Ty Korenwinder
Account Manger
Energy Markets

Southern California Gas Company

404 N. Tipton Street
Visalia, CA 93292

Tel: (559) 739-2307
Fax: (559) 739-2223
tkorenwinder@semprautilities.com

08/27/2009

Addressee's Name
Business Name
Street Address
City, State, Zip

Dear Addressee:

Southern California Gas Company (SoCalGas®) and San Diego Gas & Electric® (SDG&E®) are pleased to provide to you, and the biogas[1] community at large, the attached guidelines to demonstrate how biomethane suppliers can meet their obligation to provide merchantable gas that is free of hazardous substances. Biomethane deliveries from agriculture and/or animal wastes and, subject to California Public Utilities Commission approval to expand the utilities' biogas definitions, other sources such as waste water, meeting the guidelines will be accepted into the distribution and transmission systems of both utilities pursuant to each utility's Rule 39, Access to the Pipeline System[2].

These guidelines were developed in response to potential suppliers' request for guidance on how to demonstrate that biomethane deliveries meet the utilities' Rule 30[3] merchantability and hazardous substances gas delivery specifications and thereby foster and encourage the development of pipeline quality biomethane for transportation on the utilities' systems to help meet California's greenhouse gas emission reduction goals and promote development of new renewable energy sources.

The guidelines are based on (i) research and review of existing biomethane pipeline receipts, and (ii) feedback from a representative slate of potential suppliers covering a broad spectrum of feedstock sources, and conform to the utilities standard Rule 39 interconnection protocols.

---

[1] Herein, biogas connotes raw unprocessed digester gas while biomethane connotes biogas that has been processed to Rule 30 pipeline quality specifications.

[2] Rule 39, Access to the Pipeline System, can be found at http://www.socalgas.com/regulatory/tariffs/tm2/pdf/39.pdf and http://www.sdge.com/tm2/pdf/GAS_GAS-RULES_GRULE39.pdf for SoCalGas and SDG&E, respectively.

[3]Gas delivery specifications are provided in each utility's Rule 30, Transportation of Customer-Owned Gas, in Section I at http://www.socalgas.com/regulatory/tariffs/tm2/pdf/30.pdf and http://www.sdge.com/tm2/pdf/GAS_GAS-RULES_GRULE30.pdf for SoCalGas and SDG&E, respectively.,.

The guidelines require pre-start up and start up gas quality testing that is estimated to cost approximately $80,000 plus the associated sampling costs. Assuming the gas quality test results are within the stated limits, there will be an approximately two week period after the completion of the utility's twenty-four hour start-up testing before deliveries can resume. Two weeks are normally required to complete the trace constituents' analyses necessary to confirm the biomethane deliveries met the gas delivery specifications.

The utilities are continuing to investigate alternative assessment methods and expect with further firsthand experience and your substantive input and experience to be able to modify the guidelines over the next year to reduce suppliers' costs and the time between start up testing and the utility's ability to accept deliveries while continuing to meet consumers' expectations and safety requirements. To that end, the utilities welcome and encourage your input on the guidelines to enable updating the guidelines in August 2010.

Please contact Ty Korenwinder at 559-739-2307 or tkorenwinder@semprautilities.com if you have any questions or suggestions regarding SoCalGas biomethane interconnections and Jerry McPherson at 213-244-3972 or jmcpherson@semprautilities.com regarding SDG&E biomethane interconnections[4].

Sincerely,

Ty Korenwinder

Enclosures:
Rule 30 Biomethane Gas Delivery Specifications LIMITS and ACTION LEVELS
Rule 30 Biomethane Guidance Cost Estimate
Rule 30 Biomethane Gas Quality Review Flow Chart

Cc: <AE>

[4] Additional utility interconnection information can also be found at http://www.socalgas.com/business/suppliers/ and http://www.sdge.com/lng/gasSuppliesNew.shtml for SoCalGas and SDG&E, respectively.

Rule 30 Biomethane Gas Delivery Specifications **LIMITS** and ACTION LEVELS			
Parameters	**Limits**[1] **and/or** Action Levels[2]	Monitor and/or Sampling Method References	Test Method(s)
Water vapor content	**7 lb/MMscf (or 20°F if P>800 psi)**	Moisture Analyzer	GPA 2261, ASTM D1142/D5454/D3588, *Laser*
Hydrocarbon Dew point	**45°F at 400 psi or P, if P<400 psi (or 20°F at 400 psi if P>800 psi)**		ASTM D1142, GPA2286
Heating Value Wobbe Number, Major Components: C_1 to C_6+ CO_2, N_2, O_2, CO, H_2	**990 ≤HHV≤1150 Btu/cf** **1279 ≤WN≤1385** **4% Inerts**	Gas Chromatograph	ASTM D1945/D7164, GPA 2261
Oxygen	**0.20%**	O_2 analyzer	*Electrochemical*
Carbon Dioxide	**3%**	CO_2 analyzer (new)	*Laser, FTIR*
Hydrogen Sulfide, Mercaptan and Total Sulfur	**025 gr. H_2S/100 scf** **0.30 gr. S/100 scf** **0.75 gr. S/100 scf**	H_2S and Sulfur speciated analyzer	ASTM D4084/D6228/D4468 D5504/D7166
Dust and Gum	**Free of**	In-line filter	EPA Method 5, 0.1µm filters
Temperature	**50°F ≤T≤ 105°F**	Thermocouple	
Vinyl Chloride[3]	**1170 ppbv**	Summa Canister, XAD-2	GC/MS, EPA8270C,B, EPA T0-14, 15
Aldehydes and Ketones, Formaldehyde	Spot <0.1 ppm_v	(sorbent tube)	EPA TO-11, HPLC
Ammonia	Spot <0.001%	OSHA ID-188 or cylinder sample	GC, NCD, OSHA ID 164 Modified
Biologicals	Spot < 0.2 micron	Filter, MIC Kits	MPN, qPCR, spore enumeration (NHB 5340.1D) and id, 2µm, 0.2µm filters
Halocarbons	Spot <0.1 ppm_v	Summa Canister or cylinder sample	EPA T0-14, 15 GC/ELCD
Hydrogen	Spot < 0.1%	cylinder sample	ASTM D1945/D7164
Mercury	Spot < 0.01 $µg/m^3$	Gold plated silica beads	AA, AFS ASTM D5954/D6350
Volatile Metals	Spot < 0.01 $µg/m^3$	Nitric acid and peroxide aqueous	ICP, AAS
PCBs	Spot < 0.1 ppbv	Mod NIOSH 5503 (XAD-2)	GC/ECD, GC/MS, GC/AED, EPA 8082
Pesticides	Spot < 1 ppb_v	Mod NIOSH 5600/5601 (XAD-2)	GC/ECD, GC/MS, EPA 8081
Pharmaceuticals/ Animal care products	Spot < 1ppb_v	Porapak-R	LC/MS, GC/MS
Siloxanes	Turbine manufacturers: free of siloxanes. Capstone 5 ppbv, IR 10 ppb, Solar Turbines 87 ppb.	Impinger, tedlar bag, Summa Canister, XAD-2	EPA TO-14, 15 GC/ELCD, GC/AED, GC/MS
VOCs	Spot <0.1 ppm_v		GC/MS, EPA8270C,B, EPA T0-14, 15 EPA T0-13A
SVOCs			
PAHs			
Volatile Fatty Acids (VFAs)	Spot < 0.01 ppm_v	(Silica Gel Tube)	EPA TO-17, GC/MS

Notes:

1. **Limits** are indicated in **BOLD** and are maximums, unless otherwise indicated.
2. Values for spot are trigger levels for more action, NOT hazardous levels.

If Spot samples are above action levels, then risk assessment is done, which may increase test frequency, require monitor installation, result in a producer warning, require the establishment of a limit and/or require monitoring of operating surrogates.

Spot test frequency: Prior to receiving gas there will be two tests (raw and processed or receipt pt), during start up - another two tests; post-start-up, an established monitoring period will be determined. An established ongoing monitoring program could include periodic tests that are bi-weekly, monthly, quarterly, bi-annual, annually or continuous, depending upon previous test results.

3. Vinyl Chloride Limit is from CPUC General Order 58A

Rule 30 Biomethane Gas Delivery Specifications **LIMITS** and ACTION LEVELS

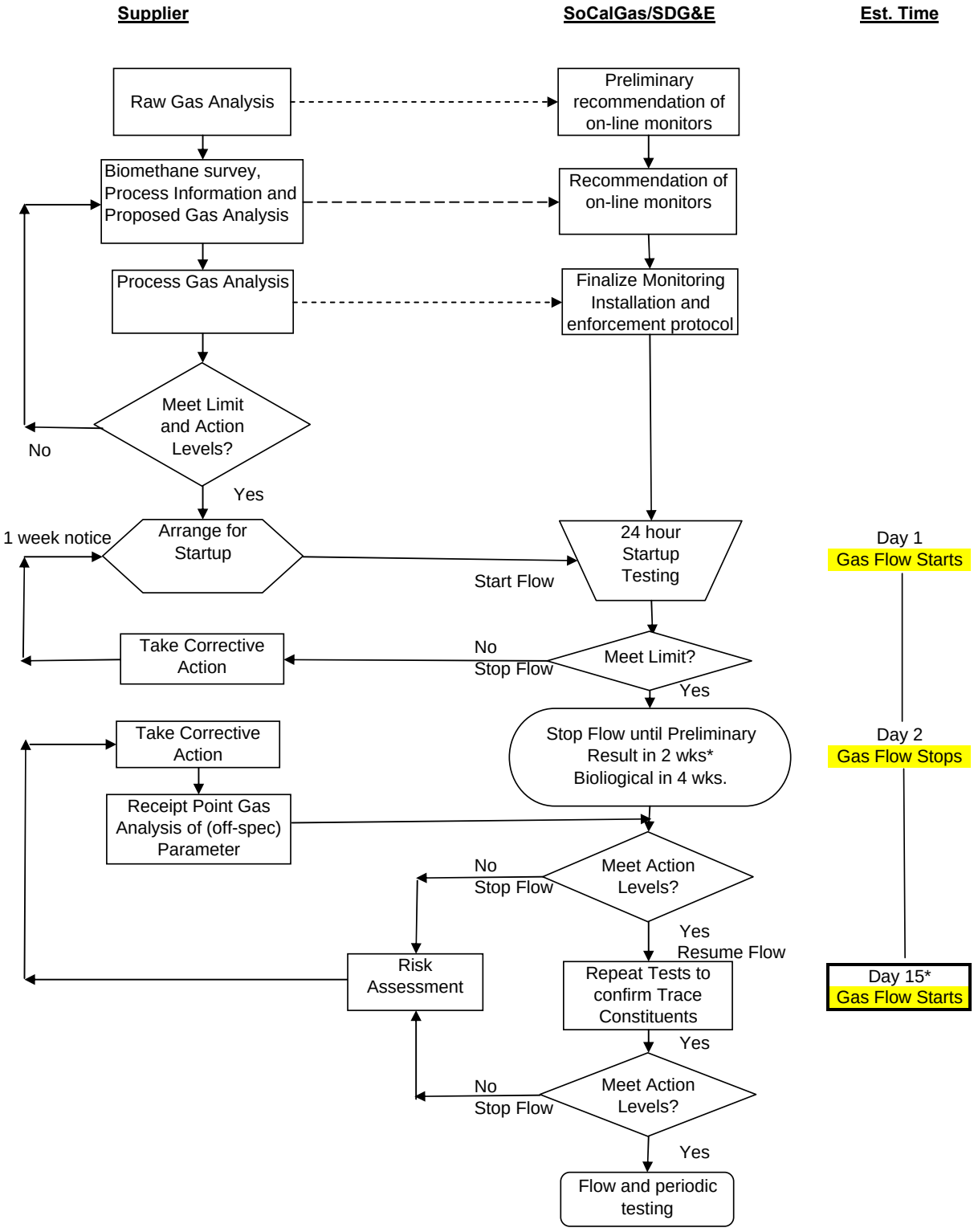
Abbreviations for Parameters:

PAHs	polycyclic aromatic hydrocarbons
PCBs	polychlorinated biphenyls
SVOCs	semi-volatile organic compounds
VFAs	volatile fatty acids
VOCs	volatile organic compounds

Abbreviations for Sampling and Test Methods:

AA	atomic absorption
AAS	atomic absorption spectrometry
AED	atomic emissions detector
AFS	atomic fluorescence spectrometry
ASTM	American Society for Testing and Materials
ECD	electron capture detector
ELCD	electrolytic conductivity detector
EPA	Environmental Protection Agency
FTIR	Fourier transform infrared spectroscopy
GC	gas chromatography
GPA	Gas Processors Association
HPLC	high performance liquid chromatography
ICP	inductively coupled plasma
LC	liquid chromatography
MIC	Microbiologically Influenced Corrosion
MPN	Most Probable Number determination of total live bacteria
MS	mass spectrometry
MVA	mercury vapor analyzer
NCD	nitrogen chemiluminescence detector
NHB	NASA Handbook
NIOSH	National Institute for Occupational Safety and Health
OSHA	Occupational Safety & Health Administration
qPCR	Quantitative Polymerase Chain Reaction
XAD-2	sorbent tube

Rule 30 Biomethane Gas Quality Review Flowchart



Note:

Estimated time is the shortest posible time assuming that gas meets all specifications and limits

*If Preliminary results (available in 2 weeks) meet action levels, including zero bacteria count and no solid particles in filter, then flow can resume prior to receiving final Biological (biological ID) results in 4 weeks.

Version: 7/20/09

Constituent(s) / Property(ies)	On-site	Dewpoint	HHV, Gas Comp	Sulfur	Aldehydes	Ammonia	Biological	Halocarbons	Hydrogen	Metals	PCBs	Pesticides	Pharma	Halocarbons, VOCs, SVOCs, PAHs	Siloxanes	Volatile Fatty Acids	Year One\1
Test	Sample and Test (Hours)	ASTM D1142	ASTM D1945	ASTM D4084	EPA TO-11	OSHA ID 164		EPA TO-14	D1945	EPA 29	EPA 8082	EPA 8081	LCMS	Niosh 5515		EPA TO-17	
PreStartup\2																	$30,000
Raw Gas Analyses			1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Proposed Gas Composition		Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	
Processed Gas Analyses		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Startup\3																	$50,000
Start up Testing	24	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Biweekly or Second Month	8				1	1	1	1	1	1	1	1	1	1	1	1	
PreStartUp & StartUp Count # Tests Subtotal	32	2	3	3	4	4	4	4	4	4	4	4	4	4	4	4	**$80,000**
Ongoing\3, 4																	
Continuous		1	1	1													
Monthly		1															
Annually																	
Total Year 1																	**$ 80,000**

Notes:

1 - Estimated Cumulative Laboratory Test Cost which excludes sampling and shipping and Ongoing costs assuming compliant gas, i.e. cost estimate only includes laboratory costs

2 - Supplier to conduct PreStartup Raw and Processed Gas sampling and analyses

3 - StartUp and Ongoing tests and frequency are a function of Supplier's gas quality with frequency herein assuming compliant gas

4 - Ongoing identified tests costs are included in the roughly $2,500 monthly point of receipt operation and maintenance fee

The Utility has provided the estimated costs for the convenience of the Interconnector and has based those costs on similar work performed under favorable conditions. Due to unforeseen factors, the actual cost may be considerably different than the estimated costs. Therefore, the Utility does not represent or warrant that the estimated costs are the same as actual costs, and the Interconnector shall be responsible for actual costs.