

SUBJECT:

# United States Testing Company, Inc.

## Tulsa Division

1341 NO, 108th EAST AVENUE TULSA, OKLAHOMA 74116 TELEPHONE: AREA CODE 918-437-8333

#### REPORT OF TEST

Emissions Technology Inc. CLIENT:

NUMBER

P.O. Box 471916

Tulsa, OK 74147-1916

91-0047

Attn: Alex Collin

3/4/91

mehtod.

Testing of diesel fuel samples for vapor pressure by the Reid

## SAMPLE IDENTIFICATION

Two jars of diesel fuel marked "Treated Diesel 2-20-91" and "Untreated Diesel 2/20/91".

RESULTS

Vapor	Pressure, paig	1.0	0.6
		1.20	

The Reid vapor pressure is a measurement of the stabilized pressure exerted by a volume of liquid fuel at 100°F. The test is an indirect measurement of combustion characteristics. When more liquid volatilizes into the pressure chamber the vapor pressure increases. Higher fuel volatility indicates hotter burning characteristics. Therefore, higher vapor pressure indicates a hotter, consequently cleaner, burning fuel.

Treated

SIGNED FOR THE COMPANY

Untreated

Mgr/Laboratory Services

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# United States Testing Company, Inc.

### Tulsa Division

1341 NO, 108th EAST AVENUE TULSA, OKLAHOMA 74116 TELEPHONE: AREA CODE 918-437-8333

### REPORT OF TEST

CLIENT:

Emissions Technology Inc.

P. O. Box 471916

Tulsa, OK 74147-1916

Attn: Alex Collin

NUMBER

91~0073

3/22/91

Testing of unleaded gasoline for Reid Vapor Pressure. SUBJECT:

#### SAMPLE IDENTIFICATION

Two samples of regular unleaded gasoline, one untreated, one treated with Ecolizer.

#### TEST RESULTS

Untreated Sample

7.6 lbs.

Treated W/Ecolizer

8.4 1bs.

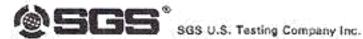
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Page 1 of

SIGNED FOR THE COMPANY Richard Finley Manager

Laboratory Services New York . Chicago . Los Angeles . Houston . Tulsa . Memphis . Reading





1341 North 100\* East Avenue - Tuica, OX 74116 - Tel: 918-437-8333 - Fex: 918-437-8487

CLIENT:

Emissions Technology Inc.

P.O. Box 471918

Tulsa, OK 74147-1916

Attn: Clark Daywelt

Test Report No:

162482

November 2, 2001 Date:

SUBJECT:

Pressure Tests.

REFERENCE:

Letter.

SAMPLE ID:

Two (2) samples identified as "ECO Units" were received from the client on

10/29/01. The samples received were ¼ \* NPT by 8\* in length. The samples were

received in good condition.

PROCEDURE:

The samples were evaluated by gradually applying a 10,000 psi hydrostatic

pressure for 1 minute or until failure. No revisions to this report will be allowed

after 90 days of the report date.

RESULTS:

Sample: 14" NPT by 8" length

Both samples held 10,000 psi for one minute without failure.

TEST DATE:

11/1/01.

SIGNED FOR AND ON BEHALF OF SGS U.S. TESTING COMPANY INC.

Dale E. Holloway-

Tuisa Branch Director

lanager/Product Evaluation

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SGS U.S. Testing Company Inc.

1341 North 108th East Avenue

Tulsa, OK 74116 Tel: 918-437-8333 Fax: 918-437-8487 Report No.: FT97-0033

Tulsa Branch Director

Date: 6/2/97 Page 1 of 5

CLIENT:

Emissions Technology, Inc.

P.O. Box 471916 Tulsa, OK 74174

Attn: Clark Daywalt

SUBJECT:

Efficiency testing of ECO Systems by use of a methane source.

REFERENCE:

Verbal 5/2/97.

SAMPLE ID:

Client refers to the sample as "ECO System, Model ECO-2".

PROCEDURE:

The testing procedure used a flow meter, monitoring methane flow, to measure the temperature of a gas brooder. With a thermal couple located in the brooder, the temperature of the flame was evaluated in comparison to methane flow. Tests were recorded with and without the sample ECO

System in line with the brooder.

RESULTS:

The results are on the following pages.

TEST DATE:

5/06/97.

bk

Member of the SGS Group

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Emissions Technology, Inc.

Report No.: FT97-0033

Date: 6/2/97 Page 2 of 5

### RESULTS:

## **Brooder Temperature Test Standard Installation**

Sample Number	Measurement (SCFH air)	Temperature (°C)	Flow Rate (ft³/min)	Flow Rate (BTU/hr)
1	6.0	900	0.134	8840
2	10.0	1050	0.224	14800
3	14.0	1110	0.313	20600
4	18.0	1145	0.403	26600

# **Brooder Temperature Test With ECO System**

Sample Number	Measurement (SCFH air)	Temperature (°C)	Flow Rate (ft³/min)	Flow Rate (BTU/hr)
1	6.0	925	0.134	8840
2	10.0	1060	0.224	14800
3	14.0	1135	0.313	20600
4	18.0	1160	0.403	26600



Emissions Technology, Inc.

Report No.: FT97-0033

Date: 6/2/97

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### CONCLUSION:

Three temperature points were evaluated for flow differences made with the ECO System and without. These points are evaluated in terms of flow difference and percent efficiency difference.

### **EVALUATED TEMPERATURE POINTS**

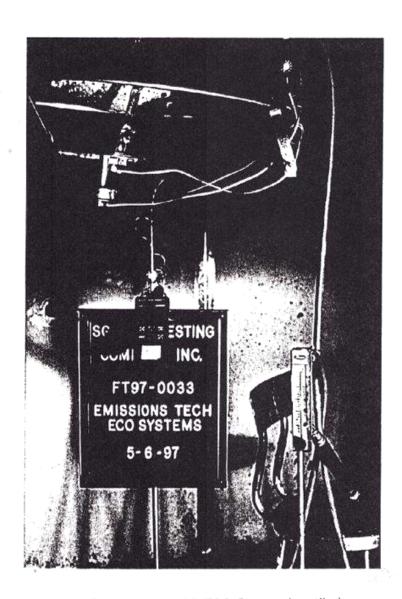
Sample	Temperature (°C)	Flow Difference (ft <sup>3</sup> /min / BTU/hr)	Efficiency Difference (%)
1	925	.0150 / 990	11.2
2	1110	.0298 / 1967	9.6
3	1150	.0530 / 3490	12.7
	A'	VERAGE - 2150 BTU/hr	11.2 %



Emissions Technology, Inc.

Report No.: FT97-0033

Date: 6/2/97 Page 4 of 5



Standard Brooder with ECO System Installed



Emissions Technology, Inc.

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Date: 6/2/97

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Standard Brooder without ECO Set-up

\* \* \* \* END OF REPORT \* \* \* \*



### SGS U.S. Testing Company Inc.

1341 North 108th East Avenue

Tulse, OK 74116 Tel: 918-437-8333 Fax: 918-437-8487 Report No.: FT97-0030

Date: 4/22/97 Page 1 of 6

CLIENT:

Emissions Technology, Inc.

P.O. Box 471916 Tulsa, OK 74174

Attn: Clark Daywalt

SUBJECT:

Efficiency testing of ECO Systems by use of a propane source.

REFERENCE:

Verbal 4/15/97.

SAMPLE ID:

Client refers to the sample as "ECO System, Model ECO-2".

PROCEDURE:

The testing procedure used a flow meter, monitoring propane flow, to measure the temperature of a gas brooder. With a thermal couple located in the brooder, the temperature of the flame was evaluated in comparison to propane flow. Tests were recorded with and without the sample ECO

System in line with the brooder.

RESULTS:

The results are on the following pages.

TEST DATE:

4/17/97.

Eric Hundley, Engineer

Signed for the Company

Dale E. Holloway Tulsa Branch Director

bk

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Emissions Technology, Inc.

Report No.: FT97-0030

Date: 4/22/97

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### RESULTS:

### **Brooder Temperature Test Standard Installation**

Sample Number	Measurement (mm)	Temperature (°C)	Flow Rate (ft <sup>3</sup> /min)	Flow Rate (BTU/hr)
1	5	1049	0.0435	6495
2	10	1095	0.0869	12970
3	15	1120	0.1300	19400
4	20	1142	0.1730	25825
5	24.5	1150	0.2097	31310

### **Brooder Temperature Test With ECO System**

Sample Number	Measurement (mm)	Temperature (°C)	Flow Rate (ft <sup>3</sup> /min)	Flow Rate (BTU/hr)
1	5	1065	0.0435	6495
2	10	1109	0.0869	12970
3	15	1140	0.1300	19400
4	20	1165	0.1730	25825
5	24.5	1191	0.2097	31310 (Extrapolated)



Report No.: FT97-0030

Date: 4/22/97

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Client: Emissions Technology, Inc.

### CONCLUSION:

Three temperature points were evaluated for flow differences made with the ECO System and without. These points are evaluated in terms of flow difference and percent efficiency difference.

### **EVALUATED TEMPERATURE POINTS**

Sample	Temperature (°C)	Flow Difference (ft <sup>3</sup> /min / BTU/hr)	Efficiency Difference (%)
1	1065	.0151 / 2253	25.8
2	1095	.0138 / 2060	15.9
3	1125	.0306 / 4568	17.7
	Д	VERAGE - 2960 BTU/hr	19.8%

\*\*\*\*END OF REPORT\*\*\*\*



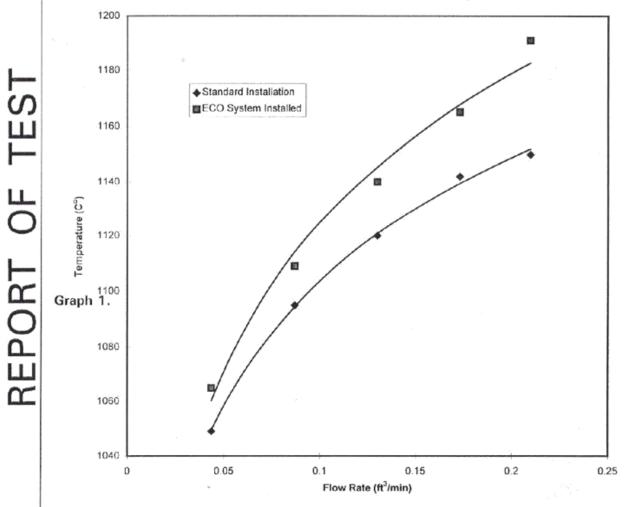
Emissions Technology, Inc.

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### Temperature Achieved Vs. Flow Rate of Propane

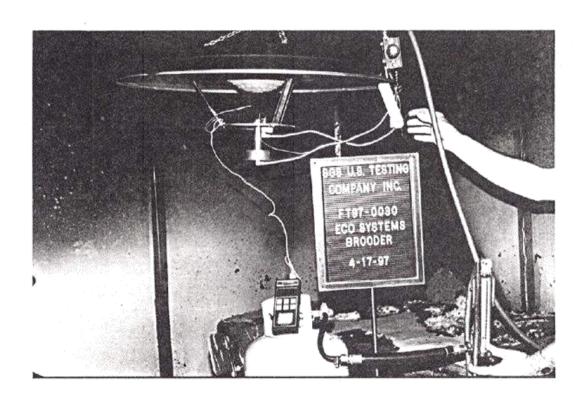




Emissions Technology, Inc.

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Systems Brooder with ECO System Installed

Emissions Technology, Inc.

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Date: 4/22/97

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Standard Brooder without Set-up