

**INFORME MENSUAL SOBRE LAS ESPECIFICACIONES DEL GAS NATURAL**

**(Valores promedio diarios)**

<b>PERMISIONARIO:</b>	<b>Compañía Nacional de Gas SA de CV - Permiso G/11/DIS/1997</b>
<b>PUNTO DE MEDICIÓN:</b>	<b>Cruce Internacional I - Estacion Importacion Rio Bravo</b>
<b>ZONA DE MEDICIÓN:</b>	<b>RESTO DEL PAÍS</b>

FECHA: (dd/mm/aa)	Metano (% vol)	Bióxido de Carbono (% vol)	Nitrógeno (% vol)	Total Inertes (% vol)	Etano (% vol)	Temperatura de Rocio (K)	Humedad (mg/m <sup>3</sup> )	Poder Calorífico (MJ/m <sup>3</sup> )	Índice Wobbe (MJ/m <sup>3</sup> )	Acido Sulfhídrico (mg/m <sup>3</sup> )
01/02/16	94.1811	0.2017	0.1480	0.3497	3.8975	270.6540	98.6737	39.9205	52.1008	4.8245
02/02/16	94.6522	0.1626	0.1372	0.2998	3.6259	271.3410	109.2939	39.7651	52.0471	0.9189
03/02/16	95.0866	0.1715	0.1300	0.3015	3.4820	272.5140	73.9892	39.4956	51.8951	1.6082
04/02/16	94.1977	0.1732	0.1385	0.3117	3.8357	271.1880	74.5499	40.0244	52.1821	0.0000
05/02/16	94.7372	0.2139	0.1399	0.3538	3.6648	272.8870	94.9414	39.5969	51.9168	0.2297
06/02/16	95.0390	0.3972	0.1381	0.5353	3.2249	273.1680	74.2615	39.3588	51.6542	0.0000
07/02/16	95.0712	0.1808	0.1516	0.3323	3.4290	275.1110	78.9710	39.4856	51.8727	0.0000
08/02/16	95.0066	0.2051	0.1476	0.3527	3.4150	272.1770	71.5384	39.5409	51.8876	0.0000
09/02/16	94.8606	0.1889	0.1463	0.3352	3.6083	272.1850	73.7650	39.5529	51.9070	0.9189
10/02/16	95.0810	0.3420	0.1357	0.4777	3.2712	276.1760	70.2633	39.3839	51.7085	0.0000
11/02/16	94.7978	0.2095	0.1492	0.3587	3.6140	274.3780	50.8586	39.5680	51.8994	1.8379
12/02/16	95.4428	0.1709	0.1377	0.3086	3.2871	272.2750	70.7375	39.3128	51.7902	6.4326
13/02/16	95.1523	0.1893	0.1419	0.3312	3.4077	273.1710	69.1517	39.4505	51.8515	0.0000
14/02/16	95.1624	0.1719	0.1387	0.3106	3.3474	273.1770	67.7581	39.5009	51.8931	0.0000
15/02/16	94.8797	0.1773	0.1400	0.3173	3.4563	273.3610	68.6070	39.6669	51.9805	3.4460
16/02/16	95.6999	0.1426	0.1313	0.2738	3.0956	273.7950	69.2638	39.2634	51.7856	0.0000
17/02/16	92.4151	0.2652	0.1473	0.4125	5.0972	274.1890	74.5339	40.5126	52.3844	0.0000
18/02/16	95.8334	0.1360	0.1282	0.2642	3.1056	273.3340	74.5178	39.1560	51.7324	1.8379
19/02/16	95.7800	0.1352	0.1286	0.2638	3.1766	272.4710	80.7490	39.1683	51.7398	1.6082
20/02/16	95.4017	0.2913	0.1355	0.4268	3.2476	273.3880	82.1266	39.2174	51.6522	0.0000
21/02/16	95.4340	0.1870	0.1362	0.3232	3.3334	273.6340	80.0442	39.2788	51.7607	0.0000
22/02/16	95.3819	0.2624	0.1334	0.3958	3.2879	271.4800	75.6071	39.2807	51.7089	0.6892
23/02/16	95.4812	0.2018	0.1311	0.3329	3.2721	273.2180	76.4401	39.2818	51.7539	0.6892
24/02/16	95.6604	0.2276	0.1326	0.3603	3.1217	274.1688	87.8132	39.1775	51.6764	6.6623
25/02/16	91.9916	0.3602	0.1559	0.5161	5.3038	273.8600	77.2089	40.5978	52.3627	8.9597
26/02/16	91.7225	0.3553	0.2131	0.5684	5.2086	273.4380	80.4607	40.7460	52.4218	0.0000
27/02/16	92.2662	0.2752	0.2128	0.4880	4.8758	273.4460	80.4607	40.6259	52.4104	1.3784
28/02/16	93.4581	0.3115	0.1724	0.4839	4.2737	272.2610	87.6370	40.0729	52.0971	0.2297
29/02/16	94.9084	0.2015	0.1577	0.3591	3.4820	275.3400	102.7263	39.5507	51.8913	9.1894

<b>Azufre total*</b> (mg/m <sup>3</sup> )	<b>Oxígeno*</b> (% vol)

\*/ Los valores trimestrales se deberán reportar en los meses de enero, abril, julio y octubre de cada año, respecto del trimestre inmediato anterior.

<b>Mínimo</b>	91.7225	0.1352	0.1282	0.2638	3.0956	270.6540	50.8586	39.1560	51.6522	0.0000
<b>Promedio</b>	94.6477	0.2244	0.1461	0.3705	3.6706	273.1650	78.5155	39.6398	51.9298	1.7745
<b>Máximo</b>	95.8334	0.3972	0.2131	0.5684	5.3038	276.1760	109.2939	40.7460	52.4218	9.1894
<b>Desv. Est.</b>	1.157822327	0.071856291	0.020974516	0.083666289	0.645998778	1.244885729	11.74120502	0.465500686	0.232310541	2.744426069



**INFORME MENSUAL SOBRE LAS ESPECIFICACIONES DEL GAS NATURAL**

**(Registros máximos diarios)**

**PERMISIONARIO:** Compañía Nacional de Gas SA de CV - Permiso G/11/DIS/1997  
**PUNTO DE MEDICIÓN:** Cruce Internacional I - Estacion Importacion Rio Bravo  
**ZONA DE MEDICIÓN:** RESTO DEL PAÍS

FECHA: (dd/mm/aa)	Metano (% vol)	Bióxido de Carbono (% vol)	Nitrógeno (% vol)	Total Inertes (% vol)	Etano (% vol)	Temperatura de Rocio (K)	Humedad (mg/m <sup>3</sup> )	Poder Calorífico (MJ/m <sup>3</sup> )	Índice Wobbe (MJ/m <sup>3</sup> )	Acido Sulfhídrico (mg/m <sup>3</sup> )
01/02/16	94.3995	0.2469	0.1531	0.3919	4.2534	270.6540	98.6737	40.1646	52.2057	4.8245
02/02/16	95.0421	0.1782	0.1443	0.3225	3.7567	271.3410	109.2939	39.9721	52.1599	0.9189
03/02/16	95.2538	0.1859	0.1340	0.3199	3.5614	272.5140	73.9892	39.5249	51.9166	1.6082
04/02/16	94.4616	0.1786	0.1413	0.3199	3.9181	271.1880	74.5499	40.1889	52.2763	0.0000
05/02/16	94.8864	0.2259	0.1445	0.3704	3.8074	272.8870	94.9414	39.7093	51.9686	0.2297
06/02/16	95.1792	0.4373	0.1421	0.5772	3.3813	273.1680	74.2615	39.4687	51.7746	0.0000
07/02/16	95.3126	0.1853	0.1586	0.3439	3.5362	275.1110	78.9710	39.5802	51.9188	0.0000
08/02/16	95.0718	0.2085	0.1504	0.3558	3.4592	272.1770	71.5384	39.5733	51.9101	0.0000
09/02/16	94.9932	0.1974	0.1505	0.3478	3.6395	272.1850	73.7650	39.5895	51.9198	0.9189
10/02/16	95.1815	0.3536	0.1404	0.4877	3.3235	276.1760	70.2633	39.4308	51.7321	0.0000
11/02/16	95.0221	0.2418	0.1565	0.3983	3.7816	274.3780	50.8586	39.6948	51.9436	1.8379
12/02/16	95.7710	0.1850	0.1477	0.3327	3.4661	272.2750	70.7375	39.4587	51.8567	6.4326
13/02/16	95.4428	0.2009	0.1459	0.3466	3.5171	273.1710	69.1517	39.5245	51.8866	0.0000
14/02/16	95.3620	0.1753	0.1499	0.3235	3.5885	273.1770	67.7581	39.6173	51.9566	0.0000
15/02/16	95.4337	0.1923	0.1437	0.3338	3.6027	273.3610	68.6070	40.0008	52.1612	3.4460
16/02/16	96.0222	0.1767	0.1426	0.3193	3.4485	273.7950	69.2638	39.6054	51.9459	0.0000
17/02/16	95.9566	0.3712	0.1561	0.5238	6.9637	274.1890	74.5339	41.7258	52.9786	0.0000
18/02/16	96.0168	0.1472	0.1314	0.2786	3.2148	273.3340	74.5178	39.2407	51.7700	1.8379
19/02/16	95.8618	0.1403	0.1311	0.2691	3.2159	272.4710	80.7490	39.2046	51.7562	1.6082
20/02/16	95.6145	0.3439	0.1415	0.4838	3.3534	273.3880	82.1266	39.2889	51.7533	0.0000
21/02/16	95.6697	0.2851	0.1449	0.4300	3.4728	273.6340	80.0442	39.3579	51.7865	0.0000
22/02/16	95.4279	0.3649	0.1422	0.4946	3.4481	271.4800	75.6071	39.3929	51.8272	0.6892
23/02/16	95.5382	0.3445	0.1328	0.4741	3.3981	273.2180	76.4401	39.3259	51.8126	0.6892
24/02/16	95.7496	0.2745	0.1378	0.4123	3.2801	274.1688	87.8132	39.2950	51.7932	6.6623
25/02/16	95.7723	0.4346	0.1656	0.6002	6.0779	273.8600	77.2089	41.1233	52.5979	8.9597
26/02/16	92.1327	0.4151	0.2307	0.5854	5.8308	273.4380	80.4607	40.9732	52.5281	0.0000
27/02/16	92.4741	0.2879	0.2308	0.5152	4.9915	273.4460	80.4607	40.7010	52.4449	1.3784
28/02/16	94.0293	0.3489	0.2050	0.5081	4.7342	272.2610	87.6370	40.5461	52.3742	0.2297
29/02/16	95.1167	0.2684	0.1619	0.4302	3.7952	275.3400	102.7263	39.7031	51.9270	9.1894
<b>Máximo</b>	96.0222	0.4373	0.2308	0.6002	6.9637	276.1760	109.2939	41.7258	52.9786	9.1894

**INFORME MENSUAL SOBRE LAS ESPECIFICACIONES DEL GAS NATURAL**  
**(Registros máximos diarios)**

**PERMISIONARIO:** Compañía Nacional de Gas SA de CV - Permiso G/11/DIS/1997  
**PUNTO DE MEDICIÓN:** Cruce Internacional II - Estacion Importacion Phenix  
**ZONA DE MEDICIÓN:** RESTO DEL PAÍS

FECHA: (dd/mm/aa)	Metano (% vol)	Bióxido de Carbono (% vol)	Nitrógeno (% vol)	Total Inertes (% vol)	Etano (% vol)	Temperatura de Rocio (K)	Humedad (mg/m <sup>3</sup> )	Poder Calorífico (MJ/m <sup>3</sup> )	Índice Wobbe (MJ/m <sup>3</sup> )	Acido Sulfhídrico (mg/m <sup>3</sup> )
01/02/16	91.1990	0.3640	1.3250	1.6890	5.3420			39.7280		
02/02/16										
03/02/16										
04/02/16										
05/02/16										
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28/02/16										
29/02/16										
<b>Máximo</b>	91.1990	0.3640	1.3250	1.6890	5.3420	0.0000	0.0000	39.7280	0.0000	0.0000

**INFORME MENSUAL SOBRE LAS ESPECIFICACIONES DEL GAS NATURAL**  
(Registros mínimos diarios)

**PERMISIONARIO:** Compañía Nacional de Gas SA de CV - Permiso G/11/DIS/1997  
**PUNTO DE MEDICIÓN:** Cruce Internacional I - Estacion Importacion Rio Bravo  
**ZONA DE MEDICIÓN:** RESTO DEL PAÍS

FECHA: (dd/mm/aa)	Metano (% vol)	Bióxido de Carbono (% vol)	Nitrógeno (% vol)	Total Inertes (% vol)	Etano (% vol)	Temperatura de Rocio (K)	Humedad (mg/m <sup>3</sup> )	Poder Calorífico (MJ/m <sup>3</sup> )	Índice Wobbe (MJ/m <sup>3</sup> )	Acido Sulfhídrico (mg/m <sup>3</sup> )
01/02/16	93.5546	0.1842	0.1449	0.3319	3.7705	270.6540	98.6737	39.8371	52.0610	4.8245
02/02/16	94.3468	0.1515	0.1282	0.2797	3.5082	271.3410	109.2939	39.5502	51.9404	0.9189
03/02/16	95.0037	0.1647	0.1241	0.2888	3.3781	272.5140	73.9892	39.4276	51.8612	1.6082
04/02/16	94.0084	0.1696	0.1360	0.3056	3.7064	271.1880	74.5499	39.8535	52.0834	0.0000
05/02/16	94.4693	0.2058	0.1382	0.3440	3.5715	272.8870	94.9414	39.5324	51.8806	0.2297
06/02/16	94.9153	0.3116	0.1327	0.4537	3.1100	273.1680	74.2615	39.2811	51.5904	0.0000
07/02/16	94.8495	0.1761	0.1448	0.3209	3.2958	275.1110	78.9710	39.3874	51.8245	0.0000
08/02/16	94.9457	0.2008	0.1446	0.3454	3.3785	272.1770	71.5384	39.5080	51.8675	0.0000
09/02/16	94.7788	0.1797	0.1413	0.3210	3.5249	272.1850	73.7650	39.4940	51.8716	0.9189
10/02/16	94.9984	0.3287	0.1323	0.4610	3.1941	276.1760	70.2633	39.3372	51.6748	0.0000
11/02/16	94.4556	0.1916	0.1455	0.3380	3.4961	274.3780	50.8586	39.4841	51.8667	1.8379
12/02/16	95.0855	0.1482	0.1279	0.2762	3.1201	272.2750	70.7375	39.1861	51.7405	6.4326
13/02/16	94.9672	0.1683	0.1313	0.2996	3.3105	273.1710	69.1517	39.3153	51.7965	0.0000
14/02/16	94.9898	0.1645	0.1333	0.2992	3.2311	273.1770	67.7581	39.3953	51.8347	0.0000
15/02/16	94.3437	0.1640	0.1338	0.3052	3.2169	273.3610	68.6070	39.3634	51.8187	3.4460
16/02/16	94.9658	0.1214	0.1259	0.2478	2.9458	273.7950	69.2638	39.1158	51.7210	0.0000
17/02/16	89.3277	0.1332	0.1282	0.2614	2.9952	274.1890	74.5339	39.1319	51.7208	0.0000
18/02/16	95.6502	0.1300	0.1255	0.2555	2.9901	273.3340	74.5178	39.0928	51.7026	1.8379
19/02/16	95.7080	0.1278	0.1266	0.2544	3.1382	272.4710	80.7490	39.1351	51.7276	1.6082
20/02/16	95.1543	0.1476	0.1293	0.2789	3.0526	273.3880	82.1266	39.1176	51.5619	0.0000
21/02/16	95.0496	0.1478	0.1309	0.2804	3.2160	273.6340	80.0442	39.2090	51.7308	0.0000
22/02/16	95.2546	0.1512	0.1286	0.2843	3.1289	271.4800	75.6071	39.2151	51.6016	0.6892
23/02/16	95.4405	0.1447	0.1296	0.2749	3.0991	273.2180	76.4401	39.1968	51.6049	0.6892
24/02/16	95.5214	0.1562	0.1284	0.2888	3.0220	274.1688	87.8132	39.1235	51.6224	6.6623
25/02/16	90.6318	0.1740	0.1314	0.3054	3.1402	273.8600	77.2089	39.1480	51.6992	8.9597
26/02/16	91.0000	0.3103	0.1666	0.5410	4.9011	273.4380	80.4607	40.6171	52.3733	0.0000
27/02/16	92.0962	0.2596	0.2045	0.4641	4.7683	273.4460	80.4607	40.5589	52.3712	1.3784
28/02/16	92.5009	0.2688	0.1592	0.4611	3.9780	272.2610	87.6370	39.8252	51.9739	0.2297
29/02/16	94.3600	0.1754	0.1555	0.3309	3.3701	275.3400	102.7263	39.4886	51.8761	9.1894

<b>Mínimo</b>	89.3277	0.1214	0.1241	0.2478	2.9458	270.6540	50.8586	39.0928	51.5619	0.0000
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**INFORME MENSUAL SOBRE LAS ESPECIFICACIONES DEL GAS NATURAL  
(Registros mínimos diarios)**

**PERMISIONARIO:** Compañía Nacional de Gas SA de CV - Permiso G/11/DIS/1997  
**PUNTO DE MEDICIÓN:** Cruce Internacional II - Estacion Importacion Phenix  
**ZONA DE MEDICIÓN:** RESTO DEL PAÍS

FECHA: (dd/mm/aa)	Metano (% vol)	Bióxido de Carbono (% vol)	Nitrógeno (% vol)	Total Inertes (% vol)	Etano (% vol)	Temperatura de Rocio (K)	Humedad (mg/m <sup>3</sup> )	Poder Calorífico (MJ/m <sup>3</sup> )	Índice Wobbe (MJ/m <sup>3</sup> )	Acido Sulfhídrico (mg/m <sup>3</sup> )
01/02/16	91.1990	0.3640	1.3250	1.6890	5.3420			39.7280		
02/02/16										
03/02/16										
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28/02/16										
29/02/16										

<b>Mínimo</b>	91.1990	0.3640	1.3250	1.6890	5.3420	0.0000	0.0000	39.7280	0.0000	0.0000
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Certificate of Analysis  
Number: 4030-16010158-014A

Pleasanton Laboratory  
627 2nd Street  
Pleasanton, TX 78064  
Phone 877-SPL-LABS

Jan. 21, 2016

Olen Douglass  
Thurmond-McGothlin, Inc  
1428 N. Banks  
Pampa, TX 79065

Station Name: Mexico #1  
Station Number: 781-006  
Cylinder No: TM-11312  
Analyzed: 01/21/2016 08:21:09 by AC

Sampled By: A. Ramirez  
Sample Of: Gas Spot  
Sample Date: 01/06/2016  
Sample Conditions: 150 psig, @ 48 °F  
Method: GPA-2261M

Analytical Data

Components	Mol. %	Wt. %	GPM at 14.65 psia		
Nitrogen	0.204	0.324		GPM TOTAL C2+	2.101
Carbon Dioxide	0.279	0.697		GPM TOTAL C3+	0.571
Methane	91.851	83.619		GPM TOTAL IC5+	0.068
Ethane	5.738	9.791	1.530		
Propane	1.247	3.120	0.342		
Iso-butane	0.204	0.673	0.067		
n-Butane	0.299	0.986	0.094		
Iso-pentane	0.075	0.307	0.027		
n-Pentane	0.052	0.213	0.019		
Hexanes Plus	0.051	0.270	0.022		
	100.000	100.000	2.101		

Physical Properties	Total	C6+
Relative Density Real Gas	0.6097	3.2176
Calculated Molecular Weight	17.622	93.189
Compressibility Factor	0.9976	
GPA 2172-09 Calculation:		
Calculated Gross BTU per ft <sup>3</sup> @ 14.65 psia & 60°F		
Real Gas Dry BTU	1083.9	5113.2
Water Sat. Gas Base BTU	1065.4	5023.7
Comments: H2O Mol% : 1.750 ; Wt% : 1.788		

Hydrocarbon Laboratory Manager

Quality Assurance:

The above analyses are performed in accordance with ASTM, UOP, GPA guidelines for quality assurance, unless otherwise stated.



**Certificate of Analysis**  
 Number: 4030-15120234-004A

**Pleasanton Laboratory**  
 627 2nd Street  
 Pleasanton, TX 78064  
 Phone 877-SPL-LABS

Dec. 23, 2015

Olen Douglass  
 Thurmond-McGothlin, Inc.  
 1428 N. Banks  
 Pampa, TX 79065

Station Name: Custom Station  
 Station Number: 781-009  
 Cylinder No: TM-11347  
 Analyzed: 12/23/2015 13:16:52 by NDS

Sampled By: A. Ramirez  
 Sample Of: Gas Composite  
 Sample Date: 12/14/2015  
 Sample Conditions: 400 psig, @ 66 °F  
 Method: GPA-2261M

**Analytical Data**

Components	Mol. %	Wt. %	GPM at 14.65 psia		
Nitrogen	1.325	2.099		GPM TOTAL C2+	1.952
Carbon Dioxide	0.364	0.906		GPM TOTAL C3+	0.528
Methane	91.199	82.753		GPM TOTAL IC5+	0.073
Ethane	5.342	9.085	1.424		
Propane	1.112	2.773	0.305		
Iso-butane	0.190	0.625	0.082		
n-Butane	0.279	0.917	0.088		
Iso-pentane	0.075	0.306	0.027		
n-Pentane	0.054	0.220	0.020		
Hexanes Plus	0.060	0.316	0.026		
	100.000	100.000	1.952		

**Physical Properties**

Relative Density Real Gas	Total	C6+
Calculated Molecular Weight	0.6117	3.2176
Compressibility Factor	17.680	93.169
	0.9976	

**GPA 2172-09 Calculation:**  
 Calculated Gross BTU per ft<sup>3</sup> @ 14.65 psia & 60°F  
 Real Gas Dry BTU 1056.3 5113.2  
 Water Sat. Gas Base BTU 1048.1 5023.7

Comments: H2O Mol% : 1.750 ; Wt% : 1.783

*[Signature]*

Hydrocarbon Laboratory Manager

Quality Assurance:

The above analyses are performed in accordance with ASTM, UOP, GPA guidelines for quality assurance, unless otherwise stated.