

MONITORING REPORT

BANDEIRANTES LANDFILL GAS TO ENERGY PROJECT (BLFGE)

(CDM Registration Reference Number 0164)

Monitoring Periods:

1 March, 2006 to 30 September, 2006



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2nd Verification – Version 1

02 October 2006

1. Introduction

Biogás Energia Ambiental implemented the Bandeirantes Landfill Gas to Energy Project (hereinafter BLFGE), according with the Project Design Document version 2B of December 2005, validated by DNV as the project number 2005-0387 on December, 2005. The project was approved by the Brazilian DNA on September, 2005 and registered at the UNFCCC's web site on 20th February 2005, with the CDM Registration Reference Number 0164.

2. OBJECTIVE

The purpose of this report is to quantify the volume performed of Greenhouse Gas Emission Reductions (ER), in tonnes of carbon dioxide equivalent, to be certified by the Designated Operational Entity as per The Kyoto Protocol and CDM Modalities Procedures requirements (Decision 17.CP7).

3. GENERAL DESCRIPTION OF THE PROJECT

BLFGE is a project designed to explore the landfill gas produced in Bandeirantes landfill, one of the biggest landfills in Brazil. This landfill is located in the metropolitan region of São Paulo, Brazil's biggest city and financial center of the country. With an estimated population of around 10 million citizens in 2000, São Paulo generates nearly 15.000 tons of waste daily. BLFGE's goal is to explore the gas produced in Bandeirantes landfill, using it to generate electricity.

Bandeirantes landfill is divided into 5 cells, named AS-1, AS-2, AS-3, AS-4 and AS-5. The former 3 are the oldest ones, which operated from 1978 until 1995. BLFGE has since its start been extracting gas from the newest cells, where there is still waste being disposed. Two main units can be detached: the degassing installations and the power plant.

The degassing installations are responsible for extracting the landfill gas from the landfill and transport it to the gas engines in the power plant. During the transportation, the gas goes through a treatment to allow its use as fuel for energy generation. Other functions of the degassing installations are: drying landfill gas by gas coolers; and measuring and analyzing the quantity and quality of the landfill gas for safety, process and operating purposes.

The landfill gas cools down when transported from the landfill, resulting in a condensate. This is drained to condensate shafts, placed nearby the gas pipes. Once in the degassing installations, the landfill gas has to be cooled again to remove moisture. This is a very important step in the gas treatment process, since the condensate, which contains silicium components, could block the gas pipes and also damage the gas engines, due to the silicium. After this step, the gas is heated again through a second heat exchanger, or economizer, to a temperature of around 25°C, far enough from the dew point of 4°C to avoid further condensation.

Considering demoisturing is fundamental for the energy generation, as per the reasons mentioned in the previous paragraph, a demister has been installed for extra-safety reasons. The demister is a stainless steel high density filter which separates liquid particles (small amounts of condensate) from the landfill gas. This liquid is to be drained off to a condensate shaft as well.

The blowers are used for transportation of the landfill gas from the landfill to the gas engines, under correct suction and pre-pressure. Capacity and pressure are adjusted through frequency controlled electromotors. Moreover, the blowers are equipped with all the necessary safety equipment, including a noise reducing housing.

On the pressure side of the degassing installation, all kinds of gas analyzing and gas measuring instruments are present. These instruments are very important for safety, process and operating purposes. After the described treatment, analyzing and measurement, the landfill gas is transported as a fuel to the gas engines. These drive electrical generators in order to generate electrical power. An occasional surplus of the landfill gas can be burned off by the flares.

The whole process is controlled by an electrical control system. This control system is provided with a PLC (Programmable Logical Controller). All the measured process signals are processed by the PLC to output signals for the gas-coolers, blowers, flares and gas-engines. Also the system counts on a SCADA system (process visualization on a personal computer). With this system it is possible to control and monitor the installation at a distance, including through the internet.

For electricity generation, a total of 24 Caterpillar engines, nominal capacity of 925 kW, model 3516 A were installed. They will burn the gas and generate energy, which is to be sent to Eletropaulo's – the electricity distributor supplying São Paulo metropolitan region – grid. This electricity will in fact not be commercialized directly; it will supply Unibanco's branches over São Paulo state.

BLFGE is the biggest biogas power plant in the world. Mankind has not been able to presence any circumstance where such scale could be put into practice for a landfill gas to energy initiative until BLFGE was up and running. In Brazil, this kind of project has never been fully accepted since technology was not considered to be proven, legislation does not require landfill gas to be flared, and the electricity market was state-regulated, which did not allow the existence of independent power producers. Moreover, and maybe more important, the country electricity culture has been focused on big hydropower plants, with this sort of electricity generation thought to be the only plausible alternative for the country's demand.

Therefore, one would not think such a landfill gas to energy initiative would happen if there were no technology transfer in place. This means not only supplying equipment, but also training engineers on how to implement such projects and how they could, in turn, train operators to take care of the various meters and softwares necessary for project operation. In the case of BLFGE, project implementation and operation capabilities were part of the work of Van der Wiel – worldwide known Dutch firm acting in the transport, infrastructure and environmental technique – and Arcadis, engineering, project management and consultancy Netherlands-based firm with a branch in Brazil (ArcadisLogos Engenharia), responsible for landfill gas capture engineering design. Equipment used in this project are mainly imported – engines for electricity generation, flow meters, gas analyzer, and flares are all imported. Both companies have been working under strict environmental regulations, and project's implementation and operation happen under such circumstances. Thus, it can be clearly seen a very

important environmentally safe technology transfer operation has been put in place with BLFGE.

4. BASELINE METHODOLOGY

Methodology used:

ACM0001 – version 2: “Consolidated baseline methodology for landfill gas project activities”

Baseline determination:

The Methodology ACM0001 – version 2 states that greenhouse gas emission reduction achieved by the project activity during a given year “y” (ER_y) is the difference between the amount of methane actually destroyed/combusted during the year ($MD_{project,y}$) and the amount of methane that would have been destroyed/combusted during the year in the absence of the project activity ($MD_{reg,y}$), times the approved Global Warming Potential value for methane (GWP_{CH_4}), as follows:

$$ER_y = (MD_{project,y} - MD_{reg,y}) \times 21 + EG_y \times CEF_{electricity,y}, \text{ where:}$$

ER_y = emission reductions of the project activity in year y (tCO₂e);

$MD_{project,y}$ = quantity of methane destroyed at year y (tCH₄);

$MD_{reg,y}$ = methane that would have been destroyed during the year y in the absence of the project activity (tCH₄);

GWP_{CH_4} = Global Warming Potential of Methane (tCO₂e/tCH₄);

EG_y = Net quantity of electricity displaced on year y;

$CEF_{electricity,y}$ = CO₂ emissions intensity of the electricity displaced (tCO₂e/MWh)

As the BLFGE does not have any contractual obligations to burn methane, $MD_{reg,y}$ is calculated based on the “Adjustment Factor”, a value estimated as 20% of total methane produced at the baseline that is flared due to odor and security concerns:

$$MD_{reg,y} = 0,2 \times MD_{project,y}$$

and

$$ER_y = 0,8 \times MD_{project,y} \times 21 + EG_y \times CEF_{electricity,y}$$

The methane destroyed by the project activity $MD_{project,y}$ during year y is determined by monitoring the quantity of methane actually flared:

$$MD_{project,y} = MD_{flared,y} + MD_{electricity,y}$$

and

$$MD_{flared,y} = LFG_{flared,y} \times w_{CH_4} \times D_{CH_4} \times FE,$$

$$MD_{electricity,y} = LFG_{electricity,y} \times w_{CH_4} \times D_{CH_4} \text{ where}$$

$MD_{flared,y}$ = quantity of methane destroyed by flaring during year y (tCH₄);

$LFG_{flared,y}$ = quantity of landfill gas flared during the year (m³_{LFG});

$MD_{electricity,y}$ = quantity of methane sent to produce electricity during year y (tCH₄);

$LFG_{electricity,y}$ = quantity of landfill gas sent to produce electricity during the year

(m^3_{LFG});

$w_{\text{CH}_4,y}$ = methane fraction of the landfill gas ($\text{m}^3\text{CH}_4 / \text{m}^3_{\text{LFG}}$);

D_{CH_4} = methane density ($\text{tCH}_4 / \text{m}^3\text{CH}_4$);

FE = flare efficiency (%);

Emission reductions from the displacement of electricity were calculated using the emission factor of the S-SE-CO grid. According with ACM0002, for the years 2002-2004 the Emission Factor ($CEF_{\text{electricity},y}$) was 0,2677 tCO_2/MWh and

5. MONITORING METHODOLOGY

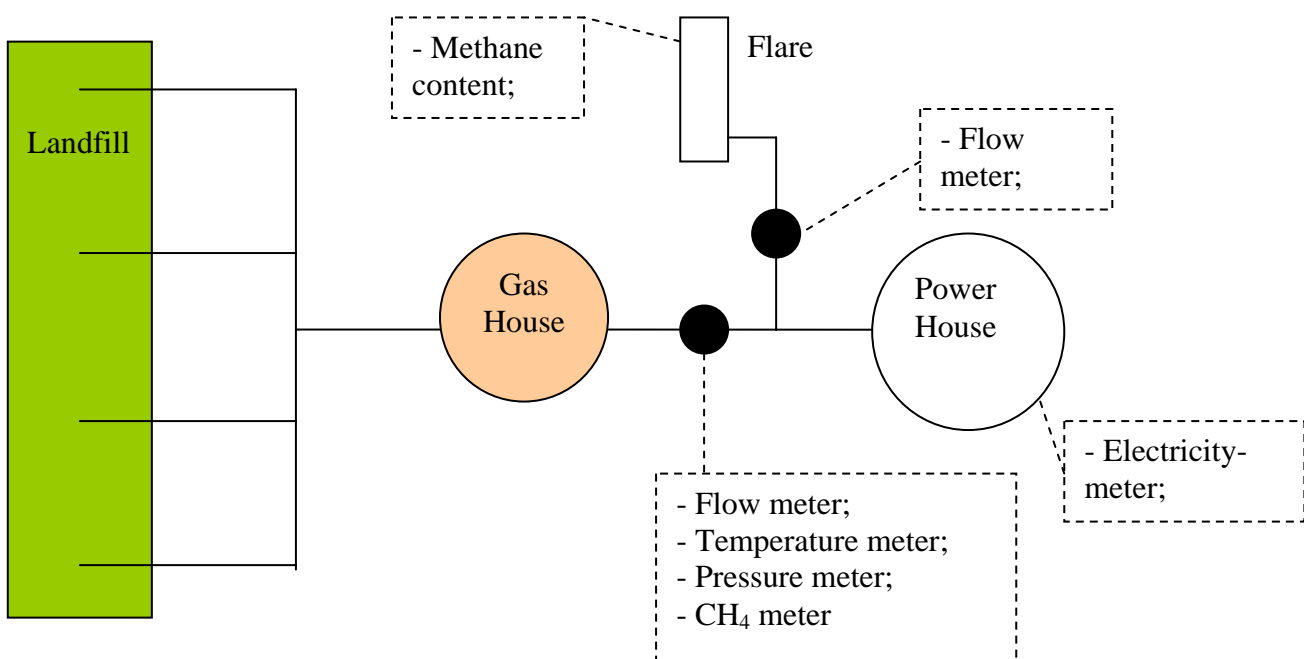
Methodology used:

ACM0001 – version 2: “Consolidated baseline methodology for landfill gas project activities”

The parameters to be monitored are, according with ACM0001 – version 2:

- total landfill gas captured;
- landfill gas sent to flares;
- landfill gas sent to produce electricity;
- pressure of the landfill gas;
- temperature of the landfill gas;
- flare efficiency;
- methane content on landfill gas;
- electricity fed to the grid;
- regulatory requirements;

The measure of the amount of landfill gas collected, the pressure, the temperature and the percentage of methane will be made after the degassing installation. Next, the amount of landfill gas sent to flares will be measured in the entrance of the flares and the difference between these two values will be the amount of landfill gas sent to produce electricity. The electricity dispatched to the grid will be measured at the power house.



All measures have been registered automatically by the flow-meter and updated at each 5 minutes. The equipments are:

After the installation of the flow-meter

Variable Measured	Instrument	Fabricant	Model	Error (+/-%)	Uncertainty
Total flow	Flow Meter	Instromet	SM-RI X K	0,600	-
Temperature	Temperature transmitter	Instromet	model 333	0,010	-
Pressure	Pressure transmitter	Instromet	model 333	0,010	0,02
Methane concentration	Panel analyzer	Emerson	BINOS 100	1,000	-
Total error + uncertainty				1,1663	%

The formulae used to calculate the error was:

$$\varepsilon = \sqrt{0,6^2 + 0,01^2 + 0,01^2 + 1^2} = 1,1663 \%$$

As the methane sent to the electricity production was not measured but calculated, a new error of the equipment must be calculated, assuming that the same equipment as those described above would be used. So, the error is calculated as:

$$\varepsilon = \sqrt{1,166^2 + 1,166^2} = 1,6494 \%$$

6. CER VOLUME REQUIRED

The CER volume required for the period is **377.234,8974 tCO₂e**

Calculation Memo, from 01/03/2006 to 30/09/2006, not considering the errors of the measuring equipment.

VARIABLE	UNIT	QUANTITY
Total Methane Captured	Nm ³	29.823.335,6339
Methane destroyed at the flares	Nm ³	1.134.875,7600
Total methane to electricity	Nm ³	28.684.205,5425
Total methane destroyed	Nm³	29.819.081,3025
Total electricity exported	MWh	89.668,4700

Some observations for the monitoring period:

- during this period, three measurements of flare efficiency were made, resulting on three different efficiencies for each period, but higher than 99,99%;
- before the first flare efficiency analysis, the value adopted was of 99, 92% as informed by the flare's manufacturer;
- all calculations were made using the Excel tool "Round.Below", with four decimal numbers;

7. Monitoring Sheet

DAY	COLLECTING SYSTEM						FLARING SYTEM				ELETRICITY DISPATCH		
	LFG Collected (Nm3)	Temperature (°C)	Temperature (K)	Pressure (mbar)	Methane (%)	Methane Collected (N.m³)	LFG sent to Flares (N.m³)	Methane sent to Flares (N.m³)	Flare Efficiency (%)	Methne Destroyed (Nm³)	Biogás sent to electricity (Nm³)	Methane sent to eletricity (Nm3/day)	Eletricity Exported (MWh)
1/3/2006	263.770	47,2100	320,3600	200,0300	51,8300	136.711,9910	7.319	3.793,4377	99,9936	3.769,1597	256.451	132.918,5533	413,2300
2/3/2006	229.510	51,1700	324,3200	199,6900	50,2800	115.397,6280	21.437	10.778,5236	99,9936	10.709,5410	208.073	104.619,1044	338,3600
3/3/2006	258.381	51,3200	324,4700	198,9600	48,9200	126.399,9852	9.665	4.728,1180	99,9936	4.697,8580	248.716	121.671,8672	405,5100
4/3/2006	259.421	49,8600	323,0100	199,7900	50,7500	131.656,1575	7.279	3.694,0925	99,9936	3.670,4503	252.142	127.962,0650	363,9300
5/3/2006	260.307	49,0800	322,2300	198,9800	53,7200	139.836,9204	7.341	3.943,5852	99,9936	3.918,3463	252.966	135.893,3352	413,0900
6/3/2006	254.322	48,7800	321,9300	200,2900	55,0300	139.953,3966	9.418	5.182,7254	99,9936	5.149,5560	244.904	134.770,6712	401,8400
7/3/2006	260.192	49,5700	322,7200	199,9700	54,9700	143.027,5424	3.620	1.989,9140	99,9936	1.977,1786	256.572	141.037,6284	422,5500
8/3/2006	261.513	51,5900	324,7400	199,6600	53,4800	139.857,1524	5.322	2.846,2056	99,9936	2.827,9899	256.191	137.010,9468	424,0700
9/3/2006	271.963	50,2500	323,4000	199,4000	54,1000	147.131,9830	5.504	2.977,6640	99,9936	2.958,6070	266.459	144.154,3190	432,6700
10/3/2006	265.705	50,4300	323,5800	199,8200	53,7400	142.789,8670	13.337	7.167,3038	99,9936	7.121,4331	252.368	135.622,5632	409,5100
11/3/2006	273.399	49,4200	322,5700	199,8500	53,4100	146.022,4059	41.024	21.910,9184	99,9936	21.770,6885	232.375	124.111,4875	377,8400
12/3/2006	274.942	50,1700	323,3200	199,0100	53,5100	147.121,4642	20.817	11.139,1767	99,9936	11.067,8860	254.125	135.982,2875	405,4900
13/3/2006	263.237	49,9600	323,1100	199,8000	51,9500	136.751,6215	11.850	6.156,0750	99,9936	6.116,6761	251.387	130.595,5465	413,6900
14/3/2006	268.797	50,0800	323,2300	200,1600	52,3500	140.715,2295	3.914	2.048,9790	99,9936	2.035,8655	264.883	138.666,2505	423,6300
15/3/2006	262.303	50,7400	323,8900	199,6500	51,7700	135.794,2631	8.380	4.338,3260	99,9936	4.310,5607	253.923	131.455,9371	413,9100
16/3/2006	263.964	51,0800	324,2300	199,8000	51,4700	135.862,2708	9.988	5.140,8236	99,9936	5.107,9223	253.976	130.721,4472	409,6600
17/3/2006	264.486	51,4800	324,6300	199,7000	51,1100	135.178,7946	14.625	7.474,8375	99,9936	7.426,9985	249.861	127.703,9571	401,9200
18/3/2006	268.291	50,3300	323,4800	200,0700	52,0200	139.564,9782	9.030	4.697,4060	99,9936	4.667,3426	259.261	134.867,5722	412,1300
19/3/2006	263.439	50,7000	323,8500	199,9500	52,5600	138.463,5384	4.736	2.489,2416	99,9936	2.473,3105	258.703	135.974,2968	416,8500
20/3/2006	263.967	51,1300	324,2800	200,0500	51,9300	137.078,0631	18.395	9.552,5235	99,9936	9.491,3873	245.572	127.525,5396	396,8300
21/3/2006	267.124	49,4800	322,6300	198,7600	52,6000	140.507,2240	3.966	2.086,1160	99,9936	2.072,7649	263.158	138.421,1080	439,3500
22/3/2006	255.301	49,6800	322,8300	199,9800	52,8000	134.798,9280	12.262	6.474,3360	99,9936	6.432,9002	243.039	128.324,5920	394,2100
23/3/2006	262.963	50,3500	323,5000	199,7100	53,0300	139.449,2789	6.158	3.265,5874	99,9936	3.244,6876	256.805	136.183,6915	420,3400
24/3/2006	241.919	51,1300	324,2800	196,3500	52,8100	127.757,4239	15.401	8.133,2681	99,9936	8.081,2152	226.518	119.624,1558	367,7000
25/3/2006	270.426	48,9600	322,1100	200,3200	52,4100	141.730,2666	19.095	10.007,6895	99,9936	9.943,6403	251.331	131.722,5771	383,5500
26/3/2006	269.771	49,7500	322,9000	200,1300	52,0700	140.469,7597	19.127	9.959,4289	99,9936	9.895,6886	250.644	130.510,3308	405,4200
27/3/2006	272.846	50,3800	323,5300	200,1800	52,7800	144.008,1188	1.186	625,9708	99,9936	621,9646	271.660	143.382,1480	440,7800

DAY	COLLECTING SYSTEM						FLARING SYTEM				ELETRICITY DISPATCH		
	LFG Collected (Nm3)	Temperature (°C)	Temperature (K)	Pressure (mbar)	Methane (%)	Methane Collected (N.m³)	LFG sent to Flares (N.m³)	Methane sent to Flares (N.m³)	Flare Efficiency (%)	Methne Destroyed (Nm³)	Biogas sent to electricity (Nm³)	Methane sent to eletricity (Nm3/day)	Eletricity Exported (MWh)
28/3/2006	269.972	47,5000	320,6500	199,8600	52,8400	142.653,2048	5.792	3.060,4928	99,9936	3.040,9056	264.180	139.592,7120	432,4800
29/3/2006	274.347	48,7800	321,9300	199,3600	53,1000	145.678,2570	29.864	15.857,7840	99,9936	15.756,2942	244.483	129.820,4730	399,9400
30/3/2006	271.216	49,2100	322,3600	199,8100	52,3400	141.954,4544	10.216	5.347,0544	99,9936	5.312,8333	261.000	136.607,4000	429,3900
31/3/2006	277.635	49,6300	322,7800	199,8800	52,4300	145.564,0305	21.447	11.244,6621	99,9936	11.172,6963	256.188	134.319,3684	418,1700
1/4/2006	275.048	49,6400	322,7900	199,9800	52,2000	143.575,0560	7.725	4.032,4500	99,9936	4.006,6423	267.323	139.542,6060	427,6800
2/4/2006	274.500	49,5800	322,7300	200,0000	51,8500	142.328,2500	4.144	2.148,6640	99,9936	2.134,9126	270.356	140.179,5860	436,2700
3/4/2006	277.384	49,0000	322,1500	199,7900	51,8100	143.712,6504	7.755	4.017,8655	99,9936	3.992,1512	269.629	139.694,7849	432,3500
4/4/2006	274.657	48,9200	322,0700	199,6800	52,1200	143.151,2284	5.401	2.815,0012	99,9936	2.796,9852	269.256	140.336,2272	433,9900
5/4/2006	271.100	49,8700	323,0200	200,0400	51,4500	139.480,9500	0	0,0000	99,9936	0,0000	271.100	139.480,9500	438,7700
6/4/2006	271.821	49,0400	322,1900	200,2200	51,8300	140.884,8243	3.547	1.838,4101	99,9936	1.826,6443	268.274	139.046,4142	432,0900
7/4/2006	263.767	49,5000	322,6500	200,0400	52,0000	137.158,8400	172	89,4400	99,9936	88,8676	263.595	137.069,4000	428,7700
8/4/2006	263.592	46,9600	320,1100	200,0500	58,6200	154.517,6304	3.040	1.782,0480	99,9936	1.770,6429	260.552	152.735,5824	425,4400
9/4/2006	135.181	49,4600	322,6100	199,9300	52,4300	70.875,3983	49.751	26.084,4493	99,9936	25.917,5088	85.430	44.790,9490	137,5600
10/4/2006	272.072	49,5000	322,6500	199,9400	51,5800	140.334,7376	8.467	4.367,2786	99,9936	4.339,3280	263.605	135.967,4590	438,5100
11/4/2006	269.140	49,0800	322,2300	199,8000	51,0200	137.315,2280	1.522	776,5244	99,9936	771,5546	267.618	136.538,7036	437,1700
12/4/2006	269.442	49,2500	322,4000	199,8400	51,0200	137.469,3084	1.191	607,6482	99,9936	603,7593	268.251	136.861,6602	433,1100
13/4/2006	267.334	49,2100	322,3600	200,2300	50,8700	135.992,8058	2.239	1.138,9793	99,9936	1.131,6898	265.095	134.853,8265	427,5800
14/4/2006	266.411	48,7800	321,9300	200,0500	50,8900	135.576,5579	1.526	776,5814	99,9936	771,6113	264.885	134.799,9765	426,7000
15/4/2006	263.749	48,7900	321,9400	200,0500	50,1800	132.349,2482	1.488	746,6784	99,9936	741,8997	262.261	131.602,5698	422,1800
16/4/2006	269.455	46,0000	319,1500	199,9500	50,8400	136.990,9220	1.164	591,7776	99,9936	587,9902	268.291	136.399,1444	426,2100
17/4/2006	258.666	45,3900	318,5400	199,8300	50,5600	130.781,5296	6.669	3.371,8464	99,9936	3.350,2666	251.997	127.409,6832	400,8300
18/4/2006	267.543	46,2500	319,4000	200,1500	50,8700	136.099,1241	441	224,3367	99,9936	222,9009	267.102	135.874,7874	425,4200
19/4/2006	266.242	47,5800	320,7300	199,8000	50,6600	134.878,1972	2.669	1.352,1154	99,9936	1.343,4619	263.573	133.526,0818	421,1300
20/4/2006	266.692	46,4600	319,6100	199,8600	51,0300	136.092,9276	4.474	2.283,0822	99,9936	2.268,4705	262.218	133.809,8454	417,9900
21/4/2006	259.555	48,6400	321,7900	199,9600	50,7300	131.672,2515	13.419	6.807,4587	99,9936	6.763,8910	246.136	124.864,7928	394,3800
22/4/2006	264.774	48,9200	322,0700	199,9100	50,4800	133.657,9152	6.090	3.074,2320	99,9936	3.054,5569	258.684	130.583,6832	411,2700
23/4/2006	264.714	48,6300	321,7800	200,2400	50,4800	133.627,6272	2.707	1.366,4936	99,9936	1.357,7480	262.007	132.261,1336	413,7200
24/4/2006	265.420	46,5400	319,6900	199,8400	53,3500	141.601,5700	8.836	4.714,0060	99,9936	4.683,8364	256.584	136.887,5640	404,2600
25/4/2006	241.859	49,3300	322,4800	200,0000	51,0100	123.372,2759	50.718	25.871,2518	99,9936	25.705,6758	191.141	97.501,0241	306,9600
26/4/2006	268.414	48,6400	321,7900	200,2700	50,1600	134.636,4624	10.210	5.121,3360	99,9936	5.088,5594	258.204	129.515,1264	411,7600

DAY	COLLECTING SYSTEM						FLARING SYTEM				ELETRICITY DISPATCH		
	LFG Collected (Nm3)	Temperature (°C)	Temperature (K)	Pressure (mbar)	Methane (%)	Methane Collected (N.m³)	LFG sent to Flares (N.m³)	Methane sent to Flares (N.m³)	Flare Efficiency (%)	Methne Destroyed (Nm³)	Biogás sent to electricity (Nm³)	Methane sent to eletricity (Nm3/day)	Eletricity Exported (MWh)
27/4/2006	271.368	48,6700	321,8200	200,0400	50,2800	136.443,8304	1.302	654,6456	99,9936	650,4559	270.066	135.789,1848	428,7300
28/4/2006	279.619	49,3000	322,4500	199,8900	50,9400	142.437,9186	457	232,7958	99,9936	231,3059	279.162	142.205,1228	441,7600
29/4/2006	277.671	49,9600	323,1100	200,2700	51,1400	142.000,9494	2.633	1.346,5162	99,9936	1.337,8985	275.038	140.654,4332	443,3300
30/4/2006	280.446	49,3300	322,4800	199,8200	51,6900	144.962,5374	4.372	2.259,8868	99,9936	2.245,4235	276.074	142.702,6506	440,9600
1/5/2006	277.608	48,9600	322,1100	199,7800	51,5600	143.134,6848	8.691	4.481,0796	99,9936	4.452,4007	268.917	138.653,6052	428,8600
2/5/2006	278.876	47,8700	321,0200	199,9300	50,3300	140.358,2908	6.182	3.111,4006	99,9936	3.091,4876	272.694	137.246,8902	434,2600
3/5/2006	284.846	46,3300	319,4800	199,9900	49,9300	142.223,6078	5.566	2.779,1038	99,9936	2.761,3175	279.280	139.444,5040	438,0000
4/5/2006	278.539	44,4300	317,5800	199,9400	50,9000	141.776,3510	1.626	827,6340	99,9936	822,3371	276.913	140.948,7170	428,5300
5/5/2006	267.934	47,4300	320,5800	200,2600	50,7400	135.949,7116	4.636	2.352,3064	99,9936	2.337,2516	263.298	133.597,4052	411,4300
6/5/2006	282.182	46,5400	319,6900	200,1800	50,5200	142.558,3464	9.892	4.997,4384	99,9936	4.965,4548	272.290	137.560,9080	424,7800
7/5/2006	278.723	46,5000	319,6500	200,0200	51,4600	143.430,8558	2.377	1.223,2042	99,9936	1.215,3757	276.346	142.207,6516	428,8300
8/5/2006	276.868	47,2100	320,3600	200,0300	51,8300	143.500,6844	7.404	3.837,4932	99,9936	3.812,9332	269.464	139.663,1912	425,2200
9/5/2006	277.348	47,6300	320,7800	199,8000	51,6600	143.277,9768	3.059	1.580,2794	99,9936	1.570,1656	274.289	141.697,6974	437,9800
10/5/2006	279.575	47,0800	320,2300	200,2200	51,2000	143.142,4000	502	257,0240	99,9936	255,3790	279.073	142.885,3760	446,1800
11/5/2006	281.008	46,8800	320,0300	199,8800	51,0000	143.314,0800	2.637	1.344,8700	99,9936	1.336,2628	278.371	141.969,2100	442,6600
12/5/2006	283.449	47,2900	320,4400	200,0300	50,5700	143.340,1593	671	339,3247	99,9936	337,1530	282.778	143.000,8346	446,1700
13/5/2006	286.541	47,2900	320,4400	200,1700	50,5300	144.789,1673	1.498	756,9394	99,9936	752,0950	285.043	144.032,2279	444,9400
14/5/2006	287.085	46,9200	320,0700	199,7600	50,8900	146.097,5565	428	217,8092	99,9936	216,4152	286.657	145.879,7473	446,5000
15/5/2006	284.072	46,6700	319,8200	199,8600	50,8200	144.365,3904	0	0,0000	99,9936	0,0000	284.072	144.365,3904	446,1200
16/5/2006	282.203	47,3000	320,4500	199,8500	51,1400	144.318,6142	2.204	1.127,1256	99,9936	1.119,9120	279.999	143.191,4886	439,1700
17/5/2006	279.712	47,6100	320,7600	199,8300	51,5600	144.219,5072	6.567	3.385,9452	99,9936	3.364,2752	273.145	140.833,5620	430,4700
18/5/2006	277.488	46,8700	320,0200	199,2300	52,2200	144.904,2336	10.133	5.291,4526	99,9936	5.257,5873	267.355	139.612,7810	424,7900
19/5/2006	263.552	45,6300	318,7800	200,0600	51,4600	135.623,8592	7.522	3.870,8212	99,9936	3.846,0479	256.030	131.753,0380	408,1300
20/5/2006	275.902	46,8700	320,0200	199,9700	50,2800	138.723,5256	6.058	3.045,9624	99,9936	3.026,4682	269.844	135.677,5632	428,1000
21/5/2006	272.890	46,9100	320,0600	200,4300	49,7100	135.653,6190	1.077	535,3767	99,9936	531,9503	271.813	135.118,2423	427,5900
22/5/2006	278.157	45,0000	318,1500	199,8600	49,0800	136.519,4556	468	229,6944	99,9936	228,2244	277.689	136.289,7612	429,3600
23/5/2006	285.118	46,8300	319,9800	199,9700	48,3000	137.711,9940	860	415,3800	99,9936	412,7216	284.258	137.296,6140	434,8100
24/5/2006	296.368	46,6300	319,7800	199,9100	48,9900	145.190,6832	656	321,3744	99,9936	319,3176	295.712	144.869,3088	448,1700
25/5/2006	288.099	48,0800	321,2300	197,8500	49,3400	142.148,0466	3.865	1.906,9910	99,9936	1.894,7863	284.234	140.241,0556	436,6800
26/5/2006	279.415	48,0500	321,2000	199,9700	48,8200	136.410,4030	6.246	3.049,2972	99,9936	3.029,7817	273.169	133.361,1058	421,3800

DAY	COLLECTING SYSTEM						FLARING SYTEM				ELETRICITY DISPATCH		
	LFG Collected (Nm3)	Temperature (°C)	Temperature (K)	Pressure (mbar)	Methane (%)	Methane Collected (N.m³)	LFG sent to Flares (N.m³)	Methane sent to Flares (N.m³)	Flare Efficiency (%)	Methne Destroyed (Nm³)	Biogas sent to electricity (Nm³)	Methane sent to eletricity (Nm3/day)	Eletricity Exported (MWh)
27/5/2006	286.294	48,4300	321,5800	200,1800	48,8700	139.911,8778	55	26,8785	99,9936	26,7065	286.239	139.884,9993	439,4500
28/5/2006	285.379	49,4600	322,6100	199,9700	49,1100	140.149,6269	604	296,6244	99,9936	294,7260	284.775	139.853,0025	437,1800
29/5/2006	286.210	50,2100	323,3600	199,6400	48,9200	140.013,9320	2.983	1.459,2836	99,9936	1.449,9442	283.227	138.554,6484	435,0500
30/5/2006	288.872	44,9100	318,0600	198,3800	48,9700	141.460,6184	8.750	4.284,8750	99,9936	4.257,4518	280.122	137.175,7434	429,6400
31/5/2006	272.131	47,0800	320,2300	199,2200	51,2600	139.494,3506	9.412	4.824,5912	99,9936	4.793,7138	262.719	134.669,7594	408,5700
1/6/2006	270.620	47,3300	320,4800	195,3900	48,5100	131.277,7620	5.821	2.823,7671	99,9970	2.815,2958	264.799	128.453,9949	419,1100
2/6/2006	288.957	48,6300	321,7800	193,3100	47,8300	138.208,1331	6.301	3.013,7683	99,9970	3.004,7270	282.656	135.194,3648	429,3500
3/6/2006	293.766	47,9200	321,0700	200,0300	47,8500	140.567,0310	716	342,6060	99,9970	341,5782	293.050	140.224,4250	444,3400
4/6/2006	290.661	48,5400	321,6900	199,9100	48,0300	139.604,4783	487	233,9061	99,9970	233,2044	290.174	139.370,5722	440,5800
5/6/2006	290.028	48,0000	321,1500	192,3000	49,7800	144.375,9384	324	161,2872	99,9970	160,8033	289.704	144.214,6512	441,8100
6/6/2006	265.293	47,7900	320,9400	188,8600	48,7000	129.197,6910	11.416	5.559,5920	99,9970	5.542,9132	253.877	123.638,0990	391,7700
7/6/2006	287.465	47,7100	320,8600	189,9300	47,8300	137.494,5095	24.353	11.648,0399	99,9970	11.613,0958	263.112	125.846,4696	397,6600
8/6/2006	299.879	47,1700	320,3200	189,9300	47,8500	143.492,1015	16.892	8.082,8220	99,9970	8.058,5735	282.987	135.409,2795	425,7600
9/6/2006	296.860	47,1300	320,2800	189,9800	47,9700	142.403,7420	1.822	874,0134	99,9970	871,3914	295.038	141.529,7286	446,6700
10/6/2006	296.343	45,7400	318,8900	190,8200	50,0000	148.171,5000	3.986	1.993,0000	99,9970	1.987,0210	292.357	146.178,5000	443,5900
11/6/2006	267.666	47,5000	320,6500	199,7300	46,9500	125.669,1870	25.063	11.767,0785	99,9970	11.731,7773	242.603	113.902,1085	371,7900
12/6/2006	298.823	47,5800	320,7300	199,8000	47,1200	140.805,3976	101	47,5912	99,9970	47,4484	298.722	140.757,8064	444,0900
13/6/2006	297.190	46,0000	319,1500	193,5500	48,3100	143.572,4890	0	0,0000	99,9970	0,0000	297.190	143.572,4890	443,5000
14/6/2006	285.437	45,6100	318,7600	190,2700	47,2000	134.726,2640	19.785	9.338,5200	99,9970	9.310,5044	265.652	125.387,7440	399,4400
15/6/2006	292.445	44,0400	317,1900	190,2800	47,3100	138.355,7295	686	324,5466	99,9970	323,5730	291.759	138.031,1829	430,8800
16/6/2006	288.909	45,2100	318,3600	189,8400	47,5300	137.318,4477	555	263,7915	99,9970	263,0001	288.354	137.054,6562	432,7900
17/6/2006	286.389	45,4200	318,5700	189,6500	47,3700	135.662,4693	0	0,0000	99,9970	0,0000	286.389	135.662,4693	432,3600
18/6/2006	286.770	46,6100	319,7600	189,8400	47,4200	135.986,3340	280	132,7760	99,9970	132,3777	286.490	135.853,5580	429,7100
19/6/2006	287.276	45,6300	318,7800	189,5000	47,7600	137.203,0176	599	286,0824	99,9970	285,2242	286.677	136.916,9352	429,7700
20/6/2006	285.968	45,8300	318,9800	190,1100	47,7800	136.635,5104	5.418	2.588,7204	99,9970	2.580,9542	280.550	134.046,7900	423,0900
21/6/2006	287.167	46,2900	319,4400	189,9200	48,1100	138.156,0437	2.408	1.158,4888	99,9970	1.155,0133	284.759	136.997,5549	432,9600
22/6/2006	285.956	47,2900	320,4400	190,0100	48,0300	137.344,6668	1.606	771,3618	99,9970	769,0477	284.350	136.573,3050	433,5700
23/6/2006	289.314	46,9600	320,1100	189,8500	48,1300	139.246,8282	766	368,6758	99,9970	367,5698	288.548	138.878,1524	438,7700
24/6/2006	288.925	45,4600	318,6100	189,8300	47,7700	138.019,4725	3.132	1.496,1564	99,9970	1.491,6679	285.793	136.523,3161	436,7400
25/6/2006	289.407	44,6700	317,8200	189,7800	47,3800	137.121,0366	2.954	1.399,6052	99,9970	1.395,4064	286.453	135.721,4314	436,5500

DAY	COLLECTING SYSTEM						FLARING SYTEM				ELETRICITY DISPATCH		
	LFG Collected (Nm3)	Temperature (°C)	Temperature (K)	Pressure (mbar)	Methane (%)	Methane Collected (N.m³)	LFG sent to Flares (N.m³)	Methane sent to Flares (N.m³)	Flare Efficiency (%)	Methne Destroyed (Nm³)	Biogas sent to electricity (Nm³)	Methane sent to eletricity (Nm3/day)	Eletricity Exported (MWh)
26/6/2006	292.952	44,4200	317,5700	187,4600	47,5700	139.357,2664	7.000	3.329,9000	99,9970	3.319,9103	285.952	136.027,3664	434,0700
27/6/2006	281.542	41,5400	314,6900	189,1500	48,2500	135.844,0150	14.924	7.200,8300	99,9970	7.179,2275	266.618	128.643,1850	401,1300
28/6/2006	278.017	42,5000	315,6500	189,6900	48,5600	135.005,0552	17.789	8.638,3384	99,9970	8.612,4234	260.228	126.366,7168	393,6200
29/6/2006	287.523	44,0800	317,2300	190,2800	48,1200	138.356,0676	4.689	2.256,3468	99,9970	2.249,5778	282.834	136.099,7208	436,0300
30/6/2006	289.601	46,0800	319,2300	189,8200	47,9900	138.979,5199	12.000	5.758,8000	99,9970	5.741,5236	277.601	133.220,7199	425,1100
1/7/2006	295.599	45,3800	318,5300	189,7200	47,5200	140.468,6448	8.692	4.130,4384	99,9970	4.118,0471	286.907	136.338,2064	442,6500
2/7/2006	299.455	45,7500	318,9000	189,5000	47,9100	143.468,8905	11.927	5.714,2257	99,9970	5.697,0830	287.528	137.754,6648	439,5200
3/7/2006	296.906	46,3300	319,4800	189,9300	47,2900	140.406,8474	5.158	2.439,2182	99,9970	2.431,9005	291.748	137.967,6292	448,6800
4/7/2006	304.090	46,6700	319,8200	190,0000	47,0300	143.013,5270	10.080	4.740,6240	99,9970	4.726,4021	294.010	138.272,9030	448,3900
5/7/2006	305.266	47,4500	320,6000	190,3100	47,0500	143.627,6530	23.707	11.154,1435	99,9970	11.120,6811	281.559	132.473,5095	422,5400
6/7/2006	309.293	47,2100	320,3600	189,9400	47,7200	147.594,6196	23.976	11.441,3472	99,9970	11.407,0232	285.317	136.153,2724	427,4600
7/7/2006	305.108	47,2900	320,4400	189,6700	48,4600	147.855,3368	18.015	8.730,0690	99,9970	8.703,8788	287.093	139.125,2678	436,4600
8/7/2006	300.873	47,9200	321,0700	189,9400	47,9000	144.118,1670	10.989	5.263,7310	99,9970	5.247,9398	289.884	138.854,4360	446,7500
9/7/2006	299.898	44,6700	317,8200	189,7900	48,4600	145.330,5708	16.188	7.844,7048	99,9970	7.821,1707	283.710	137.485,8660	430,1500
10/7/2006	294.296	47,0500	320,2000	189,6200	48,5700	142.939,5672	8.708	4.229,4756	99,9970	4.216,7872	285.588	138.710,0916	439,0600
11/7/2006	300.525	48,6100	321,7600	189,8800	48,8500	146.806,4625	8.808	4.302,7080	99,9970	4.289,7999	291.717	142.503,7545	449,8800
12/7/2006	308.419	48,4200	321,5700	189,6700	48,6000	149.891,6340	21.325	10.363,9500	99,9970	10.332,8581	287.094	139.527,6840	442,9600
13/7/2006	309.250	47,8800	321,0300	189,9000	48,6300	150.388,2750	21.180	10.299,8340	99,9970	10.268,9345	288.070	140.088,4410	441,7500
14/7/2006	306.536	47,4200	320,5700	190,0500	48,5300	148.761,9208	28.340	13.753,4020	99,9970	13.712,1418	278.196	135.008,5188	425,9700
15/7/2006	307.653	47,1700	320,3200	189,7100	48,3200	148.657,9296	23.865	11.531,5680	99,9970	11.496,9733	283.788	137.126,3616	433,8000
16/7/2006	307.068	45,9600	319,1100	190,0000	48,7200	149.603,5296	17.972	8.755,9584	99,9970	8.729,6905	289.096	140.847,5712	441,9600
17/7/2006	299.748	46,4300	319,5800	191,7500	48,6500	145.827,4020	6.099	2.967,1635	99,9970	2.958,2620	293.649	142.860,2385	452,2900
18/7/2006	296.096	46,1800	319,3300	191,6700	48,9900	145.057,4304	5.960	2.919,8040	99,9970	2.911,0446	290.136	142.137,6264	447,0700
19/7/2006	288.073	46,4600	319,6100	190,2700	49,1600	141.616,6868	23.344	11.475,9104	99,9970	11.441,4827	264.729	130.140,7764	406,2500
20/7/2006	298.055	46,9500	320,1000	189,9900	49,1200	146.404,6160	17.734	8.710,9408	99,9970	8.684,8080	280.321	137.693,6752	433,8800
21/7/2006	299.900	47,2900	320,4400	189,9400	50,2500	150.699,7500	15.926	8.002,8150	99,9970	7.978,8066	283.974	142.696,9350	440,0000
22/7/2006	289.061	47,7900	320,9400	190,0100	49,9800	144.472,6878	15.437	7.715,4126	99,9970	7.692,2664	273.624	136.757,2752	427,8100
23/7/2006	295.760	48,1700	321,3200	189,6400	49,8500	147.436,3600	14.196	7.076,7060	99,9970	7.055,4759	281.564	140.359,6540	441,2900
24/7/2006	296.760	47,7500	320,9000	189,7900	49,9000	148.083,2400	8.426	4.204,5740	99,9970	4.191,9603	288.334	143.878,6660	450,2200
25/7/2006	281.897	47,9100	321,0600	189,6300	47,9600	135.197,8012	28.906	13.863,3176	99,9970	13.821,7276	252.991	121.334,4836	393,3600

DAY	COLLECTING SYSTEM						FLARING SYTEM				ELETRICITY DISPATCH		
	LFG Collected (Nm3)	Temperature (°C)	Temperature (K)	Pressure (mbar)	Methane (%)	Methane Collected (N.m³)	LFG sent to Flares (N.m³)	Methane sent to Flares (N.m³)	Flare Efficiency (%)	Methne Destroyed (Nm³)	Biogas sent to electricity (Nm³)	Methane sent to eletricity (Nm3/day)	Eletricity Exported (MWh)
26/7/2006	299.828	49,1700	322,3200	189,9000	48,5800	145.656,4424	20.961	10.182,8538	99,9970	10.152,3052	278.867	135.473,5886	434,1300
27/7/2006	306.229	49,0800	322,2300	190,0200	50,3000	154.033,1870	22.708	11.422,1240	99,9970	11.387,8576	283.521	142.611,0630	434,7400
28/7/2006	288.203	46,2500	319,4000	189,8300	50,5600	145.715,4368	38.167	19.297,2352	99,9970	19.239,3435	250.036	126.418,2016	389,7700
29/7/2006	288.473	43,3300	316,4800	189,6500	48,0400	138.582,4292	33.195	15.946,8780	99,9970	15.899,0374	255.278	122.635,5512	398,6500
30/7/2006	302.057	41,7500	314,9000	189,8400	49,0900	148.279,7813	2.853	1.400,5377	99,9970	1.396,3361	299.204	146.879,2436	457,9200
31/7/2006	297.796	44,3800	317,5300	190,1700	49,1200	146.277,3952	639	313,8768	99,9970	312,9352	297.157	145.963,5184	463,2300
1/8/2006	300.703	44,4800	317,6300	189,7600	49,1500	147.795,5245	55	27,0325	99,9970	26,9514	300.648	147.768,4920	468,8300
2/8/2006	302.116	45,9200	319,0700	189,7900	49,0200	148.097,2632	7.323	3.589,7346	99,9970	3.578,9654	294.793	144.507,5286	458,3700
3/8/2006	305.235	47,0800	320,2300	189,6800	49,3100	150.511,3785	11.997	5.915,7207	99,9970	5.897,9735	293.238	144.595,6578	454,7500
4/8/2006	302.199	47,7100	320,8600	189,9400	49,2600	148.863,2274	16.761	8.256,4686	99,9970	8.231,6992	285.438	140.606,7588	442,6100
5/8/2006	302.031	48,8800	322,0300	190,0000	48,9600	147.874,3776	7.537	3.690,1152	99,9970	3.679,0449	294.494	144.184,2624	455,7400
6/8/2006	304.722	49,0000	322,1500	190,0200	49,1200	149.679,4464	14.916	7.326,7392	99,9970	7.304,7590	289.806	142.352,7072	445,6500
7/8/2006	301.097	48,4200	321,5700	189,9800	49,5400	149.163,4538	13.273	6.575,4442	99,9970	6.555,7179	287.824	142.588,0096	441,7400
8/8/2006	297.659	47,7100	320,8600	189,7900	49,2600	146.626,8234	5.510	2.714,2260	99,9970	2.706,0833	292.149	143.912,5974	454,0800
9/8/2006	298.225	48,7100	321,8600	189,7300	49,2700	146.935,4575	2.179	1.073,5933	99,9970	1.070,3725	296.046	145.861,8642	460,7000
10/8/2006	297.073	50,0000	323,1500	189,7000	49,0600	145.744,0138	7.605	3.731,0130	99,9970	3.719,8200	289.468	142.013,0008	448,3200
11/8/2006	298.877	49,7000	322,8500	189,9700	49,1000	146.748,6070	19.096	9.376,1360	99,9970	9.348,0076	279.781	137.372,4710	428,0700
12/8/2006	297.427	49,5800	322,7300	189,7800	49,0000	145.739,2300	19.231	9.423,1900	99,9970	9.394,9204	278.196	136.316,0400	425,6100
13/8/2006	297.843	49,3000	322,4500	190,0800	49,0900	146.211,1287	8.896	4.367,0464	99,9970	4.353,9453	288.947	141.844,0823	444,0800
14/8/2006	297.107	49,0500	322,2000	189,8000	48,5300	144.186,0271	16.244	7.883,2132	99,9970	7.859,5636	280.863	136.302,8139	429,6400
15/8/2006	288.571	50,0000	323,1500	189,8400	47,9000	138.225,5090	21.978	10.527,4620	99,9970	10.495,8796	266.593	127.698,0470	408,6900
16/8/2006	298.156	49,3300	322,4800	189,8800	48,2200	143.770,8232	17.495	8.436,0890	99,9970	8.410,7807	280.661	135.334,7342	427,3900
17/8/2006	301.508	49,7500	322,9000	189,6700	48,3100	145.658,5148	6.164	2.977,8284	99,9970	2.968,8949	295.344	142.680,6864	447,1900
18/8/2006	301.393	48,7900	321,9400	189,8500	48,0400	144.789,1972	2.603	1.250,4812	99,9970	1.246,7298	298.790	143.538,7160	454,0900
19/8/2006	300.462	48,2600	321,4100	190,0200	47,7700	143.530,6974	1.861	888,9997	99,9970	886,3327	298.601	142.641,6977	453,1000
20/8/2006	297.960	46,6300	319,7800	189,7700	47,5000	141.531,0000	374	177,6500	99,9970	177,1170	297.586	141.353,3500	451,4000
21/8/2006	294.932	45,8300	318,9800	190,8900	47,7300	140.771,0436	649	309,7677	99,9970	308,8384	294.283	140.461,2759	447,6900
22/8/2006	298.119	46,4500	319,6000	189,8500	48,2000	143.693,3580	951	458,3820	99,9970	457,0069	297.168	143.234,9760	453,2100
23/8/2006	295.046	47,2500	320,4000	189,8100	48,8400	144.100,4664	5.117	2.499,1428	99,9970	2.491,6454	289.929	141.601,3236	446,2700
24/8/2006	295.371	48,3900	321,5400	188,6600	49,9100	147.419,6661	6.498	3.243,1518	99,9970	3.233,4223	288.873	144.176,5143	443,4000

DAY	COLLECTING SYSTEM						FLARING SYTEM				ELETRICITY DISPATCH		
	LFG Collected (Nm3)	Temperature (°C)	Temperature (K)	Pressure (mbar)	Methane (%)	Methane Collected (N.m³)	LFG sent to Flares (N.m³)	Methane sent to Flares (N.m³)	Flare Efficiency (%)	Methne Destroyed (Nm³)	Biogas sent to electricity (Nm³)	Methane sent to eletricity (Nm3/day)	Eletricity Exported (MWh)
25/8/2006	284.967	49,6000	322,7500	190,1900	49,2700	140.403,2409	28.242	13.914,8334	99,9970	13.873,0889	256.725	126.488,4075	394,4000
26/8/2006	295.507	46,0000	319,1500	189,7800	48,0300	141.932,0121	20.863	10.020,4989	99,9970	9.990,4374	274.644	131.911,5132	423,2600
27/8/2006	298.883	46,1700	319,3200	190,1300	50,6600	151.414,1278	5.340	2.705,2440	99,9970	2.697,1283	293.543	148.708,8838	444,6900
28/8/2006	268.588	42,6000	315,7500	189,6200	48,1600	129.351,9808	34.623	16.674,4368	99,9970	16.624,4135	233.965	112.677,5440	354,9100
29/8/2006	281.701	43,1700	316,3200	189,4000	48,9600	137.920,8096	8.293	4.060,2528	99,9970	4.048,0720	273.408	133.860,5568	410,8000
30/8/2006	278.041	45,7500	318,9000	189,8500	47,9500	133.320,6595	15.520	7.441,8400	99,9970	7.419,5145	262.521	125.878,8195	399,0400
31/8/2006	292.300	46,0000	319,1500	189,9600	47,6000	139.134,8000	4.050	1.927,8000	99,9970	1.922,0166	288.250	137.207,0000	437,0500
1/9/2006	296.509	44,8800	321,0250	190,0600	50,4400	149.559,1396	6.964	3.512,6416	99,9986	3.507,7239	289.545	146.046,4980	435,3500
2/9/2006	274.504	47,7000	320,8457	190,0200	47,7000	130.938,4080	46.982	22.410,4140	99,9986	22.379,0394	227.522	108.527,9940	350,1100
3/9/2006	297.042	42,9100	316,0600	189,9900	47,9000	142.283,1180	4.285	2.052,5150	99,9986	2.049,6415	292.757	140.230,6030	438,9500
4/9/2006	289.344	49,7900	322,9400	189,5400	48,2900	139.724,2176	1.819	878,3951	99,9986	877,1653	287.525	138.845,8225	430,0500
5/9/2006	284.958	41,5800	314,7300	190,0700	47,8500	136.352,4030	3.222	1.541,7270	99,9986	1.539,5686	281.736	134.810,6760	427,2200
6/9/2006	288.529	43,8600	317,0100	189,9700	50,1200	144.610,7348	188	94,2256	99,9986	94,0937	288.341	144.516,5092	437,1800
7/9/2006	273.384	46,7100	319,8600	189,8800	48,3700	132.235,8408	42.933	20.766,6921	99,9986	20.737,6187	230.451	111.469,1487	355,2700
8/9/2006	289.781	47,5000	320,6500	190,0100	48,7500	141.268,2375	8.478	4.133,0250	99,9986	4.127,2388	281.303	137.135,2125	426,0300
9/9/2006	287.900	48,6300	321,7800	190,1400	48,8100	140.523,9900	16.060	7.838,8860	99,9986	7.827,9116	271.840	132.685,1040	413,0800
10/9/2006	286.836	48,7800	321,9300	190,0000	48,8700	140.176,7532	12.564	6.140,0268	99,9986	6.131,4308	274.272	134.036,7264	415,6600
11/9/2006	285.577	49,7900	322,9400	190,0700	49,0600	140.104,0762	23.285	11.423,6210	99,9986	11.407,6279	262.292	128.680,4552	393,2600
12/9/2006	285.195	50,3300	323,4800	189,5700	48,7900	139.146,6405	31.127	15.186,8633	99,9986	15.165,6017	254.068	123.959,7772	382,1500
13/9/2006	285.492	50,5400	323,6900	190,0400	48,2200	137.664,2424	17.164	8.276,4808	99,9986	8.264,8937	268.328	129.387,7616	402,0600
14/9/2006	288.413	49,6100	322,7600	190,3600	48,6500	140.312,9245	15.287	7.437,1255	99,9986	7.426,7135	273.126	132.875,7990	404,3800
15/9/2006	280.742	46,9200	320,0700	188,7300	47,4600	133.240,1532	33.241	15.776,1786	99,9986	15.754,0919	247.501	117.463,9746	363,7900
16/9/2006	282.974	45,0000	318,1500	189,6300	48,1400	136.223,6836	22.879	11.013,9506	99,9986	10.998,5311	260.095	125.209,7330	380,0200
17/9/2006	276.903	47,0400	320,1900	189,8800	48,7700	135.045,5931	12.326	6.011,3902	99,9986	6.002,9743	264.577	129.034,2029	390,5400
18/9/2006	275.032	45,5000	318,6500	190,1000	49,0100	134.793,1832	120	58,8120	99,9986	58,7297	274.912	134.734,3712	414,9700
19/9/2006	274.871	44,6200	317,7700	189,8800	48,3500	132.900,1285	187	90,4145	99,9986	90,2879	274.684	132.809,7140	419,4800
20/9/2006	273.003	46,1300	319,2800	189,7000	47,7500	130.358,9325	2.884	1.377,1100	99,9986	1.375,1820	270.119	128.981,8225	412,9600
21/9/2006	273.133	45,5000	318,6500	189,5400	47,9400	130.939,9602	519	248,8086	99,9986	248,4603	272.614	130.691,1516	418,3700
22/9/2006	274.194	45,5300	318,6800	190,3800	48,3000	132.435,7020	472	227,9760	99,9986	227,6568	273.722	132.207,7260	415,9100
23/9/2006	215.695	45,0000	318,1500	150,0000	54,6000	117.769,4700	7.316	3.994,5360	99,9986	3.988,9436	208.379	113.774,9340	326,1000

DAY	COLLECTING SYSTEM						FLARING SYTEM				ELETRICITY DISPATCH		
	LFG Collected (Nm3)	Temperature (°C)	Temperature (K)	Pressure (mbar)	Methane (%)	Methane Collected (N.m ³)	LFG sent to Flares (N.m ³)	Methane sent to Flares (N.m ³)	Flare Efficiency (%)	Methne Destroyed (Nm ³)	Biogás sent to electricity (Nm ³)	Methane sent to eletricity (Nm3/day)	Eletricity Exported (MWh)
24/9/2006	175.985	48,0000	321,1500	199,0000	55,8000	98.199,6300	68.462	38.201,7960	99,9986	38.148,3135	107.523	59.997,8340	164,0300
25/9/2006	187.909	48,0000	321,1500	189,0000	49,5900	93.184,0731	73.820	36.607,3380	99,9986	36.556,0877	114.089	56.576,7351	184,2300
26/9/2006	226.861	47,3700	320,5200	190,3000	49,5200	112.341,5672	60.400	29.910,0800	99,9986	29.868,2059	166.461	82.431,4872	253,1700
27/9/2006	245.432	45,5700	318,7200	189,8200	48,0900	118.028,2488	14.787	7.111,0683	99,9986	7.101,1128	230.645	110.917,1805	362,7300
28/9/2006	262.792	45,0000	318,1500	189,9100	47,1600	123.932,7072	3.736	1.761,8976	99,9986	1.759,4309	259.056	122.170,8096	398,6000
29/9/2006	270.607	43,7700	316,9200	189,9300	47,2400	127.834,7468	984	464,8416	99,9986	464,1908	269.623	127.369,9052	409,1600
30/9/2006	269.812	45,3600	318,5100	189,9900	47,4600	128.052,7752	586	278,1156	99,9986	277,7262	269.226	127.774,6596	409,7700

Obs: The readings of Biogás is one day ahead, as Sotreq's data are read at 23:59 hs and Biogás measures at 00:00 hs

DATA READINGS AND STORAGE

The readings were made by the flow-meter and corrected to Nm³. The readings of methane concentration were made by the operators hourly and registered by the system each 5 minutes

Data collected from:

- biogas temperature;
- pressure;
- gas flow;
- methane and oxygen concentration
- methane concentration in the fluegas of the flares, in order to calculate the efficiency of methane destruction;

A	Total methane destroyed in the flares	1.134.875,7600 Nm ³
B	Total errors of flare's measurements	1,1663 %
C = A . (1-B)	Total methane corrected destroyed at the flares	1.121.639,7040 Nm ³
D	Total methane destroyed at the electricity facility	28.684.205,5425 Nm ³
E	Total errors of electricity's measurements	1,6494 %
F = D . (1-E)	Total methane corrected destroyed at the electricity	28.211.088,2563 Nm ³
G	Total methane destroyed in the period	29.332.727,9603 Nm ³
H	Density of Methane at the STPC	0,0007168 ton/Nm ³

$I = G \cdot H$	Total weight of methane destroyed	21.025,6994 T
J	CO ₂ equivalency	21 tCO ₂ /tCH ₄
$K = J \cdot I$	Total equivalent carbon	441.539,6874 t
L	Baseline	20 %
$M = K \cdot (1-L)$	Total Liquid Carbon	353.231,7477 tCO₂
N	Total electricity exported	89.668,4700 MWh
O ¹	Total electricity imported	4,1080 MWh
P	Emission Factor	0,2677 tCO ₂ e/MWh
$Q = (N-O) \cdot P$	Total CO₂e from the energy export	24.003,1497 tCO₂
$R = Q + M$	TOTAL CREDITS DURING THE PERIOD	377.234,8974 tCO₂

¹Obs: electricity imported to attend the landfill's internal needs.