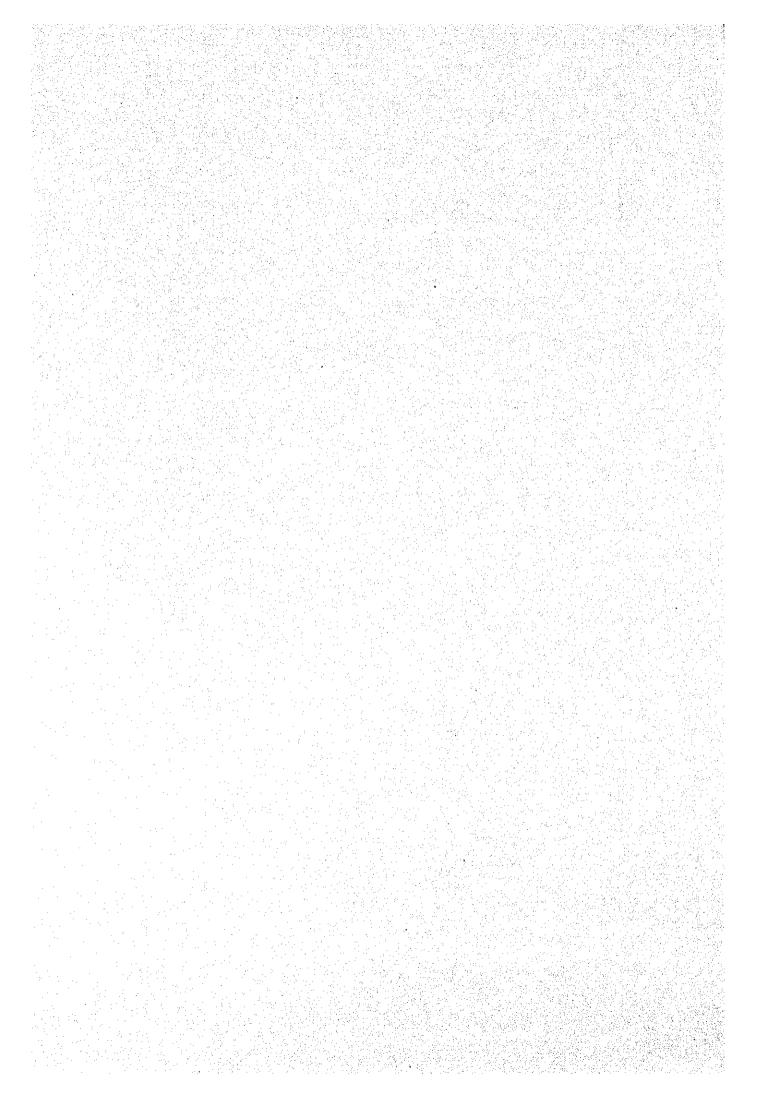


Maria Barrant Maria Barrant



JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

NATIONAL INSTITUTE OF ECOLOGY THE UNITED MEXICAN STATES

THE STUDY ON THE COMBUSTION TECHNOLOGIES FOR THE AIR POLLUTION CONTROL OF STATIONARY SOURCES IN THE METROPOLITAN AREA OF THE CITY OF MEXICO

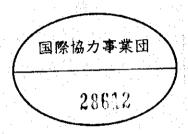
Final Report
Data Book



286/2

SEPTEMBER 1995

PACIFIC CONSULTANTS INTERNATIONAL, TOKYO
In association with
JAPAN ENVIRONMENT ASSESSMENT CENTER CO., LTD., TOKYO



In this report, project costs are estimated based on July 1995 prices with an exchange rate of 1 US\$ = N\$6.00 (= \frac{4}{9}0)

The Study on the Combustion Technologies for the Air Pollution Control of Stationary Sources in the Metropolitan Area of the City of Mexico

Final Report

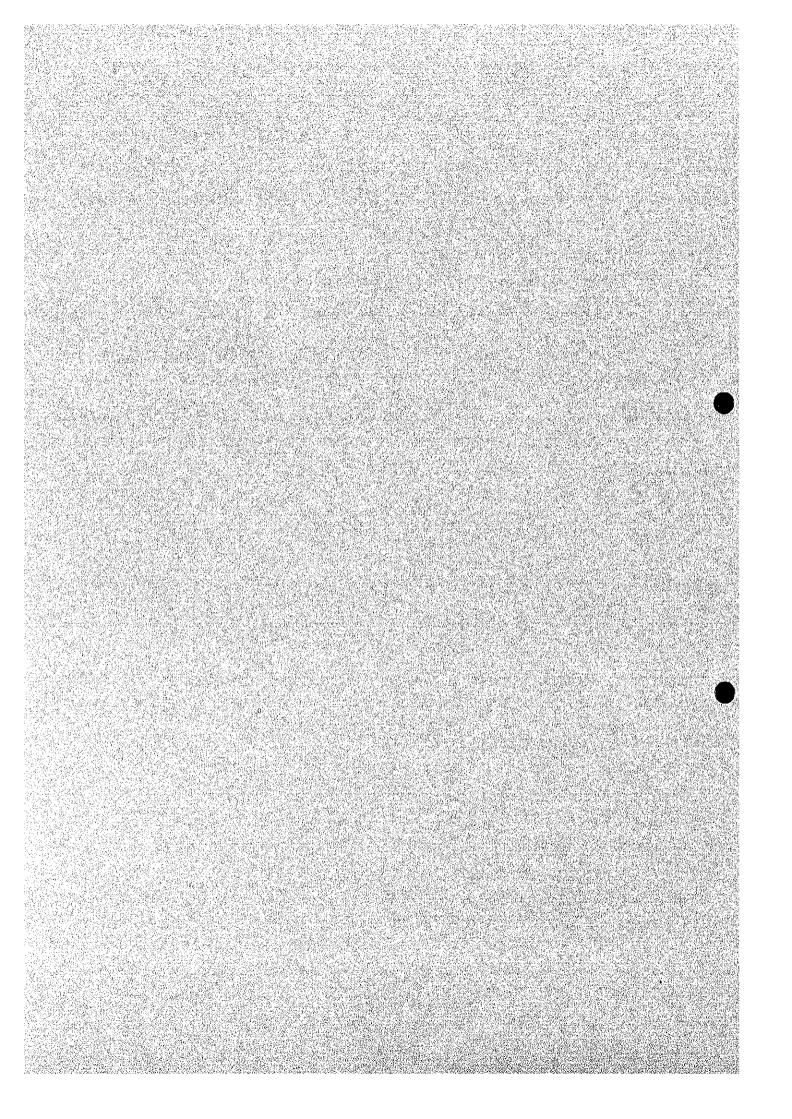
Data Book

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		*					
			4.				

Data for Chapter 2



2.1 Operation Data of H-Oil Process

Table A2.1.1 Yield and Product Data of the H-Oil Process Operated on a Blend of Arabian Light and Arabian Heavy Vacuum Residua

Number of Stages	Case 1	Case 2	Case 3
Capacity (BPSD)	20,000	20,000	20,000
Conversion (565 °C+ basis) (V%)	90	65	55
Sulfur / Nitrogen Content (W%)	S/N	S/N	S/N
Feed	5.33 / 0.44	5.33 / 0.44	5.33 / 0.44
C ₄ + Product	1.48 / 0.27	0.64 / 0.21	0.71 / 0.23
565 °C+ Product	4.41 / 0.73	1.50 / 0.42	1.41 / 0.39
Yields			
H_2S , NH_3 (W%)	4.5	5.3	5.2
$C_1 \sim C_3$ (W%)	6.7	3.2	1.9
C ₄ (V%)	3.1	2.1	1.5
$C_5 \sim 221 ^{\circ}C$ (V%)	28.2	15.5	9.7
221 ~ 371 °C (V%)	34.2	22.1	19.6
371 ~ 565 °C (V%)	33.1	34.1	33.8
565 °C+ (V%)	9.2	32.2	41.4
C ₄ + Product (V%)	107.8	106.0	106.0
C ₄ + Product, Sp.Gr	0.88	0.91	0.93
Chemical Hydrogen			
Comsumption (m ³ /bbl)	52	37	32
Catalyst Usage (cents/bbl)	70	45	38

Source: Ref. D5.

Table A2.1.2 Typical Operation Data of H-oil Process in Salamanca, Mexico

Feed	BPSD	M³/D
H ₂		170,889
Dry gas		104,050
Light cycle oil	99	
Vacuum gas oil	1,111	
Residue	3,917	
Yeild and Products	BPSD	M³/D
Sour gas		129,083
Gasoline	79	and the second of the second o
Kerosine	175	
Light gas oil	1,268	
Heavy gas oil	2,085	
Light cycle oil	145	
Residue	1,993	

Source: Ref. D6.

According to Table A2.1.2, H₂ gas consumption per fed oil volume is calculated at about 33 m³/bbl, which is almost the same as that of Case 3 in Table A2.1.1.

New Draft for Ambient Air Quality Standards

Table A2.2.1 New Draft for Ambient Air Quality Standards (NOM-020-SSA1-1993~NOM-026)

Pollutant	Averaging Time	Present	New Draft
Ozone	1 hr.	0.11 ppm	0.11 ppm
∞	8 hr.	11 ppm	11 ppm
SO ₂	24 hr.	0.13 ppm	0.13 ppm
	1 yr.	· : — · ·	0.03 ppm
NO ₂	1 hr.	0.21 ppm	0.21 ppm
TSP	24 hr.	275 μg/m ³	260 $\mu g/m^3$
	1 yr.	_	75 μg/m ³
PM10 *)	24 hr.	.·· -	150 μg/m ³
	1 yr.	-	50 μg/m ³
Pb	3 mon.	·	1.5 $\mu g/m^3$

Source: Ref. C7. Note: *) Suspended particulate matter of diameters less than $10 \ \mu m$.

2.3 Emission Standards for Indirect Heating Equipment

1) NOM-CCAT-019-ECOL / 1993 (NE) (previous standards)

(bpm v) 00 250 8 8 9 8 \mathbb{R}^{p} 180 250 Ϋ́Z 270 36 230 150 Y V AN (t) (n mdd) ZMCM others NOX critical zone 8 150 180 3 150 A NA 130 NA NA 130 Y X X 1,100 1,650 2,600 150 120 1,200 | 2,200 | 130 8 2,500 140 \mathbb{R}^{p} X Y Y NA ¥Z. Y YZ (t) (n mdd) 1,500 ZMCM others **S**02 critical zone X ¥ Ϋ́ Ϋ́ Y Z 1,000 X 800 NA NA Y NA NA X ¥ RP 300 350 Y Y NA NA 8 X AZ X **A**N Smoke dust mg/m³ (1) ZMCM others critical zone Y. Ŋ 300 250 200 NA NA Z X NA 100 Ν NA Ϋ́Z X Y Y V 2 70 blot Nr.or Smoke 10 % (3) opacity NA YZ Y Ϋ́ NA A NA Y Y 'n 9 Fuel Type other liquid heavy oil ~gasoil (a) For Existing Equipment liquid liquid liquid gas gas gas gas (1,201~3,100 HP) 43,001~110,000 (151~1,200 HP) above 110,000 Capacity 5,251~43,000 MJ/hr (HP) (3,100 HP~) up to 5,250 (~150 HP) **₹**

(b) For New Equipment

(b) For New Equipment	Jeni											
Capacity	Fuel Type	Smoke	E.	particulates	40		SO2			NOX	- 1. - 1.	00
MJ/hr			ш	mg/m ³ (1)		Id)	(ppm v) (1)	(1	a	(ppm v) (1)		(v mqq)
(HP)		blot Nr.or	- 1	critical zone	RP.	critical zone	zone	RP	critica	critical zone	RP	3
		opacity ZMCM others	ZMCM	others		ZMCM others	others		ZMCM	ZMCM others		
up to 43,000	everyone	above mentioned values for ZMCM should be satisfied and low NOx emission	tioned va	dues for	ZMCM	should b	e satisfi	ed and l	ow NOx	emission		350
(~1,200 HP)		technology should be additionally adopted	should t	e additic	mally a	dopted						
above 43,000	liquid	10 % (3)	50	50 150 250 400	250	400	400	1,500	100	400 1,500 100 140	200	350
(1,200 HP~)	gas	NA	NA	NA	NA	NA	NA	NA	75	75 100 130	130	
major repair or rebuild of existing	ld of existing	above mentioned values for ZMCM should be satisfied and low NOx emission technology	tioned va	ulues for	ZMCM	should b	e satisfi	ed and l	ow NOx	emission	techno]	ogy
equipment		should be additionally adopted	dditiona	lly adopt	8	-						

Notes:

(1) Concentration referred to is defined under the condition of 25°C, 760 mm Hg, 5 % oxygen and dry in volume. Calculation formula is as shown below:

F=16 / (21-O2 conc. measured)

2) Concentration referred to means that acquired during operation.

) percentage of opacity

() Oxygen concentration should be controlled not more than the following level:

gas-fired equipment: liquid-fired equipment:

6.3 %

RP: other area than critical zone of the country

ZMCM: Metropolitan Zone of Mexico City

NA: no application

(2) NOM-085-ECOL - 1994 (new standards)
Emission Standards for Indirect Heating Equipment

8	(a) Effective from 1994 to December 31	الم	1997									
(1)	Fuel Type	Smoke	Δ,	particulates	S		S02			Š N	-	Excess
				mg/m ³			(v mqq)			(v mqq)		Air Rate
		blot Nr.or	¥	(kg/10 ⁶ kcal)	(1	-	(kg/10 ⁶ kcal)	<u> </u>	C	(kg/10 ⁶ kcal)	a	volu me %
		opacity	ZMCM	ZC	RP	ZMCM	ΣC	RP	ZMCM	ZC(3)	RP(6)	
	heavy oil	4	NA	NA	NA	1,100	2,100	2,600	NA	NA	NA	
	~ gasoil					(4.08)	(7.80)	(9.81)				8
, =	other liquid	ю	NA A	NA	NA	1,100	2,100	2,600	NA	NA	NA	
						(4.08)	(7.80)	(9.81)				
gas		0	NA	NA	NA	NA	NA	NA	NA	NA	NA	
: 3	liquid	NA	901	425	009	1,100	2,100	2,600	220	300	400	
			(0.142)	(0.604)	(0.852)	(4.08)	(7.80)	(9.81)	(0.588)	(0.801)	(1.064)	20
gas		N.A	ΑΝ	NA A	NA	NA	ΝΑ	AN	220	300	400	
									(0.563)	(0.767)	(1.023)	
=	liquid	NA	100	425	550	1,100	2,100	2,600	180	300	004	
			(0.142)	(0.604)	(0.781)	(4.08)	(7.81)	(9.81)	(0.481)	(0.801)	(1.069)	8
gas		AN	NA	NA	ŇĀ	NA	AN	NA	180	300	400	
			·						(0.460)	(0.767)	(1.023)	
_	liquid	NA	92	325	435	1,100	2,100	2,600	160	280	400	
			(0.099)	(0.462)	(0.664)	(4.32)	(8.24)	(9.29)	(0.427)	(0.748)	(1.069)	8
gas		NA	NA	NA	NA	NA	NA	NA	160	280	400	
									(0.409)	(0.716)	(1.023)	

(b) Effective from January 1, 1998	anuary 1, 1998											
Capacity	Fuel Type	Smoke	<u>a</u>	particulates	561		S 02			NOX		Excess
MJ/hr		(blot Nr.		mg/m ³			(v mqq)			(bpm v)		Air Rate
(HP)		or opacity)	ਤ	(kg/10 ⁶ kcal)		(.	(kg/10 ⁶ kcal)	<u>.</u>	(k	(kg/106kcal)	1)	volume %
		:	ZMCM	ZC	RP	ZMCM	ΣC	RP	ZMCM	ZC	RP	
up to 5,250	heavy oil	3	NA	NA	NA	550	1,100	2,200	NA	NA	NA	20
(~150 HP)	~gasoil					(2.04)	(4.08)	(8.16)				
	other liquid	2	NA	NA	NA	550	1,100	2,200	A A	NA	NA	
						(2.04)	(4.08)	(8.16)				
	gas	0	NA	NA	NA	NA	NA	NA	NA	NA	NA	
5,251~43,000	liquid	NA	75	350	450	550	1,100	2,200	190	190	375	40
			(0.100)	(0.497)	(6:0.0)	(40.7)	(4.00)	(or.o)	(0.307)	(/05/0)	(1:0)	
(151~1,200 HP)	gas	NA	Ϋ́	Ϋ́	NA	NA V	V V	N A V	190	190	375	
							-		(004-0)	(0.400)	(25.7)	
43,001~110,000	liquid	NA	09	008	400	550	1,100	2,200	110	110	375	30
			(0.085)	(0.426)	(0.568)	(5.04)	(4.08)	(8.16)	(0.294)	(0.294)	(1.0)	
(1,201~3,100 HP)	gas	NA	NA A	NA	NA	NA	NA	NA	110 (0.281)	(0.281)	375 (0.959)	
above 110,000	solid	NA	09	250	350	550	1,100	2,200	110	110	375	
			(0.090)	(0.375)	(0.525)	(2.16)	(4.13)	(8.16)	(0.309)	(0.309)	(1.052)	
	liquid	NA	09	250	350	550	1,100	2,200	110	110	375	25
	•		(0.085)	(0.355)	(0.497)	(2.04)	(4.08)	(8.16)	(0.294)	(0.294)	(1.0)	
(3,100 HP~)	gas	ΨN	NA	NA	NA	NA A	NA	NA	110	110	375	
									(107.0)	(4.404)	(22.2)	

2.4 Emission Standards for Specific Stationary Sources

(1) SO₂, SO₃ and Sulfuric Acid Mist at Sulfuric Acid Factory (NOM-PA-CCAT-001/93 draft)

Table A2.4.1 Permissible Maximum Amount of SO₂ and SO₃ Emission at Existing Factory in the Critical Zone

Capacity of Factory (t/d)	Permissible Maximum Emission Amount
	(weight of SO ₂ in kg/tonnage of 100% sulfuric acid)
1 to 500	17.5
501 to 700	13.0
701 to 1,000	9.0
> 1,000	4.0

Table A2.4.2 Permissible Maximum Amount of SO₂ and SO₃ Emission at Existing Factory in the Other Area of the Country

Capacity of Factory (t/d)	Permissible Maximum Emission Amount (weight of SO ₂ in kg/tonnage of 100% sulfuric acid)
1 to 500	28.0
501 to 700	20.0
701 to 1,000	14.0
> 1,000	7.0

Table A2.4.3 Permissible Maximum Amount of SO₂ Emission at the Factory Site

in the Critical Zone 0

0.234 ppm

out of the Critical Zone

0.3 ppm

Table A2.4.4 Permissible Maximum Amount of SO₂ and SO₃ Emission at New Factory

Capacity of Factory (t/d)	Permissible Maximum Emission Amount
	(weight of SO ₂ in kg/tonnage of 100% sulfuric acid)
1 to 500	13.0
> 500	3.0

Table A2.4.5 Permissible Maximum Amount of SO₃ and Sulfuric Acid Mist Emission

Capacity of Factory (t / d)	Permissible Maximum Emission Amount
	(weight of SO ₂ in kg/tonnage of 100% sulfuric acid)
С	C

(2) Dust at Cement Factory (NOM-PA-CCAT-002/93 draft)

Table A2.4.6 Permissible Maximum Amount of Dust Emission From Calcination Process

Capacity of Process	Permissible Maximum Emission Amount
	(kg / h)
less than 300 t/h	0.6319 C ^{0.7502}
300 t/h or more	0.15 C

Table A2.4.7 Permissible maximum Amount of Dust Emission From Crushing and Cooling Process

Process	Permissible Maximum Emission Amount (mg/Nm³)
Crushing	80
Crushing without dryer	80
Crushing with dryer	380
Cement milling	80
Clinker cooling	150

Note: Nm3=defined under the normal dry condition

(3) Dust, Carbon Monoxide, Sulfur Dioxide and Nitrogen Oxides at Coal-fired Power Plant (NOM-PA-CCAT-005/93 draft)

Table A2.4.8 Permissible Maximum Amount of Emission

Pollutants	Permissible Maximum Emission (kg/m ³)*
particles	3.60
<u></u>	.27
SO ₂	51.3
NOx	10.00

Note:

^{*} unit coal consumption is expressed in m³ on dry base

^{**} amount of NOx is expressed as NO2

(4) Dust From Stationary Sources (NOM-PA-CCAT-006/93 draft)

Table A2.4.9 Permissible Maximum Amount of Dust Emission

Flow Volume (m³/min)	Critical Zone (mg/m ³⁾	Outside Critical Zone (mg/m³)*
5	1,536	2,304
10	1,148	1,722
20	858	1,287
30	724	1,086
40	641	962
50	584	876
60	541	811
80	479	719
100	437	655
200	326	489
500	222	333
800	182	273
1,000	166	249
3,000	105	157
5,000	84	127
8,000	69	104
10,000	63	95
20,000	47	71
30,000	40	60
50,000	32	48

Note: Permissible value for intermediate flow volume and for outrange, can be given by the following equation:

Critical Zone:

 $E=3.020 * C^{-0.42}$

Outside Critical Zone:

E=4,529.7 * C-0.42

where, E: Permissible level in mg/Nm³

C: Flow volume of gas in Nm³/min

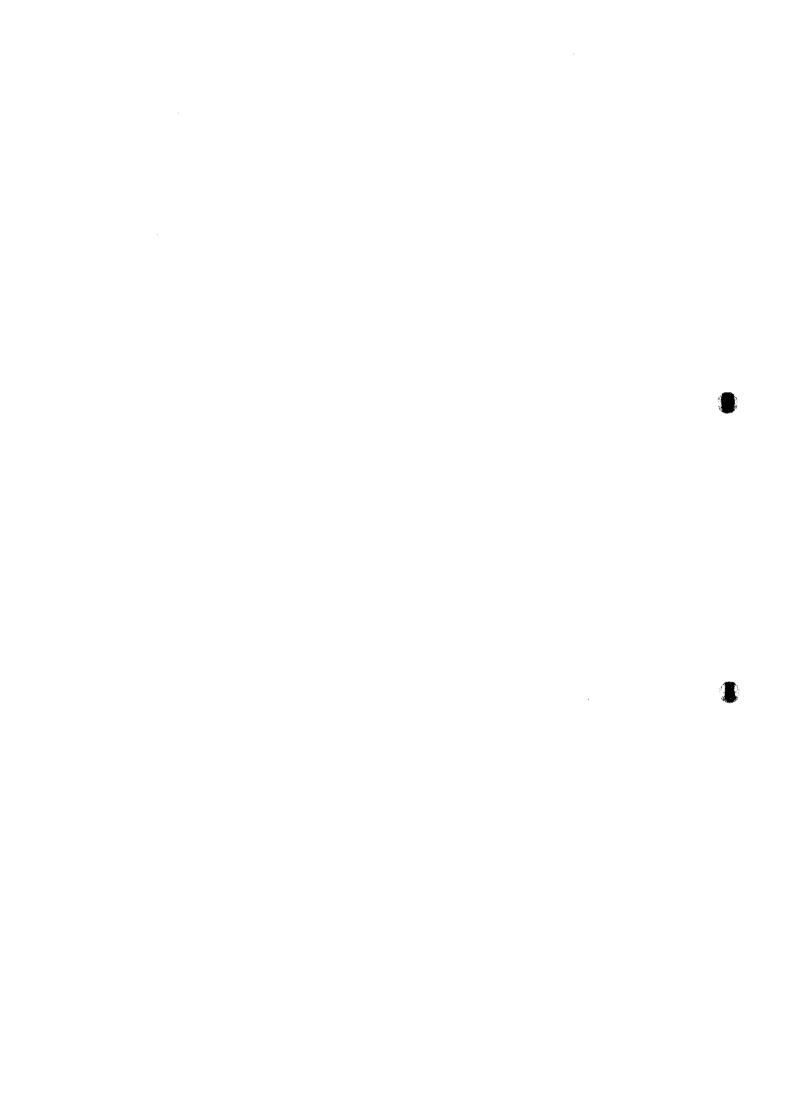
(5) SO₂, SO₃ and Sulfuric Acid Mist at Dodecilbenzenesulfonic Acid Factory (NOM-PA-CCAT-009/93 draft)

Table A2.4.10 Permissible Maximum Amount of SO₂ and SO₃ Emission at Existing Factory in the Critical Zone

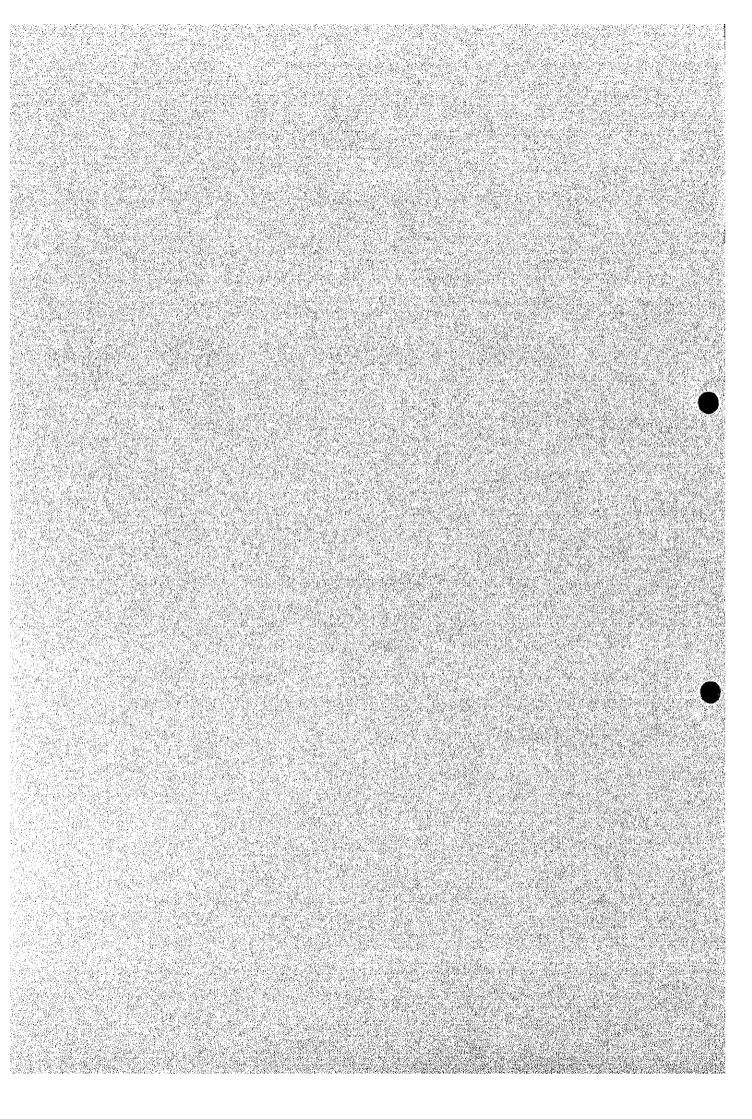
Pollutant	Permissible Maximi	um Emission Amount								
	(weight of SO ₂ in kg/tonnage of 100%									
	Dodecilbenzenesulfonic acid)									
	Existing Plant	New Plant								
Sulfur dioxide	3.0 g	2.0 g								
Mist of SO ₃ and Sulfuric acid	1.2 g	1.2 g								

(6) Permissible Sulfur Content of Gasoil for Industrial Use in AMCM (NOM-PA-CCAT-015/93)

Maximum permissible sulfur content is decided at 2 % in weight for the equipment larger than 3,500 MJ/h (100 CC).



Data for Chapter 3



3.1 Questionnaire Items for Stationary Sources

Please write answers by blocked letters or typing.

General Information on the Company

1.1 Company name

The name registered to Ministry of Commerce and Industry

1.2 Address

Clearly write the name of street and address number

1.3 Name of responsible person:

Legally responsible person in the field of pollution control

1.4 Personnel

1.4.1 Number of employees

Write numbers of administrative staff, technical staff, and executives.

1.4.2 Number of laborers in the plant

Numbers of laborers and assistants

1.5 Activities of the company

Clearly write the present activities of the company.

2. Manufacturing Processes

2.1 Description of the processes

- 1) Describe the processes separately from this form.
- 2) List chemical reactions, physical and chemical characteristics, chemical formula, process type (e.g., continuous, cycle, batch).
- 3) Flow chart: complete chart showing manufacturing flow with operation conditions and working spaces.
- 4) Identify the operations which cause atmospheric emissions: e.g., plants for sulfuric acid, hydrochloric acid and nitric acid, boilers, heating furnaces.
- 5) Detailed description of burner positioning in the combustion chamber and firing method
- 6) Indicate whether or not soot is adhered on water tubes or side walls (including smoke chamber) being hit by burner flames.

7) Indicate the maximum number of trucks per day that enter and go out of the plant for transportation of materials and products.

2.2 Operation time (combustion equipment)

Indicate operation hours per day, days per week, and weeks per year.

2.3 Combustion equipment

1) Fuel

Indicate kind(s) of fuel used such as kerosene, diesel, gas oil, gas (natural gas, LPG, etc.).

2) Fuel consumption per hour

Indicate the amount of fuel consumption per hour in the unit characteristic to each fuel such as kg/hr, ton/hr, m³/hr, etc.

3) Combustion equipment

Indicate kinds of combustion equipment such as boiler with its type (water tube, smoke tube, once-through, heat transfer medium) and other furnaces.

4) Maximum capacity (hp/hr or ton/hr)

Indicate the maximum capacity of the combustion equipment in hp/hr or ton/hr.

5) Shape and dimensions of the combustion chamber

Dimension:

 $W \times D \times H (m)$

Sectional area:

m²

Volume:

 m^3

6) Burner type

Indicate burner type such as rotary type, mechanical atomizing oil type, jet type, and others.

7) Maximum fuel consumption rate of the burner.

Indicate the consumption per hour and number of burners.

8) Mixing method

Indicate kind of atomizing medium (air or steam) and method of mixing the fuel and the atomizing medium (internal mixing or external mixing).

9) Age of the combustion equipment

Indicate the age of the boiler or furnace. If the burners are newer than the boiler or furnace, indicate the age of the burners.

2.4 Combustion control equipment

Indicate kinds of combustion control equipment installed in the plant.

2.5 Safety control equipment

Indicate kinds of safety control equipment installed in the plant.

- 2.6 Indicate whether or not an air preheater exists. If there is, indicate the temperature of the air for combustion.
- 2.7 Indicate the method of drafting combustion air.
- 2.8 Indicate times of maintenance of boiler and burner.
- NOx Emission
- 3.1 Atmospheric emission of NOx due to combustion
- 1) Equipment used
 Indicate names of combustion equipment: boiler (water tube, smoke tube) and/or furnace.
- 2) Indicate exhaust gas temperature and oxygen concentration.
- 3) Indicate exhaust gas NOx concentration value converted at 5 % oxygen.
- 4) Indicate emission rate of NOx.
- 5) Indicate emission rate of particulate matter (PM).
- 6) Indicate exhaust gas CO concentration.
- 3.1.2 Measuring equipment

Indicate whether or not the plant has exhaust gas measuring equipment.

- 3.2 NOx pollution control measures
- 3.2.1 Indicate the measures employed in the plant.
- 3.2.2 NOx pollution control equipment
 - 1) Enter names of control equipment presently employed in the plant in the first column.
 - 2) In the case you have ever changed the equipment, please indicate the reason.
 - 3) Indicate the NOx reduction efficiency (%) of the control equipment.
 - 4) Indicate total investment amount for the plant's control equipment in the 3rd column.
- 5) Indicate in the 4th column the cost for operation and maintenance of the control equipment during the operation of manufacturing processes.
- 3.3 Check yes or no. Explain each program and indicate investment amount.
- 3.4 Answer by checking.
 - 1) Indicate whether or not your plant has a person who is responsible in keeping watch on environmental problems and taking action for solution.
 - 2) Indicate his field of expertise and title in the company.

- 3.5 Answer by checking

 Indicate the category (rank) of the operator.
- 3.6 Indicate name, title, work place of the answerer to this questionnaire. Give the date and signature.

3.2 Questionnaire Answering Form for Stationary Sources

1.	General Information on the Company	the second of th	
1.1	Company name		
1.2	Address (Street and Number)		
	Area name	· · · · · · · · · · · · · · · · · · ·	. 29
	Colony	Municipality	
	Federal entity	_ Zip codeTelephone	
1.3	Name of responsible person		
1.4	Personnel		
1.4	1 Number of employees		·
1.4	2 Number of laborers in the plant		·
1.5	Activities of the company		1 7 2 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3
2.	Process(es)		1 -
2.1	Description of the process(es)	gradient de la company de	
. I	Please describe on Items 1) through 4) be	low in separate sheets.	
1) Process description		
2	2) Chemical reactions, physical and chemical	mical characteristics, chemical formula	a, and
	process type		
3	3) Plant flow chart		
4	4) Operations causing atmospheric emis	ssions	. *
4		hod (tangential type, frontal type, cou	nter firing
	type)		
(and the state of t	valls (including smoke chamber) that a	re hit by
	flames?		·
	Yes() No()		
•		that enter and go out of the plant for tr	ansportatio
	of materials and products	1	•
	Primary material	Product	
	Primary material		
	Primary material		-
	Primary material	Product	
	1 111100 J 111000-100		_

2.2 Operation time (c	combustion eq	uipment)			种层外结果
Operation hour:	from	hrs. to	hrs.		
days/w	væk		weeks/yea	u kan sebesa	
2.3 Combustion equi	pment				
Kind of fuel					
Consumption per hour					
Combustion equipment (maker name)					
Maximum capacity (HP or ton/hr)					
For combustion chamber -Dimension (W*D*H in meter)					
-Sectional area (m ²) -Volume (m ³) Burner type					
(maker name) For burner					
-Maximum, fuel consumption and number of pieces -Number of burner tip holes and					
diameter -Atomization angle -Atomizing					
medium -Method for mixing fuel and atomizing medium				in the second	
Age of the equipment					

2.4 Ex	istence of combustion control equipment		
1) 2) 3) 4) 5) 6) 7) 8)	Automatic combustion control unit Water level gaug Low water level cut-off device Steam pressure gauge Automatic water supply device Water supply flow meter Oil supply flow meter Oil temperature thermometer Steam temperature thermometer Combustion chamber pressure gauge	Yes No ()	
2.5 Ex	sistence of safety control equipment		
5) 6) 7) 8) 9) 10)	Flame eye (flame detector) Shut off valve unit Air pressure sensor (draft pressure indicator switch) Oil pressure gauge Atomizing steam pressure gauge Pressure gauge after regulator Pressure gauge after shut-off valve Gas pressure gauge at burner inlet Upper ant lower limits switch for gas pressure Test cock (purge valve) Gas flow meter		
2.6 Ex	cistence of recuperator		
	es No		
() ()		
If	"Yes", temperature of the air for combustion:°C	•	
2.7 M	ethod of drafting combustion air		
Pl	ease mark below.		
1)	Forced draft ()		
•	Balanced draft ()		
•	Induced draft () Natural draft ()		

1)					
2)	Removal of scal	le within the bo	iler	and the second	and Carried Co.
3)	Times/month				
		NOx dise to con	obustion		la administración Mista Berlindigos participas de 1900 Mista la forte
Combustion equipment	Exhaust gas temperature and oxygen	NOx (ppm) (at 5 %	Emission of NOx	PM	
		:			
3.1.2 Existe	ence of measuring		No Metho	d of measureme	
Oxygen	concentration	()	(') : <u></u>		
		()	()		
-	•	(,)	()		-
	•	()	()		
3.2 NOx pol	lution control me	asures			
3.2.1 Please	e give marks belo	w for those me	asures employ	ed in your plant	•
2) Low- 3) Exhau 4) Two- 5) Steam 6) Off-st 7) Low 6 8) Energ	NOx burner ust gas recirculation tage combustion injection toichiometric companyen combustion saving (installa ration	on abustion			zer, etc.)

2.8 Boiler and burner maintenance

3.2.2 NOx pollution control equipment

	Control equipment or method employed	NOx reduction efficiency (%)	Investment amount for the equipment	Expenses for operation and maintenance
Ī				
Ī				

				<u> </u>	•	
		%.				
				·		
.3	Did your plant inveneesures other tha	est for po in those v	llution preve vritten in Sec	ntion programation 3.2 ?	ns and/or	air pollution mitigation
	Yes() No()		-			
	If, "Yes" please ex	cplain the	content and	give the inve	estment an	nount.
	•					
.4	Is there a person in problems and takin				eeping wa	atch on environmental
	Field of expertise_				Title	
•						
.5	Do the combustion	equipme	ent operators	have the cert	ificate of l	Ministry of Labor?
	Yes() No()		Catego	огу		
.6	Person who answe	red this o	questionnaire	;		
•	Name			_ Title	<u> </u>	
	Work place					
	•					
	Signature	-				
	D.P.((1)					

3.3 Result of Synoptic Survey of Factories by Questionnaire

Results of Questionnaire Survey on Factories (1 of 3)

NA.	Mama of	T 4	Sione sel	0		10-1-4		1 01 1	Tax I	11.4	7	T 2		Т		\	in C	ontrol Ed		T . O.	- Anna Anna A	C-fub.	Control C.		(0,)			Cohana	02 T	NO	I NO. I	F4.4	60	Cidavat	Mon	10.1.1.1	Bamado	Mariah
I'VO.	Name of	Type of		Combustion		Kind of		Chamber	Chamb.	Heat	Type	Burner	Atomizin	-1 -		OTHOUS		UNION EX	-	+ 15	T	Selecty (Control Ed	quep.	_	bustion C		Exhaust	02	NOx	NOx	PM	CO	Exhaust	ľ	NOx in the	Remarks	Wish
	Factory	'	Emplys	facility and	Capacity	FUEL	Consum.	Dimension	Volume	Trans.	of _	Capacity	Media 8	1	ا. ا			عرورا رو	05 03		ر ا دا ا	امما	ماممام	SPB GPL		Air	Air -	Gas		conc. at	1 F	Emiss.	Conc.	Gas	Emiss.	Previous	1.	to
]	i	or	(staff)	Manufacturer			gas(m3/h)	M,D,H		Area	Burner	gas(m3/h)	Mixing	1	AU	WILL	SPIA	44 44-	OFIC	I FE S	AP OF	PIASPI	PRIPSIG	SPB GPL		- 1	Supply	Temp.		5 % O2	! 1	Rate	۱, ا	Monitor	Control	Study	1 -	Attend
		-	(worker)			_	oil (lit/h)	(m)	(m3)	(m2)		oil (lit/h)	Method	+	1			+-	_	+-+-	 	+ +		_	——		Method	(deg. C)		(ppm)	(kg/h)	(kg/h)	(ppm)	Equip.	Method	(ppm)	 	Seminar
		synthetic		1) WTB, Cerrey		Gas oil		2.20*7.38*4.67	• •		Y-jet	3,400	steem/o			<u>у</u> ју	1	уу	у у	 	Y	1-1					forced	200	5.00			1.36	0	02	use of	250	4	У
\sqcup	inteticas	Noer		2) WTB, ditto	13 t/h		522	1.77*4.63*2.40				1200		20		уу	y)	y . y	уу	- y	У	1 7 1	- -	7. *	- 1	70		188		321,4	_		0	neat effic.	gas oil	336		
2	Iniroyal	tire		1) WTB	- 12 t/h	Gas oil	900	1.7*5.6*2.0	19.0		Webster	950	ar/gas	6	y	у	y	y -	у	y y	y y	У	уу	уу	y no	rmal	forced	321	- 1	153.3	15,793		300	02	LNB	270	1	- y
\sqcup			.104										(burns	ar 1yr)		سلن							1.1.				1	336	6.75						y	(H. oil)		
3	Grnex :	nyton &	1650	1) WTB, Serrey	14 Vh		340	2.5*4.05*3.25	32.93			1,187		22	<u> </u>	уу	بالا	уу	-	<u> </u>	<u> </u>	11	уу	у у	y 1	65	· 1	216	2.80	39.8			6.67	02			1	1 1
		polyester	715	2) WTB, B & W	28 t/h	N. gas	1,920	3.2*5.55*5.5	97.6		Lance	. 949 x 3	aw/gas	22	IJ	уу	у	уу	-	уу	у	1. [уу	уу	y 1	165	forced [(infra-red)	low O2	387(H.oil)		у
L				3) WTB, ditto	41 t/h]	3,560	3.7*5.35*5.0	99.0		1.00	1,042 x 4	1	. 19	y	y. y	:y;	у у	-	уу	у		уу	уу	y 1	65	[324	2.80	77.1			20			194	l	
4	CIA Papelera	рарег	117	1) WTB, Cerrey	16 t/h	N. gas	1,301	1.83*4.92*2.65	23.8		Coen, LNB		air/gas	1	7	уу	у .	y -		уу	уу	у	уу	у у	- 100	rmai	forced	196	7.00	31	1.249	0.0686 g	0	Onsat	LNB	249		
	El Fenix	carton	36			[11.		DAZ20			1.								1 1				1		(at 12.0	1/h)			x gas vol				(H. oil)		
5	orge Luque	thermo-	276	1), 2) WTB	150 l/h		12,093	10.5*5.8*7.8	475	1	frontal	2015.5	steam/	40	l v l	y y	y ,	уу	y y	v v	1 - 1 v	1 1	уу	у у	V 2	230 b	elanced	180		281	124			O2, CO2	use	233, 214,	previously	1
1 1	Power Plant	electric	-,-	. "	32 mwh	None	1-,		"	· [x 6	fuel	41	-1 1	' '	[111		1'1'	'	1 ' 1	11	' ! ' !	'				F	275	120.4			(cont.	of	168	n. gas and	1
1		power		3), 4) WTB	350 t/h		23,480	9.24*6.9*20.7	1,325		tangential	978.3	ditto	35	-	v .	,	v v	v	1,1,	1.1.		y y	уу	v -	230	forced	175		80	29-31		 	only for	natural	-	oil mixed	1
1		plant		No.3, 4, C.E.	8 mwh	1	20,-00	3.24 0.3 20.1	',525	ĺ	ton (Ac) street	X 24		33	-1 - 1	'		' '		' '		'	7171	' '	' '		10000		 -	90	37-37.5		ļ !	No.3)	qas]	(8:2, 10:2)	
1	împaque de	small	132	1) WTB, Cerrey		Gas oil	400	1.9*3.4*2.7	17.4		steam jet	X 2-4	steem/o	+	- 		٠,	.	٠,	++.	 , ,	- - - 	-	-	-	rmal .	forced	330	4.20	140	1.19	0.35	8	O2 (DKK)	cas oil &	204	ENERAC 2000	, ,
"	Carlon United				8.172 Vh	• '	350	2.3*3.1*2.3	16.4		Peabody	1	SHEERIVO	27		7 7		' `	- Y	1 7	+ + + 3	+ -	+			litto	iorceu	241	8.60	100	1.86	0.07	4	02 (DKK)	additive	204	gas analyzer	
-						1	-		+		reaccety	255			+	7 7		, ,	7 -	1 7	+ + '	+-*+	+++	- 7	 				\rightarrow	. 100	-			OZ (DIGG)	_		gas analyzer	
1 1	Papeiera	recycled	1	1) STB, No.2, C & B			350	1.067(dia)*4.26	+			350		22		y y		y		1.7 7	 	+ + +	YY	<u> </u>		rmai .		230	5.00		1.66	0.45	15	٠. ا	use	185	4	, y
	runa	carton	71	2) STB, No.3, ditto		Gas oil		ditto	3.8		Y-jet	350	air/oil	22		<u> </u>		Y —		y y	 	╅╌╂	уу	у			forced	215	6.00		1.63	0.40	44	Orsat	of	<u> </u>	4	(two
					7.8 t/h		350	ditto.	3.8			350		19		y y	Y -	Y		y y	171-	╂╌┷╂	уу	<u> </u>		into		202.5			1.42	0.25	10		gas	<u> </u>	4	peopie)
1-4	·			4) STB, no.5, ditto	7.8 t/h		350	ditto	3.8		<u> </u>	350		19	1.7	уу	у .	у	-	уу	<u> </u>	1 - 1	уу	у -	- 0	into		215	9.00		2.01	0.27	7		oil	<u> </u>		-
8	Quimica	chemical	56	1) STB, C & B	3.1 t/h	Ges oil	66	sec. 0.257 m2	1.09		C&B	ļ	air/gas	_	17	y y	у .	у -	- -	уу	- y	<u>' </u>	уу	у у	y no		forced	149			3.4 g/h		0	Orsat	low O2	• • • • • • • • • • • • • • • • • • • 	4	
Ш	ucaya		50	2) OHF for triacetate	35 hp/h		16		<u>11</u>		OWR MAKE		steart/c	1 20	У			• -		- y	<u> - -</u>	- 1		-) -	- 0	into	naturali	499			10	0,0024	0	ditto	ditto	34	1	1
9	Penwait	chemici	165	1) STB, C & B			197	sec. 3.078 m2	12.2		C&B	358	air/gas	26	y	уу	у	у [-	• -	ју ју	lyl-		у у	уу	y no	ormail							<u> </u>	O2 (DKK)	low O2	42		
	•]	66	2) WTB, Faminsa	600 hp	N. gas	233	2,43*4,95			1 1	714	ditto	15	Ly]	уу	у	у -		ly y	l y −	1 - 1	уу	у -	- 6	iitto	forced				<u> </u>		1	ditto	L			
L				3) WTB, Prothern	600 hp]	266	2.1*4.29*2.44			Coen	655	ditto	7	у	уу	у	у	•	уу	у -	1 - 1	уу	у -	- 0	titto					Τ			ditto			1	
10	Cerveceria	beer	3,681	1) WTB	27 t/h	N. gas	2,308	4.75*3.15*4.0	59 84		frontal, C.E.	577 x 4	air/gas	39	У	уу	у	уу	уу	· [у] у	ΪÿΪy	· l y l	уу	уу	y 1	180 lb	elanced	162	7.70	111	6,570			Orsat			1	
	Modero	• •	998	2) WTB, Cerrey	60 t/h	1	5,545	4.62*4,15*7.78	149.22			1,386 x 4	ditto	34	y	уу	y	уу	уу	y y	y ý	, y	уу	y y	y : 1	180		192	2.50	37	5,109		24		EGR	232(H.oil)) CEGMS being	g installed
				3) WTB, ditto	60 t/h	Gas oil	4,548	ditto	149.22			.1,137 x 4	air/oil	34	7	y y	V	y y	y y	V V	V V	,	v v	y y	y	180	4								EGR	1		T
li		1 1		4) WTB, ditto	100 t/h	N. gas	8,375	4.87°4.87°10.13	240.89		tangential	1,047 x 8	air/gas	17	V	v v	V	v v	V	1 v 1 v	1 1 1	, T 🕡	v v	VV	y	180	forced	127	5.20	199	43,626	<u> </u>	18		EGR	 	EGR	
				5) WTB, ditto	100 Vh	Gas oil	7,150 kg/h	ditto	240.89		C. E.	894×8	air/oil	17	-}	v v	TVT	ÚÚ	v v	1 🗘 🗸	T v t v	, 	v v	v v	v	180					1		1		EGR		being	
1 1				6) WTB, ditto		N. gas	,	3,25*3,66*11,37	135.13			874×8	air/gas		1 1	VV	l v l	((νĺν	1 1 1	1414	, 1 - (- 1	\ \ \ \ \ \ \	V V		180		208	4.30	205	35,950		25		EGR	†	installed	
				7) WTB, difflo	81.8 Vh	4 :	5,910 kg/h	•	135.13			739 x 8	air/oil		1 1	, , ,	₩	(\ \ \	1 🗸 🔾	1414	, 🗘 	(180	:	777	1100		100,000	· · · · ·	 == -	 	EGR		1	-
111	Cementos	cement	459	1) Dryer (vertical) x2		 		10.8 m2	74.8	\dashv	mech, Pillaro			十一	-	, ,	 	: 	úl.	1,11	1:1:	, ' 	/ / /	, ,	+	670		110	17	28	2.7	2	0	chemilumi.	N. gas	112	cont. monitor	<i>,</i>
	Anahuac			2) Dryer(horiz),No.8	180 t/h	1		3.8 m2	11.4	-	1170V171 INC.	1,500 x 4	air/gas	+	╌┼		 	' -		1,1,1	++++	,++	* * 		+		forced		 '' 	28	<u> </u>		 	o i ci i i i ci i i i	EGR	11/2	COIR, INCOIRCE	~
1 1				3) Dryer(horiz) No.10		N ass	7,000 m3		11.4			1,500 x 4	outer	4-6	┟╬╅	, ,	 	.	7 7	 	 	+	/ /	 .	+	670	8	<u> </u>	 	28	 	 	┪		LOK	+	+	-
				4) Dryer(horiz) x 3	65 t/h	11.9=0	1,000	1.5 m2	3.8	-		900*2, 1,000	+		╌┞╌┼	, ,	 	' 	7 1	 	 		7 7	7 7			nduced		 	28	+	 -	┼	<u> </u>	 	┼	+	
1 1		1 1			40 t/h	1		1.1 m2	1.8			350°2,150°2	i i audingi	\vdash	- -	y y	╀	"	<u> </u>	+	 	-	╬┼╬┼	y , y	+	670	INCOCCU	 -	╌┼	28	+	 	 		 	 	+	-
1 1		1 1		5) Dryer(horiz.) x 2		11 28	40.500	4.8*75	1356				- alatail	+		YY	 -	Y 	<u> </u>	+ 4 + 3	+/+/			, , ,	 		forest	120		320	15	12	1 400	CEGMS	 		1	
				6) Cement kiln x 2	22.3 Vh	H. oii	19,500	3.8*60	680		LNB, Rotefler	<u> </u>	air/oil	+-		7 7	-	<u> </u>	Y 1	1713	+ 7 + 7	' - 	y y	- 	y 900		foeced	130	6~7	320	15	12	_	CEGMS	LNB	380	large poll. con	
										_	Pillard	1	air/oil, me	\rightarrow		YIY	₩	y	<u> </u>	, , , , ,	1 7 1 7	4	уу	y y 	• • • • • •		nduced	130	6~7			1 12			LNB	380	rol investmen	
	Empaque	carton	258	1) WTB, Cerrey	8.04 t/h	Gasok	152	2,0*3.02*2.1	12,7		Y-jet	1	air/oil	39		y y	+	у -	Y	4-17	1 - 1 y	<u>/ </u>	У		y rk	xmai	forced	220	5.00	111	1.99		+	DKK cell &	ECZ(plan)	4	У
_	de Carton	boxes		2) WTB, Cerrey	6.8 t/h		152	1.79*2.38*1.79	7.62	—	Peabody	1	ļ	22	· ⊢	уу		уу	y)	(-)	1.17	<u> </u>	У	-	у .			300	4.80	15 (4.8 9	6 1.08	ļ	0	ENERAC 2000	ECZ	 		
	Crisoba	paper		1) WTB, C. E., (1)				operation suspe	nded			1,700 x 1		38	<u> </u>	<u> </u>	ĮΥ	<u> </u>	نلنا		1-1-	<u> </u>	уу	у у	У				 		—	 	 	.	·	4		4
	Productos			2) WTB, B & W, (2)				ļ	ļ			743.8 x 4	air/gas						نلنا	4-1-	4:4:			у у			forced					0.02		Orsat	polarizer	디	CEGMS	
				3) WTB, CBC, (6)	45 Vh		3,825	2.9*6.1*4.0				3,825 x 1		_		уу			للتا	1-1-	1-1-		уу	ују		140			8.00			0,035		<u> </u>	<u> </u>	1	LNB, pckg boile	er
1 1	Jabon La			1) WTB (A), B&W		7	1,251		•		frontal, gun		1	31										уу							0.07		0.07	1		L.	plan RCP	_
	Corona	(soap)			15.42 t/h	4	1,251	2.8*4.2*3.3	38.8		Lance							у -	-15	ע עי	<u>ly ly</u>	<u> </u>	уу	у у	У	- 1					0.15		0.15				RCP	
				3) WTB (C), ditto	4.99 t/h]	405			152	type		inner	20	у	уу	ΙyΙ	у -	- 1	/ y 3	ŢyŢy	<u>/</u>]	уу	уу	nx	ormal	forced	284	4.60	2.02	0.02		0.02	Orsat	LNB		-	
1				4) WTB (D), ditto	6 t/h	N. ges	487	1.6*2,6*2,0	8.32	148	Lance	750	mixing	14	у	уу	l y l	у -	[-]	/ y 3	Lyly		уу	уу	\Box	1.		284	4.15	5.51	0.04	0.069	0.06]		24		1
				5) WTB (E), ditto	15 t/h	-1	1,217	2.3*3.2*2.1		274.90	type	1,500	1	14	y	y v	Ty1	y -		/ y 3	Ty v	,	ýÝ	уу	у	Į.						0.011]	1	62	1	
		L_		6) WTB (F), ditto	20 t/h	1	1,623	1		335.00] :	5		yly	y.	у -	T - 17	/ y s	yy		ýý	уу		1					0.92		1.74]	1	·	RCP	
15	Aicomex	aluminum	247	1) Reverberatory	20 V	N. gas	264 m3/	4.0*3.9*1.7			high speed		air/ges		فعنصاء	- -	1.1	-1-		y	Tyl.	. .	- v	уу	- nx	ormai	naturai					0.014		none	LNB	1	T	у
1 1		pipe, bar		furnace	charge		charge	1			Hasek Cat.		ļ .			.				[[]		[[]		1 1 "	- 1					1			1	1		1	'
		,		1	1	1	1	<u> </u>	1	: I	,		1				. 1		. 1		1 1	1 1	1 1	1	1 1	- 1		<u> </u>				1 .	1		,		r	

LW; Low water level cut-off device

Abbreviations: 1) Combustion Facilities

2) Emission Control and Monitoring Equipment 3) Combustion Control Equipment 4) Operational Safety Control Equipment

WTB: Water tube boiler LNB: Low-NOx burner

GPL: Gas pressure limits switch

FE: Flame eye

OHF: Oil heating furnace STB: Smoke tube boiler CEGMS: Continuous exhaust gas monitoring system AC: Automotic combustion control unit SV: Shut-off valve unit

WL: Water level gauge GF: Gas flow meter

TF-UM: Tank furnace (unit melter type) TF-RCP: Tank furnace (recuperator type) RCP: Recuperator

OP: Oil Pressure gauge ASP: Atomizing steam pressure gauge

GMF(-RCT): Glass meiting furnace (recycle type) EGR: Exhaust gas recirculation ECZ: Economizer SP: Steam pressure gauge

AW: Automatic water supply device PR: Pressure gauge lafter regulator

OT: Oil temperature gauge GPB: Gas pressure gauge at burner inlet

Results of Questionnaire Survey on Factories (2 of 3)

No.	Name of	Type of	Num of	Combustion	Max	Kind of	Fuel	Chember	Chamb.	Heat	Туре	Burner	Atomizing	Acel	Comb	ustion	Control E	auto.	0	peration	nal Safet	ty Contro	d Equip.		Combustic	n Combus.	Exhaust	O2	NOx	NOx	PM	co	Exhaust	NOx	NOx in the	Remarks	Wish
""	Factory	I '' I	Emplys	Facility and	Capacity	1	Consum.	Dimension	Volume	Trans	of.	Capacity	Media &		T			ĽΙ	1.1	T		1	T	T	Air	Air	Gas	1 1	Conc. at	Emiss.	Emiss.	Conc.	Gas	Emiss.	Previous		to
	raciony	1 1	(staff)	Manufacturer	Capaciny		I	M.D.H	YORAIRE	1 1		gas(m3/h)		ا ا	باساء	WSP	aw we	OFIC	T FF S	VAP	OP ASE	PPP	SIGPRIC	GPI GE	1	Supply	Temp.	33.132	5 % O2	i 1	Rate		Monitor	Control	Study	4.1	Attend
		Of .		PRIOR XII ACCUSED			gas(m3/h)	1.	(-2)	Anea	Burner		Meding	1 1	· · · · · ·	7						11.	7	-1 -1 -1	(deg. C)	Method	(deg. C)	(%)	(ppm)	(kg/h)	(kg/h)	(ppm)	Equip.	Method	(ppm)		Seminar
		products	(worker)				oil (lit/h)	(m)	(m3)	(m2)		oil (lit/h)	Method	(y)	++	+++	-	 	:+:+-	+-+	VV	+-+-	+ +		(ucg. c)	MECHOU		7.00			0.43			TERCTION	(PP.11)		1
	merican	textile	690	1)Boiler, CARO TEK	5.5 Vh		180	3.0(dia) * 8.0		1 1	H. oil burner	200 x 1			<u> </u>			+*+	, , , , , , , , , , , , , , , , , , , 	4-	у у	+++	+				300		3.25(?)	0.0214		5	02 (DKK)				١.,
דן .	extu		138	2)Boiler, B & W		Gas oil		2'3'2.4	14		B&W	370 x 1	steam/oil			y y	┵╅╌	171	<u> </u>	┸┼╌┼	у у	++	╌┤╌┤		normal	forced	270	6.00	3.8(?)	0.02	0.39	/		. [· '
				3)Boiler , Nebraska	8,6 Vh		240	2*3*2.3	13.7		PEC	380 x 1		10	y y	уу	<u>y -</u>	1 y 1	уу	У - 	уу	-	4-		ļ		260		3.75(?)	0.013	0.76	10					
17 0	artonaies	carton	700	1) WTB, Zum	107 t/h		4,000	2.74*13.12*2.00		- 1	EM, Zum	8 gaste		3	<u> </u>	уу	<u>y -</u>	у	у у	y y	уу	у	<u>/ </u>	у у	<u>'-</u>	forced	150	3.00	75	4.98	0.052	39	Orsat	Econom-	ļ	EGR and LNB	1
E	strella	bowes	313	2) WTB, Riley Stoker	63.6 Vh	N. gas	4,000	5.4*4.85*9.00	235.7	1	EM, Peabody	gun type	air/gas	21	y y l	уу	<u>y -</u>	<u> </u>	уу	y y '	у у	у	у	уу	normal	belanced	L							izer		planned	4
				3) WTB, Steinmuller	37.5 Vh		2,500	4.14"5.13"5.63	124		EM, B & W	6 gate		25	y y	уу	у ј -	y	уу	уу	уу	у	/ y	уу	<u> </u>	forced?		į						·			
18 V	/itro	glass	342	1) TF-UMT	30.5 l/d		250	8*24*3.6			Linde		O2/gas	0.9	Ϋ́	\Box	. [у	уу		у	у у	у у	532	forced			6.04	0.02	0.83	0	O2 (DKK)	O2 burner		heat insulation	<u>J</u>
F	ibras	fiber	125	2) TF-RT	25.5 Vd	N. gars	380	6.6*21.6*6.1			North		air/gas	13	$\sqrt{}$			TT	у	уу		у	/ y i	у у	532	balanced	881	8.75	433	3.5	1.43	0			1,226	gas scrubbing	ı
		ļ ·			11.1					1 1	American	1.1	"	1 " 1			.		-11	` `					ł				272	2.1	0.64	1				i de	
10 9	ilicatos &	Na2SiO3	71	1) Heater	200 t/h		1.000	8,3*23,4*3,5	680	 		4 burners	 					1	11	vi i		101	1 1	V V	900	forced	370	17.00		8.65	1.03		portable	use of			
	Derivados	K2SiO3		2) STB, C & B	9.4 t/h	N	300	1.2(dia)*4.2	4.75	1	C&B	1 burner	air/gas	7	. . 	ᆎᆉ	- -	† †	-1	:1:1		+	+ (+	-((2	induced	63	10.20	····	0.66	0.002		MAX 5	natural			
ו ו'	CHITOLOG	123103	. 100	3) STB, C & B	6.27 t/h	11, 905	250	0.9(dia)*3.8	2,42	1	C&B	1 burner	am/gars	10	' ' 		-2 3	1 +	- 1	' 		171	1 7		+	induced	63	10.20		0.66	0.002		.,,,,,,,	gas			1
-			1501		***************************************	Di	·		-	-					" " 	7 7 7	7 7	+++	1 1	, , ,		- 	7 7 7	7 7	20000		166	12.55	52	1.06	0.002	1	NOx	_			+
	rocter &	soap		1) WTB, B & W	. 9.1 t/h		950	circulation type D	+	\vdash	8 & W	950 x 1	air/oil	17	<u> </u>	ууу	Y -	 	y y j	ууу	y y	++	Y	y -	normal	forced					404			enrgy save		500	
	Samble,	cosmetics	270	2) Heater, No.1, No.2		N. gas	2 625	2.8 (dia) * 7.2	44.31		LNB 328/8		air/gas	burner	y		-	y	y	y y	ују	-	- У	у -	normal	forced	65	20	13	0.0028	4.94	٥	(chemi-	LNB		EGR and	
F	oniente				mm btu							<u> </u>		0.5	_			++		4		4-4-	44		1	<u> </u>		↓					lumi.)			boiler change	
21 0	CIA Hulera	tyre		1) STB, C & B	1.96 t/h		146	0.56*2.84	0.7	igsquare	C & B	150 x 1		16	уу	уу	<u>y -</u>	11	- y	уу	ــــــــــــــــــــــــــــــــــــــ	1:1	- -	- -	4	1.		6.40			0.0042		Orsat				
l l	l'ornel		120	2) STB, C & B	3.136 t/h	Diesel	121	0.57*3.6	0.92		C&B	163 x 1	air/oil	13	уу	y y	у -	1-1	<u>- y </u>	y y		1-1	- -	- -	normal	forced		5.12			0.0158				1		
	:			3) Oil medium boiler	1.9 t/h		136	5.46*4.2*4	91.7			154 x 1	<u> </u>	16	- -				у			\perp		i			324.8	8.20		0.26	0.038	43.5				3	
22 (Crisoba Ind.	paper	391	1) WTB, B & W	60 t/h	Gas	2,800	5*5*6.6	164		front, B & W	800 x 4	steam/oil	27	y -	- y	уу	TyT	у -	- y	уу	1-1	-	- [-	200	forced	217	9.80	59.2	3.995	0.035	6.72	none	energy		CEGMS	
	San Rafael)		138	2) WTB, Cerrey	60 Vh	oit	2,800	3.9*4.0*7.5	117	1 1	front, Peebody	800 x 4	1	19	y y	- у	уу	Tyl	у	У	у. у	1.1			200	7	151	16.50	357	11.154	0.264	19.4		saving	i	CEGMS	1 .
23 1	Hule	rubber		1) STB, C & B	-	Diesei		0.5(dia) * 2.5			C&B	30 x 4	air/oil	15	. . 	γу	.v -	1.1	- V	V -	v ·	1:1	-	- -	normal	forced								use of		boiler	1
	ndustrial		47	1,0,0,0,000		0.000	1	0.0(0.0) 2.0			000	~~~		"	'丨'丨	' '	' I		'	'	'		11	- 1			1							N.gas		maintenance	
	ndustrias de	n Abbar	<u> </u>	1) STB, C & B	3.136 t/h	Disease	100	0,6(dia)*4.2	1.2	 	C&B	 	air/oil	4.5	, , 		·	+ +	1,,	.		1	++		normat	forced	169	† 	39.66	5.3E-08	0.011		celt (DKK)	use of		dust	
	ndustrias de Hule Galgo	product	100	17316, C 6 6	3.130 VII	Lyosei	100	0.6(34) 4.2	1 2		Cab		aw/on.	4.5	, , , ,	y y	7 -		` '	, -		1 1	· ·	- -	i ikosii kas	10000	'``	i	03.00	0.50	0.011		οιι (D101)	diesel	I	collection	'
-		+				<u> </u>	 		+	-				+				+ +	┷	-	₩-	++			4.5	+	485	4.00	FE	57.76		10	CEGMS,			CEGMS is	
	Fermoelectri-	- bower		1) WTB, (U-1), C.E.		4 .	32,400	7.917.9118.5	1,155	. I	tangential	1,620 X 20	steam	30	уу	уу	уу	 y 	уу	уу	уу	y 	<u> </u>	уу	315	┦	135	4.00	55	4	•			use of			1
	ca del Valle	genera-	357	2) WTB, (U-2), B&W		4 -		9.0*9.0*24.0	+	↓	multi-fuel for	2,200 x 16	mechanic		у у	Y Y	уу	 Y -	уу	уу	у у	Y	<u> </u>	уу	315	forced	135	4.00	35	4 '	applica-	200		N.gars,	1 1	installed in	1
l l'	de Mexico	tion	1	3) WTB, (U-3), 8&W			35,200	ditto	1,944	↓	gas (lance)	2,200 x 16	mechanic	 >-	уу	уу	уу	171	уу	уу	уу	Y	<u> </u>	уу	315		135	4.00	40	unit	DHE			EGR, en-	1	each boiler	1
╙				4) WTB, (U-4), B&W	904.8 t/h		75,000	9.75*9.75*32.9	3,124		and oil	5,000 x 15	steam	20	уу	уу	уу	17	y y	y y	уу	<u> </u>	<u>y y l</u>	уу	322		126	6.00	120		ļ	200		ergy sav.		unit	
26	Vidriera	glass	493	1) GMF	180 t/d]	720	5.4*13*1.2	70.2		Heyeglass	90,000 x 14	high-	9	уу	уу	уу	l y l	<u>y y </u>	у у	уу	У	<u> </u>	уу	/ 700	_ •	700	ļ	<u> </u>	1.92		2,110	02	gas oil			1
	Oriental	bottles	180	2) GMF	220 Vd	Gas oil	1,041	6.6*15*1.2	99.		ditto	90,000 x 18	pressure	- 7	уу	уу	уу	l y l	уу	уу	уу	y	уу	уу	700	forced	700	<u> </u>		0.064	<u> </u>	2,307		LNB	570		
			<u> </u>	3) GMF	220 Vd		1,041	diffio	99		ditto	ditto	air/oil	2	уу	уу	уу	y	уу	уу	уу	У	у у	уу	/ 700		700	l									
27	Nueva	glass	2,035	1) GMF - RCT	8.3 Vh		971	7.24*10.48*1.1	4 135.97			10 units		3	у			T		у		l y l	уу	у у	1,200-1,3	00	325	9.20	503	14.24	2.47		02 (DKK)	use		CEGMS being	installed
	Fabrica	bottles	422	2) GMF - RCT	8.3 t/h	N. gas	1,575	ditto	ditto		gun-type	10 units	ar/gas	8.5	v I			\top	\Box	У		l y l	уу	уу	1,250-1,3	80 forced	409	7.90	730	26.75	2.58		EPA-7C	of			
	Nacional		l	3) GMF - RCT	13.33 t/I		1,566	7.93*16.06*1.7	7 317.72		LNB	12 units	1	2	v I	1				v		T v l	v v	y y	1,250-1,3	70	385	5.60	515	24.58	4.98			N.gas			7
			1	4) GMF - RCT	16,60 t/t	4	2 207	8,46*18,49*1.6				12 units	1	7.5	ý l	1		1 1	-1-1	V		1 7	V V	y y	1,300-1,3	80	463	8.80	485	24.22	3.24				644		٦
28	Planta de	asphalt	600	1) Rotary kiln No.5	120 t/h		720	2.5(dia)*8.0		1	low	1	air/oil	 -				 	101	v v	T 🕶	-+-+	+	γÝ			1			1					167	burner change	е
	Asfalto		173	2) Rotary kitn No.6	180 t/h	-	1,000	2.5(dia)*12	58.87	1	pressure		Hauck	-	,	_		++	- ; 		 (-	++	 	-(normal	induced			i	Ì	ļ		none	1	217	being	7 v
		1	'''	3) Rotary kiln No.7	200 t/h	1	1,200	2.5(dia)*12	58.87	┨	airiet		1		(╅	- ;	7 7 7 V	 (o		7 7 7 7	_			1	1		ŀ			1	160	planned	7 ′
1 1			1	4) Boiler No.5	200 011	 	50 - 70	2.0(002) 12	1 30 5/	+				╅╼╼┝	"	-		╅╌┼		/ / /	+	\rightarrow		yy				 		 	†				1	F.44.11224	
			ł		-	ļ	}	4	1						уу		<u> </u>	++			1 - 		7 7 		4		1	i					none		i	Į.	
]	5) Boiler No.6	4		50 - 70	4	ł						уу		Y	+	у (уу					1		1	Į I	HOTE				
-		-	 	6) Boiler No.7	ļ .		50 - 70		1	1		}	-		уу				у		_	_	уу			 				+		-	0.4501444	 	 		
	Sosa	Na2CO3		1) WTB, B & W x 3		4	1,640	No.3 - No.5	4		BAW	546 x 3	4	 	<u> </u>	y y	у у	1:1	_ -	y y	$\vdash\vdash$	у		- y	+		260, 220				4		cell (DKK)	enrgy save	9	installing RCF	⊣
	Техсосо	NaCl	152	2) WT8, B & W	30 t/h		2,975	No.6	4	1	1 .	744 x 4		30	·	у у		1:1	 -	<u>y y</u>	igwdap		у у	уу	y 130	forced	135			4.9	1	0	NOx			ļ	operate
		1		3) WT8, 8 & W	45 t/h	-	4,000	No.7	⊣		1	1,000 x 4	4		у у	уу	уу	1-1	<u>- y </u>	y y	igspace		<u> </u>			balanced		3.50	86.8	6.29	1	0					at
		1		4) WTB, Cerrey	68 t/h	N. gans	4,752	No.8				4,752 x 1	air/gas		уу				- y	у у		<u> y </u>	уу	уу	y 130		112	↓	<u> </u>		1	0			1	<u> </u>	70%
		1	1	5) WTB, Murray	30 t/h] .	3,150	No.9	┙		Spud Cohen	3,150 x 1]	24	уу	уу	уТу		<u> </u>	уу			уу			_	260	<u> </u>	L	<u> </u>]	0		!		installing RCI	_
		1.	1	6) WTB, Murray	50 t/h] -	4,900	No.10				4,900 x 1	1	21	y y	уу	ују		- y	уу		y [уу	ују	у	forced	249	3.40	51.6	4.07]	14.4		1		installing RCF	⊃ rated
		1		7) WTB, Murray	55 t/h	1	6,110	No.11	7 .	. [6,110 x 1]	16	y y	γγ	y v	\Box	-141	уу		· [y]	уу	уу	y 130		128]	0		1			capacit
		1	1	8) WT8, Nebraska	50 t/h		4,100	No.12	7	1		4,100 x 1	1		y y			1-1	- I vit	уу	1 1	Tý T	y y	y y	у		260				<u>l</u>	0				installing RCI	P
30	Crisoba	paper	457	1) WTB, Cerrey	30 t/h	_	2,200	1.96*7.5*2.74	40.5	1	steem jet						y y	17	10	v v	VV	\rightarrow			- normal	forced	T :	1	Ī	1	1		Orsat	LNB,EGR		CEGMS	
	Industrial	cellulose		2) WTB, Nebraska		Gas of		1.95*5.3*2.5			Coen	1	steem/o	15	* 	v V	, , , ,	;	-+;+	* *	l v l v	-+-	_		- normal	- 	1	1	T	1			being	LNB, auto		CEGMS	7
			'-	3) WTB x 2, C. E.	12 Vh		1,073			1	1			45		' '	yy		╌┼╌┼	' '	$\frac{1}{y} \frac{1}{y}$			v .	- 54	belence	s ·	1	1	1		1	planned	LNB		CEGMS	1
- 1				1-7 11 12 A E, W. E.	1	1.	1 -,0,0	1 2 2 2 3 3 3 3 3			1	1	1 .				<u>: 1)</u>	1	<u> </u>	111	IIII		1		1	1					-						

LW: Low water level cut-off device

Abbreviations: 1) Combustion Facilities

2) Emission Control and Monitoring Equipment

3) Combustion Control Equipment

4) Operational Safety Control Equipment

WTB: Water tube boiler STB: Smoke tube boiler LNB: Low-NOx burner

FE: Flame eye

AC: Automatic combustion control unit

GPL: Gas pressure limits switch

CEGMS: Continuous exhaust gas monitoring system

SV: Shut-off valve unit

OHF: Oil heating furnace WL: Water level gauge

AP: Air pressure sensor

GF: Gas flow meter

.TF-UM: Tank furnace (unit melter type) TF-RCP: Tank furnace (recuperator type) EGR: Exhaust gas recirculation

OP: Oil Pressure gauge ASP: Atomizing steam pressure gauge

SP: Steam pressure gauge

GMF(-RCT): Glass melting furnace (recycle type) ECZ: Economizer

PR: Pressure gauge lafter regulator

AW: Automatic water supply device WF: Water supply met OF: Oil flow meter

OT: Oil temperature gauge GPB: Gas pressure gauge at burner inlet

Results of Questionnaire Survey on Factories (3 of 3)

	T	T	الأش تسييل	Cambanda	A Annual	I Marilan		Chambas	I Obamb	Litera	T			1	^-	mbustio		at Easin	T	^	ع لوضن	afety Co	undown C	ou rim	_	On mile salidar	A	- Calminat	02	NO-	NOv	D14	20	Francis	NOw	MOV in the	Remarks	Mich
	me of	Type of		Combustion	!	Kind of	Fuel	Chamber	Chamb.	1	Туре	Burner	Atomizing	^9° -		TIDUSUU	7	or c deat	i 	7	T	alety Ct	J NION C	quip.		Combustion		1 .	ł I	NOx :	NOx	PM	CO	Exhaust	NOx	NOx in the	Vetimina	to
· Pan	ictory !	'1	Emplys	Facility and	Capacity	1	Consum.	Dimension	Volume] [of-	Capacity	Media &	1 Î.		. []	أندداء		ا ما	. ا . ا			امما		.	Aîr _	Air	Gas	Conc.	Conc. at	Emiss.	Emiss.	Conc.	Gas	Emiss.	Previous		1 "
		or	(staff)	Manufacturer	l		gas(m3/h)	M.D.H		Area	Burner	ges(m3/h)	Moong		(C) W	rirmiz	PIAWI	WFJOF	۱۲۱۲	E SV A	PIOP	ASPIPI	grsi	3P8 G	PL GF		Supply	Temp.		5 % 02	Rate	Rate)	Monitor	Control	Study	4	Attend
_		products			1	+	oil (lit/h)	(m)	(m3)	(m2)		oil (誠/h)	Method	(yı)		++	4		}		-		┵┵		_	(deg. C)	Method	 ` ` ` ` ` 	(%)	(ppm)	(kg/h)	(kg/h)	(ppm)	Equip.	Method	(ppm)	<u>-</u>	Semina
1 Empe		carton		1) STB, C & B	7.8 t/h	Gas oil	125			[C&B	300 x 1	air/oil	11	у	' Y '	/ Y	уу) y :	/ Y	У	- У	1 - [- -	. у	normal	forced	163.5	3.10	40	0.066		5	c he milumi		1		1
Cartor	n, Corr.		33	· · · · · · · · · · · · · · · · · · ·					<u> </u>	1 4,4				L														L							low Q2			<u> </u>
2 Du Po	ont p	paint	276	1) STB, C & B	1.2 t/h	N. gas	14	0.478(dia)*2.97				4	air/gas	1	у у	у	/ y	у -	[- [уу		- Ty	у	у	уу	normal	forced	160							LNB			1
··]	lo	chemicai	130			1	(5 kg/cm2)		1	1 .	<u>.</u> .			burner				1								[1	i	i i]]				į]]		1
3 Ciba-0	Geigy r	medicine	181	1) STB, C & B	3.13 Vh	Diesel	83		1.08		C & B		air/oil	0.8	v v	- V	, v		T-T	/ V	Y		1-1		. .	normal	forced	268	2.5	108			62	Orset	low O2		new boiler	
	- Y		346												'] '		`		1														Ì					1 .
M Orman	nizacion o	chamical	16	1) STB,Power Master	1581/6	Can nil	40		 	 	Power		air/oil	20		+++	. .	-	 	,	+;+	v I v	+	17	+	100	forced	200	4.45				+	O2/Oreat)	only one	1	regular monitor	,
1 -		ZnCl2	6	2) STB, ditto		Gas oil	40				Master		ent/Off	25	y y			- 1		' ' 	1:	, , , ,	1-1		+-	100	- 1010	200	4.45				1		boilt used		of exhaust gas	i
				···		+			 				 		7 7	++	'-'-	-	╁	' ' 	+,	-7-1-7	++	, ,	-		 	+					+	02(0134)	DOM: USEC	1		'
AGA	- 1	C2H2	176	1) Cont. turnace,21hp	•	N. gas	20	1.16*2.9*1.5	5,04	1 1	high temp, air	rjet !		12	<u>y y</u>	<u> </u>	/ Y]	<u> </u>	╀╾┼	<u> </u>	+-+	<u> </u>	 	<u>y)</u>	<u> </u>	normal	-	29	9.00				10	ĺ		1 1	not regulated	-
Mexic	x 0 0	CaC2	209	2) Dryer, Salabesic,83 h	}		78.5	0.95*1.0*0.5	0.47	4 >	ditto, Eclipse	100	air/gas	20	у.	1-1-	4-1	- -		уу	4-1	- -	1-1		- -	650	natural		15.5		li		10	none		1 1	· · · · · · · · · · · · · · · · · · ·	y
				3) Boller	4 hp	<u> </u>	3.8	0.3*0.4*0.2	0.024		Horse Power	L,		4	у -	<u> </u>			-	уу	•	• -	1		- -	400		234	4.17				43.1				not regulated	<u> </u>
6 Metak	kurgica i	non-Fe	44	i) Melting pot]			1.5(dia)*1.5			Сһогго	x 2		12	у				<u>l - l</u>	<u>- y </u>		у	y	- [٠	300		320	17.0	56	0.084	0.15	_		use of	1		1
Almer	na l	metal	18	2) Mold dryer		N. gas		0,89(dia)*1.73]	[EN Los 3		air/gas	15	у	\perp		-	[- [- y		у	y			normai	forced	53	20.0	72	0.122	0.1		none	natural	1 1	1.1]
		melting		3) Core dryer		1		1.83*0.69*1.10	1	[Casos			14	у	T		-	$\Gamma \cdot \Gamma$	- у		У	y	-		попты	٦.	30	21.0	227	0.443	0.001	7	ļ	gas			1
37 Acero	xs i	iron		1) Boiler	100 hp	Ges oil	45	T		1			air/oil	12	γ	77	\top		1		7	1	1		1	normal	forced	69	6.00	23.4	2.56	0.22	0.06	NOx				
1	. 1	rolling				1	•								1]		.] [1			1			(O2 1.8%)			1	(Shirnazu)	,			1
8 Polac		nonvi	66	1) WTB x 2, Cerrey	250 hp	 	224	0.812(dia)*3.124	4 16	 	Cerrey	224 x 2	-	 -	10 1	1			1 -	, ,	+-			у	.	normal		274	+	<u> </u>	$\overline{}$	0.0147	0	Orsat	use of	<u> </u>		1 -
~		phenoi	1 1	2) HTM heater	200110	N. gas		0.012(00) 5.12	1.0	1	Thermoflux				7 7				1-	7171	111		171		,	7	forced	242	510	0,041	0.100	0.0141	1 0	Orsat	naturai			1
	- 1	weed killer	•	3) HTM heater	1	11. 905	52	 	 	1		49 x 1 51.6 x1	aix/gas		·	not	clear					ot clear ot clear				7	1000	418					1 0	Cisal	-1			1
N -						-			 .		Deinmersion			 	_	1101	JIOSI		┯ -}-		- IK	X Crean	т т		-		+		7.00		2.50		+		gas			
39 Tamm		woolen		1) STB, C & B	3.9 t/h	Gas oil	165				C&B	165	air/oil	28	-)	/ Y	ујуј		У	y -	. .	-)	' Y	. У	у] -	normal	forced	225		148	0.52	0.144	0.018	O2(chemi	-	1		
y CIA		yam.	100		Ļ	1			<u> </u>			L				\perp												<u> </u>					 	lumi.)	1	ļ	:	ļ
40 Sabrit	tas l	fried	1,100	 Heat exchanger, 			474	2.3*6.4*2.7	39.7			500 x 1		15	y 1	/	уу	у -	1-1	уу	/	.)	/ y	у 1	у -	1	1 .	294		42.1	0.4710	0.00175	5	02	use of	1		1 .
	- 1	potato,	700	Heat & Control	L]]	North]	LL		11						1_				normal	forced	L	<u> </u>		<u> </u>		1	<u> </u>	N. gas			1
	ļ.	etc.		2) ditto		N. gas	320	2.3*5.8*2.0	26.7]]	American	330 x 1	air/gas	11	y .)	ý	у. у	у -	T-T	уГуГ	7 - 1)	/ y [y	у]		173		95.25	0.672	0.0102	0.05	Orsat	and			
				3) Fryer, FLEM		1	123	1.5*5.5*0.5	4.1	1 1		68 x 2	1	15		not	clear				, n	ot clear						520		0.0458					energy		•	
	ŀ			4) Fryer, FLEM	1	1	85	ditto	4.1	1		48 x 2	1	15		not	clear				Di	ot clear			· · · · · · · · · · · · · · · · · · ·	1		648		86.15	0.174		1		saving			
41 Vidrie	era	glass		1) GMF	3.16 Vh		404	†····	·		frontal	268 x 4		5	v .	T - I			T - 1	- I V I		. ,	,	νĪ	V	1,300	1	166	15.5	508	9.68	0.28	0	infra-red	ditto	<u> </u>		1
Los R	. 1	container	l .			4	933	1			Combustion		1	<u> </u>	<u>, </u>	+ +	-1		1.1	- 1 - 2 1	, ,		.	-(- -	- 1	1,300	i '	<u> </u>	1.5.5				+-	?	1	1		1
	.,		1 185	(7) (4MI)	7 45 I/h								E											7 1	* 17.	1,000	1									4		1
		-Utamina	185	2) GMF	7.45 Vh	N nee						328 x 6	ab/aan	4	7	 	1	- -	++	1 11	. 1	- 	.+-	u I		1 300	former	1.41	16.7	1.008	41.0		1			1		
		-Cramin	185	3) GMF	7.04 t/h	N. gas	769				Technology	357 x 6	_air/gas	6	у					- y	4 -	- 1	<u>, </u>	у	- у	1,300	forced		16.7	1,008	41.9		0				.*	-
	.	COLUMNICATI	185	3) GMF 4) GMF	7.04 t/h 10.75 t/h		769 1,172				Technology gas and oil	357 x 6 477 x 8	air/gas	6 7	y y					- y - y	y - y -	-)	, i	y y	- у - у	1,300	forced	208	16.5	523	25.9		0			-	.* •	
				3) GMF 4) GMF 5) GMF	7.04 t/h 10.75 t/h 15.41 t/h		769 1,172 1,938				Technology	357 x 6 477 x 8 x 28	air/gas	6 7 2	у у у		- · ·			- y - y - y	y - y - y -	-) -)	, . , . , .	у у у	- y - y - y	1,300	forced		+								."	
42 Ideal	1	ceramic	600	3) GMF 4) GMF 5) GMF 1) Intermittent furnaci	7.04 t/h 10.75 t/h 15.41 t/h		769 1,172 1,938 160	6.7*7.4*2.5	45.3		Technology gas and oil	357 x 6 477 x 8 x 28 5 x 18	air/gas	6 7 2	y y y					- y - y - y	y - y - y -	-) -)	, .	y y y	- y - y - y	1,300	forced	208 296	16.5 17.5	523 2267	25.9 8.28		0					
42 Ideal Stand	1		600	3) GMF 4) GMF 5) GMF	7.04 t/h 10.75 t/h 15.41 t/h		769 1,172 1,938	8.7°7.4°2.5 2.0°2.1°85	45.3 357		Technology gas and oil	357 x 6 477 x 8 x 28	air/gas	6 7 2 1 12	y y y		 	- ·		- y - y - y	y - y - y -	-)	, .	y y y	- y - y - y	1,300	forced	208 296	16.5 17.5	523	25.9 8.28	6.20E-0	0					
	1	ceramic	600	3) GMF 4) GMF 5) GMF 1) Intermittent furnaci	7.04 t/h 10.75 t/h 15.41 t/h		769 1,172 1,938 160				Technology gas and oil low spd, Owen	357 x 6 477 x 8 x 28 5 x 18	air/gas	6 7 2	y y y			- · ·	-	- y - y - y	y - y - y -	- 3	, .	y y y	- y - y - y	1,300	forced	208 296	16.5 17.5	523 2267	25.9 8.28	6.20E-0	0		use of			
	1	ceramic	600	3) GMF 4) GMF 5) GMF 1) Intermittent furnaci 2) Tunnel kiin 8	7.04 t/h 10.75 t/h 15.41 t/h 0.23 t/h 1.05 t/h		769 1,172 1,938 160 160	2,0*2.1*85	357		Technology gas and oil low spd, Owen pre-mix	357 x 6 477 x 8 x 28 5 x 18 3.8 x 42	air/gas	6 7 2 1 12	y y			- · ·	-	- y - y - y	y y y -	-) -)	7 -	y y y	- y - y - y	1,300	forced	208 296	16.5 17.5	523 2267 1.95mg/m	25.9 8.28	6.20E-0	0 0	none	use of			у
	1	ceramic	600	3) GMF 4) GMF 5) GMF 1) Infermittent furnaci 2) Tunnel kifn B 3) Tunnel kifn A	7.04 t/h 10.75 t/h 15.41 t/h 0.23 t/h 1.05 t/h	N. gas	769 1,172 1,938 160 160 180	2,0*2.1*85 ditto	357 357		Technology gas and oil low spd, Owen pre-mix	357 x 6 477 x 8 x 28 5 x 18 3.8 x 42 3.8 x 42		6 7 2 1 12 12	y y y					- y - y - y	y - y - y -	- 3		y y y	- y - y - y	1,300	forced	208 298 212	16.5 17.5 18.0	523 2267 1.95mg/m	25.9 8.28		0 0	none	1			у
	1	ceramic	600	3) GMF 4) GMF 5) GMF 1) Informittent furnace 2) Tunnel kiln 8 3) Tunnel kiln A 4) Tunnel kiln No.2	7.04 t/h 10.75 t/h 15.41 t/h 0.23 t/h 1.05 t/h 1.05 t/h 0.48 t/h 0.32 t/h	N. gas	769 1,172 1,938 160 160 180 160	2,0*2,1*85 ditto 1,4*2,1*80	357 357 235		Technology gas and oil low spd, Owen pre-mix	357 x 6 477 x 8 x 28 5 x 18 3.8 x 42 3.8 x 42 8.2 x 22		6 7 2 1 12 12 15	y					- y - y - y	y - y - y -	-)	/ - ·	y y y	- y - y - y	1,300	forced	208 296 212 100 134	16.5 17.5 18.0 19.2 20.2	523 2267 1.95mg/m	25.9 8.28 0.36g/h	5.20E-0	0 0	none	natural			У
	1	ceramic	600	3) GMF 4) GMF 5) GMF 1) Infermittent furnaci 2) Tunnel kiln B 3) Tunnel kiln A 4) Tunnel kiln No.2 5) Tunnel kiln No.1	7.04 t/h 10.75 t/h 15.41 t/h 0.23 t/h 1.05 t/h 1.05 t/h 0.48 t/h 0.32 t/h	N. gas	769 1,172 1,938 160 160 180 160 250	2,0*2.1*85 ditto 1,4*2.1*80 ditto	357 357 235 235		Technology gas and oil low spd, Owen pre-mix	357 x 6 477 x 8 x 28 5 x 18 3.8 x 42 3.8 x 42 8.2 x 22 10 x 16		6 7 2 1 12 12 15 15	y y y										- y - y - y	1,300 1,300	forced	208 296 212 100 134 277	16.5 17.5 18.0 19.2 20.2	523 2267 1.95mg/m 0 0	25.9 8.28 0.36g/h	5.20E-0	0 0	none	natural			у
	1	ceramic	600	3) GMF 4) GMF 5) GMF 1) Infermittent furnaci 2) Tunnel kiln B 3) Tunnel kiln A 4) Tunnel kiln No.2 5) Tunnel kiln No.1 6) Intermit, furnace C	7.04 t/h 10.75 t/h 15.41 t/h 0.23 t/h 1.05 t/h 1.05 t/h 0.48 t/h 0.32 t/h	N. gas	769 1,172 1,938 160 160 180 160 250 118.5	2,0*2.1*85 ditto 1,4*2.1*80 ditto	357 357 235 235		Technology gas and oil low spd, Owen pre-mbx Eclipse	357 x 6 477 x 8 x 28 5 x 18 3.8 x 42 3.8 x 42 8.2 x 22 10 x 16 x 20		6 7 2 1 12 12 15 15 5 10					_	уу	y -	- 3	/ Y	у		1,300 1,300		208 296 212 100 134 277	16.5 17.5 18.0 19.2 20.2	523 2267 1.95mg/m 0 0	25.9 8.28 0.36g/h	5.20E-0	0 0	none	natural			y
Stand	dard	ceramic ware	600 110	3) GMF 4) GMF 5) GMF 1) Intermittent furnaci 2) Tunnel kiln B 3) Tunnel kiln A 4) Tunnel kiln No.2 5) Tunnel kiln No.1 6) Intermit, furnace C 7) STB, C & B 8) STB,MYRGO	7.04 t/h i0.75 t/h i5.41 t/h 0.23 t/h 1.05 t/h 1.05 t/h 0.48 t/h 0.32 t/h 0.3 t/h 100 hp 60 hp	N. gas	769 1,172 1,938 160 160 180 160 250 118.5 71.1	2,0*2.1*85 ditto 1.4*2.1*80 ditto 5.88*6.65*3.7	357 357 235 235		Technology gas and oil low spd, Owen pre-mix Eclipse SELMEC MYRGO	357 x 6 477 x 8 x 28 5 x 18 3.8 x 42 3.8 x 42 8.2 x 22 10 x 16 x 20 118.5 x 1 71.1 x 1	air/gas	6 7 2 1 12 12 15 15 5 10 2.5		y y y			_	уу		- 3	/ y / y	y		1,300 1,300 normal		208 296 212 100 134 277	16.5 17.5 18.0 19.2 20.2	523 2267 1.95mg/m 0 0 4.1E-8 g/m	25.9 8.28 0.36g/h	5.20E-0	0 0	none	natural gas		TELEDYNE	y
Stand	dard	ceramic	600 110	3) GMF 4) GMF 5) GMF 1) Intermittent furnaci 2) Tunnel kiln B 3) Tunnel kiln No.2 5) Tunnel kiln No.1 6) Intermit furnace C 7) STB, C & B 8) STB,MYRGO 1) GMF, No.1 - No.5	7.04 t/h 10.75 t/h 15.41 t/h 0.23 t/h 1.05 t/h 1.05 t/h 0.32 t/h 0.32 t/h 100 hp 60 hp	N. gas	769 1,172 1,938 160 160 180 160 250 118.5 71.1	2,0*2.1*85 ditto 1.4*2.1*80 ditto 5.88*6.65*3.7	357 357 235 235		Technology gas and oil low spd, Owen pre-mbx Eclipse SELMEC MYRGO Cleanfire	357 x 6 477 x 8 x 28 5 x 18 3.8 x 42 3.8 x 42 8.2 x 22 10 x 16 x 20 118.5 x 1 71.1 x 1 89 x 4		6 7 2 1 12 12 15 15 5 10 2.5					_	уу	y -		/ y / y	у		1,300 1,300		208 296 212 100 134 277	16.5 17.5 18.0 19.2 20.2	523 2267 1.95mg/m 0 0 4.1E-8 g/m	25.9 8.28 0.36g/h 6.5 g/h	5.20E-0	0 0 3 3 3 637		natural gas LNB		TELEDYNE	у
Stand 43 Vidrie Mexic	dard era co	ceramic ware	600 110 1,157 208	3) GMF 4) GMF 5) GMF 1) Intermittent furnaci 2) Tunnel kiln B 3) Tunnel kiln A 4) Tunnel kiln No.2 5) Tunnel kiln No.1 6) Intermit furnace C 7) STB, C & B 8) STB,MYRGO 1) GMF, No.1 - No.5 Combustion Tech.	7.04 t/h 10.75 t/h 15.41 t/h 0.23 t/h 1.05 t/h 1.05 t/h 0.32 t/h 0.32 t/h 100 hp 60 hp	N. gas	769 1,172 1,938 160 160 180 160 250 118.5 71.1	2.0*2.1*85 ditto 1.4*2.1*80 ditto 5.88*6.65*3.7	357 357 235 235		Technology gas and oil low spd, Owen pre-mix Eclipse SELMEC MYRGO Cleanfire Comb. Tech	357 x 6 477 x 8 x 28 5 x 18 3.8 x 42 3.8 x 42 8.2 x 22 10 x 16 x 20 118.5 x 1 71.1 x 1 89 x 4 45 x 3	air/gas air/gas	6 7 2 1 12 12 15 15 5 10 25						y y y y y y	y -	- 3	/ y / y	y		1,300 1,300 normal	induced	208 296 212 100 134 277	16.5 17.5 18.0 19.2 20.2 20.3	523 2267 1.95mg/m 0 0 4.1E-8 g/m 276 mg/m3	25.9 8.28 0.36g/h 6.5 g/h	5.20E-0. 3.1 0.191	0 0 3 3 3 637	02, NOx	natural gas LNB		TELEDYNE	у
Stand 43 Vidrie Mexic 44 Indus	era Co	ceramic were	1,157 205 40	3) GMF 4) GMF 5) GMF 1) Intermittent furnaci 2) Tunnel kiln B 3) Tunnel kiln A 4) Tunnel kiln No.2 5) Tunnel kiln No.1 6) Intermit furnace C 7) STB, C & B 8) STB,MYRGO 1) GMF, No.1 - No.5 Combustion Tech. 1) Rotary kiln	7.04 t/h 10.75 t/h 15.41 t/h 0.23 t/h 1.05 t/h 1.05 t/h 0.48 t/h 0.32 t/h 100 hp 60 hp 1.8 t/h	N. gas	769 1,172 1,938 160 160 180 160 250 118.5 71.1	2.0*2.1*85 ditto 1.4*2.1*80 ditto 5.88*6.65*3.7 0.6(dia)*2.4	357 357 235 235		Technology gas and oil low spd, Owen pre-mbx Eclipse SELMEC MYRGO Cleanfire	357 x 6 477 x 8 x 28 5 x 18 3.8 x 42 3.8 x 42 8.2 x 22 10 x 16 x 20 118.5 x 1 71.1 x 1 89 x 4	air/gas	6 7 2 1 12 12 15 15 5 10 25					_	уу	y -	- 3	/ y / y	y		1,300 1,300 normal		208 296 212 100 134 277	16.5 17.5 18.0 19.2 20.2	523 2267 1.95mg/m 0 0 4.1E-8 g/m 276 mg/m3	25.9 8.28 0.36g/h 6.5 g/h	5.20E-0	0 0 3 3 3 637		natural gas LNB		TELEDYNE	у
Stand 43 Vidrie Mexic 44 Indus Pavim	era co strial nentadora	ceramic ware glass asphalt- concrete	1,157 206 40	3) GMF 4) GMF 5) GMF 1) Intermittent furnaci 2) Tunnel kiln B 3) Tunnel kiln A 4) Tunnel kiln No.2 5) Tunnel kiln No.1 6) Intermit furnace C 7) STB, C & B 8) STB,MYRGO 1) GMF, No.1 - No.5 Combustion Tech. 1) Rotary kiln	7.04 t/h 10.75 t/h 15.41 t/h 0.23 t/h 1.05 t/h 1.05 t/h 0.48 t/h 0.32 t/h 100 hp 60 hp 1.8 t/h 180 t/h 300 m3/m	N. gas	769 1,172 1,938 160 160 180 160 250 118.5 71.1	2.0*2.1*85 ditto 1.4*2.1*80 ditto 5.88*6.65*3.7 0.6(dia)*2.4 circular 7 feet	357 357 235 235		Technology gas and oil low spd, Owen pre-mix Eclipse SELMEC MYRGO Cleanfire Comb. Tech	357 x 6 477 x 8 x 28 5 x 18 3.8 x 42 3.8 x 42 8.2 x 22 10 x 16 x 20 118.5 x 1 71.1 x 1 89 x 4 45 x 3 50 hp	air/gas air/gas air/oil	6 7 2 1 12 12 15 15 5 10 2.5 0.3	y y	уу	y · y		у	y y y y y y y	y -	- 3	/ y / y / y / y /	y y y	- y - y y	1,300 1,300 normal	induced	208 298 212 100 134 277 146	16.5 17.5 18.0 19.2 20.2 20.3	523 2267 1.95mg/m 0 0 4.1E-8 g/m 276 mg/m3	25.9 8.28 0.36g/h 6.5 g/h	5.20E-0. 3.1 0.191	0 0 3 3 3 637	O2, NOx	natural gas LNB use of diesel		TELEDYNE	у
Stand 43 Vidrie Mexic 44 Indus Pavim 45 Ford	era ero co strial entadora	ceramic ware glass asphalt- concrete auto-	1,157 206 40 10 3,852	3) GMF 4) GMF 5) GMF 1) Intermittent furnaci 2) Tunnel kiln B 3) Tunnel kiln A 4) Tunnel kiln No.2 5) Tunnel kiln No.1 6) Intermit furnace C 7) STB, C & B 8) STB,MYRGO 1) GMF, No.1 - No.5 Combustion Tech. 1) Rotary kiln	7.04 t/h 10.75 t/h 15.41 t/h 0.23 t/h 1.05 t/h 1.05 t/h 0.48 t/h 0.32 t/h 100 hp 60 hp 1.8 t/h 180 t/h 300 m3/m from the	N. gas N. gas Diesel	769 1,172 1,938 160 160 180 160 250 118.5 71.1	2.0*2.1*85 ditto 1.4*2.1*80 ditto 5.88*6.65*3.7 0.6(dia)*2.4 circular 7 feet	357 357 235 235 145		Technology gas and oil low spd, Owen pre-mix Eclipse SELMEC MYRGO Cleanfire Comb. Tech	357 x 6 477 x 8 x 28 5 x 18 3.8 x 42 3.8 x 42 8.2 x 22 10 x 16 x 20 118.5 x 1 71.1 x 1 89 x 4 45 x 3 50 hp	air/gas air/gas air/oil	6 7 2 1 1 12 12 15 15 5 10 2.5 0.3	y . y . y	yy	y y y y	 y y	У	y y y y y y y y y y y y y	y - y -	- 3	/ y / y / y	y y y	- y - y y	1,300 1,300 normal	induced natural forced/	208 298 212 100 134 277 146	16.5 17.5 18.0 19.2 20.2 20.3	523 2267 1.95mg/m 0 0 4.1E-8 g/m 276 mg/m3	25.9 8.28 0.36g/h 6.5 g/h	5.20E-0. 3.1 0.191	0 0 3 3 3 637	O2, NOx	LNB use of diesel	<u>.</u>	TELEDYNE	y
Stand Stand Vidrie Mexic Hous Pavim	era ero co strial entadora	ceramic ware glass asphalt- concrete	1,157 206 40 10 3,852 1,200	3) GMF 4) GMF 5) GMF 1) Intermittent furnaci 2) Tunnel kiln B 3) Tunnel kiln A 4) Tunnel kiln No.2 5) Tunnel kiln No.1 6) Intermit furnace C 7) STB, C & B 8) STB,MYRGO 1) GMF, No.1 - No.5 Combustion Tech. 1) Rotary kiln NOx emissions (kg/h 1) Heat treating furna	7.04 t/h 10.75 t/h 15.41 t/h 0.23 t/h 1.05 t/h 1.05 t/h 0.48 t/h 0.32 t/h 100 hp 60 hp 1.8 t/h 180 t/h 300 m3/m) from the ce: 0.1615	N. gas N. gas Diesel on casting (769 1,172 1,938 160 160 180 160 250 118.5 71.1 160 1,400 (actory are as 3oiler No.1: 6	2.0*2.1*85 ditto 1.4*2.1*80 ditto 5.88*6.65*3.7 0.6(dia)*2.4 circular 7 feet 8 follows:	357 357 235 235 145 3) Boiler	r No.3; 0.	Technology gas and oil low spd, Owen pre-mix Eclipse SELMEC MYRGO Cleanfire Comb. Tech Hauk	357 x 6 477 x 8 x 28 5 x 18 3.8 x 42 3.8 x 42 8.2 x 22 10 x 16 x 20 118.5 x 1 71.1 x 1 89 x 4 45 x 3 50 hp (1) Engine (2) Assem	air/gas air/gas air/oil factory	6 7 2 1 1 12 12 15 15 5 10 2.5 0.3	у . у у у у	y y y y y y	y y y y y	 у у у у	y y y	y y y y y y y y y y	y - y - y -		/ Y / Y / Y / Y / Y / Y / Y	y y y	- y - y y - y	1,300 1,300 normal	induced netural forced/	208 298 212 100 134 277 146	16.5 17.5 18.0 19.2 20.2 20.3	523 2267 1.95mg/m 0 0 4.1E-8 g/m 276 mg/m3	25.9 8.28 0.36g/h 6.5 g/h	5.20E-0. 3.1 0.191	0 0 3 3 3 637	O2, NOx none O2,NOx Orsat	LNB use of diesel	<u>.</u>	TELEDYNE	у
Stand Stand Stand Vidrie Mexic Indus Pavim Ford	era ero co strial entadora	ceramic ware glass asphalt- concrete auto-	1,157 206 40 10 3,852 1,200	3) GMF 4) GMF 5) GMF 1) Intermittent furnaci 2) Tunnel kiln B 3) Tunnel kiln A 4) Tunnel kiln No.2 5) Tunnel kiln No.1 6) Intermit furnace C 7) STB, C & B 8) STB,MYRGO 1) GMF, No.1 - No.5 Combustion Tech. 1) Rotary kiln NOx emissions (kg/h 1) Heat treating furna 4) Emergency power	7.04 t/h 10.75 t/h 15.41 t/h 0.23 t/h 1.05 t/h 1.05 t/h 0.48 t/h 0.32 t/h 100 hp 60 hp 1.8 t/h 190 t/h 300 m3/m from the ce: 0.1615	N. gas N. gas Diesel on casting f 9, 2) E No.1: 0.0	769 1,172 1,938 160 160 180 160 250 118.5 71.1 160 1,400 (actory are as 3oiler No.1: 6009,	2.0*2.1*85 ditto 1.4*2.1*80 ditto 5.88*6.65*3.7 0.6(dia)*2.4 circular 7 feet a follows: 0.0133, 5) Emergency p	367 367 235 236 145 3) Boiler	r No.3: 0.	Technology gas and oil low spd, Owen pre-mix Eclipse SELMEC MYRGO Cleanfire Comb. Tech Hauk	357 x 6 477 x 8 x 28 5 x 18 3.8 x 42 3.8 x 42 8.2 x 22 10 x 16 x 20 118.5 x 1 71.1 x 1 89 x 4 45 x 3 50 hp (1) Engine (2) Assern (3) Casting	air/gas air/oil factory bby factory	6 7 2 1 1 12 12 15 15 5 10 2.5 0.3	у у у у	y y y y y y y y y	y y y y y y y	 у у у у	у у у	y y y y y y y y y y y y	y - y - y - y y.	-)	/ Y / Y / Y / Y / Y / Y	y y y - - y	- y - y - y	1,300 1,300 normal	induced natural forced/	208 298 212 100 134 277 146	16.5 17.5 18.0 19.2 20.2 20.3	523 2267 1.95mg/m 0 0 4.1E-8 g/m 276 mg/m3	25.9 8.28 0.36g/h 6.5 g/h	5.20E-0. 3.1 0.191	0 0 3 3 3 637	O2, NOx	LNB use of diesel	<u>.</u>	TELEDYNE	у
Stand 3 Vicirie Mexic 44 Indus Pavim 45 Ford Morto	era co strial nentadora	glass asphalt- concrete auto- mobiles	1,157 206 40 10 3,852 1,200	3) GMF 4) GMF 5) GMF 1) Intermittent furnace 2) Tunnel kiln 8 3) Tunnel kiln No.2 5) Tunnel kiln No.1 6) Intermit furnace C 7) STB, C & B 8) STB,MYRGO 1) GMF, No.1 - No.5 Combustion Tech. 1) Rotary kiln NOx emissions (kg/h 1) Heat treating furna 4) Emergency power 6) Dryer No.1: 0.047	7.04 t/h 10.75 t/h 15.41 t/h 0.23 t/h 1.05 t/h 0.48 t/h 0.32 t/h 100 hp 60 hp 1.8 t/h 190 t/h 300 m3/m from the ce: 0.1619 generator 7) Dr	N. gas N. gas Diesel on Casting f 9, 2) E No.1: 0.0 ryer No.2	769 1,172 1,938 160 160 180 160 250 118.5 71.1 160 1,400 (actory are as 3oiler No.1: 6009,	2.0*2.1*85 ditto 1.4*2.1*80 ditto 5.88*6.65*3.7 0.6(dia)*2.4 circular 7 feet s follows: 0.0133, 5) Emergency p 8) Solvent furned	357 357 235 235 145 3) Boiler cover general	r No.3: 0. erator No.	Technology gas and oil low spd, Owen pre-mix Eclipse SELMEC MYRGO Cleanfire Comb. Tech Hauk	357 x 6 477 x 8 x 28 5 x 18 3.8 x 42 3.8 x 42 8.2 x 22 10 x 16 x 20 118.5 x 1 71.1 x 1 89 x 4 45 x 3 50 hp (1) Engine (2) Assem (3) Casting	air/gas air/gas air/oil factory by factory o 0.020,	6 7 2 1 1 12 12 15 15 5 10 2.5 0.3	y y y y 10) H	y y y y y y y y y	y y y y y y y y y y ng fum	y y y y y y y cee No.1	y y y -	y y y y y y y y y y y	y - y - y - 1) Heat	y y treating	/ y / y / y / y / y / y / y / y / y / y	y y y y	- y - y - y - y - y - y - y - y - y - y	normal	induced netural forced/	208 298 212 100 134 277 146	16.5 17.5 18.0 19.2 20.2 20.3	523 2267 1.95mg/m 0 0 4.1E-8 g/m 276 mg/m3	25.9 8.28 0.36g/h 6.5 g/h	5.20E-0. 3.1 0.191	0 0 3 3 3 637	O2, NOx none O2,NOx Orsat	LNB use of diesel	<u>.</u>	TELEDYNE	У
Stand 3 Vicirie Mexic 44 Indus Pavim 45 Ford Morto	era ero co strial entadora	glass asphalt- concrete auto- mobiles	1,157 206 40 10 3,852 1,200	3) GMF 4) GMF 5) GMF 1) Intermittent furnace 2) Tunnel kiln 8 3) Tunnel kiln No.2 5) Tunnel kiln No.1 6) Intermit furnace C 7) STB, C & B 8) STB,MYRGO 1) GMF, No.1 - No.5 Combustion Tech. 1) Rotary kiln NOx emissions (kg/h 1) Heat treating furna 4) Emergency power 6) Dryer No.1: 0.047	7.04 t/h 10.75 t/h 15.41 t/h 0.23 t/h 1.05 t/h 0.48 t/h 0.32 t/h 100 hp 60 hp 1.8 t/h 190 t/h 300 m3/m from the ce: 0.1619 generator 7) Dr	N. gas N. gas Diesel on Casting f 9, 2) E No.1: 0.0 ryer No.2	769 1,172 1,938 160 160 180 160 250 118.5 71.1 160 1,400 (actory are as 3oiler No.1: 6009,	2.0*2.1*85 ditto 1.4*2.1*80 ditto 5.88*6.65*3.7 0.6(dia)*2.4 circular 7 feet s follows: 0.0133, 5) Emergency p 8) Solvent furned	357 357 235 235 145 3) Boiler cover general	r No.3: 0. erator No.	Technology gas and oil low spd, Owen pre-mix Eclipse SELMEC MYRGO Cleanfire Comb. Tech Hauk	357 x 6 477 x 8 x 28 5 x 18 3.8 x 42 3.8 x 42 8.2 x 22 10 x 16 x 20 118.5 x 1 71.1 x 1 89 x 4 45 x 3 50 hp (1) Engine (2) Assern (3) Casting	air/gas air/oil factory bby factory g facory 0.020,	6 7 2 1 1 12 12 15 15 5 10 2.5 0.3	y y y y 10) H	y y y y y y y y y	y y y y y y y y y y ng fum	y y y y y y y cee No.1	y y y -	y y y y y y y y y y y y	y - y - y - 1) Heat	y y treating	/ y / y / y / y / y / y / y / y / y / y	y y y y	- y - y - y - y - y - y - y - y - y - y	normal	induced netural forced/	208 298 212 100 134 277 146	16.5 17.5 18.0 19.2 20.2 20.3	523 2267 1.95mg/m 0 0 4.1E-8 g/m 276 mg/m3	25.9 8.28 0.36g/h 6.5 g/h	5.20E-0. 3.1 0.191	0 0 3 3 3 637	O2, NOx none O2,NOx Orsat	LNB use of diesel	<u>.</u>	TELEDYNE	у
Stand 43 Vidrie Mexic 44 Indus Pevim 45 Ford Morto	era co strial nentadora	glass asphalt- concrete auto- mobiles	1,157 206 40 10 3,852 1,200	3) GMF 4) GMF 5) GMF 1) Intermittent furnace 2) Tunnel kiln 8 3) Tunnel kiln No.2 5) Tunnel kiln No.1 6) Intermit furnace C 7) STB, C & B 8) STB,MYRGO 1) GMF, No.1 - No.5 Combustion Tech. 1) Rotary kiln NOx emissions (kg/h 1) Heat treating furna 4) Emergency power 6) Dryer No.1: 0.047	7.04 t/h 10.75 t/h 15.41 t/h 0.23 t/h 1.05 t/h 0.48 t/h 0.32 t/h 100 hp 60 hp 1.8 t/h 190 t/h 300 m3/m from the ce: 0.1619 generator 7) Dr	N. gas N. gas Diesel on Casting f 9, 2) E No.1: 0.0 ryer No.2	769 1,172 1,938 160 160 180 160 250 118.5 71.1 160 1,400 (actory are as 3oiler No.1: 6009,	2.0*2.1*85 ditto 1.4*2.1*80 ditto 5.88*6.65*3.7 0.6(dia)*2.4 circular 7 feet s follows: 0.0133, 5) Emergency p 8) Solvent furned	357 357 235 235 145 3) Boiler cover general	r No.3: 0. erator No.	Technology gas and oil low spd, Owen pre-mix Eclipse SELMEC MYRGO Cleanfire Comb. Tech Hauk	357 x 6 477 x 8 x 28 5 x 18 3.8 x 42 3.8 x 42 8.2 x 22 10 x 16 x 20 118.5 x 1 71.1 x 1 89 x 4 45 x 3 50 hp (1) Engine (2) Assem (3) Casting	air/gas air/gas air/oil factory by factory o 0.020,	6 7 2 1 1 12 12 15 15 5 10 2.5 0.3 0	y y y y 10) H	y y y y y y y y y	y y y y y y y y y y ng fum	y y y y y y y cee No.1	y y y -	y y y y y y y y y y y	y - y - y - 1) Heat	y y treating	/ y / y / y / y / y / y / y / y / y / y	y y y y	- y - y - y - y - y - y - y - y - y - y	normal	induced netural forced/ natural	208 298 212 100 134 277 146	16.5 17.5 18.0 19.2 20.2 20.3	523 2267 1.95mg/m 0 0 4.1E-8 g/m 276 mg/m3	25.9 8.28 0.36g/h 6.5 g/h	5.20E-0. 3.1 0.191	0 0 3 3 3 637	O2, NOx none O2,NOx Orsat	natural gas LNB use of diesel stoichio EGR		TELEDYNE	у
Stand 43 Vidrie Mexic 44 Indus Pavim 45 Ford Morto 46 Procto ble, Te	era co strial nentadora or & Gam- alisman	glass asphalt- concrete auto- mobiles	1,157 206 40 10 3,852 1,200	3) GMF 4) GMF 5) GMF 1) Intermittent furnace 2) Tunnel kiln B 3) Tunnel kiln A 4) Tunnel kiln No.2 5) Tunnel kiln No.1 6) Intermit furnace C 7) STB, C & B 8) STB,MYRGO 1) GMF, No.1 - No.5 Combustion Tech. 1) Rotary kiln NOx emissions (kg/h 1) Heat treating furna 4) Emergency power 6) Dryer No.1: 0.047, 1) WTB, B & W	7.04 t/h 10.75 t/h 15.41 t/h 0.23 t/h 1.05 t/h 1.05 t/h 0.32 t/h 0.32 t/h 1.05 t/h 0.32 t/h 0	N. gas N. gas Diesel on Casting f 9, 2) E No.1: 0.0 ryer No.2	769 1,172 1,938 160 160 180 160 250 118.5 71.1 160 1,400 (actory are as 3oiler No.1: 6009,	2.0*2.1*85 ditto 1.4*2.1*80 ditto 5.88*6.65*3.7 0.6(dia)*2.4 circular 7 feet s follows: 0.0133, 5) Emergency p 8) Solvent furned	357 357 235 235 145 3) Boiler cover general	r No.3: 0. erator No.	Technology gas and oil low spd, Owen pre-mix Eclipse SELMEC MYRGO Cleanfire Comb. Tech Hauk	357 x 6 477 x 8 x 28 5 x 18 3.8 x 42 3.8 x 42 8.2 x 22 10 x 16 x 20 118.5 x 1 71.1 x 1 89 x 4 45 x 3 50 hp (1) Engine (2) Assem (3) Casting	air/gas air/gas air/oil factory by factory 0.020, air/gas (burner	6 7 2 1 1 12 12 15 15 5 10 2.5 0.3 0 0 19 119 119 119 119 119 119 119 119	y y y y 10) H	y y y y y y y y y y y y y y	y y y y y y y y ng fum	y y y y y y y	y y y	y y y y y y y y y y y	y y y 1) Heat	y y treating	/ Y / Y / Y / Y / Y / Y / Y / Y / Y / Y	y y y y y e No 2:	- y - y y - y - y - y y - y y y y - y y - y y - y y y y - y - y y y y - y y - y y - y - y - y - y - y - y - y - y - y y -	normal normal normal	induced netural forced/ natural	208 298 298 212 100 134 277 146 75.4	16.5 17.5 18.0 19.2 20.2 20.3	523 2267 1.95mg/m 0 0 4.1E-8 g/m 276 mg/m3	25.9 8.28 0.36g/h 6.5 g/h	5.20E-0. 3.1 0.191 4.8	0 0 3 3 3 637	O2, NOx none O2,NOx Orsat Orsat NOx chemitum	natural gas LNB use of diesel stoichio EGR LNB i low O2		TELEDYNE	y
Stand 43 Vidrie Mexic 44 Indus Pavim 45 Ford Morto 46 Procto ble, To XYZ F	era co strial nentadora or & Gam- ialisman Fabrica	glass asphalt- concrete auto- mobiles soap cosmetics	1,157 206 40 10 3,852 1,200	3) GMF 4) GMF 5) GMF 1) Intermittent furnace 2) Tunnel kiln 8 3) Tunnel kiln No.2 5) Tunnel kiln No.1 6) Intermit furnace C 7) STB, C & B 8) STB,MYRGO 1) GMF, No.1 - No.5 Combustion Tech. 1) Rotary kiln NOx emissions (kg/h 1) Heat treating furna 4) Emergency power 6) Dryer No.1: 0.047	7.04 t/h 10.75 t/h 15.41 t/h 0.23 t/h 1.05 t/h 0.32 t/h 0.32 t/h 100 hp 60 hp 1.8 t/h 180 t/h 300 m3/m) from the ce: 0.1615 generator 7) Di 22.7 t/h	N. gas N. gas Diesel on Casting f 9, 2) E No.1: 0.0 ryer No.2	769 1,172 1,938 160 160 180 160 250 118.5 71.1 160 1,400 (actory are as 3oiler No.1: 6009, 12,000	2.0*2.1*85 ditto 1.4*2.1*80 ditto 5.88*6.65*3.7 0.6(dia)*2.4 circular 7 feet a follows: 0.0133, 5) Emergency p 8) Solvent furned 1.9*7.1*2.6	357 357 235 235 145 3) Boiler 3) Boiler 500wer genic 5e No.1: 0	r No.3: 0. erator No.	Technology gas and oil low spd, Owen pre-mix Eclipse SELMEC MYRGO Cleanfire Comb. Tech Hauk .0266, .2: 0.0093, 9) Solvent Peabody	357 x 6 477 x 8 x 28 5 x 18 3.8 x 42 3.8 x 42 8.2 x 22 10 x 16 x 20 118.5 x 1 71.1 x 1 89 x 4 45 x 3 50 hp (1) Engine (2) Assem (3) Casting (urrace No.2:	air/gas air/oil factory biy factory 0.020, air/gas	6 7 2 1 1 12 12 15 15 5 10 2.5 0.3 0 19 (1 yr) 12	y y y y 10) H	y y y y y y y y y y y y y y y y y y y	y y y y y y ng fum	y y y y y y	y y y -	y y y y y y y y y y y	y - y - y - y - y - 1) Heat	y y treating	/ y / y / y / y / y / y / y / y / y / y	y y y y y y y y y y y y y y y y y y y	- y - y y - y - y - y - y	normal normal	induced natural forced/ natural	208 298 212 100 134 277 146 75.4	16.5 17.5 18.0 19.2 20.2 20.3 11.0	523 2267 1.95mg/m 0 0 4.1E-8 g/m 276 mg/m3	25.9 8.28 0.36g/h 6.5 g/h 0.387	5.20E-0. 3.1 0.191 4.8	637 mg/m	O2, NOx none O2,NOx Orsat Orsat NOx chemitum	LNB use of diesel stoichio EGR LNB low O2 LNB,EGI		TELEDYNE	y

Abbreviations: 1) Combustion Facilities

2) Emission Control and Monitoring Equipment

3) Combustion Control Equipment 4) Operational Safety Control Equipment

WTB: Water tube boiler LNB: Low-NOx burner

FE: Flame eye

AC: Automatic combustion control unit

GPL: Gas pressure limits switch

STB: Smoke tube boiler CEGMS: Continuous exhaust gas monitoring system

SV: Shut-off valve unit

OHF: Oil heating furnace WL: Water level gauge

AP: Air pressure sensor

TF-UM: Tank furnace (unit melter type) TF-RCP: Tank furnace (recuperator type) EGR: Exhaust gas recirculation RCP: Recuperator

OP: Oil Pressure gauge ASP: Atomizing steam pressure gauge

SP: Steam pressure gauge

LW: Low water level cut-off device

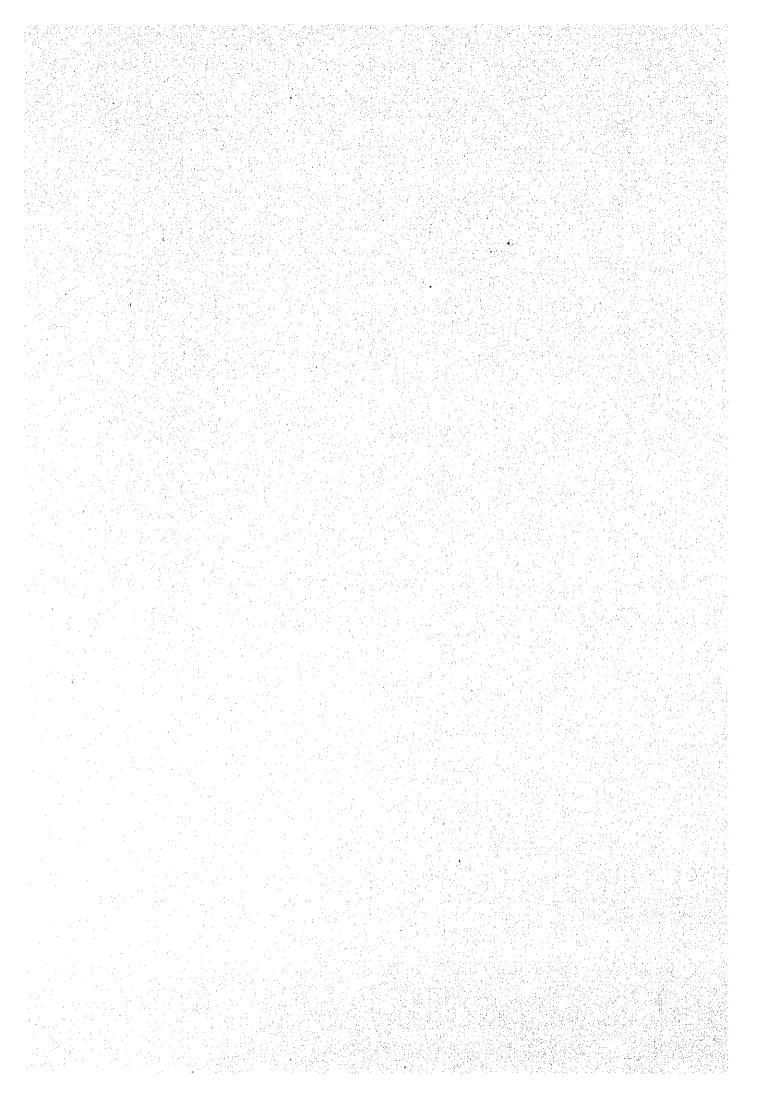
GMF(-RCT): Glass melting furnace (recycle type) ECZ: Economizer

AW: Automatic water supply device

PR: Pressure gauge after regulator

WF; Water supply meti OF: Oil flow meter

OT: Oil temperature gauge GPB: Gas pressure gauge at burner inlet



3.4 Questionnaire Answer on Installation of Combustion and Safety Control Equipment to Boilers

entprs.	fuel	AC	WL.	LW	SP	ΑW	WF	FE	S۷	ĀΡ	PR	OF	OT	OР	ASP	PS	GPB	GPL	GF	Age
20	diesel	-1	1	1	1	1	0	1	1	1	0	1	1	1	. 1	0	1	1	0	.17
21	diesel	1	1	1	1	1	0	1	1	1	0	0	0	0	0	0	Ō.	Ö	0	16
21	diesel	1	1	1	1	1	0	1	1	1	0	0	0	0	0	0	0	0	0	13
23	diesel	1	1	1	1	1	0	1	1.	0	0	0	0	1	0	0	1	0	0	15
24	diesel	1	1	1	1	1	0	1	1	0	0	0	0	0	0	Ö	0	0	0	5
33	diesel	1	1	1	1	1	0	. 1	1.	0	0	0	0	11	0	0	0	0	0	-1
52	diesel	0	1	1	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	37
50	diesel	1	1	1	1	1	0	11:	0	0	1	0	1	1	1	0	0	0	1	23
50	diesel	1	1	1	1	1	0	1	0	0	1	0	1	1	1	0	0	0	1	33
50	diesel	1	1	-	1	1	0	1	0	0	1	0	1	1	1	0	0	0	1	40
50	diesel	1	1	1	1	1	0	1	0	0	1	0	1	1	1	0	0	0	1	9
3	gas	1	1.	1	-	1	1	1	-	-	1	0	0	0	0	1	1	1	1	22
3	gas	7	1	1	-	1	1	1	1	-	-	0	0	0	0	1	1	1	1	22
3	gas	1	1	-	-	1	-	1	1	-	1	0	0	0	0	1	1	1	1	19
4	gas	7	-	-	-	1	0	1	7	-	1	0	0	1	1	1	1	1	1	1
5	gas	+	÷	1	1	1	1	.1	1	0	1	1	1	1	1	1	1	1	1	40
5	gas	:10	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1,	1	41
5	gas	1	1	0	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	35
5	gas	1	1	0	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	33
9	gas	1	1	_	1	1	0	1	1	1	1	0	0	0	0	1	1	1	1	26
9	gas	1	1	1	1	1	0	1	1	1	1	0	0	0	0	1	1	0	0	15
9	gas	1	1	1	1	1	0	1	1	1	1	0	0	0	0	1	1	0	0	7
10	gas	1	-	1	1	1	1	1	1	1	1	1	1	1	1	1	1	- 1	1	39
10	gas	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	34
10	gas	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	17
10	gas	1	1	1	1	1	1	1	1	Ш	1	1	1	1	1	1	1	1	1	4
10	gas	1	1	1	1	1	1	1	1	1	1	1.	1	1	1	1	1	1	1	- 4
13	gas	1	1	1	1	1	1	0	0	0	1	0	0	0	1	1	, 1	1	1	38
13	gas	1.	1	1	1	1	1	0	0	0	1	0	0	0	1	1	1	1	1	33
13	gas	1	1	1	1	1	1	0	0	0	1	0	0	0	1	1	1	1	1	11
14	gas	1	1	1	1	1	0	1	1.	1	1	0	1	1	0	1	1	1	1	31
14	gas	1	1	1	1	1	0	1	1	1	1	0	1	1	0	1	1	1	1	26
14	gas	1	1	1	1	1	0	1	1	1	1	0 <	1	1	0	1	1	1	0	20
14	gas	1	1	1	1	1	Ç	1	1	- -	1	0	1	1	0		1	1	0	14
14	gas	1	1		-	1	ó	1	1	1	1	9	1	1	0	1	1	1	1	14
14	gas	1	1	1	1	1	ļ	1	1	1	1	0	1	1	0	1	1	1	1	5 3
17	gas	1	1	1 1	1	1	00	1	1	1	1	1	1	1	1	1	1	1	1	
17	gas	-	_	1	_		_	_			_		+	1		1			1	21 25
19	gas	1	1		1	1	0	1	1	1	1	1		0	0		1	. 1	1	25 7
19	gas	1	1	1	1		1	1	1	1	1	0 <	0	0	0	1	1	: 1	1	
25	gas	1			1	1	1	1	1		1	0	0			1	1			10
دع	gas		1	1	1	1	1	1	1	1	1	1	1.	1	1	1	1	1	1	30

													:						-	
							*.			٠.			1	٠. ٠.						
						·	1												1.74	
entprs.	fuel	AC	WL	LW	SP	AW	WF	FΕ	S۷	ΑP	PR	OF	ŌΤ	ОP	ASP	PS	GPB	GPL	GF	Age
25	gas	1	1	1	1	1	1	1	1	1	1		1	:1:	9 A	1	1	1	1	23
25	gas	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	24
25	gas	ī	1	1	1	1	T	1	1	1	1	1	1	1	1	1	1	1	1	20
29	gas	115	1	1	1	1	1	0	1	4	1	0	0	0	0	1	1	0	1	33
29	gas	1	1.	1	1	1	1	1	1.	1	1	0	0	0	0	1	1	1	1	30
29	gas	1	1	1	1.	1	1	1	1	1	1	0	0	0	0	1	1	1	1	27
29	gas	1	1	1	1	1	1	1	1,	1	1	0	0	0	0	1	1	1	1	2
29	gas	11.	1	1	1	1	1	1	1	1	1	0	0	.0	0	1	. 1	1	1	24
29	gas	1	1	1	1	1	1	1	1	1	.1.	0	0	0.	0	1	1	1	1	21
29	gas	1:	1	1	1	1	1	1	1	1	1	0	0	0	0	1	1	1	1	16
29	gas	1	1	1	1	1	1	1	1	1	1	0	0	0	0	1	1	1	1	7
32	gas	1 .	1	1	-	-	1	1.	. 1	1	1	0	0	0	0	1.	1	1	1	1
35	gas	-	0	0	0	0	0	1	.1	0.	0	0	0	0	0	0	0	0	0	4
38	gas	-	1	-	-	1	0	1	1	0	1	0	0	0	0	1	1	1	0	20
42	gas	1	1	1	₩.	1	0	.1.	-	1	-	0	0	0	0	-	1	0	.1	10
42	gas	1	1	1	1	1	0	1	1	1	1	0	0	0	0	-	1	0	1	3
51	gas	1	-	1	1	1	0	1	: 1	0	1	0	0	0	0	1	1	1	0	25
46	gas	1	1	1	1	1	1	1	1.	1	1	0	0	÷	: 1	1	1	1	0	19
47	gas	. 1	0	1	0	0	1	1	1	0	0	0	0	1	0	1	1	0	1	5
1	gasoil	1	1	1	1	1	-	0	1	0	0	1	1	-	1	0	0	0	0	20
1	gasoil	1	1	-	-	1	Ψ.	0	1	0	0	1	-	+	1	0	0	0	0	20
2	gasoil	1	1	1	1	1	0	1	1	1	1	1	0	1	1	1.	1	1	1	6
6	gasoil	1	1	1	1	1	0	0	1	0	0	0	-	-	1	0	0	1	0	28
6	gasoil	1	1	1	1	1	1	0	1	0	0	1	1	-	1	0	0	1	0	27
7	gasoil	1	1	7	1	1	0	1	1	1	1	٥	0	0	0	1	1	0	0	22
7	gasoil	1	1	-	1	1	0	1	1	1	1	0	0	0	0	1	1	0	0	22
7	gasoli	1	1	1	1	1	0	1	1	1	1	0	0	0	0	1	1	0	0	19
7	gasoil	1	1	1	1	1	0	1	1	1	1	0	0	0	0	1	1	0	0	19
8	gasoil	.1	1	1	1	1	0	1	1	0	1	9	0	1	1	1	1	1	1	20
10	gasoil	1	1	1	1	1	1	1	1	1	1	1	1	1	1	-	1	1	1	34
10	gasoil	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	17
12	gasoil	1	1	1	1	1	0	0	1	0	1	1	1	1	1	0	0	0	1	39
12	gasoil	1	1	1	1	1	1	0	1	0	1	1	1	1	1	0	0	0	1	22
16	gasoil	1	1	1	1	1	0	1	1	0	0	1	1	1	1	0	0	0	0	10
16	gasoil	1	1	1	1	1	Ô	1	1	0	0	1	1	1.	1	0	0	0	0	26
16	gasoil	1	1	1	1	1	0	1	1	0	0	1	1	1	1	0	0	0	0	10
22	gasoil	1	0	0	1	1	1	0	0	1	0	1	1	1	15	o	0	0	0	27
30	gasoil	1	1	0	1	1	1	0	0	1	0	1	1	1	1	0	0	0	Ô	19
30	gasoil	1	1	0 1	1	1	1	1	1	1	0 <		0	1	1	0	0	0	0	20
30	gasoil	1	1	1	1	1	1	1	1	1	0	1		1	1	0	0	0	0	15
31	gasoil	1	1	0	1	1	1	0.	1	1	0	0	0 1	1.	1	0	0	1	0	45
34	gasoil gasoil	1	+	-	1	1	1	1	1	0	1	1	1	1	0	0	0	0	1	11
34	gasoil	1	1	٥	1	1		1	└	0		<u> </u>	1	1	1	0	1	0	0 0	20
37			0	0	-	0	0	·	1		1	1	1	1	1	0 0	1	0	Ô	25
3/	gasoil	<u> </u>			٧	٢٧	0	0	0	0	0	0	0	0	0	0	0	0	0	2

entprs.	fuel	AC	WL	LW	SP	ΑW	WF	FΕ	sv	ΑP	PR	OF	ОТ	OР	ASP	PS	GPB	GPL	GF	Age
39	gasoil	0	1	1	1	1.	0.	1	0	0	1	0	1	0	0	1	1	1	0	28
47	gasoil	1	0	1	0	0	1	1	1	0	0	0	0	1	0	1	1	0	1	12
48	gasoil	1	1	1	1	1	0	1	1	0	1	0	0	1	0	0	0	.0	1	28
48	gasoil	1	1.	1	1	1	0	1	1.	0	1	0	0	1	0	0	0	0	1	28
48	gasoil	1	1	1	1	1	0	1	1	0	1	0	0	1	0	0	0	0	1	28
49	gasoil	1	1	1	1	1	1.	1	1	1	0	0	0	1	1	0	0	1	0	.12
49	gasoil	1	1	1	1	1	1	1	1	1	0	0	0	1	1	Ō	0	1	0	30

Note: AC=automatic combustion control unit

WL=water level gauge

LW=low water level cut-off device

SP=steam presure gauge

AW=automatic water supply device

WF=water supply flow meter

FE=flame eye

SV=shut-off valve

AP=air pressure sensor

OF=oil supply flow meter

OT=oil temperature gauge

Age=by year

OP=oil pressure gauge

ASP=atomizing steam pressure gauge

PR=pressure gauge after regulator

PS=pressure gauge after shut-off valve

GPB=burner inlet gas pressure gauge

GPL=gas pressure limit switch

GF=gas flow meter

1= installed

0= not installed or no answer

3.5 Questionnaire Answer on Operational Conditions of Combustion Equipment

enter-	fuel used	type of	result o	f questi	onnaire	rest	ilt of di	agnostic	survey	emission :	standard of
prise		equipment	NOx	02	СО	NOx	02	СО	load rate		(ppm)
code			100					1.00	to capcty.	hitherto	from Dec.
			(ppm)	(%)	(ppm)	(ppm)	(%)	(ppm)	(%)		1994
20	diesel	boiler	52	12,6	1	-	-	-	-	150	220
21	diesel	boiler	2 <u>-</u>	6.4	16	*104	*5.6	*12	48	no	no
21	diesel	boiler	•	5.1	18	*139	*5.3	*167	-	150	220
21	diesel	boiler	•	8.2	44	*73	*7.9	*41	90	no .	no
23	diesel	boiler	40	-	-		S			150	220
33	diesel	kiln:rotary	108	2.5		-	-	_	-	no	no
44	diesel	kiln:rotary	-	11.0		÷ 4	-	-	11.7	no	no
3	923 S	boiler	40	2.8	7	75	2.8	- 18	65	130	220
3	gas	boiler	77	2.8	20	60	4.1	0	43	120	180
4	gas	boiler	31	7.0	. 0	55	8.0	0		130	220
5	gas	boiler	281	-		337	7.0	220	54	100	160
5	gas	boiler	275	_	_	-	-	10 1 1 <u>2</u> 1	4 14 1	100	160
5	gas	boiler	80	-					-	100	160
5	gas	boiler	90	-	_	70	2.4	0	32	100	160
9	gas	boiler		-		87	6.1	0	51	130	220
10	gas	boiler	- 111	7.7	-	110	6.5	21	48	120	180
10	gas	boiler	37	2.5	24	#34	#2.3	#320	52	100	160
10	gas	boiler	199	5.2	18	97	3.1	0	46	100	160
10	gas	boiler	205	4.3	25		-	-	-	100	160
13	gas	boiler	38	5.0	16	-	-			120	180
13	gas	boiler	43	8.0	33	140	5.1	629	- 68	100	160
14	gas	boiler	: 4	4.2	0	77	7.1	3	64	130	220
- 14	gas	boiler	6.	5.1	0	88	3.0	3	45	130	220
14	gas	boiler	2	4.6	0					130	220
14	gas	boiler	6	4.2	0		•	<u> </u>	<u> </u>	130	220
14	gas	boiler	46	2.1	0	<u> </u>	-	-	-	130	220
14	gas	boiler	27	3.4	2		-	-	 	100	160
17	gas	boiler	75	3.0	39	*90	*6.0	*250	-	100	160
19	gas	boiler		10.2	ļ <u>-</u>	<u> </u>	-	-		130	220
19	gas	boiler	-	10.2	├─ :	1	- 4 0		50	130	220
20	gas	boiler		1	1 10	*43	*4.8	*15	78	130	220
25 25	gas	boiler	55	4.0	10	┷		 	*70	100	160
25	gas	boiler	35 40	4.0	200	-	-	-	*70	100	160
25	gas	boiler boiler	120	4.0 6.0	200	 -	-	 -	*70	100	160
29	gas	boiler	105	7.7	5	ऻ	 	 	*70	100 120	160 180
29	gas	boiler	87	3.5	6	 	 	 	 	100	160
29	gas	boiler	63	6.1	2	 		 	 	120	180
29	gas	boiler	52	3.4	4		 	 	 	100	160
35	gas	boiler	- 32	4.2	 	 	-	-	 	no	no
38	gas	boiler	0	7.2	0			 	1	130	220
46	gas	boiler	77	6.1	ت ا		-	_		120	180
47	gas	boiler	18	8.0	10		-	-	1	120	180
11		dryer	28	17.0	0	 		 	-	}	
11	gas	dryer	28	17.0	 '		-	+ -	•	no	no
11	gas	dryer	28	17.0	 	 		 	 	no	no
11	gas	dryer	28	17.0	 			 -	-	no no	no no
11	gas gas	dryer	28	17.0	 	-	-	 	<u> </u>	no	no
35		dryer	2.0	15.5	10	 	 	-	<u> </u>	no no	no no
36	gas	dryer	72	20.0	0	-		+	-	no no	no no
36	gas	dryer	227	21.0	0	-			-	no no	no no

enter-	fuel used	type of	result of	f questic	nnaire	resu	lt of dia	gnostic	survey	emission	standard of
prise		equipment	NOx	02	CO	NOx	O2	CO	load rate	NOx	(ppm)
code	4.414	4.1							to capety.	hitherto	from Dec.
1000			(ppm)	(%)	(ppm)	(ppm)	(%)	(ppm)	(%)		1994
40	22 S	fryer	0				_	-	•	no	no
40	gas	fryer	86	- 1	-	-	-			no	по
40	gas	heat exch.	42				-	-	-	no	no
40	gas	heat exch.	95		0	-		-	_	no	по
19	gas	heater		17.0	_	*500	*17.0	*0	-	no	пo
20	22 S	heater	13	20.0	. 0		-	-		no	no
38	gas	heater		5.1	0	-	-	-	-	no	по
38	gas	heater	_	7.0	- 0	-	-		-	no	no
42	gas	intermit f.	0	20.3	-	-		-	-	no	no
42	gas	kiln:tunnel	1	18.0		_	-	-	_	no	no
42	gas	kiln:tunnel	Ō	19.2	-		-	_	-	no	no
42	gas	kiln:tunnel	0	20.2	-		-	_	-	no	no
27	gas	melting f.	503	9.2		-	-			no	по
27	gas	melting f.	730	7.9	-	-	-	_		no	no
27	gas	melting f.	515	5.6		-		-	-	no	no
27	gas	melting f.	485	8.8	-	-	-		-	no	no
41	gas	melting f.	508	15.5	0	-	-		-	no	по
41	gas	melting f.	1008	16.7	0	-	-	-	-	по	no
41	gas	melting f.	523	16.5	0		-	-	-	no	no.
41	gas	melting f.	2267	17.5	0	-	-	-	-	no	no
43	gas	melting f.	134	_	510	-	-		-	no	no -
36	gas	melting pot	56	17.0	-	-	-	-	-	no	no
15	gas	reverberatory f.		5.0	0	-		-	-	no .	no
18	gas	tank furnace	433	8.8	0	*6	*4.5	*0	-	no	no
18	gas	tank furnace	272	8.8	0	-	-		<u> </u>	no	no
35	gas	trtmnt. f.		. 9.0	. 10	-	-	-	_	по	no
47	gas	tank f.	-	-	_		-	-		no	no
1	gasoil	boiler	-	5.0	0		-	-	-	150	220
1	gasoil	boiler	321	5.0	0	98	4.8	0	42	150	220
2	gasoil	boiler	153	5.5	300	100	7.9	490	46	150	220
6	gasoil	boiler	140	4.2	8	110	3.2	10	85	150	220
6	gasoil	boiler	100	8.6	4	-	. •			150	220
7	gasoil	boiler	-	5.0	15	134	2.3	0		150	220
7	gasoil	boiler	-	6.0	44	113	4.5	0		150	- 220
7	gasoil	boiler	-	8.0	10	147	7.4	0	<u> </u>	150	220
7	gasoil	boiler		9.0	7		-		-	150	220
8	gasoil	boiler	-	-	0	200	9.7	0		150	220
12	gasoil	boiler	111	5.0	0	- 65	3.0	0	34	150	220
12	gasoil	boiler	114	4.8	0					150	220
16	gasoil	boiler	3	7.0	5	<u> </u>	-	<u> </u>	<u> -</u>	150	220
16	gasoil	boiler	4	6.0	7	·	<u> </u>		<u> </u>	150	220
16	gasoil	boiler	4	8.0	10	<u> </u>	-	-	<u> </u>	150	220
31	gasoil	boiler	40	3.1	5		-	<u> </u>		150	220
34	gasoil	boiler	-	4.5		<u> </u>		<u> </u>	<u> </u>	no	no
34	gasoil	boiler	•	4.5	-	·	-	-		по	no
37	gasoil	boiler	20	6.0	0	<u> </u>	-	<u> </u>	<u> </u>	no	no
. 39	gasoil	boiler	148	<u> </u>	0	<u> </u>		 		150	220
47	gasoil	boiler	156	3.6	50		<u> </u>	<u> </u>	<u> </u>	150	120
22	heavy oil	boiler	59	9.8	7	<u> </u>	-			230	400
22	heavy oil		357	16.5	19	*150	*4.2	<u> </u>	88	230_	400
11	heavy oil		320	6.5	1,100	*343	*14.3	*460		по	no
. 11	heavy oil	kiln:cement	320	6.5	1,100	*320	*8.7	*1900	81	no	по

*: The data was given by the plant owner. #: operated with EGR

f.: furnace
-: no data

3.6 List of Establishments for Diagnostic Survey

No	Name of Establishment	Identity in the Main Report
1.	Fibras Sintéticas	Petrochemical Products Factory (A)
2.	Uniroyal	Rubber Products Factory (A)
3.	Kimex	Petrochemical Products Factory (B)
4.	CIA. Papelera El Fenix	Paper Factory (A)
5.	Jorge Luque Power Plant	Thermoelectric Power Plant (A)
6.	Empaque de Carton United	Paper Products Factory (A)
7.	Papelera Iruña	Paper Products Factory (B)
8.	Química Lucava	Chemical Products Factory (A)
9.	Penwalt	Chemical Products Factory (B)
10.	Cervecería Modelo	Alcoholic Drinks Factory
11.	Cementos Anahuac	Cement Factory
12.	Empaque de Cartón	Paper Products Factory (C)
13.	Crisoba Productos	Paper Factory (B)
14.	Jabon La Corona	Chemical Products Factory (C)
15.	Alcomex	Metal Products Factory (A)
16.	American Textil	Textile Factory
17.	Cartonajes Estrella	Paper Products Factory (D)
18.	Vitro Fibras	Glass Factory (A)
19.	Silicatos y Derivados	Chemical Products Factory (D)
20.	Procter & Gamble, Poniente	Chemical Products Factory (E)
21.	CIA Hulera Tornel	Rubber Products Factory (B)
22.	Crisoba Ind. (San Rafael)	Paper Factory (C)
23.	Hule Industrial	Rubber Factory
24.	Industrias de Hule Galgo	Rubber Products Factory (C)
25.	Termoeléctrica del Valle de México	Thermoelectric Power Plant (B)
48.	Hospital ABC	Hospital (A)
49.	C. Deportivo Chapultepec	Sport Center
50.	Hospital General de México	Hospital (B)
51.	Hotel Camino Real	Hotel
52.	Quinonas de México	Medicine Firm