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ARY OF RESULTS

SUMMARY OF SOURCE TEST RESULTS

COMPANY: **DESTEC - DOUBLE C**

TEST DATE: FEBRUARY 9 - 12, 1993 & FEBRUARY 26, 1993

APCD #: 4165001 (B)

UNIT #: TURBINE #1

EMISSIONS	gr/scf	@12%CO2	ppm	ppm @15% O2	lb/ MMBtu	lb/hr	lb/day	Permit Limits
PARTICULATE	0.00148 0.00114	0.00604 0.00477				1.75 1.39	42.0 33.4	
Mean:	0.00131	0.00541				1.57	37.7	3.12 lb/hr
SULFUR			in fuel < 1.0 as H2S			in exhaust	in exhaust	
Mean:						< 0.0188	< 0.451	0.16 lb/hr
NOx (dry) (RUNS 1-12)								
Mean:			2.48	2.09	0.00761	2.03	48.7	0.0182 lb/MMBtu 4.04 lb/hr
CO (RUNS 1-12)								
Mean:			45.3	38.1	0.0847	22.6	542	27.83 lb/hr
NMHC turbine plus 2 lube oil vents								
Mean:						1.67	40.2	3.12 lb/hr

RELATIVE ACCURACY	% RA Related to Referance Method	% RA Related to Applicable Standard	PERMIT LIMITS Related to Referance Method	PERMIT LIMITS Related to Applicable Standard
NOx	11.05	NA	20 %	NA
CO	5.20	NA	10 %	NA
O2	1.47	NA	20 %	NA

For San Joaquin Unified APCD Use Only:

SUMMARY OF SOURCE TEST RESULTS

COMPANY: **DESTEC - DOUBLE C**

TEST DATE: FEBRUARY 9 - 12, 1993

APCD #: 4165002 (B)

UNIT #: TURBINE #2

EMISSIONS	gr/scf	@12%CO2	ppm	ppm @15% O2	lb/ MMBtu	lb/hr	lb/day	Permit Limits
PARTICULATE	0.00129 0.00199	0.00547 0.00822				1.56 2.42	37.4 58.1	
Mean:	0.00164	0.00685				1.99	47.8	3.12 lb/hr
SULFUR			in fuel < 1.0 as H2S			in exhaust	in exhaust	
Mean:						< .01995	< 0.479	0.16 lb/hr
NOx (dry) (RUNS 1-12)								
Mean:			2.94	2.51	0.00915	2.51	60.2	0.0162 lb/MMBtu 4.04 lb/hr
CO (RUNS 1-12)								
Mean:			45.0	38.3	0.08505	23.3	559	27.83 lb/hr
NMHC turbine plus 2 lube oil vents								
Mean:						1.97	47.3	3.12 lb/hr

RELATIVE ACCURACY	% RA Related to Referance Method	% RA Related to Applicable Standard	PERMIT LIMITS Related to Referance Method	PERMIT LIMITS Related to Applicable Standard
NOx	4.90	NA	20 %	NA
CO	8.09	NA	10 %	NA
O2	2.58	NA	20 %	NA

For San Joaquin Unified APCD Use Only:

COMPANY : DESTEC
UNIT : DOUBLE C – TURBINES 1 & 2 AND LUBE OIL VENTS
DATE : 02-11-93 & 02-26-93
REPORT : 027-341

SUMMARY OF HYDROCARBONS RESULTS

	gr/scf	ppm	lbs/hr	lbs/day
TURBINE #1				
NON-CONDENSABLE	---	5.78	1.67	40.16
TOTAL HYDROCARBONS	---	---	*1.67*	*40.16*
TURBINE #2				
NON-CONDENSABLE	---	6.61	1.97	47.20
TOTAL HYDROCARBONS	---	---	*1.97*	*47.20*
LOV GENERATOR 1				
CONDENSABLE	0.01070	---	0.00195	0.0466
NON-CONDENSABLE	---	0.0000	0.0000	0.0000
TOTAL HYDROCARBONS	---	---	*0.00195*	*0.0466*
LOV TURBINE 1				
CONDENSABLE	0.02222	---	0.00060	0.0144
NON-CONDENSABLE	---	0.000	0.00000	0.0000
TOTAL HYDROCARBONS	---	---	*0.00060*	*0.0144*
LOV GENERATOR 2				
CONDENSABLE	0.00968	---	0.00183	0.0440
NON-CONDENSABLE	---	0.000	0.00000	0.0000
TOTAL HYDROCARBONS	---	---	*0.00183*	*0.0440*
LOV TURBINE 2				
CONDENSABLE	0.01516	---	0.00036	0.0085
NON-CONDENSABLE	---	0.907	0.000001	0.0002
TOTAL HYDROCARBONS	---	---	*0.00036*	*0.0087*
TOTAL EMISSIONS				
TURBINE #1 + LOVG 1 + LOVT 1			***1.67***	***40.2***
TURBINE #2 + LOVG 2 + LOVT 2			***1.97***	***47.3***

INTRODUCTION

INTRODUCTION

On February 9-12 and 26, 1993, Petro Chem Environmental Services, Inc. (PCES) performed a series of emission source tests for Destec Operating Company at their Double C Limited Cogeneration Facility located in Kern County, California. The units tested were two 25.0 MW GE LM-2500 gas fired turbine/generators and four lube oil vents; two per turbine.

Determination of concentrations (ppm) and emissions (lbs/hr) of particulate, sulfur, NMHC, NOx, CO, O_2, from the exhaust of the two turbine/generators and relative accuracy testing was performed for NOx, CO, and O_2 using the following procedures:

PARAMETERS	METHOD	# TEST RUNS PER TURBINE
Particulate	EPA Method 5; Gravimetric	2 - 6 hr.
Sulfur	Fuel Analysis / Fuel Rates EAS Labs	1
NMHC	EPA Method 18; (modified) C_1 - C_{6+}	3
NOx	EPA Method 20; Chemiluminescent Analyzer equipped with Molydenum Convertor	Turbine #1 12 - 30 min. Turbine #2 10 - 30 min.
CO	EPA Method 10; Gas Filter Correlation Analyzer	Turbine #1 12 - 30 min. Turbine #2 10 - 30 min.
O_2	EPA Method 20; Fuel Cell Analyzer	Turbine #1 12 - 30 min. Turbine #2 10 - 30 min.
Molecular Weight O_2, CO_2, N_2	EPA Method 3; Orsat	2
Volume Flow DSCFM	EPA Method 2; Pitot Tube Traverse	2
Relative Accuracy NOx/ CO / O_2	Title 40 CFR Performance Spec II, III, IV	Turbine #1 12 - 30 min. Turbine #2 10 - 30 min.

Each turbine was equipped with two lube oil vent (LOV) stacks; turbine LOV and generator LOV. Concentrations (ppm, gr/DSCF) and emissions (lb/hr, lb/day) of condensable and non condensable hydrocarbon emissions from the exhaust of the lube oil vent stacks were determined using the following procedures:

PARAMETERS	METHOD	# TEST RUNS/ LUBE OIL VENTS
Condensable Hydrocarbons	EPA Method 4; with Gravimetric Organic Extractions Utilizing CARB Method 5.4.3.1.	3
Non Condensable Hydrocarbons	EPA Method 18; Bag Sample FID Analysis	3
Volume Flow	EPA Method 2; Pitot Tube Or Hot Wire Anemometer	3
Molecular Weight	EPA Method 3; Orsat Analysis	3
% H_2O	EPA Method 4; Condensation	3

As per the permit to operate, emissions of hydrocarbons are expressed as the sum of the emissions from the turbine and it's two LOV stacks.

All sampling was performed by Doug Towne, Bob Martin, and Scott Harrison of Petro Chem Environmental Services, Inc. The hydrocarbons, fuel gas, PM, and organic analyses were performed by Terry Rowles of PCES. Scott Kicker of Destec Operating Company supervised the testing. Greg LaFore of San Joaquin Valley Unified APCD, Southern Region, was present and witnessed the testing.

ETHOD 5 DATA

COMPANY : DESTEC
UNIT : DOUBLE C - TURBINE #1
DATE : 2/09-10/93
REPORT : 027-341

METHOD 1-5
FIELD DATA @ 60° F

RUN #:	1	2
TIME :	1033	840
Vm (dry gas sampled)	190.63	174.97
Y (meter calib. factor)	0.982977	0.982977
P bar (Barometric pressure)	28.49	29.24
P static (stack pressure, " H2O)	-0.7	-0.7
Delta H (differential meter press, " H2O)	0.67	0.61
Tm (meter temperature, R°)	529	527
Vol H2O mls	854.9	785.1
Vm(std),dscf	175.70	166.10
Bws-H2O vapor	0.1844	0.1801
MF-moisture factor	0.8156	0.8199
% CO2	3.6	3.5
% O2	13.8	13.9
% N2	82.6	82.6
Md-MW stk gas,dry	29.13	29.12
Ms-MW stk gas,wet	27.08	27.11
Cp-pitot tube	0.791	0.791
Avg sq rt ^p	1.03	1.05
T stack, R°	728	731
Stack area,ft2	50.004	50.004
Vs-fps	67.82	68.13
Qstd-dscfm	112679	116311
Area noz,ft2	2.01E-04	2.01E-04
Sample time	360	360
% Isokinetic	107.7	98.6

COMPANY : DESTEC
UNIT : DOUBLE C - TURBINE #1
DATE : 2/09-10/93
REPORT : 027-341

EPA METHOD 5 DATA
@ 60°F

RUN #1

PARTICULATE RESULTS:	net mg	gr/dscf	gr/scf	gr/dscf @ 12% CO2	lbs/hr
Probe & Nozzle:	11.30	0.00099	0.00081	0.00330	0.958
Filter:	0.50	0.00004	0.00004	0.00015	0.042
Condensables:	8.88	0.00078	0.00063	0.00259	0.752
Total:	20.68	0.00181	0.00148	0.00604	1.752

ADDITIONAL DATA:

TIME start	finish	%O2	%CO2	%H2O	Vm(std)	DSCFM
1033	1645	13.8	3.6	18.44	175.7	112679

RUN #2

PARTICULATE RESULTS:	net mg	gr/dscf	gr/scf	gr/dscf @ 12% CO2	lbs/hr
Probe & Nozzle:	7.40	0.00069	0.00056	0.00235	0.685
Filter:	0.30	0.00003	0.00002	0.00010	0.028
Condensables:	7.30	0.00068	0.00056	0.00232	0.676
Total:	15.00	0.00139	0.00114	0.00477	1.388

ADDITIONAL DATA:

TIME start	finish	%O2	%CO2	%H2O	Vm(std)	DSCFM
840	1453	13.9	3.5	18.01	166.1	116311

COMPANY : DESTEC
UNIT : DOUBLE C - TURBINE #2
DATE : 2/11-12/93
REPORT : 027-341

METHOD 1-5
FIELD DATA @ 60° F

RUN #:	1	2
TIME :	900	838
Vm (dry gas sampled)	172.78	171.79
Y (meter calib. factor)	0.982977	0.982977
P bar (Barometric pressure)	29.22	29.22
P static (stack pressure, " H2O)	-0.75	-0.75
Delta H (differential meter press, " H2O)	0.58	0.61
Tm (meter temperature, R°)	523	519
Vol H2O mls	725.7	735.4
Vm(std),dscf	165.15	165.49
Bws-H2O vapor	0.1695	0.1711
MF-moisture factor	0.8305	0.8289
% CO2	3.4	3.5
% O2	15	14.9
% N2	81.6	81.6
Md-MW stk gas,dry	29.14	29.16
Ms-MW stk gas,wet	27.25	27.25
Cp-pitot tube	0.791	0.791
Avg sq rt ^p	1.05	1.06
T stack, R°	738	738
Stack area,ft2	50.004	50.004
Vs-fps	68.49	68.94
Qstd-dscfm	117212	117743
Area noz,ft2	2.01E-04	2.01E-04
Sample time	360	360
% Isokinetic	97.3	97.1

COMPANY : DESTEC
UNIT : DOUBLE C - TURBINE #2
DATE : 2/11-12/93
REPORT : 027-341

EPA METHOD 5 DATA
@ 60°F

RUN #1

PARTICULATE RESULTS:	net mg	gr/dscf	gr/scf	gr/dscf @ 12% CO2	lbs/hr
Probe & Nozzle:	7.30	0.00068	0.00057	0.00240	0.685
Filter:	0.40	0.00004	0.00003	0.00013	0.038
Condensables:	8.92	0.00083	0.00069	0.00294	0.837
Total:	16.62	0.00155	0.00129	0.00547	1.559

ADDITIONAL DATA:

TIME start	finish	%O2	%CO2	%H2O	Vm(std)	DSCFM
900	1521	15	3.4	16.95	165.15	117212

RUN #2

PARTICULATE RESULTS:	net mg	gr/dscf	gr/scf	gr/dscf @ 12% CO2	lbs/hr
Probe & Nozzle:	15.70	0.00146	0.00121	0.00501	1.476
Filter:	0.50	0.00005	0.00004	0.00016	0.047
Condensables:	9.55	0.00089	0.00074	0.00305	0.898
Total:	25.75	0.00240	0.00199	0.00822	2.421

ADDITIONAL DATA:

TIME start	finish	%O2	%CO2	%H2O	Vm(std)	DSCFM
838	1447	14.9	3.5	17.11	165.49	117743

ROCARBON DATA

COMPANY : DESTEC
UNIT : DOUBLE C - TURBINES 1 & 2 AND LUBE OIL VENTS
DATE : 02-11-93 & 02-26-93
REPORT : 027-341

SUMMARY OF HYDROCARBONS RESULTS

	gr/scf	ppm	lbs/hr	lbs/day
TURBINE #1				
NON-CONDENSABLE	---	5.78	1.67	40.16
TOTAL HYDROCARBONS	---	---	*1.67*	*40.16*
TURBINE #2				
NON-CONDENSABLE	---	6.61	1.97	47.20
TOTAL HYDROCARBONS	---	---	*1.97*	*47.20*
LOV GENERATOR 1				
CONDENSABLE	0.01070	---	0.00195	0.0466
NON-CONDENSABLE	---	0.0000	0.0000	0.0000
TOTAL HYDROCARBONS	---	---	*0.00195*	*0.0466*
LOV TURBINE 1				
CONDENSABLE	0.02222	---	0.00060	0.0144
NON-CONDENSABLE	---	0.000	0.00000	0.0000
TOTAL HYDROCARBONS	---	---	*0.00060*	*0.0144*
LOV GENERATOR 2				
CONDENSABLE	0.00968	---	0.00183	0.0440
NON-CONDENSABLE	---	0.000	0.00000	0.0000
TOTAL HYDROCARBONS	---	---	*0.00183*	*0.0440*
LOV TURBINE 2				
CONDENSABLE	0.01516	---	0.00036	0.0085
NON-CONDENSABLE	---	0.907	0.000001	0.0002
TOTAL HYDROCARBONS	---	---	*0.00036*	*0.0087*
TOTAL EMISSIONS				
TURBINE #1 + LOVG 1 + LOVT 1			*1.67*	*40.2*
TURBINE #2 + LOVG 2 + LOVT 2			*1.97*	*47.3*

COMPANY : DESTEC
UNIT : DOUBLE C - TURBINE #1 & LUBE OIL VENTS
DATE : 02-11-93 & 02-26-93
REPORT : 027-341

SUMMARY OF HYDROCARBONS RESULTS

	gr/scf	ppm	lbs/hr	lbs/day
TURBINE #1 - MAIN STACK				
BLANK CORRECTED				
NON-CONDENSABLE				
RUN 1		6.68	1.93	46.32
RUN 2		5.44	1.58	37.92
RUN 3		5.23	1.51	36.24
AVERAGE		5.78	1.67	40.16
LOV GENERATOR 1				
CONDENSABLE				
RUN 1	0.00266		0.00051	0.0122
RUN 2	0.02525		0.00460	0.1103
RUN 3	0.00419		0.00073	0.0174
AVERAGE	0.01070		0.00195	0.0466
NON-CONDENSABLE				
RUN 1		0	0	0
RUN 2		0	0	0
RUN 3		0	0	0
AVERAGE		0	0	0
TOTAL HYDROCARBONS	---	---	**0.00195**	**0.0466**
LOV TURBINE 1				
CONDENSABLE				
RUN 1	0.01745		0.00047	0.0112
RUN 2	0.02758		0.00075	0.0180
RUN 3	0.02163		0.00059	0.0141
AVERAGE	0.02222		0.00060	0.0144
NON-CONDENSABLE				
RUN 1		0	0	0
RUN 2		0	0	0
RUN 3		0	0	0
AVERAGE		0	0	0
TOTAL HYDROCARBONS	---	---	**0.00060**	**0.0144**
TURBINE #1				
TOTAL EMISSIONS			***1.67***	***40.22***
MAIN STACK + LOVG + LOVT				

COMPANY : DESTEC
UNIT : DOUBLE C - TURBINE #1
DATE : 02-11-93
REPORT : 027-341

HYDROCARBON RESULTS
CORRECTED FOR METHOD BLANK

RUN No.: 1
DSCFM: 114495 average of pitot tube velocity profiles

		BLANK	ppm - BLANK	lb/hr	ppm (as Methane)	lb/hr
Methane	(C1)	0.29	67.57	19.57	67.57	19.57
Ethane	(C2)	0.00	3.22	1.75	6.44	1.87
Propane	(C3)	0.04	0.08	0.06	0.24	0.07
Butane	(C4)	0.04	0.00	0.00	0.00	0.00
Pentane	(C5)	0.12	0.00	0.00	0.00	0.00
Hexane	(C6)	0.94	0.00	0.00	0.00	0.00
	Total		70.87	21.38	74.25	21.50
	Total (non methane)		3.30	1.81	6.68	1.93

RUN No.: 2

		BLANK	ppm - BLANK	lb/hr	ppm (as Methane)	lb/hr
Methane	(C1)	0.29	66.91	19.38	66.91	19.38
Ethane	(C2)	0.00	2.66	1.44	5.32	1.54
Propane	(C3)	0.04	0.04	0.03	0.12	0.03
Butane	(C4)	0.04	0.00	0.00	0.00	0.00
Pentane	(C5)	0.12	0.00	0.00	0.00	0.00
Hexane	(C6)	0.94	0.00	0.00	0.00	0.00
	Total		69.61	20.86	72.35	20.95
	Total (non methane)		2.70	1.48	5.44	1.58

RUN No.: 3

		BLANK	ppm - BLANK	lb/hr	ppm (as Methane)	lb/hr
Methane	(C1)	0.29	65.77	19.05	65.77	19.05
Ethane	(C2)	0.00	2.60	1.41	5.20	1.51
Propane	(C3)	0.04	0.01	0.01	0.03	0.01
Butane	(C4)	0.04	0.00	0.00	0.00	0.00
Pentane	(C5)	0.12	0.00	0.00	0.00	0.00
Hexane	(C6)	0.94	0.00	0.00	0.00	0.00
	Total		68.38	20.47	71.00	20.56
	Total (non methane)		2.61	1.42	5.23	1.51

COMPANY : DESTEC
UNIT : DOUBLE C - TURBINE #1
DATE : 02-11-93
REPORT : 027-341

HYDROCARBON RESULTS
UNCORRECTED

RUN No.: 1
DSCFM: 114495 average of pitot tube velocity profiles

			ppm	lb/hr	ppm (as Methane)	lb/hr (as Methane)
Methane	(C1)		67.86	19.65	67.86	19.65
Ethane	(C2)		2.63	1.43	5.26	1.52
Propane	(C3)		0.12	0.10	0.36	0.10
Butane	(C4)	ND **	0.02	0.02	0.08	0.02
Pentane	(C5)	ND **	0.02	0.03	0.10	0.03
Hexane	(C6)		0.18	0.28	1.08	0.31
	Total		70.83	21.51	74.74	21.65
	Total (non methane)		2.97	1.85	6.88	1.99

RUN No.: 2

			ppm	lb/hr	ppm (as Methane)	lb/hr (as Methane)
Methane	(C1)		67.20	19.46	67.20	19.46
Ethane	(C2)		2.66	1.44	5.32	1.54
Propane	(C3)		0.08	0.06	0.24	0.07
Butane	(C4)	ND **	0.02	0.02	0.08	0.02
Pentane	(C5)	ND **	0.02	0.03	0.10	0.03
Hexane	(C6)		0.09	0.14	0.54	0.16
	Total		70.07	21.16	73.48	21.28
	Total (non methane)		2.87	1.70	6.28	1.82

RUN No.: 3

			ppm	lb/hr	ppm (as Methane)	lb/hr (as Methane)
Methane	(C1)		66.06	19.13	66.06	19.13
Ethane	(C2)		2.60	1.41	5.20	1.51
Propane	(C3)		0.05	0.04	0.15	0.04
Butane	(C4)	ND **	0.02	0.02	0.08	0.02
Pentane	(C5)	ND **	0.02	0.03	0.10	0.03
Hexane	(C6)		0.10	0.16	0.60	0.17
	Total		68.85	20.79	72.19	20.91
	Total (non methane)		2.79	1.65	6.13	1.78

** ND - Not Detected (See detection limits)

COMPANY : DESTEC
UNIT : DOUBLE C - LUBE OIL VENT GENERATOR 1
DATE : 02-11-93
REPORT : 027-341

FIELD DATA @ 60°F

RUN #:	1	2	3
TIME:	1058	1145	1234
Vm (dry gas sampled)	24.0	24.05	24.0
Y (meter calib. factor)	0.998954	0.998954	0.998954
P bar (Barometric pressure)	29.22	29.22	29.22
P static (stack pressure, " H2O)	0	0	0
Delta H (differential meter press, " H2O)	0.45	0.59	0.61
Tm (meter temperature, R°)	532.13	532.56	532.06
Vol H2O mls	4.9	5	5.2
Vm(std),dscf	22.91	22.94	22.92
Bws-H2O vapor	0.0098	0.0100	0.0104
MF-moisture factor	0.9902	0.9900	0.9896
% CO2	0	0	0
% O2	20.9	20.9	20.9
% N2	79.1	79.1	79.1
Md-MW stk gas,dry	28.84	28.84	28.84
Ms-MW stk gas,wet	28.73	28.73	28.73
T stack, R°	556.38	555.88	553.13
Stack area,ft2	0.060	0.060	0.060
Vs-fpm, hot wire anemometer	393.75	380.63	371.25
Q-acfm	23.6	22.8	22.3
Qstd-dscfm	22	21	20
Sample time	40	40	40

COMPANY : DESTEC
UNIT : DOUBLE C - LUBE OIL VENT GENERATOR 1
DATE : 2-11-93
REPORT : 027-341

EPA METHOD 4 DATA
@ 60°F

RUN #1

CONDENSABLE HYDROCARBONS:	net mg	gr/dscf	gr/scf	lbs/hr	lbs/day
RESULTS:	4.00	0.00269	0.00266	0.00051	0.0122

ADDITIONAL DATA:

TIME						
start	finish	%O2	%CO2	%H2O	Vm(std)	DSCFM
1058	1138	20.9	0	0.98	22.91	22

RUN #2

CONDENSABLE HYDROCARBONS:	net mg	gr/dscf	gr/scf	lbs/hr	lbs/day
RESULTS:	37.99	0.02550	0.02525	0.00460	0.1103

ADDITIONAL DATA:

TIME						
start	finish	%O2	%CO2	%H2O	Vm(std)	DSCFM
1145	1225	20.9	0	1	22.94	21

RUN #3

CONDENSABLE HYDROCARBONS:	net mg	gr/dscf	gr/scf	lbs/hr	lbs/day
RESULTS:	6.30	0.00423	0.00419	0.00073	0.0174

ADDITIONAL DATA:

TIME						
start	finish	%O2	%CO2	%H2O	Vm(std)	DSCFM
1234	1314	20.9	0	1.04	22.92	20

COMPANY : DESTEC
UNIT : DOUBLE C - LUBE OIL VENT GENERATOR 1
DATE : 02-11-93
REPORT : 027-341

NON CONDENSABLE
HYDROCARBON RESULTS

RUN No.: 1					
DSCFM: 22					
		ppm	lb/hr	ppm as CH4	lb/hr (as Methane)
Methane	(C1)	2.646	0.000	2.646	0.000
Ethane	(C2)	0.000	0.000	0.000	0.000
Propane	(C3)	0.000	0.000	0.000	0.000
Butane	(C4)	0.000	0.000	0.000	0.000
Pentane	(C5)	0.000	0.000	0.000	0.000
Hexane	(C6)	0.000	0.000	0.000	0.000
	Total	2.646	0.000	2.646	0.000
	Total (non methane)	0.000	0.000	0.000	0.000

RUN No.: 2					
DSCFM: 21					
		ppm	lb/hr	ppm as CH4	lb/hr (as Methane)
Methane	(C1)	2.451	0.000	2.451	0.000
Ethane	(C2)	0.000	0.000	0.000	0.000
Propane	(C3)	0.000	0.000	0.000	0.000
Butane	(C4)	0.000	0.000	0.000	0.000
Pentane	(C5)	0.000	0.000	0.000	0.000
Hexane	(C6)	0.000	0.000	0.000	0.000
	Total	2.451	0.000	2.451	0.000
	Total (non methane)	0.000	0.000	0.000	0.000

RUN No.: 3					
DSCFM: 20					
		ppm	lb/hr	ppm as CH4	lb/hr (as Methane)
Methane	(C1)	2.826	0.0001	2.826	0.0001
Ethane	(C2)	0.000	0.0000	0.000	0.0000
Propane	(C3)	0.000	0.0000	0.000	0.0000
Butane	(C4)	0.000	0.0000	0.000	0.0000
Pentane	(C5)	0.000	0.0000	0.000	0.0000
Hexane	(C6)	0.000	0.0000	0.000	0.0000
	Total	2.826	0.0001	2.826	0.0001
	Total (non methane)	0.000	0.0000	0.000	0.0000

COMPANY : DESTEC
UNIT : DOUBLE C – LUBE OIL VENT TURBINE 1
DATE : 02-26-93
REPORT : 027-341

FIELD DATA @ 60°F

RUN #:	1	2	3
TIME:	1043	1125	1208
Vm (dry gas sampled)	24.12	23.97	24.15
Y (meter calib. factor)	0.982977	0.982977	0.982977
P bar (Barometric pressure)	29.3	29.3	29.3
P static (stack pressure, " H2O)	0	0	0
Delta H (differential meter press, " H2O)	0.6	0.6	0.6
Tm (meter temperature, R°)	519.94	527.81	526.13
Vol H2O mls	11.6	11.8	11.5
Vm(std),dscf	23.26	22.77	23.01
Bws-H2O vapor	0.0226	0.0235	0.0227
MF-moisture factor	0.9774	0.9765	0.9773
% CO2	0	0	0
% O2	20.9	20.9	20.9
% N2	79.1	79.1	79.1
Md-MW stk gas,dry	28.84	28.84	28.84
Ms-MW stk gas,wet	28.59	28.59	28.59
T stack, R°	536.88	534	534
Stack area,ft2	0.060	0.060	0.060
Vs-fpm, hot wire anemometer	53.75	54.125	54.125
Q-acfm	3.23	3.25	3.25
Qstd-dscfm	3.06	3.10	3.10
Sample time	40	40	40

COMPANY : DESTEC
UNIT : DOUBLE C - LUBE OIL VENT TURBINE 1
DATE : 02-26-93
REPORT : 027-341

EPA METHOD 4 DATA
@ 60°F

RUN #1

CONDENSABLE HYDROCARBONS:	net mg	gr/dscf	gr/scf	lbs/hr	lbs/day
RESULTS:	26.96	0.01785	0.01745	0.00047	0.0112

ADDITIONAL DATA:

TIME

start	finish	%O2	%CO2	%H2O	Vm(std)	DSCFM
1043	1123	20.9	0	2.26	23.26	3.06

RUN #2

CONDENSABLE HYDROCARBONS:	net mg	gr/dscf	gr/scf	lbs/hr	lbs/day
RESULTS:	41.76	0.02824	0.02758	0.00075	0.0180

ADDITIONAL DATA:

TIME

start	finish	%O2	%CO2	%H2O	Vm(std)	DSCFM
1125	1205	20.9	0	2.35	22.77	3.10

RUN #3

CONDENSABLE HYDROCARBONS:	net mg	gr/dscf	gr/scf	lbs/hr	lbs/day
RESULTS:	33.07	0.02213	0.02163	0.00059	0.0141

ADDITIONAL DATA:

TIME

start	finish	%O2	%CO2	%H2O	Vm(std)	DSCFM
1208	1248	20.9	0	2.27	23.01	3.10

COMPANY : DESTEC
UNIT : DOUBLE C - LUBE OIL VENT TURBINE 1
DATE : 02-26-93
REPORT : 027-341

NON CONDENSABLE
HYDROCARBON RESULTS

RUN No.: 1
DSCFM: 3.06

		ppm	lb/hr	ppm as CH4	lb/hr (as Methane)
Methane	(C1)	3.127	0.000	3.127	0.000
Ethane	(C2)	0.000	0.000	0.000	0.000
Propane	(C3)	0.000	0.000	0.000	0.000
Butane	(C4)	0.000	0.000	0.000	0.000
Pentane	(C5)	0.000	0.000	0.000	0.000
Hexane	(C6)	0.000	0.000	0.000	0.000
	Total	3.127	0.000	3.127	0.000
	Total (non methane)	0.000	0.000	0.000	0.000

RUN No.: 2
DSCFM: 3.10

		ppm	lb/hr	ppm as CH4	lb/hr (as Methane)
Methane	(C1)	58.708	0.000	58.708	0.000
Ethane	(C2)	0.000	0.000	0.000	0.000
Propane	(C3)	0.000	0.000	0.000	0.000
Butane	(C4)	0.000	0.000	0.000	0.000
Pentane	(C5)	0.000	0.000	0.000	0.000
Hexane	(C6)	0.000	0.000	0.000	0.000
	Total	58.708	0.000	58.708	0.000
	Total (non methane)	0.000	0.000	0.000	0.000

RUN No.: 3
DSCFM: 3.10

		ppm	lb/hr	ppm as CH4	lb/hr (as Methane)
Methane	(C1)	4.887	0.000	4.887	0.000
Ethane	(C2)	0.000	0.000	0.000	0.000
Propane	(C3)	0.000	0.000	0.000	0.000
Butane	(C4)	0.000	0.000	0.000	0.000
Pentane	(C5)	0.000	0.000	0.000	0.000
Hexane	(C6)	0.000	0.000	0.000	0.000
	Total	4.887	0.000	4.887	0.000
	Total (non methane)	0.000	0.000	0.000	0.000

COMPANY : DESTEC
UNIT : DOUBLE C - TURBINE #2 & LUBE OIL VENTS
DATE : 02-11-93 & 02-26-93
REPORT : 027-341

SUMMARY OF HYDROCARBONS RESULTS

	gr/scf	ppm	lbs/hr	lbs/day
TURBINE #2 - MAIN STACK				
BLANK CORRECTED				
NON-CONDENSABLE				
RUN 1		6.80	2.02	48.48
RUN 2		6.58	1.96	47.04
RUN 3		6.45	1.92	46.08
AVERAGE		6.61	1.97	47.20
LOV GENERATOR 2				
CONDENSABLE				
RUN 1	0.00655		0.00125	0.0301
RUN 2	0.01554		0.00297	0.0713
RUN 3	0.00696		0.00127	0.0305
AVERAGE	0.00968		0.00183	0.0440
NON-CONDENSABLE				
RUN 1		0	0	0
RUN 2		0	0	0
RUN 3		0	0	0
AVERAGE		0	0	0
TOTAL HYDROCARBONS	---	---	**0.00183**	**0.0440**
LOV TURBINE 2				
CONDENSABLE				
RUN 1	0.01516		0.00034	0.0081
RUN 2	0.01384		0.00034	0.0081
RUN 3	0.01649		0.00039	0.0094
AVERAGE	0.01516		0.00036	0.0085
NON-CONDENSABLE				
RUN 1		2.720	0.00002	0.0005
RUN 2		0	0	0
RUN 3		0	0	0
AVERAGE		0.906666	0.0000066	0.00016
TOTAL HYDROCARBONS	---	---	**0.00036**	**0.0087**
TURBINE #2				
TOTAL EMISSIONS			***1.97***	***47.25***
MAIN STACK + LOVG + LOVT				

COMPANY : DESTEC
UNIT : DOUBLE C - TURBINE #2
DATE : 02-11-93
REPORT : 027-341

HYDROCARBON RESULTS
CORRECTED FOR METHOD BLANK

RUN No.: 1
DSCFM: 117478 average of pitot tube velocity profiles

		BLANK	ppm - BLANK	lb/hr	ppm (as Methane)	lb/hr
Methane	(C1)	0.29	79.18	23.53	79.18	23.53
Ethane	(C2)	0.00	3.22	1.79	6.44	1.91
Propane	(C3)	0.04	0.12	0.10	0.36	0.11
Butane	(C4)	0.04	0.00	0.00	0.00	0.00
Pentane	(C5)	0.12	0.00	0.00	0.00	0.00
Hexane	(C6)	0.94	0.00	0.00	0.00	0.00
	Total		82.52	25.42	85.98	25.55
	Total (non methane)		3.34	1.89	6.80	2.02

RUN No.: 2

		BLANK	ppm - BLANK	lb/hr	ppm (as Methane)	lb/hr
Methane	(C1)	0.29	79.86	23.73	79.86	23.73
Ethane	(C2)	0.00	3.11	1.73	6.22	1.85
Propane	(C3)	0.04	0.12	0.10	0.36	0.11
Butane	(C4)	0.04	0.00	0.00	0.00	0.00
Pentane	(C5)	0.12	0.00	0.00	0.00	0.00
Hexane	(C6)	0.94	0.00	0.00	0.00	0.00
	Total		83.09	25.56	86.44	25.69
	Total (non methane)		3.23	1.83	6.58	1.96

RUN No.: 3

		BLANK	ppm - BLANK	lb/hr	ppm (as Methane)	lb/hr
Methane	(C1)	0.29	75.93	22.56	75.93	22.56
Ethane	(C2)	0.00	3.06	1.71	6.12	1.82
Propane	(C3)	0.04	0.11	0.09	0.33	0.10
Butane	(C4)	0.04	0.00	0.00	0.00	0.00
Pentane	(C5)	0.12	0.00	0.00	0.00	0.00
Hexane	(C6)	0.94	0.00	0.00	0.00	0.00
	Total		79.10	24.36	82.38	24.48
	Total (non methane)		3.17	1.79	6.45	1.92

COMPANY : DESTEC
UNIT : DOUBLE C – TURBINE #2
DATE : 02-11-93
REPORT : 027-341

HYDROCARBON RESULTS
UNCORRECTED

RUN No.: 1
DSCFM: 117478 average of pitot tube velocity profiles

			ppm	lb/hr	ppm (as Methane)	lb/hr (as Methane)
Methane	(C1)		79.47	23.62	79.47	23.62
Ethane	(C2)		3.22	1.79	6.44	1.91
Propane	(C3)		0.16	0.13	0.48	0.14
Butane	(C4)	ND **	0.02	0.02	0.08	0.02
Pentane	(C5)	ND **	0.02	0.03	0.10	0.03
Hexane	(C6)		0.13	0.21	0.78	0.23
	Total		83.02	25.80	87.35	25.96
	Total (non methane)		3.55	2.18	7.88	2.34

RUN No.: 2

			ppm	lb/hr	ppm (as Methane)	lb/hr (as Methane)
Methane	(C1)		80.15	23.82	80.15	23.82
Ethane	(C2)		3.11	1.73	6.22	1.85
Propane	(C3)		0.16	0.13	0.48	0.14
Butane	(C4)	ND **	0.02	0.02	0.08	0.02
Pentane	(C5)	ND **	0.02	0.03	0.10	0.03
Hexane	(C6)		0.13	0.21	0.78	0.23
	Total		83.59	25.94	87.81	26.09
	Total (non methane)		3.44	2.12	7.66	2.28

RUN No.: 3

			ppm	lb/hr	ppm (as Methane)	lb/hr (as Methane)
Methane	(C1)		76.22	22.65	76.22	22.65
Ethane	(C2)		3.06	1.71	6.12	1.82
Propane	(C3)		0.15	0.12	0.45	0.13
Butane	(C4)	ND **	0.02	0.02	0.08	0.02
Pentane	(C5)	ND **	0.02	0.03	0.10	0.03
Hexane	(C6)		0.14	0.22	0.84	0.25
	Total		79.61	24.75	83.81	24.91
	Total (non methane)		3.39	2.10	7.59	2.26

** ND – Not Detected (See detection limits)

COMPANY : DESTEC
UNIT : DOUBLE C - LUBE OIL VENT GENERATOR 2
DATE : 02-11-93
REPORT : 027-341

FIELD DATA @ 60°F

RUN #:	1	2	3
TIME:	1345	1433	1527
Vm (dry gas sampled)	23.99	24.00	24.00
Y (meter calib. factor)	0.998954	0.998954	0.998954
P bar (Barometric pressure)	29.22	29.22	29.22
P static (stack pressure, " H2O)	0	0	0
Delta H (differential meter press, " H2O)	0.60	0.60	0.60
Tm (meter temperature, R°)	527.25	531.63	534.69
Vol H2O mls	6.9	6.2	6
Vm(std),dscf	23.12	22.94	22.81
Bws-H2O vapor	0.0137	0.0124	0.0121
MF-moisture factor	0.9863	0.9876	0.9879
% CO2	0	0	0
% O2	20.9	20.9	20.9
% N2	79.1	79.1	79.1
Md-MW stk gas,dry	28.84	28.84	28.84
Ms-MW stk gas,wet	28.69	28.71	28.71
T stack, R°	538.25	531.63	536
Stack area,ft2	0.060	0.060	0.060
Vs-fpm, hot wire anemometer	351.25	323.13	332.5
Q-acfm	21.1	19.4	20.0
Qstd-dscfm	20	19	19
Sample time	40	40	40

COMPANY : DESTEC
UNIT : DOUBLE C - LUBE OIL VENT GENERATOR 2
DATE : 2-11-93
REPORT : 027-341

EPA METHOD 4 DATA
@ 60°F

RUN #1

CONDENSABLE HYDROCARBONS:	net mg	gr/dscf	gr/scf	lbs/hr	lbs/day
RESULTS:	9.97	0.00664	0.00655	0.00125	0.0301

ADDITIONAL DATA:

TIME						
start	finish	%O2	%CO2	%H2O	Vm(std)	DSCFM
1345	1425	20.9	0	1.37	23.12	22

RUN #2

CONDENSABLE HYDROCARBONS:	net mg	gr/dscf	gr/scf	lbs/hr	lbs/day
RESULTS:	23.44	0.01574	0.01554	0.00297	0.0713

ADDITIONAL DATA:

TIME						
start	finish	%O2	%CO2	%H2O	Vm(std)	DSCFM
1433	1513	20.9	0	1.24	22.94	22

RUN #3

CONDENSABLE HYDROCARBONS:	net mg	gr/dscf	gr/scf	lbs/hr	lbs/day
RESULTS:	10.44	0.00705	0.00696	0.00127	0.0305

ADDITIONAL DATA:

TIME						
start	finish	%O2	%CO2	%H2O	Vm(std)	DSCFM
1527	1607	20.9	0	1.21	22.81	21

COMPANY : DESTEC
UNIT : DOUBLE C - LUBE OIL VENT GENERATOR 2
DATE : 02-11-93
REPORT : 027-341

NON CONDENSABLE
HYDROCARBON RESULTS

RUN No.:	1				
DSCFM:	20				
		ppm	lb/hr	ppm as CH4	lb/hr (as Methane)
Methane	(C1)	4.504	0.000	4.504	0.000
Ethane	(C2)	0.000	0.000	0.000	0.000
Propane	(C3)	0.000	0.000	0.000	0.000
Butane	(C4)	0.000	0.000	0.000	0.000
Pentane	(C5)	0.000	0.000	0.000	0.000
Hexane	(C6)	0.000	0.000	0.000	0.000
	Total	4.504	0.000	4.504	0.000
	Total (non methane)	0.000	0.000	0.000	0.000

RUN No.:	2				
DSCFM:	19				
		ppm	lb/hr	ppm as CH4	lb/hr (as Methane)
Methane	(C1)	5.809	0.000	5.809	0.000
Ethane	(C2)	0.000	0.000	0.000	0.000
Propane	(C3)	0.000	0.000	0.000	0.000
Butane	(C4)	0.000	0.000	0.000	0.000
Pentane	(C5)	0.000	0.000	0.000	0.000
Hexane	(C6)	0.000	0.000	0.000	0.000
	Total	5.809	0.000	5.809	0.000
	Total (non methane)	0.000	0.000	0.000	0.000

RUN No.:	3				
DSCFM:	19				
		ppm	lb/hr	ppm as CH4	lb/hr (as Methane)
Methane	(C1)	4.516	0.000	4.516	0.000
Ethane	(C2)	0.000	0.000	0.000	0.000
Propane	(C3)	0.000	0.000	0.000	0.000
Butane	(C4)	0.000	0.000	0.000	0.000
Pentane	(C5)	0.000	0.000	0.000	0.000
Hexane	(C6)	0.000	0.000	0.000	0.000
	Total	4.516	0.000	4.516	0.000
	Total (non methane)	0.000	0.000	0.000	0.000

COMPANY : DESTEC
UNIT : DOUBLE C - LUBE OIL VENT TURBINE 2
DATE : 02-11-93
REPORT : 027-341

FIELD DATA @ 60°F

RUN #:	1	2	3
TIME:	1643	1729	1814
Vm (dry gas sampled)	24.35	24.06	24.00
Y (meter calib. factor)	0.998954	0.998954	0.998954
P bar (Barometric pressure)	29.22	29.22	29.22
P static (stack pressure, " H2O)	0	0	0
Delta H (differential meter press, " H2O)	0.60	0.59	0.60
Tm (meter temperature, R°)	531.5	528.88	527.44
Vol H2O mls	11.2	13.8	10.2
Vm(std),dscf	23.28	23.11	23.12
Bws-H2O vapor	0.0219	0.0270	0.0201
MF-moisture factor	0.9781	0.9730	0.9799
% CO2	0	0	0
% O2	20.9	20.9	20.9
% N2	79.1	79.1	79.1
Md-MW stk gas,dry	28.84	28.84	28.84
Ms-MW stk gas,wet	28.6	28.55	28.62
T stack, R°	543.88	539.25	537.25
Stack area,ft2	0.060	0.060	0.060
Vs-fpm, hot wire anemometer	45.25	49.13	47.63
Q-acfm	2.72	2.95	2.86
Qstd-dscfm	2.54	2.78	2.70
Sample time	40	40	40

COMPANY : DESTEC
UNIT : DOUBLE C - LUBE OIL VENT TURBINE 2
DATE : 2-11-93
REPORT : 027-341

EPA METHOD 4 DATA
@ 60°F

RUN #1

CONDENSABLE HYDROCARBONS:	net mg	gr/dscf	gr/scf	lbs/hr	lbs/day
RESULTS:	23.43	0.01550	0.01516	0.00034	0.0081

ADDITIONAL DATA:

TIME						
start	finish	%O2	%CO2	%H2O	Vm(std)	DSCFM
1643	1723	20.9	0	2.19	23.28	2.54

RUN #2

CONDENSABLE HYDROCARBONS:	net mg	gr/dscf	gr/scf	lbs/hr	lbs/day
RESULTS:	21.34	0.01422	0.01384	0.00034	0.0081

ADDITIONAL DATA:

TIME						
start	finish	%O2	%CO2	%H2O	Vm(std)	DSCFM
1729	1809	20.9	0	2.7	23.11	2.78

RUN #3

CONDENSABLE HYDROCARBONS:	net mg	gr/dscf	gr/scf	lbs/hr	lbs/day
RESULTS:	25.26	0.01683	0.01649	0.00039	0.0094

ADDITIONAL DATA:

TIME						
start	finish	%O2	%CO2	%H2O	Vm(std)	DSCFM
1814	1854	20.9	0	2.01	23.12	2.7

COMPANY : DESTEC
UNIT : DOUBLE C - LUBE OIL VENT TURBINE 2
DATE : 02-11-93
REPORT : 027-341

NON CONDENSABLE
HYDROCARBON RESULTS

RUN No.: 1					
DSCFM: 2.54					
		ppm	lb/hr	ppm as CH4	lb/hr (as Methane)
Methane	(C1)	21.880	0.00014	21.880	0.00014
Ethane	(C2)	1.360	0.00002	2.720	0.00002
Propane	(C3)	0.000	0.00000	0.000	0.00000
Butane	(C4)	0.000	0.00000	0.000	0.00000
Pentane	(C5)	0.000	0.00000	0.000	0.00000
Hexane	(C6)	0.000	0.00000	0.000	0.00000
	Total	23.240	0.00016	24.600	0.00016
	Total (non methane)	1.360	0.00002	2.720	0.00002

RUN No.: 2					
DSCFM: 2.78					
		ppm	lb/hr	ppm as CH4	lb/hr (as Methane)
Methane	(C1)	14.650	0.000	14.650	0.000
Ethane	(C2)	0.000	0.000	0.000	0.000
Propane	(C3)	0.000	0.000	0.000	0.000
Butane	(C4)	0.000	0.000	0.000	0.000
Pentane	(C5)	0.000	0.000	0.000	0.000
Hexane	(C6)	0.000	0.000	0.000	0.000
	Total	14.650	0.000	14.650	0.000
	Total (non methane)	0.000	0.000	0.000	0.000

RUN No.: 3					
DSCFM: 2.70					
		ppm	lb/hr	ppm as CH4	lb/hr (as Methane)
Methane	(C1)	11.350	0.000	11.350	0.000
Ethane	(C2)	0.000	0.000	0.000	0.000
Propane	(C3)	0.000	0.000	0.000	0.000
Butane	(C4)	0.000	0.000	0.000	0.000
Pentane	(C5)	0.000	0.000	0.000	0.000
Hexane	(C6)	0.000	0.000	0.000	0.000
	Total	11.350	0.000	11.350	0.000
	Total (non methane)	0.000	0.000	0.000	0.000

COMPANY : DESTEC
UNIT : DOUBLE C - TURBINE #1 & #2
DATE : 02-11-93
REPORT : 027-341

HYDROCARBON RESULTS @ 60°F

DETECTION LIMITS

		ppm	ppm (as Methane)
Methane	(C1)	0.05	0.05
Ethane	(C2)	0.03	0.06
Propane	(C3)	0.02	0.06
Butane	(C4)	0.02	0.08
Pentane	(C5)	0.02	0.10
Hexane	(C6)	0.02	0.12
Total		0.16	0.47
Total (non methane)		0.11	0.42

SULFUR EMISSIONS

COMPANY : DESTEC
UNIT : DOUBLE C - TURBINE #1
DATE : 2-9/10-93
REPORT : 027-341

SUFUR EMISSION RESULTS

DATE	TIME	TS, ppm *	AVG LBS/HR GAS FUEL FLOW	SP VOL CF/LB	AVERAGE SCFH	FUEL SCFM	SULFUR LBS/HR	SULFUR LBS/DAY
2/9/93	1130-1645	< 1.0	10125.2	22.05	223261	3721	< 0.01883	< 0.452
2/10/93	900-1245	< 1.0	10098.8	22.05	222679	3711	< 0.01878	< 0.451
						AVERAGE	< 0.01880	< 0.451

EQUATION:

SCFM = SCFH (1/60)

SULFUR LBS/HR = TS ppm * 32 * SCFM * 1.581 * 10^-7

MW SULFUR = 32

* SEE FUEL ANALYSIS (Page 78)

COMPANY : DESTEC
UNIT : DOUBLE C - TURBINE #2
DATE : 2-11-93
REPORT : 027-341

SUFUR EMISSION RESULTS

DATE	TIME	TS, ppm *	AVG LBS/HR GAS FUEL FLOW	SP VOL CF/LB	AVERAGE SCFH	FUEL SCFM	SULFUR	
							LBS/HR	LBS/DAY
2/11/93	1015-1815	< 1.0	10736.3	22.04	236628	3944	< 0.01995	< 0.479

EQUATION:

SCFM = SCFH (1/60)

SULFUR LBS/HR = TS ppm * 32 * SCFM * 1.581 * 10^-7

MW SULFUR = 32

* SEE FUEL ANALYSIS (Page 78)

RELATIVE ACCURACY

COMPANY : DESTEC
UNIT : DOUBLE C - TURBINE #1
DATE : 02/09-10/93
REPORT : 027-341

ANALYZER NOx

RELATIVE ACCURACY RESULTS

PPMvd

RUN #	REFERENCE METHOD	CEM DATA	DIFFERENCE
1	1.48	2.24	-0.76
2	3.30	2.26	1.04
3	2.23	2.42	-0.19
4	2.38	2.50	-0.12
5	2.08	2.49	-0.41
6	2.65	2.49	0.16
7	2.84	2.57	0.27
8	2.45	2.50	-0.05
9	2.50	2.50	0.00
10	2.50	2.53	-0.03
11	2.52	2.55	-0.03
12	2.83	2.76	0.07
AVERAGE	2.48	2.48	0.00

RELATIVE ACCURACY RELATED TO THE REFERENCE METHOD		
$t_{.975}$	=	2.201
STANDARD DEVIATION	=	0.42
CONFIDIENCE COEFFICIENT	=	0.27
REF METHOD	=	2.5
RELATIVE ACCURACY	=	11.05

COMPANY : DESTEC
UNIT : DOUBLE C - TURBINE #1
DATE : 02/09-10/93
REPORT : 027-341

ANALYZER CO

RELATIVE ACCURACY RESULTS

PPMvd

RUN #	REFERENCE METHOD	CEM DATA	DIFFERENCE
1	46.5	43.7	2.80
2	45.7	43.0	2.70
3	45.4	43.6	1.80
4	47.0	45.2	1.80
5	48.5	46.2	2.30
6	46.8	46.9	-0.10
7	43.7	42.5	1.20
8	46.3	46.4	-0.10
9	46.0	43.9	2.10
10	44.6	42.6	2.00
11	43.5	40.9	2.60
12	39.9	38.1	1.80
AVERAGE	45.3	43.6	1.74

RELATIVE ACCURACY RELATED TO THE REFERENCE METHOD		
$t_{.975}$	=	2.201
STANDARD DEVIATION	=	0.97
CONFIDIENCE COEFFICIENT	=	0.62
REF METHOD	=	45.3
RELATIVE ACCURACY	=	5.20

COMPANY : DESTEC
UNIT : DOUBLE C - TURBINE #1
DATE : 02/09-10/93
REPORT : 027-341

ANALYZER O2

RELATIVE ACCURACY RESULTS

PPMvd

RUN #	REFERENCE METHOD	CEM DATA	DIFFERENCE
1	14.00	13.92	0.08
2	13.91	13.93	-0.02
3	14.00	13.92	0.08
4	13.90	13.92	-0.02
5	13.83	13.92	-0.09
6	13.90	13.92	-0.02
7	13.86	13.92	-0.06
8	13.88	13.97	-0.09
9	13.95	14.03	-0.08
10	13.70	14.09	-0.39
11	13.68	14.13	-0.45
12	13.98	14.13	-0.15
AVERAGE	13.88	13.98	-0.10

RELATIVE ACCURACY RELATED TO THE REFERENCE METHOD		
$t_{.975}$	=	2.201
STANDARD DEVIATION	=	0.16
CONFIDIENCE COEFFICIENT	=	0.10
REF METHOD	=	13.9
RELATIVE ACCURACY	=	1.47

COMPANY : DESTEC
UNIT : DOUBLE C - TURBINE #2
DATE : 02-11-93
REPORT : 027-341

ANALYZER NOx

RELATIVE ACCURACY RESULTS

PPMvd

RUN #	REFERENCE METHOD	CEM DATA	DIFFERENCE
1	2.93	3.01	-0.08
2	3.04	3.00	0.04
3	2.98	3.05	-0.07
4	3.00	3.00	0.00
5	2.72	3.00	-0.28
6	3.00	3.00	0.00
7	2.75	3.00	-0.25
8	3.00	3.00	0.00
9	3.00	3.00	0.00
10	3.00	3.00	0.00
AVERAGE	2.94	3.01	-0.06

RELATIVE ACCURACY RELATED TO THE REFERENCE METHOD		
$t_{.975}$	=	2.262
STANDARD DEVIATION	=	0.11
CONFIDIENCE COEFFICIENT	=	0.08
REF METHOD	=	2.9
RELATIVE ACCURACY	=	4.90

COMPANY : DESTEC
UNIT : DOUBLE C - TURBINE #2
DATE : 02-11-93
REPORT : 027-341

ANALYZER CO

RELATIVE ACCURACY RESULTS

PPMvd

RUN #	REFERENCE METHOD	CEM DATA	DIFFERENCE
1	42.8	41.0	1.80
2	43.6	41.0	2.60
3	44.4	40.8	3.60
4	45.6	42.2	3.40
5	46.0	42.5	3.50
6	45.2	41.7	3.50
7	44.3	40.3	4.00
8	44.4	40.8	3.60
9	46.2	43.6	2.60
10	47.1	44.0	3.10
AVERAGE	45.0	41.8	3.17

RELATIVE ACCURACY RELATED TO THE REFERENCE METHOD		
$t_{.975}$	=	2.262
STANDARD DEVIATION	=	0.65
CONFIDIENCE COEFFICIENT	=	0.47
REF METHOD	=	45.0
RELATIVE ACCURACY	=	8.09

COMPANY : DESTEC
UNIT : DOUBLE C - TURBINE #2
DATE : 02-11-93
REPORT : 027-341

ANALYZER O2

RELATIVE ACCURACY RESULTS

PPMvd

RUN #	REFERENCE METHOD	CEM DATA	DIFFERENCE
1	14.15	14.14	0.01
2	13.98	14.12	-0.14
3	14.20	14.13	0.07
4	14.06	14.13	-0.07
5	13.25	14.16	-0.91
6	14.03	14.13	-0.10
7	14.00	14.12	-0.12
8	14.03	14.13	-0.10
9	13.94	14.12	-0.18
10	14.00	14.12	-0.12
AVERAGE	13.96	14.13	-0.17

RELATIVE ACCURACY RELATED TO THE REFERENCE METHOD		
$t_{.975}$	=	2.262
STANDARD DEVIATION	=	0.27
CONFIDIENCE COEFFICIENT	=	0.19
REF METHOD	=	14.0
RELATIVE ACCURACY	=	2.58

COMPANY : DESTEC
UNIT : DOUBLE C – TURBINE #1 & #2
DATE : 02/09-10/93
REPORT : 027-341

CEM DATA SUMMARY

		TURBINE #1			TURBINE #2		
RUN #	TIME	%O2	NOx ppm	CO ppm	%O2	NOx ppm	CO ppm
1	1130-1200	13.92	2.24	43.7	14.14	3.01	41.0
2	1215-1245	13.93	2.26	43.0	14.12	3.00	41.0
3	1300-1330	13.92	2.42	43.6	14.13	3.05	40.8
4	1400-1430	13.92	2.50	45.2	14.13	3.00	42.2
5	1445-1515	13.92	2.49	46.2	14.16	3.00	42.5
6	1535-1605	13.92	2.49	46.9	14.13	3.00	41.7
7	1615-1645	13.92	2.57	42.5	14.12	3.00	40.3
8	900-930	13.97	2.50	46.4	14.13	3.00	40.8
9	1000-1030	14.03	2.50	43.9	14.12	3.00	43.6
10	1045-1115	14.09	2.53	42.6	14.12	3.00	44.0
11	1130-1200	14.13	2.55	40.9			
12	1215-1245	14.13	2.76	38.1			
	AVERAGE	13.98	2.48	43.6	14.13	3.01	41.8

COMPANY : DESTEC
UNIT : DOUBLE C - TURBINE #1
DATE : 02/09-10/93
REPORT : 027-341

PCES REFERENCE METHOD SUMMARY

			NOx			CO		
RUN #	TIME	%O2	ppm	ppm @ 15% O2	lbs/hr	ppm	ppm @ 15% O2	lbs/hr
1	1130-1200	14.00	1.48	1.27	1.22	46.5	39.8	23.2
2	1215-1245	13.91	3.30	2.79	2.70	45.7	38.6	22.8
3	1300-1330	14.00	2.23	1.91	1.83	45.4	38.8	22.6
4	1400-1430	13.90	2.38	2.00	1.95	47.0	39.6	23.4
5	1445-1515	13.83	2.08	1.74	1.71	48.5	40.5	24.2
6	1535-1605	13.90	2.65	2.23	2.17	46.8	39.5	23.3
7	1615-1645	13.86	2.84	2.38	2.33	43.7	36.6	21.8
8	900-930	13.88	2.45	2.06	2.01	46.3	39.0	23.1
9	1000-1030	13.95	2.50	2.12	2.05	46.0	39.0	22.9
10	1045-1115	13.70	2.50	2.05	2.05	44.6	36.5	22.2
11	1130-1200	13.68	2.52	2.06	2.06	43.5	35.5	21.7
12	1215-1245	13.98	2.83	2.41	2.32	39.9	34.0	19.9
	AVERAGE	13.88	2.48	2.09	2.03	45.3	38.1	22.6

COMPANY : DESTEC
UNIT : DOUBLE C - TURBINE #1
DATE : 02-09-93
REPORT : 027-341

RUN #1

NOx/CO/O2 DATA

Stack Gas Measurement Data							
TIME INTERVAL			CONCENTRATIONS			% FULL SCALE	
BEGIN	-	END	O2:%	NOx:ppm	CO:ppm	O2%fs	NOx%fs	CO%fs
11:30 AM	-	11:40 AM	13.98	1.90	46.9	65.8	14.3	57.0
11:40 AM	-	11:50 AM	14.00	1.50	46.2	65.6	14.5	56.5
11:50 AM	-	12:00 PM	14.02	1.05	46.5	65.4	14.6	57.0
	Averages:		14.00	1.48	46.5	65.6	14.5	56.8

Calibration Data	O2	NOx	CO
INITIAL zero	10	10	10
INITIAL span	70	90	91.5
FINAL zero	10	10	10
FINAL span	69.2	93	92
ZERO DRIFT %/ppm	0.00	0.00	0.00
CALIB. DRIFT %/ppm	-0.20	1.50	0.50
ZERO DRIFT %fs	0.00	0.00	0.00
CALIB.DRIFT %fs	-0.80	3.00	0.50
CAL GAS value	15	40	81.4
FULL SCALE RANGE	25	50	100

DSCFM = 112679 (DSCFM by Pitot Tube Traverse)

	%O2	ppm	@ 3%O2	@15%O2	lb/hr
NOx values:	14.00	1.48	3.85	1.27	1.22

	%O2	ppm	@ 3%O2	@15%O2	lb/hr
CO values:	14.00	46.5	121	39.8	23.2

COMPANY : DESTEC
UNIT : DOUBLE C - TURBINE #1
DATE : 02-09-93
REPORT : 027-341

RUN #2

NOx/CO/O2 DATA

Stack Gas Measurement Data							
TIME INTERVAL			CONCENTRATIONS			% FULL SCALE	
BEGIN	-	END	O2:%	NOx:ppm	CO:ppm	O2%fs	NOx%fs	CO%fs
12:15 PM	-	12:25 PM	13.96	2.65	46.1	66.0	14.7	56.1
12:25 PM	-	12:35 PM	13.89	3.35	45.6	66.0	14.9	55.5
12:35 PM	-	12:45 PM	13.89	3.90	45.4	66.3	14.8	55.1
		Averages:	13.91	3.30	45.7	66.1	14.8	55.6

Calibration Data	O2	NOx	CO
INITIAL zero	10	10	10
INITIAL span	70	90	91.5
FINAL zero	9.9	10.1	10
FINAL span	71	86.3	91.1
ZERO DRIFT %/ppm	-0.02	0.05	0.00
CALIB. DRIFT %/ppm	0.25	-1.85	-0.40
ZERO DRIFT %fs	-0.10	0.10	0.00
CALIB.DRIFT %fs	1.00	-3.70	-0.40
CAL GAS value	15	40	81.4
FULL SCALE RANGE	25	50	100

DSCFM = 112679 (DSCFM by Pitot Tube Traverse)

	%O2	ppm	@ 3%O2	@15%O2	lb/hr
NOx values:	13.91	3.30	8.45	2.79	2.70

	%O2	ppm	@ 3%O2	@15%O2	lb/hr
CO values:	13.91	45.7	117	38.6	22.8

COMPANY : DESTEC
UNIT : DOUBLE C - TURBINE #1
DATE : 02-09-93
REPORT : 027-341

RUN #3

NOx/CO/O2 DATA

Stack Gas Measurement Data							
TIME INTERVAL		CONCENTRATIONS			% FULL SCALE		
BEGIN	- END	O2:%	NOx:ppm	CO:ppm	O2%fs	NOx%fs	CO%fs
01:00 PM	- 01:10 PM	14.00	2.38	43.5	66.0	14.8	53.5
01:10 PM	- 01:20 PM	14.01	2.30	43.2	66.0	14.7	53.0
01:20 PM	- 01:30 PM	14.00	2.02	49.4	65.9	14.2	59.0
	Averages:	14.00	2.23	45.4	66.0	14.6	55.2

Calibration Data	O2	NOx	CO
INITIAL zero	10	10	10
INITIAL span	70	90	91.5
FINAL zero	9.9	10	10
FINAL span	70	90.2	91
ZERO DRIFT %/ppm	-0.02	0.00	0.00
CALIB. DRIFT %/ppm	0.00	0.10	-0.50
ZERO DRIFT %fs	-0.10	0.00	0.00
CALIB.DRIFT %fs	0.00	0.20	-0.50
CAL GAS value	15	40	81.4
FULL SCALE RANGE	25	50	100

DSCFM = 112679 (DSCFM by Pitot Tube Traverse)

	%O2	ppm	@ 3%O2	@15%O2	lb/hr
NOx values:	14.00	2.23	5.80	1.91	1.83

	%O2	ppm	@ 3%O2	@15%O2	lb/hr
CO values:	14.00	45.4	118	38.8	22.6

COMPANY : DESTEC
UNIT : DOUBLE C - TURBINE #1
DATE : 02-09-93
REPORT : 027-341

RUN #4

NOx/CO/O2 DATA

Stack Gas Measurement Data							
TIME INTERVAL			CONCENTRATIONS			% FULL SCALE	
BEGIN	-	END	O2:%	NOx:ppm	CO:ppm	O2%fs	NOx%fs	CO%fs
02:00 PM	-	02:10 PM	13.86	2.46	45.0	65.3	15.0	55.0
02:10 PM	-	02:20 PM	13.89	2.38	48.3	65.1	15.0	58.1
02:20 PM	-	02:30 PM	13.94	2.29	47.6	65.0	15.0	57.2
	Averages:		13.90	2.38	47.0	65.1	15.0	56.8

Calibration Data	O2	NOx	CO
INITIAL zero	10	10	10
INITIAL span	70	90	91.5
FINAL zero	9.9	10.2	10
FINAL span	69.2	90.3	91
ZERO DRIFT %/ppm	-0.02	0.10	0.00
CALIB. DRIFT %/ppm	-0.20	0.15	-0.50
ZERO DRIFT %fs	-0.10	0.20	0.00
CALIB.DRIFT %fs	-0.80	0.30	-0.50
CAL GAS value	15	40	81.4
FULL SCALE RANGE	25	50	100

DSCFM = 112679 (DSCFM by Pitot Tube Traverse)

	%O2	ppm	@ 3%O2	@15%O2	lb/hr
NOx values:	13.90	2.38	6.07	2.00	1.95

	%O2	ppm	@ 3%O2	@15%O2	lb/hr
CO values:	13.90	47.0	120	39.6	23.4

COMPANY : DESTEC
UNIT : DOUBLE C - TURBINE #1
DATE : 02-09-93
REPORT : 027-341

RUN #5

NOx/CO/O2 DATA

Stack Gas Measurement Data							
TIME INTERVAL			CONCENTRATIONS			% FULL SCALE	
BEGIN	-	END	O2:%	NOx:ppm	CO:ppm	O2%fs	NOx%fs	CO%fs
02:45 PM	-	02:55 PM	13.88	2.28	49.0	65.5	14.8	59.0
02:55 PM	-	03:05 PM	13.83	2.10	48.2	65.3	14.9	58.0
03:05 PM	-	03:15 PM	13.80	1.87	48.4	65.2	14.9	58.0
	Averages:		13.83	2.08	48.5	65.3	14.9	58.3

Calibration Data	O2	NOx	CO
INITIAL zero	10	10	10
INITIAL span	70	90	91.5
FINAL zero	10	10	9.9
FINAL span	70	91.4	91.1
ZERO DRIFT %/ppm	0.00	0.00	-0.10
CALIB. DRIFT %/ppm	0.00	0.70	-0.40
ZERO DRIFT %fs	0.00	0.00	-0.10
CALIB.DRIFT %fs	0.00	1.40	-0.40
CAL GAS value	15	40	81.4
FULL SCALE RANGE	25	50	100

DSCFM = 112679 (DSCFM by Pitot Tube Traverse)

	%O2	ppm	@ 3%O2	@15%O2	lb/hr
NOx values:	13.83	2.08	5.28	1.74	1.71

	%O2	ppm	@ 3%O2	@15%O2	lb/hr
CO values:	13.83	48.5	123	40.5	24.2

COMPANY : DESTEC
UNIT : DOUBLE C - TURBINE #1
DATE : 02-09-93
REPORT : 027-341

RUN #6

NOx/CO/O2 DATA

Stack Gas Measurement Data							
TIME INTERVAL			CONCENTRATIONS			% FULL SCALE	
BEGIN	-	END	O2:%	NOx:ppm	CO:ppm	O2%fs	NOx%fs	CO%fs
03:35 PM	-	03:45 PM	13.94	2.50	47.1	65.8	14.8	57.1
03:45 PM	-	03:55 PM	13.89	2.65	47.1	65.7	14.7	57.0
03:55 PM	-	04:05 PM	13.89	2.80	46.2	65.8	14.6	56.0
	Averages:		13.90	2.65	46.8	65.8	14.7	56.7

Calibration Data	O2	NOx	CO
INITIAL zero	10	10	10
INITIAL span	70	90	91.5
FINAL zero	10	10	9.9
FINAL span	70.3	88.8	91.3
ZERO DRIFT %/ppm	0.00	0.00	-0.10
CALIB. DRIFT %/ppm	0.07	-0.60	-0.20
ZERO DRIFT %fs	0.00	0.00	-0.10
CALIB.DRIFT %fs	0.30	-1.20	-0.20
CAL GAS value	15	40	81.4
FULL SCALE RANGE	25	50	100

DSCFM = 112679 (DSCFM by Pitot Tube Traverse)

	%O2	ppm	@ 3%O2	@15%O2	lb/hr
NOx values:	13.90	2.65	6.78	2.23	2.17

	%O2	ppm	@ 3%O2	@15%O2	lb/hr
CO values:	13.90	46.8	120	39.5	23.3

COMPANY : DESTEC
UNIT : DOUBLE C - TURBINE #1
DATE : 02-09-93
REPORT : 027-341

RUN #7

NOx/CO/O2 DATA

Stack Gas Measurement Data							
TIME INTERVAL			CONCENTRATIONS			% FULL SCALE	
BEGIN	-	END	O2:%	NOx:ppm	CO:ppm	O2%fs	NOx%fs	CO%fs
04:15 PM	-	04:25 PM	13.83	2.58	45.3	65.3	14.9	55.3
04:25 PM	-	04:35 PM	13.85	2.83	43.9	65.4	14.9	53.9
04:35 PM	-	04:45 PM	13.90	3.13	41.8	65.6	15.0	51.8
	Averages:		13.86	2.84	43.7	65.4	14.9	53.7

Calibration Data	O2	NOx	CO
INITIAL zero	10	10	10
INITIAL span	70	90	91.5
FINAL zero	10	10	10
FINAL span	70	88.5	91.4
ZERO DRIFT %/ppm	0.00	0.00	0.00
CALIB. DRIFT %/ppm	0.00	-0.75	-0.10
ZERO DRIFT %fs	0.00	0.00	0.00
CALIB.DRIFT %fs	0.00	-1.50	-0.10
CAL GAS value	15	40	81.4
FULL SCALE RANGE	25	50	100

DSCFM = 112679 (DSCFM by Pitot Tube Traverse)

	%O2	ppm	@ 3%O2	@15%O2	lb/hr
NOx values:	13.86	2.84	7.22	2.38	2.33

	%O2	ppm	@ 3%O2	@15%O2	lb/hr
CO values:	13.86	43.7	111	36.6	21.8

COMPANY : DESTEC
UNIT : DOUBLE C - TURBINE #1
DATE : 02-10-93
REPORT : 027-341

RUN #8

NOx/CO/O2 DATA

Stack Gas Measurement Data							
TIME INTERVAL			CONCENTRATIONS			% FULL SCALE	
BEGIN	-	END	O2:%	NOx:ppm	CO:ppm	O2%fs	NOx%fs	CO%fs
09:00 AM	-	09:10 AM	13.88	2.40	50.9	65.5	14.8	60.8
09:10 AM	-	09:20 AM	13.85	2.50	45.6	65.4	15.0	55.5
09:20 AM	-	09:30 AM	13.93	2.45	42.6	65.7	14.9	52.5
	Averages:		13.88	2.45	46.3	65.5	14.9	56.3

Calibration Data	O2	NOx	CO
INITIAL zero	10	10	10
INITIAL span	70	90	91.3
FINAL zero	10	10	10
FINAL span	70	90	91.3
ZERO DRIFT %/ppm	0.00	0.00	0.00
CALIB. DRIFT %/ppm	0.00	0.00	0.00
ZERO DRIFT %fs	0.00	0.00	0.00
CALIB.DRIFT %fs	0.00	0.00	0.00
CAL GAS value	15	40	81.4
FULL SCALE RANGE	25	50	100

DSCFM = 112679 (DSCFM by Pitot Tube Traverse)

	%O2	ppm	@ 3%O2	@15%O2	lb/hr
NOx values:	13.88	2.45	6.25	2.06	2.01

	%O2	ppm	@ 3%O2	@15%O2	lb/hr
CO values:	13.88	46.3	118	39.0	23.1

COMPANY : DESTEC
UNIT : DOUBLE C - TURBINE #1
DATE : 2-10-93
REPORT : 027-341

RUN #9

NOx/CO/O2 DATA

Stack Gas Measurement Data							
TIME INTERVAL			CONCENTRATIONS			% FULL SCALE	
BEGIN	-	END	O2:%	NOx:ppm	CO:ppm	O2%fs	NOx%fs	CO%fs
10:00 AM	-	10:10 AM	13.95	2.50	46.3	65.8	15.0	56.2
10:10 AM	-	10:20 AM	13.95	2.50	46.3	65.8	15.0	56.2
10:20 AM	-	10:30 AM	13.95	2.50	45.4	65.8	15.0	55.3
	Averages:		13.95	2.50	46.0	65.8	15.0	55.9

Calibration Data	O2	NOx	CO
INITIAL zero	10	10	10
INITIAL span	70	90	91.3
FINAL zero	10	10	10
FINAL span	70	90	91.3
ZERO DRIFT %/ppm	0.00	0.00	0.00
CALIB. DRIFT %/ppm	0.00	0.00	0.00
ZERO DRIFT %fs	0.00	0.00	0.00
CALIB.DRIFT %fs	0.00	0.00	0.00
CAL GAS value	15	40	81.4
FULL SCALE RANGE	25	50	100

DSCFM = 112679 (DSCFM by Pitot Tube Traverse)

	%O2	ppm	@ 3%O2	@15%O2	lb/hr
NOx values:	13.95	2.50	6.44	2.12	2.05

	%O2	ppm	@ 3%O2	@15%O2	lb/hr
CO values:	13.95	46.0	118	39.0	22.9

COMPANY : DESTEC
UNIT : DOUBLE C - TURBINE #1
DATE : 02-10-93
REPORT : 027-341

RUN #10

NOx/CO/O2 DATA

Stack Gas Measurement Data								
TIME INTERVAL			CONCENTRATIONS			% FULL SCALE		
BEGIN	-	END	O2:%	NOx:ppm	CO:ppm	O2%fs	NOx%fs	CO%fs
10:45 AM	-	10:55 AM	13.73	2.50	44.5	64.9	15.0	54.4
10:55 AM	-	11:05 AM	13.70	2.50	44.9	64.8	15.0	54.8
11:05 AM	-	11:15 AM	13.68	2.50	44.5	64.7	15.0	54.4
	Averages:		13.70	2.50	44.6	64.8	15.0	54.5

Calibration Data	O2	NOx	CO
INITIAL zero	10	10	10
INITIAL span	70	90	91.3
FINAL zero	10	10	10
FINAL span	70	90	91.3
ZERO DRIFT %/ppm	0.00	0.00	0.00
CALIB. DRIFT %/ppm	0.00	0.00	0.00
ZERO DRIFT %fs	0.00	0.00	0.00
CALIB.DRIFT %fs	0.00	0.00	0.00
CAL GAS value	15	40	81.4
FULL SCALE RANGE	25	50	100

DSCFM = 112679 (DSCFM by Pitot Tube Traverse)

	%O2	ppm	@ 3%O2	@15%O2	lb/hr
NOx values:	13.70	2.50	6.22	2.05	2.05

	%O2	ppm	@ 3%O2	@15%O2	lb/hr
CO values:	13.70	44.6	111	36.5	22.2

COMPANY : DESTEC
UNIT : DOUBLE C - TURBINE #1
DATE : 02-10-93
REPORT : 027-341

RUN #11

NOx/CO/O2 DATA

Stack Gas Measurement Data							
TIME INTERVAL			CONCENTRATIONS			% FULL SCALE	
BEGIN	-	END	O2:%	NOx:ppm	CO:ppm	O2%fs	NOx%fs	CO%fs
11:30 AM	-	11:40 AM	13.71	2.50	44.3	64.8	15.0	54.2
11:40 AM	-	11:50 AM	13.68	2.50	44.1	64.6	15.0	53.9
11:50 AM	-	12:00 PM	13.64	2.55	42.1	64.4	15.1	51.9
	Averages:		13.68	2.52	43.5	64.6	15.0	53.3

Calibration Data	O2	NOx	CO
INITIAL zero	10	10	10
INITIAL span	70	90	91.3
FINAL zero	10	10	10
FINAL span	69.8	90	91.1
ZERO DRIFT %/ppm	0.00	0.00	0.00
CALIB. DRIFT %/ppm	-0.05	0.00	-0.20
ZERO DRIFT %fs	0.00	0.00	0.00
CALIB.DRIFT %fs	-0.20	0.00	-0.20
CAL GAS value	15	40	81.4
FULL SCALE RANGE	25	50	100

DSCFM = 112679 (DSCFM by Pitot Tube Traverse)

	%O2	ppm	@ 3%O2	@15%O2	lb/hr
NOx values:	13.68	2.52	6.24	2.06	2.06

	%O2	ppm	@ 3%O2	@15%O2	lb/hr
CO values:	13.68	43.5	108	35.5	21.7

COMPANY : DESTEC
UNIT : DOUBLE C - TURBINE #1
DATE : 02-10-93
REPORT : 027-341

RUN #12

NOx/CO/O2 DATA

Stack Gas Measurement Data								
TIME INTERVAL			CONCENTRATIONS			% FULL SCALE		
BEGIN	-	END	O2:%	NOx:ppm	CO:ppm	O2%fs	NOx%fs	CO%fs
12:15 PM	-	12:25 PM	13.96	2.84	39.5	65.8	15.7	49.5
12:25 PM	-	12:35 PM	13.99	2.83	39.8	65.8	15.7	49.8
12:35 PM	-	12:45 PM	13.99	2.81	40.3	65.7	15.7	50.3
	Averages:		13.98	2.83	39.9	65.8	15.7	49.9

Calibration Data	O2	NOx	CO
INITIAL zero	10	10	10
INITIAL span	70	90	91.3
FINAL zero	9.9	10.1	9.9
FINAL span	69.8	90	91.4
ZERO DRIFT %/ppm	-0.02	0.05	-0.10
CALIB. DRIFT %/ppm	-0.05	0.00	0.10
ZERO DRIFT %fs	-0.10	0.10	-0.10
CALIB.DRIFT %fs	-0.20	0.00	0.10
CAL GAS value	15	40	81.4
FULL SCALE RANGE	25	50	100

DSCFM = 112679 (DSCFM by Pitot Tube Traverse)

	%O2	ppm	@ 3%O2	@15%O2	lb/hr
NOx values:	13.98	2.83	7.31	2.41	2.32

	%O2	ppm	@ 3%O2	@15%O2	lb/hr
CO values:	13.98	39.9	103	34.0	19.9

COMPANY : DESTEC
UNIT : DOUBLE C - TURBINE #2
DATE : 02-11-93
REPORT : 027-341

PCES REFERENCE METHOD SUMMARY

			NOx			CO		
RUN #	TIME	%O2	ppm	ppm @ 15% O2	lbs/hr	ppm	ppm @ 15% O2	lbs/hr
1	1015-1045	14.15	2.93	2.56	2.49	42.8	37.4	22.2
2	1130-1200	13.98	3.04	2.59	2.59	43.6	37.2	22.6
3	1230-1300	14.20	2.98	2.63	2.54	44.4	39.1	23.0
4	1345-1415	14.06	3.00	2.59	2.56	45.6	39.3	23.6
5	1400-1430	13.25	2.72	2.09	2.32	46.0	35.5	23.9
6	1445-1515	14.03	3.00	2.58	2.56	45.2	38.8	23.4
7	1530-1600	14.00	2.75	2.35	2.34	44.3	37.9	23.0
8	1615-1645	14.03	3.00	2.57	2.56	44.4	38.1	23.0
9	1700-1730	13.94	3.00	2.54	2.56	46.2	39.2	24.0
10	1805-1815	14.00	3.00	2.57	2.56	47.1	40.3	24.5
	AVERAGE	13.96	2.94	2.51	2.51	45.0	38.3	23.3

COMPANY : DESTEC
UNIT : DOUBLE C - TURBINE #2
DATE : 02-11-93
REPORT : 027-341

RUN #1

NOx/CO/O2 DATA

Stack Gas Measurement Data							
TIME INTERVAL			CONCENTRATIONS			% FULL SCALE	
BEGIN	-	END	O2:%	NOx:ppm	CO:ppm	O2%fs	NOx%fs	CO%fs
10:15 AM	-	10:25 AM	14.20	2.98	43.1	66.8	16.0	53.0
10:25 AM	-	10:35 AM	14.15	2.93	42.6	66.6	16.0	52.6
10:35 AM	-	10:45 AM	14.10	2.88	42.8	66.4	16.0	52.9
	Averages:		14.15	2.93	42.8	66.6	16.0	52.8

Calibration Data	O2	NOx	CO
INITIAL zero	10	10	10
INITIAL span	70	90	91.2
FINAL zero	10	10	10
FINAL span	70	90.3	91.4
ZERO DRIFT %/ppm	0.00	0.00	0.00
CALIB. DRIFT %/ppm	0.00	0.15	0.20
ZERO DRIFT %fs	0.00	0.00	0.00
CALIB.DRIFT %fs	0.00	0.30	0.20
CAL GAS value	15	40	81.4
FULL SCALE RANGE	25	50	100

DSCFM = 117212 (DSCFM by Pitot Tube Traverse)

	%O2	ppm	@ 3%O2	@15%O2	lb/hr
NOx values:	14.15	2.93	7.76	2.56	2.49

	%O2	ppm	@ 3%O2	@15%O2	lb/hr
CO values:	14.15	42.8	114	37.4	22.2

COMPANY : DESTEC
UNIT : DOUBLE C - TURBINE #2
DATE : 02-11-93
REPORT : 027-341

RUN #2

NOx/CO/O2 DATA

Stack Gas Measurement Data							
TIME INTERVAL			CONCENTRATIONS			% FULL SCALE	
BEGIN	-	END	O2:%	NOx:ppm	CO:ppm	O2%fs	NOx%fs	CO%fs
11:30 AM	-	11:40 AM	14.00	2.99	44.2	66.0	16.0	54.1
11:40 AM	-	11:50 AM	13.99	3.04	43.4	66.0	16.1	53.2
11:50 AM	-	12:00 PM	13.95	3.09	43.4	65.9	16.2	53.1
	Averages:		13.98	3.04	43.6	66.0	16.1	53.5

Calibration Data	O2	NOx	CO
INITIAL zero	10	10	10
INITIAL span	70	90.3	91.4
FINAL zero	10	10	10.1
FINAL span	70.1	90.3	91
ZERO DRIFT %/ppm	0.00	0.00	0.10
CALIB. DRIFT %/ppm	0.02	0.00	-0.40
ZERO DRIFT %fs	0.00	0.00	0.10
CALIB.DRIFT %fs	0.10	0.00	-0.40
CAL GAS value	15	40	81.4
FULL SCALE RANGE	25	50	100

DSCFM = 117212 (DSCFM by Pitot Tube Traverse)

	%O2	ppm	@ 3%O2	@15%O2	lb/hr
NOx values:	13.98	3.04	7.86	2.59	2.59

	%O2	ppm	@ 3%O2	@15%O2	lb/hr
CO values:	13.98	43.6	113	37.2	22.6

COMPANY : DESTEC
UNIT : DOUBLE C - TURBINE #2
DATE : 02-11-93
REPORT : 027-341

RUN #3

NOx/CO/O2 DATA

Stack Gas Measurement Data							
TIME INTERVAL			CONCENTRATIONS			% FULL SCALE	
BEGIN	-	END	O2:%	NOx:ppm	CO:ppm	O2%fs	NOx%fs	CO%fs
12:30 PM	-	12:40 PM	14.19	3.00	44.1	66.8	16.0	53.9
12:40 PM	-	12:50 PM	14.23	3.00	44.2	67.0	16.0	54.1
12:50 PM	-	01:00 PM	14.18	2.95	45.0	66.9	15.9	54.9
	Averages:		14.20	2.98	44.4	66.9	16.0	54.3

Calibration Data	O2	NOx	CO
INITIAL zero	10	10	10.1
INITIAL span	70	90	91
FINAL zero	10	10	10
FINAL span	70.2	90	91.2
ZERO DRIFT %/ppm	0.00	0.00	-0.10
CALIB. DRIFT %/ppm	0.05	0.00	0.20
ZERO DRIFT %fs	0.00	0.00	-0.10
CALIB.DRIFT %fs	0.20	0.00	0.20
CAL GAS value	15	40	81.4
FULL SCALE RANGE	25	50	100

DSCFM = 117212 (DSCFM by Pitot Tube Traverse)

	%O2	ppm	@ 3%O2	@15%O2	lb/hr
NOx values:	14.20	2.98	7.97	2.63	2.54

	%O2	ppm	@ 3%O2	@15%O2	lb/hr
CO values:	14.20	44.4	119	39.1	23.0

COMPANY : DESTEC
UNIT : DOUBLE C - TURBINE #2
DATE : 02-11-93
REPORT : 027-341

RUN #4

NOx/CO/O2 DATA

Stack Gas Measurement Data								
TIME INTERVAL			CONCENTRATIONS			% FULL SCALE		
BEGIN	-	END	O2:%	NOx:ppm	CO:ppm	O2%fs	NOx%fs	CO%fs
01:45 PM	-	01:55 PM	14.05	3.00	45.4	66.2	16.0	55.3
01:55 PM	-	02:05 PM	14.05	3.00	45.5	66.2	16.0	55.3
02:05 PM	-	02:15 PM	14.08	3.00	45.8	66.3	16.0	55.5
		Averages:	14.06	3.00	45.6	66.2	16.0	55.4

Calibration Data	O2	NOx	CO
INITIAL zero	10	10	10
INITIAL span	70	90	91.2
FINAL zero	10	10	10
FINAL span	70	90	91
ZERO DRIFT %/ppm	0.00	0.00	0.00
CALIB. DRIFT %/ppm	0.00	0.00	-0.20
ZERO DRIFT %fs	0.00	0.00	0.00
CALIB.DRIFT %fs	0.00	0.00	-0.20
CAL GAS value	15	40	81.4
FULL SCALE RANGE	25	50	100

DSCFM = 117212 (DSCFM by Pitot Tube Traverse)

	%O2	ppm	@ 3%O2	@15%O2	lb/hr
NOx values:	14.06	3.00	7.85	2.59	2.56

	%O2	ppm	@ 3%O2	@15%O2	lb/hr
CO values:	14.06	45.6	119	39.3	23.6

COMPANY : DESTEC
UNIT : DOUBLE C - TURBINE #2
DATE : 02-11-93
REPORT : 027-341

RUN #5

NOx/CO/O2 DATA

Stack Gas Measurement Data							
TIME INTERVAL			CONCENTRATIONS			% FULL SCALE	
BEGIN	-	END	O2:%	NOx:ppm	CO:ppm	O2%fs	NOx%fs	CO%fs
02:00 PM	-	02:10 PM	14.05	2.87	46.1	66.1	15.9	55.9
02:10 PM	-	02:20 PM	14.09	2.70	46.1	66.0	15.9	55.9
02:20 PM	-	02:30 PM	11.60	2.58	45.8	55.8	16.0	55.6
	Averages:		13.25	2.72	46.0	62.6	15.9	55.8

Calibration Data	O2	NOx	CO
INITIAL zero	10	10	10
INITIAL span	70	90	91
FINAL zero	10	10	10
FINAL span	69.3	91	91
ZERO DRIFT %/ppm	0.00	0.00	0.00
CALIB. DRIFT %/ppm	-0.18	0.50	0.00
ZERO DRIFT %fs	0.00	0.00	0.00
CALIB.DRIFT %fs	-0.70	1.00	0.00
CAL GAS value	15	40	81.4
FULL SCALE RANGE	25	50	100

DSCFM = 117212 (DSCFM by Pitot Tube Traverse)

	%O2	ppm	@ 3%O2	@15%O2	lb/hr
NOx values:	13.25	2.72	6.35	2.09	2.32

	%O2	ppm	@ 3%O2	@15%O2	lb/hr
CO values:	13.25	46.0	108	35.5	23.9

COMPANY : DESTEC
UNIT : DOUBLE C - TURBINE #2
DATE : 02-11-93
REPORT : 027-341

RUN #6

NOx/CO/O2 DATA

Stack Gas Measurement Data								
TIME INTERVAL			CONCENTRATIONS			% FULL SCALE		
BEGIN	-	END	O2:%	NOx:ppm	CO:ppm	O2%fs	NOx%fs	CO%fs
02:45 PM	-	02:55 PM	14.03	3.00	45.4	66.1	16.0	55.3
02:55 PM	-	03:05 PM	14.05	3.00	45.2	66.2	16.0	55.1
03:05 PM	-	03:15 PM	14.03	3.00	44.9	66.1	16.0	54.8
		Averages:	14.03	3.00	45.2	66.1	16.0	55.1

Calibration Data	O2	NOx	CO
INITIAL zero	10	10	10
INITIAL span	70	90	91.2
FINAL zero	10	10	10
FINAL span	70	90	91.2
ZERO DRIFT %/ppm	0.00	0.00	0.00
CALIB. DRIFT %/ppm	0.00	0.00	0.00
ZERO DRIFT %fs	0.00	0.00	0.00
CALIB.DRIFT %fs	0.00	0.00	0.00
CAL GAS value	15	40	81.4
FULL SCALE RANGE	25	50	100

DSCFM = 117212 (DSCFM by Pitot Tube Traverse)

	%O2	ppm	@ 3%O2	@15%O2	lb/hr
NOx values:	14.03	3.00	7.82	2.58	2.56

	%O2	ppm	@ 3%O2	@15%O2	lb/hr
CO values:	14.03	45.2	118	38.8	23.4

COMPANY : DESTEC
UNIT : DOUBLE C - TURBINE #2
DATE : 02-11-93
REPORT : 027-341

RUN #7

NOx/CO/O2 DATA

Stack Gas Measurement Data							
TIME INTERVAL			CONCENTRATIONS			% FULL SCALE	
BEGIN	-	END	O2:%	NOx:ppm	CO:ppm	O2%fs	NOx%fs	CO%fs
03:30 PM	-	03:40 PM	14.00	2.92	44.4	66.0	16.0	54.2
03:40 PM	-	03:50 PM	14.00	2.75	44.4	66.0	16.0	54.2
03:50 PM	-	04:00 PM	14.00	2.58	44.1	66.0	16.0	54.0
	Averages:		14.00	2.75	44.3	66.0	16.0	54.1

Calibration Data	O2	NOx	CO
INITIAL zero	10	10	10
INITIAL span	70	90	91
FINAL zero	10	10	10.1
FINAL span	70	91	91
ZERO DRIFT %/ppm	0.00	0.00	0.10
CALIB. DRIFT %/ppm	0.00	0.50	0.00
ZERO DRIFT %fs	0.00	0.00	0.10
CALIB.DRIFT %fs	0.00	1.00	0.00
CAL GAS value	15	40	81.4
FULL SCALE RANGE	25	50	100

DSCFM = 117212 (DSCFM by Pitot Tube Traverse)

	%O2	ppm	@ 3%O2	@15%O2	lb/hr
NOx values:	14.00	2.75	7.13	2.35	2.34

	%O2	ppm	@ 3%O2	@15%O2	lb/hr
CO values:	14.00	44.3	115	37.9	23.0

COMPANY : DESTEC
UNIT : DOUBLE C - TURBINE #2
DATE : 02-11-93
REPORT : 027-341

RUN #8

NOx/CO/O2 DATA

Stack Gas Measurement Data							
TIME INTERVAL			CONCENTRATIONS			% FULL SCALE	
BEGIN	-	END	O2:%	NOx:ppm	CO:ppm	O2%fs	NOx%fs	CO%fs
04:15 PM	-	04:25 PM	14.03	3.00	44.7	66.1	16.0	54.5
04:25 PM	-	04:35 PM	14.03	3.00	44.4	66.1	16.0	54.3
04:35 PM	-	04:45 PM	14.03	3.00	44.2	66.1	16.0	54.1
	Averages:		14.03	3.00	44.4	66.1	16.0	54.3

Calibration Data	O2	NOx	CO
INITIAL zero	10	10	10.1
INITIAL span	70	90	91
FINAL zero	10	10	10
FINAL span	70	90	91.2
ZERO DRIFT %/ppm	0.00	0.00	-0.10
CALIB. DRIFT %/ppm	0.00	0.00	0.20
ZERO DRIFT %fs	0.00	0.00	-0.10
CALIB.DRIFT %fs	0.00	0.00	0.20
CAL GAS value	15	40	81.4
FULL SCALE RANGE	25	50	100

DSCFM = 117212 (DSCFM by Pitot Tube Traverse)

	%O2	ppm	@ 3%O2	@15%O2	lb/hr
NOx values:	14.03	3.00	7.81	2.57	2.56

	%O2	ppm	@ 3%O2	@15%O2	lb/hr
CO values:	14.03	44.4	116	38.1	23.0

COMPANY : DESTEC
UNIT : DOUBLE C - TURBINE #2
DATE : 02-11-93
REPORT : 027-341

RUN #9

NOx/CO/O2 DATA

Stack Gas Measurement Data							
TIME INTERVAL			CONCENTRATIONS			% FULL SCALE	
BEGIN	-	END	O2:%	NOx:ppm	CO:ppm	O2%fs	NOx%fs	CO%fs
05:00 PM	-	05:10 PM	13.88	3.00	45.2	65.5	16.0	55.0
05:10 PM	-	05:20 PM	13.95	3.00	46.5	65.8	16.0	56.4
05:20 PM	-	05:30 PM	14.00	3.00	47.0	66.0	16.0	57.0
		Averages:	13.94	3.00	46.2	65.8	16.0	56.1

Calibration Data	O2	NOx	CO
INITIAL zero	10	10	10
INITIAL span	70	90	91
FINAL zero	10	10	10.3
FINAL span	70	90	91
ZERO DRIFT %/ppm	0.00	0.00	0.30
CALIB. DRIFT %/ppm	0.00	0.00	0.00
ZERO DRIFT %fs	0.00	0.00	0.30
CALIB.DRIFT %fs	0.00	0.00	0.00
CAL GAS value	15	40	81.4
FULL SCALE RANGE	25	50	100

DSCFM = 117212 (DSCFM by Pitot Tube Traverse)

	%O2	ppm	@ 3%O2	@15%O2	lb/hr
NOx values:	13.94	3.00	7.72	2.54	2.56

	%O2	ppm	@ 3%O2	@15%O2	lb/hr
CO values:	13.94	46.2	119	39.2	24.0

COMPANY : DESTEC
UNIT : DOUBLE C - TURBINE #2
DATE : 02-11-93
REPORT : 027-341

RUN #10

NOx/CO/O2 DATA

Stack Gas Measurement Data							
TIME INTERVAL			CONCENTRATIONS			% FULL SCALE	
BEGIN	-	END	O2:%	NOx:ppm	CO:ppm	O2%fs	NOx%fs	CO%fs
05:45 PM	-	05:55 PM	14.00	3.00	47.0	66.0	16.0	56.8
05:55 PM	-	06:05 PM	14.00	3.00	47.0	66.0	16.0	56.6
06:05 PM	-	06:15 PM	14.00	3.00	47.4	66.0	16.0	56.9
		Averages:	14.00	3.00	47.1	66.0	16.0	56.8

Calibration Data	O2	NOx	CO
INITIAL zero	10	10	10.3
INITIAL span	70	90	91
FINAL zero	10	10	10.1
FINAL span	70	90	90.7
ZERO DRIFT %/ppm	0.00	0.00	-0.20
CALIB. DRIFT %/ppm	0.00	0.00	-0.30
ZERO DRIFT %fs	0.00	0.00	-0.20
CALIB.DRIFT %fs	0.00	0.00	-0.30
CAL GAS value	15	40	81.4
FULL SCALE RANGE	25	50	100

DSCFM = 117212 (DSCFM by Pitot Tube Traverse)

	%O2	ppm	@ 3%O2	@15%O2	lb/hr
NOx values:	14.00	3.00	7.78	2.57	2.56

	%O2	ppm	@ 3%O2	@15%O2	lb/hr
CO values:	14.00	47.1	122	40.3	24.5

SSION FACTORS
(lbs/MMBtu)

COMPANY : DESTEC
UNIT : DOUBLE C - TURBINE #1
DATE : 02-11-93
REPORT : 027-341

LBS/MMBTU & EPA F FACTOR @ 60°F

NOx

RUN	PPM	%O2	LBS/MMBTU
#1	1.48	14.00	0.00462
#2	3.30	13.91	0.01017
#3	2.23	14.00	0.00696
#4	2.38	13.90	0.00732
#5	2.08	13.83	0.00634
#6	2.65	13.90	0.00815
#7	2.84	13.86	0.00869
#8	2.45	13.88	0.00752
#9	2.50	13.95	0.00775
#10	2.50	13.70	0.00748
#11	2.52	13.68	0.00752
#12	2.83	13.98	0.00881
AVERAGE	2.48	13.88	0.00761

CO

RUN	PPM	%O2	LBS/MMBTU
#1	46.5	14.00	0.08835
#2	45.7	13.91	0.08571
#3	45.4	14.00	0.08626
#4	47.0	13.90	0.08802
#5	48.5	13.83	0.08993
#6	46.8	13.90	0.08765
#7	43.7	13.86	0.08138
#8	46.3	13.88	0.08647
#9	46.0	13.95	0.08677
#10	44.6	13.70	0.08121
#11	43.5	13.68	0.07899
#12	39.9	13.98	0.07559
AVERAGE	45.3	13.88	0.08470

EPA F FACTOR @ 60°F 8502

COMPANY : DESTEC
UNIT : DOUBLE C - TURBINE #2
DATE : 02-11-93
REPORT : 027-341

LBS/MMBTU & EPA F FACTOR @ 60°F

NOx

RUN	PPM	%O2	LBS/MMBTU
#1	2.93	14.15	0.00935
#2	3.04	13.98	0.00946
#3	2.98	14.20	0.00958
#4	3.00	14.06	0.00945
#5	2.72	13.25	0.00766
#6	3.00	14.03	0.00941
#7	2.75	14.00	0.00858
#8	3.00	14.03	0.00941
#9	3.00	13.94	0.00928
#10	3.00	14.00	0.00936
AVERAGE	2.94	13.96	0.00915

CO

RUN	PPM	%O2	LBS/MMBTU
#1	42.8	14.15	0.08313
#2	43.6	13.98	0.08260
#3	44.4	14.20	0.08688
#4	45.6	14.06	0.08740
#5	46.0	13.25	0.07883
#6	45.2	14.03	0.08626
#7	44.3	14.00	0.08417
#8	44.4	14.03	0.08473
#9	46.2	13.94	0.08702
#10	47.1	14.00	0.08949
AVERAGE	45.0	13.96	0.08505

EPA F FACTOR @ 60°F 8502

L GAS ANALYSIS

PETRO
CHEM
ENVIRONMENTAL
SERVICES, INC.

3207 Antonino Avenue
Bakersfield, California 93308
(805) 327-7300
FAX (805) 327-3459

COMPANY : DESTEC DOUBLE "C"
UNIT : TURBINE # 1
DATE : 2-11-93
REPORT : 027-341

DATE RECEIVED : FEBRUARY 12, 1993
DATE ANALYZED : FEBRUARY 13, 1993
DATE REPORTED: FEBRUARY 16, 1993

FUEL GAS ANALYSIS

CONSTITUENT	MOLE %	WT. %
CARBON DIOXIDE	0.566	1.446
OXYGEN	0.012	0.022
NITROGEN	0.806	1.311
CARBON MONOXIDE	0.000	0.000
METHANE	93.210	86.867
ETHANE	4.507	7.873
PROPANE	0.740	1.897
ISOBUTANE	0.066	0.223
N-BUTANE	0.055	0.184
ISOPENTANE	0.012	0.051
N-PENTANE	0.008	0.035
HEXANES+	0.018	0.089
TOTALS :	100.000	100.000

CHONS Wt.%	
CARBON	73.75
HYDROGEN	23.86
OXYGEN	1.07
NITROGEN	1.31
SULFUR	0.00
H/C	0.324

SPECIFIC GRAVITY (AIR = 1)	0.5944
SPECIFIC VOLUME, cu.ft./lb.	22.05
GROSS CALORIFIC VALUE (DRY), BTU/cu.ft.	1047.78
GROSS CALORIFIC VALUE (WET), BTU/cu.ft.	1027.19
GROSS CALORIFIC VALUE (DRY), BTU/lb.	23100.57
NET CALORIFIC VALUE (DRY), BTU/cu.ft.	945.05
NET CALORIFIC VALUE (WET), BTU/cu.ft.	926.48
COMPRESSABILITY FACTOR "Z" @ 60° F, 1 ATM	0.9977
EPA "F" FACTOR @ 68° F (DSCF/MM BTU)	8631
EPA "F" FACTOR @ 60° F (DSCF/MM BTU)	8502

ASTM METHODS D-1945-81 & D-3588-91

Terry Rowles
Laboratory Manager

PETRO
CHEM
ENVIRONMENTAL
SERVICES, INC.

3207 Antonino Avenue
Bakersfield, California 93308
(805) 327-7300
FAX (805) 327-3459

COMPANY : DESTEC DOUBLE "C"
UNIT : TURBINE # 2
DATE : 2-12-93
REPORT : 027-341

DATE RECEIVED : FEBRUARY 12, 1993
DATE ANALYZED : FEBRUARY 13, 1993
DATE REPORTED: FEBRUARY 16, 1993

FUEL GAS ANALYSIS

CONSTITUENT	MOLE %	WT. %	CHONS Wt.%	
CARBON DIOXIDE	0.555	1.418	CARBON	73.76
OXYGEN	0.012	0.022	HYDROGEN	23.86
NITROGEN	0.818	1.331	OXYGEN	1.05
CARBON MONOXIDE	0.000	0.000	NITROGEN	1.33
			SULFUR	0.00
METHANE	93.153	86.780	H/C	0.323
ETHANE	4.556	7.955		
PROPANE	0.746	1.910		
ISOBUTANE	0.067	0.227		
N-BUTANE	0.056	0.189		
ISOPENTANE	0.013	0.053		
N-PENTANE	0.009	0.036		
HEXANES+	0.016	0.080		
TOTALS:	100.000	100.000		

SPECIFIC GRAVITY (AIR = 1)	0.5946
SPECIFIC VOLUME, cu.ft./lb.	22.04
GROSS CALORIFIC VALUE (DRY), BTU/cu.ft.	1048.22
GROSS CALORIFIC VALUE (WET), BTU/cu.ft.	1027.62
GROSS CALORIFIC VALUE (DRY), BTU/lb.	23101.09
NET CALORIFIC VALUE (DRY), BTU/cu.ft.	945.47
NET CALORIFIC VALUE (WET), BTU/cu.ft.	926.89
COMPRESSABILITY FACTOR "Z" @ 60° F, 1 ATM	0.9977
EPA "F" FACTOR @ 68° F (DSCF/MM BTU)	8632
EPA "F" FACTOR @ 60° F (DSCF/MM BTU)	8502

ASTM METHODS D-1945-81 & D-3588-91

Terry Rowles
Laboratory Manager

ZALCO LABORATORIES, INC.
Analytical & Consulting Services

Petro Chem Environmental Service
3207 Antonino Avenue
Bakersfield, CA 93308

Laboratory No: 34790
Date Received: 2-12-93
Date Reported: 2-17-93
P O #: 49140

Attention: Terry Rowles

Sample: Gas

Sample Description: Destec Operating Company, Double "C" Limited, Job #027-341
34790-1 Fuel Gas Turbine #1
34790-2 Fuel Gas Turbine #2
Sampled by J. K. H. on 2-12-93

Total Sulfur
(ASTM D 3246)

	-1 Result	-2 Result
As H_2S, ppm (vol.)	< 1.0	< 1.0
As S, Grains/100 SCF*	< 0.06	< 0.06

* Standard cubic feet (60 °F, 14.7 psia)

Jim Etherton
Lab Operations Manager

JE/tds

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

S AND EQUATIONS

EPA Method 2: Velocity and Volumetric Flow Rates

A computer was used in selection of suitable sample/traverse points. The calibrated pitot tube was connected to a magnehelic gauge and leak checked. A temperature and Δ-P was then recorded at each traverse point and a duct static pressure was also measured and recorded. A volume flow rate was calculated from the measured required traverse points.

EPA Method 3: % CO_2, % O_2, Dry Molecular Weight

Concurrent with each particulate sampling, an integrated gas sample was withdrawn from the summation of the traverse points through the train and collected at the outlet of the meter into a sample bag. Then the contents of the sample bladder were analyzed by Orsat for fixed gas composition.

EPA Method 4: Percent Water

Tare weights of the charged individual impingers was recorded. After sampling, the final weights was then recorded. Percent water was calculated from the weight of water collected and the dry gas volume sampled.

EPA Method 5: Particulate Emissions

A series of preliminary measurements was made prior to conducting the particulate test. EPA Methods 1, 2, and 3 was performed to determine location and number of traverse points, average gas velocity, and pressure and gas molecular weight. Percent water was determined by a psychrometric chart or from combustion analysis of the fixed gases. The results of these measurements were entered into the field computer for the purpose of determining an appropriate nozzle size for isokinetic sampling.

The method 5 apparatus was then prepared on-site in the mobile laboratory. The absorption train was charged with freshly prepared chemicals, weighted on a calibrated digital balance to the nearest 0.1 grams, and assembled. The probe was brushed out and rinsed with distilled water and acetone, then the filter holder was charged. The sampling apparatus was sealed and transported to the sampling site were it was assembled and leak tested at 15 inches mercury vacuum.

The probe, filter and impinger line heaters were set at 250 °F and the probe was then positioned into the duct at the first traverse point with the nozzle out of the flow.

The nozzle was positioned into the gas flow and the vacuum pump was started immediately and adjusted to obtain an isokinetic sample rate. A complete traverse was performed while sampling at a minimum of two minutes per sample point. Upon completion of the traverse the vacuum pump was turned off and the probe was transferred into the next sample EPA port where an identical sample-traverse was then performed. Duct conditions (temperature, Δ-P)

and sampling conditions (meter temperature, volume and pressure, probe, filter, sample line, impinger temperatures, and absorption train vacuum) was monitored and recorded regularly for each sample point.

Upon completion of sampling, the apparatus was leak tested at a vacuum greater than the highest observed vacuum. The leak was recorded and the apparatus was then sealed and transported to the mobile laboratory. The heated filter-to-impinger line was rinsed with a known amount of distilled water into the first impinger.

The filter and any loose particulate was carefully removed from the filter holder with tweezers. It was then placed in a labeled petri dish and transported to the P.C.E.S. laboratory. The nozzle, probe, and filter top housing was rinsed and brushed three times with distilled water and acetone. The sample fractions were combined, bottled, labeled, and fluid level marked for transportation to the P.C.E.S. laboratory. Aliquots of distilled water and acetone were similarly treated for blank analysis.

The absorption train was inspected for abnormalities and disassembled. The impingers were weighed on a digital balance for a percent moisture determination. The contents of the impingers were quantitatively transferred into separate bottles, sealed, labeled, and fluid level marked for transportation to the P.C.E.S. laboratory for analysis, if required. Aliquots of the reagent grade impinger contents were saved for blank analysis.

The filter was transferred to an oven and heated at 105 °F for 2-3 hours and then placed in a desiccator for 24 hours. The filter was then weighed on a Mettler digital balance to the nearest 0.01 mg. Additional six hour desiccations and weighings were then performed until the difference between consecutive weighings were less than 0.5 mg or one percent of the total filtrate weight (weighed to a constant weight).

The nozzle/probe/filter top wash was then examined for any leakage during transportation and transferred to a tared evaporation dish. The wash was then evaporated at an elevated temperature, below the boiling point of the wash, with occasional swirling. The dish and wash residue was then desiccated and weighed to a constant weight.

If required by the regulatory agency, the contents of the first impinger were recovered and diluted volumetrically to a known volume. An aliquot of this sample was then evaporated, desiccated, and then weighed to a constant weight.

The net weight of particulate was calculated from the two fractions (three fractions including the impinger contents, if required). Concentrations (gr/DSCF) and emissions (lbs/hr) or other applicable units were then calculated and reported.

EPA METHOD 2
STACK GAS VELOCITY AND VOLUMETRIC FLOWRATE

Average Stack Gas Velocity
Eq. 2-6 & Eq. 2-9

$$P_g = \frac{\text{Static Pressure, } H_2O}{13.6}$$

$$P_s = P_{bar} + P_g$$

$$V_s = K_p \; C_p \left(\sqrt{\Delta P}\right) avg \sqrt{\frac{T_{s\,(avg)}}{P_s \; M_s}}$$

Average Stack Gas Dry Volumetric Flow Rate
Eq. 2-10

$$Q_{std} = 60 \left(1 - B_{ws}\right) \; V_s \; A \left(\frac{T_{std}}{T_{s\,(avg)}}\right) \left(\frac{P_s}{P_{std}}\right)$$

$$\frac{Q_{std}}{MF} = SCFM$$

EPA METHOD 3
DRY MOLECULAR WEIGHT OF STACK GAS
Eq. 3-2

$$M_d = 0.44\,(\%\,CO_2) + 0.320\,(\%\,O_2) + 0.280\,(\%\,N_2 + \%\,CO)$$

Wet Molecular Weight of Stack Gas

$$M_s = M_d\left(1 - B_{ws}\right) + 18\left(B_{ws}\right)$$

EPA METHOD 4
DETERMINATION OF MOISTURE CONTENT IN STACK GASES

Volume of Water Vapor Condensed
Eq. 4-1

$$V_{wc\,(std)} = \frac{(V_f - V_i)\rho_w \; RT_{std}}{P_{std} \; M_w} = K_1 (V_f - V_i)$$

$$\textit{Where:} \quad K_1 = 0.04646 \; \frac{ft^3}{ml} \; @ \; 520^\circ R$$

Volume of Water Vapor Collected in Silica Gel
Eq. 4-2

$$V_{wsg\,(std)} = \frac{(W_f - W_i) \; RT_{std}}{P_{std} \; M_w \; (453.6 \; g/lb)}$$

$$= K_2 (W_f - W_i)$$

$$\textit{Where:} \quad K_2 = 0.04651 \; \frac{ft^3}{g} \; @ \; 520^\circ R$$

Sample Gas Volume
Eq. 4-3

$$V_m\,(std) = V_m \; Y \left(\frac{(P_m)(T_{std})}{(P_{std})(T_m)} \right)$$

$$= K_3 \; Y \; \frac{V_m \; P_m}{T_m}$$

$$\textit{Where:} \quad K_3 = 17.38 \; \frac{^\circ R}{in. \; Hg} \; @ \; 520^\circ R$$

Moisture Content
Eq. 4-4

$$B_{ws} = \frac{V_{wc}\,(std) + V_{wsg}\,(std)}{V_{wc}\,(std) + V_{wsg}\,(std) + V_m\,(std)}$$

$$B_{ws} \times 100 = \%\; H_2O \; \textit{in gas stream}$$

$$MF = 1 - B_{ws}$$

EPA METHOD 5
DETERMINATION OF PARTICULATE EMISSIONS FROM STATIONARY SOURCES
Use in Method 5 and 8 combinations runs

Dry Gas Volume
Eq. 5-1

$$V_m(std) = V_m Y \left(\frac{T_{std}}{T_m}\right)\left[P_{bar} + \frac{\Delta H}{13.6}\right]$$

$$= K_1 V_m Y \left[\frac{P_{bar} + \frac{\Delta H}{13.6}}{T_m}\right]$$

$$= K_1 = 17.38 \frac{^\circ R}{in.Hg} @ 520^\circ R$$

*In case of leak rate beyond allowable limits, correct Eq. 5-1 as follows:
Case 1 - No component changes made during run.

$$V_m = V_m - (L_p - L_a)\theta$$

Case 2 - One or more component changes made during run.

$$V_m = \left[V_m - (L_1 - L_a)\theta_1 - \sum_{i=2}^{n} (L_i - L_a)\theta_i - (L_p - L_a)\theta_p\right]$$

Volume of Water Vapor
Eq. 5-2

$$V_{wc}(std) = V_{1c}\left(\frac{\rho_w}{M_w}\right)\left(\frac{RT_{std}}{P_{std}}\right)$$

$$= K_2 V_{1c}$$

$$Where: K_2 = 0.04646 \frac{ft^3}{ml} @ 60^\circ F$$

Moisture Contnet
Eq. 5-3

$$B_{ws} = \frac{V_{wc}(std)}{V_m(std) + V_{wc}(std)}$$

EPA METHOD 5
(con't)

Acetone Blank Concentration
Eq. 5-4

$$C_a = \frac{M_a}{V_a \rho_a}$$

Acetone Wash Blank
Eq. 5-5

$$W_a = C_a V_{aw} \rho_a$$

Particulate Concentration
Eq. 5-6

$$C_s = \frac{gr}{dscf} = \left(0.001 \frac{g}{mg} \right) \left(\frac{M_n}{V_m (std)} \right) (15.432)$$

$$gr/dscf\,(MF) = \frac{gr}{scf}$$

Corrected to 12 % CO_2

$$\frac{gr}{dscf} @ 12\% \; CO_2 = \frac{\frac{gr}{dscf} \times 12 \% \; CO_2}{\% \; CO_2 \; (dry)}$$

Isokinetic Variation
Eq. 5-7 and 5-8

$$\% \; I = 100 \times \frac{T_s \left[V_{1c} K_3 + \frac{V_m}{T_m} \left(P_b + \frac{\Delta H}{13.6} \right) \right]}{60 \; \theta \; A_n \; V_s \; P_s}$$

Where: $K_3 = 0.002669$

Mass Emission Rate

$$\frac{lbs}{hr} = \frac{gr}{dscf} \times dscfm \times 60 \frac{m}{hr} \times \frac{1 \; lb}{7000 \; gr}$$

NOMENCLATURE

(1 of 3)

A = Cross-sectional area of stack (ft^2)

A_n = Cross-sectional area of nozzle, (ft^2)

B_{ws} = Proportion of water vapor, by volume, in the gas stream

C_a = Acetone blank residue concentration, (mg/g)

C_p = Pitot tube coefficient, dimensionless

C_s = Concentration of particulate matter in stack gas, dry basis corrected to standard conditions, (gr/dscf)

C_{SO2} = Concentration of sulfur dioxide dry basis corrected to standard conditions, (lb/dscf)

C_{H2SO4} = Sulfuric acid (including SO3) concentration, corrected to standard conditions, (lb/dscf)

ΔH = Average pressure differential across the orifice meter, (in H_2O)

K_p = Pitot tube constant, $85.49 \frac{ft\ [(lb/lb\text{-}mole)(in\ Hg)]^{\frac{1}{2}}}{sec[\ (^\circ R)\ (in\ H_2O)\ ]}$

L_p = Leakage rate observed during the post-test leak check, (cfm)

L_a = Maximum acceptable leakage rate, (0.02 cfm or 4% of average sampling rate, whichever is less)

L_i = Individual leakage rate observed during the leak check conducted prior to the "i^{th}" component change, (cfm)

M_a = Mass of residue of acetone after evaporation, mg

M_d = Molecular weight of stack gas, dry basis, (lb/lb-mole)

M_n = Total weight of particulate matter collected, mg

M_s = Molecular weight of stack gas, wet basis, (lb/lb-mole)

M_w = Molecular weight of water, 18 lb/lb-mole

N = Normality of barium perchlorate titrant, (milliequivalents/ml)

ΔP = Velocity head of stack gas, (in H_2O)

P_{bar} = Barometric pressure at measurement site (in Hg)

P_g = Stack static pressure, (in Hg)

P_m = Absolute pressure at the dry gas meter, ($P_{bar} + \Delta H/13.6$)

NOMENCLATURE

(2 of 3)

P_s = Absolute stack gas pressure, (inches Hg)

$P_{(std)}$ = Standard absolute pressure, 29.92 in Hg

$Q_{(std)}$ = Dry volumetric stack gas flow rate, standard conditions, (dscfm)

R = Ideal gas constant, 21.85 (in Hg) (ft^3)/(lb-mole)(°R)

t_s = Stack temperature, (°F)

T_m = Absolute temperature at meter, (°R)

$T_{(std)}$ = Standard absolute temperature, (520°R)

T_s = Absolute stack temperature, (460°+ t_s)

V_a = Volume of sample aliquot titrated, (ml)

V_{ab} = Volume of acetone blank, ml

V_m = Dry gas volume measured by dry gas meter, (dcf)

$V_{m(std)}$ = Dry gas volume measured by dry gas meter, corrected to standard conditions, (dscf)

$V_{wc(std)}$ = Volume of water vapor condensed corrected to standard conditions,(scf)

$V_{wsg(std)}$ = Volume of water vapor collected in silica gel corrected to standard conditions (scf)

V_{ic} = Volume of water vapor condensed in impingers and silica gel, (ml)

V_f = Final volume of condensed water, ml

V_i = Initial volume of condensed water, ml

v_s = Average stack gas velocity, (ft/sec)

V_{soln} = Total volume of solution in which the sulfur dioxide sample is contained (ml)

V_t = Volume of barium perchlorate titrant used for the sample, (ml)

V_{tb} = Volume of barium perchlorate titrant used for the blank, (ml)

W_f = Final weight of silica gel or silica gel plus impinger, (g)

W_i = Initial weight of silica gel or silica gel plus impinger, (g)

Y = Dry gas meter calibration factor

ρ_w = Density of water, (0.002202 lb/ml @ 60°F)

NOMENCLATURE

(3 of 3)

ρa	=	Density of acetone, (g/ml)(see bottle label)
MF	=	Moisture factor
$\%CO_2$	=	Percent CO_2 by volume (dry basis)
$\%O_2$	=	Percent O_2 by volume (dry basis)
%CO	=	Percent CO by volume (dry basis)
$\%N_2$	=	Percent N_2 by volume (dry basis)
0.264	=	Ratio of O_2 to N_2 in air v/v
0.280	=	Molecular weight of N_2 or CO, divided by 100
0.320	=	Molecular weight of O_2, divided by 100
0.440	=	Molecular weight of CO_2, divided by 100
60	=	Conversion factor, (sec/min)
18.0	=	Molecular weight of water, (lb/lb-mole)
32.03	=	Equivalent weight of sulfur dioxide
θ	=	Total sampling time (min)
θ_i	=	Sampling time interval, between two successive component changes, beginning with the interval between the first and second changes, (min)
θ_1	=	Sampling time interval, from the run beginning until first component change, (min)
θ_p	=	Sampling time interval, from the final (n^{th}) component change until the end of the sampling run, (min)

CONTINUOUS EMISSION MONITORING SYSTEM (CEMS)

Reference: Manual of Procedures; ST-13A, ST-19A, Jan 1982, State of California, Air Resources Board, Test Methods 1-100, June 1979.
EPA CFR Title 40, Pt. 60, Appendix A, Method 3A, 6C, 7E, & 10.

Instrument Summary

A constant sample of flue gas was extracted, dried, filtered and delivered to an instrument manifold system for distribution to one or more analyzers. Instrument results are recorded on an analog strip chart recorder. System calibration checks are performed as well as calibration checks at the beginning and end of each test run. Final data reduction includes zero and calibration drift corrections.

Sample Conditioning System

Consists of a borosilicate glass tube or 316 grade stainless steel probe fitted with a cindered stainless steel or pyrex glass wool particulate filter. The probe is fitted with a teflon (TFE) sample line which connects to a water condensation system located at the source. The condensation system consists of three 500-ml short stem glass impingers connected in a series, immersed in an ice bath. The gas is delivered to the instrument trailer with a teflon line (3/8" O.D.) through an in-line Balston particulate filter drawn by a teflon-coated diaphragm pump. The sample system is leak checked prior to sampling by plugging the end of the sample probe and adjusting the sample pump to its maximum rate (approximately 22" Hg). The manifold is by-passed and the leak rate monitored through a gas meter or low range flow meter.

Manifold System

Sample gas is delivered to each analyzer through a five way valve and regulated with a needle valve flow meter. Manifold pressure is controlled by a back pressure regulator which is typically set at three psi. Zero gas (N_2) and calibrated gases are delivered to the analyzers using the same five way valve and flow meter. All manifold parts are glass, stainless steel, or teflon materials.

Analog Strip Chart Data Reduction

Analog recordings consists of averaged time increments as shown on the data pages (typically 5,10, or 20 minute increments). Data for each increment was recorded at an average percent of full scale. The readings were then compared with the zero and calibration readings for calculation of the average concentration for each time increment. Any deviation of the zero and calibration readings from the start to the end of a test period was corrected by calculating apparent zero and calibration readings for the mid-point of each time increment. The average concentrations were then calculated from the sample readings and the apparent zero and span readings.

EPA METHOD 18
HYDROCARBON EMISSIONS TESTING
FID ANALYSIS

Sampling Procedures

The sample was drawn via evacuated cannister through a stainless steel/teflon probe into a tedlar bag. Each sample bag was evacuated and then filled.

Analytical Procedures

The contents of the tedlar bag are analyzed by gas chromatography. The gas chromatograph is calibrated with an appropriate standard for each carbon #, before and after each set of samples are analyzed. The sample is speciated by carbon #-C_1, C_2, C_3, C_4, C_5, and C_{6+} backflush.

Symbol Identification

i	=	Carbon #; i = 1 to 6+
s	=	Refers to standard for that carbon #
Rx_i	=	Response factor for C_i
MW	=	Molecular weight - g/mole
DSCFM	=	Average volume flow rate of unit tested

Equations

$$Rx_i = \frac{Area_{std}}{ppm_{std}}$$

$$Sample\ ppm_i = \frac{1}{Rx_i} \times Area_i$$

$$Sample\ ppm\ (as\ C_1) = Sample\ ppm \times \#\ of\ carbons$$

$$\frac{lbs}{hr_i} = ppm_i \times MW_i \times DSCFM \times 1.581 \times 10^{-7}$$

$$Total\ non\text{-}methane\ \frac{lbs}{hr} = \sum_{2}^{6+} \frac{lbs}{hr_i}$$

Note 1: If lbs/hr as methane is required, MW will equal 16.0 (MW of methane)
Note 2: # of carbons: ethane = 2; propane = 3; etc...

APPENDIX I
ERATIONAL DATA
(Supplied by Dested)

COMPANY : DESTEC
UNIT : DOUBLE C - TURBINE #1 & #2
DATE : 02/09-10/93
REPORT : 027-341

CEM DATA SUMMARY

RUN #	TIME	TURBINE #1			TURBINE #2		
		%O2	NOx ppm	CO ppm	%O2	NOx ppm	CO ppm
1	1130-1200	13.92	2.24	43.7	14.14	3.01	41.0
2	1215-1245	13.93	2.26	43.0	14.12	3.00	41.0
3	1300-1330	13.92	2.42	43.6	14.13	3.05	40.8
4	1400-1430	13.92	2.50	45.2	14.13	3.00	42.2
5	1445-1515	13.92	2.49	46.2	14.16	3.00	42.5
6	1535-1605	13.92	2.49	46.9	14.13	3.00	41.7
7	1615-1645	13.92	2.57	42.5	14.12	3.00	40.3
8	900-930	13.97	2.50	46.4	14.13	3.00	40.8
9	1000-1030	14.03	2.50	43.9	14.12	3.00	43.6
10	1045-1115	14.09	2.53	42.6	14.12	3.00	44.0
11	1130-1200	14.13	2.55	40.9			
12	1215-1245	14.13	2.76	38.1			
	AVERAGE	13.98	2.48	43.6	14.13	3.01	41.8

PD 09FEB93 17:25:21

EMISSIONS MONITORING LOG
DOUBLE C -LOG7 (12HR)

1 NOX LEVEL AT STACK 01-101
2 CO LEVEL AT STACK 01-101
3 COR NOX LEVEL AT STACK 01-101
4 COR CO LEVEL AT STACK 01-101
5 O2 LEVEL AT STACK 01-101
6 NOX LEVEL AT STACK 02-101
7 CO LEVEL AT STACK 02-101
8 COR NOX LEVEL AT STACL 02-101
9 COR CO LEVEL AT STACK 02-101
10 O2 LEVEL AT STACK 02-101
11 CEM SYSTEM IN CALIBRATION
12

HH:MM:SS	1 BLR1NOX PPMVD AVG	2 BLR1CO PPMVD AVG	3 BLR1NOCR PPMVD AVG	4 BLR1COCR PPMVD AVG	5 BLR1O2 PPMVD AVG	6 BLR2NOX PPMVD AVG	7 BLR2CO PPMVD AVG	8 BLR2NOCR PPMVD AVG	9 BLR2COCR PPMVD AVG	10 BLR2O2 PPMVD AVG	11 XS1932 CALIBR	12
05:30:00	2.60	35.92	2.365451	31.5	14.30	3.32	40.25	3.1	35.9	14.41	NORM	
05:45:00	2.67	34.35	2.439711	30.1	14.32	3.63	37.42	3.3	33.3	14.43	NORM	
06:00:00	2.50	38.36	2.266693	33.7	14.32	3.75	39.03	3.3	34.8	14.43	NORM	
06:15:00	2.50	38.60	2.264319	33.8	14.32	3.54	38.72	3.3	34.4	14.39	NORM	
06:30:00	2.62	37.49	2.384440	32.9	14.32	3.75	37.83	3.3	33.7	14.43	NORM	
06:45:00	2.75	37.39	2.512190	32.8	14.32	3.73	38.78	3.3	34.5	14.43	NORM	
07:00:00	2.75	37.08	2.519226	32.5	14.33	3.66	38.59	3.3	34.3	14.43	NORM	
07:15:00	2.66	37.44	2.423011	32.8	14.32	3.56	38.35	3.3	34.2	14.40	NORM	
07:30:00	2.51	38.01	2.279409	33.4	14.32	3.76	38.02	3.3	33.9	14.43	NORM	
07:45:00	2.50	37.86	2.267710	33.2	14.32	3.77	37.47	3.3	33.4	14.43	NORM	
08:00:00	2.50	37.86	2.271271	33.2	14.32	3.76	37.23	3.3	33.2	14.43	NORM	
08:15:00	2.50	38.22	2.271440	33.6	14.33	3.76	37.33	3.3	33.3	14.42	NORM	
08:30:00	2.53	40.59	2.155643	34.7	14.16	3.76	34.94	3.3	30.6	14.31	NORM	
08:45:00	2.63	41.54	2.144199	34.9	14.03	3.77	35.09	3.3	30.8	14.31	NORM	
09:00:00	2.61	42.24	2.131059	35.5	14.02	3.76	35.32	3.3	30.6	14.23	NORM	
09:15:00	2.49	43.13	2.019755	36.3	14.02	3.73	35.87	3.2	31.0	14.23	NORM	
09:30:00	2.51	40.80	2.034081	34.3	14.02	3.48	38.33	3.0	33.2	14.23	NORM	
09:45:00	2.51	38.53	2.027215	32.4	14.01	3.25	38.68	2.8	33.4	14.22	NORM	
10:00:00	2.51	37.87	2.035522	31.8	14.01	3.29	38.10	2.8	32.9	14.23	NORM	
10:15:00	2.35	41.70	1.865387	34.8	13.95	3.33	38.48	2.8	33.3	14.23	NORM	
10:30:00	2.25	44.99	1.754252	37.3	13.89	3.51	37.62	3.0	32.7	14.25	NORM	
10:45:00	2.24	45.29	1.755778	37.7	13.90	3.50	37.31	3.2	33.2	14.41	NORM	
11:00:00	2.23	44.61	1.757050	37.1	13.90	3.45	38.29	3.0	33.1	14.22	NORM	
11:15:00	2.24	44.06	1.759932	36.6	13.92	3.48	37.00	3.0	32.0	14.20	NORM	
11:30:00	2.24	44.09	1.762390	36.8	13.92	3.32	37.11	2.8	31.7	14.12	NORM	
TUBE 1 11:45:00	2.24	43.71	1.763916	36.4	13.92	3.49	37.38	3.0	31.9	14.10	NORM	
12:00:00	2.24	43.70	1.760271	36.4	13.93	3.26	38.98	2.8	33.2	14.11	NORM	
12:15:00	2.26	43.99	1.772817	36.6	13.93	3.26	38.49	2.8	32.8	14.12	NORM	
TUBE 2 12:30:00	2.25	43.52	1.760186	36.1	13.93	3.26	38.71	2.8	33.0	14.13	NORM	
12:45:00	2.27	42.46	1.787652	35.4	13.93	3.26	38.24	2.8	32.3	14.05	NORM	
13:00:00	2.36	42.26	1.883443	35.1	13.93	3.26	38.60	2.8	32.9	14.12	NORM	
TUBE 3 13:15:00	2.49	41.39	2.009498	34.4	13.92	3.48	37.72	3.0	32.2	14.13	NORM	
13:30:00	2.35	45.81	1.872677	38.1	13.92	3.50	37.62	3.0	31.7	14.05	NORM	
13:45:00	2.34	43.39	1.863258	40.2	13.92	3.50	37.94	3.0	32.4	14.11	NORM	
14:00:00	2.49	43.39	2.012041	36.1	13.92	3.35	39.09	2.8	33.3	14.11	NORM	
TUBE 4 14:15:00	2.49	44.44	2.013397	37.0	13.92	3.23	40.83	2.7	34.5	14.02	NORM	
14:30:00	2.50	45.90	2.013228	38.2	13.92	3.01	42.75	2.5	36.1	14.02	NORM	
14:45:00	2.49	45.57	2.013482	37.9	13.92	3.01	42.58	2.5	35.9	14.02	NORM	
TUBE 5 15:00:00	2.49	46.13	2.015771	38.4	13.92	3.00	42.23	2.5	35.8	14.03	NORM	
15:15:00	2.49	46.28	2.016873	38.5	13.91	3.04	41.40	2.6	35.5	14.11	NORM	
15:30:00	2.49	47.68	2.013312	39.7	13.92	3.23	41.04	2.7	34.8	14.05	NORM	
TUBE 6 15:45:00	2.49	47.90	2.017127	39.9	13.92	3.03	41.65	2.6	35.6	14.12	NORM	
16:00:00	2.49	45.85	2.018823	38.2	13.92	3.22	40.18	2.7	34.4	14.12	NORM	
16:15:00	2.49	44.38	2.019162	36.9	13.92	3.17	39.77	2.7	34.1	14.12	NORM	
TUBE 7 16:30:00	2.49	43.65	2.010515	36.4	13.92	3.25	40.07	2.8	34.4	14.13	NORM	
16:45:00	2.51	41.41	2.152591	34.4	13.92	3.26	39.49	2.8	33.8	14.13	NORM	
17:00:00	2.75	38.80	2.263048	32.1	13.92	3.26	39.99	2.8	34.1	14.12	NORM	

TUBE 1 2.24 43.7
TUBE 2 2.26 43.0
TUBE 3 2.42 43.6
TUBE 4 2.50 45.2
TUBE 5 2.49 46.2
TUBE 6 2.49 46.9
TUBE 7 2.57 42.5

13.92 13.93 13.93 13.92 13.92 13.92 13.92

PD 09FEB93 17:25:25

EMISSIONS MONITORING LOG
DOUBLE C -LOG7 (12HR)

HH:MM:SS	1 BLR1NOX PPMVD AVG	2 BLR1CO PPMVD AVG	3 BLR1NOCR PPMVD AVG	4 BLR1COCR PPMVD AVG	5 BLR1O2 PPMVD AVG	6 BLR2NOX PPMVD AVG	7 BLR2CO PPMVD AVG	8 BLR2NOCR PPMVD AVG	9 BLR2COCR PPMVD AVG	10 BLR2O2 PPMVD AVG	11 XS1932 CALIBR	12
17:15:00	2.75	37.25	2.261183	30.9	13.93	3.25	41.27	2.8	35.2	14.14	NORM	
SUMMARY DATA												
AVG	2.47	41.91	2.057946	35.4	14.04	3.42	38.69	3.0	33.5	14.22		
MAX	2.75	48.39	2.519226	40.2	14.33	3.77	42.75	3.3	36.1	14.43		
TMAX	7:00:00	13:45:00	7:00:00	13:45:00	8:15:00	8:45:00	14:30:00	5:45:00	14:30:00	6:45:00		
MIN	2.23	34.35	1.754252	30.1	13.89	3.00	34.94	2.5	30.6	14.02		
TMIN	11:00:00	5:45:00	10:30:00	5:45:00	10:30:00	15:00:00	8:30:00	15:00:00	9:00:00	14:45:00		

EMISSIONS MONITORING LOG
DOUBLE C -LOG7 (12HR)

1 NOX LEVEL AT STACK 01-101
2 CO LEVEL AT STACK 01-101
3 COR NOX LEVEL AT STACK 01-101
4 COR CO LEVEL AT STACK 01-101
5 O2 LEVEL AT STACK 01-101
6 NOX LEVEL AT STACK 02-101
7 CO LEVEL AT STACK 02-101
8 COR NOX LEVEL AT STACL 02-101
9 COR CO LEVEL AT STACK 02-101
10 O2 LEVEL AT STACK 02-101
11 CEM SYSTEM IN CALIBRATION
12

HH:MM:SS	1 BLR1NOX PPMVD AVG	2 BLR1CO PPMVD AVG	3 BLR1NOCR PPMVD AVG	4 BLR1COCR PPMVD AVG	5 BLR1O2 PPMVD AVG	6 BLR2NOX PPMVD AVG	7 BLR2CO PPMVD AVG	8 BLR2NOCR PPMVD AVG	9 BLR2COCR PPMVD AVG	10 BLR2O2 PPMVD AVG	11 XS1932 CALIBR	12
02:15:00	3.00	31.35	2.510410	27.1	14.22	3.40	38.56	2.9	33.9	14.33	NORM	
02:30:00	3.00	32.67	2.510071	28.2	14.22	3.35	38.86	2.9	34.1	14.32	NORM	
02:45:00	3.00	31.97	2.515326	27.7	14.22	3.25	38.71	2.9	34.7	14.45	NORM	
03:00:00	3.00	32.74	2.514055	28.3	14.21	3.24	39.77	2.8	35.0	14.34	NORM	
03:15:00	2.98	33.50	2.505323	28.9	14.20	3.25	39.54	2.8	34.7	14.32	NORM	
03:30:00	2.99	33.71	2.504984	29.1	14.22	3.26	39.21	2.8	34.5	14.31	NORM	
03:45:00	3.00	33.75	2.506341	29.2	14.22	3.26	40.79	2.8	35.8	14.33	NORM	
04:00:00	3.00	33.73	2.516005	29.2	14.22	3.26	40.27	2.8	35.4	14.33	NORM	
04:15:00	3.00	33.96	2.515750	29.3	14.23	3.05	40.02	2.8	35.1	14.33	NORM	
04:30:00	3.00	34.01	2.514394	29.4	14.23	3.02	40.91	2.8	36.0	14.29	NORM	
04:45:00	3.00	33.55	2.512020	29.0	14.22	3.12	41.10	2.8	36.1	14.33	NORM	
05:00:00	3.00	34.58	2.520328	29.9	14.22	3.01	41.47	2.8	36.4	14.32	NORM	
05:15:00	3.00	35.56	2.514733	30.7	14.23	3.07	41.64	2.8	36.5	14.33	NORM	
05:30:00	3.00	35.16	2.511003	30.4	14.22	3.00	41.49	2.8	36.6	14.30	NORM	
05:45:00	3.00	35.46	2.515666	30.7	14.23	3.00	41.08	2.8	36.1	14.31	NORM	
06:00:00	2.99	36.06	2.515666	31.2	14.22	3.01	41.14	2.8	36.1	14.32	NORM	
06:15:00	2.97	35.82	2.493710	30.9	14.20	3.01	40.34	2.8	35.4	14.33	NORM	
06:30:00	2.80	36.14	2.380201	30.9	14.15	3.00	41.69	2.8	36.6	14.32	NORM	
06:45:00	2.91	36.09	2.514818	31.1	14.22	3.00	41.03	2.8	36.0	14.32	NORM	
07:00:00	2.80	35.24	2.510071	30.4	14.23	2.99	40.97	2.8	36.0	14.32	NORM	
07:15:00	2.81	35.74	2.511512	30.9	14.23	3.00	40.47	2.8	35.5	14.33	NORM	
07:30:00	2.86	34.70	2.519819	30.0	14.22	3.00	39.81	2.8	34.9	14.32	NORM	
07:45:00	2.91	34.24	2.510918	29.6	14.20	3.02	40.53	2.8	35.5	14.33	NORM	
08:00:00	2.85	34.77	2.515750	30.1	14.22	3.00	40.23	2.8	36.3	14.51	NORM	
08:15:00	2.98	33.79	2.515581	29.2	14.22	3.24	38.65	2.8	34.0	14.34	NORM	
08:30:00	2.90	35.03	2.419874	30.0	14.15	3.23	38.72	2.8	33.7	14.25	NORM	
08:45:00	2.76	38.48	2.270593	32.3	14.04	3.26	39.12	2.8	33.8	14.23	NORM	
09:00:00	2.73	39.63	2.237871	33.3	14.02	3.07	38.58	2.6	33.3	14.23	NORM	
TUBE 8 09:15:00	2.52	45.40	2.010769	38.0	13.97	3.00	41.34	2.5	35.7	14.20	NORM	
09:30:00	2.48	47.43	2.012380	39.4	13.94	2.77	43.13	2.5	37.4	14.22	NORM	
09:45:00	2.37	48.68	1.939562	40.4	13.92	2.94	42.68	2.5	37.0	14.20	NORM	
10:00:00	2.50	47.04	2.017805	39.1	13.96	2.75	43.20	2.5	37.5	14.19	NORM	
TUBE 9 10:15:00	2.50	44.24	2.013482	37.1	14.02	2.77	43.09	2.5	37.7	14.31	NORM	
10:30:00	2.50	43.56	2.022976	36.5	14.03	2.77	42.40	2.5	37.1	14.31	NORM	
10:45:00	2.52	42.37	2.107663	35.7	14.05	2.75	43.10	2.5	37.7	14.32	NORM	
TUBE 10 11:00:00	2.51	41.96	2.234565	35.6	14.11	2.89	41.99	2.7	36.7	14.32	NORM	
11:15:00	2.54	43.16	2.102153	36.3	14.06	2.77	43.24	2.5	37.9	14.32	NORM	
11:30:00	2.66	42.48	2.271949	36.1	14.13	2.76	43.27	2.5	37.9	14.32	NORM	
TUBE 11 11:45:00	2.50	41.32	2.272203	35.0	14.13	2.76	41.55	2.5	36.3	14.32	NORM	
12:00:00	2.60	40.42	2.271779	34.2	14.13	3.34	38.85	2.9	34.0	14.31	NORM	
12:15:00	2.76	39.22	2.277374	33.4	14.13	3.51	38.36	3.0	33.6	14.31	NORM	
TUBE 12 12:30:00	2.76	38.00	2.272034	32.3	14.13	3.72	36.67	3.2	32.1	14.32	NORM	
12:45:00	2.76	38.14	2.272203	32.4	14.12	3.60	36.42	3.1	31.9	14.31	NORM	
13:00:00	2.76	38.62	2.275594	32.9	14.12	3.52	38.72	3.0	33.9	14.32	NORM	
13:15:00	2.71	38.54	2.266863	32.8	14.12	3.28	40.64	2.8	35.6	14.32	NORM	
13:30:00	2.73	39.40	2.271440	33.5	14.14	3.06	41.60	2.8	36.5	14.32	NORM	
13:45:00	2.74	39.33	2.268049	33.4	14.11	3.24	42.06	2.8	36.5	14.25	NORM	

TUBE 8: 2.50, 46.4, 13.97
TUBE 9: 2.50, 43.9, 14.03
TUBE 10: 2.53, 42.6, 14.09
TUBE 11: 2.55, 40.9, 14.13
TUBE 12: 2.76, 38.1, 14.13

PD 10FEB93 14:01:06

EMISSIONS MONITORING LOG
DOUBLE C -LOG7 (12HR)

LOG # 7 PAGE 2

HH:MM:SS	1 BLR1NOX PPMVD AVG	2 BLR1CO PPMVD AVG	3 BLR1NOCR PPMVD AVG	4 BLR1COCR PPMVD AVG	5 BLR1O2 PPMVD AVG	6 BLR2NOX PPMVD AVG	7 BLR2CO PPMVD AVG	8 BLR2NOCR PPMVD AVG	9 BLR2COCR PPMVD AVG	10 BLR2O2 PPMVD AVG	11 XS1932 CALIBR	12
14:00:00	2.76	38.34	2.265591	32.5	14.08	3.26	40.73	2.8	35.2	14.22	NORM	
SUMMARY DATA												
AVG	2.80	37.69	2.355192	32.2	14.15	3.10	40.58	2.7	35.5	14.31		
MAX	3.00	48.68	2.520328	40.4	14.23	3.72	43.27	3.2	37.9	14.51		
TMAX	4:00:00	9:45:00	5:00:00	9:45:00	4:30:00	12:30:00	11:30:00	12:30:00	11:30:00	8:00:00		
MIN	2.37	31.35	1.939562	27.1	13.92	2.75	36.42	2.5	31.9	14.19		
TMIN	9:45:00	2:15:00	9:45:00	2:15:00	9:45:00	10:00:00	12:45:00	10:00:00	12:45:00	10:00:00		

RA 2-11-93
TURBINE #2

PD 11FEB93 18:47:57

EMISSIONS MONITORING LOG
DOUBLE C -LOG7 (12HR)

LOG # 7 PAGE 1

1 NOX LEVEL AT STACK 01-101
2 CO LEVEL AT STACK 01-101
3 COR NOX LEVEL AT STACK 01-101
4 COR CO LEVEL AT STACK 01-101
5 O2 LEVEL AT STACK 01-101
6 NOX LEVEL AT STACK 02-101
7 CO LEVEL AT STACK 02-101
8 COR NOX LEVEL AT STACL 02-101
9 COR CO LEVEL AT STACK 02-101
10 O2 LEVEL AT STACK 02-101
11 CEM SYSTEM IN CALIBRATION
12

	HH:MM:SS	1 BLR1NOX PPMVD AVG	2 BLR1CO PPMVD AVG	3 BLR1NOCR PPMVD AVG	4 BLR1COCR PPMVD AVG	5 BLR1O2 PPMVD AVG	6 BLR2NOX PPMVD AVG	7 BLR2CO PPMVD AVG	8 BLR2NOCR PPMVD AVG	9 BLR2COCR PPMVD AVG	10 BLR2O2 PPMVD AVG	11 XS1932 CALIBR	12
	07:00:00	3.47	26.14	2.975209	22.8	14.32	3.26	37.90	2.8	33.2	14.32	NORM	
	07:15:00	3.27	26.80	2.782271	23.4	14.33	3.42	35.83	3.0	31.5	14.37	NORM	
	07:30:00	3.32	25.42	2.825250	22.2	14.31	3.67	33.44	3.3	29.6	14.40	NORM	
	07:45:00	3.51	24.72	3.015984	21.7	14.32	3.66	33.51	3.2	29.4	14.35	NORM	
	08:00:00	3.51	25.00	3.008609	21.9	14.33	3.65	34.23	3.2	30.3	14.38	NORM	
	08:15:00	3.50	24.50	2.999115	21.4	14.33	3.45	36.36	3.0	32.0	14.36	NORM	
	08:30:00	3.43	27.43	2.948252	23.7	14.23	3.24	38.35	2.8	33.3	14.26	NORM	
	08:45:00	2.72	36.22	2.274323	30.8	14.13	3.26	38.12	2.8	32.9	14.22	NORM	
	09:00:00	2.72	36.61	2.274323	31.2	14.12	3.26	36.99	2.8	31.9	14.22	NORM	
	09:15:00	2.50	39.62	2.270932	33.8	14.13	3.27	36.73	2.8	31.7	14.23	NORM	
	09:30:00	2.50	41.18	2.268897	35.1	14.12	3.41	36.22	2.9	31.4	14.23	NORM	
	09:45:00	2.50	39.19	2.240668	33.3	14.11	3.41	35.58	2.9	30.8	14.22	NORM	
	10:00:00	2.50	40.41	2.197859	34.3	14.11	3.26	38.17	2.8	32.9	14.21	NORM	
	10:15:00	2.50	42.55	2.012804	35.7	14.03	3.10	40.73	2.6	34.9	14.16	NORM	
Run 1 TURB. 2	10:30:00	2.50	43.96	2.019246	36.9	14.03	3.01	41.12	2.5	35.0	14.13	NORM	
	10:45:00	2.50	43.11	2.012973	36.2	14.03	3.01	40.91	2.5	34.9	14.14	NORM	
	11:00:00	2.47	42.27	2.013312	35.5	14.02	3.00	40.77	2.5	34.7	14.13	NORM	
	11:15:00	2.25	47.23	2.018823	39.7	14.02	3.10	40.72	2.6	34.7	14.13	NORM	
Run 2 TURB 2	11:30:00	2.25	47.10	2.007633	39.7	14.04	3.11	40.78	2.6	34.9	14.13	NORM	
	11:45:00	2.24	47.30	2.018992	39.7	14.02	3.01	41.07	2.5	35.1	14.12	NORM	
	12:00:00	2.25	46.51	2.012380	39.1	14.03	3.00	40.86	2.5	35.0	14.12	NORM	
	12:15:00	2.47	41.47	2.018653	35.0	14.03	3.04	40.47	2.5	34.6	14.13	NORM	
Run 3 TURB 2	12:30:00	2.49	40.64	2.021366	34.2	14.02	3.14	40.41	2.6	34.4	14.12	NORM	
	12:45:00	2.49	40.27	2.206082	34.3	14.10	3.09	40.58	2.6	34.6	14.13	NORM	
	13:00:00	2.50	42.29	2.012804	35.5	14.02	3.00	41.05	2.5	35.0	14.13	NORM	
	13:15:00	2.28	44.48	2.018144	37.4	14.03	3.00	41.79	2.5	35.7	14.13	NORM	
Run 4 TURB 2	13:30:00	2.25	45.12	2.012973	38.0	14.02	3.00	42.05	2.5	36.0	14.13	NORM	
	13:45:00	2.25	47.45	2.013312	40.0	14.03	3.00	42.37	2.5	36.2	14.13	NORM	
	14:00:00	2.24	46.55	2.018483	39.2	14.03	3.00	42.89	2.5	36.6	14.13	NORM	
Run 5 TURB 2	14:15:00	2.25	47.18	2.012380	39.8	14.03	3.00	42.54	2.5	36.4	14.13	NORM	
	14:30:00	2.25	43.29	2.018229	36.4	14.01	3.01	42.49	2.6	36.6	14.18	NORM	
	14:45:00	2.25	42.94	2.013228	36.1	14.02	3.00	42.07	2.5	35.9	14.12	NORM	
Run 6 TURB 2	15:00:00	2.24	42.32	2.018483	35.6	14.02	3.00	41.86	2.5	35.7	14.13	NORM	
	15:15:00	2.26	41.52	2.012889	34.9	14.02	3.01	41.47	2.5	35.4	14.13	NORM	
	15:30:00	2.24	40.62	2.012804	34.2	14.01	3.00	40.84	2.5	34.9	14.12	NORM	
Run 7 TURB 2	15:45:00	2.25	41.33	2.012889	34.7	14.01	3.00	40.28	2.5	34.4	14.12	NORM	
	16:00:00	2.23	44.24	2.016110	37.3	14.01	3.00	40.30	2.5	34.4	14.12	NORM	
	16:15:00	2.22	46.62	1.980167	39.1	14.02	3.00	41.35	2.5	35.3	14.12	NORM	
Run 8 TURB 2	16:30:00	1.99	51.81	1.755100	42.9	13.91	3.00	41.19	2.5	35.2	14.12	NORM	
	16:45:00	2.00	50.07	1.754845	41.7	13.92	3.00	40.49	2.5	34.7	14.13	NORM	
	17:00:00	2.04	51.47	1.783329	42.8	13.93	3.00	41.72	2.5	35.7	14.12	NORM	
Run 9 TURB 2	17:15:00	2.63	36.64	2.176327	30.8	14.03	3.00	42.79	2.5	36.5	14.13	NORM	
	17:30:00	3.51	30.62	3.019884	25.5	13.94	3.00	44.33	2.5	37.7	14.10	NORM	
	17:45:00	3.54	28.96	3.048113	24.3	14.03	3.00	44.99	2.5	38.4	14.11	NORM	
Run 10 TURB 2	18:00:00	3.73	29.52	3.237406	24.8	14.03	3.00	44.27	2.5	37.8	14.12	NORM	
	18:15:00	3.51	29.36	3.025563	24.7	14.03	3.00	43.69	2.5	37.3	14.11	NORM	
	18:30:00	3.51	30.47	3.013272	25.6	14.02	3.00	43.85	2.5	37.5	14.12	NORM	

3.01 41.0 14.14
3.00 41.0 14.12
3.05 40.8 14.13
3.0 42.2 14.13
3.00 42.5 14.16
3.00 41.7 14.13
3.00 40.3 14.12
3.00 40.8 14.13
3.00 43.6 14.12
3.00 44.0 14.12

PD 11FEB93 18:48:03 EMISSIONS MONITORING LOG LOG # 7 PAGE 2

DOUBLE C -LOG7 (12HR)

HH:MM:SS	1 BLR1NOX PPMVD AVG	2 BLR1CO PPMVD AVG	3 BLR1NOCR PPMVD AVG	4 BLR1COCR PPMVD AVG	5 BLR1O2 PPMVD AVG	6 BLR2NOX PPMVD AVG	7 BLR2CO PPMVD AVG	8 BLR2NOCR PPMVD AVG	9 BLR2COCR PPMVD AVG	10 BLR2O2 PPMVD AVG	11 XS1932 CALIBR	12
18:45:00	3.52	30.21	3.020392	25.3	14.03	3.00	44.49	2.5	38.0	14.13	NORM	
SUMMARY DATA												
AVG	2.66	39.18	2.301064	33.1	14.07	3.12	40.31	2.6	34.6	14.17		
MAX	3.73	51.81	3.237406	42.9	14.33	3.67	44.99	3.3	38.4	14.40		
TMAX	18:00:00	16:30:00	18:00:00	16:30:00	7:15:00	7:30:00	17:45:00	7:30:00	17:45:00	7:30:00		
MIN	1.99	24.50	1.754845	21.4	13.91	3.00	33.44	2.5	29.4	14.10		
TMIN	16:30:00	8:15:00	16:45:00	8:15:00	16:30:00	17:45:00	7:30:00	17:45:00	7:45:00	17:30:00		

P6 09FEB93 00:02:33

EMISSIONS MONITORING LOG
DOUBLE C - LOG8 (DAILY)

LOG # 8 PAGE 1

1 GT-1 MWATTS
2 GAS FUEL FLOW
3 STEAM NOZZLE LOW FLOW ALARM
4 TURBINE 1 STEAM : FUEL RATIO
5 STEAM CDP LOW FLOW ALARM
6 INLET CO CATALYTIC CONVERTER
7 SRC REACTOR INLET LOW TEMP SEL
8 TOTAL FUEL FLOW TO TURBINE 1
9 TOTAL FUEL GAS FLOW TURBINE 2
10 CEM SYSTEM IN CALIBRATION
11
12

HH:MM:SS	1 JI1964 MW AVG	2 W1IBX LBS/HR AVG	3 W1IBU AVG	4 W1STOF RATIO AVG	5 W1IBV AVG	6 TE1402 DEG F AVG	7 TI1456 DEG F AVG	8 GT1FGTOT MMPPH AVG	9 GT2FGTOT MMPPH AVG	10 XS1932 CALIBR	11	12
01:00:00	22.0	9557.0	17704.0	1.85	20467.2	975.4	739.1	4793.51	0.00	NORM		
02:00:00	21.5	9382.2	17151.7	1.83	20368.4	979.9	739.5	14301.65	0.01	NORM		
03:00:00	21.2	9280.1	16772.5	1.81	20376.5	981.9	740.2	23598.00	0.02	NORM		
04:00:00	21.9	9519.4	17658.0	1.86	20287.0	976.0	740.0	33011.38	0.03	NORM		
05:00:00	21.9	9538.3	17712.4	1.86	20260.9	976.5	740.9	42553.02	0.04	NORM		
06:00:00	21.9	9397.3	17701.8	1.88	20247.3	977.3	740.9	52031.27	0.05	NORM		
07:00:00	22.1	9423.9	17892.6	1.90	20251.1	975.9	740.7	61440.25	0.06	NORM		
08:00:00	22.2	9461.9	18031.2	1.91	20261.0	975.3	740.7	70892.93	0.07	NORM		
09:00:00	23.0	9834.7	19128.1	1.94	20562.0	982.3	745.6	80469.70	0.08	NORM		
10:00:00	23.9	10186.8	20161.3	1.98	20900.2	989.0	750.5	90575.89	0.09	NORM		
11:00:00	23.6	10157.6	19828.2	1.95	20921.8	989.9	750.8	100759.3	0.11	NORM		
12:00:00	23.5	10133.0	19669.5	1.94	20956.6	990.8	751.1	110914.4	0.12	NORM		
13:00:00	23.4	10116.7	19633.9	1.94	20959.9	991.3	751.3	121053.8	0.13	NORM		
14:00:00	23.5	10095.5	19742.9	1.96	20939.1	991.0	751.3	131155.8	0.14	NORM		
15:00:00	23.7	10151.0	20086.0	1.98	20913.5	990.1	751.3	141295.0	0.15	NORM		
16:00:00	23.6	10145.3	19990.9	1.97	20893.8	990.5	751.7	151464.3	0.16	NORM		
17:00:00	23.5	10077.1	19569.8	1.94	20822.5	992.1	752.5	161568.0	0.17	NORM		
18:00:00	23.8	10196.7	20181.6	1.98	21294.0	990.7	752.9	171697.2	0.18	NORM		
19:00:00	24.0	10271.9	20457.0	1.99	21325.3	990.0	753.6	181946.1	0.19	NORM		
20:00:00	24.1	10304.7	20646.3	2.00	21285.4	989.8	753.9	192241.7	0.20	NORM		
21:00:00	24.1	10309.3	20654.0	2.00	21319.9	990.7	754.3	202564.7	0.21	NORM		
22:00:00	23.3	10021.5	19582.3	1.95	20965.5	985.5	750.4	212825.8	0.22	NORM		
23:00:00	22.2	9630.1	18144.6	1.88	20207.9	977.5	743.5	222569.7	0.23	NORM		
00:00:00	22.2	9637.9	18247.4	1.89	20225.1	976.6	742.5	232220.2	0.24	NORM		

219 pounds

SUMMARY DATA AVG 10125.2

AVG	22.9	9867.9	19014.5	1.92	20708.8	984.4	747.0	116997.6	0.12
MAX	24.1	10309.3	20654.0	2.00	21325.3	992.1	754.3	232220.2	0.24
TMAX	20:00:00	21:00:00	21:00:00	20:00:00	19:00:00	17:00:00	21:00:00	0:00:00	0:00:00
MIN	21.2	9280.1	16772.5	1.81	20207.9	975.3	739.1	4793.51	0.00
TMIN	3:00:00	3:00:00	3:00:00	3:00:00	23:00:00	8:00:00	1:00:00	1:00:00	1:00:00

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FROM DESTEC DOUBLE C

PG 10FEB93 00:02:33

EMISSIONS MONITORING LOG
DOUBLE C - LOG8 (DAILY)

LOG # 8 PAGE 1

1 GT-1 MWATTS
2 GAS FUEL FLOW
3 STEAM NOZZLE LOW FLOW ALARM
4 TURBINE 1 STEAM : FUEL RATIO
5 STEAM CDP LOW FLOW ALARM
6 INLET CO CATALYTIC CONVERTER
7 SRC REACTOR INLET LOW TEMP SEL
8 TOTAL FUEL FLOW TO TURBINE 1
9 TOTAL FUEL GAS FLOW TURBINE 2
10 CEM SYSTEM IN CALIBRATION
11
12

TURBINE 1

HH:MM:SS	1 JI1964 MW AVG	2 W1IBX LBS/HR AVG	3 W1IBU AVG	4 W1STOF RATIO AVG	5 W1IBV AVG	6 TE1402 DEG F AVG	7 TI1456 DEG F AVG	8 GT1FGTOT MMPPH AVG	9 GT2FGTOT MMPPH AVG	10 XS1932 CALIBR	11	12
01:00:00	22.2	9646.0	18248.5	1.89	20249.2	976.2	742.5	4838.30	0.01	NORM		
02:00:00	22.2	9626.6	18215.4	1.89	20270.3	976.3	742.8	14486.60	0.02	NORM		
03:00:00	22.2	9624.3	18158.8	1.89	20254.1	975.9	742.9	24112.24	0.03	NORM		
04:00:00	22.4	9676.3	18369.2	1.90	20253.3	975.2	743.1	33768.27	0.04	NORM		
05:00:00	22.5	9737.8	18616.7	1.91	20265.8	974.1	744.1	43482.57	0.05	NORM		
06:00:00	22.4	9654.3	18430.3	1.91	20238.7	975.6	744.4	53197.37	0.06	NORM		
07:00:00	22.5	9664.5	18554.2	1.92	20223.5	975.3	744.7	62859.08	0.07	NORM		
08:00:00	22.5	9667.2	18620.4	1.93	20201.8	975.4	745.0	72538.68	0.08	NORM		
09:00:00	23.6	10080.9	20054.4	1.99	20272.7	988.0	758.2	82364.30	0.09	NORM		
10:00:00	23.7	10137.0	20443.0	2.02	20282.7	992.2	763.9	92548.55	0.10	NORM		
11:00:00	23.7	10111.9	20993.6	2.08	20519.5	991.7	764.9	102669.1	0.11	NORM		
12:00:00	23.5	10082.9	20969.2	2.08	20672.7	992.4	761.4	112769.5	0.12	NORM		
13:00:00	23.5	10081.1	20849.6	2.07	21014.2	992.8	761.7	122869.3	0.13	NORM		
14:00:00	24.0	10265.6	20999.8	2.05	21346.3	991.0	765.4	133011.2	0.14	NORM		
15:00:00	24.5	10417.9	21004.0	2.02	21541.1	990.1	767.9	143388.4	0.15	NORM		
16:00:00	24.6	10465.3	21304.7	2.04	21540.3	989.1	769.2	153842.9	0.16	NORM		
17:00:00	24.2	10322.5	20526.1	1.99	21562.4	990.0	769.1	164263.8	0.17	NORM		
18:00:00	24.1	10293.9	20284.3	1.97	21533.5	990.3	769.0	174529.1	0.18	NORM		
19:00:00	24.0	10243.9	20097.5	1.96	21568.9	991.1	773.9	184889.5	0.19	NORM		
20:00:00	23.1	9960.2	18778.8	1.89	20809.8	996.1	747.4	194949.8	0.20	NORM		
21:00:00	23.1	9956.8	18727.0	1.88	20408.8	996.3	747.3	204916.7	0.22	NORM		
22:00:00	23.0	9945.8	18610.1	1.87	20314.8	997.4	753.4	214866.5	0.23	NORM		
23:00:00	22.4	9707.5	17979.3	1.85	20364.2	989.5	747.9	224707.2	0.24	NORM		
00:00:00	22.3	9698.2	17949.8	1.85	20368.0	989.8	747.7	234422.0	0.25	NORM		

2/10 Dual Tines

10098.8

SUMMARY DATA

AVG	23.2	9961.2	19449.4	1.95	20669.9	986.3	754.9	118761.7	0.13
MAX	24.6	10465.3	21304.7	2.08	21568.9	997.4	773.9	234422.0	0.25
TMAX	16:00:00	16:00:00	16:00:00	12:00:00	19:00:00	22:00:00	19:00:00	0:00:00	0:00:00
MIN	22.2	9624.3	17949.8	1.85	20201.8	974.1	742.5	4838.30	0.01
TMIN	2:00:00	3:00:00	0:00:00	0:00:00	8:00:00	5:00:00	1:00:00	1:00:00	1:00:00

PG 11FEB93 00:02:52

EMISSIONS MONITORING LOG
DOUBLE C - LOG9 (DAILY)

LOG # 9 PAGE 1

1 GT-2 MWATTS
2 GAS FUEL FLOW
3 STEAM NOZZLE LOW FLOW ALARM
4 TURBINE 2 FUEL TO STEAM RATIO
5 STEAM CDP LOW FLOW ALARM
6 INLT CO CATALYT CONV CO-02-101
7 SRC REACTOR INLT LO TEMP SELCT
8 COR NOX LEVEL AT STACL 02-101
9 COR CO LEVEL AT STACK 02-101
10 02 LEVEL AT STACK 02-101
11 CEM SYSTEM IN CALIBRATION
12

TURBINE 2

HH:MM:SS	1 JI2964 MW AVG	2 W2IBX LBS/HR AVG	3 W2IBU AVG	4 W2STOF RATIO AVG	5 W2IBV AVG	6 TE2402 DEG F AVG	7 TI2456 DEG F AVG	8 BLR2NOCR PPMVD AVG	9 BLR2COCR PPMVD AVG	10 BLR2O2 PPMVD AVG	11 XS1932 CALIBR	12
01:00:00	23.7	10297.5	19683.6	1.91	19943.5	971.75	715.2	2.9	31.8	14.33	NORM	
02:00:00	23.9	10344.4	19968.6	1.93	19882.1	971.01	715.3	2.8	33.3	14.30	NORM	
03:00:00	24.0	10383.0	20135.0	1.94	19846.9	970.90	715.4	2.9	34.4	14.36	NORM	
04:00:00	24.2	10453.9	20500.4	1.96	19858.9	970.25	715.7	2.8	35.1	14.32	NORM	
05:00:00	24.3	10478.4	20645.6	1.97	19846.2	970.10	715.8	2.8	35.9	14.32	NORM	
06:00:00	24.4	10509.4	20852.6	1.98	19905.6	969.78	715.9	2.8	36.3	14.31	NORM	
07:00:00	24.4	10523.7	20976.7	1.99	19939.8	969.96	716.0	2.8	36.0	14.32	NORM	
~~08:00:00~~	~~24.2~~	~~10480.3~~	~~20636.1~~	~~1.97~~	~~19944.9~~	~~970.53~~	~~715.5~~	~~2.8~~	~~35.6~~	~~14.37~~	~~NORM~~	
09:00:00	24.7	10666.5	21301.1	2.00	20121.8	977.38	719.4	2.7	33.7	14.26	NORM	
10:00:00	25.1	10800.8	22101.5	2.05	20183.9	973.21	719.5	2.5	36.9	14.20	NORM	
11:00:00	24.9	10753.5	21868.4	2.03	20220.5	972.68	719.0	2.6	37.3	14.31	NORM	
12:00:00	24.8	10701.1	21526.2	2.01	20550.4	973.07	719.0	2.6	36.5	14.32	NORM	
13:00:00	24.7	10608.9	20750.2	1.96	21763.6	971.79	717.8	3.1	32.9	14.32	NORM	
14:00:00	25.2	10852.4	21728.0	2.00	21766.5	970.81	718.6	2.8	35.9	14.28	NORM	
15:00:00	25.0	10753.0	21215.6	1.97	21803.0	967.99	716.9	2.8	35.2	14.22	NORM	
16:00:00	25.0	10701.9	21073.3	1.97	21804.5	967.91	716.8	2.9	35.5	14.26	NORM	
~~17:00:00~~	~~25.0~~	~~10703.4~~	~~21070.0~~	~~1.97~~	~~21760.9~~	~~967.67~~	~~716.6~~	~~2.8~~	~~35.4~~	~~14.25~~	~~NORM~~	
18:00:00	25.1	10734.8	21043.5	1.96	21728.1	967.41	716.8	2.9	36.5	14.29	NORM	
19:00:00	25.1	10753.0	20999.1	1.95	21716.1	966.61	716.6	3.0	35.8	14.28	NORM	
20:00:00	25.1	10757.5	20969.3	1.95	21731.7	966.49	716.5	3.0	36.2	14.29	NORM	
21:00:00	24.4	10514.6	19838.8	1.89	21767.7	968.28	715.5	3.5	31.9	14.32	NORM	
22:00:00	24.1	10395.7	19219.0	1.85	21760.0	969.95	714.9	3.7	29.9	14.32	NORM	
23:00:00	24.2	10450.8	19601.8	1.88	21735.3	970.28	715.2	3.7	30.0	14.32	NORM	
00:00:00	24.6	10584.8	20553.8	1.94	21710.8	968.45	715.2	3.0	34.3	14.33	NORM	

2/11 RUN TIMES

SUMMARY DATA

AVG	24.6	10591.8	20760.8	1.96	20889.3	970.18	716.6	2.9	34.7	14.30
MAX	25.2	10852.4	22101.5	2.05	21804.5	977.38	719.5	3.7	37.3	14.37
TMAX	14:00:00	14:00:00	10:00:00	10:00:00	16:00:00	9:00:00	10:00:00	22:00:00	11:00:00	8:00:00
MIN	23.7	10297.5	19219.0	1.85	19846.2	966.49	714.9	2.5	29.9	14.20
TMIN	1:00:00	1:00:00	22:00:00	22:00:00	5:00:00	20:00:00	22:00:00	10:00:00	22:00:00	10:00:00

APPENDIX II
RAW DATA

COMPANY : Destec
UNIT : Double "C" #1
DATE : 2-9-93
REPORT : 027-341

ON-SITE DATA

		RUN	#1	#2	#3
		TIME	1033-1645	840-1453	
Vm	Dry sampled gas volume, dcf		190.63	174.97	
Y	Meter calibration factor (met# 1002, 1002,)		.982977	.982977	
Pbar	Barometric Pressure, "Hg		28.49	29.24	
Pstatic	Stack static pressure, "Hg		-.70	-.70	
ΔH	Differential meter pressure, "H2O		0.67	0.61	
Tm	Meter temperature, °F		69	67	

CONTENTS	RUN 1 FINAL	RUN 1 TARE	RUN 1 NET	RUN 2 FINAL	RUN 2 TARE	RUN 2 NET	RUN 3 FINAL	RUN 3 TARE	RUN 3 NET
H2O	990.2	579.2	411.0	846.7	553.1	293.6			
H2O	955.8	586.5	369.3	898.1	613.5	284.6			
Dry	586.9	494.5	92.4	696.8	475.3	221.5			
Dry	489.4	487.8	1.6	490.0	484.9	5.1			
Dry	483.4	481.9	1.5	463.9	462.3	1.6			
Silica	873.8	844.6	29.20	806.0	777.3	28.7			
V lc L/W volume of H2O, gms			854.9			785.1			

		RUN	#1	#2	#3
CO2	% Dry Volume		3.6	3.5	
O2	% Dry Volume		13.8	13.9	
N2	% Dry Volume				
Cp	Pitot tube coefficient (Pit# , ,)		.791	.791	
ΔP	Avg P, "H2O		1.064	1.099	
Ts	Stack temperature, °F		268	271	
As	Stack area, sq. ft.				
Ds	Stack diameter, inches		95.75	95.75	
Dn	Nozzle diameter, inches		.192	.193	
Dur	Sampling time, min		360	360	
% Iso	Mini iso				

	#1	#2	#3
Filter #	502	503	
Filter tare weights, gms	0.6163	0.6189	

INITIALS
CONTROL BOX#:
Hi P_____ Lo P_____ Avg P_____ Duct Temp _____
Diameters before disturb_____ After_____
# of points, total _____
Overall (inches)_____ Coupling _____

METHOD 5 RUN # 1 SE

COMPANY: Destec "Double C"

AMBIENT TEMP, °F: 65°

UNIT: Unit 1

DATE: 2-9-93

REPORT: 027-341

TECH: DCS

PUMP #: GAST

METER BOX#: 1002

METER H@: 0.85 (MCF: .982977)

PROBE #: Cp: .791

PRE / POST TEST LEAK CHECK

LEAK RATE:	<.001	<.001	cfm
VACUUM:	10	4	"Hg

Pbar: 28.49

STATIC PRESSURE ("Hg): -.70

ASSUMED MOISTURE,%: 17.5% Mwd 27.5

NOZZLE ID#:

AVG. CALIB. NOZZLE DIAM.("): .192

PROBE LINER MATERIAL: Qtz.

FILTER #:

DUCT DIAM ("): 95.75

TRAVERSE PT. NUMBER	TIME (θ) min.	VACUUM "Hg	STACK TEMP (Ts) °F	VELOCITY HEAD (Δ Ps) "H20	PRESSURE DIFFERENTIAL,"H2O RATE	PRESSURE DIFFERENTIAL,"H2O Δ H	GAS SAMPLE VOLUME (cu.ft)	GAS SAMPLE TEMP. AT DRY GAS METER INLET, °F	GAS SAMPLE TEMP. AT DRY GAS METER OUTLET,°F	FILTER HOLDER TEMP, °F PROBE	FILTER HOLDER TEMP, °F BOX	TEMP OF GAS EXIT CONDENSER OR LAST IMPINGER
12	10:33.0	2	269	1.00	0.508	0.63	302.00	66	64	230	244	
11	48	2	269	1.10	0.536	0.69	309.3	70	65	258	246	
10	11:03	2	269	1.15	0.550	0.72	317.6	73	66	249	248	
9	18	2	269	1.10	0.539	0.69	325.9	73	68	240	248	
8	33	2	269	1.10	0.542	0.70	334.0	79	69	240	257	
7	48	2	269	1.15	0.553	0.72	342.1	74	71	240	248	
6	12:03.0	2	268	1.00	0.518	0.64	350.4	76	72	243	261	
5	18	2	267	.95	0.503	0.61	358.2	74	71	244	258	
4	33	2	267	1.05	0.527	0.67	365.7	73	68	243	261	
3	48	2	267	1.05	0.527	0.67	373.6	73	68	245	261	
2	13:03.0	2	266	1.00	0.515	0.64	381.6	73	68	245	262	
1	18	2	250	.80	0.465	0.54	389.3	72	67		266	
PC	13:33.0						396.30					
AVG												

METHOD 5 RUN # 1 SW

COMPANY: Destec "Double C"

AMBIENT TEMP, °F: 65°

UNIT: Unit #1

DATE: 2-9-93

REPORT: 027-341

TECH: DCJ

PUMP #: GAST

METER BOX#: 1002

METER H@: 0.85 (Mc: .982977)

PROBE #: Cp: .791

PRE / POST TEST LEAK CHECK

LEAK RATE:	<.002	<.001	cfm
VACUUM:	10	5	"Hg

Pbar: 28.49

STATIC PRESSURE ("Hg): -.70

ASSUMED MOISTURE,%: 17.5% MWW 27.5

NOZZLE ID#:

AVG. CALIB. NOZZLE DIAM.("): .192

PROBE LINER MATERIAL: Qtz.

FILTER #:

DUCT DIAM ("): 95.75

TRAVERSE PT. NUMBER	TIME (θ) min.	VACUUM "Hg	STACK TEMP (Ts) °F	VELOCITY HEAD (Δ Ps) "H20	PRESSURE DIFFERENTIAL,"H2O RATE	PRESSURE DIFFERENTIAL,"H2O Δ H	GAS SAMPLE VOLUME (cu.ft)	GAS SAMPLE TEMP. AT DRY GAS METER INLET, °F	GAS SAMPLE TEMP. AT DRY GAS METER OUTLET,°F	FILTER HOLDER TEMP, °F PROBE	FILTER HOLDER TEMP, °F BOX	TEMP OF GAS EXIT CONDENSER OR LAST IMPINGER
12	13:45.00	2	267	1.10	0.538	0.69	396.50	69	69	243	265	
11	14:00.00	2	265	1.20	0.559	0.75	404.6	64	67	258	256	
10	15	2	268	1.10	0.533	0.69	413.0	64	65	264	255	
9	30	2	270	1.15	0.546	0.72	421.0	68	64	247	256	
8	45	2	272	1.20	0.558	0.74	429.1	70	64	246	259	
7	15:00.00	2	275	1.20	0.556	0.74	437.5	69	64	246	262	
6	15	2	273	1.10	0.533	0.69	445.9	68	64	244	261	
5	30	2	271	1.10	0.537	0.69	453.9	74	65	248	260	
4	45	2	271	1.05	0.525	0.66	461.9	74	65	247	260	
3	16:00.00	2	271	1.05	0.524	0.66	469.8	71	66	250	261	
2	15	2	271	1.05	0.523	0.66	477.6	70	66	250	261	
1	30	2	252	.85	0.475	0.56	485.5	67	65	249	261	
EOT	16:45.00						492.625					
							Vm: 190.63					
							Vsd: 100.29					
							VF: 66.71					
AVG			268	1.064		0.67			69			

METHOD 5 RUN # 2

COMPANY: DESTEC - Double "C"

AMBIENT TEMP, °F: 55°

UNIT: #1

DATE: 2-10-93

REPORT: 027-341

TECH: RJK

PUMP #: GAST.

METER BOX#: CB 1002 (0.85)

METER H@: McF = 0.982977

PROBE #: Cp: 0.791

(PRE) / POST TEST LEAK CHECK

LEAK RATE: < 0.007 cfm

VACUUM: 10 "Hg

Pbar: 29.24

STATIC PRESSURE ("Hg): -.70

ASSUMED MOISTURE,%: 17.5

NOZZLE ID#: MW WET 27.5

AVG. CALIB. NOZZLE DIAM.("): 0.192

PROBE LINER MATERIAL: QTZ.

FILTER #:

DUCT DIAM ("): 95.75

TRAVERSE PT. NUMBER S.W. PART	TIME (e) min.	VACUUM "Hg	STACK TEMP (Ts) °F	VELOCITY HEAD (Δ Ps) "H20	PRESSURE DIFFERENTIAL, "H2O RATE	PRESSURE DIFFERENTIAL, "H2O Δ H	GAS SAMPLE VOLUME (cu.ft)	GAS SAMPLE TEMP. (AT DRY GAS METER) INLET, °F	GAS SAMPLE TEMP. (AT DRY GAS METER) OUTLET, °F	FILTER HOLDER TEMP, °F PROBE	FILTER HOLDER TEMP, °F BOX	TEMP OF GAS EXIT CONDENSER OR LAST IMPINGER
12	8:40	2	267	1.10	0.475	0.60	493.00	55	54	246	250	
11	8:55	2	266	1.10	0.479	0.61	500.2	62	55	261	255	
10	9:10	2	270	1.15	0.490	0.63	507.2	66	55	248	257	
9	9:25	2	273	1.20	0.501	0.65	514.6	68	56	245	258	
8	9:40	2	273	1.20	0.501	0.65	522.2	68	56	250	259	
7	9:55	2	276	1.25	0.514	0.68	529.8	73	58	253	260	
6	10:10	2	277	1.10	0.482	0.61	537.5	73	59	255	260	
5	10:25	2	275	1.00	0.462	0.56	544.7	75	61	254	260	
4	10:40	2	274	1.05	0.474	0.59	551.7	75	62	251	259	
3	10:55	2	274	1.05	0.475	0.59	558.6	75	64	253	260	
2	11:10	2	274	1.05	0.476	0.59	565.7	76	65	255	262	
1	11:25	2	273	0.90	0.441	0.51	572.8	75	66	256	265	
P.C.	11:40						579.55					
							Vol = 86.55					
							Iso = 100.15					
							Vel Fps = 67.57					
AVG	~~PRELIMINARY~~ AVERAGES		273	1.094		0.61			65			

METHOD 5 RUN # 2 (CONT.)

COMPANY: DESTEC Double "C"

UNIT: #1

DATE: 2-10-93

REPORT: 027-341

TECH: RJK

PUMP #: GAST.

METER BOX#: CB 1002 (0.85)

METER H@: M_cF = 0.982977

PROBE #: Cp: 0.791

PRE / POST TEST LEAK CHECK

LEAK RATE: < 0.002 cfm

VACUUM: 6 "Hg

AMBIENT TEMP, °F: 67°

Pbar: 29.24

STATIC PRESSURE ("Hg): -.70

ASSUMED MOISTURE,%: 17.5

NOZZLE ID#: MW WET 27.5

AVG. CALIB. NOZZLE DIAM.("): 0.192

PROBE LINER MATERIAL: QTZ.

FILTER #:

DUCT DIAM ("): 95.75

493.00

TRAVERSE PT. NUMBER S.E. PORT.	TIME (e) min.	VACUUM "Hg	STACK TEMP (Ts) °F	VELOCITY HEAD (Δ Ps) "H20	PRESSURE DIFFERENTIAL,"H2O RATE	PRESSURE DIFFERENTIAL,"H2O Δ H	GAS SAMPLE VOLUME (cu.ft)	GAS SAMPLE TEMP. (AT DRY GAS METER) INLET, °F	GAS SAMPLE TEMP. (AT DRY GAS METER) OUTLET, °F	FILTER HOLDER (TEMP, °F) PROBE	FILTER HOLDER (TEMP, °F) BOX	TEMP OF GAS EXIT CONDENSER OR LAST IMPINGER
12	11:53	2	270	1.15	0.496	0.64	579.90	68	67	253	258	
11	12:08	2	268	1.15	0.501	0.64	587.3	77	66	259	253	
10	12:23	2	269	1.20	0.512	0.67	594.7	78	67	249	253	
9	12:38	2	270	1.20	0.512	0.67	602.5	78	68	251	253	
8	12:53	2	268	1.25	0.525	0.69	610.3	80	68	255	253	
7	1:08	2	269	1.35	0.545	0.74	618.2	80	69	254	253	
6	1:23	2	270	1.05	0.478	0.59	626.3	73	69	253	252	
5	1:38	2	270	1.00	0.465	0.57	633.5	70	69	255	251	
4	1:53	2	270	1.00	0.463	0.56	640.5	69	67	256	252	
3	2:08	2	271	1.00	0.461	0.56	647.4	66	65	254	253	
2	2:23	2	270	1.00	0.461	0.56	654.2	67	64	251	252	
1	2:38	2	267	0.95	0.450	0.54	661.2	65	64	250	255	
END	2:53						667.97					
							V_{OL} = [redacted]	174.97				
							ISO = 100.38					
							VEL_{FPS} = 67.67					
AVG			271	1.099		0.61			67			

VELOCITY TRAVERSE

COMPANY : Destec "Double C"
UNIT : #1
DATE : 2-8-93
REPORT : 027-341
RUN # : Initial
PUMP # : /
METER BOX# : 1002
METER coeff. 0.982977 (Δ4=0.85)
PITOT TUBE# :

TOTAL : 112.5
COUPLING : 16.75
DIAMETER : 95.75
AREA : 50.00
Cp : 0.791

TRAVERSE POINTS w/o	w/coup	no.	SW Ts (°F)	SW ΔP	SE Ts (°F)	SE ΔP
2.0	18.8	1	255	.80	259	.85
6.4	23.2	2	271	.98	272	.95
11.3	28.1	3	272	1.00	273	1.05
17.0	33.7	4	273	1.05	273	1.00
23.9	40.7	5	273	1.00	273	1.05
34.1	50.8	6	273	1.05	273	1.10
61.7	78.4	7	272	1.10	272	1.15
71.8	88.6	8	272	1.10	272	1.15
78.8	95.5	9	272	1.10	272	1.10
84.4	101.2	10	271	1.10	272	1.10
89.5	106.1	11	270	1.15	271	1.10
93.7	110.5	12	269	1.05	270	1.05

VELOCITY DATA

Rated Total MMBTU/hr _____

$\overline{\Delta P}$ 1.045
$\overline{Ts}$ 271
Static -.70
Pbar 28.99
MW(wet) 27.5
%H2O 17.5%
%O2 14%
F_{60} _____

Vel= _____
DSCFM= _____
MMBTU/hr= _____
%Thr= _____

Additional Data:
Noz. = 0.192

COMPANY : Destec
UNIT : Double "C" unit 2
DATE : 2-11-93, 2-12,93
REPORT : 027-341

ON-SITE DATA

		RUN	#1	#2	#3
		TIME	900-1521	938-1947	
Vm	Dry sampled gas volume, dcf		172.78	171.79	
Y	Meter calibration factor (met#____,____,____)		.982977	.982977	
Pbar	Barometric Pressure, "Hg		29.22	29.22	
Pstatic	Stack static pressure, "Hg		-.75	-.75	
ΔH	Differential meter pressure, "H2O		.58	.61	
Tm	Meter temperature, °F		63	59	

16.3%

CONTENTS	RUN 1 FINAL	RUN 1 TARE	RUN 1 NET	RUN 2 FINAL	RUN 2 TARE	RUN 2 NET	RUN 3 FINAL	RUN 3 TARE	RUN 3 NET
H_2O	937.2	577.0	360.2	930.9	582.0	348.9			
H_2O	943.3	597.1	346.2	960.3	593.9	366.4			
Dry	535.7	495.7	40.0	546.9	498.6	48.3			
Dry	489.9	489.3	.6	496.9	496.8	.1			
Silica	866.5	837.7	28.8	861.0	834.0	27.0			
4/4		<-50.1>				<55.3>			
V lc volume of H2O, gms			725.7			735.4			

		RUN	#1	#2	#3
CO2	% Dry Volume		3.4	3.5	
O2	% Dry Volume		15.0	14.9	
N2	% Dry Volume				
Cp	Pitot tube coefficient (Pit#____,____,____)		.791	.791	
ΔP	Avg P, "H2O		1.105	1.119	
Ts	Stack temperature, °F		278	278	
As	Stack area, sq. ft.		50.00	50.0	
Ds	Stack diameter, inches		95.75	95.75	
Dn	Nozzle diameter, inches		.192	.192	
Dur	Sampling time, min		360	360	
% Iso	Mini iso		100.13	99.73	

Filter #	507	506	
Filter tare weights, gms	0.6148	.6189	

INITIALS
CONTROL BOX#:
Hi P_____ Lo P_____ Avg P_____ Duct Temp _____
Diameters before disturb_____ After_____
# of points, total _____
Overall (inches)_____ Coupling _____

METHOD 5 RUN # 1

COMPANY: DESTEC "DOUBLE C"

AMBIENT TEMP, °F: 56°

UNIT: #2

DATE: 2-11-93

REPORT: 027-341

TECH: RJK

PUMP #: GAST. (PD-09)

METER BOX#: CB 1002

METER H@: M_cF = 0.982977 (0.85)

PROBE #: Cp: 0.791

PRE / POST TEST LEAK CHECK

LEAK RATE: <0.004 cfm

VACUUM: 9 "Hg

Pbar: 29.22

STATIC PRESSURE ("Hg): -0.75

ASSUMED MOISTURE,%: 17.5 MW WET 27.5

NOZZLE ID#:

AVG. CALIB. NOZZLE DIAM.("): 0.192

PROBE LINER MATERIAL: QTZ.

FILTER #:

DUCT DIAM ("): 95.75

TRAVERSE PT. NUMBER S.E. PORT	TIME (e) min. 15/PT.	VACUUM "Hg	STACK TEMP (Ts) °F	VELOCITY HEAD (Δ Ps) "H20	PRESSURE DIFFERENTIAL, "H2O RATE	PRESSURE DIFFERENTIAL, "H2O Δ H	GAS SAMPLE VOLUME (cu.ft)	GAS SAMPLE TEMP. (AT DRY GAS METER) INLET, °F	GAS SAMPLE TEMP. (AT DRY GAS METER) OUTLET, °F	FILTER HOLDER TEMP, °F PROBE	FILTER HOLDER TEMP, °F BOX	TEMP OF GAS EXIT CONDENSER OR LAST IMPINGER
12	9:00	2	274	1.10	0.473	0.60	674.60	55	55	245	249	
11	9:15	2	274	1.20	0.497	0.65	681.6	61	55	256	246	
10	9:30	2	275	1.20	0.498	0.65	689.1	63	56	248	248	
9	9:45	2	275	1.20	0.500	0.65	696.5	65	58	249	246	
8	10:00	2	277	1.25	0.509	0.67	704.1	64	58	248	246	
7	10:15	2	279	1.30	0.519	0.70	711.8	64	60	251	247	
6	10:30	2	281	1.05	0.467	0.58	719.6	65	62	253	247	
5	10:45	2	281	1.05	0.467	0.58	726.7	64	61	254	248	
4	11:00	2	281	1.05	0.467	0.58	733.6	65	60	251	247	
3	11:15	2	280	1.05	0.467	0.58	740.5	65	60	255	249	
2	11:30	2	279	1.05	0.467	0.58	747.4	65	60	251	251	
1	11:45	2	279	0.90	0.433	0.51	754.4	66	60	252	251	
P.C.	12:00						761.07					
							Vol=86.47					
AVG												

METHOD 5 RUN # 1 (CONT.)

COMPANY: DESTEC "DOUBLE C"

AMBIENT TEMP, °F: 65°

UNIT: #2

DATE: 2-11-93

REPORT: 027-341

TECH: RJK

PUMP #: GAST. PD-09

METER BOX#: CB 1002

METER H@: MaF = .982977 (0.85)

PROBE #: Cp: 0.791

PRE (POST) TEST LEAK CHECK

LEAK RATE: <0.006 cfm

VACUUM: 9 "Hg

Pbar: 29.22

STATIC PRESSURE ("Hg): -0.75

ASSUMED MOISTURE,%: 17.5 MW WET 27.5

NOZZLE ID#:

AVG. CALIB. NOZZLE DIAM.("): 0.192

PROBE LINER MATERIAL: QTZ.

FILTER #:

DUCT DIAM ("): 95.75

86.47 + 8.31

TRAVERSE PT. NUMBER S.W. PORT	TIME (θ) min. 15/PT.	VACUUM "Hg	STACK TEMP (Ts) °F	VELOCITY HEAD (Δ Ps) "H20	PRESSURE DIFFERENTIAL, "H2O RATE	PRESSURE DIFFERENTIAL, "H2O Δ H	GAS SAMPLE VOLUME (cu.ft)	GAS SAMPLE TEMP. (AT DRY GAS METER) INLET, °F	GAS SAMPLE TEMP. (AT DRY GAS METER) OUTLET, °F	FILTER HOLDER TEMP, °F PROBE	FILTER HOLDER TEMP, °F BOX	TEMP OF GAS EXIT CONDENSER OR LAST IMPINGER
12	12:	2	280	1.10	0.479	0.60	761.30	64	63	249	253	
11	12:36	2	280	1.15	0.491	0.63	768.4	68	63	252	251	
10	12:51	2	281	1.15	0.491	0.63	775.7	68	63	245	251	
9	13:06	2	281	1.10	0.480	0.60	783.1	67	63	251	249	
8	13:21	2	279	1.15	0.491	0.63	790.5	66	63	253	254	
7	13:36	2	277	1.15	0.491	0.63	797.9	66	62	251	247	
6	13:51	2	275	1.10	0.481	0.61	805.1	67	62	254	259	
5	14:06	2	274	1.10	0.481	0.61	812.3	65	62	253	258	
4	14:21	2	276	1.05	0.469	0.58	819.4	65	62	251	259	
3	14:36	2	276	1.10	0.480	0.60	826.5	65	62	250	259	
2	14:51	2	277	1.05	0.470	0.58	833.8	69	62	255	260	
1	15:06	2	274	0.95	0.450	0.54	840.9	72	63	256	261	
END	15:21						847.61					
							VOL = 172.78					
							ISO = 100.13					
							VELFPS = 68.16					
AVG			278	1.105		0.58			63			

METHOD 5 RUN # 2

COMPANY: DESTEC "DOUBLE C"
UNIT: #2 TURBINE OUTLET
DATE: 2-12-93
REPORT: 027-341
TECH: RJK
PUMP #: GAST (PD-09)
METER BOX#: CB1002
METER coeff: M_cF = 0.982977
PITOT TUBE#: 0.791

(PRE) POST TEST LEAK CHECK
LEAK RATE: <0.005 cfm
VACUUM: 10 "Hg

AMBIENT TEMP, °F: 47°
Pbar: 29.22
STATIC PRESSURE("Hg): -0.75
ASSUMED MOISTURE,%: 17.5 MW WET 27.5
AVG. CALIB. NOZZLE DIAM("): 0.192
PROBE LINER MATERIAL: QTZ.
FILTER #:
DUCT DIAM ("): 95.75

TRAVERSE PT. NUMBER S.E. PORT	TIME (e) min.	VACUUM "Hg	STACK TEMP (Ts) °F	VELOCITY HEAD (ΔPs) "H2O	PRESSURE DIFFERENTIAL ΔH rate "H2O	ΔH	GAS SAMPLE VOLUME (cu. ft)	GAS SAMPLE TEMP. AT DRY GAS METER 6 INLET, °F	7 OUTLET, °F	FILTER HOLDER TEMP 1 °F Probe	3 Box	TEMP OF GAS EXIT CONDENSER OR LAST IMPINGER °F
12	8:38	2	280	1.10	0.464	0.59	853.70	47	47	258	246	
11	8:53	2	279	1.10	0.468	0.59	860.8	54	48	258	248	
10	9:08	2	280	1.10	0.468	0.59	867.8	55	49	254	249	
9	9:23	2	281	1.10	0.469	0.59	874.8	56	50	251	252	
8	9:38	2	282	1.15	0.480	0.62	881.6	58	51	250	252	
7	9:53	2	282	1.20	0.492	0.64	888.8	60	52	249	246	
6	10:08	2	279	1.20	0.495	0.65	896.3	62	54	252	246	
5	10:23	2	277	1.10	0.475	0.60	903.7	62	55	255	246	
4	10:38	2	276	1.10	0.477	0.60	910.9	65	56	253	247	
3	10:53	2	277	1.15	0.490	0.63	918.0	67	58	251	245	
2	11:08	2	277	1.10	0.479	0.60	925.2	66	60	250	244	
1	11:23	2	276	0.90	0.433	0.51	932.4	63	60	249	244	
P.C.	11:38						939.2					
AVERAGE												

METHOD 5 RUN # 2 (CONT.)

COMPANY: DESTEC "DOUBLE C"
UNIT: #2 TURBINE OUTLET
DATE: 2-12-93
REPORT: 027-341
TECH: RJK
PUMP #: GAST (PD-09)
METER BOX#: CB1002
METER coeff: McF = 0.982977
PITOT TUBE#: 0.791

PRE / POST TEST LEAK CHECK
LEAK RATE: < 0.004 cfm
VACUUM: 7.5 "Hg

AMBIENT TEMP, °F: 60°
Pbar: 29.22
STATIC PRESSURE("Hg): -0.75
ASSUMED MOISTURE,%: 17.5 MW WET 27.5
AVG. CALIB. NOZZLE DIAM("): 0.192
PROBE LINER MATERIAL: QTZ.
FILTER #:
DUCT DIAM ("): 95.75

85.50 + 86.29

TRAVERSE PT. NUMBER S.W. PORT	TIME (θ) min.	VACUUM "Hg	STACK TEMP (Ts) °F	VELOCITY HEAD (ΔPs) "H2O	PRESSURE DIFFERENTIAL ΔH rate "H2O	ΔH	GAS SAMPLE VOLUME (cu. ft)	GAS SAMPLE TEMP. AT DRY GAS METER 6 INLET, °F	7 OUTLET, °F	FILTER HOLDER TEMP 1 °F Probe	3 Box	TEMP OF GAS EXIT CONDENSER OR LAST IMPINGER °F
12	11:47	2	276	1.15	0.488	0.63	939.50	60	60	250	248	
11	12:02	2	278	1.25	0.507	0.67	946.5	61	58	250	251	
10	12:17	2	277	1.20	0.497	0.65	954.0	61	58	251	250	
9	12:32	2	276	1.15	0.488	0.63	961.3	62	58	249	252	
8	12:47	2	278	1.25	0.508	0.67	968.8	62	59	252	254	
7	1:02	2	276	1.25	0.509	0.67	976.2	63	59	244	249	
6	1:17	2	278	1.20	0.499	0.65	983.9	64	59	250	249	
5	1:32	2	279	1.10	0.478	0.60	991.5	64	61	251	247	
4	1:47	2	280	1.10	0.477	0.60	998.7	64	60	254	249	
3	2:02	2	278	1.05	0.468	0.58	1005.8	65	61	250	250	
2	2:17	2	279	1.05	0.468	0.58	1012.8	66	61	249	250	
1	2:32	2	278	0.85	0.421	0.48	1019.8	65	61	252	249	
END	2:47						1025.89					
							VOL = 171.79					
							TSO = 99.73					
AVERAGE			278	1.119		0.61	VEL FPS = 69.62		59			

VELOCITY TRAVERSE

COMPANY : DESTEC "DOUBLE C"
UNIT : #2
DATE : 2-11-93
REPORT : 027-341
RUN # : VEL INITIAL
PUMP # : GAST.
METER BOX# : CB 1002
METER coeff: 0.982977 (0.85)
PITOT TUBE# :

TOTAL : 112.50
COUPLING : 16.75
DIAMETER : 95.75
AREA : 50.0
Cp : 0.791

TRAVERSE POINTS w/o	w/coup	no.	South East Ts (°F)	South East ΔP	South West Ts (°F)	South West ΔP
2.0	18.8	12	277	1.05	272	1.05
6.4	23.2	11	278	1.05	274	1.05
11.3	28.1	10	278	1.00	277	1.15
17.0	33.7	9	279	1.05	275	1.15
23.9	40.7	8	279	1.05	275	1.25
34.1	50.8	7	279	1.10	275	1.25
61.7	78.4	6	277	1.10	276	1.05
71.8	88.6	5	276	1.00	277	1.00
78.8	95.5	4	276	0.95	277	0.95
84.4	101.2	3	276	1.00	277	0.95
89.3	106.1	2	275	1.00	277	0.95
93.7	110.5	1	273	0.90	275	0.90

VELOCITY DATA

Rated Total MMBTU/hr _____

$\overline{\Delta P}$ 1.038
$\overline{Ts}$ 276.25
Static -0.75
Pbar 29.22
MW(wet) 27.5
%H2O 17.5%
%O2 14%
F_{60} _____

Vel= _____
DSCFM= _____
MMBTU/hr= _____
%Thr= _____

Additional Data:
NOZ. = 0.192

LABORATORY ANALYSIS
EPA METHOD 5 - PARTICULATE ANALYSIS

COMPANY: Destec

REPORT: 027-341

LOCATION/UNIT: Turbine #1

DATE TESTED: 2/9/93

ANALYST: DGS

RUN # 1

PROBE/NOZZLE/FILTER TOP

VOL-285 ml

DISH # 53 #1	#2	#3	AVERAGE
FINAL (g) 77.6806	77.6806		77.6806
TARE (g) 77.6693			77.6693
NET (g)			0.0113

FILTER # 502

#1	#2	#3	AVERAGE
FINAL (g) 0.6168	0.6167		0.6168
TARE (g) 0.6163			0.6163
NET (g)			0.0005

CONDENSABLE (aliquot 250ml / 1233ml)

DISH # 64 #1	#2	#3	AVERAGE
FINAL (g) 76.8166	76.8177	76.8176	76.8177
TARE (g) 76.8159			76.8159
NET (g)			0.0018

LABORATORY ANALYSIS
EPA METHOD 5 - PARTICULATE ANALYSIS

COMPANY: Destec

REPORT: 027-341

LOCATION/UNIT: Turbine #1

DATE TESTED: 2/10/93

ANALYST: DGS

RUN # 2

PROBE/NOZZLE/FILTER TOP

VOL- 185 ml

DISH # 3 #1	#2	#3	AVERAGE
FINAL (g) 77.6970	77.6987	77.6986	77.6987
TARE (g) 77.6913			77.6913
NET (g)			0.0074

FILTER # 503

#1	#2	#3	AVERAGE
FINAL (g) 0.6191	0.6192		0.6192
TARE (g) 0.6189			0.6189
NET (g)			0.0003

CONDENSABLE (aliquot 250ml / 1141 ml)

DISH # 10 #1	#2	#3	AVERAGE
FINAL (g) 74.8786	74.8795	74.8792	74.8794
TARE (g) 74.8778			74.8778
NET (g)			0.0016

LABORATORY ANALYSIS
EPA METHOD 5 - PARTICULATE ANALYSIS

COMPANY: Destec

REPORT: 027-341

LOCATION/UNIT: Turbine #2

DATE TESTED: 2/11/93

ANALYST: DGS

RUN # 1

PROBE/NOZZLE/FILTER TOP

VOL- 254 ml

DISH # 46 #1	#2	#3	AVERAGE
FINAL (g) 81.4366	81.4376	81.4377	81.4377
TARE (g) 81.4304			81.4304
NET (g)			0.0073

FILTER # 507

#1	#2	#3	AVERAGE
FINAL (g) 0.6152	0.6151		0.6152
TARE (g) 0.6148			0.6148
NET (g)			0.0004

CONDENSABLE (aliquot 250ml / 1115ml)

DISH # 62 #1	#2	#3	AVERAGE
FINAL (g) 90.2237	90.2247	90.2245	90.2246
TARE (g) 90.2226			90.2226
NET (g)			0.0020

LABORATORY ANALYSIS
EPA METHOD 5 - PARTICULATE ANALYSIS

COMPANY: Destec

REPORT: 027-341

LOCATION/UNIT: Turbine #2

DATE TESTED: 2/12/93

ANALYST: DGS

RUN # 2

PROBE/NOZZLE/FILTER TOP

VOL- 285 ml

DISH # 63 #1	#2	#3	AVERAGE
FINAL (g) 73.6306	73.6330	73.6325	73.6328
TARE (g) 73.6171			73.6171
NET (g)			0.0157

FILTER # 506

#1	#2	#3	AVERAGE
FINAL (g) 0.6195	0.6193		0.6194
TARE (g) 0.6189			0.6189
NET (g)			0.0005

CONDENSABLE (aliquot 250ml / 1194ml)

DISH # 12 #1	#2	#3	AVERAGE
FINAL (g) 76.9014	76.9024	76.9023	76.9024
TARE (g) 76.9004			76.9004
NET (g)			0.0020

COMPANY : Destec DOUBLE C
UNIT : LOV #1 TURBINE
DATE : 2-26-93
REPORT : 027-341

ON-SITE DATA

		RUN #1	RUN #2	RUN #3
	TIME	10:43-11:23	11:25-12:05	12:08-12:48
Vm	Dry sampled gas volume, dcf	24.12	23.97	24.15
Y	Meter calibration factor (met#____,____,____)	.999882	.999882	.999882
Pbar	Barometric Pressure, "Hg	29.30	29.30	29.30
Pstatic	Stack static pressure, "Hg			
ΔH	Differential meter pressure, "H2O	.60	.60	.60
Tm	Meter temperature, °F	59.94	67.61	66.13

CONTENTS	RUN 1 FINAL	RUN 1 TARE	RUN 1 NET	RUN 2 FINAL	RUN 2 TARE	RUN 2 NET	RUN 3 FINAL	RUN 3 TARE	RUN 3 NET
H_2O	638.9	581.7	57.2	672.4	617.2	55.2	663.8	605.6	58.20
H_2O	560.5	558.7	1.8	635.8	634.2	1.6	566.8	565.0	1.8
KO	486.6	486.1	0.5	495.3	494.9	0.4	534.8	534.5	0.3
Silica Gel	774.0	769.2	4.8	876.3	871.8	4.5	777.4	773.8	3.6
Line Water			(52.7)			(49.9)			(52.4)
volume of H2O, gms			11.6			11.8			11.5

meCl = 56.3
H_2O = 121.1
H_2O = 2.23%

meCl = 59.06
H_2O = 143.6
RUN #1 %H_2O = 2.308%

meCl = 56.2
H_2O = 119.8
#2 %H_2O = 2.23

		RUN #1	RUN #2	RUN #3
CO2	% Dry Volume			
O2	% Dry Volume			
N2	% Dry Volume			
Cp	Pitot tube coefficient (Pit#____,____,____)			
~~ΔP~~	~~Avg P, "H2O~~ ft/min	53.75	54.125	54.625
Ts	Stack temperature, °F	76.88	74	74
As	Stack area, sq. ft.			
Ds	Stack diameter, inches			
Dn	Nozzle diameter, inches			
Dur	Sampling time, min			
% Iso	Mini iso			

Filter #			
Filter tare weights, gms			

INITIALS
CONTROL BOX#:
Hi P_____ Lo P_____ Avg P_____ Duct Temp _____
Diameters before disturb_____ After_____
# of points, total _____
Overall (inches)_____ Coupling _____

METHOD 4 RUN # 1

COMPANY: Pestec Double 1

UNIT: LOV #1 TURBINE

DATE: 2-26-93

REPORT: 027-341

TECH: SAH

PUMP #: GAST

METER BOX#: 1003 (1.028)

METER COEFF: .999882

PROBE #: Cp:

PRE / POST TEST LEAK CHECK

LEAK RATE: .003 / <.001 cfm

VACUUM: 12 / 6 "Hg

AMBIENT TEMP, °F: 60°

Pbar: 29.30

STATIC PRESSURE ("Hg):

ASSUMED MOISTURE,%:

NOZZLE ID#:

AVG. CALIB. NOZZLE DIAM.("):

PROBE LINER MATERIAL:

FILTER #:

DUCT DIAM ("):

TRAVERSE PT. NUMBER	TIME (θ) min.	VACUUM "Hg	STACK TEMP (Ts) °F	VELOCITY HEAD (ΔPs) "H20 ft/min	PRESSURE DIFFERENTIAL, "H20 RATE	PRESSURE DIFFERENTIAL, "H20 Δ H	GAS SAMPLE VOLUME (cu.ft)	GAS SAMPLE TEMP. AT DRY GAS METER INLET, °F	GAS SAMPLE TEMP. AT DRY GAS METER OUTLET, °F	FILTER HOLDER TEMP, °F PROBE	FILTER HOLDER TEMP, °F BOX	TEMP OF GAS EXIT CONDENSER OR LAST IMPINGER
Start	10:43	2	75	47	.60	.60	60.60	59	59			
	:48	2	75	58	.60	.60	63.57	57	61			
	:53	2	76	54	.60	.60	66.55	56	63			
	:58	2	76	55	.60	.60	69.60	55	64			
	11:03	2	77	61	.60	.60	72.63	56	64			
	:08	2	78	63	.60	.60	75.67	57	64			
	:13	2	78	43	.60	.60	78.68	57	65			
	:18	2	80	49	.60	.60	81.69	57	65			
END	11:23						84.72					
			76.88	53.75	.60	.60			59.94			
							24.12					
	$V_{m(std)}$	24.12	(.999882)	$\left(\frac{520}{519.94}\right)$	$\left(\frac{29.30 + \frac{.60}{13.6}}{29.92}\right)$			=	23.656			
AVG												

METHOD 4 RUN # 2

COMPANY: Destec Doukle C

AMBIENT TEMP, °F: 70°

UNIT: LOV #1, TURBINE

DATE: 2-26-93

REPORT: 027-341

TECH: SAM

PUMP #: EAST

METER BOX#: 1003 (1.028)

METER COEFF: .999882

PROBE #: Cp:

PRE / POST TEST LEAK CHECK

LEAK RATE: .002 / <.001 cfm

VACUUM: 11 / 6 "Hg

Pbar: 29.30

STATIC PRESSURE ("Hg):

ASSUMED MOISTURE,%:

NOZZLE ID#:

AVG. CALIB. NOZZLE DIAM.("):

PROBE LINER MATERIAL:

FILTER #:

DUCT DIAM ("):

TRAVERSE PT. NUMBER	TIME (θ) min.	VACUUM "Hg	STACK TEMP (Ts) °F	VELOCITY HEAD (ΔPs) "H20 (ft/min)	PRESSURE DIFFERENTIAL, "H2O RATE	PRESSURE DIFFERENTIAL, "H2O Δ H	GAS SAMPLE VOLUME (cu.ft)	GAS SAMPLE TEMP. AT DRY GAS METER INLET, °F	GAS SAMPLE TEMP. AT DRY GAS METER OUTLET, °F	FILTER HOLDER TEMP, °F PROBE	FILTER HOLDER TEMP, °F BOX	TEMP OF GAS EXIT CONDENSER OR LAST IMPINGER
START	11:25	2	74	52	.60	.60	85.20	64	70			
		2	74	57	.60	.60	88.16	64	70			
	:35	2	74	56	.60	.60	91.14	64	71			
		2	74	58	.60	.60	94.10	65	71			
	:45	2	74	41	.60	.60	97.10	65	72			
		2	74	43	.60	.60	100.08	65	72			
	:55	2	74	62	.60	.60	103.07	64	72			
		2	74	64	.60	.60	106.11	64	72			
END	12:05						109.17					
		2	74	54.125	.60	.60	23.97		67.81			
	V_{mstd} =	23.97	(.999882)	(520/526.81)			(29.30 + .60/13.6 / 29.92)	=	23.202			
AVG												

METHOD 4 RUN # 3

COMPANY: Dester Double C

AMBIENT TEMP, °F: 70°

UNIT: LOV #1 TURBINE

DATE: 7-26-93

REPORT: 027-341

TECH: SAH

PUMP #: GAST

METER BOX#: 1003 (1.028)

METER COEFF: .999882

PROBE #: Cp:

PRE / POST TEST LEAK CHECK

LEAK RATE: .002 / <.001 cfm

VACUUM: 10 / 7 "Hg

Pbar: 29.30

STATIC PRESSURE ("Hg):

ASSUMED MOISTURE,%:

NOZZLE ID#:

AVG. CALIB. NOZZLE DIAM.("):

PROBE LINER MATERIAL:

FILTER #:

DUCT DIAM ("):

TRAVERSE PT. NUMBER	TIME (θ) min.	VACUUM "Hg	STACK TEMP (Ts) °F	VELOCITY HEAD (ΔPs) "H20 ft/min	PRESSURE DIFFERENTIAL, "H2O RATE	PRESSURE DIFFERENTIAL, "H2O Δ H	GAS SAMPLE VOLUME (cu.ft)	GAS SAMPLE TEMP. AT DRY GAS METER INLET, °F	GAS SAMPLE TEMP. AT DRY GAS METER OUTLET, °F	FILTER HOLDER TEMP, °F PROBE	FILTER HOLDER TEMP, °F BOX	TEMP OF GAS EXIT CONDENSER OR LAST IMPINGER
START	12:08	2	73	51	.60	.60	109.70	69	74			
		2	73	40	.60	.60	112.68	67	74			
	:18	2	75	67	.60	.60	115.67	66	74			
		2	75	68	.60	.60	118.65	67	75			
	:28	2	74	60	.60	.60	121.71	67	75			
		2	74	53	.60	.60	124.73	68	75			
	:38	2	74	52	.60	.60	127.78	68	73			
		2	74	46	.60	.60	130.82	68	73			
END	12:48						133.85					
		2	74	54.625	.60	.60			66.13			
							Vol=24.15					
	V_{mSTD}=	24.15	(.999882)	(520 / 526.13)	(29.30 + .60/13.6 / 29.92)			= 23.407				
AVG												

COMPANY : Destec
UNIT : Double "C" LOV GENERATOR 1
DATE : 2-4-93
REPORT : 027-341

ON-SITE DATA

		RUN	#1	#2	#3
		TIME	10:58	11:45	12:34
Vm	Dry sampled gas volume, dcf		24.0	24.05	24.00
Y	Meter calibration factor (met#_____)		.998954	.998954	.998954
Pbar	Barometric Pressure, "Hg		29.22	29.22	29.22
Pstatic	Stack static pressure, "Hg				
ΔH	Differential meter pressure, "H2O		.45	.59	.61
Tm	Meter temperature, °F		72.13	72.56	72.06

CONTENTS	RUN 1 FINAL	RUN 1 TARE	RUN 1 NET	RUN 2 FINAL	RUN 2 TARE	RUN 2 NET	RUN 3 FINAL	RUN 3 TARE	RUN 3 NET
H_2O	617.8	617.6	.2	612.5	612.5	0.00	615.4	615.1	.3
H_2O	554.5	554.0	.5	593.5	593.0	.5	562.5	562.1	.4
Dry	492.8	492.9	<.1>	485.5	485.4	.1	493.2	492.8	.4
Silica	793.4	796.1	4.3	799.1	794.7	4.4	797.5	793.4	4.1
V lc volume of H2O, gms			4.9			5.0			5.2

		RUN	#1	#2	#3
CO2	% Dry Volume				
O2	% Dry Volume				
N2	% Dry Volume				
Cp	Pitot tube coefficient (Pit#_____)				
ΔP	~~Avg P, "H2O~~ FT/MIN		393.75	380.63	371.25
Ts	Stack temperature, °F		96.38	95.88	93.13
As	Stack area, sq. ft.				
Ds	Stack diameter, inches		3.75"	3.25"	3.25"
Dn	Nozzle diameter, inches				
Dur	Sampling time, min		40	40	40
% Iso	Mini iso				

Filter #
Filter tare weights, gms

INITIALS
CONTROL BOX#:
Hi P_____ Lo P_____ Avg P_____ Duct Temp _____
Diameters before disturb_____ After_____
# of points, total _____
Overall (inches)_____ Coupling _____

METHOD 4 Condense/NC RUN # 1

COMPANY: Destec "Double C"

AMBIENT TEMP, °F: 60

UNIT: Lube Oil Vent GEN 1

DATE: 2-11-93

REPORT: 027-341

TECH: DCJ/BDM

PUMP #: GAST

METER BOX#: 1003

METER H@: 1.028 (.998954)

PROBE #: Cp:

PRE / POST TEST LEAK CHECK

LEAK RATE: <.002 / <.001 cfm

VACUUM: 5 / 2 "Hg

Pbar:

STATIC PRESSURE ("Hg):

ASSUMED MOISTURE,%:

NOZZLE ID#:

AVG. CALIB. NOZZLE DIAM.("):

PROBE LINER MATERIAL:

FILTER #:

DUCT DIAM ("): 3.25"

TRAVERSE PT. NUMBER	TIME (e) min.	VACUUM "Hg	STACK TEMP (Ts) °F	VELOCITY HEAD (Δ Ps) "H20 (FT/MIN)	PRESSURE DIFFERENTIAL, "H2O RATE	PRESSURE DIFFERENTIAL, "H2O Δ H	GAS SAMPLE VOLUME (cu.ft)	GAS SAMPLE TEMP. AT DRY GAS METER INLET, °F	GAS SAMPLE TEMP. AT DRY GAS METER OUTLET, °F	FILTER HOLDER TEMP, °F PROBE	FILTER HOLDER TEMP, °F BOX	TEMP OF GAS EXIT CONDENSER OR LAST IMPINGER
0	10:38.0	1	97	375	.6	.45	023.10	70	70			
5		1	99	415	.6	.45	026.3	68	73			
10		1	96	400	.6	.50	029.1	69	74			
15		1	100	400	.6	.40	032.2	69	75			
20		1	96	400	.6	.45	035.0	70	76			
25		1	97	390	.6	.40	038.1	70	76			
30		1	90	400	.6	.45	041.1	70	76			
35		1	96	370	.6	.50	044.1	71	77			
40	11:38.0						047.1					
							Vm: 024.00					
			96.38	393.75	.6	.45			72.13			
AVG												

METHOD 4 IC Condense/NC RUN # 2

COMPANY: Destec "Double C"
UNIT: Lube Oil Vent GEN 1
DATE: 2·11·93
REPORT: 027-341
TECH: DCT/BOM
PUMP #: GAST
METER BOX#: 1003
METER coeff: 1.028 (.998954)
PITOT TUBE#:

PRE / POST TEST LEAK CHECK

LEAK RATE: <.005 / <.005 cfm
VACUUM: 5 / 5 "Hg

AMBIENT TEMP, °F: 60
Pbar:
STATIC PRESSURE("Hg):
ASSUMED MOISTURE,%:
AVG. CALIB. NOZZLE DIAM("):
PROBE LINER MATERIAL:
FILTER #:
DUCT DIAM ("): 325"

TRAVERSE PT. NUMBER	TIME (e) min.	VACUUM "Hg	STACK TEMP (Ts) °F	VELOCITY HEAD (ΔPs) "H2O (FT/MIN)	PRESSURE DIFFERENTIAL ΔH rate "H2O	ΔH	GAS SAMPLE VOLUME (cu. ft)	GAS SAMPLE TEMP. AT DRY GAS METER INLET, °F	OUTLET, °F	FILTER HOLDER TEMP °F Probe	Box	TEMP OF GAS EXIT CONDENSER OR LAST IMPINGER °F
0	11:45.0	1	94	360	.60	.40	047.30	71	72			
5		1	99	400	.60	.50	050.3	71	75			
10		1	98	395	.60	.60	053.3	70	75			
15		1	97	395	.60	.60	056.3	71	76			
20		1	93	355	.60	.62	059.2	71	75			
25		1	97	400	.60	.65	061.9	71	75			
30		1	93	355	.60	.70	065.0	70	74			
35		1	96	385	.60	.65	068.2	70	74			
40	12:250						071.35					
							VM: 024.05					
AVERAGE			95.88	380.63	.60	0.59			72.56			

METHOD 4 Condense/NC RUN # 3

COMPANY: Destec "Double C"
UNIT: Lube Oil Vent GEN 1
DATE: 2·11·93
REPORT: 027-341
TECH: DCT/BDM
PUMP #: GAST
METER BOX#: 1003
METER coeff: 1.028 (.998954)
PITOT TUBE#:

PRE / POST TEST LEAK CHECK

LEAK RATE: <.004 / <.001 cfm
VACUUM: 5 / 5 "Hg

AMBIENT TEMP, °F: 60°
Pbar:
STATIC PRESSURE("Hg):
ASSUMED MOISTURE,%:
AVG. CALIB. NOZZLE DIAM("):
PROBE LINER MATERIAL:
FILTER #:
DUCT DIAM ("): 3.25"

TRAVERSE PT. NUMBER	TIME (e) min.	VACUUM "Hg	STACK TEMP (Ts) °F	VELOCITY HEAD (ΔPs) "H2O (FT/MIN)	PRESSURE DIFFERENTIAL ΔH rate "H2O	ΔH	GAS SAMPLE VOLUME (cu. ft)	GAS SAMPLE TEMP. AT DRY GAS METER INLET, °F	OUTLET, °F	FILTER HOLDER TEMP °F Probe	Box	TEMP OF GAS EXIT CONDENSER OR LAST IMPINGER °F
0	12:34.0	1	91	360	.60	.60	071.50	69	70			
5		1	96	380	.60	.60	074.5	69	73			
10		1	91	380	.60	.61	077.4	70	75			
15		1	93	360	.60	.62	080.4	70	75			
20		1	92	375	.60	.60	083.4	69	75			
25		1	93	370	.60	.59	086.4	70	76			
30		1	94	365	.60	.62	089.4	70	76			
35		1	95	380	.60	.60	092.5	70	76			
40	13:14.0						095.50					
							VM: 24.00					
			93.13	371.25	.60	0.61			72.06			
AVERAGE												

COMPANY : DESTEC
UNIT : LUBE OIL VENT TURBINE 2
DATE : 2-11-93
REPORT : 027-341

ON-SITE DATA

		RUN	#1	#2	#3
		TIME	16:43	17:29	18:14
Vm	Dry sampled gas volume, dcf		24.35	24.06	24.0
Y	Meter calibration factor (met#_____)		.998954	.998954	.998954
Pbar	Barometric Pressure, "Hg		29.22	29.22	29.22
Pstatic	Stack static pressure, "Hg				
ΔH	Differential meter pressure, "H2O		.60	.59	.60
Tm	Meter temperature, °F		71.5	68.88	67.44

CONTENTS	RUN 1 FINAL	RUN 1 TARE	RUN 1 NET	RUN 2 FINAL	RUN 2 TARE	RUN 2 NET	RUN 3 FINAL	RUN 3 TARE	RUN 3 NET
H2O	628.8	553.0	75.8	667.0	597.4	69.6	645.8	578.7	67.0
H2O	588.8	587.5	1.3	583.8	582.3	1.5	561.5	561.0	.5
KO	530.6	530.2	.4	493.8	493.0	.8	531.0	530.7	.3
Silicagel	805.6	802.1	3.5	811.1	807.0	4.1	809.5	805.9	3.6
		<60.87>				<62.2>			<61.2>
V lc volume of H2O, gms			11.2			13.8			10.2

		RUN	#1	#2	#3
CO2	% Dry Volume				
O2	% Dry Volume				
N2	% Dry Volume				
Cp	Pitot tube coefficient (Pit#_____)				
ΔP	~~Avg P, "H2O~~ FT/MIN		45.25	49.13	47.63
Ts	Stack temperature, °F		83.88	79.25	77.25
As	Stack area, sq. ft.				
Ds	Stack diameter, inches				
Dn	Nozzle diameter, inches				
Dur	Sampling time, min		40	40	40
% Iso	Mini iso				

Filter #
Filter tare weights, gms

INITIALS
CONTROL BOX#:
Hi P_____ Lo P_____ Avg P_____ Duct Temp _____
Diameters before disturb_____ After_____
# of points, total _____
Overall (inches)_____ Coupling _____

METHOD 4 Condense/NC RUN # 1

COMPANY: Deslec "Double C"
UNIT: Lube Oil Vent TURBINE 2
DATE: 2-11-93
REPORT: 027-341
TECH: DCJ/BDM
PUMP #: GAST
METER BOX#: 1003
METER coeff: 1.028 (.998954)
PITOT TUBE#:

PRE / POST TEST LEAK CHECK

LEAK RATE: <.002 / <.002 cfm
VACUUM: 5 / 5 "Hg

AMBIENT TEMP, °F: 60°
Pbar:
STATIC PRESSURE("Hg):
ASSUMED MOISTURE,%:
AVG. CALIB. NOZZLE DIAM("):
PROBE LINER MATERIAL:
FILTER #:
DUCT DIAM ("):

TRAVERSE PT. NUMBER	TIME (e) min.	VACUUM "Hg	STACK TEMP (Ts) °F	VELOCITY HEAD (ΔPs) "H2O (FT/MIN)	PRESSURE DIFFERENTIAL ΔH rate "H2O	ΔH	GAS SAMPLE VOLUME (cu. ft)	GAS SAMPLE TEMP. AT DRY GAS METER INLET, °F	OUTLET, °F	FILTER HOLDER TEMP °F Probe	Box	TEMP OF GAS EXIT CONDENSER OR LAST IMPINGER °F
0	16:43.0	1	87	48	.60	.60	169.30	71	70			
5		1	83	46	.60	.60	172.4	71	71			
10		1	86	44	.60	.60	175.3	71	73			
15		1	85	49	.60	.60	178.3	71	73			
20		1	83	44	.60	.58	181.3	70	74			
25		1	83	45	.60	.59	184.3	70	73			
30		1	83	44	.60	.59	187.3	70	73			
35		1	81	42	.60	.60	190.3	70	73			
40	17:23.0						193.335					
							VM: 24.35		71.50			
			83.88	45.25	.60	.60						
AVERAGE												

METHOD 4 Condense/NC RUN #2

COMPANY: Destec "Double C"
UNIT: Lube Oil Vent TURBINE 2
DATE: 2.11.93
REPORT: 027-341
TECH: DCJ / BDM
PUMP #: GAST
METER BOX#: 1003
METER coeff: 1.028 (.998954)
PITOT TUBE#:

PRE / POST TEST LEAK CHECK

LEAK RATE: <.004 / <.005 cfm
VACUUM: 5 / 5 "Hg

AMBIENT TEMP, °F: 60°
Pbar:
STATIC PRESSURE("Hg):
ASSUMED MOISTURE,%:
AVG. CALIB. NOZZLE DIAM("):
PROBE LINER MATERIAL:
FILTER #:
DUCT DIAM ("):

TRAVERSE PT. NUMBER	TIME (e) min.	VACUUM "Hg	STACK TEMP (Ts) °F	VELOCITY HEAD (ΔPs) "H2O (FT/MIN)	PRESSURE DIFFERENTIAL ΔH rate "H2O	ΔH	GAS SAMPLE VOLUME (cu. ft)	GAS SAMPLE TEMP. AT DRY GAS METER INLET, °F	OUTLET, °F	FILTER HOLDER TEMP °F Probe	Box	TEMP OF GAS EXIT CONDENSER OR LAST IMPINGER °F
0	17:29.0	1	82	52	.60	.60	193.70	68	69			
5		1	81	46	.60	.60	196.8	68	70			
10		1	80	51	.60	.59	199.8	68	71			
15		1	81	48	.60	.58	202.7	67	71			
20		1	78	50	.60	.56	205.7	67	71			
25		1	76	50	.60	.59	208.7	66	71			
30		1	76	49	.60	.59	211.7	67	71			
35		1	80	47	.60	.58	214.7	66	71			
40	18:09.0						217.76					
							VM: 24.06					
			79.25	49.13	.60	.59			68.88			
AVERAGE												

METHOD 4 Condense/N2 RUN # 3

COMPANY: Destec "Double C"
UNIT: Lube Oil Vent TURBINE 2
DATE: 2·11·93
REPORT: 027-341
TECH: DCJ/BDM
PUMP #: GAST
METER BOX#: 1003
METER coeff: 1.028 (.9989511)
PITOT TUBE#:

PRE / POST TEST LEAK CHECK

LEAK RATE: <.003 / <.002 cfm
VACUUM: 5 / 5 "Hg

AMBIENT TEMP, °F: 60°
Pbar:
STATIC PRESSURE("Hg):
ASSUMED MOISTURE, %:
AVG. CALIB. NOZZLE DIAM(''):
PROBE LINER MATERIAL:
FILTER #:
DUCT DIAM (''):

TRAVERSE PT. NUMBER	TIME (θ) min.	VACUUM "Hg	STACK TEMP (Ts) °F	VELOCITY HEAD (ΔPs) "H2O FT/MIN	PRESSURE DIFFERENTIAL ΔH rate "H2O	ΔH	GAS SAMPLE VOLUME (cu. ft)	GAS SAMPLE TEMP. AT DRY GAS METER INLET, °F	OUTLET, °F	FILTER HOLDER TEMP °F Probe	Box	TEMP OF GAS EXIT CONDENSER OR LAST IMPINGER °F
0	18:14.0	1	79	54	.60	.60	218.40	65	68			
5		1	75	48	.60	.64	221.5	66	69			
10		1	77	48	.60	.60	224.5	66	70			
15		1	77	47	.60	.60	227.5	65	70			
20		1	77	45	.60	.59	230.4	65	71			
25		1	77	47	.60	.60	233.4	65	70			
30		1	78	45	.60	.59	236.4	65	70			
35		1	78	47	.60	.59	239.4	64	70			
40	18:54.0						242.40					
							DM: 24.00		67.44			
			77.25	47.63	.60	.60						
AVERAGE												

COMPANY : Destec
UNIT : WBE OILUENT GENERATOR 2
DATE : 2-11-93
REPORT : 087-341

ON-SITE DATA

		RUN	#1	#2	#3
		TIME	13:45	14:33	15:27
Vm	Dry sampled gas volume, dcf		23.99	24.00	24.00
Y	Meter calibration factor (met#____,____,____)		.998954	.998954	.998954
Pbar	Barometric Pressure, "Hg		29.22	29.22	29.22
Pstatic	Stack static pressure, "Hg		—	—	—
ΔH	Differential meter pressure, "H2O		.60	.60	.60
Tm	Meter temperature, °F		67.25	71.63	74.69

	RUN 1			RUN 2			RUN 3		
CONTENTS	FINAL	TARE	NET	FINAL	TARE	NET	FINAL	TARE	NET
H_2O	645.0	585.2	59.8	664.1	617.0	47.1	655.1	606.7	48.4
H_2O	612.1	611.8	.3	587.7	587.3	.4	583.6	583.0	.6
KO	491.2	491.1	.1	476.2	476.0	.2	503.0	502.6	.4
Silica gel	803.0	799.1	3.9	801.8	797.4	4.4	807.3	803.0	4.3
line wash			<57.2>		<45.9>			<47.7>	
V lc volume of H2O, gms			6.9			6.2			6.0

		RUN	#1	#2	#3
CO2	% Dry Volume				
O2	% Dry Volume				
N2	% Dry Volume				
Cp	Pitot tube coefficient (Pit#____,____,____)				
ΔP	~~Avg P, "H2O~~ FT/MIN		351.25	323.13	332.50
Ts	Stack temperature, °F		75.25	71.63	76
As	Stack area, sq. ft.				
Ds	Stack diameter, inches				
Dn	Nozzle diameter, inches		—	—	—
Dur	Sampling time, min		40	40	40
% Iso	Mini iso		—	—	—

Filter #			
Filter tare weights, gms			

INITIALS
CONTROL BOX#:
Hi P_____ Lo P_____ Avg P_____ Duct Temp _____
Diameters before disturb_____ After_____
# of points, total _____
Overall (inches)_____ Coupling _____

METHOD 4 Condense/NC RUN #1

COMPANY: Destec "Double C"
UNIT: Lube Oil Vent GEN 2
DATE: 2·11·93
REPORT: 027-341
TECH: DCT/BDM
PUMP #: GAST
METER BOX#: 1003
METER coeff: 1.028 (.998954)
PITOT TUBE#:

PRE / POST TEST LEAK CHECK

LEAK RATE: <.001 / <.002 cfm
VACUUM: 5 / 5 "Hg

AMBIENT TEMP, °F: 60°
Pbar:
STATIC PRESSURE("Hg):
ASSUMED MOISTURE,%:
AVG. CALIB. NOZZLE DIAM("):
PROBE LINER MATERIAL:
FILTER #:
DUCT DIAM ("):

TRAVERSE PT. NUMBER	TIME (θ) min.	VACUUM "Hg	STACK TEMP (Ts) °F	VELOCITY HEAD (ΔPs) "H2O (FT/MIN)	PRESSURE DIFFERENTIAL ΔH rate "H2O	ΔH	GAS SAMPLE VOLUME (cu. ft)	GAS SAMPLE TEMP. AT DRY GAS METER INLET, °F	OUTLET, °F	FILTER HOLDER TEMP °F Probe	Box	TEMP OF GAS EXIT CONDENSER OR LAST IMPINGER °F
0	13:45.0	1	76	335	.60	.60	095.80	68	64			
5		1	75	335	.60	.61	098.8	67	67			
10		1	77	360	.60	.59	101.9	66	67			
15		1	77	350	.60	.59	104.9	65	68			
20		1	80	350	.60	.58	107.9	64	70			
25		1	81	360	.60	.60	110.8	65	71			
30		1	81	365	.60	.61	113.7	65	71			
35		1	79	355	.60	.60	116.8	66	72			
40	14:25.0						119.790					
							Vm: 23.99					
			78.25	351.25	.60	0.60			67.25			
AVERAGE												

METHOD 11 Condense/NC RUN # 2

COMPANY: Destec "Double C"
UNIT: Lube Oil Vent GEN 2
DATE: 2-11-93
REPORT: 027-341
TECH: DD/BDM
PUMP #: CAST
METER BOX#: 1003
METER coeff: 1.028 (.998954)
PITOT TUBE#:

PRE / POST TEST LEAK CHECK

LEAK RATE: <.003 / <.002 cfm
VACUUM: 5 / 5 "Hg

AMBIENT TEMP, °F: 60°
Pbar:
STATIC PRESSURE("Hg):
ASSUMED MOISTURE,%:
AVG. CALIB. NOZZLE DIAM("):
PROBE LINER MATERIAL:
FILTER #:
DUCT DIAM ("):

TRAVERSE PT. NUMBER	TIME (e) min.	VACUUM "Hg	STACK TEMP (Ts) °F	VELOCITY HEAD (ΔPs) "H2O (FT/MIN)	PRESSURE DIFFERENTIAL ΔH rate "H2O	ΔH	GAS SAMPLE VOLUME (cu. ft)	GAS SAMPLE TEMP. AT DRY GAS METER INLET, °F	OUTLET, °F	FILTER HOLDER TEMP °F Probe	Box	TEMP OF GAS EXIT CONDENSER OR LAST IMPINGER °F
0	14:33.0	1	78	330	.60	.60	120.40	67	69			
5		1	77	325	.60	.60	123.4	67	71			
10		1	76	325	.60	.60	126.4	67	74			
15		1	76	325	.60	.60	129.4	68	77			
20		1	76	335	.60	.60	132.4	69	75			
25		1	73	320	.60	.60	135.4	69	77			
30		1	75	310	.60	.60	138.4	69	78			
35		1	76	315	.60	.60	141.4	71	78			
40	15:13.0						144.40					
							Vm: 24.00					
			75.88	323.13	.60	.60			71.63			
AVERAGE												

METHOD 4 Condense/NC RUN #3

COMPANY: Destec "Double C"
UNIT: Lube Oil Vent GEN 2
DATE: 2·11·93
REPORT: 027-341
TECH: DCT / BDM
PUMP #: GAST
METER BOX#: 1003
METER coeff: 1.028 (.998954)
PITOT TUBE#:

PRE / POST TEST LEAK CHECK

LEAK RATE: <.001 / <.001 cfm
VACUUM: 5 / 5 "Hg

AMBIENT TEMP, °F: 60°
Pbar:
STATIC PRESSURE("Hg):
ASSUMED MOISTURE,%:
AVG. CALIB. NOZZLE DIAM("):
PROBE LINER MATERIAL:
FILTER #:
DUCT DIAM ("):

TRAVERSE PT. NUMBER	TIME (e) min.	VACUUM "Hg	STACK TEMP (Ts) °F	VELOCITY HEAD (ΔPs) "H2O FT/MIN	PRESSURE DIFFERENTIAL ΔH rate "H2O	ΔH	GAS SAMPLE VOLUME (cu. ft)	GAS SAMPLE TEMP. AT DRY GAS METER INLET, °F	OUTLET, °F	FILTER HOLDER TEMP °F Probe	Box	TEMP OF GAS EXIT CONDENSER OR LAST IMPINGER °F
0	16:27.0	1	74	370	.60	.60	144.80	71	73			
5		1	78	335	.60	.60	147.8	71	76			
10		1	76	325	.60	.60	150.8	71	78			
15		1	76	350	.60	.61	153.8	73	78			
20		1	75	325	.60	.60	156.8	72	78			
25		1	76	320	.60	.60	159.8	73	79			
30		1	77	315	.60	.60	162.8	73	78			
35		1	76	320	.60	.60	165.8	74	77			
40	16:07.0						168.8					
							VM: 24.00					
			76	332.50	.60	.60			74.69			
AVERAGE												

LABORATORY ANALYSIS
EPA METHOD 5 - ORGANIC ANALYSIS

COMPANY: Destec

REPORT: 027-341

LOCATION/UNIT: Turbine #1
Lube Oil Vent GENERATOR 1

DATE TESTED: 2/11/93

ANALYST: DGS

SAMPLE # 1 aliquot - 232 ml

TIN # 8			
# 1	# 2	# 3	AVERAGE
final (g) 1.59013	final (g) 1.59012	final (g)	1.59013
tare (g) 1.58613	tare (g)	tare (g)	1.58613
NET (g)	NET (g)	NET (g)	0.00400

SAMPLE # 2 aliquot - 232 ml

TIN # 10	#5- 1.61134	#4- 1.61135	
# 1	# 2	# 3	AVERAGE
final (g) 1.61227	final (g) 1.61195	final (g) 1.61182	1.61135
tare (g) 1.57336	tare (g)	tare (g)	1.57336
NET (g)	NET (g)	NET (g)	0.03799

SAMPLE # 3 aliquot - 248 ml

TIN # 9			
# 1	# 2	# 3	AVERAGE
final (g) 1.58301	final (g) 1.58309	final (g) 1.58305	1.58303
tare (g) 1.57673	tare (g)	tare (g)	1.57673
NET (g)	NET (g)	NET (g)	0.00630

SAMPLE # aliquot -

TIN #			
# 1	# 2	# 3	AVERAGE
final (g)	final (g)	final (g)	
tare (g)	tare (g)	tare (g)	
NET (g)	NET (g)	NET (g)	

LABORATORY ANALYSIS
EPA METHOD 5 - ORGANIC ANALYSIS

COMPANY: Destec

PROJECT: 027-341

LOCATION/UNIT: Lube Oil Vent Turbine 1

DATE TESTED: 2/24/93

ANALYST: DGS

SAMPLE # 1

ALIQUOT - 234 ml

TIN # 7	#1	#2	#3	AVERAGE
FINAL (g)	1.63177	1.63177		1.63177
TARE (g)	1.60481			1.60481
NET (g)				0.02696

SAMPLE # 2

ALIQUOT - 236 ml

TIN # 4	#1	#2	#3	AVERAGE
FINAL (g)	1.62365	1.62365		1.62365
TARE (g)	1.58189			1.58189
NET (g)				0.04176

SAMPLE # 3

ALIQUOT - 232 ml

TIN # 8	#1	#2	#3	AVERAGE
FINAL (g)	1.62465	1.62463		1.62464
TARE (g)	1.59157			1.59157
NET (g)				0.03307

LABORATORY ANALYSIS
EPA METHOD 5 - ORGANIC ANALYSIS

COMPANY: Destec

REPORT: 027-341

LOCATION/UNIT: Turbine #2
Lube Oil Vent Generator 2

DATE TESTED: 2/11/93

ANALYST: DGS

SAMPLE # 1 aliquot - 246 ml

TIN # 11			
# 1	# 2	# 3	AVERAGE
final (g) 1.61393	final (g) 1.59456	final (g) 1.59455	1.59456
tare (g) 1.58459	tare (g)	tare (g)	1.58459
NET (g)	NET (g)	NET (g)	0.00997

SAMPLE # 2 aliquot - 250 ml

TIN # 6			
# 1	# 2	# 3	AVERAGE
final (g) 1.62140	final (g) 1.62137	final (g)	1.62139
tare (g) 1.59795	tare (g)	tare (g)	1.59795
NET (g)	NET (g)	NET (g)	0.02344

SAMPLE # 3 aliquot - 241 ml

TIN # 2			
# 1	# 2	# 3	AVERAGE
final (g) 1.58898	final (g) 1.58900	final (g)	1.58899
tare (g) 1.57855	tare (g)	tare (g)	1.57855
NET (g)	NET (g)	NET (g)	0.01044

SAMPLE # aliquot -

TIN #			
# 1	# 2	# 3	AVERAGE
final (g)	final (g)	final (g)	
tare (g)	tare (g)	tare (g)	
NET (g)	NET (g)	NET (g)	

LABORATORY ANALYSIS
EPA METHOD 5 - ORGANIC ANALYSIS

COMPANY: Destec

REPORT: 027-341

LOCATION/UNIT: Turbine #2
Lube Oil Vent Turbine 2

DATE TESTED: 2/11/93

ANALYST: DGS

SAMPLE # 1 aliquot - 240 ml

TIN # 3			
# 1	# 2	# 3	AVERAGE
final (g) 1.63897	final (g) 1.63893	final (g)	1.63895
tare (g) 1.61552	tare (g)	tare (g)	1.61552
NET (g)	NET (g)	NET (g)	0.02343

SAMPLE # 2 aliquot - 240 ml

TIN # 5			
# 1	# 2	# 3	AVERAGE
final (g) 1.61439	final (g) 1.61435	final (g)	1.61437
tare (g) 1.59303	tare (g)	tare (g)	1.59303
NET (g)	NET (g)	NET (g)	0.02134

SAMPLE # 3 aliquot - 239 ml

TIN # 7			
# 1	# 2	# 3	AVERAGE
final (g) 1.64205	final (g) 1.64204	final (g)	1.64205
tare (g) 1.61679	tare (g)	tare (g)	1.61679
NET (g)	NET (g)	NET (g)	0.02526

SAMPLE # aliquot -

TIN #			
# 1	# 2	# 3	AVERAGE
final (g)	final (g)	final (g)	
tare (g)	tare (g)	tare (g)	
NET (g)	NET (g)	NET (g)	

PETRO
CHEM
ENVIRONMENTAL
SERVICES, INC.

3207 Antonino Avenue
Bakersfield, California 93308
(805) 327-7300
FAX (805) 327-3459

COMPANY	: DESTEC OPERATING	DATE RECEIVED :	2-12-93
DATE	: 2-11-93	DATE ANALYZED :	2-12-93
REPORT	: 027-341	DATE REPORTED:	2-16-93

EPA METHOD 18
HYDROCARBON ANALYSIS REPORT

UNIT : TURBINE # 1

CONSTITUENT	RUN # 1 ppm(v/v)	RUN # 2 ppm(v/v)	RUN # 3 ppm(v/v)
METHANE	67.86	67.20	66.06
ETHANE	2.63	2.66	2.60
PROPANE	0.12	0.08	0.05
BUTANE	ND	ND	ND
PENTANE	ND	ND	ND
HEXANES+	0.09	0.09	0.10
TOTAL	70.70	70.03	68.82
NON-METHANE	2.84	2.83	2.76

UNIT : TURBINE # 2

CONSTITUENT	RUN # 1 ppm(v/v)	RUN # 2 ppm(v/v)	RUN # 3 ppm(v/v)
METHANE	79.47	80.15	76.22
ETHANE	3.22	3.11	3.06
PROPANE	0.15	0.16	0.15
BUTANE	ND	ND	ND
PENTANE	ND	ND	ND
HEXANES+	0.13	0.13	0.14
TOTAL	82.97	83.55	79.57
NON-METHANE	3.50	3.39	3.35

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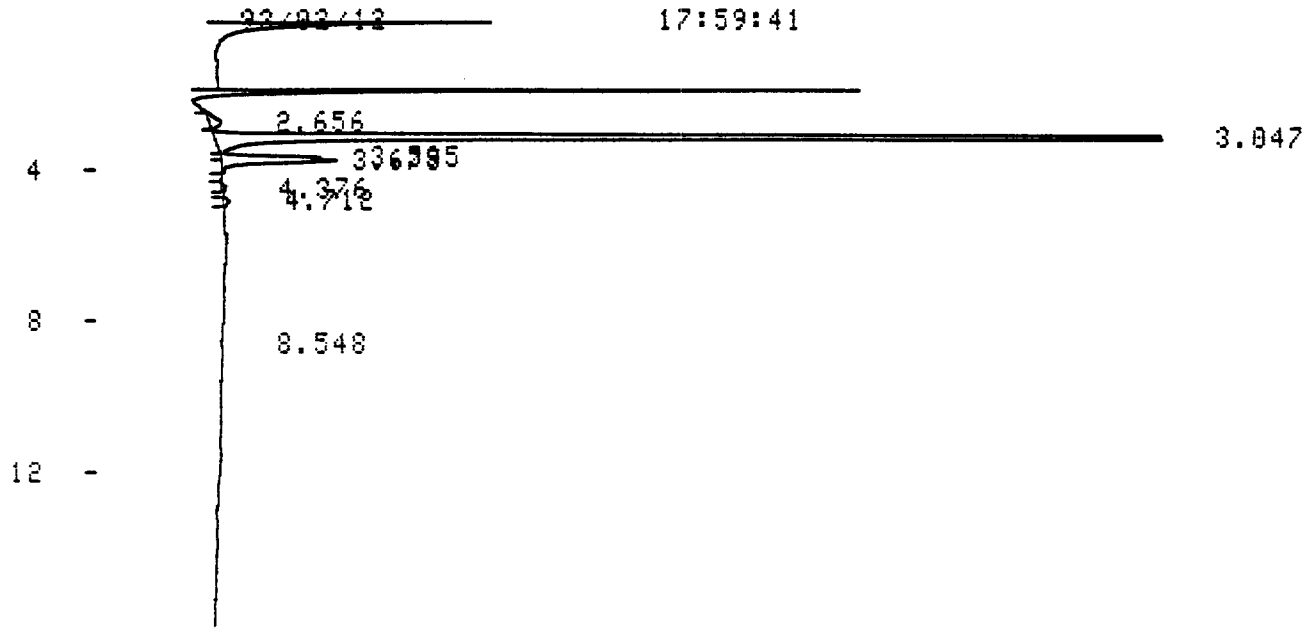
COMPANY	: DESTEC OPERATING	DATE RECEIVED :	2-12-93
DATE	: 2-11-93	DATE ANALYZED :	2-12-93
REPORT	: 027-341	DATE REPORTED:	2-16-93

EPA METHOD 18
HYDROCARBON ANALYSIS REPORT

UNIT : HYDROCARBON SAMPLE BLANK

CONSTITUENT	ppm(v/v)
METHANE	0.29
ETHANE	0.00
PROPANE	0.04
BUTANE	0.04
PENTANE	0.12
HEXANES+	0.94
TOTAL	1.43
NON-METHANE	1.14

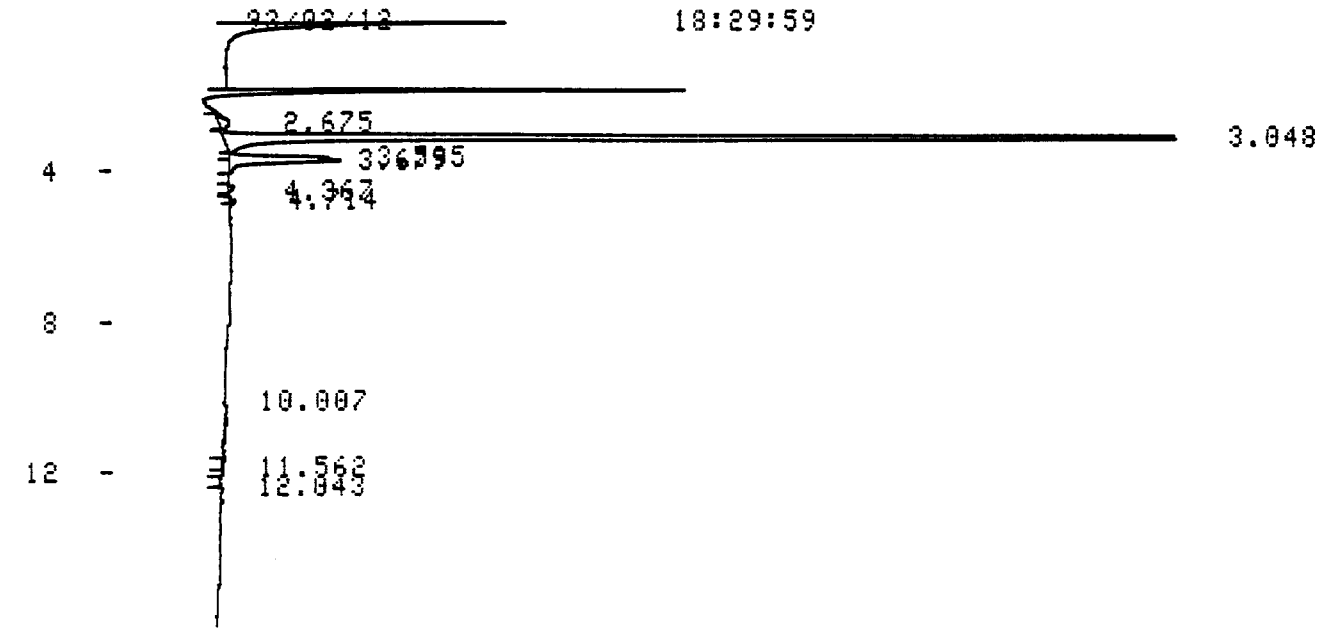
DESTEC DOUBLE "C"
2-11-93 REPORT # 027-341
NORTH TURBINE # 1
HC SAMPLE # 1



CHROMATOGRAM 10 MEMORIZED

PKNO	TIME	AREA	MK	IDNO	CONC	NAME
1	2.656	984		6		C-6+
2	3.047	119831		1		C-1
3	3.595	3776		2	> 9194	C-2
4	3.678	5418	V	2		C-2
5	4.376	340		8	> 599	C-3
6	4.712	259		3		C-3
	TOTAL	130608			0	

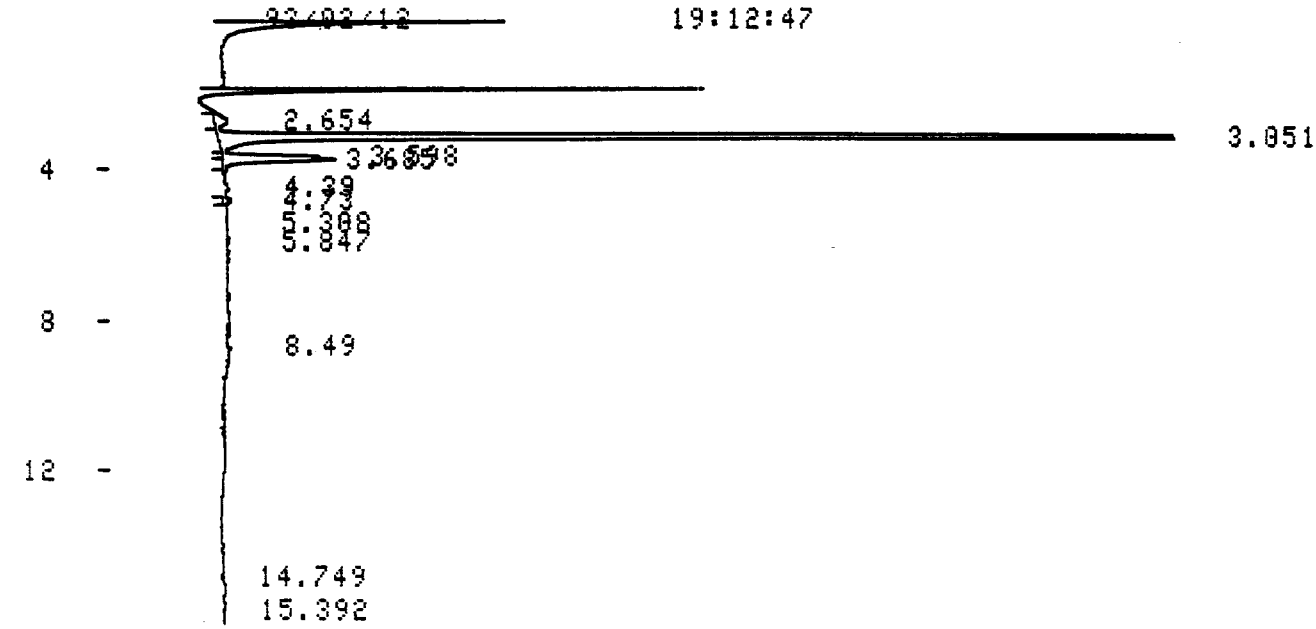
DESTEC DOUBLE "C"
2-11-93 REPORT # 027-341
NORTH TURBINE # 1
HC SAMPLE # 2



CHROMATOGRAM 11 MEMORIZED

PKNO	TIME	AREA	MK	IDNO	CONC	NAME
1	2.675	972		6		C-6+
2	3.048	118671		1		C-1
3	3.595	3787		2	> 9270	C-2
4	3.679	5483	V	2		C-2
5	4.367	309		8	> 419	C-3
6	4.714	110		3		C-3
7	11.562	157		14		~~C-5~~ Baseline noise
8	12.043	132		17		~~C-5~~
	TOTAL	129619			0	

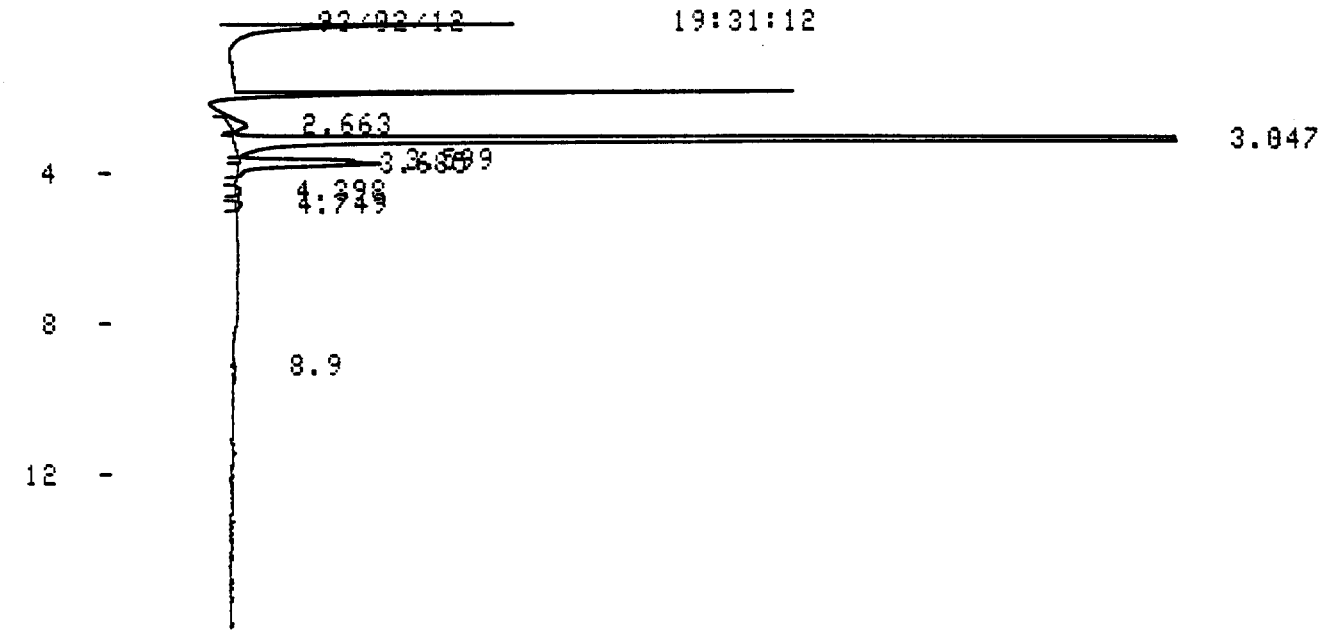
DESTEC, DOUBLE "C"
2-11-93 REPORT # 027-341
NORTH TURBINE # 1
HC SAMPLE # 3



CHROMATOGRAM 13 MEMORIZED

PKNO	TIME	AREA	MK	IDNO	CONC	NAME
1	2.654	1119		6		C-6+
2	3.051	116661		1		C-1
3	3.598	3598		2	> 9089	C-2
4	3.685	5491	V	2		C-2
5	4.73	272		3		C-3
	TOTAL	127141			0	

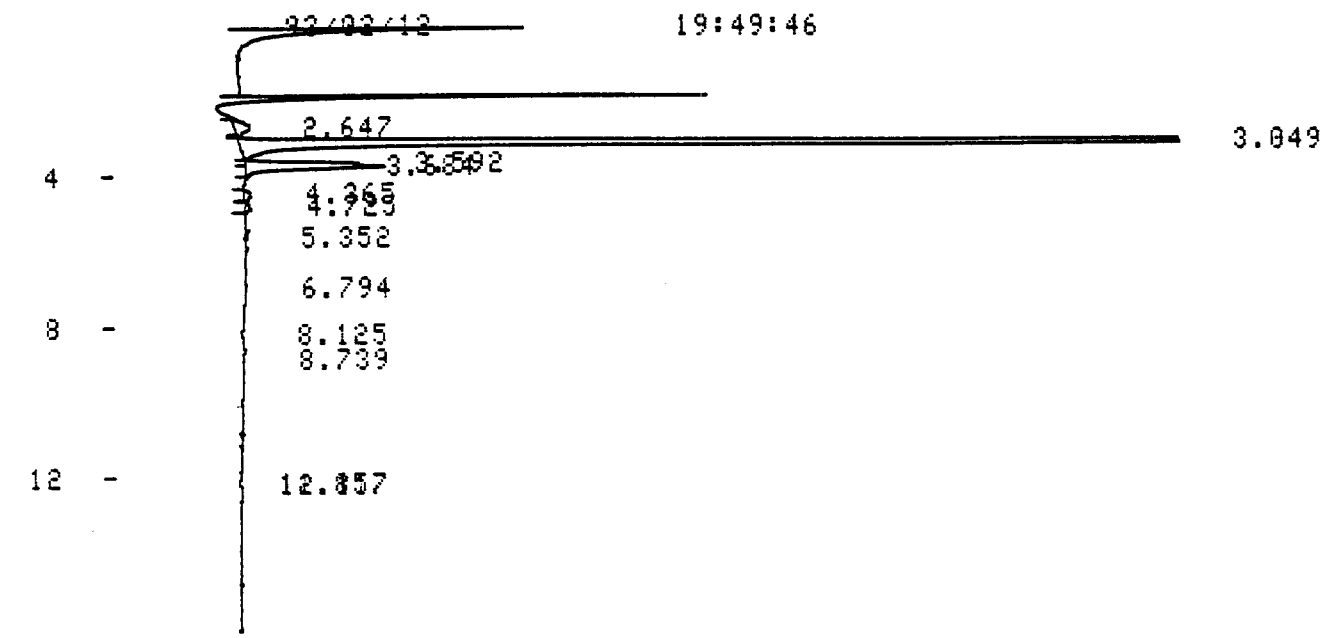
DESTEC DOUBLE "C"
2-11-93 REPORT # 027-341
TURBINE # 2
HC SAMPLE # 1



CHROMATOGRAM 14 MEMORIZED

PKNO	TIME	AREA	MK	IDNO	CONC	NAME
1	2.663	1400		6		C-6+
2	3.047	140332		1		C-1
3	3.599	4265		2	> 11256	C-2
4	3.685	6991	V	2		C-2
5	4.398	461		8	> 760	C-3
6	4.749	299		3		C-3
	TOTAL	153748			0	

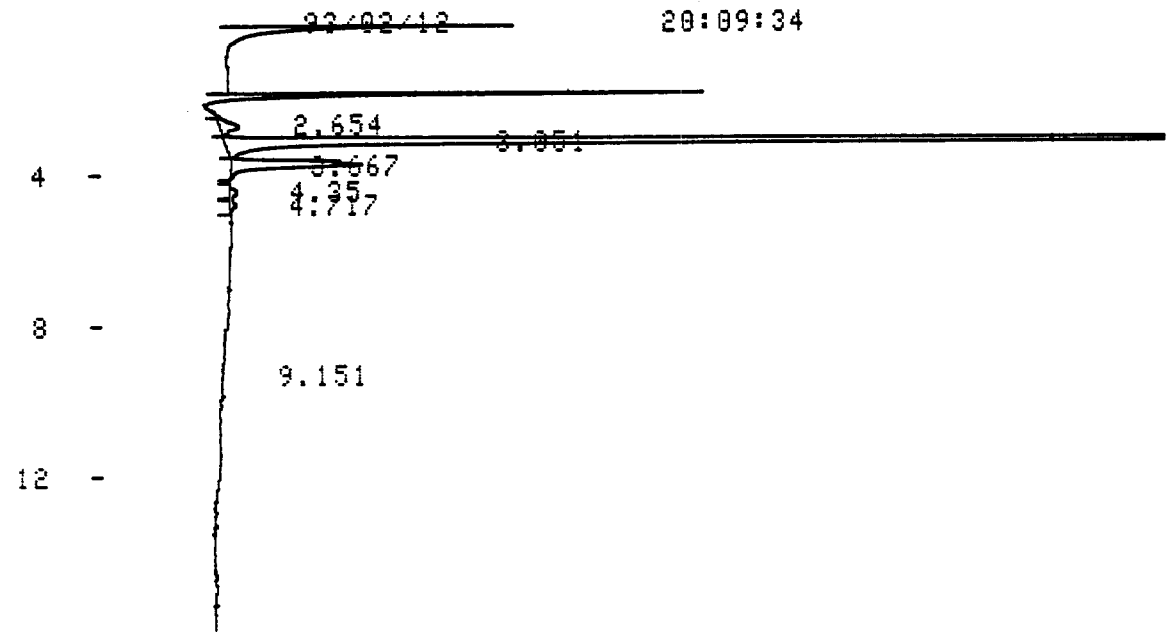
DESTEC DOUBLE "C"
2-11-93 REPORT # 027-341
TURBINE # 2
HC SAMPLE # 2



CHROMATOGRAM 15 MEMORIZED

PKNO	TIME	AREA	MK	IDNO	CONC	NAME
1	2.647	1416		6		C-6+
2	3.049	141540		1		C-1
3	3.592	4119		2	> 10845	C-2
4	3.684	6726	V	2		C-2
5	4.365	428		8	> 809	C-3
6	4.725	381		3		C-3
	TOTAL	154610			0	

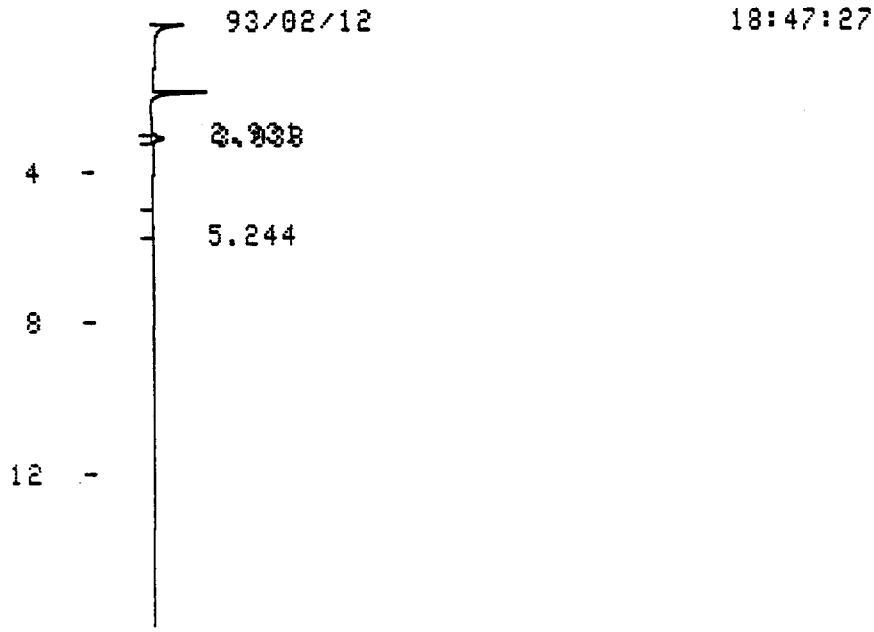
DESTEC DOUBLE "C"
2-11-93 REPORT # 027-341
TURBINE # 2
HC SAMPLE # 3



CHROMATOGRAM 16 MEMORIZED

PKNO	TIME	AREA	MK	IDNO	CONC	NAME
1	2.654	1511		6		C-6+
2	3.051	134599		1		C-1
3	3.667	10670		2		C-2
4	4.35	480		8	> 786	C-3
5	4.717	306		3		C-3
	TOTAL	147566			0	

DESTEC DOUBLE "C"
2-11-93 REPORT # 027-341
LUBE OIL VENT GENERATOR 1
HC SAMPLE # 1

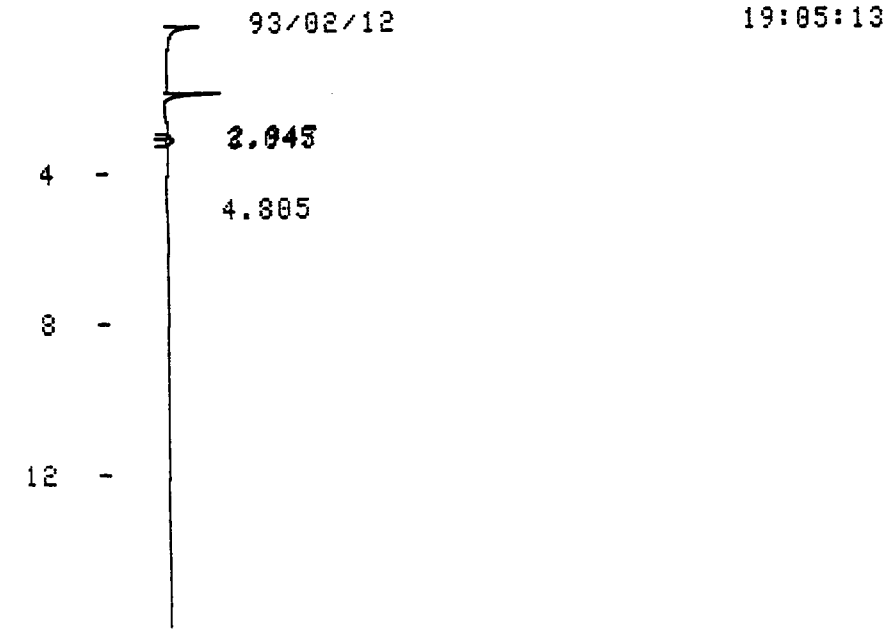


CHROMATOGRAM 10 MEMORIZED

PKNO	TIME	AREA	MK	IDNO	CONC	NAME
1	3.038	476	V	1	2.6457	C-1
2	5.244	438				
	TOTAL	913			2.6457	

GROUP(NAME)	CONC
C-1	2.6457
C-2	0
C-3	0
C-4	0
C-5	0
C-6+	0

DESTEC DOUBLE "C"
2-11-93 REPORT # 027-341
LUBE OIL VENT GENERATOR 1
HC SAMPLE # 2



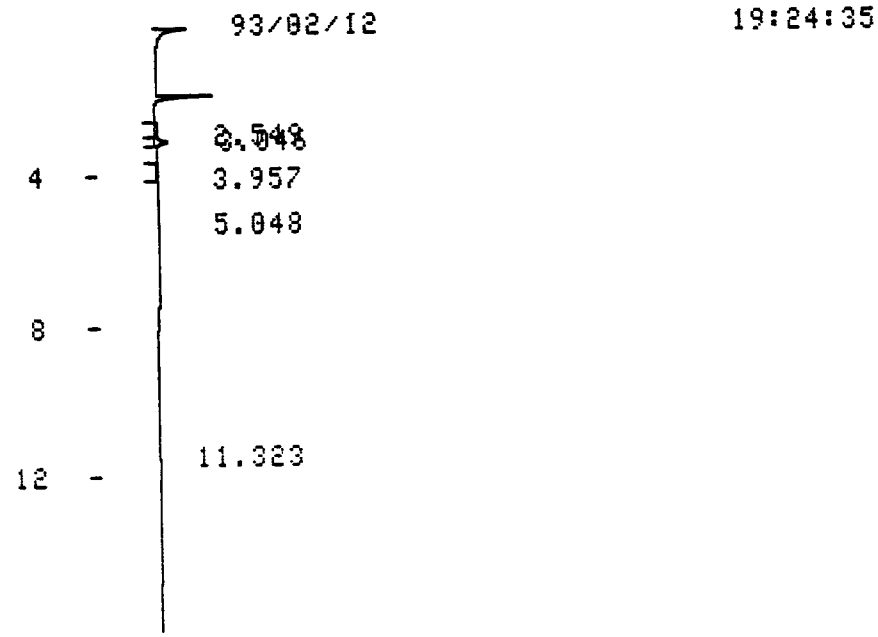
CHROMATOGRAM 11 MEMORIZED

PKNO	TIME	AREA	MK	IDNO	CONC	NAME
1	2.947	115		1	0.6376	C-1
2	3.045	326	V	1	1.8132	C-1
	TOTAL	441			2.4508	

GROUP(NAME)	CONC
C-1	2.4508
C-2	0
C-3	0
C-4	0
C-5	0
C-6+	0

DESTEC DOUBLE "C"
2-11-93 REPORT # 027-341
LUBE OIL VENT GENERATOR 1
HC SAMPLE # 3

93/02/12 19:24:35



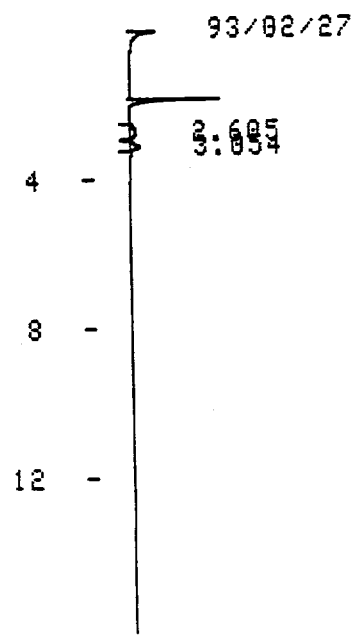
CHROMATOGRAM 12 MEMORIZED

PKNO	TIME	AREA	MK	IDNO	CONC	NAME
1	2.549	222				
2	3.046	508		1	2.8258	C-1
3	3.957	306		7	0.8506	C-2
	TOTAL	1036			3.6764	

GROUP(NAME)	CONC
C-1	2.8258
C-2	0.8506
C-3	0
C-4	0
C-5	0
C-6+	0

DESTEC DOUBLE "C"
2-26-93 REPORT # 027-341
LUBE OIL VENT TURBINE 1
HC SAMPLE # 1

93/02/27 15:36:32

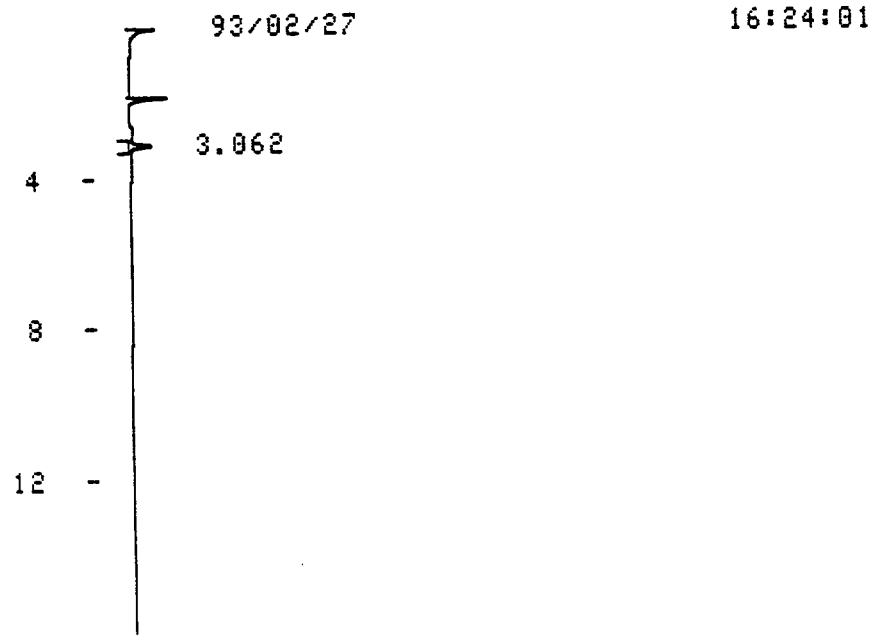


CHROMATOGRAM 10 MEMORIZED

PKNO	TIME	AREA	MK	IDNO	CONC	NAME
1	2.605	467		6	0.444	C-6+
2	3.054	544		1	3.1271	C-1
	TOTAL	1011			3.5711	

GROUP(NAME)	CONC
C-1	3.1271
C-2	0
C-3	0
C-4	0
C-5	0
C-6+	0.444

DESTEC DOUBLE "C"
2-26-93 REPORT # 027-341
LUBE OIL VENT TURBINE 1
HC SAMPLE # 2

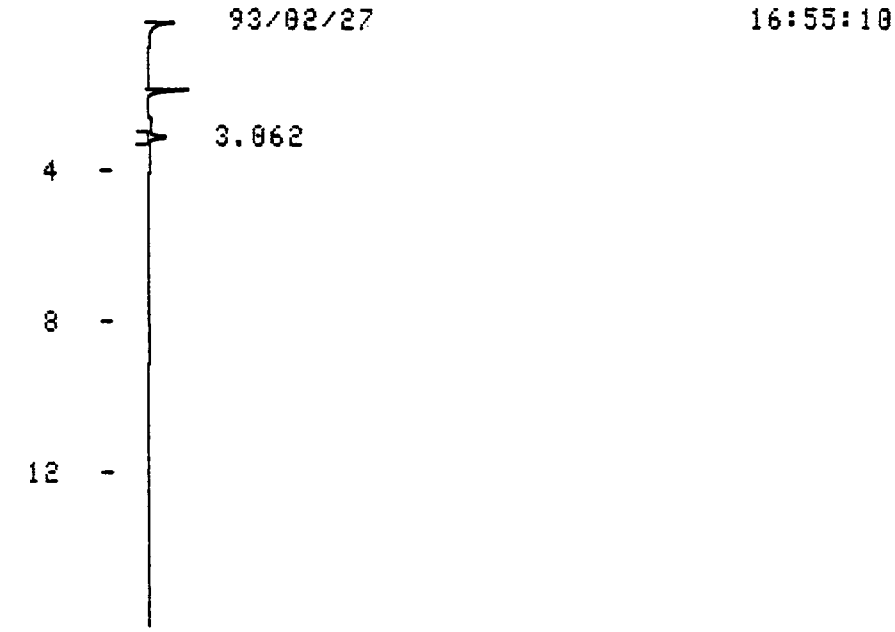


CHROMATOGRAM 11 MEMORIZED

PKNO	TIME	AREA	MK	IDNO	CONC	NAME
1	3.062	994		1	5.7082	C-1
	TOTAL	994			5.7082	

GROUP(NAME)	CONC
C-1	5.7082
C-2	0
C-3	0
C-4	0
C-5	0
C-6+	0

DESTEC DOUBLE "C"
2-26-93 REPORT # 027-341
LUBE OIL VENT TURBINE 1
HC SAMPLE # 3

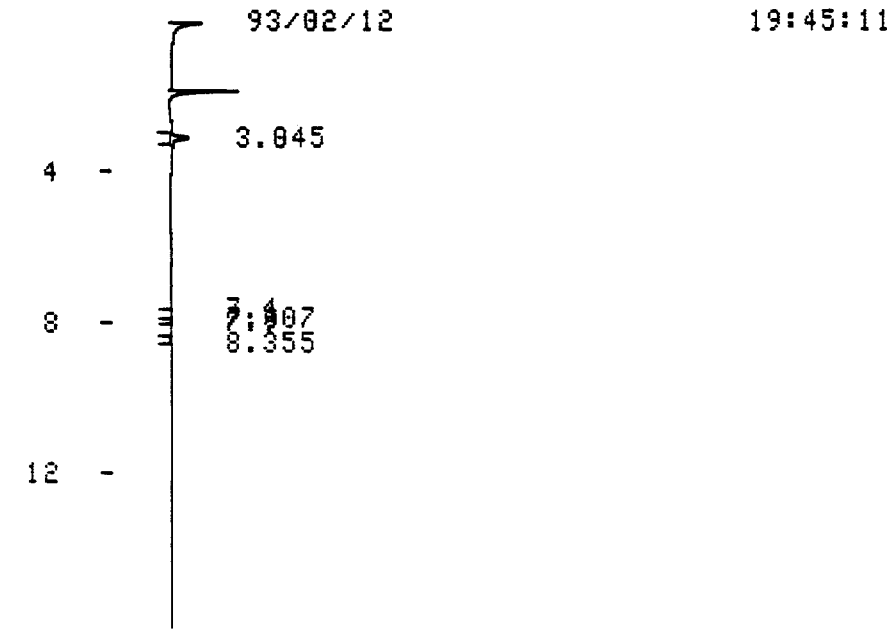


CHROMATOGRAM 12 MEMORIZED

PKNO	TIME	AREA	MK	IDNO	CONC	NAME
1	3.062	851		1	4.887	C-1
	TOTAL	851			4.887	

GROUP(NAME)	CONC
C-1	4.887
C-2	0
C-3	0
C-4	0
C-5	0
C-6+	0

DESTEC DOUBLE "C"
2-11-93 REPORT # 027-341
LUBE OIL VENT GENERATOR 2
HC SAMPLE # 1

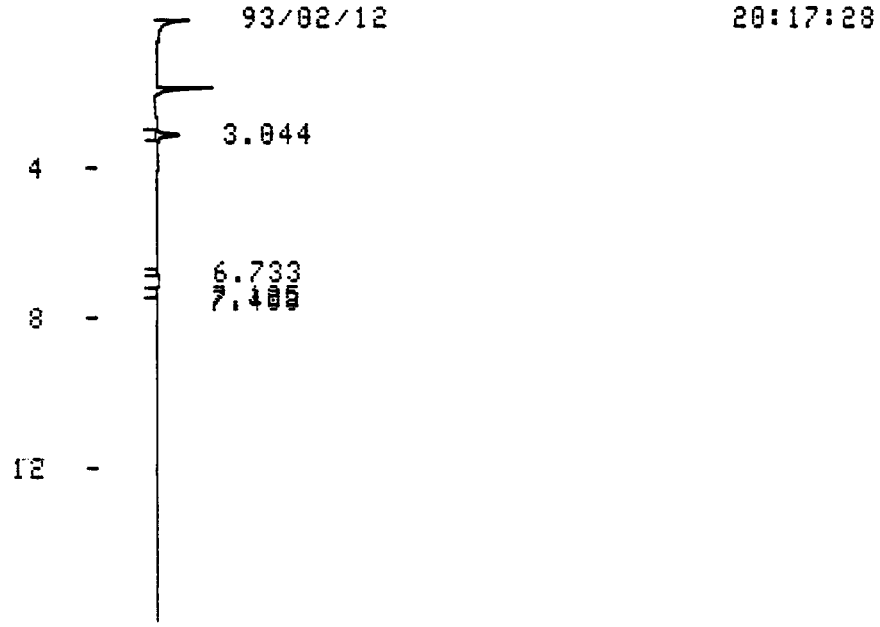


CHROMATOGRAM 13 MEMORIZED

PKNO	TIME	AREA	MK	IDNO	CONC	NAME
1	3.045	810		1	4.5039	C-1
2	7.607	64				
3	7.9	52				
4	8.355	81				
	TOTAL	1006			4.5039	

GROUP(NAME)	CONC
C-1	4.5039
C-2	0
C-3	0
C-4	0
C-5	0
C-6+	0

DESTEC DOUBLE "C"
2-11-93 REPORT # 027-341
LUBE OIL VENT GENERATOR 2
HC SAMPLE # 2



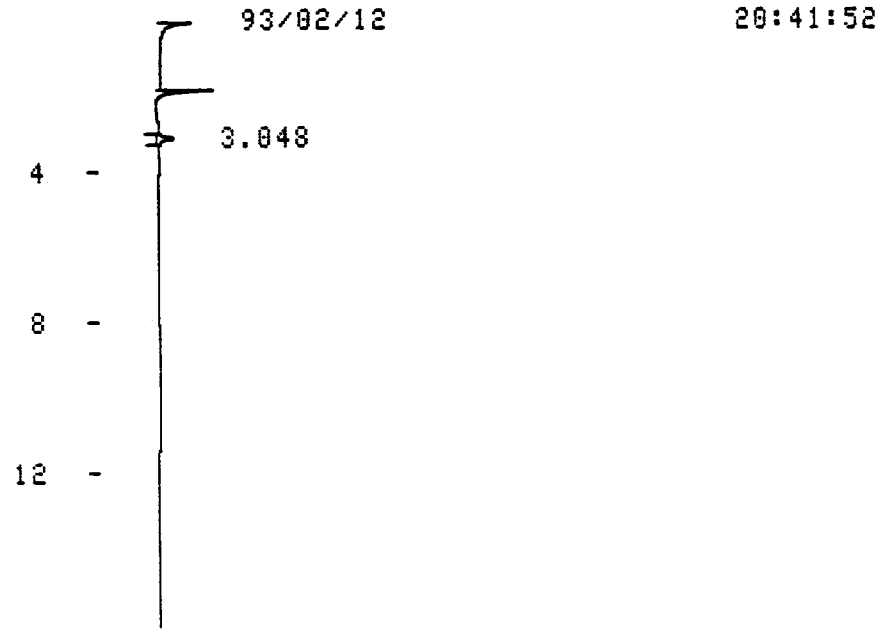
CHROMATOGRAM 14 MEMORIZED

PKNO	TIME	AREA	MK	IDNO	CONC	NAME
1	3.044	1044		1	5.809	C-1
2	6.733	70		10	0.0992	C-4
3	7.125	63		4	0.0884	C-4
	TOTAL	1177			5.9966	

GROUP(NAME)	CONC
C-1	5.809
C-2	0
C-3	0
C-4	0.1876
C-5	0
C-6+	0

DESTEC DOUBLE "C"
2-11-93 REPORT # 027-341
LUBE OIL VENT GENERATOR 2
HC SAMPLE # 3

93/02/12 20:41:52

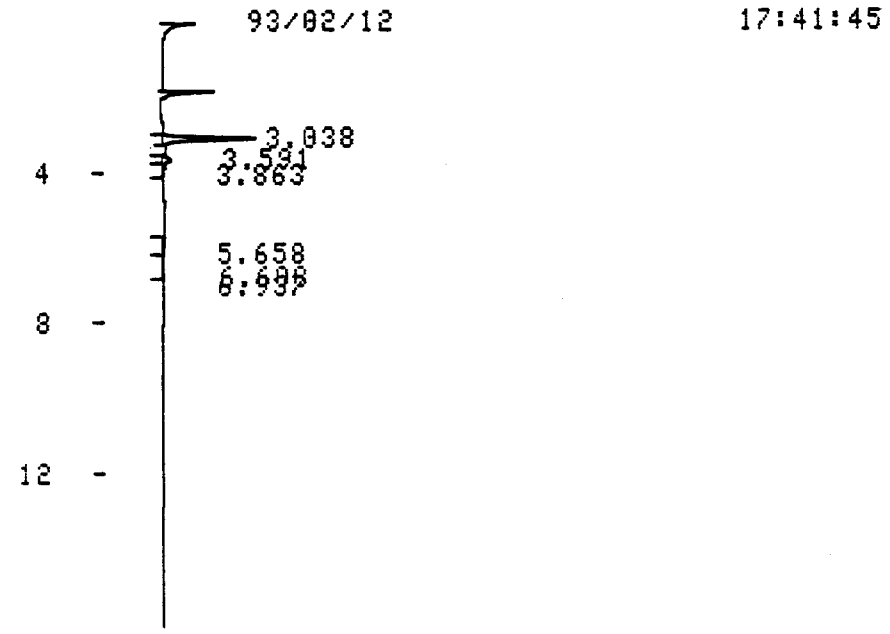


CHROMATOGRAM 15 MEMORIZED

PKNO	TIME	AREA	MK	IDNO	CONC	NAME
1	3.048	812		1	4.5156	C-1
	TOTAL	812			4.5156	

GROUP(NAME)	CONC
C-1	4.5156
C-2	0
C-3	0
C-4	0
C-5	0
C-6+	0

DESTEC DOUBLE "C"
2-11-93 REPORT # 027-341
LUBE OIL VENT TURBINE 2
HC SAMPLE # 1

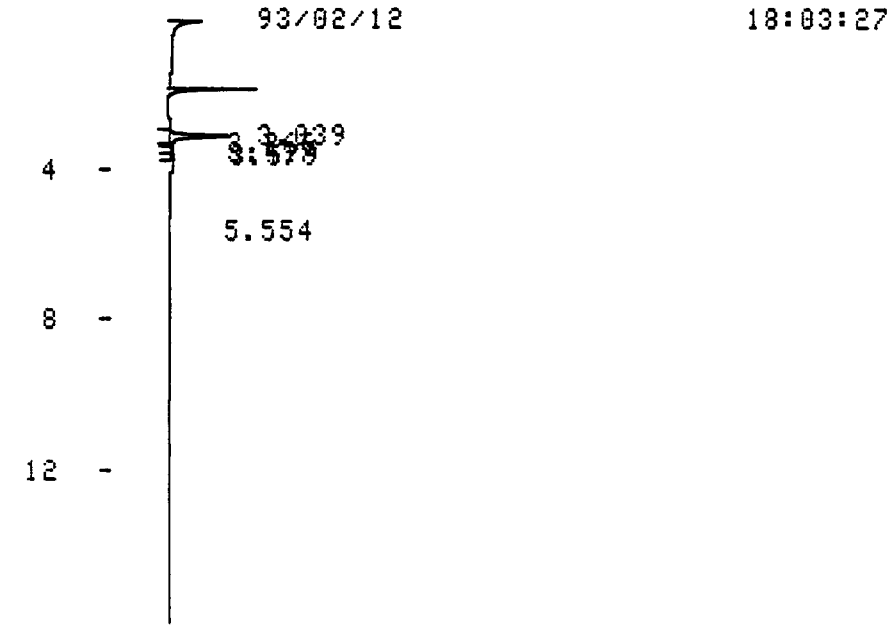


CHROMATOGRAM 7 MEMORIZED

PKNO	TIME	AREA	MK	IDNO	CONC	NAME
1	3.038	3933		1	21.8808	C-1
2	3.591	367		2	1.0196	C-2
3	3.863	125	V	7	0.3463	C-2
4	5.658	182		9	0.2576	C-4
5	6.608	232		10	0.3281	C-4
	TOTAL	4840			23.8324	

GROUP(NAME)	CONC
C-1	21.8808
C-2	1.366
C-3	0
C-4	0.5857
C-5	0
C-6+	0

DESTEC DOUBLE "C"
2-11-93 REPORT # 027-341
LUBE OIL VENT TURBINE 2
HC SAMPLE # 2

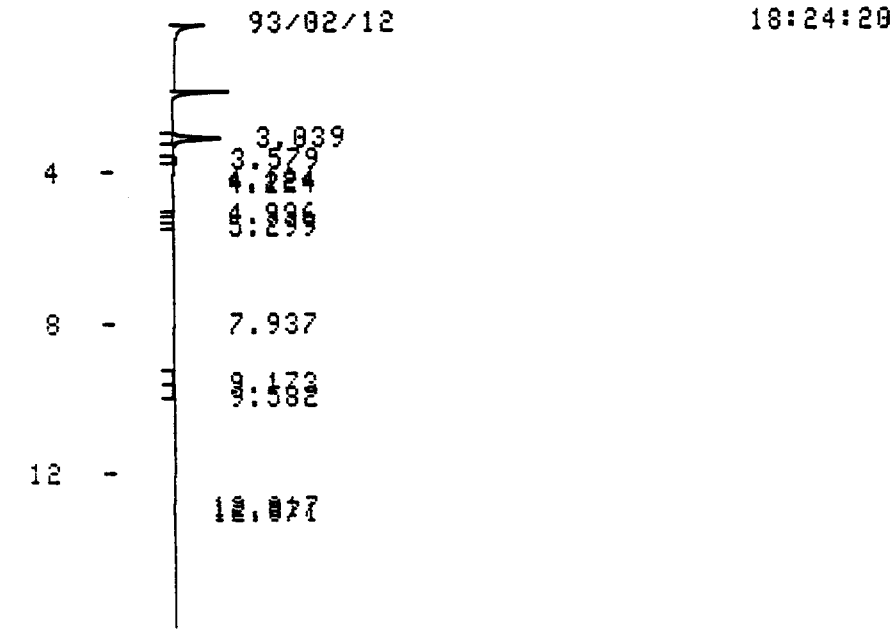


CHROMATOGRAM 8 MEMORIZED

PKNO	TIME	AREA	MK	IDNO	CONC	NAME
1	3.039	2634		1	14.6535	C-1
2	3.417	70	V			
3	3.579	205		2	0.5704	C-2
	TOTAL	2909			15.2239	

GROUP(NAME)	CONC
C-1	14.6535
C-2	0.5704
C-3	0
C-4	0
C-5	0
C-6+	0

DESTEC DOUBLE "C"
2-11-93 REPORT # 027-341
LUBE OIL VENT TURBINE 2
HC SAMPLE # 3

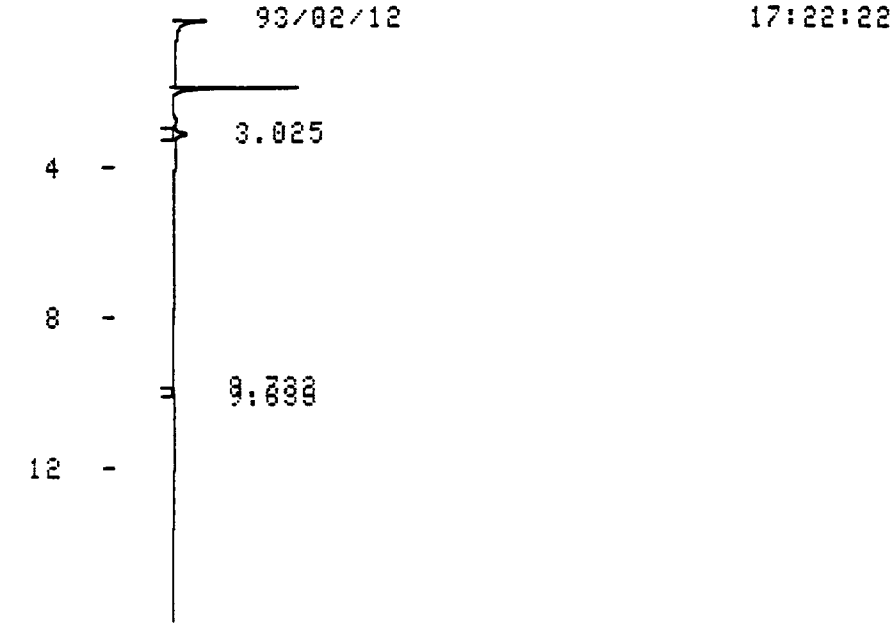


CHROMATOGRAM 9 MEMORIZED

PKNO	TIME	AREA	MK	IDNO	CONC	NAME
1	3.039	2041		1	11.3515	C-1
2	3.579	133		2	0.369	C-2
3	4.996	57				
4	5.299	80				
5	9.173	96				
6	9.582	105				
	TOTAL	2511			11.7206	

GROUP(NAME)	CONC
C-1	11.3515
C-2	0.369
C-3	0
C-4	0
C-5	0
C-6+	0

DESTEC DOUBLE "C"
2-11-93 REPORT # 027-341
LUBE OIL VENT
HC SAMPLE BLANK

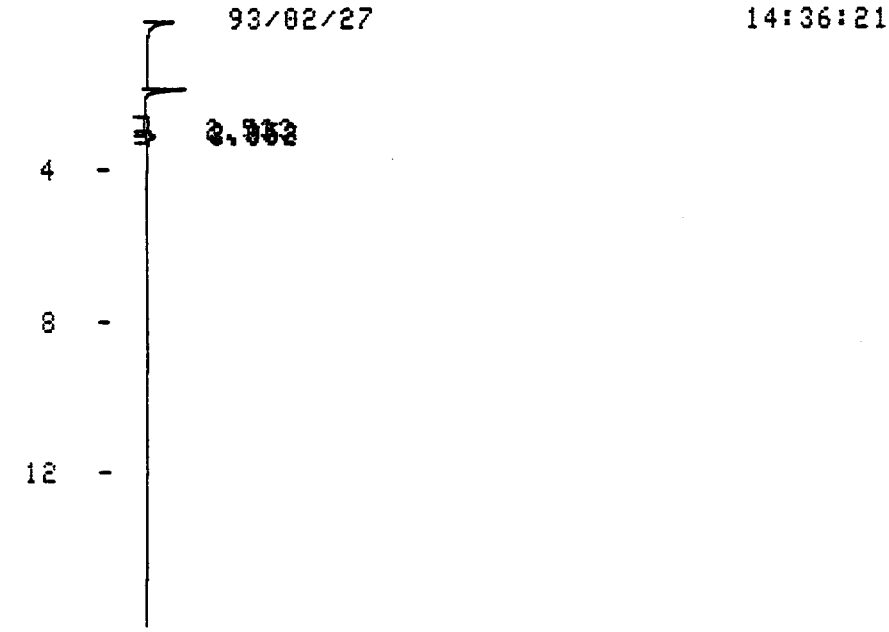


CHROMATOGRAM 6 MEMORIZED

PKNO	TIME	AREA	MK	IDNO	CONC	NAME
1	3.025	689		1	3.8316	C-1
2	9.833	70				
	TOTAL	759			3.8316	

GROUP(NAME)	CONC
C-1	3.8316
C-2	0
C-3	0
C-4	0
C-5	0
C-6+	0

DESTEC DOUBLE "C"
2-26-93 REPORT # 027-341
LUBE OIL VENT # 1 TURBINE
HC SAMPLE BLANK

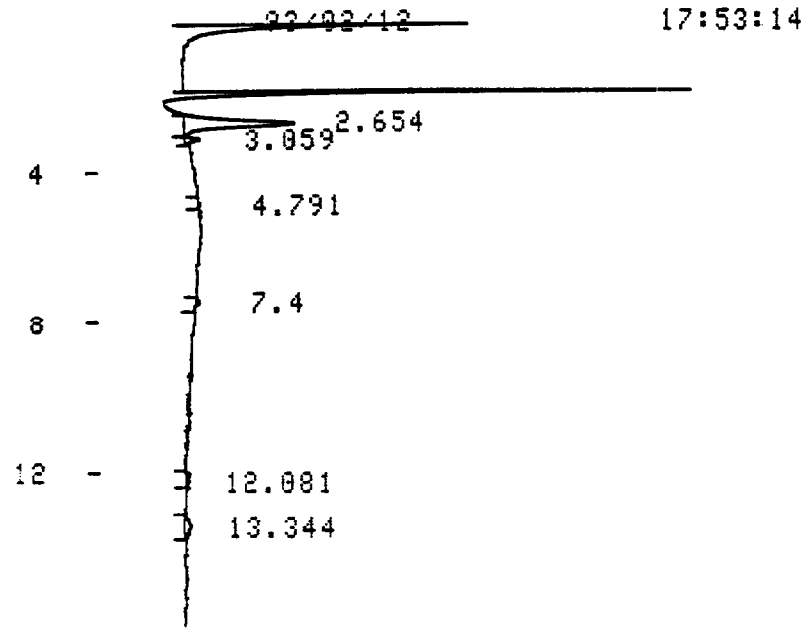


CHROMATOGRAM 9 MEMORIZED

PKNO	TIME	AREA	MK	IDNO	CONC	NAME
1	2.533	139				
2	2.958	137		1	0.7898	C-1
3	3.062	330	V	1	1.897	C-1
	TOTAL	607			2.6868	

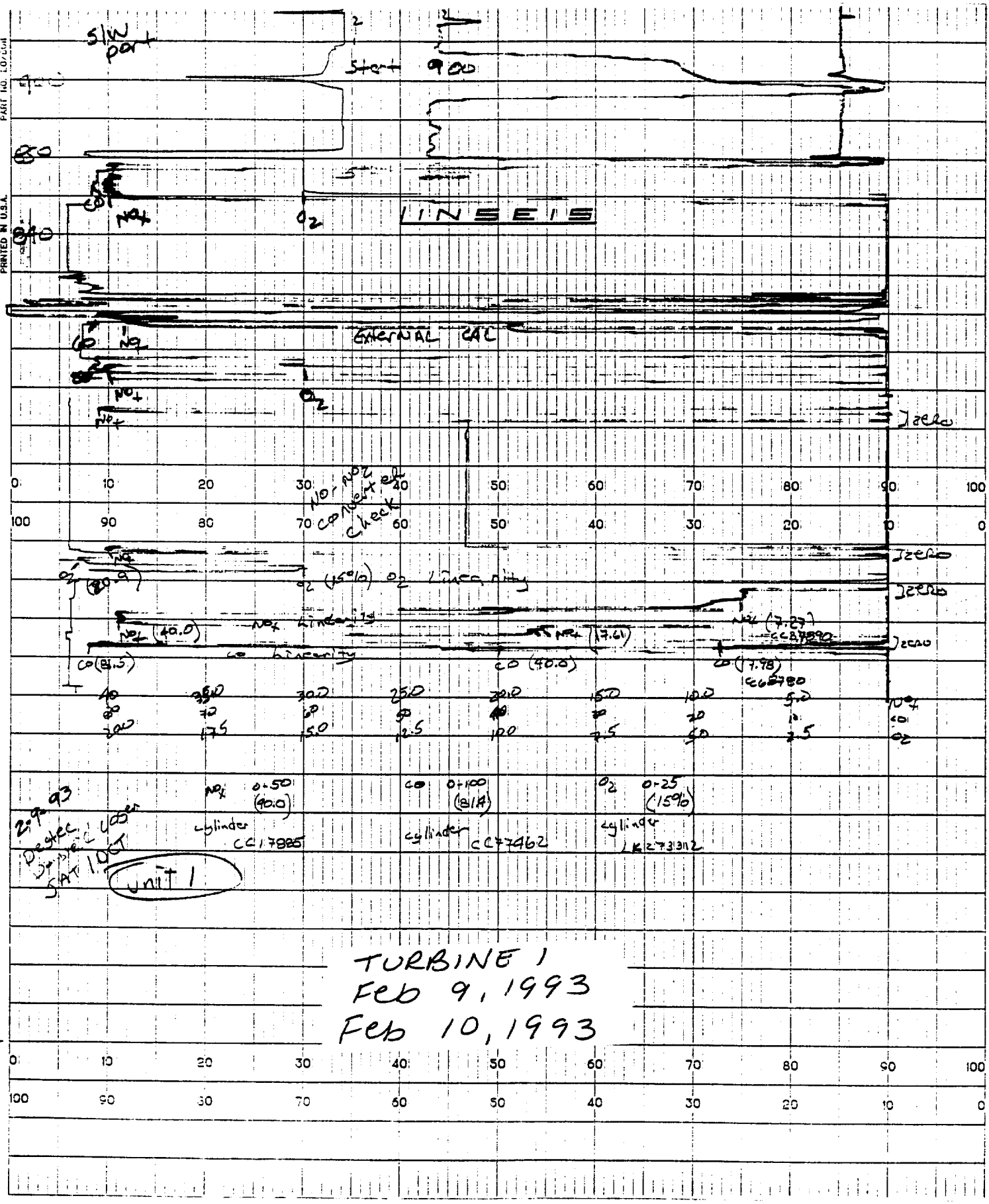
GROUP(NAME)	CONC
C-1	2.6868
C-2	0
C-3	0
C-4	0
C-5	0
C-6+	0

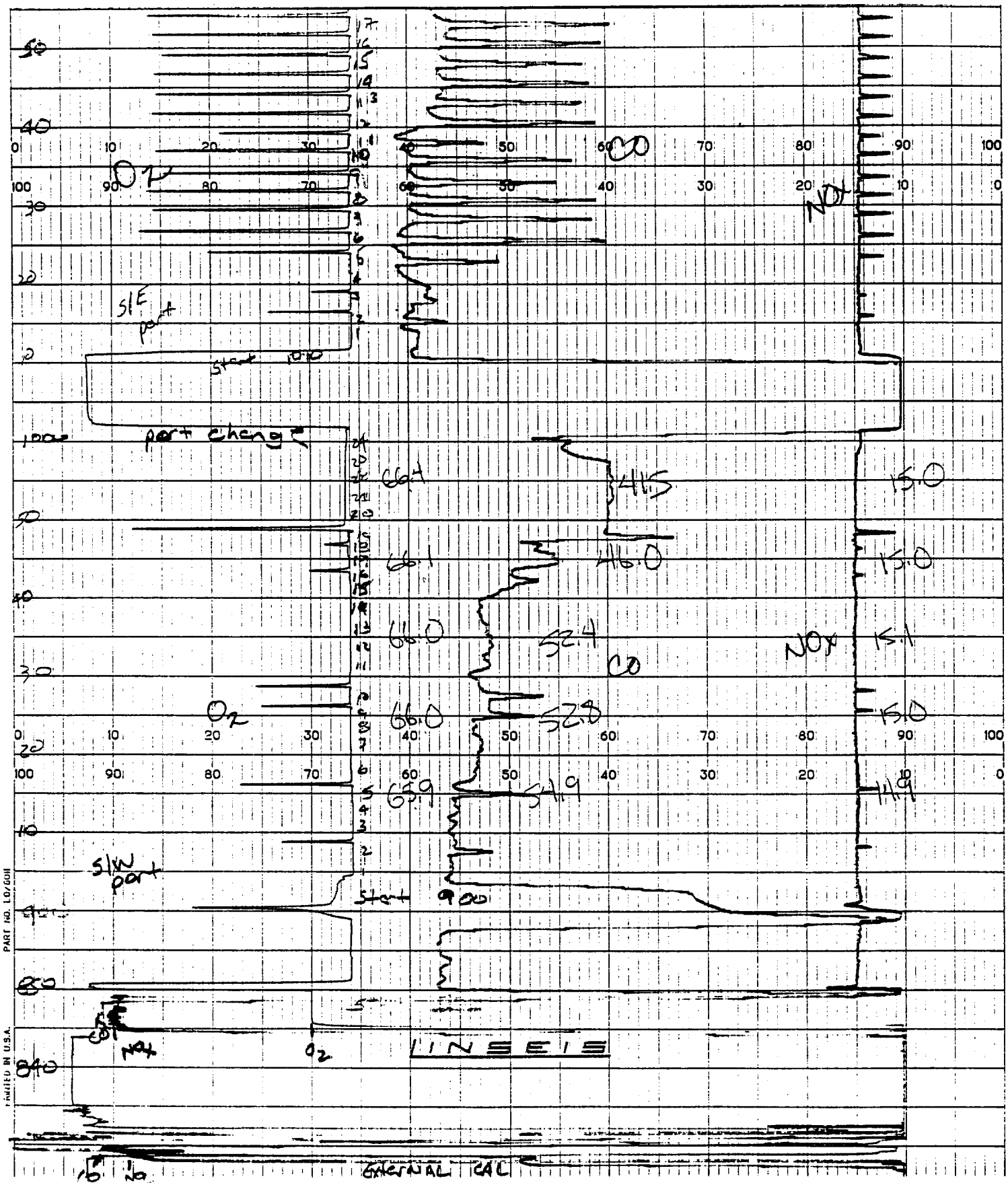
DESTEC DOUBLE "C"
2-11-93 REPORT # 027-341
TURBINE #'s 1&2
HC SAMPLE BLANK



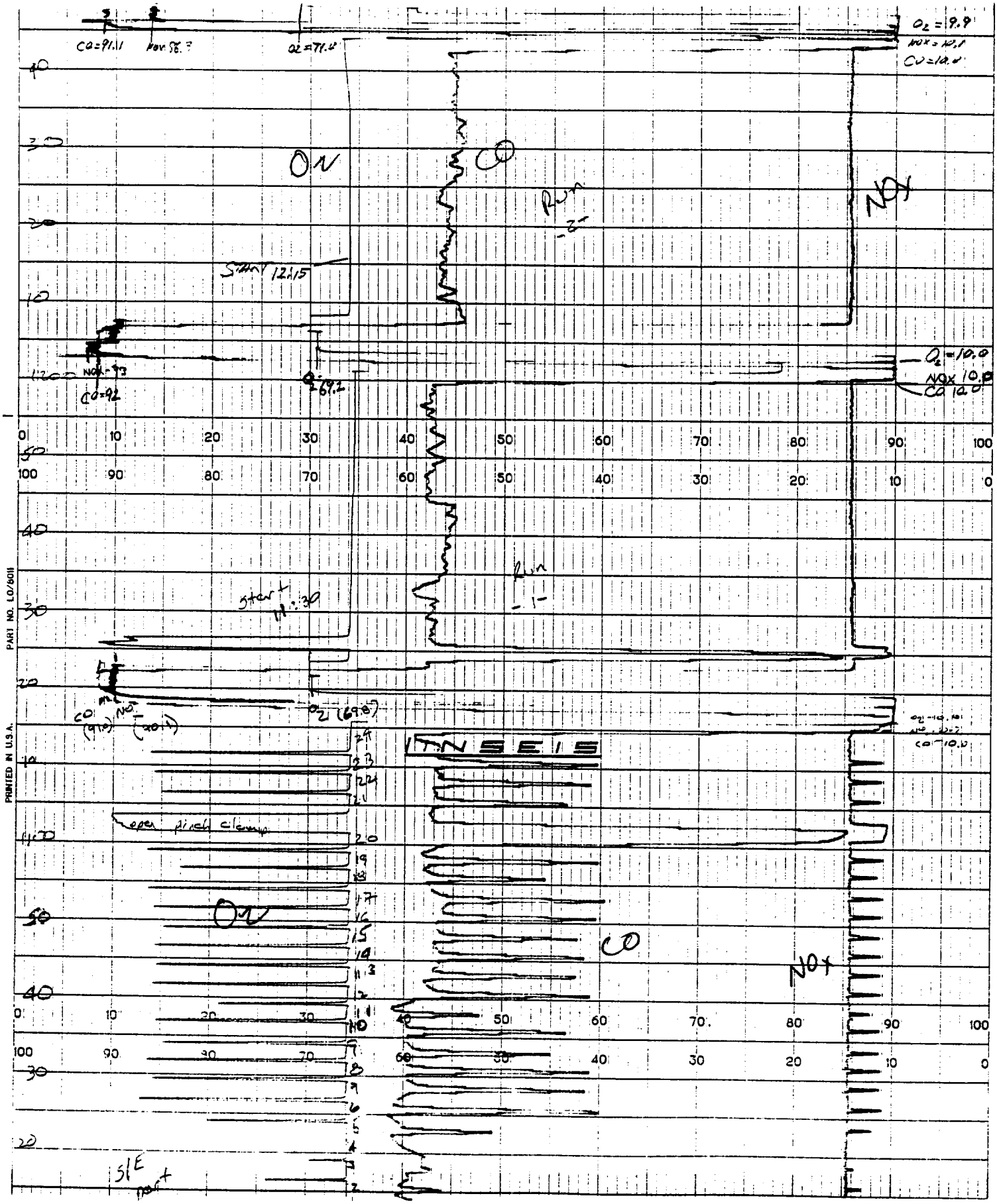
CHROMATOGRAM 8 MEMORIZED

PKNO	TIME	AREA	MK	IDNO	CONC	NAME
1	2.654	10368		6		C-6+
2	3.059	515		1		C-1
3	4.791	182		3		C-3
4	7.4	275		4		C-4
5	12.081	312		17		C-5 >1090
6	13.344	778		5		C-5
	TOTAL	12429			0	

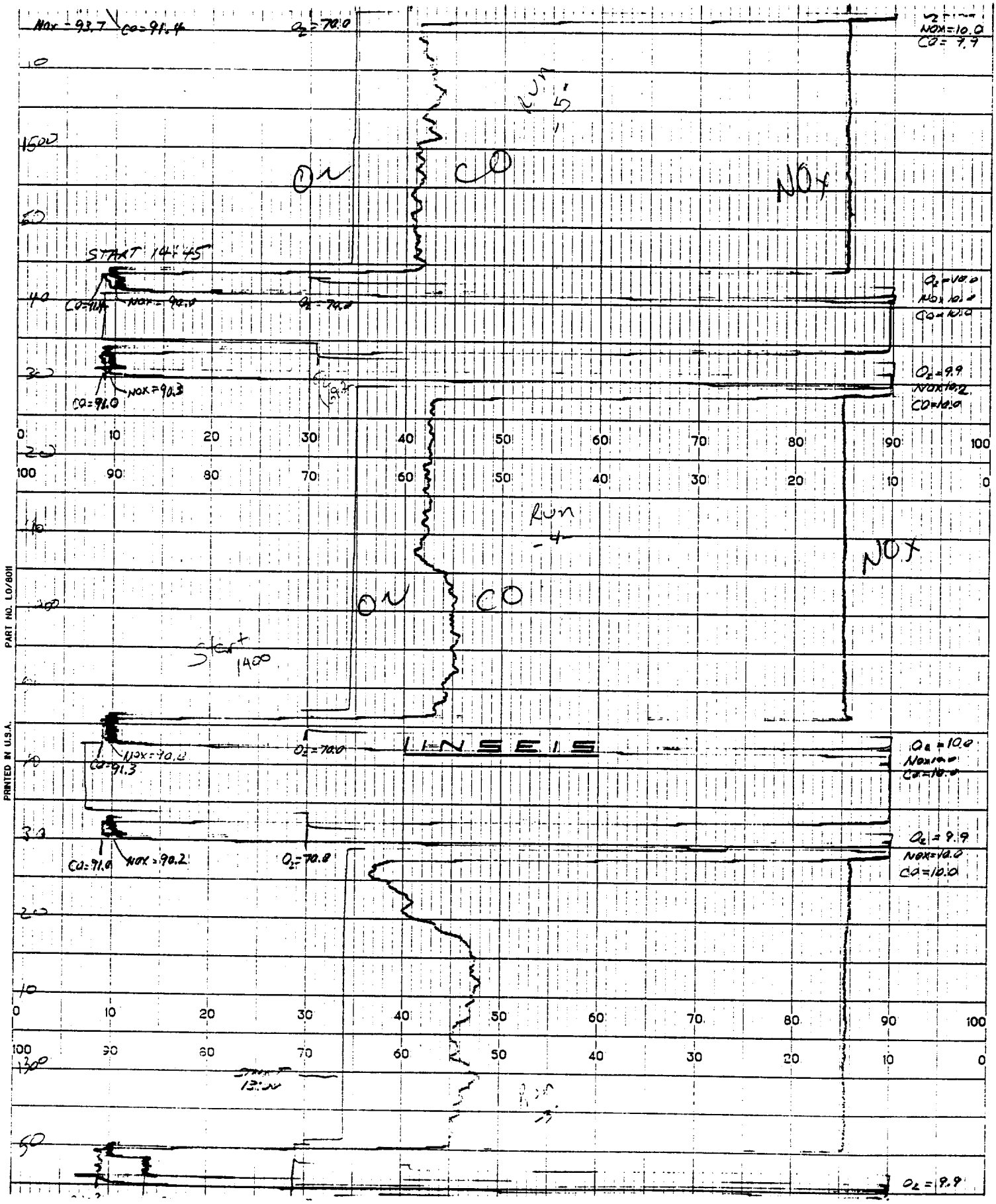

S/W port
Start 900
LINSEIS
External CAL
Zero
No-NO2 converter check
O2 (15%) O2 Linearity
NOx Linearity
CO Linearity
NOx (40.0)
CO (81.5)
CO (40.0)
NOx (7.61)
NOx (7.27)
CO (7.98)
NOx 0-50 (40.0)
CO 0-100 (81.4)
O2 0-25 (15%)
cylinder CC17885
cylinder CC77462
cylinder LK273312
2-9-93
Unit 1
TURBINE 1
Feb 9, 1993
Feb 10, 1993



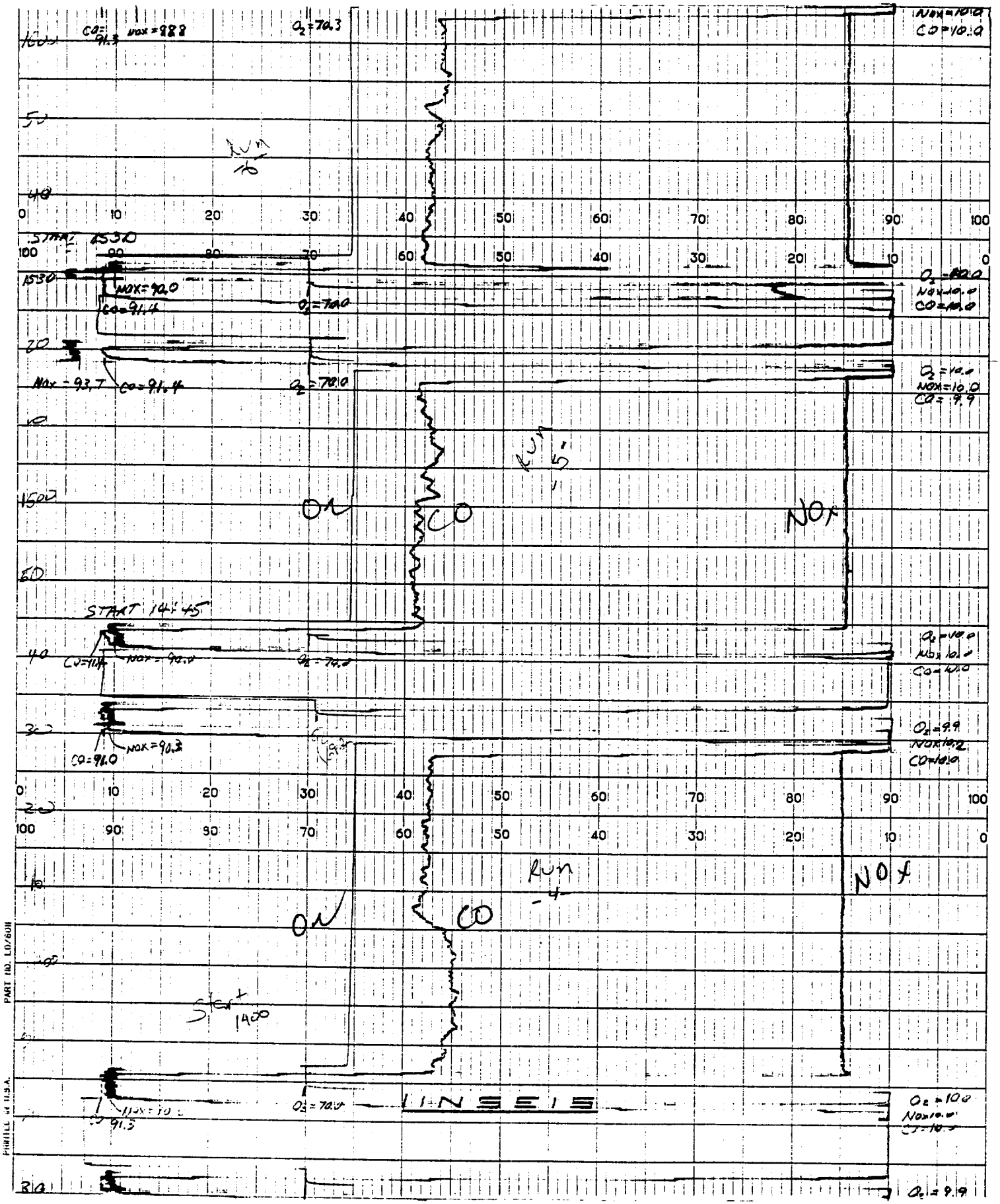
O2
CO
NOx
S/E port
start 1010
port change
66.4
41.5
15.0
66.1
46.0
15.0
66.0
52.4
CO
NOx
15.1
O2
66.0
52.8
15.0
65.9
54.9
14.9
S/W port
start 900
NOx
O2
LINSEIS
EXTERNAL CAL



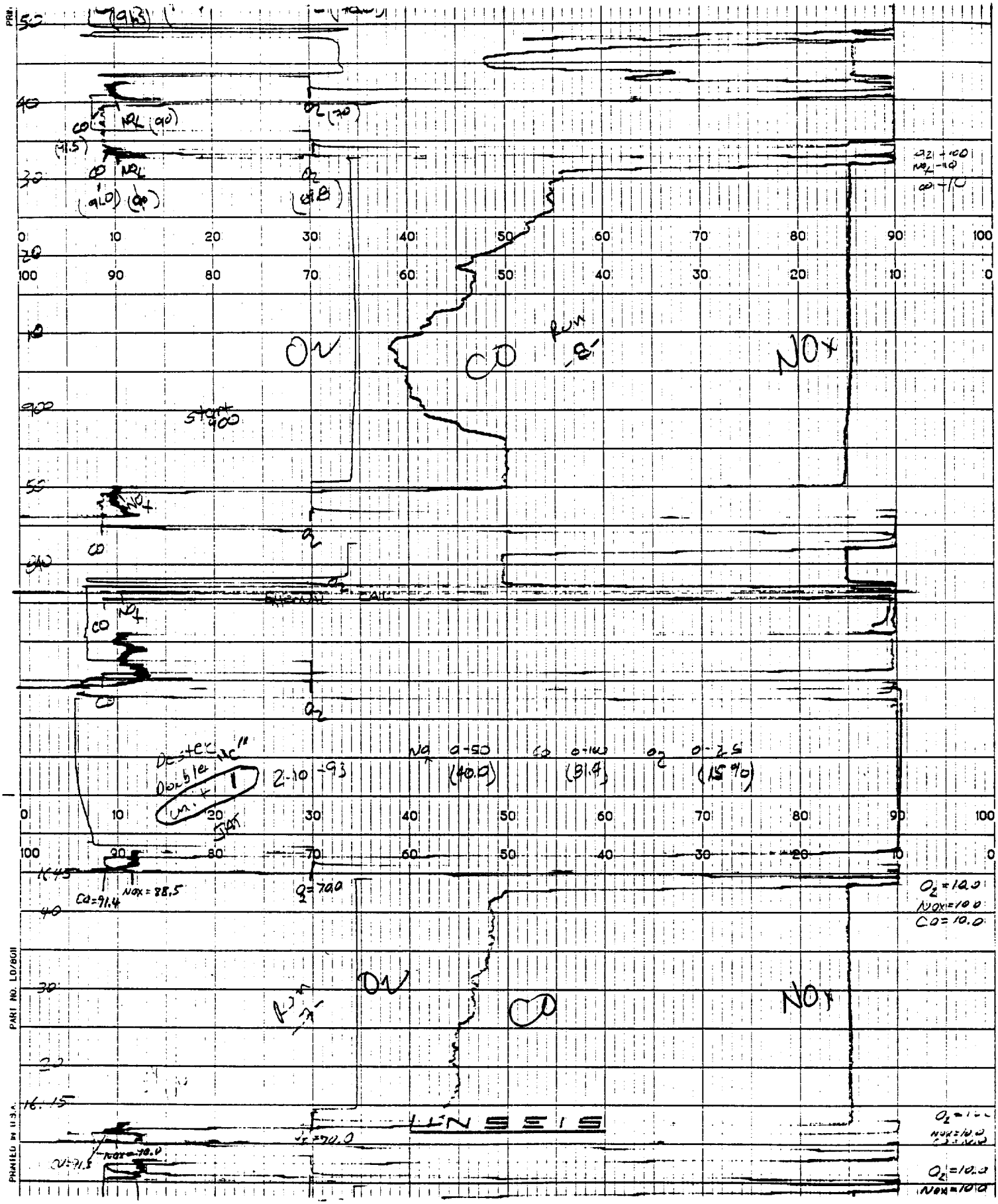
CO=91.1
O2=71.4
O2=9.9
NOX=10.1
CO=10.0
ON
CO
NOX
Run -2-
Start 12:15
NOX-93
CO=92
O2=69.2
O2=10.0
NOX 10.0
CO 10.0
Run -1-
start 11:30
CO (91.0)
NO (90.1)
O2 (69.8)
open pinch clamp
ON
CO
NOX
S/E port
PART NO. LO/8011
PRINTED IN U.S.A.



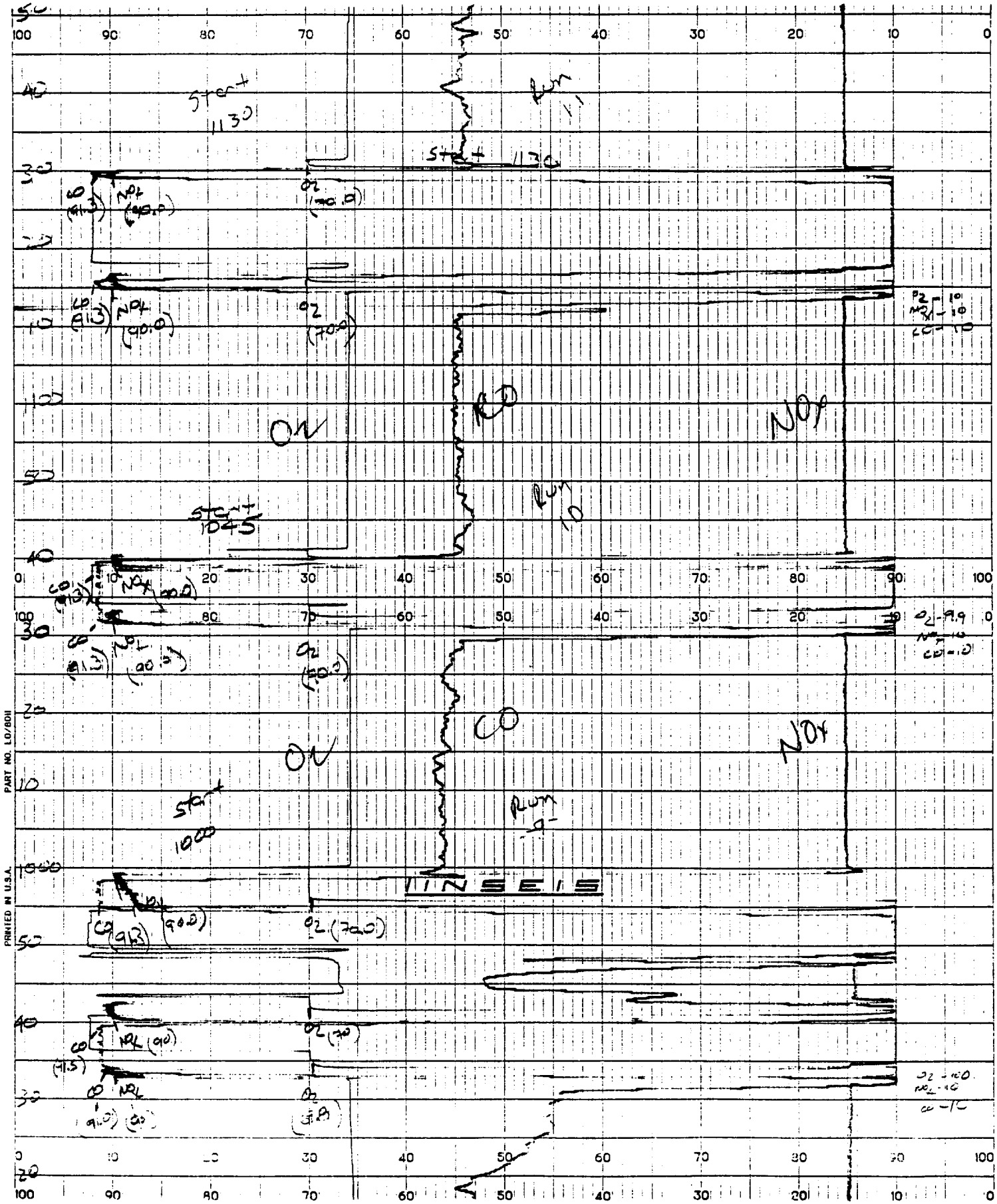
PRINTED IN U.S.A. PART NO. LO/8011



CO=91.3 NOX=88.8
O2=70.3
NOX=10.0
CO=10.0
Run 16
START 1530
NOX=90.0
CO=91.4
O2=70.0
NOX=10.0
CO=10.0
NOX=93.7
CO=91.4
O2=70.0
O2=10.0
NOX=10.0
CO=9.9
Run 5
ON
CO
NOX
START 14:45
CO=91.4
NOX=90.0
O2=70.0
O2=10.0
NOX=10.0
CO=10.0
NOX=90.3
CO=91.0
O2=9.9
NOX=10.2
CO=10.0
Run 4
ON
CO
NOX
Start 1400
O2=70.0
LINSEIS
O2=10.0
NOX=10.0
CO=10.0
O2=9.9

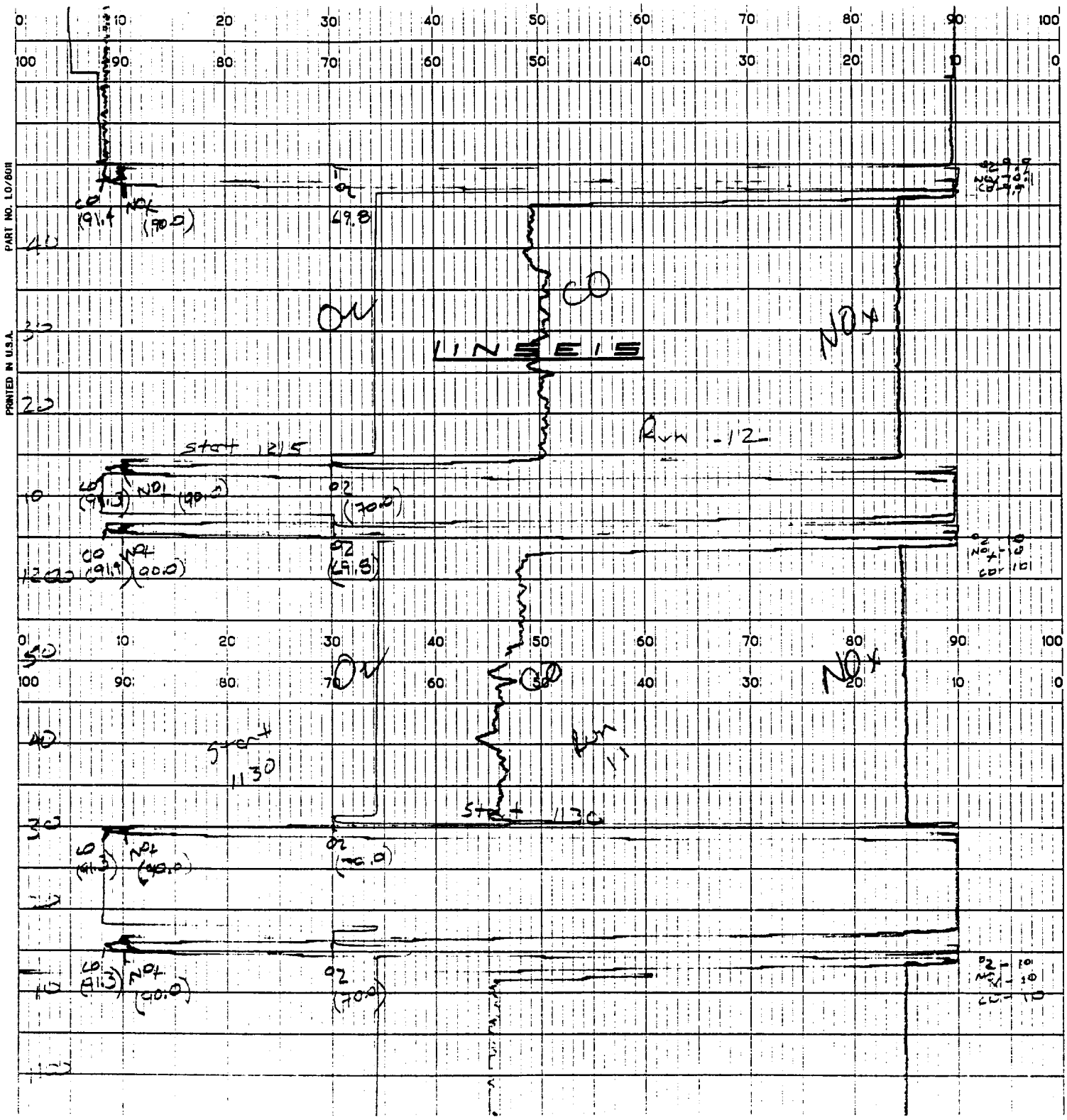


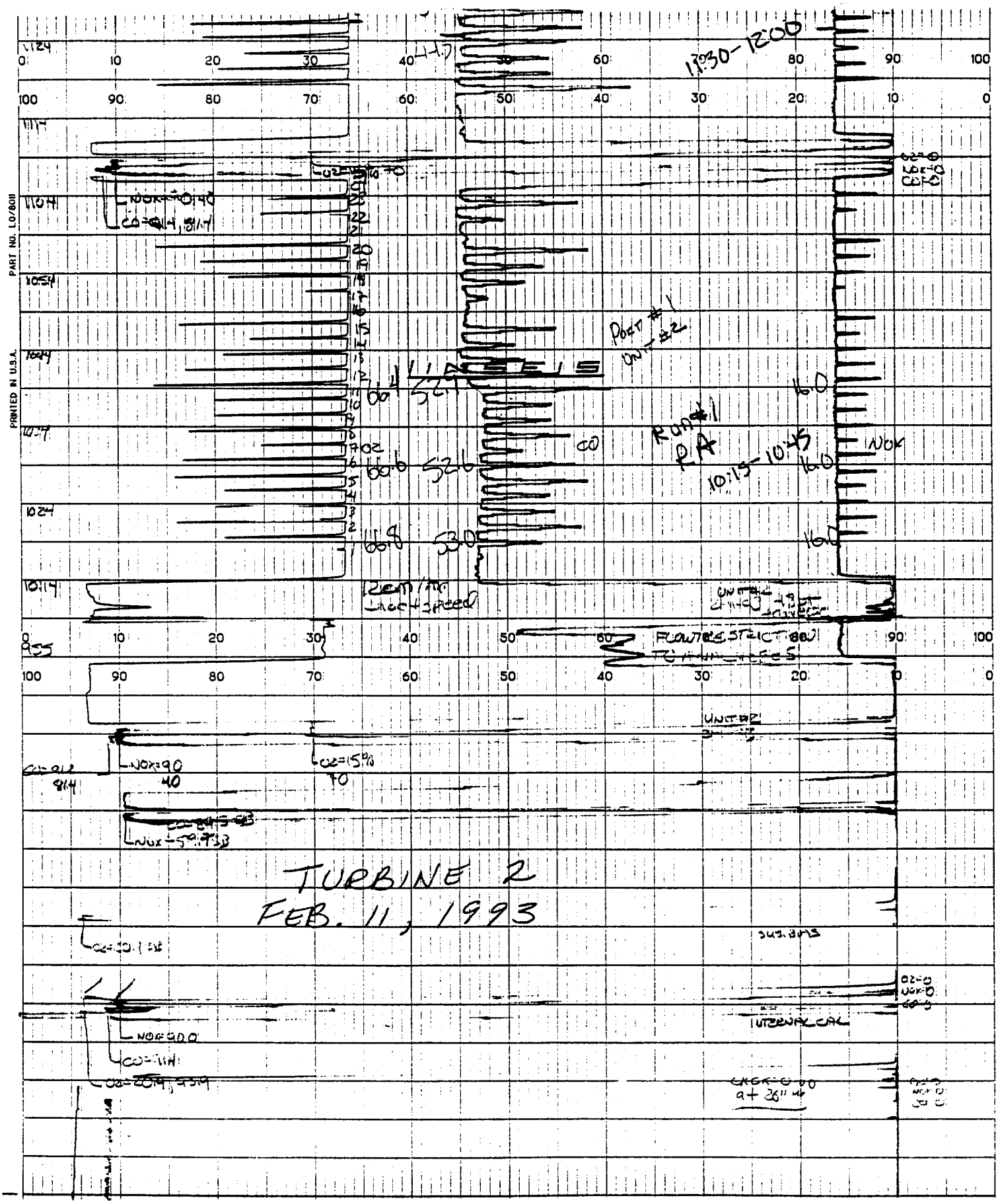
O2
CO
NOx
Run -8-
start 900
Dester "C" Double Unit 1
2-10-93
NOx 0-50 (40.0)
CO 0-100 (31.4)
O2 0-25 (15%)
CO=91.4
NOx=88.5
O2=70.0
O2=10.0
NOx=10.0
CO=10.0
Run -7-
UNSEIS
PART NO. LD/8011
PRINTED IN U.S.A.

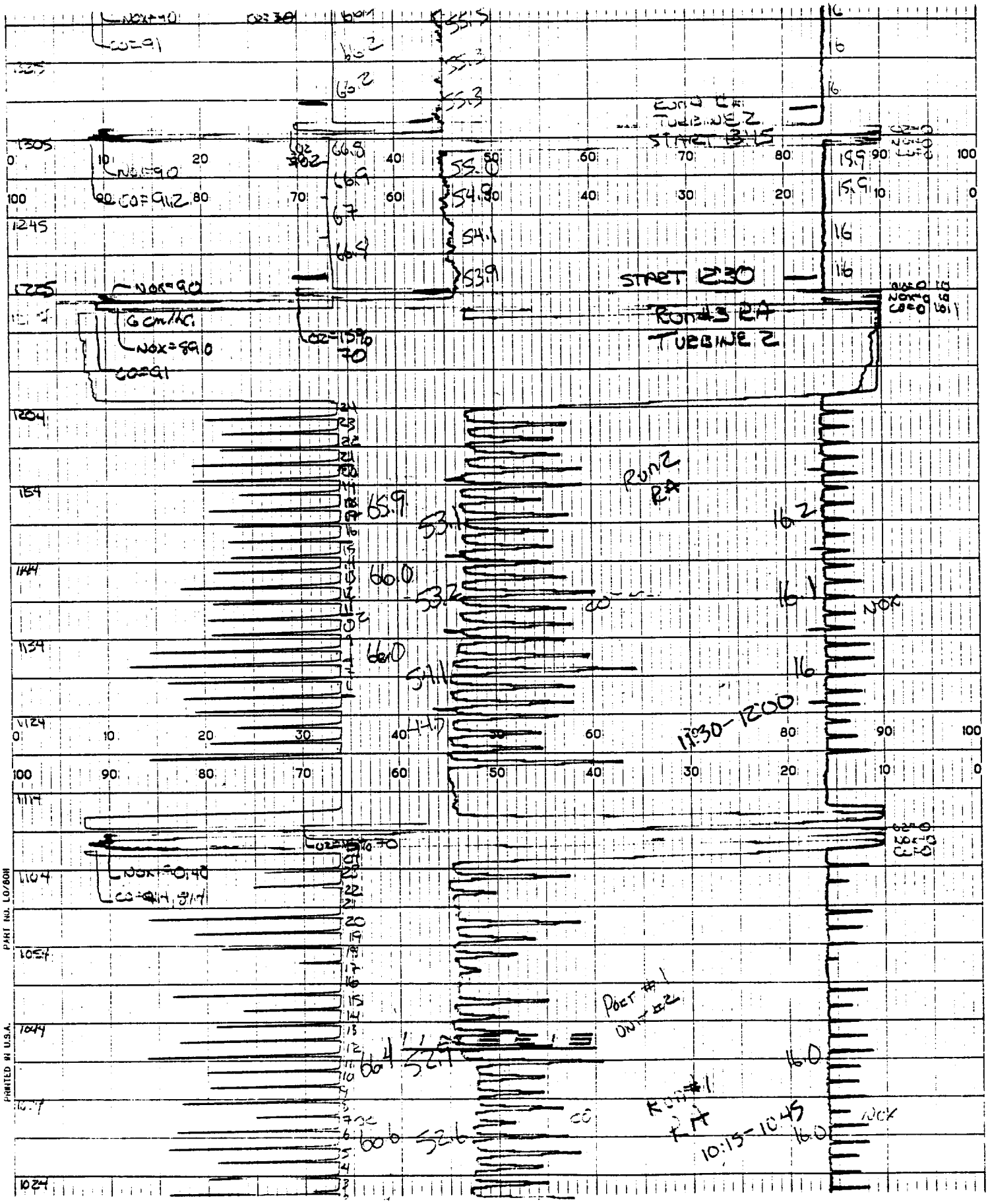


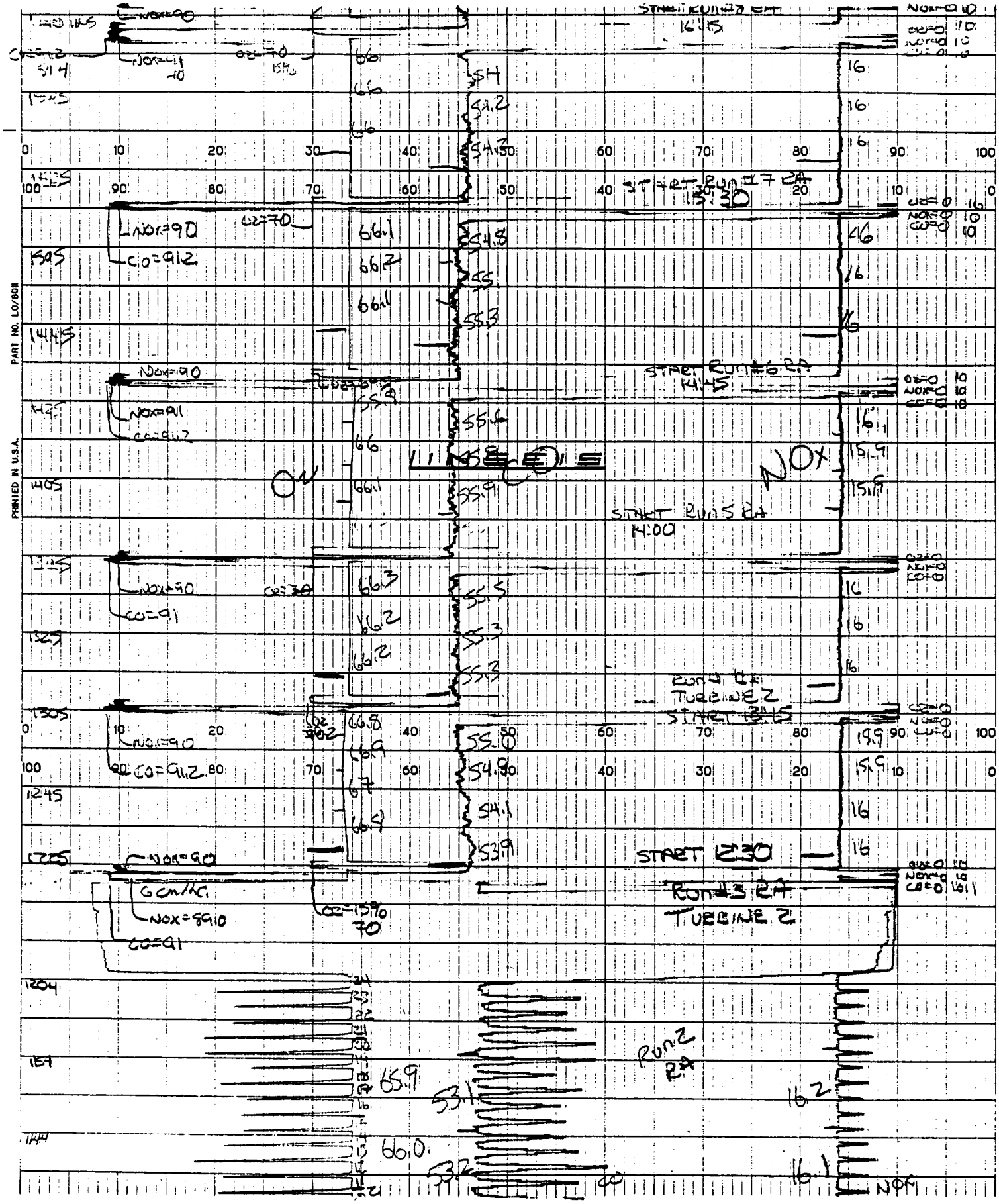
PART NO. LO/BOH

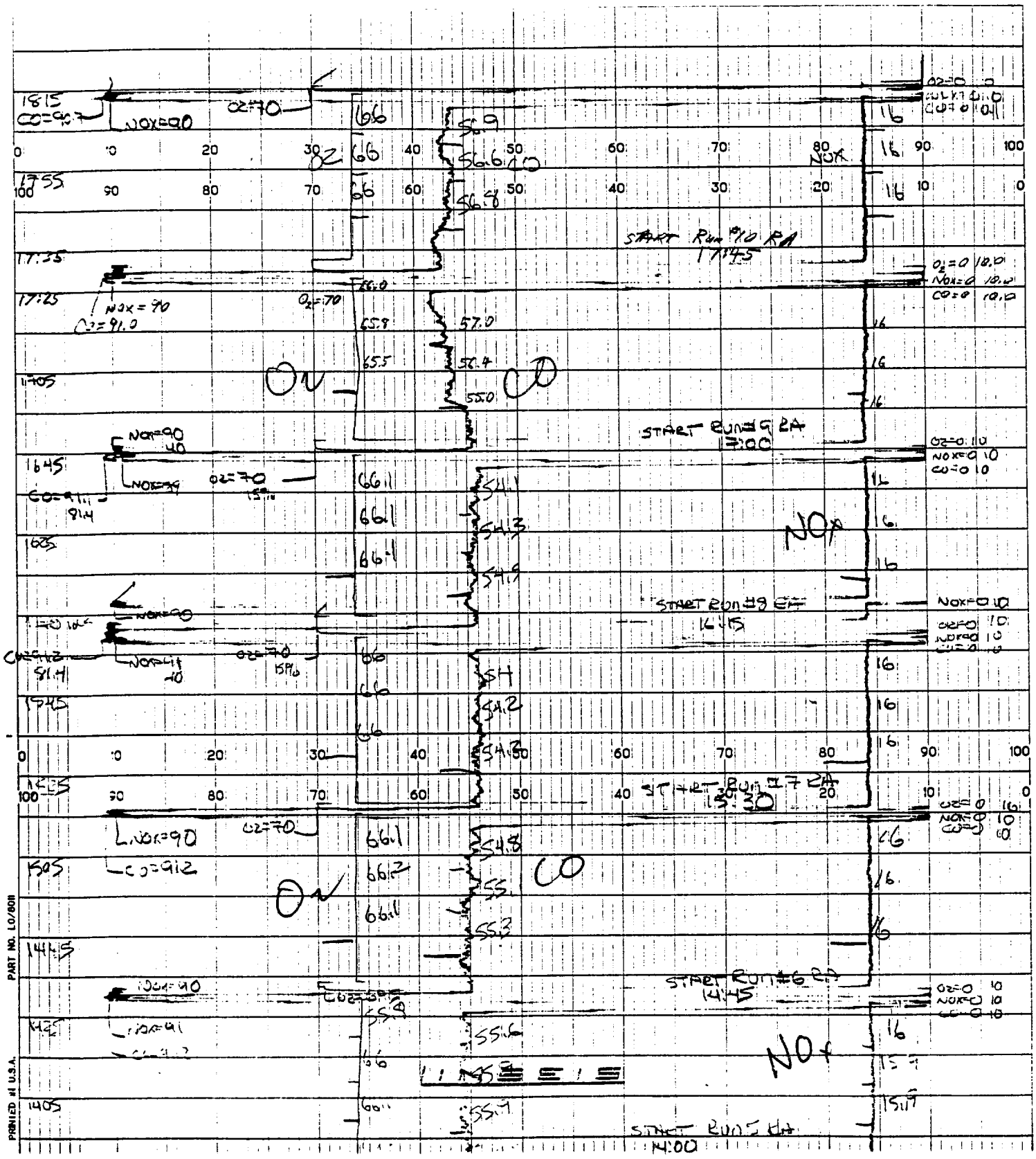
PRINTED IN U.S.A.


PART NO. LO/8011
PRINTED IN U.S.A.
LINSEIS
CO
NOx
Run -12
Start 1215
Start 1130
Run 11
Start 1130


11:30-12:00
Post #1
UNIT #2
Run #1
RA
10:15-10:45
NOx
CO
TURBINE 2
FEB. 11, 1993
INTERNAL CAL
PART NO. LO/8011
PRINTED IN U.S.A.


START 12:30
Run #3 RA
TURBINE 2
Run 2
RA
11:30-12:00
Port #1
UNIT #2
Run #1
RA
10:15-10:45
NOX
PART NO. LO/80H
PRINTED IN U.S.A.


START RUN #7 RA
15:30
START RUN #6 RA
14:45
START RUN 5 RA
14:00
RUN 4 RA
TURBINE 2
START 13:15
START 12:30
RUN #3 RA
TURBINE 2
RUN 2
RA
NOX
PART NO. LO/8011
PRINTED IN U.S.A.


START RUN #10 RA
17:45
START RUN #9 RA
17:00
START RUN #8 RA
16:15
START RUN #7 RA
15:30
START RUN #6 RA
14:45
START RUN #5 RA
14:00
NOX
CO
O2
PART NO. LO/6011
PRINTED IN U.S.A.

APPENDIX III
LITY ASSURANCE

PETRO CHEM ENVIRONMENTAL SERVICES, INC.
3207 Antonino Avenue, Bakersfield, CA 93308
(805) 631-9332 FAX (805) 327-0860

CHAIN OF CUSTODY RECORD

Submitted to: *ZALCO LABORATORIES*

COMPANY	LOCATION/UNIT
Destec Operating Co	Double "C" Limited
REPORT # 027-341	SAMPLER JKH
METHOD	REPORT ATTN. TERRY ROWLES / PO# 49140

ANALYSIS REQUEST

SAMPLE No/ID	SAMPLE DESCRIPTION	SAMPLE DATE	Liq	Filter	Gas	LOW RANGE TOTAL SULFUR as H2S				
BAG	FUEL GAS Turbine #1	2/12/93			X	X				
Bag	Fuel Gas Turbine #2	2/12/93			X	X				

COMMENTS:

RELINQUISHED BY:	DATE	RECEIVED BY:	DATE
D Smallwood	2/12/93	D Questing	2-12-93
RELINQUISHED BY:	DATE	RECEIVED BY:	DATE
RELINQUISHED BY:	DATE	RECEIVED BY:	DATE

All meth 5 condensables

PETRO CHEM ENVIRONMENTAL SERVICES, INC.
3207 Antonino Avenue, Bakersfield, CA 93308
(805) 327-7300 FAX (805) 327-3459

CHAIN OF CUSTODY RECORD

Submitted to: P.C.E.S LABS

COMPANY	LOCATION/UNIT
DESTEC	DESTEC Double "C" TURBINES 1,2
REPORT # 027-341	SAMPLER John Hinkle / JAMES TAPLIN
METHOD 5	REPORT ATTN. TERRY ROWLES / PO#

ANALYSIS REQUEST

SAMPLE No/ID	SAMPLE DESCRIPTION	SAMPLE DATE	Liq	Filter	Gas	EPA Meth 5 condensables				
22	P/N Run#1 TURBINE#1	2-9	X			X				
23	Imp Run#1 TURBINE#1	2-9	X			X				
24	" "	2-9	X			X				
25	" "	2-9	X			X				
26	P/N Run#2 TURBINE#1	2-10	X			X				
27	Imp Run#2 TURBINE#1	2-10	X			X				
28	" " "	2-10	X			X				
29	" " "	2-10	X			X				
30	P/N Run#1 TURBINE#2	2-11	X			X				
31	Imp Run#2 TURBINE#2	2-11	X			X				
32	" " "	2-11	X			X				

COMMENTS:

RELINQUISHED BY:	DATE	RECEIVED BY:	DATE
John Hinkle	2-5-93	D Smeallwood	2/16/93
RELINQUISHED BY:	DATE	RECEIVED BY:	DATE
RELINQUISHED BY:	DATE	RECEIVED BY:	DATE

Meth 5 BLANKS AND FILTERS
Fuel gases

PETRO CHEM ENVIRONMENTAL SERVICES, INC.
3207 Antonino Avenue, Bakersfield, CA 93308
(805) 327-7300 FAX (805) 327-3459

CHAIN OF CUSTODY RECORD

Submitted to: P.C.E.S. LABS

COMPANY	LOCATION/UNIT
DESTEC	DESTEC Double "C" TURBINES 1,2
REPORT # 027-341	SAMPLER John Hinkle / James Taplin
METHOD EPA 5	REPORT ATTN. Terry Rowles / PO#

ANALYSIS REQUEST

SAMPLE No/ID	SAMPLE DESCRIPTION	SAMPLE DATE	Liq	Filter	Gas	EPA Meth 5 Gravimetric	Cr-Cst by TCD Low Range H2S by FPD			
33	D/N Pretest BLNK	2-9	X			X				
34	train#1 pretest BLNK	2-9	X			X				
35	train#2 pretest BLNK	2-9	X			X				
36	D/N BLANK	2-11	X			X				
37	train BLANK	2-11	X			X				
38	FILTER#1 TURBINE#1	2-9		X		X				
39	FILTER#2 TURBINE#1	2-9		X		X				
40	FILTER#1 TURBINE#2	2-9		X		X				
41	FILTER BLANK	2-9-12		X		X				
42	Bomb Turbine 2	2-12			X		X			
43	Bomb TURBINE 1	2-12			X		X			
44	BAG TURBINE 2	2-12			X		X			
45	BAG TURBINE 1	2-12			X		X			

COMMENTS:

RELINQUISHED BY:	DATE	RECEIVED BY:	DATE
John K Hinkle	2-15-93	D Smallwood	2/16/93
RELINQUISHED BY:	DATE	RECEIVED BY:	DATE
RELINQUISHED BY:	DATE	RECEIVED BY:	DATE

All water samples

PETRO CHEM ENVIRONMENTAL SERVICES, INC.
3207 Antonino Avenue, Bakersfield, CA 93308
(805) 327-7300 FAX (805) 327-3459

CHAIN OF CUSTODY RECORD

Submitted to: P.C.E.S. LABS

COMPANY	LOCATION/UNIT
Destec	TURBINES 1,&2
REPORT # 027-341	SAMPLER John Hinkle, James TAPLIN
METHOD	REPORT ATTN. / PO#

ANALYSIS REQUEST

SAMPLE No/ID	SAMPLE DESCRIPTION	SAMPLE DATE	Liq	Filter	Gas
14	High pressure steam turbine 2	2-11	X		
15	High pressure feed turbine 2	2-11	X		
16	Low pressure steam turbine 2	2-11	X		
17	LP blowdown turb. 2	2-11	X		
18	Low pressure steam turbine 1	2-11	X		
19	High pressure steam turbine 1	2-11	X		
20	LP Blowdown turbine 1	2-11	X		
21	High pressure feed turbine 1	2-11	X		

COMMENTS:
HOLD for further instructions

RELINQUISHED BY:	DATE	RECEIVED BY:	DATE
John Hinkle	2-15-93	D Smallwood	2/16/93
RELINQUISHED BY:	DATE	RECEIVED BY:	DATE
RELINQUISHED BY:	DATE	RECEIVED BY:	DATE

All Hydrocarbons

PETRO CHEM ENVIRONMENTAL SERVICES, INC.
3207 Antonino Avenue, Bakersfield, CA 93308
(805) 327-7300 FAX (805) 327-3459

CHAIN OF CUSTODY RECORD

Submitted to: P.C.E.S. LABS

COMPANY	LOCATION/UNIT	
Dester	Turb 1, Turb 2	
REPORT # 027-341	SAMPLER John Hinkle	
METHOD	REPORT ATTN. Terry Rowles	PO#

ANALYSIS REQUEST

	SAMPLE No/ID	SAMPLE DESCRIPTION	SAMPLE DATE	Liq	Filter	Gas	EPA METH. 18 FID ANALYSIS	ORSAT ANALYS EPA METHOD 3 O_2 CO_2	EPA Meth 18 Modified C_1-C_6+ Low Range	condensable Hydrocarb EPA method 4; with gravimetric organic extractions utilizing CARB Method 5 & 3	
**	#1	LUBE OIL VENT #4 TURB 2 H/C 1,2,3	2-11-93			✓	X	X			
	#2	LUBE OIL VENT #1 TURB 1 H/C 1,2,3	2-11-93			✓	+	X			
*	#3	TURBINE 1 & 2 H/C 1,2,3 PLUS BLNK	2-11-93			✓			X		
	#4	LUBE OIL VENT #3 TURB 2 H/C 1,2,3	2-11-93			✓	X	X			
***	5	LUBE OIL VENT #3 RUN 3	2-11	✓						X	
	6	LUBE OIL VENT #4 RUN 2	2-11	✓						X	
	7	LUBE OIL VENT #4 RUN 3	2-11	✓						X	
	8	LUBE OIL VENT #3 RUN 2	2-11	✓						X	
	9	LUBE OIL VENT #1 RUN 2	2-11	✓						X	
	10	LUBE OIL VENT #1 RUN 3	2-11	✓						X	
	11	LUBE OIL VENT #3 RUN 1	2-11	✓						X	
	12	LUBE OIL VENT #4 RUN 1	2-11	✓						X	
	13	LUBE OIL VENT #1 RUN 1	2-11	✓						X	

COMMENTS: * 7 TOTAL SAMPLES
** BAG SAMPLES
*** Condensables

RELINQUISHED BY:	DATE	RECEIVED BY:	DATE
John K Hinkle	2-15-93	D Smeallwood	2/16/93
RELINQUISHED BY:	DATE	RECEIVED BY:	DATE
RELINQUISHED BY:	DATE	RECEIVED BY:	DATE

PETRO CHEM ENVIRONMENTAL SERVICES, INC.
3207 Antonino Avenue, Bakersfield, CA 93308
(805) 327-7300 FAX (805) 327-3459

CHAIN OF CUSTODY RECORD

Submitted to: P. C. E. S.

COMPANY	LOCATION/UNIT
DESTEC	TURBINE #2
REPORT # 027-341	SAMPLER RJK
METHOD	REPORT ATTN. / PO#

ANALYSIS REQUEST

SAMPLE No/ID	SAMPLE DESCRIPTION	SAMPLE DATE	Liq	Filter	Gas	EPA METH 5 GRAV.				
46	P/N RUN #2 TURBINE #2	2-12				X				
47	IMP. " "	2-12				X				
48	FILTER " "	2-12				X				
49	PROBE BLANK POST	2-12				X				
50	IMP. BLANK POST	2-12				X				

COMMENTS:
PLEASE ADD A FILTER BLANK AS WE DON'T HAVE ANY MORE.

RELINQUISHED BY:	DATE	RECEIVED BY:	DATE
RJK	2-12-93	D Smallwood	2/15/93
RELINQUISHED BY:	DATE	RECEIVED BY:	DATE
RELINQUISHED BY:	DATE	RECEIVED BY:	DATE

PETRO CHEM ENVIRONMENTAL SERVICES, INC.

DRY GAS METER CALIBRATION

DATE:	1-27-93	AMBIENT TEMP °F:	62
TECH:	BDM	BAROMETRIC Pbar:	29.54
METER I.D.#	1002	TEST METER ID#:	SSM104564
		TEST METER Mcf:	1.023

APPROXIMATE CFM		0.75	0.50	0.30
STD TEST METER VOLUME CF	INITIAL	0.00	0.00	0.00
	FINAL	7.41	10.01	10.05
	TOTAL	7.41	10.01	10.05
FIELD GAS METER VOLUME CF	INITIAL	109.20	119.00	130.10
	FINAL	116.69	129.56	140.89
	TOTAL	7.49	10.56	10.79
STD TEST METER TEMP (°F)		62.5	60.0	60.0
FIELD GAS METER TEMP (°F)	IN	69.0	71.0	69.5
	OUT	54.0	60.0	63.0
	AVERAGE	61.5	65.5	66.3
STD TEST METER PRESSURE ("H2O)		-0.60	-0.30	-0.15
FIELD GAS METER PRESSURE ("H2O)		1.40	0.60	0.21
FIELD GAS METER, Mcf		1.006629	0.978514	0.963789

FIELD AVERAGE Mcf:	0.982977	H@:	1.4324

PETRO CHEM ENVIRONMENTAL SERVICES, INC.

DRY GAS METER CALIBRATION

DATE:	1-28-93	AMBIENT TEMP °F:	61
TECH:	BDM	BAROMETRIC Pbar:	30.22
METER I.D.#	1003	TEST METER ID#:	S5M104564
		TEST METER Mcf:	1.023

APPROXIMATE CFM		.75	0.50	0.30
STD TEST METER VOLUME CF	INITIAL	0.00	0.00	0.00
	FINAL	7.59	10.04	10.01
	TOTAL	7.59	10.04	10.01
FIELD GAS METER VOLUME CF	INITIAL	807.30	815.30	826.50
	FINAL	814.90	825.75	837.19
	TOTAL	7.60	10.45	10.69
STD TEST METER TEMP (°F)		57.0	60.5	61.0
FIELD GAS METER TEMP (°F)	IN	59.0	65.5	65.5
	OUT	60.0	75.0	72.5
	AVERAGE	59.5	70.3	69.0
STD TEST METER PRESSURE ("H2O)		-0.60	-0.30	-0.15
FIELD GAS METER PRESSURE ("H2O)		0.90	0.40	0.18
FIELD GAS METER, Mcf		1.024351	1.000301	0.972209

FIELD AVERAGE Mcf:	0.998954	H@:	0.8432

PETRO CHEM ENVIRONMENTAL SERVICES, INC.

DRY GAS METER CALIBRATION

DATE:	2-25-93	AMBIENT TEMP °F:	62
TECH:	BDM	BAROMETRIC Pbar:	29.54
METER I.D.#	1003	TEST METER ID#:	S5M104564
		TEST METER Mcf:	1.023

APPROXIMATE CFM		0.75	0.50	0.30
STD TEST METER VOLUME CF	INITIAL	0.00	0.00	0.00
	FINAL	7.44	10.10	10.01
	TOTAL	7.44	10.10	10.01
FIELD GAS METER VOLUME CF	INITIAL	29.20	38.40	49.60
	FINAL	36.73	48.99	60.34
	TOTAL	7.53	10.59	10.74
STD TEST METER TEMP (°F)		61.0	61.5	62.0
FIELD GAS METER TEMP (°F)	IN	68.0	69.0	70.0
	OUT	77.0	76.5	76.0
	AVERAGE	72.5	72.8	73.0
STD TEST METER PRESSURE ("H2O)		-0.60	-0.30	-0.15
FIELD GAS METER PRESSURE ("H2O)		0.89	0.40	0.18
FIELD GAS METER, Mcf		1.030800	0.995722	0.973123

FIELD AVERAGE Mcf:	0.999882	H@:	0.8795

PETRO CHEM ENVIRONMENTAL SERVICES, INC.
PITOT TUBE CALIBRATION

PITOT TUBE ID. # P12Q-10
DATE: 2-4-93
CALIBRATED BY: RJK

	"A" SIDE CALIBRATION			
RUN #	ΔPstd cm H2O (in.H2O)	ΔP(s) cm H2O (in. H2O)	Cp(s)	DEVIATION Cp(s) -Cp(A)
1	0.260	0.415	0.784	-0.007
2	0.265	0.410	0.796	0.005
3	0.270	0.420	0.794	0.003
		Cp (SIDE A)	0.791	

	"B" SIDE CALIBRATION			
RUN #	ΔPstd cm H2O (in.H2O)	ΔP(s) cm H2O (in. H2O)	Cp(s)	DEVIATION Cp(s) -Cp(B)
1	0.265	0.415	0.791	0.000
2	0.260	0.410	0.788	-0.003
3	0.270	0.420	0.794	0.003
		Cp (SIDE B)	0.791	

Cp (SIDE A) - Cp (SIDE B) =	0.000	0.791

$Cp = .99 * \Delta Pstd / \Delta P(s)$

AIRCO

518655

Airco Electronic Gases
Union Landing & River Roads
P.O. Drawer No. 272
Riverton
New Jersey 08077
Telephones: Marketing: 609-829-7878
Prod. & Admin.: 609-829-7
International: 609-829-7917

CERTIFICATE OF ANALYSIS - EPA PROTOCOL GAS MIX

CUSTOMER: Bakersfield Welding Supply
CYLINDER #: CC-17885 CERTIFICATION DATE: 11/2/92
CYLINDER PRESSURE: 1650 psig EXPIRATION DATE: 5/2/93
LABORATORY: Riverton, NJ REFERENCE #: 24275

MIXTURE COMPONENTS	ACTUAL MIXTURE CONCENTRATION	AIRCO INTERMEDIATE STANDARD CYLINDER #	CONC.	NIST SRM#
Nitric Oxide	40.0 ppm	CC-14977	49.8 ppm	1683B
Carbon Monoxide	39.9 ppm	CC-43310	49.8 ppm	1678C

BALANCE GAS: Nitrogen

COMPONENT 1 GAS ANALYSIS PROCEDURE Chemiluminescence
MAKE/MODEL/SER#: Beckman, 952, 0100204
LAST MULTIPOINT CALIBRATION DATE: 8/3/92

COMPONENT 2 GAS ANALYSIS PROCEDURE Non-Dispersive Infrared
MAKE/MODEL/SER#: Horiba, CO/Analyzer, 56255601
LAST MULTIPOINT CALIBRATION DATE: 8/3/92

R=REFERENCE STANDARD Z=ZERO GAS S=SAMPLE GAS

1ST COMPONENT Nitric Oxide
1ST ANALYSIS: DATE 10/26/92 ANALYST A. Lattanze

1)	Z 0000	R 4550	S 3635	CONC (1)	39.8 ppm
2)	R 4540	Z 0000	S 3640	CONC (2)	39.9 ppm
3)	R 4540	S 3630	Z 0000	CONC (3)	39.8 ppm
				AVE CONC	39.8 ppm

2ND ANALYSIS: DATE 11/2/92 ANALYST A. Lattanze

1)	Z 0000	R 4385	S 3540	CONC (1)	40.2 ppm
2)	R 4400	Z 0000	S 3535	CONC (2)	40.0 ppm
3)	R 4410	S 3540	Z 0000	CONC (3)	40.0 ppm
				AVE CONC	40.1 ppm

2ND COMPONENT Carbon Monoxide
1ST ANALYSIS: DATE 10/26/92 ANALYST A. Lattanze

1)	Z 000	R 491	S 393	CONC (1)	39.9 ppm
2)	R 491	Z 000	S 393	CONC (2)	39.9 ppm
3)	R 491	S 393	Z 000	CONC (3)	39.9 ppm
				AVE CONC	39.9 ppm

2ND ANALYSIS: DATE 11/2/92 ANALYST A. Lattanze

1)	Z 000	R 493	S 395	CONC (1)	39.9 ppm
2)	R 493	Z 000	S 395	CONC (2)	39.9 ppm
3)	R 493	S 395	Z 000	CONC (3)	39.9 ppm
				AVE CONC	39.9 ppm

THIS CALIBRATION STANDARD HAS BEEN CERTIFIED VERSUS EPA TRACEABILITY PROTOCOL NO. 1, PROCEDURE G1, AND ANALYSES PERFORMED PER SECTION 3.0.4.
CERTIFIED CONCENTRATION: Nitric Oxide = 40.0 ppm; Carbon Monoxide = 39.9 pp
Nitrogen = Balance

APPROVED BY LABORATORY MANAGER

A member of The BOC Group

AIRCO 512041

Airco Electronic Gases
Union Landing & River Roads
P.O. Drawer No. 272
Riverton
New Jersey 08077
Telephones: Marketing; 609-829-7878
Prod. & Admin.; 609-829-7914
International; 609-829-7917

CERTIFICATE OF ANALYSIS - EPA PROTOCOL GAS MIX

CUSTOMER: Bakersfield Welding (Saugas, CA)
CYLINDER #: CC-77462 CERTIFICATION DATE: 10/12/92
CYLINDER PRESSURE: 1650 psig EXPIRATION DATE: 4/12/93
LABORATORY: Riverton, NJ REFERENCE #: 23698

MIXTURE COMPONENTS	ACTUAL MIXTURE CONCENTRATION	AIRCO INTERMEDIATE STANDARD CYLINDER #	CONC.	NIST SRM#
Nitric Oxide	78.2 ppm	CC-69954	100 ppm	1684B
Carbon Monoxide	81.4 ppm	CC-3138	112 ppm	1679C

BALANCE GAS: Nitrogen

COMPONENT 1 GAS ANALYSIS PROCEDURE Chemiluminescence
MAKE/MODEL/SER#: Beckman, 952, 0100204
LAST MULTIPOINT CALIBRATION DATE: 8/3/92

COMPONENT 2 GAS ANALYSIS PROCEDURE Non-Dispersive Infrared
MAKE/MODEL/SER#: Beckman; 866; 1000049
LAST MULTIPOINT CALIBRATION DATE: 8/3/92
R=REFERENCE STANDARD Z=ZERO GAS S=SAMPLE GAS

1ST COMPONENT Nitric Oxide
1ST ANALYSIS: DATE 10/5/92 ANALYST A. Lattanze

1)	Z 0000	R 3690	S 2880	CONC (1)	78.0 ppm
2)	R 3690	Z 0000	S 2880	CONC (2)	78.0 ppm
3)	R 3690	S 2880	Z 0000	CONC (3)	78.0 ppm
				AVE CONC	78.0 ppm

2ND ANALYSIS: DATE 10/12/92 ANALYST A. Lattanze

1)	Z 0000	R 3700	S 2900	CONC (1)	78.4 ppm
2)	R 3700	Z 0000	S 2900	CONC (2)	78.4 ppm
3)	R 3700	S 2900	Z 0000	CONC (3)	78.4 ppm
				AVE CONC	78.4 ppm

2ND COMPONENT Carbon Monoxide
1ST ANALYSIS: DATE 10/5/92 ANALYST A. Lattanze

1)	Z 000	R 222	S 163	CONC (1)	82.2 ppm
2)	R 222	Z 000	S 161	CONC (2)	81.2 ppm
3)	R 222	S 163	Z 000	CONC (3)	82.2 ppm
				AVE CONC	81.9 ppm

2ND ANALYSIS: DATE 10/12/92 ANALYST A. Lattanze

1)	Z 000	R 221	S 160	CONC (1)	81.1 ppm
2)	R 222	Z 000	S 160	CONC (2)	80.7 ppm
3)	R 222	S 160	Z 000	CONC (3)	80.7 ppm
				AVE CONC	80.8 ppm

THIS CALIBRATION STANDARD HAS BEEN CERTIFIED VERSUS EPA TRACEABILITY PROTOCOL NO. 1, PROCEDURE G1, AND ANALYSES PERFORMED PER SECTION 3.0.4.
CERTIFIED CONCENTRATION: Nitric Oxide = 78.2 ppm; Carbon Monoxide = 81.4 ppm; Nitrogen = Balance

APPROVED BY J. Lang
LABORATORY MANAGER

A member of The BOC Group

PETRO CHEM ENVIRONMENTAL SERVICES, INC.

CALIBRATION GAS CERTIFICATE

DATE: 12-2-91
ANALYST: TIM BRENNAN

TANK #: LK-273312
CONTENTS: Oxygen in Nitrogen

	SET #1	SET #2	SET #3
RUN #1	15.0	15.1	15.0
RUN #2	15.0	15.1	15.0
RUN #3	15.1	15.0	15.1
AVERAGE	15.0	15.1	15.0

TOTAL AVERAGE CONCENTRATION 15.0 %O2

Expires: 6-2-93

LABORATORY ANALYSIS
EPA METHOD 5 - PARTICULATE ANALYSIS

COMPANY: Destec

REPORT: 027-341

LOCATION/UNIT: Turbine #1

DATE TESTED: 2/9/93

ANALYST: DGS

RUN # PreTest Blank 2

PROBE/NOZZLE/FILTER TOP VOL-

DISH # #1	#2	#3	AVERAGE
FINAL (g)			
TARE (g)			
NET (g)			

FILTER # _____

#1	#2	#3	AVERAGE
FINAL (g)			
TARE (g)			
NET (g)			

Train 2 CONDENSABLE (aliquot 100 ml / 1 liter ml)

DISH # 43 #1	#2	#3	AVERAGE
FINAL (g) 78.2228	78.2224		78.2227
TARE (g) 78.2225			78.2225
NET (g)			0.0002

LABORATORY ANALYSIS
EPA METHOD 5 - PARTICULATE ANALYSIS

COMPANY: Destec

REPORT: 021-341

LOCATION/UNIT: Turbines #1 & #2

DATE TESTED: 2/11/93

ANALYST: DGS

RUN # Mid-Test Blanks

PROBE/NOZZLE/FILTER TOP

VOL- 185 ml

DISH # 16 #1	#2	#3	AVERAGE
FINAL (g) 76.9192	76.9183	76.9190	76.9191
TARE (g) 76.9189			76.9189
NET (g)			0.0002

FILTER # 504

#1	#2	#3	AVERAGE
FINAL (g) 0.6207	0.6207		0.6207
TARE (g) 0.6208			0.6208
NET (g)			0

CONDENSABLE (aliquot 100 ml / 214 ml)

DISH # 50 #1	#2	#3	AVERAGE
FINAL (g) 77.4978	77.4971	77.4976	77.4977
TARE (g) 77.4976			77.4976
NET (g)			0.0001

LABORATORY ANALYSIS
EPA METHOD 5 - PARTICULATE ANALYSIS

COMPANY: Destec

REPORT: 027-341

LOCATION/UNIT: Turbine #2

DATE TESTED: 2/12/93

ANALYST: DGS

RUN # End-Test Blanks

PROBE/NOZZLE/FILTER TOP

VOL- 150 ml

DISH # 40 #1	#2	#3	AVERAGE
FINAL (g) 71.8500	71.8492	71.8498	71.8495
TARE (g) 71.8497			71.8497
NET (g)			0.0002

FILTER # 505

#1	#2	#3	AVERAGE
FINAL (g) 0.6187	0.6187		0.6187
TARE (g) 0.6186			0.6186
NET (g)			0.0001

CONDENSABLE (aliquot 100ml / 209ml)

DISH # 18 #1	#2	#3	AVERAGE
FINAL (g) 65.8824	65.8817	65.8822	65.8823
TARE (g) 65.8830			65.8830
NET (g)			-0-

PETRO CHEM ENVIRONMENTAL SERVICES LABORATORY

QUALITY CONTROL - METHOD 5 Q A BATCH #: 5-93-0011

DI H_2O FROM ANTONINO AVE VOLUME (ml): 250 ml

DISH #: 27	#3- 81.1228	AVERAGE
FINAL WT.(g): 81.1213	FINAL WT.(g): 81.1228	FINAL WT.(g): 81.1228
TARE WT. (g): 81.1217	TARE WT. (g):	TARE WT. (g): 81.1217
NET WT. (g):	NET WT. (g):	NET WT. (g): 0.0011

DI H_2O FROM DANIELS LN. VOLUME (ml): 250 ml

DISH #: 24	#3- 74.5886	AVERAGE
FINAL WT.(g): 74.5875	FINAL WT.(g): 74.5886	FINAL WT.(g): 74.5886
TARE WT. (g): 74.5875	TARE WT. (g):	TARE WT. (g): 74.5875
NET WT. (g):	NET WT. (g):	NET WT. (g): 0.0011

EMPTY DISH

DISH #: 7	#3- 65.0509	AVERAGE
FINAL WT.(g): 65.0502	FINAL WT.(g): 65.0511	FINAL WT.(g): 65.0510
TARE WT. (g): 65.0504	TARE WT. (g):	TARE WT. (g): 65.0504
NET WT. (g):	NET WT. (g):	NET WT. (g): 0.0006

FILTER BLANK

FILTER #: 510		AVERAGE
FINAL WT.(g): 0.6136	FINAL WT.(g): 0.6135	FINAL WT.(g): 0.6136
TARE WT. (g): 0.6137	TARE WT. (g):	TARE WT. (g): 0.6137
NET WT. (g):	NET WT. (g):	NET WT. (g): 0

RECOVERY SAMPLE VOLUME (ml): 100 ml

DISH #: 20	#3- 72.3965	AVERAGE
FINAL WT.(g): 72.3969	FINAL WT.(g): 72.3991	FINAL WT.(g): 72.3967
TARE WT. (g): 72.3955	TARE WT. (g):	TARE WT. (g): 72.3955
NET WT. (g):	NET WT. (g):	NET WT. (g): 0.0012

CONC (g/l): 0.01435 g/l Na_2SO_4	% RECOVERY: 83.6%
WT (g): 0.001435 g	(0.0012/0.001435)100

LABORATORY ANALYSIS
EPA METHOD 5 - ORGANIC ANALYSIS

COMPANY: Destec

REPORT: 027-341

LOCATION/UNIT: Turbines 1 & 2

DATE TESTED: 2/11/93

ANALYST: DGS

SAMPLE # Lab Reagent Blank ($MeCl_2$) aliquot - 100 ml

TIN # 4			
# 1	# 2	# 3	AVERAGE
final (g) 1.59694	final (g) 1.59699	final (g)	1.59698
tare (g) 1.59684	tare (g)	tare (g)	1.59684
NET (g)	NET (g)	NET (g)	0.00014

SAMPLE # Empty aliquot - 0 ml

TIN # 1			
# 1	# 2	# 3	AVERAGE
final (g) 1.59450	final (g) 1.59454	final (g)	1.59452
tare (g) 1.59440	tare (g)	tare (g)	1.59440
NET (g)	NET (g)	NET (g)	0.00012

SAMPLE # _____ aliquot - _____

TIN #			
# 1	# 2	# 3	AVERAGE
final (g)	final (g)	final (g)	
tare (g)	tare (g)	tare (g)	
NET (g)	NET (g)	NET (g)	

SAMPLE # _____ aliquot - _____

TIN #			
# 1	# 2	# 3	AVERAGE
final (g)	final (g)	final (g)	
tare (g)	tare (g)	tare (g)	
NET (g)	NET (g)	NET (g)	

LABORATORY ANALYSIS
EPA METHOD 5 - PARTICULATE ANALYSIS

COMPANY: Destec

REPORT: 027-341

LOCATION/UNIT: Turbine #1

DATE TESTED: 2/9/93

ANALYST: DGS

RUN # Pretest Blanks 1

PROBE/NOZZLE/FILTER TOP

VOL- 150 ml

DISH # 47 #1	#2	#3	AVERAGE
FINAL (g) 77.2103	77.2096	77.2102	77.2103
TARE (g) 77.2096			77.2096
NET (g)			0.0007

FILTER # _____

#1	#2	#3	AVERAGE
FINAL (g)			
TARE (g)			
NET (g)			

Train 1

CONDENSABLE (aliquot 100ml / 194ml)

DISH # 52 #1	#2	#3	AVERAGE
FINAL (g) 77.1684	77.1675	77.1681	77.1683
TARE (g) 77.1681			77.1681
NET (g)			0.0002

LABORATORY ANALYSIS
EPA METHOD 5 - ORGANIC ANALYSIS

COMPANY: Destec

REPORT: 027-341

LOCATION/UNIT: Blanks

DATE TESTED: 2/26/93

ANALYST: DGS

SAMPLE # Lab Reagent Blank - MeCl2

ALIQUOT - 100 ml

TIN # 2			
#1	#2	#3	AVERAGE
FINAL (g) 1.59123	1.59123		1.59123
TARE (g) 1.59120			1.59120
NET (g)			0.00003

SAMPLE # Empty

ALIQUOT - Ø ml

TIN # 1			
#1	#2	#3	AVERAGE
FINAL (g) 1.58967	1.58970		1.58969
TARE (g) 1.58972			1.58972
NET (g)			-0-

SAMPLE # _____

ALIQUOT - _____

TIN #			
#1	#2	#3	AVERAGE
FINAL (g)			
TARE (g)			
NET (g)			

LABORATORY ANALYSIS
EPA METHOD 5 - ORGANIC ANALYSIS

COMPANY: Destec

REPORT: 027-341

LOCATION/UNIT: Blanks
LOV TURBINE 1

DATE TESTED: 2/24/93

ANALYST: DGS

SAMPLE # Train Blank

ALIQUOT - 200 ml

TIN # 6	#1	#2	#3	AVERAGE
FINAL (g)	1.59004	1.59004		1.59004
TARE (g)	1.58974			1.58974
NET (g)				0.00030

SAMPLE # H_2O Blanks

ALIQUOT - 200 ml

TIN # 5	#1	#2	#3	AVERAGE
FINAL (g)	1.60073	1.60077		1.60075
TARE (g)	1.60063			1.60063
NET (g)				0.00012

SAMPLE # Field Blank - $MeCl_2$

ALIQUOT - 180 ml

TIN # 3	#1	#2	#3	AVERAGE
FINAL (g)	1.57397	1.57399		1.57398
TARE (g)	1.57340			1.57340
NET (g)				0.00058

PETRO
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3207 Antonino Avenue
Bakersfield, California 93308
(805) 327-7300
FAX (805) 327-3459

COMPANY	: DESTEC OPERATING	DATE RECEIVED :	2-12-93
DATE	: 2-11-93	DATE ANALYZED :	2-12-93
REPORT	: 027-341	DATE REPORTED:	2-16-93

EPA METHOD 18
LOW RANGE HYDROCARBON ANALYSIS
CALIBRATION DATA AND STATISTICS

METHANE

CONC. (ppmv)	AREA COUNTS	RESPONSE FACTOR ppmv/AC
0.413	742	5.57E-04
0.825	1453	5.68E-04
4.125	7236	5.70E-04
8.25	14456	5.71E-04
	AVERAGE RF	5.66E-04
	STD. DEVIATION	5.70E-06
	RSD%	1.01%

ETHANE

CONC. (ppmv)	AREA COUNTS	RESPONSE FACTOR ppmv/AC
0.413	1415	2.92E-04
0.825	2838	2.91E-04
4.125	14705	2.81E-04
8.25	29176	2.83E-04
	AVERAGE RF	2.86E-04
	STD. DEVIATION	4.90E-06
	RSD%	1.71%

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COMPANY: DESTEC OPERATING
DATE : 2-11-93
REPORT : 027-341

DATE RECEIVED : 2-12-93
DATE ANALYZED : 2-12-93
DATE REPORTED: 2-16-93

EPA METHOD 18
LOW RANGE HYDROCARBON ANALYSIS
CALIBRATION DATA AND STATISTICS

PROPANE

CONC. (ppmv)	AREA COUNTS	RESPONSE FACTOR ppmv/AC
0.413	2077	1.99E-04
0.825	4179	1.97E-04
4.125	21763	1.90E-04
8.25	43211	1.91E-04
	AVERAGE RF	1.94E-04
	STD. DEVIATION	4.01E-06
	RSD%	2.07%

BUTANE

CONC. (ppmv)	AREA COUNTS	RESPONSE FACTOR ppmv/AC
0.413	2826	1.46E-04
0.825	5652	1.46E-04
4.125	28794	1.43E-04
8.25	57028	1.45E-04
	AVERAGE RF	1.45E-04
	STD. DEVIATION	1.16E-06
	RSD%	0.80%

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COMPANY: DESTEC OPERATING
DATE : 2-11-93
REPORT : 027-341

DATE RECEIVED : 2-12-93
DATE ANALYZED : 2-12-93
DATE REPORTED: 2-16-93

EPA METHOD 18
LOW RANGE HYDROCARBON ANALYSIS
CALIBRATION DATA AND STATISTICS

PENTANE

CONC. (ppmv)	AREA COUNTS	RESPONSE FACTOR ppmv/AC
0.37	3203	1.16E-04
0.74	6628	1.12E-04
3.7	35175	1.05E-04
7.4	69074	1.07E-04
	AVERAGE RF	1.10E-04
	STD. DEVIATION	4.01E-06
	RSD%	3.65%

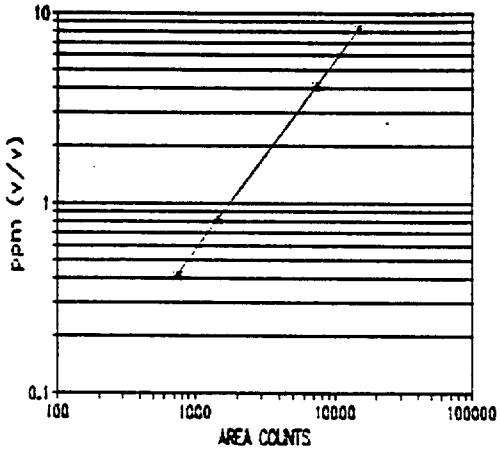
HEXANE

CONC. (ppmv)	AREA COUNTS	RESPONSE FACTOR ppmv/AC
0.38	4200	9.05E-05
0.76	8451	8.99E-05
3.8	41640	9.13E-05
7.6	82003	9.27E-05
	AVERAGE RF	9.11E-05
	STD. DEVIATION	1.03E-06
	RSD%	1.14%

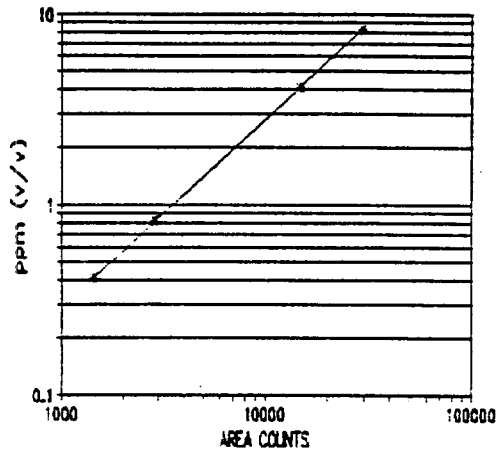
COMPANY : DESTEC OPERATING
UNIT : DOUBLE "C" TURBINES 1 & 2
DATE : 2-11-93
REPORT : 027-341

HYDROCARBON CALIBRATION LINEARITY GRAPHS
ANALYSIS PERFORMED ON 2-12-93

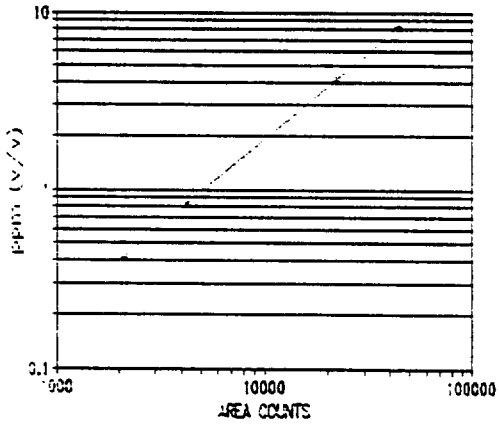
METHANE
CALIBRATION LINEARITY



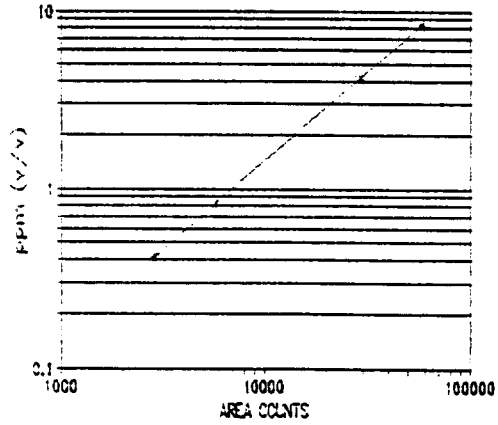
ETHANE
CALIBRATION LINEARITY



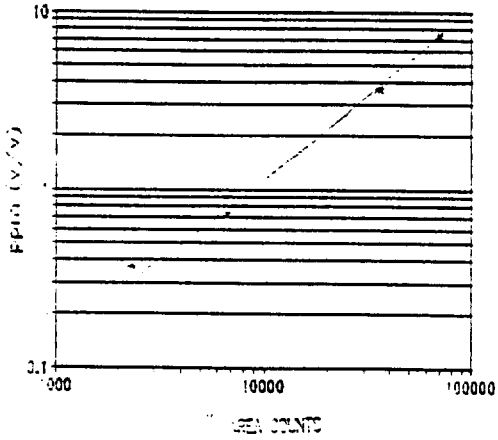
PROPANE
CALIBRATION LINEARITY



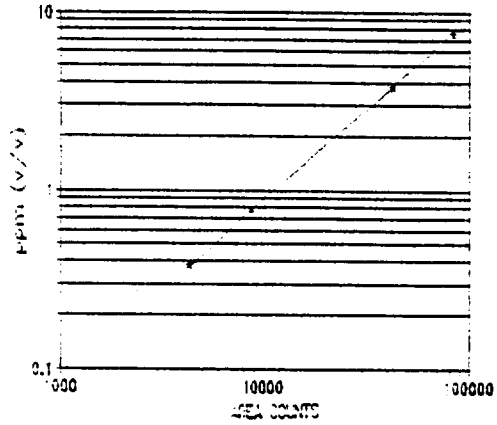
BUTANE
CALIBRATION LINEARITY



PENTANE
CALIBRATION LINEARITY



HEXANES+
CALIBRATION LINEARITY



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COMPANY: DESTEC OPERATING
DATE : 2-11-93
REPORT : 027-341

DATE RECEIVED : 2-12-93
DATE ANALYZED : 2-12-93
DATE REPORTED: 2-16-93

EPA METHOD 18
CALIBRATION DRIFT ANALYSIS

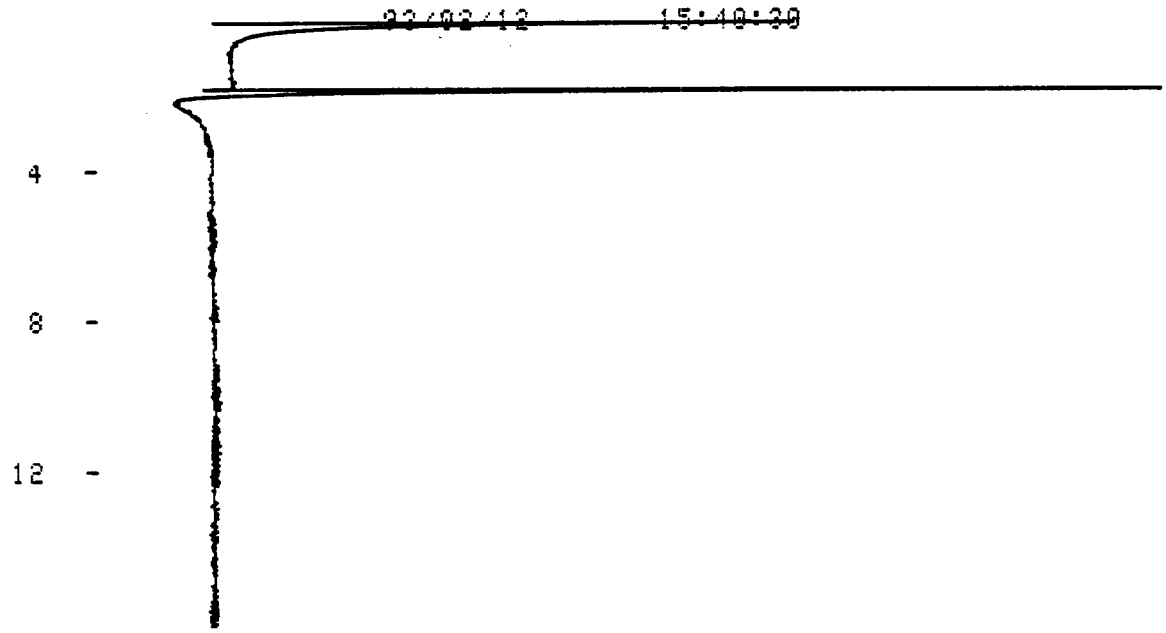
POST ANALYSIS CALIBRATION CHECK (0.4ppm STD.)

CONSTITUENT	INITIAL RF	POST RF	%DIFF.
METHANE	5.57E-04	5.73E-04	-2.91%
ETHANE	2.92E-04	2.97E-04	-1.87%
PROPANE	1.99E-04	2.08E-04	-4.48%
BUTANE	1.46E-04	1.53E-04	-4.36%
PENTANE	1.16E-04	1.18E-04	-1.94%
HEXANES+	9.05E-05	8.70E-05	3.89%

POST ANALYSIS CALIBRATION CHECK (0.8ppm STD.)

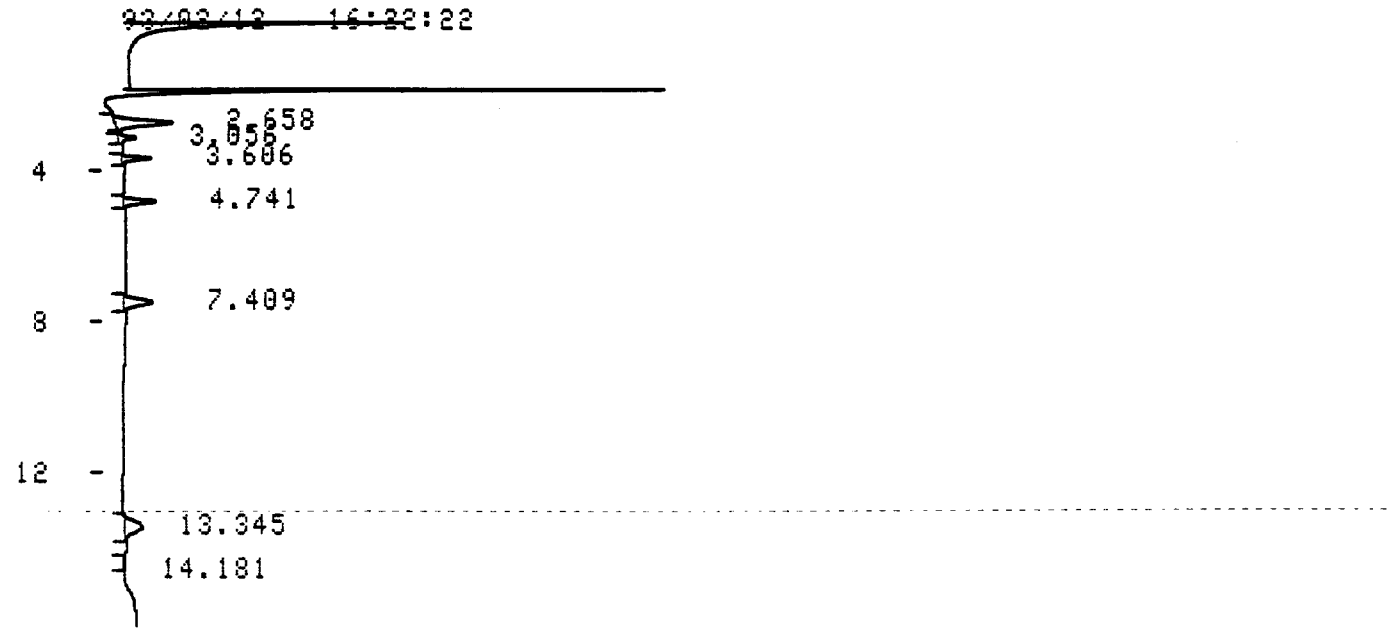
CONSTITUENT	INITIAL RF	POST RF	%DIFF.
METHANE	5.68E-04	5.67E-04	0.14%
ETHANE	2.91E-04	2.88E-04	0.94%
PROPANE	1.97E-04	1.96E-04	0.76%
BUTANE	1.46E-04	1.49E-04	-1.95%
PENTANE	1.12E-04	1.06E-04	5.22%
HEXANES+	8.99E-05	8.86E-05	1.43%

SYSTEM BLANK
UHP NITROGEN



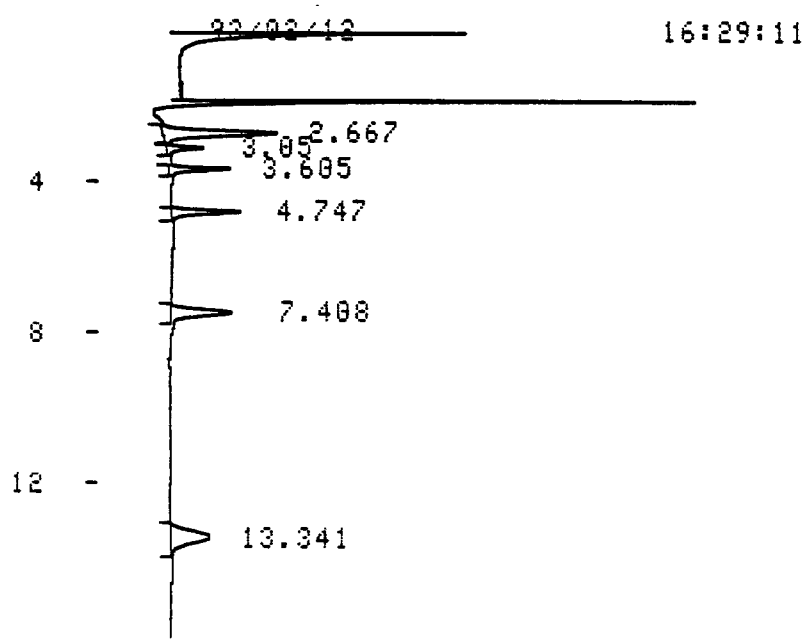
CHROMATOGRAM 2 MEMORIZED
WARNING NO PEAK

0.4PPm HYDROCARBON STANDARD
SCOTTY CAN MIX 1 DIL. 1:40



PKNO	TIME	AREA	MK	IDNO	CONC	NAME
1	2.658	4200		6		C-6+
2	3.056	742		1		C-1
3	3.606	1415		2		C-2
4	4.741	2077		3		C-3
5	7.409	2826		4		C-4
6	13.345	3203		5		C-5
7	14.181	180				
	TOTAL	14643			0	

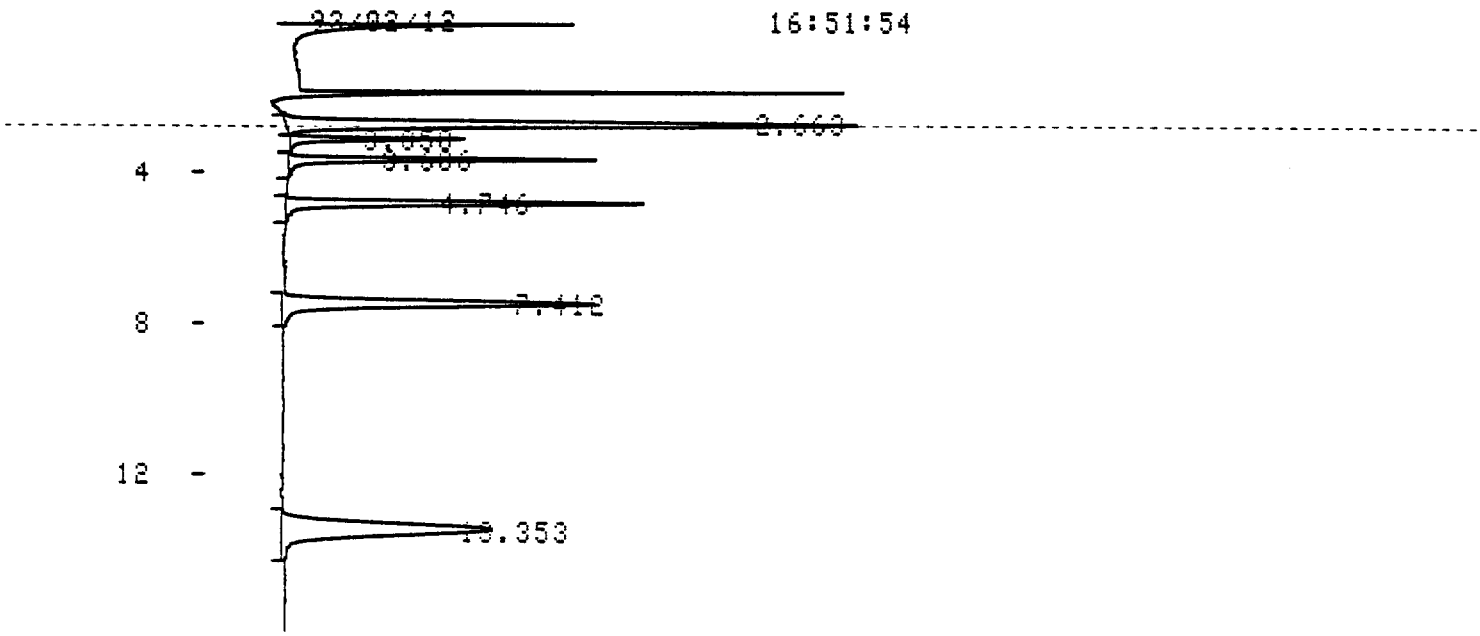
0.8PPm HYDROCARBON STANDARD
SCOTTY CAN MIX 1 DIL. 1:20



CHROMATOGRAM 4 MEMORIZED

PKNO	TIME	AREA	MK	IDNO	CONC	NAME
1	2.667	8451		6		C-6+
2	3.05	1453		1		C-1
3	3.605	2838		2		C-2
4	4.747	4179		3		C-3
5	7.408	5652		4		C-4
6	13.341	6628		5		C-5
	TOTAL	29200			0	

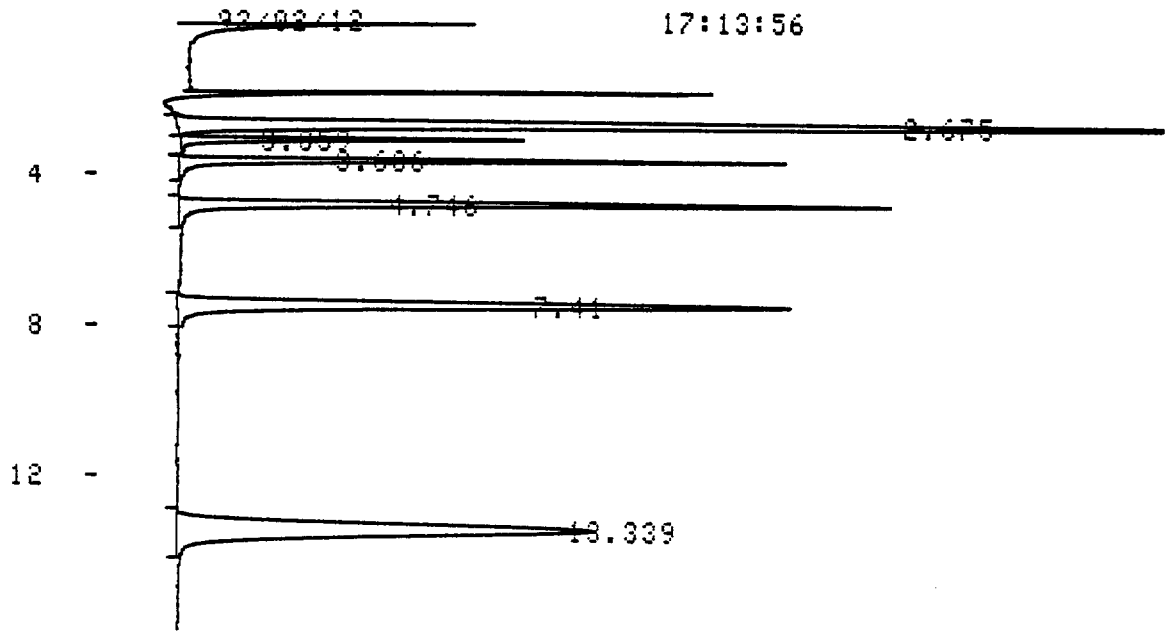
4PPm HYDROCARBON STANDARD
SCOTTY CAN MIX 1 DIL 1:4



CHROMATOGRAM 5 MEMORIZED

PKNO	TIME	AREA	MK	IDNO	CONC	NAME
1	2.663	41640		6		C-6+
2	3.058	7236		1		C-1
3	3.606	14705		2		C-2
4	4.746	21763		3		C-3
5	7.412	28794		4		C-4
6	13.353	35175		5		C-5
	TOTAL	149312			0	

8PPm HYDROCARBON STANDARD
SCOTTY CAN MIX 1 DIL. 1:2

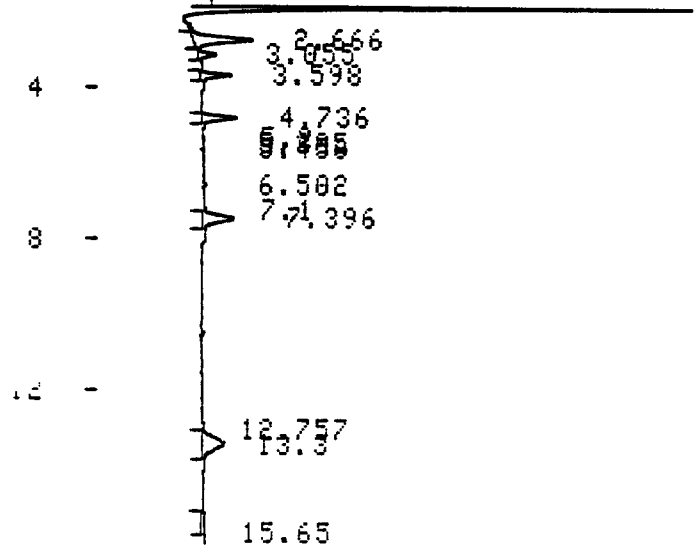


CHROMATOGRAM 6 MEMORIZED

PKNO	TIME	AREA	MK	IDNO	CONC	NAME
1	2.675	82003		6		C-6+
2	3.059	14456		1		C-1
3	3.606	29176		2		C-2
4	4.746	43211		3		C-3
5	7.41	57028		4		C-4
6	13.339	69074		5		C-5
	TOTAL	294947			0	

POST ANALYSIS CLLIBRATION CHECK
0.4PPm HYDROCARBON STANDARD
SCOTTY CAN MIX 1 DIL. 1:40

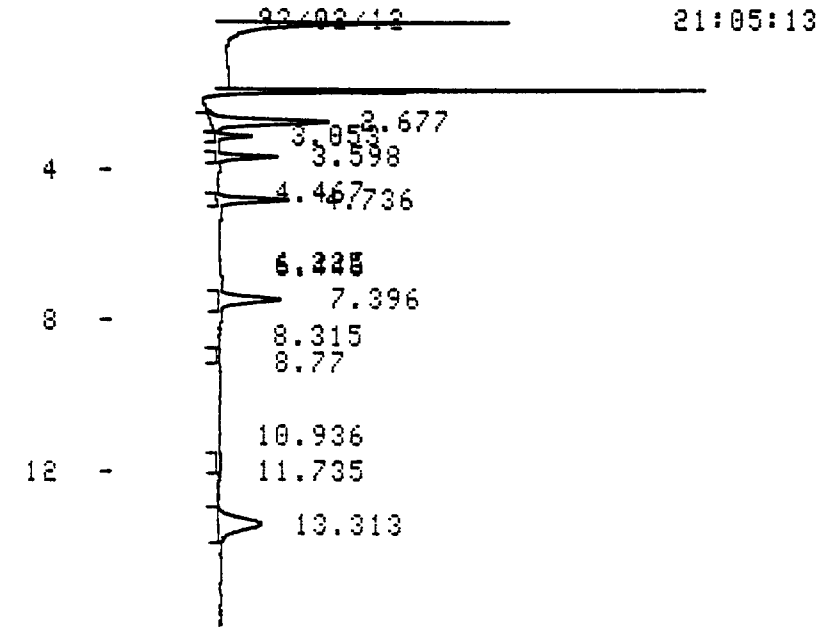
~~93/02/12~~ 20:33:31



CHROMATOGRAM 17 MEMORIZED

P<NO	TIME	AREA	MK	IDNO	CONC	NAME
1	2.666	4370		6		C-6+
2	3.055	721		1		C-1
3	3.598	1389		2		C-2
4	4.736	1988		3		C-3
5	7.396	2708		4		C-4
6	13.3	3142		5		C-5
7	~~15.65~~	~~288~~		15		~~C-5~~
	TOTAL	14606			0	

POST ANALYSIS CALIBRATION CHECK
0.8PPm HYDROCARBON STANDARD
SCOTTY CAN MIX 1 DIL. 1:20



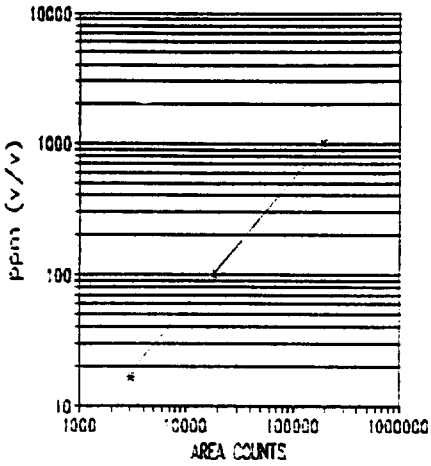
CHROMATOGRAM 18 MEMORIZED

PKNO	TIME	AREA	MK	IDNO	CONC	NAME
1	2.677	8574		6		C-6+
2	3.053	1455		1		C-1
3	3.598	2865		2		C-2
4	4.736	4211		3		C-3
5	7.396	5544		4		C-4
6	8.77	232		16		C-5
7	~~11.735~~	~~318~~		~~17~~		~~C-5~~
8	13.313	6993		5		C-5
	TOTAL	30185			0	

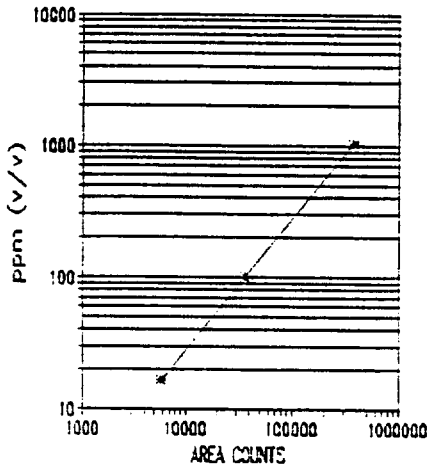
COMPANY : DESTEC DOUBLE "C"
UNIT : LUBE OIL VENTS
DATE : 2-11-93
REPORT : 027-341

HYDROCARBON CALIBRATION LINEARITY GRAPHS
ANALYSIS PERFORMED ON 2-12-93

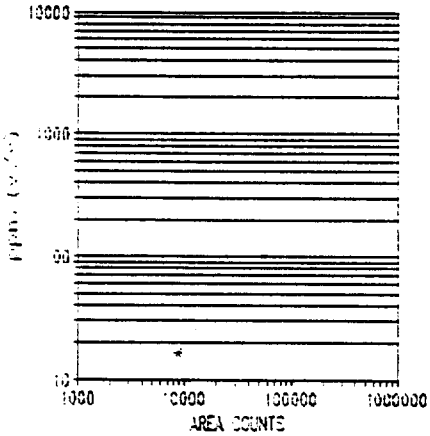
METHANE
CALIBRATION LINEARITY



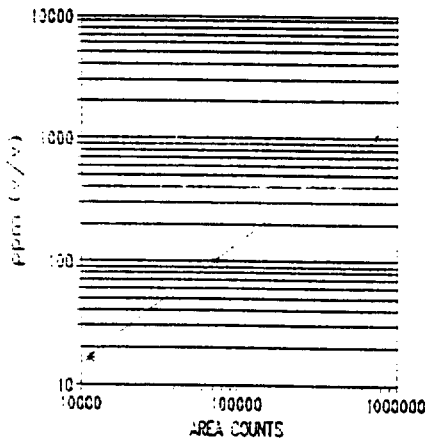
ETHANE
CALIBRATION LINEARITY



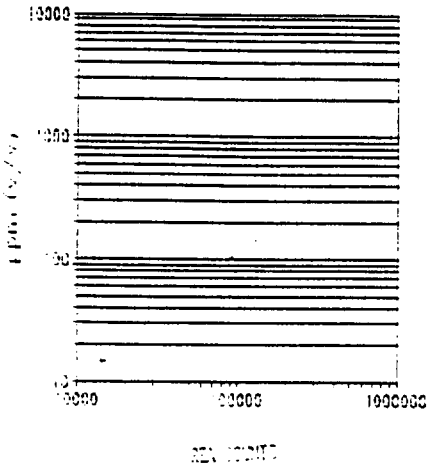
PROPANE
CALIBRATION LINEARITY



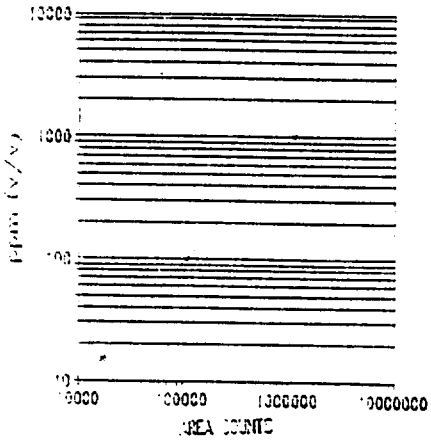
BUTANE
CALIBRATION LINEARITY



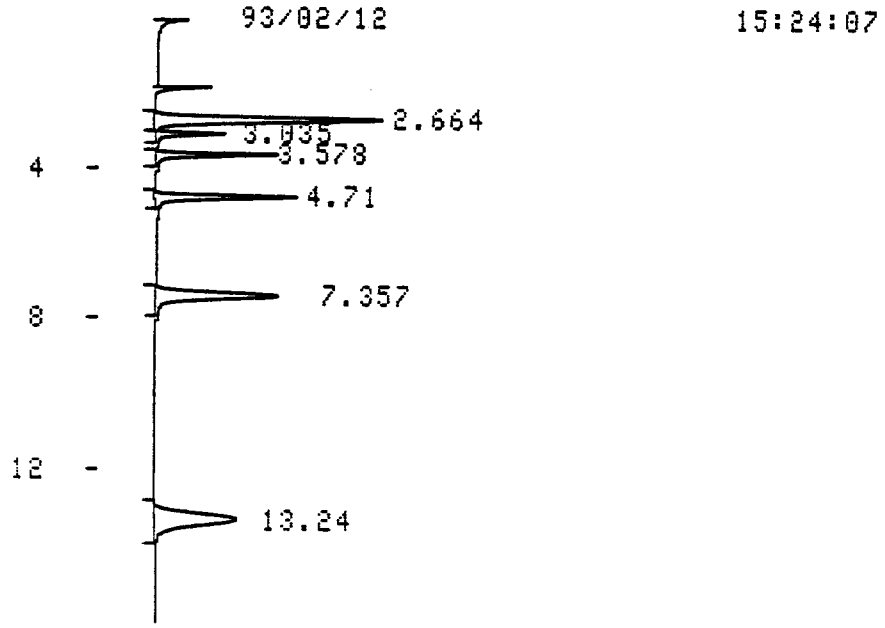
PENTANE
CALIBRATION LINEARITY



HEXANES+
CALIBRATION LINEARITY



15PPm HYDROCARBON STANDARD
SCOTTY CAN MIX 1



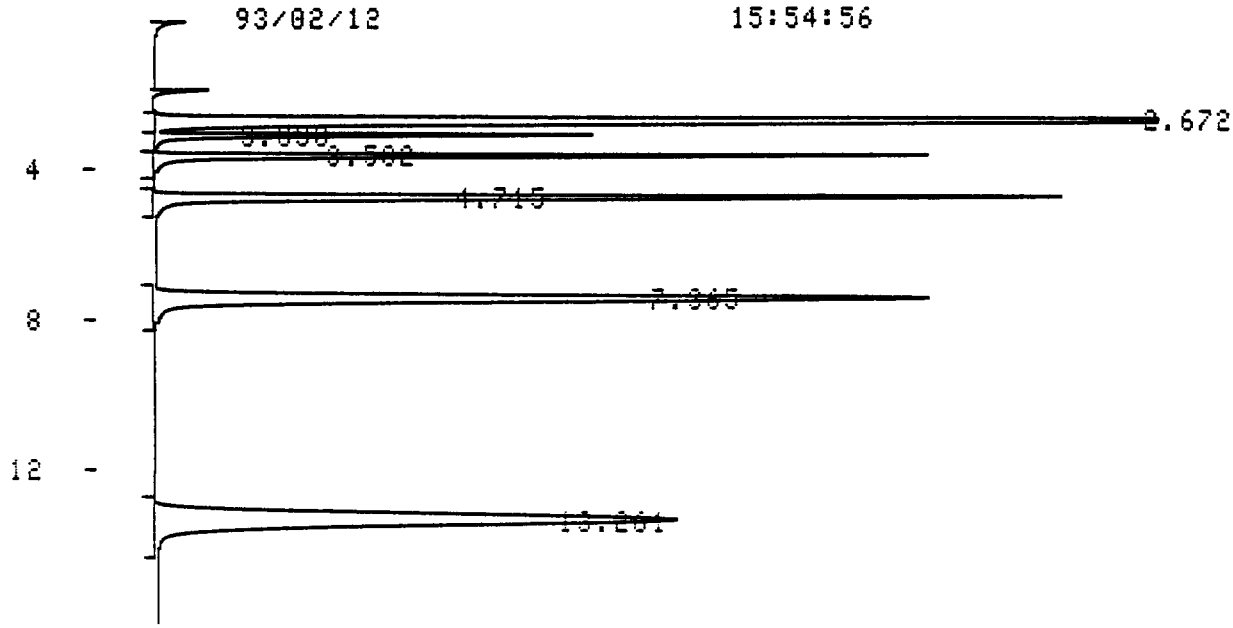
CHROMATOGRAM 2 MEMORIZED

PKNO	TIME	AREA	MK	IDNO	CONC	NAME
1	2.664	16693		6		C-6+
2	3.035	2947	V	1		C-1
3	3.578	5775		2		C-2
4	4.71	8596		3		C-3
5	7.357	11369		4		C-4
6	13.24	13965		5		C-5
	TOTAL	59346				

IDENTIFICATION FILE 0
MODE$ 101 WINDOW 3

IDNO	NAME	TIME	FACTOR	CONC
1	C-1	3.02	0.00559961	16.5
2	C-2	3.57	0.00285702	16.5
3	C-3	4.7	0.00191947	16.5
4	C-4	7.34	0.00145126	16.5
5	C-5	13.23	0.00105976	14.8
6	C-6+	2.66	0.000910568	15.2
7	C-2	3.85	0.00285702	16.5
8	C-3	4.3	0.00191947	16.5
9	C-4	5.7	0.00145126	16.5
10	C-4	6.65	0.00145126	16.5
11	C-5	10.24	0.00105976	14.8
12	C-5	10.59	0.00105976	14.8
13	C-5	12.73	0.00105976	14.8
14	C-5	11.3	0.00105976	14.8
15	C-5	15.43	0.00105976	14.8
16	C-5	8.79	0.00105976	14.8
17	C-5	11.82	0.00105976	14.8

100PPm HYDROCARBON STANDARD
SCOTTY CAN MIX 220



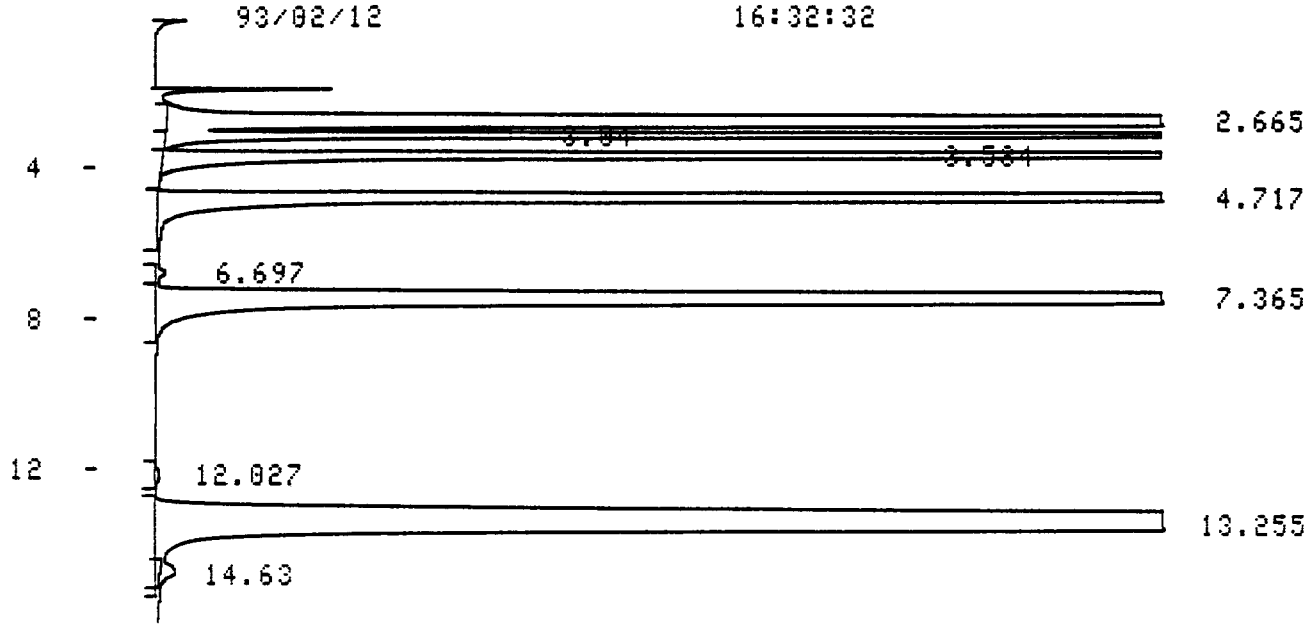
CHROMATOGRAM 3 MEMORIZED

PKNO	TIME	AREA	MK	IDNO	CONC	NAME
1	2.672	106664		6		C-6+
2	3.038	18155	V	1		C-1
3	3.582	36346		2		C-2
4	4.715	53925		3		C-3
5	7.365	71542		4		C-4
6	13.261	86396		5		C-5
	TOTAL	373029				

IDENTIFICATION FILE 1
MODE$ 101 WINDOW 3

IDNO	NAME	TIME	FACTOR	CONC
1	C-1	3.03	0.00556311	101
2	C-2	3.57	0.00277887	101
3	C-3	4.7	0.00185442	100
4	C-4	7.35	0.00141176	101
5	C-5	13.24	0.00114704	99.1
6	C-6+	2.66	0.000937519	100
7	C-2	3.9	0.00277887	101
8	C-3	4.35	0.00185442	100
9	C-4	5.75	0.00141176	101
10	C-4	6.7	0.00141176	101
11	C-5	10.21	0.00114704	101
12	C-5	10.59	0.00114704	99.1
13	C-5	12.71	0.00114704	99.1
14	C-5	11.3	0.00114704	99.1
15	C-5	15.27	0.00114704	99.1
16	C-5	12.19	0.00114704	99.1
17	C-5	11.6	0.00114704	99.1

1000PPm HYDROCARBON STANDARD
SCOTTY CAN MIX 224



CHROMATOGRAM 4 MEMORIZED

PKNO	TIME	AREA	MK	IDNO	CONC	NAME
1	2.665	1092464		6		C-6+
2	3.04	185090	V	1		C-1
3	3.584	369110		2		C-2
4	4.717	548920		3		C-3
5	6.697	810		10		C-4
6	7.365	729210		4		C-4
7	12.027	703				
8	13.255	899180	S	5		C-5
9	14.63	2218	T			
	TOTAL	3827705				

IDENTIFICATION FILE 2
MODE$ 101 WINDOW 3

IDNO	NAME	TIME	FACTOR	CONC
1	C-1	3.03	0.00540277	1000
2	C-2	3.57	0.0027905	1030
3	C-3	4.7	0.00182176	1000
4	C-4	7.35	0.00138506	1010
5	C-5	13.23	0.00113437	1020
6	C-6+	2.66	0.000919938	1005
7	C-2	3.9	0.0027905	1030
8	C-3	4.52	0.00182176	1000
9	C-4	5.94	0.00138506	1010
10	C-4	6.68	0.00138506	1010
11	C-5	10.21	0.00113437	1020
12	C-5	10.59	0.00113437	1020
13	C-5	12.73	0.00113437	1020
14	C-5	12.53	0.00113437	1020
15	C-5	15.21	0.00113437	1020

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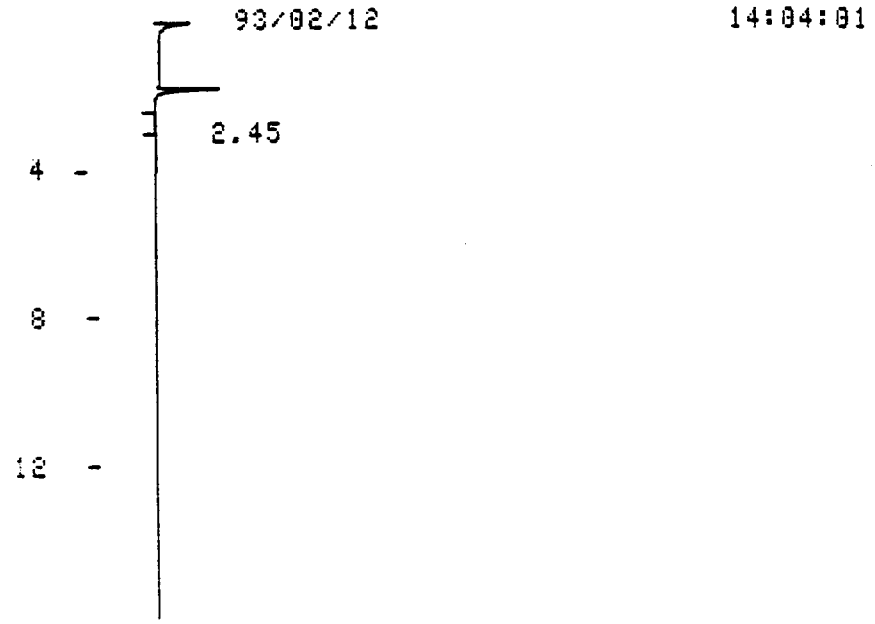
UHP NITROGEN

93/02/12 14:04:01

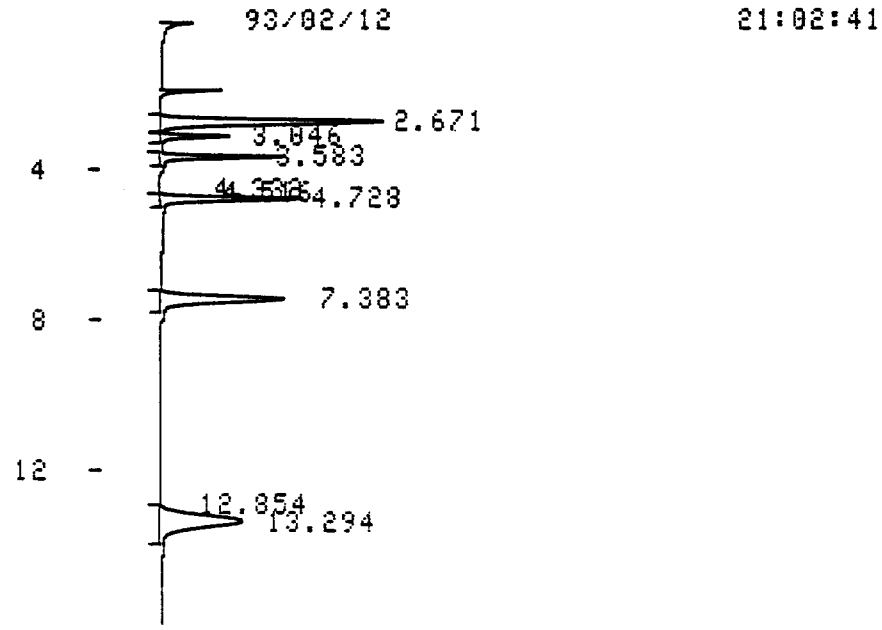


CHROMATOGRAM 1 MEMORIZED

PKNO	TIME	AREA	MK	IDNO	CONC	NAME
1	2.45	231				
	TOTAL	231			0	

GROUP(NAME)	CONC
C-1	0
C-2	0
C-3	0
C-4	0
C-5	0
C-6+	0

POST ANALYSIS CALIBRATION CHECK
15PPm HYDROCARBON STANDARD
SCOTTY CAN MIX 1

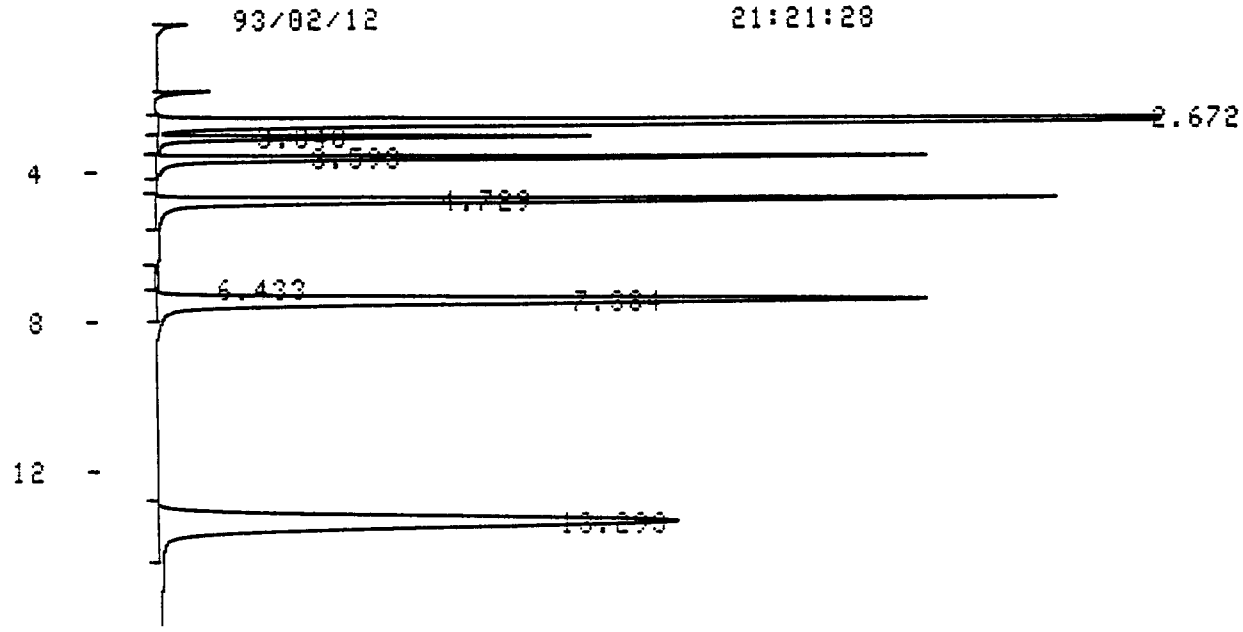


CHROMATOGRAM 16 MEMORIZED

PKNO	TIME	AREA	MK	IDNO	CONC	NAME
1	2.671	16264		6	14.8091	C-6+
2	3.046	2872		1	16.0838	C-1
3	3.583	5675		2	16.2143	C-2
4	4.728	8376	V	3	16.0768	C-3
5	7.383	11220		4	16.2832	C-4
6	13.294	13797	V	5	14.6212	C-5
	TOTAL	58204			94.0884	

GROUP(NAME)	CONC
C-1	16.0838
C-2	16.2143
C-3	16.0768
C-4	16.2832
C-5	14.6212
C-6+	14.8091

POST ANALYSIS CALIBRATION CHECK
100PPm HYDROCARBON STANDARD
SCOTTY CAN MIX 220



CHROMATOGRAM 17 MEMORIZED

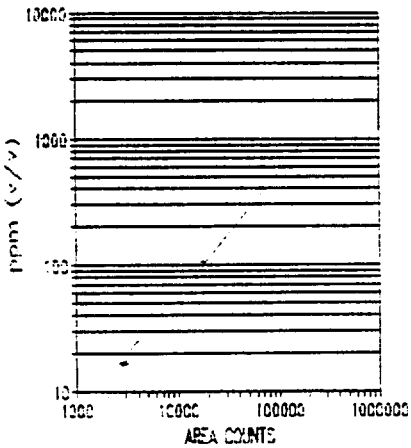
PKNO	TIME	AREA	MK	IDNO	CONC	NAME
1	2.672	106264		6	99.6241	C-6+
2	3.048	18046	V	1	100.3935	C-1
3	3.593	36074		2	100.2438	C-2
4	4.729	53827		3	99.8176	C-3
5	6.433	236				
6	7.384	70581		4	99.6427	C-4
7	13.293	85904		5	98.5352	C-5
	TOTAL	370930			598.2569	

GROUP(NAME)	CONC
C-1	100.3935
C-2	100.2438
C-3	99.8176
C-4	99.6427
C-5	98.5352
C-6+	99.6241

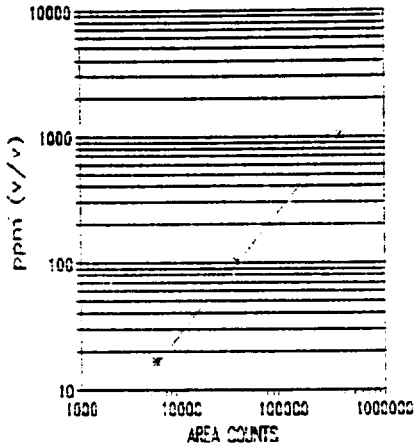
COMPANY : DESTEC OPERATING
UNIT : LUBE OIL VENT # 1 TURBINE 1
DATE : 2-26-93
REPORT : 027-341

HYDROCARBON CALIBRATION LINEARITY GRAPHS
ANALYSIS PERFORMED ON 2-27-93

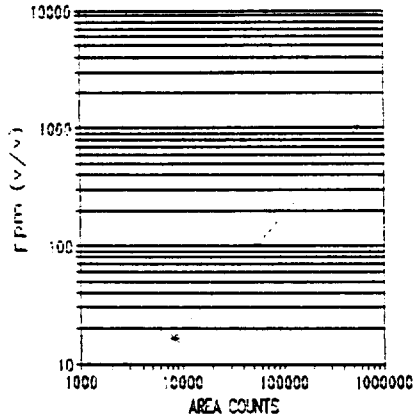
METHANE
CALIBRATION LINEARITY



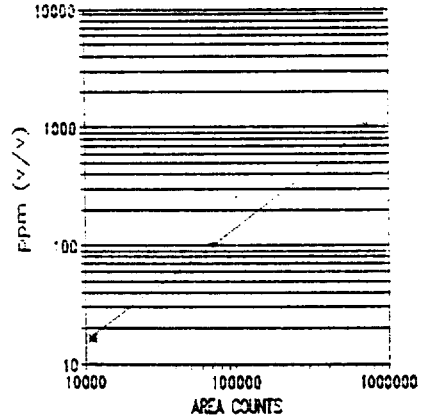
ETHANE
CALIBRATION LINEARITY



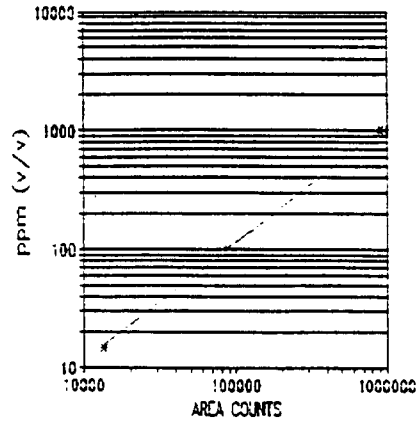
PROPANE
CALIBRATION LINEARITY



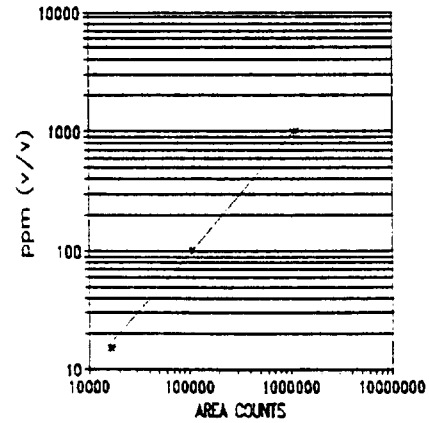
BUTANE
CALIBRATION LINEARITY



PENTANE
CALIBRATION LINEARITY



HEXANES+
CALIBRATION LINEARITY



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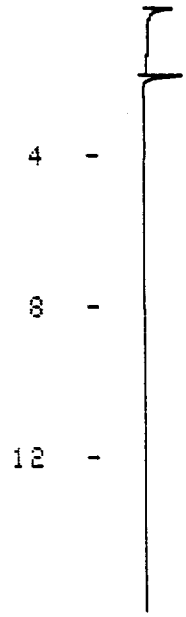
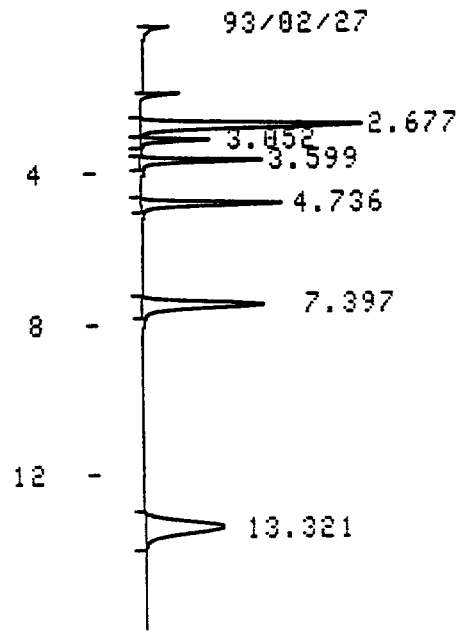
93/02/27 10:45:44



CHROMATOGRAM 1 MEMORIZED
WARNING NO PEAK

15PPm STANDARD
SCOTTY CAN MIX 1

93/02/27 11:15:36



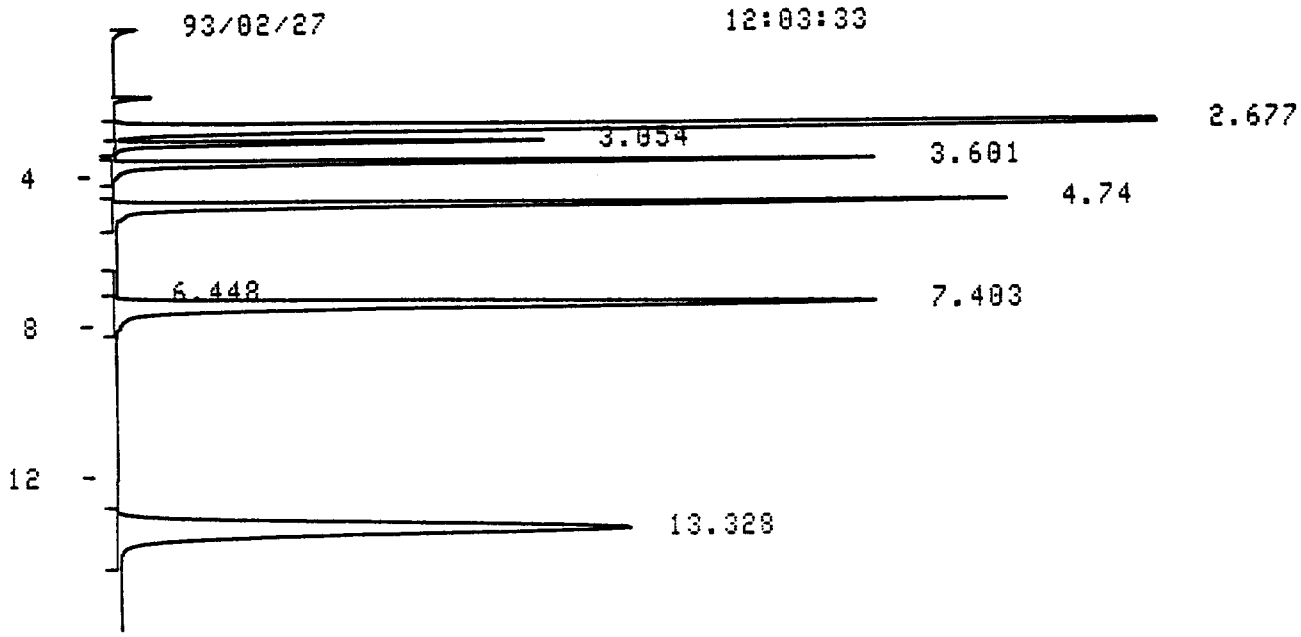
CHROMATOGRAM 2 MEMORIZED

PKNO	TIME	AREA	MK	IDNO	CONC	NAME
1	2.677	16352		6		C-6+
2	3.052	2847		1		C-1
3	3.599	5665		2		C-2
4	4.736	8260		3		C-3
5	7.397	11135		4		C-4
6	13.321	13546		5		C-5
	TOTAL	57806				

IDENTIFICATION FILE 0
MODE$ 101 WINDOW 3

IDNO	NAME	TIME	FACTOR	CONC
1	C-1	3.04	0.00579578	16.5
2	C-2	3.58	0.00291267	16.5
3	C-3	4.72	0.00199749	16.5
4	C-4	7.38	0.00148179	16.5
5	C-5	13.3	0.00109255	14.8
6	C-6+	2.66	0.000929527	15.2
7	C-2	3.85	0.00291267	16.5
8	C-3	4.3	0.00199749	16.5
9	C-4	5.7	0.00148179	16.5
10	C-4	6.65	0.00148179	16.5
11	C-5	10.24	0.00109255	14.8
12	C-5	10.59	0.00109255	14.8
13	C-5	12.73	0.00109255	14.8
14	C-5	11.3	0.00109255	14.8
15	C-5	15.43	0.00109255	14.8
16	C-5	8.79	0.00109255	14.8
17	C-5	11.82	0.00109255	14.8

100PPm HYDROCARBON STANDARD
SCOTTY CAN MIX 220

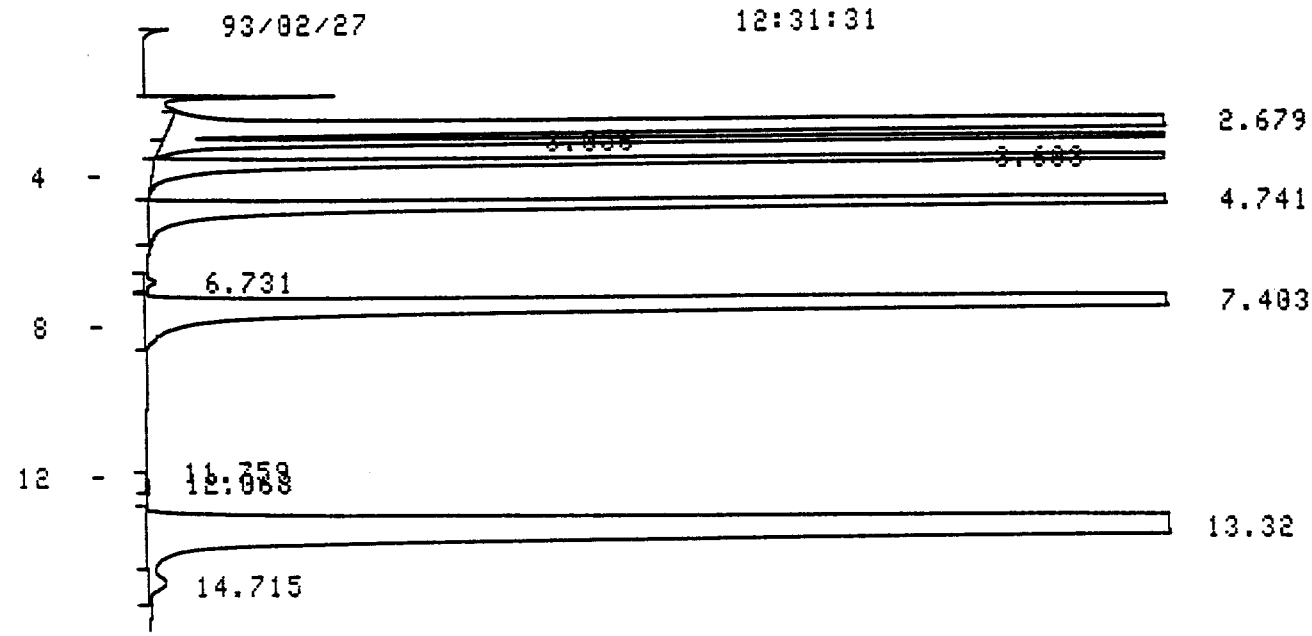


PKNO	TIME	AREA	MK	IDNO	CONC	NAME
1	2.677	105206		6		C-6+
2	3.054	17581		1		C-1
3	3.601	36075		2		C-2
4	4.74	53689		3		C-3
5	6.448	164				
6	7.403	70563		4		C-4
7	13.328	85164		5		C-5
	TOTAL	368443				

IDENTIFICATION FILE 1
MODE$ 101 WINDOW 3

IDNO	NAME	TIME	FACTOR	CONC
1	C-1	3.04	0.00574471	101
2	C-2	3.59	0.00279969	101
3	C-3	4.72	0.00186259	100
4	C-4	7.39	0.00143134	101
5	C-5	13.31	0.00116364	99.1
6	C-6+	2.66	0.000950515	100
7	C-2	3.9	0.00279969	101
8	C-3	4.35	0.00186259	100
9	C-4	5.75	0.00143134	101
10	C-4	6.66	0.00143134	101
11	C-5	10.21	0.00116364	101
12	C-5	10.59	0.00116364	99.1
13	C-5	12.71	0.00116364	99.1
14	C-5	11.3	0.00116364	99.1
15	C-5	15.27	0.00116364	99.1
16	C-5	12.19	0.00116364	99.1
17	C-5	11.6	0.00116364	99.1

1000PPm HYDROCARBON STANDARD
SCOTTY CAN MIX 224



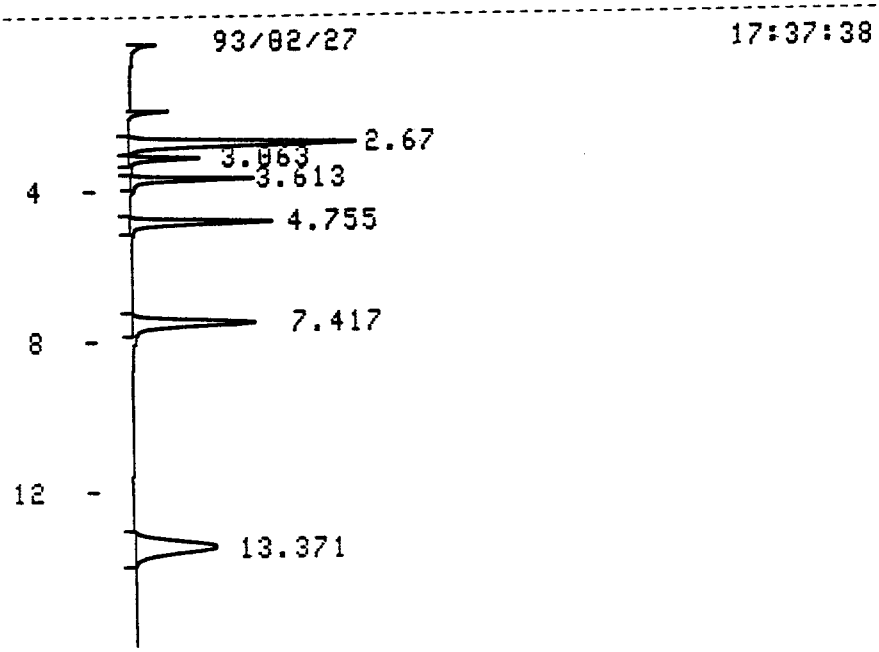
CHROMATOGRAM 4 MEMORIZED

PKNO	TIME	AREA	MK	IDNO	CONC	NAME
1	2.679	1084699		6		C-6+
2	3.056	182575	V	1		C-1
3	3.603	366221		2		C-2
4	4.741	546122		3		C-3
5	6.731	801		10		C-4
6	7.403	723032		4		C-4
7	12.068	582	V			
8	13.32	888271		5		C-5
9	14.715	3371	V			
	TOTAL	3795672				

IDENTIFICATION FILE 2
MODE$ 101 WINDOW 3

IDNO	NAME	TIME	FACTOR	CONC
1	C-1	3.04	0.0054772	1000
2	C-2	3.59	0.00281251	1030
3	C-3	4.73	0.00183109	1000
4	C-4	7.39	0.0013969	1010
5	C-5	13.3	0.0011483	1020
6	C-6+	2.66	0.000926524	1005
7	C-2	3.9	0.00281251	1030
8	C-3	4.52	0.00183109	1000
9	C-4	5.94	0.0013969	1010
10	C-4	6.71	0.0013969	1010
11	C-5	10.21	0.0011483	1020
12	C-5	10.59	0.0011483	1020
13	C-5	12.73	0.0011483	1020
14	C-5	12.55	0.0011483	1020
15	C-5	15.21	0.0011483	1020

POST ANALYSIS CALIBRATION CHECK
15PPm HYDROCARBON STANDARD
SCOTTY CAN MIX 1

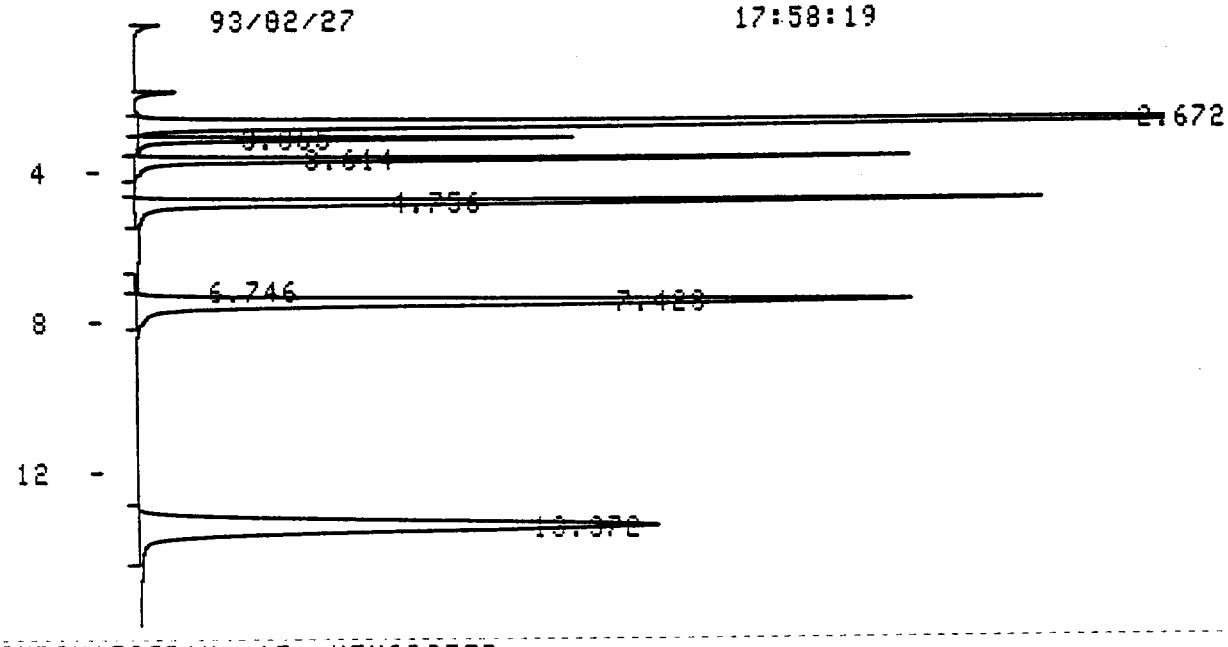


CHROMATOGRAM 14 MEMORIZED

PKNO	TIME	AREA	MK	IDNO	CONC	NAME
1	2.67	16676		6	15.5009	C-6+
2	3.063	2919		1	16.919	C-1
3	3.613	5790		2	16.8631	C-2
4	4.755	8572		3	17.1225	C-3
5	7.417	11301		4	16.7462	C-4
6	13.371	13791		5	15.0677	C-5
	TOTAL	59049			98.2193	

GROUP(NAME)	CONC
C-1	16.919
C-2	16.8631
C-3	17.1225
C-4	16.7462
C-5	15.0677
C-6+	15.5009

POST ANALYSIS CALIBRATION CHECK
100PPm HYDROCARBON STANDARD
SCOTTY CAN MIX 220



CHROMATOGRAM 15 MEMORIZED

PKNO	TIME	AREA	MK	IDNO	CONC	NAME
1	2.672	106850		6	101.5628	C-6+
2	3.065	18030		1	103.5794	C-1
3	3.614	36510		2	102.2167	C-2
4	4.756	54453		3	101.4233	C-3
5	6.746	234		10	0.3355	C-4
6	7.428	71740	V	4	102.6838	C-4
7	13.372	86707		5	100.8948	C-5
	TOTAL	374524			612.6962	

GROUP(NAME)	CONC
C-1	103.5794
C-2	102.2167
C-3	101.4233
C-4	103.0193
C-5	100.8948
C-6+	101.5628

APPENDIX IV
CORRESPONDENCE

PETRO
CHEM
ENVIRONMENTAL
SERVICES, INC.

313 Daniels Lane
Bakersfield, California 93307
(805) 327-7300
FAX (805) 327-3459

Gary Fuller (WZI)
Double "C" Limited Cogen Facility
January 27, 1993

Units: Two Gas Turbines and
Two Lube Oil Vent Stacks

SOURCE TEST PLAN

I. Source Information:

A. Unit:

Two 25.0 MW GE LM-2500
Gas Fired Turbines
PTO 4165001 (B), 4165002 (B)
Two Lube Oil Vent Stacks; one per turbine

B. Company:

Destec Engineering, Inc.
Double "C" Limited Cogeneration Facility
Sec. 11, T28S, R27E
Kern County, California

C/O Gary Fuller (WZI, Inc.)
4800 Easton Drive, Suite 114
Bakersfield, California 93309

II. Testing Firm:

Petro Chem Environmental Services, Inc.
313 Daniels Lane
Bakersfield, CA 93307

Attention: Tim Brennan

III. Regulatory Agency:

San Joaquin Valley Unified APCD
Southern Region

IV. Summary:

Determination concentrations (ppm) and emissions (lb/hr) of particulate, sulfur, NMHC, NOx, CO and Spec II, III, IV (NOx, O_2, CO) relative accuracy, from the exhaust of two gas fired Turbine/Generators.

V. Testing Date:

February 9 - 12, 1993

PROPOSAL FOR COMPLIANCE TESTING AT TWO TURBINE MAIN STACKS

Determination of concentrations (ppm) and emissions (lb/hr) of particulate, sulfur, NMHC, NOx and CO from the exhaust of two 25 MW gas fired Turbine/Generators. Relative Accuracy testing will be performed for NOx, O_2 and CO following Title 40 CFR performance Spec II, III and IV; a minimum of nine thirty minute runs will be performed. Fuel sulfur analysis will be performed by EPA Method 20 and 19; EAS Labs of San Luis Obispo will be used (example analysis enclosed). The following methods will be used:

Parameters	Method	# Test Runs Per Turbine	Permit Limit, lb/hr Per Turbine
Particulate	EPA Method 5; Gravimetric	2 - 6 hour	3.12
Sulfur	Fuel Analysis / Fuel Rates	1	*** 0.16 as sulfur
NMHC	EPA Method 18; (modified) C_1-C_6+	3	** 3.12
* NOx	EPA Method 20; Chemiluminescent Analyzer	9 - 30 min.	4.04 lb/hr 0.0162 lb/MMBtu
* CO	EPA Method 10; GFC Analyzer	9 - 30 min.	27.83
* O_2	EPA Method 20; Fuel Cell Analyzer	9 - 30 min.	---
Molecular Weight O_2/CO_2/N_2	EPA Method 3; Orsat	2	---
Volume Flow DSCFM	EPA Method 2; Pitot Tube Traverse	2	---
Relative Accuracy NOx/O_2/CO	Title 40 CFR Performance Spec II/III/IV	See above NOx,O_2,CO	20%/20%/10%

* An initial 48 point concentration traverse will be performed to document the point(s) of average concentration. All follow-up runs will be performed at the point(s) of average concentration.

** Includes emissions from lube oil vent stack. The Method 18 analysis will be modified to increase sensitivity to 0.2 ppm C_1-C_6+. Sample analysis is enclosed.

*** Emissions as sulfur = (lb/hr SO_2/s) + lb/hr SO_4/3)

Gary Fuller (WZI)
Double "C" Limited Cogen Facility
January 27, 1993

Units: Two Gas Turbines and
Two Lube Oil Vent Stacks

PROPOSAL FOR COMPLIANCE TESTING AT LUBE OIL VENT STACKS

Determination of concentrations (ppm, gr/DSCF) and emissions (lb/hr, lb/day) of condensable and non-condensable hydrocarbon emissions from the exhaust of two lube oil vent stacks, one per turbine. The following procedures will be used:

Parameters	Method	# Test Runs/Site
Condensable Hydrocarbons	EPA Method 4; with Gravimetric Organic Extractions Utilizing CARB Method 5.4.3.1	3
Non-Condensable Hydrocarbons	EPA Method 18; Bag Sample FID Analysis	3
Volume Flow	EPA Method 2; Pitot Tube or Hot Wire Anemometer	3
Molecular Weight	EPA Method 3; Orsat Analysis	3
% H_2O	EPA Method 4; Condensation	3

KERN COUNTY AIR POLLUTION CONTROL DISTRICT

PERMIT TO OPERATE

Number: 4163001(B)

2700 "M" STREET, SUITE 275
BAKERSFIELD, CA. 93301
TELEPHONE: (805) 861-3682

PERMIT TO OPERATE IS HEREBY GRANTED TO: DOUBLE "C" LIMITED

FOR EQUIPMENT LOCATED AT: Sec. 11, T28S, R27E
Kern Front Lease

EQUIPMENT OR PROCESS DESCRIPTION: 25.0 MW Gas-Fired Turbine Engine
Cogeneration System

OPERATIONAL CONDITIONS LISTED BELOW.

THIS PERMIT BECOMES VOID UPON ANY CHANGE OF OWNERSHIP OR LOCATION, OR ANY ALTERATION.

NOTE: The permittee may be required to provide adequate sampling and testing facilities. Equipment modification requires a new permit.

REVOCABLE: This permit does not authorize the emission of air contaminants in excess of those allowed by the Rules and Regulations of the K.C.A.P.C.D.

WILLIAM J. RODDY
AIR POLLUTION CONTROL OFFICER

By: _____

For Period: 02-28-92 TO 02-28-93

CONDITIONAL APPROVAL:
Compliance with all conditions of approval imposed by any applicable Authority to Construct is required for life of this equipment unless modified by application. Equipment authorized by this Permit to Operate shall comply in full with applicable Rule 210.1 requirements.

EQUIPMENT DESCRIPTION:

a. Winston 120 HB centrifugal separator.
b. General Electric, Model LM 2500, 250.2 MM BTU/hr input natural gas fired turbine engine.
c. Continuously recording emission monitores for NOx, CO, and O_2.
d. 25.0 MW electric generator.

OPERATIONAL CONDITIONS:

1. Gas turbine engine shall be fired exclusively with PUC-regulated quality natural gas. (Rule 210.1)
2. Gas turbine engine steam injection rate shall be maintained at 1.90 - 2.19 steam to fuel ratio documented to result in compliance with emission limits. (Rule 209)
3. Ammonia injection rate shall be controlled to maintain ammonia "break-through" to less than 20 ppmv. (Rule 410)
4. If steam injection, SCR, or catalytic conversion system is inoperative, gas turbine engine shall be shut down. (Rule 209)
   Inlet gas temperature to both catalyst beds shall be maintained within the range recommended by catalyst manufacturer. (Rule 209)
6. Gas turbine engine shall not burn more thna 5.67 MM scf/day of natural gas. (Rule 209)

7. All gas turbine exhaust shall flow through both catalyst beds. (Rule 209)
8. Handling and storage of collected liquids shall not result in an increase of hydrocarbon emissions. (Rule 210.1)
9. Visible emissions from lube oil system atmospheric vent shall not exceed 20% opacity for more than a total of 3 minutes in any one hour. (Rule 401)

COMPLIANCE TESTING REQUIREMENT:

Compliance with particulates, sulfur compounds, oxides of nitrogen, hydrocarbons and carbon monoxide emission sampling limits shall be demonstrated by District-witnessed sample collection by independent testing laboratory within 60 days after startup and annually within 60 days prior to permit anniversary date, and the official test results, and field data submitted within 30 days after collection. Samples shall be collected during maximum fuel consumption and use of evaporative coolers. (Rule 108.1)

EMISSION SAMPLING LIMITS:

Particulates:	3.12	lbm/hr	(Rule 210.1)	
Sulfur Compounds:	0.16	lbm/hr	(of SO2)	(Rule 210.1)
	0.24	lbm/hr	(of SO4)	(Rule 210.1)
Oxides of Nitrogen:	4.04	lbm/hr	(as NO2)	(Rule 210.1)
	0.0162	lbm/MM BTU	(as NO2)	(Rule 210.1 BACT req'mt)
Hydrocarbons:	3.12	lbm/hr	(Rule 210.1)	(including lube oil cooler/ accumulating vents & collected liquids)
Carbon Monoxide:	27.88	lbm/hr	(Rule 210.1)	

SPECIAL CONDITIONS:

1. Double "C" Limited shall comply in full with Rule 422 (New Source Performance Standards) requirements including notification, record keeping and monitoring requirements.
2. Continuous emission monitoring system for NOx (as NO2), CO and O2 serving exhaust gas stream shall conform to Rule 108 specifications.
3. Continuous emission monitoring systems shall be calibrated and operated according to EPA guidelines as specified in CRF, Part 60, Appendix B. (Rule 108)
4. Audits of monitors shall be conducted semi-annually by independent laboratory in accordance with EPA guidelines, witnessed by District, and reports shall be submitted to District within 30 days of such audit. (Rule 108)
5. Double "C" Limited continuous emissions monitoring printouts shall be made readily available for District inspection upon request. (Rule 208)

6. Double "C" Limited shall keep accurate records of daily fuel consumption of gas turbine engine and shall make them readily available for District inspection upon request. (Rule 209)
7. Steam produced at this facility for use in oil-production operations shall affect only wells connected to well vent vapor recovery systems KCAPCD #4018108 owned by Cities Service and KCAPCD #4032100 owned by Carrec Oil unless prior District approval is obtained. (Rule 210.1)
8. Double "C" Limited shall provide design details, including but not limited to engineering drawings of SCR and catalytic convertor units for District approval prior to installation. (Rule 209)
9. Non-compliance with NOx emission sampling limit shall require: shut-down of gas turbine, down throttling (reduced fuel consumption), or installation of additional SCR catalyst volume - increased emission limits will require modified Authority to Construct before continued operation at such levels pursuant to Section 42350 of Califonria Health & Safety Code, a variance for this condition cannot be obtained. (Rule 209)

RNING:

Failure of catalyst to perform as required because of catalyst poisoning of fouling shall not be recognized as basis for Rule 111 enforcement exemption. (Rule 209)

KERN COUNTY AIR POLLUTION CONTROL DISTRICT

PERMIT TO OPERATE

2700 "M" STREET, SUITE 275
BAKERSFIELD, CA. 93301
TELEPHONE: (805) 861-3682

Number: 4163002(B)

PERMIT TO OPERATE IS HEREBY GRANTED TO: DOUBLE "C" LIMITED

FOR EQUIPMENT LOCATED AT: Sec. 11, T28S, R27E
Kern Front Lease

EQUIPMENT OR PROCESS DESCRIPTION: 25.0 MW Gas-Fired Turbine Engine
Cogeneration System

OPERATIONAL CONDITIONS LISTED BELOW.

THIS PERMIT BECOMES VOID UPON ANY CHANGE OF OWNERSHIP OR LOCATION, OR ANY ALTERATION.

NOTE: The permittee may be required to provide adequate sampling and testing facilities. Equipment modification requires a new permit.

REVOCABLE: This permit does not authorize the emission of air contaminants in excess of those allowed by the Rules and Regulations of the K.C.A.P.C.D.

WILLIAM J. RODDY
AIR POLLUTION CONTROL OFFICER

By: _____

For Period: 02-28-92 TO 02-28-93

CONDITIONAL APPROVAL:
Compliance with all conditions of approval imposed by any applicable Authority to Construct is required for life of this equipment unless modified by application. Equipment authorized by this Permit to Operate shall comply in full with applicable Rule 210.1 requirements.

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c. Continuously recording emission monitores for NOx, CO, and O_2.
d. 25.0 MW electric generator.

OPERATIONAL CONDITIONS:

1. Gas turbine engine shall be fired exclusively with PUC-regulated quality natural gas. (Rule 210.1)
2. Gas turbine engine steam injection rate shall be maintained at 1.62 - 1.74 steam to fuel ratio documented to result in compliance with emission limits. (Rule 209)
3. Ammonia injection rate shall be controlled to maintain ammonia "break-through" to less than 20 ppmv. (Rule 410)
4. If steam injection, SCR, or catalytic conversion system is inoperative, gas turbine engine shall be shut down. (Rule 209)
   Inlet gas temperature to both catalyst beds shall be maintained within the range recommended by catalyst manufacturer. (Rule 209)
6. Gas turbine engine shall not burn more thna 5.67 MM scf/day of natural gas. (Rule 209)

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