00	1.878	5.623	119.04	14.11	205.23	13.21	
12/22/2010	14:08:00	1.885	5.636	118.37	13.91	207.68	13.54	
12/22/2010	14:09:00	1.899	5.641	118.42	13.86	217.20	13.66	
12/22/2010	14:10:00	1.913	5.673	118.45	14.11	211.26	13.28	
12/22/2010	14:11:00	1.915	5.671	117.91	14.11	208.80	3.94	
12/22/2010	14:12:00	1.901	5.669	117.63	14.17	202.52	0.07	
12/22/2010	14:13:00	1.882	5.698	117.31	14.19	206.62	0.07	
12/22/2010	14:14:00	1.871	5.699	118.09	14.19	193.89	0.07	
12/22/2010	14:15:00	1.878	5.705	117.88	14.26	196.89	0.07	
12/22/2010	14:16:00	1.885	5.699	117.49	14.23	189.98	0.07	
12/22/2010	14:17:00	1.875	5.698	117.65	14.30	189.09	4.43	
12/22/2010	14:18:00	1.887	5.691	117.79	14.26	193.76	9.02	
12/22/2010	14:19:00	1.883	5.690	116.80	14.29	190.51	11.70	
12/22/2010	14:20:00	1.887	5.694	117.19	14.14	189.85	13.18	
12/22/2010	14:21:00	1.897	5.694	117.12	14.15	191.98	13.54	
12/22/2010	14:22:00	1.910	5.687	117.25	14.40	190.72	14.26	
12/22/2010	14:23:00	1.918	5.689	117.02	14.39	188.57	14.19	
12/22/2010	14:24:00	1.886	5.706	116.64	14.25	195.46	13.00	
12/22/2010	14:25:00	1.867	5.710	116.90	14.19	198.75	12.66	
12/22/2010	14:26:00	1.870	5.707	117.33	14.22	195.59	12.76	
12/22/2010	14:27:00	1.863	5.702	117.71	14.18	190.95	13.12	
12/22/2010	14:28:00	1.857	5.700	117.25	14.08	197.71	12.68	
12/22/2010	14:29:00	1.853	5.685	116.85	14.08	200.42	13.01	
12/22/2010	14:30:00	1.852	5.698	116.94	14.00	209.62	13.09	
12/22/2010	14:31:00	1.871	5.698	117.66	14.14	201.59	13.73	
12/22/2010	14:32:00	1.876	5.701	117.31	14.08	204.48	13.58	
12/22/2010	14:33:00	1.890	5.711	117.28	13.97	212.53	13.61	

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BP Products North America Inc.
Texas City Refinery
Texas City, TX

One-Minute Reference Method Data
Trailer 10

SRU Incinerator Exhaust Stack

Date	Time	System 1						Calibration Status
		O_2-1	CO_2-1	SO_2-1	NO_x-1	CO-1	THC-1	
		%	%	ppm	ppm	ppm	ppm	
12/22/2010	14:34:00	1.897	5.703	117.54	14.05	206.66	10.96	
12/22/2010	14:35:00	2.471	3.987	107.41	9.91	196.85	2.88	
12/22/2010	14:36:00	0.118	0.030	95.21	0.40	52.74	0.11	Calibrating
12/22/2010	14:37:00	0.010	-0.025	98.01	0.22	1.23	0.07	Calibrating
12/22/2010	14:38:00	0.012	-0.031	98.19	0.20	1.16	0.07	Calibrating
12/22/2010	14:39:00	0.011	-0.034	97.84	0.19	1.15	0.08	Calibrating
12/22/2010	14:40:00	0.010	-0.036	92.88	2.35	1.08	0.07	Calibrating
12/22/2010	14:41:00	0.007	-0.038	10.51	48.45	0.71	0.07	Calibrating
12/22/2010	14:42:00	0.002	-0.039	4.61	49.05	0.77	0.07	Calibrating
12/22/2010	14:43:00	0.010	-0.040	3.80	49.11	0.71	0.07	Calibrating
12/22/2010	14:44:00	4.593	4.505	3.22	24.82	23.80	0.68	
12/22/2010	14:45:00	9.566	9.419	1.35	0.07	184.34	0.07	Calibrating
12/22/2010	14:46:00	9.610	9.629	1.00	-0.01	197.21	0.07	Calibrating
12/22/2010	14:47:00	9.613	9.642	0.78	-0.03	197.16	0.07	Calibrating
12/22/2010	14:48:00	9.620	9.649	0.67	-0.04	197.31	0.07	Calibrating
12/22/2010	14:49:00	0.805	0.286	0.72	-0.04	107.67	50.44	Calibrating
12/22/2010	14:50:00	0.033	-0.003	0.71	-0.05	1.43	50.49	Calibrating

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BP Products North America Inc.
Texas City Refinery
Texas City, TX

Raw One Minute Data Listing
Traverse and Stratification Data

SRU Incinerator Exhaust Stack

Time	O_2_1	NO_x_1	CO_1						
	Traversed System								
	%	ppm	ppm						
10:36:00	1.560	13.39	97.82						
10:37:00	1.893	14.28	190.54		Point #1				
10:38:00	1.872	14.14	191.60						
10:39:00	1.934	14.03	190.54						
10:40:00	1.952	14.22	189.42		Point #2				
10:41:00	1.945	14.31	190.55						
10:42:00	1.944	14.23	189.98						
10:43:00	1.937	14.17	188.97		Point #3				
10:44:00	1.951	14.22	189.42						
10:45:00	1.932	14.235	189.767						

Point #1			Point #2			Point #3		
Traversed			Traversed			Traversed		
O_2_1	NO_x_1	CO_1	O_2_1	NO_x_1	CO_1	O_2_1	NO_x_1	CO_1
1.900	14.15	190.89	1.947	14.25	189.99	1.940	14.21	189.39

3-Point Average		
O_2_1	NO_x_1	CO_1
1.929	14.20	190.09

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Stratification Testing (Oxygen)

Plant: BPTC
Source: SRU Incinerator Exhaust Stack

Test Date: 12/22/2010
Personnel: DL/MB

***Single sampling system used.

Reference or Stationary Probe Sampling System Conc. (C_r)				
				Average
Time	10:37 - 10:45	10:37 - 10:45	10:37 - 10:45	
Concentration %	1.93	1.93	1.93	1.93

Reference Sampling System (stationary) correction value (C_r - Avg)				
(Change in concentrations due to process variations)				
Correction Value (C_v)	0.00	0.00	0.00	

Traversed System Concentrations (C)				
	Point 1 (16.7 %)	Point 2 (50%)	Point 3 (83.3%)	
Time	10:37	10:40	10:43	
C	1.90	1.95	1.94	

Traversed System Conc. (C_t) Adjusted for Deviations in Reference System ($C+C_v$)				
	Point 1 (16.7 %)	Point 2 (50%)	Point 3 (83.3%)	Avg.
($C + C_v$)	1.90	1.95	1.94	1.93

Abs. Diff. (Avg.C_t - C_t)				
	Point 1 (16.7 %)	Point 2 (50%)	Point 3 (83.3%)	Max Deviation
	0.03	0.02	0.01	0.03

Not Stratified - Less than ± 0.3% O2
[redacted]

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Stratification Testing (NO_x)

Plant: BPTC **Test Date:** 12/22/2010
Source: SRU Incinerator Exhaust Stack **Personnel:** DL/MB

*****Single sampling system used.**

Reference or Stationary Probe Sampling System Conc. (C_r)				
				Average
Time	10:37 - 10:45	10:37 - 10:45	10:37 - 10:45	
Concentration (ppm)	14.20	14.20	14.20	14.20

Reference Sampling System (stationary) correction value (C_r - Avg)				
(Change in concentrations due to process variations)				
Correction Value (C_v)	0.00	0.00	0.00	

Traversed System Concentrations (C)				
	Point 1 (16.7 %)	**Point 2 (50%)**	**Point 3 (83.3%)**	
Time	10:37	10:40	10:43	
C_t	14.15	14.25	14.21	

Traversed System Conc. (C_t) Adjusted for Deviations in Reference System ($C + C_v$)				
	Point 1 (16.7 %)	**Point 2 (50%)**	**Point 3 (83.3%)**	**Avg.**
($C + C_v$)	14.15	14.25	14.21	14.20

Abs. Diff. (Avg.C_t - C_t)				
	Point 1 (16.7 %)	**Point 2 (50%)**	**Point 3 (83.3%)**	**Max % Deviation***
	0.05	0.05	0.00	0.38%

*** - Max % deviation = abs (max difference/avg C_t) x 100**

Not Stratified - Less than ± 0.5 ppm deviation
[redacted]

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Stratification Testing (CO)

Plant: BPTC **Test Date:** 12/22/2010
Source: SRU Incinerator Exhaust Stack **Personnel:** DL/MB

*****Single sampling system used.**

Reference or Stationary Probe Sampling System Conc. (C_r)				
				Average
Time	10:37 - 10:45	10:37 - 10:45	10:37 - 10:45	
Concentration (ppm)	190.09	190.09	190.09	190.09

Reference Sampling System (stationary) correction value (C_r - Avg)				
(Change in concentrations due to process variations)				
Correction Value (C_v)	0.00	0.00	0.00	

Traversed System Concentrations (C)				
	Point 1 (16.7 %)	**Point 2 (50%)**	**Point 3 (83.3%)**	
Time	10:37	10:40	10:43	
C	190.89	189.99	189.39	

Traversed System Conc. (C_t) Adjusted for Deviations in Reference System ($C+C_v$)				
	Point 1 (16.7 %)	**Point 2 (50%)**	**Point 3 (83.3%)**	**Avg.**
($C + C_v$)	190.89	189.99	189.39	190.09

Abs. Diff. (Avg.C_t - C_t)				
	Point 1 (16.7 %)	**Point 2 (50%)**	**Point 3 (83.3%)**	**Max % Deviation***
	0.81	0.10	0.70	0.42%

*** - Max % deviation = abs (max difference/avg Ç) x 100**

Not Stratified - Less Than +/- 5% deviation
[redacted]

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USEPA Methods 1-4 and 15
Summary of Test Results

Plant	BPTC	Address	Texas City, TX	Job #	11BPTC1508
Location	SRU Incinerator Exhaust Stack	Personnel	DL/MB/SB	Date	1/6/2011

	Run Number	1	2	3	Average
Date	Test Date	1/6/2011	1/6/2011	1/6/2011	
Start	Run Start Time	12:50	15:50	18:50	
End	Run Finish Time	15:50	18:50	21:50	
Θ	Net Run Time, min.	180.0	180.0	180.0	180.0
C_p	Pitot Tube Coefficient	0.84	0.84	0.84	0.84
Y	Dry Gas Meter Calibration Factor	0.989	0.989	0.989	0.989
P_{Br}	Barometric Pressure, in. Hg	29.98	29.98	29.98	29.98
ΔH	Average orifice meter Differential, in. H_2O	1.000	1.000	1.000	1.000
V_m	Dry Gas Meter Volume Sampled, ft^3	33.114	33.075	33.090	33.093
t_m	Average Dry Gas Meter Temperature, °F	64.5	72.2	78.4	71.7
V_{mstd}	Dry Gas Meter Volume Sampled, dscf	33.118	32.601	32.238	32.652
V_{lc}	Total Moisture Liquid collected, ml	85.4	79.1	77.4	80.6
V_{wstd}	Volume of Water Vapor, scf	4.03	3.73	3.65	3.80
% H_2O	Moisture Content of Stack Gas, %	10.82	10.25	10.15	10.41
M_{fd}	Dry Mole Fraction	0.892	0.897	0.898	0.896
$\%CO_2$	Carbon Dioxide, %	5.0	5.0	5.0	5.0
$\%O_2$	Oxygen, %	1.0	1.0	1.0	1.0
M_s	Wet Molecular weight, lb/lb-Mole	27.67	27.73	27.74	27.71
P_g	Flue Gas Static Pressure, in. H_2O	-0.262	-0.262	-0.262	-0.262
P_s	Absolute Flue Gas Pressure, in. Hg	29.96	29.96	29.96	29.96
t_s	Average Stack Gas Temperature, °F	1057.6	1057.0	1057.4	1057.4
$\sqrt{\Delta P_{avg}}$	Average Square-Root Velocity Head, in H_2O	0.583	0.621	0.624	0.609
v_s	Average Stack Gas Velocity, ft/sec	56.61	60.23	60.57	59.14
A_s	Stack Crossectional Area, ft^2	46.16	46.16	46.16	46.16
Q_{aw}	Actual Volumetric Flue Gas Flow Rate, acfm	156,794	166,835	167,772	163,800
Q_{std}	Dry Volumetric Flow Rate, dry scfm	48,712	52,187	52,521	51,140
H_2S_{ppmvd}	H_2S Concentration, ppmvd	1.91	1.79	1.95	1.88
$H_2S_{lb/dscf}$	H_2S Concentration, lb/dscf x 10^{-6}	0.169	0.159	0.172	0.167
$H_2S_{lb/hr}$	H_2S Emission Rate, lb/hr	0.494	0.496	0.542	0.511
$H_2S_{tons/yr}$	H_2S Emission Rate, tons/yr	2.164	2.174	2.375	2.238

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USEPA Method 4
Run 1

Method 4 Data Sheet

Plant	BPTC	Run No.	1	Date	1/6/2011
Address	Texas City, TX				
Location	SRU Incinerator Exhaust Stack				
Personnel	DL/MB/SB				

% Moisture	10.82	Meas
P_{Br} in "Hg	29.98	
P_{static} in H_2O	-0.262	
K factor		
Filter #		
Filter Wt.		

Equipment ID		Cal
Reag. Box	Samp. box	
Umbical	Meter box	0904021
Stack TC	TC Readout	
Tedlar Bag	Probe	GSCFP025
Orsat Pump	Nozzle	NA
Est. Moisture	mL H_2O	85.4
	B_w,meas	10.8
	B_w,sat	100.0

Constants		
A_s foot^2	46.16	
Y	0.989	
$\Delta H_@$	1.889	
C_p	0.84	
D_N in inches	NA	
M3	5.0	$\%CO_2$
	1.0	$\%O_2$
Fo=		F_d=

Checks	Pre	Mid	Post
Vacuum	15		15
Initial DGM			
Final DGM			
Leak rate	0.00		0.00
Pitot			
Nozzle			
Stack TC			

Job #	11BPTC1508
Ms	27.67
M_d	28.84

Traverse Point No.	Elapsed Time In Minutes Begin	End	Clock Time 24 hr	Gas Meter Reading	Velocity ΔP	Stack Temp. °F	Dry Gas Meter Temperature Inlet		Orifice Pressure ΔH in. H_2O Desired	Actual	Probe Temp. °F	Oven Temp. °F		Imping. Temp. °F	Pump Vac. Hg	Notes
A-1	0.0	5.0	13:50:00	151.352	0.259	1057	63			1.0				62	-2	
2	5.0	10.0		154.110	0.343	1057	63			1.0				60	-2	
3	10.0	15.0		156.880	0.369	1058	63			1.0				57	-2	
4	15.0	20.0		159.640	0.398	1059	64			1.0				57	-2	
5	20.0	25.0		162.410	0.391	1058	64			1.0				55	-2	
6	25.0	30.0		165.160	0.374	1058	64			1.0				52	-2	
7	30.0	35.0		167.920	0.246	1058	64			1.0				52	-2	
8	35.0	40.0		170.680	0.246	1058	65			1.0				52	-2	
B-1	40.0	45.0		173.430	0.291	1056	65			1.0				53	-2	
2	45.0	50.0		176.190	0.363	1056	65			1.0				53	-2	
3	50.0	55.0		178.950	0.394	1058	66			1.0				53	-2	
4	55.0	60.0		181.710	0.401	1058	66			1.0				55	-2	
5	60.0		14:50:00	184.466	0.405	1058	66			1.0				55	-2	
6					0.367	1058										
7					0.314	1058										
8					0.307	1057										
Final			14:50	184.466												
Sum or avg	60.0			33.114	0.3394	1057.6	64.5			1.000				Max	-2	

Sample Vol. ft^3	33.114
Sample Vol. m^3	33.118
Avg. Flow	
Q_{std}	56.61
Q_{act}	48,712.3
Q_{std}	156,794.3

Particulate	grams	lb/hr	gr/scf	lb/MMBtu
Front	NA	NA	NA	
Back	NA	NA	NA	
Inorganic				
Total				

Impingers	Contents	Vol. (mL)	Post (mL/g)	Pre (mL/g)	Net gain
1	H_2O	100	160.0	100.0	60.0
2	H_2O	100	116.0	100.0	16.0
3	M_T	0	0.0	0.0	0.0
4	SG	250	295.6	286.2	9.4

QA/QC Check
Completeness ✓ Legibility ✓ Accuracy ✓ Specifications ✓ Reasonableness ✓

Checked By: Personnel (Signature/Date) Team Leader (Signature/Date)

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USEPA Method 4
Run 2

Method 4 Data Sheet

Plant	BPTC	Run No. 2	Date 1/6/2011	Job # 11BPTC1508	
Address	Texas City, TX				
Location	SRU Incinerator Exhaust Stack				
Personnel	DL/MB/SB				

		Meas
% Moisture	10.25	
P_{Br} in "Hg	29.96	
P_{static} in H_2O	-0.262	
K factor		

Equipment ID	Cal		
Reag. Box	Samp. box		
Umbical	Meter box	0904021	
Stack TC	TC Readout		
Tedlar Bag	Probe	GSCFP025	
Orsat Pump	Nozzle	NA	
Est. Moisture	mL H_2O	79.1	
	$B_w$meas	10.3	
	$B_w$sat	100.0	

Constants		
A_s foot^2	46.16	
Y	0.989	
$\Delta H_@$	1.889	
C_p	0.84	
D_N in inches	NA	
M3	5.0	%CO_2
	1.0	%O_2
Fo=		Fs=

Checks	Pre	Mid	Post
Vacuum	15		15
Init DGM			
Final DGM			
Leak rate	0.000		0.000
Pitot			
Nozzle			
Stack TC			
Ms	27.73	M_d	28.84

Filter #

Filter Wt.

Traverse Point No.	Elapsed Time In Minutes Begin	End	Clock Time 24 hr	Gas Meter Reading	Velocity ΔP	Stack Temp. °F	Dry Gas Meter Temperature Inlet		Orifice Pressure ΔH in. H_2O Desired	Actual	Probe Temp. °F	Oven Temp. °F		Imping. Temp. °F	Pump Vac. Hg	Notes
A-1	0.0	5.0	16:50:00	184.795	0.348	1054	70			1.0				60	-2	
2	5.0	10.0		187.550	0.369	1056	70			1.0				60	-2	
3	10.0	15.0		190.310	0.395	1057	70			1.0				60	-2	
4	15.0	20.0		193.070	0.401	1057	71			1.0				58	-2	
5	20.0	25.0		195.820	0.413	1058	71			1.0				54	-2	
6	25.0	30.0		198.580	0.410	1058	72			1.0				54	-2	
7	30.0	35.0		201.340	0.387	1057	72			1.0				55	-2	
8	35.0	40.0		204.090	0.365	1057	72			1.0				56	-2	
B-1	40.0	45.0		206.840	0.366	1056	73			1.0				56	-2	
2	45.0	50.0		209.600	0.374	1056	74			1.0				56	-2	
3	50.0	55.0		212.360	0.391	1057	74			1.0				56	-2	
4	55.0	60.0		215.120	0.403	1057	74			1.0				56	-2	
5	60.0		17:50:00	217.870	0.400	1058	75			1.0				59	-2	
6					0.401	1058										
7					0.374	1058										
8					0.371	1058										
Final			17:50	217.870												
Sum or avg	60.0			33.075	0.3853	1057.0	72.2			1.000				Max	-2.0	

Sample Volume	33.075
Sample Vol std	32.601
Flow	
Rate	60.23
Hour	52,186.7
Day	166,834.7

Particulate	grams	lb/hr	gr/scf	lb/MMBtu
Total	NA	NA	NA	
Filter	NA	NA	NA	
Inorganic				
Organic				

Impingers	Contents	Vol. (mL)	Post (mL/g)	Pre (mL/g)	Net gain
1	H_2O	100	152.0	100.0	52.0
2	H_2O	100	118.0	100.0	18.0
3	M_T	0	0.0	0.0	0.0
4	SG	250	295.4	286.3	9.1

QA/QC Check

Completeness ✓ Legibility ✓ Accuracy ✓ Specifications ✓ Reasonableness ✓

Checked By: Personnel (Signature/Date) Team Leader (Signature/Date)

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USEPA Method 4
Run 3

Method 4 Data Sheet

Plant	BPTC	Run No.	3	Date	1/6/2011
Address	Texas City, TX				
Location	SRU Incinerator Exhaust Stack				
Personnel	DL/MB/SB				

% Moisture	10.15	Meas
P_{Br} in "Hg	29.98	
P_{static} in H_2O	-0.262	
K factor		
Filter #		
Filter Wt.		

Equipment ID	Cal		
Reag. Box	Samp. box		
Umbical	Meter box	0904021	
Stack TC	TC Readout		
Tedlar Bag	Probe	GSCFP025	
Orsat Pump	Nozzle	NA	
Est. Moisture	mL H_2O	77.4	
	$B_w$meas	10.2	
	$B_w$sat	100.0	

Constants		
A_n foot^2	46.16	
Y	0.989	
$\Delta H_@$	1.869	
C_p	0.84	
D_N in inches	NA	
M3	5.0	%CO_2
	1.0	%O_2
Fo=		F_d=

Checks	Pre	Mid	Post
Vacuum	15		15
Init DGM			
Final DGM			
Leak rate	0.000		0.000
Pitot			
Nozzle			
Stack TC			
Ms	27.74	M_d	28.84

Traverse Point No.	Elapsed Time In Minutes Begin	End	Clock Time 24 hr	Gas Meter Reading	Velocity ΔP	Stack Temp. °F	Dry Gas Meter Temperature Inlet		Orifice Pressure ΔH in. H_2O Desired	Actual	Probe Temp. °F	Oven Temp. °F		Imping. Temp. °F	Pump Vac. Hg	Notes
A-1	0.0	5.0	19:50:00	218.135	0.369	1057	75			1.0				59	-1	
2	5.0	10.0		220.880	0.385	1057	75			1.0				60	-1	
3	10.0	15.0		223.640	0.403	1057	76			1.0				61	-1	
4	15.0	20.0		226.400	0.411	1058	77			1.0				61	-1	
5	20.0	25.0		229.170	0.418	1059	77			1.0				63	-1	
6	25.0	30.0		231.930	0.406	1058	77			1.0				61	-1	
7	30.0	35.0		234.690	0.382	1058	79			1.0				60	-1	
8	35.0	40.0		237.450	0.371	1058	80			1.0				60	-1	
B-1	40.0	45.0		240.210	0.364	1056	80			1.0				58	-1	
2	45.0	50.0		242.960	0.391	1057	80			1.0				58	-1	
3	50.0	55.0		245.710	0.395	1057	81			1.0				55	-1	
4	55.0	60.0		248.460	0.395	1058	81			1.0				55	-1	
5	60.0		20:50:00	251.225	0.410	1058	81			1.0				55	-1	
6					0.407	1057										
7					0.378	1057										
8					0.353	1057										
Final			20:50	251.225												
Sum or avg	60.0			33.090	0.3897	1057.4	78.4			1.000				Max	-1.0	

Sample Volume	33.090
Sample Volume std	32.238
Flow	
Qavg	60.57
Qstd	52,521.2
Acfm	167,771.9

Particulate	grams	lb/hr	gr/scf	lb/MMBtu
Front	NA	NA	NA	
Back	NA	NA	NA	
Impinger				
Total				

Impingers	Contents	Vol. (mL)	Post (mL/g)	Pre (mL/g)	Net gain
1	H_2O	100	154.0	100.0	54.0
2	H_2O	100	114.0	100.0	14.0
3	M_T	0	0.0	0.0	0.0
4	SG	250	301.0	291.6	9.4

QA/QC Check
Completeness ✓ Legibility ✓ Accuracy ✓ Specifications ✓ Reasonableness ✓

Checked by: Personnel (Signature/Date) Team Leader (Signature/Date)

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SITE BP Texas City
Location SRU

Project 11BPTC1508
Date 1/6/2011

METHOD 15 H2S ANALYSIS

RUN 1 12:50 - 15:50 File Name	Date	Time	RAW H2S (ppm)	Line Loss Corrected H2S (ppm)
H2S SRU Sampling012	1/6/2011	12:50:14	1.470	1.812
H2S SRU Sampling013	1/6/2011	12:53:52	1.456	1.795
H2S SRU Sampling014	1/6/2011	12:57:30	1.448	1.785
H2S SRU Sampling015	1/6/2011	13:01:10	1.460	1.800
H2S SRU Sampling016	1/6/2011	13:04:48	1.500	1.849
H2S SRU Sampling017	1/6/2011	13:08:27	1.409	1.737
H2S SRU Sampling018	1/6/2011	13:12:06	1.365	1.683
H2S SRU Sampling019	1/6/2011	13:15:45	1.324	1.632
H2S SRU Sampling020	1/6/2011	13:19:24	1.322	1.630
H2S SRU Sampling021	1/6/2011	13:23:03	1.359	1.676
H2S SRU Sampling022	1/6/2011	13:26:42	1.442	1.778
H2S SRU Sampling023	1/6/2011	13:30:20	1.638	2.019
H2S SRU Sampling024	1/6/2011	13:33:58	1.568	1.933
H2S SRU Sampling025	1/6/2011	13:59:00	1.544	1.904
H2S SRU Sampling026	1/6/2011	14:02:39	1.570	1.936
H2S SRU Sampling027	1/6/2011	14:06:19	1.605	1.979
H2S SRU Sampling028	1/6/2011	14:09:55	1.685	2.077
H2S SRU Sampling029	1/6/2011	14:13:34	1.803	2.223
H2S SRU Sampling030	1/6/2011	14:17:16	1.875	2.312
H2S SRU Sampling031	1/6/2011	14:20:57	1.779	2.193
H2S SRU Sampling032	1/6/2011	14:24:38	1.760	2.170
H2S SRU Sampling033	1/6/2011	14:28:15	1.847	2.277
H2S SRU Sampling034	1/6/2011	14:32:57	1.592	1.963
H2S SRU Sampling035	1/6/2011	14:36:36	1.561	1.925
H2S SRU Sampling036	1/6/2011	14:40:14	1.535	1.892
H2S SRU Sampling037	1/6/2011	14:43:54	1.554	1.916
H2S SRU Sampling038	1/6/2011	14:47:34	1.620	1.997
H2S SRU Sampling039	1/6/2011	14:51:14	1.607	1.981
H2S SRU Sampling040	1/6/2011	14:54:55	1.599	1.971
H2S SRU Sampling041	1/6/2011	14:58:50	1.496	1.844
H2S SRU Sampling042	1/6/2011	15:02:40	1.531	1.888
H2S SRU Sampling043	1/6/2011	15:06:28	1.525	1.880
H2S SRU Sampling044	1/6/2011	15:10:07	1.567	1.932
H2S SRU Sampling045	1/6/2011	15:13:45	1.619	1.996
H2S SRU Sampling046	1/6/2011	15:17:23	1.522	1.876
H2S SRU Sampling047	1/6/2011	15:21:01	1.389	1.712
H2S SRU Sampling048	1/6/2011	15:24:39	1.343	1.656
H2S SRU Sampling049	1/6/2011	15:28:16	1.321	1.629
H2S SRU Sampling050	1/6/2011	15:31:55	1.364	1.682
H2S SRU Sampling051	1/6/2011	15:35:33	1.727	2.129
H2S SRU Sampling052	1/6/2011	15:39:12	1.302	1.605
H2S SRU Sampling053	1/6/2011	15:42:51	1.239	1.528
H2S SRU Sampling054	1/6/2011	15:46:30	1.203	1.483

Line Loss Corrected H2S = Raw/(1-Line Loss%)

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SITE BP Texas City
Location SRU

Project 11BPTC1508
Date 1/6/2011

METHOD 15 H2S ANALYSIS

RUN 2 15:50 - 18:50 File Name	Date	Time	RAW H2S (ppm)	Line Loss Corrected H2S (ppm)
H2S SRU Sampling055	1/6/2011	15:50:08	1.070	1.319
H2S SRU Sampling056	1/6/2011	15:53:46	1.130	1.393
H2S SRU Sampling057	1/6/2011	15:57:24	1.207	1.488
H2S SRU Sampling058	1/6/2011	16:01:02	1.171	1.444
H2S SRU Sampling059	1/6/2011	16:04:42	1.142	1.408
H2S SRU Sampling060	1/6/2011	16:08:20	1.236	1.524
H2S SRU Sampling061	1/6/2011	16:11:58	1.279	1.577
H2S SRU Sampling062	1/6/2011	16:15:38	1.249	1.540
H2S SRU Sampling063	1/6/2011	16:19:16	1.414	1.743
H2S SRU Sampling064	1/6/2011	16:22:55	1.427	1.759
H2S SRU Sampling065	1/6/2011	16:26:34	1.306	1.610
H2S SRU Sampling066	1/6/2011	16:30:11	1.317	1.624
H2S SRU Sampling067	1/6/2011	16:33:50	1.472	1.815
H2S SRU Sampling068	1/6/2011	16:37:28	1.485	1.831
H2S SRU Sampling069	1/6/2011	16:41:06	1.430	1.763
H2S SRU Sampling070	1/6/2011	16:44:44	1.352	1.667
H2S SRU Sampling071	1/6/2011	16:48:23	1.461	1.801
H2S SRU Sampling072	1/6/2011	16:52:02	1.435	1.769
H2S SRU Sampling073	1/6/2011	16:55:41	1.451	1.789
H2S SRU Sampling074	1/6/2011	16:59:20	1.518	1.872
H2S SRU Sampling075	1/6/2011	17:02:58	1.654	2.039
H2S SRU Sampling076	1/6/2011	17:06:37	1.745	2.151
H2S SRU Sampling077	1/6/2011	17:10:15	1.685	2.077
H2S SRU Sampling078	1/6/2011	17:13:52	1.665	2.053
H2S SRU Sampling079	1/6/2011	17:17:32	1.595	1.966
H2S SRU Sampling080	1/6/2011	17:21:10	1.558	1.921
H2S SRU Sampling081	1/6/2011	17:24:47	1.581	1.949
H2S SRU Sampling082	1/6/2011	17:28:25	1.581	1.949
H2S SRU Sampling083	1/6/2011	17:32:02	1.707	2.105
H2S SRU Sampling084	1/6/2011	17:35:40	1.617	1.994
H2S SRU Sampling085	1/6/2011	17:39:18	1.411	1.740
H2S SRU Sampling086	1/6/2011	17:42:57	1.463	1.804
H2S SRU Sampling087	1/6/2011	17:46:34	1.487	1.833
H2S SRU Sampling088	1/6/2011	17:50:13	1.461	1.801
H2S SRU Sampling089	1/6/2011	17:53:52	1.467	1.809
H2S SRU Sampling090	1/6/2011	17:57:31	1.506	1.857
H2S SRU Sampling091	1/6/2011	18:01:09	1.572	1.938
H2S SRU Sampling092	1/6/2011	18:04:46	1.494	1.842
H2S SRU Sampling093	1/6/2011	18:08:25	1.623	2.001
H2S SRU Sampling094	1/6/2011	18:12:03	1.597	1.969
H2S SRU Sampling095	1/6/2011	18:15:41	1.578	1.946
H2S SRU Sampling096	1/6/2011	18:19:18	1.521	1.875
H2S SRU Sampling097	1/6/2011	18:22:56	1.541	1.900
H2S SRU Sampling098	1/6/2011	18:26:34	1.525	1.880
H2S SRU Sampling099	1/6/2011	18:30:11	1.526	1.881
H2S SRU Sampling100	1/6/2011	18:33:50	1.607	1.981
H2S SRU Sampling101	1/6/2011	18:37:27	1.529	1.885
H2S SRU Sampling102	1/6/2011	18:41:05	1.535	1.892
H2S SRU Sampling103	1/6/2011	18:44:43	1.603	1.976
H2S SRU Sampling104	1/6/2011	18:48:21	1.427	1.759

Line Loss Corrected H2S = Raw/(1-Line Loss%)

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GOLDEN SPECIALTY

SITE BP Texas City
Location SRU

Project 11BPTC1508
Date 1/6/2011

METHOD 15 H2S ANALYSIS

RUN 3 18:50 - 21:50 File Name	Date	Time	RAW H2S (ppm)	Line Loss Corrected H2S (ppm)
H2S SRU Sampling105	1/6/2011	18:51:59	1.561	1.925
H2S SRU Sampling106	1/6/2011	18:55:38	1.551	1.912
H2S SRU Sampling107	1/6/2011	18:59:16	1.535	1.892
H2S SRU Sampling108	1/6/2011	19:02:53	1.434	1.768
H2S SRU Sampling109	1/6/2011	19:06:31	1.402	1.729
H2S SRU Sampling110	1/6/2011	19:10:09	1.508	1.859
H2S SRU Sampling111	1/6/2011	19:13:47	1.424	1.756
H2S SRU Sampling112	1/6/2011	19:17:27	1.383	1.705
H2S SRU Sampling113	1/6/2011	19:21:04	1.426	1.758
H2S SRU Sampling114	1/6/2011	19:24:43	1.471	1.814
H2S SRU Sampling115	1/6/2011	19:28:21	1.432	1.766
H2S SRU Sampling116	1/6/2011	19:31:59	1.464	1.805
H2S SRU Sampling117	1/6/2011	19:35:37	1.606	1.980
H2S SRU Sampling118	1/6/2011	19:39:16	1.621	1.999
H2S SRU Sampling119	1/6/2011	19:42:53	1.569	1.934
H2S SRU Sampling120	1/6/2011	19:46:33	1.684	2.076
H2S SRU Sampling121	1/6/2011	19:50:11	1.703	2.100
H2S SRU Sampling122	1/6/2011	19:53:48	1.716	2.116
H2S SRU Sampling123	1/6/2011	19:57:26	1.770	2.182
H2S SRU Sampling124	1/6/2011	20:01:04	1.776	2.190
H2S SRU Sampling125	1/6/2011	20:04:42	1.755	2.164
H2S SRU Sampling126	1/6/2011	20:08:19	1.704	2.101
H2S SRU Sampling127	1/6/2011	20:11:58	1.713	2.112
H2S SRU Sampling128	1/6/2011	20:15:35	1.615	1.991
H2S SRU Sampling129	1/6/2011	20:19:15	1.557	1.920
H2S SRU Sampling130	1/6/2011	20:22:52	1.621	1.999
H2S SRU Sampling131	1/6/2011	20:26:30	1.482	1.827
H2S SRU Sampling132	1/6/2011	20:30:08	1.518	1.872
H2S SRU Sampling133	1/6/2011	20:33:47	1.494	1.842
H2S SRU Sampling134	1/6/2011	20:37:26	1.515	1.868
H2S SRU Sampling135	1/6/2011	20:41:03	1.486	1.832
H2S SRU Sampling136	1/6/2011	20:44:49	1.418	1.748
H2S SRU Sampling137	1/6/2011	20:48:26	1.497	1.846
H2S SRU Sampling138	1/6/2011	20:52:04	1.550	1.911
H2S SRU Sampling139	1/6/2011	20:55:43	1.525	1.880
H2S SRU Sampling140	1/6/2011	20:59:22	1.563	1.927
H2S SRU Sampling141	1/6/2011	21:02:59	1.684	2.076
H2S SRU Sampling142	1/6/2011	21:06:37	1.585	1.954
H2S SRU Sampling143	1/6/2011	21:10:15	1.638	2.019
H2S SRU Sampling144	1/6/2011	21:13:52	1.628	2.007
H2S SRU Sampling145	1/6/2011	21:17:30	1.555	1.917
H2S SRU Sampling146	1/6/2011	21:21:08	1.596	1.968
H2S SRU Sampling147	1/6/2011	21:24:48	1.672	2.061
H2S SRU Sampling148	1/6/2011	21:28:27	1.678	2.069
H2S SRU Sampling149	1/6/2011	21:32:04	1.640	2.022
H2S SRU Sampling150	1/6/2011	21:35:42	1.731	2.134
H2S SRU Sampling151	1/6/2011	21:39:20	1.667	2.055
H2S SRU Sampling152	1/6/2011	21:42:58	1.648	2.032
H2S SRU Sampling153	1/6/2011	21:46:35	1.610	1.985
H2S SRU Sampling154	1/6/2011	21:50:13	1.657	2.043

Line Loss Corrected H2S = Raw/(1-Line Loss%)

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APPENDIX F – Process Data

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BP Products North America Inc.
Texas City Refinery
Texas City, TX

Process Data

SRU Incinerator Exhaust Stack

time	T202C ABSORBER OVERHEAD TO MSCFH	NATURAL GAS TO F9C BURNER MSCFH	F8C INCINERATOR TEMP Deg F	T202C ABSORBER OVHD H2S PPM	Estimated SRU sulfur production of acid gas to unit ton/day
22-Dec-10 10:45:00	1051.13	34.16	1118.69	102.13	552.96
22-Dec-10 10:46:00	1048.65	34.18	1116.87	102.13	553.02
22-Dec-10 10:47:00	1039.51	34.20	1117.83	I/O Timeout	553.07
22-Dec-10 10:48:00	1050.67	34.29	1116.01	103.13	553.12
22-Dec-10 10:49:00	1055.13	34.32	1114.36	103.13	553.17
22-Dec-10 10:50:00	1055.69	34.35	1113.80	103.13	553.22
22-Dec-10 10:51:00	1046.17	34.41	1112.17	103.13	553.27
22-Dec-10 10:52:00	1026.10	34.46	1115.19	103.13	553.33
22-Dec-10 10:53:00	1030.56	34.45	1119.07	103.13	553.38
22-Dec-10 10:54:00	1046.42	34.43	1120.58	103.13	553.43
22-Dec-10 10:55:00	1054.15	34.41	1123.78	103.13	553.48
22-Dec-10 10:56:00	1048.37	34.44	1122.65	103.13	553.53
22-Dec-10 10:57:00	1046.88	34.43	1123.64	103.13	553.58
22-Dec-10 10:58:00	1045.40	34.31	1126.98	103.13	553.64
22-Dec-10 10:59:00	1044.65	34.20	1128.61	103.13	553.69
22-Dec-10 11:00:00	1040.29	34.12	1129.06	103.13	553.74
22-Dec-10 11:01:00	1016.50	34.14	1123.15	103.13	553.78
22-Dec-10 11:02:00	1022.78	34.14	1118.60	103.13	553.83
22-Dec-10 11:03:00	1037.50	34.17	1118.71	103.13	553.87
22-Dec-10 11:04:00	1051.18	34.17	1117.36	103.13	553.91
22-Dec-10 11:05:00	1049.48	34.14	1116.17	I/O Timeout	553.96
22-Dec-10 11:06:00	1053.04	34.19	1118.13	104.34	554.00
22-Dec-10 11:07:00	1044.61	34.18	1118.69	104.31	554.05
22-Dec-10 11:08:00	1039.14	34.18	1118.93	104.27	554.09
22-Dec-10 11:09:00	1025.99	34.25	1122.30	104.24	554.13
22-Dec-10 11:10:00	1011.68	34.22	1121.91	104.20	554.18
22-Dec-10 11:11:00	1019.11	34.17	1119.60	104.17	554.22
22-Dec-10 11:12:00	1052.42	34.21	1120.24	104.13	554.26
22-Dec-10 11:13:00	1047.25	34.19	1124.26	104.10	554.31
22-Dec-10 11:14:00	1023.67	34.19	1123.86	104.06	554.35
22-Dec-10 11:15:00	1030.60	34.14	1122.59	104.03	554.40
22-Dec-10 11:16:00	1037.54	34.14	1122.31	103.99	554.44
22-Dec-10 11:17:00	1035.38	34.13	1123.85	103.96	554.48
22-Dec-10 11:18:00	1032.81	34.01	1125.71	103.92	554.53
22-Dec-10 11:19:00	1040.74	33.99	1124.58	103.89	554.57
22-Dec-10 11:20:00	1045.69	33.93	1124.42	103.85	554.61
22-Dec-10 11:21:00	1030.67	33.80	1127.41	103.82	554.66
22-Dec-10 11:22:00	1030.19	33.77	1124.61	103.78	554.70
22-Dec-10 11:23:00	1066.56	33.79	1120.03	103.75	554.75
22-Dec-10 11:24:00	1021.96	33.79	1121.56	103.71	554.79
22-Dec-10 11:25:00	1029.33	33.80	1121.10	103.68	554.83
22-Dec-10 11:26:00	1048.32	33.76	1120.62	103.64	554.88
22-Dec-10 11:27:00	1054.83	33.71	1122.23	103.61	554.92
22-Dec-10 11:28:00	1036.00	33.71	1123.24	103.57	554.96
22-Dec-10 11:29:00	1046.42	33.70	1124.17	103.54	555.01
22-Dec-10 11:30:00	1052.37	33.75	1124.13	103.50	555.05
22-Dec-10 11:31:00	1042.49	33.75	1120.95	103.47	555.10
22-Dec-10 11:32:00	1036.05	33.69	1121.73	103.43	555.14
22-Dec-10 11:33:00	1048.22	33.68	1122.01	103.40	555.18
22-Dec-10 11:34:00	1050.20	33.65	1116.27	103.36	555.23
22-Dec-10 11:35:00	1042.17	33.69	1111.32	103.33	555.27
22-Dec-10 11:36:00	1053.57	33.81	1111.92	103.29	555.31
22-Dec-10 11:37:00	1031.90	33.83	1116.41	103.26	555.36
22-Dec-10 11:38:00	1024.49	33.76	1118.14	103.22	555.40
22-Dec-10 11:39:00	1030.95	33.83	1118.10	103.19	555.45
22-Dec-10 11:40:00	1030.95	33.80	1119.37	103.15	555.49
22-Dec-10 11:41:00	1031.40	33.74	1119.93	103.12	555.53
22-Dec-10 11:42:00	1036.36	33.81	1120.98	103.08	555.58
22-Dec-10 11:43:00	1042.45	33.78	1124.13	103.05	555.62
22-Dec-10 11:44:00	1043.88	33.76	1125.55	103.01	555.66
22-Dec-10 11:45:00	1037.19	33.72	1126.42	102.98	555.71
Avg.	**1040.10**	**34.03**	**1120.77**	**103.45**	**554.38**

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BP Products North America Inc.
Texas City Refinery
Texas City, TX

Process Data

SRU Incinerator Exhaust Stack

time	T202C ABSORBER OVERHEAD TO MSCFH	NATURAL GAS TO F9C BURNER MSCFH	F8C INCINERATOR TEMP Deg F	T202C ABSORBER OVHD H2S PPM	Estimated SRU sulfur production of acid gas to unit ton/day
22-Dec-10 12:05:00	1051.25	33.55	1117.91	102.28	557.12
22-Dec-10 12:06:00	1039.11	33.54	1118.34	102.24	557.27
22-Dec-10 12:07:00	1021.24	33.60	1119.23	102.21	557.42
22-Dec-10 12:08:00	1011.09	33.60	1119.71	102.17	557.57
22-Dec-10 12:09:00	1025.47	33.50	1119.45	102.14	557.72
22-Dec-10 12:10:00	1024.38	33.54	1119.28	102.10	557.87
22-Dec-10 12:11:00	1026.61	33.62	1117.62	102.07	558.02
22-Dec-10 12:12:00	1037.84	33.64	1117.91	102.03	558.18
22-Dec-10 12:13:00	1055.68	33.63	1118.23	102.00	558.33
22-Dec-10 12:14:00	1043.19	33.63	1120.29	101.96	558.48
22-Dec-10 12:15:00	1041.74	33.61	1122.07	101.93	558.63
22-Dec-10 12:16:00	1046.89	33.57	1120.75	101.89	558.78
22-Dec-10 12:17:00	1024.09	33.55	1118.98	101.86	558.93
22-Dec-10 12:18:00	1028.95	33.54	1121.36	101.82	559.08
22-Dec-10 12:19:00	1035.72	33.58	1119.76	101.79	559.23
22-Dec-10 12:20:00	1032.95	33.52	1121.08	101.75	559.38
22-Dec-10 12:21:00	1006.19	33.49	1123.41	101.72	559.53
22-Dec-10 12:22:00	1029.33	33.62	1121.49	101.68	559.69
22-Dec-10 12:23:00	1037.84	33.71	1118.91	101.65	559.84
22-Dec-10 12:24:00	1035.41	33.65	1119.21	101.61	559.99
22-Dec-10 12:25:00	1030.95	33.58	1121.80	101.58	560.14
22-Dec-10 12:26:00	1038.38	33.61	1122.00	101.54	560.29
22-Dec-10 12:27:00	1037.69	33.62	1118.82	101.51	560.44
22-Dec-10 12:28:00	1036.50	33.64	1116.07	101.47	560.59
22-Dec-10 12:29:00	1040.22	33.66	1114.73	101.44	560.74
22-Dec-10 12:30:00	1029.81	33.70	1112.91	101.40	560.89
22-Dec-10 12:31:00	1031.76	33.79	1110.52	101.37	561.04
22-Dec-10 12:32:00	1035.31	33.88	1109.95	101.33	561.20
22-Dec-10 12:33:00	1035.56	33.98	1111.31	101.30	561.35
22-Dec-10 12:34:00	1042.50	33.96	1117.23	101.26	561.50
22-Dec-10 12:35:00	1048.66	33.86	1122.26	101.23	561.65
22-Dec-10 12:36:00	1047.90	33.86	1124.88	101.19	561.80
22-Dec-10 12:37:00	1041.85	33.82	1126.72	101.16	561.95
22-Dec-10 12:38:00	1049.29	33.74	1125.85	101.12	562.10
22-Dec-10 12:39:00	1048.05	33.66	1125.97	101.09	562.25
22-Dec-10 12:40:00	1036.88	33.57	1126.67	101.05	562.40
22-Dec-10 12:41:00	1021.52	33.51	1125.28	101.02	562.55
22-Dec-10 12:42:00	1020.03	33.59	1123.70	100.98	562.70
22-Dec-10 12:43:00	1043.50	33.62	1118.14	100.95	562.86
22-Dec-10 12:44:00	1047.23	33.71	1115.86	100.91	563.01
22-Dec-10 12:45:00	1033.97	33.73	1118.24	100.88	563.16
22-Dec-10 12:46:00	1022.57	33.71	1118.68	100.84	563.31
22-Dec-10 12:47:00	1030.60	33.71	1118.06	100.81	563.46
22-Dec-10 12:48:00	1034.21	33.72	1118.68	100.77	563.61
22-Dec-10 12:49:00	1030.94	33.68	1117.56	100.74	563.76
22-Dec-10 12:50:00	1020.04	33.71	1116.43	100.70	563.91
22-Dec-10 12:51:00	1069.42	33.74	1116.12	100.67	564.06
22-Dec-10 12:52:00	1057.75	33.72	1117.50	100.63	564.21
22-Dec-10 12:53:00	1032.81	33.74	1119.67	100.60	564.37
22-Dec-10 12:54:00	1048.08	33.70	1119.34	100.56	564.52
22-Dec-10 12:55:00	1057.99	33.79	1118.14	100.53	564.67
22-Dec-10 12:56:00	1067.06	33.87	1118.98	100.49	564.82
22-Dec-10 12:57:00	1068.03	33.86	1118.60	100.46	564.97
22-Dec-10 12:58:00	1054.66	33.83	1118.69	100.42	565.12
22-Dec-10 12:59:00	1034.46	33.89	1118.41	100.39	565.27
22-Dec-10 13:00:00	1038.26	33.86	1119.31	100.35	565.42
22-Dec-10 13:01:00	1053.60	33.83	1119.97	100.32	565.54
22-Dec-10 13:02:00	1067.21	33.84	1122.28	100.28	565.65
22-Dec-10 13:03:00	1058.78	33.85	1120.22	100.25	565.77
22-Dec-10 13:04:00	1056.40	33.92	1116.76	100.21	565.89
22-Dec-10 13:05:00	1056.00	33.85	1118.42	100.18	566.00
Avg.	**1039.53**	**33.70**	**1119.27**	**101.23**	**561.54**

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BP Products North America Inc.
Texas City Refinery
Texas City, TX

Process Data

SRU Incinerator Exhaust Stack

time	T202C ABSORBER OVERHEAD TO MSCFH	NATURAL GAS TO F9C BURNER MSCFH	F8C INCINERATOR TEMP Deg F	T202C ABSORBER OVHD H2S PPM	Estimated SRU sulfur production of acid gas to unit ton/day
22-Dec-10 14:30:00	1057.98	33.78	1120.51	104.22	567.57
22-Dec-10 14:31:00	1058.59	33.77	1119.10	104.17	567.41
22-Dec-10 14:32:00	1056.03	33.84	1120.18	104.13	567.24
22-Dec-10 14:33:00	1054.20	33.83	1121.90	104.09	567.07
22-Dec-10 14:34:00	1036.36	33.79	1122.56	104.05	566.91
22-Dec-10 14:35:00	1015.25	33.70	1121.02	104.01	566.74
22-Dec-10 14:36:00	1015.46	33.76	1118.23	103.96	566.58
22-Dec-10 14:37:00	1044.20	33.87	1116.56	103.92	566.41
22-Dec-10 14:38:00	1046.18	33.87	1119.64	103.88	566.24
22-Dec-10 14:39:00	1050.49	33.84	1123.97	103.84	566.08
22-Dec-10 14:40:00	1057.30	33.82	1124.40	103.80	565.91
22-Dec-10 14:41:00	1064.88	33.76	1124.78	103.75	565.75
22-Dec-10 14:42:00	1064.88	33.67	1124.88	103.71	565.58
22-Dec-10 14:43:00	1067.36	33.67	1123.42	103.67	565.41
22-Dec-10 14:44:00	1064.70	33.60	1121.03	103.63	565.25
22-Dec-10 14:45:00	1058.35	33.60	1120.05	103.59	565.08
22-Dec-10 14:46:00	1058.35	33.62	1121.86	103.55	564.91
22-Dec-10 14:47:00	1053.98	33.60	1121.69	103.50	564.75
22-Dec-10 14:48:00	1055.48	33.64	1121.95	103.46	564.58
22-Dec-10 14:49:00	1058.45	33.60	1122.88	103.42	564.42
22-Dec-10 14:50:00	1051.02	33.51	1122.80	103.38	564.25
22-Dec-10 14:51:00	1069.03	33.48	1122.26	103.34	564.08
22-Dec-10 14:52:00	1068.98	33.57	1121.08	103.29	563.92
22-Dec-10 14:53:00	1060.46	33.53	1121.31	103.25	563.75
22-Dec-10 14:54:00	1060.96	33.41	1122.05	103.21	563.59
22-Dec-10 14:55:00	1042.93	33.45	1121.18	103.17	563.42
22-Dec-10 14:56:00	1049.05	33.46	1121.18	103.13	563.25
22-Dec-10 14:57:00	1060.62	33.44	1121.78	103.08	563.09
22-Dec-10 14:58:00	1060.09	33.46	1120.61	103.04	562.92
22-Dec-10 14:59:00	1072.97	33.48	1116.70	103.00	562.76
22-Dec-10 15:00:00	1061.00	33.55	1115.36	102.96	562.59
22-Dec-10 15:01:00	1045.54	33.56	1113.84	102.92	562.76
22-Dec-10 15:02:00	1041.12	33.57	1112.41	102.88	562.93
22-Dec-10 15:03:00	1053.51	33.57	1114.12	102.83	563.10
22-Dec-10 15:04:00	1058.65	33.71	1114.84	102.79	563.27
22-Dec-10 15:05:00	1063.75	33.82	1114.61	102.75	563.44
22-Dec-10 15:06:00	1069.31	33.97	1114.82	102.71	563.61
22-Dec-10 15:07:00	1056.92	33.93	1117.50	102.67	563.78
22-Dec-10 15:08:00	1040.17	33.83	1119.33	102.62	563.95
22-Dec-10 15:09:00	1045.56	33.86	1118.11	102.58	564.12
22-Dec-10 15:10:00	1066.13	33.90	1116.77	102.54	564.29
22-Dec-10 15:11:00	1038.38	33.92	1116.96	102.50	564.47
22-Dec-10 15:12:00	1050.64	33.97	1117.26	102.46	564.64
22-Dec-10 15:13:00	1064.15	34.07	1115.47	102.41	564.81
22-Dec-10 15:14:00	1066.24	34.03	1117.04	102.37	564.98
22-Dec-10 15:15:00	1045.43	34.02	1118.17	102.33	565.15
22-Dec-10 15:16:00	1032.64	33.97	1120.24	102.29	565.32
22-Dec-10 15:17:00	1051.97	34.03	1122.39	102.25	565.49
22-Dec-10 15:18:00	1079.46	34.01	1123.03	102.20	565.66
22-Dec-10 15:19:00	1068.06	34.00	1122.01	102.16	565.83
22-Dec-10 15:20:00	1073.14	34.10	1118.35	102.12	566.00
22-Dec-10 15:21:00	1062.14	34.12	1116.88	102.08	566.17
22-Dec-10 15:22:00	1050.43	34.01	1117.69	102.04	566.34
22-Dec-10 15:23:00	1058.35	34.00	1119.68	102.00	566.51
22-Dec-10 15:24:00	1031.59	33.98	1121.25	101.95	566.68
22-Dec-10 15:25:00	1027.52	34.09	1120.79	101.91	566.85
22-Dec-10 15:26:00	1030.51	34.19	1120.97	101.87	567.02
22-Dec-10 15:27:00	1029.87	34.18	1122.43	101.83	567.19
22-Dec-10 15:28:00	1073.48	34.02	1123.44	101.79	567.36
22-Dec-10 15:29:00	1066.57	34.04	1120.85	101.74	567.54
22-Dec-10 15:30:00	1055.55	34.02	1120.70	101.70	567.71
Avg.	**1053.97**	**33.79**	**1119.82**	**102.96**	**565.16**

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BP Products North America Inc.
Texas City Refinery
Texas City, TX

Process Data

SRU Incinerator Stack

Time	T202C ABSORBER OVERHEAD TO	NATURAL GAS TO F9C BURNER	F8C INCINERATOR TEMP	T202C ABSORBER OVHD H2S	Estimated SRU sulfur production of acid gas to unit
	MSCFH	MSCFH	Deg F	PPM	ton/day
1/6/2011 12:00	1,114.42	53.25	1,044.10	72.49	695.11
1/6/2011 12:01	1,091.62	53.30	1,039.92	72.52	695.18
1/6/2011 12:02	1,098.96	53.42	1,038.26	72.54	695.25
1/6/2011 12:03	1,102.26	53.27	1,041.64	72.57	695.33
1/6/2011 12:04	1,094.65	53.11	1,041.37	72.59	695.40
1/6/2011 12:05	1,098.12	53.07	1,038.15	72.62	695.47
1/6/2011 12:06	1,108.32	52.90	1,037.53	72.64	695.55
1/6/2011 12:07	1,113.27	53.12	1,035.25	72.67	695.62
1/6/2011 12:08	1,110.79	52.98	1,039.03	72.69	695.69
1/6/2011 12:09	1,108.32	52.95	1,036.08	72.72	695.77
1/6/2011 12:10	1,115.11	52.91	1,036.33	72.75	695.84
1/6/2011 12:11	1,120.36	52.95	1,035.74	72.77	695.91
1/6/2011 12:12	1,122.94	52.84	1,038.23	72.80	695.98
1/6/2011 12:13	1,125.92	52.87	1,035.40	72.82	696.06
1/6/2011 12:14	1,105.70	53.16	1,035.32	72.85	696.13
1/6/2011 12:15	1,102.56	53.03	1,035.45	72.87	696.20
1/6/2011 12:16	1,110.03	52.94	1,031.59	72.90	696.28
1/6/2011 12:17	1,108.04	53.06	1,031.29	72.92	696.35
1/6/2011 12:18	1,118.30	53.14	1,027.23	72.95	696.42
1/6/2011 12:19	1,119.16	53.22	1,026.30	72.98	696.49
1/6/2011 12:20	1,120.17	53.14	1,023.09	73.00	696.57
1/6/2011 12:21	1,134.05	53.12	1,023.50	73.03	696.64
1/6/2011 12:22	1,122.65	53.76	1,024.17	73.05	696.71
1/6/2011 12:23	1,115.31	53.79	1,024.59	73.08	696.79
1/6/2011 12:24	1,111.50	53.54	1,026.36	73.10	696.86
1/6/2011 12:25	1,110.53	54.04	1,023.30	73.13	696.93
1/6/2011 12:26	1,110.03	53.84	1,023.39	73.15	697.01
1/6/2011 12:27	1,107.72	53.83	1,026.94	73.18	697.08
1/6/2011 12:28	1,113.83	54.13	1,021.31	73.21	697.15
1/6/2011 12:29	1,130.14	54.18	1,016.97	73.23	697.22
1/6/2011 12:30	1,123.70	54.28	1,021.79	73.26	697.30
1/6/2011 12:31	1,120.36	54.35	1,025.14	73.28	697.37
1/6/2011 12:32	1,113.49	54.35	1,028.35	73.31	697.44
1/6/2011 12:33	1,107.54	54.44	1,027.21	73.33	697.52
1/6/2011 12:34	1,135.29	54.19	1,025.78	73.36	697.59
1/6/2011 12:35	1,126.05	54.41	1,033.05	73.38	697.66
1/6/2011 12:36	1,111.79	54.58	1,032.84	73.41	697.73
1/6/2011 12:37	1,106.89	54.53	1,040.16	73.44	697.81
1/6/2011 12:38	1,133.15	54.65	1,033.61	73.46	697.88
1/6/2011 12:39	1,122.48	54.60	1,034.63	73.49	697.95
1/6/2011 12:40	1,126.30	54.39	1,031.54	73.51	698.03
1/6/2011 12:41	1,135.17	54.57	1,031.20	73.54	698.10
1/6/2011 12:42	1,106.43	54.52	1,029.57	73.56	698.17
1/6/2011 12:43	1,116.30	54.63	1,029.83	73.59	698.25
1/6/2011 12:44	1,121.65	54.97	1,028.14	73.61	698.32
1/6/2011 12:45	1,121.23	54.87	1,027.18	73.64	698.39
1/6/2011 12:46	1,119.74	54.64	1,027.18	73.67	698.46
1/6/2011 12:47	1,110.59	54.96	1,025.50	73.69	698.54
1/6/2011 12:48	1,104.72	55.03	1,028.49	73.72	698.61
1/6/2011 12:49	1,104.22	54.96	1,031.81	73.74	698.68
1/6/2011 12:50	1,110.41	55.07	1,034.27	73.77	698.76
1/6/2011 12:51	1,101.49	55.22	1,030.87	73.79	698.83
1/6/2011 12:52	1,108.87	55.07	1,032.78	73.82	698.90
1/6/2011 12:53	1,121.34	55.12	1,036.67	73.84	698.98
1/6/2011 12:54	1,128.97	54.93	1,033.12	73.87	699.05
1/6/2011 12:55	1,111.63	55.00	1,036.04	73.90	699.12
1/6/2011 12:56	1,108.78	55.09	1,036.89	73.92	699.19
1/6/2011 12:57	1,112.48	54.83	1,037.56	73.95	699.27
1/6/2011 12:58	1,116.34	55.23	1,033.04	73.97	699.34
1/6/2011 12:59	1,104.45	54.85	1,038.44	74.00	699.41
1/6/2011 13:00	1,102.47	55.02	1,037.18	74.02	699.49
1/6/2011 13:01	1,102.73	55.06	1,033.91	74.05	699.60
1/6/2011 13:02	1,098.43	54.90	1,032.35	74.07	699.71
1/6/2011 13:03	1,072.66	54.93	1,031.98	74.10	699.83
1/6/2011 13:04	1,096.18	55.09	1,033.89	74.13	699.94
1/6/2011 13:05	1,111.21	55.14	1,033.57	74.15	700.06
1/6/2011 13:06	1,111.53	55.05	1,033.09	74.18	700.17
1/6/2011 13:07	1,113.02	54.90	1,041.55	74.20	700.28
1/6/2011 13:08	1,115.84	54.95	1,041.45	74.23	700.40
1/6/2011 13:09	1,110.43	54.95	1,041.90	74.25	700.51
1/6/2011 13:10	1,105.11	54.70	1,041.44	74.28	700.63
1/6/2011 13:11	1,116.51	54.68	1,039.94	74.30	700.74
1/6/2011 13:12	1,107.19	54.76	1,041.71	74.33	700.85
1/6/2011 13:13	1,103.06	54.65	1,045.68	74.36	700.97
1/6/2011 13:14	1,100.68	54.42	1,045.54	74.38	701.08
1/6/2011 13:15	1,094.24	54.54	1,042.26	74.41	701.19
1/6/2011 13:16	1,108.43	54.49	1,043.26	74.43	701.31
1/6/2011 13:17	1,109.53	54.57	1,036.32	74.46	701.42
1/6/2011 13:18	1,109.63	54.33	1,033.71	74.48	701.54
1/6/2011 13:19	1,119.94	54.39	1,035.78	74.51	701.65
1/6/2011 13:20	1,127.37	54.37	1,041.96	74.53	701.76
1/6/2011 13:21	1,115.97	54.43	1,043.00	74.56	701.88
1/6/2011 13:22	1,111.48	54.44	1,043.66	74.59	701.99
1/6/2011 13:23	1,130.44	54.22	1,038.59	74.61	702.11
1/6/2011 13:24	1,123.50	54.05	1,042.14	74.64	702.22
1/6/2011 13:25	1,119.47	54.20	1,042.84	74.66	702.33
1/6/2011 13:26	1,114.67	53.99	1,038.53	74.69	702.45

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BP Products North America Inc.
Texas City Refinery
Texas City, TX

Process Data

SRU Incinerator Stack

Time	T202C ABSORBER OVERHEAD TO	NATURAL GAS TO F9C BURNER	F8C INCINERATOR TEMP	T202C ABSORBER OVHD H2S	Estimated SRU sulfur production of acid gas to unit
	MSCFH	MSCFH	Deg F	PPM	ton/day
1/6/2011 13:27	1,107.94	54.19	1,036.55	74.71	702.56
1/6/2011 13:28	1,107.94	54.23	1,032.25	74.74	702.68
1/6/2011 13:29	1,109.46	54.16	1,031.49	74.76	702.79
1/6/2011 13:30	1,121.04	54.07	1,033.71	74.79	702.90
1/6/2011 13:31	1,135.41	54.24	1,033.67	74.82	703.02
1/6/2011 13:32	1,091.80	54.12	1,033.47	74.84	703.13
1/6/2011 13:33	1,112.94	54.27	1,035.71	74.87	703.25
1/6/2011 13:34	1,124.59	54.33	1,036.33	74.89	703.36
1/6/2011 13:35	1,114.92	54.18	1,040.77	74.92	703.47
1/6/2011 13:36	1,117.40	54.08	1,039.82	74.94	703.59
1/6/2011 13:37	1,118.59	54.03	1,037.36	74.97	703.70
1/6/2011 13:38	1,117.40	54.18	1,031.11	74.99	703.81
1/6/2011 13:39	1,112.93	54.03	1,033.56	75.02	703.93
1/6/2011 13:40	1,103.51	54.25	1,031.33	75.05	704.04
1/6/2011 13:41	1,102.27	54.24	1,032.33	75.07	704.16
1/6/2011 13:42	1,104.15	54.30	1,033.58	75.10	704.27
1/6/2011 13:43	1,106.78	54.28	1,034.25	75.12	704.38
1/6/2011 13:44	1,107.28	54.11	1,038.29	75.15	704.50
1/6/2011 13:45	1,101.54	54.05	1,037.29	75.17	704.61
1/6/2011 13:46	1,103.50	54.17	1,033.83	75.20	704.73
1/6/2011 13:47	1,108.37	54.24	1,031.44	75.22	704.84
1/6/2011 13:48	1,109.85	54.43	1,026.05	75.25	704.95
1/6/2011 13:49	1,078.76	54.43	1,027.90	75.28	705.07
1/6/2011 13:50	1,091.00	54.27	1,033.52	75.30	705.18
1/6/2011 13:51	1,109.51	54.37	1,034.58	75.33	705.30
1/6/2011 13:52	1,092.85	54.43	1,038.41	75.35	705.41
1/6/2011 13:53	1,087.90	54.36	1,043.41	75.38	705.52
1/6/2011 13:54	1,090.92	54.17	1,042.06	75.40	705.64
1/6/2011 13:55	1,094.71	54.17	1,045.53	75.43	705.75
1/6/2011 13:56	1,095.07	54.03	1,040.84	75.45	705.87
1/6/2011 13:57	1,107.46	54.06	1,037.51	75.48	705.98
1/6/2011 13:58	1,101.63	54.08	1,035.96	75.51	706.09
1/6/2011 13:59	1,101.34	54.04	1,040.48	75.53	706.21
1/6/2011 14:00	1,113.89	53.97	1,042.43	75.56	706.32
1/6/2011 14:01	1,108.94	53.96	1,034.67	75.58	706.39
1/6/2011 14:02	1,111.12	53.94	1,032.25	75.61	706.44
1/6/2011 14:03	1,109.09	53.79	1,035.81	75.63	706.50
1/6/2011 14:04	1,101.58	53.88	1,034.57	75.66	706.55
1/6/2011 14:05	1,098.60	53.82	1,041.02	75.68	706.60
1/6/2011 14:06	1,112.06	53.64	1,037.57	75.71	706.66
1/6/2011 14:07	1,125.77	53.86	1,036.99	75.74	706.71
1/6/2011 14:08	1,131.41	53.76	1,035.97	75.76	706.77
1/6/2011 14:09	1,116.24	53.83	1,031.78	75.79	706.82
1/6/2011 14:10	1,107.03	53.97	1,032.05	75.81	706.87
1/6/2011 14:11	1,108.15	53.80	1,033.34	75.84	706.93
1/6/2011 14:12	1,113.11	53.77	1,030.74	75.86	706.98
1/6/2011 14:13	1,107.66	54.00	1,027.87	75.89	707.03
1/6/2011 14:14	1,106.83	54.07	1,028.34	75.91	707.09
1/6/2011 14:15	1,110.61	54.09	1,026.79	75.94	707.14
1/6/2011 14:16	1,114.08	54.27	1,028.71	75.97	707.19
1/6/2011 14:17	1,110.61	54.18	1,024.52	75.99	707.25
1/6/2011 14:18	1,107.14	54.26	1,032.42	76.02	707.30
1/6/2011 14:19	1,121.52	54.03	1,037.71	76.04	707.36
1/6/2011 14:20	1,130.41	54.06	1,038.81	76.07	707.41
1/6/2011 14:21	1,113.23	53.99	1,037.06	76.09	707.46
1/6/2011 14:22	1,115.21	54.10	1,035.84	76.12	707.52
1/6/2011 14:23	1,116.84	54.09	1,031.27	76.14	707.57
1/6/2011 14:24	1,117.53	54.10	1,031.66	76.17	707.62
1/6/2011 14:25	1,116.63	54.11	1,032.41	76.19	707.68
1/6/2011 14:26	1,111.17	54.28	1,027.06	76.22	707.73
1/6/2011 14:27	1,103.06	54.50	1,030.06	76.25	707.78
1/6/2011 14:28	1,094.59	54.31	1,034.66	76.27	707.84
1/6/2011 14:29	1,089.24	54.30	1,033.21	76.30	707.89
1/6/2011 14:30	1,100.64	54.13	1,035.25	76.32	707.95
1/6/2011 14:31	1,100.30	54.24	1,040.58	76.35	708.00
1/6/2011 14:32	1,097.32	54.26	1,039.47	76.37	708.05
1/6/2011 14:33	1,095.44	53.93	1,039.46	76.40	708.11
1/6/2011 14:34	1,098.41	54.11	1,041.81	76.42	708.16
1/6/2011 14:35	1,099.67	53.89	1,045.72	76.45	708.21
1/6/2011 14:36	1,093.30	53.88	1,043.31	76.48	708.27
1/6/2011 14:37	1,084.27	53.82	1,040.46	76.50	708.32
1/6/2011 14:38	1,086.25	53.93	1,044.58	76.53	708.37
1/6/2011 14:39	1,101.40	53.72	1,047.56	76.55	708.43
1/6/2011 14:40	1,099.92	53.64	1,040.69	76.58	708.48
1/6/2011 14:41	1,096.22	53.70	1,038.81	76.60	708.54
1/6/2011 14:42	1,117.04	53.59	1,037.33	76.63	708.59
1/6/2011 14:43	1,115.82	53.61	1,039.75	76.65	708.64
1/6/2011 14:44	1,113.19	53.51	1,039.96	76.68	708.70
1/6/2011 14:45	1,113.35	53.63	1,031.68	76.71	708.75
1/6/2011 14:46	1,119.48	53.32	1,038.19	76.73	708.80
1/6/2011 14:47	1,106.59	53.61	1,034.17	76.76	708.86
1/6/2011 14:48	1,089.89	53.62	1,032.58	76.78	708.91
1/6/2011 14:49	1,087.70	53.65	1,031.90	76.81	708.96
1/6/2011 14:50	1,109.54	53.79	1,029.89	76.83	709.02
1/6/2011 14:51	1,104.09	53.61	1,033.97	76.86	709.07
1/6/2011 14:52	1,100.87	53.75	1,031.61	76.88	709.13
1/6/2011 14:53	1,100.75	53.72	1,033.23	76.91	709.18

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BP Products North America Inc.
Texas City Refinery
Texas City, TX

Process Data

SRU Incinerator Stack

Time	T202C ABSORBER OVERHEAD TO	NATURAL GAS TO F9C BURNER	F8C INCINERATOR TEMP	T202C ABSORBER OVHD H2S	Estimated SRU sulfur production of acid gas to unit
	MSCFH	MSCFH	Deg F	PPM	ton/day
1/6/2011 14:54	1,103.09	53.85	1,030.83	76.94	709.23
1/6/2011 14:55	1,100.61	53.94	1,028.13	76.96	709.29
1/6/2011 14:56	1,101.70	53.82	1,026.08	76.99	709.34
1/6/2011 14:57	1,109.91	53.87	1,031.82	77.01	709.39
1/6/2011 14:58	1,118.42	53.95	1,032.79	77.04	709.45
1/6/2011 14:59	1,095.13	53.93	1,031.42	77.06	709.50
1/6/2011 15:00	1,096.69	53.96	1,034.76	77.09	709.55
1/6/2011 15:01	1,102.59	53.90	1,030.41	77.11	709.48
1/6/2011 15:02	1,112.35	53.99	1,036.36	77.14	709.41
1/6/2011 15:03	1,137.62	53.93	1,032.54	77.17	709.34
1/6/2011 15:04	1,125.25	54.01	1,027.98	77.19	709.27
1/6/2011 15:05	1,114.64	54.16	1,028.22	77.22	709.20
1/6/2011 15:06	1,108.32	54.13	1,030.87	77.24	709.13
1/6/2011 15:07	1,099.40	54.16	1,031.77	77.27	709.06
1/6/2011 15:08	1,115.00	54.36	1,028.18	77.29	708.99
1/6/2011 15:09	1,126.84	54.34	1,030.85	77.32	708.92
1/6/2011 15:10	1,128.28	54.17	1,025.88	77.34	708.85
1/6/2011 15:11	1,113.41	54.31	1,028.29	77.37	708.78
1/6/2011 15:12	1,134.61	54.43	1,027.62	77.40	708.70
1/6/2011 15:13	1,124.70	54.57	1,026.60	77.42	708.63
1/6/2011 15:14	1,116.96	54.55	1,027.54	77.45	708.56
1/6/2011 15:15	1,141.18	54.48	1,027.96	77.47	708.49
1/6/2011 15:16	1,120.37	54.41	1,030.93	77.50	708.42
1/6/2011 15:17	1,120.51	54.52	1,030.54	77.52	708.35
1/6/2011 15:18	1,122.99	54.71	1,031.23	77.55	708.28
1/6/2011 15:19	1,116.25	55.00	1,027.29	77.57	708.21
1/6/2011 15:20	1,106.34	54.75	1,035.38	77.60	708.14
1/6/2011 15:21	1,120.87	54.78	1,035.78	77.63	708.07
1/6/2011 15:22	1,130.87	54.76	1,037.10	77.65	708.00
1/6/2011 15:23	1,123.77	54.60	1,041.50	77.68	707.93
1/6/2011 15:24	1,125.75	54.69	1,032.65	77.69	707.86
1/6/2011 15:25	1,114.44	54.55	1,028.78	77.68	707.78
1/6/2011 15:26	1,113.12	55.02	1,024.34	77.68	707.71
1/6/2011 15:27	1,128.19	55.01	1,035.10	77.68	707.64
1/6/2011 15:28	1,138.10	54.80	1,035.23	77.68	707.57
1/6/2011 15:29	1,148.01	54.68	1,038.66	77.67	707.50
1/6/2011 15:30	1,130.17	54.85	1,033.83	77.67	707.43
1/6/2011 15:31	1,097.48	54.77	1,028.49	77.67	707.36
1/6/2011 15:32	1,122.26	54.98	1,028.94	77.67	707.29
1/6/2011 15:33	1,135.01	55.04	1,022.65	77.66	707.22
1/6/2011 15:34	1,132.29	55.27	1,020.99	77.66	707.15
1/6/2011 15:35	1,122.46	55.48	1,022.96	77.66	707.08
1/6/2011 15:36	1,125.93	55.50	1,022.64	77.66	707.01
1/6/2011 15:37	1,110.32	55.54	1,024.38	77.65	706.93
1/6/2011 15:38	1,108.66	55.51	1,026.25	77.65	706.86
1/6/2011 15:39	1,113.54	55.36	1,029.91	77.65	706.79
1/6/2011 15:40	1,107.59	55.62	1,029.49	77.65	706.72
1/6/2011 15:41	1,114.35	55.86	1,024.47	77.65	706.65
1/6/2011 15:42	1,112.06	56.01	1,028.85	77.64	706.58
1/6/2011 15:43	1,107.58	55.88	1,029.97	77.64	706.51
1/6/2011 15:44	1,110.56	55.76	1,034.88	77.64	706.44
1/6/2011 15:45	1,122.45	55.59	1,036.01	77.64	706.37
1/6/2011 15:46	1,106.24	55.79	1,036.91	77.63	706.30
1/6/2011 15:47	1,096.08	55.61	1,044.08	77.63	706.23
1/6/2011 15:48	1,118.05	55.52	1,049.71	77.63	706.16
1/6/2011 15:49	1,124.50	55.24	1,048.66	77.63	706.09
1/6/2011 15:50	1,116.04	55.31	1,048.21	77.62	706.01
1/6/2011 15:51	1,105.05	55.36	1,045.77	77.62	705.94
1/6/2011 15:52	1,097.92	55.19	1,041.41	77.62	705.87
1/6/2011 15:53	1,089.00	55.20	1,044.13	77.62	705.80
1/6/2011 15:54	1,099.10	54.99	1,045.00	77.61	705.73
1/6/2011 15:55	1,108.68	54.84	1,047.15	77.61	705.66
1/6/2011 15:56	1,107.57	54.75	1,040.50	77.61	705.59
1/6/2011 15:57	1,083.28	54.94	1,041.43	77.61	705.52
1/6/2011 15:58	1,113.51	54.74	1,041.72	77.60	705.45
1/6/2011 15:59	1,124.17	54.64	1,044.97	77.60	705.38
1/6/2011 16:00	1,109.90	54.56	1,040.25	77.60	705.31
1/6/2011 16:01	1,109.90	54.65	1,042.21	77.60	705.03
1/6/2011 16:02	1,111.22	54.45	1,042.44	77.59	704.76
1/6/2011 16:03	1,111.30	54.16	1,046.44	77.59	704.49
1/6/2011 16:04	1,111.92	54.41	1,048.34	77.59	704.22
1/6/2011 16:05	1,117.37	54.11	1,050.04	77.59	703.95
1/6/2011 16:06	1,106.34	54.18	1,044.70	77.59	703.67
1/6/2011 16:07	1,108.19	54.01	1,043.04	77.58	703.40
1/6/2011 16:08	1,109.02	53.85	1,041.74	77.58	703.13
1/6/2011 16:09	1,093.17	54.01	1,044.06	77.58	702.86
1/6/2011 16:10	1,107.04	53.94	1,043.20	77.58	702.58
1/6/2011 16:11	1,119.53	53.61	1,040.50	77.57	702.31
1/6/2011 16:12	1,122.12	53.68	1,039.17	77.57	702.04
1/6/2011 16:13	1,109.46	53.77	1,039.77	77.57	701.77
1/6/2011 16:14	1,093.11	53.64	1,043.05	77.57	701.49
1/6/2011 16:15	1,107.61	53.52	1,041.17	77.56	701.22
1/6/2011 16:16	1,114.13	53.64	1,038.92	77.56	700.95
1/6/2011 16:17	1,099.50	53.55	1,038.98	77.56	700.68
1/6/2011 16:18	1,105.45	53.66	1,037.13	77.56	700.40
1/6/2011 16:19	1,100.30	53.51	1,035.10	77.55	700.13
1/6/2011 16:20	1,102.43	53.54	1,036.03	77.55	699.86

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BP Products North America Inc.
Texas City Refinery
Texas City, TX

Process Data

SRU Incinerator Stack

Time	T202C ABSORBER OVERHEAD TO	NATURAL GAS TO F9C BURNER	F8C INCINERATOR TEMP	T202C ABSORBER OVHD H2S	Estimated SRU sulfur production of acid gas to unit
	MSCFH	MSCFH	Deg F	PPM	ton/day
1/6/2011 16:21	1,111.93	53.51	1,041.15	77.55	699.59
1/6/2011 16:22	1,104.49	53.44	1,038.44	77.55	699.32
1/6/2011 16:23	1,098.74	53.55	1,034.99	77.54	699.04
1/6/2011 16:24	1,083.51	53.52	1,036.40	77.54	698.77
1/6/2011 16:25	1,069.71	53.47	1,042.89	77.54	698.50
1/6/2011 16:26	1,092.01	53.18	1,043.14	77.54	698.23
1/6/2011 16:27	1,103.16	53.29	1,044.94	77.53	697.95
1/6/2011 16:28	1,109.89	53.21	1,043.37	77.53	697.68
1/6/2011 16:29	1,111.38	53.11	1,039.91	77.53	697.41
1/6/2011 16:30	1,104.70	52.78	1,041.92	77.53	697.14
1/6/2011 16:31	1,103.14	53.04	1,038.05	77.53	696.86
1/6/2011 16:32	1,098.97	52.92	1,036.90	77.52	696.59
1/6/2011 16:33	1,091.07	53.07	1,034.12	77.52	696.32
1/6/2011 16:34	1,079.18	53.11	1,035.17	77.52	696.05
1/6/2011 16:35	1,096.00	53.00	1,036.60	77.52	695.78
1/6/2011 16:36	1,095.77	53.05	1,029.99	77.51	695.50
1/6/2011 16:37	1,090.62	53.39	1,028.51	77.51	695.23
1/6/2011 16:38	1,101.53	53.06	1,032.88	77.51	694.96
1/6/2011 16:39	1,109.78	53.14	1,040.86	77.51	694.69
1/6/2011 16:40	1,101.31	53.06	1,044.62	77.50	694.41
1/6/2011 16:41	1,084.30	52.92	1,041.40	77.50	694.14
1/6/2011 16:42	1,076.37	52.87	1,042.14	77.50	693.87
1/6/2011 16:43	1,104.69	53.08	1,040.90	77.50	693.60
1/6/2011 16:44	1,109.18	52.73	1,046.13	77.49	693.32
1/6/2011 16:45	1,102.39	52.68	1,043.98	77.49	693.05
1/6/2011 16:46	1,103.38	52.26	1,047.99	77.49	692.78
1/6/2011 16:47	1,091.48	52.34	1,048.78	77.49	692.51
1/6/2011 16:48	1,085.01	52.38	1,044.84	77.48	692.23
1/6/2011 16:49	1,081.77	52.41	1,043.11	77.48	691.96
1/6/2011 16:50	1,080.23	52.32	1,039.68	77.48	691.69
1/6/2011 16:51	1,087.17	52.18	1,040.01	77.48	691.42
1/6/2011 16:52	1,079.94	52.29	1,040.63	77.47	691.15
1/6/2011 16:53	1,076.22	52.31	1,040.02	77.47	690.87
1/6/2011 16:54	1,083.90	52.45	1,034.56	77.47	690.60
1/6/2011 16:55	1,084.89	52.16	1,031.38	77.47	690.33
1/6/2011 16:56	1,088.21	52.27	1,032.62	77.46	690.06
1/6/2011 16:57	1,083.48	52.22	1,035.66	77.46	689.78
1/6/2011 16:58	1,074.78	52.29	1,036.05	77.46	689.51
1/6/2011 16:59	1,105.01	52.28	1,036.19	77.46	689.24
1/6/2011 17:00	1,089.51	52.28	1,035.36	77.46	688.97
1/6/2011 17:01	1,092.24	52.35	1,034.46	77.45	688.87
1/6/2011 17:02	1,113.92	52.43	1,031.19	77.45	688.77
1/6/2011 17:03	1,093.10	52.43	1,027.75	77.45	688.67
1/6/2011 17:04	1,086.89	52.55	1,026.20	77.45	688.57
1/6/2011 17:05	1,090.62	52.68	1,025.93	77.44	688.47
1/6/2011 17:06	1,097.67	52.61	1,026.78	77.44	688.37
1/6/2011 17:07	1,091.47	52.44	1,027.72	77.44	688.27
1/6/2011 17:08	1,088.71	52.73	1,027.51	77.44	688.17
1/6/2011 17:09	1,088.21	52.89	1,028.11	77.43	688.06
1/6/2011 17:10	1,089.02	52.75	1,027.84	77.43	687.96
1/6/2011 17:11	1,089.02	52.88	1,031.12	77.43	687.86
1/6/2011 17:12	1,085.16	52.75	1,032.48	77.43	687.76
1/6/2011 17:13	1,086.15	52.68	1,032.27	77.42	687.66
1/6/2011 17:14	1,087.09	52.70	1,031.95	77.42	687.56
1/6/2011 17:15	1,073.21	53.01	1,032.57	77.42	687.46
1/6/2011 17:16	1,072.51	52.98	1,034.22	77.42	687.36
1/6/2011 17:17	1,081.04	52.55	1,035.95	77.41	687.26
1/6/2011 17:18	1,084.52	53.06	1,039.62	77.41	687.16
1/6/2011 17:19	1,061.72	52.91	1,035.93	77.41	687.06
1/6/2011 17:20	1,077.25	52.79	1,038.50	77.41	686.96
1/6/2011 17:21	1,081.22	52.83	1,036.15	77.40	686.86
1/6/2011 17:22	1,086.01	53.05	1,033.30	77.40	686.76
1/6/2011 17:23	1,105.72	52.83	1,036.73	77.40	686.66
1/6/2011 17:24	1,089.86	52.74	1,034.95	77.40	686.56
1/6/2011 17:25	1,093.09	52.69	1,035.37	77.40	686.46
1/6/2011 17:26	1,104.29	52.75	1,033.19	77.39	686.36
1/6/2011 17:27	1,112.98	52.96	1,034.19	77.39	686.26
1/6/2011 17:28	1,090.68	53.05	1,028.63	77.39	686.16
1/6/2011 17:29	1,076.93	52.96	1,026.37	77.39	686.06
1/6/2011 17:30	1,072.26	53.25	1,025.48	77.38	685.96
1/6/2011 17:31	1,075.67	53.27	1,027.90	77.38	685.86
1/6/2011 17:32	1,078.64	53.18	1,025.15	77.38	685.76
1/6/2011 17:33	1,068.93	53.07	1,027.33	77.38	685.66
1/6/2011 17:34	1,061.79	53.25	1,030.80	77.37	685.56
1/6/2011 17:35	1,060.39	53.11	1,034.33	77.37	685.46
1/6/2011 17:36	1,056.92	53.33	1,036.74	77.37	685.36
1/6/2011 17:37	1,074.25	53.22	1,042.10	77.37	685.26
1/6/2011 17:38	1,082.95	53.08	1,043.80	77.36	685.16
1/6/2011 17:39	1,078.66	53.19	1,041.64	77.36	685.06
1/6/2011 17:40	1,075.19	53.04	1,047.13	77.36	684.96
1/6/2011 17:41	1,068.35	52.81	1,042.44	77.36	684.86
1/6/2011 17:42	1,069.64	52.85	1,039.09	77.35	684.76
1/6/2011 17:43	1,074.48	52.99	1,038.04	77.35	684.66
1/6/2011 17:44	1,064.57	52.90	1,038.27	77.35	684.56
1/6/2011 17:45	1,072.05	52.87	1,035.79	77.35	684.46
1/6/2011 17:46	1,061.52	52.70	1,033.85	77.34	684.36
1/6/2011 17:47	1,045.59	52.96	1,036.60	77.34	684.26

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Texas City Refinery
Texas City, TX

Process Data

SRU Incinerator Stack

Time	T202C ABSORBER OVERHEAD TO	NATURAL GAS TO F9C BURNER	F8C INCINERATOR TEMP	T202C ABSORBER OVHD H2S	Estimated SRU sulfur production of acid gas to unit
	MSCFH	MSCFH	Deg F	PPM	ton/day
1/6/2011 17:48	1,054.02	52.95	1,036.14	77.34	684.16
1/6/2011 17:49	1,079.39	52.71	1,035.35	77.34	684.06
1/6/2011 17:50	1,080.34	52.79	1,034.56	77.34	683.96
1/6/2011 17:51	1,064.66	52.88	1,040.16	77.33	683.86
1/6/2011 17:52	1,044.34	52.74	1,040.36	77.33	683.76
1/6/2011 17:53	1,046.92	52.79	1,038.62	77.33	683.66
1/6/2011 17:54	1,052.54	52.87	1,037.58	77.33	683.55
1/6/2011 17:55	1,059.65	52.42	1,042.67	77.32	683.45
1/6/2011 17:56	1,067.13	52.39	1,041.40	77.32	683.35
1/6/2011 17:57	1,076.06	52.63	1,043.78	77.32	683.25
1/6/2011 17:58	1,057.98	52.55	1,037.37	77.32	683.15
1/6/2011 17:59	1,050.25	52.52	1,039.85	77.31	683.05
1/6/2011 18:00	1,071.97	52.46	1,036.22	77.31	682.95
1/6/2011 18:01	1,070.98	52.50	1,037.36	77.31	682.90
1/6/2011 18:02	1,079.11	52.27	1,039.00	77.31	682.85
1/6/2011 18:03	1,082.88	52.35	1,038.40	77.30	682.80
1/6/2011 18:04	1,075.01	52.40	1,036.22	77.30	682.75
1/6/2011 18:05	1,048.25	52.38	1,037.25	77.30	682.70
1/6/2011 18:06	1,048.82	52.24	1,034.61	77.30	682.65
1/6/2011 18:07	1,057.01	52.54	1,028.24	77.29	682.60
1/6/2011 18:08	1,062.84	52.38	1,030.16	77.29	682.55
1/6/2011 18:09	1,056.89	52.44	1,031.09	77.29	682.50
1/6/2011 18:10	1,069.57	52.40	1,030.20	77.29	682.45
1/6/2011 18:11	1,080.37	52.52	1,029.15	77.28	682.40
1/6/2011 18:12	1,083.18	52.61	1,028.11	77.28	682.35
1/6/2011 18:13	1,071.78	52.67	1,030.71	77.28	682.30
1/6/2011 18:14	1,073.80	52.44	1,032.30	77.28	682.25
1/6/2011 18:15	1,076.60	52.63	1,036.92	77.27	682.20
1/6/2011 18:16	1,077.76	52.59	1,032.01	77.27	682.15
1/6/2011 18:17	1,074.72	52.78	1,033.18	77.27	682.10
1/6/2011 18:18	1,038.54	52.83	1,034.98	77.27	682.04
1/6/2011 18:19	1,050.93	52.42	1,036.02	77.27	681.99
1/6/2011 18:20	1,072.35	52.70	1,030.28	77.26	681.94
1/6/2011 18:21	1,072.75	52.82	1,032.94	77.26	681.89
1/6/2011 18:22	1,044.01	52.74	1,035.15	77.26	681.84
1/6/2011 18:23	1,051.87	52.67	1,037.26	77.26	681.79
1/6/2011 18:24	1,068.32	52.86	1,032.08	77.25	681.74
1/6/2011 18:25	1,075.51	52.76	1,034.04	77.25	681.69
1/6/2011 18:26	1,044.78	52.52	1,036.71	77.25	681.64
1/6/2011 18:27	1,053.66	52.59	1,033.99	77.25	681.59
1/6/2011 18:28	1,064.46	52.76	1,032.14	77.25	681.54
1/6/2011 18:29	1,062.28	52.81	1,032.39	77.25	681.49
1/6/2011 18:30	1,044.93	52.99	1,030.74	77.25	681.44
1/6/2011 18:31	1,083.75	52.77	1,032.39	77.25	681.39
1/6/2011 18:32	1,091.81	52.92	1,030.83	77.25	681.34
1/6/2011 18:33	1,061.49	52.99	1,028.94	77.25	681.29
1/6/2011 18:34	1,034.72	53.01	1,028.33	77.25	681.24
1/6/2011 18:35	1,036.42	53.05	1,030.58	77.25	681.19
1/6/2011 18:36	1,054.79	53.09	1,027.67	77.24	681.14
1/6/2011 18:37	1,076.98	53.03	1,029.80	77.24	681.09
1/6/2011 18:38	1,080.93	53.00	1,032.44	77.24	681.03
1/6/2011 18:39	1,085.82	53.09	1,033.36	77.24	680.98
1/6/2011 18:40	1,087.72	53.08	1,030.89	77.24	680.93
1/6/2011 18:41	1,080.73	53.23	1,029.74	77.24	680.88
1/6/2011 18:42	1,057.44	53.22	1,031.61	77.24	680.83
1/6/2011 18:43	1,074.11	53.33	1,031.38	77.24	680.78
1/6/2011 18:44	1,073.94	53.20	1,030.93	77.24	680.73
1/6/2011 18:45	1,066.23	53.30	1,034.87	77.24	680.68
1/6/2011 18:46	1,060.70	53.30	1,033.24	77.24	680.63
1/6/2011 18:47	1,052.77	53.20	1,038.29	77.24	680.58
1/6/2011 18:48	1,067.29	53.18	1,032.89	77.24	680.53
1/6/2011 18:49	1,079.38	53.33	1,032.05	77.24	680.48
1/6/2011 18:50	1,070.44	53.39	1,026.49	77.24	680.43
1/6/2011 18:51	1,061.02	53.35	1,027.85	77.24	680.38
1/6/2011 18:52	1,057.33	53.55	1,025.39	77.24	680.33
1/6/2011 18:53	1,057.24	53.57	1,025.97	77.24	680.28
1/6/2011 18:54	1,059.66	53.63	1,024.98	77.24	680.23
1/6/2011 18:55	1,048.20	53.70	1,029.87	77.24	680.18
1/6/2011 18:56	1,057.81	53.85	1,032.26	77.24	680.13
1/6/2011 18:57	1,070.29	53.78	1,034.38	77.23	680.08
1/6/2011 18:58	1,062.65	53.77	1,030.98	77.23	680.02
1/6/2011 18:59	1,048.21	53.82	1,030.01	77.23	679.97
1/6/2011 19:00	1,045.80	53.82	1,032.92	77.23	679.92
1/6/2011 19:01	1,050.53	53.94	1,033.07	77.23	679.76
1/6/2011 19:02	1,050.53	53.49	1,040.03	77.23	679.60
1/6/2011 19:03	1,064.76	53.69	1,041.13	77.23	679.44
1/6/2011 19:04	1,062.82	53.66	1,041.63	77.23	679.28
1/6/2011 19:05	1,057.12	53.44	1,043.66	77.23	679.12
1/6/2011 19:06	1,072.06	53.51	1,043.35	77.23	678.96
1/6/2011 19:07	1,072.06	53.49	1,036.27	77.23	678.80
1/6/2011 19:08	1,060.88	53.57	1,034.38	77.23	678.64
1/6/2011 19:09	1,051.62	53.47	1,041.23	77.23	678.48
1/6/2011 19:10	1,054.54	53.57	1,042.94	77.23	678.32
1/6/2011 19:11	1,056.52	53.37	1,041.24	77.23	678.16
1/6/2011 19:12	1,044.69	53.00	1,043.24	77.23	678.00
1/6/2011 19:13	1,036.72	53.21	1,047.05	77.23	677.84
1/6/2011 19:14	1,042.22	53.18	1,046.31	77.23	677.68

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Texas City Refinery
Texas City, TX

Process Data

SRU Incinerator Stack

Time	T202C ABSORBER OVERHEAD TO	NATURAL GAS TO F9C BURNER	F8C INCINERATOR TEMP	T202C ABSORBER OVHD H2S	Estimated SRU sulfur production of acid gas to unit
	MSCFH	MSCFH	Deg F	PPM	ton/day
1/6/2011 19:15	1,057.09	53.00	1,041.47	77.23	677.52
1/6/2011 19:16	1,057.98	52.86	1,042.54	77.23	677.36
1/6/2011 19:17	1,042.98	52.96	1,043.35	77.22	677.20
1/6/2011 19:18	1,021.45	52.73	1,046.19	77.22	677.04
1/6/2011 19:19	1,040.78	52.52	1,048.43	77.22	676.88
1/6/2011 19:20	1,054.32	52.52	1,043.11	77.22	676.72
1/6/2011 19:21	1,066.71	52.56	1,048.60	77.22	676.56
1/6/2011 19:22	1,073.06	52.32	1,049.01	77.22	676.40
1/6/2011 19:23	1,055.22	52.32	1,048.86	77.22	676.24
1/6/2011 19:24	1,028.18	52.23	1,042.98	77.22	676.08
1/6/2011 19:25	1,029.42	52.15	1,046.84	77.22	675.92
1/6/2011 19:26	1,046.02	51.97	1,045.01	77.22	675.75
1/6/2011 19:27	1,041.07	51.92	1,045.33	77.22	675.59
1/6/2011 19:28	1,037.96	51.94	1,045.25	77.22	675.43
1/6/2011 19:29	1,033.77	51.62	1,048.42	77.22	675.27
1/6/2011 19:30	1,028.66	51.49	1,047.25	77.22	675.11
1/6/2011 19:31	1,023.21	51.49	1,051.24	77.22	674.95
1/6/2011 19:32	1,029.46	51.46	1,051.37	77.22	674.79
1/6/2011 19:33	1,036.89	51.13	1,045.69	77.22	674.63
1/6/2011 19:34	1,044.99	51.28	1,043.95	77.22	674.47
1/6/2011 19:35	1,052.35	50.92	1,046.41	77.22	674.31
1/6/2011 19:36	1,028.86	51.07	1,040.83	77.22	674.15
1/6/2011 19:37	1,037.43	51.25	1,038.53	77.22	673.99
1/6/2011 19:38	1,042.82	51.06	1,034.18	77.21	673.83
1/6/2011 19:39	1,023.52	51.07	1,040.12	77.21	673.67
1/6/2011 19:40	1,039.38	51.02	1,040.67	77.21	673.51
1/6/2011 19:41	1,045.21	50.90	1,042.14	77.21	673.35
1/6/2011 19:42	1,043.82	50.92	1,039.37	77.21	673.19
1/6/2011 19:43	1,038.71	50.70	1,043.78	77.21	673.03
1/6/2011 19:44	1,043.66	50.69	1,040.66	77.21	672.87
1/6/2011 19:45	1,026.02	50.83	1,037.61	77.21	672.71
1/6/2011 19:46	1,019.02	50.71	1,039.72	77.21	672.55
1/6/2011 19:47	1,029.34	50.66	1,040.15	77.21	672.39
1/6/2011 19:48	1,039.25	50.81	1,031.97	77.21	672.23
1/6/2011 19:49	1,040.32	50.85	1,029.85	77.21	672.07
1/6/2011 19:50	1,036.91	50.81	1,028.35	77.21	671.91
1/6/2011 19:51	1,036.34	50.77	1,036.93	77.21	671.75
1/6/2011 19:52	1,055.17	50.86	1,036.82	77.21	671.59
1/6/2011 19:53	1,041.44	50.77	1,037.19	77.21	671.43
1/6/2011 19:54	1,039.71	50.74	1,034.08	77.21	671.26
1/6/2011 19:55	1,046.87	50.69	1,031.29	77.21	671.10
1/6/2011 19:56	1,047.87	51.05	1,029.31	77.21	670.94
1/6/2011 19:57	1,054.51	50.86	1,028.18	77.21	670.78
1/6/2011 19:58	1,052.66	50.90	1,029.91	77.20	670.62
1/6/2011 19:59	1,047.76	50.97	1,031.89	77.20	670.46
1/6/2011 20:00	1,047.29	51.01	1,026.71	77.20	670.30
1/6/2011 20:01	1,048.20	51.06	1,023.34	77.20	670.24
1/6/2011 20:02	1,041.66	51.24	1,023.35	77.20	670.18
1/6/2011 20:03	1,041.27	51.28	1,028.70	77.20	670.12
1/6/2011 20:04	1,063.57	51.15	1,027.74	77.20	670.06
1/6/2011 20:05	1,036.81	51.51	1,026.15	77.20	669.99
1/6/2011 20:06	1,047.30	51.65	1,030.69	77.20	669.93
1/6/2011 20:07	1,068.15	51.47	1,029.29	77.20	669.87
1/6/2011 20:08	1,075.73	51.53	1,029.27	77.20	669.81
1/6/2011 20:09	1,057.89	51.66	1,025.41	77.20	669.75
1/6/2011 20:10	1,042.60	51.83	1,028.01	77.20	669.69
1/6/2011 20:11	1,037.31	51.81	1,025.20	77.20	669.62
1/6/2011 20:12	1,043.60	51.76	1,024.95	77.20	669.56
1/6/2011 20:13	1,039.64	51.72	1,029.93	77.20	669.50
1/6/2011 20:14	1,048.10	51.89	1,029.90	77.20	669.44
1/6/2011 20:15	1,046.58	51.99	1,030.47	77.20	669.38
1/6/2011 20:16	1,033.15	51.90	1,029.91	77.20	669.31
1/6/2011 20:17	1,039.09	52.05	1,031.26	77.20	669.25
1/6/2011 20:18	1,034.72	52.12	1,030.99	77.20	669.19
1/6/2011 20:19	1,029.30	52.18	1,030.56	77.19	669.13
1/6/2011 20:20	1,028.51	52.26	1,030.13	77.19	669.07
1/6/2011 20:21	1,042.38	52.03	1,030.88	77.19	669.01
1/6/2011 20:22	1,055.38	52.29	1,035.30	77.19	668.94
1/6/2011 20:23	1,059.28	52.17	1,036.03	77.19	668.88
1/6/2011 20:24	1,055.94	52.10	1,037.78	77.19	668.82
1/6/2011 20:25	1,051.47	52.13	1,037.05	77.19	668.76
1/6/2011 20:26	1,057.19	52.05	1,035.28	77.19	668.70
1/6/2011 20:27	1,061.80	52.06	1,030.60	77.19	668.63
1/6/2011 20:28	1,051.74	52.05	1,031.81	77.19	668.57
1/6/2011 20:29	1,010.11	52.37	1,033.58	77.19	668.51
1/6/2011 20:30	1,045.51	52.28	1,032.08	77.19	668.45
1/6/2011 20:31	1,061.29	52.21	1,035.90	77.19	668.39
1/6/2011 20:32	1,056.35	52.56	1,030.43	77.19	668.33
1/6/2011 20:33	1,034.53	52.40	1,027.93	77.19	668.26
1/6/2011 20:34	1,053.86	52.46	1,030.73	47.80	668.20
1/6/2011 20:35	1,046.82	52.37	1,033.99	16.53	668.14
1/6/2011 20:36	1,039.13	52.21	1,034.93	71.50	668.08
1/6/2011 20:37	1,047.72	52.20	1,039.89	76.98	668.02
1/6/2011 20:38	1,044.74	52.40	1,036.70	76.97	667.96
1/6/2011 20:39	1,038.42	52.22	1,038.78	76.95	667.89
1/6/2011 20:40	1,028.63	52.24	1,037.01	76.93	667.83
1/6/2011 20:41	1,020.89	52.36	1,037.90	76.92	667.77

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BP Products North America Inc.
Texas City Refinery
Texas City, TX

Process Data

SRU Incinerator Stack

Time	T202C ABSORBER OVERHEAD TO	NATURAL GAS TO F9C BURNER	F8C INCINERATOR TEMP	T202C ABSORBER OVHD H2S	Estimated SRU sulfur production of acid gas to unit
	MSCFH	MSCFH	Deg F	PPM	ton/day
1/6/2011 20:42	1,052.11	51.98	1,044.36	76.90	667.71
1/6/2011 20:43	1,049.24	51.83	1,044.09	76.88	667.65
1/6/2011 20:44	1,041.67	52.06	1,044.48	76.86	667.58
1/6/2011 20:45	1,039.03	51.86	1,045.00	76.85	667.52
1/6/2011 20:46	1,040.51	51.92	1,040.06	76.83	667.46
1/6/2011 20:47	1,052.95	51.88	1,041.71	76.81	667.40
1/6/2011 20:48	1,056.22	51.77	1,044.01	76.80	667.34
1/6/2011 20:49	1,047.96	51.62	1,041.85	76.78	667.28
1/6/2011 20:50	1,033.09	51.53	1,039.28	76.76	667.21
1/6/2011 20:51	1,053.90	51.68	1,042.77	76.74	667.15
1/6/2011 20:52	1,050.93	51.38	1,039.68	76.73	667.09
1/6/2011 20:53	1,039.10	51.33	1,042.39	76.71	667.03
1/6/2011 20:54	1,057.44	51.39	1,039.01	76.69	666.97
1/6/2011 20:55	1,035.76	51.45	1,045.48	76.68	666.91
1/6/2011 20:56	1,048.38	51.31	1,045.07	76.66	666.84
1/6/2011 20:57	1,063.40	51.35	1,041.55	76.64	666.78
1/6/2011 20:58	1,038.13	51.42	1,035.95	76.62	666.72
1/6/2011 20:59	1,042.59	51.25	1,030.18	76.61	666.66
1/6/2011 21:00	1,050.43	51.30	1,032.93	76.59	666.60
1/6/2011 21:01	1,048.22	51.38	1,027.45	76.57	666.72
1/6/2011 21:02	1,027.65	51.53	1,028.29	76.56	666.85
1/6/2011 21:03	1,040.04	51.49	1,031.57	76.54	666.98
1/6/2011 21:04	1,036.08	51.45	1,033.29	76.52	667.10
1/6/2011 21:05	1,042.07	51.44	1,032.88	76.50	667.23
1/6/2011 21:06	1,065.01	51.61	1,030.81	76.49	667.36
1/6/2011 21:07	1,040.23	51.56	1,034.29	76.47	667.48
1/6/2011 21:08	1,029.43	51.47	1,040.89	76.45	667.61
1/6/2011 21:09	1,032.21	51.52	1,042.08	76.44	667.74
1/6/2011 21:10	1,040.80	51.50	1,036.15	76.42	667.86
1/6/2011 21:11	1,019.49	51.57	1,040.42	76.40	667.99
1/6/2011 21:12	1,034.11	51.26	1,039.28	76.38	668.12
1/6/2011 21:13	1,043.12	51.29	1,034.95	76.37	668.24
1/6/2011 21:14	1,041.93	51.44	1,034.87	76.35	668.37
1/6/2011 21:15	1,047.87	51.43	1,039.78	76.33	668.50
1/6/2011 21:16	1,054.26	51.34	1,042.31	76.32	668.62
1/6/2011 21:17	1,056.21	51.12	1,047.30	76.30	668.75
1/6/2011 21:18	1,051.62	51.09	1,045.49	76.28	668.88
1/6/2011 21:19	1,037.75	51.01	1,041.06	76.26	669.00
1/6/2011 21:20	1,044.69	51.07	1,037.40	76.25	669.13
1/6/2011 21:21	1,047.62	50.87	1,036.92	76.23	669.26
1/6/2011 21:22	1,049.29	51.01	1,032.59	76.21	669.38
1/6/2011 21:23	1,057.41	51.18	1,030.19	76.20	669.51
1/6/2011 21:24	1,032.63	51.23	1,028.01	76.18	669.64
1/6/2011 21:25	1,035.20	51.28	1,032.89	76.16	669.76
1/6/2011 21:26	1,060.11	51.24	1,035.25	76.14	669.89
1/6/2011 21:27	1,055.81	51.18	1,035.83	76.13	670.02
1/6/2011 21:28	1,065.04	51.08	1,033.30	76.11	670.14
1/6/2011 21:29	1,070.25	51.03	1,038.04	76.09	670.27
1/6/2011 21:30	1,067.99	51.30	1,034.93	76.08	670.40
1/6/2011 21:31	1,067.00	51.21	1,028.83	76.06	670.52
1/6/2011 21:32	1,067.66	51.24	1,031.58	76.04	670.65
1/6/2011 21:33	1,068.14	51.13	1,030.98	76.02	670.78
1/6/2011 21:34	1,063.98	51.33	1,031.35	76.01	670.91
1/6/2011 21:35	1,043.17	51.44	1,030.69	75.99	671.03
1/6/2011 21:36	1,056.06	51.32	1,030.76	75.97	671.16
1/6/2011 21:37	1,065.26	51.48	1,030.91	75.96	671.29
1/6/2011 21:38	1,063.65	51.63	1,032.85	75.94	671.41
1/6/2011 21:39	1,048.29	51.39	1,030.00	75.92	671.54
1/6/2011 21:40	1,040.79	51.34	1,031.10	75.90	671.67
1/6/2011 21:41	1,042.10	51.58	1,032.60	75.89	671.79
1/6/2011 21:42	1,043.04	51.53	1,033.28	75.87	671.92
1/6/2011 21:43	1,031.15	51.43	1,031.98	75.85	672.05
1/6/2011 21:44	1,050.44	51.43	1,027.98	75.84	672.17
1/6/2011 21:45	1,066.96	51.73	1,026.12	75.82	672.30
1/6/2011 21:46	1,070.90	51.70	1,030.84	75.80	672.43
1/6/2011 21:47	1,055.41	51.77	1,030.21	75.78	672.55
1/6/2011 21:48	1,064.82	51.84	1,029.02	75.77	672.68
1/6/2011 21:49	1,070.33	51.89	1,027.09	75.75	672.81
1/6/2011 21:50	1,061.21	52.03	1,028.47	75.73	672.93
1/6/2011 21:51	1,037.18	52.11	1,032.16	75.72	673.06
1/6/2011 21:52	1,064.93	52.13	1,029.81	75.70	673.19
1/6/2011 21:53	1,063.81	52.04	1,027.74	75.68	673.31
1/6/2011 21:54	1,062.59	52.04	1,025.75	75.66	673.44
1/6/2011 21:55	1,068.84	52.16	1,029.00	75.65	673.57
1/6/2011 21:56	1,054.46	52.13	1,029.55	75.63	673.69
1/6/2011 21:57	1,049.81	52.12	1,029.80	75.61	673.82
1/6/2011 21:58	1,052.28	52.09	1,025.79	75.60	673.95
1/6/2011 21:59	1,056.08	52.46	1,023.07	75.58	674.07
1/6/2011 22:00	1,043.69	52.45	1,025.99	75.56	674.20

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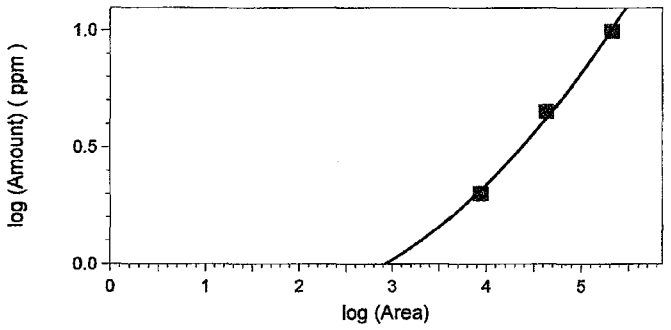
APPENDIX G – Chromatographs

Calibration Report

Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Print Time: 1/6/2011 12:14:26 PM
User: System
Instrument: GC14B-2010

Hydrogen sulfide (FPD2)
Average RF: 0.134905 RF StDev: 0.0556921 RF %RSD: 41.2825
Scaling: log(Amt) & log(Resp) LSQ Weighting: None Force Through Zero: On
Replicate Mode: Wt Average (Weight: 100)
Fit Type: Quadratic
y = 0.0788352x^2 - 0.230094x + 0.000000
Goodness of fit (r^2): 0.995314

Peak: Hydrogen sulfide -- ESTD -- FPD2



	Level 1	Level 2	Level 3	Level 4
log (Amount)	0.30103	0.653213	0.996949	0
log (Area)	3.93935	4.63274	5.32277	
RF	0.076416104 1379472	0.14099925678 1965	0.187298913726 644	
Last Area	8740.5	43267		
Residual	-0.0159528	0.0271961	-0.0118639	N/A
Rep StDev	0.0228669	0.0102884		
Rep %RSD	0.580534	0.222085		
Rep 1 Area	9195	44105	210267	
Rep 1 User	System	System	System	
Rep 1 Data File	C:\CLASS-VP\Data\1-6-11BP\2ppmH2S Cal 032.dat	C:\CLASS-VP\Data\1-6-11BP\4.5 ppmH2SCal 020.dat	C:\CLASS-VP\Data\1-6-11BP\9.93 ppmCal H2S 014	
Rep 1 Sample ID	2ppm H2S	4.5 ppm H2S	9.93 ppm H2S	
Rep 1 Calib. Time	1/6/2011 9:50:54 AM	1/6/2011 9:12:41 AM	1/6/2011 8:56:21 AM	
Rep 2 Area	8286	42429		
Rep 2 User	System	System		

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Calibration Report

Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Print Time: 1/6/2011 12:14:26 PM
User: System
Instrument: GC14B-2010

Rep 2 Data File	C:\CLASS-VP\Data\1-6-11BP\2ppmH2S Cal 033	C:\CLASS-VP\Data\1-6-11BP\4.5 ppmH2SCal 021		
Rep 2 Sample ID	2ppm H2S	4.5 ppm H2S		
Rep 2 Calib. Time	1/6/2011 9:54:34 AM	1/6/2011 9:16:18 AM		
Rep 3 Area	8609	42249		
Rep 3 User	System	System		
Rep 3 Data File	C:\CLASS-VP\Data\1-6-11BP\2ppmH2S Cal 034	C:\CLASS-VP\Data\1-6-11BP\4.5 ppmH2SCal 022		
Rep 3 Sample ID	2ppm H2S	4.5 ppm H2S		
Rep 3 Calib. Time	1/6/2011 9:58:13 AM	1/6/2011 9:19:57 AM		

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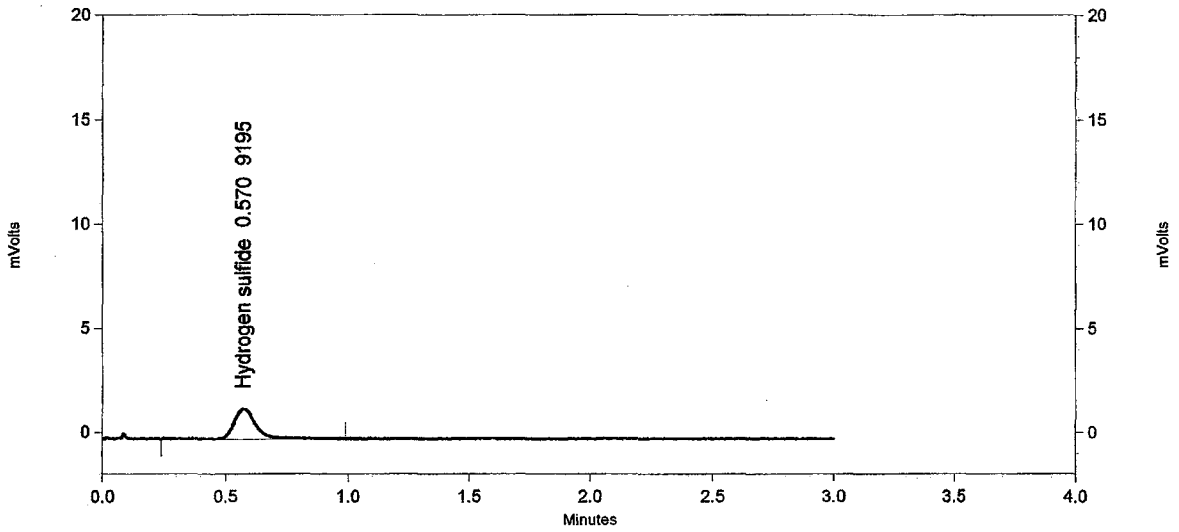
H_2S Monitoring

Sample ID: 2ppm H2S
Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Data: C:\CLASS-VP\Data\1-6-11BP\2ppmH2SCal 032.dat
Product: Shimadzu Client/Server
Software: Version 7.2 SP1 Rev B
{Data Description} 500 UL 150C detector
Run Time: 1/6/2011 9:47:52 AM

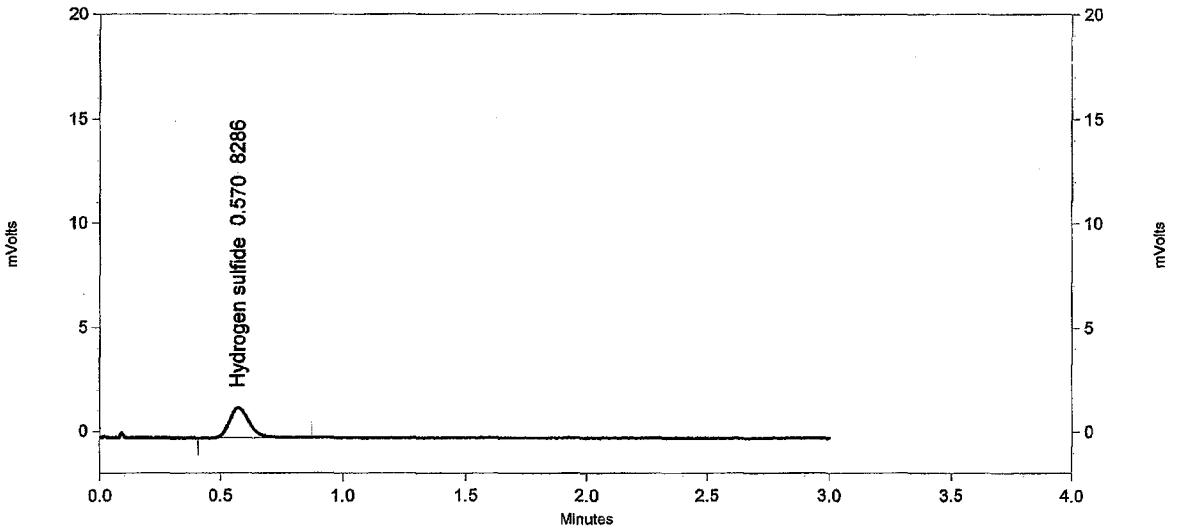


FPD2 Results

Name	Retention Time	Area	ESTD concentration (ppmv)
Hydrogen sulfide	0.570	9195	2.000 CAL
Totals		9195	2.000 CAL

H_2S Monitoring

Sample ID: 2ppm H2S
Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Data: C:\CLASS-VP\Data\1-6-11BP\2ppmH2SCal 033
Product: Shimadzu Client/Server
Software: Version 7.2 SP1 Rev B
{Data Description} 500 UL 150C detector
Run Time: 1/6/2011 9:51:30 AM

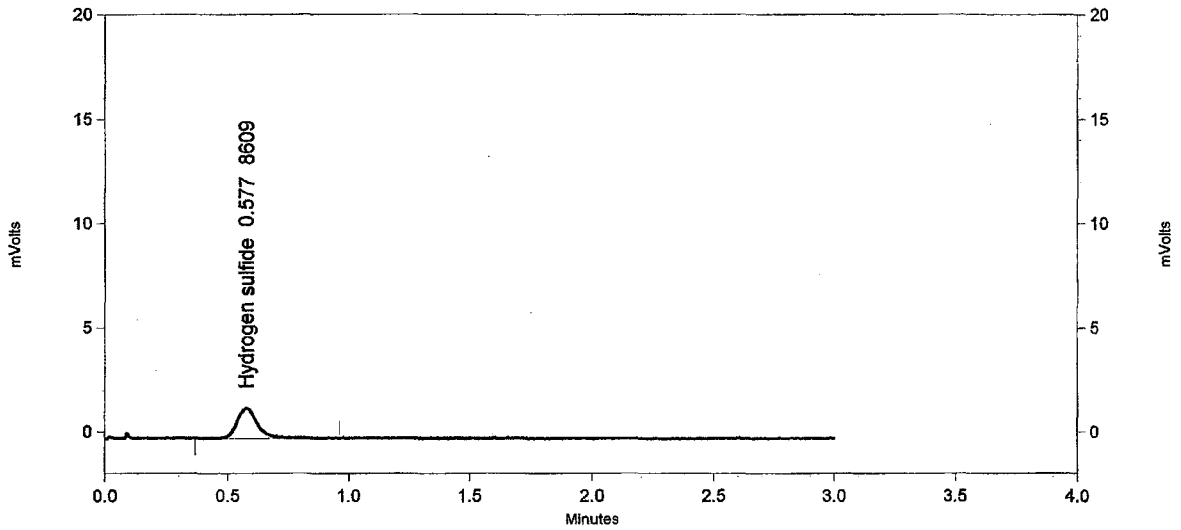


FPD2 Results

Name	Retention Time	Area	ESTD concentration (ppmv)
Hydrogen sulfide	0.570	8286	2.000 CAL
Totals		8286	2.000 CAL

H_2S Monitoring

Sample ID: 2ppm H2S
Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Data: C:\CLASS-VP\Data\1-6-11BP\2ppmH2SCal 034
Product: Shimadzu Client/Server
Software: Version 7.2 SP1 Rev B
{Data Description} 500 UL 150C detector
Run Time: 1/6/2011 9:55:10 AM



FPD2 Results

Name	Retention Time	Area	ESTD concentration (ppmv)
Hydrogen sulfide	0.577	8609	2.000 CAL
Totals		8609	2.000 CAL

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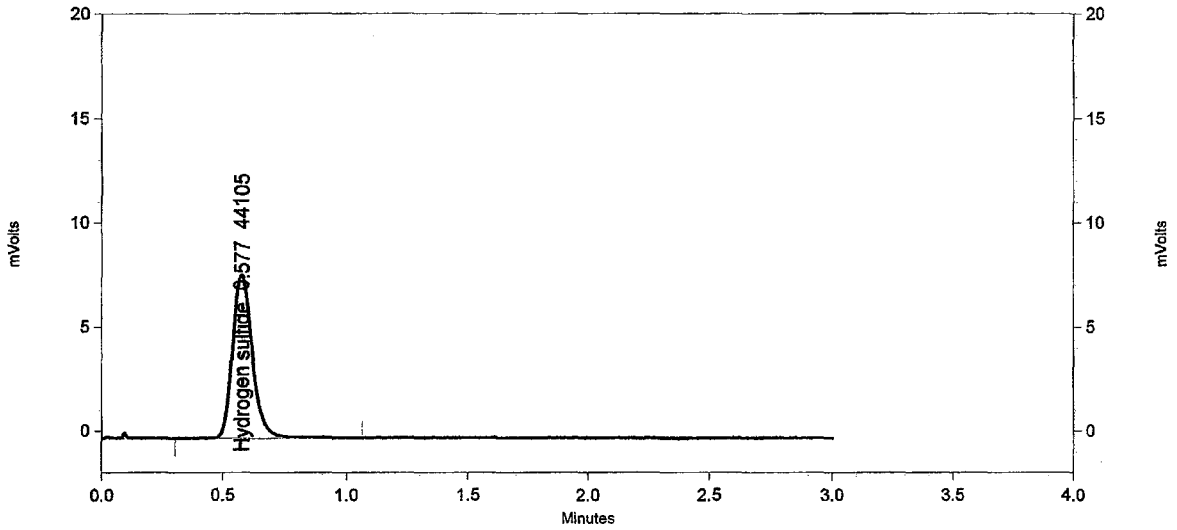
H_2S Monitoring

Sample ID: 4.5 ppm H2S
Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Data: C:\CLASS-VP\Data\1-6-11BP\4.5 ppmH2SCal 020.dat
Product: Shimadzu Client/Server
Software: Version 7.2 SP1 Rev B
{Data Description} 500 UL 150C detector
Run Time: 1/6/2011 9:09:38 AM

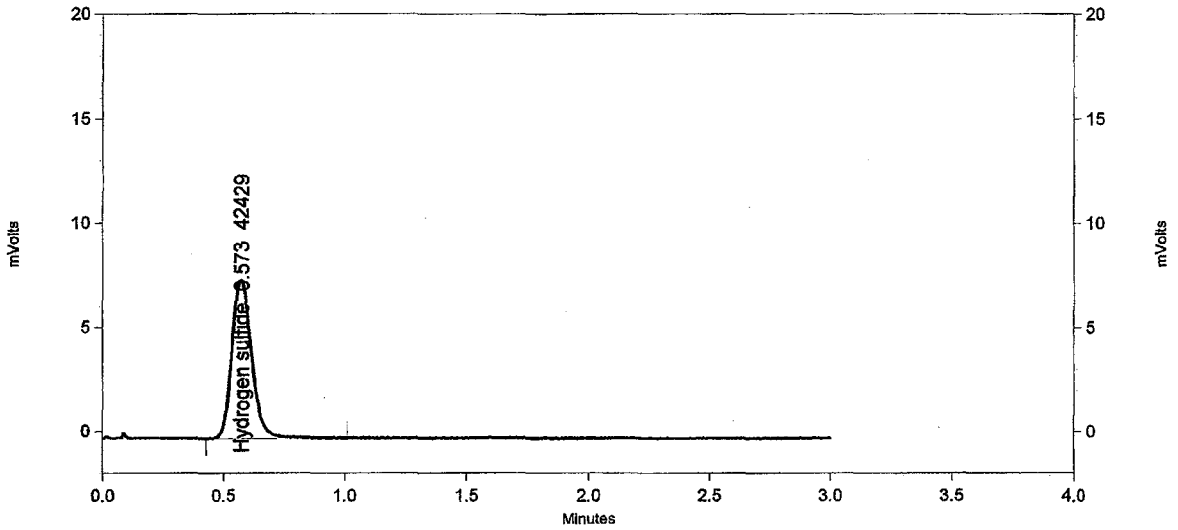


FPD2 Results

Name	Retention Time	Area	ESTD concentration (ppmv)
Hydrogen sulfide	0.577	44105	4.500 CAL
Totals		44105	4.500 CAL

H_2S Monitoring

Sample ID: 4.5 ppm H2S
Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Data: C:\CLASS-VP\Data\1-6-11BP\4.5 ppmH2SCal 021
Product: Shimadzu Client/Server
Software: Version 7.2 SP1 Rev B
{Data Description} 500 UL 150C detector
Run Time: 1/6/2011 9:13:16 AM

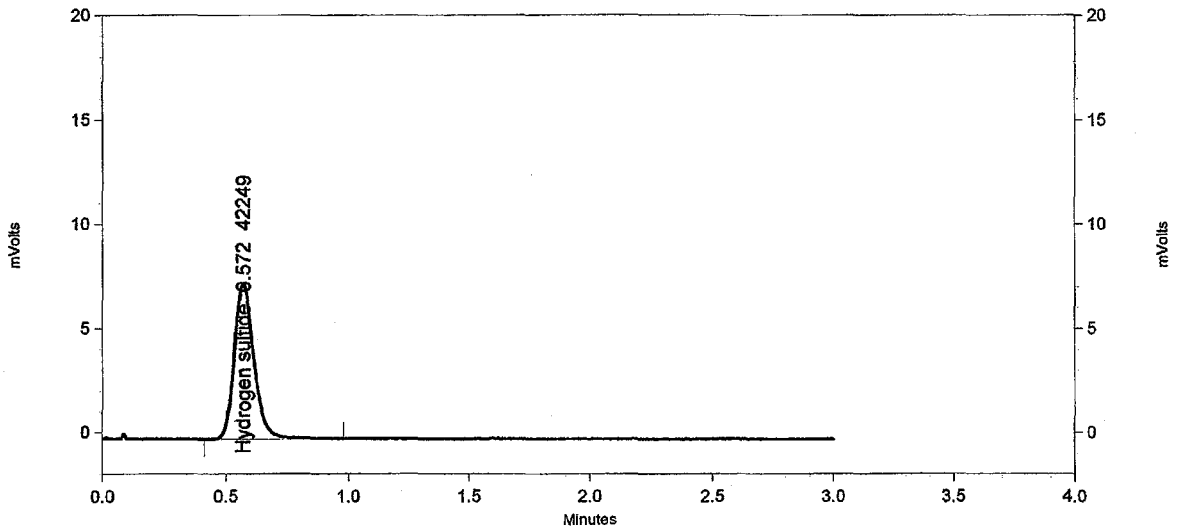


FPD2 Results

Name	Retention Time	Area	ESTD concentration (ppmv)
Hydrogen sulfide	0.573	42429	4.500 CAL
Totals		42429	4.500 CAL

H_2S Monitoring

Sample ID: 4.5 ppm H2S
Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Data: C:\CLASS-VP\Data\1-6-11BP\4.5 ppmH2SCal 022
Product: Shimadzu Client/Server
Software: Version 7.2 SP1 Rev B
{Data Description} 500 UL 150C detector
Run Time: 1/6/2011 9:16:54 AM

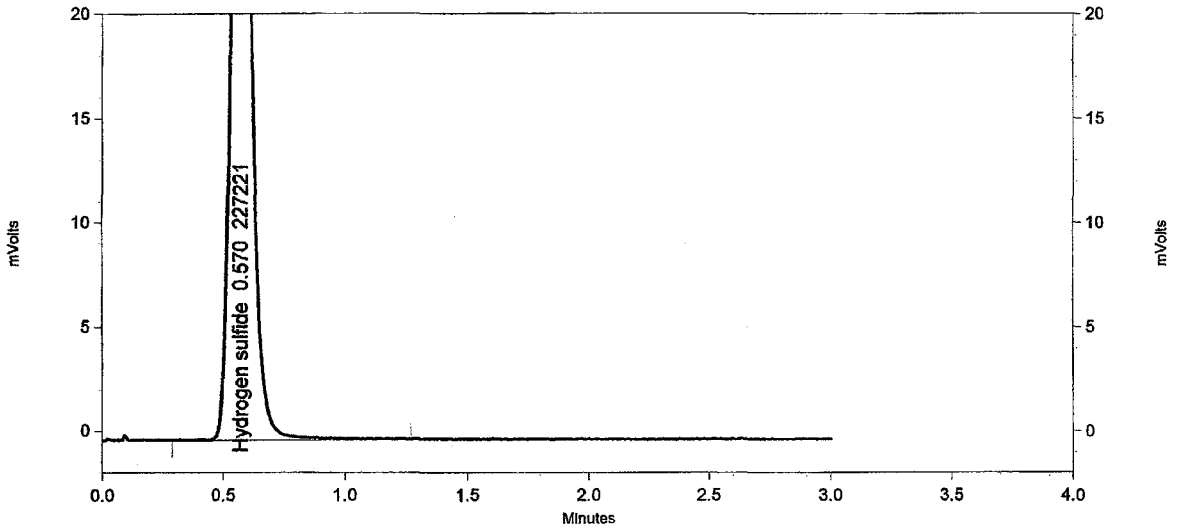


FPD2 Results

Name	Retention Time	Area	ESTD concentration (ppmv)
Hydrogen sulfide	0.572	42249	4.500 CAL
Totals		42249	4.500 CAL

H_2S Monitoring

Sample ID: 9.93 ppm H2S
Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Data: C:\CLASS-VP\Data\1-6-11BP\9.93 ppmCal H2S 012.dat
Product: Shimadzu Client/Server
Software: Version 7.2 SP1 Rev B
{Data Description} 500 UL 150C detector
Run Time: 1/6/2011 8:45:59 AM

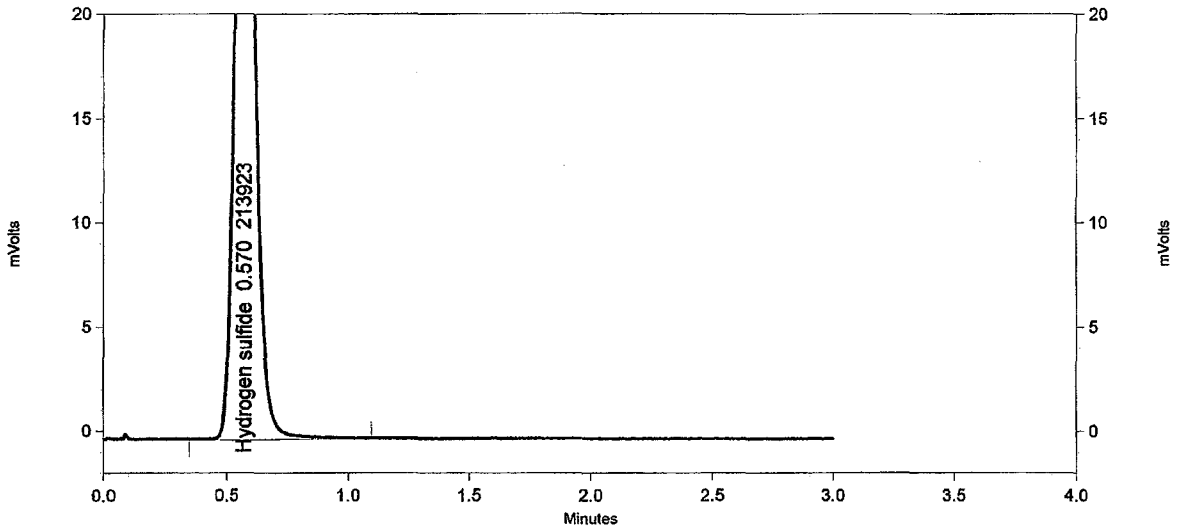


FPD2 Results

Name	Retention Time	Area	ESTD concentration (ppmv)
Hydrogen sulfide	0.570	227221	9.930 CAL
Totals		227221	9.930 CAL

H_2S Monitoring

Sample ID: 9.93 ppm H2S
Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Data: C:\CLASS-VP\Data\1-6-11BP\9.93 ppmCal H2S 013
Product: Shimadzu Client/Server
Software: Version 7.2 SP1 Rev B
{Data Description} 500 UL 150C detector
Run Time: 1/6/2011 8:49:38 AM

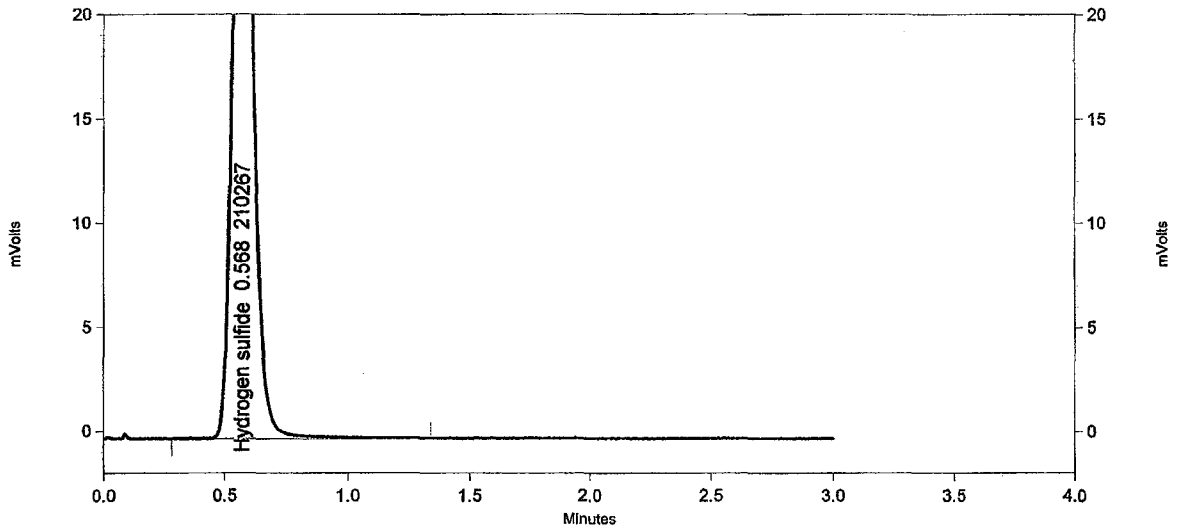


FPD2 Results

Name	Retention Time	Area	ESTD concentration (ppmv)
Hydrogen sulfide	0.570	213923	9.930 CAL
Totals		213923	9.930 CAL

H_2S Monitoring

Sample ID: 9.93 ppm H2S
Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Data: C:\CLASS-VP\Data\1-6-11BP\9.93 ppmCal H2S 014
Product: Shimadzu Client/Server
Software: Version 7.2 SP1 Rev B
{Data Description} 500 UL 150C detector
Run Time: 1/6/2011 8:53:18 AM



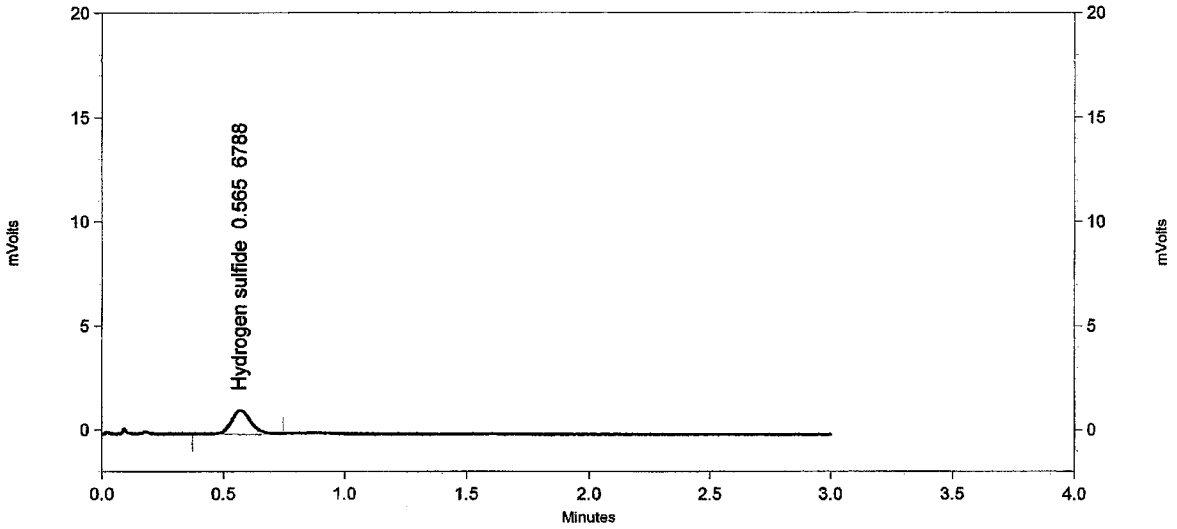
FPD2 Results

Name	Retention Time	Area	ESTD concentration (ppmv)
Hydrogen sulfide	0.568	210267	9.930 CAL
Totals		210267	9.930 CAL

H_2S Monitoring

Sample ID: H2S SRU Sampling
Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Data: C:\CLASS-VP\Data\1-6-11BP\H2S SRU Sampling 005
Product: Shimadzu Client/Server
Software: Version 7.2 SP1 Rev B
{Data Description} 500 UL 150C detector
Run Time: 1/6/2011 12:24:44 PM

Purge



FPD2 Results

Name	Retention Time	Area	ESTD concentration (ppmv)
Hydrogen sulfide	0.565	6788	1.887
Totals		6788	1.887

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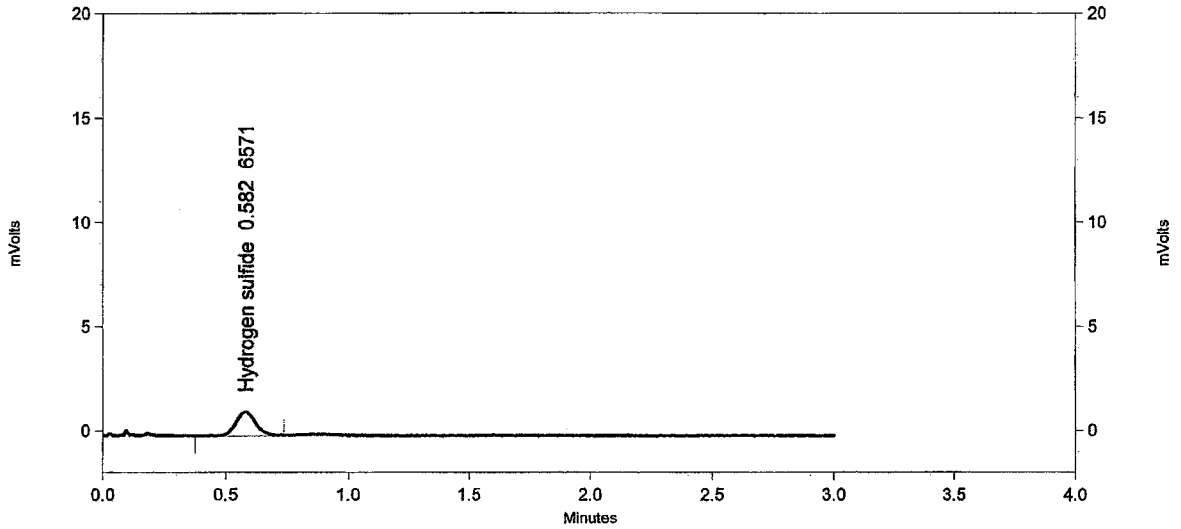
H_2S Monitoring

Sample ID: H2S SRU Sampling
Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Data: C:\CLASS-VP\Data\1-6-11BP\H2S SRU Sampling 006
Product: Shimadzu Client/Server
Software: Version 7.2 SP1 Rev B
{Data Description} 500 UL 150C detector
Run Time: 1/6/2011 12:28:22 PM

Purge



FPD2 Results

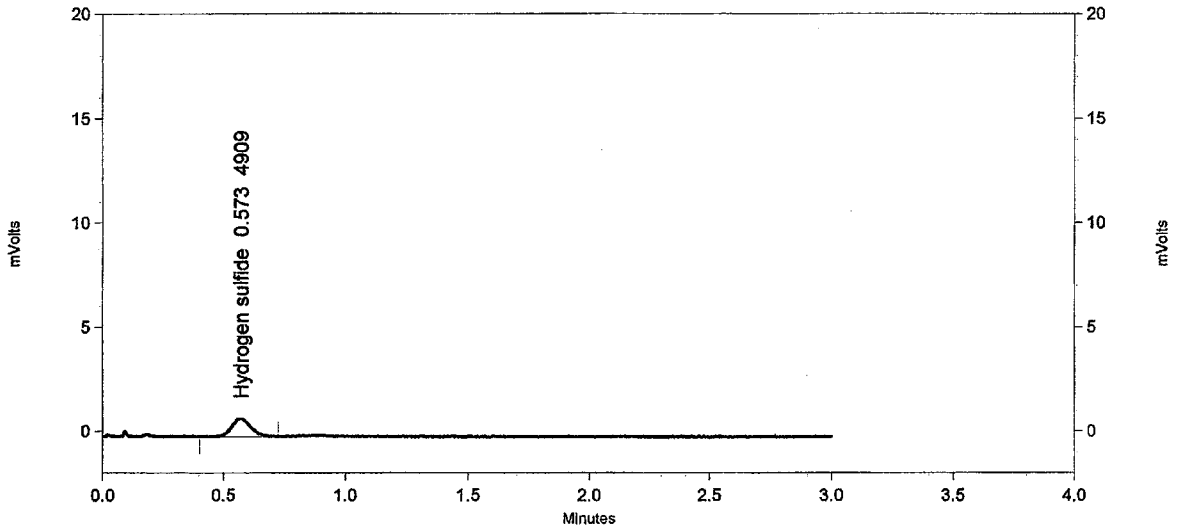
Name	Retention Time	Area	ESTD concentration (ppmv)
Hydrogen sulfide	0.582	6571	1.864
Totals		6571	1.864

Uncontrolled if copied or printed.

H_2S Monitoring

Sample ID: H2S SRU Sampling
Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Data: C:\CLASS-VP\Data\1-6-11BP\H2S SRU Sampling 007
Product: Shimadzu Client/Server
Software: Version 7.2 SP1 Rev B
{Data Description} 500 UL 150C detector
Run Time: 1/6/2011 12:32:01 PM

Purge



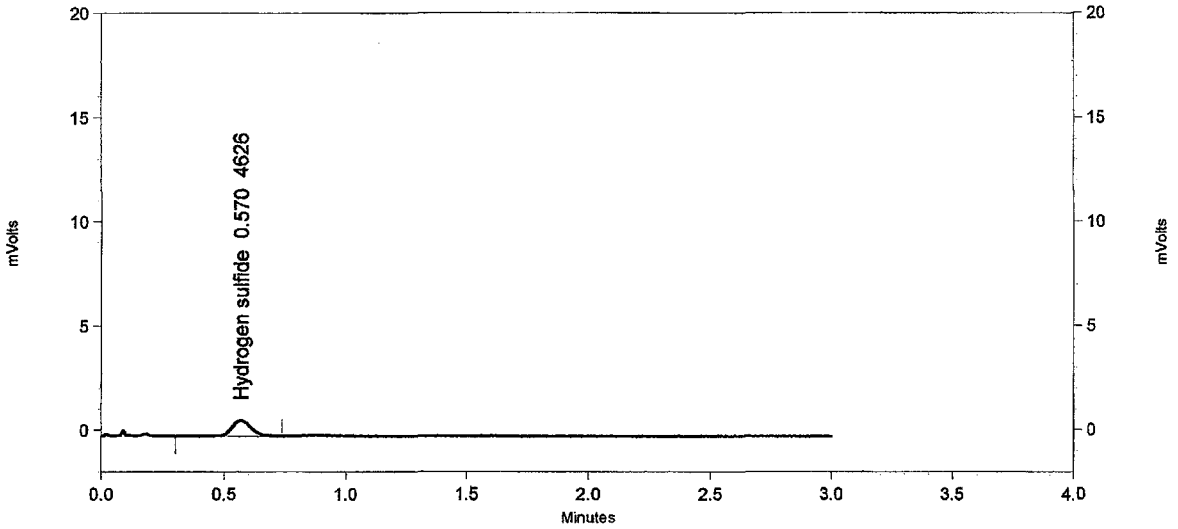
FPD2 Results

Name	Retention Time	Area	ESTD concentration (ppmv)
Hydrogen sulfide	0.573	4909	1.678
Totals		4909	1.678

H_2S Monitoring

Sample ID: H2S SRU Sampling
Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Data: C:\CLASS-VP\Data\1-6-11BP\H2S SRU Sampling 008
Product: Shimadzu Client/Server
Software: Version 7.2 SP1 Rev B
{Data Description} 500 UL 150C detector
Run Time: 1/6/2011 12:35:40 PM

Purge



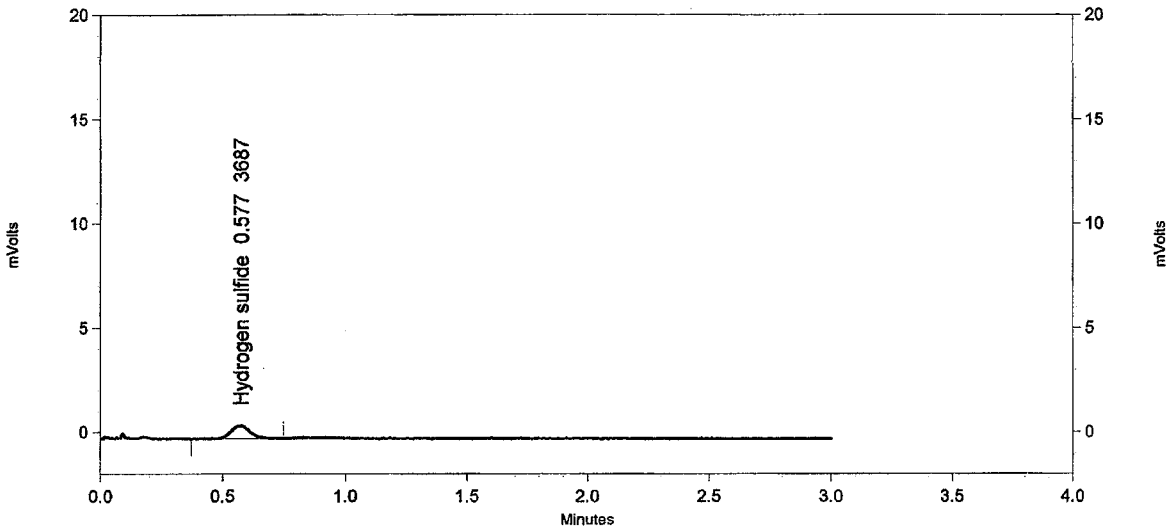
FPD2 Results

Name	Retention Time	Area	ESTD concentration (ppmv)
Hydrogen sulfide	0.570	4626	1.643
Totals		4626	1.643

H2S Monitoring

Sample ID: H2S SRU Sampling
Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Data: C:\CLASS-VP\Data\1-6-11BP\H2S SRU Sampling 009
Product: Shimadzu Client/Server
Software: Version 7.2 SP1 Rev B
{Data Description} 500 UL 150C detector
Run Time: 1/6/2011 12:39:18 PM

Purge



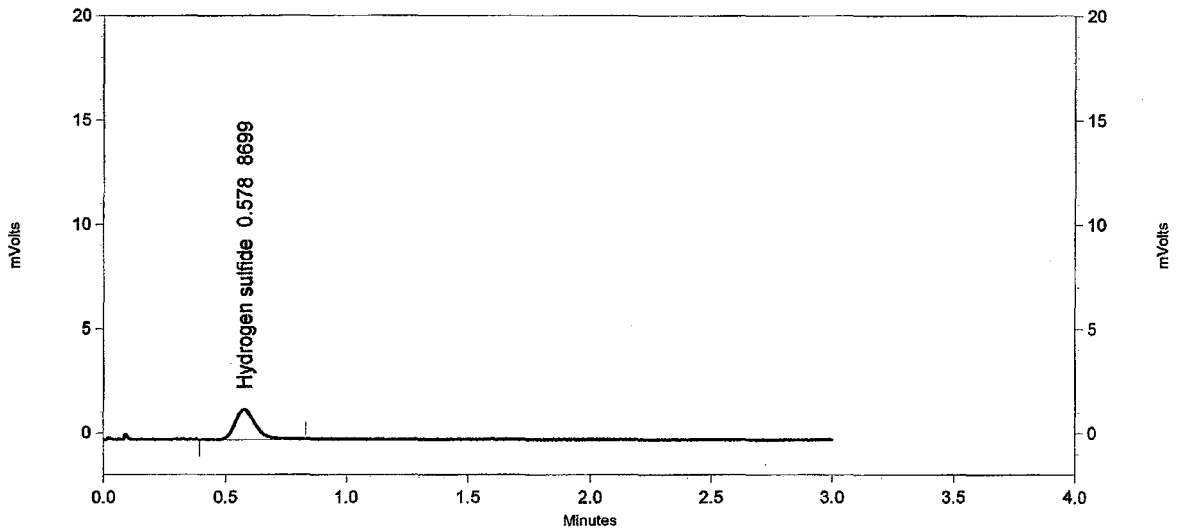
FPD2 Results

Name	Retention Time	Area	ESTD concentration (ppmv)
Hydrogen sulfide	0.577	3687	1.521
Totals		3687	1.521

Uncontrolled if copied or printed.

H_2S Monitoring

Sample ID: 2ppm H2S
Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Data: C:\CLASS-VP\Data\1-6-11BP\2ppmH2SChk035.dat
Product: Shimadzu Client/Server
Software: Version 7.2 SP1 Rev B
{Data Description} 500 UL 150C detector
Run Time: 1/6/2011 9:59:40 AM



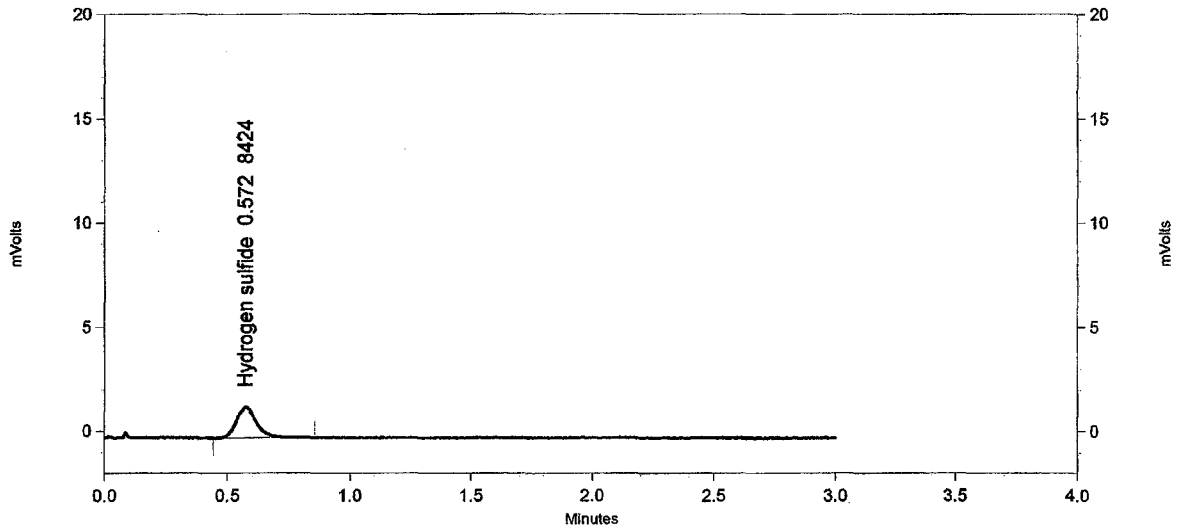
FPD2 Results

Name	Retention Time	Area	ESTD concentration (ppmv)
Hydrogen sulfide	0.578	8699	2.075
Totals		8699	2.075

Uncontrolled if copied or printed.

H_2S Monitoring

Sample ID: 2ppm H2S
Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Data: C:\CLASS-VP\Data\1-6-11BP\2ppmH2SChk036
Product: Shimadzu Client/Server
Software: Version 7.2 SP1 Rev B
{Data Description} 500 UL 150C detector
Run Time: 1/6/2011 10:03:19 AM

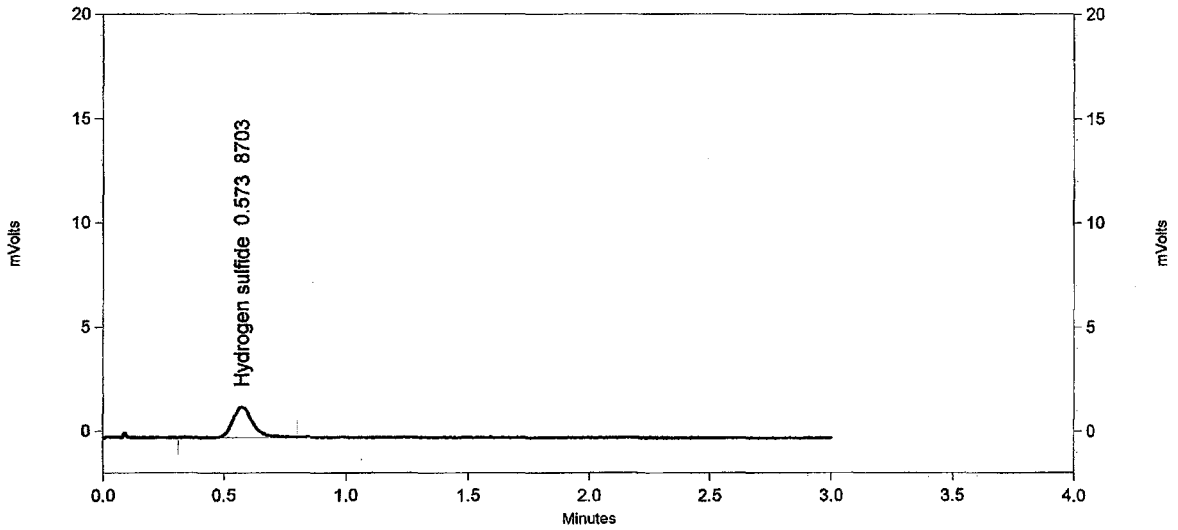


FPD2 Results

Name	Retention Time	Area	ESTD concentration (ppmv)
Hydrogen sulfide	0.572	8424	2.049
Totals		8424	2.049

H_2S Monitoring

Sample ID: 2ppm H2S
Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Data: C:\CLASS-VP\Data\1-6-11BP\2ppmH2SChk037
Product: Shimadzu Client/Server
Software: Version 7.2 SP1 Rev B
{Data Description} 500 UL 150C detector
Run Time: 1/6/2011 10:06:58 AM



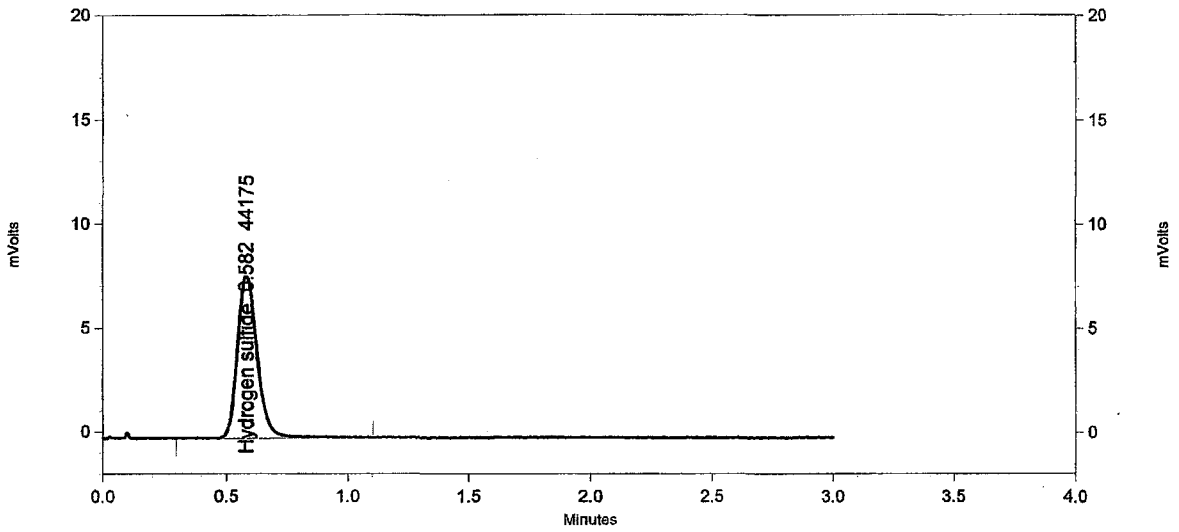
FPD2 Results

Name	Retention Time	Area	ESTD concentration (ppmv)
Hydrogen sulfide	0.573	8703	2.075
Totals		8703	2.075

Uncontrolled if copied or printed.

H_2S Monitoring

Sample ID: 4.5ppm H2S
Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Data: C:\CLASS-VP\Data\1-6-11BP\4.5ppmH2SChk039
Product: Shimadzu Client/Server
Software: Version 7.2 SP1 Rev B
{Data Description} 500 UL 150C detector
Run Time: 1/6/2011 10:15:16 AM

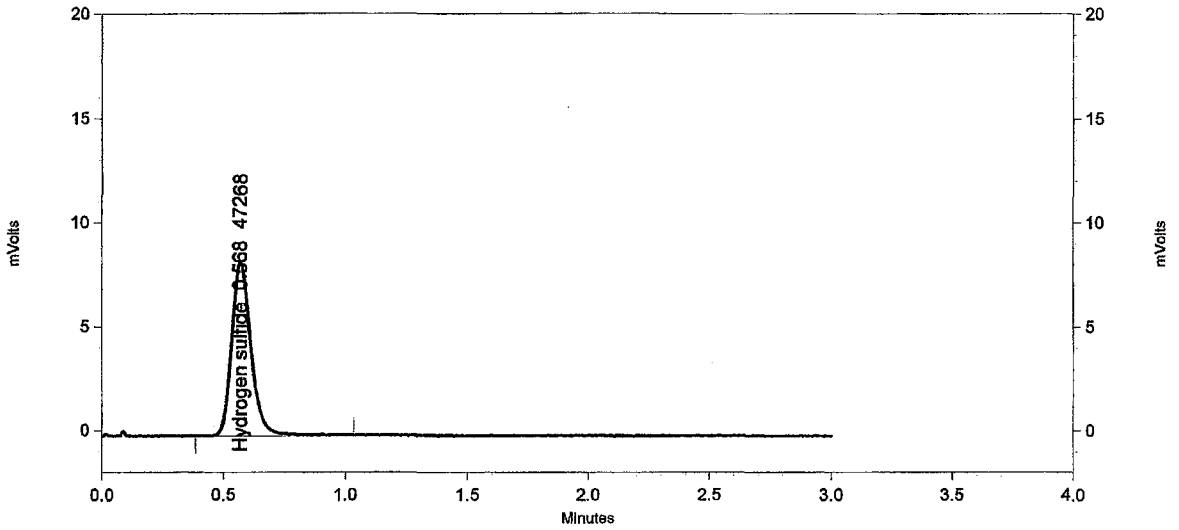


FPD2 Results

Name	Retention Time	Area	ESTD concentration (ppmv)
Hydrogen sulfide	0.582	44175	4.288
Totals		44175	4.288

H_2S Monitoring

Sample ID: 4.5ppm H2S
Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Data: C:\CLASS-VP\Data\1-6-11BP\4.5ppmH2SChk040
Product: Shimadzu Client/Server
Software: Version 7.2 SP1 Rev B
{Data Description} 500 UL 150C detector
Run Time: 1/6/2011 10:18:54 AM

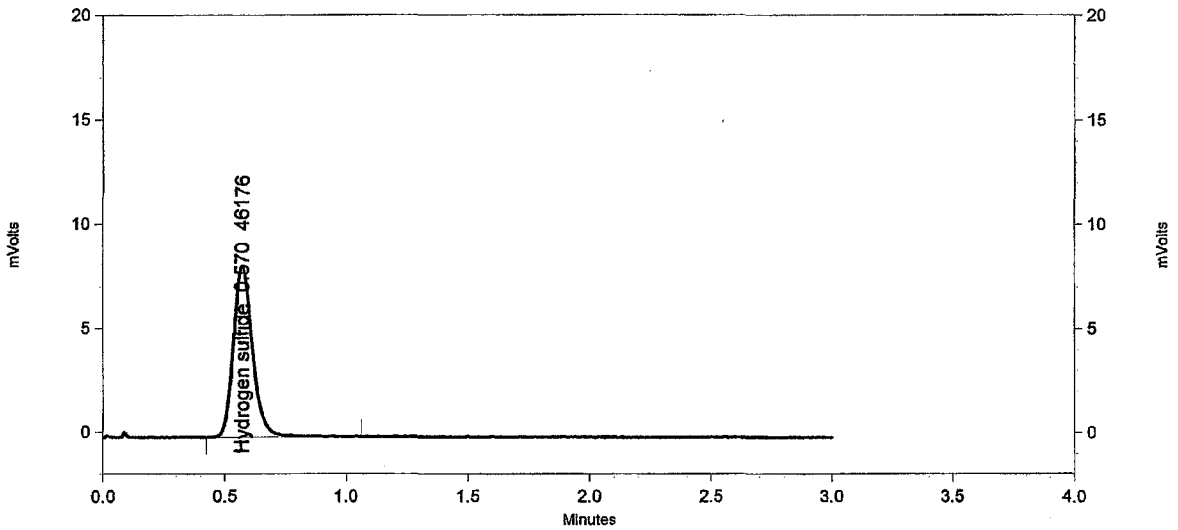


FPD2 Results

Name	Retention Time	Area	ESTD concentration (ppmv)
Hydrogen sulfide	0.568	47268	4.437
Totals		47268	4.437

H_2S Monitoring

Sample ID: 4.5ppm H2S
Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Data: C:\CLASS-VP\Data\1-6-11BP\4.5ppmH2SChk041
Product: Shimadzu Client/Server
Software: Version 7.2 SP1 Rev B
{Data Description} 500 UL 150C detector
Run Time: 1/6/2011 10:22:32 AM

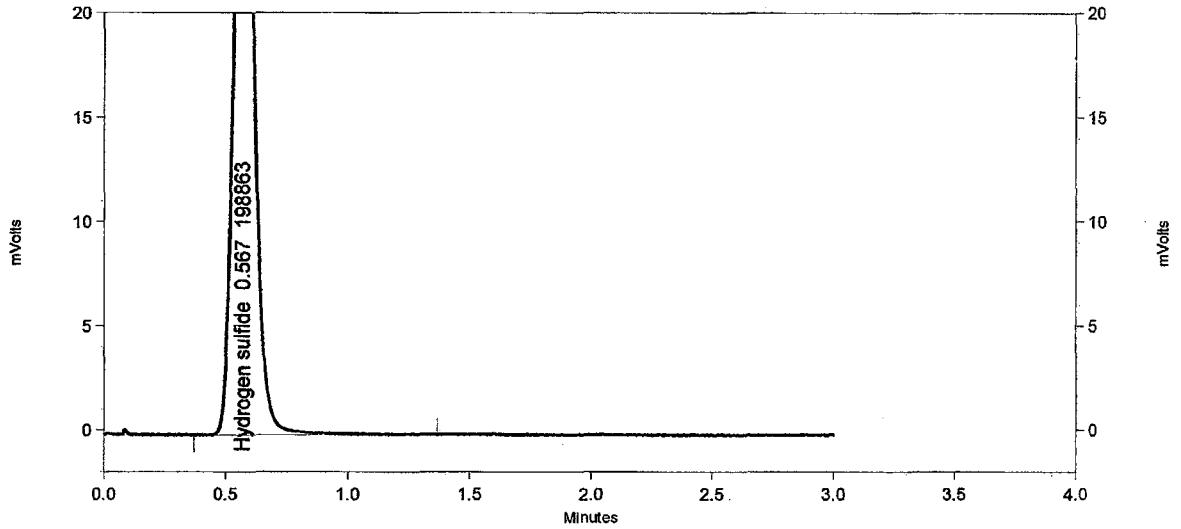


FPD2 Results

Name	Retention Time	Area	ESTD concentration (ppmv)
Hydrogen sulfide	0.570	46176	4.385
Totals		46176	4.385

H_2S Monitoring

Sample ID: 9.93ppm H2S
Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Data: C:\CLASS-VP\Data\1-6-11BP\9.93ppmH2SChk043.dat
Product: Shimadzu Client/Server
Software: Version 7.2 SP1 Rev B
{Data Description} 500 UL 150C detector
Run Time: 1/6/2011 10:31:07 AM

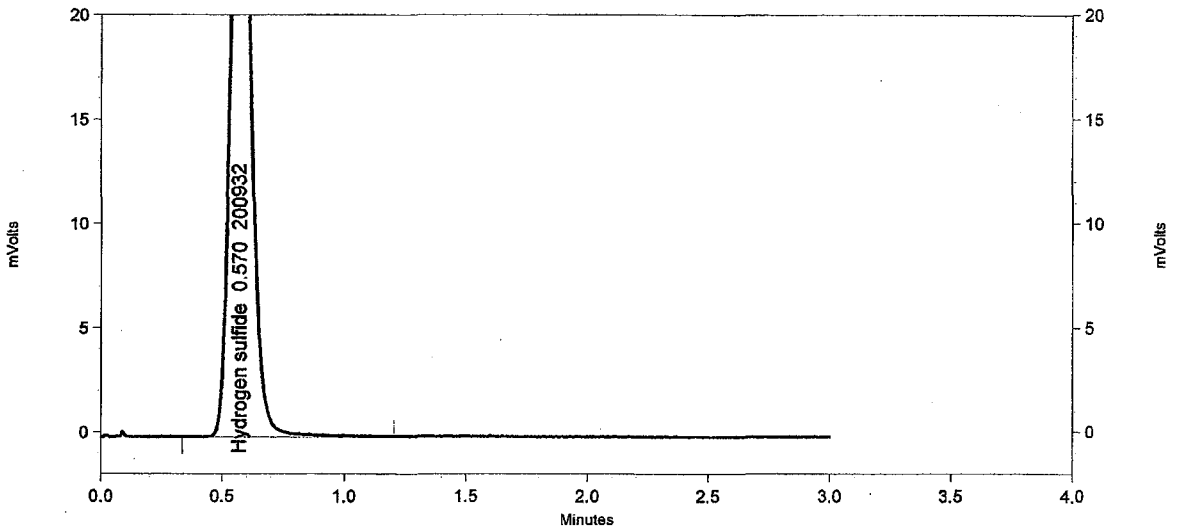


FPD2 Results

Name	Retention Time	Area	ESTD concentration (ppmv)
Hydrogen sulfide	0.567	198863	9.865
Totals		198863	9.865

H_2S Monitoring

Sample ID: 9.93ppm H2S
Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Data: C:\CLASS-VP\Data\1-6-11BP\9.93ppmH2SChk044
Product: Shimadzu Client/Server
Software: Version 7.2 SP1 Rev B
{Data Description} 500 UL 150C detector
Run Time: 1/6/2011 10:34:45 AM

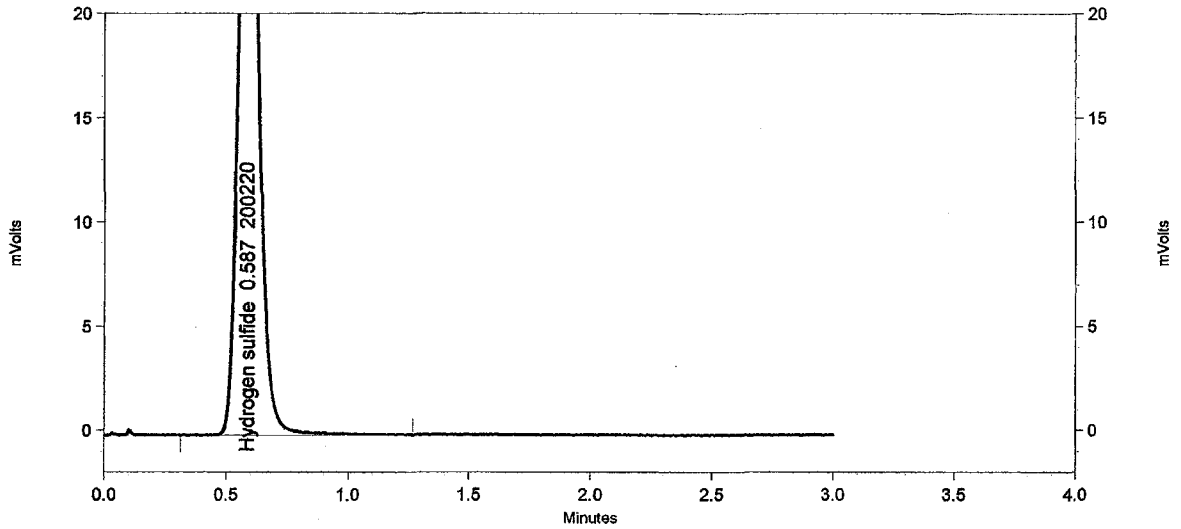


FPD2 Results

Name	Retention Time	Area	ESTD concentration (ppmv)
Hydrogen sulfide	0.570	200932	9.927
Totals		200932	9.927

H_2S Monitoring

Sample ID: 9.93ppm H2S
Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Data: C:\CLASS-VP\Data\1-6-11BP\9.93ppmH2SChk045
Product: Shimadzu Client/Server
Software: Version 7.2 SP1 Rev B
{Data Description} 500 UL 150C detector
Run Time: 1/6/2011 10:38:23 AM

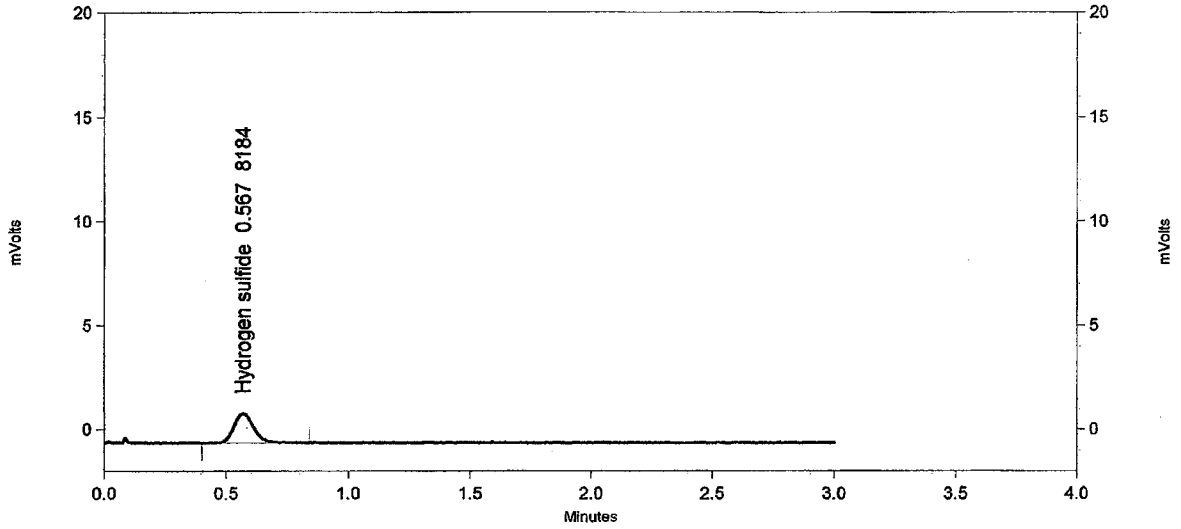


FPD2 Results

Name	Retention Time	Area	ESTD concentration (ppmv)
Hydrogen sulfide	0.587	200220	9.906
Totals		200220	9.906

H_2S Monitoring

Sample ID: 2ppm H2S Ck
Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Data: C:\CLASS-VP\Data\1-6-11BP\2ppm H2S Ck 1050
Product: Shimadzu Client/Server
Software: Version 7.2 SP1 Rev B
{Data Description} 500 UL 150C detector
Run Time: 1/7/2011 9:39:16 AM



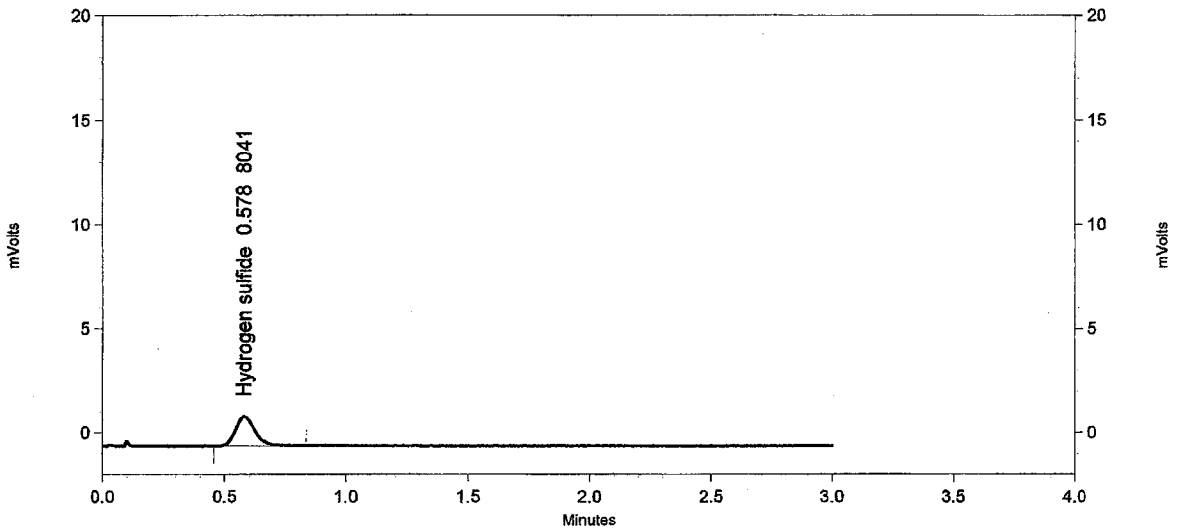
FPD2 Results

Name	Retention Time	Area	ESTD concentration (ppmv)
Hydrogen sulfide	0.567	8184	2.026
Totals		8184	2.026

Uncontrolled if copied or printed.

H_2S Monitoring

Sample ID: 2ppm H2S Ck
Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Data: C:\CLASS-VP\Data\1-6-11BP\2ppm H2S Ck 1051.dat
Product: Shimadzu Client/Server
Software: Version 7.2 SP1 Rev B
{Data Description} 500 UL 150C detector
Run Time: 1/7/2011 9:44:11 AM

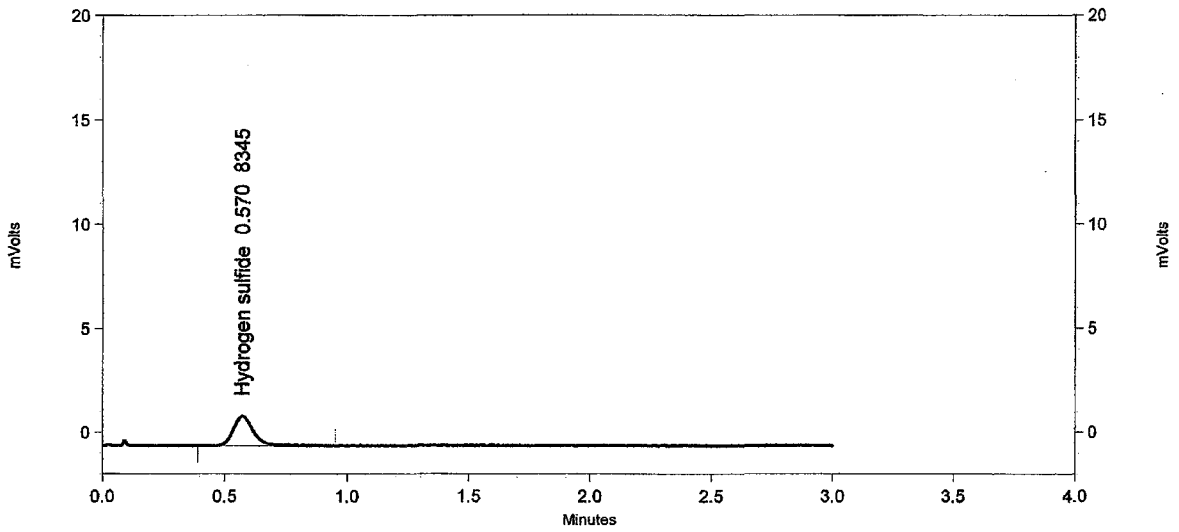


FPD2 Results

Name	Retention Time	Area	ESTD concentration (ppmv)
Hydrogen sulfide	0.578	8041	2.013
Totals		8041	2.013

H_2S Monitoring

Sample ID: 2ppm H2S Ck
Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Data: C:\CLASS-VP\Data\1-6-11BP\2ppm H2S Ck 1052
Product: Shimadzu Client/Server
Software: Version 7.2 SP1 Rev B
{Data Description} 500 UL 150C detector
Run Time: 1/7/2011 9:47:49 AM



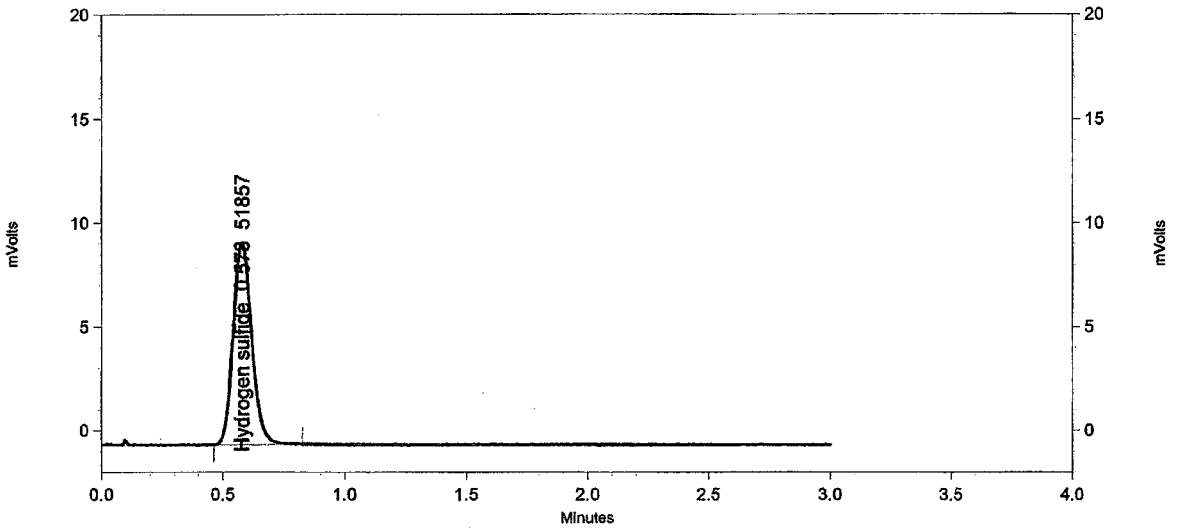
FPD2 Results

Name	Retention Time	Area	ESTD concentration (ppmv)
Hydrogen sulfide	0.570	8345	2.042
Totals		8345	2.042

Uncontrolled if copied or printed.

H_2S Monitoring

Sample ID: 4.5 ppm H2S Ck
Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Data: C:\CLASS-VP\Data\1-6-11BP\4.5ppm H2S Ck 1042
Product: Shimadzu Client/Server
Software: Version 7.2 SP1 Rev B
{Data Description} 500 UL 150C detector
Run Time: 1/7/2011 9:13:05 AM

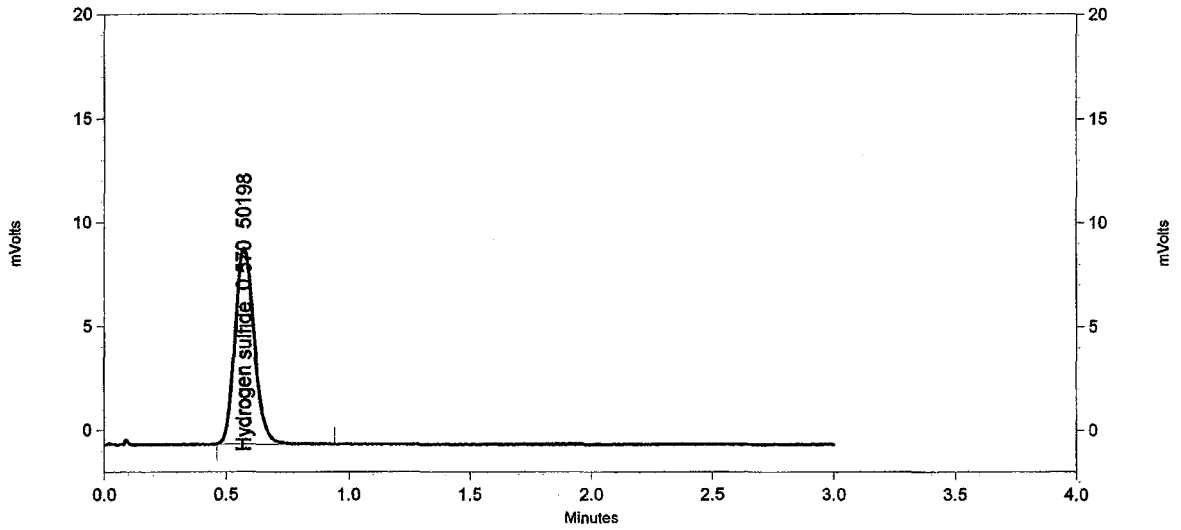


FPD2 Results

Name	Retention Time	Area	ESTD concentration (ppmv)
Hydrogen sulfide	0.578	51857	4.652
Totals		51857	4.652

H_2S Monitoring

Sample ID: 4.5 ppm H2S Ck
Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Data: C:\CLASS-VP\Data\1-6-11BP\4.5ppm H2S Ck 1043
Product: Shimadzu Client/Server
Software: Version 7.2 SP1 Rev B
{Data Description} 500 UL 150C detector
Run Time: 1/7/2011 9:16:43 AM

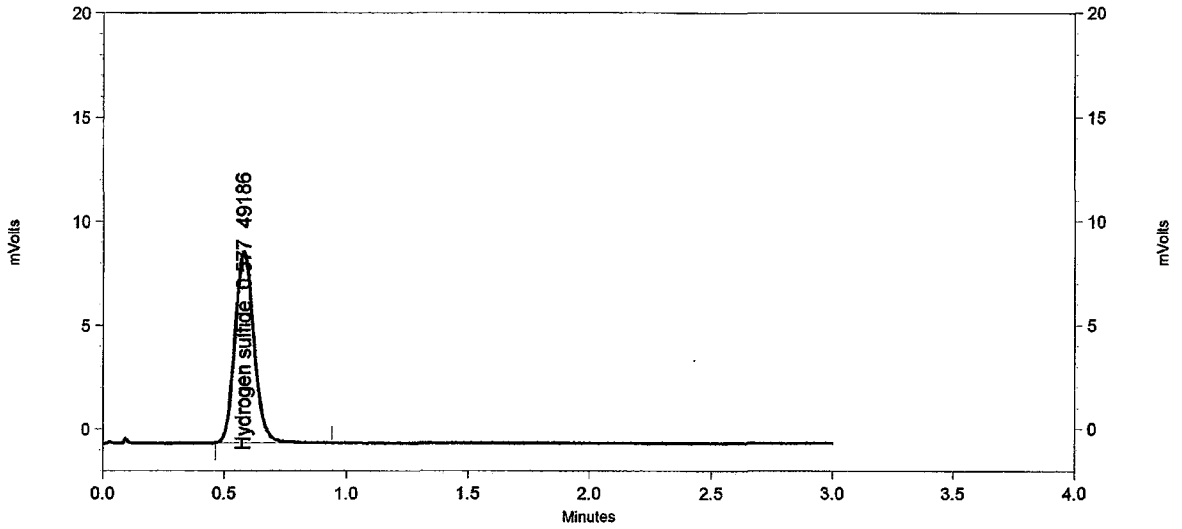


FPD2 Results

Name	Retention Time	Area	ESTD concentration (ppmv)
Hydrogen sulfide	0.570	50198	4.575
Totals		50198	4.575

H_2S Monitoring

Sample ID: 4.5 ppm H2S Ck
Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Data: C:\CLASS-VP\Data\1-6-11BP\4.5ppm H2S Ck 1044
Product: Shimadzu Client/Server
Software: Version 7.2 SP1 Rev B
{Data Description} 500 UL 150C detector
Run Time: 1/7/2011 9:20:21 AM

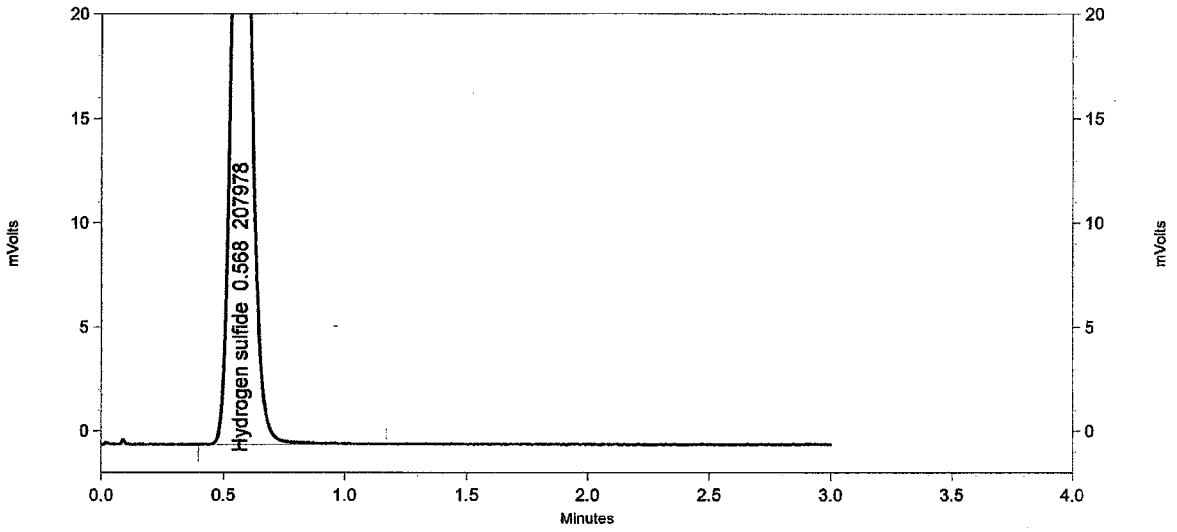


FPD2 Results

Name	Retention Time	Area	ESTD concentration (ppmv)
Hydrogen sulfide	0.577	49186	4.528
Totals		49186	4.528

H_2S Monitoring

Sample ID: 9.93ppm H2S Ck
Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Data: C:\CLASS-VP\Data\1-6-11BP\9.93ppm H2S Ck 1056
Product: Shimadzu Client/Server
Software: Version 7.2 SP1 Rev B
{Data Description} 500 UL 150C detector
Run Time: 1/7/2011 9:57:36 AM

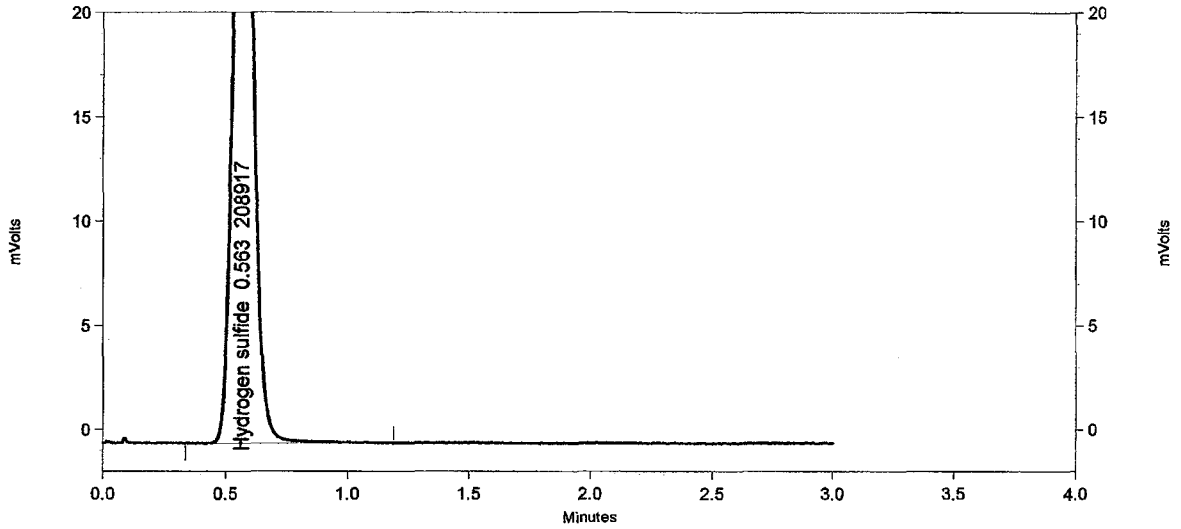


FPD2 Results

Name	Retention Time	Area	ESTD concentration (ppmv)
Hydrogen sulfide	0.568	207978	10.137
Totals		207978	10.137

H_2S Monitoring

Sample ID: 9.93ppm H2S Ck
Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Data: C:\CLASS-VP\Data\1-6-11BP\9.93ppm H2S Ck 1057
Product: Shimadzu Client/Server
Software: Version 7.2 SP1 Rev B
{Data Description} 500 UL 150C detector
Run Time: 1/7/2011 10:01:14 AM

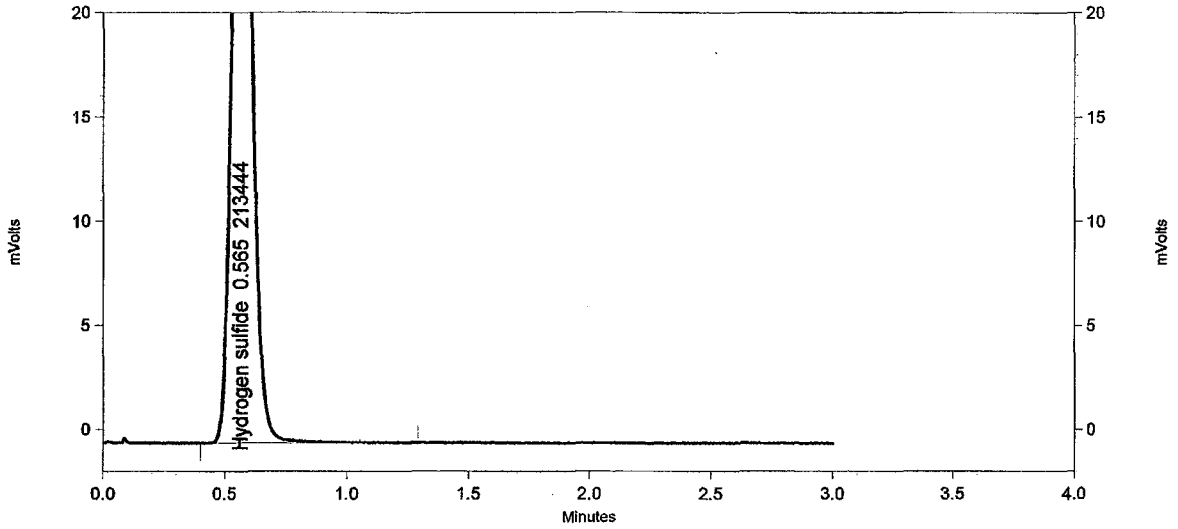


FPD2 Results

Name	Retention Time	Area	ESTD concentration (ppmv)
Hydrogen sulfide	0.563	208917	10.165
Totals		208917	10.165

H_2S Monitoring

Sample ID: 9.93ppm H2S Ck
Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Data: C:\CLASS-VP\Data\1-6-11BP\9.93ppm H2S Ck 1058
Product: Shimadzu Client/Server
Software: Version 7.2 SP1 Rev B
{Data Description} 500 UL 150C detector
Run Time: 1/7/2011 10:04:52 AM

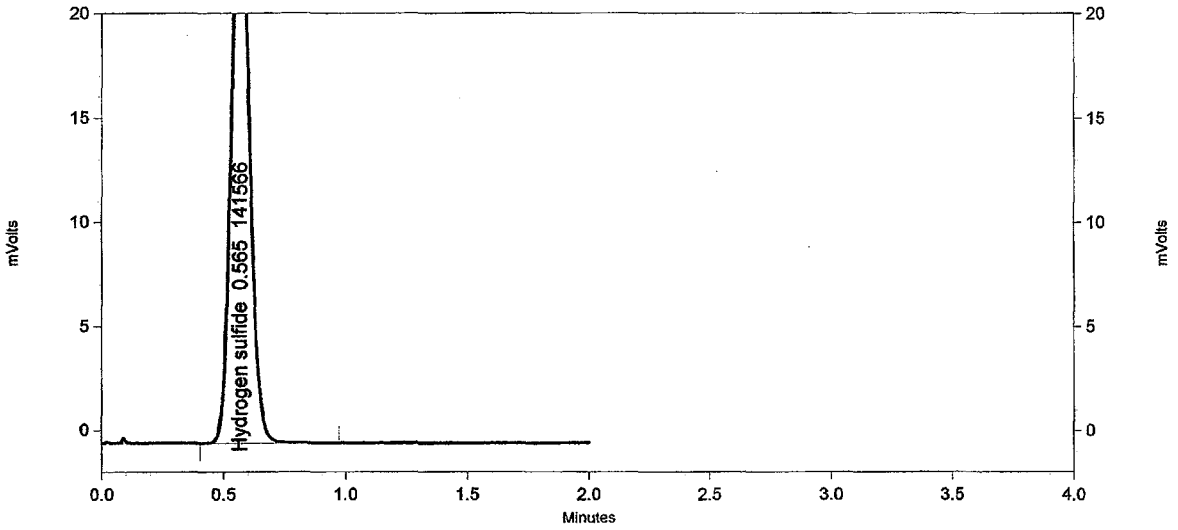


FPD2 Results

Name	Retention Time	Area	ESTD concentration (ppmv)
Hydrogen sulfide	0.565	213444	10.299
Totals		213444	10.299

H_2S Monitoring

Sample ID: 9.93 ppm H2S Line Loss
Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Data: C:\CLASS-VP\Data\1-6-11BP\9.93 ppm H2S Line Loss 12.dat
Product: Shimadzu Client/Server
Software: Version 7.2 SP1 Rev B
{Data Description} 500 UL 150C detector
Run Time: 1/7/2011 12:57:55 PM



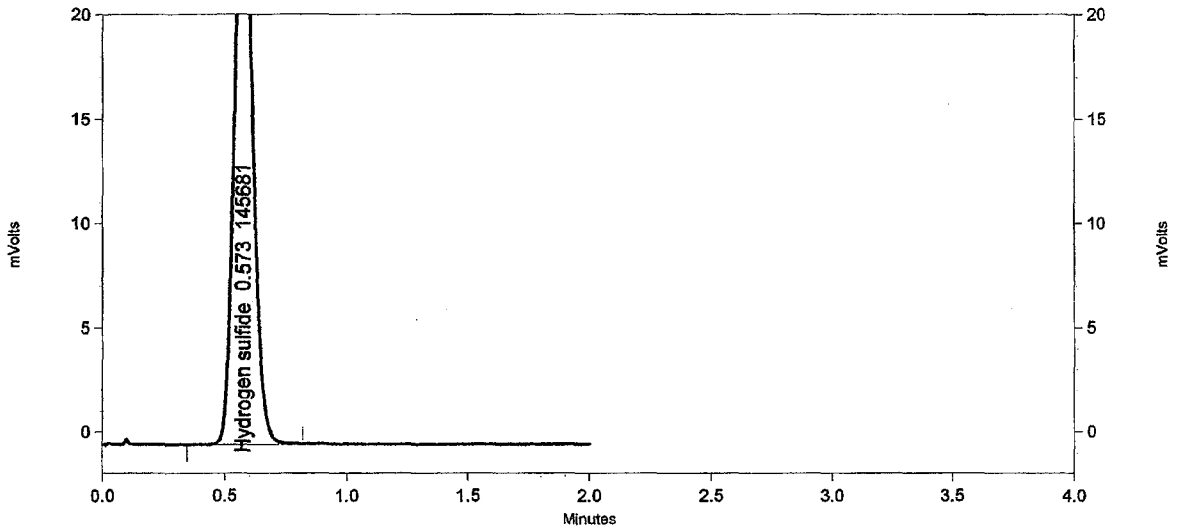
FPD2 Results

Name	Retention Time	Area	ESTD concentration (ppmv)
Hydrogen sulfide	0.565	141566	8.063
Totals		141566	8.063

Uncontrolled if copied or printed.

H_2S Monitoring

Sample ID: 9.93 ppm H2S Line Loss
Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Data: C:\CLASS-VP\Data\1-6-11BP\9.93 ppm H2S Line Loss 13
Product: Shimadzu Client/Server
Software: Version 7.2 SP1 Rev B
{Data Description} 500 UL 150C detector
Run Time: 1/7/2011 1:00:33 PM

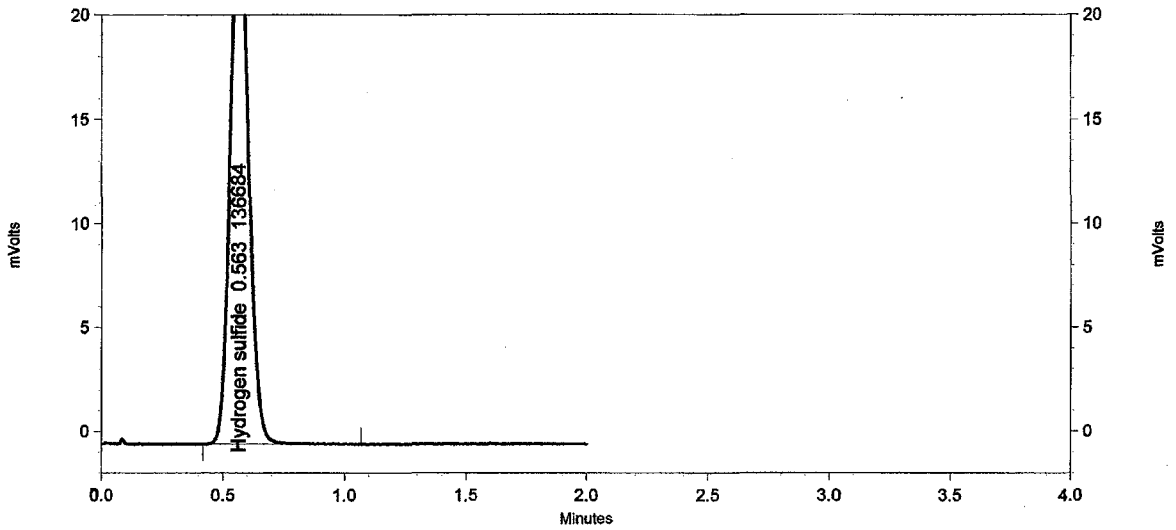


FPD2 Results

Name	Retention Time	Area	ESTD concentration (ppmv)
Hydrogen sulfide	0.573	145681	8.199
Totals		145681	8.199

H_2S Monitoring

Sample ID: 9.93 ppm H2S Line Loss
Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Data: C:\CLASS-VP\Data\1-6-11BP\9.93 ppm H2S Line Loss 14
Product: Shimadzu Client/Server
Software: Version 7.2 SP1 Rev B
{Data Description} 500 UL 150C detector
Run Time: 1/7/2011 1:03:10 PM

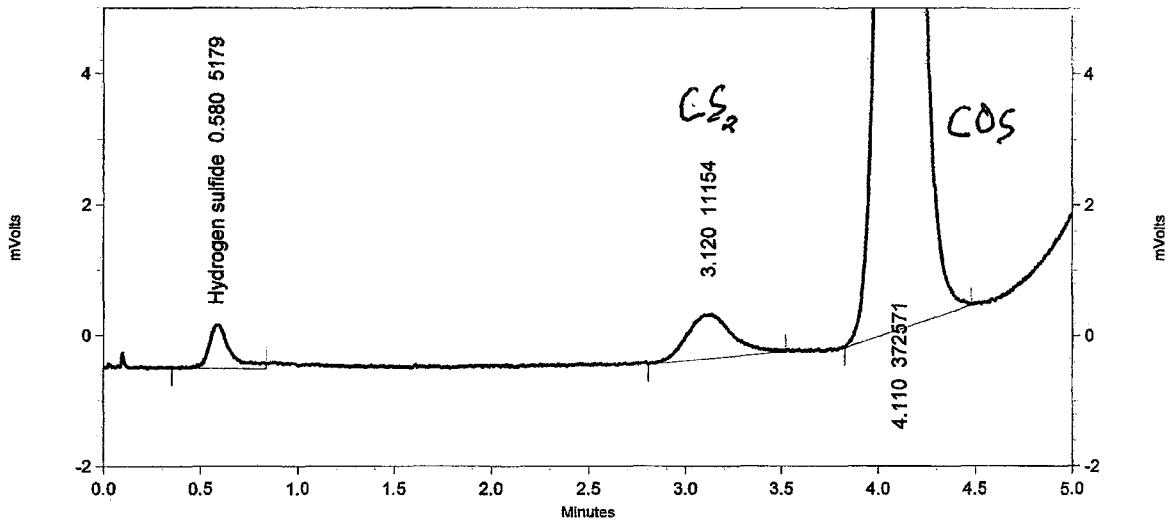


FPD2 Results

Name	Retention Time	Area	ESTD concentration (ppmv)
Hydrogen sulfide	0.563	136684	7.900
Totals		136684	7.900

H_2S Monitoring

Sample ID: 1ppmH2S
Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Data: C:\CLASS-VP\Data\1-4-11\1ppmH2S85.dat
Product: Shimadzu Client/Server
Software: Version 7.2 SP1 Rev B
{Data Description} 500 UL 150C detector
Run Time: 1/4/2011 3:25:32 PM

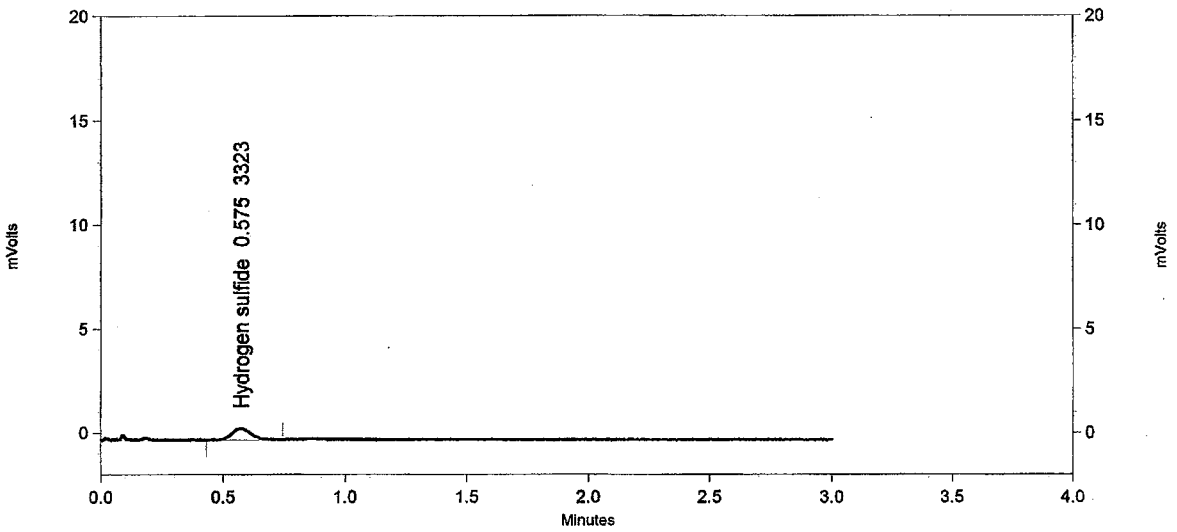


FPD2 Results

Name	Retention Time	Area	ESTD concentration (ppmv)
Hydrogen sulfide	0.580	5179	2.542
Totals		5179	2.542

H_2S Monitoring

Sample ID: H2S SRU Sampling
Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Data: C:\CLASS-VP\Data\1-6-11BP\H2S SRU Sampling 012
Product: Shimadzu Client/Server
Software: Version 7.2 SP1 Rev B
{Data Description} 500 UL 150C detector
Run Time: 1/6/2011 12:50:14 PM

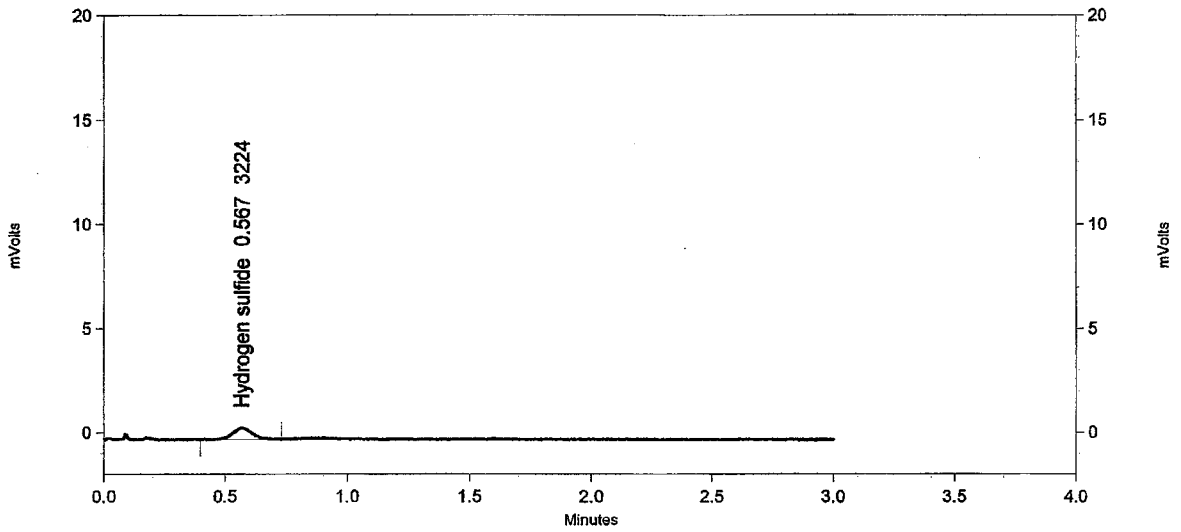


FPD2 Results

Name	Retention Time	Area	ESTD concentration (ppmv)
Hydrogen sulfide	0.575	3323	1.470
Totals		3323	1.470

H_2S Monitoring

Sample ID: H2S SRU Sampling
Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Data: C:\CLASS-VP\Data\1-6-11BP\H2S SRU Sampling 013
Product: Shimadzu Client/Server
Software: Version 7.2 SP1 Rev B
{Data Description} 500 UL 150C detector
Run Time: 1/6/2011 12:53:52 PM



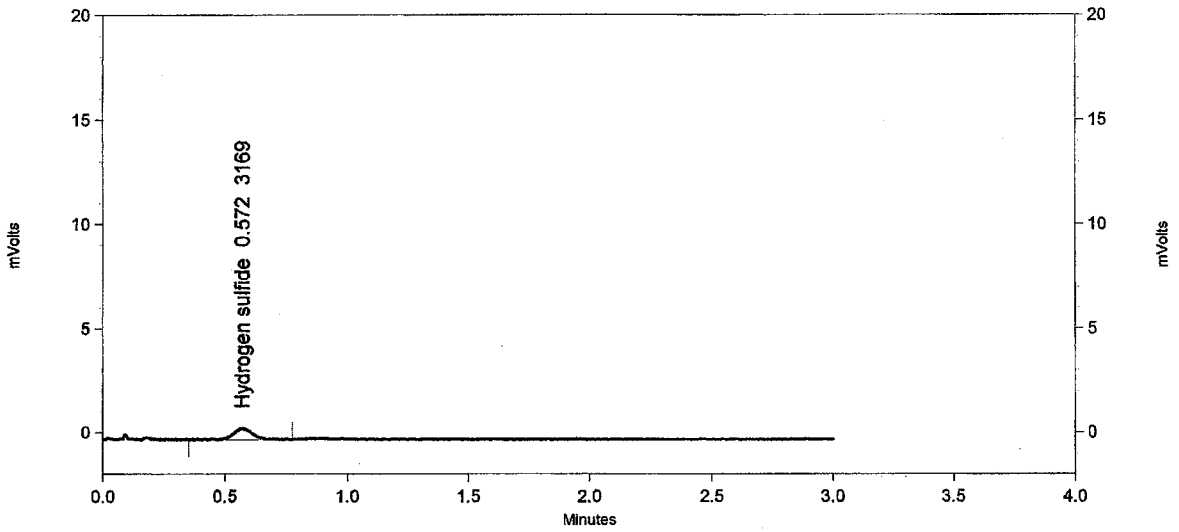
FPD2 Results

Name	Retention Time	Area	ESTD concentration (ppmv)
Hydrogen sulfide	0.567	3224	1.456
Totals		3224	1.456

Uncontrolled if copied or printed.

H2S Monitoring

Sample ID: H2S SRU Sampling
Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Data: C:\CLASS-VP\Data\1-6-11BP\H2S SRU Sampling 014
Product: Shimadzu Client/Server
Software: Version 7.2 SP1 Rev B
{Data Description} 500 UL 150C detector
Run Time: 1/6/2011 12:57:30 PM

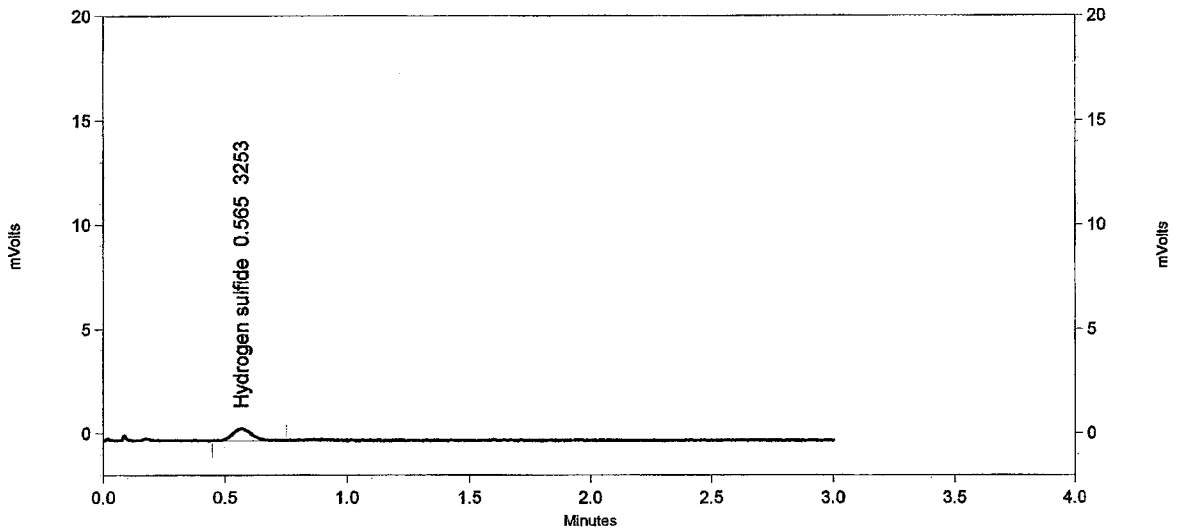


FPD2 Results

Name	Retention Time	Area	ESTD concentration (ppmv)
Hydrogen sulfide	0.572	3169	1.448
Totals		3169	1.448

H_2S Monitoring

Sample ID: H2S SRU Sampling
Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Data: C:\CLASS-VP\Data\1-6-11BP\H2S SRU Sampling 015
Product: Shimadzu Client/Server
Software: Version 7.2 SP1 Rev B
{Data Description} 500 UL 150C detector
Run Time: 1/6/2011 1:01:10 PM



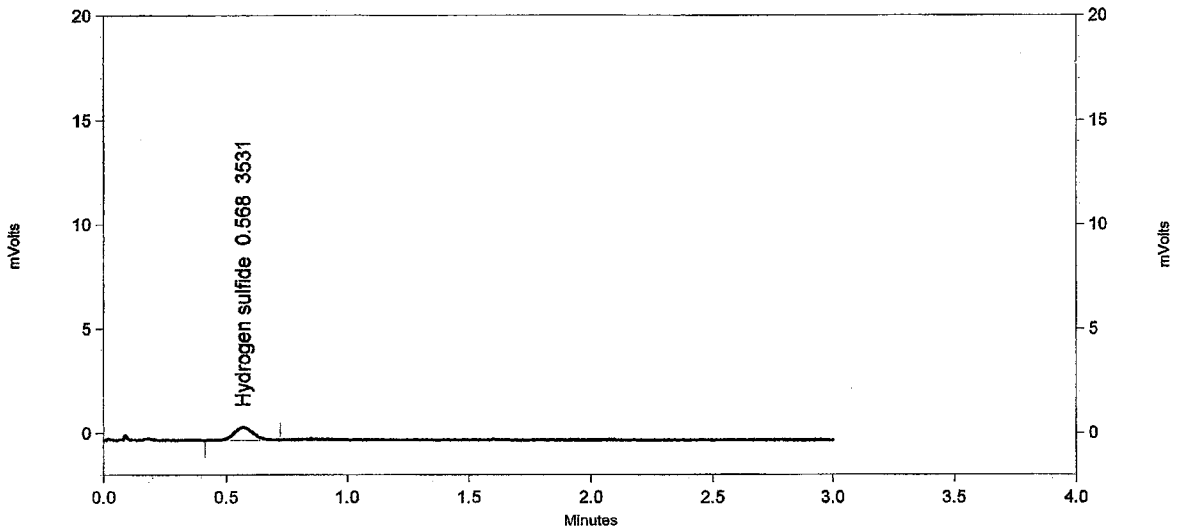
FPD2 Results

Name	Retention Time	Area	ESTD concentration (ppmv)
Hydrogen sulfide	0.565	3253	1.460
Totals		3253	1.460

Uncontrolled if copied or printed.

H_2S Monitoring

Sample ID: H2S SRU Sampling
Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Data: C:\CLASS-VP\Data\1-6-11BP\H2S SRU Sampling 016
Product: Shimadzu Client/Server
Software: Version 7.2 SP1 Rev B
{Data Description} 500 UL 150C detector
Run Time: 1/6/2011 1:04:48 PM



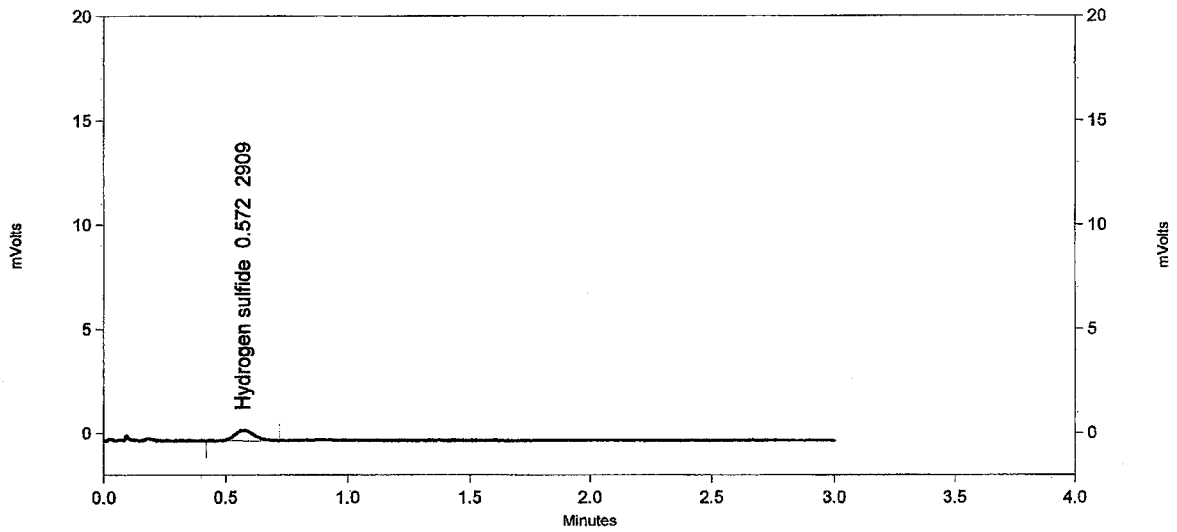
FPD2 Results

Name	Retention Time	Area	ESTD concentration (ppmv)
Hydrogen sulfide	0.568	3531	1.500
Totals		3531	1.500

Uncontrolled if copied or printed.

H_2S Monitoring

Sample ID: H2S SRU Sampling
Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Data: C:\CLASS-VP\Data\1-6-11BP\H2S SRU Sampling 017
Product: Shimadzu Client/Server
Software: Version 7.2 SP1 Rev B
{Data Description} 500 UL 150C detector
Run Time: 1/6/2011 1:08:27 PM



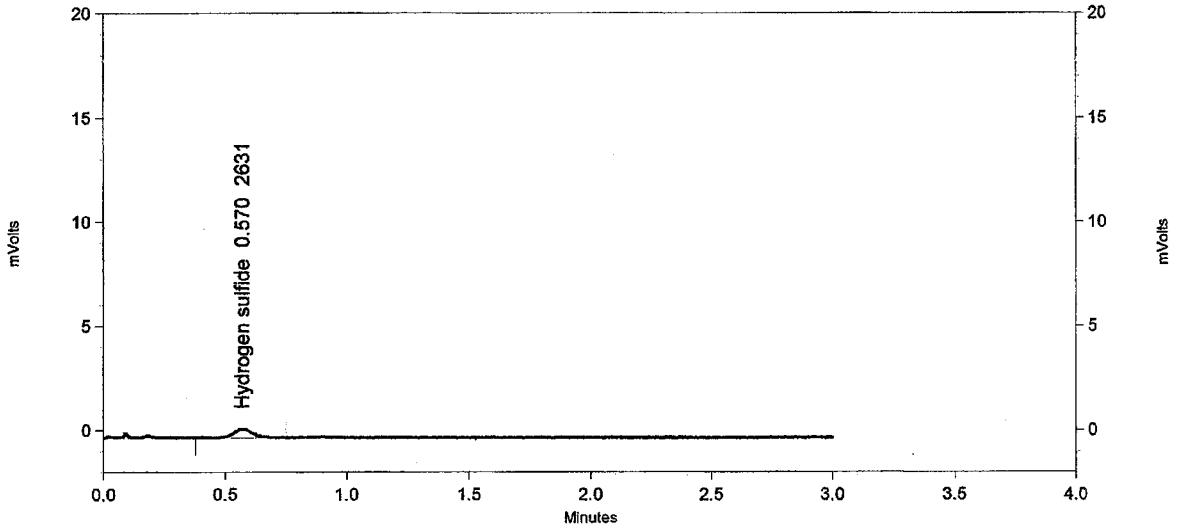
FPD2 Results

Name	Retention Time	Area	ESTD concentration (ppmv)
Hydrogen sulfide	0.572	2909	1.409
Totals		2909	1.409

Uncontrolled if copied or printed.

H_2S Monitoring

Sample ID: H2S SRU Sampling
Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Data: C:\CLASS-VP\Data\1-6-11BP\H2S SRU Sampling 018
Product: Shimadzu Client/Server
Software: Version 7.2 SP1 Rev B
{Data Description} 500 UL 150C detector
Run Time: 1/6/2011 1:12:06 PM



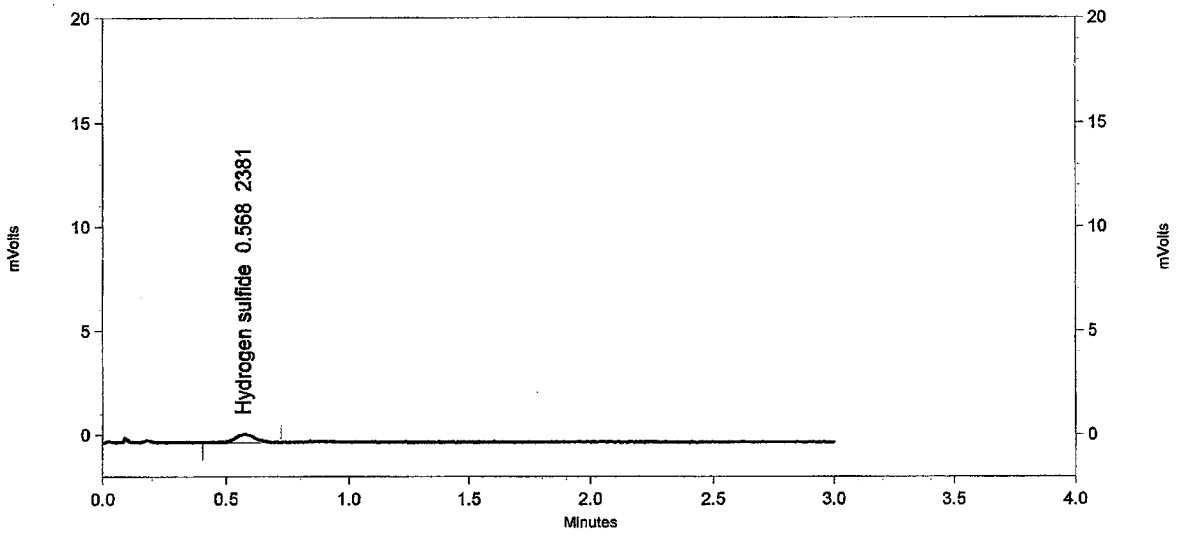
FPD2 Results

Name	Retention Time	Area	ESTD concentration (ppmv)
Hydrogen sulfide	0.570	2631	1.365
Totals		2631	1.365

Uncontrolled if copied or printed.

H_2S Monitoring

Sample ID: H2S SRU Sampling
Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Data: C:\CLASS-VP\Data\1-6-11BP\H2S SRU Sampling 019
Product: Shimadzu Client/Server
Software: Version 7.2 SP1 Rev B
{Data Description} 500 UL 150C detector
Run Time: 1/6/2011 1:15:45 PM

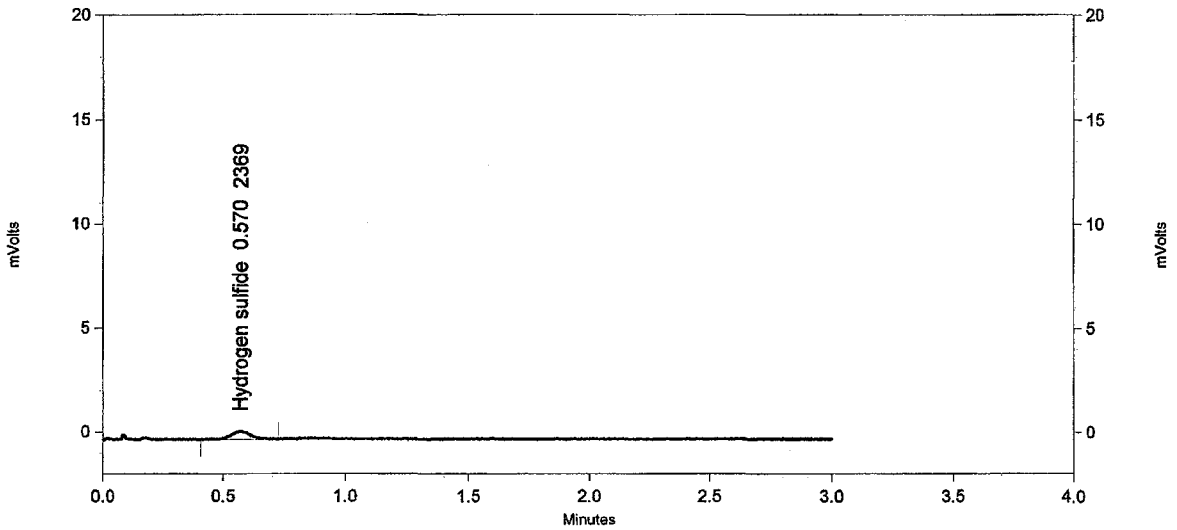


FPD2 Results

Name	Retention Time	Area	ESTD concentration (ppmv)
Hydrogen sulfide	0.568	2381	1.324
Totals		2381	1.324

H_2S Monitoring

Sample ID: H2S SRU Sampling
Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Data: C:\CLASS-VP\Data\1-6-11BP\H2S SRU Sampling 020
Product: Shimadzu Client/Server
Software: Version 7.2 SP1 Rev B
{Data Description} 500 UL 150C detector
Run Time: 1/6/2011 1:19:24 PM

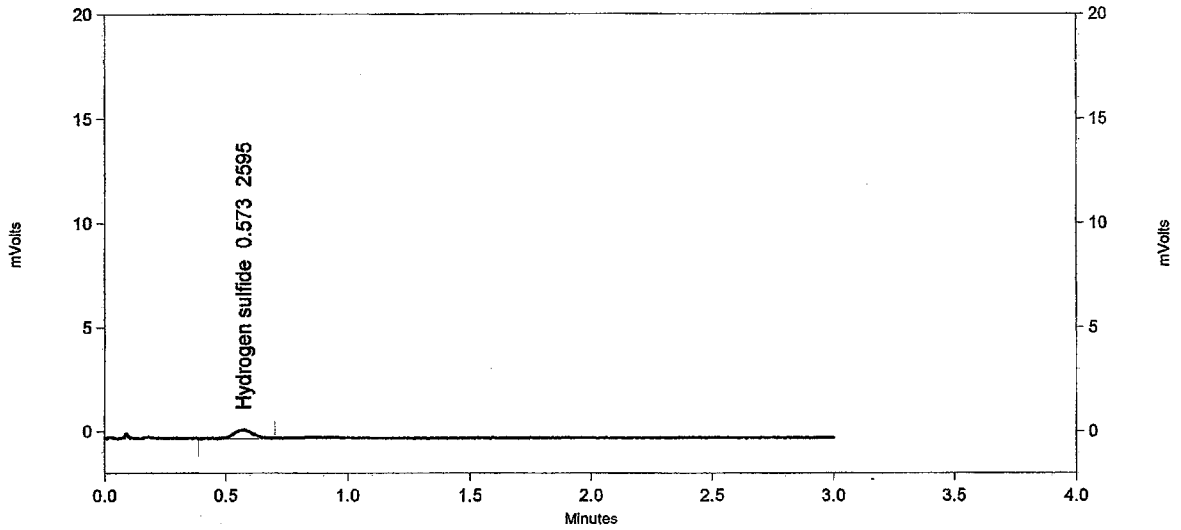


FPD2 Results

Name	Retention Time	Area	ESTD concentration (ppmv)
Hydrogen sulfide	0.570	2369	1.322
Totals		2369	1.322

H_2S Monitoring

Sample ID: H2S SRU Sampling
Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Data: C:\CLASS-VP\Data\1-6-11BP\H2S SRU Sampling 021
Product: Shimadzu Client/Server
Software: Version 7.2 SP1 Rev B
{Data Description} 500 UL 150C detector
Run Time: 1/6/2011 1:23:03 PM

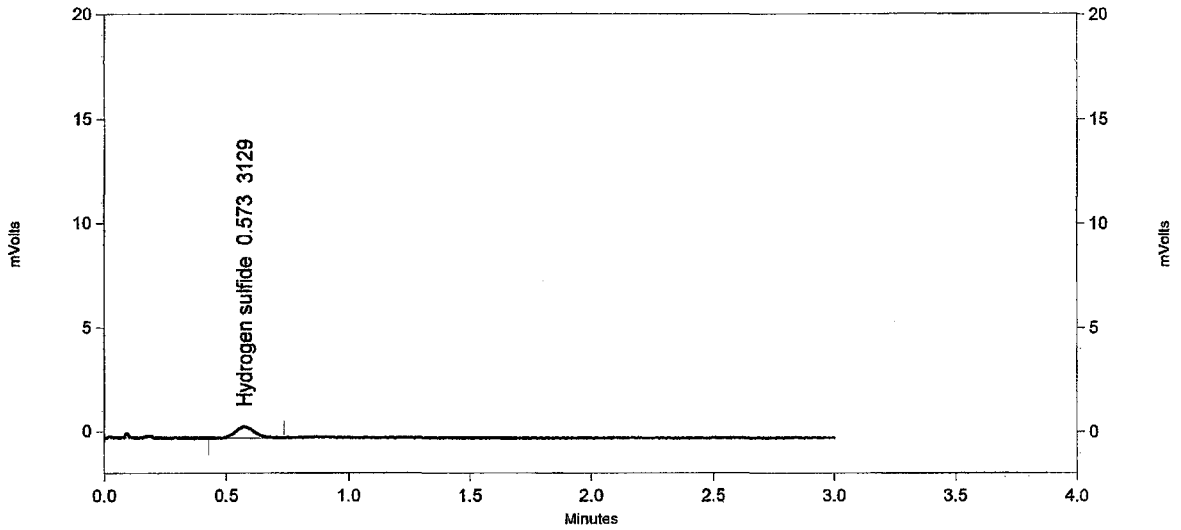


FPD2 Results

Name	Retention Time	Area	ESTD concentration (ppmv)
Hydrogen sulfide	0.573	2595	1.359
Totals		2595	1.359

H_2S Monitoring

Sample ID: H2S SRU Sampling
Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Data: C:\CLASS-VP\Data\1-6-11BP\H2S SRU Sampling 022
Product: Shimadzu Client/Server
Software: Version 7.2 SP1 Rev B
{Data Description} 500 UL 150C detector
Run Time: 1/6/2011 1:26:42 PM

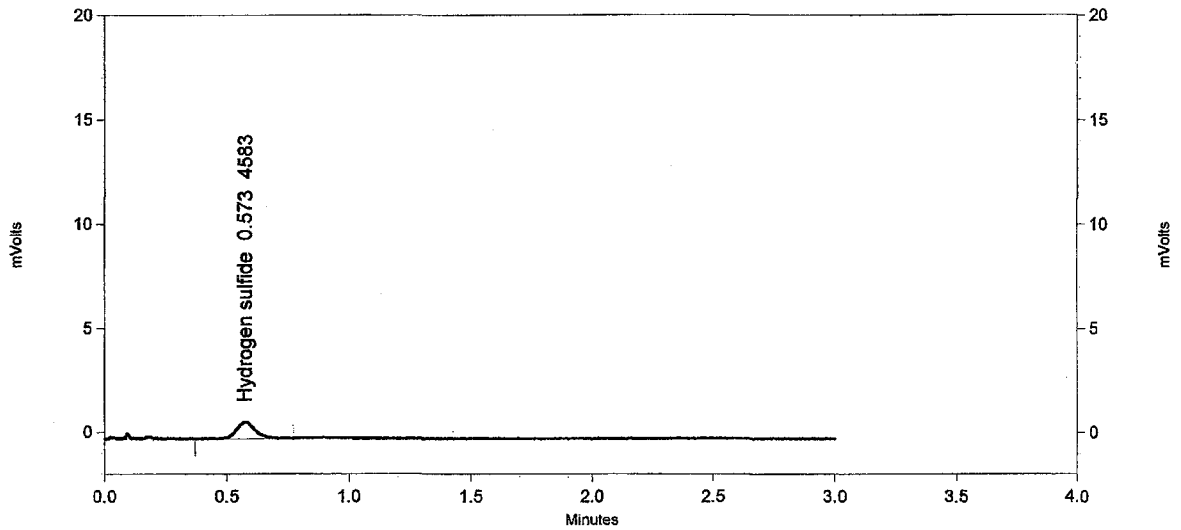


FPD2 Results

Name	Retention Time	Area	ESTD concentration (ppmv)
Hydrogen sulfide	0.573	3129	1.442
Totals		3129	1.442

H_2S Monitoring

Sample ID: H2S SRU Sampling
Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Data: C:\CLASS-VP\Data\1-6-11BP\H2S SRU Sampling 023
Product: Shimadzu Client/Server
Software: Version 7.2 SP1 Rev B
{Data Description} 500 UL 150C detector
Run Time: 1/6/2011 1:30:20 PM

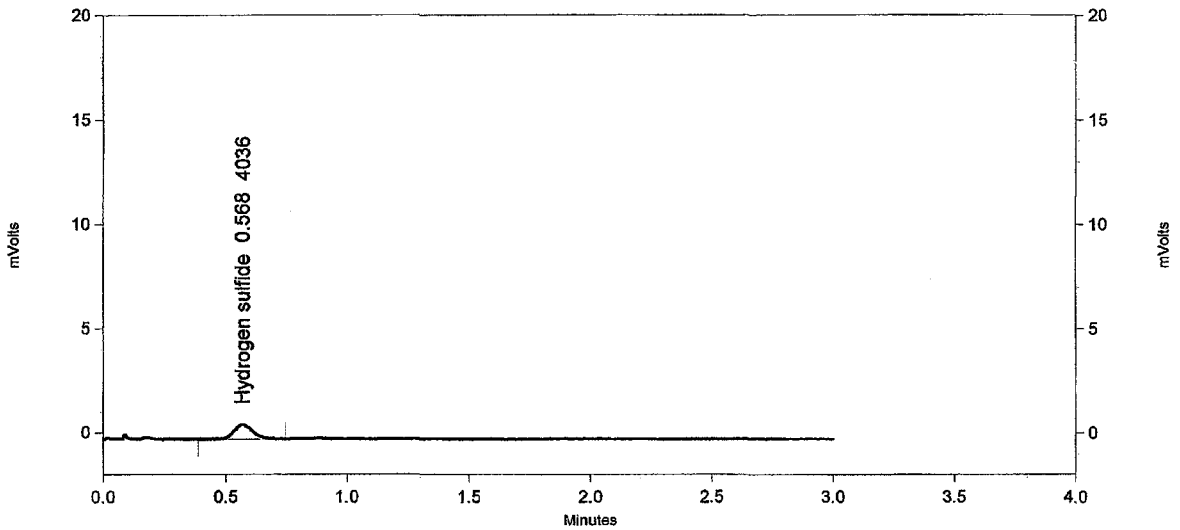


FPD2 Results

Name	Retention Time	Area	ESTD concentration (ppmv)
Hydrogen sulfide	0.573	4583	1.638
Totals		4583	1.638

H_2S Monitoring

Sample ID: H2S SRU Sampling
Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Data: C:\CLASS-VP\Data\1-6-11BP\H2S SRU Sampling 024
Product: Shimadzu Client/Server
Software: Version 7.2 SP1 Rev B
{Data Description} 500 UL 150C detector
Run Time: 1/6/2011 1:33:58 PM

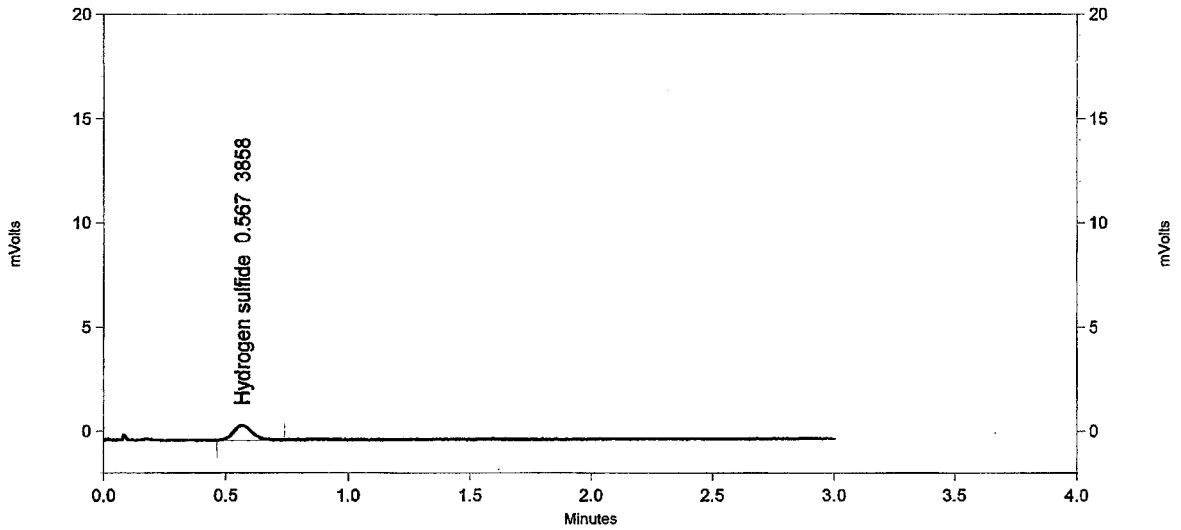


FPD2 Results

Name	Retention Time	Area	ESTD concentration (ppmv)
Hydrogen sulfide	0.568	4036	1.568
Totals		4036	1.568

H_2S Monitoring

Sample ID: H2S SRU Sampling
Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Data: C:\CLASS-VP\Data\1-6-11BP\H2S SRU Sampling 025.dat
Product: Shimadzu Client/Server
Software: Version 7.2 SP1 Rev B
{Data Description} 500 UL 150C detector
Run Time: 1/6/2011 1:59:00 PM

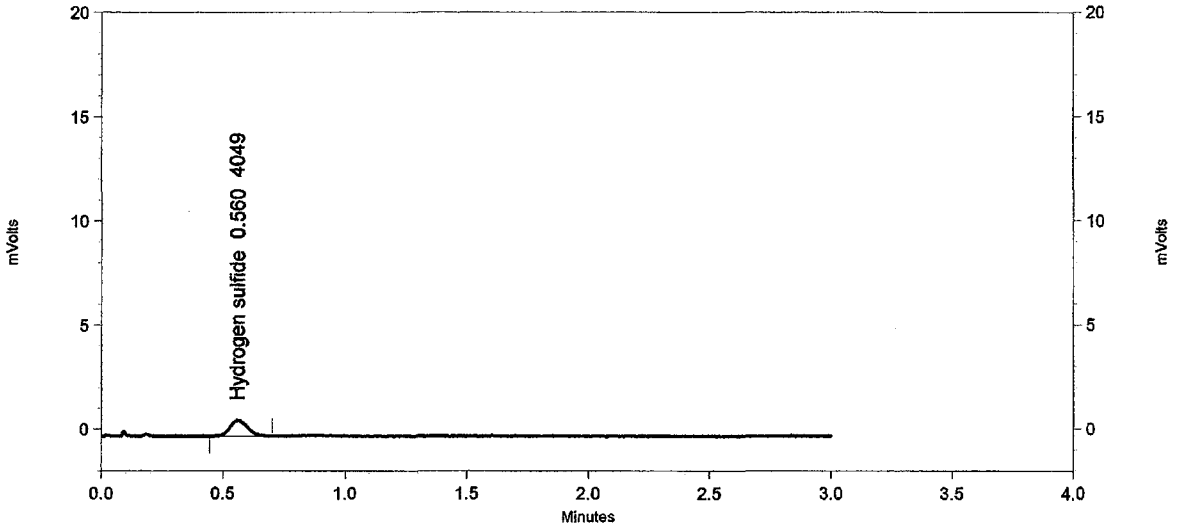


FPD2 Results

Name	Retention Time	Area	ESTD concentration (ppmv)
Hydrogen sulfide	0.567	3858	1.544
Totals		3858	1.544

H_2S Monitoring

Sample ID: H2S SRU Sampling
Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Data: C:\CLASS-VP\Data\1-6-11BP\H2S SRU Sampling 026
Product: Shimadzu Client/Server
Software: Version 7.2 SP1 Rev B
{Data Description} 500 UL 150C detector
Run Time: 1/6/2011 2:02:39 PM

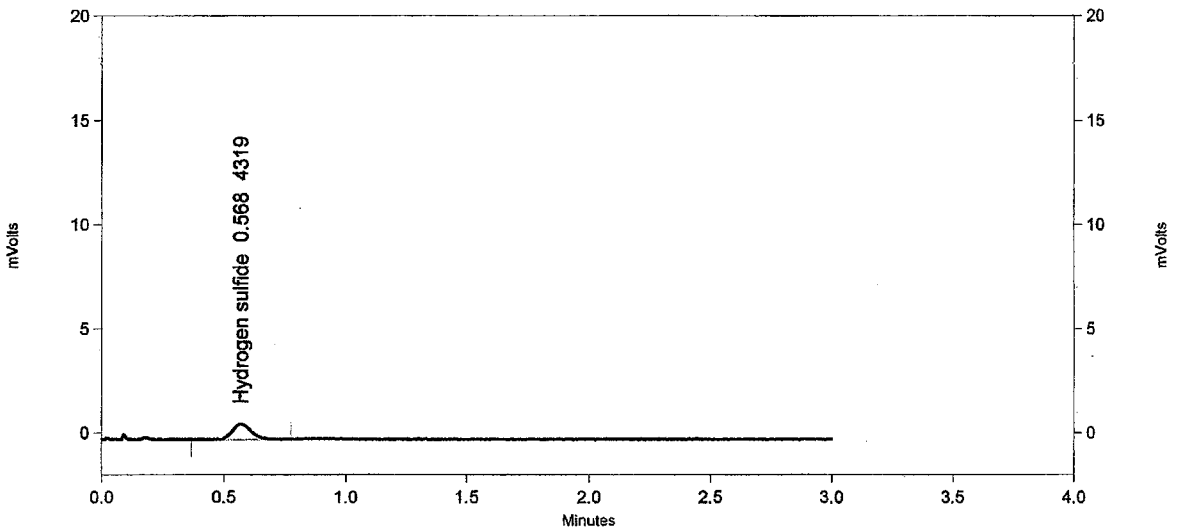


FPD2 Results

Name	Retention Time	Area	ESTD concentration (ppmv)
Hydrogen sulfide	0.560	4049	1.570
Totals		4049	1.570

H_2S Monitoring

Sample ID: H2S SRU Sampling
Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Data: C:\CLASS-VP\Data\1-6-11BP\H2S SRU Sampling 027
Product: Shimadzu Client/Server
Software: Version 7.2 SP1 Rev B
{Data Description} 500 UL 150C detector
Run Time: 1/6/2011 2:06:19 PM



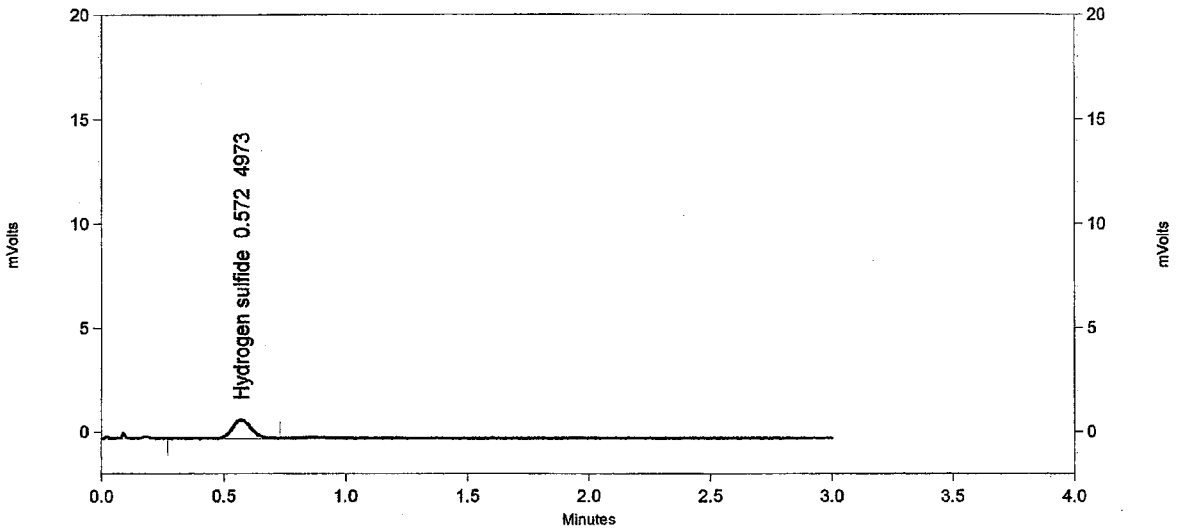
FPD2 Results

Name	Retention Time	Area	ESTD concentration (ppmv)
Hydrogen sulfide	0.568	4319	1.605
Totals		4319	1.605

Uncontrolled if copied or printed.

H_2S Monitoring

Sample ID: H2S SRU Sampling
Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Data: C:\CLASS-VP\Data\1-6-11BP\H2S SRU Sampling 028
Product: Shimadzu Client/Server
Software: Version 7.2 SP1 Rev B
{Data Description} 500 UL 150C detector
Run Time: 1/6/2011 2:09:55 PM

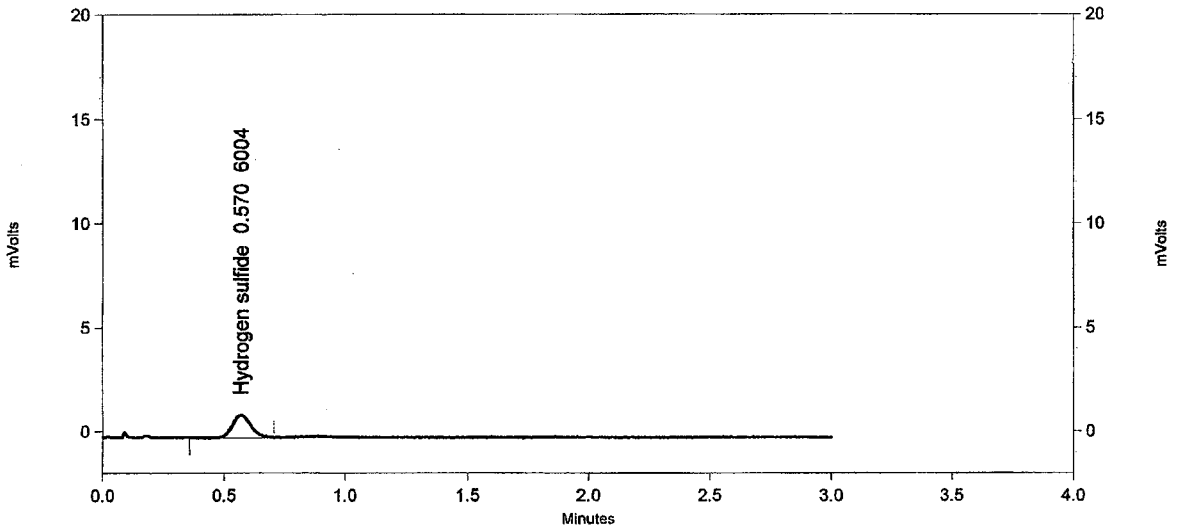


FPD2 Results

Name	Retention Time	Area	ESTD concentration (ppmv)
Hydrogen sulfide	0.572	4973	1.685
Totals		4973	1.685

H_2S Monitoring

Sample ID: H2S SRU Sampling
Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Data: C:\CLASS-VP\Data\1-6-11BP\H2S SRU Sampling 029
Product: Shimadzu Client/Server
Software: Version 7.2 SP1 Rev B
{Data Description} 500 UL 150C detector
Run Time: 1/6/2011 2:13:34 PM



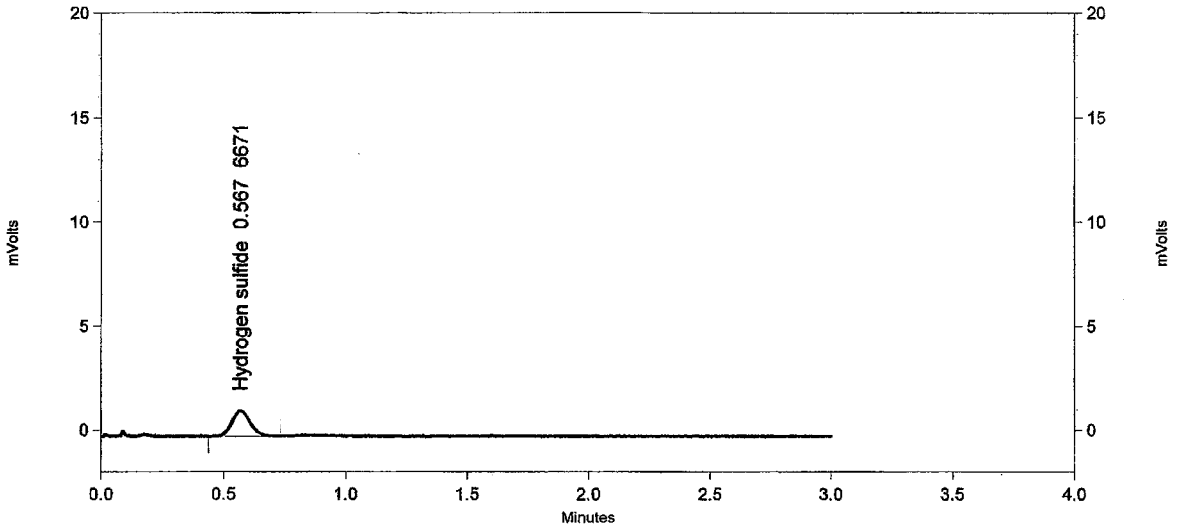
FPD2 Results

Name	Retention Time	Area	ESTD concentration (ppmv)
Hydrogen sulfide	0.570	6004	1.803
Totals		6004	1.803

Uncontrolled if copied or printed.

H_2S Monitoring

Sample ID: H2S SRU Sampling
Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Data: C:\CLASS-VP\Data\1-6-11BP\H2S SRU Sampling 030
Product: Shimadzu Client/Server
Software: Version 7.2 SP1 Rev B
{Data Description} 500 UL 150C detector
Run Time: 1/6/2011 2:17:16 PM

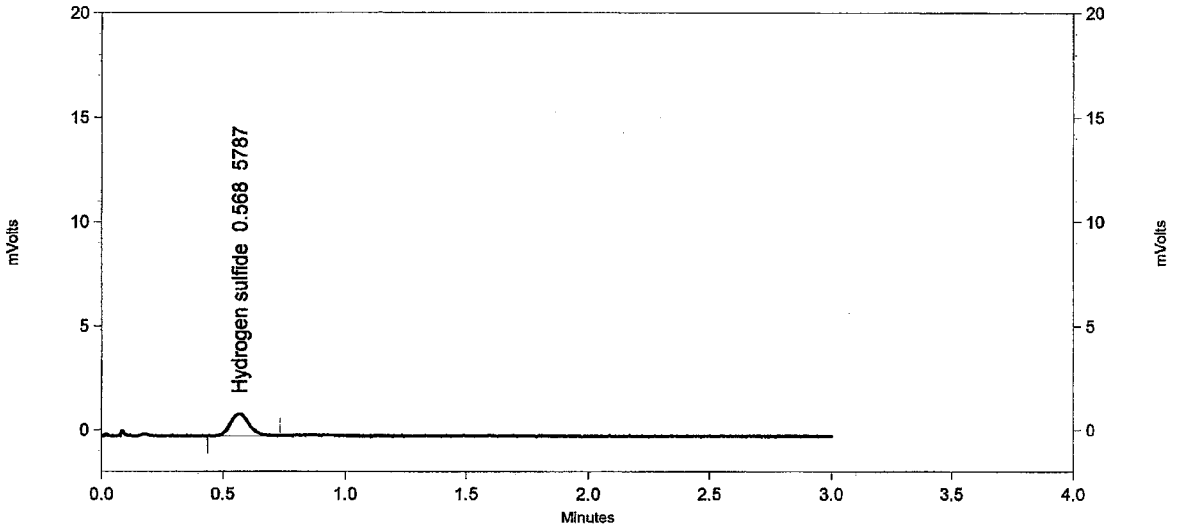


FPD2 Results

Name	Retention Time	Area	ESTD concentration (ppmv)
Hydrogen sulfide	0.567	6671	1.875
Totals		6671	1.875

H_2S Monitoring

Sample ID: H2S SRU Sampling
Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Data: C:\CLASS-VP\Data\1-6-11BP\H2S SRU Sampling 031
Product: Shimadzu Client/Server
Software: Version 7.2 SP1 Rev B
{Data Description} 500 UL 150C detector
Run Time: 1/6/2011 2:20:57 PM

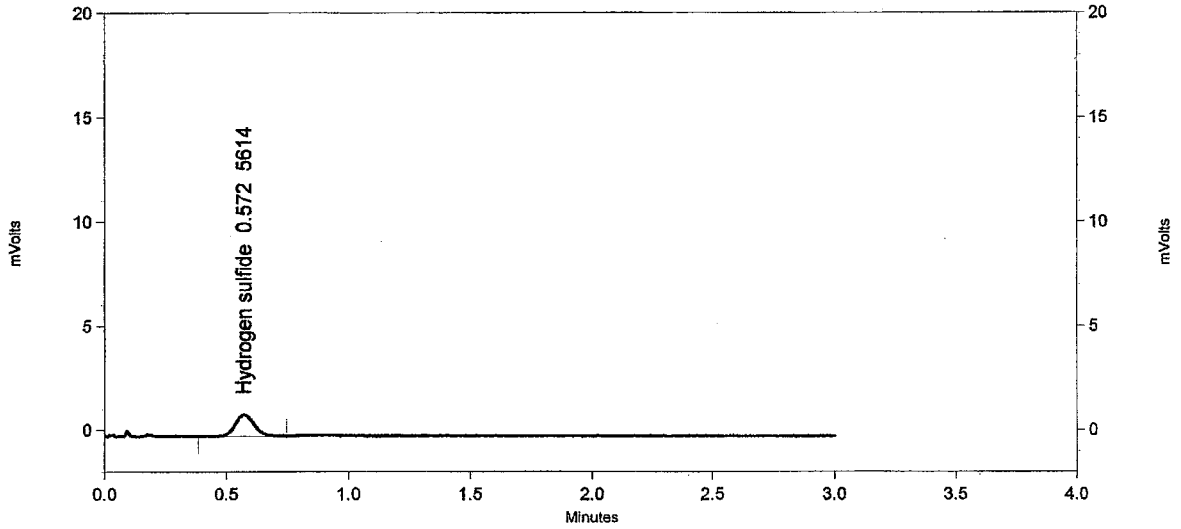


FPD2 Results

Name	Retention Time	Area	ESTD concentration (ppmv)
Hydrogen sulfide	0.568	5787	1.779
Totals		5787	1.779

H_2S Monitoring

Sample ID: H2S SRU Sampling
Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Data: C:\CLASS-VP\Data\1-6-11BP\H2S SRU Sampling 032
Product: Shimadzu Client/Server
Software: Version 7.2 SP1 Rev B
{Data Description} 500 UL 150C detector
Run Time: 1/6/2011 2:24:38 PM

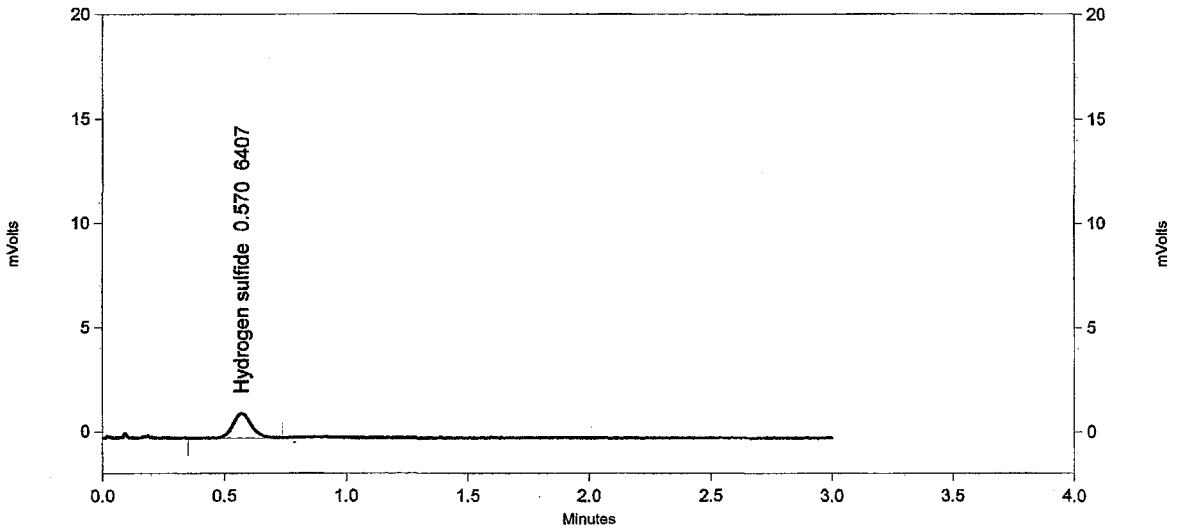


FPD2 Results

Name	Retention Time	Area	ESTD concentration (ppmv)
Hydrogen sulfide	0.572	5614	1.760
Totals		5614	1.760

H_2S Monitoring

Sample ID: H2S SRU Sampling
Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Data: C:\CLASS-VP\Data\1-6-11BP\H2S SRU Sampling 033
Product: Shimadzu Client/Server
Software: Version 7.2 SP1 Rev B
{Data Description} 500 UL 150C detector
Run Time: 1/6/2011 2:28:15 PM

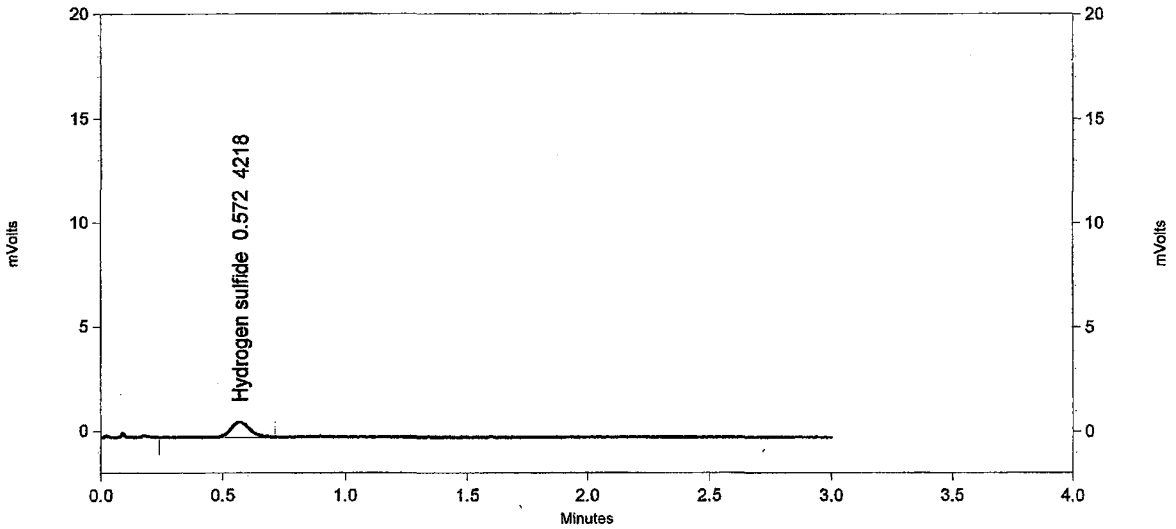


FPD2 Results

Name	Retention Time	Area	ESTD concentration (ppmv)
Hydrogen sulfide	0.570	6407	1.847
Totals		6407	1.847

H_2S Monitoring

Sample ID: H2S SRU Sampling
Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Data: C:\CLASS-VP\Data\1-6-11BP\H2S SRU Sampling 034.dat
Product: Shimadzu Client/Server
Software: Version 7.2 SP1 Rev B
{Data Description} 500 UL 150C detector
Run Time: 1/6/2011 2:32:57 PM

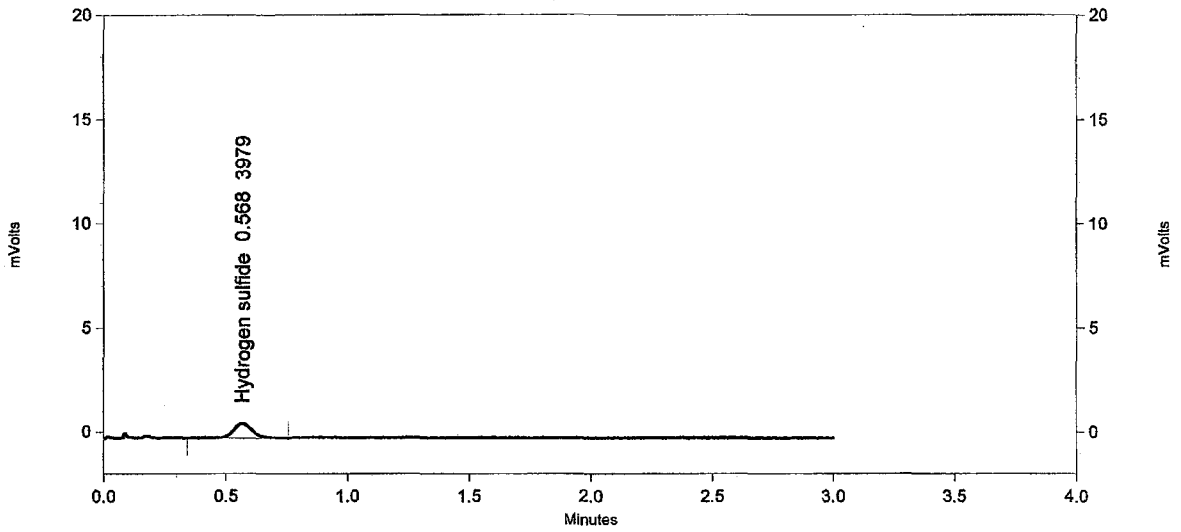


FPD2 Results

Name	Retention Time	Area	ESTD concentration (ppmv)
Hydrogen sulfide	0.572	4218	1.592
Totals		4218	1.592

H2S Monitoring

Sample ID: H2S SRU Sampling
Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Data: C:\CLASS-VP\Data\1-6-11BP\H2S SRU Sampling 035
Product: Shimadzu Client/Server
Software: Version 7.2 SP1 Rev B
{Data Description} 500 UL 150C detector
Run Time: 1/6/2011 2:36:36 PM

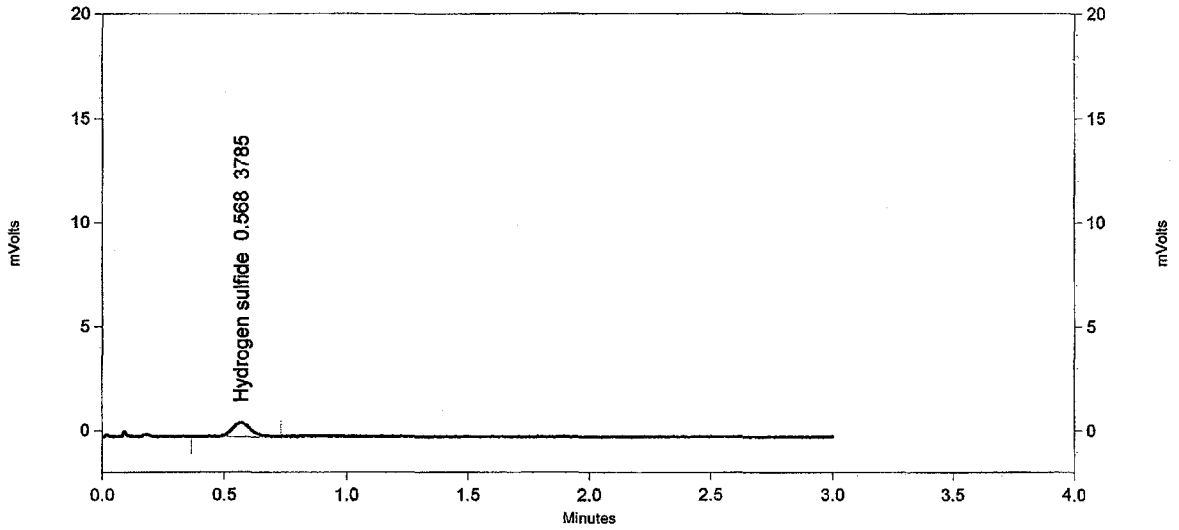


FPD2 Results

Name	Retention Time	Area	ESTD concentration (ppmv)
Hydrogen sulfide	0.568	3979	1.561
Totals		3979	1.561

H_2S Monitoring

Sample ID: H2S SRU Sampling
Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Data: C:\CLASS-VP\Data\1-6-11BP\H2S SRU Sampling 036
Product: Shimadzu Client/Server
Software: Version 7.2 SP1 Rev B
{Data Description} 500 UL 150C detector
Run Time: 1/6/2011 2:40:14 PM



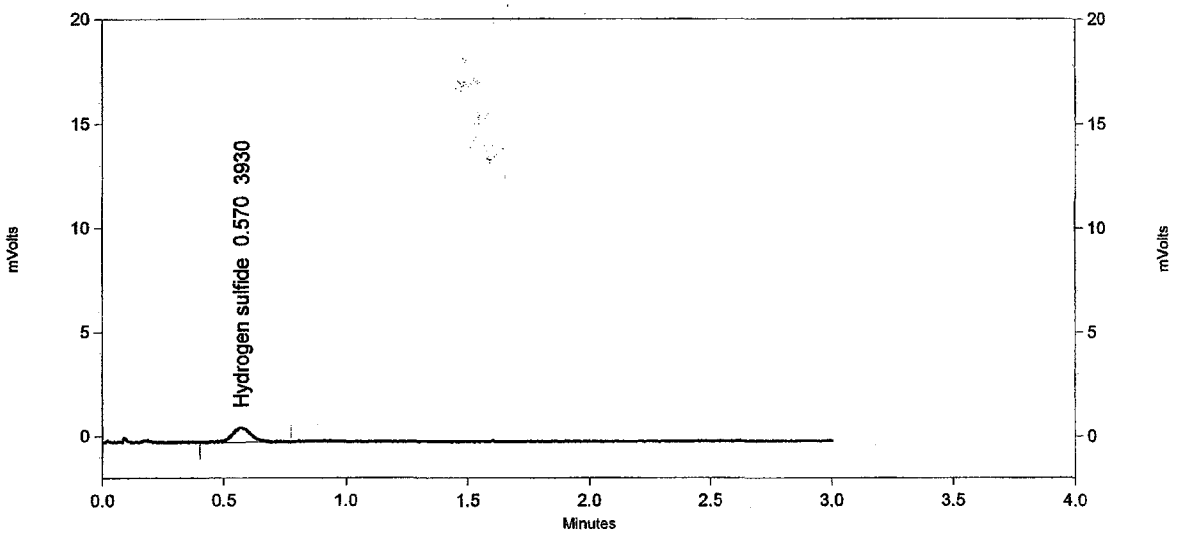
FPD2 Results

Name	Retention Time	Area	ESTD concentration (ppmv)
Hydrogen sulfide	0.568	3785	1.535
Totals		3785	1.535

Uncontrolled if copied or printed.

H2S Monitoring

Sample ID: H2S SRU Sampling
Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Data: C:\CLASS-VP\Data\1-6-11BP\H2S SRU Sampling 037
Product: Shimadzu Client/Server
Software: Version 7.2 SP1 Rev B
{Data Description} 500 UL 150C detector
Run Time: 1/6/2011 2:43:54 PM

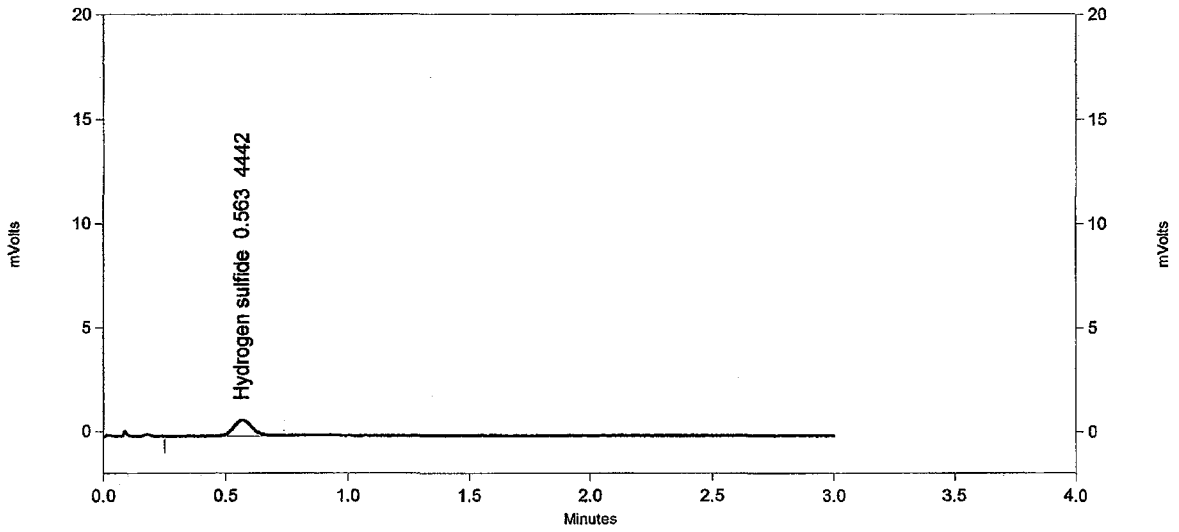


FPD2 Results

Name	Retention Time	Area	ESTD concentration (ppmv)
Hydrogen sulfide	0.570	3930	1.554
Totals		3930	1.554

H_2S Monitoring

Sample ID: H2S SRU Sampling
Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Data: C:\CLASS-VP\Data\1-6-11BP\H2S SRU Sampling 038
Product: Shimadzu Client/Server
Software: Version 7.2 SP1 Rev B
{Data Description} 500 UL 150C detector
Run Time: 1/6/2011 2:47:34 PM



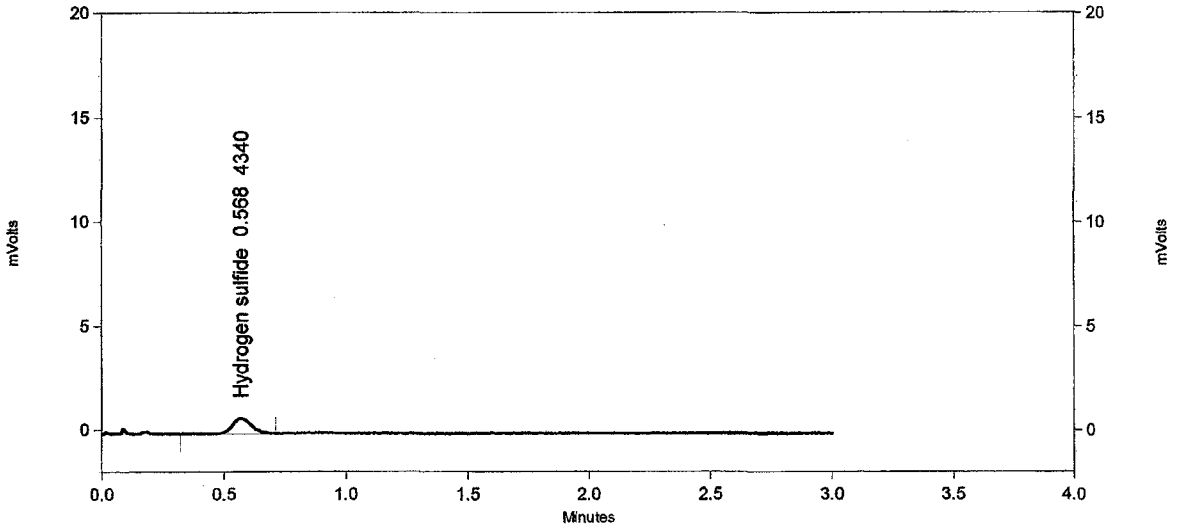
FPD2 Results

Name	Retention Time	Area	ESTD concentration (ppmv)
Hydrogen sulfide	0.563	4442	1.620
Totals		4442	1.620

Uncontrolled if copied or printed.

H_2S Monitoring

Sample ID: H2S SRU Sampling
Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Data: C:\CLASS-VP\Data\1-6-11BP\H2S SRU Sampling 039
Product: Shimadzu Client/Server
Software: Version 7.2 SP1 Rev B
{Data Description} 500 UL 150C detector
Run Time: 1/6/2011 2:51:14 PM



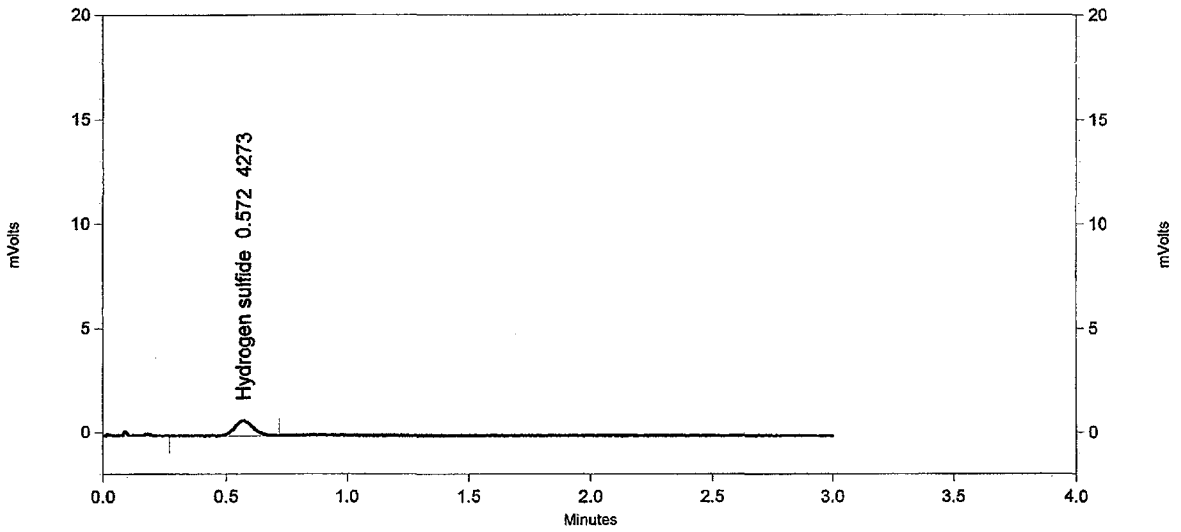
FPD2 Results

Name	Retention Time	Area	ESTD concentration (ppmv)
Hydrogen sulfide	0.568	4340	1.607
Totals		4340	1.607

Uncontrolled if copied or printed.

H_2S Monitoring

Sample ID: H2S SRU Sampling
Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Data: C:\CLASS-VP\Data\1-6-11BP\H2S SRU Sampling 040
Product: Shimadzu Client/Server
Software: Version 7.2 SP1 Rev B
{Data Description} 500 UL 150C detector
Run Time: 1/6/2011 2:54:55 PM

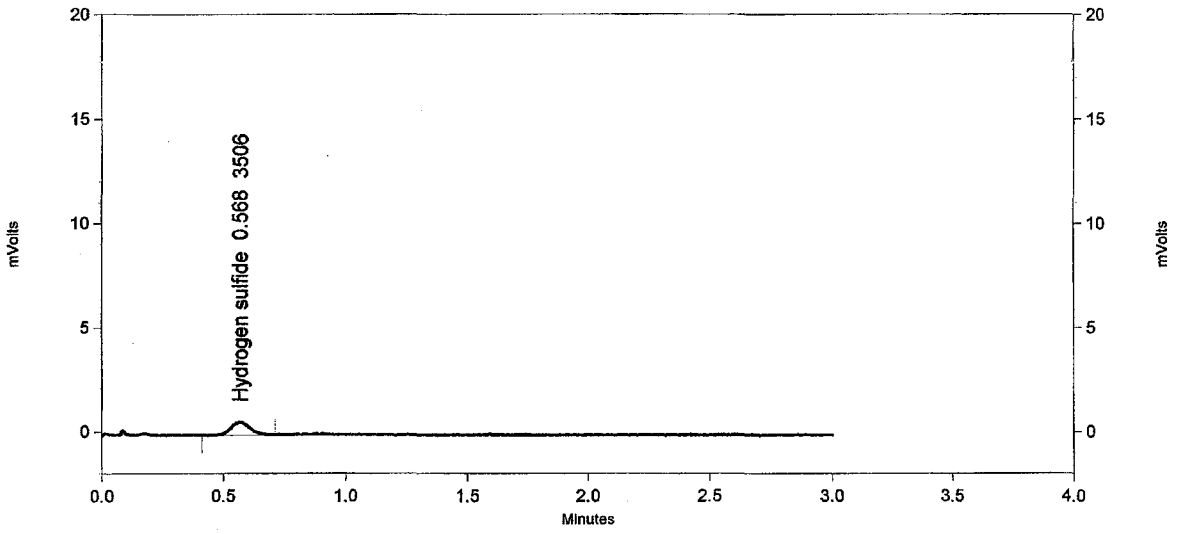


FPD2 Results

Name	Retention Time	Area	ESTD concentration (ppmv)
Hydrogen sulfide	0.572	4273	1.599
Totals		4273	1.599

H_2S Monitoring

Sample ID: H2S SRU Sampling
Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Data: C:\CLASS-VP\Data\1-6-11BP\H2S SRU Sampling 041
Product: Shimadzu Client/Server
Software: Version 7.2 SP1 Rev B
{Data Description} 500 UL 150C detector
Run Time: 1/6/2011 2:58:50 PM

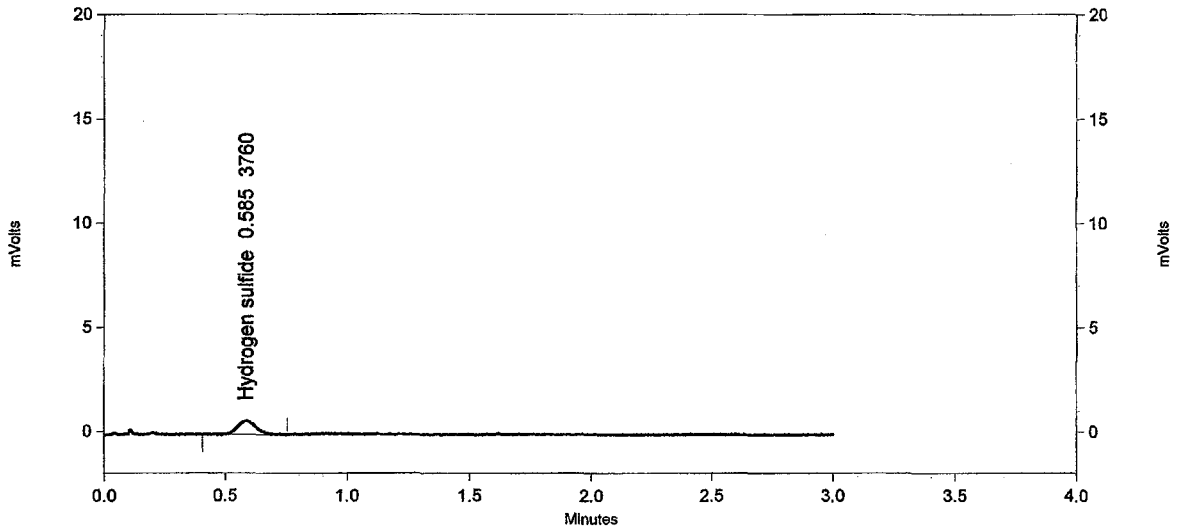


FPD2 Results

Name	Retention Time	Area	ESTD concentration (ppmv)
Hydrogen sulfide	0.568	3506	1.496
Totals		3506	1.496

H_2S Monitoring

Sample ID: H2S SRU Sampling
Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Data: C:\CLASS-VP\Data\1-6-11BP\H2S SRU Sampling 042
Product: Shimadzu Client/Server
Software: Version 7.2 SP1 Rev B
{Data Description} 500 UL 150C detector
Run Time: 1/6/2011 3:02:40 PM

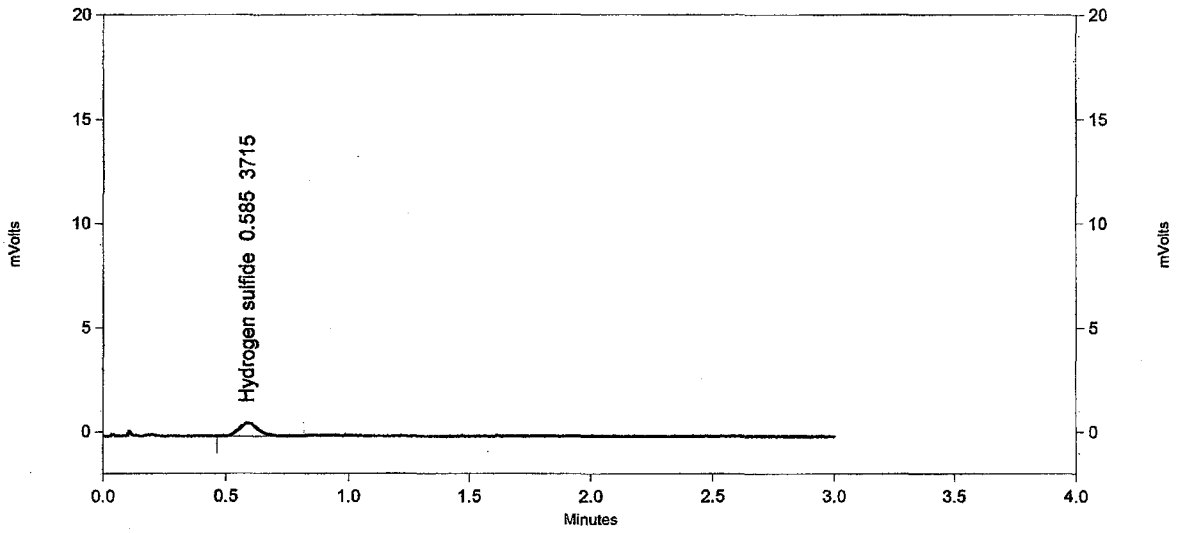


FPD2 Results

Name	Retention Time	Area	ESTD concentration (ppmv)
Hydrogen sulfide	0.585	3760	1.531
Totals		3760	1.531

H_2S Monitoring

Sample ID: H2S SRU Sampling
Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Data: C:\CLASS-VP\Data\1-6-11BP\H2S SRU Sampling 043
Product: Shimadzu Client/Server
Software: Version 7.2 SP1 Rev B
{Data Description} 500 UL 150C detector
Run Time: 1/6/2011 3:06:28 PM

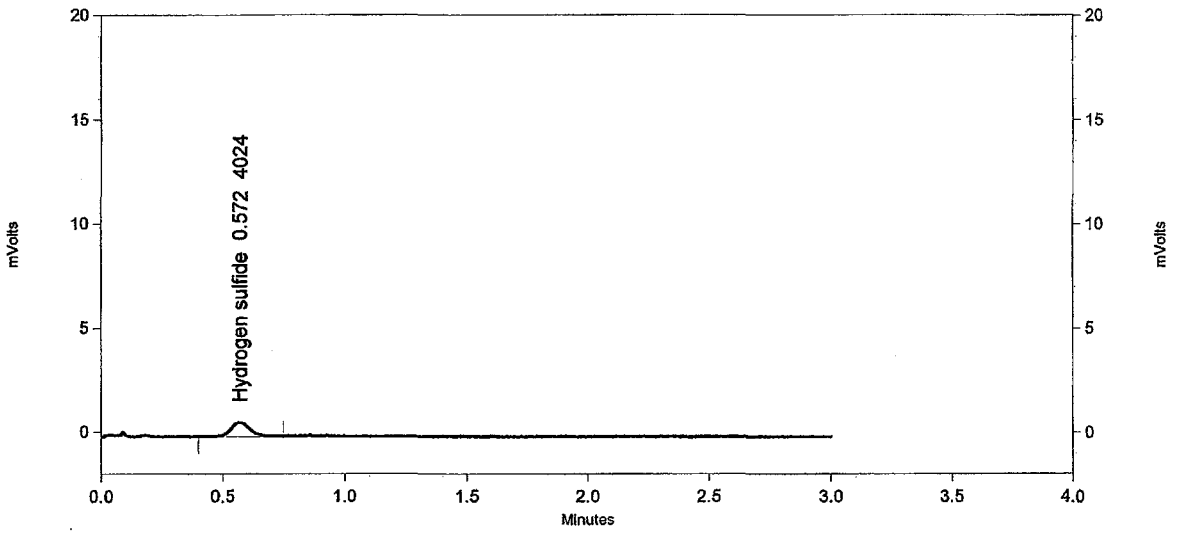


FPD2 Results

Name	Retention Time	Area	ESTD concentration (ppmv)
Hydrogen sulfide	0.585	3715	1.525
Totals		3715	1.525

H_2S Monitoring

Sample ID: H2S SRU Sampling
Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Data: C:\CLASS-VP\Data\1-6-11BP\H2S SRU Sampling 044
Product: Shimadzu Client/Server
Software: Version 7.2 SP1 Rev B
{Data Description} 500 UL 150C detector
Run Time: 1/6/2011 3:10:07 PM

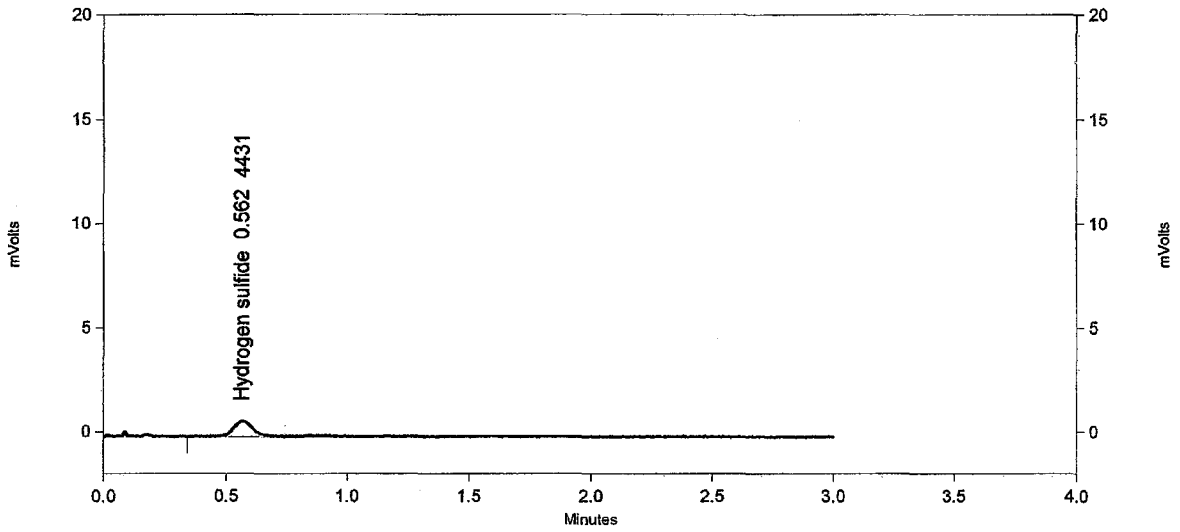


FPD2 Results

Name	Retention Time	Area	ESTD concentration (ppmv)
Hydrogen sulfide	0.572	4024	1.567
Totals		4024	1.567

H_2S Monitoring

Sample ID: H2S SRU Sampling
Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Data: C:\CLASS-VP\Data\1-6-11BP\H2S SRU Sampling 045
Product: Shimadzu Client/Server
Software: Version 7.2 SP1 Rev B
{Data Description} 500 UL 150C detector
Run Time: 1/6/2011 3:13:45 PM



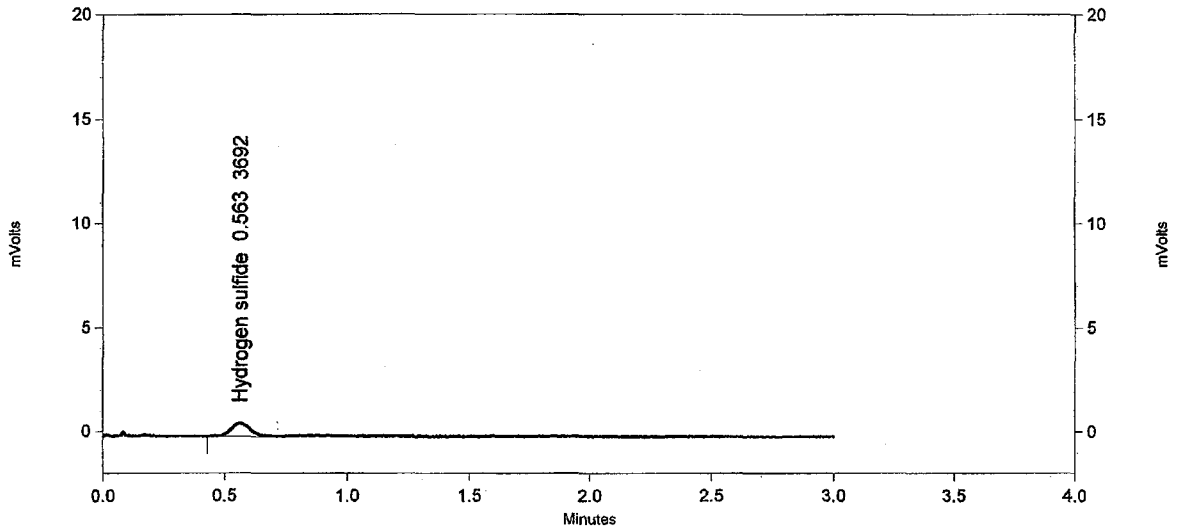
FPD2 Results

Name	Retention Time	Area	ESTD concentration (ppmv)
Hydrogen sulfide	0.562	4431	1.619
Totals		4431	1.619

Uncontrolled if copied or printed.

H_2S Monitoring

Sample ID: H2S SRU Sampling
Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Data: C:\CLASS-VP\Data\1-6-11BP\H2S SRU Sampling 046
Product: Shimadzu Client/Server
Software: Version 7.2 SP1 Rev B
{Data Description} 500 UL 150C detector
Run Time: 1/6/2011 3:17:23 PM

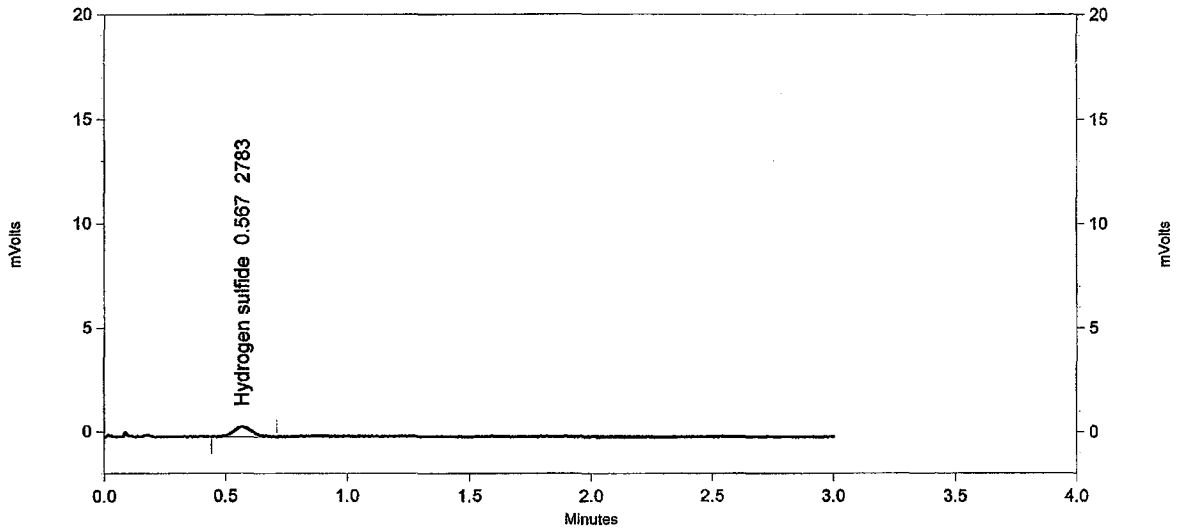


FPD2 Results

Name	Retention Time	Area	ESTD concentration (ppmv)
Hydrogen sulfide	0.563	3692	1.522
Totals		3692	1.522

H_2S Monitoring

Sample ID: H2S SRU Sampling
Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Data: C:\CLASS-VP\Data\1-6-11BP\H2S SRU Sampling 047
Product: Shimadzu Client/Server
Software: Version 7.2 SP1 Rev B
{Data Description} 500 UL 150C detector
Run Time: 1/6/2011 3:21:01 PM

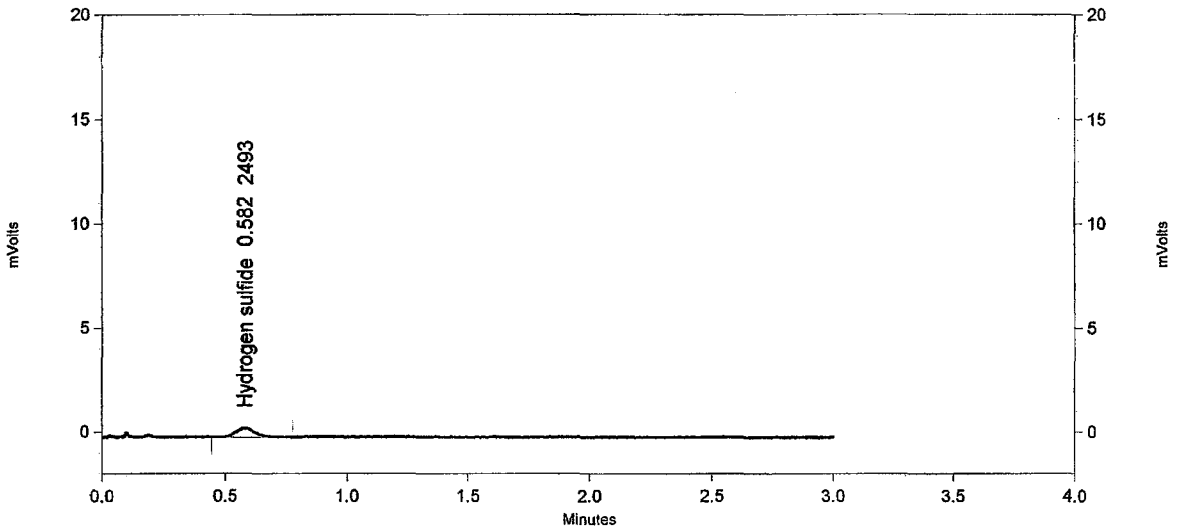


FPD2 Results

Name	Retention Time	Area	ESTD concentration (ppmv)
Hydrogen sulfide	0.567	2783	1.389
Totals		2783	1.389

H_2S Monitoring

Sample ID: H2S SRU Sampling
Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Data: C:\CLASS-VP\Data\1-6-11BP\H2S SRU Sampling 048
Product: Shimadzu Client/Server
Software: Version 7.2 SP1 Rev B
{Data Description} 500 UL 150C detector
Run Time: 1/6/2011 3:24:39 PM

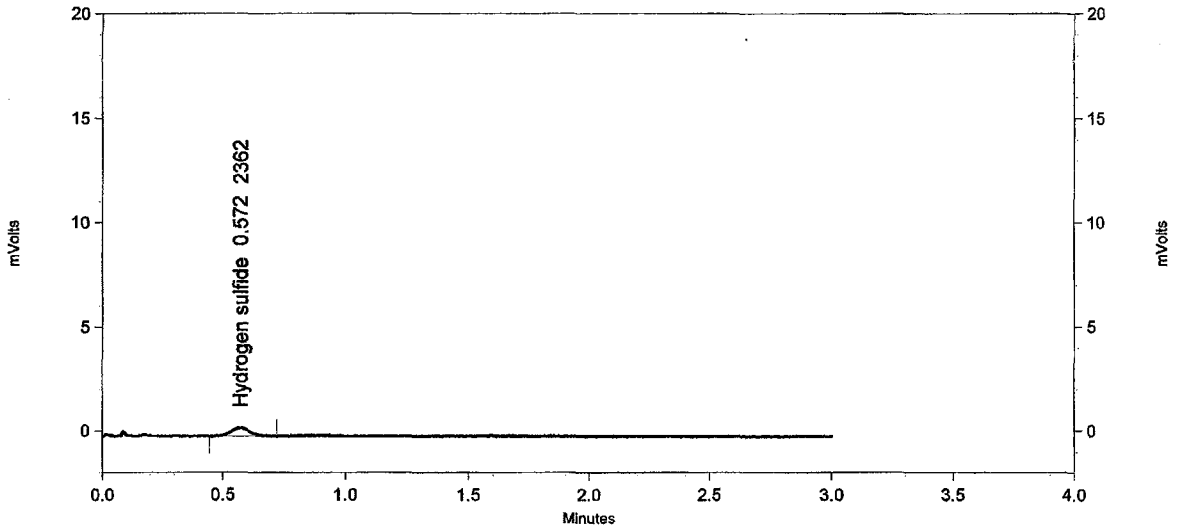


FPD2 Results

Name	Retention Time	Area	ESTD concentration (ppmv)
Hydrogen sulfide	0.582	2493	1.343
Totals		2493	1.343

H_2S Monitoring

Sample ID: H2S SRU Sampling
Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Data: C:\CLASS-VP\Data\1-6-11BP\H2S SRU Sampling 049
Product: Shimadzu Client/Server
Software: Version 7.2 SP1 Rev B
{Data Description} 500 UL 150C detector
Run Time: 1/6/2011 3:28:16 PM

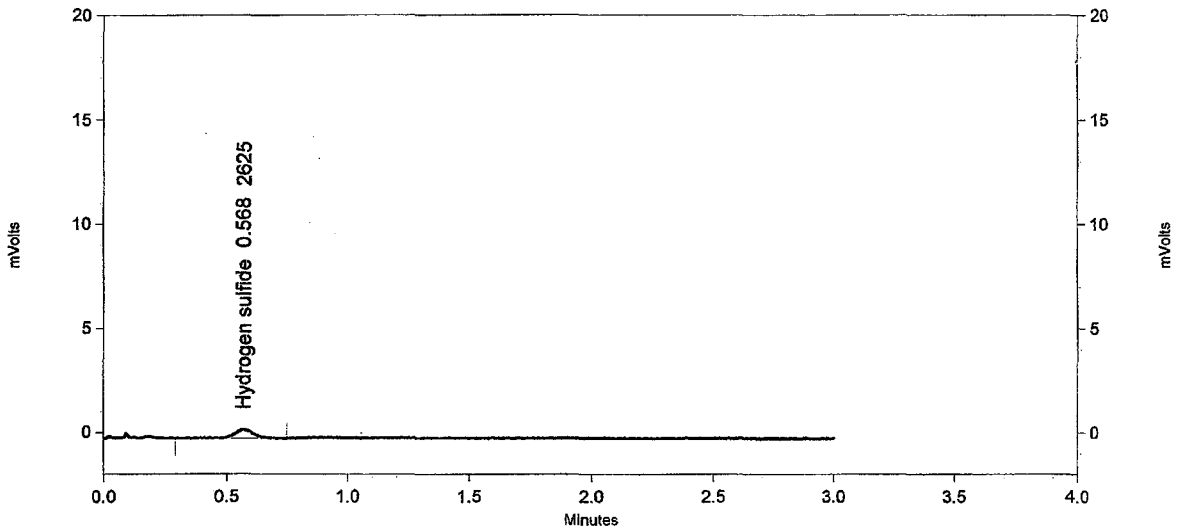


FPD2 Results

Name	Retention Time	Area	ESTD concentration (ppmv)
Hydrogen sulfide	0.572	2362	1.321
Totals		2362	1.321

H_2S Monitoring

Sample ID: H2S SRU Sampling
Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Data: C:\CLASS-VP\Data\1-6-11BP\H2S SRU Sampling 050
Product: Shimadzu Client/Server
Software: Version 7.2 SP1 Rev B
{Data Description} 500 UL 150C detector
Run Time: 1/6/2011 3:31:55 PM

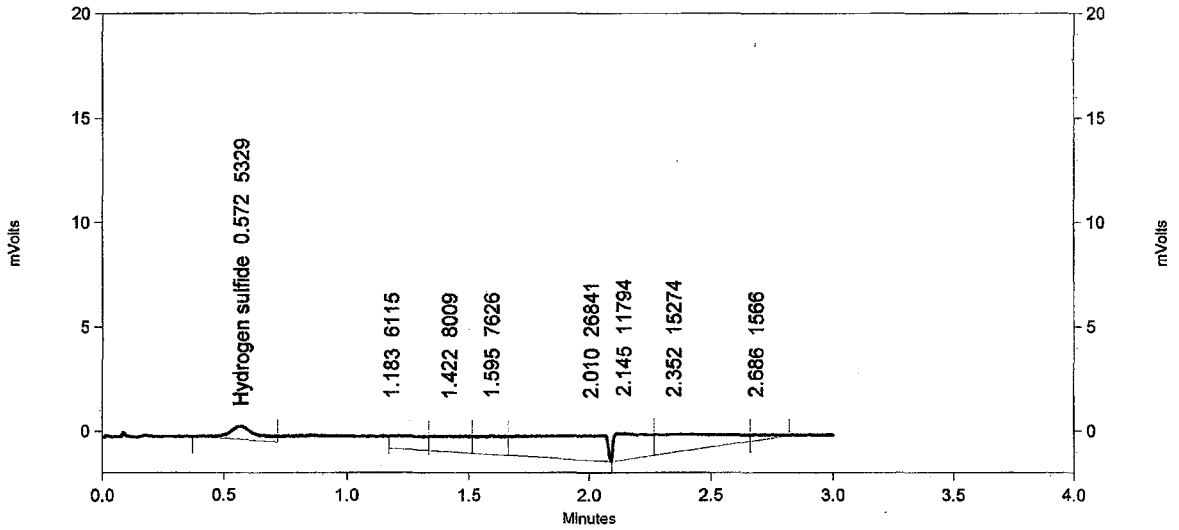


FPD2 Results

Name	Retention Time	Area	ESTD concentration (ppmv)
Hydrogen sulfide	0.568	2625	1.364
Totals		2625	1.364

H_2S Monitoring

Sample ID: H2S SRU Sampling
Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Data: C:\CLASS-VP\Data\1-6-11BP\H2S SRU Sampling 051
Product: Shimadzu Client/Server
Software: Version 7.2 SP1 Rev B
{Data Description} 500 UL 150C detector
Run Time: 1/6/2011 3:35:33 PM

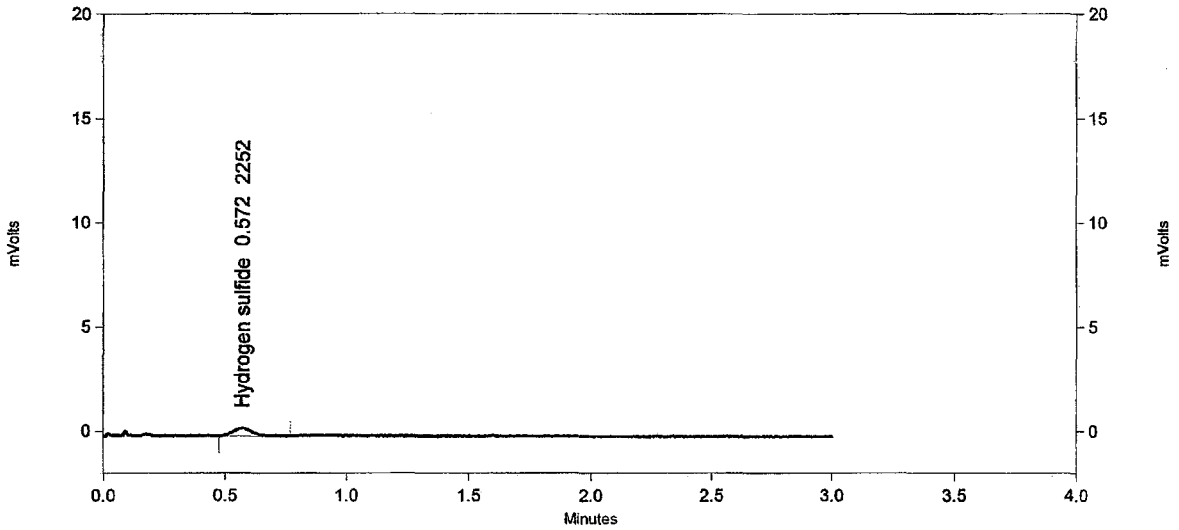


FPD2 Results

Name	Retention Time	Area	ESTD concentration (ppmv)
Hydrogen sulfide	0.572	5329	1.727
Totals		5329	1.727

H2S Monitoring

Sample ID: H2S SRU Sampling
Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Data: C:\CLASS-VP\Data\1-6-11BP\H2S SRU Sampling 052
Product: Shimadzu Client/Server
Software: Version 7.2 SP1 Rev B
{Data Description} 500 UL 150C detector
Run Time: 1/6/2011 3:39:12 PM

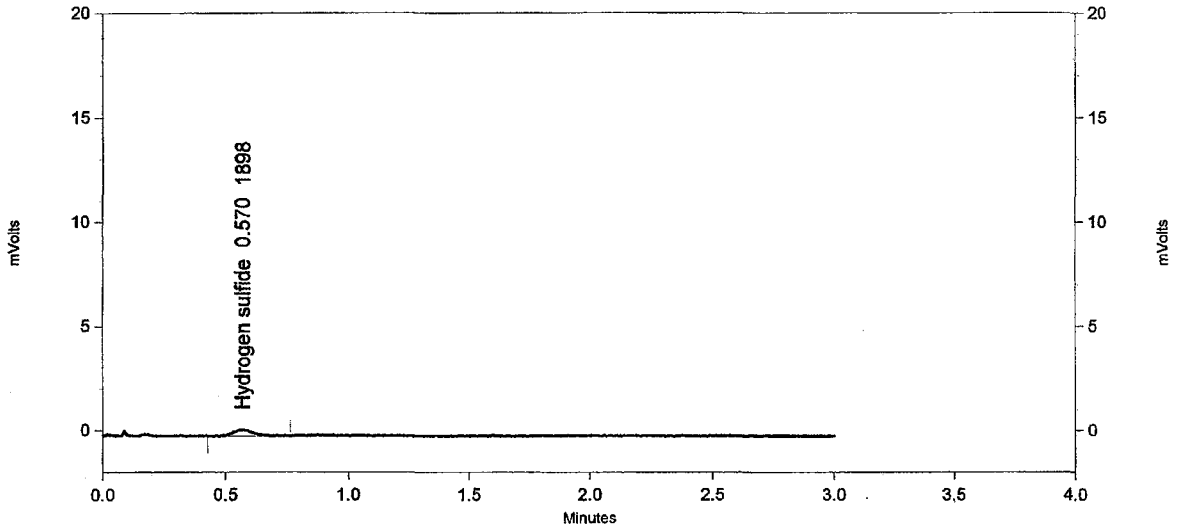


FPD2 Results

Name	Retention Time	Area	ESTD concentration (ppmv)
Hydrogen sulfide	0.572	2252	1.302
Totals		2252	1.302

H_2S Monitoring

Sample ID: H2S SRU Sampling
Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Data: C:\CLASS-VP\Data\1-6-11BP\H2S SRU Sampling 053
Product: Shimadzu Client/Server
Software: Version 7.2 SP1 Rev B
{Data Description} 500 UL 150C detector
Run Time: 1/6/2011 3:42:51 PM

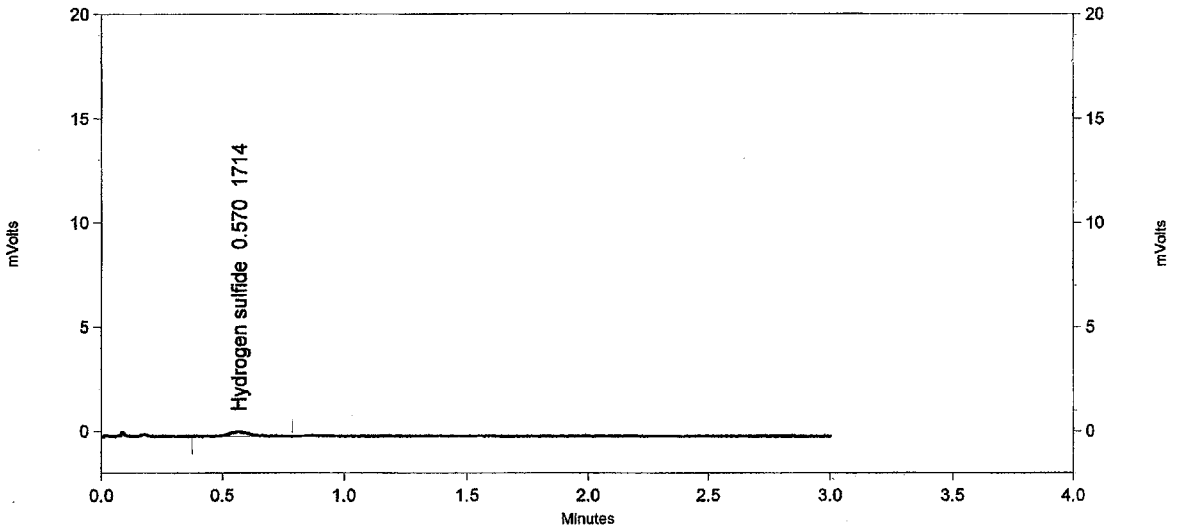


FPD2 Results

Name	Retention Time	Area	ESTD concentration (ppmv)
Hydrogen sulfide	0.570	1898	1.239
Totals		1898	1.239

H_2S Monitoring

Sample ID: H2S SRU Sampling
Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Data: C:\CLASS-VP\Data\1-6-11BP\H2S SRU Sampling 054
Product: Shimadzu Client/Server
Software: Version 7.2 SP1 Rev B
{Data Description} 500 UL 150C detector
Run Time: 1/6/2011 3:46:30 PM

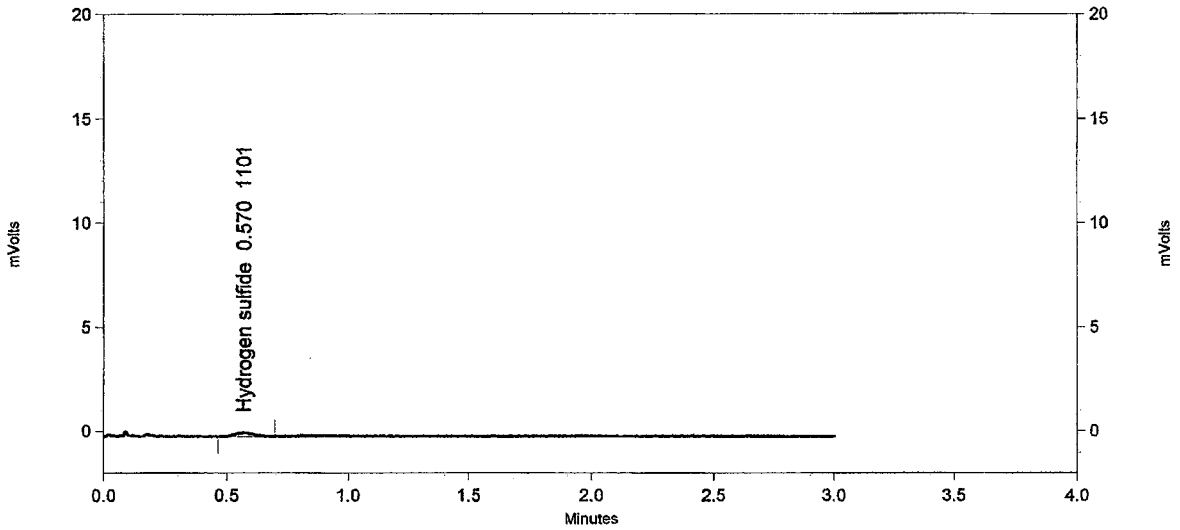


FPD2 Results

Name	Retention Time	Area	ESTD concentration (ppmv)
Hydrogen sulfide	0.570	1714	1.203
Totals		1714	1.203

H_2S Monitoring

Sample ID: H2S SRU Sampling
Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Data: C:\CLASS-VP\Data\1-6-11BP\H2S SRU Sampling 055
Product: Shimadzu Client/Server
Software: Version 7.2 SP1 Rev B
{Data Description} 500 UL 150C detector
Run Time: 1/6/2011 3:50:08 PM



FPD2 Results

Name	Retention Time	Area	ESTD concentration (ppmv)
Hydrogen sulfide	0.570	1101	1.070
Totals		1101	1.070

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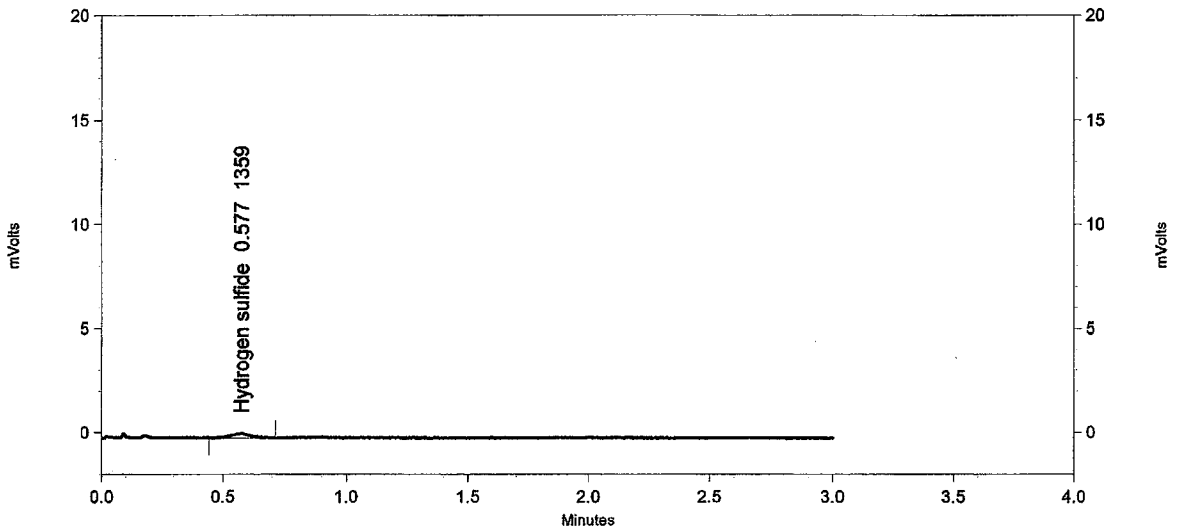
H_2S Monitoring

Sample ID: H2S SRU Sampling
Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Data: C:\CLASS-VP\Data\1-6-11BP\H2S SRU Sampling 056
Product: Shimadzu Client/Server
Software: Version 7.2 SP1 Rev B
{Data Description} 500 UL 150C detector
Run Time: 1/6/2011 3:53:46 PM

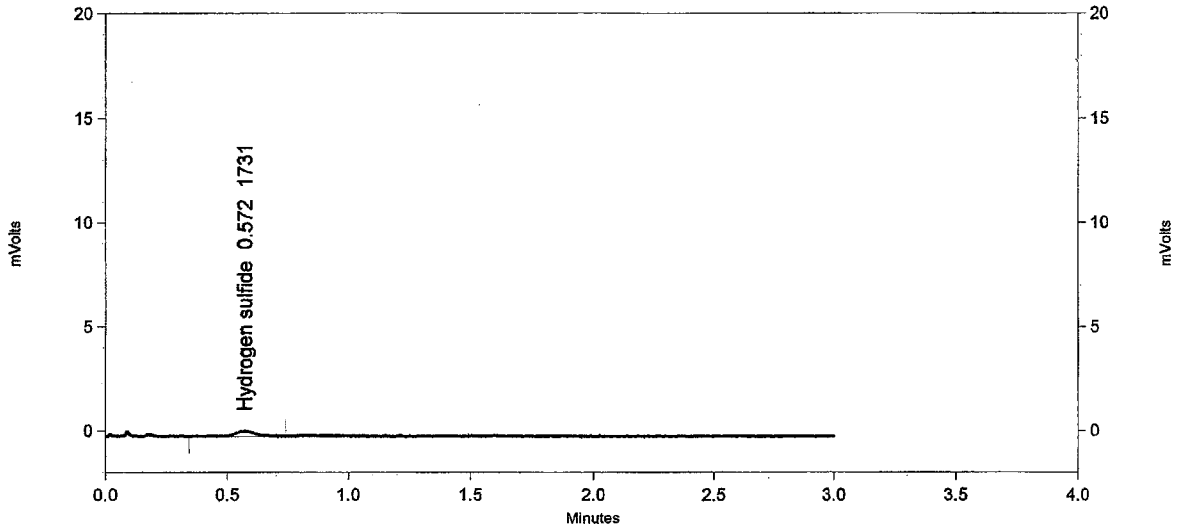


FPD2 Results

Name	Retention Time	Area	ESTD concentration (ppmv)
Hydrogen sulfide	0.577	1359	1.130
Totals		1359	1.130

H_2S Monitoring

Sample ID: H2S SRU Sampling
Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Data: C:\CLASS-VP\Data\1-6-11BP\H2S SRU Sampling 057
Product: Shimadzu Client/Server
Software: Version 7.2 SP1 Rev B
{Data Description} 500 UL 150C detector
Run Time: 1/6/2011 3:57:24 PM

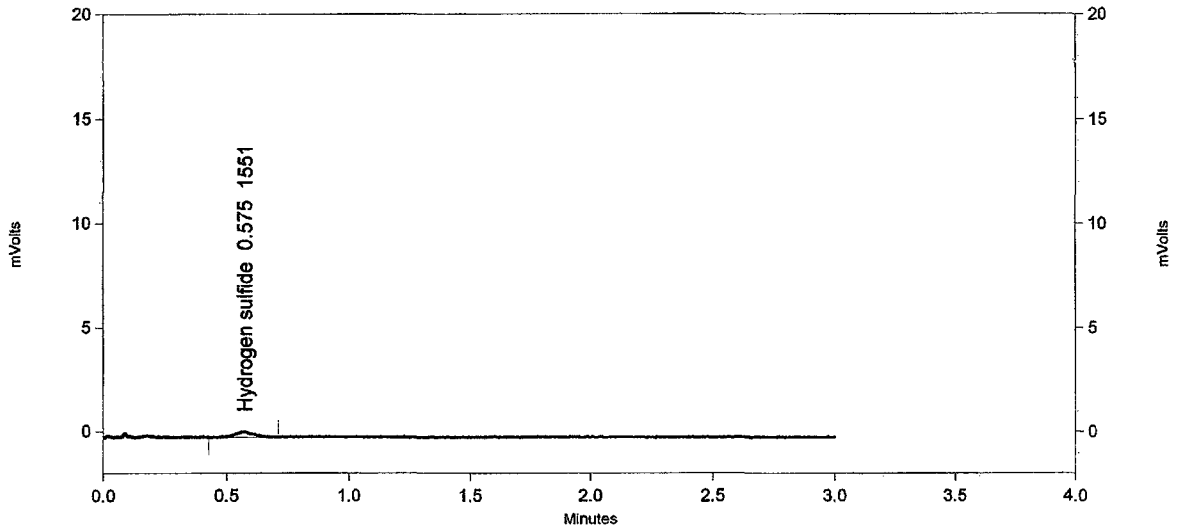


FPD2 Results

Name	Retention Time	Area	ESTD concentration (ppmv)
Hydrogen sulfide	0.572	1731	1.207
Totals		1731	1.207

H_2S Monitoring

Sample ID: H2S SRU Sampling
Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Data: C:\CLASS-VP\Data\1-6-11BP\H2S SRU Sampling 058
Product: Shimadzu Client/Server
Software: Version 7.2 SP1 Rev B
{Data Description} 500 UL 150C detector
Run Time: 1/6/2011 4:01:02 PM

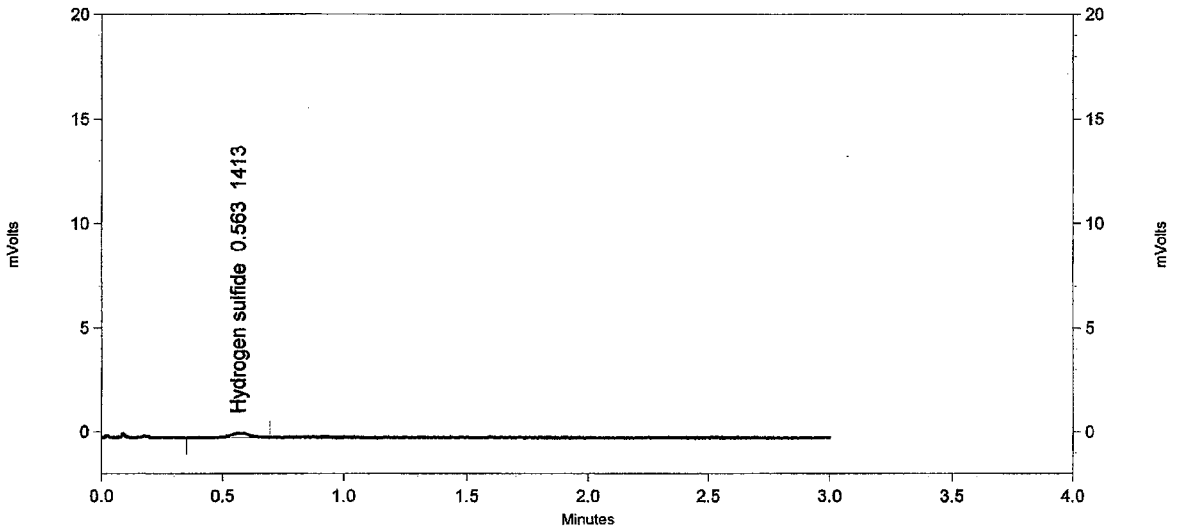


FPD2 Results

Name	Retention Time	Area	ESTD concentration (ppmv)
Hydrogen sulfide	0.575	1551	1.171
Totals		1551	1.171

H_2S Monitoring

Sample ID: H2S SRU Sampling
Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Data: C:\CLASS-VP\Data\1-6-11BP\H2S SRU Sampling 059
Product: Shimadzu Client/Server
Software: Version 7.2 SP1 Rev B
{Data Description} 500 UL 150C detector
Run Time: 1/6/2011 4:04:42 PM

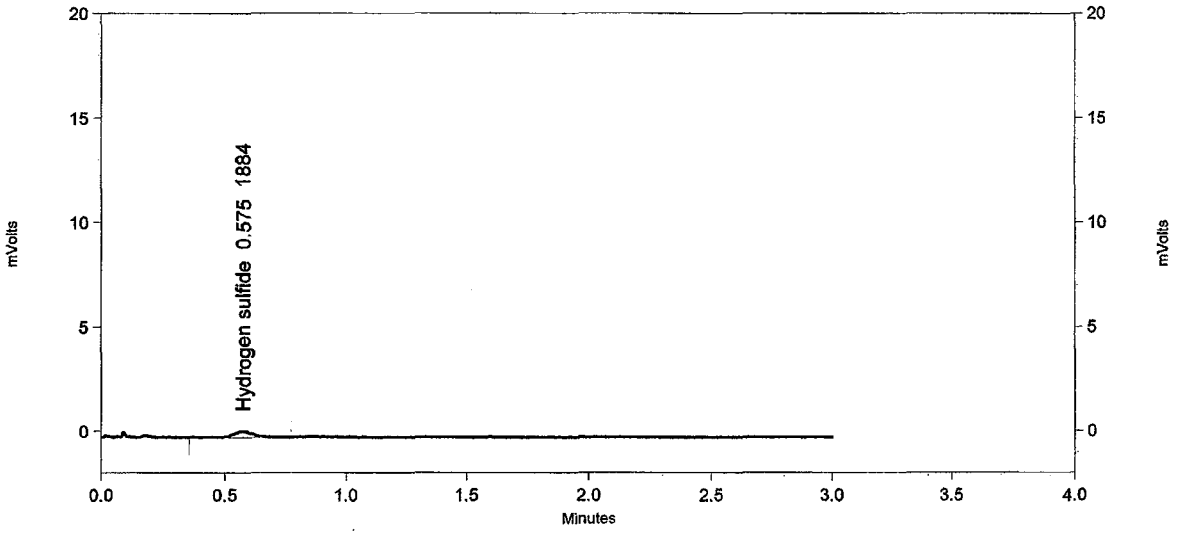


FPD2 Results

Name	Retention Time	Area	ESTD concentration (ppmv)
Hydrogen sulfide	0.563	1413	1.142
Totals		1413	1.142

H_2S Monitoring

Sample ID: H2S SRU Sampling
Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Data: C:\CLASS-VP\Data\1-6-11BP\H2S SRU Sampling 060
Product: Shimadzu Client/Server
Software: Version 7.2 SP1 Rev B
{Data Description} 500 UL 150C detector
Run Time: 1/6/2011 4:08:20 PM



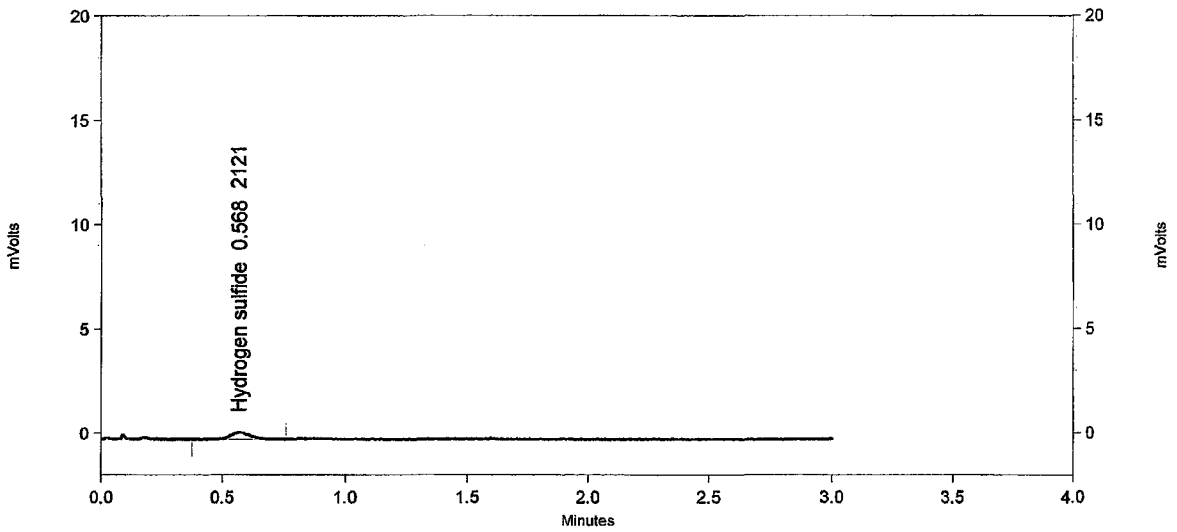
FPD2 Results

Name	Retention Time	Area	ESTD concentration (ppmv)
Hydrogen sulfide	0.575	1884	1.236
Totals		1884	1.236

Uncontrolled if copied or printed.

H_2S Monitoring

Sample ID: H2S SRU Sampling
Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Data: C:\CLASS-VP\Data\1-6-11BP\H2S SRU Sampling 061
Product: Shimadzu Client/Server
Software: Version 7.2 SP1 Rev B
{Data Description} 500 UL 150C detector
Run Time: 1/6/2011 4:11:58 PM

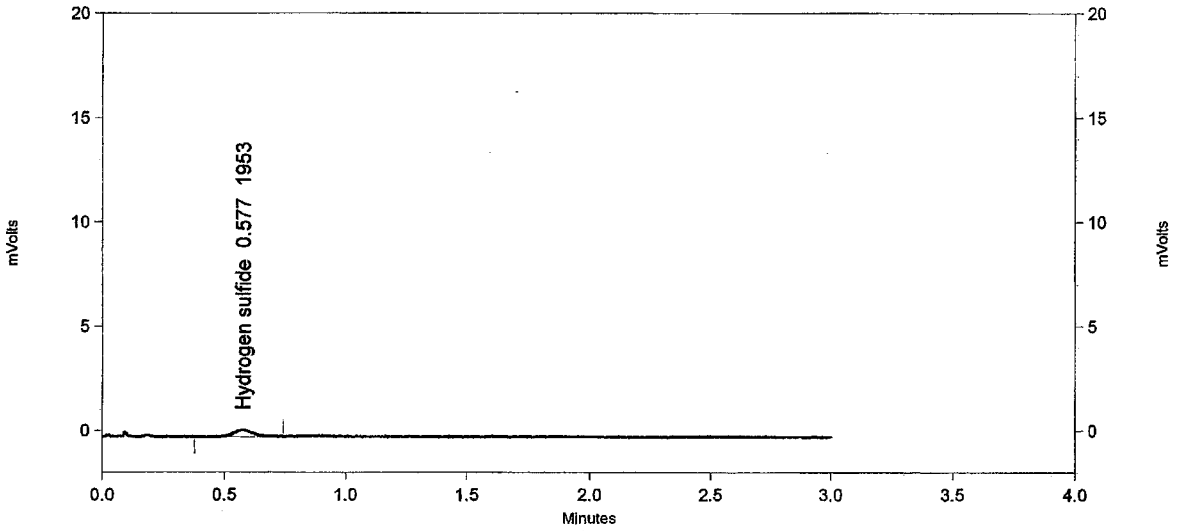


FPD2 Results

Name	Retention Time	Area	ESTD concentration (ppmv)
Hydrogen sulfide	0.568	2121	1.279
Totals		2121	1.279

H2S Monitoring

Sample ID: H2S SRU Sampling
Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Data: C:\CLASS-VP\Data\1-6-11BP\H2S SRU Sampling 062
Product: Shimadzu Client/Server
Software: Version 7.2 SP1 Rev B
{Data Description} 500 UL 150C detector
Run Time: 1/6/2011 4:15:38 PM



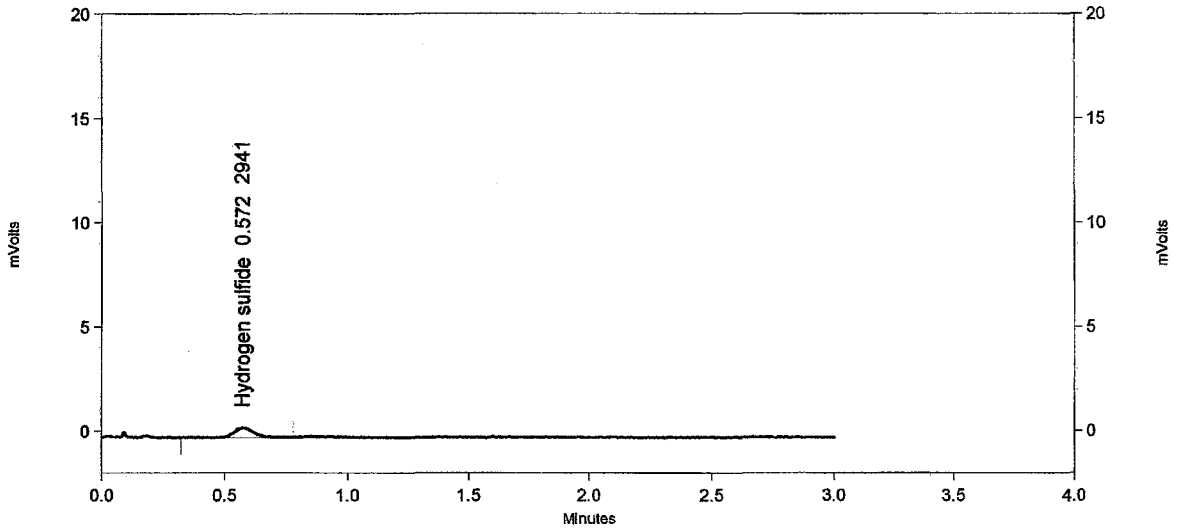
FPD2 Results

Name	Retention Time	Area	ESTD concentration (ppmv)
Hydrogen sulfide	0.577	1953	1.249
Totals		1953	1.249

Uncontrolled if copied or printed.

H_2S Monitoring

Sample ID: H2S SRU Sampling
Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Data: C:\CLASS-VP\Data\1-6-11BP\H2S SRU Sampling 063
Product: Shimadzu Client/Server
Software: Version 7.2 SP1 Rev B
{Data Description} 500 UL 150C detector
Run Time: 1/6/2011 4:19:16 PM

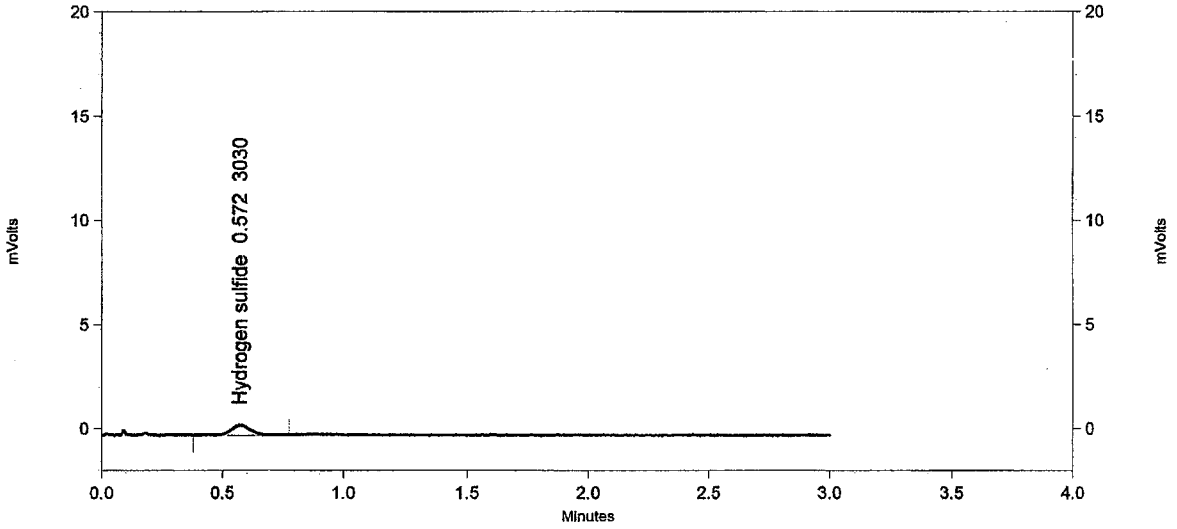


FPD2 Results

Name	Retention Time	Area	ESTD concentration (ppmv)
Hydrogen sulfide	0.572	2941	1.414
Totals		2941	1.414

H_2S Monitoring

Sample ID: H2S SRU Sampling
Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Data: C:\CLASS-VP\Data\1-6-11BP\H2S SRU Sampling 064
Product: Shimadzu Client/Server
Software: Version 7.2 SP1 Rev B
{Data Description} 500 UL 150C detector
Run Time: 1/6/2011 4:22:55 PM

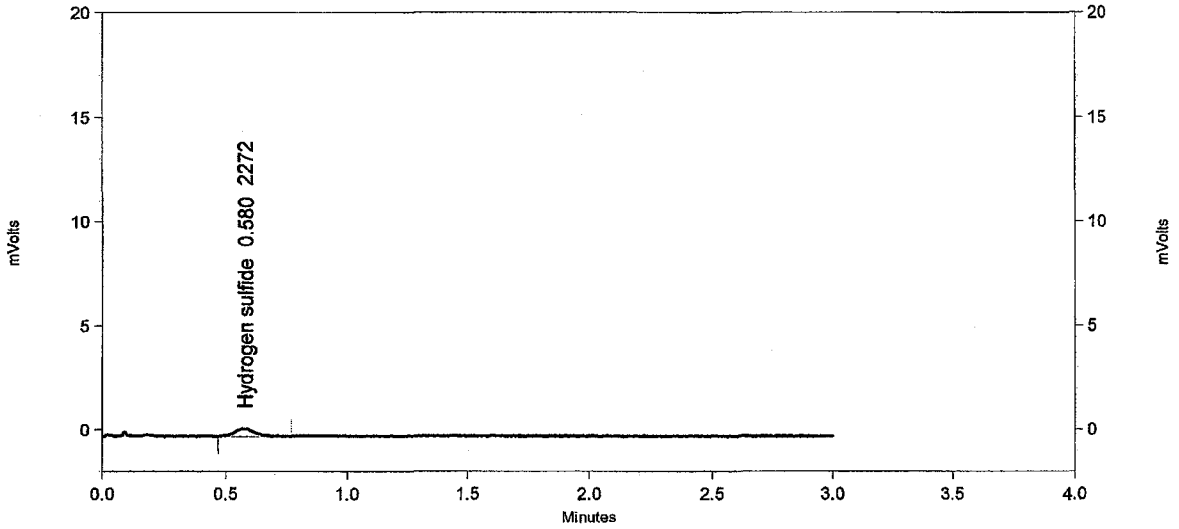


FPD2 Results

Name	Retention Time	Area	ESTD concentration (ppmv)
Hydrogen sulfide	0.572	3030	1.427
Totals		3030	1.427

H_2S Monitoring

Sample ID: H2S SRU Sampling
Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Data: C:\CLASS-VP\Data\1-6-11BP\H2S SRU Sampling 065
Product: Shimadzu Client/Server
Software: Version 7.2 SP1 Rev B
{Data Description} 500 UL 150C detector
Run Time: 1/6/2011 4:26:34 PM

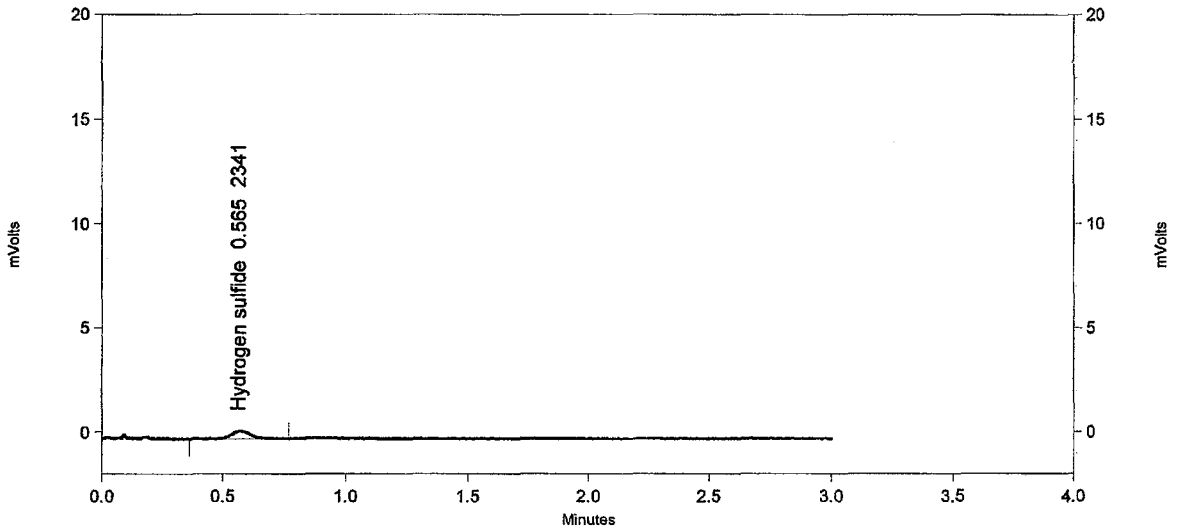


FPD2 Results

Name	Retention Time	Area	ESTD concentration (ppmv)
Hydrogen sulfide	0.580	2272	1.306
Totals		2272	1.306

H_2S Monitoring

Sample ID: H2S SRU Sampling
Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Data: C:\CLASS-VP\Data\1-6-11BP\H2S SRU Sampling 066
Product: Shimadzu Client/Server
Software: Version 7.2 SP1 Rev B
{Data Description} 500 UL 150C detector
Run Time: 1/6/2011 4:30:11 PM

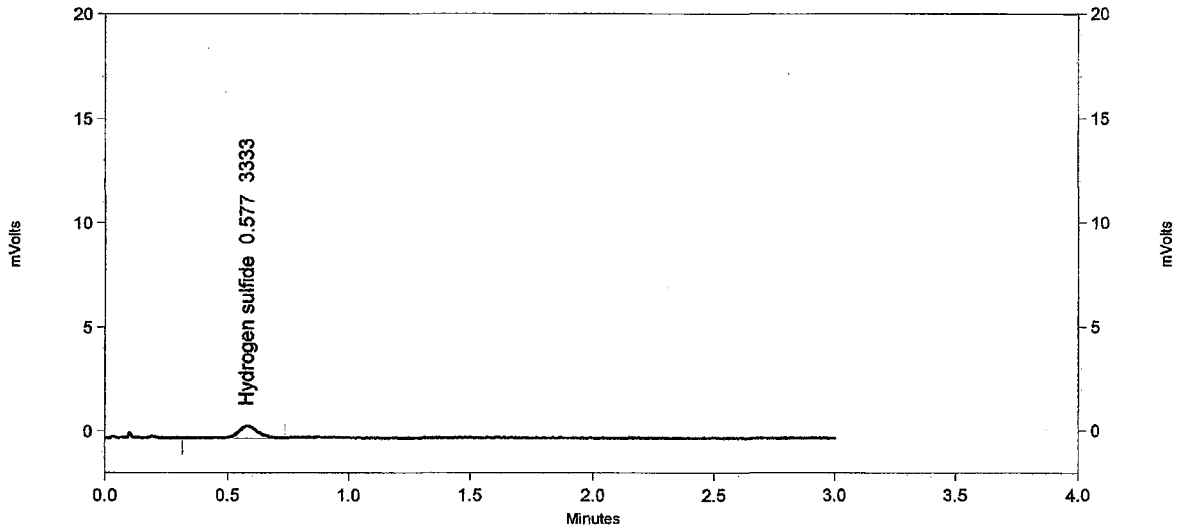


FPD2 Results

Name	Retention Time	Area	ESTD concentration (ppmv)
Hydrogen sulfide	0.565	2341	1.317
Totals		2341	1.317

H_2S Monitoring

Sample ID: H2S SRU Sampling
Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Data: C:\CLASS-VP\Data\1-6-11BP\H2S SRU Sampling 067
Product: Shimadzu Client/Server
Software: Version 7.2 SP1 Rev B
{Data Description} 500 UL 150C detector
Run Time: 1/6/2011 4:33:50 PM

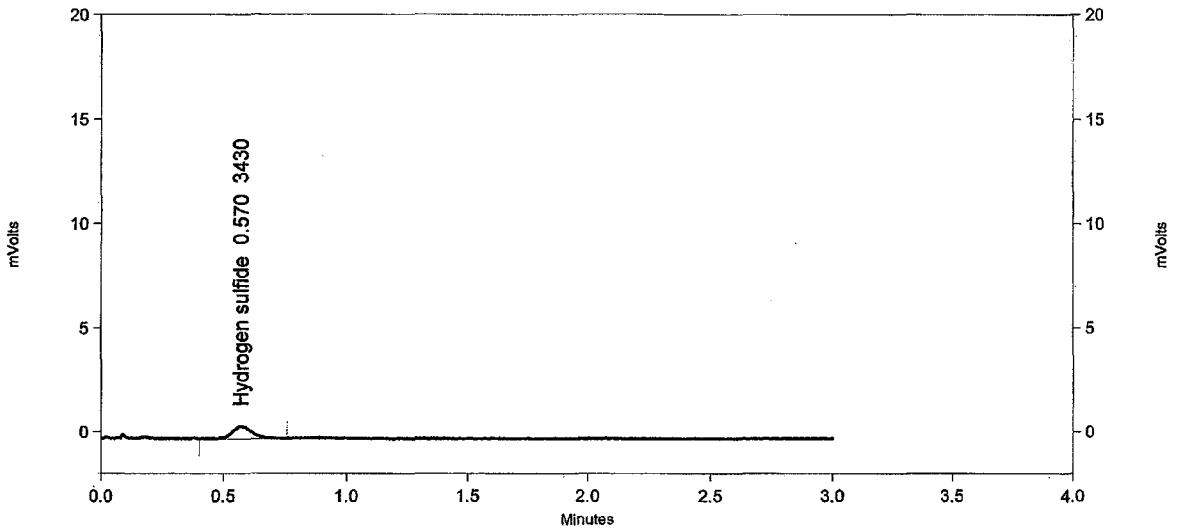


FPD2 Results

Name	Retention Time	Area	ESTD concentration (ppmv)
Hydrogen sulfide	0.577	3333	1.472
Totals		3333	1.472

H_2S Monitoring

Sample ID: H2S SRU Sampling
Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Data: C:\CLASS-VP\Data\1-6-11BP\H2S SRU Sampling 068
Product: Shimadzu Client/Server
Software: Version 7.2 SP1 Rev B
{Data Description} 500 UL 150C detector
Run Time: 1/6/2011 4:37:28 PM

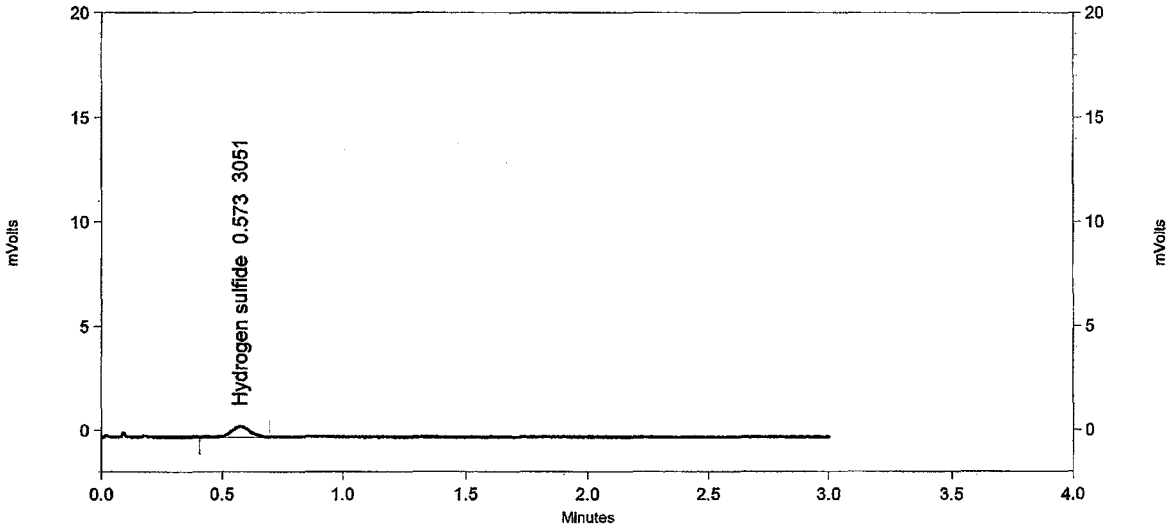


FPD2 Results

Name	Retention Time	Area	ESTD concentration (ppmv)
Hydrogen sulfide	0.570	3430	1.485
Totals		3430	1.485

H_2S Monitoring

Sample ID: H2S SRU Sampling
Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Data: C:\CLASS-VP\Data\1-6-11BP\H2S SRU Sampling 069
Product: Shimadzu Client/Server
Software: Version 7.2 SP1 Rev B
{Data Description} 500 UL 150C detector
Run Time: 1/6/2011 4:41:06 PM

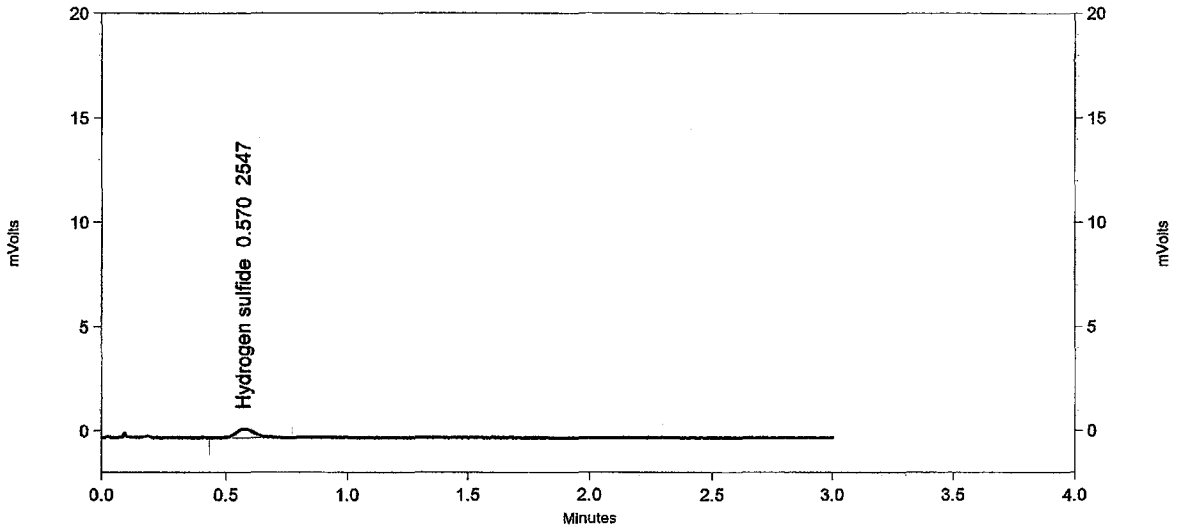


FPD2 Results

Name	Retention Time	Area	ESTD concentration (ppmv)
Hydrogen sulfide	0.573	3051	1.430
Totals		3051	1.430

H_2S Monitoring

Sample ID: H2S SRU Sampling
Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Data: C:\CLASS-VP\Data\1-6-11BP\H2S SRU Sampling 070
Product: Shimadzu Client/Server
Software: Version 7.2 SP1 Rev B
{Data Description} 500 UL 150C detector
Run Time: 1/6/2011 4:44:44 PM

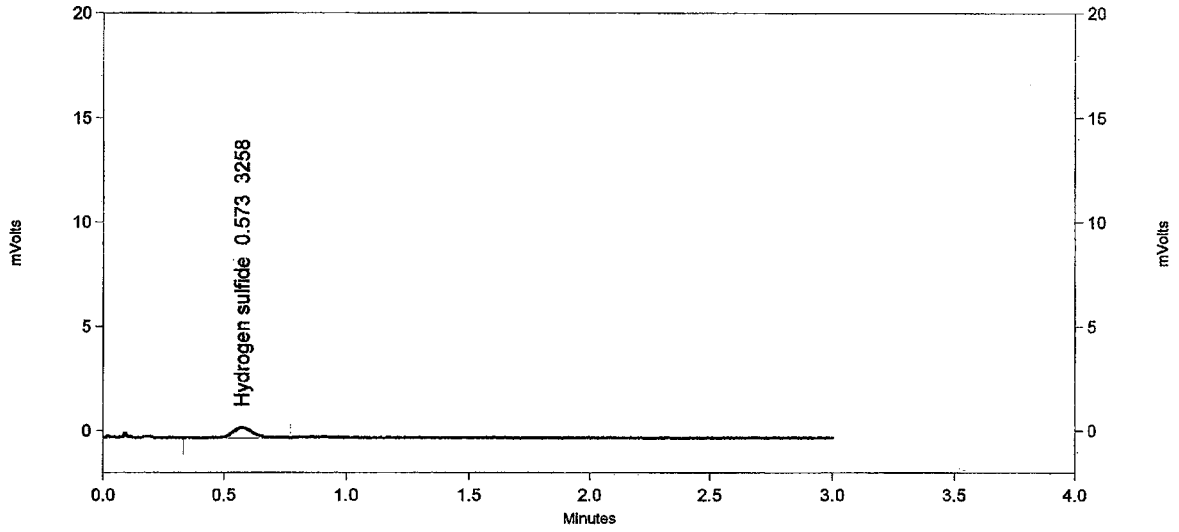


FPD2 Results

Name	Retention Time	Area	ESTD concentration (ppmv)
Hydrogen sulfide	0.570	2547	1.352
Totals		2547	1.352

H_2S Monitoring

Sample ID: H2S SRU Sampling
Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Data: C:\CLASS-VP\Data\1-6-11BP\H2S SRU Sampling 071
Product: Shimadzu Client/Server
Software: Version 7.2 SP1 Rev B
{Data Description} 500 UL 150C detector
Run Time: 1/6/2011 4:48:23 PM

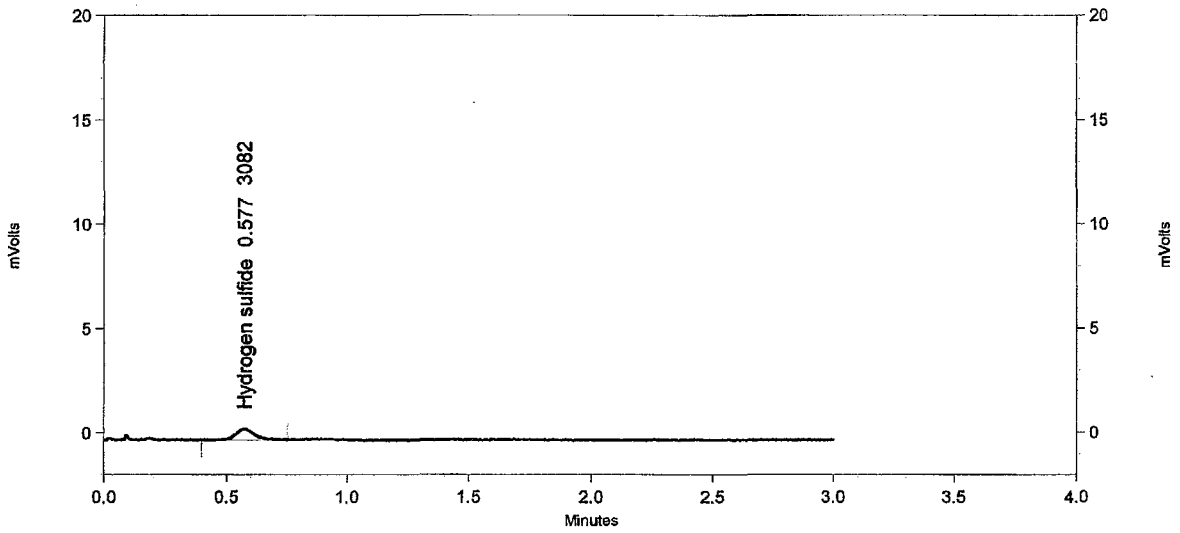


FPD2 Results

Name	Retention Time	Area	ESTD concentration (ppmv)
Hydrogen sulfide	0.573	3258	1.461
Totals		3258	1.461

H_2S Monitoring

Sample ID: H2S SRU Sampling
Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Data: C:\CLASS-VP\Data\1-6-11BP\H2S SRU Sampling 072
Product: Shimadzu Client/Server
Software: Version 7.2 SP1 Rev B
{Data Description} 500 UL 150C detector
Run Time: 1/6/2011 4:52:02 PM

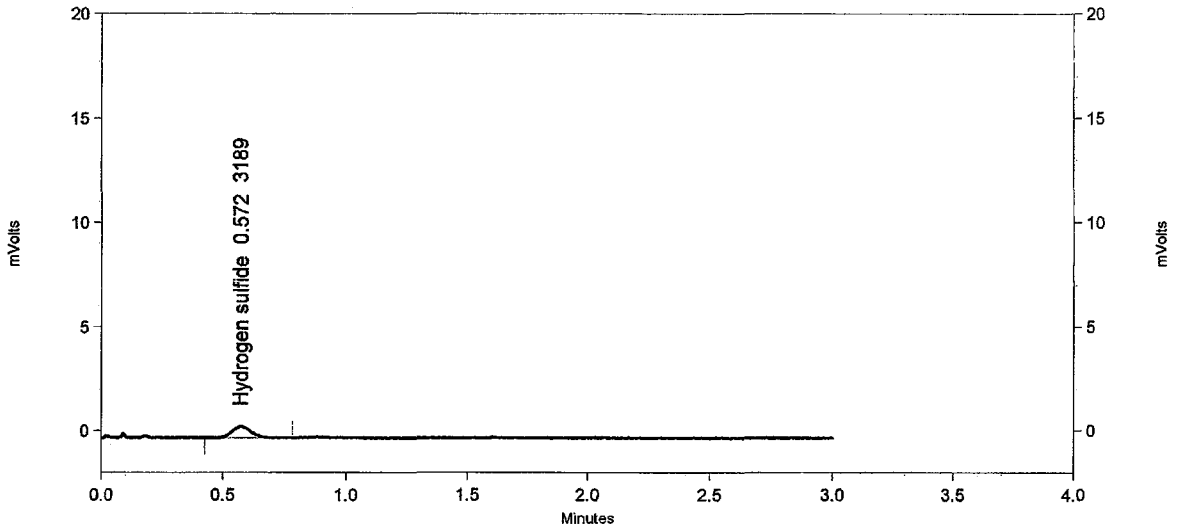


FPD2 Results

Name	Retention Time	Area	ESTD concentration (ppmv)
Hydrogen sulfide	0.577	3082	1.435
Totals		3082	1.435

H_2S Monitoring

Sample ID: H2S SRU Sampling
Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Data: C:\CLASS-VP\Data\1-6-11BP\H2S SRU Sampling 073
Product: Shimadzu Client/Server
Software: Version 7.2 SP1 Rev B
{Data Description} 500 UL 150C detector
Run Time: 1/6/2011 4:55:41 PM



FPD2 Results

Name	Retention Time	Area	ESTD concentration (ppmv)
Hydrogen sulfide	0.572	3189	1.451
Totals		3189	1.451

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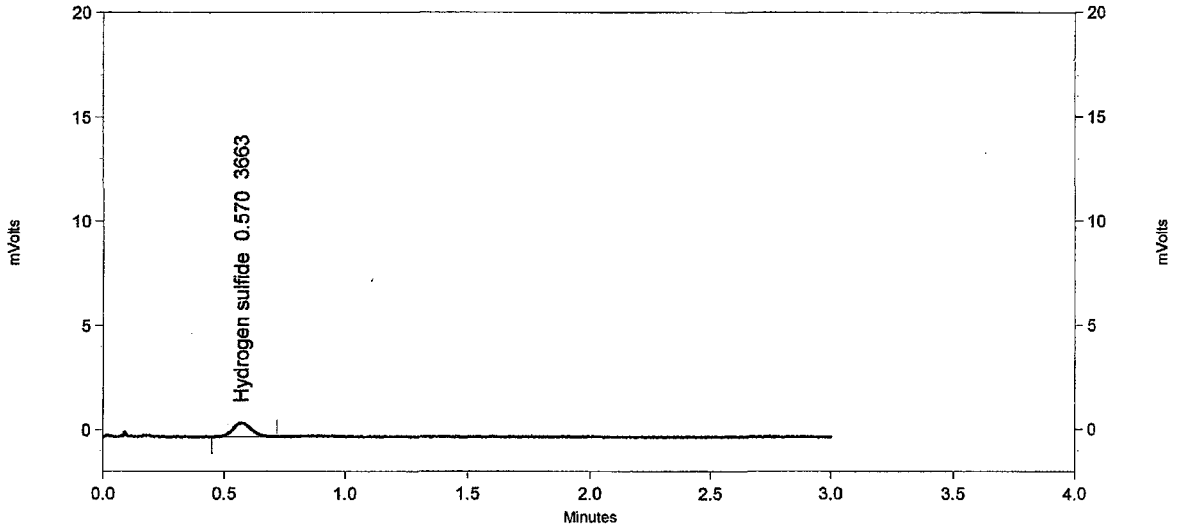
H_2S Monitoring

Sample ID: H2S SRU Sampling
Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Data: C:\CLASS-VP\Data\1-6-11BP\H2S SRU Sampling 074
Product: Shimadzu Client/Server
Software: Version 7.2 SP1 Rev B
{Data Description} 500 UL 150C detector
Run Time: 1/6/2011 4:59:20 PM

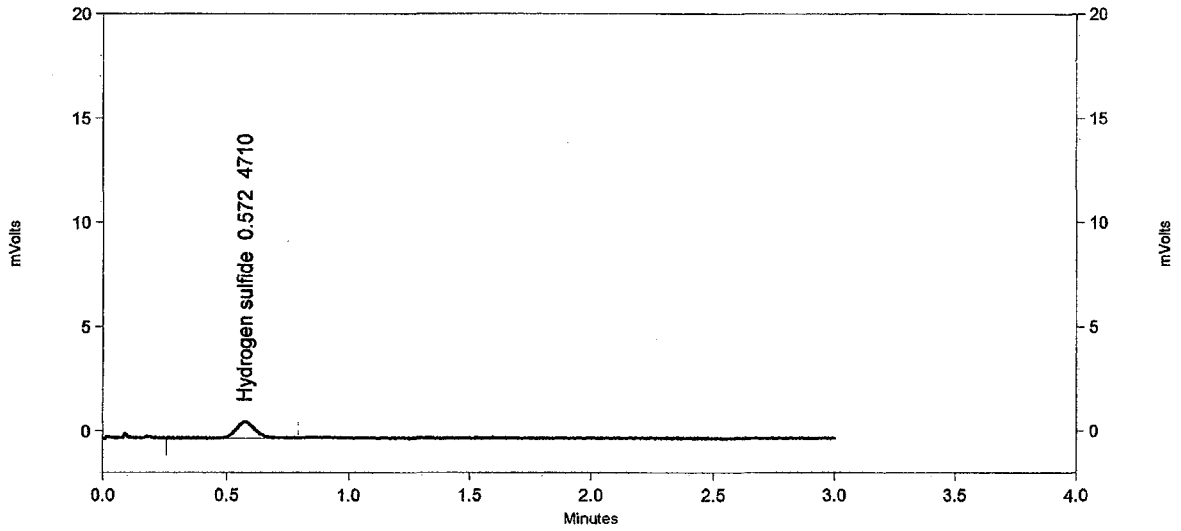


FPD2 Results

Name	Retention Time	Area	ESTD concentration (ppmv)
Hydrogen sulfide	0.570	3663	1.518
Totals		3663	1.518

H_2S Monitoring

Sample ID: H2S SRU Sampling
Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Data: C:\CLASS-VP\Data\1-6-11BP\H2S SRU Sampling 075
Product: Shimadzu Client/Server
Software: Version 7.2 SP1 Rev B
{Data Description} 500 UL 150C detector
Run Time: 1/6/2011 5:02:58 PM

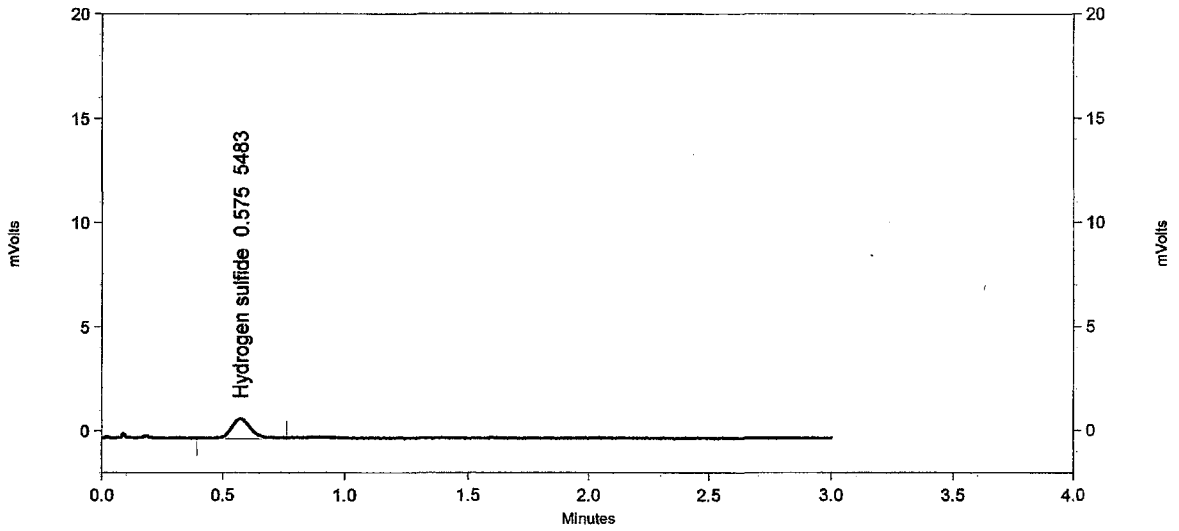


FPD2 Results

Name	Retention Time	Area	ESTD concentration (ppmv)
Hydrogen sulfide	0.572	4710	1.654
Totals		4710	1.654

H_2S Monitoring

Sample ID: H2S SRU Sampling
Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Data: C:\CLASS-VP\Data\1-6-11BP\H2S SRU Sampling 076
Product: Shimadzu Client/Server
Software: Version 7.2 SP1 Rev B
{Data Description} 500 UL 150C detector
Run Time: 1/6/2011 5:06:37 PM

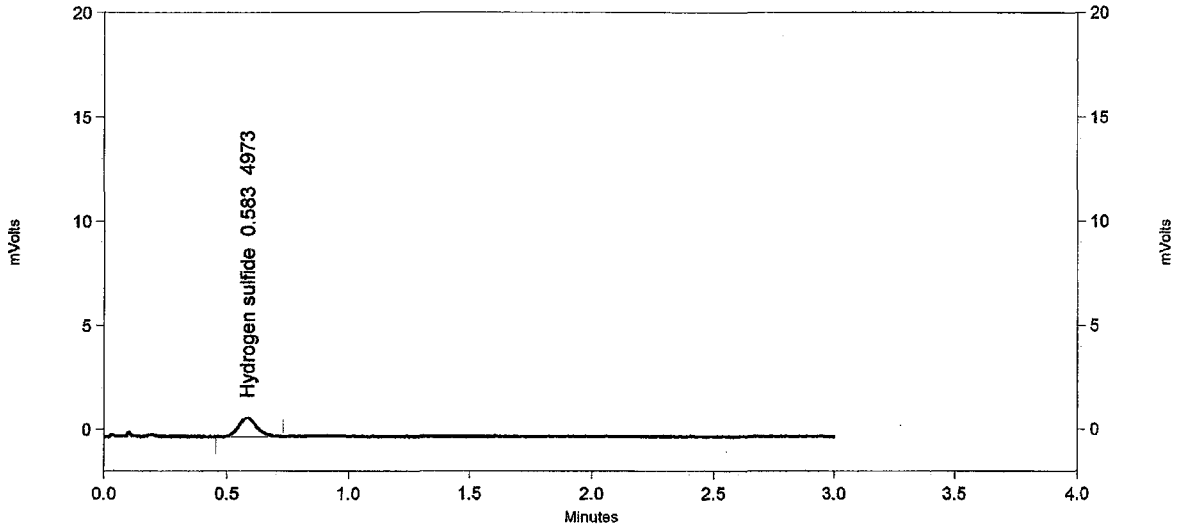


FPD2 Results

Name	Retention Time	Area	ESTD concentration (ppmv)
Hydrogen sulfide	0.575	5483	1.745
Totals		5483	1.745

H2S Monitoring

Sample ID: H2S SRU Sampling
Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Data: C:\CLASS-VP\Data\1-6-11BP\H2S SRU Sampling 077
Product: Shimadzu Client/Server
Software: Version 7.2 SP1 Rev B
{Data Description} 500 UL 150C detector
Run Time: 1/6/2011 5:10:15 PM

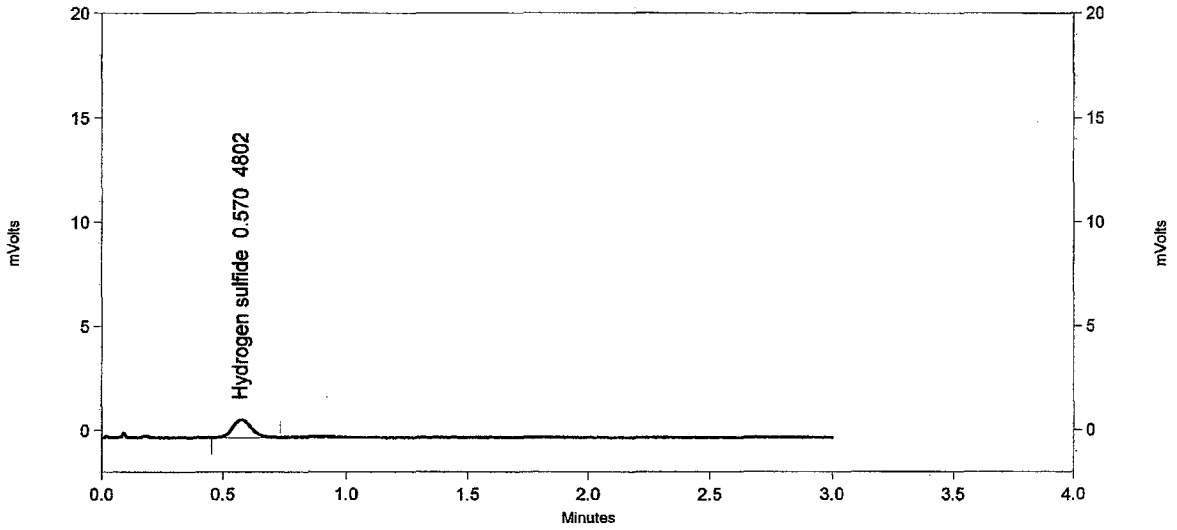


FPD2 Results

Name	Retention Time	Area	ESTD concentration (ppmv)
Hydrogen sulfide	0.583	4973	1.685
Totals		4973	1.685

H_2S Monitoring

Sample ID: H2S SRU Sampling
Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Data: C:\CLASS-VP\Data\1-6-11BP\H2S SRU Sampling 078
Product: Shimadzu Client/Server
Software: Version 7.2 SP1 Rev B
{Data Description} 500 UL 150C detector
Run Time: 1/6/2011 5:13:52 PM

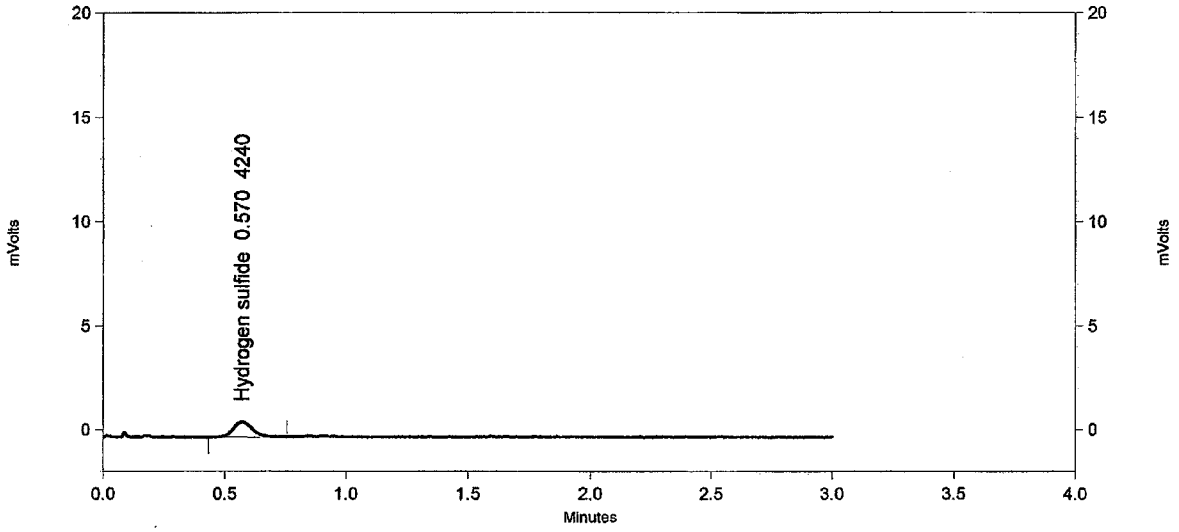


FPD2 Results

Name	Retention Time	Area	ESTD concentration (ppmv)
Hydrogen sulfide	0.570	4802	1.665
Totals		4802	1.665

H_2S Monitoring

Sample ID: H2S SRU Sampling
Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Data: C:\CLASS-VP\Data\1-6-11BP\H2S SRU Sampling 079
Product: Shimadzu Client/Server
Software: Version 7.2 SP1 Rev B
{Data Description} 500 UL 150C detector
Run Time: 1/6/2011 5:17:32 PM

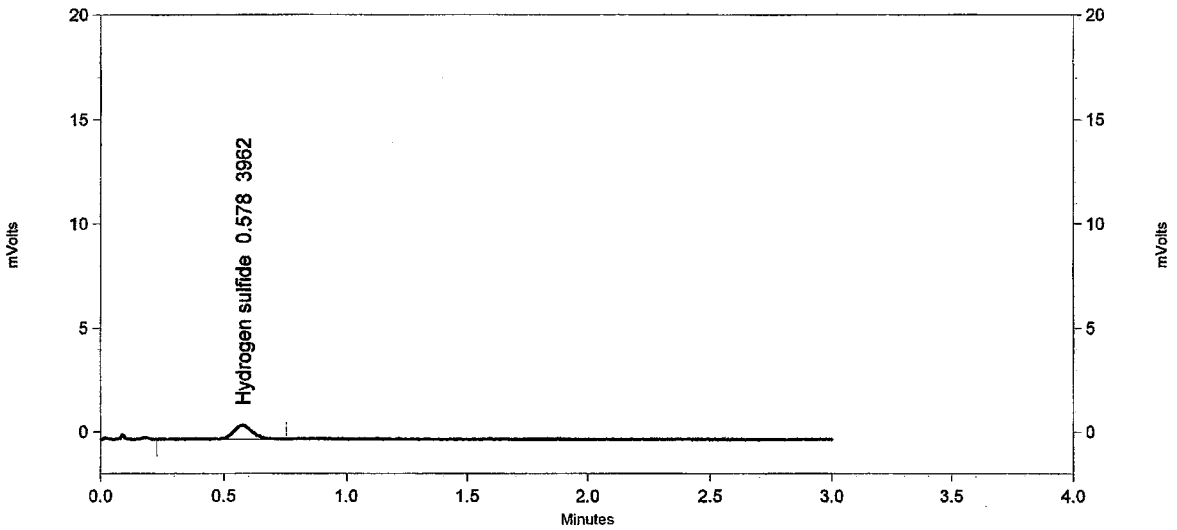


FPD2 Results

Name	Retention Time	Area	ESTD concentration (ppmv)
Hydrogen sulfide	0.570	4240	1.595
Totals		4240	1.595

H_2S Monitoring

Sample ID: H2S SRU Sampling
Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Data: C:\CLASS-VP\Data\1-6-11BP\H2S SRU Sampling 080
Product: Shimadzu Client/Server
Software: Version 7.2 SP1 Rev B
{Data Description} 500 UL 150C detector
Run Time: 1/6/2011 5:21:10 PM



FPD2 Results

Name	Retention Time	Area	ESTD concentration (ppmv)
Hydrogen sulfide	0.578	3962	1.558
Totals		3962	1.558

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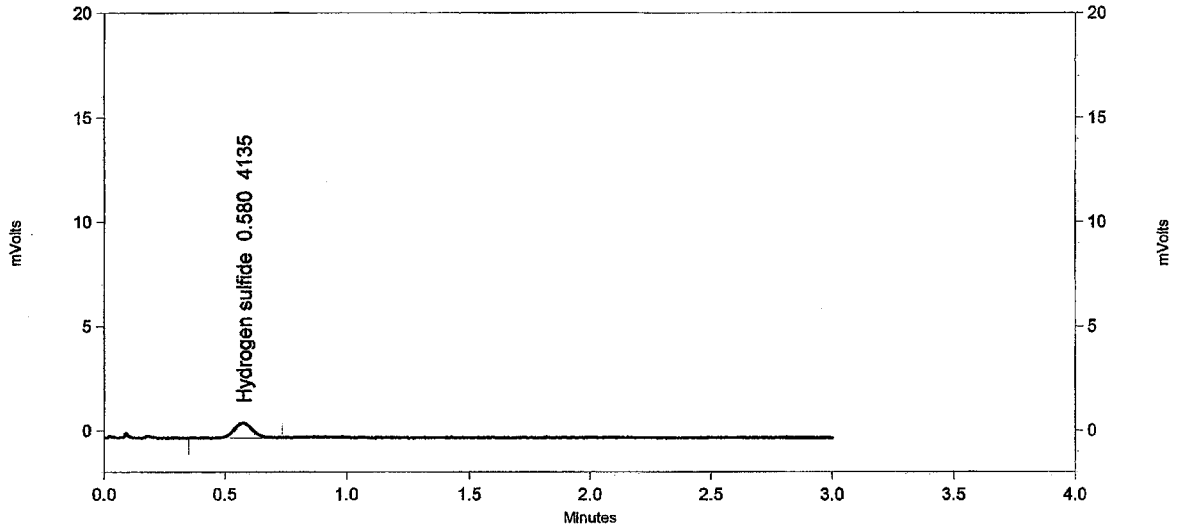
H_2S Monitoring

Sample ID: H2S SRU Sampling
Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Data: C:\CLASS-VP\Data\1-6-11BP\H2S SRU Sampling 081
Product: Shimadzu Client/Server
Software: Version 7.2 SP1 Rev B
{Data Description} 500 UL 150C detector
Run Time: 1/6/2011 5:24:47 PM

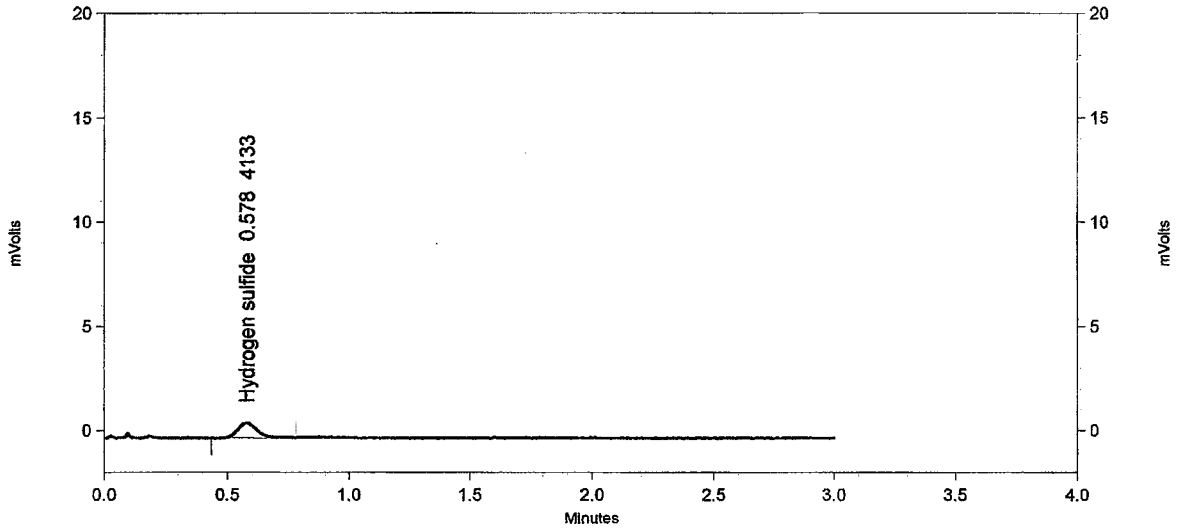


FPD2 Results

Name	Retention Time	Area	ESTD concentration (ppmv)
Hydrogen sulfide	0.580	4135	1.581
Totals		4135	1.581

H_2S Monitoring

Sample ID: H2S SRU Sampling
Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Data: C:\CLASS-VP\Data\1-6-11BP\H2S SRU Sampling 082
Product: Shimadzu Client/Server
Software: Version 7.2 SP1 Rev B
{Data Description} 500 UL 150C detector
Run Time: 1/6/2011 5:28:25 PM

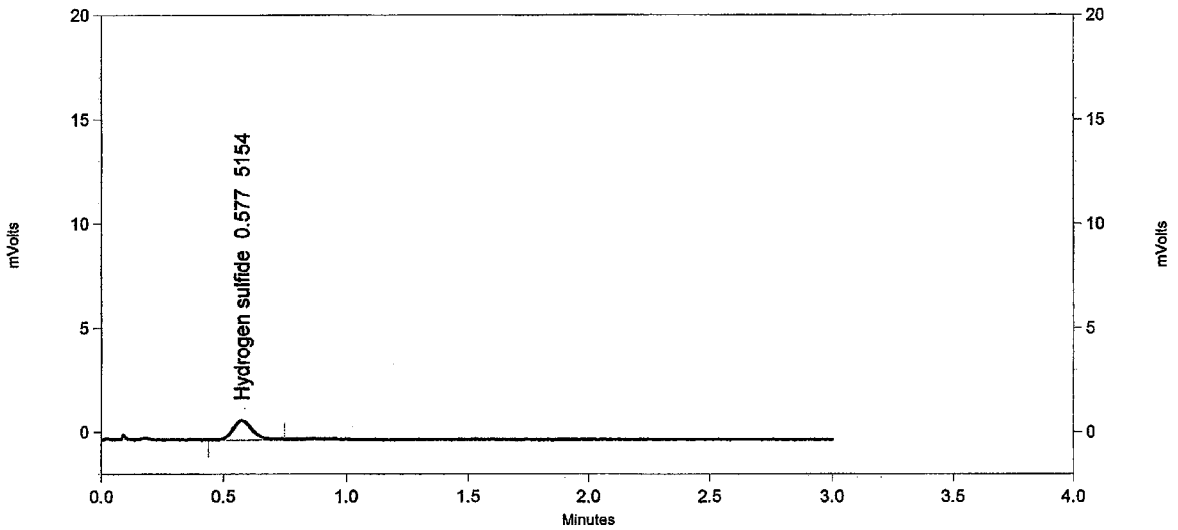


FPD2 Results

Name	Retention Time	Area	ESTD concentration (ppmv)
Hydrogen sulfide	0.578	4133	1.581
Totals		4133	1.581

H_2S Monitoring

Sample ID: H2S SRU Sampling
Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Data: C:\CLASS-VP\Data\1-6-11BP\H2S SRU Sampling 083
Product: Shimadzu Client/Server
Software: Version 7.2 SP1 Rev B
{Data Description} 500 UL 150C detector
Run Time: 1/6/2011 5:32:02 PM

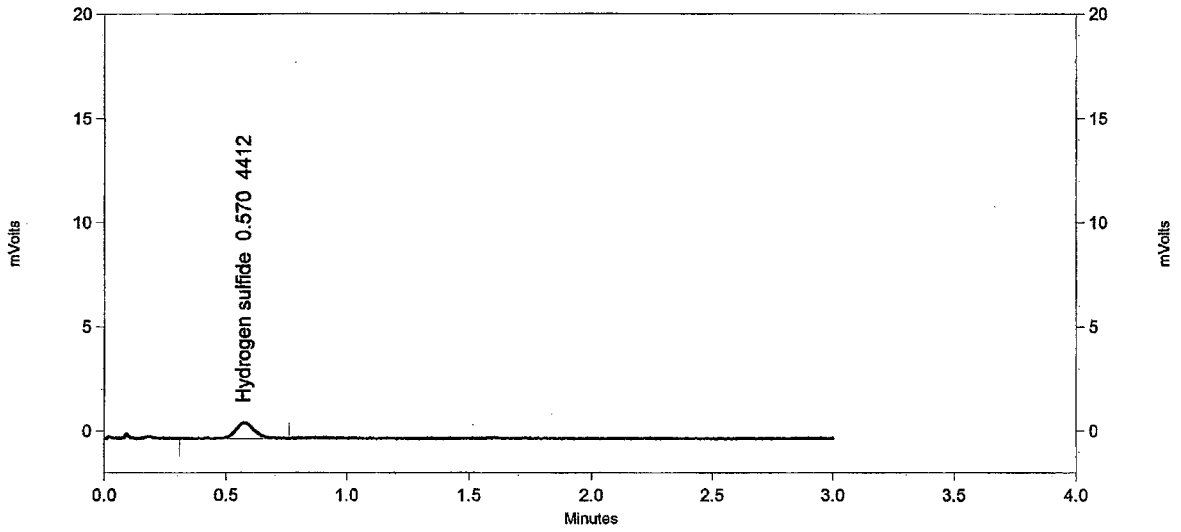


FPD2 Results

Name	Retention Time	Area	ESTD concentration (ppmv)
Hydrogen sulfide	0.577	5154	1.707
Totals		5154	1.707

H_2S Monitoring

Sample ID: H2S SRU Sampling
Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Data: C:\CLASS-VP\Data\1-6-11BP\H2S SRU Sampling 084
Product: Shimadzu Client/Server
Software: Version 7.2 SP1 Rev B
{Data Description} 500 UL 150C detector
Run Time: 1/6/2011 5:35:40 PM



FPD2 Results

Name	Retention Time	Area	ESTD concentration (ppmv)
Hydrogen sulfide	0.570	4412	1.617
Totals		4412	1.617

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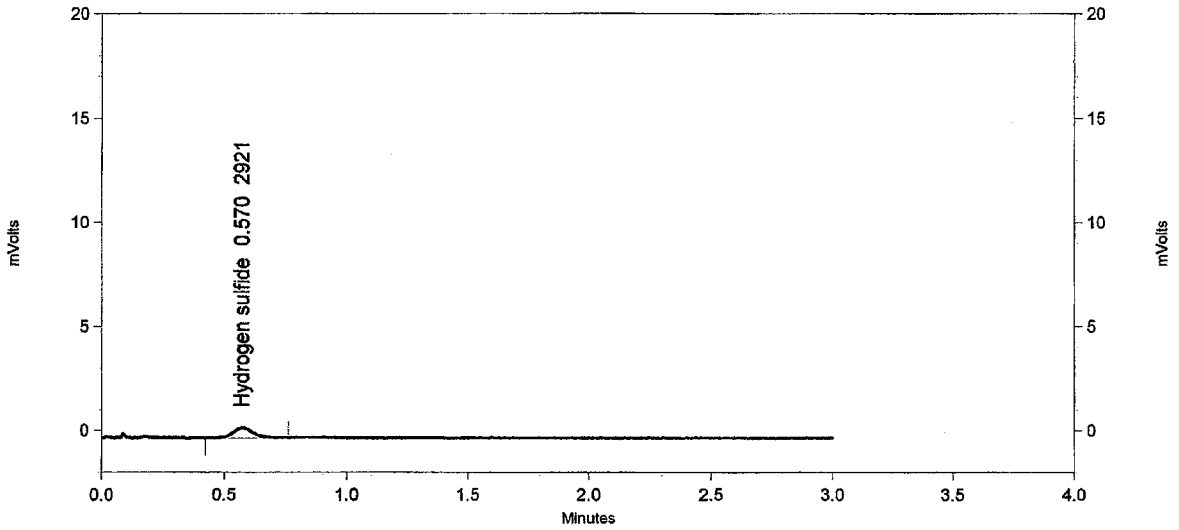
H_2S Monitoring

Sample ID: H2S SRU Sampling
Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Data: C:\CLASS-VP\Data\1-6-11BP\H2S SRU Sampling 085
Product: Shimadzu Client/Server
Software: Version 7.2 SP1 Rev B
{Data Description} 500 UL 150C detector
Run Time: 1/6/2011 5:39:18 PM

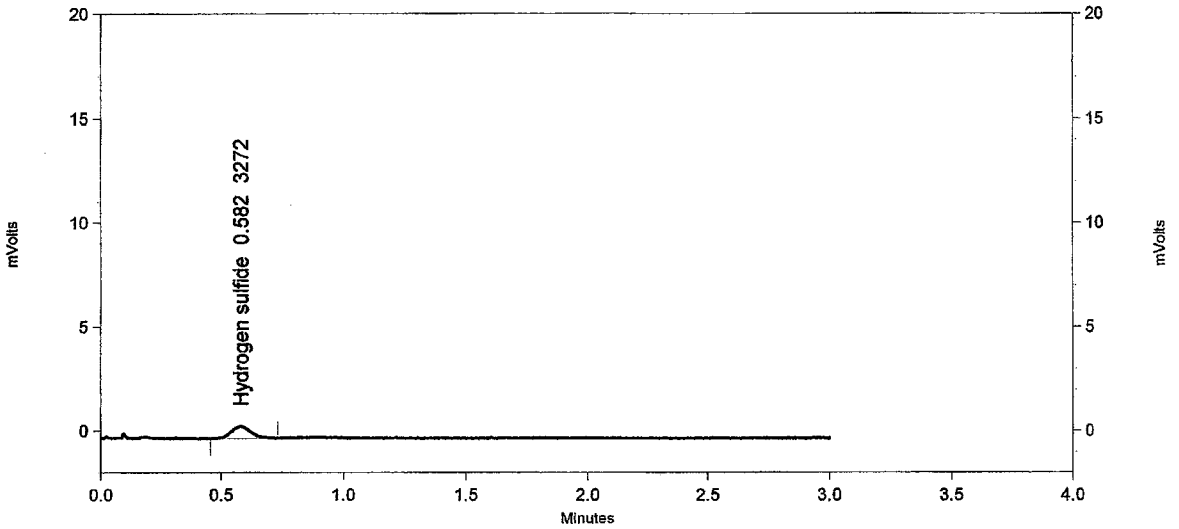


FPD2 Results

Name	Retention Time	Area	ESTD concentration (ppmv)
Hydrogen sulfide	0.570	2921	1.411
Totals		2921	1.411

H_2S Monitoring

Sample ID: H2S SRU Sampling
Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Data: C:\CLASS-VP\Data\1-6-11BP\H2S SRU Sampling 086
Product: Shimadzu Client/Server
Software: Version 7.2 SP1 Rev B
{Data Description} 500 UL 150C detector
Run Time: 1/6/2011 5:42:57 PM

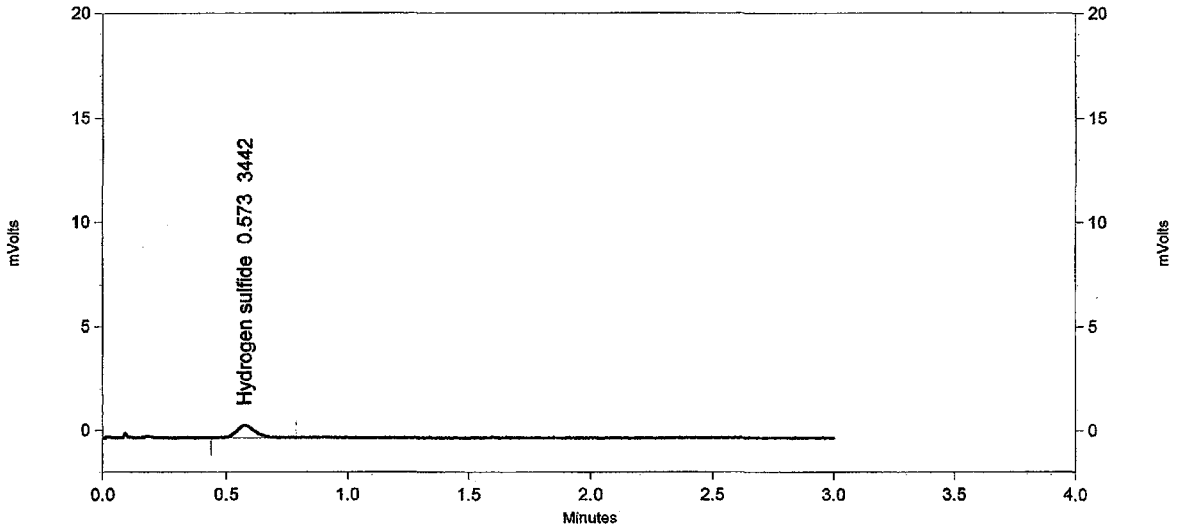


FPD2 Results

Name	Retention Time	Area	ESTD concentration (ppmv)
Hydrogen sulfide	0.582	3272	1.463
Totals		3272	1.463

H_2S Monitoring

Sample ID: H2S SRU Sampling
Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Data: C:\CLASS-VP\Data\1-6-11BP\H2S SRU Sampling 087
Product: Shimadzu Client/Server
Software: Version 7.2 SP1 Rev B
{Data Description} 500 UL 150C detector
Run Time: 1/6/2011 5:46:34 PM



FPD2 Results

Name	Retention Time	Area	ESTD concentration (ppmv)
Hydrogen sulfide	0.573	3442	1.487
Totals		3442	1.487

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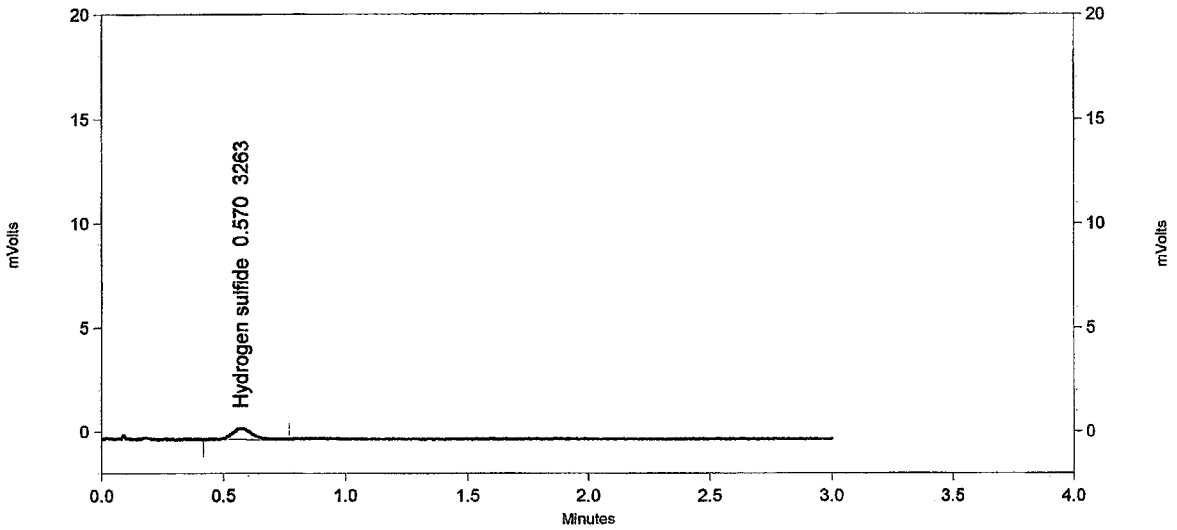
H_2S Monitoring

Sample ID: H2S SRU Sampling
Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Data: C:\CLASS-VP\Data\1-6-11BP\H2S SRU Sampling 088
Product: Shimadzu Client/Server
Software: Version 7.2 SP1 Rev B
{Data Description} 500 UL 150C detector
Run Time: 1/6/2011 5:50:13 PM

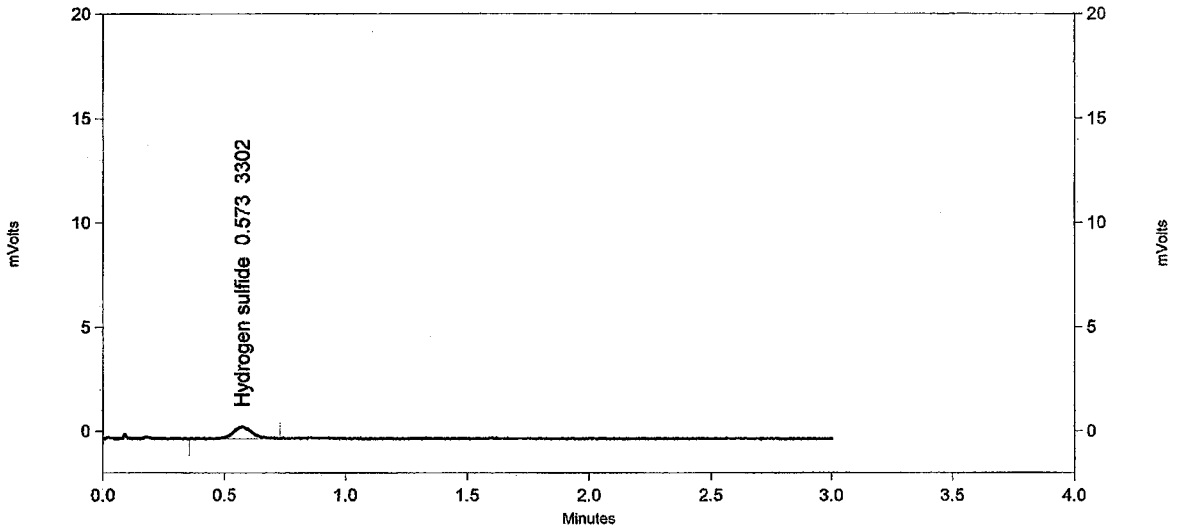


FPD2 Results

Name	Retention Time	Area	ESTD concentration (ppmv)
Hydrogen sulfide	0.570	3263	1.461
Totals		3263	1.461

H_2S Monitoring

Sample ID: H2S SRU Sampling
Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Data: C:\CLASS-VP\Data\1-6-11BP\H2S SRU Sampling 089
Product: Shimadzu Client/Server
Software: Version 7.2 SP1 Rev B
{Data Description} 500 UL 150C detector
Run Time: 1/6/2011 5:53:52 PM



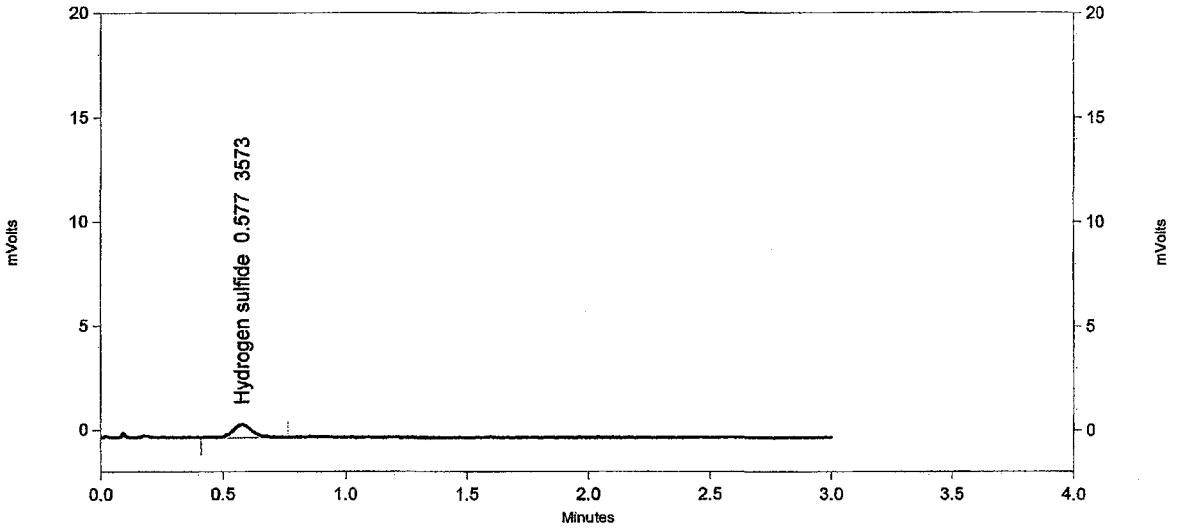
FPD2 Results

Name	Retention Time	Area	ESTD concentration (ppmv)
Hydrogen sulfide	0.573	3302	1.467
Totals		3302	1.467

Uncontrolled if copied or printed.

H_2S Monitoring

Sample ID: H2S SRU Sampling
Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Data: C:\CLASS-VP\Data\1-6-11BP\H2S SRU Sampling 090
Product: Shimadzu Client/Server
Software: Version 7.2 SP1 Rev B
{Data Description} 500 UL 150C detector
Run Time: 1/6/2011 5:57:31 PM

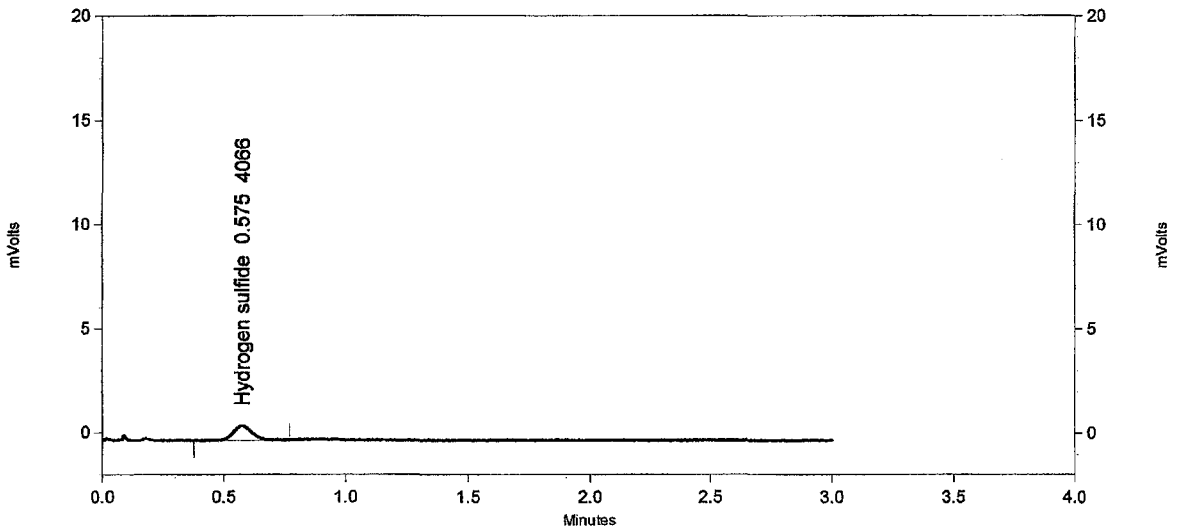


FPD2 Results

Name	Retention Time	Area	ESTD concentration (ppmv)
Hydrogen sulfide	0.577	3573	1.506
Totals		3573	1.506

H_2S Monitoring

Sample ID: H2S SRU Sampling
Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Data: C:\CLASS-VP\Data\1-6-11BP\H2S SRU Sampling 091
Product: Shimadzu Client/Server
Software: Version 7.2 SP1 Rev B
{Data Description} 500 UL 150C detector
Run Time: 1/6/2011 6:01:09 PM

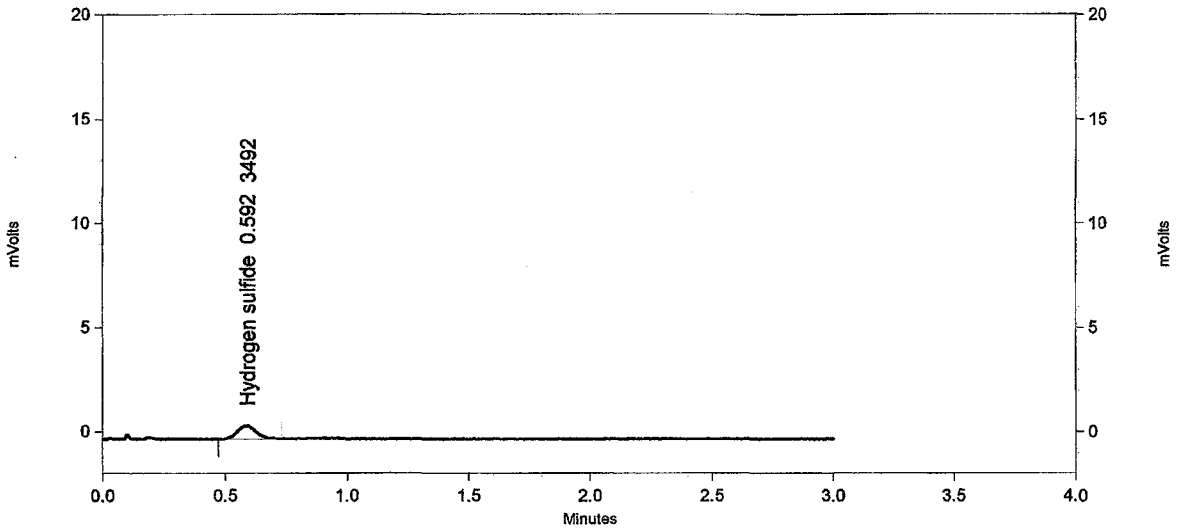


FPD2 Results

Name	Retention Time	Area	ESTD concentration (ppmv)
Hydrogen sulfide	0.575	4066	1.572
Totals		4066	1.572

H_2S Monitoring

Sample ID: H2S SRU Sampling
Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Data: C:\CLASS-VP\Data\1-6-11BP\H2S SRU Sampling 092
Product: Shimadzu Client/Server
Software: Version 7.2 SP1 Rev B
{Data Description} 500 UL 150C detector
Run Time: 1/6/2011 6:04:46 PM



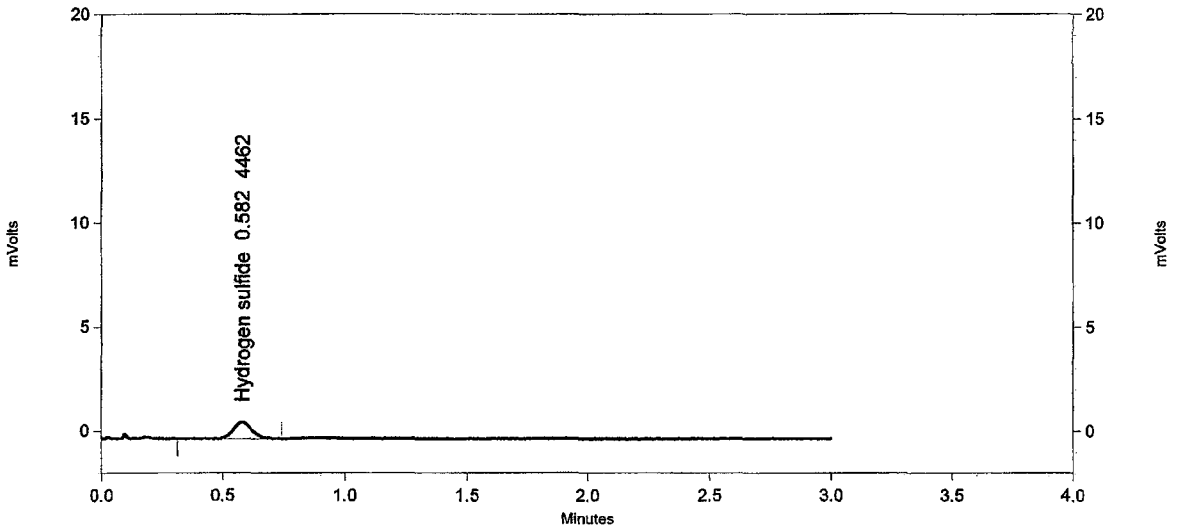
FPD2 Results

Name	Retention Time	Area	ESTD concentration (ppmv)
Hydrogen sulfide	0.592	3492	1.494
Totals		3492	1.494

Uncontrolled if copied or printed.

H_2S Monitoring

Sample ID: H2S SRU Sampling
Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Data: C:\CLASS-VP\Data\1-6-11BP\H2S SRU Sampling 093
Product: Shimadzu Client/Server
Software: Version 7.2 SP1 Rev B
{Data Description} 500 UL 150C detector
Run Time: 1/6/2011 6:08:25 PM

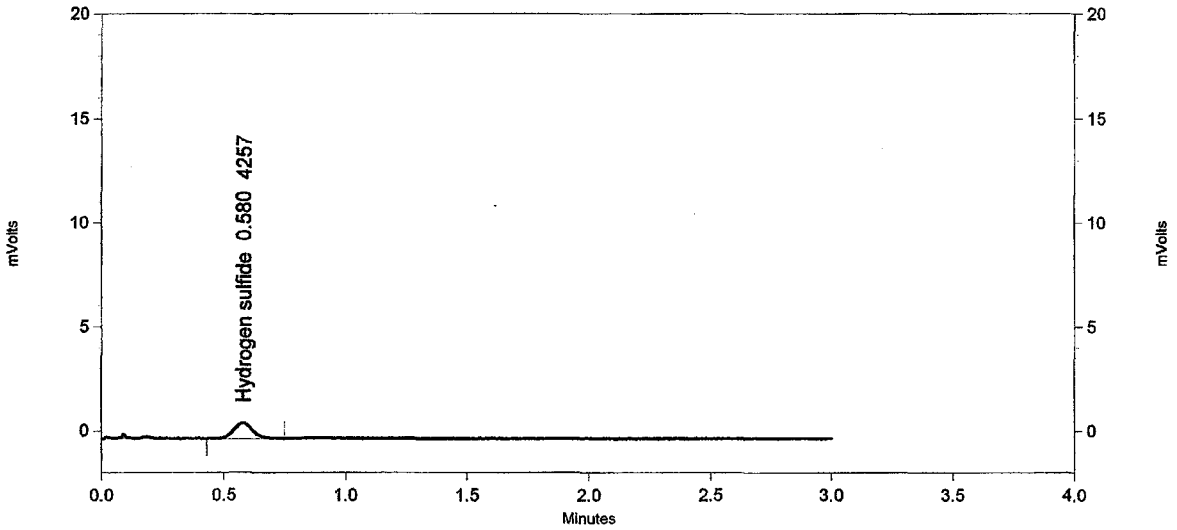


FPD2 Results

Name	Retention Time	Area	ESTD concentration (ppmv)
Hydrogen sulfide	0.582	4462	1.623
Totals		4462	1.623

H_2S Monitoring

Sample ID: H2S SRU Sampling
Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Data: C:\CLASS-VP\Data\1-6-11BP\H2S SRU Sampling 094
Product: Shimadzu Client/Server
Software: Version 7.2 SP1 Rev B
{Data Description} 500 UL 150C detector
Run Time: 1/6/2011 6:12:03 PM

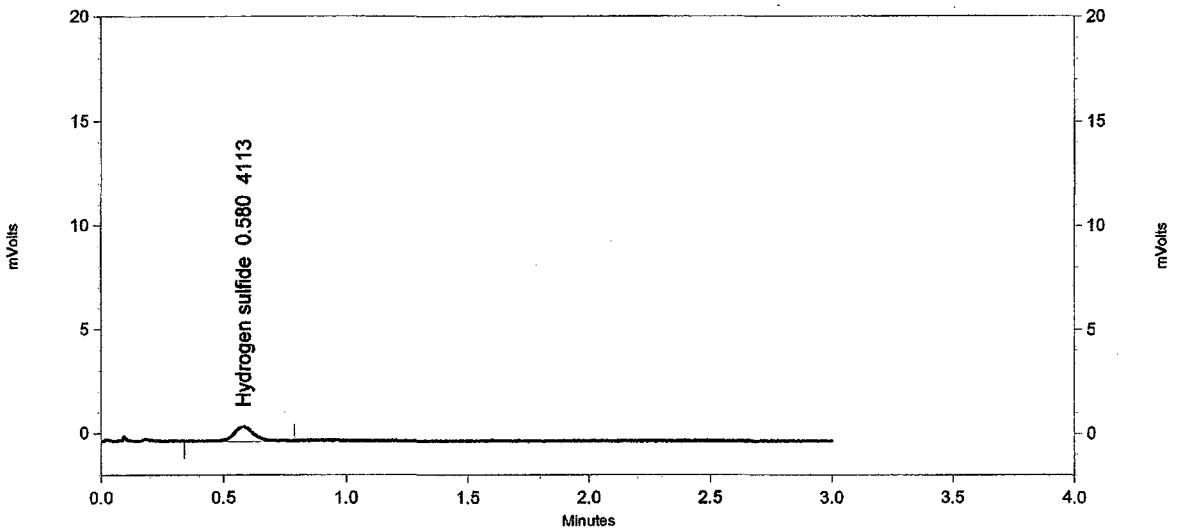


FPD2 Results

Name	Retention Time	Area	ESTD concentration (ppmv)
Hydrogen sulfide	0.580	4257	1.597
Totals		4257	1.597

H_2S Monitoring

Sample ID: H2S SRU Sampling
Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Data: C:\CLASS-VP\Data\1-6-11BP\H2S SRU Sampling 095
Product: Shimadzu Client/Server
Software: Version 7.2 SP1 Rev B
{Data Description} 500 UL 150C detector
Run Time: 1/6/2011 6:15:41 PM



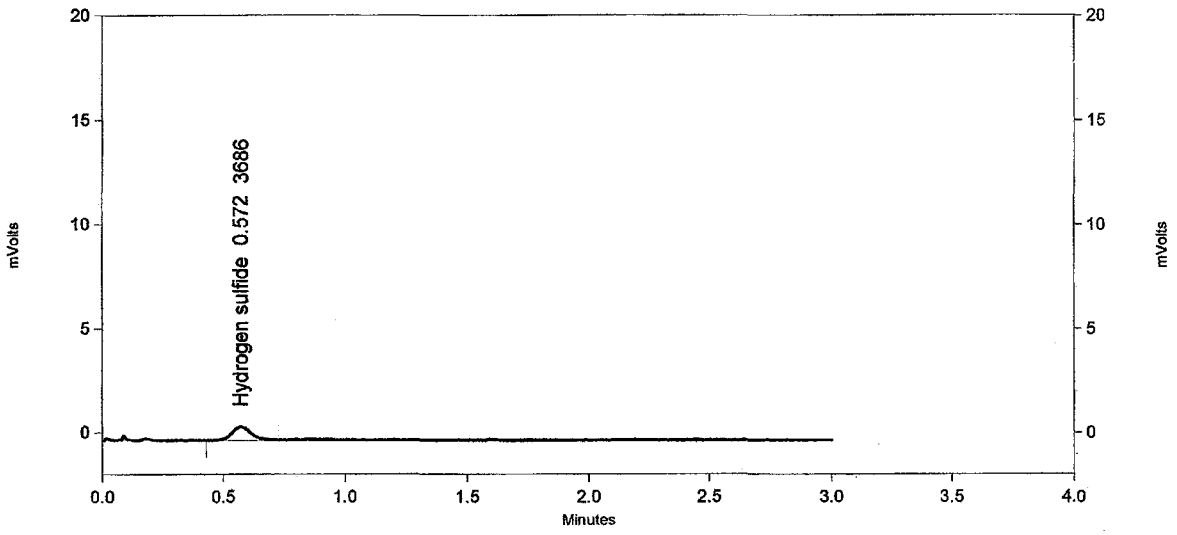
FPD2 Results

Name	Retention Time	Area	ESTD concentration (ppmv)
Hydrogen sulfide	0.580	4113	1.578
Totals		4113	1.578

Uncontrolled if copied or printed.

H_2S Monitoring

Sample ID: H2S SRU Sampling
Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Data: C:\CLASS-VP\Data\1-6-11BP\H2S SRU Sampling 096
Product: Shimadzu Client/Server
Software: Version 7.2 SP1 Rev B
{Data Description} 500 UL 150C detector
Run Time: 1/6/2011 6:19:18 PM

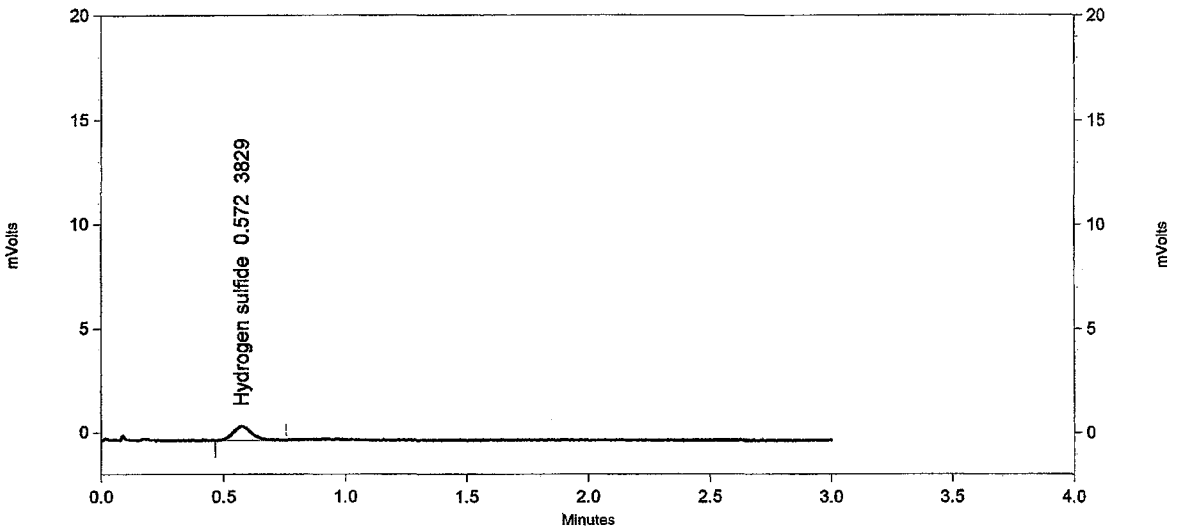


FPD2 Results

Name	Retention Time	Area	ESTD concentration (ppmv)
Hydrogen sulfide	0.572	3686	1.521
Totals		3686	1.521

H_2S Monitoring

Sample ID: H2S SRU Sampling
Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Data: C:\CLASS-VP\Data\1-6-11BP\H2S SRU Sampling 097
Product: Shimadzu Client/Server
Software: Version 7.2 SP1 Rev B
{Data Description} 500 UL 150C detector
Run Time: 1/6/2011 6:22:56 PM



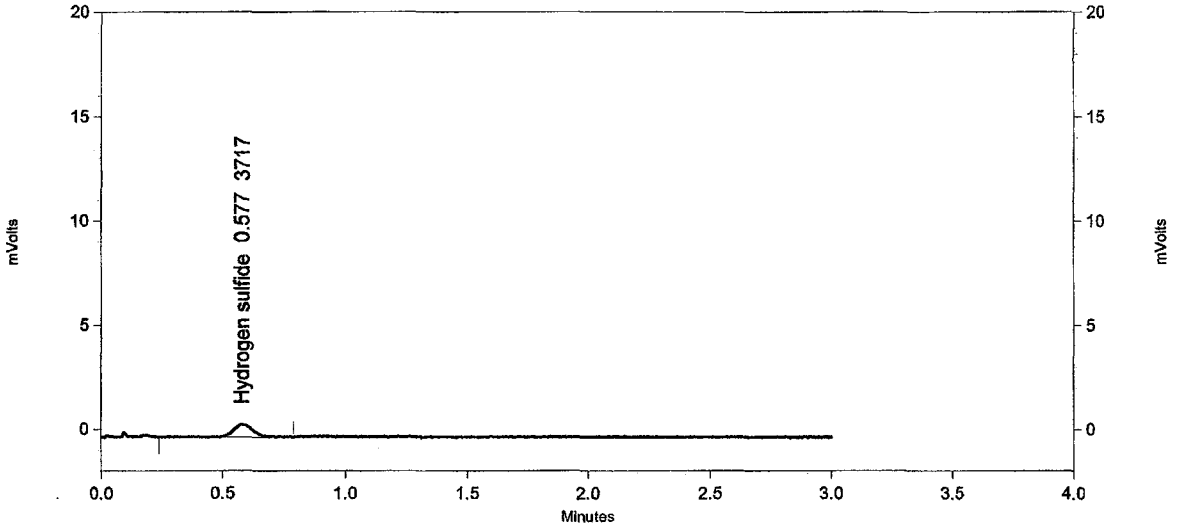
FPD2 Results

Name	Retention Time	Area	ESTD concentration (ppmv)
Hydrogen sulfide	0.572	3829	1.541
Totals		3829	1.541

Uncontrolled if copied or printed.

H_2S Monitoring

Sample ID: H2S SRU Sampling
Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Data: C:\CLASS-VP\Data\1-6-11BP\H2S SRU Sampling 098
Product: Shimadzu Client/Server
Software: Version 7.2 SP1 Rev B
{Data Description} 500 UL 150C detector
Run Time: 1/6/2011 6:26:34 PM



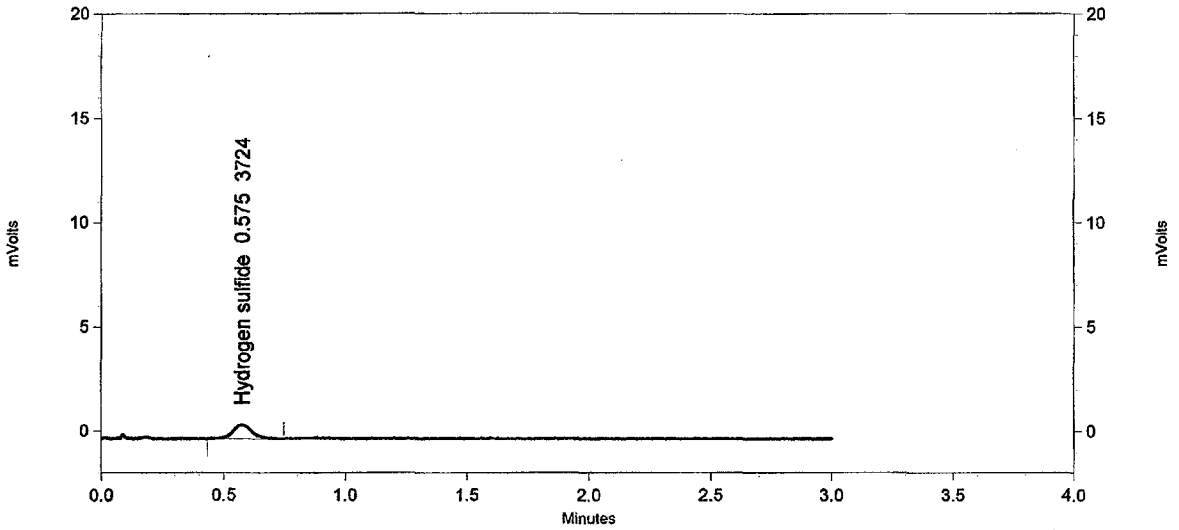
FPD2 Results

Name	Retention Time	Area	ESTD concentration (ppmv)
Hydrogen sulfide	0.577	3717	1.525
Totals		3717	1.525

Uncontrolled if copied or printed.

H_2S Monitoring

Sample ID: H2S SRU Sampling
Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Data: C:\CLASS-VP\Data\1-6-11BP\H2S SRU Sampling 099
Product: Shimadzu Client/Server
Software: Version 7.2 SP1 Rev B
{Data Description} 500 UL 150C detector
Run Time: 1/6/2011 6:30:11 PM

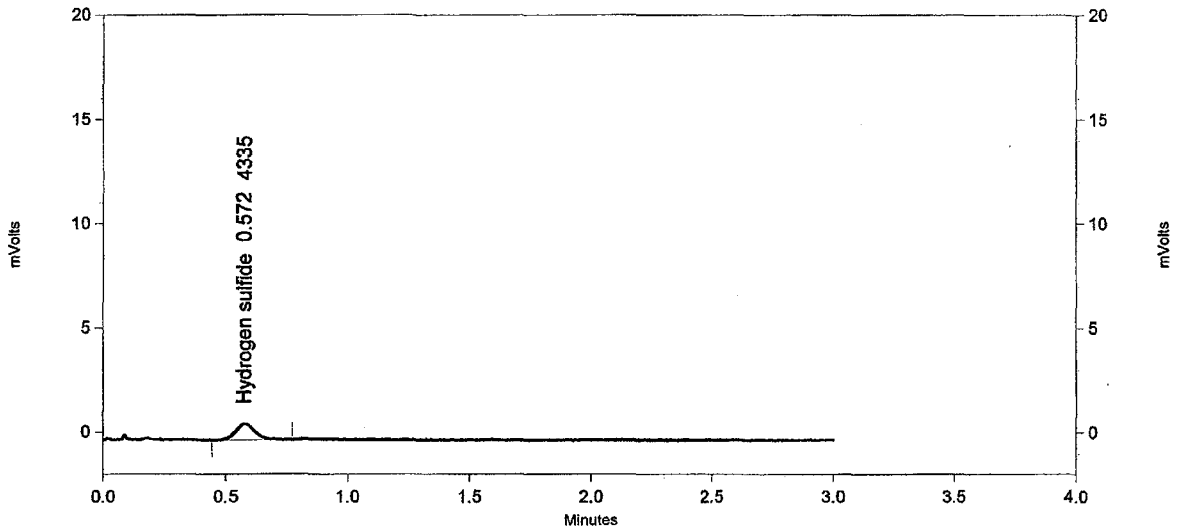


FPD2 Results

Name	Retention Time	Area	ESTD concentration (ppmv)
Hydrogen sulfide	0.575	3724	1.526
Totals		3724	1.526

H_2S Monitoring

Sample ID: H2S SRU Sampling
Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Data: C:\CLASS-VP\Data\1-6-11BP\H2S SRU Sampling 100
Product: Shimadzu Client/Server
Software: Version 7.2 SP1 Rev B
{Data Description} 500 UL 150C detector
Run Time: 1/6/2011 6:33:50 PM

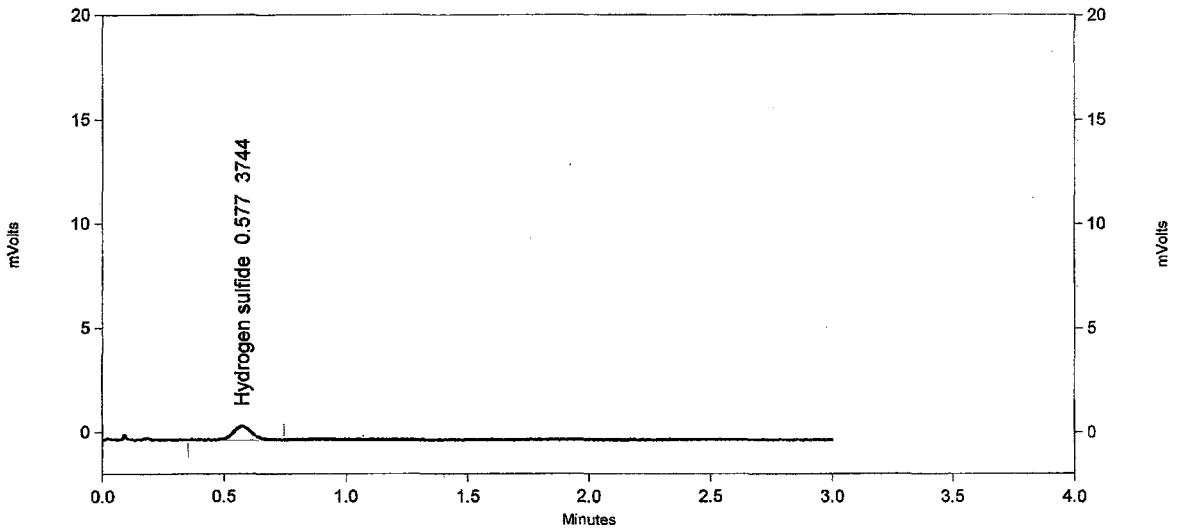


FPD2 Results

Name	Retention Time	Area	ESTD concentration (ppmv)
Hydrogen sulfide	0.572	4335	1.607
Totals		4335	1.607

H_2S Monitoring

Sample ID: H2S SRU Sampling
Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Data: C:\CLASS-VP\Data\1-6-11BP\H2S SRU Sampling 101
Product: Shimadzu Client/Server
Software: Version 7.2 SP1 Rev B
{Data Description} 500 UL 150C detector
Run Time: 1/6/2011 6:37:27 PM

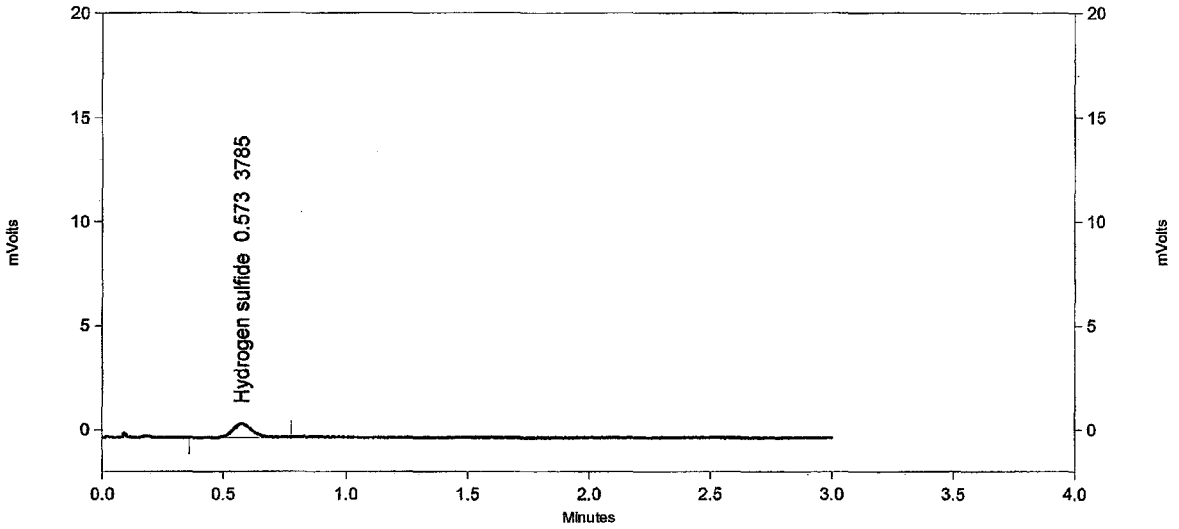


FPD2 Results

Name	Retention Time	Area	ESTD concentration (ppmv)
Hydrogen sulfide	0.577	3744	1.529
Totals		3744	1.529

H_2S Monitoring

Sample ID: H2S SRU Sampling
Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Data: C:\CLASS-VP\Data\1-6-11BP\H2S SRU Sampling 102
Product: Shimadzu Client/Server
Software: Version 7.2 SP1 Rev B
{Data Description} 500 UL 150C detector
Run Time: 1/6/2011 6:41:05 PM

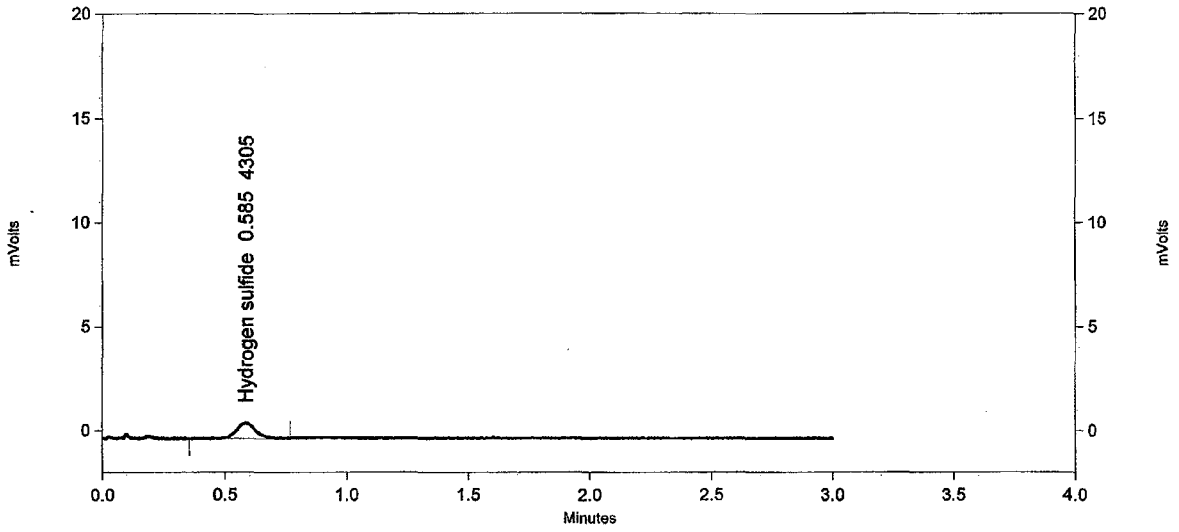


FPD2 Results

Name	Retention Time	Area	ESTD concentration (ppmv)
Hydrogen sulfide	0.573	3785	1.535
Totals		3785	1.535

H_2S Monitoring

Sample ID: H2S SRU Sampling
Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Data: C:\CLASS-VP\Data\1-6-11BP\H2S SRU Sampling 103
Product: Shimadzu Client/Server
Software: Version 7.2 SP1 Rev B
{Data Description} 500 UL 150C detector
Run Time: 1/6/2011 6:44:43 PM

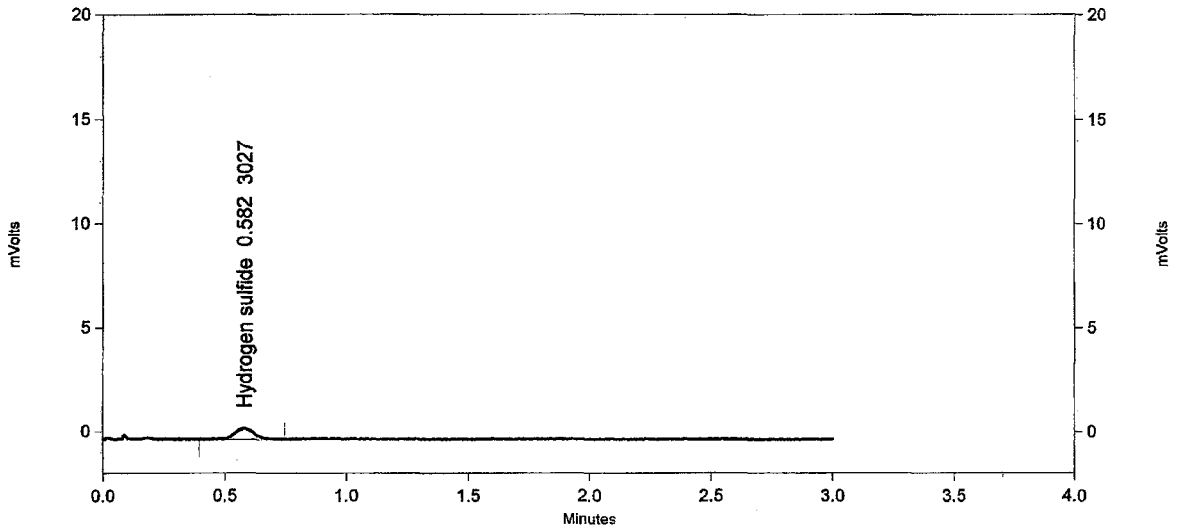


FPD2 Results

Name	Retention Time	Area	ESTD concentration (ppmv)
Hydrogen sulfide	0.585	4305	1.603
Totals		4305	1.603

H_2S Monitoring

Sample ID: H2S SRU Sampling
Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Data: C:\CLASS-VP\Data\1-6-11BP\H2S SRU Sampling 104
Product: Shimadzu Client/Server
Software: Version 7.2 SP1 Rev B
{Data Description} 500 UL 150C detector
Run Time: 1/6/2011 6:48:21 PM

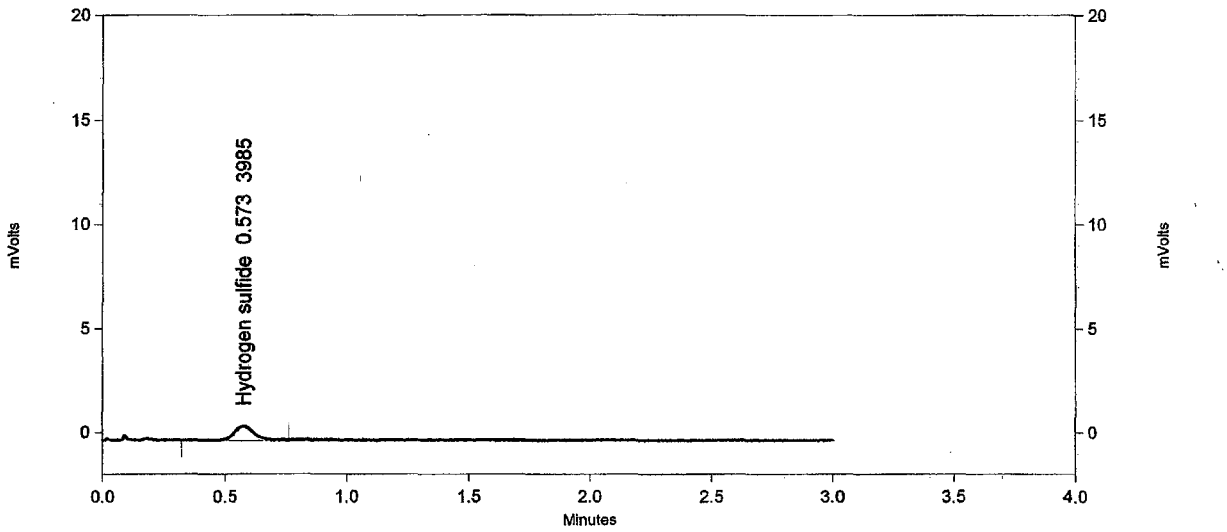


FPD2 Results

Name	Retention Time	Area	ESTD concentration (ppmv)
Hydrogen sulfide	0.582	3027	1.427
Totals		3027	1.427

H_2S Monitoring

Sample ID: H2S SRU Sampling
Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Data: C:\CLASS-VP\Data\1-6-11BP\H2S SRU Sampling 105
Product: Shimadzu Client/Server
Software: Version 7.2 SP1 Rev B
{Data Description} 500 UL 150C detector
Run Time: 1/6/2011 6:51:59 PM



FPD2 Results

Name	Retention Time	Area	ESTD concentration (ppmv)
Hydrogen sulfide	0.573	3985	1.561
Totals		3985	1.561

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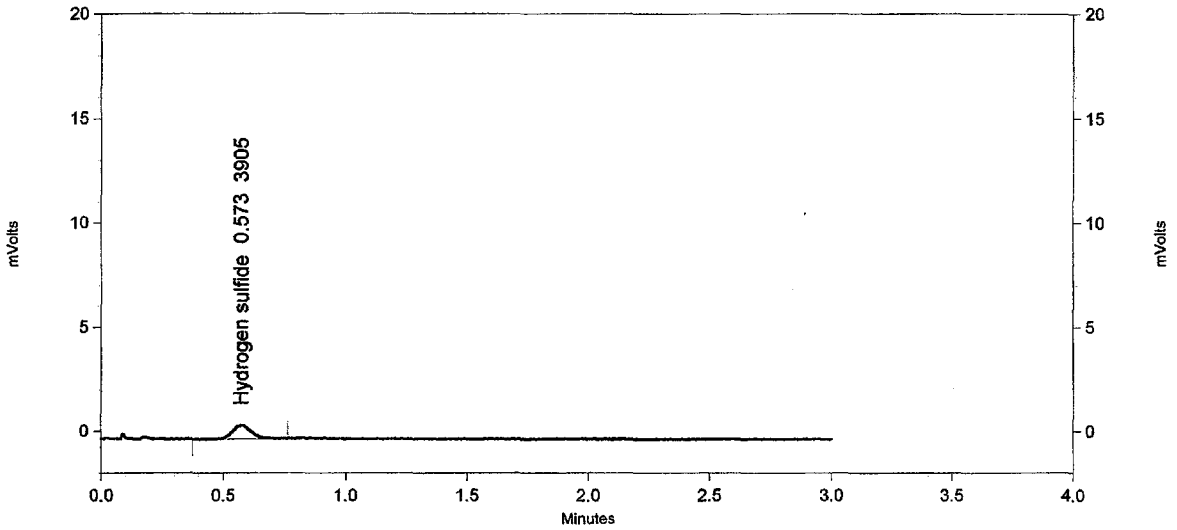
H_2S Monitoring

Sample ID: H2S SRU Sampling
Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Data: C:\CLASS-VP\Data\1-6-11BP\H2S SRU Sampling 106
Product: Shimadzu Client/Server
Software: Version 7.2 SP1 Rev B
{Data Description} 500 UL 150C detector
Run Time: 1/6/2011 6:55:38 PM

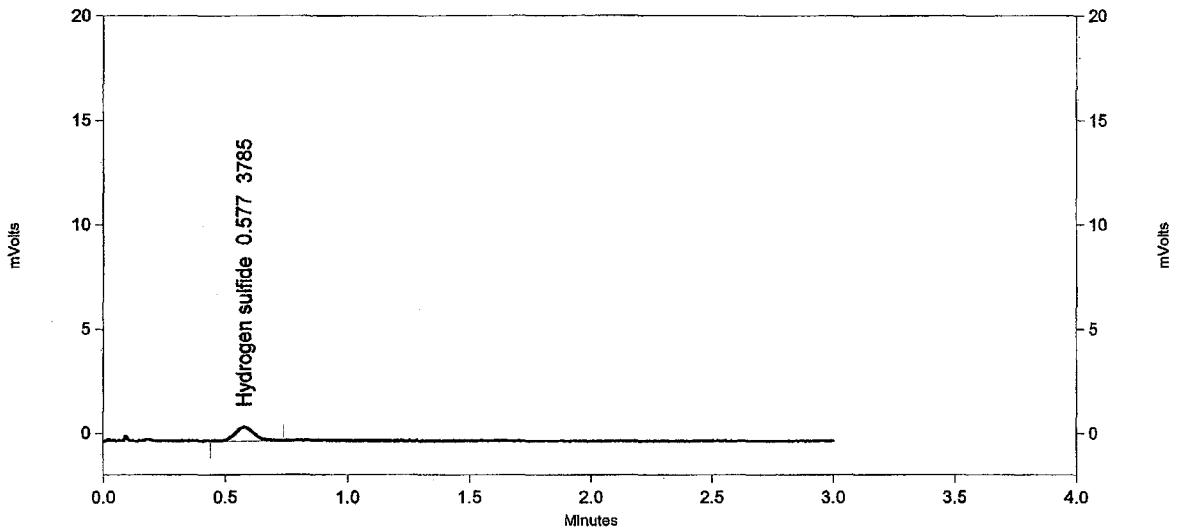


FPD2 Results

Name	Retention Time	Area	ESTD concentration (ppmv)
Hydrogen sulfide	0.573	3905	1.551
Totals		3905	1.551

H_2S Monitoring

Sample ID: H2S SRU Sampling
Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Data: C:\CLASS-VP\Data\1-6-11BP\H2S SRU Sampling 107
Product: Shimadzu Client/Server
Software: Version 7.2 SP1 Rev B
{Data Description} 500 UL 150C detector
Run Time: 1/6/2011 6:59:16 PM

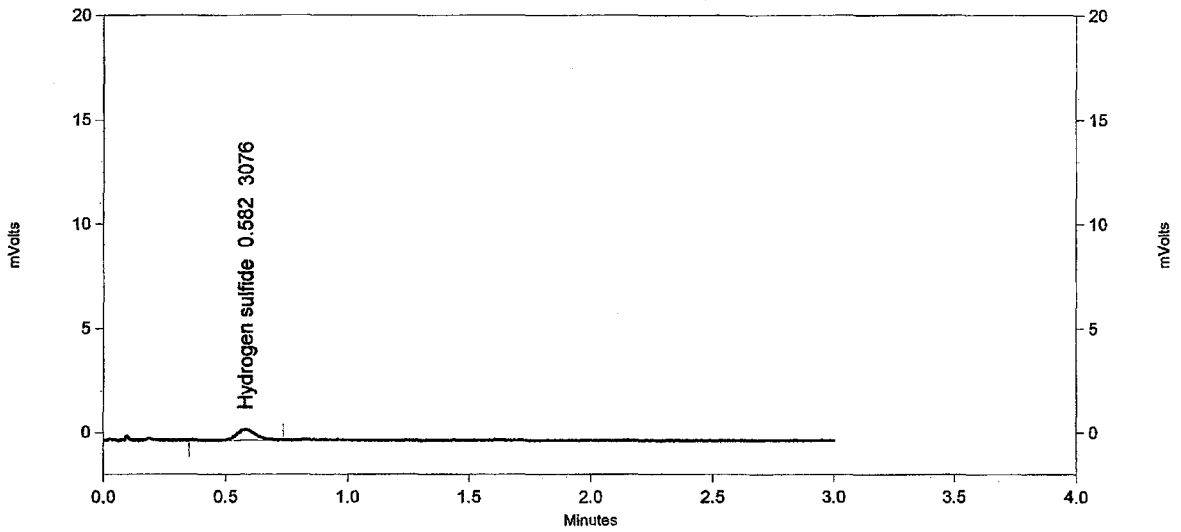


FPD2 Results

Name	Retention Time	Area	ESTD concentration (ppmv)
Hydrogen sulfide	0.577	3785	1.535
Totals		3785	1.535

H_2S Monitoring

Sample ID: H2S SRU Sampling
Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Data: C:\CLASS-VP\Data\1-6-11BP\H2S SRU Sampling 108
Product: Shimadzu Client/Server
Software: Version 7.2 SP1 Rev B
{Data Description} 500 UL 150C detector
Run Time: 1/6/2011 7:02:53 PM

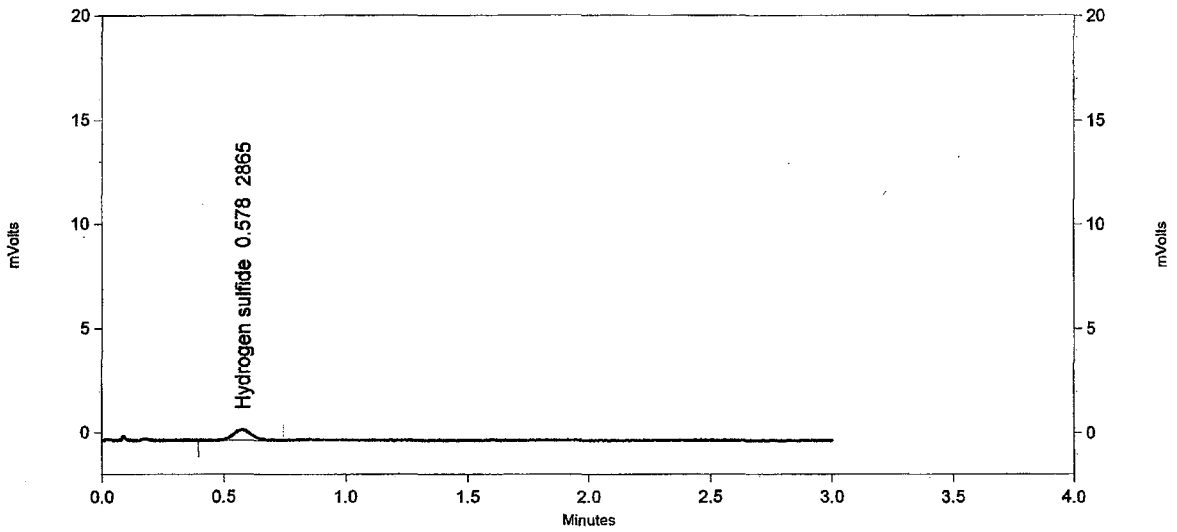


FPD2 Results

Name	Retention Time	Area	ESTD concentration (ppmv)
Hydrogen sulfide	0.582	3076	1.434
Totals		3076	1.434

H_2S Monitoring

Sample ID: H2S SRU Sampling
Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Data: C:\CLASS-VP\Data\1-6-11BP\H2S SRU Sampling 109
Product: Shimadzu Client/Server
Software: Version 7.2 SP1 Rev B
{Data Description} 500 UL 150C detector
Run Time: 1/6/2011 7:06:31 PM

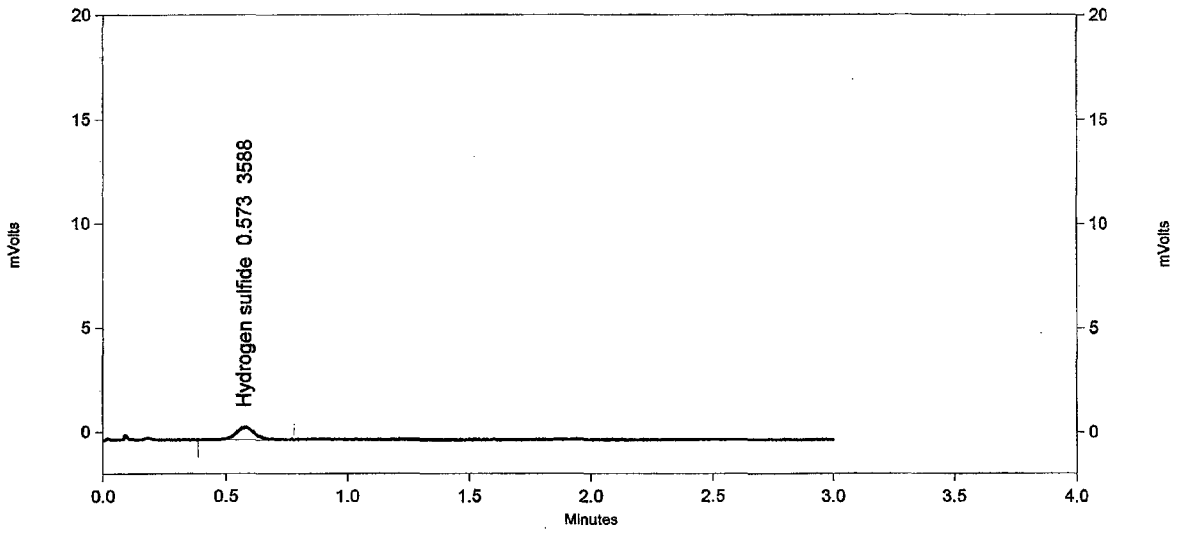


FPD2 Results

Name	Retention Time	Area	ESTD concentration (ppmv)
Hydrogen sulfide	0.578	2865	1.402
Totals		2865	1.402

H_2S Monitoring

Sample ID: H2S SRU Sampling
Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Data: C:\CLASS-VP\Data\1-6-11BP\H2S SRU Sampling 110
Product: Shimadzu Client/Server
Software: Version 7.2 SP1 Rev B
{Data Description} 500 UL 150C detector
Run Time: 1/6/2011 7:10:09 PM

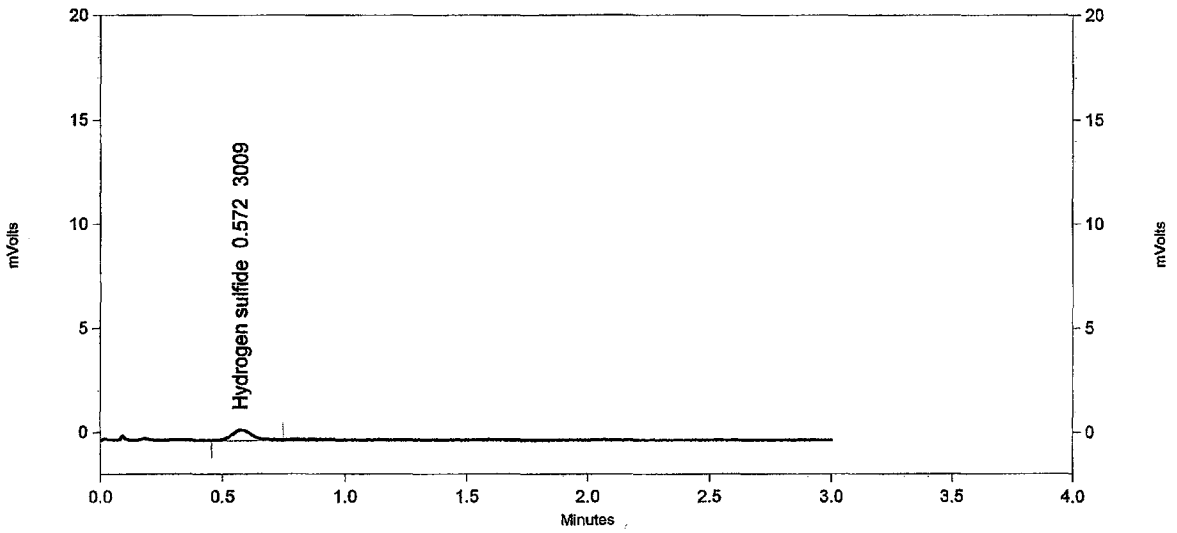


FPD2 Results

Name	Retention Time	Area	ESTD concentration (ppmv)
Hydrogen sulfide	0.573	3588	1.508
Totals		3588	1.508

H_2S Monitoring

Sample ID: H2S SRU Sampling
Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Data: C:\CLASS-VP\Data\1-6-11BP\H2S SRU Sampling 111
Product: Shimadzu Client/Server
Software: Version 7.2 SP1 Rev B
{Data Description} 500 UL 150C detector
Run Time: 1/6/2011 7:13:47 PM

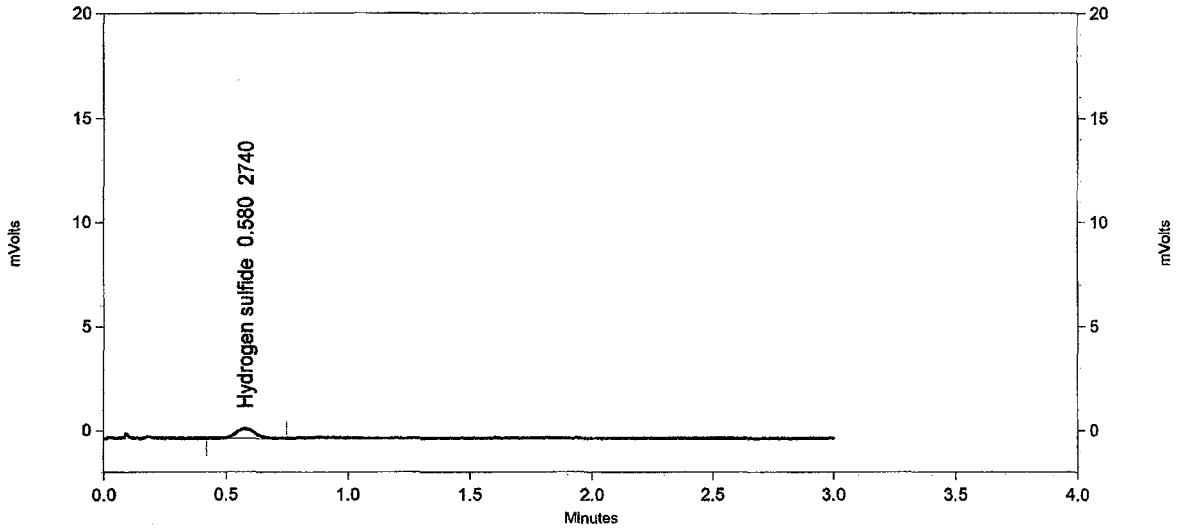


FPD2 Results

Name	Retention Time	Area	ESTD concentration (ppmv)
Hydrogen sulfide	0.572	3009	1.424
Totals		3009	1.424

H_2S Monitoring

Sample ID: H2S SRU Sampling
Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Data: C:\CLASS-VP\Data\1-6-11BP\H2S SRU Sampling 112
Product: Shimadzu Client/Server
Software: Version 7.2 SP1 Rev B
{Data Description} 500 UL 150C detector
Run Time: 1/6/2011 7:17:27 PM

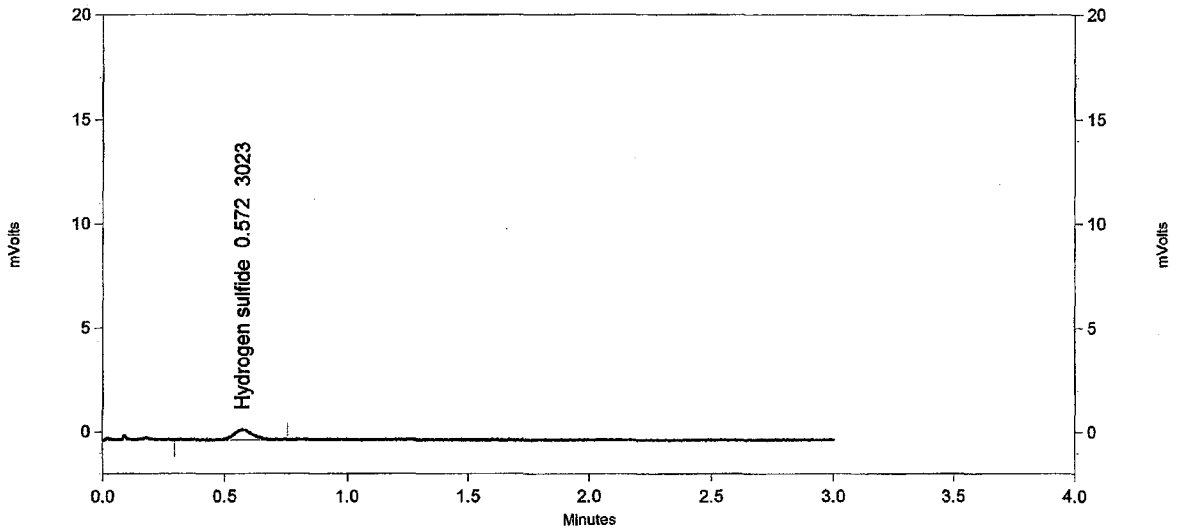


FPD2 Results

Name	Retention Time	Area	ESTD concentration (ppmv)
Hydrogen sulfide	0.580	2740	1.383
Totals		2740	1.383

H_2S Monitoring

Sample ID: H2S SRU Sampling
Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Data: C:\CLASS-VP\Data\1-6-11BP\H2S SRU Sampling 113
Product: Shimadzu Client/Server
Software: Version 7.2 SP1 Rev B
{Data Description} 500 UL 150C detector
Run Time: 1/6/2011 7:21:04 PM



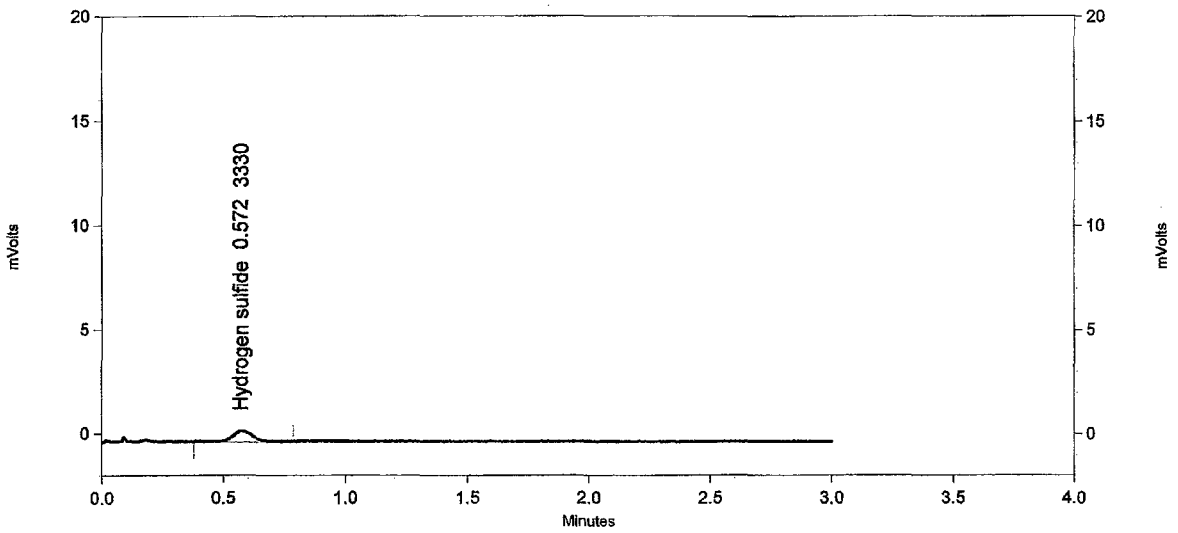
FPD2 Results

Name	Retention Time	Area	ESTD concentration (ppmv)
Hydrogen sulfide	0.572	3023	1.426
Totals		3023	1.426

Uncontrolled if copied or printed.

H2S Monitoring

Sample ID: H2S SRU Sampling
Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Data: C:\CLASS-VP\Data\1-6-11BP\H2S SRU Sampling 114
Product: Shimadzu Client/Server
Software: Version 7.2 SP1 Rev B
{Data Description} 500 UL 150C detector
Run Time: 1/6/2011 7:24:43 PM

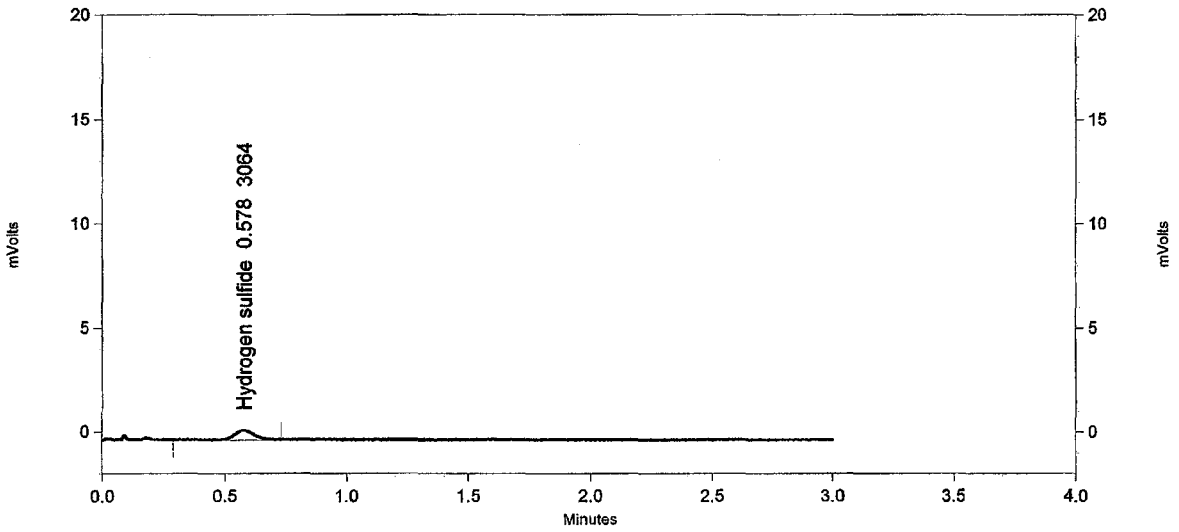


FPD2 Results

Name	Retention Time	Area	ESTD concentration (ppmv)
Hydrogen sulfide	0.572	3330	1.471
Totals		3330	1.471

H2S Monitoring

Sample ID: H2S SRU Sampling
Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Data: C:\CLASS-VP\Data\1-6-11BP\H2S SRU Sampling 115
Product: Shimadzu Client/Server
Software: Version 7.2 SP1 Rev B
{Data Description} 500 UL 150C detector
Run Time: 1/6/2011 7:28:21 PM



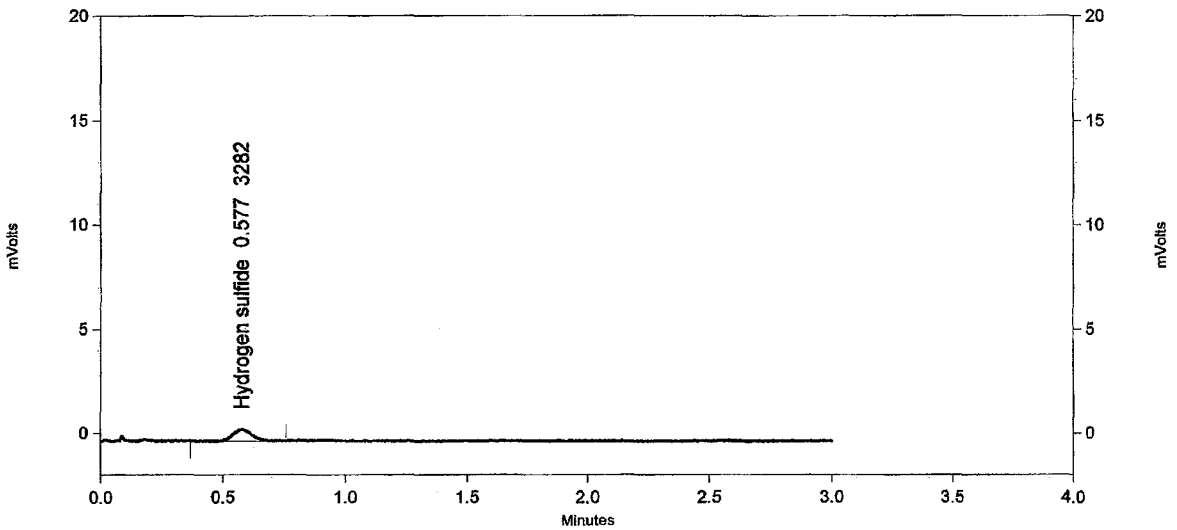
FPD2 Results

Name	Retention Time	Area	ESTD concentration (ppmv)
Hydrogen sulfide	0.578	3064	1.432
Totals		3064	1.432

Uncontrolled if copied or printed.

H_2S Monitoring

Sample ID: H2S SRU Sampling
Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Data: C:\CLASS-VP\Data\1-6-11BP\H2S SRU Sampling 116
Product: Shimadzu Client/Server
Software: Version 7.2 SP1 Rev B
{Data Description} 500 UL 150C detector
Run Time: 1/6/2011 7:31:59 PM

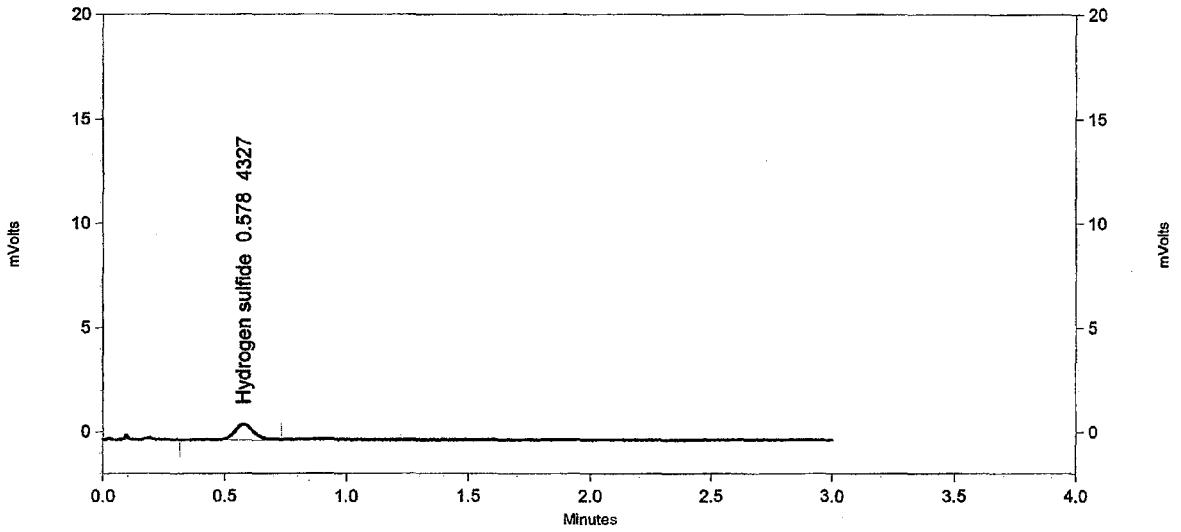


FPD2 Results

Name	Retention Time	Area	ESTD concentration (ppmv)
Hydrogen sulfide	0.577	3282	1.464
Totals		3282	1.464

H2S Monitoring

Sample ID: H2S SRU Sampling
Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Data: C:\CLASS-VP\Data\1-6-11BP\H2S SRU Sampling 117
Product: Shimadzu Client/Server
Software: Version 7.2 SP1 Rev B
{Data Description} 500 UL 150C detector
Run Time: 1/6/2011 7:35:37 PM

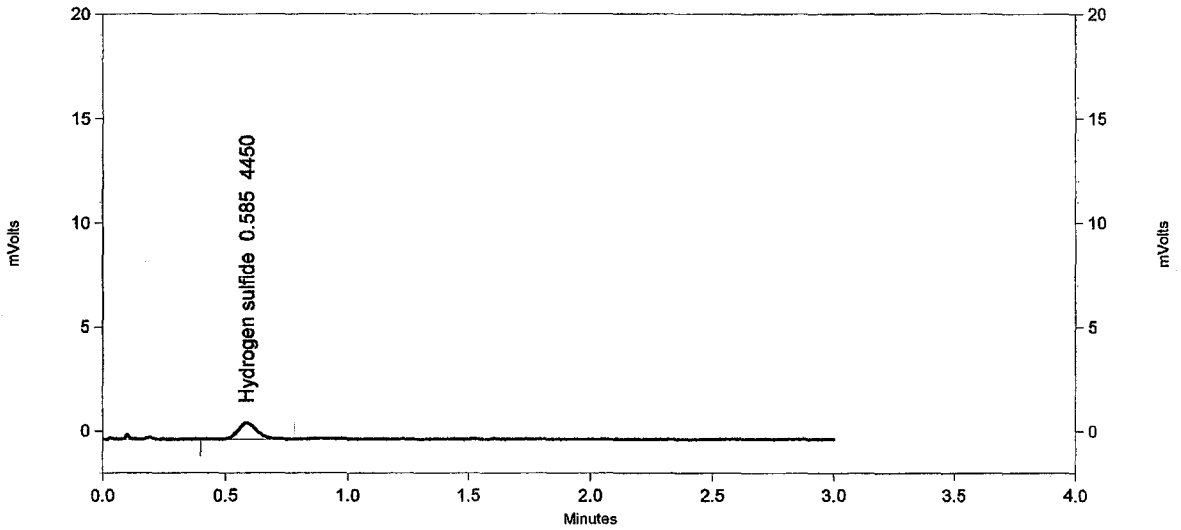


FPD2 Results

Name	Retention Time	Area	ESTD concentration (ppmv)
Hydrogen sulfide	0.578	4327	1.606
Totals		4327	1.606

H_2S Monitoring

Sample ID: H2S SRU Sampling
Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Data: C:\CLASS-VP\Data\1-6-11BP\H2S SRU Sampling 118
Product: Shimadzu Client/Server
Software: Version 7.2 SP1 Rev B
{Data Description} 500 UL 150C detector
Run Time: 1/6/2011 7:39:16 PM

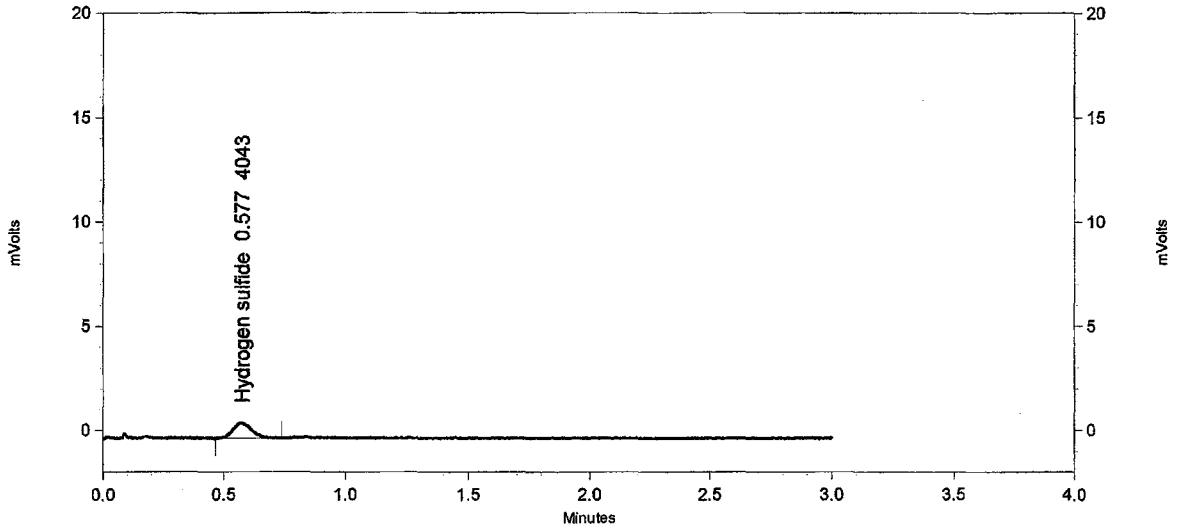


FPD2 Results

Name	Retention Time	Area	ESTD concentration (ppmv)
Hydrogen sulfide	0.585	4450	1.621
Totals		4450	1.621

H_2S Monitoring

Sample ID: H2S SRU Sampling
Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Data: C:\CLASS-VP\Data\1-6-11BP\H2S SRU Sampling 119
Product: Shimadzu Client/Server
Software: Version 7.2 SP1 Rev B
{Data Description} 500 UL 150C detector
Run Time: 1/6/2011 7:42:53 PM



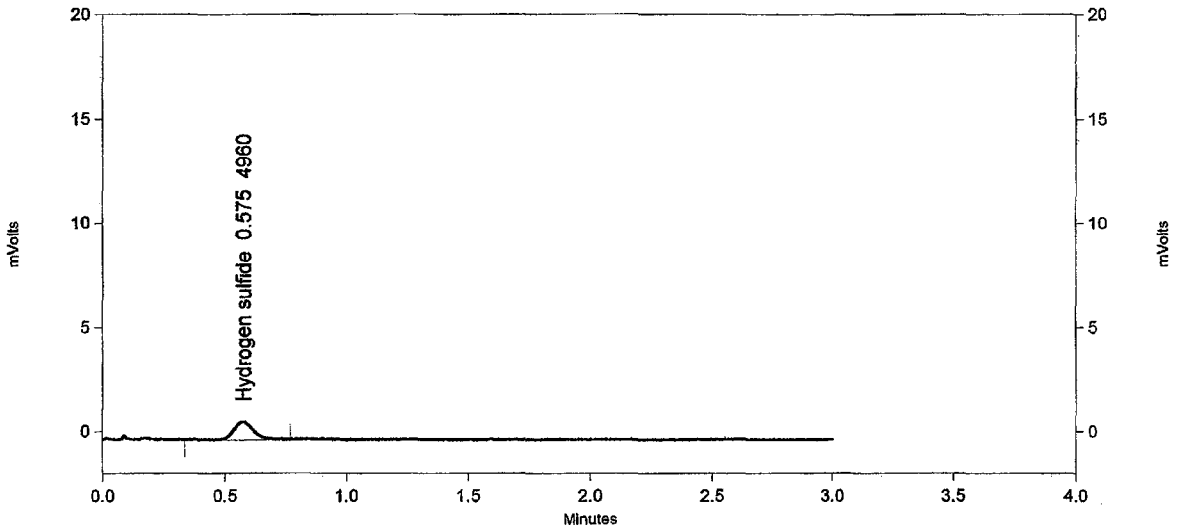
FPD2 Results

Name	Retention Time	Area	ESTD concentration (ppmv)
Hydrogen sulfide	0.577	4043	1.569
Totals		4043	1.569

Uncontrolled if copied or printed.

H2S Monitoring

Sample ID: H2S SRU Sampling
Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Data: C:\CLASS-VP\Data\1-6-11BP\H2S SRU Sampling 120
Product: Shimadzu Client/Server
Software: Version 7.2 SP1 Rev B
{Data Description} 500 UL 150C detector
Run Time: 1/6/2011 7:46:33 PM

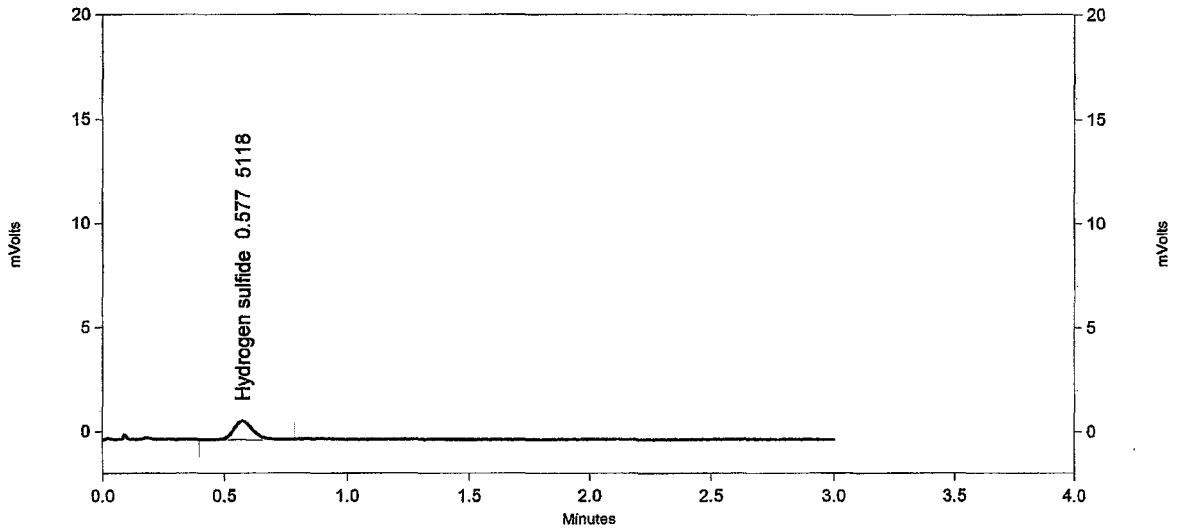


FPD2 Results

Name	Retention Time	Area	ESTD concentration (ppmv)
Hydrogen sulfide	0.575	4960	1.684
Totals		4960	1.684

H_2S Monitoring

Sample ID: H2S SRU Sampling
Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Data: C:\CLASS-VP\Data\1-6-11BP\H2S SRU Sampling 121
Product: Shimadzu Client/Server
Software: Version 7.2 SP1 Rev B
{Data Description} 500 UL 150C detector
Run Time: 1/6/2011 7:50:11 PM

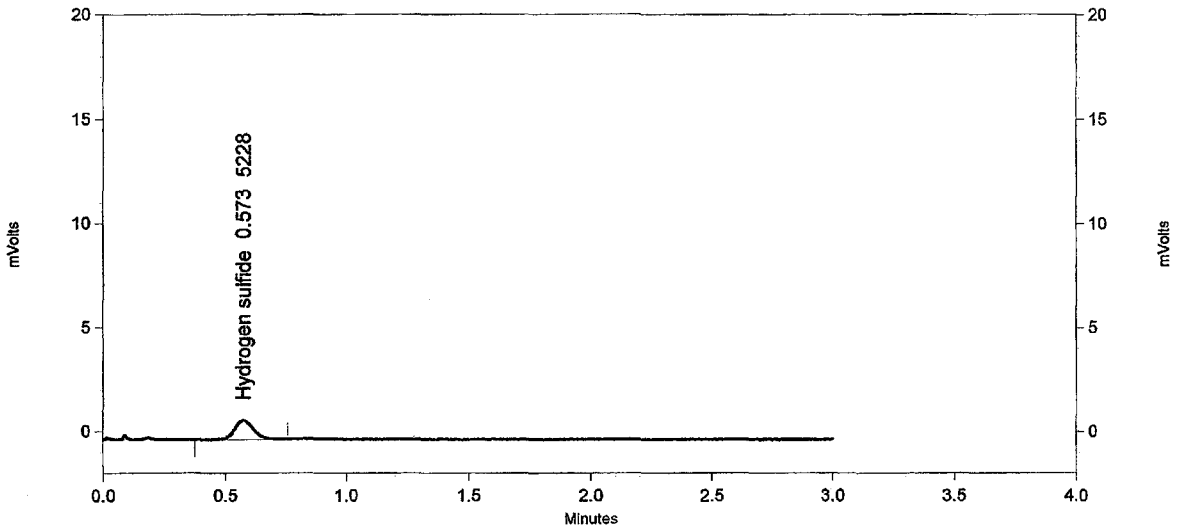


FPD2 Results

Name	Retention Time	Area	ESTD concentration (ppmv)
Hydrogen sulfide	0.577	5118	1.703
Totals		5118	1.703

H_2S Monitoring

Sample ID: H2S SRU Sampling
Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Data: C:\CLASS-VP\Data\1-6-11BP\H2S SRU Sampling 122
Product: Shimadzu Client/Server
Software: Version 7.2 SP1 Rev B
{Data Description} 500 UL 150C detector
Run Time: 1/6/2011 7:53:48 PM

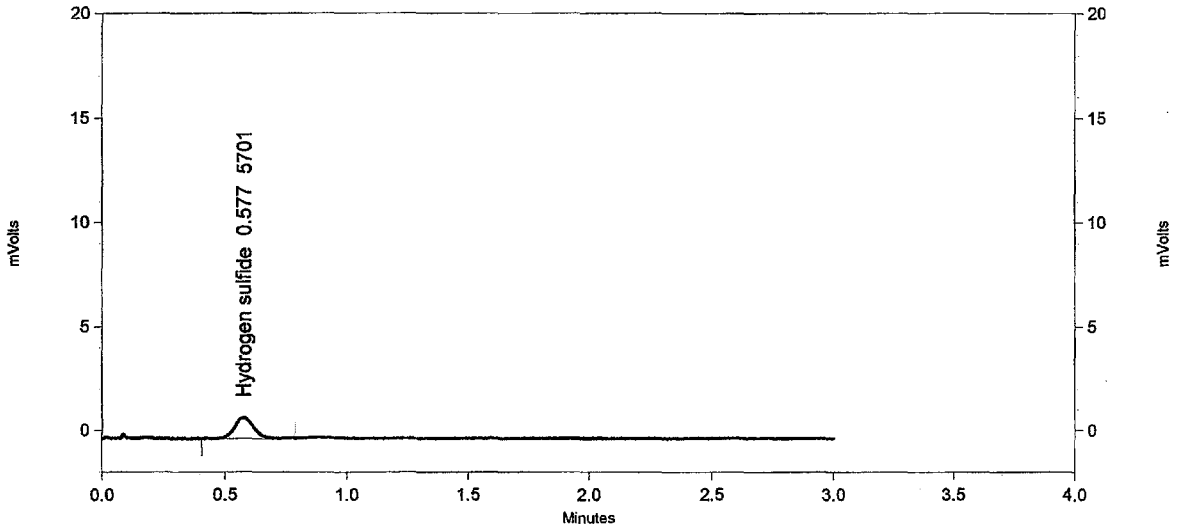


FPD2 Results

Name	Retention Time	Area	ESTD concentration (ppmv)
Hydrogen sulfide	0.573	5228	1.716
Totals		5228	1.716

H_2S Monitoring

Sample ID: H2S SRU Sampling
Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Data: C:\CLASS-VP\Data\1-6-11BP\H2S SRU Sampling 123
Product: Shimadzu Client/Server
Software: Version 7.2 SP1 Rev B
{Data Description} 500 UL 150C detector
Run Time: 1/6/2011 7:57:26 PM

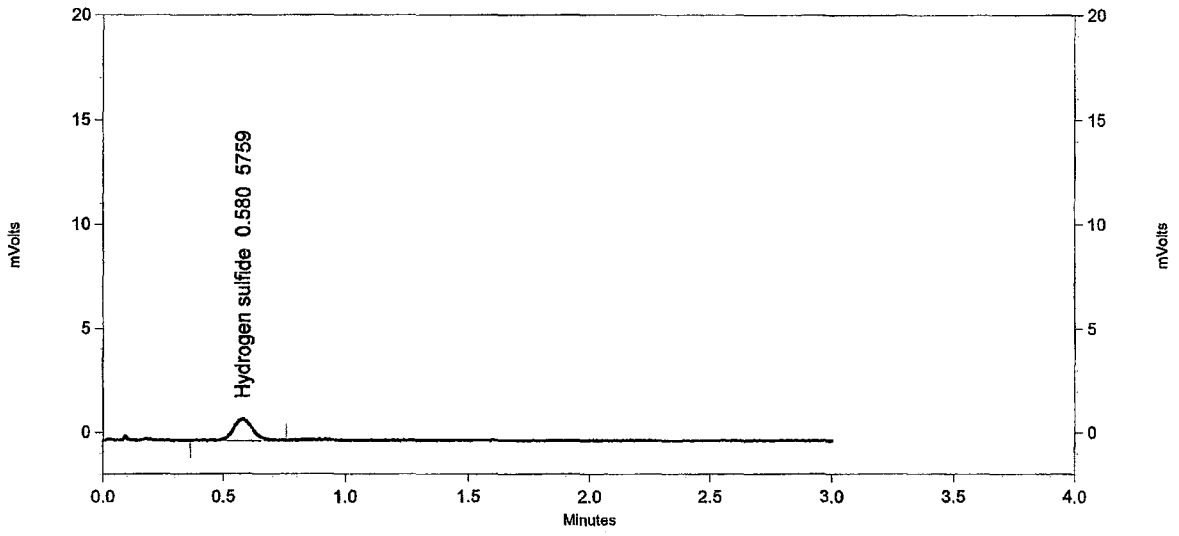


FPD2 Results

Name	Retention Time	Area	ESTD concentration (ppmv)
Hydrogen sulfide	0.577	5701	1.770
Totals		5701	1.770

H_2S Monitoring

Sample ID: H2S SRU Sampling
Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Data: C:\CLASS-VP\Data\1-6-11BP\H2S SRU Sampling 124
Product: Shimadzu Client/Server
Software: Version 7.2 SP1 Rev B
{Data Description} 500 UL 150C detector
Run Time: 1/6/2011 8:01:04 PM

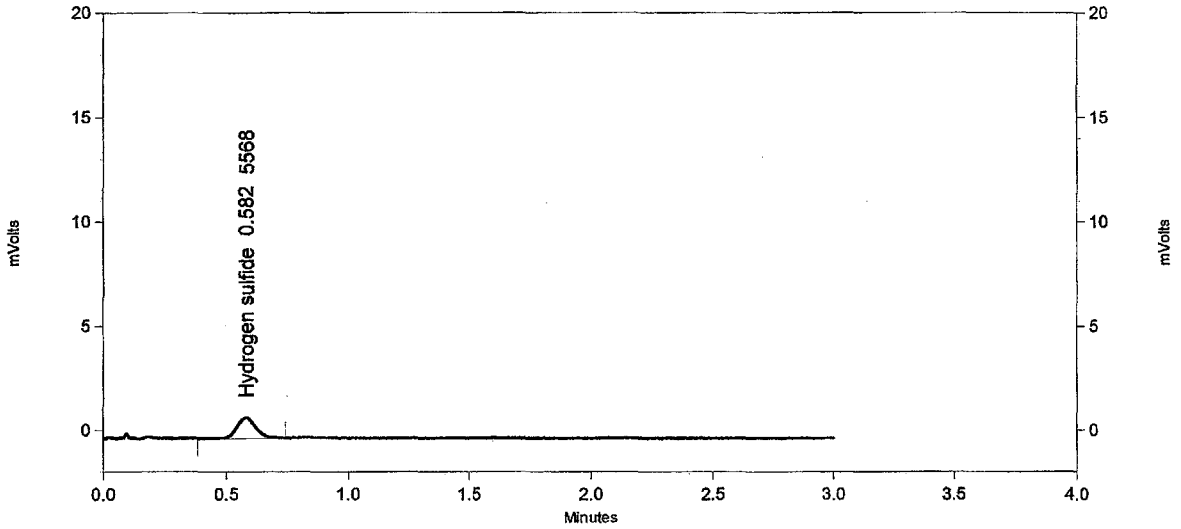


FPD2 Results

Name	Retention Time	Area	ESTD concentration (ppmv)
Hydrogen sulfide	0.580	5759	1.776
Totals		5759	1.776

H_2S Monitoring

Sample ID: H2S SRU Sampling
Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Data: C:\CLASS-VP\Data\1-6-11BP\H2S SRU Sampling 125
Product: Shimadzu Client/Server
Software: Version 7.2 SP1 Rev B
{Data Description} 500 UL 150C detector
Run Time: 1/6/2011 8:04:42 PM

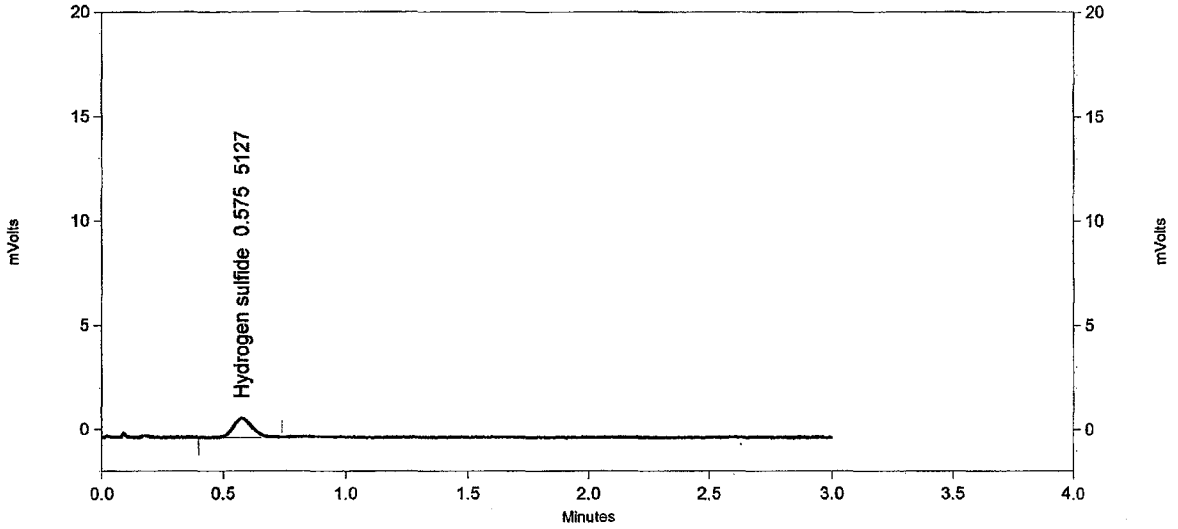


FPD2 Results

Name	Retention Time	Area	ESTD concentration (ppmv)
Hydrogen sulfide	0.582	5568	1.755
Totals		5568	1.755

H_2S Monitoring

Sample ID: H2S SRU Sampling
Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Data: C:\CLASS-VP\Data\1-6-11BP\H2S SRU Sampling 126
Product: Shimadzu Client/Server
Software: Version 7.2 SP1 Rev B
{Data Description} 500 UL 150C detector
Run Time: 1/6/2011 8:08:19 PM

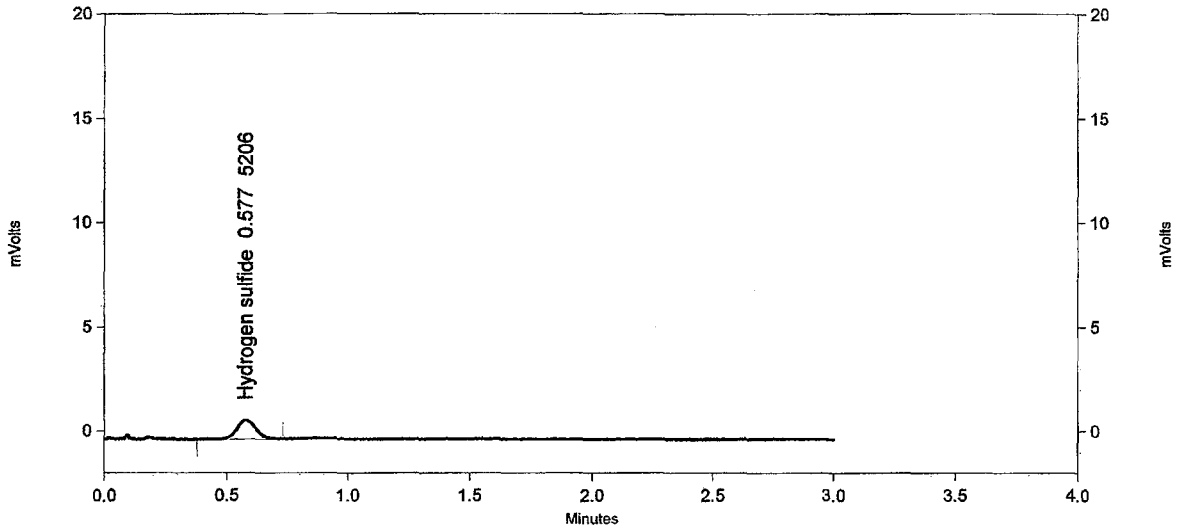


FPD2 Results

Name	Retention Time	Area	ESTD concentration (ppmv)
Hydrogen sulfide	0.575	5127	1.704
Totals		5127	1.704

H_2S Monitoring

Sample ID: H2S SRU Sampling
Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Data: C:\CLASS-VP\Data\1-6-11BP\H2S SRU Sampling 127
Product: Shimadzu Client/Server
Software: Version 7.2 SP1 Rev B
{Data Description} 500 UL 150C detector
Run Time: 1/6/2011 8:11:58 PM

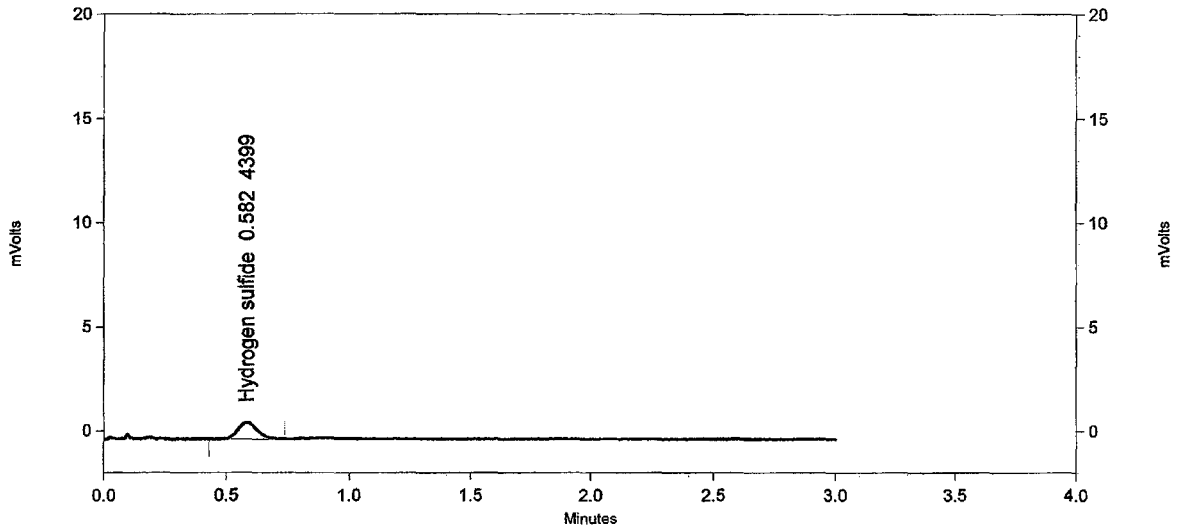


FPD2 Results

Name	Retention Time	Area	ESTD concentration (ppmv)
Hydrogen sulfide	0.577	5206	1.713
Totals		5206	1.713

H_2S Monitoring

Sample ID: H2S SRU Sampling
Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Data: C:\CLASS-VP\Data\1-6-11BP\H2S SRU Sampling 128
Product: Shimadzu Client/Server
Software: Version 7.2 SP1 Rev B
{Data Description} 500 UL 150C detector
Run Time: 1/6/2011 8:15:35 PM

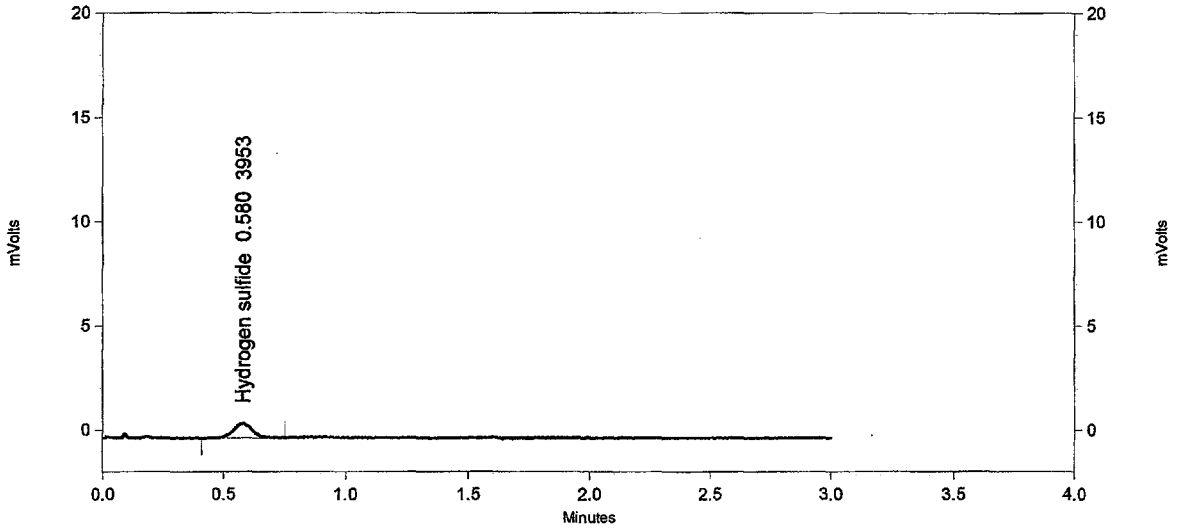


FPD2 Results

Name	Retention Time	Area	ESTD concentration (ppmv)
Hydrogen sulfide	0.582	4399	1.615
Totals		4399	1.615

H_2S Monitoring

Sample ID: H2S SRU Sampling
Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Data: C:\CLASS-VP\Data\1-6-11BP\H2S SRU Sampling 129
Product: Shimadzu Client/Server
Software: Version 7.2 SP1 Rev B
{Data Description} 500 UL 150C detector
Run Time: 1/6/2011 8:19:15 PM

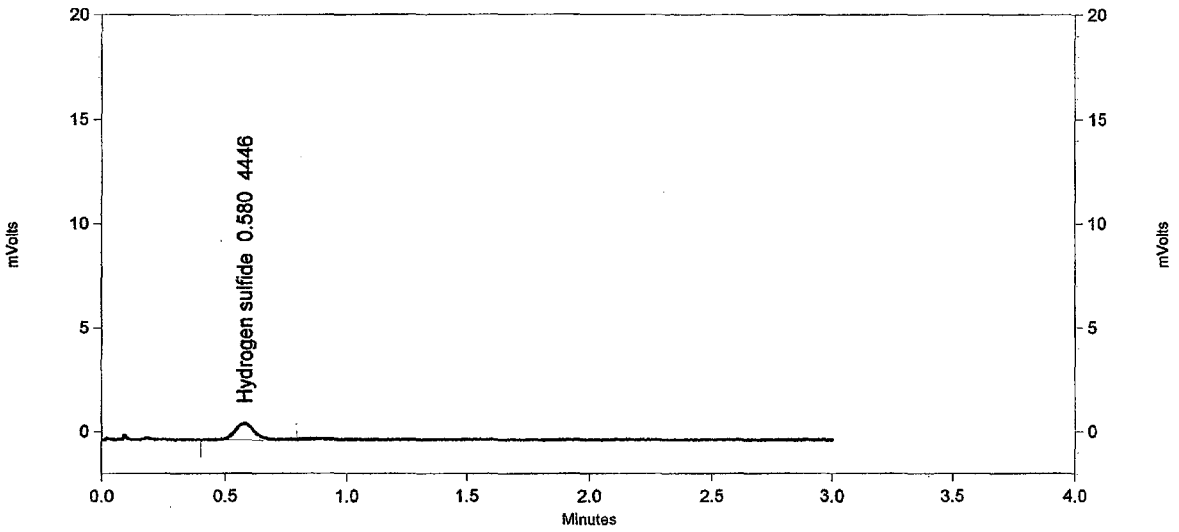


FPD2 Results

Name	Retention Time	Area	ESTD concentration (ppmv)
Hydrogen sulfide	0.580	3953	1.557
Totals		3953	1.557

H_2S Monitoring

Sample ID: H2S SRU Sampling
Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Data: C:\CLASS-VP\Data\1-6-11BP\H2S SRU Sampling 130
Product: Shimadzu Client/Server
Software: Version 7.2 SP1 Rev B
{Data Description} 500 UL 150C detector
Run Time: 1/6/2011 8:22:52 PM

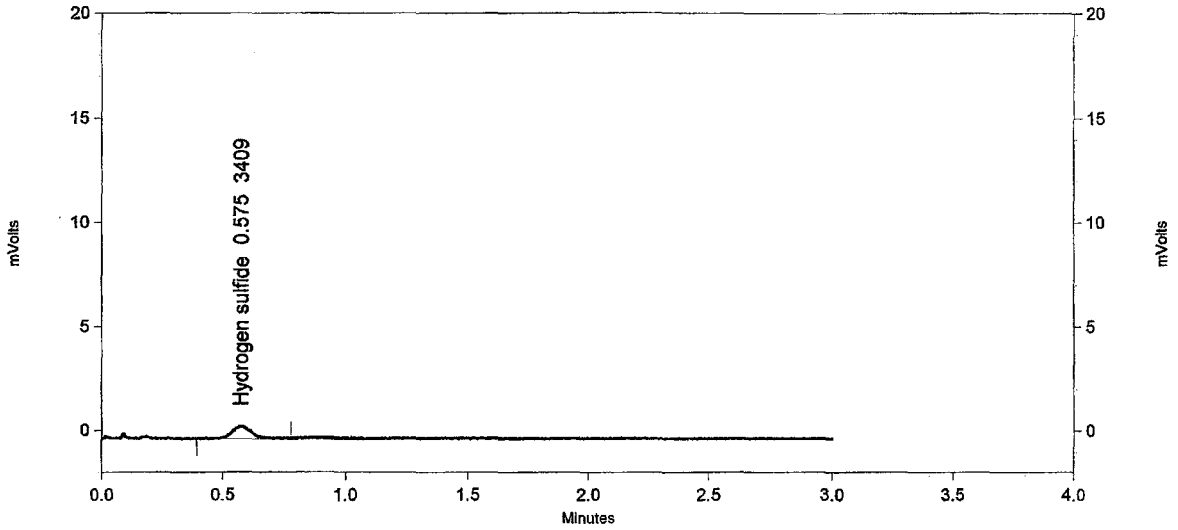


FPD2 Results

Name	Retention Time	Area	ESTD concentration (ppmv)
Hydrogen sulfide	0.580	4446	1.621
Totals		4446	1.621

H_2S Monitoring

Sample ID: H2S SRU Sampling
Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Data: C:\CLASS-VP\Data\1-6-11BP\H2S SRU Sampling 131
Product: Shimadzu Client/Server
Software: Version 7.2 SP1 Rev B
{Data Description} 500 UL 150C detector
Run Time: 1/6/2011 8:26:30 PM

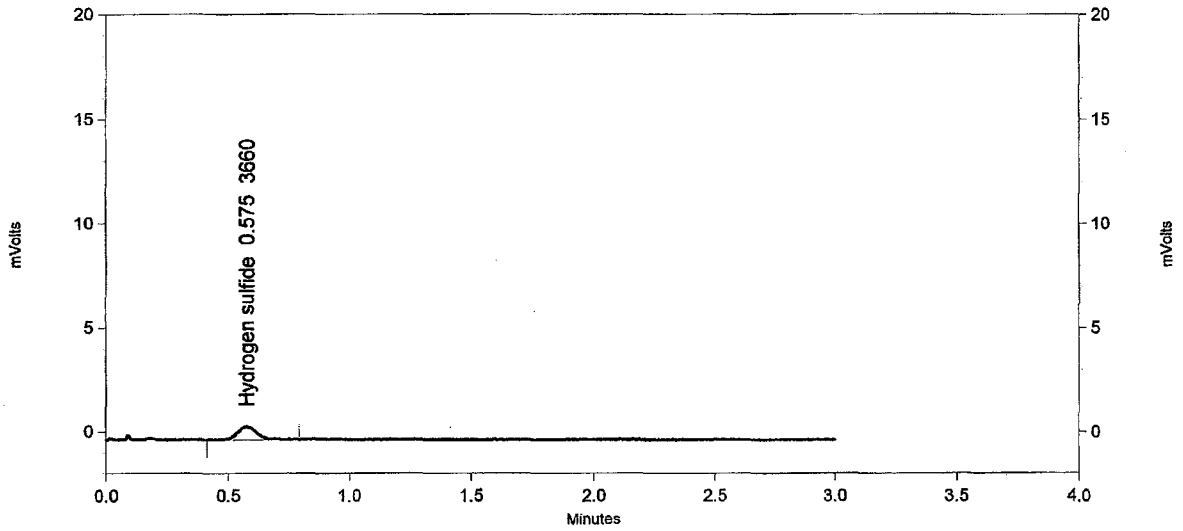


FPD2 Results

Name	Retention Time	Area	ESTD concentration (ppmv)
Hydrogen sulfide	0.575	3409	1.482
Totals		3409	1.482

H_2S Monitoring

Sample ID: H2S SRU Sampling
Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Data: C:\CLASS-VP\Data\1-6-11BP\H2S SRU Sampling 132
Product: Shimadzu Client/Server
Software: Version 7.2 SP1 Rev B
{Data Description} 500 UL 150C detector
Run Time: 1/6/2011 8:30:08 PM



FPD2 Results

Name	Retention Time	Area	ESTD concentration (ppmv)
Hydrogen sulfide	0.575	3660	1.518
Totals		3660	1.518

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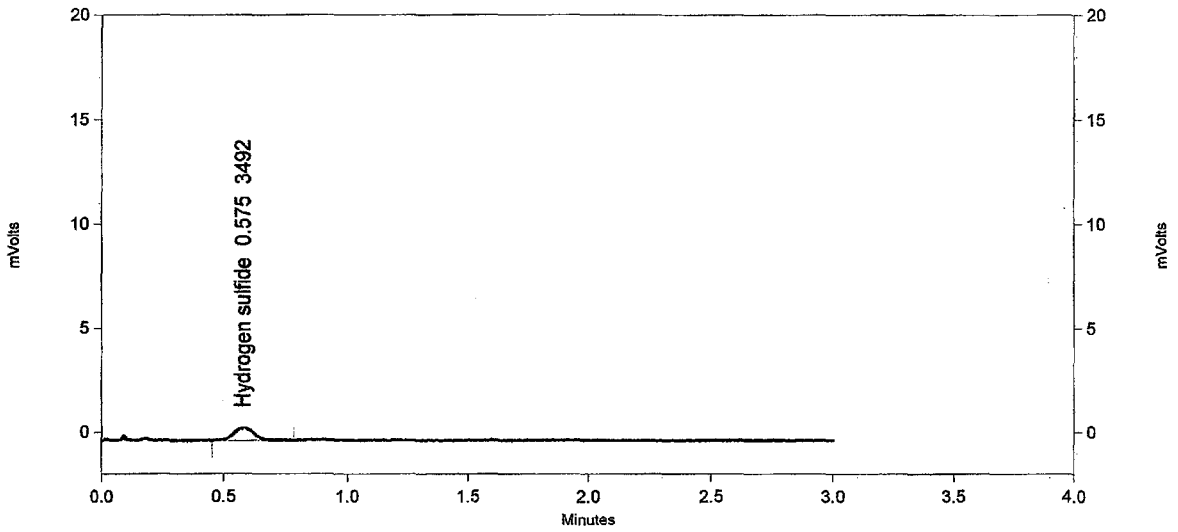
H_2S Monitoring

Sample ID: H2S SRU Sampling
Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Data: C:\CLASS-VP\Data\1-6-11BP\H2S SRU Sampling 133
Product: Shimadzu Client/Server
Software: Version 7.2 SP1 Rev B
{Data Description} 500 UL 150C detector
Run Time: 1/6/2011 8:33:47 PM

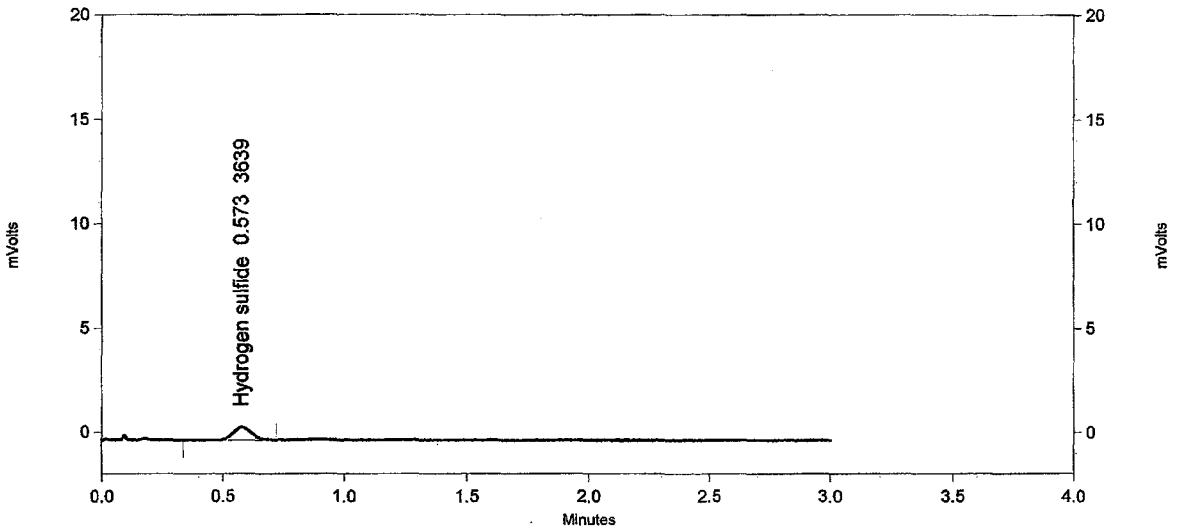


FPD2 Results

Name	Retention Time	Area	ESTD concentration (ppmv)
Hydrogen sulfide	0.575	3492	1.494
Totals		3492	1.494

H_2S Monitoring

Sample ID: H2S SRU Sampling
Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Data: C:\CLASS-VP\Data\1-6-11BP\H2S SRU Sampling 134
Product: Shimadzu Client/Server
Software: Version 7.2 SP1 Rev B
{Data Description} 500 UL 150C detector
Run Time: 1/6/2011 8:37:26 PM

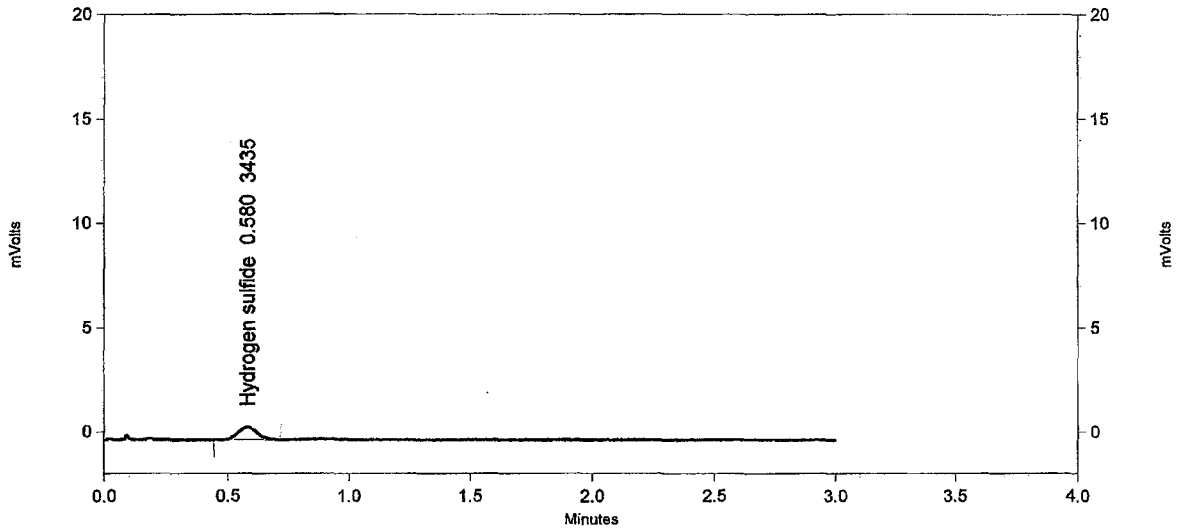


FPD2 Results

Name	Retention Time	Area	ESTD concentration (ppmv)
Hydrogen sulfide	0.573	3639	1.515
Totals		3639	1.515

H_2S Monitoring

Sample ID: H2S SRU Sampling
Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Data: C:\CLASS-VP\Data\1-6-11BP\H2S SRU Sampling 135
Product: Shimadzu Client/Server
Software: Version 7.2 SP1 Rev B
{Data Description} 500 UL 150C detector
Run Time: 1/6/2011 8:41:03 PM

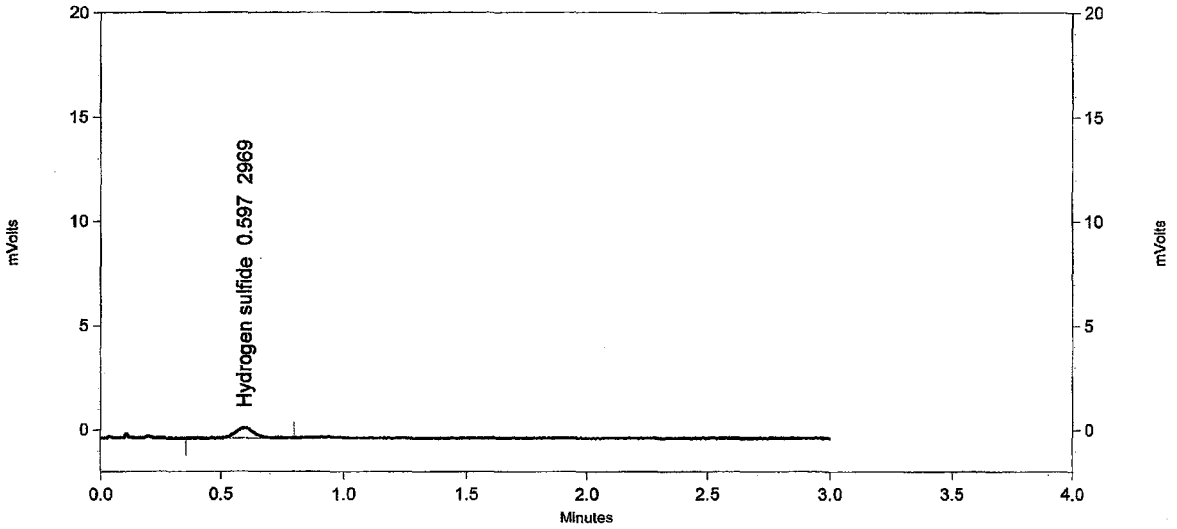


FPD2 Results

Name	Retention Time	Area	ESTD concentration (ppmv)
Hydrogen sulfide	0.580	3435	1.486
Totals		3435	1.486

H_2S Monitoring

Sample ID: H2S SRU Sampling
Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Data: C:\CLASS-VP\Data\1-6-11BP\H2S SRU Sampling 136
Product: Shimadzu Client/Server
Software: Version 7.2 SP1 Rev B
{Data Description} 500 UL 150C detector
Run Time: 1/6/2011 8:44:49 PM

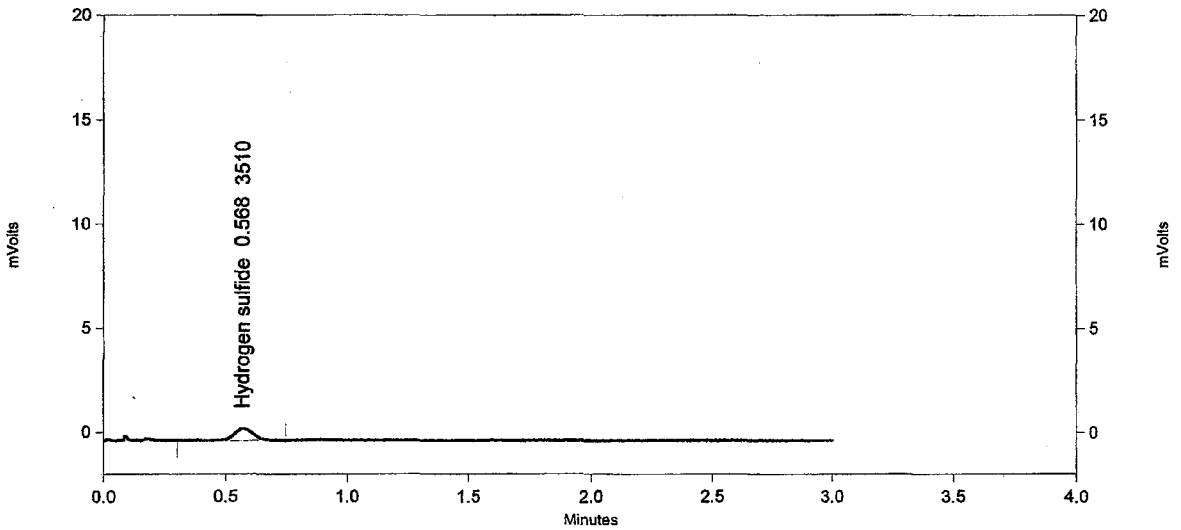


FPD2 Results

Name	Retention Time	Area	ESTD concentration (ppmv)
Hydrogen sulfide	0.597	2969	1.418
Totals		2969	1.418

H_2S Monitoring

Sample ID: H2S SRU Sampling
Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Data: C:\CLASS-VP\Data\1-6-11BP\H2S SRU Sampling 137
Product: Shimadzu Client/Server
Software: Version 7.2 SP1 Rev B
{Data Description} 500 UL 150C detector
Run Time: 1/6/2011 8:48:26 PM

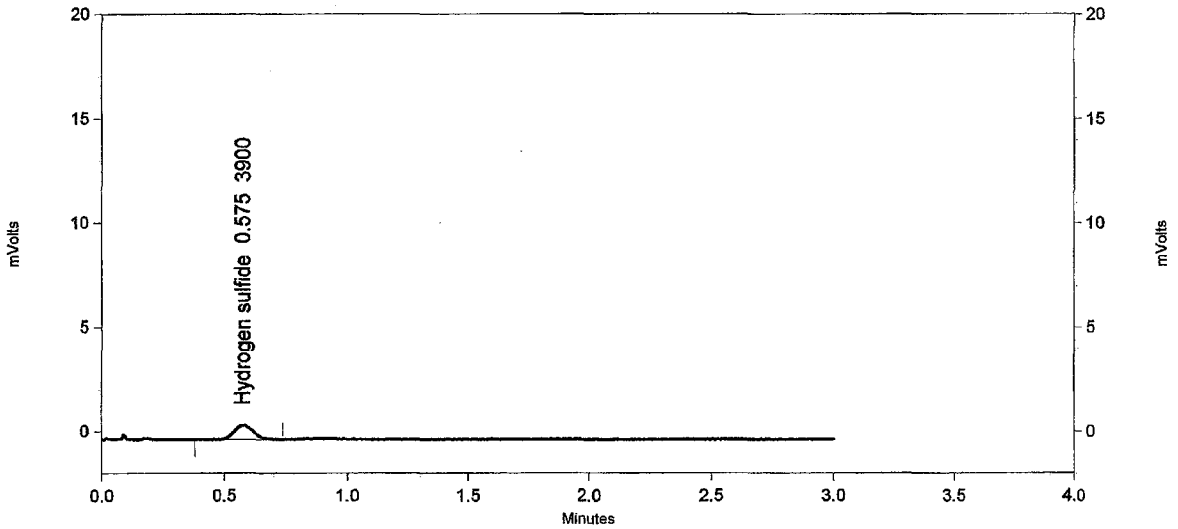


FPD2 Results

Name	Retention Time	Area	ESTD concentration (ppmv)
Hydrogen sulfide	0.568	3510	1.497
Totals		3510	1.497

H_2S Monitoring

Sample ID: H2S SRU Sampling
Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Data: C:\CLASS-VP\Data\1-6-11BP\H2S SRU Sampling 138
Product: Shimadzu Client/Server
Software: Version 7.2 SP1 Rev B
{Data Description} 500 UL 150C detector
Run Time: 1/6/2011 8:52:04 PM

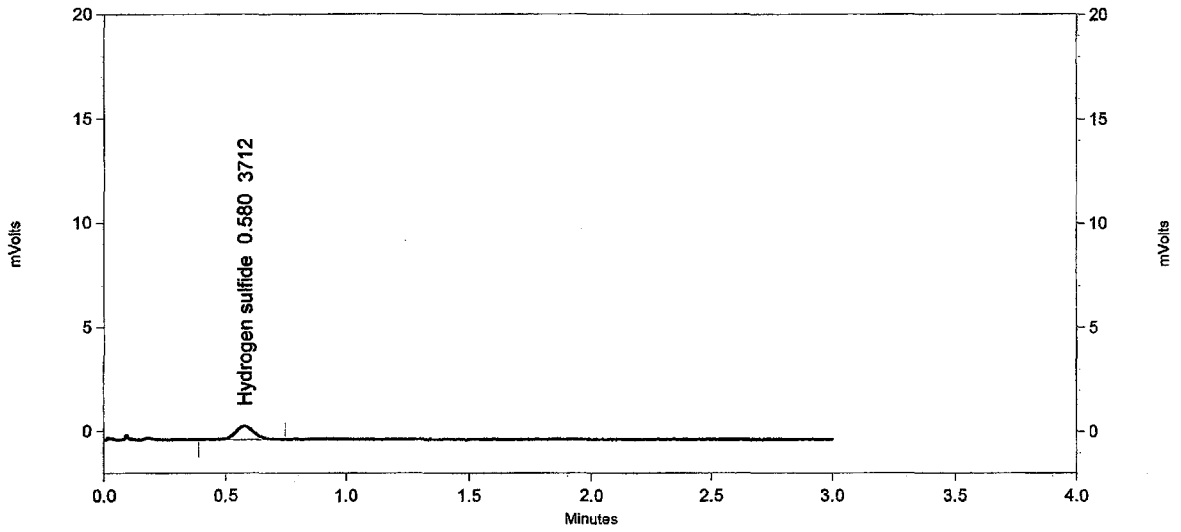


FPD2 Results

Name	Retention Time	Area	ESTD concentration (ppmv)
Hydrogen sulfide	0.575	3900	1.550
Totals		3900	1.550

H_2S Monitoring

Sample ID: H2S SRU Sampling
Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Data: C:\CLASS-VP\Data\1-6-11BP\H2S SRU Sampling 139
Product: Shimadzu Client/Server
Software: Version 7.2 SP1 Rev B
{Data Description} 500 UL 150C detector
Run Time: 1/6/2011 8:55:43 PM

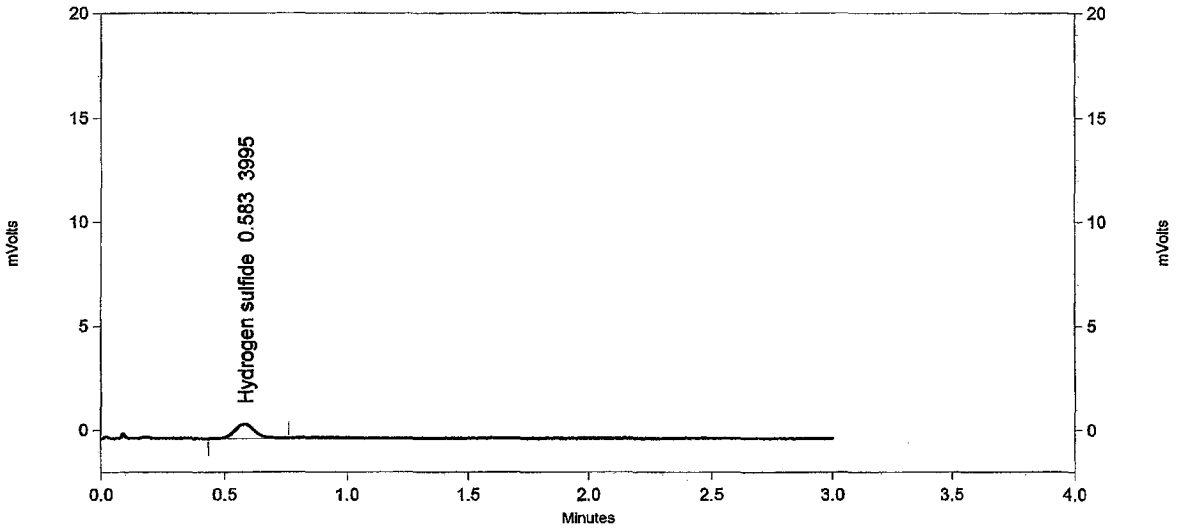


FPD2 Results

Name	Retention Time	Area	ESTD concentration (ppmv)
Hydrogen sulfide	0.580	3712	1.525
Totals		3712	1.525

H_2S Monitoring

Sample ID: H2S SRU Sampling
Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Data: C:\CLASS-VP\Data\1-6-11BP\H2S SRU Sampling 140
Product: Shimadzu Client/Server
Software: Version 7.2 SP1 Rev B
{Data Description} 500 UL 150C detector
Run Time: 1/6/2011 8:59:22 PM

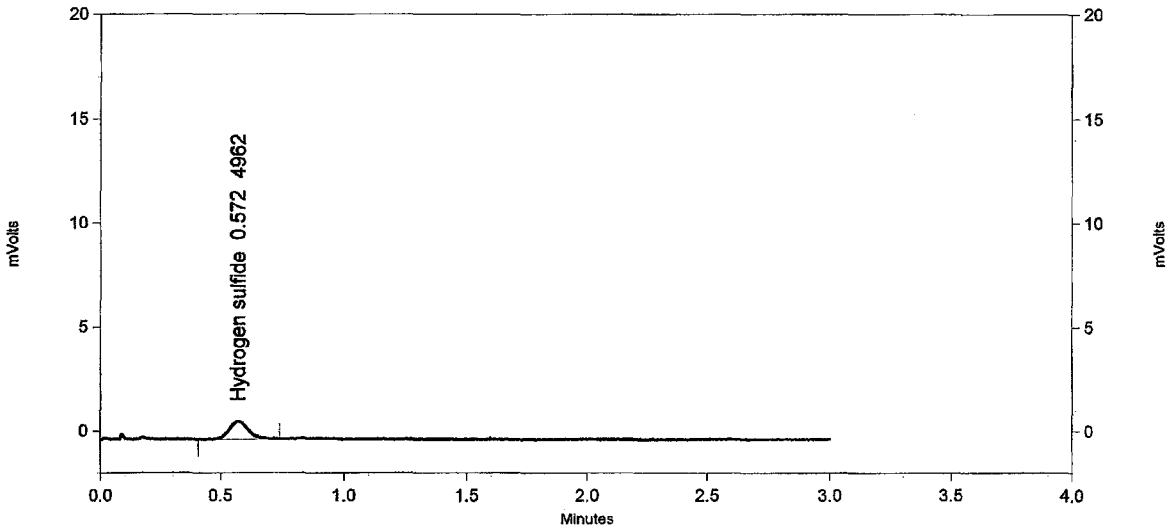


FPD2 Results

Name	Retention Time	Area	ESTD concentration (ppmv)
Hydrogen sulfide	0.583	3995	1.563
Totals		3995	1.563

H_2S Monitoring

Sample ID: H2S SRU Sampling
Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Data: C:\CLASS-VP\Data\1-6-11BP\H2S SRU Sampling 141
Product: Shimadzu Client/Server
Software: Version 7.2 SP1 Rev B
{Data Description} 500 UL 150C detector
Run Time: 1/6/2011 9:02:59 PM



FPD2 Results

Name	Retention Time	Area	ESTD concentration (ppmv)
Hydrogen sulfide	0.572	4962	1.684
Totals		4962	1.684

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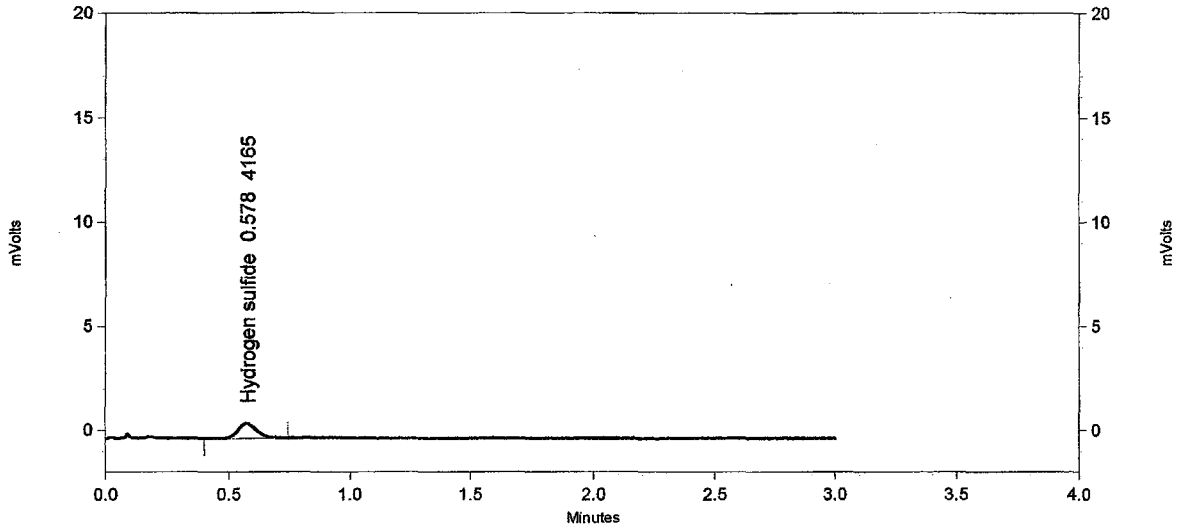
H_2S Monitoring

Sample ID: H2S SRU Sampling
Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Data: C:\CLASS-VP\Data\1-6-11BP\H2S SRU Sampling 142
Product: Shimadzu Client/Server
Software: Version 7.2 SP1 Rev B
{Data Description} 500 UL 150C detector
Run Time: 1/6/2011 9:06:37 PM

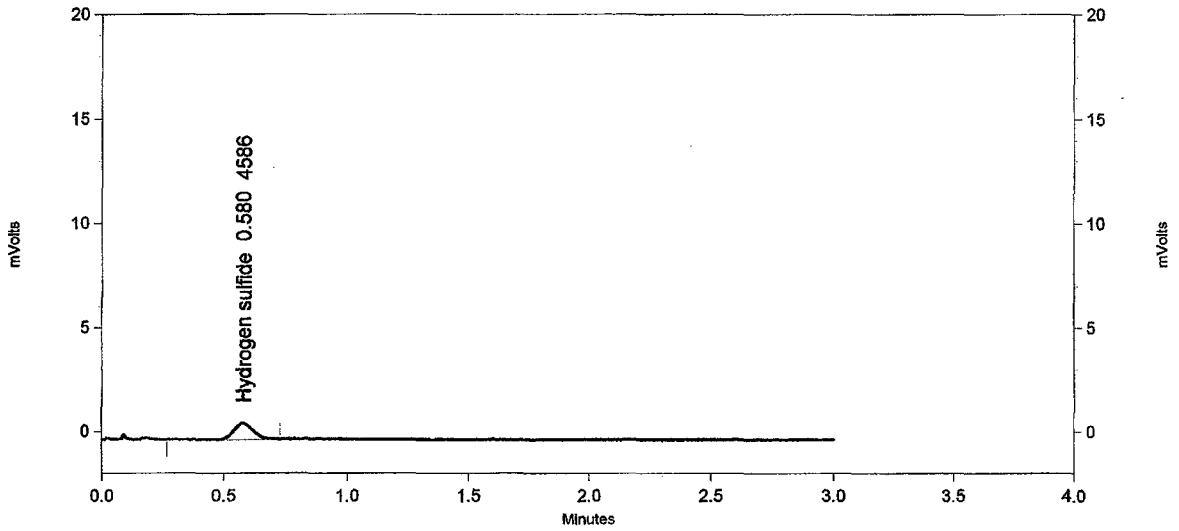


FPD2 Results

Name	Retention Time	Area	ESTD concentration (ppmv)
Hydrogen sulfide	0.578	4165	1.585
Totals		4165	1.585

H_2S Monitoring

Sample ID: H2S SRU Sampling
Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Data: C:\CLASS-VP\Data\1-6-11BP\H2S SRU Sampling 143
Product: Shimadzu Client/Server
Software: Version 7.2 SP1 Rev B
{Data Description} 500 UL 150C detector
Run Time: 1/6/2011 9:10:15 PM

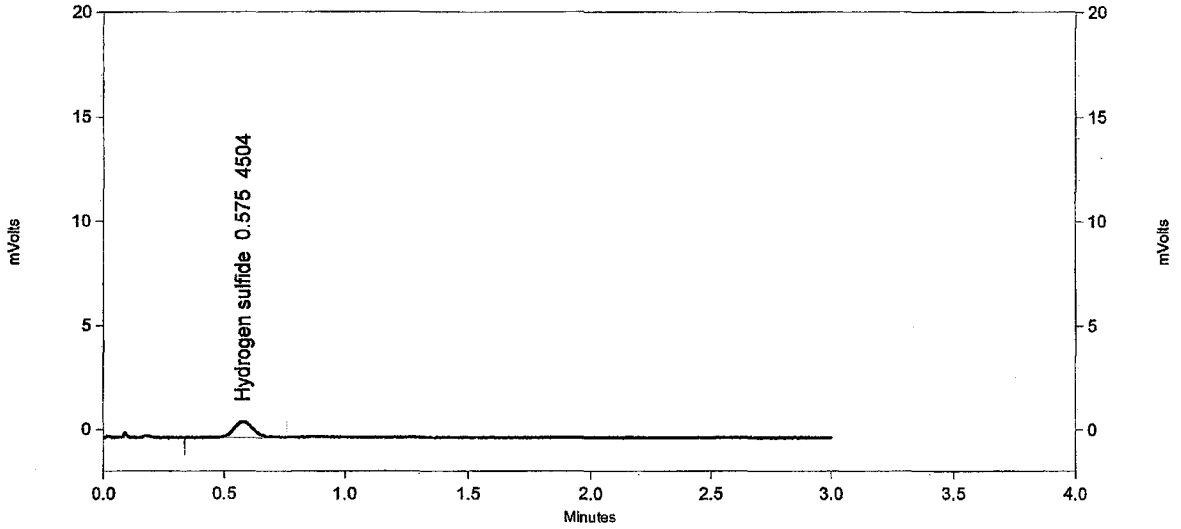


FPD2 Results

Name	Retention Time	Area	ESTD concentration (ppmv)
Hydrogen sulfide	0.580	4586	1.638
Totals		4586	1.638

H_2S Monitoring

Sample ID: H2S SRU Sampling
Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Data: C:\CLASS-VP\Data\1-6-11BP\H2S SRU Sampling 144
Product: Shimadzu Client/Server
Software: Version 7.2 SP1 Rev B
{Data Description} 500 UL 150C detector
Run Time: 1/6/2011 9:13:52 PM

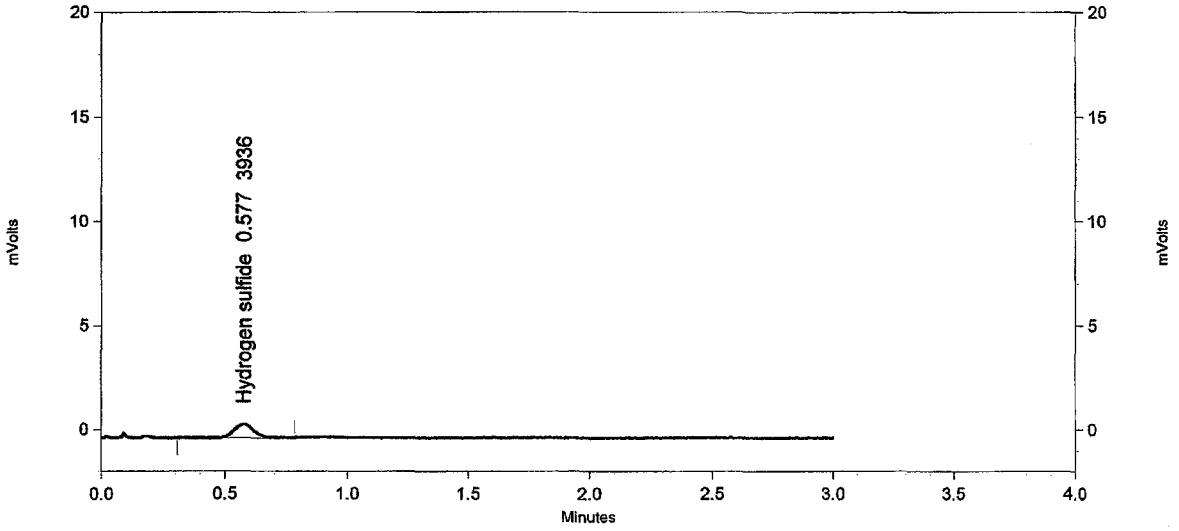


FPD2 Results

Name	Retention Time	Area	ESTD concentration (ppmv)
Hydrogen sulfide	0.575	4504	1.628
Totals		4504	1.628

H_2S Monitoring

Sample ID: H2S SRU Sampling
Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Data: C:\CLASS-VP\Data\1-6-11BP\H2S SRU Sampling 145
Product: Shimadzu Client/Server
Software: Version 7.2 SP1 Rev B
{Data Description} 500 UL 150C detector
Run Time: 1/6/2011 9:17:30 PM

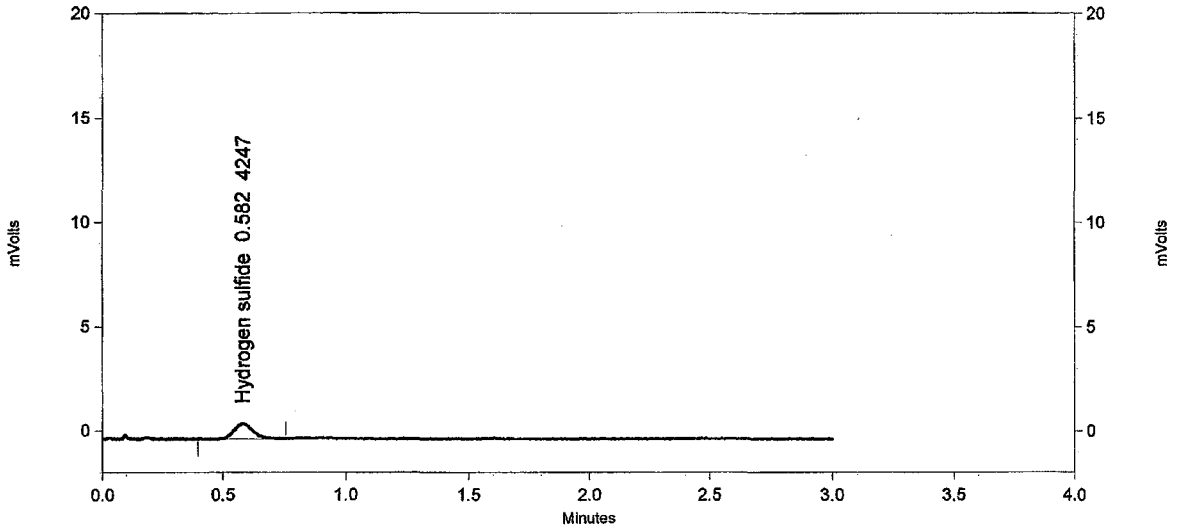


FPD2 Results

Name	Retention Time	Area	ESTD concentration (ppmv)
Hydrogen sulfide	0.577	3936	1.555
Totals		3936	1.555

H_2S Monitoring

Sample ID: H2S SRU Sampling
Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Data: C:\CLASS-VP\Data\1-6-11BP\H2S SRU Sampling 146
Product: Shimadzu Client/Server
Software: Version 7.2 SP1 Rev B
{Data Description} 500 UL 150C detector
Run Time: 1/6/2011 9:21:08 PM

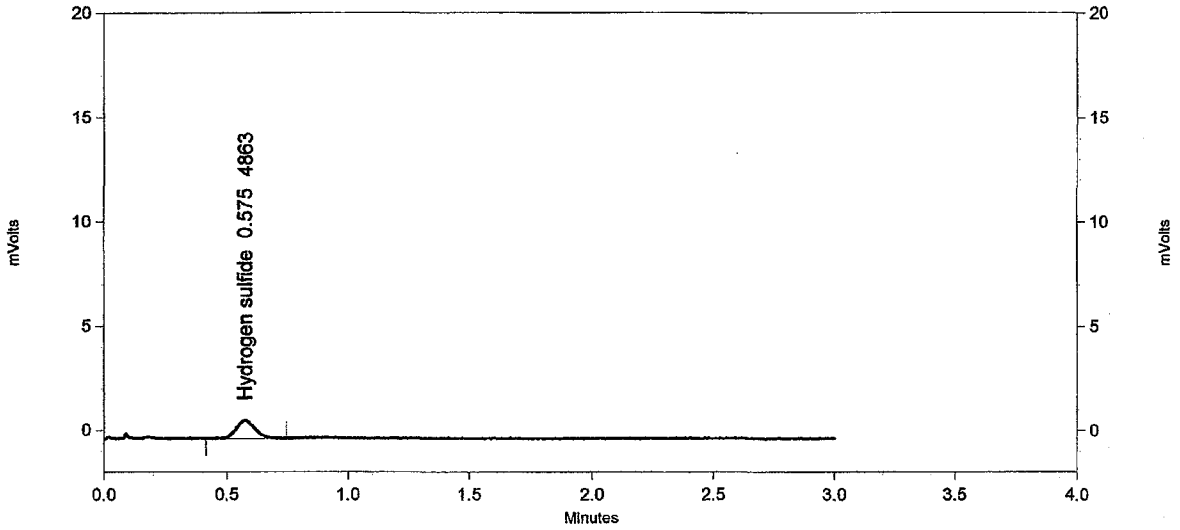


FPD2 Results

Name	Retention Time	Area	ESTD concentration (ppmv)
Hydrogen sulfide	0.582	4247	1.596
Totals		4247	1.596

H_2S Monitoring

Sample ID: H2S SRU Sampling
Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Data: C:\CLASS-VP\Data\1-6-11BP\H2S SRU Sampling 147
Product: Shimadzu Client/Server
Software: Version 7.2 SP1 Rev B
{Data Description} 500 UL 150C detector
Run Time: 1/6/2011 9:24:48 PM

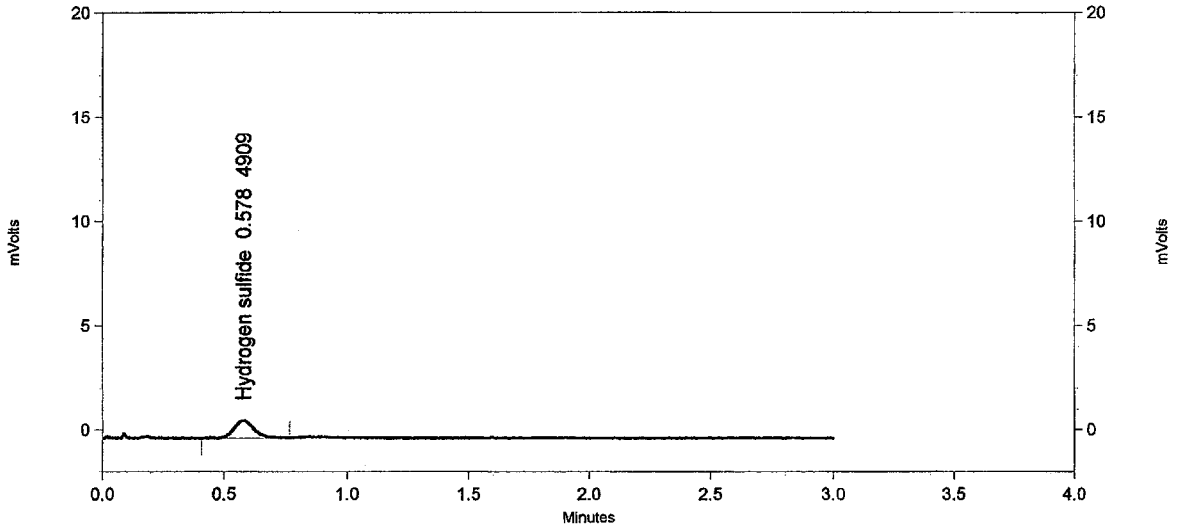


FPD2 Results

Name	Retention Time	Area	ESTD concentration (ppmv)
Hydrogen sulfide	0.575	4863	1.672
Totals		4863	1.672

H_2S Monitoring

Sample ID: H2S SRU Sampling
Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Data: C:\CLASS-VP\Data\1-6-11BP\H2S SRU Sampling 148
Product: Shimadzu Client/Server
Software: Version 7.2 SP1 Rev B
{Data Description} 500 UL 150C detector
Run Time: 1/6/2011 9:28:27 PM



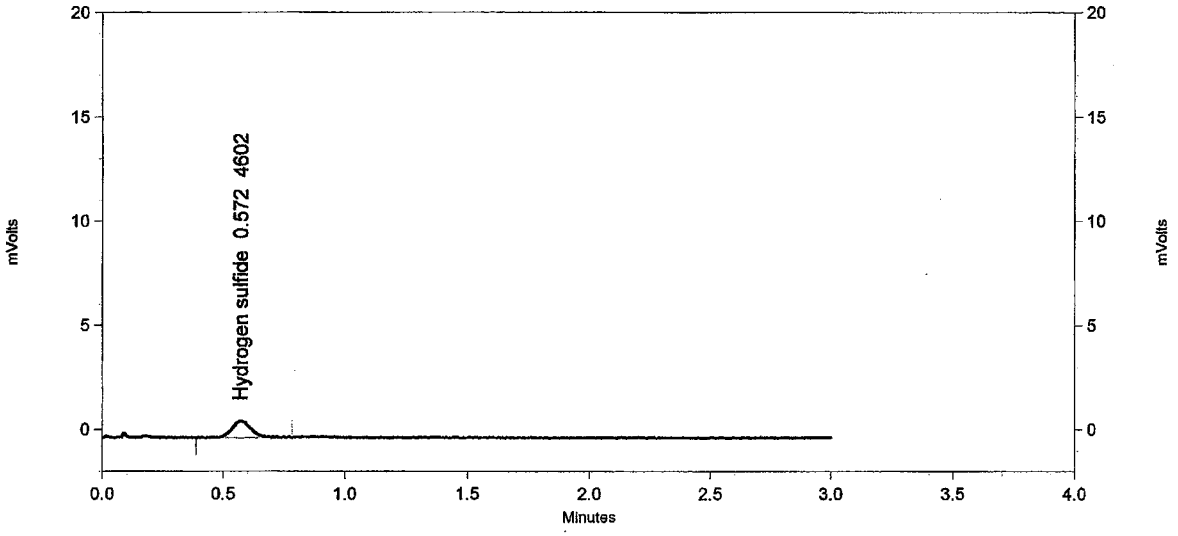
FPD2 Results

Name	Retention Time	Area	ESTD concentration (ppmv)
Hydrogen sulfide	0.578	4909	1.678
Totals		4909	1.678

Uncontrolled if copied or printed.

H_2S Monitoring

Sample ID: H2S SRU Sampling
Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Data: C:\CLASS-VP\Data\1-6-11BP\H2S SRU Sampling 149
Product: Shimadzu Client/Server
Software: Version 7.2 SP1 Rev B
{Data Description} 500 UL 150C detector
Run Time: 1/6/2011 9:32:04 PM



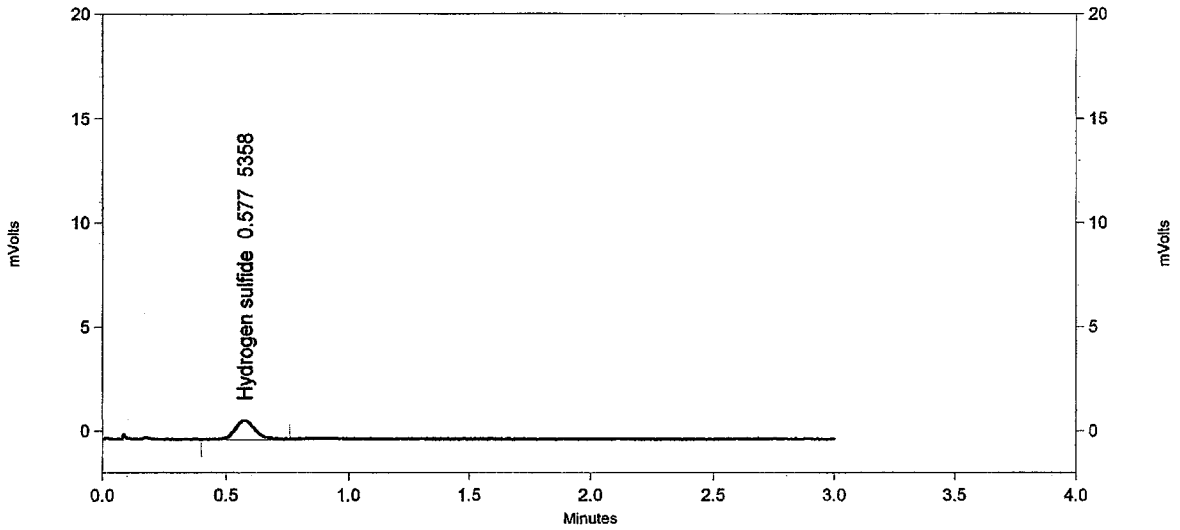
FPD2 Results

Name	Retention Time	Area	ESTD concentration (ppmv)
Hydrogen sulfide	0.572	4602	1.640
Totals		4602	1.640

Uncontrolled if copied or printed.

H_2S Monitoring

Sample ID: H2S SRU Sampling
Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Data: C:\CLASS-VP\Data\1-6-11BP\H2S SRU Sampling 150
Product: Shimadzu Client/Server
Software: Version 7.2 SP1 Rev B
{Data Description} 500 UL 150C detector
Run Time: 1/6/2011 9:35:42 PM



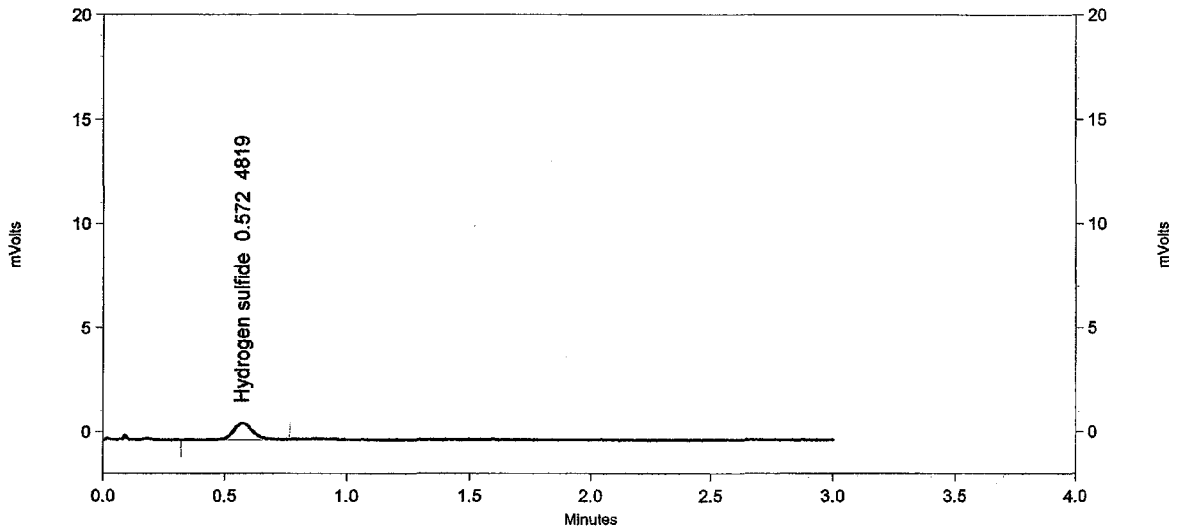
FPD2 Results

Name	Retention Time	Area	ESTD concentration (ppmv)
Hydrogen sulfide	0.577	5358	1.731
Totals		5358	1.731

Uncontrolled if copied or printed.

H_2S Monitoring

Sample ID: H2S SRU Sampling
Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Data: C:\CLASS-VP\Data\1-6-11BP\H2S SRU Sampling 151
Product: Shimadzu Client/Server
Software: Version 7.2 SP1 Rev B
{Data Description} 500 UL 150C detector
Run Time: 1/6/2011 9:39:20 PM

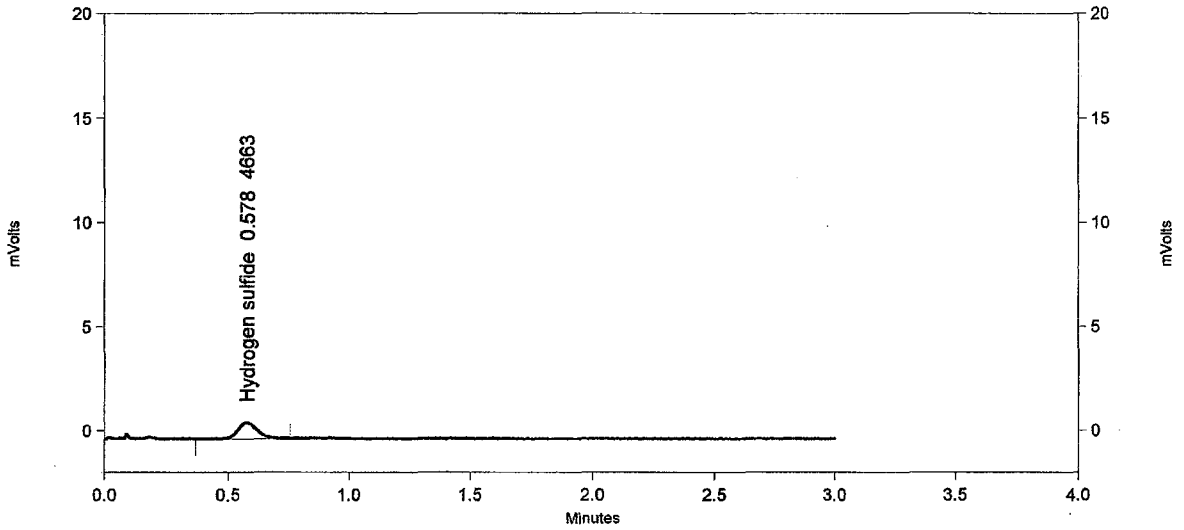


FPD2 Results

Name	Retention Time	Area	ESTD concentration (ppmv)
Hydrogen sulfide	0.572	4819	1.667
Totals		4819	1.667

H_2S Monitoring

Sample ID: H2S SRU Sampling
Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Data: C:\CLASS-VP\Data\1-6-11BP\H2S SRU Sampling 152
Product: Shimadzu Client/Server
Software: Version 7.2 SP1 Rev B
{Data Description} 500 UL 150C detector
Run Time: 1/6/2011 9:42:58 PM

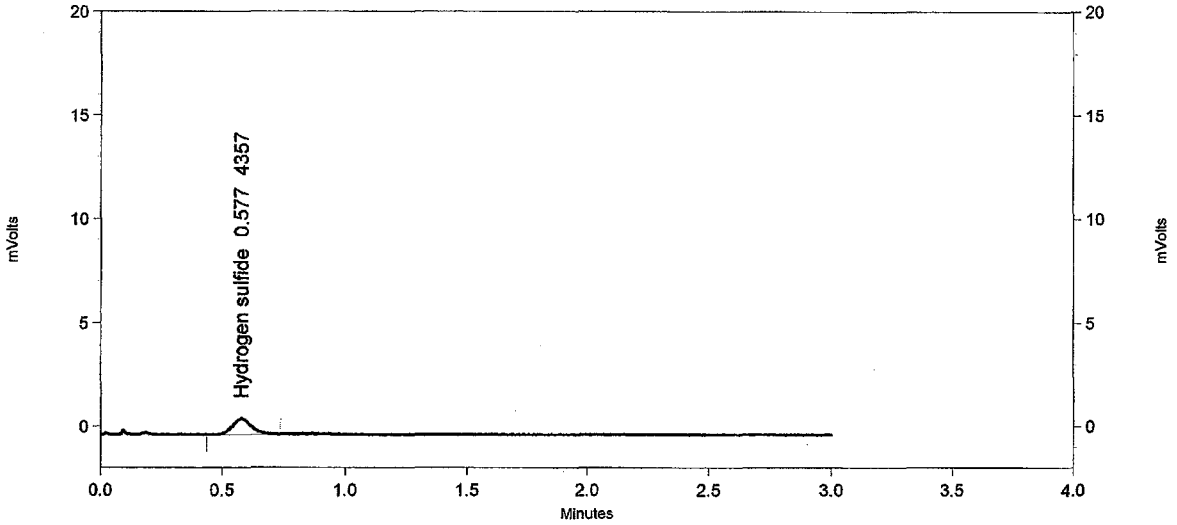


FPD2 Results

Name	Retention Time	Area	ESTD concentration (ppmv)
Hydrogen sulfide	0.578	4663	1.648
Totals		4663	1.648

Uncontrolled if copied or printed.

Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Data: C:\CLASS-VP\Data\1-6-11BP\H2S SRU Sampling 153
Product: Shimadzu Client/Server
Software: Version 7.2 SP1 Rev B
{Data Description} 500 UL 150C detector
Run Time: 1/6/2011 9:46:35 PM



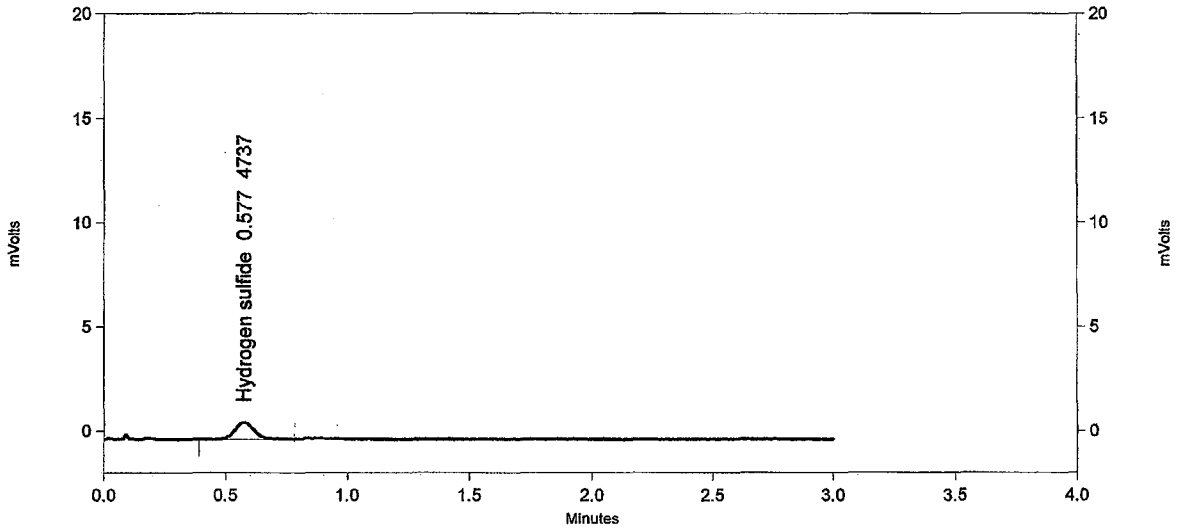
FPD2 Results

Name	Retention Time	Area	ESTD concentration (ppmv)
Hydrogen sulfide	0.577	4357	1.610
Totals		4357	1.610

Uncontrolled if copied or printed.

H_2S Monitoring

Sample ID: H2S SRU Sampling
Method: C:\CLASS-VP\Enterprise\Projects\Default\Method\01-05-11_H2S.met
Data: C:\CLASS-VP\Data\1-6-11BP\H2S SRU Sampling 154
Product: Shimadzu Client/Server
Software: Version 7.2 SP1 Rev B
{Data Description} 500 UL 150C detector
Run Time: 1/6/2011 9:50:13 PM



FPD2 Results

Name	Retention Time	Area	ESTD concentration (ppmv)
Hydrogen sulfide	0.577	4737	1.657
Totals		4737	1.657

Uncontrolled if copied or printed.