SOUTH
COAST
ENVIRONMENTAL
COMPANY

June 6, 1991

Mr. Andrew Washington
Pacific Energy
6055 East Washington Blvd.
Commerce, CA 90040

SUBJECT: Otay Landfill Annual Compliance
Source Test Results
SCEC Job No. T1259

Dear Mr. Washington:

Enclosed are two (2) copies of the second addendum to the report presenting the results of the annual compliance test conducted on April 2-5, 1991. This addendum reflects emissions of NO_2 in lbs/hr rather than ppm, and is based on combustion analysis and fuel flow rates rather than CARB Method 1-4 for exhaust gas flow measurements.

If you have any questions, comments, or require any further information please contact me or Keith B. Shannon at 714-596-6540.

Sincerely,
SOUTH COAST ENVIRONMENTAL COMPANY

Leslie A. Johnson
Source Test Manager

LAJ/KBS:smw

T1259m

1915 McKinley Ave.
Suite E
La Verne, CA 91750
714-596-6540
714-596-5619 (FAX)

SOUTH
COAST
ENVIRONMENTAL
COMPANY

May 29, 1991

Mr. Andrew Washington
Pacific Energy
6055 East Washington Blvd.
Commerce, CA 90040

SUBJECT: Otay Landfill Annual Compliance
Source Test Results
SCEC No. T1259

Dear Mr. Washington:

Enclosed are two (2) copies of the addendum to the report presenting the results of the annual compliance test conducted on April 2-5, 1991. This addendum reflects emissions based on combustion analysis and fuel flow rates rather than CARB Method 1-4.

If you have any questions, comments, or require any further information please contact me or Keith B. Shannon at 714-596-6540.

Sincerely,
SOUTH COAST ENVIRONMENTAL COMPANY

Leslie A. Johnson
Source Test Manager

LAJ/KBS:smw

Encl.

T12591

1915 McKinley Ave.
Suite E
La Verne, CA 91750
714-596-6540
714-596-5619 (FAX)

SOUTH
COAST
ENVIRONMENTAL
COMPANY

ADDENDUM TO

SOURCE TEST REPORT

PACIFIC ENERGY
6055 EAST WASHINGTON BOULEVARD
COMMERCE, CA 90040

UNIT TESTED:

OTAY LANDFILL
SUPERIOR ENGINE #1

TEST DATE:

APRIL 2, 1991

ISSUE DATE:

MAY 29, 1991

PARAMETERS MEASURED:

NO_x, NO_2, CO, O_2, REACTIVE ORGANIC GASES,
AND PARTICULATE EMISSIONS

TESTED BY:

SOUTH COAST ENVIRONMENTAL COMPANY
1915 McKINLEY AVE., SUITE E
LA VERNE, CA 91750

REPORT NO: T1259

TESTED BY: Keith Hamm

REVIEWED BY:

SOUTH
COAST
ENVIRONMENTAL
COMPANY

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T1259k

SOUTH
COAST
ENVIRONMENTAL
COMPANY

I. SUMMARY OF RESULTS

PACIFIC ENERGY

A SUBSIDIARY OF
PACIFIC
ENTERPRISES

6055
East
Washington
Boulevard,
Commerce,
California
90040

Telephone
(213) 725-1139

Facsimile
(213) 725-8772

June 11, 1991

Mr. John Jackson
San Diego County APCD
9150 Chesapeake Drive
San Diego, CA 92123-1095

Dear Mr. Jackson:

RE: Otay Landfill Source Test Results
AB2588 Report - SCEC #T1265
Annual Compliance Report - SCEC #1259

Enclosed please find copies of the above referenced reports for Pacific Energy's Otay facility.

As I explained to you during our telephone conversation, the Annual Compliance report has two addenda. The first represents emissions based on carbon balance rather than CARB Method 1-4. The second represents emissions based on combustion analysis rather than CARB Method 1-4. The AB2588 report has an addendum representing emissions based on carbon balance.

We look forward to discussing these results with you during our meeting tentatively scheduled for June 20, 1991 at 11:00 a.m. in your offices.

In the meantime, if you have any questions, please call me at (213) 725-1139 x448.

Sincerely,

Andrew F. Washington
Environmental Compliance Mgr.

cc: P. Nakamoto
R. Rolfe

SOUTH
COAST
ENVIRONMENTAL
COMPANY

June 6, 1991

Mr. Andrew Washington
Pacific Energy
6055 East Washington Blvd.
Commerce, CA 90040

SUBJECT: Otay Landfill Annual Compliance
Source Test Results
SCEC Job No. T1259

Dear Mr. Washington:

Enclosed are two (2) copies of the second addendum to the report presenting the results of the annual compliance test conducted on April 2-5, 1991. This addendum reflects emissions of NO_2 in lbs/hr rather than ppm, and is based on carbon analysis rather than CARB Method 1-4 for exhaust gas flow measurements.

If you have any questions, comments, or require any further information please contact me or Keith B. Shannon at 714-596-6540.

Sincerely,
SOUTH COAST ENVIRONMENTAL COMPANY

Leslie A. Johnson
Source Test Manager

LAJ/KBS:smw

T1259n

1915 McKinley Ave.
Suite E
La Verne, CA 91750
714-596-6540
714-596-5619 (FAX)

SOUTH
COAST
ENVIRONMENTAL
COMPANY

May 14, 1991

Mr. Terence Hee
Pacific Energy
6055 East Washington Blvd.
Commerce, CA 90040

SUBJECT: Otay Landfill Annual Compliance
Source Test Results
SCEC No. T1259

Dear Mr. Hee:

Enclosed are two (2) copies of the addendum to the report presenting the results of the annual compliance test conducted on April 2-5, 1991. This addendum reflects emissions based on total carbon analysis rather than CARB Method 1-4.

Upon your review please forward one copy to Mr. John Jackson at San Diego Air Pollution Control District. We hope everything is in order and to your satisfaction.

If you have any questions, comments, or require any further information please contact me or Keith B. Shannon at 714-596-6540.

Sincerely,
SOUTH COAST ENVIRONMENTAL COMPANY

Leslie A. Johnson
Source Test Manager

LAJ/KBS:smw

Encl.

T1259j

1915 McKinley Ave.
Suite E
La Verne, CA 91750
714-596-6540
714-596-5619 (FAX)

SOUTH
COAST
ENVIRONMENTAL
COMPANY

ADDENDUM TO

SOURCE TEST REPORT

PACIFIC ENERGY
6055 EAST WASHINGTON BOULEVARD
COMMERCE, CA 90040

UNIT TESTED:

OTAY LANDFILL
SUPERIOR ENGINE #1

TEST DATE:

APRIL 2, 1991

ISSUE DATE:

MAY 14, 1991

PARAMETERS MEASURED:

NO_x, NO_2, CO, O_2, REACTIVE ORGANIC GASES,
AND PARTICULATE EMISSIONS

TESTED BY:

SOUTH COAST ENVIRONMENTAL COMPANY
1915 McKINLEY AVE., SUITE E
LA VERNE, CA 91750

REPORT NO: T1259

TESTED BY: _____

REVIEWED BY: _____

SOUTH
COAST
ENVIRONMENTAL
COMPANY

TABLE OF CONTENTS

I. SUMMARY OF RESULTS

LANDFILL GAS ENGINE EXHAUST EMISSION TEST REPORT

PLANT: OTAY		
TEST DATE: April 2 & 3, 1991	TESTING LAB: South Coast Environmental	TECHNICIAN: K. B. Shannon
KW LOAD: 1959	RATED HP: 2650	TOTAL TEST KWHRS: 5877
STACK TEMP: 815°F	STACK MOISTURE % VOLUME: 12.2%	FLOW SDCFM: 4712*

TEST PARAMETER	PERMIT LIMITS	TEST AVERAGE	RUN #1	run #2	run #3
FUEL FLOW (DSCFM)	NONE	588	N/A	N/A	N/A
O2 %	NONE	7.86	7.95	7.79	7.83
NO2 (NOX-NO) LBS-HR	10.9	1.53	1.39	1.55	1.65
NOx (Corrected) PPM	400 (Dry)	159.95	157.79	162.52	159.53
LBS-HR	--	5.49	5.42	5.58	5.48
g/Bhp-Hr	_	0.95	0.94	0.96	0.95
NON-METHANE HYDROCARBONS PPM	-	5.00	5.90	5.20	3.90
LBS-HR @	-	0.16	0.23	0.16	0.09
g/Bhp-Hr	0.8 g/Bhp-Hr	0.03	0.04	0.03	0.02
CARBON MONOXIDE PPM @ 3 % O2	750 (Dry)	354.95	355.01	355.60	354.23
LBS-HR	-	5.40	5.36	5.44	5.40
g/Bhp-Hr	-	0.93	0.93	0.94	0.93
PARTICULATES Gr/DSCF	0.1 Gr/DSCF	0.003	0.005	0.002	0.001
TEST COORDINATOR	TERENCE HEE 213-725-1139 (SEND REPORT TO)				
SITE CONTACT	MAURICE KING 619-421-5945				

* Flow DSCFM calulated from carbon balance equation.

ENGINEERING SOURCE TEST REPORT FORMAT:

INTRODUCTION
SUMMARY
    FORAMLIZED COPY OF THIS FORM
INSTRUMENT DATA
EXHAUST VOLUMETRIC FLOW DATA
    COPY OF ALL CALCULATIONS
    FUEL GAS ANALYSIS REPORT
        INCLUDE VOLUME AND WEIGHT OF SAMPLE
        LAB REPORT TO IDENTIFY PLANT AND GAS SAMPLE SOURCE
FIELD DATA
    COPY OF PLANT GAS CHROMATOGRAPH PRINTOUT
    ALL ENGINE OPERATING PARAMETERS DOCUMENTED

SOUTH
COAST
ENVIRONMENTAL
COMPANY

II. EXHAUST VOLUMETRIC FLOW DATA

COMPANY: PACIFIC ENERGY
DATE: MAY 6, 1991
UNIT: ICE #1
REPORT #:T1259

EXHUAST FLOW RATE CALCULATIONS

CALCULATIONS BASED ON INLET GAS FLOW RATE AND CARBON BALANCE FROM TOTAL CARBON ANALYSIS.

EXHAUST O2 % = 7.86

INLET FLOW RATE (SCFM) = 588

INLET CARBON CONC. (CONC. OF CO2, CO, CH4, NMHC IN PPM) = 92Ø69Ø

EXHAUST CARBON CONC. (CONC. OF CO2, CO, CH4, NMHC IN PPM) = 114880

$$\text{EXHAUST FLOW CALCULATION} = \frac{(\text{INLET FLOW RATE})(\text{INLET CARBON CONC.})}{(\text{EXHAUST CARBON CONC.})}$$

EXHAUST FLOW RATE (DSCFM)= 4712

EXHAUST FLOW RATE @ 0% O2 (DSCFM)= 2940

EXHAUST FLOW RATE @ 15% O2 (DSCFM)= 10415

ZALCO LABORATORIES, INC.

Analytical & Consulting Services

SOUTH COAST ENVIRONMENTAL
1915 McKinley, Suite E
Laverne, CA 91750

Lab. No.: 027378_001
Received: May 3, 1991
Reported: May 3, 1991

Attention: Russ Logan

Sample Description: PEN-OTAY LF Ice #1 Inlet

* CHROMATOGRAPHIC ANALYSIS (Z 1610) *

Components	Mole %	ppm	Wt %	G.P.M.
Carbon Dioxide	38.428	384280	60.666	
Oxygen	2.198		2.522	
Nitrogen	5.733		5.761	
Carbon Monoxide	0.000		0.000	
Methane	53.567	535,670	30.827	
Ethane	0.000		0.000	
Propane	0.000		0.000	0.000
IsoButane	.004	40	.008	.001
N-Butane	0.000		0.000	0.000
IsoPentane	0.000		0.000	0.000
N-Pentane	0.000		0.000	0.000
Hexanes+	.070	700	.215	.030
Totals =	100.000	920,690	100.000	.031

	SPECIFIC GRAVITY (Air = 1)	.9664
*	SPECIFIC VOLUME, cu.ft./lb	13.56
*	GROSS CALORIFIC VALUE, BTU/cu.ft.	537.60
**	GROSS CALORIFIC VALUE, BTU/cu.ft.	546.89
**	GROSS CALORIFIC VALUE, BTU/lb	7414.66
*	NET CALORIFIC VALUE, BTU/cu.ft.	484.14
**	NET CALORIFIC VALUE, BTU/cu.ft.	492.51
	COMPRESSIBILITY FACTOR 'Z' (60 F,1 ATM)	.9975

* Water Saturated ** Dry Gas @ 60 F, 14.73 psia

Maryann W. Benoit
Organics Supervisor

Richard L. Penner
Laboratory Director

4309 Armour Avenue Bakersfield, California 93308
(805) 395-0539 FAX (805) 395-3069

ZALCO LABORATORIES, INC.

Analytical & Consulting Services

SOUTH COAST ENVIRONMENTAL
1915 McKinley, Suite E
Laverne, CA 91750

Lab. No.: 027378_002
Received: May 3, 1991
Reported: May 3, 1991

Attention: Russ Logan

Sample Description: PEN-OTAY LF Ice #1 Outlet

* CHROMATOGRAPHIC ANALYSIS (Z 1610) *

Components	Mole %	PPM	Wt %	G.P.M.
Carbon Dioxide	11.340	113,400	16.531	
Oxygen	9.470		10.037	
Nitrogen	79.040		73.337	
Carbon Monoxide	.032	320	.030	
Methane	.1150	1150	.061	
Ethane	0.000		0.000	
Propane	0.000		0.000	0.000
IsoButane	0.000		0.000	0.000
N-Butane	0.000		0.000	0.000
IsoPentane	0.000		0.000	0.000
N-Pentane	0.000		0.000	0.000
Hexanes+	.001	10	.004	.001
Totals =	100.000	114,880	100.000	.001

	SPECIFIC GRAVITY (Air = 1)	1.0510
*	SPECIFIC VOLUME, cu.ft./lb	12.47
*	GROSS CALORIFIC VALUE, BTU/cu.ft.	1.31
**	GROSS CALORIFIC VALUE, BTU/cu.ft.	1.34
**	GROSS CALORIFIC VALUE, BTU/lb	16.65
*	NET CALORIFIC VALUE, BTU/cu.ft.	1.19
**	NET CALORIFIC VALUE, BTU/cu.ft.	1.21
	COMPRESSIBILITY FACTOR 'Z' (60 F,1 ATM)	.9995

* Water Saturated ** Dry Gas @ 60 F, 14.73 psia

Note: See attached ppm Hydrocarbon Analysis for a more accurate measurement of hydrocarbons.

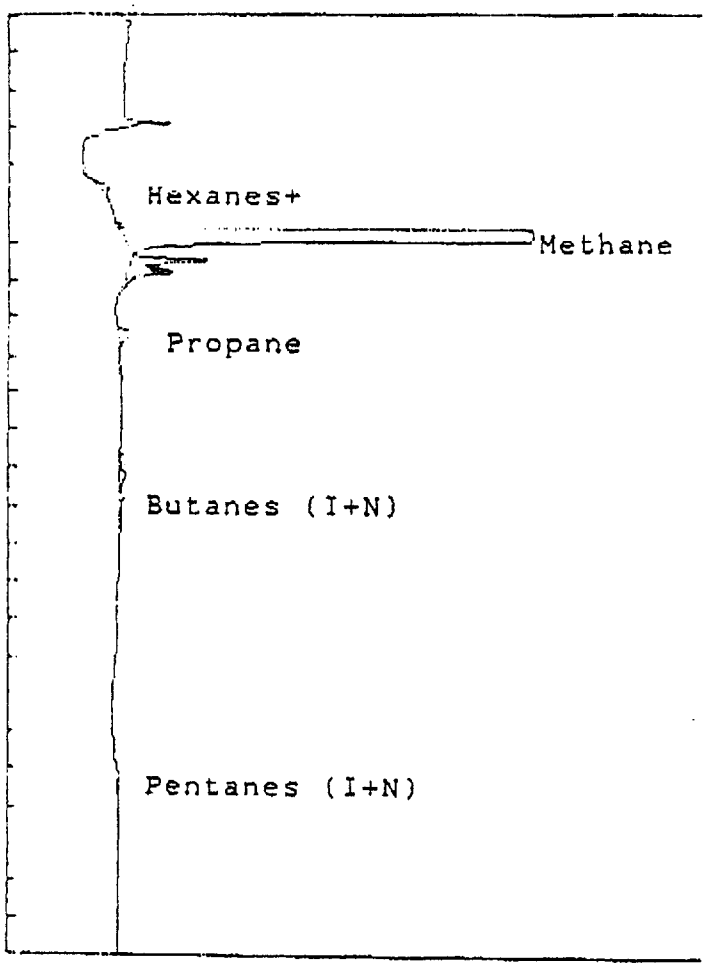
Maryann W. Benoit
Organics Supervisor

Richard L. Penner
Laboratory Director

Zalco C1-C6 PPM Report

Sample Name : PEN-OTAY LF Ice #1 Outlet
0199, 027378_002, May 3, 1991
Peak Processor : Genie Multilevel : False
Instument : ADC_2 Application : Loop
Calculation : ExternalSTD Quantitation: AreaUnits
Result File : /DATA/LOOP/RESULT/ADC_2/SCE27378_002.RES
Run Time : 25.00 Minutes, injected on Fri May 3, 1991 11:38:21
Run Status : RunStatusOK

RETENTION TIME	AREA	FACTOR	ppmvol
4.542	534	8.33811E-04	.4455
5.498	122	0.00000E+00	0.0000
5.756	238850	7.57094E-03	1808.3210
6.617	3934	0.00000E+00	0.0000
8.429	559	2.06853E-03	1.1560
12.767	584	1.65972E-03	.9685
20.217	251	1.22814E-03	.3080
		Total Hydrocarbons	1811.1980



Report Time: Fri May 3, 1991 1:03:32 pm
Method: /DATA/LOOP/METHOD/LOWPPMA.MTH
Format File: /DATA/LOOP/FORMAT/SIDE_BY_SIDE.FMT

III. NO_x, CO, AND ROG RESULTS

COMPANY: PACIFIC ENERGY
DATE: APRIL 2, 1991
UNIT: OTAY FACILITY ICE #1
REPORT #:T-1259

NO2 - NOx CORRECTIONS

RUN #	UNCORRECTED NO ppm	UNCORRECTED NO2 ppm	% LOSS*	NO2 ppm	NOx CORRECTED VALUES ppm	@ 3% O2	LB/HR
#1	117.24	37.55	7.98%	40.55	157.79	218.10	5.42
#2	117.24	40.50	11.79%	45.28	162.52	221.90	5.58
#3	111.58	41.48	15.60%	47.95	159.53	218.48	5.48
			AVERAGE	44.59	159.95	219.50	5.49

RUN #	%O2	DSCFM	GR/BHP-HR	NO2 LB/HR
#1	7.95	4712	0.94	1.39
#2	7.79	4712	0.96	1.55
#3	7.83	4712	0.95	1.65
		AVERAGE =	0.95	1.53

* Initial NO2 system loss was 6.08%, final NO2 system loss was 17.50%

COMPANY: PACIFIC ENERGY
DATE: APRIL 2, 1991
UNIT: ICE #1
REPORT #:T1259
RUN #: #1-NOx MODE

NOx/CO/O2 DATA

TIME INTERVAL			CONCENTRATIONS			% Full Scale		
BEGIN	-	END	O2;%	NOx;ppm	CO;ppm	O2%fs	NOx%fs	CO%fs
10:30 AM	-	10:35 AM	7.88	153.79	259.14	42	20.4	30.8
10:35 AM	-	10:40 AM	7.88	159.78	259.14	42	21	30.8
10:40 AM	-	10:45 AM	8.03	155.79	257.17	42.6	20.6	30.6
10:45 AM	-	10:50 AM	8.03	152.79	257.17	42.6	20.3	30.6
10:50 AM	-	10:55 AM	7.88	159.78	251.23	42	21	30
10:55 AM	-	11:00 AM	7.98	146.80	257.17	42.4	19.7	30.6
Averages;			7.95	154.79	256.84	42.3	20.5	30.6

	O2	NOx	CO
INITAL zero; %fs	10	5	4.6
INITAL span; %fs	42.5	56.2	53.2
FINAL zero; %fs	10	5	4.8
FINAL span; %fs	44	56	52.4
ZERO DRIFT %/ppm:	0	0	2
CALIB. DRIFT %/ppm:	0.4	-2	-8
ZERO DRIFT %fs:	0	0	-0.2
CALIB.DRIFT %fs:	-1.5	0.2	0.8
CAL GAS value	8.05	511	483
FULL SCALE RANGE	25	1000	1000

SDCFM = 4712.0 CARBON BALANCE
B-Hp = 2627 %O2 = 7.95

	ppm	@ 3%O2	@15%O2	lbs/hr lb/day
NOx values;	154.79	213.96	70.52	5.31 127.44
				grms/BHp
				0.92

	ppm	@ 3%O2	@15%O2	lbs/hr lb/day
CO values;	256.84	355.01	117.02	5.36 128.64
				grms/BHp
				0.93

COMPANY: PACIFIC ENERGY
DATE: APRIL 2, 1991
UNIT: ICE #1
REPORT #:T1259
RUN #: #2-NOx MODE

NOx/CO/O2 DATA

TIME INTERVAL		CONCENTRATIONS			% Full Scale		
BEGIN	END	O2;%	NOx;ppm	CO;ppm	O2%fs	NOx%fs	CO%fs
11:57 AM	12:02 PM	7.81	154.40	261.96	42.8	20.4	30.6
12:02 PM	12:07 PM	7.76	160.42	260.95	42.6	21	30.5
12:07 PM	12:12 PM	7.76	164.43	260.95	42.6	21.4	30.5
12:12 PM	12:17 PM	7.73	160.42	260.95	42.5	21	30.5
12:17 PM	12:22 PM	7.85	154.40	259.93	43	20.4	30.4
12:22 PM	12:27 PM	7.85	152.40	257.90	43	20.2	30.2
Averages;		7.79	157.74	260.44	42.8	20.7	30.5

	O2	NOx	CO
INITAL zero; %fs	10	5	4.8
INITAL span; %fs	44	56	52.4
FINAL zero; %fs	9.9	4.9	4.8
FINAL span; %fs	43.1	56.9	52.2
ZERO DRIFT %/ppm:	0	-1	0
CALIB. DRIFT %/ppm:	-0.2	9	-2
ZERO DRIFT %fs:	0.1	0.1	0
CALIB.DRIFT %fs:	0.9	-0.9	0.2
CAL GAS value	8.05	511	483
FULL SCALE RANGE	25	1000	1000

SDCFM = 4712.0
B-Hp = 2627 %O2 = 7.79

	ppm	@ 3%O2	@15%O2	lbs/hr lb/day
NOx values;	157.74	215.37	70.99	5.41 129.84 grms/BHp 0.93
CO values;	260.44	355.6	117.21	5.44 130.56 grms/BHp 0.94

COMPANY: PACIFIC ENERGY
DATE: APRIL 2, 1991
UNIT: ICE #1
REPORT #:T1259
RUN #: #3-NOx MODE

NOx/CO/O2 DATA

TIME INTERVAL		CONCENTRATIONS			% Full Scale		
BEGIN	END	O2;%	NOx;ppm	CO;ppm	O2%fs	NOx%fs	CO%fs
01:05 PM	01:10 PM	7.81	151.75	258.99	42.1	20.4	30.2
01:10 PM	01:15 PM	7.84	151.75	258.99	42.2	20.4	30.2
01:15 PM	01:20 PM	7.84	157.63	258.99	42.2	21	30.2
01:20 PM	01:25 PM	7.84	155.67	258.99	42.2	20.8	30.2
01:25 PM	01:30 PM	7.86	150.78	257.97	42.3	20.3	30.1
01:30 PM	01:35 PM	7.79	150.78	257.97	42	20.3	30.1
Averages;		7.83	153.06	258.65	42.2	20.5	30.2

	O2	NOx	CO
INITAL zero; %fs	9.9	4.9	4.8
INITAL span; %fs	43.1	56.9	52.2
FINAL zero; %fs	9.8	5	4.8
FINAL span; %fs	43.4	57	52
ZERO DRIFT %/ppm:	0	1	0
CALIB. DRIFT %/ppm:	0.1	1	-2
ZERO DRIFT %fs:	0.1	-0.1	0
CALIB.DRIFT %fs:	-0.3	-0.1	0.2
CAL GAS value	8.05	511	483
FULL SCALE RANGE	25	1000	1000

SDCFM = 4712.0
B-Hp = 2627 %O2 = 7.83

	ppm	@ 3%O2	@15%O2	lbs/hr	lb/day
NOx values;	153.06	209.62	69.09	5.25	126
				grms/BHp	
				0.91	

	ppm	@ 3%O2	@15%O2	lbs/hr	lb/day
CO values;	258.65	354.23	116.76	5.4	129.6
				grms/BHp	
				0.93	