API
American Petroleum Institute

STEP
Strategies for Today's Environmental Partnership

Air Toxics Emission Factors for Combustion Sources Using Petroleum-Based fuels

Volume 3
Development of Emission Factors Using API/WSPA Approach

Health and Enviromental Affairs Department
Publication Number 348

DEVELOPMENT OF TOXICS EMISSION FACTORS FOR PETROLEUM INDUSTRY COMBUSTION SOURCES

Draft Final Report
Volume 3 - Supporting Information

Prepared for

Scott Folwarkow
Western States Petroleum Association
2300 Clayton Road, Suite 1440
Concord, Ca 94520

and

Karen Ritter
American Petroleum Institute
2020 L Street, N.W.
Washington, DC 20005

Prepared by

Energy and Environmental Research
18 Mason
Irvine, CA 92718

June 14, 1997

TABLE OF CONTENTS

ACRONYMS

4D 2378	Same as 2,3,7,8-Tetrachlorodibenzo-p-dioxin.
4D Other	Same as Tetrachlorodibenzo-p-dioxin other.
4D Total	Same as Tetrachlorodibenzo-p-dioxin total.
4F 2378	Same as 2,3,7,8-Tetrachlorodibenzofuran.
4F Other	Same as Tetrachlorodibenzofuran other.
4F Total	Same as Tetrachlorodibenzofuran total.
5D 12378	Same as 1,2,3,7,8-Pentachlorodibenzo-p-dioxin.
5D Other	Same as Pentachlorodibenzo-p-dioxin other.
5D Total	Same as Pentachlorodibenzo-p-dioxin total.
5F 12378	Same as 1,2,3,7,8-Pentachlorodibenzofuran.
5F 23478	Same as 2,3,4,7,8-Pentachlorodibenzofuran.
5F Other	Same as Pentachlorodibenzofuran other.
5F Total	Same as Pentachlorodibenzofuran total.
6D 123478	Same as 1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin.
6D 123678	Same as 1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin.
6D 123789	Same as 1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin.
6D Other	Same as Hexachlorodibenzo-p-dioxin other.
6D Total	Same as Hexachlorodibenzo-p-dioxin.
6F 123478	Same as 1,2,3,4,7,8-Hexachlorodibenzofuran.
6F 123678	Same as 1,2,3,6,7,8-Hexachlorodibenzofuran.
6F 123789	Same as 1,2,3,7,8,9-Hexachlorodibenzofuran.
6F 234678	Same as 2,3,4,6,7,8-Hexachlorodibenzofuran.
6F Other	Same as Hexachlorodibenzofuran other.
6F Total	Same as Hexachlorodibenzofuran total.
7D 1234678	Same as 1,2,3,4,7,8-Heptachlorodibenzo-p-dioxin.
7D Other	Same as Heptachlorodibenzo-p-dioxin other.
7D Total	Same as Heptachlorodibenzo-p-dioxin total.
7F 1234678	Same as 1,2,3,4,6,7,8-Heptachlorodibenzofuran.
7F 1234789	Same as 1,2,3,4,7,8,9-Heptachlorodibenzofuran.
7F Other	Same as Heptachlorodibenzofuran other.
7F Total	Same as Heptachlorodibenzofuran total.
8D	Same as Octachlorodibenzo-p-dioxin.
8F	Same as Octachlorodibenzofuran.
AB2588	Air Toxics "Hot Spots" Information and Assessment Act of 1987
AB	Afterburner
APC	Air Pollution Control
API	American Petroleum Institute
APS	Air Pollution Control System
ATEDS	Air Toxic Emission Data System
B	Benzene
BAAQMD	Bay Area Air Quality Management District
BD	Blank Data
BF	Baffle Filter
BTX	Benzene, Toluene, and Xylene
C	Cyclone or Carbon
CD	Calibration Data
CARB	California Air Resources Board
CO	Carbon Monoxide
COC	Carbon Monoxide Oxidation Catalyst

CVAAS	Cold Vapor Atomic Absorption Spectrometry
CVR	Case Vapors Recovered
Cr	Chromium
D	Dioxins
DD	Device Description
DM	Demister
dscfm	Dry Standard Cubic Feet per Minute
dscf	Dry Standard Cubic Feet
EER	Energy and Environmental Research Corporation
EF	Emission Factor
EPA	Environmental Protection Agency
USG	United States Government
F	Formaldehyde
GFAAS	Graphite Furnace Atomic Absorption Spectrometry
H2S	Hydrogen Sulfide
HC	Hexavalent Chromium
HCHO	Formaldehyde
HCl	Hydrogen Chloride
HF	Hydrogen Fluoride
Hl	Hydrogen Chloride
HNO3	Nitric acid
HO	Halogenated Organics
Hp	Horse Power
HS	Hydrogen Sulfide
ICAP	Inductively Coupled Argon Plasma
ICE	Internal Combustion Engine
IS	Internal Standards
LD	Laboratory Data or Location Data
lbs/MMcf	Pounds per Million Cubic Feet
lbs/Mgal	Pounds per Thousand Gallons
lbs/ton coke	Pounds per Ton Coke
lbs/1000 Barrels	Pounds per Thousand Barrels
LP	Liquid Petroleum
M	Metals
MMBtu	Million British Thermal Units
MMcf	Million Cubic Feet
MD	Method Description
MDL	Method Detection Limit
Mgal	Thousand Gallons
MMT	Multiple Metals Train
Ni	Nickel
NIOSH	National Institute of Occupation Safety and Hazard
NOx	Nitrogen oxides
O2	Oxygen
O	Oxygen
PAH	Polycyclic Aromatic Hydrocarbons
PCB	Polychlorinated Biphenyls
PCDD	Polychlorinated Dibenzo-p-dioxin
PCDF	Polychlorinated Dibenzofuran
PH	Polycyclic Aromatic Hydrocarbons
ppbv	Parts per Billion Volume

PQL	Practical Quantitation Limit
PR	Process Rate
QA/QC	Quality Assurance/Quality Control
QD	Quality Assurance/Quality Control Data
RFG	Refinery Fuel Gas
ROC	Reactive Organic Compound
RSD	Relative Standard Deviation
S	Strokes per Cycle
SCAQMD	South Coast Air Quality Management District
SCC	Source Classification Code
SCR	Selective Catalytic Reduction
SD	Sample Data or Spray Dryer
SG	Steam Generator
SIC	Standard Industrial Classification
SO2	Sulfur Dioxide
SVOC	Semi-Volatile Organic Compounds
THC	Total Hydrocarbons
Ti	Titanium
TO	Thermal Oxidizer
VC	Vinyl Chloride
VOC	Volatile Organic Compound
WSPA	Western States Petroleum Association

SECTION 2
LISTING OF TEST DOCUMENTATION INFORMATION, AND SUBSTANCES QUANTIFIED IN THE FUEL AND AIR EMISSIONS

ATTACHMENT 2. LISTING OF TEST DOCUMENTATION INFORMATION AND SUBSTANCES QUANTIFIED IN THE FUEL AND AIR EMISSIONS (a).

Device	Material	Search Case	Number of Tests	Control Device Used	Report ID	Report Information										Report Year	Sample Location	Substance Group										
						DD	MD	SD	LD	QD	CD	LD	BD	PR	EF			M	HI	PH	D	F	B	VC	PB	HO	HS	HC	O
?	?	7	2	N	2369A	N	Y	N	Y	N	N	N	N	N	N	1990	STACK										Y		Y
ASPHALT RECOVERY INCINERATOR	ASPHALT FUMES	2	2	Y	2599L	Y	Y	Y	Y	N	N	Y	Y	Y	Y	1990	STACK	Y		Y		Y	Y				Y	Y	Y
BOILER	?	7	1	N	2505A	N	Y	Y	Y	N	Y	Y	Y	N	N	1993	STACK	Y		Y		Y	Y,					Y	Y
BOILER	CRUDE OIL	1	1	N	2487A	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	1992	FUEL		NR	NR	NR	NR	NR	NR	NR	NR	NR		Y
BOILER	CRUDE OIL	1	1	N	2487A	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	1992	STACK												
BOILER	NO. 6 FUEL OIL	6	1	N	2484A	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	1990	STACK	Y		Y	Y	Y	Y						
BOILER	REFINERY GAS	5	1	N	2599E	Y	Y	Y	Y	N	N	Y	Y	Y	Y	1990	FUEL	Y	NR	NR	NR	NR	NR	NR	NR	NR	NR	Y	
BOILER	REFINERY GAS	5	1	N	2599E	Y	Y	Y	Y	N	N	Y	Y	Y	Y	1990	STACK			Y		Y	Y						
BOILER	REFINERY GAS	5	1	N	2599F	Y	Y	Y	Y	N	N	Y	Y	Y	Y	1990	FUEL	Y	NR	NR	NR	NR	NR	NR	NR	NR	NR	Y	
BOILER	REFINERY GAS	5	1	N	2599F	Y	Y	Y	Y	N	N	Y	Y	Y	Y	1990	STACK	Y		Y		Y	Y				Y	Y	Y
BOILER	REFINERY GAS	5	1	N	2599G	Y	Y	Y	Y	N	N	Y	Y	Y	Y	1990	FUEL	Y	NR	NR	NR	NR	NR	NR	NR	NR	NR	Y	
BOILER	REFINERY GAS	5	1	N	2599G	Y	Y	Y	Y	N	N	Y	Y	Y	Y	1990	STACK			Y		Y	Y						
BOILER	REFINERY GAS	5	1	N	2599H	Y	Y	Y	Y	N	N	Y	Y	Y	Y	1990	FUEL	Y	NR	NR	NR	NR	NR	NR	NR	NR	NR	Y	
BOILER	REFINERY GAS	5	1	N	2599H	Y	Y	Y	Y	N	N	Y	Y	Y	Y	1990	STACK			Y		Y	Y						
BOILER, CO	?	7	1	?	2122A	N	Y	Y	Y	N	N	Y	Y	N	N	1990	STACK	Y		Y		Y	Y				Y		
BOILER, CO	COKE	7	1	?	2122B	N	Y	Y	Y	N	N	Y	Y	N	N	1990	STACK	Y				Y	Y				Y		
BOILER, REBOILER	GAS	7	1	N	2494A	Y	Y	Y	Y	Y	N	N	Y	N	N	1990	STACK						Y						Y
BOILER, REBOILER	GLYCOL	6	1	Y	2492A	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	1992	STACK					Y	Y						Y
BOILER, REBOILER	GLYCOL	6	1	N	2492B	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	1992	STACK												Y
BULK TERMINAL	GASOLINE	7	1	N	2447A	Y	N	Y	Y	Y	Y	Y	N	N	N	1991	STACK						Y						Y
BULK TERMINAL (VAPOR RECOVERY)	GASOLINE	3	1	Y	2578A	Y	Y	N	Y	N	N	N	N	Y	N	1989	STACK												Y
BURNER	GAS	6	1	N	2410A	Y	Y	Y	Y	Y	Y	N	N	N	Y	1991	STACK						Y				Y		Y
CARBON CANISTER	CARBON	6	1	N	2411A	Y	N	Y	N	N	Y	Y	N	Y	N	1992	STACK						Y						Y
CATALYTIC REFORMER	NAPHTHAS	2	2	Y	2406A	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	1991	STACK				Y								
CATALYTIC REFORMER	OIL	7	1	N	2408A	N	Y	Y	Y	Y	Y	Y	Y	N	N	1990	STACK	Y	Y		Y							Y	Y
COKER	COKE	7	1	N	2327A	Y	Y	N	Y	Y	Y	N	Y	N	N	1992	STACK	Y		Y								Y	
FLUID CATALYTIC CRACKING UNIT	CARBON & HYDROCARBONS	7	1	Y	2326A	N	Y	Y	Y	Y	Y	Y	Y	N	N	1990	STACK	Y		Y		Y	Y				Y	Y	Y
FLUID CATALYTIC CRACKING UNIT	CARBON & HYDROCARBONS	7	1	?	2068A	N	Y	Y	Y	N	Y	Y	Y	N	N	1990	STACK	Y				Y	Y						Y
FLUID CATALYTIC CRACKING UNIT	CARBON & HYDROCARBONS	7	1	?	2122C	N	Y	Y	Y	N	N	Y	Y	N	N	1990	STACK	Y		Y		Y	Y				Y	Y	Y
FLUID CATALYTIC CRACKING UNIT	CARBON & HYDROCARBONS	7	1	N	2125A	N	N	Y	Y	N	Y	Y	Y	N	N	1990	STACK	Y		Y		Y	Y				Y	Y	Y
FLUID CATALYTIC CRACKING UNIT	CARBON & HYDROCARBONS	7	1	Y	2320A	N	Y	Y	Y	Y	N	Y	Y	N	N	1991	STACK	Y				Y	Y						Y
FUGITIVES, BUTADIENE PROCESS LINES	1,3-BUTADIENE	7	1	N	2323A	Y	Y	Y	N	Y	N	N	N	N	N	1992	FUGITIVES		NR	NR	NR	NR	NR	NR	NR	NR	NR		Y
FUGITIVES, CRUDE OIL STORAGE TANK VAPOR	GAS	7	1	N	2466A	Y	Y	N	Y	Y	Y	N	Y	N	N	1990	STACK	Y					Y						Y
FUGITIVES, OIL SAMPLE	OIL	7	1	N	2466B	Y	Y	N	Y	Y	Y	N	Y	N	N	1990	DUST		NR	NR	NR	NR	Y	NR	NR	NR	Y		Y
FUGITIVES, WELL	PETROLEUM	7	1	N	2054A	Y	Y	Y	Y	Y	Y	Y	N	N	N	1990	STACK						Y						Y
FURNACE	LIGHT HYDROCARBON	7	1	N	2432A	Y	Y	Y	Y	Y	Y	Y	Y	N	N	1990	STACK	Y		Y		Y					Y	Y	
HEATER	NATURAL GAS	5	1	N	2405A	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	1992	STACK			Y		Y	Y						Y
HEATER	NATURAL/ REFINERY GAS	5	1	N	2481A	Y	Y	Y	Y	Y	N	Y	Y	N	Y	1991	FUEL		NR	NR	NR	NR	NR	NR	NR	NR	NR		Y
HEATER	NATURAL/ REFINERY GAS	5	1	N	2481A	Y	Y	Y	Y	Y	N	Y	Y	N	Y	1991	STACK			Y		Y	Y						Y
HEATER	PIPELINE OIL	3	1	N	2541A	N	Y	Y	Y	Y	Y	Y	Y	N	Y	1990	FUEL	Y	NR	NR	NR	NR	NR	NR	NR	NR	NR		
HEATER	PIPELINE OIL	3	1	N	2541A	N	Y	Y	Y	Y	Y	Y	Y	N	Y	1990	STACK	Y		Y	Y	Y	Y						
HEATER	REFINERY GAS	6	3	?	2124A	N	Y	N	Y	Y	N	N	Y	Y	N	1992	STACK	Y		Y		Y	Y					Y	Y
HEATER	REFINERY GAS	4	5	N	2300A	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	1991	FUEL	Y	NR	NR	NR	NR	NR	NR	NR	NR	NR	Y	
HEATER	REFINERY GAS	4	5	N	2300A	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	1991	STACK			Y									
HEATER	REFINERY GAS	4	1	N	2598A	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	1992	STACK	Y		Y		Y	Y						
HEATER	REFINERY GAS	5	3	N	2599A	Y	Y	Y	Y	N	N	Y	Y	Y	Y	1990	FUEL	Y	NR	NR	NR	NR	NR	NR	NR	NR	NR	Y	
HEATER	REFINERY GAS	5	3	N	2599A	Y	Y	Y	Y	N	N	Y	Y	Y	Y	1990	STACK			Y		Y	Y						Y
HEATER	REFINERY GAS	5	1	N	2599C	Y	Y	Y	Y	N	N	Y	Y	Y	Y	1990	FUEL	Y	NR	NR	NR	NR	NR	NR	NR	NR	NR	Y	
HEATER	REFINERY GAS	5	1	N	2599C	Y	Y	Y	Y	N	N	Y	Y	Y	Y	1990	STACK			Y		Y	Y						
HEATER	REFINERY GAS	5	1	N	2599D	Y	Y	Y	Y	N	N	Y	Y	Y	Y	1990	FUEL	Y	NR	NR	NR	NR	NR	NR	NR	NR	NR	Y	
HEATER	REFINERY GAS	5	1	N	2599D	Y	Y	Y	Y	N	N	Y	Y	Y	Y	1990	STACK			Y		Y	Y						

Report Information: DD-Device Description, MD-Method Decription, SD-Sample Data, LD-Lab Data, QD-QA/QC Data, CD-Calibration Data, LD-Location Data, BD-Blank Data, PR-Process Rate, EF-Emission Factor
Substance Group: M-Metals, HI-HCl, PH-PAH, D-Dioxins, F-Formaldehyde, B-Benzene, VC-Vinyl Chloride, PB-PCB, HO-Halgenated Organics, HS-H2S, HC-Hex Chromium, O-Other
Other Comments: NR - Not required, Y - Yes, N - No, Blank - No, ? - Additional investigation required.
(a) Table described in Section 3.3.

ATTACHMENT 2. LISTING OF TEST DOCUMENTATION INFORMATION AND SUBSTANCES QUANTIFIED IN THE FUEL AND AIR EMISSIONS (a).

Device	Material	Search Case	Number of Tests	Control Device Used	Report ID	Report Information										Report Year	Sample Location	Substance Group										
						DD	MD	SD	LD	QD	CD	LD	BD	PR	EF			M	HI	PH	D	F	B	VC	PB	HO	HS	HC	O
HEATER & BOILER	REFINERY GAS	5	2	N	2599B	Y	Y	Y	Y	N	N	Y	Y	Y	Y	1990	FUEL	Y	NR	NR	NR	NR	NR	NR	NR	NR	NR	Y	
HEATER & BOILER	REFINERY GAS	5	2	N	2599B	Y	Y	Y	Y	N	N	Y	Y	Y	Y	1990	STACK			Y		Y	Y						
INCINERATOR, AFTERBURNER	STRIPPING WASTE GAS	7	1	N	2108A	Y	N	N	Y	N	N	N	Y	N	N	1991	STACK						Y						Y
INTERNAL COMBUSTION ENGINE	DIESEL	2	2	N	2375C	Y	Y	Y	Y	Y	N	Y	Y	Y	Y	1990	STACK			Y		Y							Y
INTERNAL COMBUSTION ENGINE	DIESEL	2	1	N	2513C	Y	Y	Y	Y	Y	N	Y	Y	Y	Y	1990	STACK			Y		Y							
INTERNAL COMBUSTION ENGINE	DIESEL	3	1	N	2472B	N	N	N	Y	N	N	N	Y	Y	N	1992	FUEL		NR	NR	NR	NR	NR	NR	NR	NR	NR		Y
INTERNAL COMBUSTION ENGINE	DIESEL	3	2	N	2472C	N	N	N	Y	N	N	N	Y	Y	N	1992	FUEL		NR	NR	NR	NR	NR	NR	NR	NR	NR		Y
INTERNAL COMBUSTION ENGINE	DIESEL	2	1	N	2513K	Y	Y	Y	Y	Y	N	Y	Y	Y	N	1990	STACK												Y
INTERNAL COMBUSTION ENGINE	FIELD GAS	5	1	N	2513D	Y	Y	Y	Y	Y	N	Y	Y	Y	N	1990	STACK												Y
INTERNAL COMBUSTION ENGINE	GAS	6	24	N	2464A	Y	Y	N	Y	Y	Y	N	Y	Y	N	1993	STACK												Y
INTERNAL COMBUSTION ENGINE	GAS	5	1	N	2513G	Y	Y	Y	Y	Y	N	Y	Y	Y	N	1990	STACK												Y
INTERNAL COMBUSTION ENGINE	GAS	7	1	Y	2460A	Y	Y	Y	Y	Y	Y	Y	Y	N	N	1992	STACK					Y	Y						Y
INTERNAL COMBUSTION ENGINE	GAS	7	19	Y	2463A	Y	Y	N	Y	Y	Y	N	Y	N	N	1990	STACK												Y
INTERNAL COMBUSTION ENGINE	NATURAL GAS	6	4	N	2352A	Y	Y	Y	Y	Y	Y	N	N	Y	N	1993	STACK										Y		Y
INTERNAL COMBUSTION ENGINE	NATURAL GAS	4	4	N	2460B	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	1992	STACK					Y							Y
INTERNAL COMBUSTION ENGINE	NATURAL GAS	5	1	N	2355A	Y	Y	Y	Y	Y	Y	N	Y	Y	N	1993	STACK					Y							Y
INTERNAL COMBUSTION ENGINE	NATURAL/FIELD GAS	6	14	N	2409A	N	Y	Y	Y	Y	Y	N	Y	N	Y	1990	STACK			Y		Y	Y						Y
KILN, CALCINING COKE TO PETRO PRODUCTS	COKE	1	1	Y	2007A	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	1993	STACK	Y		Y	Y	Y	Y					Y	Y
STEAM GENERATOR	CASING/NATURAL GAS	6	3	N	2407A	Y	Y	N	N	Y	Y	N	N	N	Y	1992	STACK					Y	Y					Y	Y
STEAM GENERATOR	CRUDE OIL	2	1	Y	2375B	Y	Y	Y	Y	Y	N	Y	Y	Y	Y	1990	STACK	Y		Y									Y
STEAM GENERATOR	CRUDE OIL	2	1	Y	2513A	Y	Y	Y	Y	Y	N	Y	Y	Y	Y	1990	STACK	Y		Y		Y	Y						Y
STEAM GENERATOR	CRUDE OIL	2	1	N	2513E	Y	Y	Y	Y	Y	N	Y	Y	Y	N	1990	STACK												Y
STEAM GENERATOR	CRUDE OIL	2	1	N	2513L	Y	Y	Y	Y	Y	N	Y	Y	Y	N	1990	STACK												Y
STEAM GENERATOR	CRUDE OIL	3	1	N	2536A	N	N	Y	Y	Y	N	Y	Y	Y	N	1990	STACK	Y	Y	Y		Y	Y						Y
STEAM GENERATOR	NATURAL GAS	5	1	N	2375A	Y	Y	Y	Y	Y	N	Y	Y	Y	Y	1990	STACK					Y	Y						Y
STEAM GENERATOR	NATURAL GAS/1:1 81:3 TEORING	5	1	N	2513B	Y	Y	Y	Y	Y	N	Y	Y	Y	Y	1990	STACK												Y
STEAM GENERATOR	NATURAL/CVR GAS	5	1	N	2405B	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	1992	STACK			Y		Y	Y				Y		Y
STEAM GENERATOR	NATURAL/CVR GAS	5	1	N	2444A	Y	Y	Y	Y	Y	N	Y	Y	Y	Y	1991	STACK			Y			Y						Y
SULFUR RECOVERY UNIT	?	5	1	N	2599M	Y	Y	Y	Y	N	N	Y	Y	Y	Y	1990	STACK					Y	Y				Y		Y
THERMAL OXIDIZER	GAS	6	1	N	2502A	N	N	Y	Y	N	Y	Y	Y	Y	N	1992	STACK	Y		Y		Y	Y					Y	Y
THERMAL OXIDIZER	VAPOR GASOLINA	4	1	N	2446A	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	0	STACK						Y						Y
TURBINE	GAS	6	1	N	2461A	Y	N	N	Y	Y	Y	N	Y	Y	N	1992	STACK												Y
TURBINE	GAS	6	4	N	2472A	N	N	N	Y	N	N	N	Y	Y	N	1992	FUEL		NR	NR	NR	NR	NR	NR	NR	NR	NR		Y
TURBINE	NATURAL GAS	5	1	N	2405C	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	1992	STACK			Y		Y	Y						Y
TURBINE	NATURAL GAS	5	1	Y	2444B	Y	Y	Y	Y	Y	N	Y	Y	Y	N	1991	STACK			Y			Y						Y
TURBINE	NATURAL GAS	6	1	N	2459A	Y	Y	N	Y	Y	Y	N	N	N	Y	1990	STACK					Y	Y						Y
TURBINE	NATURAL GAS	4	1	Y	2511A	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	1992	STACK			Y		Y	Y						
TURBINE	NATURAL/LP/REFINERY GAS	5	2	N	2599J	Y	Y	Y	Y	N	N	Y	Y	Y	Y	1990	STACK	Y		Y		Y	Y					Y	
TURBINE	REFINERY GAS	5	1	N	2599I	Y	Y	Y	Y	N	N	Y	Y	Y	Y	1990	STACK	Y		Y		Y	Y					Y	
TURBINE	REFINERY GAS	5	2	N	2599K	Y	Y	Y	Y	N	N	Y	Y	Y	Y	1990	STACK	Y		Y		Y	Y					Y	
WASTE WATER	H2O	7	1	N	2466C	Y	Y	N	Y	Y	Y	N	Y	N	N	1990	FUEL		NR	NR	NR	NR	NR	NR	NR	NR	NR		Y

Report Information: DD-Device Description, MD-Method Decription, SD-Sample Data, LD-Lab Data, QD-QA/QC Data, CD-Calibration Data, LD-Location Data, BD-Blank Data, PR-Process Rate, EF-Emission Factor
Substance Group: M-Metals, HI-HCl, PH-PAH, D-Dioxins, F-Formaldehyde, B-Benzene, VC-Vinyl Chloride, PB-PCB, HO-Halgenated Organics, HS-H2S, HC-Hex Chromium, O-Other
Other Comments: NR - Not required, Y - Yes, N - No, Blank - No, ? - Additional investigation required.
(a) Table described in Section 3.3.

SECTION 3
METHOD VALIDATION FORMS AND CALCULATION SPREADSHEETS

Description of Forms

Each method validation procedure includes a description of the method, quality assurance/control checks, blank correction procedure if applicable, and other comments. The method description is used to check the procedures followed in the source test report. The quality assurance/control checks are provided in a table. This table includes a series of questions. If the answer to a question is yes, then the user circles the code which includes the character "a". For example, if a swirl check was not conducted for Method 12, the code sc1a would be circled. If the test report does not provide enough information to answer the question, then the user circles the code which includes the character "b". For example, if the test report did not indicate the variation in probe diameter for Method 12, the code nz2b is circled. For some checks, more than one "a" code is provided. In these instances, each code refers to a different run. For example, if the Method 12 leak check was greater than 0.02 cfm for the second run, the second lc3a code is circled. It should be noted that all questions are phrased to indicate failures of key method criteria. Therefore, any mark on the table indicates either the information in the report was missing or a key parameter was not satisfied. If the table contains no marks, the test was conducted within guidelines of the method. All of the circled codes are transferred to a database. In addition to verifying key method parameters, calculation checks are conducted for each isokinetic method using the spreadsheets provided in this attachment. One calculation check is conducted per report per method per substance. For example, if a report presented results from methods 428 and 436, two calculation checks are conducted.

SOURCE TEST METHOD DETAILED VALIDATION CHECKLIST

Test Method: CARB 11 - June, 1983
Substance: Hydrogen Sulfide

Report ID Number: _____
Reviewer: _____
Review Date: _____

Method Description and Applicability

This method is applicable to the determination of hydrogen sulfide content of fuel gas streams at petroleum refineries. Hydrogen sulfide (H2S) is collected from a source in a series of midget impingers and absorbed in pH 3.0 cadmium sulfate (CdSO4) solution to form cadmium sulfide (CdS). The latter compound is then measured iodometrically.

Quality Assurance/Quality Control Checks

Please complete the detailed checklist provided in the attached Table. If the statements are true, circle "a"s or the corresponding run numbers; and if they are not reported, circle "b"s.

Other Comments

_____
_____
_____
_____

Device ID:

SAMPLING EQUIPMENT			
** Field Dry Gas Meter*			
1.) Not checked pre- and post-test?	gm1a	gm1b	M
2.) Pre- and post-test Y not within (+/-) 5%?	gm2a	gm2b	M
SAMPLING PROCEDURES			
**Sample Time*			
NR 1.) Runs < 10 minutes	sd1a	sd1a sd1a	R
**Leak Check*			
1.) Not conducted?	lc1a	lc1b	M
2.) Indication of leaks?	ic2a	lc2b	M
Reagent Blanks			
1.) Not conducted daily?	fb1a	fb1b	M
**Impinger Solution*			
1.) Hydrogen peroxide (H_2O_2) not used?	im1a	im1b	M
2.) Cadmium sulfate (CdS) not used?	im2a	im2b	M
ANALYSIS			
**Method*			
1.) 0.01N Sodium thiosulfate solution not used for titration?	mt1a	mt1b	M
2.) Iodine solution not used?	mt2a	mt2b	M

M-Method a-True
R-Run b-Not reported
S-Substance

SOURCE TEST METHOD DETAILED VALIDATION CHECKLIST

Test Method: CARB 12 - March, 1986
Substance: Inorganic Lead

Report ID Number: _____
Reviewer: _____
Review Date: _____

Method Description and Applicability

This method is applicable to the determination of inorganic lead emissions from stationary sources. Particulate and gaseous Pb emissions are withdrawn isokinetically and collected on a filter and/or in dilute nitric acid. The samples are then digested and analyzed by atomic absorption spectrometry using an air acetylene flame.

Quality Assurance/Quality Control Checks

Please complete the detailed checklist provided in attached Table. If the statements are true, circle "a"s or the corresponding run numbers; and if they are not reported, circle "b"s. In addition to completing the checklist please answer the following questions:

1.) What digestion method was used? _____
2.) Enter the digestion date(s). _____
3.) Number of Impingers: 0.1 HNO3 (2) __ Empty (1)__ Silica Gel (1) __

Blank Procedure

Please be sure that the blank data was applied and considered correctly. For this particular method, the absorbance reading from the sample needs to be corrected for the absorbance readings from the filter and nitric blanks. There is no criteria for the blank levels, they just need to be performed and corrected for in the sample values.

Other Comments

_____

_____

Device ID:

SAMPLE LOCATION			
* *Swirl Check*			
1.) Not conducted?	sc1a	sc1b	M
2.) Average absolute value of angles > 10%?	sc2a	sc2b	M
* *Stack Size*			
1.) Enter stack diameter (inches).			M
2.) Stack diameter < 12 inch ? or	st2a	st2b	M
3.) Area <113 inch squared?	st3a	st3b	M
* *Number of Sample Points*			
1.) Enter total number of points.			M
2.) Method 1 not used?	ns2a	ns2b	M
SAMPLING EQUIPMENT			
* *Nozzle Size Check*			
1.) Not conducted prior to test?	nz1a	nz1b	M
2.) Variation in diameter > 0.004 inch?	nz2a	nz2b	M
* *Field Gas Dry Meter*			
1.) Not checked pre- and post-test?	gm1a	gm1b	M
2.) Pre- and post-test Y not within (+/-) 5%?	gm2a	gm2b	M
* *Pitot Tube*			
1.) Semi-annual calibration sheet not included?	pt1a	pt1b	M
SAMPLING PROCEDURES			
* *Leak Check*			
1.) Not conducted?	lc1a	lc1b	M
2.) Values not reported?	lc2a		M
3.) Pretest >0.02 cfm or 4% of average?	lc3a lc3a lc3a		R
4.) Post-test >0.02 cfm or 4% of average?	lc4a lc4a lc4a		R
* *Isokinetic Variation*			
1.) Sample not taken isokinetically?	is1a	is1b	M
2.) Isokinetic variation not reported?	is2a		M
3.) Isokinetic <90 or >110%?	is3a is3a is3a		R
* *Field Reagent Blank*			
1.) Not conducted for two filters and 0.1N HNO3?	rb1a	rb1b	M
2.) Not used to correct samples?	rb2a	rb2b	M
ANALYSIS			
* *Method*			
1.) Atomic absorption spectrometry (AAS) not used?	mt1a	mt1b	M
2.) Not conducted in triplicate?	mt2a	mt2b	M

M-Method a-True
R-Run b-Not reported
S-Substance

CALCULATION CHECK FOR CARB METHOD 12

Device ID:

DATA ENTRY-SAMPLING	SYMBOL	UNITS	DATA
RUN NUMBER	-	-	
ROUND STACK, DIAMETER RECTANGULAR STACK, LENGTH WIDTH	ds L W	inches inches inches	
NOZZLE DIAMETER	dn	inches	
AVERAGE STACK TEMPERATURE	Fs	degrees F	
AVERAGE METER TEMPERATURE	Fm	degrees F	
BAROMETRIC PRESSURE	Pbar	in. Hg	
STACK STATIC PRESSURE	Pg	in. H20	
AVG. DELTA H	dH	in. H20	
AVG. RMS VELOCITY HEAD	dP	in. H20	
PITOT COEFFICIENT	Cp	-	
GAS SAMPLE VOLUME	Vm	cubic ft.	
METER CALIBRATION FACTOR	Y	-	
TOTAL SAMPLING TIME	min	minutes	
STACK GAS OXYGEN CONTENT	Co2,m	%	
STACK GAS CARBON DIOXIDE CONTENT	Cco2,m	%	
TOTAL IMPINGER GAIN (WATER & PARTICULATE)	Ww	grams	
CALCULATED DATA-SAMPLING			
RUN NUMBER	-	-	
NOZZLE AREA, An = 3.14(dn)**2/4	An	sq. in.	0.000
STACK AREA, As = 3.14*(ds)**2/576 (ROUND) = L * W/144 (RECTANGULAR)	As	sq. feet	0.000
AVG. STACK TEMPERATURE, Ts = Fs + 460	Ts	degrees R	460.0
AVG. METER TEMPERATURE, Tm = Fm + 460	Tm	degrees R	460.0
GAS SAMPLE VOLUME AT STANDARD CONDITIONS, VmStd = 17.64*Y*(Vm/Tm)*(Pbar + dH/13.6)	VmStd	dscf	0.0
VOLUME OF WATER VAPOR, VwStd = 0.04707*Ww	VwStd	scf	0.0
MOISTURE FRACTION, Bws = VwStd/(VmStd + VwStd)	Bws	-	#DIV/0!
DRY STACK GAS MOL. WEIGHT, Md = 0.32(Co2,m)+ 0.44(Cco2,m)+0.28[100-(Co2,m)-(Cco2,m)]	Md	g/g-mole	28.00
WET STACK GAS MOLECULAR WEIGHT, Mw = Md(1-Bws)+18.0(Bws)	Mw	g/g-mole	#DIV/0!
ABSOLUTE STACK PRESSURE, Ps = Pbar + Pg/13.6	Ps	in. Hg	0.00
STACK GAS VELOCITY vs = 85.49 Cp { sqrt[(dP*Ts) /(Ps*Mw)] }	vs	ft/s	#DIV/0!
ACTUAL STACK GAS FLOW RATE, Q = 60*vs*As	Q	acf/min	#DIV/0!
DRY GAS STACK FLOW RATE (DRY,STP) Qsd = 17.64*Q*(1-Bws)*(Ps/Ts)	Qsd	dscf/min	#DIV/0!
ISOKINETIC RATE, I = 13.61*Ts*VmStd/[Ps*vs*An*min*(1-Bws)]	I	%	#DIV/0!
DATA ENTRY-ANALYTICAL			
TOTAL MASS OF LEAD IS SAMPLE TRAIN	Mpb	mg	
CALCULATED DATA-OVERALL			
CONCENTRATION OF LEAD MCpb = (35.31*Mpb)/Vmstd	MCpb	mg/dscm	#DIV/0!

SOURCE TEST METHOD DETAILED VALIDATION CHECKLIST

Test Method: CARB 15 - June, 1983
Substance: Hydrogen Sulfide

Report ID Number: _____
Reviewer: _____
Review Date: _____

Method Description and Applicability

This method is applicable to the measurement of hydrogen sulfide, carbonyl sulfide, and carbon disulfide from tail gas control units of sulfur recovery plants. A gas sample is extracted from the emission source and diluted with clean dry air. An aliquot of the sample is then analyzed by gas chromatographic separation and flame photometric detection (GC/FPD).

Quality Assurance/Quality Control Checks

Due to the difficulty in performing on-site GC testing, CARB has often allowed contractors to collect sample in Tedlar Bags and submit the bags to the laboratory for analysis. If this was done on the source test, prior approval from CARB must be obtained. Along with approval, CARB adds additional quality assurance checks and samples to ensure accurate measurements. Determine if samples were collected with a bag sample or if on-site GC analysis was performed. If the sample was collected using a bag, please answer the following questions.

1) Was this modification discussed in the text? YES NO
2) Did the discussion include prior approval and additional requirements by CARB?YES NO
3) Were the additional requirements completed and did they pass criteria? YES NO

If the bag collection technique was used, some of the parameters listed in Table 1 might not be applicable. **The Table 1 applies strictly to the method, which specifies on-site GC analysis. Please complete** the detailed checklist provided in the attached Table . Please complete the detailed checklist provided in attached Table. If the statements are true, circle "a"s or the corresponding run numbers; and if they are not reported, circle "b"s.

Other Comments

Device ID:

This table applies only to on-site GC analysis.

SAMPLING PROCEDURES			
** Leak Check*			
1.) Not conducted?	lc1a	lc1b	M
2.) Indication of leaks?	lc2a	lc2b	M
**Sample line loss*			
1.) Not conducted for post-test?	sl1a	sl1b	M
2.) Sample not corrrected for <20% loss?	sl2a	sl2b	M
3.) Sample corrected for >20% loss?	sl3a	sl3b	M
ANALYSIS			
** Method*			
1.) GC/FPD not used?	mt1a	mt1b	M

M-Method a-True
R-Run b-Not reported
S-Substance

SOURCE TEST METHOD DETAILED VALIDATION CHECKLIST

Test Method: CARB 101A - March, 1986
Substance: Mercury

Report ID Number: _____
Reviewer: _____
Review Date: _____

Method Description and Applicability

This method is applicable to the determination of mercury emissions from stationary sources. Particulate and gaseous mercury emissions are withdrawn isokinetically from the source and collected in acidic potassium permanganate (KMnO4) solution. The Hg collected (in the mercuric form) is reduced to elemental Hg which is then aerated from the solution into an optical cell and measured by atomic absorption spectrometry.

Quality Assurance/Quality Control Checks

Please complete the detailed checklist provided in the attached Table. If the statements are true, please circle "a"s or the corresponding run numbers; and if they are not reported, circle "a"s. In addition to completing the checklist please answer the following questions:

1.) What digestion method was used? _____

2.) Enter the digestion date(s). _____

3.) Number of Impingers: 50 ml 4% KMnO4 (1) __ 100 ml 4% KMnO4 (1)__
Empty (1 optional) __Silica Gel (1) __

Blank Procedure

Please be sure that the blank data was applied and considered correctly. For this particular method, the average peak height (or peak area) of the blank should have been subtracted from the average peak height of the aliquot standards.

Other Comments

Device ID:

SAMPLE LOCATION				
** Swirl Check*				
1.) Not conducted?	sc1a		sc1b	M
2.) Average absolute value of angles > 10%?	sc2a		sc2b	M
** Stack Size*				
1.) Enter stack diameter (inches).				M
2.) Stack diameter < 12 inch ? or	st2a		st2b	M
3.) Area <113 inch squared?	st3a		st3b	M
** Number of Sample Points*				
1.) Enter total number of points.				M
2.) Method 1 not used?	ns2a		ns2b	M
SAMPLING EQUIPMENT				
** Nozzle Size Check*				
1.) Not conducted prior to test?	nz1a		nz1b	M
2.) Variation in diameter > 0.004 inch?	nz2a		nz2b	M
** Field Gas Dry Meter*				
1.) Not checked pre- and post-test?	gm1a		gm1b	M
2.) Pre- and post-test Y not within (+/-) 5%?	gm2a		gm2b	M
** Pitot Tube*				
1.) Semi-annual calibration sheet not included?	pt1a		pt1b	M
SAMPLING PROCEDURES				
** Leak Check*				
1.) Not conducted?	lc1a		lc1b	M
2.) Values not reported?	lc2a			M
3.) Pretest >0.02 cfm or 4% of average?	lc3a	lc3a	lc3a	R
4.) Post-test >0.02 cfm or 4% of average?	lc4a	lc4a	lc4a	R
** Isokinetic Variation*				
1.) Sample not taken isokinetically?	is1a		is1b	M
2.) Isokinetic variation not reported?	is2a			M
3.) Isokinetic <90 or >110%?	is3a	is3a	is3a	R
** Field Reagent Blank*				
1.) Not conducted once per test?	rb1a		rb1b	M
2.) Not used to correct sample?	rb2a		rb2b	M
** Temperature*				
1.) Filter temperature not between 106 and 134 degrees?	tm1a		tm1b	M
** Flow Rate*				
1.) Flow rate not reported?	fr1a			M
2.) Flow rate > 28 liter per minute (1 cfm)?	fr2a	fr2a	fr2a	R
ANALYSIS				
** Method*				
1.) Atomic absorption spectrometry (AAS) not used?	mt1a		mt1b	M
2.) Combined analysis used ?	mt2a		mt2b	M

M-Method
R-Run
S-Substance

a-True
b-Not reported

CALCULATION CHECK FOR CARB METHOD 101A

Device ID:

DATA ENTRY-SAMPLING	SYMBOL	UNITS	DATA
RUN NUMBER	-	-	
ROUND STACK, DIAMETER	ds	inches	
RECTANGULAR STACK, LENGTH	L	inches	
WIDTH	W	inches	
NOZZLE DIAMETER	dn	inches	
AVERAGE STACK TEMPERATURE	Fs	degrees F	
AVERAGE METER TEMPERATURE	Fm	degrees F	
BAROMETRIC PRESSURE	Pbar	in. Hg	
STACK STATIC PRESSURE	Pg	in. H20	
AVG. DELTA H	dH	in. H20	
AVG. RMS VELOCITY HEAD	dP	in. H20	
PITOT COEFFICIENT	Cp	-	
GAS SAMPLE VOLUME	Vm	cubic ft.	
METER CALIBRATION FACTOR	Y	-	
TOTAL SAMPLING TIME	min	minutes	
STACK GAS OXYGEN CONTENT	Co2,m	%	
STACK GAS CARBON DIOXIDE CONTENT	Cco2,m	%	
TOTAL IMPINGER GAIN (WATER & PARTICULATE)	Ww	grams	
CALCULATED DATA-SAMPLING			
RUN NUMBER	-	-	0
NOZZLE AREA, An = 3.14(dn)**2/4	An	sq. in.	0.000
STACK AREA, As = 3.14*(ds)**2/576 (ROUND) = L * W/144 (RECTANGULAR)	As	-sq. feet	0.000
AVG. STACK TEMPERATURE, Ts = Fs + 460	Ts	degrees R	460.0
AVG. METER TEMPERATURE, Tm = Fm + 460	Tm	degrees R	460.0
GAS SAMPLE VOLUME AT STANDARD CONDITIONS, VmStd = 17.64*Y*(Vm/Tm)*(Pbar + dH/13.6)	VmStd	cubic ft.	0.0
VOLUME OF WATER VAPOR, VwStd = 0.04707*Ww	VwStd	cubic ft.	0.0
MOISTURE FRACTION, Bws = VwStd/(VmStd + VwStd)	Bws	-	#DIV/0!
DRY STACK GAS MOL. WEIGHT, Md = 0.32(Co2,m)+ 0.44(Cco2,m)+0.28{100-(Co2,m)-(Cco2,m)]	Md	g/g-mole	28.00
WET STACK GAS MOLECULAR WEIGHT, Mw = Md(1-Bws)+18.0(Bws)	Mw	g/g-mole	#DIV/0!
ABSOLUTE STACK PRESSURE, Ps = Pbar + Pg/13.6	Ps	in. Hg	0.00
STACK GAS VELOCITY vs = 85.49 Cp { sqrt[(dP*Ts) /(Ps*Mw)] }	vs	ft/s	#DIV/0!
ACTUAL STACK GAS FLOW RATE, Q = 60*vs*As	Q	acf/min	#DIV/0!
DRY GAS STACK FLOW RATE (DRY,STP) Qsd = 17.64*Q*(1-Bws)*(Ps/Ts)	Qsd	dscf/min	#DIV/0!
ISOKINETIC RATE, I = 13.61*Ts*VmStd/[Ps*vs*An*min*(1-Bws)]	I	%	#DIV/0!
DATA ENTRY-ANALYTICAL			
TOTAL MASS OF MERCURY IN SAMPLE TRAIN	Mhg	mg	
CALCULATED DATA-OVERALL			
CONCENTRATION OF MERCURY MChg = (35.31*Mhg)/Vmstd	MChg	mg/dscm	#DIV/0!
ARSENIC MASS EMISSION RATE Ehg = ((Qsd*Mhg)/Vmstd)*1.32e-4	Ehg	lb/hr	#DIV/0!

SOURCE TEST METHOD DETAILED VALIDATION CHECKLIST

Test Method: CARB 104 - March, 1986
Substance: Beryllium

Report ID Number: _____
Reviewer: _____
Review Date: _____

Method Description and Applicability

This method is applicable to the determination of beryllium emissions from stationary sources. Beryllium emissions are withdrawn isokinetically and the collected sample is digested in and acid solution and analyzed by atomic absorption spectrometry.

Quality Assurance/Quality Control Checks

Please complete the detailed checklist provided in the attached Table. If the statements are true, please circle "a"s or the corresponding run numbers; and if they are not reported, circle "a"s. In addition to completing the checklist please answer the following questions:

1.) What digestion method was used? _____
2.) Enter the digestion date(s). _____
3.) Number of Impingers: H2O (2) __ Empty (1)__ Silica Gel (1) __

Blank Procedure

Please be sure that the blank data was applied and considered correctly. For this particular method, the total amount of beryllium detected in the sample is corrected for the total amount of beryllium detected in the acetone and water blanks. There is no criteria for the blank levels, they just need to be performed and corrected for the sample values.

Other Comments

_____

_____

Device ID:

SAMPLE LOCATION				
* *Swirl Check*				
1.) Not conducted?	sc1a		sc1b	M
2.) Average absolute value of angles > 10%?	sc2a		sc2b	M
* *Stack Size*				
1.) Enter stack diameter (inches).				M
2.) Stack diameter < 12 inch ? or	st2a		st2b	M
3.) Area <113 inch squared?	st3a		st3b	M
* *Number of Sample Points*				
1.) Enter total number of points.				M
2.) Method 1 not used?	ns2a		ns2b	M
SAMPLING EQUIPMENT				
* *Nozzle Size Check*				
1.) Not conducted prior to test?	nz1a		nz1b	M
2.) Variation in diameter > 0.004 inch?	nz2a		nz2b	M
* *Field Gas Dry Meter*				
1.) Not checked pre- and post-test?	gm1a		gm1b	M
2.) Pre- and post-test Y not within (+/-) 5%?	gm2a		gm2b	M
* *Pitot Tube*				
1.) Semi-annual calibration sheet not included?	pt1a		pt1b	M
SAMPLING PROCEDURES				
* *Leak Check*				
1.) Not conducted?	lc1a		lc1b	M
2.) Values not reported?	lc2a			M
3.) Pretest >0.02 cfm or 4% of average?	lc3a	lc3a	lc3a	R
4.) Post-test >0.02 cfm or 4% of average?	lc4a	lc4a	lc4a	R
* *Isokinetic Variation*				
1.) Sample not taken isokinetically?	is1a		is1b	M
2.) Isokinetic variation not reported?	is2a			M
3.) Isokinetic <90 or >110%?	is3a	is3a	is3a	R
* *Field Reagent Blank*				
1.) Not conducted for acetone?	rb1a		rb1b	M
2.) Not used to correct sample ?	rb2a		rb2b	M
* *Flow Rate*				
1.) Flow rate not reported?	fr1a			M
2.) Flow rate < 0.5 or > 1 cfm?	fr2a	fr2a	fr2a	R
ANALYSIS				
* *Method*				
1.) Atomic absorption spectrometry (AAS) not used?	mt1a		mt1b	M

M-Method
R-Run
S-Substance

a-True
b-Not reported

CALCULATION CHECK FOR CARB METHOD 104

Device ID:

DATA ENTRY-SAMPLING	SYMBOL	UNITS	DATA
RUN NUMBER	-	-	
ROUND STACK, DIAMETER	ds	inches	
RECTANGULAR STACK, LENGTH	L	inches	
WIDTH	W	inches	
NOZZLE DIAMETER	dn	inches	
AVERAGE STACK TEMPERATURE	Fs	degrees F	
AVERAGE METER TEMPERATURE	Fm	degrees F	
BAROMETRIC PRESSURE	Pbar	in. Hg	
STACK STATIC PRESSURE	Pg	in. H20	
AVG. DELTA H	dH	in. H20	
AVG. RMS VELOCITY HEAD	dP	in. H20	
PITOT COEFFICIENT	Cp	-	
GAS SAMPLE VOLUME	Vm	cubic ft.	
METER CALIBRATION FACTOR	Y	-	
TOTAL SAMPLING TIME	min	minutes	
STACK GAS OXYGEN CONTENT	Co2,m	%	
STACK GAS CARBON DIOXIDE CONTENT	Cco2,m	%	
TOTAL IMPINGER GAIN (WATER & PARTICULATE)	Ww	grams	
CALCULATED DATA-SAMPLING			
RUN NUMBER	-	-	0
NOZZLE AREA, An = 3.14(dn)**2/4	An	sq. in.	0.000
STACK AREA, As = 3.14*(ds)**2/576 (ROUND) = L * W/144 (RECTANGULAR)	As	sq. feet	0.000
AVG. STACK TEMPERATURE, Ts = Fs + 460	Ts	degrees R	460.0
AVG. METER TEMPERATURE, Tm = Fm + 460	Tm	degrees R	460.0
GAS SAMPLE VOLUME AT STANDARD CONDITIONS, VmStd = 17.64*Y*(Vm/Tm)*(Pbar + dH/13.6)	VmStd	cubic ft.	0.0
VOLUME OF WATER VAPOR, VwStd = 0.04707*Ww	VwStd	cubic ft.	0.0
MOISTURE FRACTION, Bws = VwStd/(VmStd + VwStd)	Bws	-	#DIV/0!
DRY STACK GAS MOL. WEIGHT, Md = 0.32(Co2,m)+ 0.44(Cco2,m)+0.28[100-(Co2,m)-(Cco2,m)]	Md	g/g-mole	28.00
WET STACK GAS MOLECULAR WEIGHT, Mw = Md(1-Bws)+18.0(Bws)	Mw	g/g-mole	#DIV/0!
ABSOLUTE STACK PRESSURE, Ps = Pbar + Pg/13.6	Ps	in. Hg	0.00
STACK GAS VELOCITY vs = 85.49 Cp { sqrt[(dP*Ts) /(Ps*Mw)] }	vs	ft/s	#DIV/0!
ACTUAL STACK GAS FLOW RATE, Q = 60*vs*As	Q	acf/min	#DIV/0!
DRY GAS STACK FLOW RATE (DRY,STP) Qsd = 17.64*Q*(1-Bws)*(Ps/Ts)	Qsd	dscf/min	#DIV/0!
ISOKINETIC RATE, I = 13.61*Ts*VmStd/[Ps*vs*An*min*(1-Bws)]	I	%	#DIV/0!
DATA ENTRY-ANALYTICAL			
TOTAL MASS OF BERYLLIUM IN SAMPLE TRAIN	Mass	mg	
TOTAL MASS OF BERYLLIUM IN ACETONE REAGENT BLAN	Mbeac	mg	
TOTAL MASS OF BERYLLIUM IN WATER REAGENT BLANK	Mbeh2o	mg	
CALCULATED DATA-OVERALL			
CORRECTED TOTAL AMOUNT OF BERYLLIUM Mbe = Mass - Mbeac - Mbeh2o	Mbe	mg	0.000
CONCENTRATION OF BERYLLIUM MCbe = (35.31*Mbe)/Vmstd	MCbe	mg/dscm	#DIV/0!
ARSENIC MASS EMISSION RATE Ebe = ((Qsd*Mbe)/Vmstd)*1.32e-4	Ebe	lb/hr	#DIV/0!

SOURCE TEST METHOD DETAILED VALIDATION CHECKLIST

Test Method: CARB 106 - June, 1983
Substance: Vinyl Chloride

Report ID Number: _____
Reviewer: _____
Review Date: _____

Method Description and Applicability

This method is applicable to the measurement of vinyl chloride in stack gases. An integrated bag sample of stack gas is subjected to chromatographic analysis, using a flame ionization detector.

Quality Assurance/Quality Control Checks

Please complete the detailed checklist provided in the attached Table . If the statements are true, please circle "a"s or the corresponding run numbers; and if they are not reported, circle "b"s.

Other Comments

_____
_____
_____
_____

Device ID:

ANALYSIS			
* *Method*			
1.) GC/FID not used?	mt1a	mt1b	M
**Analysis Date*			
1.) Not within 72 hours from collection, all samples?	ad1a	ad1b	M
* *3-Point Calibration Curve*			
1.) Not conducted daily or before and after test?	pc1a	pc1b	M
2.) Percent difference not reported?	pc2a		M
3.) Percent difference > 5%?	pc3a	pc3b	M

M-Method
R-Run
S-Substance

a-True
b-Not reported

SOURCE TEST METHOD DETAILED VALIDATION CHECKLIST

Test Method: CARB 410A/B - March, 1986
Substance: Benzene

Report ID Number: _____
Reviewer: _____
Review Date: _____

Method Description and Applicability

This method is designed to provide sampling and analysis techniques for measurement of benzene emissions from stationary sources. CARB Method 410A is used for low concentrations (1.0 to 1000 ppb) and CARB Method 410B is used for high concentrations (60 ppb to 1 %). A Tedlar bag is used to collect a sample and the sample is subjected to gas chromatographic with a photo ionization detector for low concentrations and a flame ionization detector for high concentrations.

Quality Assurance/Quality Control Checks

Please complete the detailed checklist provided in the attached Table . If the statements are true, please circle "a"s or the corresponding run numbers; and if they are not reported, circle "b"s.

Other Comments

_____
_____
_____
_____

Device ID:

SAMPLING EQUIPMENT			
** Tedlar Bag Contamination Checks*			
1.) Not conducted for all bags?	tb1a	tb1b	M
SAMPLE COLLECTION			
** Leak Check*			
1.) Not conducted before and after each test?	lc1a	lc1b	M
ANALYSIS			
** Method*			
1.) FID not used for high concentrations (60ppb to .01) used?	mt1a	mt1b	M
2.) PID not used for low concentratons (1.0 to 1000 ppb)?	mt2a	mt2b	M
**Analysis Date*			
1.) Not within 96 hours from collection, each sample?	ad1a	ad1b	M

M-Method a-True
R-Run b-Not reported
S-Substance

T=true; NR=not reported; *, 2,3 refers to run numbers

SOURCE TEST METHOD DETAILED VALIDATION CHECKLIST

Test Method: CARB 421 - January, 1987
Substance: Hydrochloric Acid

Report ID Number: _____
Reviewer: _____
Review Date: _____

Method Description and Applicability

This method is applicable to the determination of hydrochloric acid emissions from stationary sources. Particulate and gaseous chloride emissions are withdrawn isokinetically from the source through a impinger-filter train where the gaseous chloride is absorbed and ionized in a basic buffer solution. Hydrochloric acid is assumed to be the principle compounds detected when testing combustion sources. ARB Method 421 calls for isokinetic sampling, absorption of HCL in impingers filled with ion chormatographic eluent solution, and analysis of samples by ion chormatography using that same eluent solution.

Quality Assurance/Quality Control Checks

Before completing the detailed QA checklist, please answer the following questions:

1) Is stack temperature above 250F? Yes No (answer Q #2)
2) If No, Is the sampling isokinetic? Yes No
3) If No, **STOP** evaluating this method.
4) Number of Impingers: NaHCO3/Na2CO3 (2)___ Empty (1)___Silica Gel (1)__

Please complete the detailed checklist provided in the attached Table . If the statements are true, please circle "a"s or the corresponding run numbers; and if they are not reported, circle "b"s.

Blank Procedure .

Please be sure that the blank data is considered correctly. For this particular method, the peak resulting from the reagent blank **should have been subtracted** off of the sample peaks on the chromatograph.

Other Comments

Device ID:

SAMPLE LOCATION				
* *Swirl Check*				
1.) Not conducted?	sc1a		sc1b	M
2.) Average absolute value of angles > 10%?	sc2a		sc2b	M
* *Stack Size*				
1.) Enter stack diameter (inches).				M
2.) Stack diameter < 12 inch ? or	st2a		st2b	M
3.) Area <113 inch squared?	st3a		st3b	M
* *Number of Sample Points*				
1.) Enter total number of points.				M
2.) Method 1 not used?	ns2a		ns2b	M
SAMPLING EQUIPMENT				
* *Nozzle Size Check*				
1.) Not conducted prior to test?	nz1a		nz1b	M
2.) Variation in diameter > 0.004 inch?	nz2a		nz2b	M
* *Field Gas Dry Meter*				
1.) Not checked pre- and post-test?	gm1a		gm1b	M
2.) Pre- and post-test Y not within (+/-) 5%?	gm2a		gm2b	M
* *Pitot Tube*				
1.) Semi-annual calibration sheet not included?	pt1a		pt1b	M
SAMPLING PROCEDURES				
* *Leak Check*				
1.) Not conducted?	lc1a		lc1b	M
2.) Values not reported?	lc2a			M
3.) Pretest >0.02 cfm or 4% of average?	lc3a	lc3a	lc3a	R
4.) Post-test >0.02 cfm or 4% of average?	lc4a	lc4a	lc4a	R
* *Isokinetic Variation*				
1.) Sample not taken isokinetically?	is1a		is1b	M
2.) Isokinetic variation not reported?	is2a			M
3.) Isokinetic <90 or >110%?	is3a	is3a	is3a	R
* *Field Reagent Blank*				
1.) Not conducted once per test?	fb1a		fb1b	M
2.) Not used to correct sample peaks on the chromatograph?	fb2a		fb2b	M
* *Impinger Solution*				
1.) Biocarbonate (NaHCO3) not used ?	im1a		im1b	M
2.) Sodium carbonate (Na2CO3) not used ?	im2a		im2b	M
3.) Water not used ?	im3a		im3b	M
ANALYSIS				
* *Method*				
1.) Ion chromatography not used?	mt1a		mt1b	M
* *Lab Spike*				
1) Not conducted 10% of all samples?	ls1a		ls1b	M
* *Duplicate*				
1.) Not conducted for each sample?	du1a		du1b	M
2.) Percent difference not reported?	du2a			M
3.) Percent difference > 5%?				
NR Hydrogen Chloride (HCl)	du3a	du3a	du3a	S

M-Method
R-Run
S-Substance

a-True
b-Not reported

SOURCE TEST METHOD DETAILED VALIDATION CHECKLIST

Test Method: CARB 421 - December, 1991
Substance: Hydrogen Chloride

Report ID Number: _____
Reviewer: _____
Review Date: _____

Method Description and Applicability

This method is applicable to the determination of gaseous chloride emissions from stationary sources. Gaseous chloride is absorbed and ionized in a basic buffer solution and volatile chloride aerosol mist are also detected. Hydrochloric acid is assumed to be the principle compounds detected when testing combustion sources. ARB Method 421 calls for isokinetic sampling, absorption of HCL in impingers filled with ion chormatographic eluent solution, and analysis of samples by ion chormatography using that same eluent solution.

Quality Assurance/Quality Control Checks

Before completing the detailed QA checklist, please answer the following questions:

1) Is stack temperature above 250F? Yes No (answer Q #2)
2) If No, Is the sampling isokinetic? Yes No
3) If No, **STOP** evaluating this method.
4) Number of Impingers: NaHCO3/Na2CO3 (2)__ Empty (1)__Silica Gel (1)__

Please complete the detailed checklist provided in the attached Table. If the statements are true, please circle "a"s or the corresponding run numbers; and if they are not reported, circle "b"s.

Blank Procedure

Please be sure that the blank data is considered correctly. For this particular method, the sample value is not corrected with any of the blank values, although there is a blank level criteria. Make sure the measured blank levels satisfy the method criteria.

Other Comments

Device ID:

SAMPLE LOCATION				
* *Swirl Check*				
1.) Not conducted?	sc1a		sc1b	M
2.) Average absolute value of angles > 10%?	sc2a		sc2b	M
* *Stack Size*				
1.) Enter stack diameter (inches).				M
2.) Stack diameter < 12 inch ? or	st2a		st2b	M
3.) Area <113 inch squared?	st3a		st3b	M
* *Number of Sample Points*				
1.) Enter total number of points.				M
2.) Method 1 not used?	ns2a		ns2b	M
SAMPLING EQUIPMENT				
* *Nozzle Size Check*				
1.) Not conducted prior to test?	nz1a		nz1b	M
2.) Variation in diameter > 0.004 inch?	nz2a		nz2b	M
* *Field Gas Dry Meter*				
1.) Not checked pre- and post-test?	gm1a		gm1b	M
2.) Pre- and post-test Y not within (+/-) 5%?	gm2a		gm2b	M
* *Pitot Tube*				
1.) Semi-annual calibration sheet not included?	pt1a		pt1b	M
SAMPLING PROCEDURES				
* *Sample Runs*				
1.) Runs<3?	sr1a		sr1b	M
* *Sample Time*				
1.) Not conducted per run?	sd1a		sd1a	M
NR 2.) Runs <60 minutes?	sd2a	sd2a	sd2a	R
* *Leak Check*				
1.) Not conducted?	lc1a		lc1b	M
2.) Values not reported?	lc2a		lc2b	M
3.) Pre-test >0.02 cfm or 4% of average?	lc3a	lc3a	lc3a	R
4.) Post-test >0.02 cfm or 4% of average?	lc4a	lc4a	lc4a	R
* *Isokinetic Variation*				
1.) Sample not taken isokinetically?	is1a		is1b	M
2.) Isokinetic variation not reported?	is2a			M
3.) Isokinetic <90 or >110%?	is3a	is3a	is3a	R
* *Field Blank*				
1.) Not conducted once per test?	fb1a		fb1b	M
2.) Used to correct sample peaks on the chromatograph?	fb2a		fb2b	M
3.) Contamination >20% of any run ?				
NR HCl	fb3a	fb3a	fb3a	S
* *Impinger Solution*				
1.) Biocarbonate (NaHCO3) not used ?	im1a		im1b	M
2.) Sodium carbonate (Na2CO3) not used ?	im2a		im2b	M
3.) Water not used ?	im3a		im3b	M
ANALYSIS				
* *Method*				
1.) Ion chromatography not used?	mt1a		mt1b	M
* *Lab Spike*				
1.) Not conducted prior, daily, and after every 40 samples?	ls1a		ls1b	M
2.) Percent recovery not reported?	ls2a			M
3.) Percent recovery <95% or > 105%				
Hydrogen Chloride (HCl)	ls3a	ls3a	ls3a	S
* *Duplicate*				
1.) Not conducted for 10% of all samples?	du1a		du1b	M
2.) Percent difference not reported?	du2a			M
3.) Percent difference > 5% STD?				
Hydrogen Chloride (HCl)	du3a	du3a	du3a	R

M-Method a-True
R-Run b-not reported
S-Substance

SOURCE TEST METHOD DETAILED VALIDATION CHECKLIST

Test Method: CARB 422-January, 1987
Substance: Volatile Halogenated Organic Compounds

Report ID Number: _____
Reviewer: _____
Review Date: _____

Method Description and Applicability

This method is designed to provide sampling and analysis techniques for measurement of halogenated organics in emissions from stationary sources. A Tedlar bag is used to collect a sample and the sample is subjected to gas chromatographic analysis for quantitation.

Quality Assurance/Quality Control Checks

Please complete the detailed checklist provided in the attached Table. If the statements are true, please circle "a
"s or the corresponding run numbers; and if they are not reported, circle "b"s.

Other Comments

_____
_____
_____
_____

Device ID:

SAMPLING EQUIPMENT			
** Tedlar Bag Contamination Checks*			
1.) Not conducted for all bags?	tb1a	tb1b	M
2.) Levels not reported ?	tb2a	tb2b	M
SAMPLE Collection			
** Leak Check*			
1.) Not conducted before and after each test?	lc1a	lc1b	M
2.) Leaks > 5% of sample rate ?	lc2a	lc2b	M
ANALYSIS			
** Method*			
1.) GC not used ?	mt1a	mt1b	M
**Analysis Date*			
1.) Not within 24 hours from collection, each sample?	ad1a	ad1b	M

M-Method
R-Run
S-Substance

a-True
b-Not reported

SOURCE TEST METHOD DETAILED VALIDATION CHECKLIST

Test Method: CARB 422 - December, 1991
Substance: Volatile Halogenated Organic Compounds

Report ID Number: _____
Reviewer: _____
Review Date: _____

Method Description and Applicability

This method is designed to provide sampling and analysis techniques for measurement of volatile organic compounds in emissions from stationary sources. This method cannot be used to determine compounds that (1) are polymetric (high molecular weight) (2) can polymerize before analysis, or (3) have very low vapor pressures at stack or instrument conditions. A Tedlar bag is used to collect a sample and the sample is subjected to gas chromatographic analysis for quantitation.

Quality Assurance/Quality Control Checks

Some preliminary determinations and options are available to the source tester based on the stack conditions. The following questions indicate those options.

1) Was the sample diluted to avoid condensation? Yes No
2) Were impingers used? Yes No
3) Was an on-site GC used for 1,3-Butadiene? Yes No

Please complete the detailed checklist provided in the attached Table. If the statements are true, please circle "a"s or the corresponding run numbers; and if they are not reported, circle "a"s.

Other Comments

_____
_____
_____
_____

Device ID:

422DEC91.XLS

SAMPLING EQUIPMENT						
** Tedlar Bag Contamination Checks*						
1.) Not conducted for all bags?				tb1a	tb1b	M
2.) Levels not reported ?				tb2a	tb2b	M
SAMPLE COLLECTION						
** Field Blank*						
1.) Not conducted once per test?				fb1a	fb1b	M
2.) Used to correct sample?				fb2a	fb2b	M
3.) Blank > 20% of the stack samples?						
	NA	NR	Dichloromethane	fb3a	fb3a fb3a	S
	NA	NR	Chloroform	fb3a	fb3a fb3a	S
	NA	NR	1,1,1-trichloroethane	fb3a	fb3a fb3a	S
	NA	NR	Carbon tetrachloride	fb3a	fb3a fb3a	S
	NA	NR	1,2-dichloroethane	fb3a	fb3a fb3a	S
	NA	NR	Trichloroethene	fb3a	fb3a fb3a	S
	NA	NR	1,2-dibromoethane	fb3a	fb3a fb3a	S
	NA	NR	Tetrachloroethene	fb3a	fb3a fb3a	S
	NA	NR	1,3-butadiene	fb3a	fb3a fb3a	S
** Leak Check*						
1.) Not conducted before and after each test?				lc1a	lc1b	M
2.) Leaks > 5% of sample rate ?				lc2a	lc2b	M
** Field Spike*						
1.) Not collected once per source?				fs1a	fs1b	M
ANALYSIS						
** Method*						
1.) GC not used ?				mt1a	mt1b	M
**Analysis Date*						
1) Not within 72 hours from collection, each sample?				ad1a	ad1b	M
** Duplicates*						
1.) Not conducted once per sample?				du1a	du1b	M
2.) Values not reported?				du2a		M
3.) Values > 3 X RSD ?						
		NA	Dichloromethane	du3a	du3b	S
		NA	Chloroform	du3a	du3b	S
		NA	1,1,1-trichloroethane	du3a	du3b	S
		NA	Carbon tetrachloride	du3a	du3b	S
		NA	1,2-dichloroethane	du3a	du3b	S
		NA	Trichloroethene	du3a	du3b	S
		NA	1,2-dibromoethane	du3a	du3b	S
		NA	Tetrachloroethene	du3a	du3b	S
		NA	1,3-butadiene	du3a	du3b	S

M-Method
R-Run
S-Substance

a-True
b-Not reported

SOURCE TEST METHOD DETAILED VALIDATION CHECKLIST

Test Method: CARB 423 - January, 1987
Substance: Inorganic Arsenic

Report ID Number: _____
Reviewer: _____
Review Date: _____

Method Description and Applicability

This method is applicable to the determination of inorganic arsenic emissions from stationary sources. Particulate and gaseous arsenic emissions are withdrawn isokinetically and collected on a filter and in water. The samples are then analyzed by atomic absorption spectrometry.

Quality Assurance/Quality Control Checks

Please complete the detailed checklist provided in the attached Table. If the statements are true, please circle "a"s or the corresponding run numbers; and if they are not reported, circle "a"s. In addition to completing the checklist please answer the following questions:

1.) What digestion method was used? _____
2.) Enter the digestion date(s). _____
3.) Number of Impingers: H2O (2) __ Empty (1)__ Silica Gel (1) __

Blank Procedure

Please be sure that the blank data was applied and considered correctly. For this particular method, the total amount of arsenic detected in the sample is corrected for the total amount of arsenic detected in the filter, NaOH, and water blanks. There is no criteria for the blank levels, they just need to be performed and corrected for the sample values.

Other Comments

_____

_____

Device ID:

SAMPLE LOCATION				
* *Swirl Check*				
1.) Not conducted?	sc1a		sc1b	M
2.) Average absolute value of angles > 10%?	sc2a		sc2b	M
* *Stack Size*				
1.) Enter stack diameter (inches).				M
2.) Stack diameter < 12 inch ? or	st2a		st2b	M
3.) Area <113 inch squared?	st3a		st3b	M
* *Number of Sample Points*				
1.) Enter total number of points.				M
2.) Method 1 not used?	ns2a		ns2b	M
SAMPLING EQUIPMENT				
* *Nozzle Size Check*				
1.) Not conducted prior to test?	nz1a		nz1b	M
2.) Variation in diameter > 0.004 inch?	nz2a		nz2b	M
* *Field Gas Dry Meter*				
1.) Not checked pre- and post-test?	gm1a		gm1b	M
2.) Pre- and post-test Y not within (+/-) 5%?	gm2a		gm2b	M
* *Pitot Tube*				
1.) Semi-annual calibration sheet not included?	pt1a		pt1b	M
SAMPLING PROCEDURES				
* *Leak Check*				
1.) Not conducted?	lc1a		lc1b	M
2.) Values not reported?	lc2a			M
3.) Pretest >0.02 cfm or 4% of average?	lc3a	lc3a	lc3a	R
4.) Post-test >0.02 cfm or 4% of average?	lc4a	lc4a	lc4a	R
* *Isokinetic Variation*				
1.) Sample not taken isokinetically?	is1a		is1b	M
2.) Isokinetic variation not reported?	is2a			M
3.) Isokinetic <90 or >110%?	is3a	is3a	is3a	R
* *Field Reagent Blank*				
1.) Not conducted for two filters and 0.1N NaOH?	rb1a		rb1b	M
2.) Not used to correct sample ?	rb2a		rb2b	M
* *Temperature*				
1.) Filter temperature not between 107 and 135 degrees?	tm1a		tm1b	M
* *Flow Rate*				
1.) Flow rate not reported?	fr1a			M
2.) Flow rate > 28 liter per minute (1 cfm)?	fr2a	fr2a	fr2a	R
ANALYSIS				
* Method				
1.) Atomic absorption spectrometry (AAS) not used?	mt1a		mt1b	M
2.) Combined analysis used ?	mt2a		mt2b	M

M-Method
R-Run
S-Substance

a-True
b-Not reported

CALCULATION CHECK FOR CARB METHOD 423 -

Device ID:

DATA ENTRY-SAMPLING	SYMBOL	UNITS	DATA
RUN NUMBER	-	-	
ROUND STACK, DIAMETER RECTANGULAR STACK, LENGTH WIDTH	ds L W	inches inches inches	
NOZZLE DIAMETER	dn	inches	
AVERAGE STACK TEMPERATURE	Fs	degrees F	
AVERAGE METER TEMPERATURE	Fm	degrees F	
BAROMETRIC PRESSURE	Pbar	in. Hg	
STACK STATIC PRESSURE	Pg	in. H20	
AVG. DELTA H	dH	in. H20	
AVG. RMS VELOCITY HEAD	dP	in. H20	
PITOT COEFFICIENT	Cp	-	
GAS SAMPLE VOLUME	Vm	cubic ft.	
METER CALIBRATION FACTOR	Y	-	
TOTAL SAMPLING TIME	min	minutes	
STACK GAS OXYGEN CONTENT	Co2,m	%	
STACK GAS CARBON DIOXIDE CONTENT	Cco2,m	%	
TOTAL IMPINGER GAIN (WATER & PARTICULATE)	Ww	grams	
CALCULATED DATA-SAMPLING			
RUN NUMBER	-	-	
NOZZLE AREA, An = 3.14(dn)**2/4	An	sq. in.	0.000
STACK AREA, As = 3.14*(ds)**2/576 (ROUND) = L * W/144 (RECTANGULAR)	As	sq. feet	0.000
AVG. STACK TEMPERATURE, Ts = Fs + 460	Ts	degrees R	460.0
AVG. METER TEMPERATURE, Tm = Fm + 460	Tm	degrees R	460.0
GAS SAMPLE VOLUME AT STANDARD CONDITIONS, VmStd = 17.64*Y*(Vm/Tm)*(Pbar + dH/13.6)	VmStd	cubic ft.	0.0
VOLUME OF WATER VAPOR, VwStd = 0.04707*Ww	VwStd	cubic ft.	0.0
MOISTURE FRACTION, Bws = VwStd/(VmStd + VwStd)	Bws	-	#DIV/0!
DRY STACK GAS MOL. WEIGHT, Md = 0.32(Co2,m)+ 0.44(Cco2,m)+0.28[100-(Co2,m)-(Cco2,m)]	Md	g/g-mole	28.00
WET STACK GAS MOLECULAR WEIGHT, Mw = Md(1-Bws)+18.0(Bws)	Mw	g/g-mole	#DIV/0!
ABSOLUTE STACK PRESSURE, Ps = Pbar + Pg/13.6	Ps	in. Hg	0.00
STACK GAS VELOCITY vs = 85.49 Cp [sqrt[(dP*Ts) /(Ps*Mw)]]	vs	ft/s	#DIV/0!
ACTUAL STACK GAS FLOW RATE, Q = 60*vs*As	Q	acf/min	#DIV/0!
DRY GAS STACK FLOW RATE (DRY,STP) Qsd = 17.64*Q*(1-Bws)*(Ps/Ts)	Qsd	dscf/min	#DIV/0!
ISOKINETIC RATE, I = 13.61*Ts*VmStd/[Ps*vs*An*min*(1-Bws)]	I	%	#DIV/0!
DATA ENTRY-ANALYTICAL			
TOTAL MASS OF ARSENIC IN SAMPLE TRAIN	Mass	mg	
TOTAL MASS OF ARSENIC IN FILTER REAGENT BLANKS	Masf	mg	
TOTAL MASS OF ARSENIC IN 0.1N NaOH REAGENT BLANK	Masoh	mg	
TOTAL MASS OF ARSENIC IN WATER REAGENT BLANK	Mash2o	mg	
CALCULATED DATA-OVERALL			
CORRECTED TOTAL AMOUNT OF ARSENIC Mas = Mass - Masf - Masoh - Mash2o	Mas	mg	0.000
CONCENTRATION OF ARSENIC MCas = (35.31*Mas)/Vmstd	MCas	mg/dscm	#DIV/0!
ARSENIC MASS EMISSION RATE Eas = ((Qsd*Mas)/Vmstd)*1.32e-4	Eas	lb/hr	#DIV/0!

SOURCE TEST METHOD DETAILED VALIDATION CHECKLIST

Test Method: CARB 424 - January, 1987
Substance: Inorganic Cadmium

Report ID Number: _____
Reviewer: _____
Review Date: _____

Method Description and Applicability

This method is applicable to the determination of inorganic cadmium emissions from stationary sources. Particulate and gaseous cadmium emissions are withdrawn isokinetically and collected on a filter and in a solution of nitric acid. The samples are then analyzed by atomic absorption spectrometry (direct aspiration method).

Quality Assurance/Quality Control Checks

Please complete the detailed checklist provided in the attached Table. If the statements are true, please circle "a"s or the corresponding run numbers; and if they are not reported, circle "a"s. In addition to completing the checklist please answer the following questions:

1.) What digestion method was used? _____
2.) Enter the digestion date(s). _____
3.) Number of Impingers: 0.1N HNO3 (2) __ Empty (1)__ Silica Gel (1) __

Blank Procedure

Please be sure that the blank data was applied and considered correctly. For this particular method, the absorbance reading from the sample needs to be corrected for the absorbance readings of the filter and nitric blanks. There is no criteria for the blank levels, they just need to be performed and corrected for the sample values.

Other Comments

_____

_____

Device ID:

SAMPLE LOCATION				
* *Swirl Check*				
1.) Not conducted?	sc1a		sc1b	M
2.) Average absolute value of angles > 10%?	sc2a		sc2b	M
* *Stack Size*				
1.) Enter stack diameter (inches).				M
2.) Stack diameter < 12 inch ? or	st2a		st2b	M
3.) Area <113 inch squared?	st3a		st3b	M
* *Number of Sample Points*				
1.) Enter total number of points.				M
2.) Method 1 not used?	ns2a		ns2b	M
SAMPLING EQUIPMENT				
* *Nozzle Size Check*				
1.) Not conducted prior to test?	nz1a		nz1b	M
2.) Variation in diameter > 0.004 inch?	nz2a		nz2b	M
* *Field Gas Dry Meter*				
1.) Not checked pre- and post-test?	gm1a		gm1b	M
2.) Pre- and post-test Y not within (+/-) 5%?	gm2a		gm2b	M
* *Pitot Tube*				
1.) Semi-annual calibration sheet not included?	pt1a		pt1b	M
SAMPLING PROCEDURES				
* *Leak Check*				
1.) Not conducted?	lc1a		lc1b	M
2.) Values not reported?	lc2a			M
3.) Pretest >0.02 cfm or 4% of average?	lc3a	lc3a	lc3a	R
4.) Post-test >0.02 cfm or 4% of average?	lc4a	lc4a	lc4a	R
* *Isokinetic Variation*				
1.) Sample not taken isokinetically?	is1a		is1b	M
2.) Isokinetic variation not reported?	is2a			M
3.) Isokinetic <90 or >110%?	is3a	is3a	is3a	R
* *Field Reagent Blank*				
1.) Not conducted for two filters and 0.1N HNO3?	rb1a		rb1b	M
2.) Not used to correct sample ?	rb2a		rb2b	M
ANALYSIS				
* *Method*				
1.) Atomic absorption spectrometry (AAS) not used?	mt1a		mt1b	M
2.) Not conducted in triplicate ?	mt2a		mt2b	M

M-Method
R-Run
S-Substance

a-True
b-Not reported

CALCULATION CHECK FOR CARB METHOD 424

Device ID:

DATA ENTRY-SAMPLING	SYMBOL	UNITS	DATA
RUN NUMBER	-	-	
ROUND STACK, DIAMETER	ds	inches	
RECTANGULAR STACK, LENGTH	L	inches	
WIDTH	W	inches	
NOZZLE DIAMETER	dn	inches	
AVERAGE STACK TEMPERATURE	Fs	degrees F	
AVERAGE METER TEMPERATURE	Fm	degrees F	
BAROMETRIC PRESSURE	Pbar	in. Hg	
STACK STATIC PRESSURE	Pg	in. H20	
AVG. DELTA H	dH	in. H20	
AVG. RMS VELOCITY HEAD	dP	in. H20	
PITOT COEFFICIENT	Cp	-	
GAS SAMPLE VOLUME	Vm	cubic ft.	
METER CALIBRATION FACTOR	Y	-	
TOTAL SAMPLING TIME	min	minutes	
STACK GAS OXYGEN CONTENT	Co2,m	%	
STACK GAS CARBON DIOXIDE CONTENT	Cco2,m	%	
TOTAL IMPINGER GAIN (WATER & PARTICULATE)	Ww	grams	
CALCULATED DATA-SAMPLING			
RUN NUMBER	-	-	0
NOZZLE AREA, An = 3.14(dn)**2/4	An	sq. in.	0.000
STACK AREA, As = 3.14*(ds)**2/576 (ROUND) = L * W/144 (RECTANGULAR)	As	_sq. feet	0.000
AVG. STACK TEMPERATURE, Ts = Fs + 460	Ts	degrees R	460.0
AVG. METER TEMPERATURE, Tm = Fm + 460	Tm	degrees R	460.0
GAS SAMPLE VOLUME AT STANDARD CONDITIONS, VmStd = 17.64*Y*(Vm/Tm)*(Pbar + dH/13.6)	VmStd	cubic ft.	0.0
VOLUME OF WATER VAPOR, VwStd = 0.04707*Ww	VwStd	cubic ft.	0.0
MOISTURE FRACTION, Bws = VwStd/(VmStd + VwStd)	Bws	-	#DIV/0!
DRY STACK GAS MOL. WEIGHT, Md = 0.32(Co2,m)+ 0.44(Cco2,m)+0.28[100-(Co2,m)-(Cco2,m)]	Md	g/g-mole	28.00
WET STACK GAS MOLECULAR WEIGHT, Mw = Md(1-Bws)+18.0(Bws)	Mw	g/g-mole	#DIV/0!
ABSOLUTE STACK PRESSURE, Ps = Pbar + Pg/13.6	Ps	in. Hg	0.00
STACK GAS VELOCITY vs = 85.49 Cp { sqrt[(dP*Ts) /(Ps*Mw)] }	vs	ft/s	#DIV/0!
ACTUAL STACK GAS FLOW RATE, Q = 60*vs*As	Q	acf/min	#DIV/0!
DRY GAS STACK FLOW RATE (DRY,STP) Qsd = 17.64*Q*(1-Bws)*(Ps/Ts)	Qsd	dscf/min	#DIV/0!
ISOKINETIC RATE, I = 13.61*Ts*VmStd/[Ps*vs*An*min*(1-Bws)]	I	%	#DIV/0!
DATA ENTRY-ANALYTICAL			
TOTAL MASS OF CADMIUM IN SAMPLE TRAIN	Mcd	mg	
CALCULATED DATA-OVERALL			
CONCENTRATION OF CADMIUM MCcd = (35.31*Mcd)/Vmstd	MCcd	mg/dscm	#DIV/0!
CADMIUM MASS EMISSION RATE Ecd = ((Qsd*Mcd)/Vmstd)*1.32e-4	Ecd	lb/hr	#DIV/0!

SOURCE TEST METHOD DETAILED VALIDATION CHECKLIST

Test Method: CARB 425 - January, 1987
Substance: Total and Hexavalent Chromium

Report ID Number: _____
Reviewer: _____
Review Date: _____

Method Description and Applicability

This method is applicable to the determination of total chromium and hexavalent chromium emissions from stationary sources. Particulate emissions are withdrawn isokinetically and collected on a filter and in DI water. The components of the collected sample are then split and analyzed. Analysis for hexavalent chromium is performed by a diphenylcarbazide colorimetric method after alkaline extraction. Total chromium is analyzed by a graphite furnace technique after acid digestion and dissolution.

Quality Assurance/Quality Control Checks

Please complete the detailed checklist provided in the attached Table. If the statements are true, please circle "a"s or the corresponding run numbers; and if they are not reported, circle "a"s.

Other Comments

_____
_____
_____
_____

Device ID:

SAMPLE LOCATION			
* *Swirl Check*			
1.) Not conducted?	sc1a	sc1b	M
2.) Average absolute value of angles > 10%?	sc2a	sc2b	M
* *Stack Size*			
1.) Enter stack diameter (inches).			
2.) Stack diameter < 12 inch ? or	st2a	st2b	M
3.) Area <113 inch squared?	st3a	st3b	M
* *Number of Sample Points*			
1.) Enter total number of points.			
2.) Method 1 not used?	ns2a	ns2b	M
SAMPLING EQUIPMENT			
* *Nozzle Size Check*			
1.) Not conducted prior to test?	nz1a	nz1b	M
2.) Variation in diameter > 0.004 inch?	nz2a	nz2b	M
* *Field Gas Dry Meter*			
1.) Not checked pre- and post-test?	gm1a	gm1b	M
2.) Pre- and post-test Y not within (+/-) 5%?	gm2a	gm2b	M
* *Pitot Tube*			
1.) Semi-annual calibration sheet not included?	pt1a	pt1b	M
SAMPLING PROCEDURES			
* *Leak Check*			
1.) Not conducted?	lc1a	lc1b	M
2.) Values not reported?	lc2a		M
3.) Pretest >0.02 cfm or 4% of average?	lc3a lc3a lc3a		R
4.) Post-test >0.02 cfm or 4% of average?	lc4a lc4a lc4a		R
* *Isokinetic Variation*			
1.) Sample not taken isokinetically?	is1a	is1b	M
2.) Isokinetic variation not reported?	is2a		M
3.) Isokinetic <90 or >110%?	is3a is3a is3a		R
* *Reagent Blank*			
1.) Not conducted once per sample batch?	rb1a	rb1b	M
2.) Used to correct sample?	rb2a	rb2b	M
ANALYSIS (Hexavalent Chromium)			
* *Matrix Spike*			
1.) Not conducted per test?	ms1a	ms1b	M
2.) Percent recovery not reported?	ms2a		M
3.) Was percent recovery > 10%?			
Hexavalent Chromium	ms3a ms3a ms3a		S
ANALYSIS (Total Chromium)			
* *Duplicates*			
1.) Not conducted for every 10 samples?	du1a	du1b	M
* *Matrix Spike*			
1.) Not conducted daily?	ms4a	ms4b	M

M-Method
R-Run
S-Substance

a-True
b-Not reported

CALCULATION CHECK FOR CARB METHOD 425-Jan 87

Device ID:

DATA ENTRY-SAMPLING	SYMBOL	UNITS	DATA
RUN NUMBER	-	-	
ROUND STACK, DIAMETER	ds	inches	
RECTANGULAR STACK, LENGTH	L	inches	
WIDTH	W	inches	
NOZZLE DIAMETER	dn	inches	
AVERAGE STACK TEMPERATURE	Fs	degrees F	
AVERAGE METER TEMPERATURE	Fm	degrees F	
BAROMETRIC PRESSURE	Pbar	in. Hg	
STACK STATIC PRESSURE	Pg	in. H20	
AVG. DELTA H	dH	in. H20	
AVG. RMS VELOCITY HEAD	dP	in. H20	
PITOT COEFFICIENT	Cp	-	
GAS SAMPLE VOLUME	Vm	cubic ft.	
METER CALIBRATION FACTOR	Y	-	
TOTAL SAMPLING TIME	min	minutes	
STACK GAS OXYGEN CONTENT	Co2,m	%	
STACK GAS CARBON DIOXIDE CONTENT	Cco2,m	%	
TOTAL IMPINGER GAIN (WATER & PARTICULATE)	Ww	grams	
CALCULATED DATA-SAMPLING			
RUN NUMBER	-	-	
NOZZLE AREA, An = 3.14(dn)**2/4	An	sq. in.	0.000
STACK AREA, As = 3.14*(ds)**2/576 (ROUND) = L * W/144 (RECTANGULAR)	As	sq. feet	0.000
AVG. STACK TEMPERATURE, Ts = Fs + 460	Ts	degrees R	460.0
AVG. METER TEMPERATURE, Tm = Fm + 460	Tm	degrees R	460.0
GAS SAMPLE VOLUME AT STANDARD CONDITIONS, VmStd = 17.64*Y*(Vm/Tm)*(Pbar + dH/13.6)	VmStd	cubic ft.	0.0
VOLUME OF WATER VAPOR, VwStd = 0.04707*Ww	VwStd	cubic ft.	0.0
MOISTURE FRACTION, Bws = VwStd/(VmStd + VwStd)	Bws	- -	#DIV/0!
DRY STACK GAS MOL. WEIGHT, Md = 0.32(Co2,m)+ 0.44(Cco2,m)+0.28[100-(Co2,m)-(Cco2,m)]	Md	g/g-mole	28.00
WET STACK GAS MOLECULAR WEIGHT, Mw = Md(1-Bws)+18.0(Bws)	Mw	g/g-mole	#DIV/0!
ABSOLUTE STACK PRESSURE, Ps = Pbar + Pg/13.6	Ps	in. Hg	0.00
STACK GAS VELOCITY vs = 85.49 Cp [sqrt[(dP*Ts) /(Ps*Mw)]]	vs	ft/s	#DIV/0!
ACTUAL STACK GAS FLOW RATE, Q = 60*vs*As	Q	acf/min	#DIV/0!
DRY GAS STACK FLOW RATE (DRY,STP) Qsd = 17.64*Q*(1-Bws)*(Ps/Ts)	Qsd	dscf/min	#DIV/0!
ISOKINETIC RATE, I = 13.61*Ts*VmStd/[Ps*vs*An*min*(1-Bws)]	I	%	#DIV/0!
DATA ENTRY-ANALYTICAL			
TOTAL HEXAVELENT CHROMIUM IN PROBE	Mpcr6	ug	
TOTAL HEXAVELENT CHROMIUM IN FILTER	Mfcr6	ug	
TOTAL HEXAVELENT CHROMIUM IN IMPINGERS	Micr6	ug	
TOTAL CHROMIUM IN PROBE	Mpcr	ug	
TOTAL CHROMIUM IN FILTER	Mfcr	ug	
TOTAL CHROMIUM IN IMPINGERS	Micr	ug	
CALCULATED DATA-OVERALL			
TOTAL HEXAVALENT CHROMIUM Mcr6 = Mpcr6 + Mfcr6 + Micr6	Mcr6	ug	0.000
TOTAL CHROMIUM Mcr = Mpcr + Mfcr + Micr	Mcr	ug	0.000
CONCENTRATION OF HEXAVELENT CHROMIUM Ccr6 = (35.31*Mcr6)/Vmstd	Ccr6	ug/dscm	#DIV/0!
CONCENTRATION OF TOTAL CHROMIUM Ccr = (35.31*Mcr)/Vmstd	Ccr	ug/dscm	#DIV/0!
HEXAVALENT CHROMIUM MASS EMISSION RATE Ecr6 = ((Qsd*Mcr6)/Vmstd)*1.32e-7	Ecr6	lb/hr	#DIV/0!
TOTAL CHROMIUM MASS EMISSION RATE Ecr = ((Qsd*Mcr)/Vmstd)*1.32e-7	Ecr	lb/hr	#DIV/0!

SOURCE TEST METHOD DETAILED VALIDATION CHECKLIST

Test Method: CARB 425 - September, 1990
Substance: Total and Hexavalent Chromium

Report ID Number: _____
Reviewer: _____
Review Date: _____

Method Description and Applicability

This method is applicable to the determination of total chromium and hexavalent chromium emissions from stationary sources. Particulate emissions are withdrawn isokinetically and collected in an alkaline medium. The components of the collected sample are then split and analyzed. Analysis for hexavalent chromium is performed by a diphenylcarbazide colorimetric method after alkaline extraction. Total chromium is analyzed by a graphite furnace technique after acid digestion and dissolution.

Quality Assurance/Quality Control Checks

Before preceding with the validation checklist, the method allows alternative procedures and analysis to be performed. The following questions will indicate which alternatives the contractor chose in order to perform the source test (circle correct answers).

1) Was total chromium quantified with this method? Yes No (if no, disregard all questions involving total chrome)
2) How was the hexavalent chromium analyzed? Colorimetric Ion Chromatography
3) How was the total chromium analyzed? Graphite Furnace Flame AAS
4) Were impinger catches analyzed combined or separate? Combined Separate
5) Which impinger catch was used to extract filter? Imp #1 Imp #2

Please complete the detailed checklist provided in the attached Tabl. If the statements are true, please circle "a"s or the corresponding run numbers; and if they are not reported, circle "b"s.

Blank Procedure

Please be sure that the blank data was applied and considered correctly. The absorbance reading from the reagent blank should be subtracted from the absorbance reading obtained from the field sample.

Other Comments

Device ID:

SAMPLE LOCATION			
* *Swirl Check*			
1.) Not conducted?	sc1a	sc1b	M
2.) Average absolute value of angles > 10%?	sc2a	sc2b	M
* *Stack Size*			
1.) Enter stack diameter (inches).			
2.) Stack diameter < 12 inch ? or	st2a	st2b	M
3.) Area <113 inch squared?	st3a	st3b	M
* *Number of Sample Points*			
1.) Enter total number of points.			
2.) Method 1 not used?	ns2a	ns2b	M
SAMPLING EQUIPMENT			
* *Nozzle Size Check*			
1.) Not conducted prior to test?	nz1a	nz1b	M
2.) Variation in diameter > 0.004 inch?	nz2a	nz2b	M
* *Field Gas Dry Meter*			
1.) Not checked pre- and post-test?	gm1a	gm1b	M
2.) Pre- and post-test Y not within (+/-) 5%?	gm2a	gm2b	M
* *Pitot Tube*			
1.) Semi-annual calibration sheet not included?	pt1a	pt1b	M
SAMPLING PROCEDURES			
* *Leak Check*			
1.) Not conducted?	lc1a	lc1b	M
2.) Values not reported?	lc2a		M
3.) Pretest >0.02 cfm or 4% of average?	lc3a lc3a	lc3a	R
4.) Post-test >0.02 cfm or 4% of average?	lc4a lc4a	lc4a	R
* *Isokinetic Variation*			
1.) Sample not taken isokinetically?	is1a	is1b	M
2.) Isokinetic variation not reported?	is2a		M
3.) Isokinetic <90 or >110%?	is3a is3a	is3a	R
* *Probe Proof*			
1.) Not conducted per prob?	pp1a	pp1b	M
2.) Value not reported ?	pp2a		M
3.) Total chrome > DL ?	pp3a pp3a	pp3a	S
* *Reagent Blank*			
1.) Not conducted one per sample batch?	rb1a	rb1b	M
2.) Not used to correct sample?	rb2a	rb2b	M
ANALYSIS (Hexavalent Chromium)			
* *Matrix Spik*			
1.) Not conducted per test?	ms1a	ms1b	M
2.) Percent recovery not reported?	ms2a		M
3.) Percent recovery > 10%?			
Hexavalent Chromium	ms3a ms3a	ms3a	S
ANALYSIS (Total Chromium)			
* *Duplicates*			
1.) Not conducted for every 10 samples?	du1a	du1b	M
* *Spikes*			
1.) Not conducted daily?	ms4a	ms4b	M

M-Method
R-Run
S-Substance

a-True
b-Not reported

CALCULATION CHECK FOR CARB METHOD 425-Sep 90

Device ID:

DATA ENTRY-SAMPLING	SYMBOL	UNITS	DATA
RUN NUMBER	-	-	
ROUND STACK, DIAMETER RECTANGULAR STACK, LENGTH WIDTH	ds L W	inches inches inches	
NOZZLE DIAMETER	dn	inches	
AVERAGE STACK TEMPERATURE	Fs	degrees F	
AVERAGE METER TEMPERATURE	Fm	degrees F	
BAROMETRIC PRESSURE	Pbar	in. Hg	
STACK STATIC PRESSURE	Pg	in. H20	
AVG. DELTA H	dH	in. H20	
AVG. RMS VELOCITY HEAD	dP	in. H20	
PITOT COEFFICIENT	Cp	-	
GAS SAMPLE VOLUME	Vm	cubic ft.	
METER CALIBRATION FACTOR	Y	-	
TOTAL SAMPLING TIME	min	minutes	
STACK GAS OXYGEN CONTENT	Co2,m	%	
STACK GAS CARBON DIOXIDE CONTENT	Cco2,m	%	
TOTAL IMPINGER GAIN (WATER & PARTICULATE)	Ww	grams	
CALCULATED DATA-SAMPLING			
RUN NUMBER	-	-	
NOZZLE AREA, An = 3.14(dn)**2/4	An	sq. in.	0.000
STACK AREA, As = 3.14*(ds)**2/576 (ROUND) = L * W/144 (RECTANGULAR)	As	sq. feet	0.000
AVG. STACK TEMPERATURE, Ts = Fs + 460	Ts	degrees R	460.0
AVG. METER TEMPERATURE, Tm = Fm + 460	Tm	degrees R	460.0
GAS SAMPLE VOLUME AT STANDARD CONDITIONS, VmStd = 17.64*Y*(Vm/Tm)*(Pbar + dH/13.6)	VmStd	cubic ft.	0.0
VOLUME OF WATER VAPOR, VwStd = 0.04707*Ww	VwStd	cubic ft.	0.0
MOISTURE FRACTION, Bws = VwStd/(VmStd + VwStd)	Bws	-	#DIV/0!
DRY STACK GAS MOL. WEIGHT, Md = 0.32(Co2,m)+ 0.44(Cco2,m)+0.28{100-(Co2,m)-(Cco2,m)}	Md	g/g-mole	28.00
WET STACK GAS MOLECULAR WEIGHT, Mw = Md(1-Bws)+18.0(Bws)	Mw	g/g-mole	#DIV/0!
ABSOLUTE STACK PRESSURE, Ps = Pbar + Pg/13.6	Ps	in. Hg	0.00
STACK GAS VELOCITY vs = 85.49 Cp { sqrt[(dP*Ts) /(Ps*Mw)] }	vs	ft/s	#DIV/0!
ACTUAL STACK GAS FLOW RATE, Q = 60*vs*As	Q	acf/min	#DIV/0!
DRY GAS STACK FLOW RATE (DRY,STP) Qsd = 17.64*Q*(1-Bws)*(Ps/Ts)	Qsd	dscf/min	#DIV/0!
ISOKINETIC RATE, I = 13.61*Ts*VmStd/[Ps*vs*An*min*(1-Bws)]	I	%	#DIV/0!
DATA ENTRY-ANALYTICAL			
TOTAL MASS OF HEXAVELENT CHROMIUM IN SAMPLE TRAIN	Mcr6	ug	
TOTAL MASS OF TOTAL CHROMIUM IN SAMPLE TRAIN	Mcr	ug	
CALCULATED DATA-OVERALL			
CONCENTRATION OF HEXAVELENT CHROMIUM Ccr6 = (35.31*Mcr6)/Vmstd	Ccr6	ug/dscm	#DIV/0!
CONCENTRATION OF TOTAL CHROMIUM Ccr = (35.31*Mcr)/Vmstd	Ccr	ug/dscm	#DIV/0!
HEXAVALENT CHROMIUM MASS EMISSION RATE Ecr6 = ((Qsd*Mcr6)/Vmstd)*1.32e-7	Ecr6	lb/hr	#DIV/0!
TOTAL CHROMIUM MASS EMISSION RATE Ecr = ((Qsd*Mcr)/Vmstd)*1.32e-7	Ecr	lb/hr	#DIV/0!

SOURCE TEST METHOD DETAILED VALIDATION CHECKLIST

Test Method: CARB 428-March, 1988
Substance: PCDD/PCDF

Report ID Number: _____
Reviewer: _____
Review Date: _____

Method Description and Applicability

This method is applicable to the determination of Polychlorinated Dibenzo-p-dioxin (PCDD) and Polychlorinated Dibenzofuran (PCDF) emissions from stationary sources. Particulate and gaseous phase PCDD, and PCDF are withdrawn isokinetically from the stack and collected on a filter, XAD-2 resin, or in impingers. The contents of the sample train are then extracted. Internal standards are added and the extracts are separated by high resolution gas chromatography (HRGS) and quantified by low resolution mass spectrometry (LRMS) or high resolution mass spectrometry (HRMS). Only total amounts of the analytes can be determined, partitioning of the analytes cannot be determined.

Quality Assurance/Quality Control Checks

Before completing the detailed QA checklist, please answer the following questions:

1) Sampling run IDs ---------- (428) Laboratory sample IDs ---------- (428)
---------- (429) ---------- (429)

2) Was the sample run ID the same for the Method 428 and 429 tests? Yes No

3) Was the Laboratory sample ID the same for Method 428 and 429 samples? Yes No
If the answer to either 2 or 3 is "Yes", check the source test report for further confirmation that Method 428 and 429 were modified for analysis of single sample.

4) Was a single sampling train used for both methods? Yes No

5) If the answer to #4 is "Yes"; **STOP**, do not evaluate these method.

Please complete the detailed checklist provided in the attached Table. If the statements are true, circle "a"s or the corresponding run numbers; and if they are not reported, circle "b"s.

Other Comments

Device ID:

SAMPLE LOCATION					
* *Swirl Check*					
1.) Not conducted?		sc1a		sc1b	M
2.) Average absolute value of angles > 10%?		sc2a		sc2b	M
* *Stack Size*					
1.) Enter stack diameter (inches).					
2.) Stack diameter < 12 inch ? or		st2a		st2b	M
3.) Area <113 inch squared?		st3a		st3b	M
* *Number of Sample Points*					
1.) Enter total number of points.					M
2.) Method 1 not used?		ns2a		ns2b	M
SAMPLING EQUIPMENT					
* *Nozzle Size Check*					
1.) Not conducted prior to test?		nz1a		nz1b	M
2.) Variation in diameter > 0.004 inch?		nz2a		nz2b	M
* *Field Gas Dry Meter*					
1.) Not checked pre- and post-test?		gm1a		gm1b	M
2.) Pre- and post-test Y not within (+/-) 5%?		gm2a		gm2b	M
* *Pitot Tube*					
1.) Semi-annual calibration sheet not included?		pt1a		pt1b	M
SAMPLING PROCEDURES					
* *Leak Check*					
1.) Not conducted?		lc1a		lc1b	M
2.) Values not reported?		lc2a			M
3.) Pretest >0.02 cfm or 4% of average?		lc3a	lc3a	lc3a	R
4.) Post-test >0.02 cfm or 4% of average?		lc4a	lc4a	lc4a	R
* *Sample Runs*					
1) Runs<3?		sr1a		sr1b	M
* *Sample Time*					
NR	1.) Runs < 3 hours?	sd1a	sd1a	sd1a	R
* *Isokinetic Variation*					
1.) Sample not taken isokinetically?		is1a		is1b	M
2.) Isokinetic variation not reported?		is2a			M
3.) Isokinetic <90 or >110%?		is3a	is3a	is3a	R
* *Field Blank*					
1.) Not conducted once per test?		fb1a		fb1b	M
2.) Used to correct sample?		fb2a		fb2b	M
* *Surrogate Standards*					
1.) Not conducted once per test?		ss1a		ss1b	M
2.) Spiked <1 run?		ss2a		ss2b	M
3.) Percent recovery <60 or >140%?					
NA	NR	37Cl-2,3,7,8-TCDD	ss3a	ss3a	ss3a	R
NA	NR	13C-1,2,3,4,6,7,8-HpCDF	ss4a	ss4a	ss4a	R

M-Method
R-Run
S-Substance

a-True
b-Not reported

ANALYSIS					
* *Laboratory Control Spike*					
1.) Not conducted every 20 samples or per site?		lq1a		lq1b	M
2.) Percent accuracy <60 or >140%?					
	NA	**PCDDs**			
	NA	2,3,7,8-TCDD	lq2a	lq2b	S
	NA	Total TCDD	lq2a	lq2b	S
	NA	1,2,3,7,8-PeCDD	lq2a	lq2b	S
	NA	Total PeCDD	lq2a	lq2b	S
	NA	1,2,3,4,7,8-HxCDD	lq2a	lq2b	S
	NA	1,2,3,6,7,8-HxCDD	lq2a	lq2b	S
	NA	1,2,3,7,8,9-HxCDD	lq2a	lq2b	S
	NA	Total HxCDD	lq2a	lq2b	S
	NA	1,2,3,4,6,7,8-HpCDD	lq2a	lq2b	S
	NA	Total HpCDD	lq2a	lq2b	S
	NA	Total OCDD	lq2a	lq2b	S
		PCBs			
	NA	Monochlorobiphenyls	lq2a	lq2b	S
	NA	Dichlorobiphenyls	lq2a	lq2b	S
	NA	Trichlorobiphenyls	lq2a	lq2b	S
	NA	Tetrachlorobiphenyls	lq2a	lq2b	S
	NA	Pentachlorobiphenyls	lq2a	lq2b	S
	NA	Hexachlorobiphenyls	lq2a	lq2b	S
	NA	Heptachlorobiphenyls	lq2a	lq2b	S
	NA	Octachlorobiphenyls	lq2a	lq2b	S
	NA	Nonachlorobiphenyls	lq2a	lq2b	S
		Decachlorobiphenyl	lq2a	lq2b	S
		PCDFs			
	NA	2,3,7,8-TCDF	lq2a	lq2b	S
	NA	Total TCDF	lq2a	lq2b	S
	NA	1,2,3,7,8-PeCDF	lq2a	lq2b	S
	NA	2,3,4,7,8-PeCDF	lq2a	lq2b	S
	NA	Total PeCDF	lq2a	lq2b	S
	NA	1,2,3,4,7,8-HxCDF	lq2a	lq2b	S
	NA	1,2,3,6,7,8-HxCDF	lq2a	lq2b	S
	NA	1,2,3,7,8,9-HxCDF	lq2a	lq2b	S
	NA	2,3,4,6,7,8-HxCDF	lq2a	lq2b	S
	NA	Total HxCDF	lq2a	lq2b	S
	NA	1,2,3,4,6,7,8-HpCDF	lq2a	lq2b	S
	NA	1,2,3,4,7,8,9-HpCDF	lq2a	lq2b	S
	NA	Total HpCDF	lq2a	lq2b	S
	NA	Total OCDF	lq2a	lq2b	S
* *Internal Standards*					
1.) Not conducted once per sample?		qs1a		qs1b	M
2.) Percent recovery <60 or >120%?					
NA	NR	13C-2,3,7,8-TCDD	qs2a	qs2a	qs2a	S
NA	NR	13C-1,2,3,7,8-PeCDD	qs2a	qs2a	qs2a	S
NA	NR	13C-1,2,3,6,7,8-HxCDD	qs2a	qs2a	qs2a	S
NA	NR	13C-1,2,3,4,6,7,8-HpCDD	qs2a	qs2a	qs2a	S
NA	NR	13C-OCDD	qs2a	qs2a	qs2a	S
NA	NR	13C-2,3,7,8-TCDF	qs2a	qs2a	qs2a	S

CALCULATION CHECK FOR CARB METHOD 428-March 88

Device ID:
Substance:

DATA ENTRY-SAMPLING	SYMBOL	UNITS	DATA
RUN NUMBER	-	-	
ROUND STACK, DIAMETER RECTANGULAR STACK, LENGTH WIDTH	ds L W	inches inches inches	
NOZZLE DIAMETER	dn	inches	
AVERAGE STACK TEMPERATURE	Fs	degrees F	
AVERAGE METER TEMPERATURE	Fm	degrees F	
BAROMETRIC PRESSURE	Pbar	in. Hg	
STACK STATIC PRESSURE	Pg	in. H20	
AVG. DELTA H	dH	in. H20	
AVG. RMS VELOCITY HEAD	dP	in. H20	
PITOT COEFFICIENT	Cp	-	
GAS SAMPLE VOLUME	Vm	cubic ft.	
METER CALIBRATION FACTOR	Y	-	
TOTAL SAMPLING TIME	min	minutes	
STACK GAS OXYGEN CONTENT	Co2,m	%	
STACK GAS CARBON DIOXIDE CONTENT	Cco2,m	%	
TOTAL IMPINGER GAIN (WATER & PARTICULATE)	Ww	grams	
CALCULATED DATA-SAMPLING			
RUN NUMBER	-	-	
NOZZLE AREA, An = 3.14(dn)**2/4	An	sq. in.	0.000
STACK AREA, As = 3.14*(ds)**2/576 (ROUND) = L * W/144 (RECTANGULAR)	As	sq. feet	0.000
AVG. STACK TEMPERATURE, Ts = Fs + 460	Ts	degrees R	460.0
AVG. METER TEMPERATURE, Tm = Fm + 460	Tm	degrees R	460.0
GAS SAMPLE VOLUME AT STANDARD CONDITIONS, VmStd = 17.64*Y*(Vm/Tm)*(Pbar + dH/13.6)	VmStd	cubic ft.	0.0
VOLUME OF WATER VAPOR, VwStd = 0.04707*Ww	VwStd	cubic ft.	0.0
MOISTURE FRACTION, Bws = VwStd/(VmStd + VwStd)	Bws	-	#DIV/0!
DRY STACK GAS MOL. WEIGHT, Md = 0.32(Co2,m)+ 0.44(Cco2,m)+0.28{100-(Co2,m)-(Cco2,m)}	Md	g/g-mole	28.00
WET STACK GAS MOLECULAR WEIGHT, Mw = Md(1-Bws)+18.0(Bws)	Mw	g/g-mole	#DIV/0!
ABSOLUTE STACK PRESSURE, Ps = Pbar + Pg/13.6	Ps	in. Hg	0.00
STACK GAS VELOCITY vs = 85.49 Cp { sqrt[(dP*Ts) /(Ps*Mw)] }	vs	ft/s	#DIV/0!
ACTUAL STACK GAS FLOW RATE, Q = 60*vs*As	Q	acf/min	#DIV/0!
DRY GAS STACK FLOW RATE (DRY,STP) Qsd = 17.64*Q*(1-Bws)*(Ps/Ts)	Qsd	dscf/min	#DIV/0!
ISOKINETIC RATE, I = 13.61*Ts*VmStd/[Ps*vs*An*min*(1-Bws)]	I	%	#DIV/0!
DATA ENTRY-ANALYTICAL			
TOTAL MASS OF ONE ANALYTE IN SAMPLE TRAIN	Ma	ng	
CALCULATED DATA-OVERALL			
CONCENTRATION OF ANALYTE Mc = (35.31*Ma)/Vmstd	Mc	ng/dscm	#DIV/0!
ANALYTE MASS EMISSION RATE Em = ((Qsd*Ma)/Vmstd)*1.32e-10	Em	lb/hr	#DIV/0!

SOURCE TEST METHOD DETAILED VALIDATION CHECKLIST

Test Method: CARB 428 - September, 1990
Substance: PCDD/PCDF and PCB's

Report ID Number: _____
Reviewer: _____
Review Date: _____

Method Description and Applicability

This method is applicable to the determination of Polychlorinated Dibenzo-p-dioxin (PCDD), Polychlorinated Dibenzofuran (PCDF) and Polychlorinated Biphenyl (PCB) emissions from stationary sources. Particulate and gaseous phase PCDD, PCDF, and PCB are withdrawn isokinetically from the stack and collected on a filter, XAD-2 resin, and in impingers. The contents of the sample train are then extracted and split, if both PCDD/PCDF and PCB are of interest. Internal standards are added and the extracts are separated by high resolution gas chromatography (HRGS) and quantified by low resolution mass spectrometry (LRMS). High resolution mass spectrometry (HRMS) is sometimes used to quantify PCDD/PCDF. Only total amounts of the analytes can be determined, partitioning of the analytes cannot be determined.

Quality Assurance/Quality Control Checks

Before completing the detailed QA checklist, please answer the following questions:

1) Sampling run IDs ---------- (428) Laboratory sample IDs ---------- (428)
---------- (429) ---------- (429)

2) Was the sample run ID the same for the Method 428 and 429 tests? Yes No

3) was the Laboratory sample ID the same for Method 428 and 429 samples? Yes No

If the answer to either 2 or 3 is "Yes", check the source test report for further confirmation that Method 428 and 429 were modified for analysis of single sample.

4) Was a single sampling train used for both method? Yes No

5) If the answer to #4 is "Yes"; **STOP**, do not evaluate these method.

Please complete the detailed checklist provided in the attached Table. If the statements are true, circle "a"s or the corresponding run numbers; and if they are not reported, circle "b"s.

Other Comments

Device ID:

SAMPLE LOCATION				
* Swirl Check				
1.) Not conducted?	sc1a	sc1b	M	
2.) Average absolute value of angles > 10%?	sc2a	sc2b	M	
* Stack Size				
1.) Enter stack diameter (inches).			M	
2.) Stack diameter < 12 inch ? or	st2a	st2b	M	
3.) Area <113 inch squared?	st3a	st3b	M	
* Number of Sample Points				
1.) Enter total number of points.			M	
2.) Method 1 not used?	ns2a	ns2b	M	
SAMPLING EQUIPMENT				
* Nozzle Size Check				
1.) Not conducted prior to test?	nz1a	nz1b	M	
2.) Variation in diameter > 0.004 inch?	nz2a	nz2b	M	
* Field Gas Dry Meter				
1.) Not checked pre- and post-test?	qm1a	qm1b	M	
2.) Pre- and post-test Y not within (+/-) 5%?	qm2a	qm2b	M	
* Pitot Tube				
1.) Semi-annual calibration sheet not included?	pt1a	pt1b	M	
SAMPLING PROCEDURES				
* Leak Check				
1.) Not conducted?	lc1a	lc1b	M	
2.) Values not reported?	lc2a		M	
3.) Pretest >0.02 cfm or 4% of average?	lc3a	lc3a lc3a	R	
4.) Post-test >0.02 cfm or 4% of average?	lc4a	lc4a lc4a	R	
* Sample Runs				
1) Runs<3?	sr1a	sr1b	M	
* Sample Time				
1.) Runs < 3 hours	sd1a	sd1a sd1a	R	
* Isokinetic				
1.) Sample not taken isokinetically?	is1a	is1b	M	
2.) Isokinetic variation not reported?	is2a		M	
3.) Isokinetic <90 or >110%?	is3a	is3a is3a	R	
* Field Blank				
1.) Not conducted once per test?	fb1a	fb1b	M	
2.) Used to correct sample?	fb2a	fb2b	M	
*Surrogate Standard				
1.) Not conducted once per run?	ss1a	ss1a ss1a	R	
2.) Not reported?	ss2a		M	
3a.) Percent recovery <60 or >140% (for LRMS)?				
NA NR 37Cl-2,3,7,8-TCDD	ss3a	ss3a ss3a	S	
NA NR 13C-1,2,3,7,8,9-HxCDD	ss3a	ss3a ss3a	S	
NA NR 13C-1,2,3,4,6,7,8-HpCDF	ss3a	ss3a ss3a	S	
3b.) Percent recovery <60 or >140% (for HRMS)?				
NA NR 37Cl-2,3,7,8-TCDD	ss4a	ss4a ss4a	S	
NA NR 13C-2,3,4,7,8-PeCDF	ss4a	ss4a ss4a	S	
NA NR 13C-1,2,3,7,8,9-HxCDD	ss4a	ss4a ss4a	S	
NA NR 13C-1,2,3,4,7,8-HxCDF	ss4a	ss4a ss4a	S	
NA NR 13C-1,2,3,4,6,7,8-HpCDF	ss4a	ss4a ss4a	S	

M-Method a-True
R-Run b-Not reported
S-Substance

ANALYSIS				
*Laboratory Control Spike				
1.) Not conducted every 20 samples or per site?	lq1a	lq1b	M	
2.) Was percent accuracy <60 or >140%?				
PCDDs				
NA 2,3,7,8-TCDD	lq2a	lq2b	S	
NA Total TCDD	lq2a	lq2b	S	
NA 1,2,3,7,8-PeCDD	lq2a	lq2b	S	
NA Total PeCDD	lq2a	lq2b	S	
NA 1,2,3,4,7,8-HxCDD	lq2a	lq2b	S	
NA 1,2,3,6,7,8-HxCDD	lq2a	lq2b	S	
NA 1,2,3,7,8,9-HxCDD	lq2a	lq2b	S	
NA Total HxCDD	lq2a	lq2b	S	
NA 1,2,3,4,6,7,8-HpCDD	lq2a	lq2b	S	
NA Total HpCDD	lq2a	lq2b	S	
NA Total OCDD	lq2a	lq2b	S	
PCBs				
NA Monochlorobiphenyls	lq2a	lq2b	S	
NA Dichlorobiphenyls	lq2a	lq2b	S	
NA Trichlorobiphenyls	lq2a	lq2b	S	
NA Tetrachlorobiphenyls	lq2a	lq2b	S	
NA Pentachlorobiphenyls	lq2a	lq2b	S	
NA Hexachlorobiphenyls	lq2a	lq2b	S	
NA Heptachlorobiphenyls	lq2a	lq2b	S	
NA Octachlorobiphenyls	lq2a	lq2b	S	
NA Nonachlorobiphenyls	lq2a	lq2b	S	
NA Decachlorobiphenyl	lq2a	lq2b	S	
PCDFs				
NA 2,3,7,8-TCDF	lq2a	lq2b	S	
NA Total TCDF	lq2a	lq2b	S	
NA 1,2,3,7,8-PeCDF	lq2a	lq2b	S	
NA 2,3,4,7,8-PeCDF	lq2a	lq2b	S	
NA Total PeCDF	lq2a	lq2b	S	
NA 1,2,3,4,7,8-HxCDF	lq2a	lq2b	S	
NA 1,2,3,6,7,8-HxCDF	lq2a	lq2b	S	
NA 1,2,3,7,8,9-HxCDF	lq2a	lq2b	S	
NA 2,3,4,6,7,8-HxCDF	lq2a	lq2b	S	
NA Total HxCDF	lq2a	lq2b	S	
NA 1,2,3,4,6,7,8-HpCDF	lq2a	lq2b	S	
NA 1,2,3,4,7,8,9-HpCDF	lq2a	lq2b	S	
NA Total HpCDF	lq2a	lq2b	S	
NA Total OCDF	lq2a	lq2b	S	
Internal Standards (LRMS)				
NA 1.) Not conducted once per sample?	qs1a	qs1b	M	
NA 2.) Values not reported?	qs2a		M	
3.) Was percent accuracy <40 or >120%?				
NA NR 13C-2,3,7,8-TCDD	qs4a	qs4a qs4a	S	
NA NR 13C-1,2,3,7,8-PeCDD	qs4a	qs4a qs4a	S	
NA NR 13C-1,2,3,6,7,8-HxCDD	qs4a	qs4a qs4a	S	
NA NR 13C-1,2,3,4,6,7,8-HpCDD	qs4a	qs4a qs4a	S	
NA NR 13C-OCDD	qs4a	qs4a qs4a	S	
NA NR 13C-2,3,7,8-TCDF	qs4a	qs4a qs4a	S	
Internal Standards (HRMS)				
NA 1.) Not conducted once per sample?	qs1a	qs1b	M	
NA 2.) Values not reported?	qs2a		M	
3.) Was percent accuracy <40 or >120%?				
NA NR 13C-2,3,7,8-TCDD	qs3a	qs3a qs3a	S	
NA NR 13C-1,2,3,7,8-PeCDD	qs3a	qs3a qs3a	S	
NA NR 13C-1,2,3,6,7,8-HxCDD	qs3a	qs3a qs3a	S	
NA NR 13C-1,2,3,4,6,7,8-HpCDD	qs3a	qs3a qs3a	S	
NA NR 13C-OCDD	qs3a	qs3a qs3a	S	
NA NR 13C-2,3,7,8-TCDF	qs3a	qs3a qs3a	S	
NA NR 13C-1,2,3,7,8-PeCDF	qs3a	qs3a qs3a	S	
NA NR 13C-1,2,3,6,7,8-HxCDF	qs3a	qs3a qs3a	S	
NA NR 13C-1,2,3,4,7,8,9-HpCDF	qs3a	qs3a qs3a	S	

CALCULATION CHECK FOR CARB METHOD 428-Sep 90

Device ID:

Substance:

DATA ENTRY-SAMPLING	SYMBOL	UNITS	DATA
RUN NUMBER	-	-	
ROUND STACK, DIAMETER	ds	inches	
RECTANGULAR STACK, LENGTH	L	inches	
WIDTH	W	inches	
NOZZLE DIAMETER	dn	inches	
AVERAGE STACK TEMPERATURE	Fs	degrees F	
AVERAGE METER TEMPERATURE	Fm	degrees F	
BAROMETRIC PRESSURE	Pbar	in. Hg	
STACK STATIC PRESSURE	Pg	in. H20	
AVG. DELTA H	dH	in. H20	
AVG. RMS VELOCITY HEAD	dP	in. H20	
PITOT COEFFICIENT	Cp	-	
GAS SAMPLE VOLUME	Vm	cubic ft.	
METER CALIBRATION FACTOR	Y	-	
TOTAL SAMPLING TIME	min	minutes	
STACK GAS OXYGEN CONTENT	Co2,m	%	
STACK GAS CARBON DIOXIDE CONTENT	Cco2,m	%	
TOTAL IMPINGER GAIN (WATER & PARTICULATE)	Ww	grams	
CALCULATED DATA-SAMPLING			
RUN NUMBER	-	-	0
NOZZLE AREA, An = 3.14(dn)**2/4	An	sq. in.	0.000
STACK AREA, As = 3.14*(ds)**2/576 (ROUND) = L * W/144 (RECTANGULAR)	As	sq_feet	0.000
AVG. STACK TEMPERATURE, Ts = Fs + 460	Ts	degrees R	460.0
AVG. METER TEMPERATURE, Tm = Fm + 460	Tm	degrees R	460.0
GAS SAMPLE VOLUME AT STANDARD CONDITIONS, VmStd = 17.64*Y*(Vm/Tm)*(Pbar + dH/13.6)	VmStd	cubic ft.	0.0
VOLUME OF WATER VAPOR, VwStd = 0.04707*Ww	VwStd	cubic ft.	0.0
MOISTURE FRACTION, Bws = VwStd/(VmStd + VwStd)	Bws	-	#DIV/0!
DRY STACK GAS MOL. WEIGHT, Md = 0.32(Co2,m)+ 0.44(Cco2,m)+0.28{100-(Co2,m)-(Cco2,m)]	Md	g/g-mole	28.00
WET STACK GAS MOLECULAR WEIGHT, Mw = Md(1-Bws)+18.0(Bws)	Mw	g/g-mole	#DIV/0!
ABSOLUTE STACK PRESSURE, Ps = Pbar + Pg/13.6	Ps	in. Hg	0.00
STACK GAS VELOCITY vs = 85.49 Cp { sqrt[(dP*Ts) /(Ps*Mw)] }	vs	ft/s	#DIV/0!
ACTUAL STACK GAS FLOW RATE, Q = 60*vs*As	Q	acf/min	#DIV/0!
DRY GAS STACK FLOW RATE (DRY,STP) Qsd = 17.64*Q*(1-Bws)*(Ps/Ts)	Qsd	dscf/min	#DIV/0!
ISOKINETIC RATE, I = 13.61*Ts*VmStd/[Ps*vs*An*min*(1-Bws)]	I	%	#DIV/0!
DATA ENTRY-ANALYTICAL			
TOTAL MASS OF ONE ANALYTE IN SAMPLE TRAIN	Ma	ng	
CALCULATED DATA-OVERALL			
CONCENTRATION OF ANALYTE Mc = (35.31*Ma)/Vmstd	Mc	ng/dscm	#DIV/0!
ANALYTE MASS EMISSION RATE Em = ((Qsd*Ma)/Vmstd)*1.32e-10	Em	lb/hr	#DIV/0!

SOURCE TEST METHOD DETAILED VALIDATION CHECKLIST

Test Method: CARB 429 - September, 1989
Substance: PAH

Report ID Number: _____
Reviewer: _____
Review Date: _____

Method Description and Applicability

This method is applicable to the determination of Polycyclic Aromatic Hydrocarbons (PAH) emissions from stationary sources. Particulate and gaseous phase PAH are withdrawn isokinetically from the stack and collected on a filter, XAD-2 resin, and in impingers. The contents of the sample train are then extracted. Internal standards are added and the extracts are separated by high resolution gas chromatography (HRGS) and quantified by low resolution mass spectrometry (LRMS) or high resolution mass spectrometry (HRMS). Only total amounts of the analytes can be determined, partitioning of the analytes cannot be determined.

Quality Assurance/Quality Control Checks

Before completing the detailed QA checklist, please answer the following questions:

1) Sampling run IDs ---------- (428) Laboratory sample IDs ---------- (428)
---------- (429) ---------- (429)

2) Was the sample run ID the same for the Method 428 and 429 tests? Yes No

3) was the Laboratory sample ID the same for Method 428 and 429 samples? Yes No

If the answer to either 2 or 3 is "Yes", check the source test report for further confirmation that Method 428 and 429 were modified for analysis of single sample.

4) Was a single sampling train used for both method? Yes No

5) If the answer to #4 is "Yes"; **STOP**, do not evaluate these method.

6) Was a Teflon coated glass fiber or Teflon membrane filter used? Yes No

7) If the answer to #6 is "No"; **STOP**, do not evaluate these method.

Please complete the detailed checklist provided in the attached Table. If the statements are true, circle "a"s or the corresponding run numbers; and if they are not reported, circle "b"s.

Other Comments

Device ID:

SAMPLE LOCATION				
* *Swirl Check*				
1.) Not conducted?	sc1a		sc1b	M
2.) Average absolute value of angles > 10%?	sc2a		sc2b	M
* *Stack Size*				
1.) Enter stack diameter (inches).				M
2.) Stack diameter < 12 inch ? or	st2a		st2b	M
3.) Area <113 inch squared?	st3a		st3b	M
* *Number of Sample Points*				
1.) Enter total number of points.				M
2.) Method 1 not used?	ns2a		ns2b	M
SAMPLING EQUIPMENT				
* *Nozzle Size Check*				
1.) Not conducted prior to test?	nz1a		nz1b	M
2.) Variation in diameter > 0.004 inch?	nz2a		nz2b	M
* *Field Gas Dry Meter*				
1.) Not checked pre- and post-test?	gm1a		gm1b	M
2.) Pre- and post-test Y not within (+/-) 5%?	gm2a		gm2b	M
* *Pitot Tube*				
1.) Semi-annual calibration sheet not included?	pt1a		pt1b	M
SAMPLING PROCEDURES				
* *Leak Check*				
1.) Not conducted?	lc1a		lc1b	M
2.) Values not reported?	lc2a			M
3.) Pretest >0.02 cfm or 4% of average?	lc3a	lc3a	lc3a	R
4.) Post-test >0.02 cfm or 4% of average?	lc4a	lc4a	lc4a	R
* *Sample Runs*				
1) Runs < 3?	sr1a		sr1b	M
* *Isokinetic Variation*				
1.) Sample not taken isokinetically?	is1a		is1b	M
2.) Isokinetic variation not reported?	is2a			M
3.) Isokinetic <90 or >110%?	is3a	is3a	is3a	R
* *Field Blank*				
1.) Not conducted once per test?	fb1a		fb1b	M
2.) Used to correct sample?	fb2a		fb2b	M
* *Surrogate Standards*				
1.) Not conducted once per run?	ss1a		ss1b	M
2.) Values not reported?	ss2a			M
3.) Percent recovery <50 or >150% ?				
NA NR d10-methylnaphthalene	ss3a	ss3a	ss3a	R

M-Method a-True
R-Run b-Not reported
S-Substance

ANALYSIS						
* *Analysis Date*						
1.) Not within 40 days of extraction?			ad1a		ad1b	M
* *Extraction Date*						
1.) Not within 7 days of collection			ed1a		ed1b	M
**Laboratory Control*						
1.) Not conducted every 20 samples?			lq1a		lq1b	M
2.) Percent accuracy <50 or >150%?						
NA acenaphthene			lq2a		lq2b	S
NA acenaphtheylene			lq2a		lq2b	S
NA anthracene			lq2a		lq2b	S
NA benz[a]anthracene			lq2a		lq2b	S
NA benzo[b]fluoranthene			lq2a		lq2b	S
NA benzo[a]pyrene			lq2a		lq2b	S
NA benzo[g,h,i]pyrene			lq2a		lq2b	S
NA chrysene			lq2a		lq2b	S
NA dibenz[a,h]anthracene			lq2a		lq2b	S
NA fluoranthene			lq2a		lq2b	S
NA fluorene			lq2a		lq2b	S
NA indeno[1,2,3-c,d]pyrene			lq2a		lq2b	S
NA naphthalene			lq2a		lq2b	S
NA phenantherene			lq2a		lq2b	S
NA pyrene			lq2a		lq2b	S
NA benzo[k]fluoranthene			lq2a		lq2b	S
NA benzo[b+k]fluoranthene			lq2a		lq2b	S
**Internal Standards*						
1.) Not conducted once per sample?			qs1a		qs1b	M
2.) Values not reported?			qs2a			M
3.) Percent accuracy <50 or >150%?						
NA NR d8-acenaphtheylene			qs3a	qs3a	qs3a	S
NA NR d8-naphthalene			qs3a	qs3a	qs3a	S
NA NR d10-acenaphthene			qs3a	qs3a	qs3a	S
NA NR d10-anthracene			qs3a	qs3a	qs3a	S
NA NR d10-fluoranthene			qs3a	qs3a	qs3a	S
NA NR d10-fluorene			qs3a	qs3a	qs3a	S
NA NR d10-phenantherene			qs3a	qs3a	qs3a	S
NA NR d10-pyrene			qs3a	qs3a	qs3a	S
NA NR d12-benz[a]anthracene			qs3a	qs3a	qs3a	S
NA NR d12-benzo[a]pyrene			qs3a	qs3a	qs3a	S
NA NR d12-benzo[b]fluoranthene			qs3a	qs3a	qs3a	S
NA NR d12-benzo[g,h,i]pyrene			qs3a	qs3a	qs3a	S
NA NR d12-benzo[k]fluoranthene			qs3a	qs3a	qs3a	S
NA NR d12-chrysene			qs3a	qs3a	qs3a	S

CALCULATION CHECK FOR CARB METHOD 429

Device ID:

Substance:

DATA ENTRY-SAMPLING	SYMBOL	UNITS	DATA
RUN NUMBER	-	-	
ROUND STACK, DIAMETER RECTANGULAR STACK, LENGTH WIDTH	ds L W	inches inches inches	
NOZZLE DIAMETER	dn	inches	
AVERAGE STACK TEMPERATURE	Fs	degrees F	
AVERAGE METER TEMPERATURE	Fm	degrees F	
BAROMETRIC PRESSURE	Pbar	in. Hg	
STACK STATIC PRESSURE	Pg	in. H20	
AVG. DELTA H	dH	in. H20	
AVG. RMS VELOCITY HEAD	dP	in. H20	
PITOT COEFFICIENT	Cp	-	
GAS SAMPLE VOLUME	Vm	cubic ft.	
METER CALIBRATION FACTOR	Y	-	
TOTAL SAMPLING TIME	min	minutes	
STACK GAS OXYGEN CONTENT	Co2,m	%	
STACK GAS CARBON DIOXIDE CONTENT	Cco2,m	%	
TOTAL IMPINGER GAIN (WATER & PARTICULATE)	Ww	grams	
CALCULATED DATA-SAMPLING			
RUN NUMBER	-	-	0
NOZZLE AREA, An = 3.14(dn)**2/4	An	sq. in.	0.000
STACK AREA, As = 3.14*(ds)**2/576 (ROUND) = L * W/144 (RECTANGULAR)	As	sq. feet	0.000
AVG. STACK TEMPERATURE, Ts = Fs + 460	Ts	degrees R	460.0
AVG. METER TEMPERATURE, Tm = Fm + 460	Tm	degrees R	460.0
GAS SAMPLE VOLUME AT STANDARD CONDITIONS, VmStd = 17.64*Y*(Vm/Tm)*(Pbar + dH/13.6)	VmStd	cubic ft.	0.0
VOLUME OF WATER VAPOR, VwStd = 0.04707*Ww	VwStd	cubic ft.	0.0
MOISTURE FRACTION, Bws = VwStd/(VmStd + VwStd)	Bws	-	#DIV/0!
DRY STACK GAS MOL. WEIGHT, Md = 0.32(Co2,m)+ 0.44(Cco2,m)+0.28{100-(Co2,m)-(Cco2,m)]	Md	g/g-mole	28.00
WET STACK GAS MOLECULAR WEIGHT, Mw = Md(1-Bws)+18.0(Bws)	Mw	g/g-mole	#DIV/0!
ABSOLUTE STACK PRESSURE, Ps = Pbar + Pg/13.6	Ps	in. Hg	0.00
STACK GAS VELOCITY vs = 85.49 Cp { sqrt[(dP*Ts) /(Ps*Mw)] }	vs	ft/s	#DIV/0!
ACTUAL STACK GAS FLOW RATE, Q = 60*vs*As	Q	acf/min	#DIV/0!
DRY GAS STACK FLOW RATE (DRY,STP) Qsd = 17.64*Q*(1-Bws)*(Ps/Ts)	Qsd	dscf/min	#DIV/0!
ISOKINETIC RATE, I = 13.61*Ts*VmStd/[Ps*vs*An*min*(1-Bws)]	I	%	#DIV/0!
DATA ENTRY-ANALYTICAL			
TOTAL MASS OF ONE ANALYTE IN SAMPLE TRAIN	Ma	ng	
CALCULATED DATA-OVERALL			
CONCENTRATION OF ANALYTE Mc = (35.31*Ma)/Vmstd	Mc	ng/dscm	#DIV/0!
ANALYTE MASS EMISSION RATE Em = ((Qsd*Ma)/Vmstd)*1.32e-10	Em	lb/hr	#DIV/0!

Revised: 11/30/95

CARB 429

SOURCE TEST METHOD DETAILED VALIDATION CHECKLIST

Test Method: CARB 430-September, 1989
Substance: Formaldehyde

Report ID Number: _____
Reviewer: _____
Review Date: _____

Method Description and Applicability

This method is applicable to the determination of formaldehyde emissions from stationary sources. Gaseous emissions are drawn through a Teflon sample line and two impingers in series, each impinger containing an aqueous acidic solution of 2,4-dinitrophenyl-hydrazine (DNPH). An aldehyde reacts with DNPH by nucleophilic addition on the carbonyl followed by 1,2-elimination of water and the formation of a 2,4-dinitrophenylhydrazone. The sample is then extracted and analyzed using reverse phase HPLC with an ultraviolet absorption detector.

Quality Assurance/Quality Control Checks

Please complete the detailed checklist provided in the attached Table. If the statements are true, circle "a"s or the corresponding run numbers; and if they are not reported, circle "b"s.

Other Comments

_____
_____
_____
_____

Device ID:

SAMPLING EQUIPMENT				
** Field Gas Dry Meter*				
1.) Not checked pre- and post-test?	gm1a		gm1b	M
2.) Pre- and post-test Y not within (+/-) 5%?	gm2a		gm2b	M
SAMPLING PROCEDURES				
** Flow Rate*				
1.) Not conducted per run?	fr1a		fr1b	M
2.) Values not reported?	fr2a			M
3.) Runs > 1.0 L / min?	fr3a	fr3a	fr3a	R
4.) Pre-test and post-test not within 15% per run?	fr4a	fr4a	fr4a	R
** Leak Checks*				
1.) Not conducted per test?	lc1a		lc1b	M
2.) Indication of flow?	lc2a		lc2b	M
** Sample Runs*				
NR 1.) Runs < 3?	sr1a	sr1a	sr1a	R
** Field Blank*				
1.) Not conducted once per test?	fb1a		fb1b	M
2.) Not conducted on 2 impingers?	fb2a		fb2b	M
3.) Used to correct sample?	fb3a		fb3b	M
**Field Spike*				
NR 1.) Not conducted once per run?	fs1a	fs1a	fs1a	R
ANALYSIS				
** Extraction Date*				
1.) Not within 7 days of collection, each sample?	ed1a		ed1b	M
** Analysis Date*				
1.) Not within 30 days of extraction, each sample?	ad1a		ad1b	M
**Sampling Method*				
1.) Reverse phase HPLC not used?	mt1a		mt1b	M
** Matrix Spike*				
1.) Not conducted per test?	ms1a		ms1b	M
2.) Not reported?	ms2a			M

M-Method
R-Run
S-Substance

a-True
b-Not reported

CALCULATION CHECK FOR CARB 430-Sept 89

DATA ENTRY	SYMBOL	UNITS	DATA
RUN NUMBER	-	-	
AVERAGE METER TEMPERATURE	Fm	degree F	
BAROMETRIC PRESSURE	Pbar	in. Hg	
AVG. DELTA H	dH	in. H20	
GAS SAMPLE VOLUME	Vm	cubic ft.	
METER CALIBRATION FACTOR	Y	-	
TOTAL SAMPLING TIME	min	minutes	
SAMPLE WEIGHTS (1ST IMPINGER)			
Formaldehyde	Swt,1	µg	
SAMPLE WEIGHTS (2ND IMPINGER)			
Formaldehyde	Swt,2	µg	

CALCULATED DATA	SYMBOL	UNITS	DATA
RUN NUMBER	-	-	0.00
AVG. METER TEMPERATURE, Tm = Fm + 460	Tm	degrees R	460.00
GAS SAMPLE VOLUME AT STANDARD CONDITIONS, VmStd = 17.64Y (Vm/Tm) (Pbar + dH/13.6)	VmStd	dscm	0.000

SAMPLE CONCENTRATIONS Cc,1 = (Swt,1 + Swt,2) / Vmstd

RUN NUMBER	-	-	0.00
Formaldehyde	Cc,1	ng/dscm	#DIV/0!

SAMPLE CONCENTRATIONS Cc,2 = Cc,1 * 24.05/30

RUN NUMBER	-	-	0.00
Formaldehyde	Cc,2	ppbv	#DIV/0!

11/14/94

SOURCE TEST METHOD DETAILED VALIDATION CHECKLIST

Test Method: CARB 430 - December, 1991
Substance: Formaldehyde and Acetaldehyde

Report ID Number: _____
Reviewer: _____
Review Date: _____

Method Description and Applicability

This method is applicable to the determination of formaldehyde and acetaldehyde emissions from stationary sources. Gaseous emissions are drawn through a Teflon sample line and two impingers in series , each impinger containing an aqueous acidic solution of 2,4-dinitrophenyl-hydrazine (DNPH). The sample line is rinsed with another aliquot of the same solution. An aldehyde reacts with DNPH by nucleophilic addition on the carbonyl followed by 1,2-elimination of water and the formation of a 2,4-dinitrophenylhydrazone. The sample is then extracted and analyzed using reverse phase HPLC with an ultraviolet absorption detector.

Quality Assurance/Quality Control Checks

Please complete the detailed checklist provided in the attached Table. If the statements are true, circle "a"s or the corresponding run numbers; and if they are not reported, circle "b"s.

Blank Procedure

The average of the three field blanks should be used to calculate the sample/blank ratios. **If the ratios are greater than five, the field blank is subtracted off of the field samples. If the ratios are equal to or less than five, the reporting limit should be reported. The reporting limit is equal to the average field blank times 5.**

Other Comments

_____
_____
_____
_____

Device ID:

SAMPLING EQUIPMENT							
* *Calibration Check*							
1.) Not conducted for each rotometer?				cc1a		cc1b	M
2.) Calibration sheet not included?				cc2a		cc2b	M
SAMPLING PROCEDURES							
* *Sample flow*							
1.) Not conducted per run?				fr1a		fr1b	M
2.) Values not reported?				fr2a			M
3.) Runs > 1.0 L / min?				fr3a	fr3a	fr3a	R
4.) Pre-test and post-test not within 15% per run?				fr4a	fr4a	fr4a	R
* *Leak Checks*							
1.) Not conducted per test?				lc1a		lc1b	M
2.) Indication of flow?				lc2a		lc2b	M
* *Sample Runs*							
1.) Runs < 3?				sr1a		sr1b	M
* *Sampling Date*							
1.) Not within 2 days of reagent blank contaminatin check?				sd1a		sd1b	M
* *Field Blank*							
1.) Not conducted three per test?				fb1a		fb1b	M
2a.) Reporting limit not given?(Sample / Field Blank <5)							
	NA	NR	formaldehyde	fb2a	fb2a	fb2a	S
	NA	NR	acetaldehyde	fb2a	fb2a	fb2a	S
	NA	NR	acrolein	fb2a	fb2a	fb2a	S
2b.) Sample not corrected?(Sample / Field Blank >5)							
	NA	NR	formaldehyde	fb3a	fb3a	fb3a	S
	NA	NR	acetaldehyde	fb3a	fb3a	fb3a	S
	NA	NR	acrolein	fb3a	fb3a	fb3a	S
ANALYSIS							
* *Extraction Date*							
1.) Not within 7 days of collection, each sample?				ed1a		ed1b	M
* *Analysis Date*							
1.) Not within 30 days of extraction, each sample?				ad1a		ad1b	M
*Sampling Method							
1.) Reverse phase HPLC not used?				mt1a		mt1b	M
* *Impinger Analysis*							
1.) Not analyzed seperately?				im1a		im1b	M
* *Matrix Spike*							
1.) Not conducted per test?				ms1a		ms1b	M
2.) Not reported ?				ms2a		ms2b	M

M-Method
R-Run
S-Substance

a-True
b-Not reported

Device ID:

DATA ENTRY	SYMBOL	UNITS		DATA		DATA		DATA			
RUN NUMBER	-	-		R1		R2		R3		AVE	RSD
AVERAGE METER TEMPERATURE	Fm	degree F								#DIV/0!	#DIV/0!
BAROMETRIC PRESSURE	Pbar	in. Hg								#DIV/0!	#DIV/0!
AVG. DELTA H	dH	in. H20								#DIV/0!	#DIV/0!
GAS SAMPLE VOLUME	Vm	cubic ft.								#DIV/0!	#DIV/0!
METER CALIBRATION FACTOR	Y	-								#DIV/0!	#DIV/0!
TOTAL SAMPLING TIME	min	minutes								#DIV/0!	#DIV/0!
SAMPLE 1ST IMPINGER VOLUME	Siwt.1	ml								#DIV/0!	#DIV/0!
SAMPLE 2ND IMPINGER VOLUME	Siwt.2	ml								#DIV/0!	#DIV/0!
BLANK 1ST IMPINGER VOLUME	Biwt.1	ml								#DIV/0!	#DIV/0!
BIANK 2ND IMPINGER VOLUME	Biwt.2	ml								#DIV/0!	#DIV/0!
SAMPLE WEIGHTS (1ST IMPINGER)											
Formaldehyde	Swt.1	µg								#DIV/0!	#DIV/0!
SAMPLE WEIGHTS (2ND IMPINGER)											
Formaldehyde	Swt.2	µg								#DIV/0!	#DIV/0!
BLANK WEIGHTS (1ST IMPINGER)											
Formaldehyde	Bwt.1	µg								#DIV/0!	#DIV/0!
BLANK WEIGHTS (2ND IMPINGER)											
Formaldehyde	Bwt.2	µg								#DIV/0!	#DIV/0!

CALCULATED DATA	SYMBOL	UNITS		DATA		DATA		DATA			
RUN NUMBER	-	-		R1		R2		R3		AVE	RSD
AVG. METER TEMPERATURE. Tm = Fm + 460	Tm	degrees R		460.00		460.00		460.00		460.00	0.00
GAS SAMPLE VOLUME AT STANDARD CONDITIONS. VmStd = 17.64Y (Vm/Tm) (Pbar + dH/13.6)	VmStd	dscm		0.000		0.000		0.000		0.000	#DIV/0!

SAMPLE IMPINGER CONCENTRATION (ng/ml). S or Bic= 1000*(S or Bwt.1+S or Bwt.2)/(S or Biwt.1+S or Biwt.2)

RUN NUMBER	-	-		R1		R2		R3		AVE	RSD
SAMPLE											
Formaldehyde	Sic	ng/ml		#DIV/0!		#DIV/0!		#DIV/0!		#DIV/0!	#DIV/0!
BLANK											
Formaldehyde	Bic	ng/ml		#DIV/0!		#DIV/0!		#DIV/0!		#DIV/0!	#DIV/0!

BLANK TO SAMPLE RATIO. Br=Sic/Average(Bic)

RUN NUMBER	-	-		R1		R2		R3		AVE	RSD
RATIO											
Formaldehyde	Br		###	#DIV/0!	###	#DIV/0!	###	#DIV/0!		#DIV/0!	#DIV/0!

CORRECTED SAMPLE CONCENTRATION (ng/ml) Br>5 Cic=Sic-Average(Bic); Br<5 Cic=5*Average(Bic)

RUN NUMBER	-	-		R1		R2		R3		AVE	RSD
SAMPLE											
Formaldehyde	Cic	ng/ml	### ###	#DIV/0!	### ###	#DIV/0!	### ###	#DIV/0!	### ###	#DIV/0!	#DIV/0!

CORRECTED SAMPLE CONCENTRATION 1 (mg/dscm). Cc.1=Cic*(Swt.1+Swt.2)/VmStd/1e06

RUN NUMBER	-	-		R1		R2		R3		AVE	RSD
SAMPLE											
Formaldehyde	Cc.1	mg/dscm	### ###	#DIV/0!	### ###	#DIV/0!	### ###	#DIV/0!	### ###	#DIV/0!	#DIV/0!

CORRECTED SAMPLE CONCENTRATION 2 (ppbv). Cc.2=1000*24.05/Mw

RUN NUMBER	-	-		R1		R2		R3		AVE	RSD
SAMPLE											
Formaldehyde	Cc.2	ppbv	### ###	#DIV/0!	### ###	#DIV/0!	### ###	#DIV/0!	### ###	#DIV/0!	#DIV/0!

ND - Sample value below detection limit

< - Some sample values below detection limit

C - Blank Corrected

RL - Reporting Limit

NA - Not Available

SOURCE TEST METHOD DETAILED VALIDATION CHECKLIST

Test Method: CARB 433 - September, 1989
Substance: Nickel

Report ID Number: _____
Reviewer: _____
Review Date: _____

Method Description and Applicability

This method is applicable to the determination of nickel emissions from stationary sources. Particulate and gaseous nickel emissions are withdrawn isokinetically and collected on a filter and in a solution of nitric acid. The samples are then analyzed by atomic absorption spectrometry using the direct aspiration flame method (flame AA).

Quality Assurance/Quality Control Checks

Please complete the detailed checklist provided in the attached Table. If the statements are true, please circle "a"s or the corresponding run numbers; and if they are not reported, circle "a"s. In addition to completing the checklist please answer the following questions:

1.) What digestion method was used? _____
2.) Enter the digestion date(s). _____
3.) Number of Impingers: 0.1N HNO3 (2) __ Empty (1)__ Silica Gel (1) __

Blank Procedure

Please be sure that the blank data was applied and considered correctly. For this particular method, the absorbance reading from the sample needs to be corrected for the absorbance readings of the filter and nitric blanks. There is no criteria for the blank levels, they just need to be performed and corrected for the sample values.

Other Comments

_____

_____

Device ID:

SAMPLE LOCATION			
* *Swirl Check*			
1.) Not conducted?	sc1a	sc1b	M
2.) Average absolute value of angles > 10%?	sc2a	sc2b	M
* *Stack Size*			
1.) Enter stack diameter (inches).			M
2.) Stack diameter < 12 inch ? or	st2a	st2b	M
3.) Area <113 inch squared?	st3a	st3b	M
* *Number of Sample Points*			
1.) Enter total number of points.			M
2.) Method 1 not used?	ns2a	ns2b	M
SAMPLING EQUIPMENT			
* *Nozzle Size Check*			
1.) Not conducted prior to test?	nz1a	nz1b	M
2.) Variation in diameter > 0.004 inch?	nz2a	nz2b	M
* *Field Gas Dry Meter*			
1.) Not checked pre- and post-test?	gm1a	gm1b	M
2.) Pre- and post-test Y not within (+/-) 5%?	gm2a	gm2b	M
* *Pitot Tube*			
1.) Semi-annual calibration sheet not included?	pt1a	pt1b	M
SAMPLING PROCEDURES			
* *Leak Check*			
1.) Not conducted?	lc1a	lc1b	M
2.) Values not reported?	lc2a		M
3.) Pretest >0.02 cfm or 4% of average?	lc3a lc3a	lc3a	R
4.) Post-test >0.02 cfm or 4% of average?	lc4a lc4a	lc4a	R
* *Isokinetic Variation*			
1.) Sample not taken isokinetically?	is1a	is1b	M
2.) Isokinetic variation not reported?	is2a		M
3.) Isokinetic <90 or >110%?	is3a is3a	is3a	R
* *Field Reagent Blank*			
1.) Not conducted for two filters and 0.1N HNO3?	rb1a	rb1b	M
2.) Not used to correct sample ?	rb2a	rb2b	M
ANALYSIS			
* *Method*			
1.) Atomic absorption spectrometry (AAS) not used?	mt1a	mt1b	M
2.) Not conducted in triplicate ?	mt2a	mt2b	M

M-Method
R-Run
S-Substance

a-True
b-Not reported

CALCULATION CHECK FOR CARB METHOD 433

Device ID:

DATA ENTRY-SAMPLING	SYMBOL	UNITS	DATA
RUN NUMBER	-	-	
ROUND STACK, DIAMETER RECTANGULAR STACK, LENGTH WIDTH	ds L W	inches inches inches	
NOZZLE DIAMETER	dn	inches	
AVERAGE STACK TEMPERATURE	Fs	degrees F	
AVERAGE METER TEMPERATURE	Fm	degrees F	
BAROMETRIC PRESSURE	Pbar	in. Hg	
STACK STATIC PRESSURE	Pg	in. H20	
AVG. DELTA H	dH	in. H20	
AVG. RMS VELOCITY HEAD	dP	in. H20	
PITOT COEFFICIENT	Cp	-	
GAS SAMPLE VOLUME	Vm	cubic ft.	
METER CALIBRATION FACTOR	Y	-	
TOTAL SAMPLING TIME	min	minutes	
STACK GAS OXYGEN CONTENT	Co2,m	%	
STACK GAS CARBON DIOXIDE CONTENT	Cco2,m	%	
TOTAL IMPINGER GAIN (WATER & PARTICULATE)	Ww	grams	
CALCULATED DATA-SAMPLING			
RUN NUMBER	-	-	0
NOZZLE AREA, An = 3.14(dn)**2/4	An	sq. in.	0.000
STACK AREA, As = 3.14*(ds)**2/576 (ROUND) = L * W/144 (RECTANGULAR)	As	sq. feet	0.000
AVG. STACK TEMPERATURE, Ts = Fs + 460	Ts	degrees R	460.0
AVG. METER TEMPERATURE, Tm = Fm + 460	Tm	degrees R	460.0
GAS SAMPLE VOLUME AT STANDARD CONDITIONS, VmStd = 17.64*Y*(Vm/Tm)*(Pbar + dH/13.6)	VmStd	cubic ft.	0.0
VOLUME OF WATER VAPOR, VwStd = 0.04707*Ww	VwStd	cubic ft.	0.0
MOISTURE FRACTION, Bws = VwStd/(VmStd + VwStd)	Bws	-	#DIV/0!
DRY STACK GAS MOL. WEIGHT, Md = 0.32(Co2,m)+ 0.44(Cco2,m)+0.28{100-(Co2,m)-(Cco2,m)]	Md	g/g-mole	28.00
WET STACK GAS MOLECULAR WEIGHT, Mw = Md(1-Bws)+18.0(Bws)	Mw	g/g-mole	#DIV/0!
ABSOLUTE STACK PRESSURE, Ps = Pbar + Pg/13.6	Ps	in. Hg	0.00
STACK GAS VELOCITY vs = 85.49 Cp { sqrt[(dP*Ts) /(Ps*Mw)] }	vs	ft/s	#DIV/0!
ACTUAL STACK GAS FLOW RATE, Q = 60*vs*As	Q	acf/min	#DIV/0!
DRY GAS STACK FLOW RATE (DRY,STP) Qsd = 17.64*Q*(1-Bws)*(Ps/Ts)	Qsd	dscf/min	#DIV/0!
ISOKINETIC RATE, I = 13.61*Ts*VmStd/[Ps*vs*An*min*(1-Bws)]	I	%	#DIV/0!
DATA ENTRY-ANALYTICAL			
TOTAL MASS OF NICKEL IN SAMPLE TRAIN	Mni	mg	
CALCULATED DATA-OVERALL			
CONCENTRATION OF NICKEL MCni = (35.31*Mni)/Vmstd	MCni	mg/dscm	#DIV/0!
NICKEL MASS EMISSION RATE Eni = ((Qsd*Mni)/Vmstd)*1.32e-4	Eni	lb/hr	#DIV/0!

SOURCE TEST METHOD DETAILED VALIDATION CHECKLIST

Test Method: MMT - Pre 436
Substance: Trace Metals

Report ID Number: _____
Reviewer: _____
Review Date: _____

Method Description and Applicability

This method is applicable to the determination of trace metal emissions from stationary sources. Particulate and gaseous metal emissions are withdrawn isokinetically and collected on a filter and in a nitric acid solution and a potassium permanganate solution. The samples are then analyzed in separate front and back half portions by either ICAP, GVAAS, AAS and Hg is analyzed by CVAAS.

Quality Assurance/Quality Control Checks

Before completing the detailed QA checklist, please answer the following questions.

1) Was ARB approval granted for use of this method (This method was to be used prior to February 1991)? Yes No

2) Equipment check - Non-metallic prob, nozzle, prob brush, and non-wood prob brush.
Yes No

3) If the answer to #2 is "No" **STOP** evaluating.

4) Number of impingers with Mercury:
5%HNO_3/10%H_2O_2 (2)___ 4%$KMnO_4$/10%H_2SO_2 (1 or 2 depending on Hg levels)___
Silica Gel (1)___ Empty(0 if moisture <150ml ; otherwise 1) ___
Number of impingers without Mercury:
5%HNO_3/10%H_2O_2 (2)___ Silica Gel (1)___
Empty (0 if moisture <150ml ; otherwise 1) ___

5) If answer to #4 is different than the default **STOP** evaluating this method (see manager).

6) Combined or separate (front and back half) analysis? Combined Separate

7) If the answer to #6 is "Combined" **STOP** evaluating this method (see manager).

8.) What digestion method was used? _____

9.) Enter the digestion date(s). _____

Please complete the detailed checklist provided in the attached Table. If the statements are true, circle "a"s or the corresponding run numbers; and if they are not reported, circle "b"s.

Blank Procedure

Please be sure that the blank data was applied and considered correctly. The blank data should be handled as follows:

If the measured blank value for the front half is in the range of 0.0 to A [where A equals the value determined by multiplying 1.4 ug per square inch (1.4 ug/in2) times the actual area in square inches (in2) of the filter used in the emission sample], the measured blank value can be used to correct the front half field sample results. If the measured blank level is greater than A, the greater of these two value should be used:

I. A ug, or
II. The lesser of (1) the measured front half blank value or (2) 5 percent of the front half sample value

If the measured blank value for the back half is in the range of 0.0 to 1 ug, the measured back half blank value can be used to correct the back half field sample results. If the measured back half blank value exceeds 1 ug, the greater of the two following values may be used:

I. 1 ug, or
II. 5 percent of the measured back half field sample

Other Comments

_____

_____

_____

_____

Device ID:

SAMPLE LOCATION			
* *Swirl Check*			
1.) Not conducted?	sc1a	sc1b	M
2.) Average absolute value of angles > 10%?	sc2a	sc2b	M
* *Stack Size*			
1.) Enter stack diameter (inches).			
2.) Stack diameter < 12 inch ? or	st2a	st2b	M
3.) Area <113 inch squared?	st3a	st3b	M
* *Number of Sample Points*			
1.) Enter total number of points.			M
2.) Method 1 not used?	ns2a	ns2b	M
SAMPLING EQUIPMENT			
* *Nozzle Size Check*			
1.) Not conducted prior to test?	nz1a	nz1b	M
2.) Variation in diameter > 0.004 inch?	nz2a	nz2b	M
* *Field Gas Dry Meter*			
1.) Not checked pre- and post-test?	gm1a	gm1b	M
2.) Pre- and post-test Y not within (+/-) 5%?	gm2a	gm2b	M
* *Pitot Tube*			
1.) Semi-annual calibration sheet not included?	pt1a	pt1b	M
SAMPLING PROCEDURES			
* *Leak Check*			
1.) Not conducted?	lc1a	lc1b	M
2.) Values not reported?	lc2a		M
3.) Pretest >0.02 cfm or 4% of average?	lc3a	lc3a lc3a	R
4.) Post-test >0.02 cfm or 4% of average?	lc4a	lc4a lc4a	R
* *Isokinetic Variation*			
1.) Sample not taken isokinetically?	is1a	is1b	M
2.) Isokinetic variation not reported?	is2a		M
3.) Isokinetic <90 or >110%?	is3a	is3a is3a	R
* *Field Reagent Blanks*			
1.) Not conducted once per test?	rb1a	rb1b	M
2.) Not used to correct samples?	rb2a	rb2b	M

M-Method a-True
R-Run b-Not reported
S-Substance.

ANALYSIS ICAP (all metals ,except mercury)						
* *Duplicate*						
NA	1.) Not conducted once per test?	du1a		du1b		M
NA	2.) Percent difference not reported?	du2a				M
	3.) Was percent difference > 5%?					
NA	NR Antimony (Sb)	du3a	du3a	du3a		S
NA	NR Arsenic (As)	du3a	du3a	du3a		S
NA	NR Barium (Ba)	du3a	du3a	du3a		S
NA	NR Beryllium (Be)	du3a	du3a	du3a		S
NA	NR Cadmium (Cd)	du3a	du3a	du3a		S
NA	NR Chromium (Cr)	du3a	du3a	du3a		S
NA	NR Copper (Cu)	du3a	du3a	du3a		S
NA	NR Lead (Pb)	du3a	du3a	du3a		S
NA	NR Manganese (Mn)	du3a	du3a	du3a		S
NA	NR Nickel (Ni)	du3a	du3a	du3a		S
NA	NR Phosphorus (P)	du3a	du3a	du3a		S
NA	NR Selenium (Se)	du3a	du3a	du3a		S
NA	NR Silver (Ag)	du3a	du3a	du3a		S
NA	NR Thallium (Tl)	du3a	du3a	du3a		S
NA	NR Zinc (Zn)	du3a	du3a	du3a		S
ANALYSIS GFAAS (listed metals)						
* *Duplicate*						
NA	1.) Not conducted per run?	du4a		du4b		M
NA	2.) Runs not reported?	du5a	du5a	du5a		R
* *Matrix Spike*						
NA	1.) Spike include Front- and Back-Half?	ms1a		ms1b		M
NA	2.) Percent recovery not reported?	ms3a				
	3.) Was percent recovery <75 or >125%?					
NA	NR Antimony (Sb)	ms4a	ms4a	ms4a		S
NA	NR Arsenic (As)	ms4a	ms4a	ms4a		S
NA	NR Cadmium (Cd)	ms4a	ms4a	ms4a		S
NA	NR Lead (Pb)	ms4a	ms4a	ms4a		S
NA	NR Selenium (Se)	ms4a	ms4a	ms4a		S
NA	NR Thallium (Tl)	ms4a	ms4a	ms4a		S
ANALYSIS CVAAS (mercury)						
* *Duplicate*						
NA	1.) Not conducted per run?	du6a		du6b		M
NA	2.) Runs not reported?	du7a	du7a	du7a		R
* *Matrix Spike*						
NA	1.) Not conducted on one nitric impinger?	ms5a		ms5b		M
NA	2.) Percent recovery not reported?	ms6a				M
	3.) Was percent recovery <75 or >125%?					
NA	NR 1.) Mercury (Hg)	ms7a	ms7a	ms7a		S

CALCULATION CHECK FOR METHOD MMT - Pre 436

Device ID:

Substance:

DATA ENTRY-SAMPLING	SYMBOL	UNITS	DATA
RUN NUMBER	-	-	
ROUND STACK, DIAMETER RECTANGULAR STACK, LENGTH WIDTH	ds L W	inches inches inches	
NOZZLE DIAMETER	dn	inches	
AVERAGE STACK TEMPERATURE	Fs	degrees F	
AVERAGE METER TEMPERATURE	Fm	degrees F	
BAROMETRIC PRESSURE	Pbar	in. Hg	
STACK STATIC PRESSURE	Pg	in. H20	
AVG. DELTA H	dH	in. H20	
AVG. RMS VELOCITY HEAD	dP	in. H20	
PITOT COEFFICIENT	Cp	-	
GAS SAMPLE VOLUME	Vm	cubic ft.	
METER CALIBRATION FACTOR	Y	-	
TOTAL SAMPLING TIME	min	minutes	
STACK GAS OXYGEN CONTENT	Co2,m	%	
STACK GAS CARBON DIOXIDE CONTENT	Cco2,m	%	
TOTAL IMPINGER GAIN (WATER & PARTICULATE)	Ww	grams	
CALCULATED DATA-SAMPLING			
RUN NUMBER	-	-	
NOZZLE AREA, An = 3.14(dn)**2/4	An	sq. in.	0.000
STACK AREA, As = 3.14*(ds)**2/576 (ROUND) = L * W/144 (RECTANGULAR)	As	sq. feet	0.000
AVG. STACK TEMPERATURE, Ts = Fs + 460	Ts	degrees R	460.0
AVG. METER TEMPERATURE, Tm = Fm + 460	Tm	degrees R	460.0
GAS SAMPLE VOLUME AT STANDARD CONDITIONS, VmStd = 17.64*Y*(Vm/Tm)*(Pbar + dH/13.6)	VmStd	cubic ft.	0.0
VOLUME OF WATER VAPOR, VwStd = 0.04707*Ww	VwStd	cubic ft.	0.0
MOISTURE FRACTION, Bws = VwStd/(VmStd + VwStd)	Bws	-	#DIV/0!
DRY STACK GAS MOL. WEIGHT, Md = 0.32(Co2,m)+ 0.44(Cco2,m)+0.28{100-(Co2,m)-(Cco2,m)}	Md	g/g-mole	28.00
WET STACK GAS MOLECULAR WEIGHT, Mw = Md(1-Bws)+18.0(Bws)	Mw	g/g-mole	#DIV/0!
ABSOLUTE STACK PRESSURE, Ps = Pbar + Pg/13.6	Ps	in. Hg	0.00
STACK GAS VELOCITY vs = 85.49 Cp { sqrt[(dP*Ts) /(Ps*Mw)] }	vs	ft/s	#DIV/0!
ACTUAL STACK GAS FLOW RATE, Q = 60*vs*As	Q	acf/min	#DIV/0!
DRY GAS STACK FLOW RATE (DRY,STP) Qsd = 17.64*Q*(1-Bws)*(Ps/Ts)	Qsd	dscf/min	#DIV/0!
ISOKINETIC RATE, I = 13.61*Ts*VmStd/[Ps*vs*An*min*(1-Bws)]	I	%	#DIV/0!
DATA ENTRY-ANALYTICAL			
TOTAL MASS OF ONE TRACE METAL IN FRONT HALF OF SAMPLE TRAIN	Mfh	mg	
TOTAL MASS OF TRACE METAL IN FRONT HALF REAGENT BLANK	Mfhb	mg	
TOTAL MASS OF TRACE METAL IN BACK HALF OF SAMPLE TRAIN	Mbh	mg	
TOTAL MASS OF TRACE METAL IN BACK HALF REAGENT BLANK	Mbhb	mg	
CALCULATED DATA-OVERALL			
CORRECTED TOTAL AMOUNT OF TRACE METAL Mmt = (Mfh - Mfhb) + (Mbh - Mbhb)	Mmt	mg	0.000
CONCENTRATION OF TRACE METAL Mmc = (35.31*Mmt)/Vmstd	Mmc	mg/dscm	#DIV/0!
TRACE METAL MASS EMISSION RATE Emt = ((Qsd*Mmt)/Vmstd)*1.32e-4	Emt	lb/hr	#DIV/0!

SOURCE TEST METHOD DETAILED VALIDATION CHECKLIST

Test Method: CARB 436-March, 1991 or March 1992
Substance: Trace Metals

Report ID Number: _____
Reviewer: _____
Review Date: _____

Method Description and Applicability

This method is applicable to the determination of trace metal emissions from stationary sources. Particulate and gaseous arsenic emissions are withdrawn isokinetically and collected on a filter and in a nitric acid solution and a potassium permanganate solution. The samples are then analyzed in separate front and back half portions by either ICAP, GVAAS, AAS and Hg is analyzed by CVAAS.

Quality Assurance/Quality Control Checks

Before completing the detailed QA checklist, please answer the following questions.

1) Was ARB approval granted for use of this method? Yes No
2) If the answer to question 1 is "No" check with manager.
3) Indicate the specific version of CARB 436 used. March 1991 or March 1992
4) Have results of parallel source test or audit provided? Yes No
5) Equipment check - Non-metallic prob, nozzle, prob brush, and non-wood prob brush.
   Yes No
6) If the answer to #5 is "No" STOP evaluating.
7) Number of impingers with Mercury:
   5%HNO_3/10%H_2O_2 (2)___ 4%$KMnO_4$/10%H_2SO_2 (2)___ Silica Gel (1)___
   Empty(1 if moisture <100ml 92 version or <150ml 91 version ; otherwise 2) ___
   Number of impingers without Mercury:
   5%HNO_3/10%H_2O_2 (2)___ Silica Gel (1)___
   Empty(0 if moisture <100ml 92 version or <150ml 91 version ; otherwise 1) ___

8) If answer to #7 is different than the default **STOP** evaluating this method (see manager).

9) For all metals except mercury was combined or separate (front and back half) analysis conducted? Combined Separate

10) If the answer to #9 is "Separate" and prior approval from ARB not obtained **STOP** evaluating this method (see manager).

11.) What digestion method was used? _____

12.) Enter the digestion date(s). _____

Please complete the detailed checklist provided in the attached Table. If the statements are true, circle "a"s or the corresponding run numbers; and if they are not reported, circle "b"s.

Blank Procedure

Please be sure that the blank data was applied and considered correctly. The blank data should be handled as follows:

The field reagent blanks should be used to correct field sample data. If the amount of metal detected in the field reagent blank is greater than 20% of the field sample. The field sample needs to be flagged as such. The field blank is not used to correct the field data, instead a field sample/field blank ratio needs to be calculated for all of the samples. If the ratio is less than 5, the field data needs to be flagged as such.

Other Comments

_____

_____

_____

_____

Device ID:

SAMPLE LOCATION					
* *Swirl Check*					
1.) Not conducted?			sc1a	sc1b	M
2.) Average absolute value of angles > 10%?			sc2a	sc2b	M
* *Stack Size*					
1.) Enter stack diameter (inches).					
2.) Stack diameter < 12 inch ? or			st2a	st2b	M
3.) Area <113 inch squared?			st3a	st3b	M
* *Number of Sample Points*					
1.) Enter total number of points.					
2.) Method 1 not used?			ns2a	ns2b	M
SAMPLING EQUIPMENT					
* *Nozzle Size Check*					
1.) Not conducted prior to test?			nz1a	nz1b	M
2.) Variation in diameter > 0.004 inch?			nz2a	nz2b	M
* *Field Gas Dry Meter*					
1.) Not checked pre- and post-test?			qm1a	qm1b	M
2.) Pre- and post-test Y not within (+/-) 5%?			qm2a	qm2b	M
* *Pitot Tube*					
1.) Semi-annual calibration sheet not included?			pt1a	pt1b	M
SAMPLING PROCEDURES					
* *Leak Check*					
1.) Not conducted?			lc1a	lc1b	M
2.) Values not reported?			lc2a		M
3.) Pretest >0.02 cfm or 4% of average?			lc3a	lc3a lc3a	R
4.) Post-test >0.02 cfm or 4% of average?			lc4a	lc4a lc4a	R
*Sample runs					
1) Runs<3?			sr1a	sr1b	M
* *Isokinetic*					
1.) Sample not taken isokinetically?			is1a	is1b	M
2.) Isokinetic variation not reported?			is2a		M
3.) Isokinetic <90 or >110%?			is3a	is3a is3a	R
[illegible]					
1.) Not conducted once per test?			fb1a	fb1b	M
2.) Used to correct samples?			fb2a	fb2b	M
3) Sample/field blank<5?					
NA	NR	Antimony	fb3a	fb3a fb3a	S
NA	NR	Arsenic	fb3a	fb3a fb3a	S
NA	NR	Barium	fb3a	fb3a fb3a	S
NA	NR	Beryllium	fb3a	fb3a fb3a	S
NA	NR	Cadmium	fb3a	fb3a fb3a	S
NA	NR	Chromium	fb3a	fb3a fb3a	S
NA	NR	Copper	fb3a	fb3a fb3a	S
NA	NR	Lead	fb3a	fb3a fb3a	S
NA	NR	Manganese	fb3a	fb3a fb3a	S
NA	NR	Nickel	fb3a	fb3a fb3a	S
NA	NR	Phosphorus	fb3a	fb3a fb3a	S
NA	NR	Selenium	fb3a	fb3a fb3a	S
NA	NR	Silver	fb3a	fb3a fb3a	S
NA	NR	Titanium	fb3a	fb3a fb3a	S
NA	NR	Zinc	fb3a	fb3a fb3a	S
[illegible]					
1.) Not conducted once per test?			rb1a	rb1b	M
2.) Not used to correct samples?			rb2a	rb2b	M

ANALYSIS ICAP (all metals ,except mercury)					
* *Analysis Date*					
NA		1.) Not within 2 months, for all samples?	ad1a	ad1b	M
* *Duplicate*					
NA		1.) Not conducted once per test?	du1a	du1b	M
NA		2.) Percent difference not reported?	du2a		M
		3.) Was percent difference > 10%?			
NA	NR	Antimony (Sb)	du3a	du3a du3a	S
NA	NR	Arsenic (As)	du3a	du3a du3a	S
NA	NR	Barium (Ba)	du3a	du3a du3a	S
NA	NR	Beryllium (Be)	du3a	du3a du3a	S
NA	NR	Cadmium (Cd)	du3a	du3a du3a	S
NA	NR	Chromium (Cr)	du3a	du3a du3a	S
NA	NR	Copper (Cu)	du3a	du3a du3a	S
NA	NR	Lead (Pb)	du3a	du3a du3a	S
NA	NR	Manganese (Mn)	du3a	du3a du3a	S
NA	NR	Nickel (Ni)	du3a	du3a du3a	S
NA	NR	Phosphorus (P)	du3a	du3a du3a	S
NA	NR	Selenium (Se)	du3a	du3a du3a	S
NA	NR	Silver (Ag)	du3a	du3a du3a	S
NA	NR	Thallium (Tl)	du3a	du3a du3a	S
NA	NR	Zinc (Zn)	du3a	du3a du3a	S
ANALYSIS GFAAS (listed metals)					
* *Analysis Date*					
NA		1.) Not within 2 months, for all samples?	ad2a	ad2b	M
* *Duplicate*					
NA		1.) Not conducted per run?	du4a	du4b	M
NA		2.) Runs not reported?	du5a	du5a du5a	R
* *Matrix Spike*					
NA		1.) Not conducted on combined?	ms1a	ms1b	M
NA		2.) Percent recovery not reported?	ms2a		M
		3.) Was percent recovery <75 or >125%?			
NA	NR	Antimony (Sb)	ms3a	ms3a ms3a	S
NA	NR	Arsenic (As)	ms3a	ms3a ms3a	S
NA	NR	Cadmium (Cd)	ms3a	ms3a ms3a	S
NA	NR	Lead (Pb)	ms3a	ms3a ms3a	S
NA	NR	Selenium (Se)	ms3a	ms3a ms3a	S
NA	NR	Thallium (Tl)	ms3a	ms3a ms3a	S
ANALYSIS CVAAS (mercury)					
[illegible]					
NA		1.) Not within 28 days, for all samples?	ad3a	ad3b	M
[illegible]					
NA		1) Not conducted per run?	du6a	du6b	M
NA		2.) Runs not reported?	du7a	du7a du7a	R
[illegible]					
NA		1.) Not conducted on one nitric impinger?	ms4a	ms4b	M
NA		2.) Percent recovery not reported?	ms5a		M
		3.) Percent recovery <75 or >125%?			
NA	NR	1.)Mercury (Hg)	ms6a	ms6a ms6a	S

M-Method a-True
R-Run b-Not reported
S-Substance

CALCULATION CHECK FOR CARB METHOD 436-MARCH 91 and 92

Device ID:
Substance:

DATA ENTRY-SAMPLING	SYMBOL	UNITS	DATA
RUN NUMBER	-	-	
ROUND STACK, DIAMETER RECTANGULAR STACK, LENGTH WIDTH	ds L W	inches inches inches	
NOZZLE DIAMETER	dn	inches	
AVERAGE STACK TEMPERATURE	Fs	degrees F	
AVERAGE METER TEMPERATURE	Fm	degrees F	
BAROMETRIC PRESSURE	Pbar	in. Hg	
STACK STATIC PRESSURE	Pg	in. H20	
AVG. DELTA H	dH	in. H20	
AVG. RMS VELOCITY HEAD	dP	in. H20	
PITOT COEFFICIENT	Cp	-	
GAS SAMPLE VOLUME	Vm	cubic ft.	
METER CALIBRATION FACTOR	Y	-	
TOTAL SAMPLING TIME	min	minutes	
STACK GAS OXYGEN CONTENT	Co2,m	%	
STACK GAS CARBON DIOXIDE CONTENT	Cco2,m	%	
TOTAL IMPINGER GAIN (WATER & PARTICULATE)	Ww	grams	
CALCULATED DATA-SAMPLING			
RUN NUMBER	-	-	
NOZZLE AREA, An = 3.14(dn)**2/4	An	sq. in.	0.000
STACK AREA, As = 3.14*(ds)**2/576 (ROUND) = L * W/144 (RECTANGULAR)	As	sq. feet	0.000
AVG. STACK TEMPERATURE, Ts = Fs + 460	Ts	degrees R	460.0
AVG. METER TEMPERATURE, Tm = Fm + 460	Tm	degrees R	460.0
GAS SAMPLE VOLUME AT STANDARD CONDITIONS, VmStd = 17.64*Y*(Vm/Tm)*(Pbar + dH/13.6)	VmStd	cubic ft.	0.0
VOLUME OF WATER VAPOR, VwStd = 0.04707*Ww	VwStd	cubic ft.	0.0
MOISTURE FRACTION, Bws = VwStd/(VmStd + VwStd)	Bws	-	#DIV/0!
DRY STACK GAS MOL. WEIGHT, Md = 0.32(Co2,m)+ 0.44(Cco2,m)+0.28[100-(Co2,m)-(Cco2,m)]	Md	g/g-mole	28.00
WET STACK GAS MOLECULAR WEIGHT, Mw = Md(1-Bws)+18.0(Bws)	Mw	g/g-mole	#DIV/0!
ABSOLUTE STACK PRESSURE, Ps = Pbar + Pg/13.6	Ps	in. Hg	0.00
STACK GAS VELOCITY vs = 85.49 Cp [sqrt[(dP*Ts) /(Ps*Mw)]]	vs	ft/s	#DIV/0!
ACTUAL STACK GAS FLOW RATE, Q = 60*vs*As	Q	acf/min	#DIV/0!
DRY GAS STACK FLOW RATE (DRY,STP) Qsd = 17.64*Q*(1-Bws)*(Ps/Ts)	Qsd	dscf/min	#DIV/0!
ISOKINETIC RATE, I = 13.61*Ts*VmStd/[Ps*vs*An*min*(1-Bws)]	I	%	#DIV/0!
DATA ENTRY-ANALYTICAL			
TOTAL MASS OF ONE TRACE METAL IN SAMPLE TRAIN	Mf	mg	
TOTAL MASS OF TRACE METAL IN FIELD REAGENT BLANK	Mb	mg	
CALCULATED DATA-OVERALL			
CORRECTED TOTAL AMOUNT OF TRACE METAL Mmt = (Mf - Mb)	Mmt	mg	0.000
CONCENTRATION OF TRACE METAL Mmc = (35.31*Mmt)/Vmstd	Mmc	mg/dscm	#DIV/0!
TRACE METAL MASS EMISSION RATE Emt = ((Qsd*Mmt)/Vmstd)*1.32e-4	Emt	lb/hr	#DIV/0!

SECTION 4
VALIDATION PARAMETERS SUMMARY TABLES

VALIDATION PARAMETERS SUMMARY FOR CARB 11 (1983)
HYDROGEN SULFIDE

VALIDATION PARAMETERS	Stack ID
	10810
SAMPLING EQUIPMENT	
Field gas meter pre- and post-test Y not within (+/-) 5%?	V
SAMPLING PROCEDURE	
Sample time < 10 minutes?	
Indication of leaks?	Y
Reagent blank not conducted daily?	R
INTERFERENCE CHECK	
Hydrogen peroxide (H2O2) not used? Cadmium sulfate (CdS) not used?	
ANALYSIS METHOD	
0.01n sodium thiosulfate solution not used for titration? Iodine solution not used?	

R-Not reported
V-Values not provided
N-Not conducted
P-Not provided
Y-Failed check
Blank Cells - Indicates check passed

RF-Runs do not pass check
RN-Runs could not be checked
PF-Points do not pass check
PN-Points could not be checked

VALIDATION PARAMETERS SUMMARY FOR CARB 12 (1986)
INORGANIC LEAD

VALIDATION PARAMETERS	Stack ID	
	45110	45210
SAMPLE LOCATION		
Average absolute value of swirl angles >10%?	V	V
Stack diameter < 12 inch? Stack area < 113 inch squared?		
Method 1 not used?		
SAMPLING EQUIPMENT		
Variation in nozzle diameter > 0.004 inch?		
Pre- and post-test meter Y not within (+/-) 5%?		
Pitot tube semi-annual calibration sheet included?	P	P
SAMPLING PROCEDURES		
Pre-test leak rate > 0.02 cfm or 4% of average? Post-test leak rate > 0.02 cfm or 4% of average?		
Isokinetic variation <90 or >110%?		
FIELD REAGENT BLANK		
Not conducted on 2 filters & 0.1N HNO3? Not used to correct samples?	Y	Y
ANALYSIS METHOD		
Atomic absorption spectrometry not used?	R	R
Analysis not conducted in triplicate?	R	R

R-Not reported
V-Values not provided
N-Not conducted
P-Not provided
Y-Failed check
Blank Cells - Indicates check passed

RF-Runs do not pass check
RN-Runs could not be checked
PF-Points do not pass check
PN-Points could not be checked

VALIDATION PARAMETERS SUMMARY FOR CARB 15 (1983)
HYDROGEN SULFIDE

VALIDATION PARAMETERS	Stack ID													
	16010	43710	43810	44410	50510	50610	50710	50810	50910	51010	64210	64310	64410	64610
SAMPLING PROCEDURES														
Indication of leaks?	V													
Sample line loss not conducted for post-test?	R													
Sample not corrected for < 20% loss?	R													
Sample corrected for > 20% loss?	R													
ANALYSIS METHOD														
GC/FPD not used?														

R-Not reported
V-Values not provided
N-Not conducted
P-Not provided
Y-Failed check
Blank Cells - Indicates check passed

RF-Runs do not pass check
RN-Runs could not be checked
PF-Points do not pass check
PN-Points could not be checked

VALIDATION PARAMETERS SUMMARY FOR CARB 101A (1986)
MERCURY

VALIDATION PARAMETERS	Stack ID			
	16010	45110	51010	64410
SAMPLE LOCATION				
Average absolute value of swirl angles >10%?	V	V	V	V
Stack diameter < 12 inch? Stack area < 113 inch squared?				
Method 1 not used?	R		R	
SAMPLING EQUIPMENT				
Variation in nozzle diameter > 0.004 inch?	V	Y		
Pre- and post-test meter Y not within (+/-) 5%?	V		N	N
Pitot tube semi-annual calibration sheet included?	P	P	P	P
SAMPLING PROCEDURES				
Pre-test leak rate > 0.02 cfm or 4% of average? Post-test leak rate > 0.02 cfm or 4% of average?		1RN		
Isokinetic variation <90 or >110%?				
Filter temperature not between 106 and 134 degrees?	R	R		R
Flow rate > 28 liter per minute (1 cfm)?	V			
FIELD REAGENT BLANK				
Not conducted once per test? Not used to correct samples?	Y	Y	Y	Y
ANALYSIS METHOD				
Atomic absorption spectrometry not used?		R		
Combined analysis not used?	Y	Y	Y	Y

R-Not reported
V-Values not provided
N-Not conducted
P-Not provided
Y-Failed check
Blank Cells - Indicates check passed

RF-Runs do not pass check
RN-Runs could not be checked
PF-Points do not pass check
PN-Points could not be checked

VALIDATION PARAMETERS SUMMARY FOR CARB 104 (1986)
BERYLLIUM

VALIDATION PARAMETERS	Stack ID		
	11110	14210	43510
SAMPLE LOCATION			
Average absolute value of swirl angles >10%?	V	V	V
Stack diameter < 12 inch? Stack area < 113 inch squared?			
Method 1 not used?			R
SAMPLING EQUIPMENT			
Variation in nozzle diameter > 0.004 inch?	V	V	V
Pre- and post-test meter Y not within (+/-) 5%?		V	V
Pitot tube semi-annual calibration sheet included?	P	P	P
SAMPLING PROCEDURES			
Pre-test leak rate > 0.02 cfm or 4% of average? Post-test leak rate > 0.02 cfm or 4% of average?			3RN
Isokinetic variation <90 or >110%?			1RF
Flow rate < 0.5 or > 1 cfm?		3RF	V
FIELD REAGENT BLANK			
Not conducted for acetone?		R	R
Not used to correct samples?	Y	Y	Y
ANALYSIS METHOD			
Atomic absorption spectrometry not used?		Y	R

R-Not reported
V-Values not provided
N-Not conducted
P-Not provided
Y-Failed check
Blank Cells - Indicates check passed

RF-Runs do not pass check
RN-Runs could not be checked
PF-Points do not pass check
PN-Points could not be checked

VALIDATION PARAMETERS SUMMARY FOR CARB 410A (1986)

VALIDATION PARAMETERS	Stack ID																	
	10710	10810	10910	11010	11110	11210	11310	11410	11510	11610	11710	11810	11910	12010	12110	12210	12310	12410
TEDLAR BAG CONTAMINATION CHECK																		
Not conducted for all bags?																		
LEAK CHECK																		
Not conducted before and after each test?	R	R	R					R	R	R	R	R	R	R	R	R	R	R
ANALYSIS METHOD																		
FID not used for high concentrations (60ppb to .01)? PID not used for low concentrations (1.0 to 1000 ppb)?																		
Analysis date not within 96 hours from collection?																		

R-Not reported
V-Values not provided
N-Not conducted
P-Not provided
Y-Failed check
Blank Cells - Indicates check passed

RF-Runs do not pass check
RN-Runs could not be checked
PF-Points do not pass check
PN-Points could not be checked

VALIDATION PARAMETERS SUMMARY FOR CARB 410A (1986)

VALIDATION PARAMETERS	Stack ID																	
	12510	12610	12710	14210	14610	16810	17010	17110	17710	17810	41110	42510	43610	43710	43810	44410	44510	44610
TEDLAR BAG CONTAMINATION CHECK																		
Not conducted for all bags?						R	R	R			Y	R		R	R	R		R
LEAK CHECK																		
Not conducted before and after each test?	R	R	R	Y	R	Y	Y	Y			R						R	R
ANALYSIS METHOD																		
FID not used for high concentrations (60ppb to .01)?				!Y	Y	Y	Y	Y			Y	Y	Y	R	R	R		
PID not used for low concentrations (1.0 to 1000 ppb)?				Y	Y	Y	Y	Y			Y	Y	Y	R	R	R		
Analysis date not within 96 hours from collection?				Y	Y						Y							

R-Not reported
V-Values not provided
N-Not conducted
P-Not provided
Y-Failed check
Blank Cells - Indicates check passed

RF-Runs do not pass check
RN-Runs could not be checked
PF-Points do not pass check
PN-Points could not be checked

VALIDATION PARAMETERS SUMMARY FOR CARB 410A (1986)

VALIDATION PARAMETERS	Stack ID																	
	44710	44910	45110	50510	50610	50710	50810	50910	51010	51110	51210	51310	63710	63810	64210	64310	64410	64610
TEDLAR BAG CONTAMINATION CHECK																		
Not conducted for all bags?	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
LEAK CHECK																		
Not conducted before and after each test?	R	Y					Y							R		Y		
ANALYSIS METHOD																		
FID not used for high concentrations (60ppb to .01)?		Y	R	!R	R	R	R	R	R						R	R	R	R
PID not used for low concentrations (1.0 to 1000 ppb)?		Y	R	R	R	R	R	R	R						R	R	R	R
Analysis date not within 96 hours from collection?		Y																R

R-Not reported
V-Values not provided
N-Not conducted
P-Not provided
Y-Failed check
Blank Cells - Indicates check passed

RF-Runs do not pass check
RN-Runs could not be checked
PF-Points do not pass check
PN-Points could not be checked

VALIDATION PARAMETERS SUMMARY FOR CARB 421 (1987)
HYDROGEN CHLORIDE

VALIDATION PARAMETERS	Stack ID 16010
SAMPLE LOCATION	
Average absolute value of swirl angles >10%?	V
Stack diameter < 12 inch? Stack area < 113 inch squared?	
Method 1 not used?	
SAMPLING EQUIPMENT	
Variation in nozzle diameter > 0.004 inch?	V
Pre- and post-test meter Y not within (+/-) 5%?	N
Pitot tube semi-annual calibration sheet included?	P
SAMPLING PROCEDURES	
Pre-test leak rate > 0.02 cfm or 4% of average?	V
Post-test leak rate > 0.02 cfm or 4% of average?	V
Isokinetic variation <90 or >110%?	V
REAGENT BLANK	
Not collected once per test?	R
Not used to correct sample peaks on the chromatograph	R
IMPINGER SOLUTIONS	
Biocarbonate (NaHCO3) not used? Sodium carbonate (Na2CO3) not used? Water not used?	
ANALYSIS METHOD	
Ion chromatography not used?	
Lab spike not conducted for 10% of samples?	
Duplicate not conducted for each sample?	R
Percent difference > 5%?	V

R-Not reported
V-Values not provided
N-Not conducted
P-Not provided
Y-Failed check
Blank Cells - Indicates check passed

RF-Runs do not pass check
RN-Runs could not be checked
PF-Points do not pass check
PN-Points could not be checked

VALIDATION PARAMETERS SUMMARY FOR CARB 422 (1987)
VOLTILE HALOGENATED ORGANIC COMPOUNDS

VALIDATION PARAMETERS	Stack ID	
	17710	17810
[illegible]		
Not conducted for all bags?		
Levels not reported?		
[illegible]		
Not conducted before and after each test?		
Leak rate > 5% of sample rate?		
[illegible]		
GC not used?		
Analysis date not within 24 hours of collection?	Y	

R-Not reported
V-Values not provided
N-Not conducted
P-Not provided
Y-Failed check
Blank Cells - Indicates check passed

RF-Runs do not pass check
RN-Runs could not be checked
PF-Points do not pass check
PN-Points could not be checked

VALIDATION PARAMETERS SUMMARY FOR CARB 422 (1991)
VOLTILE HALOGENATED ORGANIC COMPOUNDS

VALIDATION PARAMETERS	Stack ID
	64510
TEDLAR BAG CONTAMINATION CHECK	
Not conducted for all bags?	R
Levels not reported?	R
FIELD BLANK	
Not conducted once per test?	R
Used to correct sample?	R
Blank > 20% of the stack samples?	3PN
LEAK CHECK	
Not conducted before and after each test?	R
Leak rate > 5% of sample rate?	R
FIELD SPIKE	
Not collected once per source?	Y
ANALYSIS METHOD	
GC not used?	
Analysis date not within 72 hours from collection?	
Duplicates not conducted once per sample?	Y
Values > 3 x RSD?	V

R-Not reported
V-Values not provided
N-Not conducted
P-Not provided
Y-Failed check
Blank Cells - Indicates check passed

RF-Runs do not pass check
RN-Runs could not be checked
PF-Points do not pass check
PN-Points could not be checked

VALIDATION PARAMETERS SUMMARY FOR CARB 423 (1987)
INORGANIC ARSENIC

VALIDATION PARAMETERS	Stack ID 14610
SAMPLE LOCATION	
Average absolute value of swirl angles >10%?	V
Stack diameter < 12 inch? Stack area < 113 inch squared?	
Method 1 not used?	
SAMPLING EQUIPMENT	
Variation in nozzle diameter > 0.004 inch?	V
Pre- and post-test meter Y not within (+/-) 5%?	N
Pitot tube semi-annual calibration sheet included?	P
SAMPLING PROCEDURES	
Pre-test leak rate > 0.02 cfm or 4% of average? Post-test leak rate > 0.02 cfm or 4% of average?	
Isokinetic variation <90 or >110%?	
Filter temperature not between 107 and 135 degrees?	R
Flow rate > 28 liter per minute (1 cfm)?	1RF
FIELD REAGENT BLANK	
Not conducted for two filters and 0.1N NAOH? Not used to correct sample?	Y
ANALYSIS METHOD	
Atomic absorption spectrometry not used?	
Combined analysis used?	

R-Not reported
V-Values not provided
N-Not conducted
P-Not provided
Y-Failed check
Blank Cells - Indicates check passed

RF-Runs do not pass check
RN-Runs could not be checked
PF-Points do not pass check
PN-Points could not be checked

VALIDATION PARAMETERS SUMMARY FOR CARB 424 (1987)
INORGANIC CADMIUM

VALIDATION PARAMETERS	Stack ID
	45210
SAMPLE LOCATION	
Average absolute value of swirl angles >10%?	V
Stack diameter < 12 inch? Stack area < 113 inch squared?	
Method 1 not used?	
SAMPLING EQUIPMENT	
Variation in nozzle diameter > 0.004 inch?	N
Pre- and post-test meter Y not within (+/-) 5%?	
Pitot tube semi-annual calibration sheet included?	P
SAMPLING FRACTIONS	
Pre-test leak rate > 0.02 cfm or 4% of average? Post-test leak rate > 0.02 cfm or 4% of average?	
Isokinetic variation <90 or >110%?	
FIELD REAGENT BLANK	
Not conducted for two filters and 0.1N HNO3? Not used to correct sample?	R Y
ANALYSIS METHOD	
Atomic absorption spectrometry not used?	R
Not conducted in triplicate?	R

R-Not reported
V-Values not provided
N-Not conducted
P-Not provided
Y-Failed check
Blank Cells - Indicates check passed

RF-Runs do not pass check
RN-Runs could not be checked
PF-Points do not pass check
PN-Points could not be checked

VALIDATION PARAMETERS SUMMARY FOR CARB 425 (1987)
TOTAL AND HEXAVALENT CHROMIUM

VALIDATION PARAMETERS	Stack ID						
	14210	14610	16010	43510	51010	63810	64410
SAMPLE LOCATION							
Average absolute value of swirl angles >10%?	V	V	V	V	V	V	V
Stack diameter < 12 inch?							
Stack area < 113 inch squared?							
Method 1 not used?					R		
SAMPLING EQUIPMENT							
Variation in nozzle diameter > 0.004 inch?	V	V	V	V		V	
Pre- and post-test meter Y not within (+/-) 5%?	N	N	V	V	N		N
Pitot tube semi-annual calibration sheet included?	P	P	P	P	P	P	P
SAMPLING PROCEDURES							
Pre-test leak rate > 0.02 cfm or 4% of average?							
Post-test leak rate > 0.02 cfm or 4% of average?							
Isokinetic variation <90 or >110%?				2RF			
REAGENT BLANK							
Not conducted once per sample batch?				R			
Used to correct sample?				R			
ANALYSIS METHOD							
Matrix spike not conducted once per test (Hexavalent Chromium)?			R	R	R		R
Percent recovery > 10%?			V	V	V		V
Matrix spike not conducted daily (Total Chromium)?				R	R		R
Duplicates not conducted for every 10 samples (Total Chromium)?	R		R	R	R		R

R-Not reported
V-Values not provided
N-Not conducted
P-Not provided
Y-Failed check
Blank Cells - Indicates check passed

RF-Runs do not pass check
RN-Runs could not be checked
PF-Points do not pass check
PN-Points could not be checked

VALIDATION PARAMETERS SUMMARY FOR CARB 425 (1990)
TOTAL AND HEXAVALENT CHROMIUM

VALIDATION PARAMETERS	Stack ID				
	11110	42510	43610	45110	64610
SAMPLE LOCATION					
Average absolute value of swirl angles >10%?	V		V	V	V
Stack diameter < 12 inch? Stack area < 113 inch squared?					
Method 1 not used?					R
SAMPLING EQUIPMENT					
Variation in nozzle diameter > 0.004 inch?	V				
Pre- and post-test meter Y not within (+/-) 5%?			N		
Pitot tube semi-annual calibration sheet included?	P			P	
SAMPLING PROCEDURES					
Pre-test leak rate > 0.02 cfm or 4% of average? Post-test leak rate > 0.02 cfm or 4% of average?		V V	 1RN		
Isokinetic variation <90 or >110%?					
PROBE PROOF					
Not conducted per probe? Total chrome > detection limit?	R V	Y		R V	R V
REAGENT BLANK					
Not conducted once per sample batch? Not used to correct sample?		R R	 Y	 Y	
ANALYSIS METHOD					
Matrix spike not conducted once per test (Hexavalent Chromium)? Percent recovery > 10%?	Y	 V	R V	Y 1PF,2PN	
Matrix spike not conducted daily (Total Chromium)?		R	R	R	R
Duplicates not conducted for every 10 samples (Total Chromium)?	Y	R	R		Y

R-Not reported
V-Values not provided
N-Not conducted
P-Not provided
Y-Failed check
Blank Cells - Indicates check passed

RF-Runs do not pass check
RN-Runs could not be checked
PF-Points do not pass check
PN-Points could not be checked

VALIDATION PARAMETERS SUMMARY FOR CARB 428 (1988)
PCDD/PCDF

VALIDATION PARAMETERS	Stack ID	
	14210	14610
SAMPLE LOCATION		
Average absolute value of swirl angles >10%?	V	V
Stack diameter < 12 inch? Stack area < 113 inch squared?		
Method 1 not used?		
SAMPLING EQUIPMENT		
Variation in nozzle diameter > 0.004 inch?	V	V
Pre- and post-test meter Y not within (+/-) 5%?	N	N
Pitot tube semi-annual calibration sheet included?	P	P
SAMPLING PROCEDURES		
Pre-test leak rate > 0.02 cfm or 4% of average? Post-test leak rate > 0.02 cfm or 4% of average?		
Isokinetic variation <90 or >110%?		
Sample runs < 3?		
Sample time < 3 hours?		
FIELD BLANK		
Not conducted once per test? Used to correct sample?		
SURROGATE STANDARDS		
Not conducted once per run?	R	R
Percent recovery < 60 or > 140% (37C1-2,3,7,8-TCDD)?	R	R
Percent recovery < 60 or > 140% (13C-1,2,3,4,6,7,8-HpCDF)?	R	R
LABORATORY CONTROL SPIKE		
Percent accuracy < 60 or > 140 %?	V	V
INTERNAL STANDARDS		
Not conducted once per sample?	R	R
Percent recovery < 60 or > 120%?	R	R

R-Not reported
V-Values not provided
N-Not conducted
P-Not provided
Y-Failed check
Blank Cells - Indicates check passed

RF-Runs do not pass check
RN-Runs could not be checked
PF-Points do not pass check
PN-Points could not be checked

VALIDATION PARAMETERS SUMMARY FOR CARB 428 (1990)
PCDD/PCDF

VALIDATION PARAMETERS	Stack ID
	42510
SAMPLE LOCATION	
Average absolute value of swirl angles >10%?	
Stack diameter < 12 inch?	
Stack area < 113 inch squared?	
Method 1 not used?	
SAMPLING EQUIPMENT	
Variation in nozzle diameter > 0.004 inch?	
Pre- and post-test meter Y not within (+/-) 5%?	
Pitot tube semi-annual calibration sheet included?	
SAMPLING PROCEDURES	
Pre-test leak rate > 0.02 cfm or 4% of average?	V
Post-test leak rate > 0.02 cfm or 4% of average?	V
Isokinetic variation <90 or >110%?	
Sample runs < 3?	
Sample time < 3 hours?	1RF
FIELD BLANK	
Not conducted once per test?	
Used to correct sample?	R
SURROGATE STANDARDS	
Not conducted once per run?	
Percent recovery < 60 or > 140% (LRMS)?	
Percent recovery < 60 or > 140% (HRMS)?	
LABORATORY CONTROL SPIKE	
Laboratory control spike percent accuracy < 60 or > 140%?	
INTERNAL STANDARDS	
Not conducted once per sample (LRMS)?	
Percent accuracy < 40 or >120%?	
Not conducted once per sample (HRMS)?	
Percent accuracy < 40 or > 120%?	

R-Not reported
V-Values not provided
N-Not conducted
P-Not provided
Y-Failed check
Blank Cells - Indicates check passed

RF-Runs do not pass check
RN-Runs could not be checked
PF-Points do not pass check
PN-Points could not be checked

VALIDATION PARAMETERS SUMMARY FOR CARB 429 (1989)

PAH

VALIDATION PARAMETERS	Stack ID												
	10710	10810	10910	11110	11210	11310	12210	12710	14210	14610	16010	17710	17810
SAMPLE LOCATION													
Average absolute value of swirl angles >10%?				V	V	V	V	V	V	V	V	V	V
Stack diameter < 12 inch?					Y	R	Y						
Stack area < 113 inch squared?					Y	R	Y						
Method 1 not used?						R							
SAMPLING EQUIPMENT													
Variation in nozzle diameter > 0.004 inch?				V	V	V			V	V	V	V	V
Pre- and post-test meter Y not within (+/-) 5%?									N	N	V	V	V
Pitot tube semi-annual calibration sheet included?	P	P	P	P	P	P	P	P	P	P	P	P	P
SAMPLING PROCEDURES													
Pre-test leak rate > 0.02 cfm or 4% of average?													
Post-test leak rate > 0.02 cfm or 4% of average?													
Isokinetic variation <90 or >110%?				N	N	N							
Sample runs < 3?											Y		
FIELD BLANK													
Not conducted once per test?											R		
Used to correct sample?													
SURROGATE STANDARDS													
Not conducted once per run?				Y	Y	Y			R	R	R	R	R
Percent recovery < 50 or > 150%?	V	V	V	V	V	V		1RF		V	V		V
LABORATORY CONTROL SPIKE													
Percent accuracy < 50 or > 150%?				V	V	V	V	V	V	V	V		
INTERNAL STANDARDS													
Not conducted once per run?				R	R	R			R	R	R		
Percent accuracy < 50 or > 150%?	8PF			V	V	V	8PF,3PN	4PN		V	V	7PF	6PF
ANALYSIS/EXTRACTION DATES													
Analysis date not within 40 days of extraction?									R	R	R		
Extraction date not within 7 days of collection?									R	R	R		

R-Not reported
V-Values not provided
N-Not conducted
P-Not provided
Y-Failed check
Blank Cells - Indicates check passed

RF-Runs do not pass check
RN-Runs could not be checked
PF-Points do not pass check
PN-Points could not be checked

VALIDATION PARAMETERS SUMMARY FOR CARB 429 (1989)

PAH

VALIDATION PARAMETERS	Stack ID												
	41110	42510	43510	43610	43710	43810	43910	44010	44110	44210	44310	44410	44510
SAMPLE LOCATION													
Average absolute value of swirl angles >10%?	V		V	V	V	V		Y				V	
Stack diameter < 12 inch?													
Stack area < 113 inch squared?		!											
Method 1 not used?					R	R						R	R
SAMPLING EQUIPMENT													
Variation in nozzle diameter > 0.004 inch?	V		V		V	V						V	V
Pre- and post-test meter Y not within (+/-) 5%?	V		V	N	N	N	N					N	N
Pitot tube semi-annual calibration sheet included?	P		P		P	P	P	P	P	P	P	P	P
SAMPLING PROCEDURES													
Pre-test leak rate > 0.02 cfm or 4% of average?		V	3RN										V
Post-test leak rate > 0.02 cfm or 4% of average?		V	2RF								1RF		V
Isokinetic variation <90 or >110%?													
Sample runs < 3?													
FIELD BLANK													
Not conducted once per test?													
Used to correct sample?			Y										
SURROGATE STANDARDS													
Not conducted once per run?			R		Y	Y						Y	
Percent recovery < 50 or > 150%?	V		V	V	V	2RN	V	V	V	V	V	2RN	V
LABORATORY CONTROL SPIKE													
Percent accuracy < 50 or > 150%?		V	V		V	V						V	
INTERNAL STANDARDS													
Not conducted once per run?			R		Y	Y						Y	
Percent accuracy < 50 or > 150%?	18PF	2PF	V	3PF,3PN	V	V						V	6PF
ANALYSIS/EXTRACTION DATES													
Analysis date not within 40 days of extraction?	R		R		R	R	R	R	R	R	R	R	
Extraction date not within 7 days of collection?	Y		R		R	R						R	

R-Not reported
V-Values not provided
N-Not conducted
P-Not provided
Y-Failed check
Blank Cells - Indicates check passed

RF-Runs do not pass check
RN-Runs could not be checked
PF-Points do not pass check
PN-Points could not be checked

VALIDATION PARAMETERS SUMMARY FOR CARB 429 (1989)
PAH

VALIDATION PARAMETERS	Stack ID													
	45110	50510	50610	50710	50810	50910	51010	63710	63810	64210	64310	64410	64510	64610
SAMPLE LOCATION														
Average absolute value of swirl angles >10%?	V	V	V	V	V	V	V	V	V	V	V	V	V	V
Stack diameter < 12 inch?								Y						
Stack area < 113 inch squared?								Y						
Method 1 not used?		R	R	R	R	R	R	Y						R
SAMPLING EQUIPMENT														
Variation in nozzle diameter > 0.004 inch?								V	V		V		V	
Pre- and post-test meter Y not within (+/-) 5%?		N	N	N	N	N	N			N	N	N	N	
Pitot tube semi-annual calibration sheet included?	P	P	P	P		P	P	P	P	P	P	P	P	
SAMPLING PROCEDURES														
Pre-test leak rate > 0.02 cfm or 4% of average?														
Post-test leak rate > 0.02 cfm or 4% of average?						1RN								
Isokinetic variation <90 or >110%?														
Sample runs < 3?														
FIELD BLANK														
Not conducted once per test?														
Used to correct sample?														
SURROGATE STANDARDS														
Not conducted once per run?	Y	Y	Y	Y	Y	Y	Y			Y	Y	Y		
Percent recovery < 50 or > 150%?	V	2RN	2RN	2RN	V	1RF,2RN	1RF	V	V	2RN	2RN	2RN	V	V
LABORATORY CONTROL SPIKE														
Percent accuracy < 50 or > 150%?	V	V	V	V	V	V	V	V	V	V	V	V		
INTERNAL STANDARDS														
Not conducted once per run?		Y	Y	Y	Y	Y	Y			Y	Y	Y		
Percent accuracy < 50 or > 150%?	37PF	V	V	V	V	V	V	1PF,27PN	1PF,24PN	V	V	V	12PF	7PF
ANALYSIS/EXTRACTION DATES														
Analysis date not within 40 days of extraction?	R	R	R	R	R	R	R			R	R	R		
Extraction date not within 7 days of collection?	R	R	R	R	R	R	R	R	R	R	R	R		

R-Not reported
V-Values not provided
N-Not conducted
P-Not provided
Y-Failed check
Blank Cells - indicates check passed

RF-Runs do not pass check
RN-Runs could not be checked
PF-Points do not pass check
PN-Points could not be checked

VALIDATION PARAMETERS SUMMARY FOR CARB 430 (1989)
ALDEHYDES

VALIDATION PARAMETERS	Stack ID																	
	11010	11110	11210	11310	11410	11510	11610	11710	11810	11910	12010	12110	12210	12310	12410	12510	12610	12710	14210
FIELD DRY GAS METER CHECK																			
Pre- and post-test meter Y not within (+/-) 5%?																			N
SAMPLING PROCEDURES																			
Sample flow not checked per run?	R	R	R	R															
Sample flow > 1.0 L/min?	V	V	V	V															
Pre-test and post-test sample flow not within 15%?	V	V	V	V	3RN	3RN	3RN	3RN	3RN	3RN	3RN	3RN	3RN	3RN	3RN	3RN	3RN	3RN	3RN
Indication of leaks?	V	V	V	V															
FIELD BLANK																			V
Not conducted once per test?																			
Not conducted on 2 impingers?																			
Used to correct samples?																			Y
FIELD SPIKE																			
Not conducted per run?																			
ANALYSIS METHOD																			
Extraction date not within 7 days of collection?																			
Analysis date not within 30 days of extraction?																			
Reverse phase HPLC not used?																			
Matrix spike not conducted per test?	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	
Not reported?	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	

R-Not reported
V-Values not provided
N-Not conducted
P-Not provided
Y-Failed check
Blank Cells - Indicates check passed

RF-Runs do not pass check
RN-Runs could not be checked
PF-Points do not pass check
PN-Points could not be checked

VALIDATION PARAMETERS SUMMARY FOR CARB 430 (1989)
ALDEHYDES

VALIDATION PARAMETERS	Stack ID																			
	14610	16010	41110	43510	43710	43810	44410	44910	50510	50610	50710	50810	50910	51010	63710	63810	64210	64310	64410	64610
FIELD DRY GAS METER CHECK																				
Pre- and post-test meter Y not within (+/-) 5%?	N	V	V	V	N	N	N	V	N	N	N	N	N	N			N	N	N	
SAMPLING PROCEDURES																				
Sample flow not checked per run?				R																
Sample flow > 1.0 L/min?		2RF		V	3RF	3RF	6RF		3RF	3RF	3RF	3RF	3RF	3RF		3RF	3RF	3RF	3RF	3RF
Pre-test and post-test sample flow not within 15%?	3RN	2RN		V	3RN	3RN	6RN	3RN	3RN	3RN	3RN	3RN	3RN	3RN	3RN	3RN	3RN	3RN	3RN	3RN
Indication of leaks?	V			V											Y	Y				
FIELD BLANK																				
Not conducted once per test?																				
Not conducted on 2 impingers?	Y		R	R				R					R		R					
Used to correct samples?			Y	R																R
FIELD SPIKE																				
Not conducted per run?	3RF	1RF													2RF	2RF				
ANALYSIS METHOD																				
Extraction date not within 7 days of collection?		R		R	R		R	R				R	R				R	R	R	R
Analysis date not within 30 days of extraction?		R		R	R		R	R					R				R	R	R	
Reverse phase HPLC not used?				R	R	R	R			R	R	R	R	R						R
Matrix spike not conducted per test?	Y	R	R	R	R	R	R	R	R	R	R	R	R	R			R	R	R	R
Not reported?	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y			Y	Y	Y	Y

R-Not reported
V-Values not provided
N-Not conducted
P-Not provided
Y-Failed check
Blank Cells - Indicates check passed

RF-Runs do not pass check
RN-Runs could not be checked
PF-Points do not pass check
PN-Points could not be checked

VALIDATION PARAMETERS SUMMARY FOR CARB 430 (1991)
ALDEHYDES

VALIDATION PARAMETERS	Stack ID															
	10710	10810	10910	16810	16910	17010	17110	42510	43610	44610	44710	44810	51110	51210	51310	64510
CALIBRATION CHECK																
Not conducted for each rotometer?				R	R	R	R	R	R			R				R
Calibration sheet not included?				Y	Y	Y	Y	Y	Y			R				Y
SAMPLING PROCEDURES																
Sample flow not checked per run?			!													R
Sample flow > 1.0 L/min?					1RN		2RN			3RF	3RF					3RN
Pre-test and post-test sample flow not within 15%?		3RN	3RN	3RN	3RN	3RN	3RN	3RN	3RN	3RN	3RN	3RN	6RN	3RN	3RN	3RN
Indication of leaks?												V				
Number of sample runs < 3?																
FIELD BLANK																
Three blanks not collected per test?				Y	Y	Y	Y		Y							
Reporting limit not given (sample /field blank < 5)?				3PF	3PF	3PF		3PF	6PF			3PF	18PN	9PN	9PN	6PN
Sample not corrected (sample/field blank > 5)?							3PF			3PN	3PN		18PN	9PN	9PN	6PN
ANALYSIS METHOD																
Sampling date not within 2 days of reagent blank check?				R	R	R	R	R		R	R	R	R	R	R	
Extraction date not within 7 days of collection?				R	R	R	R			R	R					
Analysis date not within 30 days of extraction?				R	R	R	R			R	R					
Reverse phase HPLC not used?																
Impingers not analyzed seperately?				Y	Y	Y	Y									
Matrix spike not conducted per test?										R	R		R	R	R	
Recovery not reported?										Y	Y		Y	Y	Y	

R-Not reported
V-Values not provided
N-Not conducted
P-Not provided
Y-Failed check
Blank Cells - Indicates check passed

RF-Runs do not pass check
RN-Runs could not be checked
PF-Points do not pass check
PN-Points could not be checked

VALIDATION PARAMETERS SUMMARY FOR CARB 433 (1989)
NICKEL

VALIDATION PARAMETERS	Stack ID			
	42510	45210	63810	64610
SAMPLE LOCATION				
Average absolute value of swirl angles >10%?		V	V	V
Stack diameter < 12 inch? Stack area < 113 inch squared?				
Method 1 not used?				R
SAMPLING EQUIPMENT				
Variation in nozzle diameter > 0.004 inch?			V	
Pre- and post-test meter Y not within (+/-) 5%?			V	
Pitot tube semi-annual calibration sheet included?		P	P	
SAMPLING PROCEDURES				
Pre-test leak rate > 0.02 cfm or 4% of average? Post-test leak rate > 0.02 cfm or 4% of average?	V V			
Isokinetic variation <90 or >110%?				
FIELD REAGENT BLANK				
Not conducted for two filters and 0.1N HNO3? Not used to correct sample?	R Y	R Y		 Y
ANALYSIS METHOD				
Atomic absorption spectrometry not used?	Y	R	Y	R
Not conducted in triplicate?		R		R

R-Not reported
V-Values not provided
N-Not conducted
P-Not provided
Y-Failed check
Blank Cells - Indicates check passed

RF-Runs do not pass check
RN-Runs could not be checked
PF-Points do not pass check
PN-Points could not be checked

VALIDATION PARAMETERS SUMMARY FOR EPA MMT (1989)
TRACE METALS

VALIDATION PARAMETERS	Stack ID								
	11110	14210	14610	16010	43510	51010	63810	64410	64610
SAMPLE LOCATION									
Average absolute value of swirl angles >10%?	V	V	V	V	V	V	V	V	V
Stack diameter < 12 inch? Stack area < 113 inch squared?									
Method 1 not used?						R			R
SAMPLING EQUIPMENT									
Variation in nozzle diameter > 0.004 inch?	V	V	V	V	V		V		
Pre- and post-test meter Y not within (+/-) 5%?		N	N	N	V	N		N	
Pitot tube semi-annual calibration sheet included?	P	P	P		P	P	P	P	
SAMPLING PROCEDURES									
Pre-test leak rate > 0.02 cfm or 4% of average? Post-test leak rate > 0.02 cfm or 4% of average?									
Isokinetic variation <90 or >110%?									
FIELD REAGENT BLANK									
Not collected once per test? Not used to correct samples?	Y	Y	Y	Y	R R	Y		Y	Y
DUPLICATES									
Percent difference > 5% (ICAP)?	V	V	V	V	V	V	1PF	V	30PN
Not conducted per run (GFAAS)?	R	R	R	R	R		R		
Not conducted per run (CVAAS)?	R	R	R		R		R		3RF
MATRIX SPIKES									
Not conducted on front- and back-half (GFAAS)? Percent recovery < 75 or > 125%?	V	V	V	R V	R V		V		
Not conducted on one nitric impinger (CVAAS)? Percent recovery < 75 or > 125%?	R V	R V	R V		R V				R V

R-Not reported
V-Values not provided
N-Not conducted
P-Not provided
Y-Failed check
Blank Cells - Indicates check passed

RF-Runs do not pass check
RN-Runs could not be checked
PF-Points do not pass check
PN-Points could not be checked

VALIDATION PARAMETERS SUMMARY FOR CARB 436 (1992)
TRACE METALS

VALIDATION PARAMETERS	Stack ID	
	42510	43610
SAMPLE LOCATION		
Average absolute value of swirl angles >10%?		V
Stack diameter < 12 inch?		
Stack area < 113 inch squared?		
Method 1 not used?		
[illegible]		
Variation in nozzle diameter > 0.004 inch?		
Pre- and post-test meter Y not within (+/-) 5%?		N
Pitot tube semi-annual calibration sheet included?		
SAMPLING PROCEDURES		
Pre-test leak rate > 0.02 cfm or 4% of average?	V	
Post-test leak rate > 0.02 cfm or 4% of average?	V	
Isokinetic variation <90 or >110%?		
Number of Sample runs < 3?		
FIELD BLANK		
Not collected once per test?	Y	
Used to correct samples?		
Sample/field blank < 5?	R	35PF
FIELD REAGENT BLANK		
Not collected once per test?		
Not used to correct samples?	Y	
ANALYSIS DATES		
Not within 2 months (ICAP)?		R
Not within 2 months (GFAAS)?		
Not within 28 days (CVAAS)?	Y	
DUPLICATES		
Percent difference > 10% (ICAP)?	V	V
Not conducted per run (GFAAS)?	R	
Not conducted per run (CVAAS)?		3RF
MATRIX SPIKES		
Not conducted on front- and back-half (GFAAS)?	R	
Percent recovery < 75 or > 125%?	V	
Not conducted on one nitric impinger (CVAAS)?	R	R
Percent recovery < 75 or > 125%?	V	V

R-Not reported
V-Values not provided
N-Not conducted
P-Not provided
Y-Failed check
Blank Cells - Indicates check passed

RF-Runs do not pass check
RN-Runs could not be checked
PF-Points do not pass check
PN-Points could not be checked

SECTION 5
SUBSTANCE SPECIFIC QA FAILURE FREQUENCY

ATTACHMENT 5 - SUBSTANCE SPECIFIC QA FAILURE FREQUENCY.

Method	Version	Check	Substance	Count
CARB 422	91	Field Blank Level not Reported	1,3-Butadiene	3
CARB 425	90	Matrix Spike Recovery > 10%	Chromium (Hex)	1
		Matrix Spike Recovery not Reported	Chromium (Hex)	2
CARB 429	89	Internal Standard Recovery <50 or >150%	Acenaphthene	12
			Acenaphthylene	11
			Anthracene	13
			Benzo(a)anthracene	11
			Benzo(a)pyrene	10
			Benzo(b)fluoranthene	6
			Benzo(g,h,i)perylene	7
			Benzo(k)fluoranthene	6
			Chrysene	10
			Fluoranthene	1
			Fluorene	8
			Naphthalene	13
			Phenanthrene	6
			Pyrene	2
		Internal Standard Recovery not Reported	Acenaphthene	5
			Acenaphthylene	6
			Benzo(a)anthracene	6
			Benzo(g,h,i)perylene	6
			Fluoranthene	6
			Fluorene	11
			Naphthalene	6
			Phenanthrene	6
			Pyrene	9
CARB 430	91	Reporting Limit not Given when Sample/Blank Ratio <5	Acetaldehyde	6
			Acrolein	3
			Formaldehyde	12
		Could not Determine if Reporting Limit Given when Sample/Blank Ratio <5	Acetaldehyde	15
			Acrolein	12
			Formaldehyde	15
		Sample not Corrected when Sample/Blank Ratio >5	Formaldehyde	3
		Could not Determine if Sample Corrected when Sample/Blank Ratio <5	Acetaldehyde	15
			Acrolein	12
			Formaldehyde	21
CARB 436	92	Sample to Blank Ratio <5	Antimony	3
			Arsenic	1
			Beryllium	3
			Cadmium	3
			Chromium	3
			Copper	2
			Lead	3
			Manganese	1
			Nickel	2
			Phosphorus	3
			Selenium	3
			Silver	2
			Thallium	3
			Zinc	3
EPA MMT	89	Duplicate Percent Difference >5% for ICAP	Selenium	1
		Duplicate Percent Difference not Reported for ICAP	Arsenic	3
			Beryllium	3
			Cadmium	3

ATTACHMENT 5 - SUBSTANCE SPECIFIC QA FAILURE FREQUENCY.

Method	Version	Check	Substance	Count
			Chromium	3
			Copper	3
			Lead	3
			Manganese	3
			Nickel	3
			Selenium	3
			Zinc	3

SECTION 6
STATISTICAL ANALYSIS OF GROUPS ON VOLUME BASIS

TABLE 6-1. SOURCE CLASSIFICATION CODE COMPARISON.

Major Group	Category	Substance	EF Unit	Value Type	First Sample Statistics					Second Sample Statistics					Significant Difference at 95%Confidence
					Description SCC	Size	Average	Standard Deviation	Detect Ratio	Description SCC	Size	Average	Standard Deviation	Detect Ratio	
ICE, Field Gas	VOC	Benzene	lbs/MMcf	EF	20200202	6	1.72E+00	6.13E-01	1.00	20200252	5	7.85E+00	4.07E+00	1.00	Yes
ICE, Field Gas	VOC	Benzene	lbs/MMcf	EF	20200202	6	1.72E+00	6.13E-01	1.00	20200254	2	1.10E+01	1.26E-01	1.00	Yes
ICE, Field Gas	VOC	Benzene	lbs/MMcf	EF	20200252	5	7.85E+00	4.77E+00	1.00	20200254	2	1.10E+01	1.26E-01	1.00	No
ICE, Field Gas	VOC	Benzene	lbs/MMcf	Log EF	20200202	6	2.07E-01	1.83E-01	1.00	20200252	5	8.31E-01	2.60E-01	1.00	Yes
ICE, Field Gas	VOC	Benzene	lbs/MMcf	Log EF	20200202	6	2.07E-01	1.83E-01	1.00	20200254	2	1.04E+00	4.99E-03	1.00	Yes
ICE, Field Gas	VOC	Benzene	lbs/MMcf	Log EF	20200252	5	8.31E-01	2.60E-01	1.00	20200254	2	1.04E+00	4.99E-03	1.00	No
ICE, Field Gas	VOC	Formaldehyde	lbs/MMcf	EF	20200202	9	4.15E+01	3.18E+01	1.00	20200252	6	5.09E+01	3.55E+01	1.00	No
ICE, Field Gas	VOC	Formaldehyde	lbs/MMcf	EF	20200202	9	4.15E+01	3.18E+01	1.00	20200254	3	5.05E+00	8.04E-01	1.00	No
ICE, Field Gas	VOC	Formaldehyde	lbs/MMcf	EF	20200252	6	5.09E+01	3.55E+01	1.00	20200254	3	5.05E+00	8.04E-01	1.00	No
ICE, Field Gas	VOC	Formaldehyde	lbs/MMcf	Log EF	20200202	9	1.48E+00	4.02E-01	1.00	20200252	6	1.49E+00	5.82E-01	1.00	No
ICE, Field Gas	VOC	Formaldehyde	lbs/MMcf	Log EF	20200202	9	1.48E+00	4.02E-01	1.00	20200254	3	7.00E-01	6.65E-02	1.00	Yes
ICE, Field Gas	VOC	Formaldehyde	lbs/MMcf	Log EF	20200252	6	1.49E+00	5.82E-01	1.00	20200254	3	7.00E-01	6.65E-02	1.00	No
ICE, Field Gas	VOC	Propylene	lbs/MMcf	EF	20200202	6	1.59E+01	4.86E+00	1.00	20200252	5	2.49E+01	1.41E+01	1.00	No
ICE, Field Gas	VOC	Propylene	lbs/MMcf	EF	20200202	6	1.59E+01	4.86E+00	1.00	20200254	2	3.04E+00	0.00E+00	0.00	Yes
ICE, Field Gas	VOC	Propylene	lbs/MMcf	EF	20200252	5	2.49E+01	1.41E+01	1.00	20200254	2	3.04E+00	0.00E+00	0.00	No
ICE, Field Gas	VOC	Propylene	lbs/MMcf	Log EF	20200202	6	1.18E+00	1.51E-01	1.00	20200252	5	1.34E+00	2.52E-01	1.00	No
ICE, Field Gas	VOC	Propylene	lbs/MMcf	Log EF	20200202	6	1.18E+00	1.51E-01	1.00	20200254	2	4.83E-01	0.00E+00	0.00	Yes
ICE, Field Gas	VOC	Propylene	lbs/MMcf	Log EF	20200252	5	1.34E+00	2.52E-01	1.00	20200254	2	4.83E-01	0.00E+00	0.00	Yes
ICE, Field Gas	VOC	Toluene	lbs/MMcf	EF	20200202	6	7.68E-01	3.92E-01	1.00	20200252	5	2.86E+00	2.08E+00	1.00	Yes
ICE, Field Gas	VOC	Toluene	lbs/MMcf	EF	20200202	6	7.68E-01	3.92E-01	1.00	20200254	2	3.44E+00	1.57E-01	1.00	Yes
ICE, Field Gas	VOC	Toluene	lbs/MMcf	EF	20200252	5	2.86E+00	2.08E+00	1.00	20200254	2	3.44E+00	1.57E-01	1.00	No
ICE, Field Gas	VOC	Toluene	lbs/MMcf	Log EF	20200202	6	-1.84E-01	2.95E-01	1.00	20200252	5	2.76E-01	5.49E-01	1.00	No
ICE, Field Gas	VOC	Toluene	lbs/MMcf	Log EF	20200202	6	-1.84E-01	2.95E-01	1.00	20200254	2	5.36E-01	1.98E-02	1.00	Yes
ICE, Field Gas	VOC	Toluene	lbs/MMcf	Log EF	20200252	5	2.76E-01	5.49E-01	1.00	20200254	2	5.36E-01	1.98E-02	1.00	No
ICE, Field Gas	VOC	Xylene (m,p)	lbs/MMcf	EF	20200202	6	3.02E-01	3.01E-01	1.00	20200252	5	6.04E-01	4.88E-01	1.00	No
ICE, Field Gas	VOC	Xylene (m,p)	lbs/MMcf	EF	20200202	6	3.02E-01	3.01E-01	1.00	20200254	2	5.37E-01	3.62E-02	1.00	No
ICE, Field Gas	VOC	Xylene (m,p)	lbs/MMcf	EF	20200252	5	6.04E-01	4.88E-01	1.00	20200254	2	5.37E-01	3.62E-02	1.00	No
ICE, Field Gas	VOC	Xylene (m,p)	lbs/MMcf	Log EF	20200202	6	-6.51E-01	3.47E-01	1.00	20200252	5	-3.42E-01	3.68E-01	1.00	No
ICE, Field Gas	VOC	Xylene (m,p)	lbs/MMcf	Log EF	20200202	6	-6.51E-01	3.47E-01	1.00	20200254	2	-2.71E-01	2.93E-02	1.00	No
ICE, Field Gas	VOC	Xylene (m,p)	lbs/MMcf	Log EF	20200252	5	-3.42E-01	3.68E-01	1.00	20200254	2	-2.71E-01	2.93E-02	1.00	No
ICE, Field Gas	VOC	Xylene (o)	lbs/MMcf	EF	20200202	6	8.97E-02	2.30E-02	1.00	20200252	5	2.88E-01	2.54E-01	1.00	No
ICE, Field Gas	VOC	Xylene (o)	lbs/MMcf	EF	20200202	6	8.97E-02	2.30E-02	1.00	20200254	2	2.68E-01	1.81E-02	1.00	Yes
ICE, Field Gas	VOC	Xylene (o)	lbs/MMcf	EF	20200252	5	2.88E-01	2.54E-01	1.00	20200254	2	2.68E-01	1.81E-02	1.00	No
ICE, Field Gas	VOC	Xylene (o)	lbs/MMcf	Log EF	20200202	6	-1.06E+00	1.17E-01	1.00	20200252	5	-7.01E-01	4.27E-01	1.00	No
ICE, Field Gas	VOC	Xylene (o)	lbs/MMcf	Log EF	20200202	6	-1.06E+00	1.17E-01	1.00	20200254	2	-5.72E-01	2.93E-02	1.00	Yes
ICE, Field Gas	VOC	Xylene (o)	lbs/MMcf	Log EF	20200252	5	-7.01E-01	4.27E-01	1.00	20200254	2	-5.72E-01	2.93E-02	1.00	No
ICE, Natural Gas	VOC	Acetaldehyde	lbs/MMcf	EF	20200202	15	3.99E+00	2.59E+00	1.00	20200254	3	1.71E+00	1.10E-01	1.00	No
ICE, Natural Gas	VOC	Acetaldehyde	lbs/MMcf	Log EF	20200202	15	5.18E-01	2.77E-01	1.00	20200254	3	2.32E-01	2.80E-02	1.00	No
ICE, Natural Gas	VOC	Acrolein	lbs/MMcf	EF	20200202	14	1.63E+00	1.50E+00	1.00	20200254	6	5.40E-01	5.71E-01	1.00	No
ICE, Natural Gas	VOC	Acrolein	lbs/MMcf	Log EF	20200202	14	4.80E-02	4.07E-01	1.00	20200254	6	-8.04E-01	1.04E+00	1.00	Yes
ICE, Natural Gas	VOC	Benzene	lbs/MMcf	EF	20200202	14	1.21E+00	5.70E-01	1.00	20200254	2	9.87E+00	4.98E-01	1.00	Yes

TABLE 6-1. SOURCE CLASSIFICATION CODE COMPARISON.

Major Group	Category	Substance	EF Unit	Value Type	First Sample Statistics					Second Sample Statistics					Significant Difference at 95%Confidence
					Description SCC	Size	Average	Standard Deviation	Detect Ratio	Description SCC	Size	Average	Standard Deviation	Detect Ratio	
ICE, Natural Gas	VOC	Benzene	lbs/MMcf	Log EF	20200202	14	2.07E-02	2.65E-01	1.00	20200254	2	9.94E-01	2.19E-02	1.00	Yes
ICE, Natural Gas	VOC	Formaldehyde	lbs/MMcf	EF	[illegible]					20200254	6	5.32E+00	5.35E+00	1.00	Yes
ICE, Natural Gas	VOC	Formaldehyde	lbs/MMcf	Log EF	[illegible]					20200254	6	3.54E-01	7.13E-01	1.00	Yes
ICE, Natural Gas	VOC	Propylene	lbs/MMcf	EF	20200202	14	1.87E+01	2.04E+01	0.97	20200254	2	3.95E+01	3.54E+00	1.00	No
ICE, Natural Gas	VOC	Propylene	lbs/MMcf	Log EF	20200202	14	1.07E+00	4.10E-01	0.97	20200254	2	1.60E+00	3.89E-02	1.00	No
ICE, Natural Gas	VOC	Toluene	lbs/MMcf	EF	20200202	14	4.12E-01	1.40E-01	1.00	20200254	2	2.51E+00	1.55E-01	1.00	Yes
ICE, Natural Gas	VOC	Toluene	lbs/MMcf	Log EF	20200202	14	-4.14E-01	1.74E-01	1.00	20200254	2	4.00E-01	2.67E-02	1.00	Yes
ICE, Natural Gas	VOC	Xylene (m,p)	lbs/MMcf	EF	20200202	14	8.63E-02	3.99E-02	1.00	20200254	2	4.41E-01	1.78E-02	1.00	Yes
ICE, Natural Gas	VOC	Xylene (m,p)	lbs/MMcf	Log EF	20200202	14	-1.11E+00	2.18E-01	1.00	20200254	2	-3.56E-01	1.76E-02	1.00	Yes
ICE, Natural Gas	VOC	Xylene (o)	lbs/MMcf	EF	20200202	14	4.94E-02	1.95E-02	0.95	20200254	2	2.17E-01	7.13E-03	1.00	Yes
ICE, Natural Gas	VOC	Xylene (o)	lbs/MMcf	Log EF	20200202	14	-1.35E+00	2.19E-01	0.95	20200254	2	-6.64E-01	1.43E-02	1.00	Yes

TABLE 6-2. AIR POLLUTION CONTROL DEVICE COMPARISON.

Major Group	Category	Substance	EF Unit	Value Type	First Sample Statistics					Second Sample Statistics					Significant Difference at 95%Confidence
					Description APCD	Size	Average	Standard Deviation	Detect Ratio	Description APCD	Size	Average	Standard Deviation	Detect Ratio	
Boiler, Ref. Gas	SVOC	Phenol	lbs/MMcf	EF	None	9	2.65E-03	2.24E-03	0.93	SCR	3	7.60E-04	4.53E-05	0.00	No
Boiler, Ref. Gas	SVOC	Phenol	lbs/MMcf	Log EF	None	9	-2.73E+00	4.00E-01	0.93	SCR	3	-3.12E+00	2.55E-02	0.00	No
Boiler, Ref. Gas	VOC	Acetaldehyde	lbs/MMcf	EF	None	12	4.43E-03	4.37E-03	1.00	SCR	3	2.13E-03	6.87E-04	1.00	No
Boiler, Ref. Gas	VOC	Acetaldehyde	lbs/MMcf	Log EF	None	12	-2.89E+00	1.15E+00	1.00	SCR	3	-2.69E+00	1.46E-01	1.00	No
Boiler, Ref. Gas	VOC	Benzene	lbs/MMcf	EF	None	13	1.38E-01	2.18E-01	0.70	SCR	3	5.04E-01	7.73E-01	0.92	No
Boiler, Ref. Gas	VOC	Benzene	lbs/MMcf	Log EF	None	13	-1.25E+00	6.39E-01	0.70	SCR	3	-7.78E-01	8.00E-01	0.92	No
Boiler, Ref. Gas	VOC	Formaldehyde	lbs/MMcf	EF	None	12	1.51E-02	7.41E-03	1.00	SCR	3	1.93E-02	1.92E-02	1.00	No
Boiler, Ref. Gas	VOC	Formaldehyde	lbs/MMcf	Log EF	None	12	-1.88E+00	2.64E-01	1.00	SCR	3	-1.86E+00	4.21E-01	1.00	No
Boiler, Ref. Gas	VOC	Hydrogen Sulfide	lbs/MMcf	EF	None	13	3.22E-01	2.49E-01	0.00	SCR	3	6.38E-02	2.02E-03	0.00	No
Boiler, Ref. Gas	VOC	Hydrogen Sulfide	lbs/MMcf	Log EF	None	13	-6.50E-01	4.21E-01	0.00	SCR	3	-1.20E+00	1.37E-02	0.00	Yes
Boiler, Ref. Gas	VOC	Toluene	lbs/MMcf	EF	None	6	4.04E-01	3.76E-01	0.96	SCR	3	1.71E+00	2.85E+00	0.97	No
Boiler, Ref. Gas	VOC	Toluene	lbs/MMcf	Log EF	None	6	-6.77E-01	6.10E-01	0.96	SCR	3	-5.46E-01	1.08E+00	0.97	No
Heater, Ref. Gas	PAH	Acenaphthene	lbs/MMcf	EF	DeNOx	3	2.30E-06	7.92E-07	0.80	None	8	2.34E-06	1.78E-06	1.00	No
Heater, Ref. Gas	PAH	Acenaphthene	lbs/MMcf	Log EF	DeNOx	3	-5.66E+00	1.72E-01	0.80	None	8	-5.72E+00	2.71E-01	1.00	No
Heater, Ref. Gas	PAH	Acenaphthylene	lbs/MMcf	EF	DeNOx	3	1.40E-06	1.45E-08	0.00	None	8	1.57E-06	6.96E-07	0.68	No
Heater, Ref. Gas	PAH	Acenaphthylene	lbs/MMcf	Log EF	DeNOx	3	-5.85E+00	4.50E-03	0.00	None	8	-5.84E+00	1.86E-01	0.68	No
Heater, Ref. Gas	PAH	Anthracene	lbs/MMcf	EF	DeNOx	3	2.20E-06	7.35E-07	0.79	None	8	3.03E-06	1.83E-06	0.96	No
Heater, Ref. Gas	PAH	Anthracene	lbs/MMcf	Log EF	DeNOx	3	-5.68E+00	1.61E-01	0.79	None	8	-5.59E+00	2.66E-01	0.96	No
Heater, Ref. Gas	PAH	Benzo(a)anthracene	lbs/MMcf	EF	DeNOx	3	2.34E-06	3.61E-07	1.00	None	23	4.15E-05	1.02E-04	1.00	No
Heater, Ref. Gas	PAH	Benzo(a)anthracene	lbs/MMcf	Log EF	DeNOx	3	-5.63E+00	6.96E-02	1.00	None	23	-5.12E+00	7.58E-01	1.00	No
Heater, Ref. Gas	PAH	Benzo(a)pyrene	lbs/MMcf	EF	DeNOx	3	1.40E-06	1.45E-08	0.00	None	23	1.12E-04	3.61E-04	0.98	No
Heater, Ref. Gas	PAH	Benzo(a)pyrene	lbs/MMcf	Log EF	DeNOx	3	-5.85E+00	4.50E-03	0.00	None	23	-5.42E+00	8.45E-01	0.98	No
Heater, Ref. Gas	PAH	Benzo(b)fluoranthene	lbs/MMcf	EF	DeNOx	3	3.20E-06	1.42E-06	1.00	None	23	5.17E-05	1.54E-04	0.99	No
Heater, Ref. Gas	PAH	Benzo(b)fluoranthene	lbs/MMcf	Log EF	DeNOx	3	-5.52E+00	1.83E-01	1.00	None	23	-5.29E+00	7.68E-01	0.99	No
Heater, Ref. Gas	PAH	Benzo(g,h,i)perylene	lbs/MMcf	EF	DeNOx	3	1.40E-06	1.45E-08	0.00	None	8	1.08E-06	1.38E-07	0.00	Yes
Heater, Ref. Gas	PAH	Benzo(g,h,i)perylene	lbs/MMcf	Log EF	DeNOx	3	-5.85E+00	4.50E-03	0.00	None	8	-5.97E+00	5.20E-02	0.00	Yes
Heater, Ref. Gas	PAH	Benzo(k)fluoranthene	lbs/MMcf	EF	DeNOx	3	1.40E-06	1.45E-08	0.00	None	23	3.06E-05	8.93E-05	0.97	No
Heater, Ref. Gas	PAH	Benzo(k)fluoranthene	lbs/MMcf	Log EF	DeNOx	3	-5.85E+00	4.50E-03	0.00	None	23	-5.41E+00	6.96E-01	0.97	No
Heater, Ref. Gas	PAH	Chrysene	lbs/MMcf	EF	DeNOx	3	2.94E-06	2.14E-06	0.84	None	8	1.18E-06	2.51E-07	0.44	Yes
Heater, Ref. Gas	PAH	Chrysene	lbs/MMcf	Log EF	DeNOx	3	-5.61E+00	3.03E-01	0.84	None	8	-5.93E+00	8.68E-02	0.44	Yes
Heater, Ref. Gas	PAH	Dibenz(a,h)anthracene	lbs/MMcf	EF	DeNOx	3	1.40E-06	1.45E-08	0.00	None	23	1.18E-05	2.93E-05	0.00	No
Heater, Ref. Gas	PAH	Dibenz(a,h)anthracene	lbs/MMcf	Log EF	DeNOx	3	-5.85E+00	4.50E-03	0.00	None	23	-5.54E+00	5.96E-01	0.00	No
Heater, Ref. Gas	PAH	Fluoranthene	lbs/MMcf	EF	DeNOx	3	3.88E-06	1.67E-06	1.00	None	8	2.75E-06	8.50E-07	1.00	No
Heater, Ref. Gas	PAH	Fluoranthene	lbs/MMcf	Log EF	DeNOx	3	-5.44E+00	1.93E-01	1.00	None	8	-5.58E+00	1.34E-01	1.00	No
Heater, Ref. Gas	PAH	Fluorene	lbs/MMcf	EF	DeNOx	3	8.45E-06	4.58E-06	1.00	None	8	1.14E-05	8.03E-06	1.00	No
Heater, Ref. Gas	PAH	Fluorene	lbs/MMcf	Log EF	DeNOx	3	-5.13E+00	3.02E-01	1.00	None	8	-5.02E+00	2.66E-01	1.00	No
Heater, Ref. Gas	PAH	Indeno(1,2,3-cd)pyrene	lbs/MMcf	EF	DeNOx	3	1.40E-06	1.45E-08	0.00	None	23	1.30E-04	4.19E-04	0.99	No
Heater, Ref. Gas	PAH	Indeno(1,2,3-cd)pyrene	lbs/MMcf	Log EF	DeNOx	3	-5.85E+00	4.50E-03	0.00	None	23	-5.36E+00	8.83E-01	0.99	No
Heater, Ref. Gas	PAH	Naphthalene	lbs/MMcf	EF	DeNOx	3	1.57E-04	2.24E-05	1.00	None	8	3.56E-04	1.97E-04	1.00	No
Heater, Ref. Gas	PAH	Naphthalene	lbs/MMcf	Log EF	DeNOx	3	-3.81E+00	6.35E-02	1.00	None	8	-3.50E+00	2.32E-01	1.00	No
Heater, Ref. Gas	PAH	Phenanthrene	lbs/MMcf	EF	DeNOx	3	1.48E-05	6.28E-06	1.00	None	8	1.43E-05	4.46E-06	1.00	No
Heater, Ref. Gas	PAH	Phenanthrene	lbs/MMcf	Log EF	DeNOx	3	-4.86E+00	2.18E-01	1.00	None	8	-4.87E+00	1.42E-01	1.00	No
Heater, Ref. Gas	PAH	Pyrene	lbs/MMcf	EF	DeNOx	3	3.63E-06	1.48E-06	1.00	None	8	2.54E-06	5.79E-07	1.00	No
Heater, Ref. Gas	PAH	Pyrene	lbs/MMcf	Log EF	DeNOx	3	-5.47E+00	1.91E-01	1.00	None	8	-5.61E+00	1.03E-01	1.00	No
Heater, Ref. Gas	SVOC	Ethylbenzene	lbs/MMcf	EF	DeNOx	3	5.06E-02	0.00E+00	0.00	None	9	2.37E-02	3.30E-02	0.88	No
Heater, Ref. Gas	SVOC	Ethylbenzene	lbs/MMcf	Log EF	DeNOx	3	-1.30E+00	0.00E+00	0.00	None	9	-1.98E+00	5.70E-01	0.88	No

TABLE 6-2. AIR POLLUTION CONTROL DEVICE COMPARISON.

Major Group	Category	Substance	EF Unit	Value Type	First Sample Statistics					Second Sample Statistics					Significant Difference at 95%Confidence
					Description APCD	Size	Average	Standard Deviation	Detect Ratio	Description APCD	Size	Average	Standard Deviation	Detect Ratio	
Heater, Ref. Gas	SVOC	Phenol	lbs/MMcf	EF	None	15	6.07E-03	5.81E-03	0.96	SCR	6	9.21E-03	1.03E-02	0.98	No
Heater, Ref. Gas	SVOC	Phenol	lbs/MMcf	Log EF	None	15	-2.46E+00	5.52E-01	0.96	SCR	6	-2.37E+00	6.50E-01	0.98	No
Heater, Ref. Gas	VOC	Acetaldehyde	lbs/MMcf	EF	DeNOx	3	2.89E-02	4.12E-03	0.38	None	15	1.66E-02	2.95E-02	1.00	No
Heater, Ref. Gas	VOC	Acetaldehyde	lbs/MMcf	EF	DeNOx	3	2.89E-02	4.12E-03	0.38	SCR	6	2.21E-02	1.94E-02	1.00	No
Heater, Ref. Gas	VOC	Acetaldehyde	lbs/MMcf	EF	None	15	1.66E-02	2.95E-02	1.00	SCR	6	2.21E-02	1.94E-02	1.00	No
Heater, Ref. Gas	VOC	Acetaldehyde	lbs/MMcf	Log EF	DeNOx	3	-1.54E+00	6.36E-02	0.38	None	15	-2.43E+00	8.79E-01	1.00	No
Heater, Ref. Gas	VOC	Acetaldehyde	lbs/MMcf	Log EF	DeNOx	3	-1.54E+00	6.36E-02	0.38	SCR	6	-1.82E+00	4.32E-01	1.00	No
Heater, Ref. Gas	VOC	Acetaldehyde	lbs/MMcf	Log EF	None	15	-2.43E+00	8.79E-01	1.00	SCR	6	-1.82E+00	4.32E-01	1.00	No
Heater, Ref. Gas	VOC	Benzene	lbs/MMcf	EF	DeNOx	3	3.73E-02	0.00E+00	0.00	None	24	8.23E-02	8.76E-02	0.03	No
Heater, Ref. Gas	VOC	Benzene	lbs/MMcf	EF	DeNOx	3	3.73E-02	0.00E+00	0.00	SCR	6	1.15E-01	4.51E-02	0.00	Yes
Heater, Ref. Gas	VOC	Benzene	lbs/MMcf	EF	None	24	8.23E-02	8.76E-02	0.03	SCR	6	1.15E-01	4.51E-02	0.00	No
Heater, Ref. Gas	VOC	Benzene	lbs/MMcf	Log EF	DeNOx	3	-1.43E+00	0.00E+00	0.00	None	24	-1.48E+00	6.99E-01	0.03	No
Heater, Ref. Gas	VOC	Benzene	lbs/MMcf	Log EF	DeNOx	3	-1.43E+00	0.00E+00	0.00	SCR	6	-9.68E-01	1.77E-01	0.00	Yes
Heater, Ref. Gas	VOC	Benzene	lbs/MMcf	Log EF	None	24	-1.48E+00	6.99E-01	0.03	SCR	6	-9.68E-01	1.77E-01	0.00	No
Heater, Ref. Gas	VOC	Formaldehyde	lbs/MMcf	EF	DeNOx	3	6.91E-02	2.27E-02	1.00	None	15	1.96E-01	4.52E-01	1.00	No
Heater, Ref. Gas	VOC	Formaldehyde	lbs/MMcf	EF	DeNOx	3	6.91E-02	2.27E-02	1.00	SCR	3	1.28E-02	4.04E-03	1.00	Yes
Heater, Ref. Gas	VOC	Formaldehyde	lbs/MMcf	EF	None	15	1.96E-01	4.52E-01	1.00	SCR	3	1.28E-02	4.04E-03	1.00	No
Heater, Ref. Gas	VOC	Formaldehyde	lbs/MMcf	Log EF	DeNOx	3	-1.18E+00	1.63E-01	1.00	None	15	-1.69E+00	1.09E+00	1.00	No
Heater, Ref. Gas	VOC	Formaldehyde	lbs/MMcf	Log EF	DeNOx	3	-1.18E+00	1.63E-01	1.00	SCR	3	-1.91E+00	1.55E-01	1.00	Yes
Heater, Ref. Gas	VOC	Formaldehyde	lbs/MMcf	Log EF	None	15	-1.69E+00	1.09E+00	1.00	SCR	3	-1.91E+00	1.55E-01	1.00	No
Heater, Ref. Gas	VOC	Hydrogen Sulfide	lbs/MMcf	EF	None	15	4.69E-01	3.87E-01	0.00	SCR	6	2.47E-01	8.43E-02	0.00	No
Heater, Ref. Gas	VOC	Hydrogen Sulfide	lbs/MMcf	Log EF	None	15	-5.99E-01	6.32E-01	0.00	SCR	6	-6.29E-01	1.54E-01	0.00	No
Heater, Ref. Gas	VOC	Toluene	lbs/MMcf	EF	DeNOx	3	4.39E-02	0.00E+00	0.00	None	24	1.40E-01	2.45E-01	0.60	No
Heater, Ref. Gas	VOC	Toluene	lbs/MMcf	EF	DeNOx	3	4.39E-02	0.00E+00	0.00	SCR	6	1.72E-01	6.88E-02	0.47	Yes
Heater, Ref. Gas	VOC	Toluene	lbs/MMcf	EF	None	24	1.40E-01	2.45E-01	0.60	SCR	6	1.72E-01	6.88E-02	0.47	No
Heater, Ref. Gas	VOC	Toluene	lbs/MMcf	Log EF	DeNOx	3	-1.36E+00	0.00E+00	0.00	None	24	-1.25E+00	6.39E-01	0.60	No
Heater, Ref. Gas	VOC	Toluene	lbs/MMcf	Log EF	DeNOx	3	-1.36E+00	0.00E+00	0.00	SCR	6	-8.08E-01	2.44E-01	0.47	Yes
Heater, Ref. Gas	VOC	Toluene	lbs/MMcf	Log EF	None	24	-1.25E+00	6.39E-01	0.60	SCR	6	-8.08E-01	2.44E-01	0.47	No
Heater, Ref. Gas	VOC	Xylene (Total)	lbs/MMcf	EF	DeNOx	3	5.06E-02	0.00E+00	0.00	None	9	3.29E-02	4.09E-02	0.91	No
Heater, Ref. Gas	VOC	Xylene (Total)	lbs/MMcf	Log EF	DeNOx	3	-1.30E+00	0.00E+00	0.00	None	9	-1.84E+00	5.92E-01	0.91	No
SG, Crude Oil	Metals	Arsenic	lbs/Mgal	EF	None	3	6.86E-04	9.78E-05	1.00	SO2 Scrub	6	1.15E-03	1.01E-03	1.00	No
SG, Crude Oil	Metals	Arsenic	lbs/Mgal	Log EF	None	3	-3.17E+00	5.98E-02	1.00	SO2 Scrub	6	-3.07E+00	3.72E-01	1.00	No
SG, Crude Oil	Metals	Cadmium	lbs/Mgal	EF	None	3	2.81E-05	6.72E-06	1.00	SO2 Scrub	6	2.30E-04	1.63E-04	1.00	No
SG, Crude Oil	Metals	Cadmium	lbs/Mgal	Log EF	None	3	-4.56E+00	9.85E-02	1.00	SO2 Scrub	6	-3.71E+00	2.70E-01	1.00	Yes
SG, Crude Oil	Metals	Chromium (Hex)	lbs/Mgal	EF	None	3	9.26E-05	2.81E-06	0.00	SO2 Scrub	6	2.01E-04	9.32E-05	0.58	No
SG, Crude Oil	Metals	Chromium (Hex)	lbs/Mgal	Log EF	None	3	-4.03E+00	1.31E-02	0.00	SO2 Scrub	6	-3.75E+00	2.65E-01	0.58	No
SG, Crude Oil	Metals	Chromium (Total)	lbs/Mgal	EF	None	3	2.18E-04	8.24E-05	1.00	SO2 Scrub	6	1.18E-03	6.81E-04	1.00	No
SG, Crude Oil	Metals	Chromium (Total)	lbs/Mgal	Log EF	None	3	-3.68E+00	1.58E-01	1.00	SO2 Scrub	6	-2.99E+00	2.64E-01	1.00	Yes
SG, Crude Oil	Metals	Copper	lbs/Mgal	EF	None	3	6.46E-04	2.89E-04	1.00	SO2 Scrub	6	1.17E-03	4.57E-04	1.00	No
SG, Crude Oil	Metals	Copper	lbs/Mgal	Log EF	None	3	-3.22E+00	1.79E-01	1.00	SO2 Scrub	6	-2.96E+00	1.74E-01	1.00	No
SG, Crude Oil	Metals	Lead	lbs/Mgal	EF	None	3	3.74E-04	1.19E-04	1.00	SO2 Scrub	6	2.37E-04	3.47E-05	0.15	Yes
SG, Crude Oil	Metals	Lead	lbs/Mgal	Log EF	None	3	-3.44E+00	1.46E-01	1.00	SO2 Scrub	6	-3.63E+00	6.80E-02	0.15	Yes
SG, Crude Oil	Metals	Manganese	lbs/Mgal	EF	None	1	2.44E-04		1.00	SO2 Scrub	6	3.49E-03	1.64E-03	1.00	No
SG, Crude Oil	Metals	Manganese	lbs/Mgal	Log EF	None	1	-3.61E+00		1.00	SO2 Scrub	6	-2.50E+00	2.11E-01	1.00	Yes
SG, Crude Oil	Metals	Mercury	lbs/Mgal	EF	None	1	3.60E-05		1.00	SO2 Scrub	6	2.55E-03	2.76E-03	1.00	No
SG, Crude Oil	Metals	Mercury	lbs/Mgal	Log EF	None	1	-4.44E+00		1.00	SO2 Scrub	6	-3.44E+00	1.28E+00	1.00	No

TABLE 6-2. AIR POLLUTION CONTROL DEVICE COMPARISON.

Major Group	Category	Substance	EF Unit	Value Type	First Sample Statistics					Second Sample Statistics					Significant Difference at 95%Confidence
					Description APCD	Size	Average	Standard Deviation	Detect Ratio	Description APCD	Size	Average	Standard Deviation	Detect Ratio	
SG, Crude Oil	Metals	Nickel	lbs/Mgal	EF	None	3	3.72E-01	2.53E-02	1.00	SO2 Scrub	6	3.55E-01	1.82E-02	1.00	No
SG, Crude Oil	Metals	Nickel	lbs/Mgal	Log EF	None	3	-4.30E-01	2.89E-02	1.00	SO2 Scrub	6	-4.50E-01	2.24E-02	1.00	No
SG, Crude Oil	Metals	Selenium	lbs/Mgal	EF	None	3	4.41E-04	9.79E-05	1.00	SO2 Scrub	6	1.55E-03	1.45E-03	0.96	No
SG, Crude Oil	Metals	Selenium	lbs/Mgal	Log EF	None	3	-3.36E+00	9.86E-02	1.00	SO2 Scrub	6	-3.09E+00	6.05E-01	0.96	No
SG, Crude Oil	Metals	Zinc	lbs/Mgal	EF	None	3	3.28E-02	3.26E-02	1.00	SO2 Scrub	6	1.05E-01	1.20E-01	0.93	No
SG, Crude Oil	Metals	Zinc	lbs/Mgal	Log EF	None	3	-1.78E+00	7.52E-01	1.00	SO2 Scrub	6	-1.31E+00	6.27E-01	0.93	No
SG, Crude Oil	PAH	Acenaphthylene	lbs/Mgal	EF	None	3	8.63E-06	8.44E-06	1.00	SO2 Scrub	6	6.91E-06	5.71E-06	0.13	No
SG, Crude Oil	PAH	Acenaphthylene	lbs/Mgal	Log EF	None	3	-5.26E+00	5.55E-01	1.00	SO2 Scrub	6	-5.46E+00	7.22E-01	0.13	No
SG, Crude Oil	PAH	Anthracene	lbs/Mgal	EF	None	2	1.29E-05	1.72E-05	1.00	SO2 Scrub	6	5.95E-06	8.66E-06	1.00	No
SG, Crude Oil	PAH	Anthracene	lbs/Mgal	Log EF	None	2	-5.36E+00	1.08E+00	1.00	SO2 Scrub	6	-5.54E+00	5.95E-01	1.00	No
SG, Crude Oil	PAH	Benzo(a)anthracene	lbs/Mgal	EF	None	2	3.16E-06	2.49E-06	1.00	SO2 Scrub	6	9.27E-06	5.58E-06	0.35	No
SG, Crude Oil	PAH	Benzo(a)anthracene	lbs/Mgal	Log EF	None	2	-5.58E+00	3.87E-01	1.00	SO2 Scrub	6	-5.21E+00	5.57E-01	0.35	No
SG, Crude Oil	PAH	Chrysene	lbs/Mgal	EF	None	3	1.37E-05	1.81E-05	1.00	SO2 Scrub	6	9.90E-06	6.18E-06	0.40	No
SG, Crude Oil	PAH	Chrysene	lbs/Mgal	Log EF	None	3	-5.16E+00	6.26E-01	1.00	SO2 Scrub	6	-5.14E+00	4.57E-01	0.40	No
SG, Crude Oil	PAH	Fluoranthene	lbs/Mgal	EF	None	3	5.66E-06	8.23E-07	1.00	SO2 Scrub	6	1.68E-05	1.79E-05	0.64	No
SG, Crude Oil	PAH	Fluoranthene	lbs/Mgal	Log EF	None	3	-5.25E+00	6.09E-02	1.00	SO2 Scrub	6	-4.99E+00	5.45E-01	0.64	No
SG, Crude Oil	PAH	Fluorene	lbs/Mgal	EF	None	3	1.70E-05	1.99E-05	1.00	SO2 Scrub	6	1.28E-05	1.65E-05	1.00	No
SG, Crude Oil	PAH	Fluorene	lbs/Mgal	Log EF	None	3	-4.98E+00	5.17E-01	1.00	SO2 Scrub	6	-5.15E+00	5.31E-01	1.00	No
SG, Crude Oil	PAH	Naphthalene	lbs/Mgal	EF	None	2	4.08E-04	1.61E-04	1.00	SO2 Scrub	6	9.26E-04	7.08E-04	1.00	No
SG, Crude Oil	PAH	Naphthalene	lbs/Mgal	Log EF	None	2	-3.41E+00	1.76E-01	1.00	SO2 Scrub	6	-3.18E+00	4.23E-01	1.00	No
SG, Crude Oil	PAH	Phenanthrene	lbs/Mgal	EF	None	3	4.67E-06	4.25E-06	1.00	SO2 Scrub	6	3.50E-05	6.27E-05	1.00	No
SG, Crude Oil	PAH	Phenanthrene	lbs/Mgal	Log EF	None	3	-5.44E+00	3.67E-01	1.00	SO2 Scrub	6	-4.89E+00	5.94E-01	1.00	No
SG, Crude Oil	PAH	Pyrene	lbs/Mgal	EF	None	3	4.43E-05	2.53E-05	1.00	SO2 Scrub	6	1.19E-05	8.93E-06	0.50	Yes
SG, Crude Oil	PAH	Pyrene	lbs/Mgal	Log EF	None	3	-4.40E+00	2.48E-01	1.00	SO2 Scrub	6	-5.08E+00	4.81E-01	0.50	No
Turbine, Natural Gas	PAH	Acenaphthene	lbs/MMcf	EF	None	3	5.48E-06	3.07E-06	0.82	SCR/COC	3	1.30E-06	3.46E-08	0.00	No
Turbine, Natural Gas	PAH	Acenaphthene	lbs/MMcf	Log EF	None	3	-5.31E+00	2.44E-01	0.82	SCR/COC	3	-5.89E+00	1.17E-02	0.00	Yes
Turbine, Natural Gas	PAH	Acenaphthylene	lbs/MMcf	EF	None	3	3.22E-06	6.11E-07	0.41	SCR/COC	3	2.79E-06	2.59E-06	0.69	No
Turbine, Natural Gas	PAH	Acenaphthylene	lbs/MMcf	Log EF	None	3	-5.50E+00	7.87E-02	0.41	SCR/COC	3	-5.67E+00	3.76E-01	0.69	No
Turbine, Natural Gas	PAH	Anthracene	lbs/MMcf	EF	None	3	1.61E-05	1.64E-05	1.00	SCR/COC	3	5.43E-05	8.57E-05	1.00	No
Turbine, Natural Gas	PAH	Anthracene	lbs/MMcf	Log EF	None	3	-4.95E+00	4.59E-01	1.00	SCR/COC	3	-4.83E+00	8.80E-01	1.00	No
Turbine, Natural Gas	PAH	Benzo(a)anthracene	lbs/MMcf	EF	None	3	3.88E-06	1.74E-06	0.51	SCR/COC	3	1.89E-06	5.05E-08	0.00	No
Turbine, Natural Gas	PAH	Benzo(a)anthracene	lbs/MMcf	Log EF	None	3	-5.44E+00	1.80E-01	0.51	SCR/COC	3	-5.72E+00	1.17E-02	0.00	No
Turbine, Natural Gas	PAH	Benzo(a)pyrene	lbs/MMcf	EF	None	3	2.97E-06	1.73E-07	0.00	SCR/COC	3	1.30E-06	3.46E-08	0.00	Yes
Turbine, Natural Gas	PAH	Benzo(a)pyrene	lbs/MMcf	Log EF	None	3	-5.53E+00	2.49E-02	0.00	SCR/COC	3	-5.89E+00	1.17E-02	0.00	Yes
Turbine, Natural Gas	PAH	Benzo(b)fluoranthene	lbs/MMcf	EF	None	3	2.97E-06	1.73E-07	0.00	SCR/COC	3	3.84E-06	4.41E-06	0.78	No
Turbine, Natural Gas	PAH	Benzo(b)fluoranthene	lbs/MMcf	Log EF	None	3	-5.53E+00	2.49E-02	0.00	SCR/COC	3	-5.61E+00	4.86E-01	0.78	No
Turbine, Natural Gas	PAH	Benzo(g,h,i)perylene	lbs/MMcf	EF	None	3	2.97E-06	1.73E-07	0.00	SCR/COC	3	1.96E-06	1.17E-06	0.56	No
Turbine, Natural Gas	PAH	Benzo(g,h,i)perylene	lbs/MMcf	Log EF	None	3	-5.53E+00	2.49E-02	0.00	SCR/COC	3	-5.75E+00	2.37E-01	0.56	No
Turbine, Natural Gas	PAH	Benzo(k)fluoranthene	lbs/MMcf	EF	None	3	2.97E-06	1.73E-07	0.00	SCR/COC	3	2.37E-06	1.88E-06	0.64	No
Turbine, Natural Gas	PAH	Benzo(k)fluoranthene	lbs/MMcf	Log EF	None	3	-5.53E+00	2.49E-02	0.00	SCR/COC	3	-5.71E+00	3.17E-01	0.64	No
Turbine, Natural Gas	PAH	Chrysene	lbs/MMcf	EF	None	3	4.12E-06	1.92E-06	0.77	SCR/COC	3	6.05E-06	1.61E-07	0.00	No
Turbine, Natural Gas	PAH	Chrysene	lbs/MMcf	Log EF	None	3	-5.41E+00	1.87E-01	0.77	SCR/COC	3	-5.22E+00	1.17E-02	0.00	No
Turbine, Natural Gas	PAH	Dibenz(a,h)anthracene	lbs/MMcf	EF	None	3	2.97E-06	1.73E-07	0.00	SCR/COC	3	1.30E-06	3.46E-08	0.00	Yes
Turbine, Natural Gas	PAH	Dibenz(a,h)anthracene	lbs/MMcf	Log EF	None	3	-5.53E+00	2.49E-02	0.00	SCR/COC	3	-5.89E+00	1.17E-02	0.00	Yes
Turbine, Natural Gas	PAH	Fluoranthene	lbs/MMcf	EF	None	3	1.00E-05	4.41E-06	1.00	SCR/COC	3	1.39E-05	4.00E-06	1.00	No
Turbine, Natural Gas	PAH	Fluoranthene	lbs/MMcf	Log EF	None	3	-5.03E+00	2.01E-01	1.00	SCR/COC	3	-4.87E+00	1.35E-01	1.00	No

TABLE 6-2. AIR POLLUTION CONTROL DEVICE COMPARISON.

Major Group	Category	Substance	EF Unit	Value Type	First Sample Statistics					Second Sample Statistics					Significant Difference at 95%Confidence
					Description APCD	Size	Average	Standard Deviation	Detect Ratio	Description APCD	Size	Average	Standard Deviation	Detect Ratio	
Turbine, Natural Gas	PAH	Fluorene	lbs/MMcf	EF	None	3	1.88E-05	1.16E-05	1.00	SCR/COC	3	1.22E-05	3.60E-06	1.00	No
Turbine, Natural Gas	PAH	Fluorene	lbs/MMcf	Log EF	None	3	-4.78E+00	2.69E-01	1.00	SCR/COC	3	-4.93E+00	1.43E-01	1.00	No
Turbine, Natural Gas	PAH	Indeno(1,2,3-cd)pyrene	lbs/MMcf	EF	None	3	2.97E-06	1.73E-07	0.00	SCR/COC	3	1.79E-06	8.64E-07	0.52	No
Turbine, Natural Gas	PAH	Indeno(1,2,3-cd)pyrene	lbs/MMcf	Log EF	None	3	-5.53E+00	2.49E-02	0.00	SCR/COC	3	-5.78E+00	1.93E-01	0.52	No
Turbine, Natural Gas	PAH	Naphthalene	lbs/MMcf	EF	None	3	5.67E-04	1.21E-04	1.00	SCR/COC	3	9.34E-04	2.49E-05	1.00	Yes
Turbine, Natural Gas	PAH	Naphthalene	lbs/MMcf	Log EF	None	3	-3.25E+00	9.23E-02	1.00	SCR/COC	3	-3.03E+00	1.17E-02	1.00	Yes
Turbine, Natural Gas	PAH	Phenanthrene	lbs/MMcf	EF	None	3	9.25E-05	5.01E-05	1.00	SCR/COC	3	4.17E-05	1.35E-05	1.00	No
Turbine, Natural Gas	PAH	Phenanthrene	lbs/MMcf	Log EF	None	3	-4.08E+00	2.50E-01	1.00	SCR/COC	3	-4.40E+00	1.60E-01	1.00	No
Turbine, Natural Gas	PAH	Pyrene	lbs/MMcf	EF	None	3	1.15E-05	6.00E-06	1.00	SCR/COC	3	3.48E-05	9.45E-06	1.00	Yes
Turbine, Natural Gas	PAH	Pyrene	lbs/MMcf	Log EF	None	3	-4.98E+00	2.44E-01	1.00	SCR/COC	3	-4.47E+00	1.29E-01	1.00	Yes
Turbine, Natural Gas	SVOC	Ethylbenzene	lbs/MMcf	EF	None	3	9.64E-03	2.15E-04	0.00	SCR/COC	3	2.11E-02	8.59E-04	0.00	Yes
Turbine, Natural Gas	SVOC	Ethylbenzene	lbs/MMcf	Log EF	None	3	-2.02E+00	9.62E-03	0.00	SCR/COC	3	-1.68E+00	1.75E-02	0.00	Yes
Turbine, Natural Gas	VOC	Benzene	lbs/MMcf	EF	None	3	7.07E-03	1.58E-04	0.00	SCR/COC	3	1.77E-02	7.20E-04	0.00	Yes
Turbine, Natural Gas	VOC	Benzene	lbs/MMcf	Log EF	None	3	-2.15E+00	9.62E-03	0.00	SCR/COC	3	-1.75E+00	1.75E-02	0.00	Yes
Turbine, Natural Gas	VOC	Formaldehyde	lbs/MMcf	EF	None	3	2.09E-02	6.23E-03	0.45	SCR	3	6.22E+00	5.95E-01	1.00	Yes
Turbine, Natural Gas	VOC	Formaldehyde	lbs/MMcf	Log EF	None	3	-1.69E+00	1.21E-01	0.45	SCR	3	7.93E-01	4.11E-02	1.00	Yes
Turbine, Natural Gas	VOC	Toluene	lbs/MMcf	EF	None	3	1.83E-02	8.87E-03	0.85	SCR/COC	3	1.25E-01	3.90E-02	1.00	Yes
Turbine, Natural Gas	VOC	Toluene	lbs/MMcf	Log EF	None	3	-1.78E+00	2.62E-01	0.85	SCR/COC	3	-9.16E-01	1.31E-01	1.00	Yes
Turbine, Natural Gas	VOC	Xylene (Total)	lbs/MMcf	EF	None	3	3.05E-02	2.82E-02	0.89	SCR/COC	3	4.21E-02	1.72E-03	0.00	No
Turbine, Natural Gas	VOC	Xylene (Total)	lbs/MMcf	Log EF	None	3	-1.64E+00	4.10E-01	0.89	SCR/COC	3	-1.38E+00	1.75E-02	0.00	No

TABLE 6-3. RICE STROKES PER CYCLE COMPARISON.

Major Group	Category	Substance	EF Unit	Value Type	First Sample Statistics					Second Sample Statistics					Significant Difference at 95%Confidence
					Description Strokes	Size	Average	Standard Deviation	Detect Ratio	Description Strokes	Size	Average	Standard Deviation	Detect Ratio	
ICE, Field Gas	VOC	Benzene	lbs/MMcf	EF	2S	5	7.85E+00	4.77E+00	1.00	4S	8	4.04E+00	4.32E+00	1.00	No
ICE, Field Gas	VOC	Benzene	lbs/MMcf	Log EF	2S	5	8.31E-01	2.60E-01	1.00	4S	8	4.16E-01	4.16E-01	1.00	No
ICE, Field Gas	VOC	Formaldehyde	lbs/MMcf	EF	2S	6	5.09E+01	3.55E+01	1.00	4S	12	3.24E+01	3.18E+01	1.00	No
ICE, Field Gas	VOC	Formaldehyde	lbs/MMcf	Log EF	2S	6	1.49E+00	5.82E-01	1.00	4S	12	1.29E+00	4.94E-01	1.00	No
ICE, Field Gas	VOC	Propylene	lbs/MMcf	EF	2S	5	2.49E+01	1.41E+01	1.00	4S	8	1.27E+01	7.24E+00	0.94	No
ICE, Field Gas	VOC	Propylene	lbs/MMcf	Log EF	2S	5	1.34E+00	2.52E-01	1.00	4S	8	1.01E+00	3.48E-01	0.94	No
ICE, Field Gas	VOC	Toluene	lbs/MMcf	EF	2S	5	2.86E+00	2.08E+00	1.00	4S	8	1.44E+00	1.28E+00	1.00	No
ICE, Field Gas	VOC	Toluene	lbs/MMcf	Log EF	2S	5	2.76E-01	5.49E-01	1.00	4S	8	-4.30E-03	4.16E-01	1.00	No
ICE, Field Gas	VOC	Xylene (m,p)	lbs/MMcf	EF	2S	5	6.04E-01	4.88E-01	1.00	4S	8	3.60E-01	2.77E-01	1.00	No
ICE, Field Gas	VOC	Xylene (m,p)	lbs/MMcf	Log EF	2S	5	-3.42E-01	3.68E-01	1.00	4S	8	-5.56E-01	3.42E-01	1.00	No
ICE, Field Gas	VOC	Xylene (o)	lbs/MMcf	EF	2S	5	2.88E-01	2.54E-01	1.00	4S	8	1.34E-01	8.52E-02	1.00	No
ICE, Field Gas	VOC	Xylene (o)	lbs/MMcf	Log EF	2S	5	-7.01E-01	4.27E-01	1.00	4S	8	-9.38E-01	2.47E-01	1.00	No

TABLE 6-4. RICE OXYGEN COMPARISON.

Major Group	Category	Substance	EF Unit	Value Type	First Sample Statistics					Second Sample Statistics					Significant Difference at 95%Confidence
					Description Oxygen	Size	Average	Standard Deviation	Detect Ratio	Description Oxygen	Size	Average	Standard Deviation	Detect Ratio	
ICE, Diesel	PAH	Acenaphthene	lbs/Mgal	EF	O2<13%	3	6.44E-04	2.47E-04	1.00	O2>13%	6	1.98E-04	2.69E-04	1.00	Yes
ICE, Diesel	PAH	Acenaphthene	lbs/Mgal	Log EF	O2<13%	3	-3.22E+00	1.86E-01	1.00	O2>13%	6	-4.65E+00	1.32E+00	1.00	No
ICE, Diesel	PAH	Acenaphthylene	lbs/Mgal	EF	O2<13%	3	1.27E-03	7.76E-05	1.00	O2>13%	6	7.03E-04	8.81E-04	1.00	No
ICE, Diesel	PAH	Acenaphthylene	lbs/Mgal	Log EF	O2<13%	3	-2.90E+00	2.70E-02	1.00	O2>13%	6	-4.37E+00	1.62E+00	1.00	No
ICE, Diesel	PAH	Anthracene	lbs/Mgal	EF	O2<13%	3	1.70E-04	1.06E-04	1.00	O2>13%	6	2.60E-04	1.18E-04	1.00	No
ICE, Diesel	PAH	Anthracene	lbs/Mgal	Log EF	O2<13%	3	-3.83E+00	2.66E-01	1.00	O2>13%	6	-3.68E+00	4.07E-01	1.00	No
ICE, Diesel	PAH	Benzo(a)anthracene	lbs/Mgal	EF	O2<13%	3	8.71E-05	8.47E-06	1.00	O2>13%	6	2.34E-04	2.43E-04	1.00	No
ICE, Diesel	PAH	Benzo(a)anthracene	lbs/Mgal	Log EF	O2<13%	3	-4.06E+00	4.12E-02	1.00	O2>13%	6	-3.94E+00	6.67E-01	1.00	No
ICE, Diesel	PAH	Benzo(a)pyrene	lbs/Mgal	EF	O2<13%	3	3.54E-05	1.41E-05	0.45	O2>13%	6	2.60E-05	2.82E-05	0.00	No
ICE, Diesel	PAH	Benzo(a)pyrene	lbs/Mgal	Log EF	O2<13%	3	-4.48E+00	1.97E-01	0.45	O2>13%	6	-5.08E+00	8.44E-01	0.00	No
ICE, Diesel	PAH	Benzo(b)fluoranthene	lbs/Mgal	EF	O2<13%	3	1.53E-04	3.46E-05	0.27	O2>13%	3	2.59E-05	1.36E-05	0.50	Yes
ICE, Diesel	PAH	Benzo(b)fluoranthene	lbs/Mgal	Log EF	O2<13%	3	-3.82E+00	9.46E-02	0.27	O2>13%	3	-4.64E+00	2.69E-01	0.50	Yes
ICE, Diesel	PAH	Benzo(g,h,i)perylene	lbs/Mgal	EF	O2<13%	3	7.69E-05	7.05E-06	1.00	O2>13%	6	6.78E-05	4.86E-05	0.43	No
ICE, Diesel	PAH	Benzo(g,h,i)perylene	lbs/Mgal	Log EF	O2<13%	3	-4.12E+00	4.05E-02	1.00	O2>13%	6	-4.28E+00	3.74E-01	0.43	No
ICE, Diesel	PAH	Benzo(k)fluoranthene	lbs/Mgal	EF	O2<13%	3	3.02E-05	3.38E-05	0.76	O2>13%	3	4.14E-05	2.14E-05	0.50	No
ICE, Diesel	PAH	Benzo(k)fluoranthene	lbs/Mgal	Log EF	O2<13%	3	-4.70E+00	4.73E-01	0.76	O2>13%	3	-4.43E+00	2.58E-01	0.50	No
ICE, Diesel	PAH	Chrysene	lbs/Mgal	EF	O2<13%	3	2.11E-04	2.33E-05	1.00	O2>13%	6	4.90E-05	1.67E-05	1.00	Yes
ICE, Diesel	PAH	Chrysene	lbs/Mgal	Log EF	O2<13%	3	-3.68E+00	4.95E-02	1.00	O2>13%	6	-4.33E+00	1.65E-01	1.00	Yes
ICE, Diesel	PAH	Dibenz(a,h)anthracene	lbs/Mgal	EF	O2<13%	3	4.77E-05	2.66E-06	0.00	O2>13%	6	8.12E-05	4.12E-05	0.35	No
ICE, Diesel	PAH	Dibenz(a,h)anthracene	lbs/Mgal	Log EF	O2<13%	3	-4.32E+00	2.39E-02	0.00	O2>13%	6	-4.13E+00	2.11E-01	0.35	No
ICE, Diesel	PAH	Fluoranthene	lbs/Mgal	EF	O2<13%	3	5.56E-04	2.50E-05	1.00	O2>13%	6	1.06E-03	9.59E-04	1.00	No
ICE, Diesel	PAH	Fluoranthene	lbs/Mgal	Log EF	O2<13%	3	-3.26E+00	1.93E-02	1.00	O2>13%	6	-3.19E+00	5.60E-01	1.00	No
ICE, Diesel	PAH	Fluorene	lbs/Mgal	EF	O2<13%	3	1.77E-03	4.62E-05	1.00	O2>13%	6	4.06E-03	3.56E-03	0.99	No
ICE, Diesel	PAH	Fluorene	lbs/Mgal	Log EF	O2<13%	3	-2.75E+00	1.13E-02	1.00	O2>13%	6	-2.66E+00	6.34E-01	0.99	No
ICE, Diesel	PAH	Indeno(1,2,3-cd)pyrene	lbs/Mgal	EF	O2<13%	3	5.69E-05	1.01E-05	0.34	O2>13%	6	6.43E-05	5.39E-05	0.30	No
ICE, Diesel	PAH	Indeno(1,2,3-cd)pyrene	lbs/Mgal	Log EF	O2<13%	3	-4.25E+00	7.94E-02	0.34	O2>13%	6	-4.36E+00	4.58E-01	0.30	No
ICE, Diesel	PAH	Naphthalene	lbs/Mgal	EF	O2<13%	3	1.80E-02	6.72E-04	1.00	O2>13%	6	1.18E-02	9.44E-03	1.00	No
ICE, Diesel	PAH	Naphthalene	lbs/Mgal	Log EF	O2<13%	3	-1.75E+00	1.64E-02	1.00	O2>13%	6	-2.01E+00	2.70E-01	1.00	No
ICE, Diesel	PAH	Phenanthrene	lbs/Mgal	EF	O2<13%	3	5.62E-03	1.45E-04	1.00	O2>13%	6	4.09E-03	2.68E-03	1.00	No
ICE, Diesel	PAH	Phenanthrene	lbs/Mgal	Log EF	O2<13%	3	-2.25E+00	1.12E-02	1.00	O2>13%	6	-2.55E+00	5.09E-01	1.00	No
ICE, Diesel	PAH	Pyrene	lbs/Mgal	EF	O2<13%	3	5.11E-04	4.17E-05	1.00	O2>13%	6	6.66E-04	3.46E-04	1.00	No
ICE, Diesel	PAH	Pyrene	lbs/Mgal	Log EF	O2<13%	3	-3.29E+00	3.47E-02	1.00	O2>13%	6	-3.26E+00	3.50E-01	1.00	No
ICE, Diesel	VOC	Acetaldehyde	lbs/Mgal	EF	O2<13%	3	3.47E-03	2.61E-03	1.00	O2>13%	6	1.07E-01	4.60E-02	1.00	Yes
ICE, Diesel	VOC	Acetaldehyde	lbs/Mgal	Log EF	O2<13%	3	-2.54E+00	3.07E-01	1.00	O2>13%	6	-1.01E+00	1.99E-01	1.00	Yes
ICE, Diesel	VOC	Acrolein	lbs/Mgal	EF	O2<13%	3	1.07E-03	6.19E-04	0.56	O2>13%	6	1.30E-02	9.64E-03	0.82	No
ICE, Diesel	VOC	Acrolein	lbs/Mgal	Log EF	O2<13%	3	-3.01E+00	2.30E-01	0.56	O2>13%	6	-1.96E+00	2.59E-01	0.82	Yes
ICE, Diesel	VOC	Benzene	lbs/Mgal	EF	O2<13%	3	1.01E-01	2.73E-03	1.00	O2>13%	6	1.22E-01	5.91E-02	1.00	No
ICE, Diesel	VOC	Benzene	lbs/Mgal	Log EF	O2<13%	3	-9.96E-01	1.17E-02	1.00	O2>13%	6	-9.59E-01	2.22E-01	1.00	No
ICE, Diesel	VOC	Formaldehyde	lbs/Mgal	EF	O2<13%	3	1.09E-02	1.34E-02	1.00	O2>13%	6	1.65E-01	9.22E-02	1.00	Yes
ICE, Diesel	VOC	Formaldehyde	lbs/Mgal	Log EF	O2<13%	3	-2.22E+00	5.97E-01	1.00	O2>13%	6	-8.30E-01	2.20E-01	1.00	Yes
ICE, Diesel	VOC	Propylene	lbs/Mgal	EF	O2<13%	3	3.85E-01	3.10E-02	1.00	O2>13%	6	3.58E-01	2.03E-01	1.00	No
ICE, Diesel	VOC	Propylene	lbs/Mgal	Log EF	O2<13%	3	-4.16E-01	3.59E-02	1.00	O2>13%	6	-5.13E-01	2.72E-01	1.00	No
ICE, Diesel	VOC	Toluene	lbs/Mgal	EF	O2<13%	3	3.74E-02	1.22E-03	1.00	O2>13%	6	5.50E-02	2.10E-02	1.00	No
ICE, Diesel	VOC	Toluene	lbs/Mgal	Log EF	O2<13%	3	-1.43E+00	1.41E-02	1.00	O2>13%	6	-1.29E+00	1.73E-01	1.00	No

TABLE 6-4. RICE OXYGEN COMPARISON.

Major Group	Category	Substance	EF Unit	Value Type	First Sample Statistics					Second Sample Statistics					Significant Difference at 95%Confidence
					Description Oxygen	Size	Average	Standard Deviation	Detect Ratio	Description Oxygen	Size	Average	Standard Deviation	Detect Ratio	
ICE, Diesel	VOC	Xylene (Total)	lbs/Mgal	EF	O2<13%	3	2.68E-02	1.03E-03	1.00	O2>13%	3	3.59E-02	1.48E-02	1.00	No
ICE, Diesel	VOC	Xylene (Total)	lbs/Mgal	Log EF	O2<13%	3	-1.57E+00	1.68E-02	1.00	O2>13%	3	-1.48E+00	2.16E-01	1.00	No
ICE, Field Gas	VOC	Benzene	lbs/MMcf	EF	Lean	11	4.51E+00	4.42E+00	1.00	Rich	2	1.10E+01	1.26E-01	1.00	No
ICE, Field Gas	VOC	Benzene	lbs/MMcf	Log EF	Lean	11	4.91E-01	3.87E-01	1.00	Rich	2	1.04E+00	4.99E-03	1.00	No
ICE, Field Gas	VOC	Formaldehyde	lbs/MMcf	EF	Lean	15	4.52E+01	3.24E+01	1.00	Rich	3	5.05E+00	8.04E-01	1.00	No
ICE, Field Gas	VOC	Formaldehyde	lbs/MMcf	Log EF	Lean	15	1.49E+00	4.62E-01	1.00	Rich	3	7.00E-01	6.65E-02	1.00	Yes
ICE, Field Gas	VOC	Propylene	lbs/MMcf	EF	Lean	11	2.00E+01	1.07E+01	1.00	Rich	2	3.04E+00	0.00E+00	0.00	No
ICE, Field Gas	VOC	Propylene	lbs/MMcf	Log EF	Lean	11	1.25E+00	2.09E-01	1.00	Rich	2	4.83E-01	0.00E+00	0.00	Yes
ICE, Field Gas	VOC	Toluene	lbs/MMcf	EF	Lean	11	1.72E+00	1.73E+00	1.00	Rich	2	3.44E+00	1.57E-01	1.00	No
ICE, Field Gas	VOC	Toluene	lbs/MMcf	Log EF	Lean	11	2.50E-02	4.71E-01	1.00	Rich	2	5.36E-01	1.98E-02	1.00	No
ICE, Field Gas	VOC	Xylene (m,p)	lbs/MMcf	EF	Lean	11	4.39E-01	4.07E-01	1.00	Rich	2	5.37E-01	3.62E-02	1.00	No
ICE, Field Gas	VOC	Xylene (m,p)	lbs/MMcf	Log EF	Lean	11	-5.11E-01	3.75E-01	1.00	Rich	2	-2.71E-01	2.93E-02	1.00	No
ICE, Field Gas	VOC	Xylene (o)	lbs/MMcf	EF	Lean	11	1.80E-01	1.92E-01	1.00	Rich	2	2.68E-01	1.81E-02	1.00	No
ICE, Field Gas	VOC	Xylene (o)	lbs/MMcf	Log EF	Lean	11	-8.97E-01	3.39E-01	1.00	Rich	2	-5.72E-01	2.93E-02	1.00	No
ICE, Natural Gas	VOC	Acetaldehyde	lbs/MMcf	EF	Lean	15	3.99E+00	2.59E+00	1.00	Rich	3	1.71E+00	1.10E-01	1.00	No
ICE, Natural Gas	VOC	Acetaldehyde	lbs/MMcf	Log EF	Lean	15	5.18E-01	2.77E-01	1.00	Rich	3	2.32E-01	2.80E-02	1.00	No
ICE, Natural Gas	VOC	Acrolein	lbs/MMcf	EF	Lean	14	1.63E+00	1.50E+00	1.00	Rich	6	5.40E-01	5.71E-01	1.00	No
ICE, Natural Gas	VOC	Acrolein	lbs/MMcf	Log EF	Lean	14	4.60E-02	4.07E-01	1.00	Rich	6	-8.04E-01	1.04E+00	1.00	Yes
ICE, Natural Gas	VOC	Benzene	lbs/MMcf	EF	Lean	14	1.21E+00	5.70E-01	1.00	Rich	2	9.87E+00	4.98E-01	1.00	Yes
ICE, Natural Gas	VOC	Benzene	lbs/MMcf	Log EF	Lean	14	2.07E-02	2.65E-01	1.00	Rich	2	9.94E-01	2.19E-02	1.00	Yes
ICE, Natural Gas	VOC	Formaldehyde	lbs/MMcf	EF	Lean	21	2.67E+01	1.10E+01	1.00	Rich	6	5.32E+00	5.35E+00	1.00	Yes
ICE, Natural Gas	VOC	Formaldehyde	lbs/MMcf	Log EF	Lean	21	1.42E+00	1.09E-01	1.00	Rich	6	3.54E-01	7.13E-01	1.00	Yes
ICE, Natural Gas	VOC	Propylene	lbs/MMcf	EF	Lean	14	1.87E+01	2.04E+01	0.97	Rich	2	3.95E+01	3.54E+00	1.00	No
ICE, Natural Gas	VOC	Propylene	lbs/MMcf	Log EF	Lean	14	1.07E+00	4.10E-01	0.97	Rich	2	1.60E+00	3.89E-02	1.00	No
ICE, Natural Gas	VOC	Toluene	lbs/MMcf	EF	Lean	14	4.12E-01	1.40E-01	1.00	Rich	2	2.51E+00	1.55E-01	1.00	Yes
ICE, Natural Gas	VOC	Toluene	lbs/MMcf	Log EF	Lean	14	-4.14E-01	1.74E-01	1.00	Rich	2	4.00E-01	2.67E-02	1.00	Yes
ICE, Natural Gas	VOC	Xylene (m,p)	lbs/MMcf	EF	Lean	14	8.63E-02	3.99E-02	1.00	Rich	2	4.41E-01	1.78E-02	1.00	Yes
ICE, Natural Gas	VOC	Xylene (m,p)	lbs/MMcf	Log EF	Lean	14	-1.11E+00	2.18E-01	1.00	Rich	2	-3.56E-01	1.76E-02	1.00	Yes
ICE, Natural Gas	VOC	Xylene (o)	lbs/MMcf	EF	Lean	14	4.94E-02	1.95E-02	0.95	Rich	2	2.17E-01	7.13E-03	1.00	Yes
ICE, Natural Gas	VOC	Xylene (o)	lbs/MMcf	Log EF	Lean	14	-1.35E+00	2.19E-01	0.95	Rich	2	-6.64E-01	1.43E-02	1.00	Yes

TABLE 6-5. RICE CAPACITY COMPARISON.

Major Group	Category	Substance	EF Unit	Value Type	First Sample Statistics					Second Sample Statistics					Significant Difference at 95%Confidence
					Description Capacity	Size	Average	Standard Deviation	Detect Ratio	Description Capacity	Size	Average	Standard Deviation	Detect Ratio	
ICE, Diesel	PAH	Acenaphthene	lbs/Mgal	EF	<650 Hp	6	3.23E-04	3.85E-04	1.00	>650 Hp	3	3.94E-04	2.55E-04	1.00	No
ICE, Diesel	PAH	Acenaphthene	lbs/Mgal	Log EF	<650 Hp	6	-4.53E+00	1.44E+00	1.00	>650 Hp	3	-3.46E+00	2.60E-01	1.00	No
ICE, Diesel	PAH	Acenaphthylene	lbs/Mgal	EF	<650 Hp	6	6.36E-04	6.97E-04	1.00	>650 Hp	3	1.41E-03	6.79E-04	1.00	No
ICE, Diesel	PAH	Acenaphthylene	lbs/Mgal	Log EF	<650 Hp	6	-4.37E+00	1.61E+00	1.00	>650 Hp	3	-2.90E+00	2.65E-01	1.00	No
ICE, Diesel	PAH	Anthracene	lbs/Mgal	EF	<650 Hp	6	2.45E-04	1.10E-04	1.00	>650 Hp	3	1.99E-04	1.47E-04	1.00	No
ICE, Diesel	PAH	Anthracene	lbs/Mgal	Log EF	<650 Hp	6	-3.66E+00	2.49E-01	1.00	>650 Hp	3	-3.87E+00	5.55E-01	1.00	No
ICE, Diesel	PAH	Benzo(a)anthracene	lbs/Mgal	EF	<650 Hp	6	2.31E-04	2.31E-04	1.00	>650 Hp	3	9.32E-05	1.31E-04	1.00	No
ICE, Diesel	PAH	Benzo(a)anthracene	lbs/Mgal	Log EF	<650 Hp	6	-3.78E+00	3.65E-01	1.00	>650 Hp	3	-4.38E+00	6.65E-01	1.00	No
ICE, Diesel	PAH	Benzo(a)pyrene	lbs/Mgal	EF	<650 Hp	6	1.84E-05	2.06E-05	0.43	>650 Hp	3	5.05E-05	1.35E-05	0.00	Yes
ICE, Diesel	PAH	Benzo(a)pyrene	lbs/Mgal	Log EF	<650 Hp	6	-5.16E+00	7.57E-01	0.43	>650 Hp	3	-4.31E+00	1.28E-01	0.00	No
ICE, Diesel	PAH	Benzo(b)fluoranthene	lbs/Mgal	EF	<650 Hp	3	1.53E-04	3.46E-05	0.27	>650 Hp	3	2.59E-05	1.36E-05	0.50	Yes
ICE, Diesel	PAH	Benzo(b)fluoranthene	lbs/Mgal	Log EF	<650 Hp	3	-3.82E+00	9.46E-02	0.27	>650 Hp	3	-4.64E+00	2.69E-01	0.50	Yes
ICE, Diesel	PAH	Benzo(g,h,i)perylene	lbs/Mgal	EF	<650 Hp	6	6.73E-05	1.64E-05	1.00	>650 Hp	3	7.77E-05	7.26E-05	0.00	No
ICE, Diesel	PAH	Benzo(g,h,i)perylene	lbs/Mgal	Log EF	<650 Hp	6	-4.18E+00	1.16E-01	1.00	>650 Hp	3	-4.31E+00	5.73E-01	0.00	No
ICE, Diesel	PAH	Benzo(k)fluoranthene	lbs/Mgal	EF	<650 Hp	3	3.02E-05	3.38E-05	0.76	>650 Hp	3	4.14E-05	2.14E-05	0.50	No
ICE, Diesel	PAH	Benzo(k)fluoranthene	lbs/Mgal	Log EF	<650 Hp	3	-4.70E+00	4.73E-01	0.76	>650 Hp	3	-4.43E+00	2.58E-01	0.50	No
ICE, Diesel	PAH	Chrysene	lbs/Mgal	EF	<650 Hp	6	1.36E-04	8.32E-05	1.00	>650 Hp	3	3.63E-05	1.25E-05	1.00	No
ICE, Diesel	PAH	Chrysene	lbs/Mgal	Log EF	<650 Hp	6	-3.94E+00	2.96E-01	1.00	>650 Hp	3	-4.46E+00	1.41E-01	1.00	Yes
ICE, Diesel	PAH	Dibenz(a,h)anthracene	lbs/Mgal	EF	<650 Hp	6	5.26E-05	1.08E-05	0.55	>650 Hp	3	1.05E-04	4.85E-05	0.00	Yes
ICE, Diesel	PAH	Dibenz(a,h)anthracene	lbs/Mgal	Log EF	<650 Hp	6	-4.29E+00	8.12E-02	0.55	>650 Hp	3	-4.02E+00	2.43E-01	0.00	Yes
ICE, Diesel	PAH	Fluoranthene	lbs/Mgal	EF	<650 Hp	6	1.16E-03	8.54E-04	1.00	>650 Hp	3	3.51E-04	2.71E-04	1.00	No
ICE, Diesel	PAH	Fluoranthene	lbs/Mgal	Log EF	<650 Hp	6	-3.02E+00	2.89E-01	1.00	>650 Hp	3	-3.60E+00	4.93E-01	1.00	No
ICE, Diesel	PAH	Fluorene	lbs/Mgal	EF	<650 Hp	6	4.53E-03	3.04E-03	1.00	>650 Hp	3	8.42E-04	5.48E-04	0.92	No
ICE, Diesel	PAH	Fluorene	lbs/Mgal	Log EF	<650 Hp	6	-2.45E+00	3.37E-01	1.00	>650 Hp	3	-3.18E+00	4.28E-01	0.92	Yes
ICE, Diesel	PAH	Indeno(1,2,3-cd)pyrene	lbs/Mgal	EF	<650 Hp	6	4.75E-05	1.29E-05	0.61	>650 Hp	3	9.06E-05	7.18E-05	0.00	No
ICE, Diesel	PAH	Indeno(1,2,3-cd)pyrene	lbs/Mgal	Log EF	<650 Hp	6	-4.34E+00	1.18E-01	0.61	>650 Hp	3	-4.29E+00	7.10E-01	0.00	No
ICE, Diesel	PAH	Naphthalene	lbs/Mgal	EF	<650 Hp	6	1.26E-02	5.91E-03	1.00	>650 Hp	3	1.63E-02	1.27E-02	1.00	No
ICE, Diesel	PAH	Naphthalene	lbs/Mgal	Log EF	<650 Hp	6	-1.94E+00	2.22E-01	1.00	>650 Hp	3	-1.88E+00	3.56E-01	1.00	No
ICE, Diesel	PAH	Phenanthrene	lbs/Mgal	EF	<650 Hp	6	5.98E-03	7.77E-04	1.00	>650 Hp	3	1.85E-03	1.35E-03	1.00	Yes
ICE, Diesel	PAH	Phenanthrene	lbs/Mgal	Log EF	<650 Hp	6	-2.23E+00	5.17E-02	1.00	>650 Hp	3	-2.89E+00	5.35E-01	1.00	Yes
ICE, Diesel	PAH	Pyrene	lbs/Mgal	EF	<650 Hp	6	6.28E-04	2.20E-04	1.00	>650 Hp	3	5.89E-04	4.51E-04	1.00	No
ICE, Diesel	PAH	Pyrene	lbs/Mgal	Log EF	<650 Hp	6	-3.22E+00	1.27E-01	1.00	>650 Hp	3	-3.37E+00	4.95E-01	1.00	No
ICE, Diesel	VOC	Acetaldehyde	lbs/Mgal	EF	<650 Hp	6	7.59E-02	7.94E-02	1.00	>650 Hp	3	6.48E-02	5.78E-03	1.00	No
ICE, Diesel	VOC	Acetaldehyde	lbs/Mgal	Log EF	<650 Hp	6	-1.68E+00	9.56E-01	1.00	>650 Hp	3	-1.19E+00	3.98E-02	1.00	No
ICE, Diesel	VOC	Acrolein	lbs/Mgal	EF	<650 Hp	6	4.21E-03	3.49E-03	0.38	>650 Hp	3	1.87E-02	1.17E-02	1.00	Yes
ICE, Diesel	VOC	Acrolein	lbs/Mgal	Log EF	<650 Hp	6	-2.57E+00	5.03E-01	0.38	>650 Hp	3	-1.79E+00	2.73E-01	1.00	Yes
ICE, Diesel	VOC	Benzene	lbs/Mgal	EF	<650 Hp	6	8.51E-02	1.74E-02	1.00	>650 Hp	3	1.75E-01	1.82E-02	1.00	Yes
ICE, Diesel	VOC	Benzene	lbs/Mgal	Log EF	<650 Hp	6	-1.08E+00	9.03E-02	1.00	>650 Hp	3	-7.58E-01	4.62E-02	1.00	Yes
ICE, Diesel	VOC	Formaldehyde	lbs/Mgal	EF	<650 Hp	6	1.02E-01	1.28E-01	1.00	>650 Hp	3	1.39E-01	5.35E-02	1.00	No
ICE, Diesel	VOC	Formaldehyde	lbs/Mgal	Log EF	<650 Hp	6	-1.50E+00	8.95E-01	1.00	>650 Hp	3	-8.81E-01	1.77E-01	1.00	No
ICE, Diesel	VOC	Propylene	lbs/Mgal	EF	<650 Hp	6	2.82E-01	1.17E-01	1.00	>650 Hp	3	5.38E-01	6.69E-02	1.00	Yes
ICE, Diesel	VOC	Propylene	lbs/Mgal	Log EF	<650 Hp	6	-5.85E-01	1.95E-01	1.00	>650 Hp	3	-2.72E-01	5.62E-02	1.00	Yes
ICE, Diesel	VOC	Toluene	lbs/Mgal	EF	<650 Hp	6	3.67E-02	1.40E-03	1.00	>650 Hp	3	7.41E-02	1.48E-03	1.00	Yes
ICE, Diesel	VOC	Toluene	lbs/Mgal	Log EF	<650 Hp	6	-1.44E+00	1.66E-02	1.00	>650 Hp	3	-1.13E+00	8.69E-03	1.00	Yes

TABLE 6-5. RICE CAPACITY COMPARISON.

Major Group	Category	Substance	EF Unit	Value Type	First Sample Statistics					Second Sample Statistics					Significant Difference at 95%Confidence
					Description Capacity	Size	Average	Standard Deviation	Detect Ratio	Description Capacity	Size	Average	Standard Deviation	Detect Ratio	
ICE, Diesel	VOC	Xylene (Total)	lbs/Mgal	EF	<650 Hp	3	2.68E-02	1.03E-03	1.00	≥650 Hp	3	3.59E-02	1.48E-02	1.00	No
ICE, Diesel	VOC	Xylene (Total)	lbs/Mgal	Log EF	<650 Hp	3	-1.57E+00	1.68E-02	1.00	≥650 Hp	3	-1.48E+00	2.16E-01	1.00	No
ICE, Field Gas	VOC	Benzene	lbs/MMcf	EF	≤650 Hp	10	5.84E+00	5.39E+00	1.00	>650 Hp	3	4.39E+00	1.91E-01	1.00	No
ICE, Field Gas	VOC	Benzene	lbs/MMcf	Log EF	<650 Hp	10	5.56E-01	4.71E-01	1.00	≥650 Hp	3	6.42E-01	1.87E-02	1.00	No
ICE, Field Gas	VOC	Formaldehyde	lbs/MMcf	EF	≤650 Hp	15	4.11E+01	3.36E+01	1.00	>650 Hp	3	2.58E+01	3.46E+01	1.00	No
ICE, Field Gas	VOC	Formaldehyde	lbs/MMcf	Log EF	≤650 Hp	15	1.41E+00	5.02E-01	1.00	>650 Hp	3	1.10E+00	6.29E-01	1.00	No
ICE, Field Gas	VOC	Propylene	lbs/MMcf	EF	≤650 Hp	10	1.82E+01	1.32E+01	0.97	>650 Hp	3	1.47E+01	3.16E+00	1.00	No
ICE, Field Gas	VOC	Propylene	lbs/MMcf	Log EF	<650 Hp	10	1.13E+00	3.97E-01	0.97	≥650 Hp	3	1.16E+00	9.65E-02	1.00	No
ICE, Field Gas	VOC	Toluene	lbs/MMcf	EF	≤650 Hp	10	2.11E+00	1.87E+00	1.00	>650 Hp	3	1.54E+00	1.15E+00	1.00	No
ICE, Field Gas	VOC	Toluene	lbs/MMcf	Log EF	≤650 Hp	10	1.32E-01	4.68E-01	1.00	>650 Hp	3	1.00E-02	5.74E-01	1.00	No
ICE, Field Gas	VOC	Xylene (m,p)	lbs/MMcf	EF	≤650 Hp	10	5.14E-01	4.09E-01	1.00	>650 Hp	3	2.54E-01	6.43E-02	1.00	No
ICE, Field Gas	VOC	Xylene (m,p)	lbs/MMcf	Log EF	≤650 Hp	10	-4.35E-01	3.96E-01	1.00	>650 Hp	3	-6.04E-01	1.13E-01	1.00	No
ICE, Field Gas	VOC	Xylene (o)	lbs/MMcf	EF	≤650 Hp	10	2.20E-01	1.97E-01	1.00	>650 Hp	3	1.03E-01	3.41E-02	1.00	No
ICE, Field Gas	VOC	Xylene (o)	lbs/MMcf	Log EF	≤650 Hp	10	-8.00E-01	3.63E-01	1.00	>650 Hp	3	-1.00E+00	1.52E-01	1.00	No

TABLE 6-6. RICE STROKES PER CYCLE AND OXYGEN COMPARISON.

Major Group	Category	Substance	EF Unit	Value Type	First Sample Statistics						Second Sample Statistics						Significant Difference at 95%Confidence
					Description		Size	Average	Standard Deviation	Detect Ratio	Description		Size	Average	Standard Deviation	Detect Ratio	
					Strokes	Oxygen					Strokes	Oxygen					
ICE, Diesel	PAH	Acenaphthene	lbs/Mgal	EF	NC	O2<13%	3	6.44E-04	2.47E-04	1.00	NC	O2>13%	6	1.98E-04	2.69E-04	1.00	Yes
ICE, Diesel	PAH	Acenaphthene	lbs/Mgal	Log EF	NC	O2<13%	3	-3.22E+00	1.86E-01	1.00	NC	O2>13%	6	-4.65E+00	1.32E+00	1.00	No
ICE, Diesel	PAH	Acenaphthylene	lbs/Mgal	EF	NC	O2<13%	3	1.27E-03	7.76E-05	1.00	NC	O2>13%	6	7.03E-04	8.81E-04	1.00	No
ICE, Diesel	PAH	Acenaphthylene	lbs/Mgal	Log EF	NC	O2<13%	3	-2.90E+00	2.70E-02	1.00	NC	O2>13%	6	-4.37E+00	1.62E+00	1.00	No
ICE, Diesel	PAH	Anthracene	lbs/Mgal	EF	NC	O2<13%	3	1.70E-04	1.06E-04	1.00	NC	O2>13%	6	2.60E-04	1.18E-04	1.00	No
ICE, Diesel	PAH	Anthracene	lbs/Mgal	Log EF	NC	O2<13%	3	-3.83E+00	2.66E-01	1.00	NC	O2>13%	6	-3.68E+00	4.07E-01	1.00	No
ICE, Diesel	PAH	Benzo(a)anthracene	lbs/Mgal	EF	NC	O2<13%	3	8.71E-05	8.47E-06	1.00	NC	O2>13%	6	2.34E-04	2.43E-04	1.00	No
ICE, Diesel	PAH	Benzo(a)anthracene	lbs/Mgal	Log EF	NC	O2<13%	3	-4.06E+00	4.12E-02	1.00	NC	O2>13%	6	-3.94E+00	6.67E-01	1.00	No
ICE, Diesel	PAH	Benzo(a)pyrene	lbs/Mgal	EF	NC	O2<13%	3	3.54E-05	1.41E-05	0.45	NC	O2>13%	6	2.60E-05	2.82E-05	0.00	No
ICE, Diesel	PAH	Benzo(a)pyrene	lbs/Mgal	Log EF	NC	O2<13%	3	-4.48E+00	1.97E-01	0.45	NC	O2>13%	6	-5.08E+00	8.44E-01	0.00	No
ICE, Diesel	PAH	Benzo(b)fluoranthene	lbs/Mgal	EF	NC	O2<13%	3	1.53E-04	3.46E-05	0.27	NC	O2>13%	3	2.59E-05	1.36E-05	0.50	Yes
ICE, Diesel	PAH	Benzo(b)fluoranthene	lbs/Mgal	Log EF	NC	O2<13%	3	-3.82E+00	9.46E-02	0.27	NC	O2>13%	3	-4.64E+00	2.69E-01	0.50	Yes
ICE, Diesel	PAH	Benzo(g,h,i)perylene	lbs/Mgal	EF	NC	O2<13%	3	7.69E-05	7.05E-06	1.00	NC	O2>13%	6	6.78E-05	4.86E-05	0.43	No
ICE, Diesel	PAH	Benzo(g,h,i)perylene	lbs/Mgal	Log EF	NC	O2<13%	3	-4.12E+00	4.05E-02	1.00	NC	O2>13%	6	-4.28E+00	3.74E-01	0.43	No
ICE, Diesel	PAH	Benzo(k)fluoranthene	lbs/Mgal	EF	NC	O2<13%	3	3.02E-05	3.38E-05	0.76	NC	O2>13%	3	4.14E-05	2.14E-05	0.50	No
ICE, Diesel	PAH	Benzo(k)fluoranthene	lbs/Mgal	Log EF	NC	O2<13%	3	-4.70E+00	4.73E-01	0.76	NC	O2>13%	3	-4.43E+00	2.58E-01	0.50	No
ICE, Diesel	PAH	Chrysene	lbs/Mgal	EF	NC	O2<13%	3	2.11E-04	2.33E-05	1.00	NC	O2>13%	6	4.90E-05	1.67E-05	1.00	Yes
ICE, Diesel	PAH	Chrysene	lbs/Mgal	Log EF	NC	O2<13%	3	-3.68E+00	4.95E-02	1.00	NC	O2>13%	6	-4.33E+00	1.65E-01	1.00	Yes
ICE, Diesel	PAH	Dibenz(a,h)anthracene	lbs/Mgal	EF	NC	O2<13%	3	4.77E-05	2.66E-06	0.00	NC	O2>13%	6	8.12E-05	4.12E-05	0.35	No
ICE, Diesel	PAH	Dibenz(a,h)anthracene	lbs/Mgal	Log EF	NC	O2<13%	3	-4.32E+00	2.39E-02	0.00	NC	O2>13%	6	-4.13E+00	2.11E-01	0.35	No
ICE, Diesel	PAH	Fluoranthene	lbs/Mgal	EF	NC	O2<13%	3	5.56E-04	2.50E-05	1.00	NC	O2>13%	6	1.06E-03	9.59E-04	1.00	No
ICE, Diesel	PAH	Fluoranthene	lbs/Mgal	Log EF	NC	O2<13%	3	-3.26E+00	1.93E-02	1.00	NC	O2>13%	6	-3.19E+00	5.60E-01	1.00	No
ICE, Diesel	PAH	Fluorene	lbs/Mgal	EF	NC	O2<13%	3	1.77E-03	4.62E-05	1.00	NC	O2>13%	6	4.06E-03	3.56E-03	0.99	No
ICE, Diesel	PAH	Fluorene	lbs/Mgal	Log EF	NC	O2<13%	3	-2.75E+00	1.13E-02	1.00	NC	O2>13%	6	-2.66E+00	6.34E-01	0.99	No
ICE, Diesel	PAH	Indeno(1,2,3-cd)pyrene	lbs/Mgal	EF	NC	O2<13%	3	5.69E-05	1.01E-05	0.34	NC	O2>13%	6	6.43E-05	5.39E-05	0.30	No
ICE, Diesel	PAH	Indeno(1,2,3-cd)pyrene	lbs/Mgal	Log EF	NC	O2<13%	3	-4.25E+00	7.94E-02	0.34	NC	O2>13%	6	-4.36E+00	4.58E-01	0.30	No
ICE, Diesel	PAH	Naphthalene	lbs/Mgal	EF	NC	O2<13%	3	1.80E-02	6.72E-04	1.00	NC	O2>13%	6	1.18E-02	9.44E-03	1.00	No
ICE, Diesel	PAH	Naphthalene	lbs/Mgal	Log EF	NC	O2<13%	3	-1.75E+00	1.64E-02	1.00	NC	O2>13%	6	-2.01E+00	2.70E-01	1.00	No
ICE, Diesel	PAH	Phenanthrene	lbs/Mgal	EF	NC	O2<13%	3	5.62E-03	1.45E-04	1.00	NC	O2>13%	6	4.09E-03	2.68E-03	1.00	No
ICE, Diesel	PAH	Phenanthrene	lbs/Mgal	Log EF	NC	O2<13%	3	-2.25E+00	1.12E-02	1.00	NC	O2>13%	6	-2.55E+00	5.09E-01	1.00	No
ICE, Diesel	PAH	Pyrene	lbs/Mgal	EF	NC	O2<13%	3	5.11E-04	4.17E-05	1.00	NC	O2>13%	6	6.66E-04	3.46E-04	1.00	No
ICE, Diesel	PAH	Pyrene	lbs/Mgal	Log EF	NC	O2<13%	3	-3.29E+00	3.47E-02	1.00	NC	O2>13%	6	-3.26E+00	3.50E-01	1.00	No
ICE, Diesel	VOC	Acetaldehyde	lbs/Mgal	EF	NC	O2<13%	3	3.47E-03	2.61E-03	1.00	NC	O2>13%	6	1.07E-01	4.60E-02	1.00	Yes
ICE, Diesel	VOC	Acetaldehyde	lbs/Mgal	Log EF	NC	O2<13%	3	-2.54E+00	3.07E-01	1.00	NC	O2>13%	6	-1.01E+00	1.99E-01	1.00	Yes
ICE, Diesel	VOC	Acrolein	lbs/Mgal	EF	NC	O2<13%	3	1.07E-03	6.19E-04	0.56	NC	O2>13%	6	1.30E-02	9.64E-03	0.82	No
ICE, Diesel	VOC	Acrolein	lbs/Mgal	Log EF	NC	O2<13%	3	-3.01E+00	2.30E-01	0.56	NC	O2>13%	6	-1.96E+00	2.59E-01	0.82	Yes
ICE, Diesel	VOC	Benzene	lbs/Mgal	EF	NC	O2<13%	3	1.01E-01	2.73E-03	1.00	NC	O2>13%	6	1.22E-01	5.91E-02	1.00	No
ICE, Diesel	VOC	Benzene	lbs/Mgal	Log EF	NC	O2<13%	3	-9.96E-01	1.17E-02	1.00	NC	O2>13%	6	-9.59E-01	2.22E-01	1.00	No
ICE, Diesel	VOC	Formaldehyde	lbs/Mgal	EF	NC	O2<13%	3	1.09E-02	1.34E-02	1.00	NC	O2>13%	6	1.65E-01	9.22E-02	1.00	Yes
ICE, Diesel	VOC	Formaldehyde	lbs/Mgal	Log EF	NC	O2<13%	3	-2.22E+00	5.97E-01	1.00	NC	O2>13%	6	-8.30E-01	2.20E-01	1.00	Yes
ICE, Diesel	VOC	Propylene	lbs/Mgal	EF	NC	O2<13%	3	3.85E-01	3.10E-02	1.00	NC	O2>13%	6	3.58E-01	2.03E-01	1.00	No
ICE, Diesel	VOC	Propylene	lbs/Mgal	Log EF	NC	O2<13%	3	-4.16E-01	3.59E-02	1.00	NC	O2>13%	6	-5.13E-01	2.72E-01	1.00	No
ICE, Diesel	VOC	Toluene	lbs/Mgal	EF	NC	O2<13%	3	3.74E-02	1.22E-03	1.00	NC	O2>13%	6	5.50E-02	2.10E-02	1.00	No
ICE, Diesel	VOC	Toluene	lbs/Mgal	Log EF	NC	O2<13%	3	-1.43E+00	1.41E-02	1.00	NC	O2>13%	6	-1.29E+00	1.73E-01	1.00	No
ICE, Diesel	VOC	Xylene (Total)	lbs/Mgal	EF	NC	O2<13%	3	2.68E-02	1.03E-03	1.00	NC	O2>13%	3	3.59E-02	1.48E-02	1.00	No
ICE, Diesel	VOC	Xylene (Total)	lbs/Mgal	Log EF	NC	O2<13%	3	-1.57E+00	1.68E-02	1.00	NC	O2>13%	3	-1.48E+00	2.16E-01	1.00	No
ICE, Field Gas	VOC	Benzene	lbs/MMcf	EF	2S	Lean	6	7.85E+00	4.77E+00	1.00	4S	Lean	6	1.72E+00	6.13E-01	1.00	Yes

TABLE 6-6. RICE STROKES PER CYCLE AND OXYGEN COMPARISON.

Major Group	Category	Substance	EF Unit	Value Type	First Sample Statistics						Second Sample Statistics						Significant Difference at 95%Confidence
					Description		Size	Average	Standard Deviation	Detect Ratio	Description		Size	Average	Standard Deviation	Detect Ratio	
					Strokes	Oxygen					Strokes	Oxygen					
ICE, Field Gas	VOC	Benzene	lbs/MMcf	EF	2S	Lean	5	7.85E+00	4.77E+00	1.00	4S	Rich	2	1.10E+01	1.26E-01	1.00	No
ICE, Field Gas	VOC	Benzene	lbs/MMcf	EF	4S	Lean	6	1.72E+00	6.13E-01	1.00	4S	Rich	2	1.10E+01	1.26E-01	1.00	Yes
ICE, Field Gas	VOC	Benzene	lbs/MMcf	Log EF	2S	Lean	5	8.31E-01	2.60E-01	1.00	4S	Lean	6	2.07E-01	1.83E-01	1.00	Yes
ICE, Field Gas	VOC	Benzene	lbs/MMcf	Log EF	2S	Lean	5	8.31E-01	2.60E-01	1.00	4S	Rich	2	1.04E+00	4.99E-03	1.00	No
ICE, Field Gas	VOC	Benzene	lbs/MMcf	Log EF	4S	Lean	6	2.07E-01	1.83E-01	1.00	4S	Rich	2	1.04E+00	4.99E-03	1.00	Yes
ICE, Field Gas	VOC	Formaldehyde	lbs/MMcf	EF	2S	Lean	6	5.09E+01	3.55E+01	1.00	4S	Lean	9	4.15E+01	3.18E+01	1.00	No
ICE, Field Gas	VOC	Formaldehyde	lbs/MMcf	EF	2S	Lean	6	5.09E+01	3.55E+01	1.00	4S	Rich	3	5.05E+00	8.04E-01	1.00	No
ICE, Field Gas	VOC	Formaldehyde	lbs/MMcf	EF	4S	Lean	9	4.15E+01	3.18E+01	1.00	4S	Rich	3	5.05E+00	8.04E-01	1.00	No
ICE, Field Gas	VOC	Formaldehyde	lbs/MMcf	Log EF	2S	Lean	6	1.49E+00	5.82E-01	1.00	4S	Lean	9	1.48E+00	4.02E-01	1.00	No
ICE, Field Gas	VOC	Formaldehyde	lbs/MMcf	Log EF	2S	Lean	6	1.49E+00	5.82E-01	1.00	4S	Rich	3	7.00E-01	6.65E-02	1.00	No
ICE, Field Gas	VOC	Formaldehyde	lbs/MMcf	Log EF	4S	Lean	9	1.48E+00	4.02E-01	1.00	4S	Rich	3	7.00E-01	6.65E-02	1.00	Yes
ICE, Field Gas	VOC	Propylene	lbs/MMcf	EF	2S	Lean	5	2.49E+01	1.41E+01	1.00	4S	Lean	6	1.59E+01	4.86E+00	1.00	No
ICE, Field Gas	VOC	Propylene	lbs/MMcf	EF	2S	Lean	5	2.49E+01	1.41E+01	1.00	4S	Rich	2	3.04E+00	0.00E+00	0.00	No
ICE, Field Gas	VOC	Propylene	lbs/MMcf	EF	4S	Lean	6	1.59E+01	4.86E+00	1.00	4S	Rich	2	3.04E+00	0.00E+00	0.00	Yes
ICE, Field Gas	VOC	Propylene	lbs/MMcf	Log EF	2S	Lean	5	1.34E+00	2.52E-01	1.00	4S	Lean	6	1.18E+00	1.51E-01	1.00	No
ICE, Field Gas	VOC	Propylene	lbs/MMcf	Log EF	2S	Lean	5	1.34E+00	2.52E-01	1.00	4S	Rich	2	4.83E-01	0.00E+00	0.00	Yes
ICE, Field Gas	VOC	Propylene	lbs/MMcf	Log EF	4S	Lean	6	1.18E+00	1.51E-01	1.00	4S	Rich	2	4.83E-01	0.00E+00	0.00	Yes
ICE, Field Gas	VOC	Toluene	lbs/MMcf	EF	2S	Lean	5	2.86E+00	2.08E+00	1.00	4S	Lean	6	7.68E-01	3.92E-01	1.00	Yes
ICE, Field Gas	VOC	Toluene	lbs/MMcf	EF	2S	Lean	5	2.86E+00	2.08E+00	1.00	4S	Rich	2	3.44E+00	1.57E-01	1.00	No
ICE, Field Gas	VOC	Toluene	lbs/MMcf	EF	4S	Lean	6	7.68E-01	3.92E-01	1.00	4S	Rich	2	3.44E+00	1.57E-01	1.00	Yes
ICE, Field Gas	VOC	Toluene	lbs/MMcf	Log EF	2S	Lean	5	2.76E-01	5.49E-01	1.00	4S	Lean	6	-1.84E-01	2.95E-01	1.00	No
ICE, Field Gas	VOC	Toluene	lbs/MMcf	Log EF	2S	Lean	5	2.76E-01	5.49E-01	1.00	4S	Rich	2	5.36E-01	1.98E-02	1.00	No
ICE, Field Gas	VOC	Toluene	lbs/MMcf	Log EF	4S	Lean	6	-1.84E-01	2.95E-01	1.00	4S	Rich	2	5.36E-01	1.98E-02	1.00	Yes
ICE, Field Gas	VOC	Xylene (m,p)	lbs/MMcf	EF	2S	Lean	5	6.04E-01	4.88E-01	1.00	4S	Lean	6	3.02E-01	3.01E-01	1.00	No
ICE, Field Gas	VOC	Xylene (m,p)	lbs/MMcf	EF	2S	Lean	5	6.04E-01	4.88E-01	1.00	4S	Rich	2	5.37E-01	3.62E-02	1.00	No
ICE, Field Gas	VOC	Xylene (m,p)	lbs/MMcf	EF	4S	Lean	6	3.02E-01	3.01E-01	1.00	4S	Rich	2	5.37E-01	3.62E-02	1.00	No
ICE, Field Gas	VOC	Xylene (m,p)	lbs/MMcf	Log EF	2S	Lean	5	-3.42E-01	3.68E-01	1.00	4S	Lean	6	-6.51E-01	3.47E-01	1.00	No
ICE, Field Gas	VOC	Xylene (m,p)	lbs/MMcf	Log EF	2S	Lean	5	-3.42E-01	3.68E-01	1.00	4S	Rich	2	-2.71E-01	2.93E-02	1.00	No
ICE, Field Gas	VOC	Xylene (m,p)	lbs/MMcf	Log EF	4S	Lean	6	-6.51E-01	3.47E-01	1.00	4S	Rich	2	-2.71E-01	2.93E-02	1.00	No
ICE, Field Gas	VOC	Xylene (o)	lbs/MMcf	EF	2S	Lean	5	2.88E-01	2.54E-01	1.00	4S	Lean	6	8.97E-02	2.30E-02	1.00	No
ICE, Field Gas	VOC	Xylene (o)	lbs/MMcf	EF	2S	Lean	5	2.88E-01	2.54E-01	1.00	4S	Rich	2	2.68E-01	1.81E-02	1.00	No
ICE, Field Gas	VOC	Xylene (o)	lbs/MMcf	EF	4S	Lean	6	8.97E-02	2.30E-02	1.00	4S	Rich	2	2.68E-01	1.81E-02	1.00	Yes
ICE, Field Gas	VOC	Xylene (o)	lbs/MMcf	Log EF	2S	Lean	5	-7.01E-01	4.27E-01	1.00	4S	Lean	6	-1.06E+00	1.17E-01	1.00	No
ICE, Field Gas	VOC	Xylene (o)	lbs/MMcf	Log EF	2S	Lean	5	-7.01E-01	4.27E-01	1.00	4S	Rich	2	-5.72E-01	2.93E-02	1.00	No
ICE, Field Gas	VOC	Xylene (o)	lbs/MMcf	Log EF	4S	Lean	6	-1.06E+00	1.17E-01	1.00	4S	Rich	2	-5.72E-01	2.93E-02	1.00	Yes
ICE, Natural Gas	VOC	Acetaldehyde	lbs/MMcf	EF	4S	Lean	15	3.99E+00	2.59E+00	1.00	4S	Rich	3	1.71E+00	1.10E-01	1.00	No
ICE, Natural Gas	VOC	Acetaldehyde	lbs/MMcf	Log EF	4S	Lean	15	5.18E-01	2.77E-01	1.00	4S	Rich	3	2.32E-01	2.80E-02	1.00	No
ICE, Natural Gas	VOC	Acrolein	lbs/MMcf	EF	4S	Lean	14	1.63E+00	1.50E+00	1.00	4S	Rich	6	5.40E-01	5.71E-01	1.00	No
ICE, Natural Gas	VOC	Acrolein	lbs/MMcf	Log EF	4S	Lean	14	4.50E-02	4.07E-01	1.00	4S	Rich	6	-8.04E-01	1.04E+00	1.00	Yes
ICE, Natural Gas	VOC	Benzene	lbs/MMcf	EF	4S	Lean	14	1.21E+00	5.70E-01	1.00	4S	Rich	2	9.87E+00	4.98E-01	1.00	Yes
ICE, Natural Gas	VOC	Benzene	lbs/MMcf	Log EF	4S	Lean	14	2.07E-02	2.65E-01	1.00	4S	Rich	2	9.94E-01	2.19E-02	1.00	Yes
ICE, Natural Gas	VOC	Formaldehyde	lbs/MMcf	EF	4S	Lean	21	2.87E+01	1.10E+01	1.00	4S	Rich	6	5.32E+00	5.35E+00	1.00	Yes
ICE, Natural Gas	VOC	Formaldehyde	lbs/MMcf	Log EF	4S	Lean	21	1.42E+00	1.89E-01	1.00	4S	Rich	6	3.54E-01	7.13E-01	1.00	Yes
ICE, Natural Gas	VOC	Propylene	lbs/MMcf	EF	4S	Lean	14	1.87E+01	2.04E+01	0.97	4S	Rich	2	3.95E+01	3.54E+00	1.00	No
ICE, Natural Gas	VOC	Propylene	lbs/MMcf	Log EF	4S	Lean	14	1.07E+00	4.10E-01	0.97	4S	Rich	2	1.60E+00	3.89E-02	1.00	No
ICE, Natural Gas	VOC	Toluene	lbs/MMcf	EF	4S	Lean	14	4.12E-01	1.40E-01	1.00	4S	Rich	2	2.51E+00	1.55E-01	1.00	Yes
ICE, Natural Gas	VOC	Toluene	lbs/MMcf	Log EF	4S	Lean	14	-4.14E-01	1.74E-01	1.00	4S	Rich	2	4.00E-01	2.67E-02	1.00	Yes

TABLE 6-6. RICE STROKES PER CYCLE AND OXYGEN COMPARISON.

Major Group	Category	Substance	EF Unit	Value Type	First Sample Statistics						Second Sample Statistics						Significant Difference at 95%Confidence
					Description		Size	Average	Standard Deviation	Detect Ratio	Description		Size	Average	Standard Deviation	Detect Ratio	
					Strokes	Oxygen					Strokes	Oxygen					
ICE, Natural Gas	VOC	Xylene (m,p)	lbs/MMcf	EF	4S	Lean	14	8.63E-02	3.99E-02	1.00	4S	Rich	2	4.41E-01	1.78E-02	1.00	Yes
ICE, Natural Gas	VOC	Xylene (m,p)	lbs/MMcf	Log EF	4S	Lean	14	-1.11E+00	2.18E-01	1.00	4S	Rich	2	-3.58E-01	1.79E-02	1.00	Yes
ICE, Natural Gas	VOC	Xylene (o)	lbs/MMcf	EF	4S	Lean	14	4.94E-02	1.95E-02	0.95	4S	Rich	2	2.17E-01	7.13E-03	1.00	Yes
ICE, Natural Gas	VOC	Xylene (o)	lbs/MMcf	Log EF	4S	Lean	14	-1.35E+00	2.19E-01	0.95	4S	Rich	2	-6.64E-01	1.43E-02	1.00	Yes

TABLE 6-7. RICE STROKES PER CYCLE AND CAPACITY COMPARISON.

Major Group	Category	Substance	EF Unit	Value Type	First Sample Statistics						Second Sample Statistics						Significant Difference at 95%Confidence
					Description		Size	Average	Standard Deviation	Detect Ratio	Description		Size	Average	Standard Deviation	Detect Ratio	
					Strokes	Capacity					Strokes	Capacity					
ICE, Diesel	PAH	Acenaphthene	lbs/Mgal	EF	NC	<650 Hp	6	3.23E-04	3.85E-04	1.00	NC	>650 Hp	3	3.94E-04	2.55E-04	1.00	No
ICE, Diesel	PAH	Acenaphthene	lbs/Mgal	Log EF	NC	<650 Hp	6	-4.53E+00	1.44E+00	1.00	NC	>650 Hp	3	-3.46E+00	2.60E-01	1.00	No
ICE, Diesel	PAH	Acenaphthylene	lbs/Mgal	EF	NC	<650 Hp	6	6.36E-04	6.97E-04	1.00	NC	>650 Hp	3	1.41E-03	6.79E-04	1.00	No
ICE, Diesel	PAH	Acenaphthylene	lbs/Mgal	Log EF	NC	<650 Hp	6	-4.37E+00	1.61E+00	1.00	NC	>650 Hp	3	-2.90E+00	2.65E-01	1.00	No
ICE, Diesel	PAH	Anthracene	lbs/Mgal	EF	NC	<650 Hp	6	2.45E-04	1.10E-04	1.00	NC	>650 Hp	3	1.99E-04	1.47E-04	1.00	No
ICE, Diesel	PAH	Anthracene	lbs/Mgal	Log EF	NC	<650 Hp	6	-3.66E+00	2.49E-01	1.00	NC	>650 Hp	3	-3.87E+00	5.55E-01	1.00	No
ICE, Diesel	PAH	Benzo(a)anthracene	lbs/Mgal	EF	NC	<650 Hp	6	2.31E-04	2.31E-04	1.00	NC	>650 Hp	3	9.32E-05	1.31E-04	1.00	No
ICE, Diesel	PAH	Benzo(a)anthracene	lbs/Mgal	Log EF	NC	<650 Hp	6	-3.78E+00	3.65E-01	1.00	NC	>650 Hp	3	-4.38E+00	6.65E-01	1.00	No
ICE, Diesel	PAH	Benzo(a)pyrene	lbs/Mgal	EF	NC	<650 Hp	6	1.84E-05	2.06E-05	0.43	NC	>650 Hp	3	5.05E-05	1.35E-05	0.00	Yes
ICE, Diesel	PAH	Benzo(a)pyrene	lbs/Mgal	Log EF	NC	<650 Hp	6	-5.16E+00	7.57E-01	0.43	NC	>650 Hp	3	-4.31E+00	1.28E-01	0.00	No
ICE, Diesel	PAH	Benzo(b)fluoranthene	lbs/Mgal	EF	NC	<650 Hp	3	1.53E-04	3.46E-05	0.27	NC	>650 Hp	3	2.59E-05	1.36E-05	0.50	Yes
ICE, Diesel	PAH	Benzo(b)fluoranthene	lbs/Mgal	Log EF	NC	<650 Hp	3	-3.82E+00	9.46E-02	0.27	NC	>650 Hp	3	-4.64E+00	2.69E-01	0.50	Yes
ICE, Diesel	PAH	Benzo(g,h,i)perylene	lbs/Mgal	EF	NC	<650 Hp	6	6.73E-05	1.64E-05	1.00	NC	>650 Hp	3	7.77E-05	7.26E-05	0.00	No
ICE, Diesel	PAH	Benzo(g,h,i)perylene	lbs/Mgal	Log EF	NC	<650 Hp	6	-4.18E+00	1.16E-01	1.00	NC	>650 Hp	3	-4.31E+00	5.73E-01	0.00	No
ICE, Diesel	PAH	Benzo(k)fluoranthene	lbs/Mgal	EF	NC	<650 Hp	3	3.02E-05	3.38E-05	0.76	NC	>650 Hp	3	4.14E-05	2.14E-05	0.50	No
ICE, Diesel	PAH	Benzo(k)fluoranthene	lbs/Mgal	Log EF	NC	<650 Hp	3	-4.70E+00	4.73E-01	0.76	NC	>650 Hp	3	-4.43E+00	2.58E-01	0.50	No
ICE, Diesel	PAH	Chrysene	lbs/Mgal	EF	NC	<650 Hp	6	1.36E-04	8.32E-05	1.00	NC	>650 Hp	3	3.63E-05	1.25E-05	1.00	No
ICE, Diesel	PAH	Chrysene	lbs/Mgal	Log EF	NC	<650 Hp	6	-3.94E+00	2.96E-01	1.00	NC	>650 Hp	3	-4.46E+00	1.41E-01	1.00	Yes
ICE, Diesel	PAH	Dibenz(a,h)anthracene	lbs/Mgal	EF	NC	<650 Hp	6	5.26E-05	1.08E-05	0.55	NC	>650 Hp	3	1.05E-04	4.85E-05	0.00	Yes
ICE, Diesel	PAH	Dibenz(a,h)anthracene	lbs/Mgal	Log EF	NC	<650 Hp	6	-4.29E+00	8.12E-02	0.55	NC	>650 Hp	3	-4.02E+00	2.43E-01	0.00	Yes
ICE, Diesel	PAH	Fluoranthene	lbs/Mgal	EF	NC	<650 Hp	6	1.16E-03	8.54E-04	1.00	NC	>650 Hp	3	3.51E-04	2.71E-04	1.00	No
ICE, Diesel	PAH	Fluoranthene	lbs/Mgal	Log EF	NC	<650 Hp	6	-3.02E+00	2.89E-01	1.00	NC	>650 Hp	3	-3.60E+00	4.93E-01	1.00	No
ICE, Diesel	PAH	Fluorene	lbs/Mgal	EF	NC	<650 Hp	6	4.53E-03	3.04E-03	1.00	NC	>650 Hp	3	8.42E-04	5.48E-04	0.92	No
ICE, Diesel	PAH	Fluorene	lbs/Mgal	Log EF	NC	<650 Hp	6	-2.45E+00	3.37E-01	1.00	NC	>650 Hp	3	-3.18E+00	4.28E-01	0.92	Yes
ICE, Diesel	PAH	Indeno(1,2,3-cd)pyrene	lbs/Mgal	EF	NC	<650 Hp	6	4.75E-05	1.29E-05	0.61	NC	>650 Hp	3	9.06E-05	7.18E-05	0.00	No
ICE, Diesel	PAH	Indeno(1,2,3-cd)pyrene	lbs/Mgal	Log EF	NC	<650 Hp	6	-4.34E+00	1.18E-01	0.61	NC	>650 Hp	3	-4.29E+00	7.10E-01	0.00	No
ICE, Diesel	PAH	Naphthalene	lbs/Mgal	EF	NC	<650 Hp	6	1.26E-02	5.91E-03	1.00	NC	>650 Hp	3	1.63E-02	1.27E-02	1.00	No
ICE, Diesel	PAH	Naphthalene	lbs/Mgal	Log EF	NC	<650 Hp	6	-1.94E+00	2.22E-01	1.00	NC	>650 Hp	3	-1.88E+00	3.56E-01	1.00	No
ICE, Diesel	PAH	Phenanthrene	lbs/Mgal	EF	NC	<650 Hp	6	5.98E-03	7.77E-04	1.00	NC	>650 Hp	3	1.85E-03	1.35E-03	1.00	Yes
ICE, Diesel	PAH	Phenanthrene	lbs/Mgal	Log EF	NC	<650 Hp	6	-2.23E+00	5.17E-02	1.00	NC	>650 Hp	3	-2.89E+00	5.35E-01	1.00	Yes
ICE, Diesel	PAH	Pyrene	lbs/Mgal	EF	NC	<650 Hp	6	6.28E-04	2.20E-04	1.00	NC	>650 Hp	3	5.89E-04	4.51E-04	1.00	No
ICE, Diesel	PAH	Pyrene	lbs/Mgal	Log EF	NC	<650 Hp	6	-3.22E+00	1.27E-01	1.00	NC	>650 Hp	3	-3.37E+00	4.95E-01	1.00	No
ICE, Diesel	VOC	Acetaldehyde	lbs/Mgal	EF	NC	<650 Hp	6	7.59E-02	7.94E-02	1.00	NC	>650 Hp	3	6.48E-02	5.78E-03	1.00	No
ICE, Diesel	VOC	Acetaldehyde	lbs/Mgal	Log EF	NC	<650 Hp	6	-1.68E+00	9.56E-01	1.00	NC	>650 Hp	3	-1.19E+00	3.98E-02	1.00	No
ICE, Diesel	VOC	Acrolein	lbs/Mgal	EF	NC	<650 Hp	6	4.21E-03	3.49E-03	0.38	NC	>650 Hp	3	1.87E-02	1.17E-02	1.00	Yes
ICE, Diesel	VOC	Acrolein	lbs/Mgal	Log EF	NC	<650 Hp	6	-2.57E+00	5.03E-01	0.38	NC	>650 Hp	3	-1.79E+00	2.73E-01	1.00	Yes
ICE, Diesel	VOC	Benzene	lbs/Mgal	EF	NC	<650 Hp	6	8.51E-02	1.74E-02	1.00	NC	>650 Hp	3	1.75E-01	1.82E-02	1.00	Yes
ICE, Diesel	VOC	Benzene	lbs/Mgal	Log EF	NC	<650 Hp	6	-1.08E+00	9.03E-02	1.00	NC	>650 Hp	3	-7.58E-01	4.62E-02	1.00	Yes
ICE, Diesel	VOC	Formaldehyde	lbs/Mgal	EF	NC	<650 Hp	6	1.02E-01	1.28E-01	1.00	NC	>650 Hp	3	1.39E-01	5.35E-02	1.00	No
ICE, Diesel	VOC	Formaldehyde	lbs/Mgal	Log EF	NC	<650 Hp	6	-1.50E+00	8.95E-01	1.00	NC	>650 Hp	3	-8.81E-01	1.77E-01	1.00	No
ICE, Diesel	VOC	Propylene	lbs/Mgal	EF	NC	<650 Hp	6	2.82E-01	1.17E-01	1.00	NC	>650 Hp	3	5.38E-01	6.69E-02	1.00	Yes
ICE, Diesel	VOC	Propylene	lbs/Mgal	Log EF	NC	<650 Hp	6	-5.85E-01	1.95E-01	1.00	NC	>650 Hp	3	-2.72E-01	5.62E-02	1.00	Yes
ICE, Diesel	VOC	Toluene	lbs/Mgal	EF	NC	<650 Hp	6	3.67E-02	1.40E-03	1.00	NC	>650 Hp	3	7.41E-02	1.48E-03	1.00	Yes
ICE, Diesel	VOC	Toluene	lbs/Mgal	Log EF	NC	<650 Hp	6	-1.44E+00	1.66E-02	1.00	NC	>650 Hp	3	-1.13E+00	8.69E-03	1.00	Yes
ICE, Diesel	VOC	Xylene (Total)	lbs/Mgal	EF	NC	<650 Hp	3	2.68E-02	1.03E-03	1.00	NC	>650 Hp	3	3.59E-02	1.48E-02	1.00	No
ICE, Diesel	VOC	Xylene (Total)	lbs/Mgal	Log EF	NC	<650 Hp	3	-1.57E+00	1.68E-02	1.00	NC	>650 Hp	3	-1.48E+00	2.16E-01	1.00	No

TABLE 6-7. RICE STROKES PER CYCLE AND CAPACITY COMPARISON.

Major Group	Category	Substance	EF Unit	Value Type	First Sample Statistics						Second Sample Statistics						Significant Difference at 95%Confidence
					Description		Size	Average	Standard Deviation	Detect Ratio	Description		Size	Average	Standard Deviation	Detect Ratio	
					Strokes	Capacity					Strokes	Capacity					
ICE, Field Gas	VOC	Benzene	lbs/MMcf	EF	2S	<650 Hp	2	1.31E+01	7.69E-01	1.00	2S	>650 Hp	3	4.39E+00	1.91E-01	1.00	Yes
ICE, Field Gas	VOC	Benzene	lbs/MMcf	EF	2S	<650 Hp	2	1.31E+01	7.69E-01	1.00	4S	<650 Hp	8	4.04E+00	4.32E+00	1.00	Yes
ICE, Field Gas	VOC	Benzene	lbs/MMcf	EF	2S	>650 Hp	3	4.39E+00	1.91E-01	1.00	4S	<650 Hp	8	4.04E+00	4.32E+00	1.00	No
ICE, Field Gas	VOC	Benzene	lbs/MMcf	Log EF	2S	<650 Hp	2	1.12E+00	2.56E-02	1.00	2S	>650 Hp	3	6.42E-01	1.87E-02	1.00	Yes
ICE, Field Gas	VOC	Benzene	lbs/MMcf	Log EF	2S	<650 Hp	2	1.12E+00	2.56E-02	1.00	4S	<650 Hp	8	4.16E-01	4.16E-01	1.00	No
ICE, Field Gas	VOC	Benzene	lbs/MMcf	Log EF	2S	>650 Hp	3	6.42E-01	1.87E-02	1.00	4S	<650 Hp	8	4.16E-01	4.16E-01	1.00	No
ICE, Field Gas	VOC	Formaldehyde	lbs/MMcf	EF	2S	<650 Hp	3	7.60E+01	8.20E+00	1.00	2S	>650 Hp	3	2.58E+01	3.46E+01	1.00	No
ICE, Field Gas	VOC	Formaldehyde	lbs/MMcf	EF	2S	<650 Hp	3	7.60E+01	8.20E+00	1.00	4S	<650 Hp	12	3.24E+01	3.18E+01	1.00	Yes
ICE, Field Gas	VOC	Formaldehyde	lbs/MMcf	EF	2S	>650 Hp	3	2.58E+01	3.46E+01	1.00	4S	<650 Hp	12	3.24E+01	3.18E+01	1.00	No
ICE, Field Gas	VOC	Formaldehyde	lbs/MMcf	Log EF	2S	<650 Hp	3	1.88E+00	4.58E-02	1.00	2S	>650 Hp	3	1.10E+00	6.29E-01	1.00	No
ICE, Field Gas	VOC	Formaldehyde	lbs/MMcf	Log EF	2S	<650 Hp	3	1.88E+00	4.58E-02	1.00	4S	<650 Hp	12	1.29E+00	4.94E-01	1.00	No
ICE, Field Gas	VOC	Formaldehyde	lbs/MMcf	Log EF	2S	>650 Hp	3	1.10E+00	6.29E-01	1.00	4S	<650 Hp	12	1.29E+00	4.94E-01	1.00	No
ICE, Field Gas	VOC	Propylene	lbs/MMcf	EF	2S	<650 Hp	2	4.02E+01	0.00E+00	1.00	2S	>650 Hp	3	1.47E+01	3.16E+00	1.00	Yes
ICE, Field Gas	VOC	Propylene	lbs/MMcf	EF	2S	<650 Hp	2	4.02E+01	0.00E+00	1.00	4S	<650 Hp	8	1.27E+01	7.24E+00	0.94	Yes
ICE, Field Gas	VOC	Propylene	lbs/MMcf	EF	2S	>650 Hp	3	1.47E+01	3.16E+00	1.00	4S	<650 Hp	8	1.27E+01	7.24E+00	0.94	No
ICE, Field Gas	VOC	Propylene	lbs/MMcf	Log EF	2S	<650 Hp	2	1.60E+00	0.00E+00	1.00	2S	>650 Hp	3	1.16E+00	9.65E-02	1.00	Yes
ICE, Field Gas	VOC	Propylene	lbs/MMcf	Log EF	2S	<650 Hp	2	1.60E+00	0.00E+00	1.00	4S	<650 Hp	8	1.01E+00	3.48E-01	0.94	Yes
ICE, Field Gas	VOC	Propylene	lbs/MMcf	Log EF	2S	>650 Hp	3	1.16E+00	9.65E-02	1.00	4S	<650 Hp	8	1.01E+00	3.48E-01	0.94	No
ICE, Field Gas	VOC	Toluene	lbs/MMcf	EF	2S	<650 Hp	2	4.83E+00	1.29E+00	1.00	2S	>650 Hp	3	1.54E+00	1.15E+00	1.00	No
ICE, Field Gas	VOC	Toluene	lbs/MMcf	EF	2S	<650 Hp	2	4.83E+00	1.29E+00	1.00	4S	<650 Hp	8	1.44E+00	1.28E+00	1.00	Yes
ICE, Field Gas	VOC	Toluene	lbs/MMcf	EF	2S	>650 Hp	3	1.54E+00	1.15E+00	1.00	4S	<650 Hp	8	1.44E+00	1.28E+00	1.00	No
ICE, Field Gas	VOC	Toluene	lbs/MMcf	Log EF	2S	<650 Hp	2	6.76E-01	1.17E-01	1.00	2S	>650 Hp	3	1.00E-02	5.74E-01	1.00	No
ICE, Field Gas	VOC	Toluene	lbs/MMcf	Log EF	2S	<650 Hp	2	6.76E-01	1.17E-01	1.00	4S	<650 Hp	8	-4.30E-03	4.16E-01	1.00	No
ICE, Field Gas	VOC	Toluene	lbs/MMcf	Log EF	2S	>650 Hp	3	1.00E-02	5.74E-01	1.00	4S	<650 Hp	8	-4.30E-03	4.16E-01	1.00	No
ICE, Field Gas	VOC	Xylene (m,p)	lbs/MMcf	EF	2S	<650 Hp	2	1.13E+00	1.65E-01	1.00	2S	>650 Hp	3	2.54E-01	6.43E-02	1.00	Yes
ICE, Field Gas	VOC	Xylene (m,p)	lbs/MMcf	EF	2S	<650 Hp	2	1.13E+00	1.65E-01	1.00	4S	<650 Hp	8	3.60E-01	2.77E-01	1.00	Yes
ICE, Field Gas	VOC	Xylene (m,p)	lbs/MMcf	EF	2S	>650 Hp	3	2.54E-01	6.43E-02	1.00	4S	<650 Hp	8	3.60E-01	2.77E-01	1.00	No
ICE, Field Gas	VOC	Xylene (m,p)	lbs/MMcf	Log EF	2S	<650 Hp	2	5.01E-02	6.38E-02	1.00	2S	>650 Hp	3	-6.04E-01	1.13E-01	1.00	Yes
ICE, Field Gas	VOC	Xylene (m,p)	lbs/MMcf	Log EF	2S	<650 Hp	2	5.01E-02	6.38E-02	1.00	4S	<650 Hp	8	-5.56E-01	3.42E-01	1.00	Yes
ICE, Field Gas	VOC	Xylene (m,p)	lbs/MMcf	Log EF	2S	>650 Hp	3	-6.04E-01	1.13E-01	1.00	4S	<650 Hp	8	-5.56E-01	3.42E-01	1.00	No
ICE, Field Gas	VOC	Xylene (o)	lbs/MMcf	EF	2S	<650 Hp	2	5.64E-01	3.85E-02	1.00	2S	>650 Hp	3	1.03E-01	3.41E-02	1.00	Yes
ICE, Field Gas	VOC	Xylene (o)	lbs/MMcf	EF	2S	<650 Hp	2	5.64E-01	3.85E-02	1.00	4S	<650 Hp	8	1.34E-01	8.52E-02	1.00	Yes
ICE, Field Gas	VOC	Xylene (o)	lbs/MMcf	EF	2S	>650 Hp	3	1.03E-01	3.41E-02	1.00	4S	<650 Hp	8	1.34E-01	8.52E-02	1.00	No
ICE, Field Gas	VOC	Xylene (o)	lbs/MMcf	Log EF	2S	<650 Hp	2	-2.49E-01	2.97E-02	1.00	2S	>650 Hp	3	-1.00E+00	1.52E-01	1.00	Yes
ICE, Field Gas	VOC	Xylene (o)	lbs/MMcf	Log EF	2S	<650 Hp	2	-2.49E-01	2.97E-02	1.00	4S	<650 Hp	8	-9.38E-01	2.47E-01	1.00	Yes
ICE, Field Gas	VOC	Xylene (o)	lbs/MMcf	Log EF	2S	>650 Hp	3	-1.00E+00	1.52E-01	1.00	4S	<650 Hp	8	-9.38E-01	2.47E-01	1.00	No

TABLE 6-8. RICE STROKES PER CYCLE, OXYGEN, AND CAPACITY COMPARISON.

Major Group	Category	Substance	EF Unit	Value Type	First Sample Statistics							Second Sample Statistics							Significant Difference at 95%Confidence
					Description			Size	Average	Standard Deviation	Detect Ratio	Description			Size	Average	Standard Deviation	Detect Ratio	
					Strokes	Oxygen	Capacity					Strokes	Oxygen	Capacity					
ICE, Diesel	PAH	Acenaphthene	lbs/Mgal	EF	NC	O2<13%	<650 Hp	3	6.44E-04	2.47E-04	1.00	NC	O2>13%	<650 Hp	3	1.44E-06	2.72E-08	0.00	Yes
ICE, Diesel	PAH	Acenaphthene	lbs/Mgal	EF	NC	O2<13%	<650 Hp	3	6.44E-04	2.47E-04	1.00	NC	O2>13%	>650 Hp	3	3.94E-04	2.55E-04	1.00	No
ICE, Diesel	PAH	Acenaphthene	lbs/Mgal	EF	NC	O2>13%	<650 Hp	3	1.44E-06	2.72E-08	0.00	NC	O2>13%	>650 Hp	3	3.94E-04	2.55E-04	1.00	No
ICE, Diesel	PAH	Acenaphthene	lbs/Mgal	Log EF	NC	O2<13%	<650 Hp	3	-3.22E+00	1.86E-01	1.00	NC	O2>13%	<650 Hp	3	-5.84E+00	8.28E-03	0.00	Yes
ICE, Diesel	PAH	Acenaphthene	lbs/Mgal	Log EF	NC	O2<13%	<650 Hp	3	-3.22E+00	1.86E-01	1.00	NC	O2>13%	>650 Hp	3	-3.46E+00	2.60E-01	1.00	No
ICE, Diesel	PAH	Acenaphthene	lbs/Mgal	Log EF	NC	O2>13%	<650 Hp	3	-5.84E+00	8.28E-03	0.00	NC	O2>13%	>650 Hp	3	-3.46E+00	2.60E-01	1.00	Yes
ICE, Diesel	PAH	Acenaphthylene	lbs/Mgal	EF	NC	O2<13%	<650 Hp	3	1.27E-03	7.76E-05	1.00	NC	O2>13%	<650 Hp	3	1.44E-06	2.72E-08	0.00	Yes
ICE, Diesel	PAH	Acenaphthylene	lbs/Mgal	EF	NC	O2<13%	<650 Hp	3	1.27E-03	7.76E-05	1.00	NC	O2>13%	>650 Hp	3	1.41E-03	6.79E-04	1.00	No
ICE, Diesel	PAH	Acenaphthylene	lbs/Mgal	EF	NC	O2>13%	<650 Hp	3	1.44E-06	2.72E-08	0.00	NC	O2>13%	>650 Hp	3	1.41E-03	6.79E-04	1.00	Yes
ICE, Diesel	PAH	Acenaphthylene	lbs/Mgal	Log EF	NC	O2<13%	<650 Hp	3	-2.90E+00	2.70E-02	1.00	NC	O2>13%	<650 Hp	3	-5.84E+00	8.28E-03	0.00	Yes
ICE, Diesel	PAH	Acenaphthylene	lbs/Mgal	Log EF	NC	O2<13%	<650 Hp	3	-2.90E+00	2.70E-02	1.00	NC	O2>13%	>650 Hp	3	-2.90E+00	2.65E-01	1.00	No
ICE, Diesel	PAH	Acenaphthylene	lbs/Mgal	Log EF	NC	O2>13%	<650 Hp	3	-5.84E+00	8.28E-03	0.00	NC	O2>13%	>650 Hp	3	-2.90E+00	2.65E-01	1.00	Yes
ICE, Diesel	PAH	Anthracene	lbs/Mgal	EF	NC	O2<13%	<650 Hp	3	1.70E-04	1.06E-04	1.00	NC	O2>13%	<650 Hp	3	3.20E-04	4.44E-05	1.00	No
ICE, Diesel	PAH	Anthracene	lbs/Mgal	EF	NC	O2<13%	<650 Hp	3	1.70E-04	1.06E-04	1.00	NC	O2>13%	>650 Hp	3	1.99E-04	1.47E-04	1.00	No
ICE, Diesel	PAH	Anthracene	lbs/Mgal	EF	NC	O2>13%	<650 Hp	3	3.20E-04	4.44E-05	1.00	NC	O2>13%	>650 Hp	3	1.99E-04	1.47E-04	1.00	No
ICE, Diesel	PAH	Anthracene	lbs/Mgal	Log EF	NC	O2<13%	<650 Hp	3	-3.83E+00	2.66E-01	1.00	NC	O2>13%	<650 Hp	3	-3.50E+00	5.81E-02	1.00	No
ICE, Diesel	PAH	Anthracene	lbs/Mgal	Log EF	NC	O2<13%	<650 Hp	3	-3.83E+00	2.66E-01	1.00	NC	O2>13%	>650 Hp	3	-3.87E+00	5.55E-01	1.00	No
ICE, Diesel	PAH	Anthracene	lbs/Mgal	Log EF	NC	O2>13%	<650 Hp	3	-3.50E+00	5.81E-02	1.00	NC	O2>13%	>650 Hp	3	-3.87E+00	5.55E-01	1.00	No
ICE, Diesel	PAH	Benzo(a)anthracene	lbs/Mgal	EF	NC	O2<13%	<650 Hp	3	8.71E-05	8.47E-06	1.00	NC	O2>13%	<650 Hp	3	3.74E-04	2.67E-04	1.00	No
ICE, Diesel	PAH	Benzo(a)anthracene	lbs/Mgal	EF	NC	O2<13%	<650 Hp	3	8.71E-05	8.47E-06	1.00	NC	O2>13%	>650 Hp	3	9.32E-05	1.31E-04	1.00	No
ICE, Diesel	PAH	Benzo(a)anthracene	lbs/Mgal	EF	NC	O2>13%	<650 Hp	3	3.74E-04	2.67E-04	1.00	NC	O2>13%	>650 Hp	3	9.32E-05	1.31E-04	1.00	No
ICE, Diesel	PAH	Benzo(a)anthracene	lbs/Mgal	Log EF	NC	O2<13%	<650 Hp	3	-4.06E+00	4.12E-02	1.00	NC	O2>13%	<650 Hp	3	-3.50E+00	3.11E-01	1.00	Yes
ICE, Diesel	PAH	Benzo(a)anthracene	lbs/Mgal	Log EF	NC	O2<13%	<650 Hp	3	-4.06E+00	4.12E-02	1.00	NC	O2>13%	>650 Hp	3	-4.38E+00	6.65E-01	1.00	No
ICE, Diesel	PAH	Benzo(a)anthracene	lbs/Mgal	Log EF	NC	O2>13%	<650 Hp	3	-3.50E+00	3.11E-01	1.00	NC	O2>13%	>650 Hp	3	-4.38E+00	6.65E-01	1.00	No
ICE, Diesel	PAH	Benzo(a)pyrene	lbs/Mgal	EF	NC	O2<13%	<650 Hp	3	3.54E-05	1.41E-05	0.45	NC	O2>13%	<650 Hp	3	1.44E-06	2.72E-08	0.00	Yes
ICE, Diesel	PAH	Benzo(a)pyrene	lbs/Mgal	EF	NC	O2<13%	<650 Hp	3	3.54E-05	1.41E-05	0.45	NC	O2>13%	>650 Hp	3	5.05E-05	1.35E-05	0.00	No
ICE, Diesel	PAH	Benzo(a)pyrene	lbs/Mgal	EF	NC	O2>13%	<650 Hp	3	1.44E-06	2.72E-08	0.00	NC	O2>13%	>650 Hp	3	5.05E-05	1.35E-05	0.00	Yes
ICE, Diesel	PAH	Benzo(a)pyrene	lbs/Mgal	Log EF	NC	O2<13%	<650 Hp	3	-4.48E+00	1.97E-01	0.45	NC	O2>13%	<650 Hp	3	-5.84E+00	8.28E-03	0.00	Yes
ICE, Diesel	PAH	Benzo(a)pyrene	lbs/Mgal	Log EF	NC	O2<13%	<650 Hp	3	-4.48E+00	1.97E-01	0.45	NC	O2>13%	>650 Hp	3	-4.31E+00	1.28E-01	0.00	No
ICE, Diesel	PAH	Benzo(a)pyrene	lbs/Mgal	Log EF	NC	O2>13%	<650 Hp	3	-5.84E+00	8.28E-03	0.00	NC	O2>13%	>650 Hp	3	-4.31E+00	1.28E-01	0.00	Yes
ICE, Diesel	PAH	Benzo(b)fluoranthene	lbs/Mgal	EF	NC	O2<13%	<650 Hp	3	1.53E-04	3.46E-05	0.27	NC	O2>13%	>650 Hp	3	2.59E-05	1.36E-05	0.50	Yes
ICE, Diesel	PAH	Benzo(b)fluoranthene	lbs/Mgal	Log EF	NC	O2<13%	<650 Hp	3	-3.82E+00	9.46E-02	0.27	NC	O2>13%	>650 Hp	3	-4.64E+00	2.69E-01	0.50	Yes
ICE, Diesel	PAH	Benzo(g,h,i)perylene	lbs/Mgal	EF	NC	O2<13%	<650 Hp	3	7.69E-05	7.05E-06	1.00	NC	O2>13%	<650 Hp	3	5.78E-05	1.86E-05	1.00	No
ICE, Diesel	PAH	Benzo(g,h,i)perylene	lbs/Mgal	EF	NC	O2<13%	<650 Hp	3	7.69E-05	7.05E-06	1.00	NC	O2>13%	>650 Hp	3	7.77E-05	7.26E-05	0.00	No
ICE, Diesel	PAH	Benzo(g,h,i)perylene	lbs/Mgal	EF	NC	O2>13%	<650 Hp	3	5.78E-05	1.86E-05	1.00	NC	O2>13%	>650 Hp	3	7.77E-05	7.26E-05	0.00	No
ICE, Diesel	PAH	Benzo(g,h,i)perylene	lbs/Mgal	Log EF	NC	O2<13%	<650 Hp	3	-4.12E+00	4.05E-02	1.00	NC	O2>13%	<650 Hp	3	-4.25E+00	1.35E-01	1.00	No
ICE, Diesel	PAH	Benzo(g,h,i)perylene	lbs/Mgal	Log EF	NC	O2<13%	<650 Hp	3	-4.12E+00	4.05E-02	1.00	NC	O2>13%	>650 Hp	3	-4.31E+00	5.73E-01	0.00	No
ICE, Diesel	PAH	Benzo(g,h,i)perylene	lbs/Mgal	Log EF	NC	O2>13%	<650 Hp	3	-4.25E+00	1.35E-01	1.00	NC	O2>13%	>650 Hp	3	-4.31E+00	5.73E-01	0.00	No
ICE, Diesel	PAH	Benzo(k)fluoranthene	lbs/Mgal	EF	NC	O2<13%	<650 Hp	3	3.02E-05	3.38E-05	0.76	NC	O2>13%	>650 Hp	3	4.14E-05	2.14E-05	0.50	No
ICE, Diesel	PAH	Benzo(k)fluoranthene	lbs/Mgal	Log EF	NC	O2<13%	<650 Hp	3	-4.70E+00	4.73E-01	0.76	NC	O2>13%	>650 Hp	3	-4.43E+00	2.58E-01	0.50	No
ICE, Diesel	PAH	Chrysene	lbs/Mgal	EF	NC	O2<13%	<650 Hp	3	2.11E-04	2.33E-05	1.00	NC	O2>13%	<650 Hp	3	6.18E-05	6.90E-06	1.00	Yes
ICE, Diesel	PAH	Chrysene	lbs/Mgal	EF	NC	O2<13%	<650 Hp	3	2.11E-04	2.33E-05	1.00	NC	O2>13%	>650 Hp	3	3.63E-05	1.25E-05	1.00	Yes
ICE, Diesel	PAH	Chrysene	lbs/Mgal	EF	NC	O2>13%	<650 Hp	3	6.18E-05	6.90E-06	1.00	NC	O2>13%	>650 Hp	3	3.63E-05	1.25E-05	1.00	Yes
ICE, Diesel	PAH	Chrysene	lbs/Mgal	Log EF	NC	O2<13%	<650 Hp	3	-3.68E+00	4.95E-02	1.00	NC	O2>13%	<650 Hp	3	-4.21E+00	4.98E-02	1.00	Yes
ICE, Diesel	PAH	Chrysene	lbs/Mgal	Log EF	NC	O2<13%	<650 Hp	3	-3.68E+00	4.95E-02	1.00	NC	O2>13%	>650 Hp	3	-4.46E+00	1.41E-01	1.00	Yes
ICE, Diesel	PAH	Chrysene	lbs/Mgal	Log EF	NC	O2>13%	<650 Hp	3	-4.21E+00	4.98E-02	1.00	NC	O2>13%	>650 Hp	3	-4.46E+00	1.41E-01	1.00	Yes
ICE, Diesel	PAH	Dibenz(a,h)anthracene	lbs/Mgal	EF	NC	O2<13%	<650 Hp	3	4.77E-05	2.66E-06	0.00	NC	O2>13%	<650 Hp	3	5.75E-05	1.46E-05	1.00	No
ICE, Diesel	PAH	Dibenz(a,h)anthracene	lbs/Mgal	EF	NC	O2<13%	<650 Hp	3	4.77E-05	2.66E-06	0.00	NC	O2>13%	>650 Hp	3	1.05E-04	4.85E-05	0.00	No
ICE, Diesel	PAH	Dibenz(a,h)anthracene	lbs/Mgal	EF	NC	O2>13%	<650 Hp	3	5.75E-05	1.46E-05	1.00	NC	O2>13%	>650 Hp	3	1.05E-04	4.85E-05	0.00	No
ICE, Diesel	PAH	Dibenz(a,h)anthracene	lbs/Mgal	Log EF	NC	O2<13%	<650 Hp	3	-4.32E+00	2.39E-02	0.00	NC	O2>13%	<650 Hp	3	-4.25E+00	1.09E-01	1.00	No
ICE, Diesel	PAH	Dibenz(a,h)anthracene	lbs/Mgal	Log EF	NC	O2<13%	<650 Hp	3	-4.32E+00	2.39E-02	0.00	NC	O2>13%	>650 Hp	3	-4.02E+00	2.43E-01	0.00	No
ICE, Diesel	PAH	Dibenz(a,h)anthracene	lbs/Mgal	Log EF	NC	O2>13%	<650 Hp	3	-4.25E+00	1.09E-01	1.00	NC	O2>13%	>650 Hp	3	-4.02E+00	2.43E-01	0.00	No

TABLE 6-8. RICE STROKES PER CYCLE, OXYGEN, AND CAPACITY COMPARISON.

Major Group	Category	Substance	EF Unit	Value Type	First Sample Statistics							Second Sample Statistics							Significant Difference at 95%Confidence
					Description			Size	Average	Standard Deviation	Detect Ratio	Description			Size	Average	Standard Deviation	Detect Ratio	
					Strokes	Oxygen	Capacity					Strokes	Oxygen	Capacity					
ICE, Diesel	PAH	Fluoranthene	lbs/Mgal	EF	NC	O2<13%	<650 Hp	3	5.56E-04	2.50E-05	1.00	NC	O2>13%	<650 Hp	3	1.77E-03	8.45E-04	1.00	No
ICE, Diesel	PAH	Fluoranthene	lbs/Mgal	EF	NC	O2<13%	<650 Hp	3	5.56E-04	2.50E-05	1.00	NC	O2>13%	>650 Hp	3	3.51E-04	2.71E-04	1.00	No
ICE, Diesel	PAH	Fluoranthene	lbs/Mgal	EF	NC	O2>13%	<650 Hp	3	1.77E-03	8.45E-04	1.00	NC	O2>13%	>650 Hp	3	3.51E-04	2.71E-04	1.00	No
ICE, Diesel	PAH	Fluoranthene	lbs/Mgal	Log EF	NC	O2<13%	<650 Hp	3	-3.26E+00	1.93E-02	1.00	NC	O2>13%	<650 Hp	3	-2.78E+00	2.08E-01	1.00	Yes
ICE, Diesel	PAH	Fluoranthene	lbs/Mgal	Log EF	NC	O2<13%	<650 Hp	3	-3.26E+00	1.93E-02	1.00	NC	O2>13%	>650 Hp	3	-3.60E+00	4.93E-01	1.00	No
ICE, Diesel	PAH	Fluoranthene	lbs/Mgal	Log EF	NC	O2>13%	<650 Hp	3	-2.78E+00	2.08E-01	1.00	NC	O2>13%	>650 Hp	3	-3.60E+00	4.93E-01	1.00	No
ICE, Diesel	PAH	Fluorene	lbs/Mgal	EF	NC	O2<13%	<650 Hp	3	1.77E-03	4.62E-05	1.00	NC	O2>13%	<650 Hp	3	7.29E-03	4.66E-04	1.00	Yes
ICE, Diesel	PAH	Fluorene	lbs/Mgal	EF	NC	O2<13%	<650 Hp	3	1.77E-03	4.62E-05	1.00	NC	O2>13%	>650 Hp	3	8.42E-04	5.48E-04	0.92	Yes
ICE, Diesel	PAH	Fluorene	lbs/Mgal	EF	NC	O2>13%	<650 Hp	3	7.29E-03	4.66E-04	1.00	NC	O2>13%	>650 Hp	3	8.42E-04	5.48E-04	0.92	Yes
ICE, Diesel	PAH	Fluorene	lbs/Mgal	Log EF	NC	O2<13%	<650 Hp	3	-2.75E+00	1.13E-02	1.00	NC	O2>13%	<650 Hp	3	-2.14E+00	2.83E-02	1.00	Yes
ICE, Diesel	PAH	Fluorene	lbs/Mgal	Log EF	NC	O2<13%	<650 Hp	3	-2.75E+00	1.13E-02	1.00	NC	O2>13%	>650 Hp	3	-3.18E+00	4.28E-01	0.92	No
ICE, Diesel	PAH	Fluorene	lbs/Mgal	Log EF	NC	O2>13%	<650 Hp	3	-2.14E+00	2.83E-02	1.00	NC	O2>13%	>650 Hp	3	-3.18E+00	4.28E-01	0.92	Yes
ICE, Diesel	PAH	Indeno(1,2,3-cd)pyrene	lbs/Mgal	EF	NC	O2<13%	<650 Hp	3	5.69E-05	1.01E-05	0.34	NC	O2>13%	<650 Hp	3	3.80E-05	6.74E-06	1.00	No
ICE, Diesel	PAH	Indeno(1,2,3-cd)pyrene	lbs/Mgal	EF	NC	O2<13%	<650 Hp	3	5.69E-05	1.01E-05	0.34	NC	O2>13%	>650 Hp	3	9.06E-05	7.18E-05	0.00	No
ICE, Diesel	PAH	Indeno(1,2,3-cd)pyrene	lbs/Mgal	EF	NC	O2>13%	<650 Hp	3	3.80E-05	6.74E-06	1.00	NC	O2>13%	>650 Hp	3	9.06E-05	7.18E-05	0.00	No
ICE, Diesel	PAH	Indeno(1,2,3-cd)pyrene	lbs/Mgal	Log EF	NC	O2<13%	<650 Hp	3	-4.25E+00	7.94E-02	0.34	NC	O2>13%	<650 Hp	3	-4.42E+00	7.51E-02	1.00	No
ICE, Diesel	PAH	Indeno(1,2,3-cd)pyrene	lbs/Mgal	Log EF	NC	O2<13%	<650 Hp	3	-4.25E+00	7.94E-02	0.34	NC	O2>13%	>650 Hp	3	-4.29E+00	7.10E-01	0.00	No
ICE, Diesel	PAH	Indeno(1,2,3-cd)pyrene	lbs/Mgal	Log EF	NC	O2>13%	<650 Hp	3	-4.42E+00	7.51E-02	1.00	NC	O2>13%	>650 Hp	3	-4.29E+00	7.10E-01	0.00	No
ICE, Diesel	PAH	Naphthalene	lbs/Mgal	EF	NC	O2<13%	<650 Hp	3	1.80E-02	6.72E-04	1.00	NC	O2>13%	<650 Hp	3	7.29E-03	1.29E-03	1.00	Yes
ICE, Diesel	PAH	Naphthalene	lbs/Mgal	EF	NC	O2<13%	<650 Hp	3	1.80E-02	6.72E-04	1.00	NC	O2>13%	>650 Hp	3	1.63E-02	1.27E-02	1.00	No
ICE, Diesel	PAH	Naphthalene	lbs/Mgal	EF	NC	O2>13%	<650 Hp	3	7.29E-03	1.29E-03	1.00	NC	O2>13%	>650 Hp	3	1.63E-02	1.27E-02	1.00	No
ICE, Diesel	PAH	Naphthalene	lbs/Mgal	Log EF	NC	O2<13%	<650 Hp	3	-1.75E+00	1.64E-02	1.00	NC	O2>13%	<650 Hp	3	-2.14E+00	7.52E-02	1.00	Yes
ICE, Diesel	PAH	Naphthalene	lbs/Mgal	Log EF	NC	O2<13%	<650 Hp	3	-1.75E+00	1.64E-02	1.00	NC	O2>13%	>650 Hp	3	-1.88E+00	3.56E-01	1.00	No
ICE, Diesel	PAH	Naphthalene	lbs/Mgal	Log EF	NC	O2>13%	<650 Hp	3	-2.14E+00	7.52E-02	1.00	NC	O2>13%	>650 Hp	3	-1.88E+00	3.56E-01	1.00	No
ICE, Diesel	PAH	Phenanthrene	lbs/Mgal	EF	NC	O2<13%	<650 Hp	3	5.62E-03	1.45E-04	1.00	NC	O2>13%	<650 Hp	3	6.33E-03	1.06E-03	1.00	No
ICE, Diesel	PAH	Phenanthrene	lbs/Mgal	EF	NC	O2<13%	<650 Hp	3	5.62E-03	1.45E-04	1.00	NC	O2>13%	>650 Hp	3	1.85E-03	1.35E-03	1.00	Yes
ICE, Diesel	PAH	Phenanthrene	lbs/Mgal	EF	NC	O2>13%	<650 Hp	3	6.33E-03	1.06E-03	1.00	NC	O2>13%	>650 Hp	3	1.85E-03	1.35E-03	1.00	Yes
ICE, Diesel	PAH	Phenanthrene	lbs/Mgal	Log EF	NC	O2<13%	<650 Hp	3	-2.25E+00	1.12E-02	1.00	NC	O2>13%	<650 Hp	3	-2.20E+00	6.97E-02	1.00	No
ICE, Diesel	PAH	Phenanthrene	lbs/Mgal	Log EF	NC	O2<13%	<650 Hp	3	-2.25E+00	1.12E-02	1.00	NC	O2>13%	>650 Hp	3	-2.89E+00	5.35E-01	1.00	No
ICE, Diesel	PAH	Phenanthrene	lbs/Mgal	Log EF	NC	O2>13%	<650 Hp	3	-2.20E+00	6.97E-02	1.00	NC	O2>13%	>650 Hp	3	-2.89E+00	5.35E-01	1.00	No
ICE, Diesel	PAH	Pyrene	lbs/Mgal	EF	NC	O2<13%	<650 Hp	3	5.11E-04	4.17E-05	1.00	NC	O2>13%	<650 Hp	3	7.44E-04	2.81E-04	1.00	No
ICE, Diesel	PAH	Pyrene	lbs/Mgal	EF	NC	O2<13%	<650 Hp	3	5.11E-04	4.17E-05	1.00	NC	O2>13%	>650 Hp	3	5.89E-04	4.51E-04	1.00	No
ICE, Diesel	PAH	Pyrene	lbs/Mgal	EF	NC	O2>13%	<650 Hp	3	7.44E-04	2.81E-04	1.00	NC	O2>13%	>650 Hp	3	5.89E-04	4.51E-04	1.00	No
ICE, Diesel	PAH	Pyrene	lbs/Mgal	Log EF	NC	O2<13%	<650 Hp	3	-3.29E+00	3.47E-02	1.00	NC	O2>13%	<650 Hp	3	-3.15E+00	1.53E-01	1.00	No
ICE, Diesel	PAH	Pyrene	lbs/Mgal	Log EF	NC	O2<13%	<650 Hp	3	-3.29E+00	3.47E-02	1.00	NC	O2>13%	>650 Hp	3	-3.37E+00	4.95E-01	1.00	No
ICE, Diesel	PAH	Pyrene	lbs/Mgal	Log EF	NC	O2>13%	<650 Hp	3	-3.15E+00	1.53E-01	1.00	NC	O2>13%	>650 Hp	3	-3.37E+00	4.95E-01	1.00	No
ICE, Diesel	VOC	Acetaldehyde	lbs/Mgal	EF	NC	O2<13%	<650 Hp	3	3.47E-03	2.61E-03	1.00	NC	O2>13%	<650 Hp	3	1.48E-01	3.54E-03	1.00	Yes
ICE, Diesel	VOC	Acetaldehyde	lbs/Mgal	EF	NC	O2<13%	<650 Hp	3	3.47E-03	2.61E-03	1.00	NC	O2>13%	>650 Hp	3	6.48E-02	5.78E-03	1.00	Yes
ICE, Diesel	VOC	Acetaldehyde	lbs/Mgal	EF	NC	O2>13%	<650 Hp	3	1.48E-01	3.54E-03	1.00	NC	O2>13%	>650 Hp	3	6.48E-02	5.78E-03	1.00	Yes
ICE, Diesel	VOC	Acetaldehyde	lbs/Mgal	Log EF	NC	O2<13%	<650 Hp	3	-2.54E+00	3.07E-01	1.00	NC	O2>13%	<650 Hp	3	-8.29E-01	1.04E-02	1.00	Yes
ICE, Diesel	VOC	Acetaldehyde	lbs/Mgal	Log EF	NC	O2<13%	<650 Hp	3	-2.54E+00	3.07E-01	1.00	NC	O2>13%	>650 Hp	3	-1.19E+00	3.98E-02	1.00	Yes
ICE, Diesel	VOC	Acetaldehyde	lbs/Mgal	Log EF	NC	O2>13%	<650 Hp	3	-8.29E-01	1.04E-02	1.00	NC	O2>13%	>650 Hp	3	-1.19E+00	3.98E-02	1.00	Yes
ICE, Diesel	VOC	Acrolein	lbs/Mgal	EF	NC	O2<13%	<650 Hp	3	1.07E-03	6.19E-04	0.56	NC	O2>13%	<650 Hp	3	7.35E-03	6.42E-04	0.35	Yes
ICE, Diesel	VOC	Acrolein	lbs/Mgal	EF	NC	O2<13%	<650 Hp	3	1.07E-03	6.19E-04	0.56	NC	O2>13%	>650 Hp	3	1.87E-02	1.17E-02	1.00	No
ICE, Diesel	VOC	Acrolein	lbs/Mgal	EF	NC	O2>13%	<650 Hp	3	7.35E-03	6.42E-04	0.35	NC	O2>13%	>650 Hp	3	1.87E-02	1.17E-02	1.00	No
ICE, Diesel	VOC	Acrolein	lbs/Mgal	Log EF	NC	O2<13%	<650 Hp	3	-3.01E+00	2.30E-01	0.56	NC	O2>13%	<650 Hp	3	-2.13E+00	3.89E-02	0.35	Yes
ICE, Diesel	VOC	Acrolein	lbs/Mgal	Log EF	NC	O2<13%	<650 Hp	3	-3.01E+00	2.30E-01	0.56	NC	O2>13%	>650 Hp	3	-1.79E+00	2.73E-01	1.00	Yes
ICE, Diesel	VOC	Acrolein	lbs/Mgal	Log EF	NC	O2>13%	<650 Hp	3	-2.13E+00	3.89E-02	0.35	NC	O2>13%	>650 Hp	3	-1.79E+00	2.73E-01	1.00	No
ICE, Diesel	VOC	Benzene	lbs/Mgal	EF	NC	O2<13%	<650 Hp	3	1.01E-01	2.73E-03	1.00	NC	O2>13%	<650 Hp	3	6.94E-02	3.18E-03	1.00	Yes
ICE, Diesel	VOC	Benzene	lbs/Mgal	EF	NC	O2<13%	<650 Hp	3	1.01E-01	2.73E-03	1.00	NC	O2>13%	>650 Hp	3	1.75E-01	1.82E-02	1.00	Yes
ICE, Diesel	VOC	Benzene	lbs/Mgal	EF	NC	O2>13%	<650 Hp	3	6.94E-02	3.18E-03	1.00	NC	O2>13%	>650 Hp	3	1.75E-01	1.82E-02	1.00	Yes
ICE, Diesel	VOC	Benzene	lbs/Mgal	Log EF	NC	O2<13%	<650 Hp	3	-9.96E-01	1.17E-02	1.00	NC	O2>13%	<650 Hp	3	-1.16E+00	2.02E-02	1.00	Yes

TABLE 6-8. RICE STROKES PER CYCLE, OXYGEN, AND CAPACITY COMPARISON.

Major Group	Category	Substance	EF Unit	Value Type	First Sample Statistics							Second Sample Statistics							Significant
					Description			Size	Average	Standard Deviation	Detect Ratio	Description			Size	Average	Standard Deviation	Detect Ratio	Difference at 95%Confidence
					Strokes	Oxygen	Capacity					Strokes	Oxygen	Capacity					
ICE, Diesel	VOC	Benzene	lbs/Mgal	Log EF	NC	O2<13%	<650 Hp	3	-9.96E-01	1.17E-02	1.00	NC	O2>13%	>650 Hp	3	-7.58E-01	4.62E-02	1.00	Yes
ICE, Diesel	VOC	Benzene	lbs/Mgal	Log EF	NC	O2>13%	<650 Hp	3	-1.16E+00	2.02E-02	1.00	NC	O2>13%	>650 Hp	3	-7.58E-01	4.62E-02	1.00	Yes
ICE, Diesel	VOC	Formaldehyde	lbs/Mgal	EF	NC	O2<13%	<650 Hp	3	1.09E-02	1.34E-02	1.00	NC	O2>13%	<650 Hp	3	1.92E-01	1.27E-01	1.00	No
ICE, Diesel	VOC	Formaldehyde	lbs/Mgal	EF	NC	O2<13%	<650 Hp	3	1.09E-02	1.34E-02	1.00	NC	O2>13%	>650 Hp	3	1.39E-01	5.35E-02	1.00	Yes
ICE, Diesel	VOC	Formaldehyde	lbs/Mgal	EF	NC	O2>13%	<650 Hp	3	1.92E-01	1.27E-01	1.00	NC	O2>13%	>650 Hp	3	1.39E-01	5.35E-02	1.00	No
ICE, Diesel	VOC	Formaldehyde	lbs/Mgal	Log EF	NC	O2<13%	<650 Hp	3	-2.22E+00	5.97E-01	1.00	NC	O2>13%	<650 Hp	3	-7.80E-01	2.87E-01	1.00	Yes
ICE, Diesel	VOC	Formaldehyde	lbs/Mgal	Log EF	NC	O2<13%	<650 Hp	3	-2.22E+00	5.97E-01	1.00	NC	O2>13%	>650 Hp	3	-8.81E-01	1.77E-01	1.00	Yes
ICE, Diesel	VOC	Formaldehyde	lbs/Mgal	Log EF	NC	O2>13%	<650 Hp	3	-7.80E-01	2.87E-01	1.00	NC	O2>13%	>650 Hp	3	-8.81E-01	1.77E-01	1.00	No
ICE, Diesel	VOC	Propylene	lbs/Mgal	EF	NC	O2<13%	<650 Hp	3	3.85E-01	3.10E-02	1.00	NC	O2>13%	<650 Hp	3	1.78E-01	3.54E-02	1.00	Yes
ICE, Diesel	VOC	Propylene	lbs/Mgal	EF	NC	O2<13%	<650 Hp	3	3.85E-01	3.10E-02	1.00	NC	O2>13%	>650 Hp	3	5.38E-01	6.69E-02	1.00	Yes
ICE, Diesel	VOC	Propylene	lbs/Mgal	EF	NC	O2>13%	<650 Hp	3	1.78E-01	3.54E-02	1.00	NC	O2>13%	>650 Hp	3	5.38E-01	6.69E-02	1.00	Yes
ICE, Diesel	VOC	Propylene	lbs/Mgal	Log EF	NC	O2<13%	<650 Hp	3	-4.16E-01	3.59E-02	1.00	NC	O2>13%	<650 Hp	3	-7.55E-01	8.61E-02	1.00	Yes
ICE, Diesel	VOC	Propylene	lbs/Mgal	Log EF	NC	O2<13%	<650 Hp	3	-4.16E-01	3.59E-02	1.00	NC	O2>13%	>650 Hp	3	-2.72E-01	5.62E-02	1.00	Yes
ICE, Diesel	VOC	Propylene	lbs/Mgal	Log EF	NC	O2>13%	<650 Hp	3	-7.55E-01	8.61E-02	1.00	NC	O2>13%	>650 Hp	3	-2.72E-01	5.62E-02	1.00	Yes
ICE, Diesel	VOC	Toluene	lbs/Mgal	EF	NC	O2<13%	<650 Hp	3	3.74E-02	1.22E-03	1.00	NC	O2>13%	<650 Hp	3	3.60E-02	1.38E-03	1.00	No
ICE, Diesel	VOC	Toluene	lbs/Mgal	EF	NC	O2<13%	<650 Hp	3	3.74E-02	1.22E-03	1.00	NC	O2>13%	>650 Hp	3	7.41E-02	1.48E-03	1.00	Yes
ICE, Diesel	VOC	Toluene	lbs/Mgal	EF	NC	O2>13%	<650 Hp	3	3.60E-02	1.38E-03	1.00	NC	O2>13%	>650 Hp	3	7.41E-02	1.48E-03	1.00	Yes
ICE, Diesel	VOC	Toluene	lbs/Mgal	Log EF	NC	O2<13%	<650 Hp	3	-1.43E+00	1.41E-02	1.00	NC	O2>13%	<650 Hp	3	-1.44E+00	1.68E-02	1.00	No
ICE, Diesel	VOC	Toluene	lbs/Mgal	Log EF	NC	O2<13%	<650 Hp	3	-1.43E+00	1.41E-02	1.00	NC	O2>13%	>650 Hp	3	-1.13E+00	8.69E-03	1.00	Yes
ICE, Diesel	VOC	Toluene	lbs/Mgal	Log EF	NC	O2>13%	<650 Hp	3	-1.44E+00	1.68E-02	1.00	NC	O2>13%	>650 Hp	3	-1.13E+00	8.69E-03	1.00	Yes
ICE, Diesel	VOC	Xylene (Total)	lbs/Mgal	EF	NC	O2<13%	<650 Hp	3	2.68E-02	1.03E-03	1.00	NC	O2>13%	>650 Hp	3	3.59E-02	1.48E-02	1.00	No
ICE, Diesel	VOC	Xylene (Total)	lbs/Mgal	Log EF	NC	O2<13%	<650 Hp	3	-1.57E+00	1.68E-02	1.00	NC	O2>13%	>650 Hp	3	-1.48E+00	2.16E-01	1.00	No
ICE, Field Gas	VOC	Benzene	lbs/MMcf	EF	2S	Lean	<650 Hp	2	1.31E+01	7.69E-01	1.00	2S	Lean	>650 Hp	3	4.39E+00	1.91E-01	1.00	Yes
ICE, Field Gas	VOC	Benzene	lbs/MMcf	EF	2S	Lean	<650 Hp	2	1.31E+01	7.69E-01	1.00	4S	Lean	<650 Hp	6	1.72E+00	6.13E-01	1.00	Yes
ICE, Field Gas	VOC	Benzene	lbs/MMcf	EF	2S	Lean	<650 Hp	2	1.31E+01	7.69E-01	1.00	4S	Rich	<650 Hp	2	1.10E+01	1.26E-01	1.00	No
ICE, Field Gas	VOC	Benzene	lbs/MMcf	EF	2S	Lean	>650 Hp	3	4.39E+00	1.91E-01	1.00	4S	Lean	<650 Hp	6	1.72E+00	6.13E-01	1.00	Yes
ICE, Field Gas	VOC	Benzene	lbs/MMcf	EF	2S	Lean	>650 Hp	3	4.39E+00	1.91E-01	1.00	4S	Rich	<650 Hp	2	1.10E+01	1.26E-01	1.00	Yes
ICE, Field Gas	VOC	Benzene	lbs/MMcf	EF	4S	Lean	<650 Hp	6	1.72E+00	6.13E-01	1.00	4S	Rich	<650 Hp	2	1.10E+01	1.26E-01	1.00	Yes
ICE, Field Gas	VOC	Benzene	lbs/MMcf	Log EF	2S	Lean	<650 Hp	2	1.12E+00	2.56E-02	1.00	2S	Lean	>650 Hp	3	6.42E-01	1.87E-02	1.00	Yes
ICE, Field Gas	VOC	Benzene	lbs/MMcf	Log EF	2S	Lean	<650 Hp	2	1.12E+00	2.56E-02	1.00	4S	Lean	<650 Hp	6	2.07E-01	1.83E-01	1.00	Yes
ICE, Field Gas	VOC	Benzene	lbs/MMcf	Log EF	2S	Lean	<650 Hp	2	1.12E+00	2.56E-02	1.00	4S	Rich	<650 Hp	2	1.04E+00	4.99E-03	1.00	No
ICE, Field Gas	VOC	Benzene	lbs/MMcf	Log EF	2S	Lean	>650 Hp	3	6.42E-01	1.87E-02	1.00	4S	Lean	<650 Hp	6	2.07E-01	1.83E-01	1.00	Yes
ICE, Field Gas	VOC	Benzene	lbs/MMcf	Log EF	2S	Lean	>650 Hp	3	6.42E-01	1.87E-02	1.00	4S	Rich	<650 Hp	2	1.04E+00	4.99E-03	1.00	Yes
ICE, Field Gas	VOC	Benzene	lbs/MMcf	Log EF	4S	Lean	<650 Hp	6	2.07E-01	1.83E-01	1.00	4S	Rich	<650 Hp	2	1.04E+00	4.99E-03	1.00	Yes
ICE, Field Gas	VOC	Formaldehyde	lbs/MMcf	EF	2S	Lean	<650 Hp	3	7.60E+01	8.20E+00	1.00	2S	Lean	>650 Hp	3	2.58E+01	3.46E+01	1.00	No
ICE, Field Gas	VOC	Formaldehyde	lbs/MMcf	EF	2S	Lean	<650 Hp	3	7.60E+01	8.20E+00	1.00	4S	Lean	<650 Hp	9	4.15E+01	3.18E+01	1.00	No
ICE, Field Gas	VOC	Formaldehyde	lbs/MMcf	EF	2S	Lean	<650 Hp	3	7.60E+01	8.20E+00	1.00	4S	Rich	<650 Hp	3	5.05E+00	8.04E-01	1.00	Yes
ICE, Field Gas	VOC	Formaldehyde	lbs/MMcf	EF	2S	Lean	>650 Hp	3	2.58E+01	3.46E+01	1.00	4S	Lean	<650 Hp	9	4.15E+01	3.18E+01	1.00	No
ICE, Field Gas	VOC	Formaldehyde	lbs/MMcf	EF	2S	Lean	>650 Hp	3	2.58E+01	3.46E+01	1.00	4S	Rich	<650 Hp	3	5.05E+00	8.04E-01	1.00	No
ICE, Field Gas	VOC	Formaldehyde	lbs/MMcf	EF	4S	Lean	<650 Hp	9	4.15E+01	3.18E+01	1.00	4S	Rich	<650 Hp	3	5.05E+00	8.04E-01	1.00	No
ICE, Field Gas	VOC	Formaldehyde	lbs/MMcf	Log EF	2S	Lean	<650 Hp	3	1.88E+00	4.58E-02	1.00	2S	Lean	>650 Hp	3	1.10E+00	6.29E-01	1.00	No
ICE, Field Gas	VOC	Formaldehyde	lbs/MMcf	Log EF	2S	Lean	<650 Hp	3	1.88E+00	4.58E-02	1.00	4S	Lean	<650 Hp	9	1.48E+00	4.02E-01	1.00	No
ICE, Field Gas	VOC	Formaldehyde	lbs/MMcf	Log EF	2S	Lean	<650 Hp	3	1.88E+00	4.58E-02	1.00	4S	Rich	<650 Hp	3	7.00E-01	6.65E-02	1.00	Yes
ICE, Field Gas	VOC	Formaldehyde	lbs/MMcf	Log EF	2S	Lean	>650 Hp	3	1.10E+00	6.29E-01	1.00	4S	Lean	<650 Hp	9	1.48E+00	4.02E-01	1.00	No
ICE, Field Gas	VOC	Formaldehyde	lbs/MMcf	Log EF	2S	Lean	>650 Hp	3	1.10E+00	6.29E-01	1.00	4S	Rich	<650 Hp	3	7.00E-01	6.65E-02	1.00	No
ICE, Field Gas	VOC	Formaldehyde	lbs/MMcf	Log EF	4S	Lean	<650 Hp	9	1.48E+00	4.02E-01	1.00	4S	Rich	<650 Hp	3	7.00E-01	6.65E-02	1.00	Yes
ICE, Field Gas	VOC	Propylene	lbs/MMcf	EF	2S	Lean	<650 Hp	2	4.02E+01	0.00E+00	1.00	2S	Lean	>650 Hp	3	1.47E+01	3.16E+00	1.00	Yes
ICE, Field Gas	VOC	Propylene	lbs/MMcf	EF	2S	Lean	<650 Hp	2	4.02E+01	0.00E+00	1.00	4S	Lean	<650 Hp	6	1.59E+01	4.86E+00	1.00	Yes
ICE, Field Gas	VOC	Propylene	lbs/MMcf	EF	2S	Lean	<650 Hp	2	4.02E+01	0.00E+00	1.00	4S	Rich	<650 Hp	2	3.04E+00	0.00E+00	0.00	NA
ICE, Field Gas	VOC	Propylene	lbs/MMcf	EF	2S	Lean	>650 Hp	3	1.47E+01	3.16E+00	1.00	4S	Lean	<650 Hp	6	1.59E+01	4.86E+00	1.00	No
ICE, Field Gas	VOC	Propylene	lbs/MMcf	EF	2S	Lean	>650 Hp	3	1.47E+01	3.16E+00	1.00	4S	Rich	<650 Hp	2	3.04E+00	0.00E+00	0.00	Yes
ICE, Field Gas	VOC	Propylene	lbs/MMcf	EF	4S	Lean	<650 Hp	6	1.59E+01	4.86E+00	1.00	4S	Rich	<650 Hp	2	3.04E+00	0.00E+00	0.00	Yes

TABLE 6-8. RICE STROKES PER CYCLE, OXYGEN, AND CAPACITY COMPARISON.

Major Group	Category	Substance	EF Unit	Value Type	First Sample Statistics							Second Sample Statistics							Significant Difference at 95%Confidence
					Description			Size	Average	Standard Deviation	Detect Ratio	Description			Size	Average	Standard Deviation	Detect Ratio	
					Strokes	Oxygen	Capacity					Strokes	Oxygen	Capacity					
ICE, Field Gas	VOC	Propylene	lbs/MMcf	Log EF	2S	Lean	<650 Hp	2	1.60E+00	0.00E+00	1.00	2S	Lean	>650 Hp	3	1.16E+00	9.65E-02	1.00	Yes
ICE, Field Gas	VOC	Propylene	lbs/MMcf	Log EF	2S	Lean	<650 Hp	2	1.60E+00	0.00E+00	1.00	4S	Lean	<650 Hp	6	1.18E+00	1.51E-01	1.00	Yes
ICE, Field Gas	VOC	Propylene	lbs/MMcf	Log EF	2S	Lean	<650 Hp	2	1.60E+00	0.00E+00	1.00	4S	Rich	<650 Hp	2	4.83E-01	0.00E+00	0.00	NA
ICE, Field Gas	VOC	Propylene	lbs/MMcf	Log EF	2S	Lean	>650 Hp	3	1.16E+00	9.65E-02	1.00	4S	Lean	<650 Hp	6	1.18E+00	1.51E-01	1.00	No
ICE, Field Gas	VOC	Propylene	lbs/MMcf	Log EF	2S	Lean	>650 Hp	3	1.16E+00	9.65E-02	1.00	4S	Rich	<650 Hp	2	4.83E-01	0.00E+00	0.00	Yes
ICE, Field Gas	VOC	Propylene	lbs/MMcf	Log EF	4S	Lean	<650 Hp	6	1.18E+00	1.51E-01	1.00	4S	Rich	<650 Hp	2	4.83E-01	0.00E+00	0.00	Yes
ICE, Field Gas	VOC	Toluene	lbs/MMcf	EF	2S	Lean	<650 Hp	2	4.83E+00	1.29E+00	1.00	2S	Lean	>650 Hp	3	1.54E+00	1.15E+00	1.00	No
ICE, Field Gas	VOC	Toluene	lbs/MMcf	EF	2S	Lean	<650 Hp	2	4.83E+00	1.29E+00	1.00	4S	Lean	<650 Hp	6	7.68E-01	3.92E-01	1.00	Yes
ICE, Field Gas	VOC	Toluene	lbs/MMcf	EF	2S	Lean	<650 Hp	2	4.83E+00	1.29E+00	1.00	4S	Rich	<650 Hp	2	3.44E+00	1.57E-01	1.00	No
ICE, Field Gas	VOC	Toluene	lbs/MMcf	EF	2S	Lean	>650 Hp	3	1.54E+00	1.15E+00	1.00	4S	Lean	<650 Hp	6	7.68E-01	3.92E-01	1.00	No
ICE, Field Gas	VOC	Toluene	lbs/MMcf	EF	2S	Lean	>650 Hp	3	1.54E+00	1.15E+00	1.00	4S	Rich	<650 Hp	2	3.44E+00	1.57E-01	1.00	No
ICE, Field Gas	VOC	Toluene	lbs/MMcf	EF	4S	Lean	<650 Hp	6	7.68E-01	3.92E-01	1.00	4S	Rich	<650 Hp	2	3.44E+00	1.57E-01	1.00	Yes
ICE, Field Gas	VOC	Toluene	lbs/MMcf	Log EF	2S	Lean	<650 Hp	2	6.76E-01	1.17E-01	1.00	2S	Lean	>650 Hp	3	1.00E-02	5.74E-01	1.00	No
ICE, Field Gas	VOC	Toluene	lbs/MMcf	Log EF	2S	Lean	<650 Hp	2	6.76E-01	1.17E-01	1.00	4S	Lean	<650 Hp	6	-1.84E-01	2.95E-01	1.00	Yes
ICE, Field Gas	VOC	Toluene	lbs/MMcf	Log EF	2S	Lean	<650 Hp	2	6.76E-01	1.17E-01	1.00	4S	Rich	<650 Hp	2	5.36E-01	1.98E-02	1.00	No
ICE, Field Gas	VOC	Toluene	lbs/MMcf	Log EF	2S	Lean	>650 Hp	3	1.00E-02	5.74E-01	1.00	4S	Lean	<650 Hp	6	-1.84E-01	2.95E-01	1.00	No
ICE, Field Gas	VOC	Toluene	lbs/MMcf	Log EF	2S	Lean	>650 Hp	3	1.00E-02	5.74E-01	1.00	4S	Rich	<650 Hp	2	5.36E-01	1.98E-02	1.00	No
ICE, Field Gas	VOC	Toluene	lbs/MMcf	Log EF	4S	Lean	<650 Hp	6	-1.84E-01	2.95E-01	1.00	4S	Rich	<650 Hp	2	5.36E-01	1.98E-02	1.00	Yes
ICE, Field Gas	VOC	Xylene (m,p)	lbs/MMcf	EF	2S	Lean	<650 Hp	2	1.13E+00	1.65E-01	1.00	2S	Lean	>650 Hp	3	2.54E-01	6.43E-02	1.00	Yes
ICE, Field Gas	VOC	Xylene (m,p)	lbs/MMcf	EF	2S	Lean	<650 Hp	2	1.13E+00	1.65E-01	1.00	4S	Lean	<650 Hp	6	3.02E-01	3.01E-01	1.00	Yes
ICE, Field Gas	VOC	Xylene (m,p)	lbs/MMcf	EF	2S	Lean	<650 Hp	2	1.13E+00	1.65E-01	1.00	4S	Rich	<650 Hp	2	5.37E-01	3.62E-02	1.00	Yes
ICE, Field Gas	VOC	Xylene (m,p)	lbs/MMcf	EF	2S	Lean	>650 Hp	3	2.54E-01	6.43E-02	1.00	4S	Lean	<650 Hp	6	3.02E-01	3.01E-01	1.00	No
ICE, Field Gas	VOC	Xylene (m,p)	lbs/MMcf	EF	2S	Lean	>650 Hp	3	2.54E-01	6.43E-02	1.00	4S	Rich	<650 Hp	2	5.37E-01	3.62E-02	1.00	Yes
ICE, Field Gas	VOC	Xylene (m,p)	lbs/MMcf	EF	4S	Lean	<650 Hp	6	3.02E-01	3.01E-01	1.00	4S	Rich	<650 Hp	2	5.37E-01	3.62E-02	1.00	No
ICE, Field Gas	VOC	Xylene (m,p)	lbs/MMcf	Log EF	2S	Lean	<650 Hp	2	5.01E-02	6.38E-02	1.00	2S	Lean	>650 Hp	3	-6.04E-01	1.13E-01	1.00	Yes
ICE, Field Gas	VOC	Xylene (m,p)	lbs/MMcf	Log EF	2S	Lean	<650 Hp	2	5.01E-02	6.38E-02	1.00	4S	Lean	<650 Hp	6	-6.51E-01	3.47E-01	1.00	Yes
ICE, Field Gas	VOC	Xylene (m,p)	lbs/MMcf	Log EF	2S	Lean	<650 Hp	2	5.01E-02	6.38E-02	1.00	4S	Rich	<650 Hp	2	-2.71E-01	2.93E-02	1.00	Yes
ICE, Field Gas	VOC	Xylene (m,p)	lbs/MMcf	Log EF	2S	Lean	>650 Hp	3	-6.04E-01	1.13E-01	1.00	4S	Lean	<650 Hp	6	-6.51E-01	3.47E-01	1.00	No
ICE, Field Gas	VOC	Xylene (m,p)	lbs/MMcf	Log EF	2S	Lean	>650 Hp	3	-6.04E-01	1.13E-01	1.00	4S	Rich	<650 Hp	2	-2.71E-01	2.93E-02	1.00	Yes
ICE, Field Gas	VOC	Xylene (m,p)	lbs/MMcf	Log EF	4S	Lean	<650 Hp	6	-6.51E-01	3.47E-01	1.00	4S	Rich	<650 Hp	2	-2.71E-01	2.93E-02	1.00	No
ICE, Field Gas	VOC	Xylene (o)	lbs/MMcf	EF	2S	Lean	<650 Hp	2	5.64E-01	3.85E-02	1.00	2S	Lean	>650 Hp	3	1.03E-01	3.41E-02	1.00	Yes
ICE, Field Gas	VOC	Xylene (o)	lbs/MMcf	EF	2S	Lean	<650 Hp	2	5.64E-01	3.85E-02	1.00	4S	Lean	<650 Hp	6	8.97E-02	2.30E-02	1.00	Yes
ICE, Field Gas	VOC	Xylene (o)	lbs/MMcf	EF	2S	Lean	<650 Hp	2	5.64E-01	3.85E-02	1.00	4S	Rich	<650 Hp	2	2.68E-01	1.81E-02	1.00	Yes
ICE, Field Gas	VOC	Xylene (o)	lbs/MMcf	EF	2S	Lean	>650 Hp	3	1.03E-01	3.41E-02	1.00	4S	Lean	<650 Hp	6	8.97E-02	2.30E-02	1.00	No
ICE, Field Gas	VOC	Xylene (o)	lbs/MMcf	EF	2S	Lean	>650 Hp	3	1.03E,01	3.41E-02	1.00	4S	Rich	<650 Hp	2	2.68E-01	1.81E-02	1.00	Yes
ICE, Field Gas	VOC	Xylene (o)	lbs/MMcf	EF	4S	Lean	<650 Hp	6	8.97E-02	2.30E-02	1.00	4S	Rich	<650 Hp	2	2.68E-01	1.81E-02	1.00	Yes
ICE, Field Gas	VOC	Xylene (o)	lbs/MMcf	Log EF	2S	Lean	<650 Hp	2	-2.49E-01	2.97E-02	1.00	2S	Lean	>650 Hp	3	-1.00E+00	1.52E-01	1.00	Yes
ICE, Field Gas	VOC	Xylene (o)	lbs/MMcf	Log EF	2S	Lean	<650 Hp	2	-2.49E-01	2.97E-02	1.00	4S	Lean	<650 Hp	6	-1.06E+00	1.17E-01	1.00	Yes
ICE, Field Gas	VOC	Xylene (o)	lbs/MMcf	Log EF	2S	Lean	<650 Hp	2	-2.49E-01	2.97E-02	1.00	4S	Rich	<650 Hp	2	-5.72E-01	2.93E-02	1.00	Yes
ICE, Field Gas	VOC	Xylene (o)	lbs/MMcf	Log EF	2S	Lean	>650 Hp	3	-1.00E+00	1.52E-01	1.00	4S	Lean	<650 Hp	6	-1.06E+00	1.17E-01	1.00	No
ICE, Field Gas	VOC	Xylene (o)	lbs/MMcf	Log EF	2S	Lean	>650 Hp	3	-1.00E+00	1.52E-01	1.00	4S	Rich	<650 Hp	2	-5.72E-01	2.93E-02	1.00	Yes
ICE, Field Gas	VOC	Xylene (o)	lbs/MMcf	Log EF	4S	Lean	<650 Hp	6	-1.06E+00	1.17E-01	1.00	4S	Rich	<650 Hp	2	-5.72E-01	2.93E-02	1.00	Yes
ICE, Natural Gas	VOC	Acetaldehyde	lbs/MMcf	EF	4S	Lean	<650 Hp	15	3.99E+00	2.59E+00	1.00	4S	Rich	<650 Hp	3	1.71E+00	1.10E-01	1.00	No
ICE, Natural Gas	VOC	Acetaldehyde	lbs/MMcf	Log EF	4S	Lean	<650 Hp	15	5.18E-01	2.77E-01	1.00	4S	Rich	<650 Hp	3	2.32E-01	2.80E-02	1.00	No
ICE, Natural Gas	VOC	Acrolein	lbs/MMcf	EF	4S	Lean	<650 Hp	14	1.63E+00	1.50E+00	1.00	4S	Rich	<650 Hp	6	5.40E-01	5.71E-01	1.00	No
ICE, Natural Gas	VOC	Acrolein	lbs/MMcf	Log EF	4S	Lean	<650 Hp	14	4.60E-02	4.07E-01	1.00	4S	Rich	<650 Hp	6	-8.04E-01	1.04E+00	1.00	Yes
ICE, Natural Gas	VOC	Benzene	lbs/MMcf	EF	4S	Lean	<650 Hp	14	1.21E+00	5.70E-01	1.00	4S	Rich	<650 Hp	2	9.87E+00	4.98E-01	1.00	Yes
ICE, Natural Gas	VOC	Benzene	lbs/MMcf	Log EF	4S	Lean	<650 Hp	14	2.07E-02	2.65E-01	1.00	4S	Rich	<650 Hp	2	9.94E-01	2.19E-02	1.00	Yes
ICE, Natural Gas	VOC	Formaldehyde	lbs/MMcf	EF	4S	Lean	<650 Hp	21	2.87E+01	1.10E+01	1.00	4S	Rich	<650 Hp	6	5.32E+00	5.35E+00	1.00	Yes
ICE, Natural Gas	VOC	Formaldehyde	lbs/MMcf	Log EF	4S	Lean	<650 Hp	21	1.42E+00	1.89E-01	1.00	4S	Rich	<650 Hp	6	3.54E-01	7.13E-01	1.00	Yes
ICE, Natural Gas	VOC	Propylene	lbs/MMcf	EF	4S	Lean	<650 Hp	14	1.87E+01	2.04E+01	0.97	4S	Rich	<650 Hp	2	3.95E+01	3.54E+00	1.00	No
ICE, Natural Gas	VOC	Propylene	lbs/MMcf	Log EF	4S	Lean	<650 Hp	14	1.07E+00	4.10E-01	0.97	4S	Rich	<650 Hp	2	1.60E+00	3.89E-02	1.00	No

TABLE 6-8. RICE STROKES PER CYCLE, OXYGEN, AND CAPACITY COMPARISON.

Major Group	Category	Substance	EF Unit	Value Type	First Sample Statistics							Second Sample Statistics							Significant Difference at 95%Confidence
					Description			Size	Average	Standard Deviation	Detect Ratio	Description			Size	Average	Standard Deviation	Detect Ratio	
					Strokes	Oxygen	Capacity					Strokes	Oxygen	Capacity					
ICE, Natural Gas	VOC	Toluene	lbs/MMcf	EF	4S	Lean	<650 Hp	14	4.12E-01	1.40E-01	1.00	4S	Rich	<650 Hp	2	2.51E+00	1.55E-01	1.00	Yes
ICE, Natural Gas	VOC	Toluene	lbs/MMcf	Log EF	4S	Lean	<650 Hp	14	-4.14E-01	1.74E-01	1.00	4S	Rich	<650 Hp	2	4.00E-01	2.67E-02	1.00	Yes
ICE, Natural Gas	VOC	Xylene (m,p)	lbs/MMcf	EF	4S	Lean	<650 Hp	14	8.63E-02	3.99E-02	1.00	4S	Rich	<650 Hp	2	4.41E-01	1.78E-02	1.00	Yes
ICE, Natural Gas	VOC	Xylene (m,p)	lbs/MMcf	Log EF	4S	Lean	<650 Hp	14	-1.11E+00	2.18E-01	1.00	4S	Rich	<650 Hp	2	-3.58E-01	1.78E-02	1.00	Yes
ICE, Natural Gas	VOC	Xylene (o)	lbs/MMcf	EF	4S	Lean	<650 Hp	14	4.94E-02	1.95E-02	0.95	4S	Rich	<650 Hp	2	2.17E-01	7.13E-03	1.00	Yes
ICE, Natural Gas	VOC	Xylene (o)	lbs/MMcf	Log EF	4S	Lean	<650 Hp	14	-1.35E+00	2.19E-01	0.95	4S	Rich	<650 Hp	2	-6.64E-01	1.43E-02	1.00	Yes

TABLE 6-9. GAS TURBINE DUCT BURNER COMPARISON.

Major Group	Category	Substance	EF Unit	Value Type	First Sample Statistics					Second Sample Statistics					Significant Difference at 95%Confidence
					Description Duct Burner	Size	Average	Standard Deviation	Detect Ratio	Description Duct Burner	Size	Average	Standard Deviation	Detect Ratio	
Turbine, Natural Gas	VOC	Formaldehyde	lbs/MMcf	EF	N	3	2.09E-02	6.23E-03	0.45	Y	3	6.22E+00	5.95E-01	1.00	Yes
Turbine, Natural Gas	VOC	Formaldehyde	lbs/MMcf	Log EF	N	3	-1.69E+00	1.21E-01	0.45	Y	3	7.93E-01	4.11E-02	1.00	Yes

TABLE 6-10. EXTERNAL COMBUSTION LOAD COMPARISON.

Major Group	Category	Substance	EF Unit	Value Type	First Sample Statistics					Second Sample Statistics					Significant Difference at 95%Confidence
					Description Load	Size	Average	Standard Deviation	Detect Ratio	Description Load	Size	Average	Standard Deviation	Detect Ratio	
Boiler, Ref. Gas	SVOC	Phenol	lbs/MMcf	EF	<80%	9	1.33E-03	1.52E-03	0.67	>80%	3	4.74E-03	1.30E-03	1.00	Yes
Boiler, Ref. Gas	SVOC	Phenol	lbs/MMcf	Log EF	<80%	9	-3.00E+00	2.74E-01	0.67	>80%	3	-2.34E+00	1.32E-01	1.00	Yes
Boiler, Ref. Gas	VOC	Acetaldehyde	lbs/MMcf	EF	<80%	12	4.56E-03	4.29E-03	1.00	>80%	3	1.63E-03	8.57E-04	1.00	No
Boiler, Ref. Gas	VOC	Acetaldehyde	lbs/MMcf	Log EF	<80%	12	-2.85E+00	1.15E+00	1.00	>80%	3	-2.84E+00	2.71E-01	1.00	No
Boiler, Ref. Gas	VOC	Benzene	lbs/MMcf	EF	<80%	13	2.42E-01	4.08E-01	0.84	>80%	3	5.23E-02	1.79E-02	0.00	No
Boiler, Ref. Gas	VOC	Benzene	lbs/MMcf	Log EF	<80%	13	-1.13E+00	7.43E-01	0.84	>80%	3	-1.30E+00	1.53E-01	0.00	No
Boiler, Ref. Gas	VOC	Formaldehyde	lbs/MMcf	EF	<80%	12	1.64E-02	1.04E-02	1.00	>80%	3	1.44E-02	9.75E-03	1.00	No
Boiler, Ref. Gas	VOC	Formaldehyde	lbs/MMcf	Log EF	<80%	12	-1.85E+00	2.49E-01	1.00	>80%	3	-1.96E+00	4.57E-01	1.00	No
Boiler, Ref. Gas	VOC	Hydrogen Sulfide	lbs/MMcf	EF	<80%	13	2.58E-01	2.68E-01	0.00	>80%	3	3.42E-01	1.17E-01	0.00	No
Boiler, Ref. Gas	VOC	Hydrogen Sulfide	lbs/MMcf	Log EF	<80%	13	-8.14E-01	4.60E-01	0.00	>80%	3	-4.84E-01	1.53E-01	0.00	No
Boiler, Ref. Gas	VOC	Toluene	lbs/MMcf	EF	<80%	6	1.23E+00	1.88E+00	0.98	>80%	3	6.17E-02	2.11E-02	0.45	No
Boiler, Ref. Gas	VOC	Toluene	lbs/MMcf	Log EF	<80%	6	-3.37E-01	7.19E-01	0.98	>80%	3	-1.23E+00	1.53E-01	0.45	No
Heater, Ref. Gas	PAH	Acenaphthene	lbs/MMcf	EF	<80%	5	1.67E-06	1.70E-06	0.92	>80%	6	1.38E-06	1.45E-07	1.00	Yes
Heater, Ref. Gas	PAH	Acenaphthene	lbs/MMcf	Log EF	<80%	5	-6.11E+00	2.40E-01	0.92	>80%	6	-5.86E+00	4.88E-02	1.00	Yes
Heater, Ref. Gas	PAH	Acenaphthylene	lbs/MMcf	EF	<80%	5	1.83E-06	5.97E-07	0.54	>80%	6	1.27E-06	4.83E-07	0.47	No
Heater, Ref. Gas	PAH	Acenaphthylene	lbs/MMcf	Log EF	<80%	5	-5.76E+00	1.36E-01	0.54	>80%	6	-5.92E+00	1.40E-01	0.47	No
Heater, Ref. Gas	PAH	Anthracene	lbs/MMcf	EF	<80%	5	3.62E-06	2.01E-06	0.92	>80%	6	2.13E-06	8.70E-07	0.92	No
Heater, Ref. Gas	PAH	Anthracene	lbs/MMcf	Log EF	<80%	5	-5.50E+00	2.64E-01	0.92	>80%	6	-5.70E+00	1.88E-01	0.92	No
Heater, Ref. Gas	PAH	Benzo(a)anthracene	lbs/MMcf	EF	<80%	17	1.31E-05	1.56E-05	0.99	>80%	9	8.21E-05	1.59E-04	1.00	No
Heater, Ref. Gas	PAH	Benzo(a)anthracene	lbs/MMcf	Log EF	<80%	17	-5.13E+00	4.92E-01	0.99	>80%	9	-5.27E+00	1.08E+00	1.00	No
Heater, Ref. Gas	PAH	Benzo(a)pyrene	lbs/MMcf	EF	<80%	17	2.92E-06	2.20E-06	0.21	>80%	9	2.50E-04	6.63E-04	1.00	Yes
Heater, Ref. Gas	PAH	Benzo(a)pyrene	lbs/MMcf	Log EF	<80%	17	-5.61E+00	2.41E-01	0.21	>80%	9	-5.22E+00	1.34E+00	1.00	No
Heater, Ref. Gas	PAH	Benzo(b)fluoranthene	lbs/MMcf	EF	<80%	17	6.16E-06	6.83E-06	0.94	>80%	9	1.22E-04	2.37E-04	1.00	No
Heater, Ref. Gas	PAH	Benzo(b)fluoranthene	lbs/MMcf	Log EF	<80%	17	-5.36E+00	3.38E-01	0.94	>80%	9	-5.25E+00	1.19E+00	1.00	No
Heater, Ref. Gas	PAH	Benzo(g,h,i)perylene	lbs/MMcf	EF	<80%	5	1.36E-06	5.57E-08	0.00	>80%	6	1.01E-06	1.94E-08	0.00	Yes
Heater, Ref. Gas	PAH	Benzo(g,h,i)perylene	lbs/MMcf	Log EF	<80%	5	-5.87E+00	1.79E-02	0.00	>80%	6	-6.00E+00	8.30E-03	0.00	Yes
Heater, Ref. Gas	PAH	Benzo(k)fluoranthene	lbs/MMcf	EF	<80%	17	4.31E-06	4.50E-06	0.69	>80%	9	7.06E-05	1.38E-04	0.99	No
Heater, Ref. Gas	PAH	Benzo(k)fluoranthene	lbs/MMcf	Log EF	<80%	17	-5.51E+00	3.34E-01	0.69	>80%	9	-5.37E+00	1.08E+00	0.99	No
Heater, Ref. Gas	PAH	Chrysene	lbs/MMcf	EF	<80%	5	2.33E-06	1.73E-06	0.77	>80%	6	1.10E-06	2.24E-07	0.40	No
Heater, Ref. Gas	PAH	Chrysene	lbs/MMcf	Log EF	<80%	5	-6.70E+00	2.64E-01	0.77	>80%	6	-5.96E+00	7.71E-02	0.40	Yes
Heater, Ref. Gas	PAH	Dibenz(a,h)anthracene	lbs/MMcf	EF	<80%	17	1.00E-05	3.12E-05	0.00	>80%	9	1.16E-05	2.12E-05	0.00	No
Heater, Ref. Gas	PAH	Dibenz(a,h)anthracene	lbs/MMcf	Log EF	<80%	17	-5.54E+00	4.64E-01	0.00	>80%	9	-5.64E+00	7.56E-01	0.00	No
Heater, Ref. Gas	PAH	Fluoranthene	lbs/MMcf	EF	<80%	5	3.79E-06	1.26E-06	1.00	>80%	6	2.45E-06	6.63E-07	1.00	Yes
Heater, Ref. Gas	PAH	Fluoranthene	lbs/MMcf	Log EF	<80%	6	-5.44E+00	1.44E-01	1.00	>80%	6	-5.62E+00	1.15E-01	1.00	Yes
Heater, Ref. Gas	PAH	Fluorene	lbs/MMcf	EF	<80%	5	1.46E-05	9.24E-06	1.00	>80%	6	7.21E-06	2.04E-06	1.00	No
Heater, Ref. Gas	PAH	Fluorene	lbs/MMcf	Log EF	<80%	5	-4.93E+00	3.53E-01	1.00	>80%	6	-5.16E+00	1.17E-01	1.00	No
Heater, Ref. Gas	PAH	Indeno(1,2,3-cd)pyrene	lbs/MMcf	EF	<80%	17	3.41E-06	3.41E-06	0.57	>80%	9	3.27E-04	6.41E-04	1.00	Yes
Heater, Ref. Gas	PAH	Indeno(1,2,3-cd)pyrene	lbs/MMcf	Log EF	<80%	17	-5.57E+00	2.80E-01	0.57	>80%	9	-5.13E+00	1.39E+00	1.00	No
Heater, Ref. Gas	PAH	Naphthalene	lbs/MMcf	EF	<80%	5	3.55E-04	2.73E-04	1.00	>80%	6	2.58E-04	8.32E-05	1.00	No
Heater, Ref. Gas	PAH	Naphthalene	lbs/MMcf	Log EF	<80%	5	-3.56E+00	3.43E-01	1.00	>80%	6	-3.61E+00	1.47E-01	1.00	No
Heater, Ref. Gas	PAH	Phenanthrene	lbs/MMcf	EF	<80%	5	1.69E-05	5.40E-06	1.00	>80%	6	1.23E-05	3.03E-06	1.00	No
Heater, Ref. Gas	PAH	Phenanthrene	lbs/MMcf	Log EF	<80%	5	-4.80E+00	1.79E-01	1.00	>80%	6	-4.92E+00	1.15E-01	1.00	No
Heater, Ref. Gas	PAH	Pyrene	lbs/MMcf	EF	<80%	5	3.43E-06	1.10E-06	1.00	>80%	6	2.35E-06	4.97E-07	1.00	No
Heater, Ref. Gas	PAH	Pyrene	lbs/MMcf	Log EF	<80%	5	-5.48E+00	1.40E-01	1.00	>80%	6	-5.64E+00	9.43E-02	1.00	No

TABLE 6-10. EXTERNAL COMBUSTION LOAD COMPARISON.

Major Group	Category	Substance	EF Unit	Value Type	First Sample Statistics					Second Sample Statistics					Significant Difference at 95%Confidence
					Description Load	Size	Average	Standard Deviation	Detect Ratio	Description Load	Size	Average	Standard Deviation	Detect Ratio	
Heater, Ref. Gas	SVOC	Ethylbenzene	lbs/MMcf	EF	≤80%	6	3.13E-02	2.32E-02	0.17	>80%	6	2.96E-02	3.91E-02	0.88	No
Heater, Ref. Gas	SVOC	Ethylbenzene	lbs/MMcf	Log EF	≤80%	6	-1.73E+00	5.94E-01	0.17	>80%	6	-1.89E+00	6.04E-01	0.88	No
Heater, Ref. Gas	SVOC	Phenol	lbs/MMcf	EF	≤80%	9	1.12E-03	7.48E-03	1.00	>80%	12	2.59E-03	2.36E-03	0.85	Yes
Heater, Ref. Gas	SVOC	Phenol	lbs/MMcf	Log EF	≤80%	9	-1.97E+00	2.63E-01	1.00	>80%	12	-2.78E+00	4.61E-01	0.85	Yes
Heater, Ref. Gas	VOC	Acetaldehyde	lbs/MMcf	EF	≤80%	12	2.71E-02	3.00E-02	0.83	>80%	12	1.18E-02	1.72E-02	1.00	No
Heater, Ref. Gas	VOC	Acetaldehyde	lbs/MMcf	Log EF	≤80%	12	-1.88E+00	7.56E-01	0.83	>80%	12	-2.46E+00	7.65E-01	1.00	No
Heater, Ref. Gas	VOC	Benzene	lbs/MMcf	EF	≤80%	15	1.11E-01	7.87E-02	0.01	>80%	18	6.17E-02	7.37E-02	0.03	No
Heater, Ref. Gas	VOC	Benzene	lbs/MMcf	Log EF	≤80%	15	-1.21E+00	6.47E-01	0.01	>80%	18	-1.53E+00	5.93E-01	0.03	No
Heater, Ref. Gas	VOC	Formaldehyde	lbs/MMcf	EF	≤80%	9	2.86E-01	5.65E-01	1.00	>80%	12	5.08E-02	1.07E-01	1.00	No
Heater, Ref. Gas	VOC	Formaldehyde	lbs/MMcf	Log EF	≤80%	9	-1.02E+00	6.09E-01	1.00	>80%	12	-2.11E+00	8.82E-01	1.00	Yes
Heater, Ref. Gas	VOC	Hydrogen Sulfide	lbs/MMcf	EF	<80%	9	3.98E-01	3.54E-01	0.00	>80%	12	4.11E-01	3.49E-01	0.00	No
Heater, Ref. Gas	VOC	Hydrogen Sulfide	lbs/MMcf	Log EF	<80%	9	-5.37E-01	3.49E-01	0.00	>80%	12	-6.61E-01	6.51E-01	0.00	No
Heater, Ref. Gas	VOC	Propylene	lbs/MMcf	EF	<80%	3	1.87E-03	9.64E-04	0.18	>80%	6	2.14E-03	1.76E-04	0.00	No
Heater, Ref. Gas	VOC	Propylene	lbs/MMcf	Log EF	<80%	3	-2.77E+00	2.31E-01	0.18	>80%	6	-2.67E+00	3.55E-02	0.00	No
Heater, Ref. Gas	VOC	Toluene	lbs/MMcf	EF	≤80%	15	1.88E-01	2.94E-01	0.56	>80%	18	9.50E-02	9.49E-02	0.55	No
Heater, Ref. Gas	VOC	Toluene	lbs/MMcf	Log EF	≤80%	15	-1.09E+00	6.55E-01	0.56	>80%	18	-1.26E+00	5.14E-01	0.55	No
Heater, Ref. Gas	VOC	Xylene (Total)	lbs/MMcf	EF	≤80%	6	4.53E-02	3.30E-02	0.43	>80%	6	2.94E-02	3.98E-02	0.88	No
Heater, Ref. Gas	VOC	Xylene (Total)	lbs/MMcf	Log EF	≤80%	6	-1.51E+00	4.90E-01	0.43	>80%	6	-1.90E+00	6.01E-01	0.88	No
SG, Crude Oil	Metals	Arsenic	lbs/Mgal	EF	≤80%	3	1.89E-03	9.53E-04	1.00	>80%	6	5.52E-04	1.63E-04	1.00	Yes
SG, Crude Oil	Metals	Arsenic	lbs/Mgal	Log EF	≤80%	3	-2.77E+00	2.42E-01	1.00	>80%	6	-3.27E+00	1.30E-01	1.00	Yes
SG, Crude Oil	Metals	Beryllium	lbs/Mgal	EF	≤80%	3	2.92E-04	4.49E-05	1.00	>80%	3	2.82E-04	4.07E-05	0.00	No
SG, Crude Oil	Metals	Beryllium	lbs/Mgal	Log EF	≤80%	3	-3.54E+00	7.04E-02	1.00	>80%	3	-3.55E+00	6.42E-02	0.00	No
SG, Crude Oil	Metals	Cadmium	lbs/Mgal	EF	≤80%	3	1.87E-04	4.99E-05	1.00	>80%	6	1.51E-04	2.03E-04	1.00	No
SG, Crude Oil	Metals	Cadmium	lbs/Mgal	Log EF	≤80%	3	-3.74E+00	1.12E-01	1.00	>80%	6	-4.12E+00	5.47E-01	1.00	No
SG, Crude Oil	Metals	Chromium (Hex)	lbs/Mgal	EF	<80%	3	1.38E-04	7.61E-05	0.86	≥80%	6	1.78E-04	1.02E-04	0.32	No
SG, Crude Oil	Metals	Chromium (Hex)	lbs/Mgal	Log EF	<80%	3	-3.92E+00	2.91E-01	0.86	≥80%	6	-3.81E+00	2.52E-01	0.32	No
SG, Crude Oil	Metals	Chromium (Total)	lbs/Mgal	EF	≤80%	3	1.77E-03	3.49E-04	1.00	>80%	6	4.04E-04	2.11E-04	1.00	Yes
SG, Crude Oil	Metals	Chromium (Total)	lbs/Mgal	Log EF	≤80%	3	-2.76E+00	8.26E-02	1.00	>80%	6	-3.46E+00	2.67E-01	1.00	Yes
SG, Crude Oil	Metals	Copper	lbs/Mgal	EF	≤80%	3	1.55E-03	2.59E-04	1.00	>80%	6	7.16E-04	2.16E-04	1.00	Yes
SG, Crude Oil	Metals	Copper	lbs/Mgal	Log EF	≤80%	3	-2.81E+00	7.04E-02	1.00	>80%	6	-3.16E+00	1.36E-01	1.00	Yes
SG, Crude Oil	Metals	Lead	lbs/Mgal	EF	<80%	3	2.64E-04	4.00E-06	0.00	≥80%	6	2.93E-04	1.18E-04	0.76	No
SG, Crude Oil	Metals	Lead	lbs/Mgal	Log EF	<80%	3	-3.58E+00	6.57E-03	0.00	≥80%	6	-3.56E+00	1.63E-01	0.76	No
SG, Crude Oil	Metals	Manganese	lbs/Mgal	EF	≤80%	3	3.20E-03	1.84E-03	1.00	>80%	4	2.89E-03	2.27E-03	1.00	No
SG, Crude Oil	Metals	Manganese	lbs/Mgal	Log EF	≤80%	3	-2.55E+00	2.59E-01	1.00	>80%	4	-2.74E+00	6.01E-01	1.00	No
SG, Crude Oil	Metals	Mercury	lbs/Mgal	EF	≤80%	3	5.06E-03	9.89E-05	1.00	>80%	4	3.41E-05	1.83E-05	1.00	Yes
SG, Crude Oil	Metals	Mercury	lbs/Mgal	Log EF	≤80%	3	-2.30E+00	8.47E-03	1.00	>80%	4	-4.55E+00	3.50E-01	1.00	Yes
SG, Crude Oil	Metals	Nickel	lbs/Mgal	EF	<80%	3	3.48E-01	1.97E-02	1.00	≥80%	6	3.67E-01	2.00E-02	1.00	No
SG, Crude Oil	Metals	Nickel	lbs/Mgal	Log EF	<80%	3	-4.59E-01	2.49E-02	1.00	≥80%	6	-4.36E-01	2.32E-02	1.00	No
SG, Crude Oil	Metals	Phosphorus	lbs/Mgal	EF	≤80%	3	4.11E-02	3.40E-02	1.00	>80%	3	1.20E-02	4.53E-03	1.00	No
SG, Crude Oil	Metals	Phosphorus	lbs/Mgal	Log EF	≤80%	3	-1.67E+00	7.76E-01	1.00	>80%	3	-1.94E+00	1.81E-01	1.00	No
SG, Crude Oil	Metals	Selenium	lbs/Mgal	EF	≤80%	3	2.87E-03	1.96E-04	1.00	>80%	6	3.40E-04	1.36E-04	0.81	Yes
SG, Crude Oil	Metals	Selenium	lbs/Mgal	Log EF	≤80%	3	-2.54E+00	2.92E-02	1.00	>80%	6	-3.50E+00	1.82E-01	0.81	Yes
SG, Crude Oil	Metals	Zinc	lbs/Mgal	EF	≤80%	3	1.96E-01	1.06E-01	1.00	>80%	6	2.34E-02	2.31E-02	0.70	Yes
SG, Crude Oil	Metals	Zinc	lbs/Mgal	Log EF	≤80%	3	-7.70E-01	3.14E-01	1.00	>80%	6	-1.82E+00	4.79E-01	0.70	Yes

TABLE 6-10. EXTERNAL COMBUSTION LOAD COMPARISON.

Major Group	Category	Substance	EF Unit	Value Type	First Sample Statistics					Second Sample Statistics					Significant Difference at 95%Confidence
					Description Load	Size	Average	Standard Deviation	Detect Ratio	Description Load	Size	Average	Standard Deviation	Detect Ratio	
SG, Crude Oil	PAH	Acenaphthene	lbs/Mgal	EF	≤80%	3	6.56E-05	4.41E-05	1.00	>80%	3	1.03E-05	1.42E-05	1.00	No
SG, Crude Oil	PAH	Acenaphthene	lbs/Mgal	Log EF	≤80%	3	-4.30E+00	4.57E-01	1.00	>80%	3	-5.35E+00	7.11E-01	1.00	No
SG, Crude Oil	PAH	Acenaphthylene	lbs/Mgal	EF	<80%	3	1.20E-05	4.87E-07	0.00	>80%	6	5.24E-06	6.64E-06	1.00	No
SG, Crude Oil	PAH	Acenaphthylene	lbs/Mgal	Log EF	<80%	3	-4.92E+00	1.76E-02	0.00	>80%	6	-5.63E+00	6.78E-01	1.00	No
SG, Crude Oil	PAH	Anthracene	lbs/Mgal	EF	<80%	3	3.26E-06	2.14E-07	1.00	>80%	5	1.03E-05	1.27E-05	1.00	No
SG, Crude Oil	PAH	Anthracene	lbs/Mgal	Log EF	≤80%	3	-5.49E+00	2.81E-02	1.00	>80%	5	-5.50E+00	8.63E-01	1.00	No
SG, Crude Oil	PAH	Benzo(a)anthracene	lbs/Mgal	EF	<80%	3	1.20E-05	4.87E-07	0.00	>80%	5	5.21E-06	5.75E-06	1.00	No
SG, Crude Oil	PAH	Benzo(a)anthracene	lbs/Mgal	Log EF	<80%	3	-4.92E+00	1.76E-02	0.00	>80%	5	-5.53E+00	5.54E-01	1.00	No
SG, Crude Oil	PAH	Benzo(a)pyrene	lbs/Mgal	EF	<80%	3	1.20E-05	4.87E-07	0.00	>80%	3	4.09E-06	3.47E-06	0.96	Yes
SG, Crude Oil	PAH	Benzo(a)pyrene	lbs/Mgal	Log EF	<80%	3	-4.92E+00	1.76E-02	0.00	>80%	3	-5.59E+00	6.04E-01	0.96	No
SG, Crude Oil	PAH	Benzo(g,h,i)perylene	lbs/Mgal	EF	<80%	3	1.20E-05	4.87E-07	0.00	>80%	3	3.56E-06	2.69E-06	0.90	Yes
SG, Crude Oil	PAH	Benzo(g,h,i)perylene	lbs/Mgal	Log EF	<80%	3	-4.92E+00	1.76E-02	0.00	>80%	3	-5.55E+00	3.92E-01	0.90	Yes
SG, Crude Oil	PAH	Chrysene	lbs/Mgal	EF	<80%	3	1.20E-05	4.87E-07	0.00	>80%	6	1.08E-05	1.32E-05	1.00	No
SG, Crude Oil	PAH	Chrysene	lbs/Mgal	Log EF	<80%	3	-4.92E+00	1.76E-02	0.00	>80%	6	-5.26E+00	5.66E-01	1.00	No
SG, Crude Oil	PAH	Dibenz(a,h)anthracene	lbs/Mgal	EF	<80%	3	1.20E-05	4.87E-07	0.00	>80%	3	3.91E-06	3.26E-06	0.00	Yes
SG, Crude Oil	PAH	Dibenz(a,h)anthracene	lbs/Mgal	Log EF	<80%	3	-4.92E+00	1.76E-02	0.00	>80%	3	-5.53E+00	4.24E-01	0.00	No
SG, Crude Oil	PAH	Fluoranthene	lbs/Mgal	EF	<80%	3	1.20E-05	4.87E-07	0.00	>80%	6	1.37E-05	1.92E-05	1.00	No
SG, Crude Oil	PAH	Fluoranthene	lbs/Mgal	Log EF	<80%	3	-4.92E+00	1.76E-02	0.00	>80%	6	-5.16E+00	5.50E-01	1.00	No
SG, Crude Oil	PAH	Fluorene	lbs/Mgal	EF	<80%	3	7.38E-06	3.11E-06	1.00	>80%	6	1.76E-05	1.99E-05	1.00	No
SG, Crude Oil	PAH	Fluorene	lbs/Mgal	Log EF	<80%	3	-5.16E+00	1.91E-01	1.00	>80%	6	-5.06E+00	6.18E-01	1.00	No
SG, Crude Oil	PAH	Indeno(1,2,3-cd)pyrene	lbs/Mgal	EF	<80%	3	1.20E-05	4.87E-07	0.00	>80%	3	3.91E-06	4.04E-06	0.91	Yes
SG, Crude Oil	PAH	Indeno(1,2,3-cd)pyrene	lbs/Mgal	Log EF	<80%	3	-4.92E+00	1.76E-02	0.00	>80%	3	-5.57E+00	4.60E-01	0.91	No
SG, Crude Oil	PAH	Naphthalene	lbs/Mgal	EF	<80%	3	2.82E-04	8.74E-05	1.00	>80%	5	1.10E-03	6.43E-04	1.00	No
SG, Crude Oil	PAH	Naphthalene	lbs/Mgal	Log EF	<80%	3	-3.56E+00	1.30E-01	1.00	>80%	5	-3.05E+00	3.42E-01	1.00	Yes
SG, Crude Oil	PAH	Phenanthrene	lbs/Mgal	EF	<80%	3	6.69E-06	8.76E-07	1.00	>80%	6	3.40E-05	6.33E-05	1.00	No
SG, Crude Oil	PAH	Phenanthrene	lbs/Mgal	Log EF	<80%	3	-5.18E+00	5.89E-02	1.00	>80%	6	-5.02E+00	7.20E-01	1.00	No
SG, Crude Oil	PAH	Pyrene	lbs/Mgal	EF	<80%	3	1.20E-05	4.87E-07	0.00	>80%	6	2.80E-05	2.55E-05	1.00	No
SG, Crude Oil	PAH	Pyrene	lbs/Mgal	Log EF	<80%	3	-4.92E+00	1.76E-02	0.00	>80%	6	-4.82E+00	6.61E-01	1.00	No
SG, Crude Oil	VOC	Acetaldehyde	lbs/Mgal	EF	<80%	3	3.68E-03	2.47E-04	0.00	>80%	6	2.16E-03	1.48E-03	1.00	No
SG, Crude Oil	VOC	Acetaldehyde	lbs/Mgal	Log EF	<80%	3	-2.43E+00	2.98E-02	0.00	>80%	6	-2.73E+00	2.33E-01	1.00	No
SG, Crude Oil	VOC	Acrolein	lbs/Mgal	EF	<80%	3	4.35E-03	2.92E-04	0.00	>80%	6	4.99E-04	9.20E-12	0.00	Yes
SG, Crude Oil	VOC	Acrolein	lbs/Mgal	Log EF	<80%	3	-2.36E+00	2.98E-02	0.00	>80%	6	-3.30E+00	5.33E-08	0.00	Yes
SG, Crude Oil	VOC	Benzene	lbs/Mgal	EF	<80%	3	3.00E-04	5.14E-12	0.00	>80%	6	7.70E-04	1.70E-04	0.43	Yes
SG, Crude Oil	VOC	Benzene	lbs/Mgal	Log EF	<80%	3	-3.52E+00	5.96E-08	0.00	>80%	6	-3.12E+00	9.09E-02	0.43	Yes
SG, Crude Oil	VOC	Formaldehyde	lbs/Mgal	EF	<80%	3	1.57E-03	1.06E-04	0.00	>80%	6	6.30E-04	1.84E-04	1.00	Yes
SG, Crude Oil	VOC	Formaldehyde	lbs/Mgal	Log EF	<80%	3	-2.80E+00	2.98E-02	0.00	>80%	6	-3.22E+00	1.40E-01	1.00	Yes
SG, Crude Oil	VOC	Propylene	lbs/Mgal	EF	<80%	3	1.70E-01	0.00E+00	0.00	>80%	6	1.87E-03	0.00E+00	0.00	NA
SG, Crude Oil	VOC	Propylene	lbs/Mgal	Log EF	<80%	3	-7.69E-01	0.00E+00	0.00	>80%	6	-2.73E+00	0.00E+00	0.00	NA
SG, Crude Oil	VOC	Toluene	lbs/Mgal	EF	≤80%	3	6.58E-03	4.38E-03	1.00	>80%	6	2.05E-03	2.60E-11	0.33	Yes
SG, Crude Oil	VOC	Toluene	lbs/Mgal	Log EF	≤80%	3	-2.24E+00	2.74E-01	1.00	>80%	6	-2.69E+00	0.00E+00	0.33	Yes
SG, Crude Oil	VOC	Xylene (Total)	lbs/Mgal	EF	<80%	3	4.29E-04	0.00E+00	0.00	>80%	6	4.72E-03	0.00E+00	0.00	NA
SG, Crude Oil	VOC	Xylene (Total)	lbs/Mgal	Log EF	<80%	3	-3.37E+00	0.00E+00	0.00	>80%	6	-2.33E+00	0.00E+00	0.00	NA
SG, Natural Gas	VOC	Benzene	lbs/MMcf	EF	<80%	3	3.84E-03	1.38E-05	0.00	?	3	3.88E-03	5.82E-11	0.00	Yes
SG, Natural Gas	VOC	Benzene	lbs/MMcf	Log EF	<80%	3	-2.42E+00	1.56E-03	0.00	?	3	-2.41E+00	0.00E+00	0.00	Yes

TABLE 6-10. EXTERNAL COMBUSTION LOAD COMPARISON.

Major Group	Category	Substance	EF Unit	Value Type	First Sample Statistics					Second Sample Statistics					Significant Difference at 95%Confidence
					Description Load	Size	Average	Standard Deviation	Detect Ratio	Description Load	Size	Average	Standard Deviation	Detect Ratio	
SG, Natural Gas	VOC	Formaldehyde	lbs/MMcf	EF	<80%	3	5.03E-02	3.69E-02	1.00	?	3	8.72E-03	6.29E-03	1.00	No
SG, Natural Gas	VOC	Formaldehyde	lbs/MMcf	Log EF	<80%	3	-1.38E+00	3.24E-01	1.00	?	3	-2.13E+00	3.06E-01	1.00	Yes
SG, Natural Gas	VOC	Toluene	lbs/MMcf	EF	<80%	3	1.19E-02	4.27E-05	0.00	?	3	1.20E-02	1.65E-10	0.00	Yes
SG, Natural Gas	VOC	Toluene	lbs/MMcf	Log EF	<80%	3	-1.92E+00	1.56E-03	0.00	?	3	-1.92E+00	0.00E+00	0.00	Yes
SG, Natural Gas	VOC	Xylene (Total)	lbs/MMcf	EF	<80%	3	2.75E-02	9.84E-05	0.00	?	3	2.77E-02	4.66E-10	0.00	Yes
SG, Natural Gas	VOC	Xylene (Total)	lbs/MMcf	Log EF	<80%	3	-1.56E+00	1.56E-03	0.00	?	3	-1.56E+00	0.00E+00	0.00	Yes

TABLE 6-11. EXTERNAL COMBUSTION BURNER COMPARISON.

Major Group	Category	Substance	EF Unit	Value Type	First Sample Statistics					Second Sample Statistics					Significant Difference at 95%Confidence
					Description Burner	Size	Average	Standard Deviation	Detect Ratio	Description Burner	Size	Average	Standard Deviation	Detect Ratio	
Boiler, Ref. Gas	SVOC	Phenol	lbs/MMcf	EF	Conventional	6	1.56E-03	1.87E-03	0.76	Low NOx	6	2.80E-03	2.28E-03	0.90	No
Boiler, Ref. Gas	SVOC	Phenol	lbs/MMcf	Log EF	Conventional	6	-2.96E+00	3.40E-01	0.76	Low NOx	6	-2.70E+00	4.08E-01	0.90	No
Boiler, Ref. Gas	VOC	Acetaldehyde	lbs/MMcf	EF	Conventional	9	3.03E-03	3.63E-03	1.00	Low NOx	6	5.38E-03	4.45E-03	1.00	No
Boiler, Ref. Gas	VOC	Acetaldehyde	lbs/MMcf	Log EF	Conventional	9	-3.12E+00	1.22E+00	1.00	Low NOx	6	-2.45E+00	4.71E-01	1.00	No
Boiler, Ref. Gas	VOC	Benzene	lbs/MMcf	EF	Conventional	10	2.96E-01	4.56E-01	0.90	Low NOx	6	5.68E-02	1.28E-02	0.00	No
Boiler, Ref. Gas	VOC	Benzene	lbs/MMcf	Log EF	Conventional	10	-1.11E+00	8.56E-01	0.90	Low NOx	6	-1.26E+00	1.10E-01	0.00	No
Boiler, Ref. Gas	VOC	Formaldehyde	lbs/MMcf	EF	Conventional	9	1.88E-02	1.10E-02	1.00	Low NOx	6	1.18E-02	7.05E-03	1.00	No
Boiler, Ref. Gas	VOC	Formaldehyde	lbs/MMcf	Log EF	Conventional	9	-1.79E+00	2.48E-01	1.00	Low NOx	6	-2.01E+00	3.04E-01	1.00	No
Boiler, Ref. Gas	VOC	Hydrogen Sulfide	lbs/MMcf	EF	Conventional	10	2.55E-01	3.09E-01	0.00	Low NOx	6	3.05E-01	8.56E-02	0.00	No
Boiler, Ref. Gas	VOC	Hydrogen Sulfide	lbs/MMcf	Log EF	Conventional	10	-8.87E-01	5.07E-01	0.00	Low NOx	6	-5.28E-01	1.11E-01	0.00	No
Boiler, Ref. Gas	VOC	Toluene	lbs/MMcf	EF	Conventional	6	1.23E+00	1.88E+00	0.98	Low NOx	3	6.17E-02	2.11E-02	0.45	No
Boiler, Ref. Gas	VOC	Toluene	lbs/MMcf	Log EF	Conventional	6	-3.37E-01	7.19E-01	0.98	Low NOx	3	-1.23E+00	1.53E-01	0.45	No
Heater, Ref. Gas	PAH	Acenaphthene	lbs/MMcf	EF	Conventional	8	2.34E-06	1.78E-06	1.00	Low NOx	3	2.30E-06	7.92E-07	0.80	No
Heater, Ref. Gas	PAH	Acenaphthene	lbs/MMcf	Log EF	Conventional	8	-5.72E+00	2.71E-01	1.00	Low NOx	3	-5.66E+00	1.72E-01	0.80	No
Heater, Ref. Gas	PAH	Acenaphthylene	lbs/MMcf	EF	Conventional	8	1.57E-06	6.96E-07	0.68	Low NOx	3	1.40E-06	1.45E-08	0.00	No
Heater, Ref. Gas	PAH	Acenaphthylene	lbs/MMcf	Log EF	Conventional	8	-5.84E+00	1.86E-01	0.68	Low NOx	3	-5.85E+00	4.50E-03	0.00	No
Heater, Ref. Gas	PAH	Anthracene	lbs/MMcf	EF	Conventional	8	3.03E-06	1.83E-06	0.96	Low NOx	3	2.20E-06	7.35E-07	0.79	No
Heater, Ref. Gas	PAH	Anthracene	lbs/MMcf	Log EF	Conventional	8	-5.59E+00	2.66E-01	0.96	Low NOx	3	-5.68E+00	1.61E-01	0.79	No
Heater, Ref. Gas	PAH	Benzo(a)anthracene	lbs/MMcf	EF	Conventional	17	5.23E-05	1.18E-04	1.00	Low NOx	9	8.06E-06	5.67E-06	1.00	No
Heater, Ref. Gas	PAH	Benzo(a)anthracene	lbs/MMcf	Log EF	Conventional	17	-5.15E+00	8.74E-01	1.00	Low NOx	9	-5.22E+00	3.71E-01	1.00	No
Heater, Ref. Gas	PAH	Benzo(a)pyrene	lbs/MMcf	EF	Conventional	17	1.50E-04	4.16E-04	0.99	Low NOx	9	2.87E-06	2.90E-06	0.41	No
Heater, Ref. Gas	PAH	Benzo(a)pyrene	lbs/MMcf	Log EF	Conventional	17	-5.38E+00	9.74E-01	0.99	Low NOx	9	-5.65E+00	2.72E-01	0.41	No
Heater, Ref. Gas	PAH	Benzo(b)fluoranthene	lbs/MMcf	EF	Conventional	17	6.78E-05	1.78E-04	0.99	Low NOx	9	5.10E-06	3.01E-06	1.00	No
Heater, Ref. Gas	PAH	Benzo(b)fluoranthene	lbs/MMcf	Log EF	Conventional	17	-5.31E+00	8.95E-01	0.99	Low NOx	9	-5.34E+00	2.14E-01	1.00	No
Heater, Ref. Gas	PAH	Benzo(g,h,i)perylene	lbs/MMcf	EF	Conventional	8	1.08E-06	1.38E-07	0.00	Low NOx	3	1.40E-06	1.45E-08	0.00	Yes
Heater, Ref. Gas	PAH	Benzo(g,h,i)perylene	lbs/MMcf	Log EF	Conventional	8	-5.97E+00	5.20E-02	0.00	Low NOx	3	-5.85E+00	4.50E-03	0.00	Yes
Heater, Ref. Gas	PAH	Benzo(k)fluoranthene	lbs/MMcf	EF	Conventional	17	3.99E-05	1.03E-04	0.97	Low NOx	9	3.38E-06	3.03E-06	0.79	No
Heater, Ref. Gas	PAH	Benzo(k)fluoranthene	lbs/MMcf	Log EF	Conventional	17	-5.40E+00	8.04E-01	0.97	Low NOx	9	-5.57E+00	2.90E-01	0.79	No
Heater, Ref. Gas	PAH	Chrysene	lbs/MMcf	EF	Conventional	8	1.18E-06	2.51E-07	0.44	Low NOx	3	2.94E-06	2.14E-06	0.84	Yes
Heater, Ref. Gas	PAH	Chrysene	lbs/MMcf	Log EF	Conventional	8	-5.93E+00	8.68E-02	0.44	Low NOx	3	-5.61E+00	3.03E-01	0.84	Yes
Heater, Ref. Gas	PAH	Dibenz(a,h)anthracene	lbs/MMcf	EF	Conventional	17	7.56E-06	1.57E-05	0.00	Low NOx	9	1.63E-05	4.31E-05	0.00	No
Heater, Ref. Gas	PAH	Dibenz(a,h)anthracene	lbs/MMcf	Log EF	Conventional	17	-5.61E+00	5.54E-01	0.00	Low NOx	9	-5.53E+00	6.25E-01	0.00	No
Heater, Ref. Gas	PAH	Fluoranthene	lbs/MMcf	EF	Conventional	8	2.75E-06	8.50E-07	1.00	Low NOx	3	3.88E-06	1.67E-06	1.00	No
Heater, Ref. Gas	PAH	Fluoranthene	lbs/MMcf	Log EF	Conventional	8	-5.58E+00	1.34E-01	1.00	Low NOx	3	-5.44E+00	1.93E-01	1.00	No
Heater, Ref. Gas	PAH	Fluorene	lbs/MMcf	EF	Conventional	8	1.14E-05	8.03E-06	1.00	Low NOx	3	8.45E-06	4.58E-06	1.00	No
Heater, Ref. Gas	PAH	Fluorene	lbs/MMcf	Log EF	Conventional	8	-5.02E+00	2.66E-01	1.00	Low NOx	3	-5.13E+00	3.02E-01	1.00	No
Heater, Ref. Gas	PAH	Indeno(1,2,3-cd)pyrene	lbs/MMcf	EF	Conventional	17	1.75E-04	4.83E-04	0.99	Low NOx	9	3.57E-06	4.61E-06	0.73	No
Heater, Ref. Gas	PAH	Indeno(1,2,3-cd)pyrene	lbs/MMcf	Log EF	Conventional	17	-5.32E+00	1.01E+00	0.99	Low NOx	9	-5.61E+00	3.27E-01	0.73	No
Heater, Ref. Gas	PAH	Naphthalene	lbs/MMcf	EF	Conventional	8	3.56E-04	1.97E-04	1.00	Low NOx	3	1.57E-04	2.24E-05	1.00	No
Heater, Ref. Gas	PAH	Naphthalene	lbs/MMcf	Log EF	Conventional	8	-3.50E+00	2.32E-01	1.00	Low NOx	3	-3.81E+00	6.35E-02	1.00	No
Heater, Ref. Gas	PAH	Phenanthrene	lbs/MMcf	EF	Conventional	8	1.43E-05	4.46E-06	1.00	Low NOx	3	1.48E-05	6.28E-06	1.00	No
Heater, Ref. Gas	PAH	Phenanthrene	lbs/MMcf	Log EF	Conventional	8	-4.87E+00	1.42E-01	1.00	Low NOx	3	-4.86E+00	2.18E-01	1.00	No
Heater, Ref. Gas	PAH	Pyrene	lbs/MMcf	EF	Conventional	8	2.54E-06	5.79E-07	1.00	Low NOx	3	3.63E-06	1.48E-06	1.00	No
Heater, Ref. Gas	PAH	Pyrene	lbs/MMcf	Log EF	Conventional	8	-5.61E+00	1.03E-01	1.00	Low NOx	3	-5.47E+00	1.91E-01	1.00	No
Heater, Ref. Gas	SVOC	Ethylbenzene	lbs/MMcf	EF	Conventional	9	2.37E-02	3.30E-02	0.88	Low NOx	3	5.06E-02	0.00E+00	0.00	No
Heater, Ref. Gas	SVOC	Ethylbenzene	lbs/MMcf	Log EF	Conventional	9	-1.98E+00	5.70E-01	0.88	Low NOx	3	-1.30E+00	0.00E+00	0.00	No

TABLE 6-11. EXTERNAL COMBUSTION BURNER COMPARISON.

Major Group	Category	Substance	EF Unit	Value Type	First Sample Statistics					Second Sample Statistics					Significant Difference at 95%Confidence
					Description Burner	Size	Average	Standard Deviation	Detect Ratio	Description Burner	Size	Average	Standard Deviation	Detect Ratio	
Heater, Ref. Gas	SVOC	Phenol	lbs/MMcf	EF	Conventional	6	3.53E-03	2.71E-03	0.95	Low NOx	15	8.34E-03	8.04E-03	0.97	No
Heater, Ref. Gas	SVOC	Phenol	lbs/MMcf	Log EF	Conventional	6	-2.59E+00	4.03E-01	0.95	Low NOx	15	-2.37E+00	6.21E-01	0.97	No
Heater, Ref. Gas	VOC	Acetaldehyde	lbs/MMcf	EF	Conventional	6	2.21E-02	2.00E-02	1.00	Low NOx	18	1.86E-02	2.71E-02	0.84	No
Heater, Ref. Gas	VOC	Acetaldehyde	lbs/MMcf	Log EF	Conventional	6	-2.01E+00	8.20E-01	1.00	Low NOx	18	-2.22E+00	8.09E-01	0.84	No
Heater, Ref. Gas	VOC	Benzene	lbs/MMcf	EF	Conventional	15	5.87E-02	8.25E-02	0.06	Low NOx	18	1.05E-01	7.11E-02	0.00	No
Heater, Ref. Gas	VOC	Benzene	lbs/MMcf	Log EF	Conventional	15	-1.71E+00	7.16E-01	0.06	Low NOx	18	-1.11E+00	3.88E-01	0.00	Yes
Heater, Ref. Gas	VOC	Formaldehyde	lbs/MMcf	EF	Conventional	6	9.99E-02	1.39E-01	1.00	Low NOx	15	1.72E-01	4.51E-01	1.00	No
Heater, Ref. Gas	VOC	Formaldehyde	lbs/MMcf	Log EF	Conventional	6	-1.40E+00	6.53E-01	1.00	Low NOx	15	-1.74E+00	1.03E+00	1.00	No
Heater, Ref. Gas	VOC	Hydrogen Sulfide	lbs/MMcf	EF	Conventional	6	5.91E-01	3.70E-01	0.00	Low NOx	15	3.31E-01	3.13E-01	0.00	No
Heater, Ref. Gas	VOC	Hydrogen Sulfide	lbs/MMcf	Log EF	Conventional	6	-2.92E-01	2.50E-01	0.00	Low NOx	15	-7.34E-01	5.71E-01	0.00	No
Heater, Ref. Gas	VOC	Toluene	lbs/MMcf	EF	Conventional	15	9.76E-02	1.05E-01	0.52	Low NOx	18	1.70E-01	2.70E-01	0.57	No
Heater, Ref. Gas	VOC	Toluene	lbs/MMcf	Log EF	Conventional	15	-1.36E+00	6.68E-01	0.52	Low NOx	18	-1.03E+00	4.61E-01	0.57	No
Heater, Ref. Gas	VOC	Xylene (Total)	lbs/MMcf	EF	Conventional	9	3.29E-02	4.09E-02	0.91	Low NOx	3	5.06E-02	0.00E+00	0.00	No
Heater, Ref. Gas	VOC	Xylene (Total)	lbs/MMcf	Log EF	Conventional	9	-1.84E+00	5.92E-01	0.91	Low NOx	3	-1.30E+00	0.00E+00	0.00	No
SG, Crude Oil	Metals	Arsenic	lbs/Mgal	EF	Conventional	3	6.86E-04	9.78E-05	1.00	Low NOx	6	1.15E-03	1.01E-03	1.00	No
SG, Crude Oil	Metals	Arsenic	lbs/Mgal	Log EF	Conventional	3	-3.17E+00	5.98E-02	1.00	Low NOx	6	-3.07E+00	3.72E-01	1.00	No
SG, Crude Oil	Metals	Cadmium	lbs/Mgal	EF	Conventional	3	2.81E-05	6.72E-06	1.00	Low NOx	6	2.30E-04	1.63E-04	1.00	No
SG, Crude Oil	Metals	Cadmium	lbs/Mgal	Log EF	Conventional	3	-4.56E+00	9.85E-02	1.00	Low NOx	6	-3.71E+00	2.70E-01	1.00	Yes
SG, Crude Oil	Metals	Chromium (Hex)	lbs/Mgal	EF	Conventional	3	9.26E-05	2.81E-06	0.00	Low NOx	6	2.01E-04	9.32E-05	0.58	No
SG, Crude Oil	Metals	Chromium (Hex)	lbs/Mgal	Log EF	Conventional	3	-4.03E+00	1.31E-02	0.00	Low NOx	6	-3.75E+00	2.65E-01	0.58	No
SG, Crude Oil	Metals	Chromium (Total)	lbs/Mgal	EF	Conventional	3	2.18E-04	8.24E-05	1.00	Low NOx	6	1.18E-03	6.81E-04	1.00	No
SG, Crude Oil	Metals	Chromium (Total)	lbs/Mgal	Log EF	Conventional	3	-3.68E+00	1.58E-01	1.00	Low NOx	6	-2.99E+00	2.64E-01	1.00	Yes
SG, Crude Oil	Metals	Copper	lbs/Mgal	EF	Conventional	3	6.46E-04	2.89E-04	1.00	Low NOx	6	1.17E-03	4.57E-04	1.00	No
SG, Crude Oil	Metals	Copper	lbs/Mgal	Log EF	Conventional	3	-3.22E+00	1.79E-01	1.00	Low NOx	6	-2.96E+00	1.74E-01	1.00	No
SG, Crude Oil	Metals	Lead	lbs/Mgal	EF	Conventional	3	3.74E-04	1.19E-04	1.00	Low NOx	6	2.37E-04	3.47E-05	0.15	Yes
SG, Crude Oil	Metals	Lead	lbs/Mgal	Log EF	Conventional	3	-3.44E+00	1.46E-01	1.00	Low NOx	6	-3.63E+00	6.80E-02	0.15	Yes
SG, Crude Oil	Metals	Manganese	lbs/Mgal	EF	Conventional	1	2.44E-04		1.00	Low NOx	6	3.49E-03	1.64E-03	1.00	No
SG, Crude Oil	Metals	Manganese	lbs/Mgal	Log EF	Conventional	1	-3.61E+00		1.00	Low NOx	6	-2.50E+00	2.11E-01	1.00	Yes
SG, Crude Oil	Metals	Mercury	lbs/Mgal	EF	Conventional	1	3.60E-05		1.00	Low NOx	6	2.55E-03	2.76E-03	1.00	No
SG, Crude Oil	Metals	Mercury	lbs/Mgal	Log EF	Conventional	1	-4.44E+00		1.00	Low NOx	6	-3.44E+00	1.28E+00	1.00	No
SG, Crude Oil	Metals	Nickel	lbs/Mgal	EF	Conventional	3	3.72E-01	2.53E-02	1.00	Low NOx	6	3.55E-01	1.82E-02	1.00	No
SG, Crude Oil	Metals	Nickel	lbs/Mgal	Log EF	Conventional	3	-4.30E-01	2.89E-02	1.00	Low NOx	6	-4.50E-01	2.24E-02	1.00	No
SG, Crude Oil	Metals	Selenium	lbs/Mgal	EF	Conventional	3	4.41E-04	9.79E-05	1.00	Low NOx	6	1.55E-03	1.45E-03	0.96	No
SG, Crude Oil	Metals	Selenium	lbs/Mgal	Log EF	Conventional	3	-3.36E+00	9.86E-02	1.00	Low NOx	6	-3.09E+00	6.05E-01	0.96	No
SG, Crude Oil	Metals	Zinc	lbs/Mgal	EF	Conventional	3	3.28E-02	3.26E-02	1.00	Low NOx	6	1.05E-01	1.20E-01	0.93	No
SG, Crude Oil	Metals	Zinc	lbs/Mgal	Log EF	Conventional	3	-1.78E+00	7.52E-01	1.00	Low NOx	6	-1.31E+00	6.27E-01	0.93	No
SG, Crude Oil	PAH	Acenaphthylene	lbs/Mgal	EF	Conventional	3	8.63E-06	8.44E-06	1.00	Low NOx	6	6.91E-06	5.71E-06	0.13	No
SG, Crude Oil	PAH	Acenaphthylene	lbs/Mgal	Log EF	Conventional	3	-5.26E+00	5.55E-01	1.00	Low NOx	6	-5.46E+00	7.22E-01	0.13	No
SG, Crude Oil	PAH	Anthracene	lbs/Mgal	EF	Conventional	2	1.29E-05	1.72E-05	1.00	Low NOx	6	5.95E-06	8.66E-06	1.00	No
SG, Crude Oil	PAH	Anthracene	lbs/Mgal	Log EF	Conventional	2	-5.36E+00	1.08E+00	1.00	Low NOx	6	-5.54E+00	5.95E-01	1.00	No
SG, Crude Oil	PAH	Benzo(a)anthracene	lbs/Mgal	EF	Conventional	2	3.16E-06	2.49E-06	1.00	Low NOx	6	9.27E-06	5.58E-06	0.35	No
SG, Crude Oil	PAH	Benzo(a)anthracene	lbs/Mgal	Log EF	Conventional	2	-5.58E+00	3.87E-01	1.00	Low NOx	6	-5.21E+00	5.57E-01	0.35	No
SG, Crude Oil	PAH	Chrysene	lbs/Mgal	EF	Conventional	3	1.37E-05	1.81E-05	1.00	Low NOx	6	9.90E-06	6.18E-06	0.40	No
SG, Crude Oil	PAH	Chrysene	lbs/Mgal	Log EF	Conventional	3	-5.16E+00	6.26E-01	1.00	Low NOx	6	-5.14E+00	4.57E-01	0.40	No
SG, Crude Oil	PAH	Fluoranthene	lbs/Mgal	EF	Conventional	3	5.66E-06	8.23E-07	1.00	Low NOx	6	1.68E-05	1.79E-05	0.64	No
SG, Crude Oil	PAH	Fluoranthene	lbs/Mgal	Log EF	Conventional	3	-5.25E+00	6.09E-02	1.00	Low NOx	6	-4.99E+00	5.45E-01	0.64	No

TABLE 6-11. EXTERNAL COMBUSTION BURNER COMPARISON.

Major Group	Category	Substance	EF Unit	Value Type	First Sample Statistics					Second Sample Statistics					Significant Difference at 95%Confidence
					Description Burner	Size	Average	Standard Deviation	Detect Ratio	Description Burner	Size	Average	Standard Deviation	Detect Ratio	
SG, Crude Oil	PAH	Fluorene	lbs/Mgal	EF	Conventional	3	1.70E-05	1.99E-05	1.00	Low NOx	6	1.28E-05	1.65E-05	1.00	No
SG, Crude Oil	PAH	Fluorene	lbs/Mgal	Log EF	Conventional	3	-4.98E+00	5.17E-01	1.00	Low NOx	6	-5.15E+00	5.31E-01	1.00	No
SG, Crude Oil	PAH	Naphthalene	lbs/Mgal	EF	Conventional	2	4.08E-04	1.61E-04	1.00	Low NOx	6	9.26E-04	7.08E-04	1.00	No
SG, Crude Oil	PAH	Naphthalene	lbs/Mgal	Log EF	Conventional	2	-3.41E+00	1.76E-01	1.00	Low NOx	6	-3.18E+00	4.23E-01	1.00	No
SG, Crude Oil	PAH	Phenanthrene	lbs/Mgal	EF	Conventional	3	4.67E-06	4.25E-06	1.00	Low NOx	6	3.50E-05	6.27E-05	1.00	No
SG, Crude Oil	PAH	Phenanthrene	lbs/Mgal	Log EF	Conventional	3	-5.44E+00	3.67E-01	1.00	Low NOx	6	-4.89E+00	5.94E-01	1.00	No
SG, Crude Oil	PAH	Pyrene	lbs/Mgal	EF	Conventional	3	4.43E-05	2.53E-05	1.00	Low NOx	6	1.19E-05	8.93E-06	0.50	Yes
SG, Crude Oil	PAH	Pyrene	lbs/Mgal	Log EF	Conventional	3	-4.40E+00	2.48E-01	1.00	Low NOx	6	-5.08E+00	4.81E-01	0.50	No
SG, Natural/CVR Gas	PAH	Acenaphthene	lbs/MMcf	EF	Conventional	3	1.38E-06	9.82E-07	0.90	Low NOx	3	7.01E-07	5.56E-08	0.36	No
SG, Natural/CVR Gas	PAH	Acenaphthene	lbs/MMcf	Log EF	Conventional	3	-5.96E+00	3.88E-01	0.90	Low NOx	3	-6.16E+00	3.39E-02	0.36	No
SG, Natural/CVR Gas	PAH	Acenaphthylene	lbs/MMcf	EF	Conventional	3	4.74E-06	5.06E-06	0.97	Low NOx	3	6.58E-07	2.32E-08	0.00	No
SG, Natural/CVR Gas	PAH	Acenaphthylene	lbs/MMcf	Log EF	Conventional	3	-5.61E+00	7.11E-01	0.97	Low NOx	3	-6.18E+00	1.53E-02	0.00	No
SG, Natural/CVR Gas	PAH	Anthracene	lbs/MMcf	EF	Conventional	3	2.04E-06	1.41E-06	0.93	Low NOx	3	2.14E-06	1.51E-06	1.00	No
SG, Natural/CVR Gas	PAH	Anthracene	lbs/MMcf	Log EF	Conventional	3	-5.82E+00	4.86E-01	0.93	Low NOx	3	-5.74E+00	3.14E-01	1.00	No
SG, Natural/CVR Gas	PAH	Benzo(a)anthracene	lbs/MMcf	EF	Conventional	3	1.13E-06	2.46E-08	0.00	Low NOx	3	1.32E-06	7.61E-07	0.83	No
SG, Natural/CVR Gas	PAH	Benzo(a)anthracene	lbs/MMcf	Log EF	Conventional	3	-5.95E+00	9.45E-03	0.00	Low NOx	3	-5.93E+00	2.51E-01	0.83	No
SG, Natural/CVR Gas	PAH	Benzo(a)pyrene	lbs/MMcf	EF	Conventional	3	7.14E-07	5.34E-07	0.62	Low NOx	3	6.58E-07	2.32E-08	0.00	No
SG, Natural/CVR Gas	PAH	Benzo(a)pyrene	lbs/MMcf	Log EF	Conventional	3	-6.22E+00	2.98E-01	0.62	Low NOx	3	-6.18E+00	1.53E-02	0.00	No
SG, Natural/CVR Gas	PAH	Benzo(b)fluoranthene	lbs/MMcf	EF	Conventional	3	3.35E-06	1.93E-06	1.00	Low NOx	3	6.58E-07	2.32E-08	0.00	No
SG, Natural/CVR Gas	PAH	Benzo(b)fluoranthene	lbs/MMcf	Log EF	Conventional	3	-5.55E+00	3.39E-01	1.00	Low NOx	3	-6.18E+00	1.53E-02	0.00	Yes
SG, Natural/CVR Gas	PAH	Benzo(g,h,i)perylene	lbs/MMcf	EF	Conventional	3	1.30E-06	7.71E-07	0.89	Low NOx	3	6.58E-07	2.32E-08	0.00	No
SG, Natural/CVR Gas	PAH	Benzo(g,h,i)perylene	lbs/MMcf	Log EF	Conventional	3	-5.97E+00	3.62E-01	0.89	Low NOx	3	-6.18E+00	1.53E-02	0.00	No
SG, Natural/CVR Gas	PAH	Benzo(k)fluoranthene	lbs/MMcf	EF	Conventional	3	9.84E-07	5.11E-07	0.86	Low NOx	3	6.58E-07	2.32E-08	0.00	No
SG, Natural/CVR Gas	PAH	Benzo(k)fluoranthene	lbs/MMcf	Log EF	Conventional	3	-6.06E+00	2.84E-01	0.86	Low NOx	3	-6.18E+00	1.53E-02	0.00	No
SG, Natural/CVR Gas	PAH	Chrysene	lbs/MMcf	EF	Conventional	3	1.85E-06	4.05E-08	0.00	Low NOx	3	1.25E-06	7.95E-07	0.82	No
SG, Natural/CVR Gas	PAH	Chrysene	lbs/MMcf	Log EF	Conventional	3	-5.73E+00	9.45E-03	0.00	Low NOx	3	-5.96E+00	2.60E-01	0.82	No
SG, Natural/CVR Gas	PAH	Dibenz(a,h)anthracene	lbs/MMcf	EF	Conventional	3	4.02E-07	8.80E-09	0.00	Low NOx	3	6.58E-07	2.32E-08	0.00	Yes
SG, Natural/CVR Gas	PAH	Dibenz(a,h)anthracene	lbs/MMcf	Log EF	Conventional	3	-6.40E+00	9.45E-03	0.00	Low NOx	3	-6.18E+00	1.53E-02	0.00	Yes
SG, Natural/CVR Gas	PAH	Fluoranthene	lbs/MMcf	EF	Conventional	3	6.03E-06	3.93E-06	1.00	Low NOx	3	1.29E-06	4.76E-07	1.00	No
SG, Natural/CVR Gas	PAH	Fluoranthene	lbs/MMcf	Log EF	Conventional	3	-5.32E+00	4.15E-01	1.00	Low NOx	3	-5.91E+00	1.49E-01	1.00	No
SG, Natural/CVR Gas	PAH	Fluorene	lbs/MMcf	EF	Conventional	3	9.08E-06	6.02E-06	1.00	Low NOx	3	2.18E-06	5.44E-07	1.00	No
SG, Natural/CVR Gas	PAH	Fluorene	lbs/MMcf	Log EF	Conventional	3	-5.16E+00	4.43E-01	1.00	Low NOx	3	-5.67E+00	1.04E-01	1.00	No
SG, Natural/CVR Gas	PAH	Indeno(1,2,3-cd)pyrene	lbs/MMcf	EF	Conventional	3	1.67E-06	1.09E-06	0.92	Low NOx	3	6.58E-07	2.32E-08	0.00	No
SG, Natural/CVR Gas	PAH	Indeno(1,2,3-cd)pyrene	lbs/MMcf	Log EF	Conventional	3	-5.89E+00	4.31E-01	0.92	Low NOx	3	-6.18E+00	1.53E-02	0.00	No
SG, Natural/CVR Gas	PAH	Naphthalene	lbs/MMcf	EF	Conventional	3	4.12E-04	1.42E-04	1.00	Low NOx	3	1.66E-04	1.45E-05	1.00	Yes
SG, Natural/CVR Gas	PAH	Naphthalene	lbs/MMcf	Log EF	Conventional	3	-3.40E+00	1.56E-01	1.00	Low NOx	3	-3.78E+00	3.87E-02	1.00	Yes
SG, Natural/CVR Gas	PAH	Phenanthrene	lbs/MMcf	EF	Conventional	3	2.18E-05	1.34E-05	1.00	Low NOx	3	1.11E-05	3.63E-06	1.00	No
SG, Natural/CVR Gas	PAH	Phenanthrene	lbs/MMcf	Log EF	Conventional	3	-4.75E+00	3.75E-01	1.00	Low NOx	3	-4.97E+00	1.33E-01	1.00	No
SG, Natural/CVR Gas	PAH	Pyrene	lbs/MMcf	EF	Conventional	3	1.02E-05	7.40E-06	1.00	Low NOx	3	1.82E-06	1.06E-06	1.00	No
SG, Natural/CVR Gas	PAH	Pyrene	lbs/MMcf	Log EF	Conventional	3	-5.11E+00	4.24E-01	1.00	Low NOx	3	-5.80E+00	2.78E-01	1.00	No
SG, Natural/CVR Gas	SVOC	Ethylbenzene	lbs/MMcf	EF	Conventional	3	7.32E-03	6.84E-05	0.00	Low NOx	3	1.11E-02	7.47E-03	0.89	No
SG, Natural/CVR Gas	SVOC	Ethylbenzene	lbs/MMcf	Log EF	Conventional	3	-2.14E+00	4.04E-03	0.00	Low NOx	3	-2.04E+00	3.59E-01	0.89	No
SG, Natural/CVR Gas	VOC	Acetaldehyde	lbs/MMcf	EF	?	9	1.32E-02	5.98E-03	0.95	Low NOx	3	5.23E-03	3.59E-04	0.00	Yes
SG, Natural/CVR Gas	VOC	Acetaldehyde	lbs/MMcf	Log EF	?	9	-1.91E+00	1.84E-01	0.95	Low NOx	3	-2.28E+00	2.93E-02	0.00	Yes
SG, Natural/CVR Gas	VOC	Acrolein	lbs/MMcf	EF	?	9	1.22E-02	2.80E-03	1.00	Low NOx	3	5.23E-03	3.59E-04	0.00	Yes
SG, Natural/CVR Gas	VOC	Acrolein	lbs/MMcf	Log EF	?	9	-1.92E+00	9.30E-02	1.00	Low NOx	3	-2.28E+00	2.93E-02	0.00	Yes

TABLE 6-11. EXTERNAL COMBUSTION BURNER COMPARISON.

Major Group	Category	Substance	EF Unit	Value Type	First Sample Statistics					Second Sample Statistics					Significant Difference at 95%Confidence
					Description Burner	Size	Average	Standard Deviation	Detect Ratio	Description Burner	Size	Average	Standard Deviation	Detect Ratio	
SG, Natural/CVR Gas	VOC	Benzene	lbs/MMcf	EF	?	9	2.62E-03	3.22E-04	0.00	Conventional	3	6.14E-03	5.74E-05	0.00	Yes
SG, Natural/CVR Gas	VOC	Benzene	lbs/MMcf	EF	?	9	2.62E-03	3.22E-04	0.00	Low NOx	3	2.64E-03	8.58E-05	0.00	No
SG, Natural/CVR Gas	VOC	Benzene	lbs/MMcf	EF	Conventional	3	6.14E-03	5.74E-05	0.00	Low NOx	3	2.64E-03	8.58E-05	0.00	Yes
SG, Natural/CVR Gas	VOC	Benzene	lbs/MMcf	Log EF	?	9	-2.58E+00	5.17E-02	0.00	Conventional	3	-2.21E+00	4.04E-03	0.00	Yes
SG, Natural/CVR Gas	VOC	Benzene	lbs/MMcf	Log EF	?	9	-2.58E+00	5.17E-02	0.00	Low NOx	3	-2.58E+00	1.43E-02	0.00	No
SG, Natural/CVR Gas	VOC	Benzene	lbs/MMcf	Log EF	Conventional	3	-2.21E+00	4.04E-03	0.00	Low NOx	3	-2.58E+00	1.43E-02	0.00	Yes
SG, Natural/CVR Gas	VOC	Formaldehyde	lbs/MMcf	EF	?	9	1.94E-02	2.05E-02	0.73	Low NOx	3	5.23E-03	3.59E-04	0.32	No
SG, Natural/CVR Gas	VOC	Formaldehyde	lbs/MMcf	Log EF	?	9	-1.85E+00	3.20E-01	0.73	Low NOx	3	-2.28E+00	2.93E-02	0.32	Yes
SG, Natural/CVR Gas	VOC	Propylene	lbs/MMcf	EF	?	9	6.77E-02	2.45E-02	0.00	Low NOx	3	5.29E-01	1.04E-01	1.00	Yes
SG, Natural/CVR Gas	VOC	Propylene	lbs/MMcf	Log EF	?	9	-1.24E+00	3.53E-01	0.00	Low NOx	3	-2.82E-01	8.79E-02	1.00	Yes
SG, Natural/CVR Gas	VOC	Toluene	lbs/MMcf	EF	?	9	8.13E-03	1.00E-03	0.00	Conventional	3	2.68E-02	4.63E-03	1.00	Yes
SG, Natural/CVR Gas	VOC	Toluene	lbs/MMcf	EF	?	9	8.13E-03	1.00E-03	0.00	Low NOx	3	1.75E-02	4.71E-03	1.00	Yes
SG, Natural/CVR Gas	VOC	Toluene	lbs/MMcf	EF	Conventional	3	2.68E-02	4.63E-03	1.00	Low NOx	3	1.75E-02	4.71E-03	1.00	No
SG, Natural/CVR Gas	VOC	Toluene	lbs/MMcf	Log EF	?	9	-2.09E+00	5.17E-02	0.00	Conventional	3	-1.58E+00	7.79E-02	1.00	Yes
SG, Natural/CVR Gas	VOC	Toluene	lbs/MMcf	Log EF	?	9	-2.09E+00	5.17E-02	0.00	Low NOx	3	-1.77E+00	1.11E-01	1.00	Yes
SG, Natural/CVR Gas	VOC	Toluene	lbs/MMcf	Log EF	Conventional	3	-1.58E+00	7.79E-02	1.00	Low NOx	3	-1.77E+00	1.11E-01	1.00	No
SG, Natural/CVR Gas	VOC	Xylene (Total)	lbs/MMcf	EF	?	9	1.87E-02	2.31E-03	0.00	Conventional	3	1.46E-02	1.37E-04	0.00	Yes
SG, Natural/CVR Gas	VOC	Xylene (Total)	lbs/MMcf	EF	?	9	1.87E-02	2.31E-03	0.00	Low NOx	3	2.16E-02	1.62E-02	1.00	No
SG, Natural/CVR Gas	VOC	Xylene (Total)	lbs/MMcf	EF	Conventional	3	1.46E-02	1.37E-04	0.00	Low NOx	3	2.16E-02	1.62E-02	1.00	No
SG, Natural/CVR Gas	VOC	Xylene (Total)	lbs/MMcf	Log EF	?	9	-1.73E+00	5.17E-02	0.00	Conventional	3	-1.83E+00	4.04E-03	0.00	Yes
SG, Natural/CVR Gas	VOC	Xylene (Total)	lbs/MMcf	Log EF	?	9	-1.73E+00	5.17E-02	0.00	Low NOx	3	-1.74E+00	3.02E-01	1.00	No
SG, Natural/CVR Gas	VOC	Xylene (Total)	lbs/MMcf	Log EF	Conventional	3	-1.83E+00	4.04E-03	0.00	Low NOx	3	-1.74E+00	3.02E-01	1.00	No

TABLE 6-12. EXTERNAL COMBUSTION BURNER AND LOAD COMPARISON.

Major Group	Category	Substance	EF Unit	Value Type	First Sample Statistics						Second Sample Statistics						Significant Difference at 95%Confidence
					Description		Size	Average	Standard Deviation	Detect Ratio	Description		Size	Average	Standard Deviation	Detect Ratio	
					Burner	Load					Burner	Load					
Boiler, Ref. Gas	SVOC	Phenol	lbs/MMcf	EF	Conventional	<80%	6	1.56E-03	1.87E-03	0.76	Low NOx	<80%	3	8.58E-04	2.59E-05	0.34	No
Boiler, Ref. Gas	SVOC	Phenol	lbs/MMcf	EF	Conventional	<80%	6	1.56E-03	1.87E-03	0.76	Low NOx	>80%	3	4.74E-03	1.30E-03	1.00	Yes
Boiler, Ref. Gas	SVOC	Phenol	lbs/MMcf	EF	Low NOx	<80%	3	8.58E-04	2.59E-05	0.34	Low NOx	>80%	3	4.74E-03	1.30E-03	1.00	Yes
Boiler, Ref. Gas	SVOC	Phenol	lbs/MMcf	Log EF	Conventional	<80%	6	-2.96E+00	3.40E-01	0.76	Low NOx	<80%	3	-3.07E+00	1.31E-02	0.34	No
Boiler, Ref. Gas	SVOC	Phenol	lbs/MMcf	Log EF	Conventional	<80%	6	-2.96E+00	3.40E-01	0.76	Low NOx	>80%	3	-2.34E+00	1.32E-01	1.00	Yes
Boiler, Ref. Gas	SVOC	Phenol	lbs/MMcf	Log EF	Low NOx	<80%	3	-3.07E+00	1.31E-02	0.34	Low NOx	>80%	3	-2.34E+00	1.32E-01	1.00	Yes
Boiler, Ref. Gas	VOC	Acetaldehyde	lbs/MMcf	EF	Conventional	<80%	9	3.03E-03	3.63E-03	1.00	Low NOx	<80%	3	9.13E-03	2.57E-03	1.00	Yes
Boiler, Ref. Gas	VOC	Acetaldehyde	lbs/MMcf	EF	Conventional	<80%	9	3.03E-03	3.63E-03	1.00	Low NOx	>80%	3	1.63E-03	8.57E-04	1.00	No
Boiler, Ref. Gas	VOC	Acetaldehyde	lbs/MMcf	EF	Low NOx	<80%	3	9.13E-03	2.57E-03	1.00	Low NOx	>80%	3	1.63E-03	8.57E-04	1.00	Yes
Boiler, Ref. Gas	VOC	Acetaldehyde	lbs/MMcf	Log EF	Conventional	<80%	9	-3.12E+00	1.22E+00	1.00	Low NOx	<80%	3	-2.05E+00	1.29E-01	1.00	No
Boiler, Ref. Gas	VOC	Acetaldehyde	lbs/MMcf	Log EF	Conventional	<80%	9	-3.12E+00	1.22E+00	1.00	Low NOx	>80%	3	-2.84E+00	2.71E-01	1.00	No
Boiler, Ref. Gas	VOC	Acetaldehyde	lbs/MMcf	Log EF	Low NOx	<80%	3	-2.05E+00	1.29E-01	1.00	Low NOx	>80%	3	-2.84E+00	2.71E-01	1.00	Yes
Boiler, Ref. Gas	VOC	Benzene	lbs/MMcf	EF	Conventional	<80%	10	2.96E-01	4.56E-01	0.90	Low NOx	<80%	3	6.14E-02	5.03E-03	0.00	No
Boiler, Ref. Gas	VOC	Benzene	lbs/MMcf	EF	Conventional	<80%	10	2.96E-01	4.56E-01	0.90	Low NOx	>80%	3	5.23E-02	1.79E-02	0.00	No
Boiler, Ref. Gas	VOC	Benzene	lbs/MMcf	EF	Low NOx	<80%	3	6.14E-02	5.03E-03	0.00	Low NOx	>80%	3	5.23E-02	1.79E-02	0.00	No
Boiler, Ref. Gas	VOC	Benzene	lbs/MMcf	Log EF	Conventional	<80%	10	-1.11E+00	8.56E-01	0.90	Low NOx	<80%	3	-1.21E+00	3.58E-02	0.00	No
Boiler, Ref. Gas	VOC	Benzene	lbs/MMcf	Log EF	Conventional	<80%	10	-1.11E+00	8.56E-01	0.90	Low NOx	>80%	3	-1.30E+00	1.53E-01	0.00	No
Boiler, Ref. Gas	VOC	Benzene	lbs/MMcf	Log EF	Low NOx	<80%	3	-1.21E+00	3.58E-02	0.00	Low NOx	>80%	3	-1.30E+00	1.53E-01	0.00	No
Boiler, Ref. Gas	VOC	Formaldehyde	lbs/MMcf	EF	Conventional	<80%	9	1.88E-02	1.10E-02	1.00	Low NOx	<80%	3	9.19E-03	2.91E-03	1.00	No
Boiler, Ref. Gas	VOC	Formaldehyde	lbs/MMcf	EF	Conventional	<80%	9	1.88E-02	1.10E-02	1.00	Low NOx	>80%	3	1.44E-02	9.75E-03	1.00	No
Boiler, Ref. Gas	VOC	Formaldehyde	lbs/MMcf	EF	Low NOx	<80%	3	9.19E-03	2.91E-03	1.00	Low NOx	>80%	3	1.44E-02	9.75E-03	1.00	No
Boiler, Ref. Gas	VOC	Formaldehyde	lbs/MMcf	Log EF	Conventional	<80%	9	-1.79E+00	2.48E-01	1.00	Low NOx	<80%	3	-2.05E+00	1.30E-01	1.00	No
Boiler, Ref. Gas	VOC	Formaldehyde	lbs/MMcf	Log EF	Conventional	<80%	9	-1.79E+00	2.48E-01	1.00	Low NOx	>80%	3	-1.96E+00	4.57E-01	1.00	No
Boiler, Ref. Gas	VOC	Formaldehyde	lbs/MMcf	Log EF	Low NOx	<80%	3	-2.05E+00	1.30E-01	1.00	Low NOx	>80%	3	-1.96E+00	4.57E-01	1.00	No
Boiler, Ref. Gas	VOC	Hydrogen Sulfide	lbs/MMcf	EF	Conventional	<80%	10	2.55E-01	3.09E-01	0.00	Low NOx	<80%	3	2.68E-01	2.21E-02	0.00	No
Boiler, Ref. Gas	VOC	Hydrogen Sulfide	lbs/MMcf	EF	Conventional	<80%	10	2.55E-01	3.09E-01	0.00	Low NOx	>80%	3	3.42E-01	1.17E-01	0.00	No
Boiler, Ref. Gas	VOC	Hydrogen Sulfide	lbs/MMcf	EF	Low NOx	<80%	3	2.68E-01	2.21E-02	0.00	Low NOx	>80%	3	3.42E-01	1.17E-01	0.00	No
Boiler, Ref. Gas	VOC	Hydrogen Sulfide	lbs/MMcf	Log EF	Conventional	<80%	10	-8.87E-01	5.07E-01	0.00	Low NOx	<80%	3	-5.73E-01	3.60E-02	0.00	No
Boiler, Ref. Gas	VOC	Hydrogen Sulfide	lbs/MMcf	Log EF	Conventional	<80%	10	-8.87E-01	5.07E-01	0.00	Low NOx	>80%	3	-4.84E-01	1.53E-01	0.00	No
Boiler, Ref. Gas	VOC	Hydrogen Sulfide	lbs/MMcf	Log EF	Low NOx	<80%	3	-5.73E-01	3.60E-02	0.00	Low NOx	>80%	3	-4.84E-01	1.53E-01	0.00	No
Boiler, Ref. Gas	VOC	Toluene	lbs/MMcf	EF	Conventional	<80%	6	1.23E+00	1.88E+00	0.98	Low NOx	>80%	3	6.17E-02	2.11E-02	0.45	No
Boiler, Ref. Gas	VOC	Toluene	lbs/MMcf	Log EF	Conventional	<80%	6	-3.37E-01	7.19E-01	0.98	Low NOx	>80%	3	-1.23E+00	1.53E-01	0.45	No
Heater, Ref. Gas	PAH	Acenaphthene	lbs/MMcf	EF	Conventional	<80%	2	5.22E-06	9.25E-08	1.00	Conventional	>80%	6	1.38E-06	1.45E-07	1.00	Yes
Heater, Ref. Gas	PAH	Acenaphthene	lbs/MMcf	EF	Conventional	<80%	2	5.22E-06	9.25E-08	1.00	Low NOx	<80%	3	2.30E-06	7.92E-07	0.80	Yes
Heater, Ref. Gas	PAH	Acenaphthene	lbs/MMcf	EF	Conventional	>80%	6	1.38E-06	1.45E-07	1.00	Low NOx	<80%	3	2.30E-06	7.92E-07	0.80	Yes
Heater, Ref. Gas	PAH	Acenaphthene	lbs/MMcf	Log EF	Conventional	<80%	2	-5.28E+00	7.69E-03	1.00	Conventional	>80%	6	-5.86E+00	4.88E-02	1.00	Yes
Heater, Ref. Gas	PAH	Acenaphthene	lbs/MMcf	Log EF	Conventional	<80%	2	-5.28E+00	7.69E-03	1.00	Low NOx	<80%	3	-5.66E+00	1.72E-01	0.80	No
Heater, Ref. Gas	PAH	Acenaphthene	lbs/MMcf	Log EF	Conventional	>80%	6	-5.86E+00	4.88E-02	1.00	Low NOx	<80%	3	-5.66E+00	1.72E-01	0.80	Yes
Heater, Ref. Gas	PAH	Acenaphthylene	lbs/MMcf	EF	Conventional	<80%	2	2.47E-06	2.47E-07	1.00	Conventional	>80%	6	1.27E-06	4.83E-07	0.47	Yes
Heater, Ref. Gas	PAH	Acenaphthylene	lbs/MMcf	EF	Conventional	<80%	2	2.47E-06	2.47E-07	1.00	Low NOx	<80%	3	1.40E-06	1.45E-08	0.00	Yes
Heater, Ref. Gas	PAH	Acenaphthylene	lbs/MMcf	EF	Conventional	>80%	6	1.27E-06	4.83E-07	0.47	Low NOx	<80%	3	1.40E-06	1.45E-08	0.00	No
Heater, Ref. Gas	PAH	Acenaphthylene	lbs/MMcf	Log EF	Conventional	<80%	2	-5.61E+00	4.35E-02	1.00	Conventional	>80%	6	-5.92E+00	1.40E-01	0.47	Yes
Heater, Ref. Gas	PAH	Acenaphthylene	lbs/MMcf	Log EF	Conventional	<80%	2	-5.61E+00	4.35E-02	1.00	Low NOx	<80%	3	-5.85E+00	4.50E-03	0.00	Yes
Heater, Ref. Gas	PAH	Acenaphthylene	lbs/MMcf	Log EF	Conventional	>80%	6	-5.92E+00	1.40E-01	0.47	Low NOx	<80%	3	-5.85E+00	4.50E-03	0.00	No
Heater, Ref. Gas	PAH	Anthracene	lbs/MMcf	EF	Conventional	<80%	2	5.74E-06	2.67E-07	1.00	Conventional	>80%	6	2.13E-06	8.70E-07	0.92	Yes
Heater, Ref. Gas	PAH	Anthracene	lbs/MMcf	EF	Conventional	<80%	2	5.74E-06	2.67E-07	1.00	Low NOx	<80%	3	2.20E-06	7.35E-07	0.79	Yes
Heater, Ref. Gas	PAH	Anthracene	lbs/MMcf	EF	Conventional	>80%	6	2.13E-06	8.70E-07	0.92	Low NOx	<80%	3	2.20E-06	7.35E-07	0.79	No
Heater, Ref. Gas	PAH	Anthracene	lbs/MMcf	Log EF	Conventional	<80%	2	-5.24E+00	2.02E-02	1.00	Conventional	>80%	6	-5.70E+00	1.88E-01	0.92	Yes
Heater, Ref. Gas	PAH	Anthracene	lbs/MMcf	Log EF	Conventional	<80%	2	-5.24E+00	2.02E-02	1.00	Low NOx	<80%	3	-5.68E+00	1.61E-01	0.79	Yes
Heater, Ref. Gas	PAH	Anthracene	lbs/MMcf	Log EF	Conventional	>80%	6	-5.70E+00	1.88E-01	0.92	Low NOx	<80%	3	-5.68E+00	1.61E-01	0.79	No

TABLE 6-12. EXTERNAL COMBUSTION BURNER AND LOAD COMPARISON.

Major Group	Category	Substance	EF Unit	Value Type	First Sample Statistics						Second Sample Statistics						Significant Difference at 95%Confidence
					Description		Size	Average	Standard Deviation	Detect Ratio	Description		Size	Average	Standard Deviation	Detect Ratio	
					Burner	Load					Burner	Load					
Heater, Ref. Gas	PAH	Benzo(a)anthracene	lbs/MMcf	EF	Conventional	<80%	8	1.88E-05	2.12E-05	0.99	Conventional	>80%	9	8.21E-05	1.59E-04	1.00	No
Heater, Ref. Gas	PAH	Benzo(a)anthracene	lbs/MMcf	EF	Conventional	<80%	8	1.88E-05	2.12E-05	0.99	Low NOx	<80%	9	8.06E-06	5.67E-06	1.00	No
Heater, Ref. Gas	PAH	Benzo(a)anthracene	lbs/MMcf	EF	Conventional	>80%	9	8.21E-05	1.59E-04	1.00	Low NOx	<80%	9	8.06E-06	5.67E-06	1.00	No
Heater, Ref. Gas	PAH	Benzo(a)anthracene	lbs/MMcf	Log EF	Conventional	<80%	8	-5.02E+00	6.10E-01	0.99	Conventional	>80%	9	-5.27E+00	1.08E+00	1.00	No
Heater, Ref. Gas	PAH	Benzo(a)anthracene	lbs/MMcf	Log EF	Conventional	<80%	8	-5.02E+00	6.10E-01	0.99	Low NOx	<80%	9	-5.22E+00	3.71E-01	1.00	No
Heater, Ref. Gas	PAH	Benzo(a)anthracene	lbs/MMcf	Log EF	Conventional	>80%	9	-5.27E+00	1.08E+00	1.00	Low NOx	<80%	9	-5.22E+00	3.71E-01	1.00	No
Heater, Ref. Gas	PAH	Benzo(a)pyrene	lbs/MMcf	EF	Conventional	<80%	8	2.97E-06	1.20E-06	0.00	Conventional	>80%	9	2.80E-04	5.53E-04	1.00	No
Heater, Ref. Gas	PAH	Benzo(a)pyrene	lbs/MMcf	EF	Conventional	<80%	8	2.97E-06	1.20E-06	0.00	Low NOx	<80%	9	2.87E-06	2.90E-06	0.41	No
Heater, Ref. Gas	PAH	Benzo(a)pyrene	lbs/MMcf	EF	Conventional	>80%	9	2.80E-04	5.53E-04	1.00	Low NOx	<80%	9	2.87E-06	2.90E-06	0.41	No
Heater, Ref. Gas	PAH	Benzo(a)pyrene	lbs/MMcf	Log EF	Conventional	<80%	8	-5.57E+00	2.11E-01	0.00	Conventional	>80%	9	-5.22E+00	1.34E+00	1.00	No
Heater, Ref. Gas	PAH	Benzo(a)pyrene	lbs/MMcf	Log EF	Conventional	<80%	8	-5.57E+00	2.11E-01	0.00	Low NOx	<80%	9	-5.65E+00	2.72E-01	0.41	No
Heater, Ref. Gas	PAH	Benzo(a)pyrene	lbs/MMcf	Log EF	Conventional	>80%	9	-5.22E+00	1.34E+00	1.00	Low NOx	<80%	9	-5.65E+00	2.72E-01	0.41	No
Heater, Ref. Gas	PAH	Benzo(b)fluoranthene	lbs/MMcf	EF	Conventional	<80%	8	7.36E-06	9.66E-06	0.89	Conventional	>80%	9	1.22E-04	2.37E-04	1.00	No
Heater, Ref. Gas	PAH	Benzo(b)fluoranthene	lbs/MMcf	EF	Conventional	<80%	8	7.36E-06	9.66E-06	0.89	Low NOx	<80%	9	5.10E-06	3.01E-06	1.00	No
Heater, Ref. Gas	PAH	Benzo(b)fluoranthene	lbs/MMcf	EF	Conventional	>80%	9	1.22E-04	2.37E-04	1.00	Low NOx	<80%	9	5.10E-06	3.01E-06	1.00	No
Heater, Ref. Gas	PAH	Benzo(b)fluoranthene	lbs/MMcf	Log EF	Conventional	<80%	8	-5.37E+00	4.56E-01	0.89	Conventional	>80%	9	-5.25E+00	1.19E+00	1.00	No
Heater, Ref. Gas	PAH	Benzo(b)fluoranthene	lbs/MMcf	Log EF	Conventional	<80%	8	-5.37E+00	4.56E-01	0.89	Low NOx	<80%	9	-5.34E+00	2.14E-01	1.00	No
Heater, Ref. Gas	PAH	Benzo(b)fluoranthene	lbs/MMcf	Log EF	Conventional	>80%	9	-5.25E+00	1.19E+00	1.00	Low NOx	<80%	9	-5.34E+00	2.14E-01	1.00	No
Heater, Ref. Gas	PAH	Benzo(g,h,i)perylene	lbs/MMcf	EF	Conventional	<80%	2	1.30E-06	2.31E-08	0.00	Conventional	>80%	6	1.01E-06	1.94E-08	0.00	Yes
Heater, Ref. Gas	PAH	Benzo(g,h,i)perylene	lbs/MMcf	EF	Conventional	<80%	2	1.30E-06	2.31E-08	0.00	Low NOx	<80%	3	1.40E-06	1.45E-08	0.00	Yes
Heater, Ref. Gas	PAH	Benzo(g,h,i)perylene	lbs/MMcf	EF	Conventional	>80%	6	1.01E-06	1.94E-08	0.00	Low NOx	<80%	3	1.40E-06	1.45E-08	0.00	Yes
Heater, Ref. Gas	PAH	Benzo(g,h,i)perylene	lbs/MMcf	Log EF	Conventional	<80%	2	-5.88E+00	7.69E-03	0.00	Conventional	>80%	6	-6.00E+00	8.30E-03	0.00	Yes
Heater, Ref. Gas	PAH	Benzo(g,h,i)perylene	lbs/MMcf	Log EF	Conventional	<80%	2	-5.88E+00	7.69E-03	0.00	Low NOx	<80%	3	-5.85E+00	4.50E-03	0.00	Yes
Heater, Ref. Gas	PAH	Benzo(g,h,i)perylene	lbs/MMcf	Log EF	Conventional	>80%	6	-6.00E+00	8.30E-03	0.00	Low NOx	<80%	3	-5.85E+00	4.50E-03	0.00	Yes
Heater, Ref. Gas	PAH	Benzo(k)fluoranthene	lbs/MMcf	EF	Conventional	<80%	8	5.36E-06	5.78E-06	0.62	Conventional	>80%	9	7.06E-05	1.38E-04	0.99	No
Heater, Ref. Gas	PAH	Benzo(k)fluoranthene	lbs/MMcf	EF	Conventional	<80%	8	5.36E-06	5.78E-06	0.62	Low NOx	<80%	9	3.38E-06	3.03E-06	0.79	No
Heater, Ref. Gas	PAH	Benzo(k)fluoranthene	lbs/MMcf	EF	Conventional	>80%	9	7.06E-05	1.38E-04	0.99	Low NOx	<80%	9	3.38E-06	3.03E-06	0.79	No
Heater, Ref. Gas	PAH	Benzo(k)fluoranthene	lbs/MMcf	Log EF	Conventional	<80%	8	-5.44E+00	3.83E-01	0.62	Conventional	>80%	9	-5.37E+00	1.08E+00	0.99	No
Heater, Ref. Gas	PAH	Benzo(k)fluoranthene	lbs/MMcf	Log EF	Conventional	<80%	8	-5.44E+00	3.83E-01	0.62	Low NOx	<80%	9	-5.57E+00	2.90E-01	0.79	No
Heater, Ref. Gas	PAH	Benzo(k)fluoranthene	lbs/MMcf	Log EF	Conventional	>80%	9	-5.37E+00	1.08E+00	0.99	Low NOx	<80%	9	-5.57E+00	2.90E-01	0.79	No
Heater, Ref. Gas	PAH	Chrysene	lbs/MMcf	EF	Conventional	<80%	2	1.42E-06	1.91E-07	0.55	Conventional	>80%	6	1.10E-06	2.24E-07	0.40	No
Heater, Ref. Gas	PAH	Chrysene	lbs/MMcf	EF	Conventional	<80%	2	1.42E-06	1.91E-07	0.55	Low NOx	<80%	3	2.94E-06	2.14E-06	0.84	No
Heater, Ref. Gas	PAH	Chrysene	lbs/MMcf	EF	Conventional	>80%	6	1.10E-06	2.24E-07	0.40	Low NOx	<80%	3	2.94E-06	2.14E-06	0.84	No
Heater, Ref. Gas	PAH	Chrysene	lbs/MMcf	Log EF	Conventional	<80%	2	-5.85E+00	5.85E-02	0.55	Conventional	>80%	6	-5.96E+00	7.71E-02	0.40	No
Heater, Ref. Gas	PAH	Chrysene	lbs/MMcf	Log EF	Conventional	<80%	2	-5.85E+00	5.85E-02	0.55	Low NOx	<80%	3	-5.61E+00	3.03E-01	0.84	No
Heater, Ref. Gas	PAH	Chrysene	lbs/MMcf	Log EF	Conventional	>80%	6	-5.96E+00	7.71E-02	0.40	Low NOx	<80%	3	-5.61E+00	3.03E-01	0.84	Yes
Heater, Ref. Gas	PAH	Dibenz(a,h)anthracene	lbs/MMcf	EF	Conventional	<80%	8	2.97E-06	1.20E-06	0.00	Conventional	>80%	9	1.16E-05	2.12E-05	0.00	No
Heater, Ref. Gas	PAH	Dibenz(a,h)anthracene	lbs/MMcf	EF	Conventional	<80%	8	2.97E-06	1.20E-06	0.00	Low NOx	<80%	9	1.63E-05	4.31E-05	0.00	No
Heater, Ref. Gas	PAH	Dibenz(a,h)anthracene	lbs/MMcf	EF	Conventional	>80%	9	1.16E-05	2.12E-05	0.00	Low NOx	<80%	9	1.63E-05	4.31E-05	0.00	No
Heater, Ref. Gas	PAH	Dibenz(a,h)anthracene	lbs/MMcf	Log EF	Conventional	<80%	8	-5.57E+00	2.11E-01	0.00	Conventional	>80%	9	-5.64E+00	7.56E-01	0.00	No
Heater, Ref. Gas	PAH	Dibenz(a,h)anthracene	lbs/MMcf	Log EF	Conventional	<80%	8	-5.57E+00	2.11E-01	0.00	Low NOx	<80%	9	-5.53E+00	6.25E-01	0.00	No
Heater, Ref. Gas	PAH	Dibenz(a,h)anthracene	lbs/MMcf	Log EF	Conventional	>80%	9	-5.64E+00	7.56E-01	0.00	Low NOx	<80%	9	-5.53E+00	6.25E-01	0.00	No
Heater, Ref. Gas	PAH	Fluoranthene	lbs/MMcf	EF	Conventional	<80%	2	3.66E-06	8.03E-07	1.00	Conventional	>80%	6	2.45E-06	6.63E-07	1.00	No
Heater, Ref. Gas	PAH	Fluoranthene	lbs/MMcf	EF	Conventional	<80%	2	3.66E-06	8.03E-07	1.00	Low NOx	<80%	3	3.88E-06	1.67E-06	1.00	No
Heater, Ref. Gas	PAH	Fluoranthene	lbs/MMcf	EF	Conventional	>80%	6	2.45E-06	6.63E-07	1.00	Low NOx	<80%	3	3.88E-06	1.67E-06	1.00	No
Heater, Ref. Gas	PAH	Fluoranthene	lbs/MMcf	Log EF	Conventional	<80%	2	-5.44E+00	9.60E-02	1.00	Conventional	>80%	6	-5.62E+00	1.15E-01	1.00	No
Heater, Ref. Gas	PAH	Fluoranthene	lbs/MMcf	Log EF	Conventional	<80%	2	-5.44E+00	9.60E-02	1.00	Low NOx	<80%	3	-5.44E+00	1.93E-01	1.00	No
Heater, Ref. Gas	PAH	Fluoranthene	lbs/MMcf	Log EF	Conventional	>80%	6	-5.62E+00	1.15E-01	1.00	Low NOx	<80%	3	-5.44E+00	1.93E-01	1.00	No
Heater, Ref. Gas	PAH	Fluorene	lbs/MMcf	EF	Conventional	<80%	2	2.39E-05	3.56E-06	1.00	Conventional	>80%	6	7.21E-06	2.04E-06	1.00	Yes
Heater, Ref. Gas	PAH	Fluorene	lbs/MMcf	EF	Conventional	<80%	2	2.39E-05	3.56E-06	1.00	Low NOx	<80%	3	8.45E-06	4.58E-06	1.00	Yes

TABLE 6-12. EXTERNAL COMBUSTION BURNER AND LOAD COMPARISON.

Major Group	Category	Substance	EF Unit	Value Type	First Sample Statistics						Second Sample Statistics						Significant Difference at 95%Confidence
					Description		Size	Average	Standard Deviation	Detect Ratio	Description		Size	Average	Standard Deviation	Detect Ratio	
					Burner	Load					Burner	Load					
Heater, Ref. Gas	PAH	Fluorene	lbs/MMcf	EF	Conventional	>80%	6	7.21E-06	2.04E-06	1.00	Low NOx	<80%	3	8.45E-06	4.58E-06	1.00	No
Heater, Ref. Gas	PAH	Fluorene	lbs/MMcf	Log EF	Conventional	<80%	2	-4.62E+00	6.49E-02	1.00	Conventional	>80%	6	-5.16E+00	1.17E-01	1.00	Yes
Heater, Ref. Gas	PAH	Fluorene	lbs/MMcf	Log EF	Conventional	<80%	2	-4.62E+00	6.49E-02	1.00	Low NOx	<80%	3	-5.13E+00	3.02E-01	1.00	No
Heater, Ref. Gas	PAH	Fluorene	lbs/MMcf	Log EF	Conventional	>80%	6	-5.16E+00	1.17E-01	1.00	Low NOx	<80%	3	-5.13E+00	3.02E-01	1.00	No
Heater, Ref. Gas	PAH	Indeno(1,2,3-cd)pyrene	lbs/MMcf	EF	Conventional	<80%	8	3.24E-06	1.50E-06	0.37	Conventional	>80%	9	3.27E-04	6.41E-04	1.00	No
Heater, Ref. Gas	PAH	Indeno(1,2,3-cd)pyrene	lbs/MMcf	EF	Conventional	<80%	8	3.24E-06	1.50E-06	0.37	Low NOx	<80%	9	3.57E-06	4.61E-06	0.73	No
Heater, Ref. Gas	PAH	Indeno(1,2,3-cd)pyrene	lbs/MMcf	EF	Conventional	>80%	9	3.27E-04	6.41E-04	1.00	Low NOx	<80%	9	3.57E-06	4.61E-06	0.73	No
Heater, Ref. Gas	PAH	Indeno(1,2,3-cd)pyrene	lbs/MMcf	Log EF	Conventional	<80%	8	-5.54E+00	2.33E-01	0.37	Conventional	>80%	9	-5.13E+00	1.39E+00	1.00	No
Heater, Ref. Gas	PAH	Indeno(1,2,3-cd)pyrene	lbs/MMcf	Log EF	Conventional	<80%	8	-5.54E+00	2.33E-01	0.37	Low NOx	<80%	9	-5.61E+00	3.27E-01	0.73	No
Heater, Ref. Gas	PAH	Indeno(1,2,3-cd)pyrene	lbs/MMcf	Log EF	Conventional	>80%	9	-5.13E+00	1.39E+00	1.00	Low NOx	<80%	9	-5.61E+00	3.27E-01	0.73	No
Heater, Ref. Gas	PAH	Naphthalene	lbs/MMcf	EF	Conventional	<80%	2	6.52E-04	6.23E-05	1.00	Conventional	>80%	6	2.58E-04	8.32E-05	1.00	Yes
Heater, Ref. Gas	PAH	Naphthalene	lbs/MMcf	EF	Conventional	<80%	2	6.52E-04	6.23E-05	1.00	Low NOx	<80%	3	1.57E-04	2.24E-05	1.00	Yes
Heater, Ref. Gas	PAH	Naphthalene	lbs/MMcf	EF	Conventional	>80%	6	2.58E-04	8.32E-05	1.00	Low NOx	<80%	3	1.57E-04	2.24E-05	1.00	No
Heater, Ref. Gas	PAH	Naphthalene	lbs/MMcf	Log EF	Conventional	<80%	2	-3.19E+00	4.15E-02	1.00	Conventional	>80%	6	-3.61E+00	1.47E-01	1.00	Yes
Heater, Ref. Gas	PAH	Naphthalene	lbs/MMcf	Log EF	Conventional	<80%	2	-3.19E+00	4.15E-02	1.00	Low NOx	<80%	3	-3.81E+00	6.35E-02	1.00	Yes
Heater, Ref. Gas	PAH	Naphthalene	lbs/MMcf	Log EF	Conventional	>80%	6	-3.61E+00	1.47E-01	1.00	Low NOx	<80%	3	-3.81E+00	6.35E-02	1.00	No
Heater, Ref. Gas	PAH	Phenanthrene	lbs/MMcf	EF	Conventional	<80%	2	2.00E-05	2.38E-06	1.00	Conventional	>80%	6	1.23E-05	3.03E-06	1.00	Yes
Heater, Ref. Gas	PAH	Phenanthrene	lbs/MMcf	EF	Conventional	<80%	2	2.00E-05	2.38E-06	1.00	Low NOx	<80%	3	1.48E-05	6.28E-06	1.00	No
Heater, Ref. Gas	PAH	Phenanthrene	lbs/MMcf	EF	Conventional	>80%	6	1.23E-05	3.03E-06	1.00	Low NOx	<80%	3	1.48E-05	6.28E-06	1.00	No
Heater, Ref. Gas	PAH	Phenanthrene	lbs/MMcf	Log EF	Conventional	<80%	2	-4.70E+00	5.19E-02	1.00	Conventional	>80%	6	-4.92E+00	1.15E-01	1.00	Yes
Heater, Ref. Gas	PAH	Phenanthrene	lbs/MMcf	Log EF	Conventional	<80%	2	-4.70E+00	5.19E-02	1.00	Low NOx	<80%	3	-4.86E+00	2.18E-01	1.00	No
Heater, Ref. Gas	PAH	Phenanthrene	lbs/MMcf	Log EF	Conventional	>80%	6	-4.92E+00	1.15E-01	1.00	Low NOx	<80%	3	-4.86E+00	2.18E-01	1.00	No
Heater, Ref. Gas	PAH	Pyrene	lbs/MMcf	EF	Conventional	<80%	2	3.13E-06	4.25E-07	1.00	Conventional	>80%	6	2.35E-06	4.97E-07	1.00	No
Heater, Ref. Gas	PAH	Pyrene	lbs/MMcf	EF	Conventional	<80%	2	3.13E-06	4.25E-07	1.00	Low NOx	<80%	3	3.63E-06	1.48E-06	1.00	No
Heater, Ref. Gas	PAH	Pyrene	lbs/MMcf	EF	Conventional	>80%	6	2.35E-06	4.97E-07	1.00	Low NOx	<80%	3	3.63E-06	1.48E-06	1.00	No
Heater, Ref. Gas	PAH	Pyrene	lbs/MMcf	Log EF	Conventional	<80%	2	-5.51E+00	5.90E-02	1.00	Conventional	>80%	6	-5.64E+00	9.43E-02	1.00	No
Heater, Ref. Gas	PAH	Pyrene	lbs/MMcf	Log EF	Conventional	<80%	2	-5.51E+00	5.90E-02	1.00	Low NOx	<80%	3	-5.47E+00	1.91E-01	1.00	No
Heater, Ref. Gas	PAH	Pyrene	lbs/MMcf	Log EF	Conventional	>80%	6	-5.64E+00	9.43E-02	1.00	Low NOx	<80%	3	-5.47E+00	1.91E-01	1.00	No
Heater, Ref. Gas	SVOC	Ethylbenzene	lbs/MMcf	EF	Conventional	<80%	3	1.20E-02	1.50E-02	0.88	Conventional	>80%	6	2.96E-02	3.91E-02	0.88	No
Heater, Ref. Gas	SVOC	Ethylbenzene	lbs/MMcf	EF	Conventional	<80%	3	1.20E-02	1.50E-02	0.88	Low NOx	<80%	3	5.06E-02	0.00E+00	0.00	Yes
Heater, Ref. Gas	SVOC	Ethylbenzene	lbs/MMcf	EF	Conventional	>80%	6	2.96E-02	3.91E-02	0.88	Low NOx	<80%	3	5.06E-02	0.00E+00	0.00	No
Heater, Ref. Gas	SVOC	Ethylbenzene	lbs/MMcf	Log EF	Conventional	<80%	3	-2.17E+00	5.60E-01	0.88	Conventional	>80%	6	-1.89E+00	6.04E-01	0.88	No
Heater, Ref. Gas	SVOC	Ethylbenzene	lbs/MMcf	Log EF	Conventional	<80%	3	-2.17E+00	5.60E-01	0.88	Low NOx	<80%	3	-1.30E+00	0.00E+00	0.00	No
Heater, Ref. Gas	SVOC	Ethylbenzene	lbs/MMcf	Log EF	Conventional	>80%	6	-1.89E+00	6.04E-01	0.88	Low NOx	<80%	3	-1.30E+00	0.00E+00	0.00	No
Heater, Ref. Gas	SVOC	Phenol	lbs/MMcf	EF	Conventional	>80%	6	3.53E-03	2.71E-03	0.95	Low NOx	<80%	9	1.28E-02	7.46E-03	1.00	Yes
Heater, Ref. Gas	SVOC	Phenol	lbs/MMcf	EF	Conventional	>80%	6	3.53E-03	2.71E-03	0.95	Low NOx	>80%	6	1.65E-03	1.67E-03	0.62	No
Heater, Ref. Gas	SVOC	Phenol	lbs/MMcf	EF	Low NOx	<80%	9	1.28E-02	7.46E-03	1.00	Low NOx	>80%	6	1.65E-03	1.67E-03	0.62	Yes
Heater, Ref. Gas	SVOC	Phenol	lbs/MMcf	Log EF	Conventional	>80%	6	-2.59E+00	4.03E-01	0.95	Low NOx	<80%	9	-1.97E+00	2.93E-01	1.00	Yes
Heater, Ref. Gas	SVOC	Phenol	lbs/MMcf	Log EF	Conventional	>80%	6	-2.59E+00	4.03E-01	0.95	Low NOx	>80%	6	-2.97E+00	4.68E-01	0.62	No
Heater, Ref. Gas	SVOC	Phenol	lbs/MMcf	Log EF	Low NOx	<80%	9	-1.97E+00	2.93E-01	1.00	Low NOx	>80%	6	-2.97E+00	4.68E-01	0.62	Yes
Heater, Ref. Gas	VOC	Acetaldehyde	lbs/MMcf	EF	Conventional	>80%	6	2.21E-02	2.00E-02	1.00	Low NOx	<80%	12	2.71E-02	3.00E-02	0.83	No
Heater, Ref. Gas	VOC	Acetaldehyde	lbs/MMcf	EF	Conventional	>80%	6	2.21E-02	2.00E-02	1.00	Low NOx	>80%	6	1.60E-03	1.20E-03	1.00	Yes
Heater, Ref. Gas	VOC	Acetaldehyde	lbs/MMcf	EF	Low NOx	<80%	12	2.71E-02	3.00E-02	0.83	Low NOx	>80%	6	1.60E-03	1.20E-03	1.00	No
Heater, Ref. Gas	VOC	Acetaldehyde	lbs/MMcf	Log EF	Conventional	>80%	6	-2.01E+00	8.20E-01	1.00	Low NOx	<80%	12	-1.88E+00	7.56E-01	0.83	No
Heater, Ref. Gas	VOC	Acetaldehyde	lbs/MMcf	Log EF	Conventional	>80%	6	-2.01E+00	8.20E-01	1.00	Low NOx	>80%	6	-2.91E+00	3.54E-01	1.00	Yes
Heater, Ref. Gas	VOC	Acetaldehyde	lbs/MMcf	Log EF	Low NOx	<80%	12	-1.88E+00	7.56E-01	0.83	Low NOx	>80%	6	-2.91E+00	3.54E-01	1.00	Yes
Heater, Ref. Gas	VOC	Benzene	lbs/MMcf	EF	Conventional	<80%	3	8.61E-03	1.03E-02	0.88	Conventional	>80%	12	7.12E-02	8.82E-02	0.03	No
Heater, Ref. Gas	VOC	Benzene	lbs/MMcf	EF	Conventional	<80%	3	8.61E-03	1.03E-02	0.88	Low NOx	<80%	12	1.37E-01	6.54E-02	0.00	Yes
Heater, Ref. Gas	VOC	Benzene	lbs/MMcf	EF	Conventional	<80%	3	8.61E-03	1.03E-02	0.88	Low NOx	>80%	6	4.28E-02	2.69E-02	0.00	No
Heater, Ref. Gas	VOC	Benzene	lbs/MMcf	EF	Conventional	>80%	12	7.12E-02	8.82E-02	0.03	Low NOx	<80%	12	1.37E-01	6.54E-02	0.00	No

TABLE 6-12. EXTERNAL COMBUSTION BURNER AND LOAD COMPARISON.

Major Group	Category	Substance	EF Unit	Value Type	First Sample Statistics						Second Sample Statistics						Significant Difference at 95%Confidence
					Description		Size	Average	Standard Deviation	Detect Ratio	Description		Size	Average	Standard Deviation	Detect Ratio	
					Burner	Load					Burner	Load					
Heater, Ref. Gas	VOC	Benzene	lbs/MMcf	EF	Conventional	>80%	12	7.12E-02	8.82E-02	0.03	Low NOx	>80%	6	4.28E-02	2.69E-02	0.00	No
Heater, Ref. Gas	VOC	Benzene	lbs/MMcf	EF	Low NOx	<80%	12	1.37E-01	6.54E-02	0.00	Low NOx	>80%	6	4.28E-02	2.69E-02	0.00	Yes
Heater, Ref. Gas	VOC	Benzene	lbs/MMcf	Log EF	Conventional	<80%	3	-2.28E+00	5.15E-01	0.88	Conventional	>80%	12	-1.57E+00	7.03E-01	0.03	No
Heater, Ref. Gas	VOC	Benzene	lbs/MMcf	Log EF	Conventional	<80%	3	-2.28E+00	5.15E-01	0.88	Low NOx	<80%	12	-9.39E-01	3.02E-01	0.00	Yes
Heater, Ref. Gas	VOC	Benzene	lbs/MMcf	Log EF	Conventional	<80%	3	-2.28E+00	5.15E-01	0.88	Low NOx	>80%	6	-1.46E+00	3.12E-01	0.00	Yes
Heater, Ref. Gas	VOC	Benzene	lbs/MMcf	Log EF	Conventional	>80%	12	-1.57E+00	7.03E-01	0.03	Low NOx	<80%	12	-9.39E-01	3.02E-01	0.00	Yes
Heater, Ref. Gas	VOC	Benzene	lbs/MMcf	Log EF	Conventional	>80%	12	-1.57E+00	7.03E-01	0.03	Low NOx	>80%	6	-1.46E+00	3.12E-01	0.00	No
Heater, Ref. Gas	VOC	Benzene	lbs/MMcf	Log EF	Low NOx	<80%	12	-9.39E-01	3.02E-01	0.00	Low NOx	>80%	6	-1.46E+00	3.12E-01	0.00	Yes
Heater, Ref. Gas	VOC	Formaldehyde	lbs/MMcf	EF	Conventional	>80%	6	9.99E-02	1.39E-01	1.00	Low NOx	<80%	9	2.86E-01	5.65E-01	1.00	No
Heater, Ref. Gas	VOC	Formaldehyde	lbs/MMcf	EF	Conventional	>80%	6	9.99E-02	1.39E-01	1.00	Low NOx	>80%	6	1.75E-03	1.06E-03	1.00	No
Heater, Ref. Gas	VOC	Formaldehyde	lbs/MMcf	EF	Low NOx	<80%	9	2.86E-01	5.65E-01	1.00	Low NOx	>80%	6	1.75E-03	1.06E-03	1.00	No
Heater, Ref. Gas	VOC	Formaldehyde	lbs/MMcf	Log EF	Conventional	>80%	6	-1.40E+00	6.53E-01	1.00	Low NOx	<80%	9	-1.02E+00	6.09E-01	1.00	No
Heater, Ref. Gas	VOC	Formaldehyde	lbs/MMcf	Log EF	Conventional	>80%	6	-1.40E+00	6.53E-01	1.00	Low NOx	>80%	6	-2.82E+00	2.62E-01	1.00	Yes
Heater, Ref. Gas	VOC	Formaldehyde	lbs/MMcf	Log EF	Low NOx	<80%	9	-1.02E+00	6.09E-01	1.00	Low NOx	>80%	6	-2.82E+00	2.62E-01	1.00	Yes
Heater, Ref. Gas	VOC	Hydrogen Sulfide	lbs/MMcf	EF	Conventional	>80%	6	5.91E-01	3.70E-01	0.00	Low NOx	<80%	9	3.98E-01	3.54E-01	0.00	No
Heater, Ref. Gas	VOC	Hydrogen Sulfide	lbs/MMcf	EF	Conventional	>80%	6	5.91E-01	3.70E-01	0.00	Low NOx	>80%	6	2.30E-01	2.30E-01	0.00	No
Heater, Ref. Gas	VOC	Hydrogen Sulfide	lbs/MMcf	EF	Low NOx	<80%	9	3.98E-01	3.54E-01	0.00	Low NOx	>80%	6	2.30E-01	2.30E-01	0.00	No
Heater, Ref. Gas	VOC	Hydrogen Sulfide	lbs/MMcf	Log EF	Conventional	>80%	6	-2.92E-01	2.50E-01	0.00	Low NOx	<80%	9	-5.37E-01	3.49E-01	0.00	No
Heater, Ref. Gas	VOC	Hydrogen Sulfide	lbs/MMcf	Log EF	Conventional	>80%	6	-2.92E-01	2.50E-01	0.00	Low NOx	>80%	6	-1.03E+00	7.37E-01	0.00	Yes
Heater, Ref. Gas	VOC	Hydrogen Sulfide	lbs/MMcf	Log EF	Low NOx	<80%	9	-5.37E-01	3.49E-01	0.00	Low NOx	>80%	6	-1.03E+00	7.37E-01	0.00	No
Heater, Ref. Gas	VOC	Propylene	lbs/MMcf	EF	Conventional	<80%	3	1.87E-03	9.64E-04	0.18	Conventional	>80%	6	2.14E-03	1.76E-04	0.00	No
Heater, Ref. Gas	VOC	Propylene	lbs/MMcf	Log EF	Conventional	<80%	3	-2.77E+00	2.31E-01	0.18	Conventional	>80%	6	-2.67E+00	3.55E-02	0.00	No
Heater, Ref. Gas	VOC	Toluene	lbs/MMcf	EF	Conventional	<80%	3	2.29E-02	3.24E-02	0.95	Conventional	>80%	12	1.16E-01	1.09E-01	0.50	No
Heater, Ref. Gas	VOC	Toluene	lbs/MMcf	EF	Conventional	<80%	3	2.29E-02	3.24E-02	0.95	Low NOx	<80%	12	2.29E-01	3.17E-01	0.55	No
Heater, Ref. Gas	VOC	Toluene	lbs/MMcf	EF	Conventional	<80%	3	2.29E-02	3.24E-02	0.95	Low NOx	>80%	6	5.23E-02	3.39E-02	0.79	No
Heater, Ref. Gas	VOC	Toluene	lbs/MMcf	EF	Conventional	>80%	12	1.16E-01	1.09E-01	0.50	Low NOx	<80%	12	2.29E-01	3.17E-01	0.55	No
Heater, Ref. Gas	VOC	Toluene	lbs/MMcf	EF	Conventional	>80%	12	1.16E-01	1.09E-01	0.50	Low NOx	>80%	6	5.23E-02	3.39E-02	0.79	No
Heater, Ref. Gas	VOC	Toluene	lbs/MMcf	EF	Low NOx	<80%	12	2.29E-01	3.17E-01	0.55	Low NOx	>80%	6	5.23E-02	3.39E-02	0.79	No
Heater, Ref. Gas	VOC	Toluene	lbs/MMcf	Log EF	Conventional	<80%	3	-1.99E+00	6.71E-01	0.95	Conventional	>80%	12	-1.20E+00	5.93E-01	0.50	No
Heater, Ref. Gas	VOC	Toluene	lbs/MMcf	Log EF	Conventional	<80%	3	-1.99E+00	6.71E-01	0.95	Low NOx	<80%	12	-8.61E-01	4.30E-01	0.55	Yes
Heater, Ref. Gas	VOC	Toluene	lbs/MMcf	Log EF	Conventional	<80%	3	-1.99E+00	6.71E-01	0.95	Low NOx	>80%	6	-1.37E+00	3.22E-01	0.79	No
Heater, Ref. Gas	VOC	Toluene	lbs/MMcf	Log EF	Conventional	>80%	12	-1.20E+00	5.93E-01	0.50	Low NOx	<80%	12	-8.61E-01	4.30E-01	0.55	No
Heater, Ref. Gas	VOC	Toluene	lbs/MMcf	Log EF	Conventional	>80%	12	-1.20E+00	5.93E-01	0.50	Low NOx	>80%	6	-1.37E+00	3.22E-01	0.79	No
Heater, Ref. Gas	VOC	Toluene	lbs/MMcf	Log EF	Low NOx	<80%	12	-8.61E-01	4.30E-01	0.55	Low NOx	>80%	6	-1.37E+00	3.22E-01	0.79	Yes
Heater, Ref. Gas	VOC	Xylene (Total)	lbs/MMcf	EF	Conventional	<80%	3	4.00E-02	5.14E-02	0.96	Conventional	>80%	6	2.94E-02	3.98E-02	0.88	No
Heater, Ref. Gas	VOC	Xylene (Total)	lbs/MMcf	EF	Conventional	<80%	3	4.00E-02	5.14E-02	0.96	Low NOx	<80%	3	5.06E-02	0.00E+00	0.00	No
Heater, Ref. Gas	VOC	Xylene (Total)	lbs/MMcf	EF	Conventional	>80%	6	2.94E-02	3.98E-02	0.88	Low NOx	<80%	3	5.06E-02	0.00E+00	0.00	No
Heater, Ref. Gas	VOC	Xylene (Total)	lbs/MMcf	Log EF	Conventional	<80%	3	-1.72E+00	6.84E-01	0.96	Conventional	>80%	6	-1.90E+00	6.01E-01	0.88	No
Heater, Ref. Gas	VOC	Xylene (Total)	lbs/MMcf	Log EF	Conventional	<80%	3	-1.72E+00	6.84E-01	0.96	Low NOx	<80%	3	-1.30E+00	0.00E+00	0.00	No
Heater, Ref. Gas	VOC	Xylene (Total)	lbs/MMcf	Log EF	Conventional	>80%	6	-1.90E+00	6.01E-01	0.88	Low NOx	<80%	3	-1.30E+00	0.00E+00	0.00	No
SG, Crude Oil	Metals	Arsenic	lbs/Mgal	EF	Conventional	>80%	3	6.86E-04	9.78E-05	1.00	Low NOx	<80%	3	1.89E-03	9.53E-04	1.00	No
SG, Crude Oil	Metals	Arsenic	lbs/Mgal	EF	Conventional	>80%	3	6.86E-04	9.78E-05	1.00	Low NOx	>80%	3	4.19E-04	6.10E-05	1.00	Yes
SG, Crude Oil	Metals	Arsenic	lbs/Mgal	EF	Low NOx	<80%	3	1.89E-03	9.53E-04	1.00	Low NOx	>80%	3	4.19E-04	6.10E-05	1.00	No
SG, Crude Oil	Metals	Arsenic	lbs/Mgal	Log EF	Conventional	>80%	3	-3.17E+00	5.98E-02	1.00	Low NOx	<80%	3	-2.77E+00	2.42E-01	1.00	Yes
SG, Crude Oil	Metals	Arsenic	lbs/Mgal	Log EF	Conventional	>80%	3	-3.17E+00	5.98E-02	1.00	Low NOx	>80%	3	-3.38E+00	6.36E-02	1.00	Yes
SG, Crude Oil	Metals	Arsenic	lbs/Mgal	Log EF	Low NOx	<80%	3	-2.77E+00	2.42E-01	1.00	Low NOx	>80%	3	-3.38E+00	6.36E-02	1.00	Yes
SG, Crude Oil	Metals	Beryllium	lbs/Mgal	EF	Low NOx	<80%	3	2.92E-04	4.49E-05	1.00	Low NOx	>80%	3	2.82E-04	4.07E-05	0.00	No
SG, Crude Oil	Metals	Beryllium	lbs/Mgal	Log EF	Low NOx	<80%	3	-3.54E+00	7.04E-02	1.00	Low NOx	>80%	3	-3.55E+00	6.42E-02	0.00	No
SG, Crude Oil	Metals	Cadmium	lbs/Mgal	EF	Conventional	>80%	3	2.81E-05	6.72E-06	1.00	Low NOx	<80%	3	1.87E-04	4.99E-05	1.00	Yes
SG, Crude Oil	Metals	Cadmium	lbs/Mgal	EF	Conventional	>80%	3	2.81E-05	6.72E-06	1.00	Low NOx	>80%	3	2.73E-04	2.41E-04	1.00	No

TABLE 6-12. EXTERNAL COMBUSTION BURNER AND LOAD COMPARISON.

Major Group	Category	Substance	EF Unit	Value Type	First Sample Statistics						Second Sample Statistics						Significant Difference at 95%Confidence
					Description		Size	Average	Standard Deviation	Detect Ratio	Description		Size	Average	Standard Deviation	Detect Ratio	
					Burner	Load					Burner	Load					
SG, Crude Oil	Metals	Cadmium	lbs/Mgal	EF	Low NOx	<80%	3	1.87E-04	4.99E-05	1.00	Low NOx	>80%	3	2.73E-04	2.41E-04	1.00	No
SG, Crude Oil	Metals	Cadmium	lbs/Mgal	Log EF	Conventional	>80%	3	-4.56E+00	9.85E-02	1.00	Low NOx	<80%	3	-3.74E+00	1.12E-01	1.00	Yes
SG, Crude Oil	Metals	Cadmium	lbs/Mgal	Log EF	Conventional	>80%	3	-4.56E+00	9.85E-02	1.00	Low NOx	>80%	3	-3.69E+00	4.09E-01	1.00	Yes
SG, Crude Oil	Metals	Cadmium	lbs/Mgal	Log EF	Low NOx	<80%	3	-3.74E+00	1.12E-01	1.00	Low NOx	>80%	3	-3.69E+00	4.09E-01	1.00	No
SG, Crude Oil	Metals	Chromium (Hex)	lbs/Mgal	EF	Conventional	>80%	3	9.26E-05	2.81E-06	0.00	Low NOx	<80%	3	1.38E-04	7.61E-05	0.86	No
SG, Crude Oil	Metals	Chromium (Hex)	lbs/Mgal	EF	Conventional	>80%	3	9.26E-05	2.81E-06	0.00	Low NOx	>80%	3	2.63E-04	6.61E-05	0.43	Yes
SG, Crude Oil	Metals	Chromium (Hex)	lbs/Mgal	EF	Low NOx	<80%	3	1.38E-04	7.61E-05	0.86	Low NOx	>80%	3	2.63E-04	6.61E-05	0.43	No
SG, Crude Oil	Metals	Chromium (Hex)	lbs/Mgal	Log EF	Conventional	>80%	3	-4.03E+00	1.31E-02	0.00	Low NOx	<80%	3	-3.92E+00	2.91E-01	0.86	No
SG, Crude Oil	Metals	Chromium (Hex)	lbs/Mgal	Log EF	Conventional	>80%	3	-4.03E+00	1.31E-02	0.00	Low NOx	>80%	3	-3.59E+00	1.06E-01	0.43	Yes
SG, Crude Oil	Metals	Chromium (Hex)	lbs/Mgal	Log EF	Low NOx	<80%	3	-3.92E+00	2.91E-01	0.86	Low NOx	>80%	3	-3.59E+00	1.06E-01	0.43	No
SG, Crude Oil	Metals	Chromium (Total)	lbs/Mgal	EF	Conventional	>80%	3	2.18E-04	8.24E-05	1.00	Low NOx	<80%	3	1.77E-03	3.49E-04	1.00	Yes
SG, Crude Oil	Metals	Chromium (Total)	lbs/Mgal	EF	Conventional	>80%	3	2.18E-04	8.24E-05	1.00	Low NOx	>80%	3	5.90E-04	2.73E-05	1.00	Yes
SG, Crude Oil	Metals	Chromium (Total)	lbs/Mgal	EF	Low NOx	<80%	3	1.77E-03	3.49E-04	1.00	Low NOx	>80%	3	5.90E-04	2.73E-05	1.00	Yes
SG, Crude Oil	Metals	Chromium (Total)	lbs/Mgal	Log EF	Conventional	>80%	3	-3.68E+00	1.58E-01	1.00	Low NOx	<80%	3	-2.76E+00	8.26E-02	1.00	Yes
SG, Crude Oil	Metals	Chromium (Total)	lbs/Mgal	Log EF	Conventional	>80%	3	-3.68E+00	1.58E-01	1.00	Low NOx	>80%	3	-3.23E+00	1.99E-02	1.00	Yes
SG, Crude Oil	Metals	Chromium (Total)	lbs/Mgal	Log EF	Low NOx	<80%	3	-2.76E+00	8.26E-02	1.00	Low NOx	>80%	3	-3.23E+00	1.99E-02	1.00	Yes
SG, Crude Oil	Metals	Copper	lbs/Mgal	EF	Conventional	>80%	3	6.46E-04	2.89E-04	1.00	Low NOx	<80%	3	1.55E-03	2.59E-04	1.00	Yes
SG, Crude Oil	Metals	Copper	lbs/Mgal	EF	Conventional	>80%	3	6.46E-04	2.89E-04	1.00	Low NOx	>80%	3	7.86E-04	1.38E-04	1.00	No
SG, Crude Oil	Metals	Copper	lbs/Mgal	EF	Low NOx	<80%	3	1.55E-03	2.59E-04	1.00	Low NOx	>80%	3	7.86E-04	1.38E-04	1.00	Yes
SG, Crude Oil	Metals	Copper	lbs/Mgal	Log EF	Conventional	>80%	3	-3.22E+00	1.79E-01	1.00	Low NOx	<80%	3	-2.81E+00	7.04E-02	1.00	Yes
SG, Crude Oil	Metals	Copper	lbs/Mgal	Log EF	Conventional	>80%	3	-3.22E+00	1.79E-01	1.00	Low NOx	>80%	3	-3.11E+00	7.58E-02	1.00	No
SG, Crude Oil	Metals	Copper	lbs/Mgal	Log EF	Low NOx	<80%	3	-2.81E+00	7.04E-02	1.00	Low NOx	>80%	3	-3.11E+00	7.58E-02	1.00	Yes
SG, Crude Oil	Metals	Lead	lbs/Mgal	EF	Conventional	>80%	3	3.74E-04	1.19E-04	1.00	Low NOx	<80%	3	2.64E-04	4.00E-06	0.00	No
SG, Crude Oil	Metals	Lead	lbs/Mgal	EF	Conventional	>80%	3	3.74E-04	1.19E-04	1.00	Low NOx	>80%	3	2.11E-04	3.04E-05	0.34	No
SG, Crude Oil	Metals	Lead	lbs/Mgal	EF	Low NOx	<80%	3	2.64E-04	4.00E-06	0.00	Low NOx	>80%	3	2.11E-04	3.04E-05	0.34	Yes
SG, Crude Oil	Metals	Lead	lbs/Mgal	Log EF	Conventional	>80%	3	-3.44E+00	1.46E-01	1.00	Low NOx	<80%	3	-3.58E+00	6.57E-03	0.00	No
SG, Crude Oil	Metals	Lead	lbs/Mgal	Log EF	Conventional	>80%	3	-3.44E+00	1.46E-01	1.00	Low NOx	>80%	3	-3.68E+00	6.38E-02	0.34	No
SG, Crude Oil	Metals	Lead	lbs/Mgal	Log EF	Low NOx	<80%	3	-3.58E+00	6.57E-03	0.00	Low NOx	>80%	3	-3.68E+00	6.38E-02	0.34	No
SG, Crude Oil	Metals	Manganese	lbs/Mgal	EF	Conventional	>80%	1	2.44E-04		1.00	Low NOx	<80%	3	3.20E-03	1.84E-03	1.00	No
SG, Crude Oil	Metals	Manganese	lbs/Mgal	EF	Conventional	>80%	1	2.44E-04		1.00	Low NOx	>80%	3	3.77E-03	1.74E-03	1.00	No
SG, Crude Oil	Metals	Manganese	lbs/Mgal	EF	Low NOx	<80%	3	3.20E-03	1.84E-03	1.00	Low NOx	>80%	3	3.77E-03	1.74E-03	1.00	No
SG, Crude Oil	Metals	Manganese	lbs/Mgal	Log EF	Conventional	>80%	1	-3.61E+00		1.00	Low NOx	<80%	3	-2.55E+00	2.59E-01	1.00	No
SG, Crude Oil	Metals	Manganese	lbs/Mgal	Log EF	Conventional	>80%	1	-3.61E+00		1.00	Low NOx	>80%	3	-2.45E+00	1.94E-01	1.00	Yes
SG, Crude Oil	Metals	Manganese	lbs/Mgal	Log EF	Low NOx	<80%	3	-2.55E+00	2.59E-01	1.00	Low NOx	>80%	3	-2.45E+00	1.94E-01	1.00	No
SG, Crude Oil	Metals	Mercury	lbs/Mgal	EF	Conventional	>80%	1	3.60E-05		1.00	Low NOx	<80%	3	5.06E-03	9.89E-05	1.00	Yes
SG, Crude Oil	Metals	Mercury	lbs/Mgal	EF	Conventional	>80%	1	3.60E-05		1.00	Low NOx	>80%	3	3.35E-05	2.23E-05	1.00	No
SG, Crude Oil	Metals	Mercury	lbs/Mgal	EF	Low NOx	<80%	3	5.06E-03	9.89E-05	1.00	Low NOx	>80%	3	3.35E-05	2.23E-05	1.00	Yes
SG, Crude Oil	Metals	Mercury	lbs/Mgal	Log EF	Conventional	>80%	1	-4.44E+00		1.00	Low NOx	<80%	3	-2.30E+00	8.47E-03	1.00	Yes
SG, Crude Oil	Metals	Mercury	lbs/Mgal	Log EF	Conventional	>80%	1	-4.44E+00		1.00	Low NOx	>80%	3	-4.58E+00	4.20E-01	1.00	No
SG, Crude Oil	Metals	Mercury	lbs/Mgal	Log EF	Low NOx	<80%	3	-2.30E+00	8.47E-03	1.00	Low NOx	>80%	3	-4.58E+00	4.20E-01	1.00	Yes
SG, Crude Oil	Metals	Nickel	lbs/Mgal	EF	Conventional	>80%	3	3.72E-01	2.53E-02	1.00	Low NOx	<80%	3	3.48E-01	1.97E-02	1.00	No
SG, Crude Oil	Metals	Nickel	lbs/Mgal	EF	Conventional	>80%	3	3.72E-01	2.53E-02	1.00	Low NOx	>80%	3	3.62E-01	1.68E-02	1.00	No
SG, Crude Oil	Metals	Nickel	lbs/Mgal	EF	Low NOx	<80%	3	3.48E-01	1.97E-02	1.00	Low NOx	>80%	3	3.62E-01	1.68E-02	1.00	No
SG, Crude Oil	Metals	Nickel	lbs/Mgal	Log EF	Conventional	>80%	3	-4.30E-01	2.89E-02	1.00	Low NOx	<80%	3	-4.59E-01	2.49E-02	1.00	No
SG, Crude Oil	Metals	Nickel	lbs/Mgal	Log EF	Conventional	>80%	3	-4.30E-01	2.89E-02	1.00	Low NOx	>80%	3	-4.42E-01	2.01E-02	1.00	No
SG, Crude Oil	Metals	Nickel	lbs/Mgal	Log EF	Low NOx	<80%	3	-4.59E-01	2.49E-02	1.00	Low NOx	>80%	3	-4.42E-01	2.01E-02	1.00	No
SG, Crude Oil	Metals	Phosphorus	lbs/Mgal	EF	Low NOx	<80%	3	4.11E-02	3.40E-02	1.00	Low NOx	>80%	3	1.20E-02	4.53E-03	1.00	No
SG, Crude Oil	Metals	Phosphorus	lbs/Mgal	Log EF	Low NOx	<80%	3	-1.67E+00	7.76E-01	1.00	Low NOx	>80%	3	-1.94E+00	1.81E-01	1.00	No
SG, Crude Oil	Metals	Selenium	lbs/Mgal	EF	Conventional	>80%	3	4.41E-04	9.79E-05	1.00	Low NOx	<80%	3	2.87E-03	1.96E-04	1.00	Yes
SG, Crude Oil	Metals	Selenium	lbs/Mgal	EF	Conventional	>80%	3	4.41E-04	9.79E-05	1.00	Low NOx	>80%	3	2.38E-04	7.29E-05	0.45	Yes

TABLE 6-12. EXTERNAL COMBUSTION BURNER AND LOAD COMPARISON.

Major Group	Category	Substance	EF Unit	Value Type	First Sample Statistics						Second Sample Statistics						Significant Difference at 95%Confidence
					Description		Size	Average	Standard Deviation	Detect Ratio	Description		Size	Average	Standard Deviation	Detect Ratio	
					Burner	Load					Burner	Load					
SG, Crude Oil	Metals	Selenium	lbs/Mgal	EF	Low NOx	<80%	3	2.87E-03	1.96E-04	1.00	Low NOx	>80%	3	2.38E-04	7.29E-05	0.45	Yes
SG, Crude Oil	Metals	Selenium	lbs/Mgal	Log EF	Conventional	>80%	3	-3.36E+00	9.86E-02	1.00	Low NOx	<80%	3	-2.54E+00	2.92E-02	1.00	Yes
SG, Crude Oil	Metals	Selenium	lbs/Mgal	Log EF	Conventional	>80%	3	-3.36E+00	9.86E-02	1.00	Low NOx	>80%	3	-3.64E+00	1.28E-01	0.45	Yes
SG, Crude Oil	Metals	Selenium	lbs/Mgal	Log EF	Low NOx	<80%	3	-2.54E+00	2.92E-02	1.00	Low NOx	>80%	3	-3.64E+00	1.28E-01	0.45	Yes
SG, Crude Oil	Metals	Zinc	lbs/Mgal	EF	Conventional	>80%	3	3.28E-02	3.26E-02	1.00	Low NOx	<80%	3	1.96E-01	1.08E-01	1.00	No
SG, Crude Oil	Metals	Zinc	lbs/Mgal	EF	Conventional	>80%	3	3.28E-02	3.26E-02	1.00	Low NOx	>80%	3	1.41E-02	2.01E-03	0.00	No
SG, Crude Oil	Metals	Zinc	lbs/Mgal	EF	Low NOx	<80%	3	1.96E-01	1.08E-01	1.00	Low NOx	>80%	3	1.41E-02	2.01E-03	0.00	Yes
SG, Crude Oil	Metals	Zinc	lbs/Mgal	Log EF	Conventional	>80%	3	-1.78E+00	7.52E-01	1.00	Low NOx	<80%	3	-7.70E-01	3.14E-01	1.00	No
SG, Crude Oil	Metals	Zinc	lbs/Mgal	Log EF	Conventional	>80%	3	-1.78E+00	7.52E-01	1.00	Low NOx	>80%	3	-1.85E+00	6.32E-02	0.00	No
SG, Crude Oil	Metals	Zinc	lbs/Mgal	Log EF	Low NOx	<80%	3	-7.70E-01	3.14E-01	1.00	Low NOx	>80%	3	-1.85E+00	6.32E-02	0.00	Yes
SG, Crude Oil	PAH	Acenaphthene	lbs/Mgal	EF	Low NOx	<80%	3	6.56E-05	4.41E-05	1.00	Low NOx	>80%	3	1.03E-05	1.42E-05	1.00	No
SG, Crude Oil	PAH	Acenaphthene	lbs/Mgal	Log EF	Low NOx	<80%	3	-4.30E+00	4.57E-01	1.00	Low NOx	>80%	3	-5.35E+00	7.11E-01	1.00	No
SG, Crude Oil	PAH	Acenaphthylene	lbs/Mgal	EF	Conventional	>80%	3	8.63E-06	8.44E-06	1.00	Low NOx	<80%	3	1.20E-05	4.87E-07	0.00	No
SG, Crude Oil	PAH	Acenaphthylene	lbs/Mgal	EF	Conventional	>80%	3	8.63E-06	8.44E-06	1.00	Low NOx	>80%	3	1.85E-06	2.14E-06	1.00	No
SG, Crude Oil	PAH	Acenaphthylene	lbs/Mgal	EF	Low NOx	<80%	3	1.20E-05	4.87E-07	0.00	Low NOx	>80%	3	1.85E-06	2.14E-06	1.00	Yes
SG, Crude Oil	PAH	Acenaphthylene	lbs/Mgal	Log EF	Conventional	>80%	3	-5.26E+00	5.55E-01	1.00	Low NOx	<80%	3	-4.92E+00	1.76E-02	0.00	No
SG, Crude Oil	PAH	Acenaphthylene	lbs/Mgal	Log EF	Conventional	>80%	3	-5.26E+00	5.55E-01	1.00	Low NOx	>80%	3	-6.00E+00	6.51E-01	1.00	No
SG, Crude Oil	PAH	Acenaphthylene	lbs/Mgal	Log EF	Low NOx	<80%	3	-4.92E+00	1.76E-02	0.00	Low NOx	>80%	3	-6.00E+00	6.51E-01	1.00	Yes
SG, Crude Oil	PAH	Anthracene	lbs/Mgal	EF	Conventional	>80%	2	1.29E-05	1.72E-05	1.00	Low NOx	<80%	3	3.26E-06	2.14E-07	1.00	No
SG, Crude Oil	PAH	Anthracene	lbs/Mgal	EF	Conventional	>80%	2	1.29E-05	1.72E-05	1.00	Low NOx	>80%	3	8.64E-06	1.29E-05	1.00	No
SG, Crude Oil	PAH	Anthracene	lbs/Mgal	EF	Low NOx	<80%	3	3.26E-06	2.14E-07	1.00	Low NOx	>80%	3	8.64E-06	1.29E-05	1.00	No
SG, Crude Oil	PAH	Anthracene	lbs/Mgal	Log EF	Conventional	>80%	2	-5.36E+00	1.08E+00	1.00	Low NOx	<80%	3	-5.49E+00	2.81E-02	1.00	No
SG, Crude Oil	PAH	Anthracene	lbs/Mgal	Log EF	Conventional	>80%	2	-5.36E+00	1.08E+00	1.00	Low NOx	>80%	3	-5.60E+00	9.35E-01	1.00	No
SG, Crude Oil	PAH	Anthracene	lbs/Mgal	Log EF	Low NOx	<80%	3	-5.49E+00	2.81E-02	1.00	Low NOx	>80%	3	-5.60E+00	9.35E-01	1.00	No
SG, Crude Oil	PAH	Benzo(a)anthracene	lbs/Mgal	EF	Conventional	>80%	2	3.16E-06	2.49E-06	1.00	Low NOx	<80%	3	1.20E-05	4.87E-07	0.00	Yes
SG, Crude Oil	PAH	Benzo(a)anthracene	lbs/Mgal	EF	Conventional	>80%	2	3.16E-06	2.49E-06	1.00	Low NOx	>80%	3	6.58E-06	7.48E-06	1.00	No
SG, Crude Oil	PAH	Benzo(a)anthracene	lbs/Mgal	EF	Low NOx	<80%	3	1.20E-05	4.87E-07	0.00	Low NOx	>80%	3	6.58E-06	7.48E-06	1.00	No
SG, Crude Oil	PAH	Benzo(a)anthracene	lbs/Mgal	Log EF	Conventional	>80%	2	-5.58E+00	3.87E-01	1.00	Low NOx	<80%	3	-4.92E+00	1.76E-02	0.00	Yes
SG, Crude Oil	PAH	Benzo(a)anthracene	lbs/Mgal	Log EF	Conventional	>80%	2	-5.58E+00	3.87E-01	1.00	Low NOx	>80%	3	-5.49E+00	7.31E-01	1.00	No
SG, Crude Oil	PAH	Benzo(a)anthracene	lbs/Mgal	Log EF	Low NOx	<80%	3	-4.92E+00	1.76E-02	0.00	Low NOx	>80%	3	-5.49E+00	7.31E-01	1.00	No
SG, Crude Oil	PAH	Benzo(a)pyrene	lbs/Mgal	EF	Low NOx	<80%	3	1.20E-05	4.87E-07	0.00	Low NOx	>80%	3	4.09E-06	3.47E-06	0.96	Yes
SG, Crude Oil	PAH	Benzo(a)pyrene	lbs/Mgal	Log EF	Low NOx	<80%	3	-4.92E+00	1.76E-02	0.00	Low NOx	>80%	3	-5.59E+00	6.04E-01	0.96	No
SG, Crude Oil	PAH	Benzo(g,h,i)perylene	lbs/Mgal	EF	Low NOx	<80%	3	1.20E-05	4.87E-07	0.00	Low NOx	>80%	3	3.56E-06	2.69E-06	0.90	Yes
SG, Crude Oil	PAH	Benzo(g,h,i)perylene	lbs/Mgal	Log EF	Low NOx	<80%	3	-4.92E+00	1.76E-02	0.00	Low NOx	>80%	3	-5.55E+00	3.92E-01	0.90	Yes
SG, Crude Oil	PAH	Chrysene	lbs/Mgal	EF	Conventional	>80%	3	1.37E-05	1.81E-05	1.00	Low NOx	<80%	3	1.20E-05	4.87E-07	0.00	No
SG, Crude Oil	PAH	Chrysene	lbs/Mgal	EF	Conventional	>80%	3	1.37E-05	1.81E-05	1.00	Low NOx	>80%	3	7.82E-06	9.07E-06	1.00	No
SG, Crude Oil	PAH	Chrysene	lbs/Mgal	EF	Low NOx	<80%	3	1.20E-05	4.87E-07	0.00	Low NOx	>80%	3	7.82E-06	9.07E-06	1.00	No
SG, Crude Oil	PAH	Chrysene	lbs/Mgal	Log EF	Conventional	>80%	3	-5.16E+00	6.26E-01	1.00	Low NOx	<80%	3	-4.92E+00	1.76E-02	0.00	No
SG, Crude Oil	PAH	Chrysene	lbs/Mgal	Log EF	Conventional	>80%	3	-5.16E+00	6.26E-01	1.00	Low NOx	>80%	3	-5.36E+00	6.15E-01	1.00	No
SG, Crude Oil	PAH	Chrysene	lbs/Mgal	Log EF	Low NOx	<80%	3	-4.92E+00	1.76E-02	0.00	Low NOx	>80%	3	-5.36E+00	6.15E-01	1.00	No
SG, Crude Oil	PAH	Dibenz(a,h)anthracene	lbs/Mgal	EF	Low NOx	<80%	3	1.20E-05	4.87E-07	0.00	Low NOx	>80%	3	3.91E-06	3.26E-06	0.00	Yes
SG, Crude Oil	PAH	Dibenz(a,h)anthracene	lbs/Mgal	Log EF	Low NOx	<80%	3	-4.92E+00	1.76E-02	0.00	Low NOx	>80%	3	-5.53E+00	4.24E-01	0.00	No
SG, Crude Oil	PAH	Fluoranthene	lbs/Mgal	EF	Conventional	>80%	3	5.66E-06	8.23E-07	1.00	Low NOx	<80%	3	1.20E-05	4.87E-07	0.00	Yes
SG, Crude Oil	PAH	Fluoranthene	lbs/Mgal	EF	Conventional	>80%	3	5.66E-06	8.23E-07	1.00	Low NOx	>80%	3	2.17E-05	2.70E-05	1.00	No
SG, Crude Oil	PAH	Fluoranthene	lbs/Mgal	EF	Low NOx	<80%	3	1.20E-05	4.87E-07	0.00	Low NOx	>80%	3	2.17E-05	2.70E-05	1.00	No
SG, Crude Oil	PAH	Fluoranthene	lbs/Mgal	Log EF	Conventional	>80%	3	-5.25E+00	6.09E-02	1.00	Low NOx	<80%	3	-4.92E+00	1.76E-02	0.00	Yes
SG, Crude Oil	PAH	Fluoranthene	lbs/Mgal	Log EF	Conventional	>80%	3	-5.25E+00	6.09E-02	1.00	Low NOx	>80%	3	-5.06E+00	8.53E-01	1.00	No
SG, Crude Oil	PAH	Fluoranthene	lbs/Mgal	Log EF	Low NOx	<80%	3	-4.92E+00	1.76E-02	0.00	Low NOx	>80%	3	-5.06E+00	8.53E-01	1.00	No
SG, Crude Oil	PAH	Fluorene	lbs/Mgal	EF	Conventional	>80%	3	1.70E-05	1.99E-05	1.00	Low NOx	<80%	3	7.38E-06	3.11E-06	1.00	No
SG, Crude Oil	PAH	Fluorene	lbs/Mgal	EF	Conventional	>80%	3	1.70E-05	1.99E-05	1.00	Low NOx	>80%	3	1.81E-05	2.42E-05	1.00	No

TABLE 6-12. EXTERNAL COMBUSTION BURNER AND LOAD COMPARISON.

Major Group	Category	Substance	EF Unit	Value Type	First Sample Statistics						Second Sample Statistics						Significant Difference at 95%Confidence
					Description		Size	Average	Standard Deviation	Detect Ratio	Description		Size	Average	Standard Deviation	Detect Ratio	
					Burner	Load					Burner	Load					
SG, Crude Oil	PAH	Fluorene	lbs/Mgal	EF	Low NOx	<80%	3	7.38E-06	3.11E-06	1.00	Low NOx	>80%	3	1.81E-05	2.42E-05	1.00	No
SG, Crude Oil	PAH	Fluorene	lbs/Mgal	Log EF	Conventional	>80%	3	-4.98E+00	5.17E-01	1.00	Low NOx	<80%	3	-5.16E+00	1.91E-01	1.00	No
SG, Crude Oil	PAH	Fluorene	lbs/Mgal	Log EF	Conventional	>80%	3	-4.98E+00	5.17E-01	1.00	Low NOx	>80%	3	-5.15E+00	8.17E-01	1.00	No
SG, Crude Oil	PAH	Fluorene	lbs/Mgal	Log EF	Low NOx	<80%	3	-5.16E+00	1.91E-01	1.00	Low NOx	>80%	3	-5.15E+00	8.17E-01	1.00	No
SG, Crude Oil	PAH	Indeno(1,2,3-cd)pyrene	lbs/Mgal	EF	Low NOx	<80%	3	1.20E-05	4.87E-07	0.00	Low NOx	>80%	3	3.91E-06	4.04E-06	0.91	Yes
SG, Crude Oil	PAH	Indeno(1,2,3-cd)pyrene	lbs/Mgal	Log EF	Low NOx	<80%	3	-4.92E+00	1.76E-02	0.00	Low NOx	>80%	3	-5.57E+00	4.60E-01	0.91	No
SG, Crude Oil	PAH	Naphthalene	lbs/Mgal	EF	Conventional	>80%	2	4.08E-04	1.61E-04	1.00	Low NOx	<80%	3	2.82E-04	8.74E-05	1.00	No
SG, Crude Oil	PAH	Naphthalene	lbs/Mgal	EF	Conventional	>80%	2	4.08E-04	1.61E-04	1.00	Low NOx	>80%	3	1.57E-03	6.85E-05	1.00	Yes
SG, Crude Oil	PAH	Naphthalene	lbs/Mgal	EF	Low NOx	<80%	3	2.82E-04	8.74E-05	1.00	Low NOx	>80%	3	1.57E-03	6.85E-05	1.00	Yes
SG, Crude Oil	PAH	Naphthalene	lbs/Mgal	Log EF	Conventional	>80%	2	-3.41E+00	1.76E-01	1.00	Low NOx	<80%	3	-3.56E+00	1.30E-01	1.00	No
SG, Crude Oil	PAH	Naphthalene	lbs/Mgal	Log EF	Conventional	>80%	2	-3.41E+00	1.76E-01	1.00	Low NOx	>80%	3	-2.80E+00	1.92E-02	1.00	Yes
SG, Crude Oil	PAH	Naphthalene	lbs/Mgal	Log EF	Low NOx	<80%	3	-3.56E+00	1.30E-01	1.00	Low NOx	>80%	3	-2.80E+00	1.92E-02	1.00	Yes
SG, Crude Oil	PAH	Phenanthrene	lbs/Mgal	EF	Conventional	>80%	3	4.67E-06	4.25E-06	1.00	Low NOx	<80%	3	6.69E-06	8.76E-07	1.00	No
SG, Crude Oil	PAH	Phenanthrene	lbs/Mgal	EF	Conventional	>80%	3	4.67E-06	4.25E-06	1.00	Low NOx	>80%	3	6.33E-05	8.62E-05	1.00	No
SG, Crude Oil	PAH	Phenanthrene	lbs/Mgal	EF	Low NOx	<80%	3	6.69E-06	8.76E-07	1.00	Low NOx	>80%	3	6.33E-05	8.62E-05	1.00	No
SG, Crude Oil	PAH	Phenanthrene	lbs/Mgal	Log EF	Conventional	>80%	3	-5.44E+00	3.67E-01	1.00	Low NOx	<80%	3	-5.18E+00	5.89E-02	1.00	No
SG, Crude Oil	PAH	Phenanthrene	lbs/Mgal	Log EF	Conventional	>80%	3	-5.44E+00	3.67E-01	1.00	Low NOx	>80%	3	-4.60E+00	7.90E-01	1.00	No
SG, Crude Oil	PAH	Phenanthrene	lbs/Mgal	Log EF	Low NOx	<80%	3	-5.18E+00	5.89E-02	1.00	Low NOx	>80%	3	-4.60E+00	7.90E-01	1.00	No
SG, Crude Oil	PAH	Pyrene	lbs/Mgal	EF	Conventional	>80%	3	4.43E-05	2.53E-05	1.00	Low NOx	<80%	3	1.20E-05	4.87E-07	0.00	No
SG, Crude Oil	PAH	Pyrene	lbs/Mgal	EF	Conventional	>80%	3	4.43E-05	2.53E-05	1.00	Low NOx	>80%	3	1.17E-05	1.41E-05	1.00	No
SG, Crude Oil	PAH	Pyrene	lbs/Mgal	EF	Low NOx	<80%	3	1.20E-05	4.87E-07	0.00	Low NOx	>80%	3	1.17E-05	1.41E-05	1.00	No
SG, Crude Oil	PAH	Pyrene	lbs/Mgal	Log EF	Conventional	>80%	3	-4.40E+00	2.48E-01	1.00	Low NOx	<80%	3	-4.92E+00	1.76E-02	0.00	Yes
SG, Crude Oil	PAH	Pyrene	lbs/Mgal	Log EF	Conventional	>80%	3	-4.40E+00	2.48E-01	1.00	Low NOx	>80%	3	-5.24E+00	7.09E-01	1.00	No
SG, Crude Oil	PAH	Pyrene	lbs/Mgal	Log EF	Low NOx	<80%	3	-4.92E+00	1.76E-02	0.00	Low NOx	>80%	3	-5.24E+00	7.09E-01	1.00	No
SG, Crude Oil	VOC	Acetaldehyde	lbs/Mgal	EF	Low NOx	<80%	3	3.68E-03	2.47E-04	0.00	Low NOx	>80%	6	2.16E-03	1.48E-03	1.00	No
SG, Crude Oil	VOC	Acetaldehyde	lbs/Mgal	Log EF	Low NOx	<80%	3	-2.43E+00	2.98E-02	0.00	Low NOx	>80%	6	-2.73E+00	2.33E-01	1.00	No
SG, Crude Oil	VOC	Acrolein	lbs/Mgal	EF	Low NOx	<80%	3	4.35E-03	2.92E-04	0.00	Low NOx	>80%	6	4.99E-04	9.20E-12	0.00	Yes
SG, Crude Oil	VOC	Acrolein	lbs/Mgal	Log EF	Low NOx	<80%	3	-2.36E+00	2.98E-02	0.00	Low NOx	>80%	6	-3.30E+00	5.33E-08	0.00	Yes
SG, Crude Oil	VOC	Benzene	lbs/Mgal	EF	Low NOx	<80%	3	3.00E-04	5.14E-12	0.00	Low NOx	>80%	6	7.70E-04	1.70E-04	0.43	Yes
SG, Crude Oil	VOC	Benzene	lbs/Mgal	Log EF	Low NOx	<80%	3	-3.52E+00	5.96E-08	0.00	Low NOx	>80%	6	-3.12E+00	9.09E-02	0.43	Yes
SG, Crude Oil	VOC	Formaldehyde	lbs/Mgal	EF	Low NOx	<80%	3	1.57E-03	1.06E-04	0.00	Low NOx	>80%	6	6.30E-04	1.84E-04	1.00	Yes
SG, Crude Oil	VOC	Formaldehyde	lbs/Mgal	Log EF	Low NOx	<80%	3	-2.80E+00	2.98E-02	0.00	Low NOx	>80%	6	-3.22E+00	1.40E-01	1.00	Yes
SG, Crude Oil	VOC	Propylene	lbs/Mgal	EF	Low NOx	<80%	3	1.70E-01	0.00E+00	0.00	Low NOx	>80%	6	1.87E-03	0.00E+00	0.00	NA
SG, Crude Oil	VOC	Propylene	lbs/Mgal	Log EF	Low NOx	<80%	3	-7.69E-01	0.00E+00	0.00	Low NOx	>80%	6	-2.73E+00	0.00E+00	0.00	NA
SG, Crude Oil	VOC	Toluene	lbs/Mgal	EF	Low NOx	<80%	3	6.58E-03	4.38E-03	1.00	Low NOx	>80%	6	2.05E-03	2.60E-11	0.33	Yes
SG, Crude Oil	VOC	Toluene	lbs/Mgal	Log EF	Low NOx	<80%	3	-2.24E+00	2.74E-01	1.00	Low NOx	>80%	6	-2.69E+00	0.00E+00	0.33	Yes
SG, Crude Oil	VOC	Xylene (Total)	lbs/Mgal	EF	Low NOx	<80%	3	4.29E-04	0.00E+00	0.00	Low NOx	>80%	6	4.72E-03	0.00E+00	0.00	NA
SG, Crude Oil	VOC	Xylene (Total)	lbs/Mgal	Log EF	Low NOx	<80%	3	-3.37E+00	0.00E+00	0.00	Low NOx	>80%	6	-2.33E+00	0.00E+00	0.00	NA
SG, Natural Gas	VOC	Benzene	lbs/MMcf	EF	NC	<80%	3	3.84E-03	1.38E-05	0.00	NC	?	3	3.88E-03	5.82E-11	0.00	Yes
SG, Natural Gas	VOC	Benzene	lbs/MMcf	Log EF	NC	<80%	3	-2.42E+00	1.56E-03	0.00	NC	?	3	-2.41E+00	0.00E+00	0.00	Yes
SG, Natural Gas	VOC	Formaldehyde	lbs/MMcf	EF	NC	<80%	3	5.03E-02	3.69E-02	1.00	NC	?	3	8.72E-03	6.29E-03	1.00	No
SG, Natural Gas	VOC	Formaldehyde	lbs/MMcf	Log EF	NC	<80%	3	-1.38E+00	3.24E-01	1.00	NC	?	3	-2.13E+00	3.06E-01	1.00	Yes
SG, Natural Gas	VOC	Toluene	lbs/MMcf	EF	NC	<80%	3	1.19E-02	4.27E-05	0.00	NC	?	3	1.20E-02	1.65E-10	0.00	Yes
SG, Natural Gas	VOC	Toluene	lbs/MMcf	Log EF	NC	<80%	3	-1.92E+00	1.56E-03	0.00	NC	?	3	-1.92E+00	0.00E+00	0.00	Yes
SG, Natural Gas	VOC	Xylene (Total)	lbs/MMcf	EF	NC	<80%	3	2.75E-02	9.84E-05	0.00	NC	?	3	2.77E-02	4.66E-10	0.00	Yes
SG, Natural Gas	VOC	Xylene (Total)	lbs/MMcf	Log EF	NC	<80%	3	-1.56E+00	1.56E-03	0.00	NC	?	3	-1.56E+00	0.00E+00	0.00	Yes
SG, Natural/CVR Gas	PAH	Acenaphthene	lbs/MMcf	EF	Conventional	<80%	3	1.38E-06	9.82E-07	0.90	Low NOx	<80%	3	7.01E-07	5.56E-08	0.36	No
SG, Natural/CVR Gas	PAH	Acenaphthene	lbs/MMcf	Log EF	Conventional	<80%	3	-5.96E+00	3.88E-01	0.90	Low NOx	<80%	3	-6.16E+00	3.39E-02	0.36	No
SG, Natural/CVR Gas	PAH	Acenaphthylene	lbs/MMcf	EF	Conventional	<80%	3	4.74E-06	5.06E-06	0.97	Low NOx	<80%	3	6.58E-07	2.32E-08	0.00	No
SG, Natural/CVR Gas	PAH	Acenaphthylene	lbs/MMcf	Log EF	Conventional	<80%	3	-5.61E+00	7.11E-01	0.97	Low NOx	<80%	3	-6.18E+00	1.53E-02	0.00	No

TABLE 6-12. EXTERNAL COMBUSTION BURNER AND LOAD COMPARISON.

Major Group	Category	Substance	EF Unit	Value Type	First Sample Statistics						Second Sample Statistics						Significant Difference at 95%Confidence
					Description		Size	Average	Standard Deviation	Detect Ratio	Description		Size	Average	Standard Deviation	Detect Ratio	
					Burner	Load					Burner	Load					
SG, Natural/CVR Gas	PAH	Anthracene	lbs/MMcf	EF	Conventional	<80%	3	2.04E-06	1.41E-06	0.93	Low NOx	<80%	3	2.14E-06	1.51E-06	1.00	No
SG, Natural/CVR Gas	PAH	Anthracene	lbs/MMcf	Log EF	Conventional	<80%	3	-5.82E+00	4.86E-01	0.93	Low NOx	<80%	3	-5.74E+00	3.14E-01	1.00	No
SG, Natural/CVR Gas	PAH	Benzo(a)anthracene	lbs/MMcf	EF	Conventional	<80%	3	1.13E-06	2.46E-08	0.00	Low NOx	<80%	3	1.32E-06	7.61E-07	0.83	No
SG, Natural/CVR Gas	PAH	Benzo(a)anthracene	lbs/MMcf	Log EF	Conventional	<80%	3	-5.95E+00	9.45E-03	0.00	Low NOx	<80%	3	-5.93E+00	2.51E-01	0.83	No
SG, Natural/CVR Gas	PAH	Benzo(a)pyrene	lbs/MMcf	EF	Conventional	<80%	3	7.14E-07	5.34E-07	0.62	Low NOx	<80%	3	6.58E-07	2.32E-08	0.00	No
SG, Natural/CVR Gas	PAH	Benzo(a)pyrene	lbs/MMcf	Log EF	Conventional	<80%	3	-6.22E+00	2.98E-01	0.62	Low NOx	<80%	3	-6.18E+00	1.53E-02	0.00	No
SG, Natural/CVR Gas	PAH	Benzo(b)fluoranthene	lbs/MMcf	EF	Conventional	<80%	3	3.35E-06	1.93E-06	1.00	Low NOx	<80%	3	6.58E-07	2.32E-08	0.00	No
SG, Natural/CVR Gas	PAH	Benzo(b)fluoranthene	lbs/MMcf	Log EF	Conventional	<80%	3	-5.55E+00	3.39E-01	1.00	Low NOx	<80%	3	-6.18E+00	1.53E-02	0.00	Yes
SG, Natural/CVR Gas	PAH	Benzo(g,h,i)perylene	lbs/MMcf	EF	Conventional	<80%	3	1.30E-06	7.71E-07	0.89	Low NOx	<80%	3	6.58E-07	2.32E-08	0.00	No
SG, Natural/CVR Gas	PAH	Benzo(g,h,i)perylene	lbs/MMcf	Log EF	Conventional	<80%	3	-5.97E+00	3.62E-01	0.89	Low NOx	<80%	3	-6.18E+00	1.53E-02	0.00	No
SG, Natural/CVR Gas	PAH	Benzo(k)fluoranthene	lbs/MMcf	EF	Conventional	<80%	3	9.84E-07	5.11E-07	0.86	Low NOx	<80%	3	6.58E-07	2.32E-08	0.00	No
SG, Natural/CVR Gas	PAH	Benzo(k)fluoranthene	lbs/MMcf	Log EF	Conventional	<80%	3	-6.06E+00	2.84E-01	0.86	Low NOx	<80%	3	-6.18E+00	1.53E-02	0.00	No
SG, Natural/CVR Gas	PAH	Chrysene	lbs/MMcf	EF	Conventional	<80%	3	1.85E-06	4.05E-08	0.00	Low NOx	<80%	3	1.25E-06	7.95E-07	0.82	No
SG, Natural/CVR Gas	PAH	Chrysene	lbs/MMcf	Log EF	Conventional	<80%	3	-5.73E+00	9.45E-03	0.00	Low NOx	<80%	3	-5.96E+00	2.60E-01	0.82	No
SG, Natural/CVR Gas	PAH	Dibenz(a,h)anthracene	lbs/MMcf	EF	Conventional	<80%	3	4.02E-07	8.80E-09	0.00	Low NOx	<80%	3	6.58E-07	2.32E-08	0.00	Yes
SG, Natural/CVR Gas	PAH	Dibenz(a,h)anthracene	lbs/MMcf	Log EF	Conventional	<80%	3	-6.40E+00	9.45E-03	0.00	Low NOx	<80%	3	-6.18E+00	1.53E-02	0.00	Yes
SG, Natural/CVR Gas	PAH	Fluoranthene	lbs/MMcf	EF	Conventional	<80%	3	6.03E-06	3.93E-06	1.00	Low NOx	<80%	3	1.29E-06	4.76E-07	1.00	No
SG, Natural/CVR Gas	PAH	Fluoranthene	lbs/MMcf	Log EF	Conventional	<80%	3	-5.32E+00	4.15E-01	1.00	Low NOx	<80%	3	-5.91E+00	1.49E-01	1.00	No
SG, Natural/CVR Gas	PAH	Fluorene	lbs/MMcf	EF	Conventional	<80%	3	9.08E-06	6.02E-06	1.00	Low NOx	<80%	3	2.18E-06	5.44E-07	1.00	No
SG, Natural/CVR Gas	PAH	Fluorene	lbs/MMcf	Log EF	Conventional	<80%	3	-5.16E+00	4.43E-01	1.00	Low NOx	<80%	3	-5.67E+00	1.04E-01	1.00	No
SG, Natural/CVR Gas	PAH	Indeno(1,2,3-cd)pyrene	lbs/MMcf	EF	Conventional	<80%	3	1.67E-06	1.09E-06	0.92	Low NOx	<80%	3	6.58E-07	2.32E-08	0.00	No
SG, Natural/CVR Gas	PAH	Indeno(1,2,3-cd)pyrene	lbs/MMcf	Log EF	Conventional	<80%	3	-5.89E+00	4.31E-01	0.92	Low NOx	<80%	3	-6.18E+00	1.53E-02	0.00	No
SG, Natural/CVR Gas	PAH	Naphthalene	lbs/MMcf	EF	Conventional	<80%	3	4.12E-04	1.42E-04	1.00	Low NOx	<80%	3	1.66E-04	1.45E-05	1.00	Yes
SG, Natural/CVR Gas	PAH	Naphthalene	lbs/MMcf	Log EF	Conventional	<80%	3	-3.40E+00	1.56E-01	1.00	Low NOx	<80%	3	-3.78E+00	3.87E-02	1.00	Yes
SG, Natural/CVR Gas	PAH	Phenanthrene	lbs/MMcf	EF	Conventional	<80%	3	2.18E-05	1.34E-05	1.00	Low NOx	<80%	3	1.11E-05	3.63E-06	1.00	No
SG, Natural/CVR Gas	PAH	Phenanthrene	lbs/MMcf	Log EF	Conventional	<80%	3	-4.75E+00	3.75E-01	1.00	Low NOx	<80%	3	-4.97E+00	1.33E-01	1.00	No
SG, Natural/CVR Gas	PAH	Pyrene	lbs/MMcf	EF	Conventional	<80%	3	1.02E-05	7.40E-06	1.00	Low NOx	<80%	3	1.82E-06	1.06E-06	1.00	No
SG, Natural/CVR Gas	PAH	Pyrene	lbs/MMcf	Log EF	Conventional	<80%	3	-5.11E+00	4.24E-01	1.00	Low NOx	<80%	3	-5.80E+00	2.78E-01	1.00	No
SG, Natural/CVR Gas	SVOC	Ethylbenzene	lbs/MMcf	EF	Conventional	<80%	3	7.32E-03	6.84E-05	0.00	Low NOx	<80%	3	1.11E-02	7.47E-03	0.89	No
SG, Natural/CVR Gas	SVOC	Ethylbenzene	lbs/MMcf	Log EF	Conventional	<80%	3	-2.14E+00	4.04E-03	0.00	Low NOx	<80%	3	-2.04E+00	3.59E-01	0.89	No
SG, Natural/CVR Gas	VOC	Acetaldehyde	lbs/MMcf	EF	?	<80%	9	1.32E-02	5.98E-03	0.95	Low NOx	<80%	3	5.23E-03	3.59E-04	0.00	Yes
SG, Natural/CVR Gas	VOC	Acetaldehyde	lbs/MMcf	Log EF	?	<80%	9	-1.91E+00	1.84E-01	0.95	Low NOx	<80%	3	-2.28E+00	2.93E-02	0.00	Yes
SG, Natural/CVR Gas	VOC	Acrolein	lbs/MMcf	EF	?	<80%	9	1.22E-02	2.80E-03	1.00	Low NOx	<80%	3	5.23E-03	3.59E-04	0.00	Yes
SG, Natural/CVR Gas	VOC	Acrolein	lbs/MMcf	Log EF	?	<80%	9	-1.92E+00	9.30E-02	1.00	Low NOx	<80%	3	-2.28E+00	2.93E-02	0.00	Yes
SG, Natural/CVR Gas	VOC	Benzene	lbs/MMcf	EF	?	<80%	9	2.62E-03	3.22E-04	0.00	Conventional	<80%	3	6.14E-03	5.74E-05	0.00	Yes
SG, Natural/CVR Gas	VOC	Benzene	lbs/MMcf	EF	?	<80%	9	2.62E-03	3.22E-04	0.00	Low NOx	<80%	3	2.64E-03	8.58E-05	0.00	No
SG, Natural/CVR Gas	VOC	Benzene	lbs/MMcf	EF	Conventional	<80%	3	6.14E-03	5.74E-05	0.00	Low NOx	<80%	3	2.64E-03	8.58E-05	0.00	Yes
SG, Natural/CVR Gas	VOC	Benzene	lbs/MMcf	Log EF	?	<80%	9	-2.58E+00	5.17E-02	0.00	Conventional	<80%	3	-2.21E+00	4.04E-03	0.00	Yes
SG, Natural/CVR Gas	VOC	Benzene	lbs/MMcf	Log EF	?	<80%	9	-2.58E+00	5.17E-02	0.00	Low NOx	<80%	3	-2.58E+00	1.43E-02	0.00	No
SG, Natural/CVR Gas	VOC	Benzene	lbs/MMcf	Log EF	Conventional	<80%	3	-2.21E+00	4.04E-03	0.00	Low NOx	<80%	3	-2.58E+00	1.43E-02	0.00	Yes
SG, Natural/CVR Gas	VOC	Formaldehyde	lbs/MMcf	EF	?	<80%	9	1.94E-02	2.05E-02	0.73	Low NOx	<80%	3	5.23E-03	3.59E-04	0.32	No
SG, Natural/CVR Gas	VOC	Formaldehyde	lbs/MMcf	Log EF	?	<80%	9	-1.85E+00	3.20E-01	0.73	Low NOx	<80%	3	-2.28E+00	2.93E-02	0.32	Yes
SG, Natural/CVR Gas	VOC	Propylene	lbs/MMcf	EF	?	<80%	9	6.77E-02	2.45E-02	0.00	Low NOx	<80%	3	5.29E-01	1.04E-01	1.00	Yes
SG, Natural/CVR Gas	VOC	Propylene	lbs/MMcf	Log EF	?	<80%	9	-1.24E+00	3.53E-01	0.00	Low NOx	<80%	3	-2.82E-01	8.79E-02	1.00	Yes
SG, Natural/CVR Gas	VOC	Toluene	lbs/MMcf	EF	?	<80%	9	8.13E-03	1.00E-03	0.00	Conventional	<80%	3	2.68E-02	4.63E-03	1.00	Yes
SG, Natural/CVR Gas	VOC	Toluene	lbs/MMcf	EF	?	<80%	9	8.13E-03	1.00E-03	0.00	Low NOx	<80%	3	1.75E-02	4.71E-03	1.00	Yes
SG, Natural/CVR Gas	VOC	Toluene	lbs/MMcf	EF	Conventional	<80%	3	2.68E-02	4.63E-03	1.00	Low NOx	<80%	3	1.75E-02	4.71E-03	1.00	No
SG, Natural/CVR Gas	VOC	Toluene	lbs/MMcf	Log EF	?	<80%	9	-2.09E+00	5.17E-02	0.00	Conventional	<80%	3	-1.58E+00	7.79E-02	1.00	Yes
SG, Natural/CVR Gas	VOC	Toluene	lbs/MMcf	Log EF	?	<80%	9	-2.09E+00	5.17E-02	0.00	Low NOx	<80%	3	-1.77E+00	1.11E-01	1.00	Yes
SG, Natural/CVR Gas	VOC	Toluene	lbs/MMcf	Log EF	Conventional	<80%	3	-1.58E+00	7.79E-02	1.00	Low NOx	<80%	3	-1.77E+00	1.11E-01	1.00	No

TABLE 6-12. EXTERNAL COMBUSTION BURNER AND LOAD COMPARISON.

Major Group	Category	Substance	EF Unit	Value Type	First Sample Statistics						Second Sample Statistics						Significant Difference at 95%Confidence
					Description		Size	Average	Standard Deviation	Detect Ratio	Description		Size	Average	Standard Deviation	Detect Ratio	
					Burner	Load					Burner	Load					
SG, Natural/CVR Gas	VOC	Xylene (Total)	lbs/MMcf	EF	?	<80%	9	1.87E-02	2.31E-03	0.00	Conventional	<80%	3	1.46E-02	1.37E-04	0.00	Yes
SG, Natural/CVR Gas	VOC	Xylene (Total)	lbs/MMcf	EF	?	<80%	9	1.87E-02	2.31E-03	0.00	Low NOx	<80%	3	2.16E-02	1.62E-02	1.00	No
SG, Natural/CVR Gas	VOC	Xylene (Total)	lbs/MMcf	EF	Conventional	<80%	3	1.46E-02	1.37E-04	0.00	Low NOx	<80%	3	2.16E-02	1.62E-02	1.00	No
SG, Natural/CVR Gas	VOC	Xylene (Total)	lbs/MMcf	Log EF	?	<80%	9	-1.73E+00	5.17E-02	0.00	Conventional	<80%	3	-1.83E+00	4.04E-03	0.00	Yes
SG, Natural/CVR Gas	VOC	Xylene (Total)	lbs/MMcf	Log EF	?	<80%	9	-1.73E+00	5.17E-02	0.00	Low NOx	<80%	3	-1.74E+00	3.02E-01	1.00	No
SG, Natural/CVR Gas	VOC	Xylene (Total)	lbs/MMcf	Log EF	Conventional	<80%	3	-1.83E+00	4.04E-03	0.00	Low NOx	<80%	3	-1.74E+00	3.02E-01	1.00	No

SECTION 7
STATISTICAL ANALYSIS OF GROUPS ON HEAT INPUT BASIS

TABLE 7-1. SOURCE CLASSIFICATION CODE COMPARISON.

Major Group	Category	Substance	Value Type	First Sample Statistics					Second Sample Statistics					Significant Difference at 95%Confidence
				Description SCC	Size	Average	Standard Deviation	Detect Ratio	Description SCC	Size	Average	Standard Deviation	Detect Ratio	
ICE, Field Gas	VOC	Benzene	lb/MMBtu	20200202	6	1.64E-03	5.84E-04	1.00	20200252	5	7.48E-03	4.54E-03	1.00	Yes
ICE, Field Gas	VOC	Benzene	lb/MMBtu	20200202	6	1.64E-03	5.84E-04	1.00	20200254	2	1.05E-02	1.20E-04	1.00	Yes
ICE, Field Gas	VOC	Benzene	lb/MMBtu	20200252	5	7.48E-03	4.54E-03	1.00	20200254	2	1.05E-02	1.20E-04	1.00	No
ICE, Field Gas	VOC	Benzene	Log lb/MMBtu	20200202	6	-2.81E+00	1.83E-01	1.00	20200252	5	-2.19E+00	2.60E-01	1.00	Yes
ICE, Field Gas	VOC	Benzene	Log lb/MMBtu	20200202	6	-2.81E+00	1.83E-01	1.00	20200254	2	-1.98E+00	4.99E-03	1.00	Yes
ICE, Field Gas	VOC	Benzene	Log lb/MMBtu	20200252	5	-2.19E+00	2.60E-01	1.00	20200254	2	-1.98E+00	4.99E-03	1.00	No
ICE, Field Gas	VOC	Formaldehyde	lb/MMBtu	20200202	9	3.95E-02	3.03E-02	1.00	20200252	6	4.85E-02	3.38E-02	1.00	No
ICE, Field Gas	VOC	Formaldehyde	lb/MMBtu	20200202	9	3.95E-02	3.03E-02	1.00	20200254	3	4.81E-03	7.65E-04	1.00	No
ICE, Field Gas	VOC	Formaldehyde	lb/MMBtu	20200252	6	4.85E-02	3.38E-02	1.00	20200254	3	4.81E-03	7.65E-04	1.00	No
ICE, Field Gas	VOC	Formaldehyde	Log lb/MMBtu	20200202	9	-1.54E+00	4.02E-01	1.00	20200252	6	-1.53E+00	5.82E-01	1.00	No
ICE, Field Gas	VOC	Formaldehyde	Log lb/MMBtu	20200202	9	-1.54E+00	4.02E-01	1.00	20200254	3	-2.32E+00	6.65E-02	1.00	Yes
ICE, Field Gas	VOC	Formaldehyde	Log lb/MMBtu	20200252	6	-1.53E+00	5.82E-01	1.00	20200254	3	-2.32E+00	6.65E-02	1.00	No
ICE, Field Gas	VOC	Propylene	lb/MMBtu	20200202	6	1.52E-02	4.62E-03	1.00	20200252	5	2.37E-02	1.34E-02	1.00	No
ICE, Field Gas	VOC	Propylene	lb/MMBtu	20200202	6	1.52E-02	4.62E-03	1.00	20200254	2	2.90E-03	0.00E+00	0.00	Yes
ICE, Field Gas	VOC	Propylene	lb/MMBtu	20200252	5	2.37E-02	1.34E-02	1.00	20200254	2	2.90E-03	0.00E+00	0.00	No
ICE, Field Gas	VOC	Propylene	Log lb/MMBtu	20200202	6	-1.84E+00	1.51E-01	1.00	20200252	5	-1.68E+00	2.52E-01	1.00	No
ICE, Field Gas	VOC	Propylene	Log lb/MMBtu	20200202	6	-1.84E+00	1.51E-01	1.00	20200254	2	-2.54E+00	0.00E+00	0.00	Yes
ICE, Field Gas	VOC	Propylene	Log lb/MMBtu	20200252	5	-1.68E+00	2.52E-01	1.00	20200254	2	-2.54E+00	0.00E+00	0.00	Yes
ICE, Field Gas	VOC	Toluene	lb/MMBtu	20200202	6	7.31E-04	3.74E-04	1.00	20200252	5	2.72E-03	1.98E-03	1.00	Yes
ICE, Field Gas	VOC	Toluene	lb/MMBtu	20200202	6	7.31E-04	3.74E-04	1.00	20200254	2	3.28E-03	1.49E-04	1.00	Yes
ICE, Field Gas	VOC	Toluene	lb/MMBtu	20200252	5	2.72E-03	1.98E-03	1.00	20200254	2	3.28E-03	1.49E-04	1.00	No
ICE, Field Gas	VOC	Toluene	Log lb/MMBtu	20200202	6	-3.21E+00	2.95E-01	1.00	20200252	5	-2.74E+00	5.49E-01	1.00	No
ICE, Field Gas	VOC	Toluene	Log lb/MMBtu	20200202	6	-3.21E+00	2.95E-01	1.00	20200254	2	-2.48E+00	1.98E-02	1.00	Yes
ICE, Field Gas	VOC	Toluene	Log lb/MMBtu	20200252	5	-2.74E+00	5.49E-01	1.00	20200254	2	-2.48E+00	1.98E-02	1.00	No
ICE, Field Gas	VOC	Xylene (m,p)	lb/MMBtu	20200202	6	2.87E-04	2.86E-04	1.00	20200252	5	5.75E-04	4.65E-04	1.00	No
ICE, Field Gas	VOC	Xylene (m,p)	lb/MMBtu	20200202	6	2.87E-04	2.86E-04	1.00	20200254	2	5.11E-04	3.44E-05	1.00	No
ICE, Field Gas	VOC	Xylene (m,p)	lb/MMBtu	20200252	5	5.75E-04	4.65E-04	1.00	20200254	2	5.11E-04	3.44E-05	1.00	No
ICE, Field Gas	VOC	Xylene (m,p)	Log lb/MMBtu	20200202	6	-3.67E+00	3.47E-01	1.00	20200252	5	-3.36E+00	3.68E-01	1.00	No
ICE, Field Gas	VOC	Xylene (m,p)	Log lb/MMBtu	20200202	6	-3.67E+00	3.47E-01	1.00	20200254	2	-3.29E+00	2.93E-02	1.00	No
ICE, Field Gas	VOC	Xylene (m,p)	Log lb/MMBtu	20200252	5	-3.36E+00	3.68E-01	1.00	20200254	2	-3.29E+00	2.93E-02	1.00	No
ICE, Field Gas	VOC	Xylene (o)	lb/MMBtu	20200202	6	8.55E-05	2.19E-05	1.00	20200252	5	2.74E-04	2.42E-04	1.00	No
ICE, Field Gas	VOC	Xylene (o)	lb/MMBtu	20200202	6	8.55E-05	2.19E-05	1.00	20200254	2	2.56E-04	1.72E-05	1.00	Yes
ICE, Field Gas	VOC	Xylene (o)	lb/MMBtu	20200252	5	2.74E-04	2.42E-04	1.00	20200254	2	2.56E-04	1.72E-05	1.00	No
ICE, Field Gas	VOC	Xylene (o)	Log lb/MMBtu	20200202	6	-4.08E+00	1.17E-01	1.00	20200252	5	-3.72E+00	4.27E-01	1.00	No
ICE, Field Gas	VOC	Xylene (o)	Log lb/MMBtu	20200202	6	-4.08E+00	1.17E-01	1.00	20200254	2	-3.59E+00	2.93E-02	1.00	Yes
ICE, Field Gas	VOC	Xylene (o)	Log lb/MMBtu	20200252	5	-3.72E+00	4.27E-01	1.00	20200254	2	-3.59E+00	2.93E-02	1.00	No
ICE, Natural Gas	VOC	Acetaldehyde	lb/MMBtu	20200202	15	3.80E-03	2.47E-03	1.00	20200254	3	1.63E-03	1.05E-04	1.00	No
ICE, Natural Gas	VOC	Acetaldehyde	Log lb/MMBtu	20200202	15	-2.50E+00	2.77E-01	1.00	20200254	3	-2.79E+00	2.80E-02	1.00	No
ICE, Natural Gas	VOC	Acrolein	lb/MMBtu	20200202	14	1.56E-03	1.43E-03	1.00	20200254	6	5.15E-04	5.44E-04	1.00	No
ICE, Natural Gas	VOC	Acrolein	Log lb/MMBtu	20200202	14	-2.98E+00	4.07E-01	1.00	20200254	6	-3.82E+00	1.03E+00	1.00	Yes

TABLE 7-1. SOURCE CLASSIFICATION CODE COMPARISON.

Major Group	Category	Substance	Value Type	First Sample Statistics					Second Sample Statistics					Significant Difference at 95%Confidence
				Description SCC	Size	Average	Standard Deviation	Detect Ratio	Description SCC	Size	Average	Standard Deviation	Detect Ratio	
ICE, Natural Gas	VOC	Benzene	lb/MMBtu	20200202	14	1.15E-03	5.43E-04	1.00	20200254	2	9.40E-03	4.75E-04	1.00	Yes
ICE, Natural Gas	VOC	Benzene	Log lb/MMBtu	20200202	14	-3.00E+00	2.65E-01	1.00	20200254	2	-2.03E+00	2.19E-02	1.00	Yes
ICE, Natural Gas	VOC	Formaldehyde	lb/MMBtu	[illegible]					20200254	6	5.07E-03	5.09E-03	1.00	Yes
ICE, Natural Gas	VOC	Formaldehyde	Log lb/MMBtu	[illegible]					20200254	6	-2.66E+00	7.09E-01	1.00	Yes
ICE, Natural Gas	VOC	Propylene	lb/MMBtu	20200202	14	1.78E-02	1.94E-02	0.97	20200254	2	3.76E-02	3.37E-03	1.00	No
ICE, Natural Gas	VOC	Propylene	Log lb/MMBtu	20200202	14	-1.95E+00	4.10E-01	0.97	20200254	2	-1.43E+00	3.89E-02	1.00	No
ICE, Natural Gas	VOC	Toluene	lb/MMBtu	20200202	14	3.92E-04	1.33E-04	1.00	20200254	2	2.40E-03	1.47E-04	1.00	Yes
ICE, Natural Gas	VOC	Toluene	Log lb/MMBtu	20200202	14	-3.43E+00	1.74E-01	1.00	20200254	2	-2.62E+00	2.67E-02	1.00	Yes
ICE, Natural Gas	VOC	Xylene (m,p)	lb/MMBtu	20200202	14	8.22E-05	3.80E-05	1.00	20200254	2	4.20E-04	1.70E-05	1.00	Yes
ICE, Natural Gas	VOC	Xylene (m,p)	Log lb/MMBtu	20200202	14	-4.13E+00	2.18E-01	1.00	20200254	2	-3.38E+00	1.76E-02	1.00	Yes
ICE, Natural Gas	VOC	Xylene (o)	lb/MMBtu	20200202	14	4.71E-05	1.86E-05	0.95	20200254	2	2.06E-04	6.79E-06	1.00	Yes
ICE, Natural Gas	VOC	Xylene (o)	Log lb/MMBtu	20200202	14	-4.37E+00	2.19E-01	0.95	20200254	2	-3.69E+00	1.43E-02	1.00	Yes

TABLE 7-2. AIR POLLUTION CONTROL DEVICE COMPARISON.

Major Group	Category	Substance	Value Type	First Sample Statistics					Second Sample Statistics					Significant Difference at 95%Confidence
				Description APCD	Size	Average	Standard Deviation	Detect Ratio	Description APCD	Size	Average	Standard Deviation	Detect Ratio	
Boiler, Ref. Gas	SVOC	Phenol	lb/MMBtu	None	9	2.21E-06	1.97E-06	0.94	SCR	3	6.65E-07	3.96E-08	0.00	No
Boiler, Ref. Gas	SVOC	Phenol	Log lb/MMBtu	None	9	-5.84E+00	4.41E-01	0.94	SCR	3	-6.18E+00	2.55E-02	0.00	No
Boiler, Ref. Gas	VOC	Acetaldehyde	lb/MMBtu	None	12	3.29E-06	3.16E-06	1.00	SCR	3	1.86E-06	6.00E-07	1.00	No
Boiler, Ref. Gas	VOC	Acetaldehyde	Log lb/MMBtu	None	12	-5.99E+00	1.13E+00	1.00	SCR	3	-5.75E+00	1.46E-01	1.00	No
Boiler, Ref. Gas	VOC	Benzene	lb/MMBtu	None	13	1.12E-04	1.81E-04	0.71	SCR	3	4.40E-04	6.75E-04	0.92	No
Boiler, Ref. Gas	VOC	Benzene	Log lb/MMBtu	None	13	-4.35E+00	6.36E-01	0.71	SCR	3	-3.84E+00	8.00E-01	0.92	No
Boiler, Ref. Gas	VOC	Formaldehyde	lb/MMBtu	None	12	1.23E-05	6.58E-06	1.00	SCR	3	1.69E-05	1.68E-05	1.00	No
Boiler, Ref. Gas	VOC	Formaldehyde	Log lb/MMBtu	None	12	-4.98E+00	2.84E-01	1.00	SCR	3	-4.92E+00	4.21E-01	1.00	No
Boiler, Ref. Gas	VOC	Hydrogen Sulfide	lb/MMBtu	None	13	2.59E-04	2.10E-04	0.00	SCR	3	5.58E-05	1.77E-06	0.00	No
Boiler, Ref. Gas	VOC	Hydrogen Sulfide	Log lb/MMBtu	None	13	-3.75E+00	4.20E-01	0.00	SCR	3	-4.25E+00	1.37E-02	0.00	No
Boiler, Ref. Gas	VOC	Toluene	lb/MMBtu	None	6	3.36E-04	3.10E-04	0.96	SCR	3	1.50E-03	2.49E-03	0.97	No
Boiler, Ref. Gas	VOC	Toluene	Log lb/MMBtu	None	6	-3.75E+00	5.99E-01	0.96	SCR	3	-3.60E+00	1.08E+00	0.97	No
Heater, Ref. Gas	PAH	Acenaphthene	lb/MMBtu	DeNOx	3	2.04E-09	7.05E-10	0.80	None	8	2.48E-09	1.90E-09	1.00	No
Heater, Ref. Gas	PAH	Acenaphthene	Log lb/MMBtu	DeNOx	3	-8.71E+00	1.72E-01	0.80	None	8	-8.69E+00	2.73E-01	1.00	No
Heater, Ref. Gas	PAH	Acenaphthylene	lb/MMBtu	DeNOx	3	1.25E-09	1.29E-11	0.00	None	8	1.66E-09	7.36E-10	0.68	No
Heater, Ref. Gas	PAH	Acenaphthylene	Log lb/MMBtu	DeNOx	3	-8.90E+00	4.50E-03	0.00	None	8	-8.82E+00	1.87E-01	0.68	No
Heater, Ref. Gas	PAH	Anthracene	lb/MMBtu	DeNOx	3	1.96E-09	6.55E-10	0.79	None	8	3.21E-09	1.95E-09	0.96	No
Heater, Ref. Gas	PAH	Anthracene	Log lb/MMBtu	DeNOx	3	-8.73E+00	1.61E-01	0.79	None	8	-8.56E+00	2.65E-01	0.96	No
Heater, Ref. Gas	PAH	Benzo(a)anthracene	lb/MMBtu	DeNOx	3	2.08E-09	3.22E-10	1.00	None	23	3.61E-08	9.01E-08	0.99	No
Heater, Ref. Gas	PAH	Benzo(a)anthracene	Log lb/MMBtu	DeNOx	3	-8.68E+00	6.96E-02	1.00	None	23	-8.16E+00	7.22E-01	0.99	No
Heater, Ref. Gas	PAH	Benzo(a)pyrene	lb/MMBtu	DeNOx	3	1.25E-09	1.29E-11	0.00	None	23	1.01E-07	3.35E-07	0.98	No
Heater, Ref. Gas	PAH	Benzo(a)pyrene	Log lb/MMBtu	DeNOx	3	-8.90E+00	4.50E-03	0.00	None	23	-8.47E+00	8.33E-01	0.98	No
Heater, Ref. Gas	PAH	Benzo(b)fluoranthene	lb/MMBtu	DeNOx	3	2.85E-09	1.26E-09	1.00	None	23	4.53E-08	1.35E-07	0.99	No
Heater, Ref. Gas	PAH	Benzo(b)fluoranthene	Log lb/MMBtu	DeNOx	3	-8.57E+00	1.83E-01	1.00	None	23	-8.34E+00	7.44E-01	0.99	No
Heater, Ref. Gas	PAH	Benzo(g,h,i)perylene	lb/MMBtu	DeNOx	3	1.25E-09	1.29E-11	0.00	None	8	1.15E-09	1.52E-10	0.00	No
Heater, Ref. Gas	PAH	Benzo(g,h,i)perylene	Log lb/MMBtu	DeNOx	3	-8.90E+00	4.50E-03	0.00	None	8	-8.94E+00	5.43E-02	0.00	No
Heater, Ref. Gas	PAH	Benzo(k)fluoranthene	lb/MMBtu	DeNOx	3	1.25E-09	1.29E-11	0.00	None	23	2.70E-08	7.90E-08	0.97	No
Heater, Ref. Gas	PAH	Benzo(k)fluoranthene	Log lb/MMBtu	DeNOx	3	-8.90E+00	4.50E-03	0.00	None	23	-8.45E+00	6.77E-01	0.97	No
Heater, Ref. Gas	PAH	Chrysene	lb/MMBtu	DeNOx	3	2.62E-09	1.90E-09	0.84	None	8	1.25E-09	2.73E-10	0.44	No
Heater, Ref. Gas	PAH	Chrysene	Log lb/MMBtu	DeNOx	3	-8.66E+00	3.03E-01	0.84	None	8	-8.91E+00	8.98E-02	0.44	Yes
Heater, Ref. Gas	PAH	Dibenz(a,h)anthracene	lb/MMBtu	DeNOx	3	1.25E-09	1.29E-11	0.00	None	23	1.13E-08	3.01E-08	0.00	No
Heater, Ref. Gas	PAH	Dibenz(a,h)anthracene	Log lb/MMBtu	DeNOx	3	-8.90E+00	4.50E-03	0.00	None	23	-8.59E+00	5.88E-01	0.00	No
Heater, Ref. Gas	PAH	Fluoranthene	lb/MMBtu	DeNOx	3	3.46E-09	1.49E-09	1.00	None	8	2.90E-09	8.91E-10	1.00	No
Heater, Ref. Gas	PAH	Fluoranthene	Log lb/MMBtu	DeNOx	3	-8.49E+00	1.93E-01	1.00	None	8	-8.55E+00	1.33E-01	1.00	No
Heater, Ref. Gas	PAH	Fluorene	lb/MMBtu	DeNOx	3	7.52E-09	4.08E-09	1.00	None	8	1.20E-08	8.49E-09	1.00	No
Heater, Ref. Gas	PAH	Fluorene	Log lb/MMBtu	DeNOx	3	-8.18E+00	3.02E-01	1.00	None	8	-8.00E+00	2.66E-01	1.00	No
Heater, Ref. Gas	PAH	Indeno(1,2,3-cd)pyrene	lb/MMBtu	DeNOx	3	1.25E-09	1.29E-11	0.00	None	23	1.16E-07	3.74E-07	0.99	No
Heater, Ref. Gas	PAH	Indeno(1,2,3-cd)pyrene	Log lb/MMBtu	DeNOx	3	-8.90E+00	4.50E-03	0.00	None	23	-8.41E+00	8.71E-01	0.99	No
Heater, Ref. Gas	PAH	Naphthalene	lb/MMBtu	DeNOx	3	1.40E-07	1.99E-08	1.00	None	8	3.77E-07	2.12E-07	1.00	No
Heater, Ref. Gas	PAH	Naphthalene	Log lb/MMBtu	DeNOx	3	-6.86E+00	6.35E-02	1.00	None	8	-6.48E+00	2.33E-01	1.00	Yes
Heater, Ref. Gas	PAH	Phenanthrene	lb/MMBtu	DeNOx	3	1.32E-08	5.59E-09	1.00	None	8	1.51E-08	4.71E-09	1.00	No
Heater, Ref. Gas	PAH	Phenanthrene	Log lb/MMBtu	DeNOx	3	-7.91E+00	2.18E-01	1.00	None	8	-7.84E+00	1.42E-01	1.00	No
Heater, Ref. Gas	PAH	Pyrene	lb/MMBtu	DeNOx	3	3.23E-09	1.32E-09	1.00	None	8	2.69E-09	6.09E-10	1.00	No
Heater, Ref. Gas	PAH	Pyrene	Log lb/MMBtu	DeNOx	3	-8.52E+00	1.91E-01	1.00	None	8	-8.58E+00	1.02E-01	1.00	No

TABLE 7-2. AIR POLLUTION CONTROL DEVICE COMPARISON.

Major Group	Category	Substance	Value Type	First Sample Statistics					Second Sample Statistics					Significant Difference at 95%Confidence
				Description APCD	Size	Average	Standard Deviation	Detect Ratio	Description APCD	Size	Average	Standard Deviation	Detect Ratio	
Heater, Ref. Gas	SVOC	Ethylbenzene	lb/MMBtu	DeNOx	3	4.51E-05	0.00E+00	0.00	None	9	2.52E-05	3.55E-05	0.88	No
Heater, Ref. Gas	SVOC	Ethylbenzene	Log lb/MMBtu	DeNOx	3	-4.35E+00	0.00E+00	0.00	None	9	-4.96E+00	5.67E-01	0.88	No
Heater, Ref. Gas	SVOC	Phenol	lb/MMBtu	None	15	4.43E-06	4.42E-06	0.95	SCR	6	8.61E-06	9.84E-06	0.99	No
Heater, Ref. Gas	SVOC	Phenol	Log lb/MMBtu	None	15	-5.58E+00	5.07E-01	0.95	SCR	6	-5.45E+00	7.04E-01	0.99	No
Heater, Ref. Gas	VOC	Acetaldehyde	lb/MMBtu	DeNOx	3	2.57E-05	3.67E-06	0.38	None	15	1.24E-05	2.25E-05	1.00	No
Heater, Ref. Gas	VOC	Acetaldehyde	lb/MMBtu	DeNOx	3	2.57E-05	3.67E-06	0.38	SCR	6	1.73E-05	1.40E-05	1.00	No
Heater, Ref. Gas	VOC	Acetaldehyde	lb/MMBtu	None	15	1.24E-05	2.25E-05	1.00	SCR	6	1.73E-05	1.40E-05	1.00	No
Heater, Ref. Gas	VOC	Acetaldehyde	Log lb/MMBtu	DeNOx	3	-4.59E+00	6.36E-02	0.38	None	15	-5.55E+00	8.66E-01	1.00	No
Heater, Ref. Gas	VOC	Acetaldehyde	Log lb/MMBtu	DeNOx	3	-4.59E+00	6.36E-02	0.38	SCR	6	-4.90E+00	3.81E-01	1.00	No
Heater, Ref. Gas	VOC	Acetaldehyde	Log lb/MMBtu	None	15	-5.55E+00	8.66E-01	1.00	SCR	6	-4.90E+00	3.81E-01	1.00	No
Heater, Ref. Gas	VOC	Benzene	lb/MMBtu	DeNOx	3	3.32E-05	0.00E+00	0.00	None	24	5.92E-05	5.82E-05	0.04	No
Heater, Ref. Gas	VOC	Benzene	lb/MMBtu	DeNOx	3	3.32E-05	0.00E+00	0.00	SCR	6	1.02E-04	5.06E-05	0.00	No
Heater, Ref. Gas	VOC	Benzene	lb/MMBtu	None	24	5.92E-05	5.82E-05	0.04	SCR	6	1.02E-04	5.06E-05	0.00	No
Heater, Ref. Gas	VOC	Benzene	Log lb/MMBtu	DeNOx	3	-4.48E+00	5.96E-08	0.00	None	24	-4.55E+00	6.17E-01	0.04	No
Heater, Ref. Gas	VOC	Benzene	Log lb/MMBtu	DeNOx	3	-4.48E+00	5.96E-08	0.00	SCR	6	-4.04E+00	2.31E-01	0.00	Yes
Heater, Ref. Gas	VOC	Benzene	Log lb/MMBtu	None	24	-4.55E+00	6.17E-01	0.04	SCR	6	-4.04E+00	2.31E-01	0.00	No
Heater, Ref. Gas	VOC	Formaldehyde	lb/MMBtu	DeNOx	3	6.15E-05	2.02E-05	1.00	None	15	1.41E-04	3.43E-04	1.00	No
Heater, Ref. Gas	VOC	Formaldehyde	lb/MMBtu	DeNOx	3	6.15E-05	2.02E-05	1.00	SCR	3	9.66E-06	3.04E-06	1.00	Yes
Heater, Ref. Gas	VOC	Formaldehyde	lb/MMBtu	None	15	1.41E-04	3.43E-04	1.00	SCR	3	9.66E-06	3.04E-06	1.00	No
Heater, Ref. Gas	VOC	Formaldehyde	Log lb/MMBtu	DeNOx	3	-4.23E+00	1.63E-01	1.00	None	15	-4.80E+00	1.03E+00	1.00	No
Heater, Ref. Gas	VOC	Formaldehyde	Log lb/MMBtu	DeNOx	3	-4.23E+00	1.63E-01	1.00	SCR	3	-5.03E+00	1.55E-01	1.00	Yes
Heater, Ref. Gas	VOC	Formaldehyde	Log lb/MMBtu	None	15	-4.80E+00	1.03E+00	1.00	SCR	3	-5.03E+00	1.55E-01	1.00	No
Heater, Ref. Gas	VOC	Hydrogen Sulfide	lb/MMBtu	None	15	3.27E-04	2.53E-04	0.00	SCR	6	2.03E-04	4.55E-05	0.00	No
Heater, Ref. Gas	VOC	Hydrogen Sulfide	Log lb/MMBtu	None	15	-3.72E+00	5.75E-01	0.00	SCR	6	-3.70E+00	9.92E-02	0.00	No
Heater, Ref. Gas	VOC	Toluene	lb/MMBtu	DeNOx	3	3.91E-05	6.43E-13	0.00	None	24	1.05E-04	1.82E-04	0.65	No
Heater, Ref. Gas	VOC	Toluene	lb/MMBtu	DeNOx	3	3.91E-05	6.43E-13	0.00	SCR	6	1.48E-04	5.89E-05	0.41	Yes
Heater, Ref. Gas	VOC	Toluene	lb/MMBtu	None	24	1.05E-04	1.82E-04	0.65	SCR	6	1.48E-04	5.89E-05	0.41	No
Heater, Ref. Gas	VOC	Toluene	Log lb/MMBtu	DeNOx	3	-4.41E+00	0.00E+00	0.00	None	24	-4.32E+00	5.73E-01	0.65	No
Heater, Ref. Gas	VOC	Toluene	Log lb/MMBtu	DeNOx	3	-4.41E+00	0.00E+00	0.00	SCR	6	-3.88E+00	2.67E-01	0.41	Yes
Heater, Ref. Gas	VOC	Toluene	Log lb/MMBtu	None	24	-4.32E+00	5.73E-01	0.65	SCR	6	-3.88E+00	2.67E-01	0.41	No
Heater, Ref. Gas	VOC	Xylene (Total)	lb/MMBtu	DeNOx	3	4.51E-05	0.00E+00	0.00	None	9	3.48E-05	4.31E-05	0.91	No
Heater, Ref. Gas	VOC	Xylene (Total)	Log lb/MMBtu	DeNOx	3	-4.35E+00	0.00E+00	0.00	None	9	-4.81E+00	5.89E-01	0.91	No
SG, Crude Oil	Metals	Arsenic	lb/MMBtu	None	3	4.53E-06	6.46E-07	1.00	SO2 Scrub	6	7.74E-06	6.80E-06	1.00	No
SG, Crude Oil	Metals	Arsenic	Log lb/MMBtu	None	3	-5.35E+00	5.98E-02	1.00	SO2 Scrub	6	-5.25E+00	3.76E-01	1.00	No
SG, Crude Oil	Metals	Cadmium	lb/MMBtu	None	3	1.86E-07	4.44E-08	1.00	SO2 Scrub	6	1.54E-06	1.08E-06	1.00	No
SG, Crude Oil	Metals	Cadmium	Log lb/MMBtu	None	3	-6.74E+00	9.85E-02	1.00	SO2 Scrub	6	-5.89E+00	2.69E-01	1.00	Yes
SG, Crude Oil	Metals	Chromium (Hex)	lb/MMBtu	None	3	6.12E-07	1.85E-08	0.00	SO2 Scrub	6	1.34E-06	6.13E-07	0.58	No
SG, Crude Oil	Metals	Chromium (Hex)	Log lb/MMBtu	None	3	-6.21E+00	1.31E-02	0.00	SO2 Scrub	6	-5.93E+00	2.63E-01	0.58	No
SG, Crude Oil	Metals	Chromium (Total)	lb/MMBtu	None	3	1.44E-06	5.44E-07	1.00	SO2 Scrub	6	7.90E-06	4.63E-06	1.00	No
SG, Crude Oil	Metals	Chromium (Total)	Log lb/MMBtu	None	3	-5.86E+00	1.58E-01	1.00	SO2 Scrub	6	-5.17E+00	2.68E-01	1.00	Yes
SG, Crude Oil	Metals	Copper	lb/MMBtu	None	3	4.27E-06	1.91E-06	1.00	SO2 Scrub	6	7.82E-06	3.12E-06	1.00	No
SG, Crude Oil	Metals	Copper	Log lb/MMBtu	None	3	-5.40E+00	1.79E-01	1.00	SO2 Scrub	6	-5.14E+00	1.78E-01	1.00	No
SG, Crude Oil	Metals	Lead	lb/MMBtu	None	3	2.47E-06	7.88E-07	1.00	SO2 Scrub	6	1.59E-06	2.44E-07	0.15	Yes
SG, Crude Oil	Metals	Lead	Log lb/MMBtu	None	3	-5.62E+00	1.46E-01	1.00	SO2 Scrub	6	-5.80E+00	7.14E-02	0.15	Yes

TABLE 7-2. AIR POLLUTION CONTROL DEVICE COMPARISON.

Major Group	Category	Substance	Value Type	First Sample Statistics					Second Sample Statistics					Significant Difference at 95%Confidence
				Description APCD	Size	Average	Standard Deviation	Detect Ratio	Description APCD	Size	Average	Standard Deviation	Detect Ratio	
SG, Crude Oil	Metals	Manganese	lb/MMBtu	None	1	1.62E-06		1.00	SO2 Scrub	6	2.33E-05	1.09E-05	1.00	No
SG, Crude Oil	Metals	Manganese	Log lb/MMBtu	None	1	-5.79E+00		1.00	SO2 Scrub	6	-4.67E+00	2.10E-01	1.00	Yes
SG, Crude Oil	Metals	Mercury	lb/MMBtu	None	1	2.38E-07		1.00	SO2 Scrub	6	1.72E-05	1.86E-05	1.00	No
SG, Crude Oil	Metals	Mercury	Log lb/MMBtu	None	1	-6.62E+00		1.00	SO2 Scrub	6	-5.61E+00	1.28E+00	1.00	No
SG, Crude Oil	Metals	Nickel	lb/MMBtu	None	3	2.46E-03	1.67E-04	1.00	SO2 Scrub	6	2.37E-03	1.13E-04	1.00	No
SG, Crude Oil	Metals	Nickel	Log lb/MMBtu	None	3	-2.61E+00	2.89E-02	1.00	SO2 Scrub	6	-2.63E+00	2.10E-02	1.00	No
SG, Crude Oil	Metals	Selenium	lb/MMBtu	None	3	2.92E-06	6.47E-07	1.00	SO2 Scrub	6	1.05E-05	9.78E-06	0.96	No
SG, Crude Oil	Metals	Selenium	Log lb/MMBtu	None	3	-5.54E+00	9.86E-02	1.00	SO2 Scrub	6	-5.26E+00	6.09E-01	0.96	No
SG, Crude Oil	Metals	Zinc	lb/MMBtu	None	3	2.17E-04	2.16E-04	1.00	SO2 Scrub	6	7.08E-04	8.12E-04	0.93	No
SG, Crude Oil	Metals	Zinc	Log lb/MMBtu	None	3	-3.96E+00	7.52E-01	1.00	SO2 Scrub	6	-3.49E+00	6.31E-01	0.93	No
SG, Crude Oil	PAH	Acenaphthylene	lb/MMBtu	None	3	5.70E-08	5.58E-08	1.00	SO2 Scrub	6	4.64E-08	3.86E-08	0.13	No
SG, Crude Oil	PAH	Acenaphthylene	Log lb/MMBtu	None	3	-7.44E+00	5.55E-01	1.00	SO2 Scrub	6	-7.64E+00	7.25E-01	0.13	No
SG, Crude Oil	PAH	Anthracene	lb/MMBtu	None	2	8.53E-08	1.14E-07	1.00	SO2 Scrub	6	3.96E-08	5.73E-08	1.00	No
SG, Crude Oil	PAH	Anthracene	Log lb/MMBtu	None	2	-7.54E+00	1.08E+00	1.00	SO2 Scrub	6	-7.72E+00	5.95E-01	1.00	No
SG, Crude Oil	PAH	Benzo(a)anthracene	lb/MMBtu	None	2	2.09E-08	1.65E-08	1.00	SO2 Scrub	6	6.21E-08	3.74E-08	0.35	No
SG, Crude Oil	PAH	Benzo(a)anthracene	Log lb/MMBtu	None	2	-7.76E+00	3.87E-01	1.00	SO2 Scrub	6	-7.38E+00	5.59E-01	0.35	No
SG, Crude Oil	PAH	Chrysene	lb/MMBtu	None	3	9.06E-08	1.19E-07	1.00	SO2 Scrub	6	6.62E-08	4.12E-08	0.39	No
SG, Crude Oil	PAH	Chrysene	Log lb/MMBtu	None	3	-7.34E+00	6.26E-01	1.00	SO2 Scrub	6	-7.32E+00	4.60E-01	0.39	No
SG, Crude Oil	PAH	Fluoranthene	lb/MMBtu	None	3	3.74E-08	5.44E-09	1.00	SO2 Scrub	6	1.12E-07	1.18E-07	0.64	No
SG, Crude Oil	PAH	Fluoranthene	Log lb/MMBtu	None	3	-7.43E+00	6.09E-02	1.00	SO2 Scrub	6	-7.17E+00	5.45E-01	0.64	No
SG, Crude Oil	PAH	Fluorene	lb/MMBtu	None	3	1.13E-07	1.32E-07	1.00	SO2 Scrub	6	8.49E-08	1.09E-07	1.00	No
SG, Crude Oil	PAH	Fluorene	Log lb/MMBtu	None	3	-7.16E+00	5.17E-01	1.00	SO2 Scrub	6	-7.33E+00	5.31E-01	1.00	No
SG, Crude Oil	PAH	Naphthalene	lb/MMBtu	None	2	2.70E-06	1.06E-06	1.00	SO2 Scrub	6	6.14E-06	4.67E-06	1.00	No
SG, Crude Oil	PAH	Naphthalene	Log lb/MMBtu	None	2	-5.59E+00	1.76E-01	1.00	SO2 Scrub	6	-5.36E+00	4.19E-01	1.00	No
SG, Crude Oil	PAH	Phenanthrene	lb/MMBtu	None	3	3.09E-08	2.81E-08	1.00	SO2 Scrub	6	2.32E-07	4.15E-07	1.00	No
SG, Crude Oil	PAH	Phenanthrene	Log lb/MMBtu	None	3	-7.62E+00	3.67E-01	1.00	SO2 Scrub	6	-7.06E+00	5.91E-01	1.00	No
SG, Crude Oil	PAH	Pyrene	lb/MMBtu	None	3	2.93E-07	1.67E-07	1.00	SO2 Scrub	6	7.92E-08	5.91E-08	0.49	Yes
SG, Crude Oil	PAH	Pyrene	Log lb/MMBtu	None	3	-6.58E+00	2.48E-01	1.00	SO2 Scrub	6	-7.26E+00	4.83E-01	0.49	No
Turbine, Natural Gas	PAH	Acenaphthene	lb/MMBtu	None	3	5.23E-09	2.93E-09	0.82	SCR/COC	3	1.27E-09	3.39E-11	0.00	No
Turbine, Natural Gas	PAH	Acenaphthene	Log lb/MMBtu	None	3	-8.33E+00	2.44E-01	0.82	SCR/COC	3	-8.90E+00	1.17E-02	0.00	Yes
Turbine, Natural Gas	PAH	Acenaphthylene	lb/MMBtu	None	3	3.08E-09	5.83E-10	0.41	SCR/COC	3	2.73E-09	2.54E-09	0.69	No
Turbine, Natural Gas	PAH	Acenaphthylene	Log lb/MMBtu	None	3	-8.52E+00	7.87E-02	0.41	SCR/COC	3	-8.68E+00	3.76E-01	0.69	No
Turbine, Natural Gas	PAH	Anthracene	lb/MMBtu	None	3	1.54E-08	1.57E-08	1.00	SCR/COC	3	5.33E-08	8.41E-08	1.00	No
Turbine, Natural Gas	PAH	Anthracene	Log lb/MMBtu	None	3	-7.97E+00	4.59E-01	1.00	SCR/COC	3	-7.83E+00	8.80E-01	1.00	No
Turbine, Natural Gas	PAH	Benzo(a)anthracene	lb/MMBtu	None	3	3.70E-09	1.66E-09	0.51	SCR/COC	3	1.86E-09	4.95E-11	0.00	No
Turbine, Natural Gas	PAH	Benzo(a)anthracene	Log lb/MMBtu	None	3	-8.46E+00	1.80E-01	0.51	SCR/COC	3	-8.73E+00	1.17E-02	0.00	No
Turbine, Natural Gas	PAH	Benzo(a)pyrene	lb/MMBtu	None	3	2.83E-09	1.65E-10	0.00	SCR/COC	3	1.27E-09	3.39E-11	0.00	Yes
Turbine, Natural Gas	PAH	Benzo(a)pyrene	Log lb/MMBtu	None	3	-8.55E+00	2.49E-02	0.00	SCR/COC	3	-8.90E+00	1.17E-02	0.00	Yes
Turbine, Natural Gas	PAH	Benzo(b)fluoranthene	lb/MMBtu	None	3	2.83E-09	1.65E-10	0.00	SCR/COC	3	3.77E-09	4.33E-09	0.78	No
Turbine, Natural Gas	PAH	Benzo(b)fluoranthene	Log lb/MMBtu	None	3	-8.55E+00	2.49E-02	0.00	SCR/COC	3	-8.62E+00	4.86E-01	0.78	No
Turbine, Natural Gas	PAH	Benzo(g,h,i)perylene	lb/MMBtu	None	3	2.83E-09	1.65E-10	0.00	SCR/COC	3	1.93E-09	1.15E-09	0.56	No
Turbine, Natural Gas	PAH	Benzo(g,h,i)perylene	Log lb/MMBtu	None	3	-8.55E+00	2.49E-02	0.00	SCR/COC	3	-8.76E+00	2.37E-01	0.56	No
Turbine, Natural Gas	PAH	Benzo(k)fluoranthene	lb/MMBtu	None	3	2.83E-09	1.65E-10	0.00	SCR/COC	3	2.33E-09	1.85E-09	0.64	No
Turbine, Natural Gas	PAH	Benzo(k)fluoranthene	Log lb/MMBtu	None	3	-8.55E+00	2.49E-02	0.00	SCR/COC	3	-8.72E+00	3.17E-01	0.64	No

TABLE 7-2. AIR POLLUTION CONTROL DEVICE COMPARISON.

Major Group	Category	Substance	Value Type	First Sample Statistics					Second Sample Statistics					Significant Difference at 95%Confidence
				Description APCD	Size	Average	Standard Deviation	Detect Ratio	Description APCD	Size	Average	Standard Deviation	Detect Ratio	
Turbine, Natural Gas	PAH	Chrysene	lb/MMBtu	None	3	3.93E-09	1.83E-09	0.77	SCR/COC	3	5.93E-09	1.58E-10	0.00	No
Turbine, Natural Gas	PAH	Chrysene	Log lb/MMBtu	None	3	-8.43E+00	1.87E-01	0.77	SCR/COC	3	-8.23E+00	1.17E-02	0.00	No
Turbine, Natural Gas	PAH	Dibenz(a,h)anthracene	lb/MMBtu	None	3	2.83E-09	1.65E-10	0.00	SCR/COC	3	1.27E-09	3.39E-11	0.00	Yes
Turbine, Natural Gas	PAH	Dibenz(a,h)anthracene	Log lb/MMBtu	None	3	-8.55E+00	2.49E-02	0.00	SCR/COC	3	-8.90E+00	1.17E-02	0.00	Yes
Turbine, Natural Gas	PAH	Fluoranthene	lb/MMBtu	None	3	9.56E-09	4.20E-09	1.00	SCR/COC	3	1.36E-08	3.93E-09	1.00	No
Turbine, Natural Gas	PAH	Fluoranthene	Log lb/MMBtu	None	3	-8.05E+00	2.01E-01	1.00	SCR/COC	3	-7.88E+00	1.35E-01	1.00	No
Turbine, Natural Gas	PAH	Fluorene	lb/MMBtu	None	3	1.79E-08	1.11E-08	1.00	SCR/COC	3	1.19E-08	3.53E-09	1.00	No
Turbine, Natural Gas	PAH	Fluorene	Log lb/MMBtu	None	3	-7.80E+00	2.69E-01	1.00	SCR/COC	3	-7.94E+00	1.43E-01	1.00	No
Turbine, Natural Gas	PAH	Indeno(1,2,3-cd)pyrene	lb/MMBtu	None	3	2.83E-09	1.65E-10	0.00	SCR/COC	3	1.75E-09	8.48E-10	0.52	No
Turbine, Natural Gas	PAH	Indeno(1,2,3-cd)pyrene	Log lb/MMBtu	None	3	-8.55E+00	2.49E-02	0.00	SCR/COC	3	-8.79E+00	1.93E-01	0.52	No
Turbine, Natural Gas	PAH	Naphthalene	lb/MMBtu	None	3	5.41E-07	1.16E-07	1.00	SCR/COC	3	9.17E-07	2.44E-08	1.00	Yes
Turbine, Natural Gas	PAH	Naphthalene	Log lb/MMBtu	None	3	-6.27E+00	9.23E-02	1.00	SCR/COC	3	-6.04E+00	1.17E-02	1.00	Yes
Turbine, Natural Gas	PAH	Phenanthrene	lb/MMBtu	None	3	8.83E-08	4.78E-08	1.00	SCR/COC	3	4.10E-08	1.33E-08	1.00	No
Turbine, Natural Gas	PAH	Phenanthrene	Log lb/MMBtu	None	3	-7.10E+00	2.50E-01	1.00	SCR/COC	3	-7.41E+00	1.60E-01	1.00	No
Turbine, Natural Gas	PAH	Pyrene	lb/MMBtu	None	3	1.09E-08	5.73E-09	1.00	SCR/COC	3	3.41E-08	9.27E-09	1.00	Yes
Turbine, Natural Gas	PAH	Pyrene	Log lb/MMBtu	None	3	-8.01E+00	2.44E-01	1.00	SCR/COC	3	-7.48E+00	1.29E-01	1.00	Yes
Turbine, Natural Gas	SVOC	Ethylbenzene	lb/MMBtu	None	3	9.20E-06	2.05E-07	0.00	SCR/COC	3	2.07E-05	8.43E-07	0.00	Yes
Turbine, Natural Gas	SVOC	Ethylbenzene	Log lb/MMBtu	None	3	-5.04E+00	9.62E-03	0.00	SCR/COC	3	-4.69E+00	1.75E-02	0.00	Yes
Turbine, Natural Gas	VOC	Benzene	lb/MMBtu	None	3	6.75E-06	1.50E-07	0.00	SCR/COC	3	1.73E-05	7.07E-07	0.00	Yes
Turbine, Natural Gas	VOC	Benzene	Log lb/MMBtu	None	3	-5.17E+00	9.62E-03	0.00	SCR/COC	3	-4.76E+00	1.75E-02	0.00	Yes
Turbine, Natural Gas	VOC	Formaldehyde	lb/MMBtu	None	3	1.99E-05	5.94E-06	0.45	SCR	3	6.02E-03	5.76E-04	1.00	Yes
Turbine, Natural Gas	VOC	Formaldehyde	Log lb/MMBtu	None	3	-4.71E+00	1.21E-01	0.45	SCR	3	-2.22E+00	4.11E-02	1.00	Yes
Turbine, Natural Gas	VOC	Toluene	lb/MMBtu	None	3	1.74E-05	8.47E-06	0.85	SCR/COC	3	1.23E-04	3.82E-05	1.00	Yes
Turbine, Natural Gas	VOC	Toluene	Log lb/MMBtu	None	3	-4.80E+00	2.62E-01	0.85	SCR/COC	3	-3.92E+00	1.31E-01	1.00	Yes
Turbine, Natural Gas	VOC	Xylene (Total)	lb/MMBtu	None	3	2.91E-05	2.69E-05	0.89	SCR/COC	3	4.13E-05	1.69E-06	0.00	No
Turbine, Natural Gas	VOC	Xylene (Total)	Log lb/MMBtu	None	3	-4.66E+00	4.10E-01	0.89	SCR/COC	3	-4.38E+00	1.75E-02	0.00	No

TABLE 7-3. RICE STROKES PER CYCLE COMPARISON.

Major Group	Category	Substance	Value Type	First Sample Statistics					Second Sample Statistics					Significant Difference at 95%Confidence
				Description Strokes	Size	Average	Standard Deviation	Detect Ratio	Description Strokes	Size	Average	Standard Deviation	Detect Ratio	
ICE, Field Gas	VOC	Benzene	lb/MMBtu	2S	5	7.48E-03	4.54E-03	1.00	4S	8	3.85E-03	4.12E-03	1.00	No
ICE, Field Gas	VOC	Benzene	Log lb/MMBtu	2S	5	-2.19E+00	2.60E-01	1.00	4S	8	-2.61E+00	4.16E-01	1.00	No
ICE, Field Gas	VOC	Formaldehyde	lb/MMBtu	2S	6	4.85E-02	3.38E-02	1.00	4S	12	3.08E-02	3.02E-02	1.00	No
ICE, Field Gas	VOC	Formaldehyde	Log lb/MMBtu	2S	6	-1.53E+00	5.82E-01	1.00	4S	12	-1.73E+00	4.94E-01	1.00	No
ICE, Field Gas	VOC	Propylene	lb/MMBtu	2S	5	2.37E-02	1.34E-02	1.00	4S	8	1.21E-02	6.89E-03	0.94	No
ICE, Field Gas	VOC	Propylene	Log lb/MMBtu	2S	5	-1.68E+00	2.52E-01	1.00	4S	8	-2.01E+00	3.48E-01	0.94	No
ICE, Field Gas	VOC	Toluene	lb/MMBtu	2S	5	2.72E-03	1.98E-03	1.00	4S	8	1.37E-03	1.22E-03	1.00	No
ICE, Field Gas	VOC	Toluene	Log lb/MMBtu	2S	5	-2.74E+00	5.49E-01	1.00	4S	8	-3.03E+00	4.16E-01	1.00	No
ICE, Field Gas	VOC	Xylene (m,p)	lb/MMBtu	2S	5	5.75E-04	4.65E-04	1.00	4S	8	3.43E-04	2.64E-04	1.00	No
ICE, Field Gas	VOC	Xylene (m,p)	Log lb/MMBtu	2S	5	-3.36E+00	3.68E-01	1.00	4S	8	-3.58E+00	3.42E-01	1.00	No
ICE, Field Gas	VOC	Xylene (o)	lb/MMBtu	2S	5	2.74E-04	2.42E-04	1.00	4S	8	1.28E-04	8.12E-05	1.00	No
ICE, Field Gas	VOC	Xylene (o)	Log lb/MMBtu	2S	5	-3.72E+00	4.27E-01	1.00	4S	8	-3.96E+00	2.47E-01	1.00	No

TABLE 7-4. RICE OXYGEN COMPARISON.

Major Group	Category	Substance	Value Type	First Sample Statistics					Second Sample Statistics					Significant Difference at 95%Confidence
				Description Oxygen	Size	Average	Standard Deviation	Detect Ratio	Description Oxygen	Size	Average	Standard Deviation	Detect Ratio	
ICE, Diesel	PAH	Acenaphthene	lb/MMBtu	O2<13%	3	4.54E-06	1.74E-06	1.00	O2>13%	6	1.43E-06	1.94E-06	1.00	No
ICE, Diesel	PAH	Acenaphthene	Log lb/MMBtu	O2<13%	3	-5.37E+00	1.86E-01	1.00	O2>13%	6	-6.80E+00	1.32E+00	1.00	No
ICE, Diesel	PAH	Acenaphthylene	lb/MMBtu	O2<13%	3	8.97E-06	5.47E-07	1.00	O2>13%	6	5.08E-06	6.37E-06	1.00	No
ICE, Diesel	PAH	Acenaphthylene	Log lb/MMBtu	O2<13%	3	-5.05E+00	2.70E-02	1.00	O2>13%	6	-6.51E+00	1.62E+00	1.00	No
ICE, Diesel	PAH	Anthracene	lb/MMBtu	O2<13%	3	1.20E-06	7.48E-07	1.00	O2>13%	6	1.86E-06	8.40E-07	1.00	No
ICE, Diesel	PAH	Anthracene	Log lb/MMBtu	O2<13%	3	-5.98E+00	2.66E-01	1.00	O2>13%	6	-5.83E+00	4.05E-01	1.00	No
ICE, Diesel	PAH	Benzo(a)anthracene	lb/MMBtu	O2<13%	3	6.14E-07	5.97E-08	1.00	O2>13%	6	1.67E-06	1.73E-06	1.00	No
ICE, Diesel	PAH	Benzo(a)anthracene	Log lb/MMBtu	O2<13%	3	-6.21E+00	4.12E-02	1.00	O2>13%	6	-6.08E+00	6.65E-01	1.00	No
ICE, Diesel	PAH	Benzo(a)pyrene	lb/MMBtu	O2<13%	3	2.49E-07	9.94E-08	0.45	O2>13%	6	1.88E-07	2.04E-07	0.00	No
ICE, Diesel	PAH	Benzo(a)pyrene	Log lb/MMBtu	O2<13%	3	-6.63E+00	1.97E-01	0.45	O2>13%	6	-7.22E+00	8.47E-01	0.00	No
ICE, Diesel	PAH	Benzo(b)fluoranthene	lb/MMBtu	O2<13%	3	1.08E-06	2.44E-07	0.27	O2>13%	3	1.87E-07	9.87E-08	0.50	Yes
ICE, Diesel	PAH	Benzo(b)fluoranthene	Log lb/MMBtu	O2<13%	3	-5.97E+00	9.46E-02	0.27	O2>13%	3	-6.78E+00	2.69E-01	0.50	Yes
ICE, Diesel	PAH	Benzo(g,h,i)perylene	lb/MMBtu	O2<13%	3	5.42E-07	4.97E-08	1.00	O2>13%	6	4.87E-07	3.52E-07	0.42	No
ICE, Diesel	PAH	Benzo(g,h,i)perylene	Log lb/MMBtu	O2<13%	3	-6.27E+00	4.05E-02	1.00	O2>13%	6	-6.42E+00	3.73E-01	0.42	No
ICE, Diesel	PAH	Benzo(k)fluoranthene	lb/MMBtu	O2<13%	3	2.13E-07	2.38E-07	0.76	O2>13%	3	3.00E-07	1.55E-07	0.50	No
ICE, Diesel	PAH	Benzo(k)fluoranthene	Log lb/MMBtu	O2<13%	3	-6.85E+00	4.73E-01	0.76	O2>13%	3	-6.57E+00	2.58E-01	0.50	No
ICE, Diesel	PAH	Chrysene	lb/MMBtu	O2<13%	3	1.49E-06	1.64E-07	1.00	O2>13%	6	3.52E-07	1.18E-07	1.00	Yes
ICE, Diesel	PAH	Chrysene	Log lb/MMBtu	O2<13%	3	-5.83E+00	4.95E-02	1.00	O2>13%	6	-6.48E+00	1.62E-01	1.00	Yes
ICE, Diesel	PAH	Dibenz(a,h)anthracene	lb/MMBtu	O2<13%	3	3.36E-07	1.88E-08	0.00	O2>13%	6	5.84E-07	3.00E-07	0.35	No
ICE, Diesel	PAH	Dibenz(a,h)anthracene	Log lb/MMBtu	O2<13%	3	-6.47E+00	2.39E-02	0.00	O2>13%	6	-6.28E+00	2.13E-01	0.35	No
ICE, Diesel	PAH	Fluoranthene	lb/MMBtu	O2<13%	3	3.92E-06	1.76E-07	1.00	O2>13%	6	7.59E-06	6.83E-06	1.00	No
ICE, Diesel	PAH	Fluoranthene	Log lb/MMBtu	O2<13%	3	-5.41E+00	1.93E-02	1.00	O2>13%	6	-5.34E+00	5.57E-01	1.00	No
ICE, Diesel	PAH	Fluorene	lb/MMBtu	O2<13%	3	1.25E-05	3.26E-07	1.00	O2>13%	6	2.90E-05	2.53E-05	0.99	No
ICE, Diesel	PAH	Fluorene	Log lb/MMBtu	O2<13%	3	-4.90E+00	1.13E-02	1.00	O2>13%	6	-4.80E+00	6.31E-01	0.99	No
ICE, Diesel	PAH	Indeno(1,2,3-cd)pyrene	lb/MMBtu	O2<13%	3	4.01E-07	7.11E-08	0.34	O2>13%	6	4.63E-07	3.91E-07	0.29	No
ICE, Diesel	PAH	Indeno(1,2,3-cd)pyrene	Log lb/MMBtu	O2<13%	3	-6.40E+00	7.94E-02	0.34	O2>13%	6	-6.50E+00	4.58E-01	0.29	No
ICE, Diesel	PAH	Naphthalene	lb/MMBtu	O2<13%	3	1.27E-04	4.74E-06	1.00	O2>13%	6	8.48E-05	6.85E-05	1.00	No
ICE, Diesel	PAH	Naphthalene	Log lb/MMBtu	O2<13%	3	-3.90E+00	1.64E-02	1.00	O2>13%	6	-4.16E+00	2.72E-01	1.00	No
ICE, Diesel	PAH	Phenanthrene	lb/MMBtu	O2<13%	3	3.97E-05	1.02E-06	1.00	O2>13%	6	2.93E-05	1.91E-05	1.00	No
ICE, Diesel	PAH	Phenanthrene	Log lb/MMBtu	O2<13%	3	-4.40E+00	1.12E-02	1.00	O2>13%	6	-4.69E+00	5.06E-01	1.00	No
ICE, Diesel	PAH	Pyrene	lb/MMBtu	O2<13%	3	3.61E-06	2.94E-07	1.00	O2>13%	6	4.78E-06	2.49E-06	1.00	No
ICE, Diesel	PAH	Pyrene	Log lb/MMBtu	O2<13%	3	-5.44E+00	3.47E-02	1.00	O2>13%	6	-5.40E+00	3.49E-01	1.00	No
ICE, Diesel	VOC	Acetaldehyde	lb/MMBtu	O2<13%	3	2.44E-05	1.84E-05	1.00	O2>13%	6	7.64E-04	3.24E-04	1.00	Yes
ICE, Diesel	VOC	Acetaldehyde	Log lb/MMBtu	O2<13%	3	-4.69E+00	3.07E-01	1.00	O2>13%	6	-3.15E+00	1.96E-01	1.00	Yes
ICE, Diesel	VOC	Acrolein	lb/MMBtu	O2<13%	3	7.57E-06	4.37E-06	0.56	O2>13%	6	9.37E-05	7.00E-05	0.82	No
ICE, Diesel	VOC	Acrolein	Log lb/MMBtu	O2<13%	3	-5.16E+00	2.30E-01	0.56	O2>13%	6	-4.10E+00	2.61E-01	0.82	Yes
ICE, Diesel	VOC	Benzene	lb/MMBtu	O2<13%	3	7.11E-04	1.92E-05	1.00	O2>13%	6	8.81E-04	4.31E-04	1.00	No
ICE, Diesel	VOC	Benzene	Log lb/MMBtu	O2<13%	3	-3.15E+00	1.17E-02	1.00	O2>13%	6	-3.10E+00	2.25E-01	1.00	No
ICE, Diesel	VOC	Formaldehyde	lb/MMBtu	O2<13%	3	7.68E-05	9.46E-05	1.00	O2>13%	6	1.19E-03	6.56E-04	1.00	Yes
ICE, Diesel	VOC	Formaldehyde	Log lb/MMBtu	O2<13%	3	-4.38E+00	5.97E-01	1.00	O2>13%	6	-2.97E+00	2.20E-01	1.00	Yes
ICE, Diesel	VOC	Propylene	lb/MMBtu	O2<13%	3	2.71E-03	2.19E-04	1.00	O2>13%	6	2.58E-03	1.48E-03	1.00	No
ICE, Diesel	VOC	Propylene	Log lb/MMBtu	O2<13%	3	-2.57E+00	3.59E-02	1.00	O2>13%	6	-2.66E+00	2.76E-01	1.00	No

TABLE 7-4. RICE OXYGEN COMPARISON.

Major Group	Category	Substance	Value Type	First Sample Statistics					Second Sample Statistics					Significant Difference at 95%Confidence
				Description Oxygen	Size	Average	Standard Deviation	Detect Ratio	Description Oxygen	Size	Average	Standard Deviation	Detect Ratio	
ICE, Diesel	VOC	Toluene	lb/MMBtu	O2<13%	3	2.63E-04	8.61E-06	1.00	O2>13%	6	3.96E-04	1.53E-04	1.00	No
ICE, Diesel	VOC	Toluene	Log lb/MMBtu	O2<13%	3	-3.58E+00	1.41E-02	1.00	O2>13%	6	-3.43E+00	1.76E-01	1.00	No
ICE, Diesel	VOC	Xylene (Total)	lb/MMBtu	O2<13%	3	1.89E-04	7.28E-06	1.00	O2>13%	3	2.59E-04	1.07E-04	1.00	No
ICE, Diesel	VOC	Xylene (Total)	Log lb/MMBtu	O2<13%	3	-3.72E+00	1.68E-02	1.00	O2>13%	3	-3.62E+00	2.16E-01	1.00	No
ICE, Field Gas	VOC	Benzene	lb/MMBtu	Lean	11	4.30E-03	4.21E-03	1.00	Rich	2	1.05E-02	1.20E-04	1.00	No
ICE, Field Gas	VOC	Benzene	Log lb/MMBtu	Lean	11	-2.53E+00	3.87E-01	1.00	Rich	2	-1.98E+00	4.99E-03	1.00	No
ICE, Field Gas	VOC	Formaldehyde	lb/MMBtu	Lean	15	4.31E-02	3.09E-02	1.00	Rich	3	4.81E-03	7.65E-04	1.00	No
ICE, Field Gas	VOC	Formaldehyde	Log lb/MMBtu	Lean	15	-1.53E+00	4.62E-01	1.00	Rich	3	-2.32E+00	6.65E-02	1.00	Yes
ICE, Field Gas	VOC	Propylene	lb/MMBtu	Lean	11	1.90E-02	1.01E-02	1.00	Rich	2	2.90E-03	0.00E+00	0.00	No
ICE, Field Gas	VOC	Propylene	Log lb/MMBtu	Lean	11	-1.77E+00	2.09E-01	1.00	Rich	2	-2.54E+00	0.00E+00	0.00	Yes
ICE, Field Gas	VOC	Toluene	lb/MMBtu	Lean	11	1.63E-03	1.65E-03	1.00	Rich	2	3.28E-03	1.49E-04	1.00	No
ICE, Field Gas	VOC	Toluene	Log lb/MMBtu	Lean	11	-3.00E+00	4.71E-01	1.00	Rich	2	-2.48E+00	1.98E-02	1.00	No
ICE, Field Gas	VOC	Xylene (m,p)	lb/MMBtu	Lean	11	4.18E-04	3.87E-04	1.00	Rich	2	5.11E-04	3.44E-05	1.00	No
ICE, Field Gas	VOC	Xylene (m,p)	Log lb/MMBtu	Lean	11	-3.53E+00	3.75E-01	1.00	Rich	2	-3.29E+00	2.93E-02	1.00	No
ICE, Field Gas	VOC	Xylene (o)	lb/MMBtu	Lean	11	1.71E-04	1.83E-04	1.00	Rich	2	2.56E-04	1.72E-05	1.00	No
ICE, Field Gas	VOC	Xylene (o)	Log lb/MMBtu	Lean	11	-3.92E+00	3.39E-01	1.00	Rich	2	-3.59E+00	2.93E-02	1.00	No
ICE, Natural Gas	VOC	Acetaldehyde	lb/MMBtu	Lean	15	3.80E-03	2.47E-03	1.00	Rich	3	1.63E-03	1.05E-04	1.00	No
ICE, Natural Gas	VOC	Acetaldehyde	Log lb/MMBtu	Lean	15	-2.50E+00	2.77E-01	1.00	Rich	3	-2.79E+00	2.80E-02	1.00	No
ICE, Natural Gas	VOC	Acrolein	lb/MMBtu	Lean	14	1.56E-03	1.43E-03	1.00	Rich	6	5.15E-04	5.44E-04	1.00	No
ICE, Natural Gas	VOC	Acrolein	Log lb/MMBtu	Lean	14	-2.88E+00	4.07E-01	1.00	Rich	6	-3.82E+00	1.03E+00	1.00	Yes
ICE, Natural Gas	VOC	Benzene	lb/MMBtu	Lean	14	1.15E-03	5.43E-04	1.00	Rich	2	9.40E-03	4.75E-04	1.00	Yes
ICE, Natural Gas	VOC	Benzene	Log lb/MMBtu	Lean	14	-3.00E+00	2.65E-01	1.00	Rich	2	-2.03E+00	2.19E-02	1.00	Yes
ICE, Natural Gas	VOC	Formaldehyde	lb/MMBtu	Lean	21	2.73E-02	1.05E-02	1.00	Rich	6	5.07E-03	5.09E-03	1.00	Yes
ICE, Natural Gas	VOC	Formaldehyde	Log lb/MMBtu	Lean	21	-1.80E+00	1.89E-01	1.00	Rich	6	-2.66E+00	7.09E-01	1.00	Yes
ICE, Natural Gas	VOC	Propylene	lb/MMBtu	Lean	14	1.78E-02	1.94E-02	0.97	Rich	2	3.76E-02	3.37E-03	1.00	No
ICE, Natural Gas	VOC	Propylene	Log lb/MMBtu	Lean	14	-1.95E+00	4.10E-01	0.97	Rich	2	-1.43E+00	3.89E-02	1.00	No
ICE, Natural Gas	VOC	Toluene	lb/MMBtu	Lean	14	3.92E-04	1.33E-04	1.00	Rich	2	2.40E-03	1.47E-04	1.00	Yes
ICE, Natural Gas	VOC	Toluene	Log lb/MMBtu	Lean	14	-3.43E+00	1.74E-01	1.00	Rich	2	-2.62E+00	2.67E-02	1.00	Yes
ICE, Natural Gas	VOC	Xylene (m,p)	lb/MMBtu	Lean	14	8.22E-05	3.80E-05	1.00	Rich	2	4.20E-04	1.70E-05	1.00	Yes
ICE, Natural Gas	VOC	Xylene (m,p)	Log lb/MMBtu	Lean	14	-4.13E+00	2.18E-01	1.00	Rich	2	-3.38E+00	1.76E-02	1.00	Yes
ICE, Natural Gas	VOC	Xylene (o)	lb/MMBtu	Lean	14	4.71E-05	1.86E-05	0.95	Rich	2	2.06E-04	6.79E-06	1.00	Yes
ICE, Natural Gas	VOC	Xylene (o)	Log lb/MMBtu	Lean	14	-4.37E+00	2.19E-01	0.95	Rich	2	-3.69E+00	1.43E-02	1.00	Yes

TABLE 7-5. RICE CAPACITY COMPARISON.

Major Group	Category	Substance	Value Type	First Sample Statistics					Second Sample Statistics					Significant
				Description Capacity	Size	Average	Standard Deviation	Detect Ratio	Description Capacity	Size	Average	Standard Deviation	Detect Ratio	Difference at 95%Confidence
ICE, Diesel	PAH	Acenaphthene	lb/MMBtu	<650 Hp	6	2.28E-06	2.72E-06	1.00	>650 Hp	3	2.85E-06	1.85E-06	1.00	No
ICE, Diesel	PAH	Acenaphthene	Log lb/MMBtu	<650 Hp	6	-6.68E+00	1.44E+00	1.00	>650 Hp	3	-5.60E+00	2.60E-01	1.00	No
ICE, Diesel	PAH	Acenaphthylene	lb/MMBtu	<650 Hp	6	4.49E-06	4.92E-06	1.00	>650 Hp	3	1.02E-05	4.91E-06	1.00	No
ICE, Diesel	PAH	Acenaphthylene	Log lb/MMBtu	<650 Hp	6	-6.52E+00	1.61E+00	1.00	>650 Hp	3	-5.04E+00	2.65E-01	1.00	No
ICE, Diesel	PAH	Anthracene	lb/MMBtu	<650 Hp	6	1.74E-06	7.87E-07	1.00	>650 Hp	3	1.44E-06	1.06E-06	1.00	No
ICE, Diesel	PAH	Anthracene	Log lb/MMBtu	<650 Hp	6	-5.81E+00	2.51E-01	1.00	>650 Hp	3	-6.01E+00	5.55E-01	1.00	No
ICE, Diesel	PAH	Benzo(a)anthracene	lb/MMBtu	<650 Hp	6	1.64E-06	1.65E-06	1.00	>650 Hp	3	6.74E-07	9.49E-07	1.00	No
ICE, Diesel	PAH	Benzo(a)anthracene	Log lb/MMBtu	<650 Hp	6	-5.93E+00	3.67E-01	1.00	>650 Hp	3	-6.52E+00	6.65E-01	1.00	No
ICE, Diesel	PAH	Benzo(a)pyrene	lb/MMBtu	<650 Hp	6	1.30E-07	1.45E-07	0.43	>650 Hp	3	3.65E-07	9.73E-08	0.00	Yes
ICE, Diesel	PAH	Benzo(a)pyrene	Log lb/MMBtu	<650 Hp	6	-7.31E+00	7.55E-01	0.43	>650 Hp	3	-6.45E+00	1.28E-01	0.00	No
ICE, Diesel	PAH	Benzo(b)fluoranthene	lb/MMBtu	<650 Hp	3	1.08E-06	2.44E-07	0.27	>650 Hp	3	1.87E-07	9.87E-08	0.50	Yes
ICE, Diesel	PAH	Benzo(b)fluoranthene	Log lb/MMBtu	<650 Hp	3	-5.97E+00	9.46E-02	0.27	>650 Hp	3	-6.78E+00	2.69E-01	0.50	Yes
ICE, Diesel	PAH	Benzo(g,h,i)perylene	lb/MMBtu	<650 Hp	6	4.77E-07	1.14E-07	1.00	>650 Hp	3	5.62E-07	5.25E-07	0.00	No
ICE, Diesel	PAH	Benzo(g,h,i)perylene	Log lb/MMBtu	<650 Hp	6	-6.33E+00	1.15E-01	1.00	>650 Hp	3	-6.45E+00	5.73E-01	0.00	No
ICE, Diesel	PAH	Benzo(k)fluoranthene	lb/MMBtu	<650 Hp	3	2.13E-07	2.38E-07	0.76	>650 Hp	3	3.00E-07	1.55E-07	0.50	No
ICE, Diesel	PAH	Benzo(k)fluoranthene	Log lb/MMBtu	<650 Hp	3	-6.85E+00	4.73E-01	0.76	>650 Hp	3	-6.57E+00	2.58E-01	0.50	No
ICE, Diesel	PAH	Chrysene	lb/MMBtu	<650 Hp	6	9.65E-07	5.84E-07	1.00	>650 Hp	3	2.62E-07	9.03E-08	1.00	No
ICE, Diesel	PAH	Chrysene	Log lb/MMBtu	<650 Hp	6	-6.09E+00	2.93E-01	1.00	>650 Hp	3	-6.60E+00	1.41E-01	1.00	Yes
ICE, Diesel	PAH	Dibenz(a,h)anthracene	lb/MMBtu	<650 Hp	6	3.73E-07	7.81E-08	0.55	>650 Hp	3	7.58E-07	3.51E-07	0.00	Yes
ICE, Diesel	PAH	Dibenz(a,h)anthracene	Log lb/MMBtu	<650 Hp	6	-6.44E+00	8.26E-02	0.55	>650 Hp	3	-6.16E+00	2.43E-01	0.00	Yes
ICE, Diesel	PAH	Fluoranthene	lb/MMBtu	<650 Hp	6	8.28E-06	6.11E-06	1.00	>650 Hp	3	2.54E-06	1.96E-06	1.00	No
ICE, Diesel	PAH	Fluoranthene	Log lb/MMBtu	<650 Hp	6	-5.17E+00	2.92E-01	1.00	>650 Hp	3	-5.74E+00	4.93E-01	1.00	No
ICE, Diesel	PAH	Fluorene	lb/MMBtu	<650 Hp	6	3.22E-05	2.17E-05	1.00	>650 Hp	3	6.09E-06	3.96E-06	0.92	No
ICE, Diesel	PAH	Fluorene	Log lb/MMBtu	<650 Hp	6	-4.59E+00	3.40E-01	1.00	>650 Hp	3	-5.32E+00	4.28E-01	0.92	Yes
ICE, Diesel	PAH	Indeno(1,2,3-cd)pyrene	lb/MMBtu	<650 Hp	6	3.36E-07	8.95E-08	0.61	>650 Hp	3	6.55E-07	5.19E-07	0.00	No
ICE, Diesel	PAH	Indeno(1,2,3-cd)pyrene	Log lb/MMBtu	<650 Hp	6	-6.49E+00	1.16E-01	0.61	>650 Hp	3	-6.43E+00	7.10E-01	0.00	No
ICE, Diesel	PAH	Naphthalene	lb/MMBtu	<650 Hp	6	8.93E-05	4.14E-05	1.00	>650 Hp	3	1.18E-04	9.16E-05	1.00	No
ICE, Diesel	PAH	Naphthalene	Log lb/MMBtu	<650 Hp	6	-4.09E+00	2.19E-01	1.00	>650 Hp	3	-4.02E+00	3.56E-01	1.00	No
ICE, Diesel	PAH	Phenanthrene	lb/MMBtu	<650 Hp	6	4.24E-05	5.67E-06	1.00	>650 Hp	3	1.34E-05	9.79E-06	1.00	Yes
ICE, Diesel	PAH	Phenanthrene	Log lb/MMBtu	<650 Hp	6	-4.38E+00	5.31E-02	1.00	>650 Hp	3	-5.03E+00	5.35E-01	1.00	Yes
ICE, Diesel	PAH	Pyrene	lb/MMBtu	<650 Hp	6	4.46E-06	1.58E-06	1.00	>650 Hp	3	4.26E-06	3.26E-06	1.00	No
ICE, Diesel	PAH	Pyrene	Log lb/MMBtu	<650 Hp	6	-5.37E+00	1.28E-01	1.00	>650 Hp	3	-5.52E+00	4.95E-01	1.00	No
ICE, Diesel	VOC	Acetaldehyde	lb/MMBtu	<650 Hp	6	5.41E-04	5.67E-04	1.00	>650 Hp	3	4.69E-04	4.18E-05	1.00	No
ICE, Diesel	VOC	Acetaldehyde	Log lb/MMBtu	<650 Hp	6	-3.83E+00	9.58E-01	1.00	>650 Hp	3	-3.33E+00	3.98E-02	1.00	No
ICE, Diesel	VOC	Acrolein	lb/MMBtu	<650 Hp	6	3.00E-05	2.49E-05	0.38	>650 Hp	3	1.35E-04	8.43E-05	1.00	Yes
ICE, Diesel	VOC	Acrolein	Log lb/MMBtu	<650 Hp	6	-4.72E+00	5.06E-01	0.38	>650 Hp	3	-3.93E+00	2.73E-01	1.00	Yes
ICE, Diesel	VOC	Benzene	lb/MMBtu	<650 Hp	6	6.03E-04	1.20E-04	1.00	>650 Hp	3	1.27E-03	1.32E-04	1.00	Yes
ICE, Diesel	VOC	Benzene	Log lb/MMBtu	<650 Hp	6	-3.23E+00	8.76E-02	1.00	>650 Hp	3	-2.90E+00	4.62E-02	1.00	Yes
ICE, Diesel	VOC	Formaldehyde	lb/MMBtu	<650 Hp	6	7.24E-04	9.15E-04	1.00	>650 Hp	3	1.00E-03	3.87E-04	1.00	No
ICE, Diesel	VOC	Formaldehyde	Log lb/MMBtu	<650 Hp	6	-3.65E+00	8.98E-01	1.00	>650 Hp	3	-3.02E+00	1.77E-01	1.00	No
ICE, Diesel	VOC	Propylene	lb/MMBtu	<650 Hp	6	1.99E-03	8.17E-04	1.00	>650 Hp	3	3.89E-03	4.84E-04	1.00	Yes
ICE, Diesel	VOC	Propylene	Log lb/MMBtu	<650 Hp	6	-2.73E+00	1.92E-01	1.00	>650 Hp	3	-2.41E+00	5.62E-02	1.00	Yes

TABLE 7-5. RICE CAPACITY COMPARISON.

Major Group	Category	Substance	Value Type	First Sample Statistics					Second Sample Statistics					Significant Difference at 95%Confidence
				Description Capacity	Size	Average	Standard Deviation	Detect Ratio	Description Capacity	Size	Average	Standard Deviation	Detect Ratio	
ICE, Diesel	VOC	Toluene	lb/MMBtu	<650 Hp	6	2.60E-04	9.13E-06	1.00	>650 Hp	3	5.36E-04	1.07E-05	1.00	Yes
ICE, Diesel	VOC	Toluene	Log lb/MMBtu	<650 Hp	6	-3.59E+00	1.53E-02	1.00	>650 Hp	3	-3.27E+00	8.69E-03	1.00	Yes
ICE, Diesel	VOC	Xylene (Total)	lb/MMBtu	<650 Hp	3	1.89E-04	7.28E-06	1.00	>650 Hp	3	2.59E-04	1.07E-04	1.00	No
ICE, Diesel	VOC	Xylene (Total)	Log lb/MMBtu	<650 Hp	3	-3.72E+00	1.68E-02	1.00	>650 Hp	3	-3.62E+00	2.16E-01	1.00	No
ICE, Field Gas	VOC	Benzene	lb/MMBtu	≤650 Hp	10	5.57E-03	5.13E-03	1.00	>650 Hp	3	4.18E-03	1.81E-04	1.00	No
ICE, Field Gas	VOC	Benzene	Log lb/MMBtu	<650 Hp	10	-2.47E+00	4.71E-01	1.00	≥650 Hp	3	-2.38E+00	1.87E-02	1.00	No
ICE, Field Gas	VOC	Formaldehyde	lb/MMBtu	≤650 Hp	15	3.91E-02	3.20E-02	1.00	>650 Hp	3	2.45E-02	3.29E-02	1.00	No
ICE, Field Gas	VOC	Formaldehyde	Log lb/MMBtu	≤650 Hp	15	-1.62E+00	5.02E-01	1.00	>650 Hp	3	-1.92E+00	6.29E-01	1.00	No
ICE, Field Gas	VOC	Propylene	lb/MMBtu	≤650 Hp	10	1.73E-02	1.26E-02	0.97	>650 Hp	3	1.40E-02	3.01E-03	1.00	No
ICE, Field Gas	VOC	Propylene	Log lb/MMBtu	<650 Hp	10	-1.89E+00	3.97E-01	0.97	≥650 Hp	3	-1.86E+00	9.65E-02	1.00	No
ICE, Field Gas	VOC	Toluene	lb/MMBtu	≤650 Hp	10	2.01E-03	1.78E-03	1.00	>650 Hp	3	1.47E-03	1.10E-03	1.00	No
ICE, Field Gas	VOC	Toluene	Log lb/MMBtu	≤650 Hp	10	-2.89E+00	4.68E-01	1.00	>650 Hp	3	-3.01E+00	5.74E-01	1.00	No
ICE, Field Gas	VOC	Xylene (m,p)	lb/MMBtu	≤650 Hp	10	4.90E-04	3.90E-04	1.00	>650 Hp	3	2.42E-04	6.12E-05	1.00	No
ICE, Field Gas	VOC	Xylene (m,p)	Log lb/MMBtu	≤650 Hp	10	-3.46E+00	3.96E-01	1.00	>650 Hp	3	-3.63E+00	1.13E-01	1.00	No
ICE, Field Gas	VOC	Xylene (o)	lb/MMBtu	≤650 Hp	10	2.10E-04	1.87E-04	1.00	>650 Hp	3	9.84E-05	3.25E-05	1.00	No
ICE, Field Gas	VOC	Xylene (o)	Log lb/MMBtu	≤650 Hp	10	-3.82E+00	3.63E-01	1.00	>650 Hp	3	-4.02E+00	1.52E-01	1.00	No

TABLE 7-6. RICE STROKES PER CYCLE AND OXYGEN COMPARISON.

Major Group	Category	Substance	Value Type	First Sample Statistics						Second Sample Statistics						Significant Difference at 95%Confidence
				Description		Size	Average	Standard Deviation	Detect Ratio	Description		Size	Average	Standard Deviation	Detect Ratio	
				Strokes	Oxygen					Strokes	Oxygen					
ICE, Diesel	PAH	Acenaphthene	lb/MMBtu	NC	O2<13%	3	4.54E-06	1.74E-06	1.00	NC	O2>13%	6	1.43E-06	1.94E-06	1.00	No
ICE, Diesel	PAH	Acenaphthene	Log lb/MMBtu	NC	O2<13%	3	-5.37E+00	1.86E-01	1.00	NC	O2>13%	6	-6.80E+00	1.32E+00	1.00	No
ICE, Diesel	PAH	Acenaphthylene	lb/MMBtu	NC	O2<13%	3	8.97E-06	5.47E-07	1.00	NC	O2>13%	6	5.08E-06	6.37E-06	1.00	No
ICE, Diesel	PAH	Acenaphthylene	Log lb/MMBtu	NC	O2<13%	3	-5.05E+00	2.70E-02	1.00	NC	O2>13%	6	-6.51E+00	1.62E+00	1.00	No
ICE, Diesel	PAH	Anthracene	lb/MMBtu	NC	O2<13%	3	1.20E-06	7.48E-07	1.00	NC	O2>13%	6	1.86E-06	8.40E-07	1.00	No
ICE, Diesel	PAH	Anthracene	Log lb/MMBtu	NC	O2<13%	3	-5.98E+00	2.66E-01	1.00	NC	O2>13%	6	-5.83E+00	4.05E-01	1.00	No
ICE, Diesel	PAH	Benzo(a)anthracene	lb/MMBtu	NC	O2<13%	3	6.14E-07	5.97E-08	1.00	NC	O2>13%	6	1.67E-06	1.73E-06	1.00	No
ICE, Diesel	PAH	Benzo(a)anthracene	Log lb/MMBtu	NC	O2<13%	3	-6.21E+00	4.12E-02	1.00	NC	O2>13%	6	-6.08E+00	6.65E-01	1.00	No
ICE, Diesel	PAH	Benzo(a)pyrene	lb/MMBtu	NC	O2<13%	3	2.49E-07	9.94E-08	0.45	NC	O2>13%	6	1.88E-07	2.04E-07	0.00	No
ICE, Diesel	PAH	Benzo(a)pyrene	Log lb/MMBtu	NC	O2<13%	3	-6.63E+00	1.97E-01	0.45	NC	O2>13%	6	-7.22E+00	8.47E-01	0.00	No
ICE, Diesel	PAH	Benzo(b)fluoranthene	lb/MMBtu	NC	O2<13%	3	1.08E-06	2.44E-07	0.27	NC	O2>13%	3	1.87E-07	9.87E-08	0.50	Yes
ICE, Diesel	PAH	Benzo(b)fluoranthene	Log lb/MMBtu	NC	O2<13%	3	-5.97E+00	9.46E-02	0.27	NC	O2>13%	3	-6.78E+00	2.69E-01	0.50	Yes
ICE, Diesel	PAH	Benzo(g,h,i)perylene	lb/MMBtu	NC	O2<13%	3	5.42E-07	4.97E-08	1.00	NC	O2>13%	6	4.87E-07	3.52E-07	0.42	No
ICE, Diesel	PAH	Benzo(g,h,i)perylene	Log lb/MMBtu	NC	O2<13%	3	-6.27E+00	4.05E-02	1.00	NC	O2>13%	6	-6.42E+00	3.73E-01	0.42	No
ICE, Diesel	PAH	Benzo(k)fluoranthene	lb/MMBtu	NC	O2<13%	3	2.13E-07	2.38E-07	0.76	NC	O2>13%	3	3.00E-07	1.55E-07	0.50	No
ICE, Diesel	PAH	Benzo(k)fluoranthene	Log lb/MMBtu	NC	O2<13%	3	-6.85E+00	4.73E-01	0.76	NC	O2>13%	3	-6.57E+00	2.58E-01	0.50	No
ICE, Diesel	PAH	Chrysene	lb/MMBtu	NC	O2<13%	3	1.49E-06	1.64E-07	1.00	NC	O2>13%	6	3.52E-07	1.18E-07	1.00	Yes
ICE, Diesel	PAH	Chrysene	Log lb/MMBtu	NC	O2<13%	3	-5.83E+00	4.95E-02	1.00	NC	O2>13%	6	-6.48E+00	1.62E-01	1.00	Yes
ICE, Diesel	PAH	Dibenz(a,h)anthracene	lb/MMBtu	NC	O2<13%	3	3.36E-07	1.88E-08	0.00	NC	O2>13%	6	5.84E-07	3.00E-07	0.35	No
ICE, Diesel	PAH	Dibenz(a,h)anthracene	Log lb/MMBtu	NC	O2<13%	3	-6.47E+00	2.39E-02	0.00	NC	O2>13%	6	-6.28E+00	2.13E-01	0.35	No
ICE, Diesel	PAH	Fluoranthene	lb/MMBtu	NC	O2<13%	3	3.92E-06	1.76E-07	1.00	NC	O2>13%	6	7.59E-06	6.83E-06	1.00	No
ICE, Diesel	PAH	Fluoranthene	Log lb/MMBtu	NC	O2<13%	3	-5.41E+00	1.93E-02	1.00	NC	O2>13%	6	-5.34E+00	5.57E-01	1.00	No
ICE, Diesel	PAH	Fluorene	lb/MMBtu	NC	O2<13%	3	1.25E-05	3.26E-07	1.00	NC	O2>13%	6	2.90E-05	2.53E-05	0.99	No
ICE, Diesel	PAH	Fluorene	Log lb/MMBtu	NC	O2<13%	3	-4.90E+00	1.13E-02	1.00	NC	O2>13%	6	-4.80E+00	6.31E-01	0.99	No
ICE, Diesel	PAH	Indeno(1,2,3-cd)pyrene	lb/MMBtu	NC	O2<13%	3	4.01E-07	7.11E-08	0.34	NC	O2>13%	6	4.63E-07	3.91E-07	0.29	No
ICE, Diesel	PAH	Indeno(1,2,3-cd)pyrene	Log lb/MMBtu	NC	O2<13%	3	-6.40E+00	7.94E-02	0.34	NC	O2>13%	6	-6.50E+00	4.58E-01	0.29	No
ICE, Diesel	PAH	Naphthalene	lb/MMBtu	NC	O2<13%	3	1.27E-04	4.74E-06	1.00	NC	O2>13%	6	8.48E-05	6.85E-05	1.00	No
ICE, Diesel	PAH	Naphthalene	Log lb/MMBtu	NC	O2<13%	3	-3.90E+00	1.64E-02	1.00	NC	O2>13%	6	-4.16E+00	2.72E-01	1.00	No
ICE, Diesel	PAH	Phenanthrene	lb/MMBtu	NC	O2<13%	3	3.97E-05	1.02E-06	1.00	NC	O2>13%	6	2.93E-05	1.91E-05	1.00	No
ICE, Diesel	PAH	Phenanthrene	Log lb/MMBtu	NC	O2<13%	3	-4.40E+00	1.12E-02	1.00	NC	O2>13%	6	-4.69E+00	5.06E-01	1.00	No
ICE, Diesel	PAH	Pyrene	lb/MMBtu	NC	O2<13%	3	3.61E-06	2.94E-07	1.00	NC	O2>13%	6	4.78E-06	2.49E-06	1.00	No
ICE, Diesel	PAH	Pyrene	Log lb/MMBtu	NC	O2<13%	3	-5.44E+00	3.47E-02	1.00	NC	O2>13%	6	-5.40E+00	3.49E-01	1.00	No
ICE, Diesel	VOC	Acetaldehyde	lb/MMBtu	NC	O2<13%	3	2.44E-05	1.84E-05	1.00	NC	O2>13%	6	7.64E-04	3.24E-04	1.00	Yes
ICE, Diesel	VOC	Acetaldehyde	Log lb/MMBtu	NC	O2<13%	3	-4.69E+00	3.07E-01	1.00	NC	O2>13%	6	-3.15E+00	1.96E-01	1.00	Yes
ICE, Diesel	VOC	Acrolein	lb/MMBtu	NC	O2<13%	3	7.57E-06	4.37E-06	0.56	NC	O2>13%	6	9.37E-05	7.00E-05	0.82	No
ICE, Diesel	VOC	Acrolein	Log lb/MMBtu	NC	O2<13%	3	-5.16E+00	2.30E-01	0.56	NC	O2>13%	6	-4.10E+00	2.61E-01	0.82	Yes
ICE, Diesel	VOC	Benzene	lb/MMBtu	NC	O2<13%	3	7.11E-04	1.92E-05	1.00	NC	O2>13%	6	8.81E-04	4.31E-04	1.00	No
ICE, Diesel	VOC	Benzene	Log lb/MMBtu	NC	O2<13%	3	-3.15E+00	1.17E-02	1.00	NC	O2>13%	6	-3.10E+00	2.25E-01	1.00	No
ICE, Diesel	VOC	Formaldehyde	lb/MMBtu	NC	O2<13%	3	7.68E-05	9.46E-05	1.00	NC	O2>13%	6	1.19E-03	6.56E-04	1.00	Yes
ICE, Diesel	VOC	Formaldehyde	Log lb/MMBtu	NC	O2<13%	3	-4.38E+00	5.97E-01	1.00	NC	O2>13%	6	-2.97E+00	2.20E-01	1.00	Yes
ICE, Diesel	VOC	Propylene	lb/MMBtu	NC	O2<13%	3	2.71E-03	2.19E-04	1.00	NC	O2>13%	6	2.58E-03	1.48E-03	1.00	No
ICE, Diesel	VOC	Propylene	Log lb/MMBtu	NC	O2<13%	3	-2.57E+00	3.59E-02	1.00	NC	O2>13%	6	-2.66E+00	2.76E-01	1.00	No
ICE, Diesel	VOC	Toluene	lb/MMBtu	NC	O2<13%	3	2.63E-04	8.61E-06	1.00	NC	O2>13%	6	3.96E-04	1.53E-04	1.00	No
ICE, Diesel	VOC	Toluene	Log lb/MMBtu	NC	O2<13%	3	-3.58E+00	1.41E-02	1.00	NC	O2>13%	6	-3.43E+00	1.76E-01	1.00	No
ICE, Diesel	VOC	Xylene (Total)	lb/MMBtu	NC	O2<13%	3	1.89E-04	7.28E-06	1.00	NC	O2>13%	3	2.59E-04	1.07E-04	1.00	No
ICE, Diesel	VOC	Xylene (Total)	Log lb/MMBtu	NC	O2<13%	3	-3.72E+00	1.68E-02	1.00	NC	O2>13%	3	-3.62E+00	2.16E-01	1.00	No

TABLE 7-6. RICE STROKES PER CYCLE AND OXYGEN COMPARISON.

Major Group	Category	Substance	Value Type	First Sample Statistics						Second Sample Statistics						Significant Difference at 95%Confidence
				Description		Size	Average	Standard Deviation	Detect Ratio	Description		Size	Average	Standard Deviation	Detect Ratio	
				Strokes	Oxygen					Strokes	Oxygen					
ICE, Field Gas	VOC	Benzene	lb/MMBtu	2S	Lean	5	7.48E-03	4.54E-03	1.00	4S	Lean	6	1.64E-03	5.84E-04	1.00	Yes
ICE, Field Gas	VOC	Benzene	lb/MMBtu	2S	Lean	5	7.48E-03	4.54E-03	1.00	4S	Rich	2	1.05E-02	1.20E-04	1.00	No
ICE, Field Gas	VOC	Benzene	lb/MMBtu	4S	Lean	6	1.64E-03	5.84E-04	1.00	4S	Rich	2	1.05E-02	1.20E-04	1.00	Yes
ICE, Field Gas	VOC	Benzene	Log lb/MMBtu	2S	Lean	5	-2.19E+00	2.60E-01	1.00	4S	Lean	6	-2.81E+00	1.83E-01	1.00	Yes
ICE, Field Gas	VOC	Benzene	Log lb/MMBtu	2S	Lean	5	-2.19E+00	2.60E-01	1.00	4S	Rich	2	-1.98E+00	4.99E-03	1.00	No
ICE, Field Gas	VOC	Benzene	Log lb/MMBtu	4S	Lean	6	-2.81E+00	1.83E-01	1.00	4S	Rich	2	-1.98E+00	4.99E-03	1.00	Yes
ICE, Field Gas	VOC	Formaldehyde	lb/MMBtu	2S	Lean	6	4.85E-02	3.38E-02	1.00	4S	Lean	9	3.95E-02	3.03E-02	1.00	No
ICE, Field Gas	VOC	Formaldehyde	lb/MMBtu	2S	Lean	6	4.85E-02	3.38E-02	1.00	4S	Rich	3	4.81E-03	7.65E-04	1.00	No
ICE, Field Gas	VOC	Formaldehyde	lb/MMBtu	4S	Lean	9	3.95E-02	3.03E-02	1.00	4S	Rich	3	4.81E-03	7.65E-04	1.00	No
ICE, Field Gas	VOC	Formaldehyde	Log lb/MMBtu	2S	Lean	6	-1.53E+00	5.82E-01	1.00	4S	Lean	9	-1.54E+00	4.02E-01	1.00	No
ICE, Field Gas	VOC	Formaldehyde	Log lb/MMBtu	2S	Lean	6	-1.53E+00	5.82E-01	1.00	4S	Rich	3	-2.32E+00	6.65E-02	1.00	No
ICE, Field Gas	VOC	Formaldehyde	Log lb/MMBtu	4S	Lean	9	-1.54E+00	4.02E-01	1.00	4S	Rich	3	-2.32E+00	6.65E-02	1.00	Yes
ICE, Field Gas	VOC	Propylene	lb/MMBtu	2S	Lean	5	2.37E-02	1.34E-02	1.00	4S	Lean	6	1.52E-02	4.62E-03	1.00	No
ICE, Field Gas	VOC	Propylene	lb/MMBtu	2S	Lean	5	2.37E-02	1.34E-02	1.00	4S	Rich	2	2.90E-03	0.00E+00	0.00	No
ICE, Field Gas	VOC	Propylene	lb/MMBtu	4S	Lean	6	1.52E-02	4.62E-03	1.00	4S	Rich	2	2.90E-03	0.00E+00	0.00	Yes
ICE, Field Gas	VOC	Propylene	Log lb/MMBtu	2S	Lean	5	-1.68E+00	2.52E-01	1.00	4S	Lean	6	-1.84E+00	1.51E-01	1.00	No
ICE, Field Gas	VOC	Propylene	Log lb/MMBtu	2S	Lean	5	-1.68E+00	2.52E-01	1.00	4S	Rich	2	-2.54E+00	0.00E+00	0.00	Yes
ICE, Field Gas	VOC	Propylene	Log lb/MMBtu	4S	Lean	6	-1.84E+00	1.51E-01	1.00	4S	Rich	2	-2.54E+00	0.00E+00	0.00	Yes
ICE, Field Gas	VOC	Toluene	lb/MMBtu	2S	Lean	5	2.72E-03	1.98E-03	1.00	4S	Lean	6	7.31E-04	3.74E-04	1.00	Yes
ICE, Field Gas	VOC	Toluene	lb/MMBtu	2S	Lean	5	2.72E-03	1.98E-03	1.00	4S	Rich	2	3.28E-03	1.49E-04	1.00	No
ICE, Field Gas	VOC	Toluene	lb/MMBtu	4S	Lean	6	7.31E-04	3.74E-04	1.00	4S	Rich	2	3.28E-03	1.49E-04	1.00	Yes
ICE, Field Gas	VOC	Toluene	Log lb/MMBtu	2S	Lean	5	-2.74E+00	5.49E-01	1.00	4S	Lean	6	-3.21E+00	2.95E-01	1.00	No
ICE, Field Gas	VOC	Toluene	Log lb/MMBtu	2S	Lean	5	-2.74E+00	5.49E-01	1.00	4S	Rich	2	-2.48E+00	1.98E-02	1.00	No
ICE, Field Gas	VOC	Toluene	Log lb/MMBtu	4S	Lean	6	-3.21E+00	2.95E-01	1.00	4S	Rich	2	-2.48E+00	1.98E-02	1.00	Yes
ICE, Field Gas	VOC	Xylene (m,p)	lb/MMBtu	2S	Lean	5	5.75E-04	4.65E-04	1.00	4S	Lean	6	2.87E-04	2.86E-04	1.00	No
ICE, Field Gas	VOC	Xylene (m,p)	lb/MMBtu	2S	Lean	5	5.75E-04	4.65E-04	1.00	4S	Rich	2	5.11E-04	3.44E-05	1.00	No
ICE, Field Gas	VOC	Xylene (m,p)	lb/MMBtu	4S	Lean	6	2.87E-04	2.86E-04	1.00	4S	Rich	2	5.11E-04	3.44E-05	1.00	No
ICE, Field Gas	VOC	Xylene (m,p)	Log lb/MMBtu	2S	Lean	5	-3.36E+00	3.68E-01	1.00	4S	Lean	6	-3.67E+00	3.47E-01	1.00	No
ICE, Field Gas	VOC	Xylene (m,p)	Log lb/MMBtu	2S	Lean	5	-3.36E+00	3.68E-01	1.00	4S	Rich	2	-3.29E+00	2.93E-02	1.00	No
ICE, Field Gas	VOC	Xylene (m,p)	Log lb/MMBtu	4S	Lean	6	-3.67E+00	3.47E-01	1.00	4S	Rich	2	-3.29E+00	2.93E-02	1.00	No
ICE, Field Gas	VOC	Xylene (o)	lb/MMBtu	2S	Lean	5	2.74E-04	2.42E-04	1.00	4S	Lean	6	8.55E-05	2.19E-05	1.00	No
ICE, Field Gas	VOC	Xylene (o)	lb/MMBtu	2S	Lean	5	2.74E-04	2.42E-04	1.00	4S	Rich	2	2.56E-04	1.72E-05	1.00	No
ICE, Field Gas	VOC	Xylene (o)	lb/MMBtu	4S	Lean	6	8.55E-05	2.19E-05	1.00	4S	Rich	2	2.56E-04	1.72E-05	1.00	Yes
ICE, Field Gas	VOC	Xylene (o)	Log lb/MMBtu	2S	Lean	5	-3.72E+00	4.27E-01	1.00	4S	Lean	6	-4.08E+00	1.17E-01	1.00	No
ICE, Field Gas	VOC	Xylene (o)	Log lb/MMBtu	2S	Lean	5	-3.72E+00	4.27E-01	1.00	4S	Rich	2	-3.59E+00	2.93E-02	1.00	No
ICE, Field Gas	VOC	Xylene (o)	Log lb/MMBtu	4S	Lean	6	-4.08E+00	1.17E-01	1.00	4S	Rich	2	-3.59E+00	2.93E-02	1.00	Yes
ICE, Natural Gas	VOC	Acetaldehyde	lb/MMBtu	4S	Lean	15	3.80E-03	2.47E-03	1.00	4S	Rich	3	1.63E-03	1.05E-04	1.00	No
ICE, Natural Gas	VOC	Acetaldehyde	Log lb/MMBtu	4S	Lean	15	-2.50E+00	2.77E-01	1.00	4S	Rich	3	-2.79E+00	2.80E-02	1.00	No
ICE, Natural Gas	VOC	Acrolein	lb/MMBtu	4S	Lean	14	1.56E-03	1.43E-03	1.00	4S	Rich	6	5.15E-04	5.44E-04	1.00	No
ICE, Natural Gas	VOC	Acrolein	Log lb/MMBtu	4S	Lean	14	-2.98E+00	4.07E-01	1.00	4S	Rich	6	-3.82E+00	1.03E+00	1.00	Yes
ICE, Natural Gas	VOC	Benzene	lb/MMBtu	4S	Lean	14	1.15E-03	5.43E-04	1.00	4S	Rich	2	9.40E-03	4.75E-04	1.00	Yes
ICE, Natural Gas	VOC	Benzene	Log lb/MMBtu	4S	Lean	14	-3.00E+00	2.65E-01	1.00	4S	Rich	2	-2.03E+00	2.19E-02	1.00	Yes
ICE, Natural Gas	VOC	Formaldehyde	lb/MMBtu	4S	Lean	21	2.73E-02	1.05E-02	1.00	4S	Rich	6	5.07E-03	5.09E-03	1.00	Yes
ICE, Natural Gas	VOC	Formaldehyde	Log lb/MMBtu	4S	Lean	21	-1.60E+00	1.89E-01	1.00	4S	Rich	6	-2.66E+00	7.09E-01	1.00	Yes
ICE, Natural Gas	VOC	Propylene	lb/MMBtu	4S	Lean	14	1.78E-02	1.94E-02	0.97	4S	Rich	2	3.76E-02	3.37E-03	1.00	No
ICE, Natural Gas	VOC	Propylene	Log lb/MMBtu	4S	Lean	14	-1.95E+00	4.10E-01	0.97	4S	Rich	2	-1.43E+00	3.89E-02	1.00	No

TABLE 7-6. RICE STROKES PER CYCLE AND OXYGEN COMPARISON.

Major Group	Category	Substance	Value Type	First Sample Statistics						Second Sample Statistics						Significant Difference at 95%Confidence
				Description		Size	Average	Standard Deviation	Detect Ratio	Description		Size	Average	Standard Deviation	Detect Ratio	
				Strokes	Oxygen					Strokes	Oxygen					
ICE, Natural Gas	VOC	Toluene	lb/MMBtu	4S	Lean	14	3.92E-04	1.33E-04	1.00	4S	Rich	2	2.40E-03	1.47E-04	1.00	Yes
ICE, Natural Gas	VOC	Toluene	Log lb/MMBtu	4S	Lean	14	-3.43E+00	1.74E-01	1.00	4S	Rich	2	-2.62E+00	2.87E-02	1.00	Yes
ICE, Natural Gas	VOC	Xylene (m,p)	lb/MMBtu	4S	Lean	14	8.22E-05	3.80E-05	1.00	4S	Rich	2	4.20E-04	1.70E-05	1.00	Yes
ICE, Natural Gas	VOC	Xylene (m,p)	Log lb/MMBtu	4S	Lean	14	-4.13E+00	2.18E-01	1.00	4S	Rich	2	-3.38E+00	1.76E-02	1.00	Yes
ICE, Natural Gas	VOC	Xylene (o)	lb/MMBtu	4S	Lean	14	4.71E-05	1.86E-05	0.95	4S	Rich	2	2.06E-04	6.79E-06	1.00	Yes
ICE, Natural Gas	VOC	Xylene (o)	Log lb/MMBtu	4S	Lean	14	-4.37E+00	2.19E-01	0.95	4S	Rich	2	-3.69E+00	1.43E-02	1.00	Yes

TABLE 7-7. RICE STROKES PER CYCLE AND CAPACITY COMPARISON.

Major Group	Category	Substance	Value Type	First Sample Statistics						Second Sample Statistics						Significant Difference at 95%Confidence
				Description		Size	Average	Standard Deviation	Detect Ratio	Description		Size	Average	Standard Deviation	Detect Ratio	
				Strokes	Capacity					Strokes	Capacity					
ICE, Diesel	PAH	Acenaphthene	lb/MMBtu	NC	<650 Hp	6	2.28E-06	2.72E-06	1.00	NC	>650 Hp	3	2.85E-06	1.85E-06	1.00	No
ICE, Diesel	PAH	Acenaphthene	Log lb/MMBtu	NC	<650 Hp	6	-6.68E+00	1.44E+00	1.00	NC	>650 Hp	3	-5.60E+00	2.60E-01	1.00	No
ICE, Diesel	PAH	Acenaphthylene	lb/MMBtu	NC	<650 Hp	6	4.49E-06	4.92E-06	1.00	NC	>650 Hp	3	1.02E-05	4.91E-06	1.00	No
ICE, Diesel	PAH	Acenaphthylene	Log lb/MMBtu	NC	<650 Hp	6	-6.52E+00	1.61E+00	1.00	NC	>650 Hp	3	-5.04E+00	2.65E-01	1.00	No
ICE, Diesel	PAH	Anthracene	lb/MMBtu	NC	<650 Hp	6	1.74E-06	7.87E-07	1.00	NC	>650 Hp	3	1.44E-06	1.06E-06	1.00	No
ICE, Diesel	PAH	Anthracene	Log lb/MMBtu	NC	<650 Hp	6	-5.81E+00	2.51E-01	1.00	NC	>650 Hp	3	-6.01E+00	5.55E-01	1.00	No
ICE, Diesel	PAH	Benzo(a)anthracene	lb/MMBtu	NC	<650 Hp	6	1.64E-06	1.65E-06	1.00	NC	>650 Hp	3	6.74E-07	9.49E-07	1.00	No
ICE, Diesel	PAH	Benzo(a)anthracene	Log lb/MMBtu	NC	<650 Hp	6	-5.93E+00	3.67E-01	1.00	NC	>650 Hp	3	-6.52E+00	6.65E-01	1.00	No
ICE, Diesel	PAH	Benzo(a)pyrene	lb/MMBtu	NC	<650 Hp	6	1.30E-07	1.45E-07	0.43	NC	>650 Hp	3	3.65E-07	9.73E-08	0.00	Yes
ICE, Diesel	PAH	Benzo(a)pyrene	Log lb/MMBtu	NC	<650 Hp	6	-7.31E+00	7.55E-01	0.43	NC	>650 Hp	3	-6.45E+00	1.28E-01	0.00	No
ICE, Diesel	PAH	Benzo(b)fluoranthene	lb/MMBtu	NC	<650 Hp	3	1.08E-06	2.44E-07	0.27	NC	>650 Hp	3	1.87E-07	9.87E-08	0.50	Yes
ICE, Diesel	PAH	Benzo(b)fluoranthene	Log lb/MMBtu	NC	<650 Hp	3	-5.97E+00	9.46E-02	0.27	NC	>650 Hp	3	-6.78E+00	2.69E-01	0.50	Yes
ICE, Diesel	PAH	Benzo(g,h,i)perylene	lb/MMBtu	NC	<650 Hp	6	4.77E-07	1.14E-07	1.00	NC	>650 Hp	3	5.62E-07	5.25E-07	0.00	No
ICE, Diesel	PAH	Benzo(g,h,i)perylene	Log lb/MMBtu	NC	<650 Hp	6	-6.33E+00	1.15E-01	1.00	NC	>650 Hp	3	-6.45E+00	5.73E-01	0.00	No
ICE, Diesel	PAH	Benzo(k)fluoranthene	lb/MMBtu	NC	<650 Hp	3	2.13E-07	2.38E-07	0.76	NC	>650 Hp	3	3.00E-07	1.55E-07	0.50	No
ICE, Diesel	PAH	Benzo(k)fluoranthene	Log lb/MMBtu	NC	<650 Hp	3	-6.85E+00	4.73E-01	0.76	NC	>650 Hp	3	-6.57E+00	2.58E-01	0.50	No
ICE, Diesel	PAH	Chrysene	lb/MMBtu	NC	<650 Hp	6	9.65E-07	5.84E-07	1.00	NC	>650 Hp	3	2.62E-07	9.03E-08	1.00	No
ICE, Diesel	PAH	Chrysene	Log lb/MMBtu	NC	<650 Hp	6	-6.09E+00	2.93E-01	1.00	NC	>650 Hp	3	-6.60E+00	1.41E-01	1.00	Yes
ICE, Diesel	PAH	Dibenz(a,h)anthracene	lb/MMBtu	NC	<650 Hp	6	3.73E-07	7.81E-08	0.55	NC	>650 Hp	3	7.58E-07	3.51E-07	0.00	Yes
ICE, Diesel	PAH	Dibenz(a,h)anthracene	Log lb/MMBtu	NC	<650 Hp	6	-6.44E+00	8.26E-02	0.55	NC	>650 Hp	3	-6.16E+00	2.43E-01	0.00	Yes
ICE, Diesel	PAH	Fluoranthene	lb/MMBtu	NC	<650 Hp	6	8.28E-06	6.11E-06	1.00	NC	>650 Hp	3	2.54E-06	1.96E-06	1.00	No
ICE, Diesel	PAH	Fluoranthene	Log lb/MMBtu	NC	<650 Hp	6	-5.17E+00	2.92E-01	1.00	NC	>650 Hp	3	-5.74E+00	4.93E-01	1.00	No
ICE, Diesel	PAH	Fluorene	lb/MMBtu	NC	<650 Hp	6	3.22E-05	2.17E-05	1.00	NC	>650 Hp	3	6.09E-06	3.96E-06	0.92	No
ICE, Diesel	PAH	Fluorene	Log lb/MMBtu	NC	<650 Hp	6	-4.59E+00	3.40E-01	1.00	NC	>650 Hp	3	-5.32E+00	4.28E-01	0.92	Yes
ICE, Diesel	PAH	Indeno(1,2,3-cd)pyrene	lb/MMBtu	NC	<650 Hp	6	3.36E-07	8.95E-08	0.61	NC	>650 Hp	3	6.55E-07	5.19E-07	0.00	No
ICE, Diesel	PAH	Indeno(1,2,3-cd)pyrene	Log lb/MMBtu	NC	<650 Hp	6	-6.49E+00	1.16E-01	0.61	NC	>650 Hp	3	-6.43E+00	7.10E-01	0.00	No
ICE, Diesel	PAH	Naphthalene	lb/MMBtu	NC	<650 Hp	6	8.93E-05	4.14E-05	1.00	NC	>650 Hp	3	1.18E-04	9.16E-05	1.00	No
ICE, Diesel	PAH	Naphthalene	Log lb/MMBtu	NC	<650 Hp	6	-4.09E+00	2.19E-01	1.00	NC	>650 Hp	3	-4.02E+00	3.56E-01	1.00	No
ICE, Diesel	PAH	Phenanthrene	lb/MMBtu	NC	<650 Hp	6	4.24E-05	5.67E-06	1.00	NC	>650 Hp	3	1.34E-05	9.79E-06	1.00	Yes
ICE, Diesel	PAH	Phenanthrene	Log lb/MMBtu	NC	<650 Hp	6	-4.38E+00	5.31E-02	1.00	NC	>650 Hp	3	-5.03E+00	5.35E-01	1.00	Yes
ICE, Diesel	PAH	Pyrene	lb/MMBtu	NC	<650 Hp	6	4.46E-06	1.58E-06	1.00	NC	>650 Hp	3	4.26E-06	3.26E-06	1.00	No
ICE, Diesel	PAH	Pyrene	Log lb/MMBtu	NC	<650 Hp	6	-5.37E+00	1.28E-01	1.00	NC	>650 Hp	3	-5.52E+00	4.95E-01	1.00	No
ICE, Diesel	VOC	Acetaldehyde	lb/MMBtu	NC	<650 Hp	6	5.41E-04	5.67E-04	1.00	NC	>650 Hp	3	4.69E-04	4.18E-05	1.00	No
ICE, Diesel	VOC	Acetaldehyde	Log lb/MMBtu	NC	<650 Hp	6	-3.83E+00	9.58E-01	1.00	NC	>650 Hp	3	-3.33E+00	3.98E-02	1.00	No
ICE, Diesel	VOC	Acrolein	lb/MMBtu	NC	<650 Hp	6	3.00E-05	2.49E-05	0.38	NC	>650 Hp	3	1.35E-04	8.43E-05	1.00	Yes
ICE, Diesel	VOC	Acrolein	Log lb/MMBtu	NC	<650 Hp	6	-4.72E+00	5.06E-01	0.38	NC	>650 Hp	3	-3.93E+00	2.73E-01	1.00	Yes
ICE, Diesel	VOC	Benzene	lb/MMBtu	NC	<650 Hp	6	6.03E-04	1.20E-04	1.00	NC	>650 Hp	3	1.27E-03	1.32E-04	1.00	Yes
ICE, Diesel	VOC	Benzene	Log lb/MMBtu	NC	<650 Hp	6	-3.23E+00	8.76E-02	1.00	NC	>650 Hp	3	-2.90E+00	4.62E-02	1.00	Yes
ICE, Diesel	VOC	Formaldehyde	lb/MMBtu	NC	<650 Hp	6	7.24E-04	9.15E-04	1.00	NC	>650 Hp	3	1.00E-03	3.87E-04	1.00	No
ICE, Diesel	VOC	Formaldehyde	Log lb/MMBtu	NC	<650 Hp	6	-3.65E+00	8.98E-01	1.00	NC	>650 Hp	3	-3.02E+00	1.77E-01	1.00	No
ICE, Diesel	VOC	Propylene	lb/MMBtu	NC	<650 Hp	6	1.99E-03	8.17E-04	1.00	NC	>650 Hp	3	3.89E-03	4.84E-04	1.00	Yes
ICE, Diesel	VOC	Propylene	Log lb/MMBtu	NC	<650 Hp	6	-2.73E+00	1.92E-01	1.00	NC	>650 Hp	3	-2.41E+00	5.62E-02	1.00	Yes
ICE, Diesel	VOC	Toluene	lb/MMBtu	NC	<650 Hp	6	2.60E-04	9.13E-06	1.00	NC	>650 Hp	3	5.36E-04	1.07E-05	1.00	Yes
ICE, Diesel	VOC	Toluene	Log lb/MMBtu	NC	<650 Hp	6	-3.59E+00	1.53E-02	1.00	NC	>650 Hp	3	-3.27E+00	8.69E-03	1.00	Yes

TABLE 7-7. RICE STROKES PER CYCLE AND CAPACITY COMPARISON.

Major Group	Category	Substance	Value Type	First Sample Statistics						Second Sample Statistics						Significant Difference at 95%Confidence
				Description		Size	Average	Standard Deviation	Detect Ratio	Description		Size	Average	Standard Deviation	Detect Ratio	
				Strokes	Capacity					Strokes	Capacity					
ICE, Diesel	VOC	Xylene (Total)	lb/MMBtu	NC	<650 Hp	3	1.89E-04	7.28E-06	1.00	NC	>650 Hp	3	2.59E-04	1.07E-04	1.00	No
ICE, Diesel	VOC	Xylene (Total)	Log lb/MMBtu	NC	<650 Hp	3	-3.72E+00	1.68E-02	1.00	NC	>650 Hp	3	-3.62E+00	2.16E-01	1.00	No
ICE, Field Gas	VOC	Benzene	lb/MMBtu	2S	<650 Hp	2	1.24E-02	7.33E-04	1.00	2S	>650 Hp	3	4.18E-03	1.81E-04	1.00	Yes
ICE, Field Gas	VOC	Benzene	lb/MMBtu	2S	<650 Hp	2	1.24E-02	7.33E-04	1.00	4S	<650 Hp	8	3.85E-03	4.12E-03	1.00	Yes
ICE, Field Gas	VOC	Benzene	lb/MMBtu	2S	>650 Hp	3	4.18E-03	1.81E-04	1.00	4S	<650 Hp	8	3.85E-03	4.12E-03	1.00	No
ICE, Field Gas	VOC	Benzene	Log lb/MMBtu	2S	<650 Hp	2	-1.91E+00	2.56E-02	1.00	2S	>650 Hp	3	-2.38E+00	1.87E-02	1.00	Yes
ICE, Field Gas	VOC	Benzene	Log lb/MMBtu	2S	<650 Hp	2	-1.91E+00	2.56E-02	1.00	4S	<650 Hp	8	-2.61E+00	4.16E-01	1.00	No
ICE, Field Gas	VOC	Benzene	Log lb/MMBtu	2S	>650 Hp	3	-2.38E+00	1.87E-02	1.00	4S	<650 Hp	8	-2.61E+00	4.16E-01	1.00	No
ICE, Field Gas	VOC	Formaldehyde	lb/MMBtu	2S	<650 Hp	3	7.24E-02	7.81E-03	1.00	2S	>650 Hp	3	2.45E-02	3.29E-02	1.00	No
ICE, Field Gas	VOC	Formaldehyde	lb/MMBtu	2S	<650 Hp	3	7.24E-02	7.81E-03	1.00	4S	<650 Hp	12	3.08E-02	3.02E-02	1.00	Yes
ICE, Field Gas	VOC	Formaldehyde	lb/MMBtu	2S	>650 Hp	3	2.45E-02	3.29E-02	1.00	4S	<650 Hp	12	3.08E-02	3.02E-02	1.00	No
ICE, Field Gas	VOC	Formaldehyde	Log lb/MMBtu	2S	<650 Hp	3	-1.14E+00	4.58E-02	1.00	2S	>650 Hp	3	-1.92E+00	6.29E-01	1.00	No
ICE, Field Gas	VOC	Formaldehyde	Log lb/MMBtu	2S	<650 Hp	3	-1.14E+00	4.58E-02	1.00	4S	<650 Hp	12	-1.73E+00	4.94E-01	1.00	No
ICE, Field Gas	VOC	Formaldehyde	Log lb/MMBtu	2S	>650 Hp	3	-1.92E+00	6.29E-01	1.00	4S	<650 Hp	12	-1.73E+00	4.94E-01	1.00	No
ICE, Field Gas	VOC	Propylene	lb/MMBtu	2S	<650 Hp	2	3.82E-02	0.00E+00	1.00	2S	>650 Hp	3	1.40E-02	3.01E-03	1.00	Yes
ICE, Field Gas	VOC	Propylene	lb/MMBtu	2S	<650 Hp	2	3.82E-02	0.00E+00	1.00	4S	<650 Hp	8	1.21E-02	6.89E-03	0.94	Yes
ICE, Field Gas	VOC	Propylene	lb/MMBtu	2S	>650 Hp	3	1.40E-02	3.01E-03	1.00	4S	<650 Hp	8	1.21E-02	6.89E-03	0.94	No
ICE, Field Gas	VOC	Propylene	Log lb/MMBtu	2S	<650 Hp	2	-1.42E+00	0.00E+00	1.00	2S	>650 Hp	3	-1.86E+00	9.65E-02	1.00	Yes
ICE, Field Gas	VOC	Propylene	Log lb/MMBtu	2S	<650 Hp	2	-1.42E+00	0.00E+00	1.00	4S	<650 Hp	8	-2.01E+00	3.48E-01	0.94	Yes
ICE, Field Gas	VOC	Propylene	Log lb/MMBtu	2S	>650 Hp	3	-1.86E+00	9.65E-02	1.00	4S	<650 Hp	8	-2.01E+00	3.48E-01	0.94	No
ICE, Field Gas	VOC	Toluene	lb/MMBtu	2S	<650 Hp	2	4.60E-03	1.23E-03	1.00	2S	>650 Hp	3	1.47E-03	1.10E-03	1.00	No
ICE, Field Gas	VOC	Toluene	lb/MMBtu	2S	<650 Hp	2	4.60E-03	1.23E-03	1.00	4S	<650 Hp	8	1.37E-03	1.22E-03	1.00	Yes
ICE, Field Gas	VOC	Toluene	lb/MMBtu	2S	>650 Hp	3	1.47E-03	1.10E-03	1.00	4S	<650 Hp	8	1.37E-03	1.22E-03	1.00	No
ICE, Field Gas	VOC	Toluene	Log lb/MMBtu	2S	<650 Hp	2	-2.35E+00	1.17E-01	1.00	2S	>650 Hp	3	-3.01E+00	5.74E-01	1.00	No
ICE, Field Gas	VOC	Toluene	Log lb/MMBtu	2S	<650 Hp	2	-2.35E+00	1.17E-01	1.00	4S	<650 Hp	8	-3.03E+00	4.16E-01	1.00	No
ICE, Field Gas	VOC	Toluene	Log lb/MMBtu	2S	>650 Hp	3	-3.01E+00	5.74E-01	1.00	4S	<650 Hp	8	-3.03E+00	4.16E-01	1.00	No
ICE, Field Gas	VOC	Xylene (m,p)	lb/MMBtu	2S	<650 Hp	2	1.07E-03	1.57E-04	1.00	2S	>650 Hp	3	2.42E-04	6.12E-05	1.00	Yes
ICE, Field Gas	VOC	Xylene (m,p)	lb/MMBtu	2S	<650 Hp	2	1.07E-03	1.57E-04	1.00	4S	<650 Hp	8	3.43E-04	2.64E-04	1.00	Yes
ICE, Field Gas	VOC	Xylene (m,p)	lb/MMBtu	2S	>650 Hp	3	2.42E-04	6.12E-05	1.00	4S	<650 Hp	8	3.43E-04	2.64E-04	1.00	No
ICE, Field Gas	VOC	Xylene (m,p)	Log lb/MMBtu	2S	<650 Hp	2	-2.97E+00	6.38E-02	1.00	2S	>650 Hp	3	-3.63E+00	1.13E-01	1.00	Yes
ICE, Field Gas	VOC	Xylene (m,p)	Log lb/MMBtu	2S	<650 Hp	2	-2.97E+00	6.38E-02	1.00	4S	<650 Hp	8	-3.58E+00	3.42E-01	1.00	Yes
ICE, Field Gas	VOC	Xylene (m,p)	Log lb/MMBtu	2S	>650 Hp	3	-3.63E+00	1.13E-01	1.00	4S	<650 Hp	8	-3.58E+00	3.42E-01	1.00	No
ICE, Field Gas	VOC	Xylene (o)	lb/MMBtu	2S	<650 Hp	2	5.37E-04	3.67E-05	1.00	2S	>650 Hp	3	9.84E-05	3.25E-05	1.00	Yes
ICE, Field Gas	VOC	Xylene (o)	lb/MMBtu	2S	<650 Hp	2	5.37E-04	3.67E-05	1.00	4S	<650 Hp	8	1.28E-04	8.12E-05	1.00	Yes
ICE, Field Gas	VOC	Xylene (o)	lb/MMBtu	2S	>650 Hp	3	9.84E-05	3.25E-05	1.00	4S	<650 Hp	8	1.28E-04	8.12E-05	1.00	No
ICE, Field Gas	VOC	Xylene (o)	Log lb/MMBtu	2S	<650 Hp	2	-3.27E+00	2.97E-02	1.00	2S	>650 Hp	3	-4.02E+00	1.52E-01	1.00	Yes
ICE, Field Gas	VOC	Xylene (o)	Log lb/MMBtu	2S	<650 Hp	2	-3.27E+00	2.97E-02	1.00	4S	<650 Hp	8	-3.96E+00	2.47E-01	1.00	Yes
ICE, Field Gas	VOC	Xylene (o)	Log lb/MMBtu	2S	>650 Hp	3	-4.02E+00	1.52E-01	1.00	4S	<650 Hp	8	-3.96E+00	2.47E-01	1.00	No

TABLE 7-8. RICE STROKES PER CYCLE, OXYGEN, AND CAPACITY COMPARISON.

Major Group	Category	Substance	Value Type	First Sample Statistics							Second Sample Statistics							Significant Difference at 95%Confidence
				Description			Size	Average	Standard Deviation	Detect Ratio	Description			Size	Average	Standard Deviation	Detect Ratio	
				Strokes	Oxygen	Capacity					Strokes	Oxygen	Capacity					
ICE, Diesel	PAH	Acenaphthene	lb/MMBtu	NC	O2<13%	<650 Hp	3	4.54E-06	1.74E-06	1.00	NC	O2>13%	<650 Hp	3	1.03E-08	1.94E-10	0.00	Yes
ICE, Diesel	PAH	Acenaphthene	lb/MMBtu	NC	O2<13%	<650 Hp	3	4.54E-06	1.74E-06	1.00	NC	O2>13%	>650 Hp	3	2.85E-06	1.85E-06	1.00	No
ICE, Diesel	PAH	Acenaphthene	lb/MMBtu	NC	O2>13%	<650 Hp	3	1.03E-08	1.94E-10	0.00	NC	O2>13%	>650 Hp	3	2.85E-06	1.85E-06	1.00	No
ICE, Diesel	PAH	Acenaphthene	Log lb/MMBtu	NC	O2<13%	<650 Hp	3	-5.37E+00	1.86E-01	1.00	NC	O2>13%	<650 Hp	3	-7.99E+00	8.28E-03	0.00	Yes
ICE, Diesel	PAH	Acenaphthene	Log lb/MMBtu	NC	O2<13%	<650 Hp	3	-5.37E+00	1.86E-01	1.00	NC	O2>13%	>650 Hp	3	-5.60E+00	2.60E-01	1.00	No
ICE, Diesel	PAH	Acenaphthene	Log lb/MMBtu	NC	O2>13%	<650 Hp	3	-7.99E+00	8.28E-03	0.00	NC	O2>13%	>650 Hp	3	-5.60E+00	2.60E-01	1.00	Yes
ICE, Diesel	PAH	Acenaphthylene	lb/MMBtu	NC	O2<13%	<650 Hp	3	8.97E-06	5.47E-07	1.00	NC	O2>13%	<650 Hp	3	1.03E-08	1.94E-10	0.00	Yes
ICE, Diesel	PAH	Acenaphthylene	lb/MMBtu	NC	O2<13%	<650 Hp	3	8.97E-06	5.47E-07	1.00	NC	O2>13%	>650 Hp	3	1.02E-05	4.91E-06	1.00	No
ICE, Diesel	PAH	Acenaphthylene	lb/MMBtu	NC	O2>13%	<650 Hp	3	1.03E-08	1.94E-10	0.00	NC	O2>13%	>650 Hp	3	1.02E-05	4.91E-06	1.00	Yes
ICE, Diesel	PAH	Acenaphthylene	Log lb/MMBtu	NC	O2<13%	<650 Hp	3	-5.05E+00	2.70E-02	1.00	NC	O2>13%	<650 Hp	3	-7.99E+00	8.28E-03	0.00	Yes
ICE, Diesel	PAH	Acenaphthylene	Log lb/MMBtu	NC	O2<13%	<650 Hp	3	-5.05E+00	2.70E-02	1.00	NC	O2>13%	>650 Hp	3	-5.04E+00	2.65E-01	1.00	No
ICE, Diesel	PAH	Acenaphthylene	Log lb/MMBtu	NC	O2>13%	<650 Hp	3	-7.99E+00	8.28E-03	0.00	NC	O2>13%	>650 Hp	3	-5.04E+00	2.65E-01	1.00	Yes
ICE, Diesel	PAH	Anthracene	lb/MMBtu	NC	O2<13%	<650 Hp	3	1.20E-06	7.48E-07	1.00	NC	O2>13%	<650 Hp	3	2.28E-06	3.16E-07	1.00	No
ICE, Diesel	PAH	Anthracene	lb/MMBtu	NC	O2<13%	<650 Hp	3	1.20E-06	7.48E-07	1.00	NC	O2>13%	>650 Hp	3	1.44E-06	1.06E-06	1.00	No
ICE, Diesel	PAH	Anthracene	lb/MMBtu	NC	O2>13%	<650 Hp	3	2.28E-06	3.16E-07	1.00	NC	O2>13%	>650 Hp	3	1.44E-06	1.06E-06	1.00	No
ICE, Diesel	PAH	Anthracene	Log lb/MMBtu	NC	O2<13%	<650 Hp	3	-5.98E+00	2.66E-01	1.00	NC	O2>13%	<650 Hp	3	-5.64E+00	5.81E-02	1.00	No
ICE, Diesel	PAH	Anthracene	Log lb/MMBtu	NC	O2<13%	<650 Hp	3	-5.98E+00	2.66E-01	1.00	NC	O2>13%	>650 Hp	3	-6.01E+00	5.55E-01	1.00	No
ICE, Diesel	PAH	Anthracene	Log lb/MMBtu	NC	O2>13%	<650 Hp	3	-5.64E+00	5.81E-02	1.00	NC	O2>13%	>650 Hp	3	-6.01E+00	5.55E-01	1.00	No
ICE, Diesel	PAH	Benzo(a)anthracene	lb/MMBtu	NC	O2<13%	<650 Hp	3	6.14E-07	5.97E-08	1.00	NC	O2>13%	<650 Hp	3	2.67E-06	1.91E-06	1.00	No
ICE, Diesel	PAH	Benzo(a)anthracene	lb/MMBtu	NC	O2<13%	<650 Hp	3	6.14E-07	5.97E-08	1.00	NC	O2>13%	>650 Hp	3	6.74E-07	9.49E-07	1.00	No
ICE, Diesel	PAH	Benzo(a)anthracene	lb/MMBtu	NC	O2>13%	<650 Hp	3	2.67E-06	1.91E-06	1.00	NC	O2>13%	>650 Hp	3	6.74E-07	9.49E-07	1.00	No
ICE, Diesel	PAH	Benzo(a)anthracene	Log lb/MMBtu	NC	O2<13%	<650 Hp	3	-6.21E+00	4.12E-02	1.00	NC	O2>13%	<650 Hp	3	-5.65E+00	3.11E-01	1.00	Yes
ICE, Diesel	PAH	Benzo(a)anthracene	Log lb/MMBtu	NC	O2<13%	<650 Hp	3	-6.21E+00	4.12E-02	1.00	NC	O2>13%	>650 Hp	3	-6.52E+00	6.65E-01	1.00	No
ICE, Diesel	PAH	Benzo(a)anthracene	Log lb/MMBtu	NC	O2>13%	<650 Hp	3	-5.65E+00	3.11E-01	1.00	NC	O2>13%	>650 Hp	3	-6.52E+00	6.65E-01	1.00	No
ICE, Diesel	PAH	Benzo(a)pyrene	lb/MMBtu	NC	O2<13%	<650 Hp	3	2.49E-07	9.94E-08	0.45	NC	O2>13%	<650 Hp	3	1.03E-08	1.94E-10	0.00	Yes
ICE, Diesel	PAH	Benzo(a)pyrene	lb/MMBtu	NC	O2<13%	<650 Hp	3	2.49E-07	9.94E-08	0.45	NC	O2>13%	>650 Hp	3	3.65E-07	9.73E-08	0.00	No
ICE, Diesel	PAH	Benzo(a)pyrene	lb/MMBtu	NC	O2>13%	<650 Hp	3	1.03E-08	1.94E-10	0.00	NC	O2>13%	>650 Hp	3	3.65E-07	9.73E-08	0.00	Yes
ICE, Diesel	PAH	Benzo(a)pyrene	Log lb/MMBtu	NC	O2<13%	<650 Hp	3	-6.63E+00	1.97E-01	0.45	NC	O2>13%	<650 Hp	3	-7.99E+00	8.28E-03	0.00	Yes
ICE, Diesel	PAH	Benzo(a)pyrene	Log lb/MMBtu	NC	O2<13%	<650 Hp	3	-6.63E+00	1.97E-01	0.45	NC	O2>13%	>650 Hp	3	-6.45E+00	1.28E-01	0.00	No
ICE, Diesel	PAH	Benzo(a)pyrene	Log lb/MMBtu	NC	O2>13%	<650 Hp	3	-7.99E+00	8.28E-03	0.00	NC	O2>13%	>650 Hp	3	-6.45E+00	1.28E-01	0.00	Yes
ICE, Diesel	PAH	Benzo(b)fluoranthene	lb/MMBtu	NC	O2<13%	<650 Hp	3	1.08E-06	2.44E-07	0.27	NC	O2>13%	>650 Hp	3	1.87E-07	9.87E-08	0.50	Yes
ICE, Diesel	PAH	Benzo(b)fluoranthene	Log lb/MMBtu	NC	O2<13%	<650 Hp	3	-5.97E+00	9.46E-02	0.27	NC	O2>13%	>650 Hp	3	-6.78E+00	2.69E-01	0.50	Yes
ICE, Diesel	PAH	Benzo(g,h,i)perylene	lb/MMBtu	NC	O2<13%	<650 Hp	3	5.42E-07	4.97E-08	1.00	NC	O2>13%	<650 Hp	3	4.12E-07	1.33E-07	1.00	No
ICE, Diesel	PAH	Benzo(g,h,i)perylene	lb/MMBtu	NC	O2<13%	<650 Hp	3	5.42E-07	4.97E-08	1.00	NC	O2>13%	>650 Hp	3	5.62E-07	5.25E-07	0.00	No
ICE, Diesel	PAH	Benzo(g,h,i)perylene	lb/MMBtu	NC	O2>13%	<650 Hp	3	4.12E-07	1.33E-07	1.00	NC	O2>13%	>650 Hp	3	5.62E-07	5.25E-07	0.00	No
ICE, Diesel	PAH	Benzo(g,h,i)perylene	Log lb/MMBtu	NC	O2<13%	<650 Hp	3	-6.27E+00	4.05E-02	1.00	NC	O2>13%	<650 Hp	3	-6.40E+00	1.35E-01	1.00	No
ICE, Diesel	PAH	Benzo(g,h,i)perylene	Log lb/MMBtu	NC	O2<13%	<650 Hp	3	-6.27E+00	4.05E-02	1.00	NC	O2>13%	>650 Hp	3	-6.45E+00	5.73E-01	0.00	No
ICE, Diesel	PAH	Benzo(g,h,i)perylene	Log lb/MMBtu	NC	O2>13%	<650 Hp	3	-6.40E+00	1.35E-01	1.00	NC	O2>13%	>650 Hp	3	-6.45E+00	5.73E-01	0.00	No
ICE, Diesel	PAH	Benzo(k)fluoranthene	lb/MMBtu	NC	O2<13%	<650 Hp	3	2.13E-07	2.38E-07	0.76	NC	O2>13%	>650 Hp	3	3.00E-07	1.55E-07	0.50	No
ICE, Diesel	PAH	Benzo(k)fluoranthene	Log lb/MMBtu	NC	O2<13%	<650 Hp	3	-6.85E+00	4.73E-01	0.76	NC	O2>13%	>650 Hp	3	-6.57E+00	2.58E-01	0.50	No
ICE, Diesel	PAH	Chrysene	lb/MMBtu	NC	O2<13%	<650 Hp	3	1.49E-06	1.64E-07	1.00	NC	O2>13%	<650 Hp	3	4.41E-07	4.92E-08	1.00	Yes
ICE, Diesel	PAH	Chrysene	lb/MMBtu	NC	O2<13%	<650 Hp	3	1.49E-06	1.64E-07	1.00	NC	O2>13%	>650 Hp	3	2.62E-07	9.03E-08	1.00	Yes
ICE, Diesel	PAH	Chrysene	lb/MMBtu	NC	O2>13%	<650 Hp	3	4.41E-07	4.92E-08	1.00	NC	O2>13%	>650 Hp	3	2.62E-07	9.03E-08	1.00	Yes
ICE, Diesel	PAH	Chrysene	Log lb/MMBtu	NC	O2<13%	<650 Hp	3	-5.83E+00	4.95E-02	1.00	NC	O2>13%	<650 Hp	3	-6.36E+00	4.98E-02	1.00	Yes
ICE, Diesel	PAH	Chrysene	Log lb/MMBtu	NC	O2<13%	<650 Hp	3	-5.83E+00	4.95E-02	1.00	NC	O2>13%	>650 Hp	3	-6.60E+00	1.41E-01	1.00	Yes
ICE, Diesel	PAH	Chrysene	Log lb/MMBtu	NC	O2>13%	<650 Hp	3	-6.36E+00	4.98E-02	1.00	NC	O2>13%	>650 Hp	3	-6.60E+00	1.41E-01	1.00	No
ICE, Diesel	PAH	Dibenz(a,h)anthracene	lb/MMBtu	NC	O2<13%	<650 Hp	3	3.36E-07	1.88E-08	0.00	NC	O2>13%	<650 Hp	3	4.10E-07	1.04E-07	1.00	No
ICE, Diesel	PAH	Dibenz(a,h)anthracene	lb/MMBtu	NC	O2<13%	<650 Hp	3	3.36E-07	1.88E-08	0.00	NC	O2>13%	>650 Hp	3	7.58E-07	3.51E-07	0.00	No
ICE, Diesel	PAH	Dibenz(a,h)anthracene	lb/MMBtu	NC	O2>13%	<650 Hp	3	4.10E-07	1.04E-07	1.00	NC	O2>13%	>650 Hp	3	7.58E-07	3.51E-07	0.00	No
ICE, Diesel	PAH	Dibenz(a,h)anthracene	Log lb/MMBtu	NC	O2<13%	<650 Hp	3	-6.47E+00	2.39E-02	0.00	NC	O2>13%	<650 Hp	3	-6.40E+00	1.09E-01	1.00	No

TABLE 7-8. RICE STROKES PER CYCLE, OXYGEN, AND CAPACITY COMPARISON.

Major Group	Category	Substance	Value Type	First Sample Statistics							Second Sample Statistics							Significant Difference at 95%Confidence
				Description			Size	Average	Standard Deviation	Detect Ratio	Description			Size	Average	Standard Deviation	Detect Ratio	
				Strokes	Oxygen	Capacity					Strokes	Oxygen	Capacity					
ICE, Diesel	PAH	Dibenz(a,h)anthracene	Log lb/MMBtu	NC	O2<13%	<650 Hp	3	-6.47E+00	2.39E-02	0.00	NC	O2>13%	>650 Hp	3	-6.16E+00	2.43E-01	0.00	No
ICE, Diesel	PAH	Dibenz(a,h)anthracene	Log lb/MMBtu	NC	O2>13%	<650 Hp	3	-6.40E+00	1.09E-01	1.00	NC	O2>13%	>650 Hp	3	-6.16E+00	2.43E-01	0.00	No
ICE, Diesel	PAH	Fluoranthene	lb/MMBtu	NC	O2<13%	<650 Hp	3	3.92E-06	1.76E-07	1.00	NC	O2>13%	<650 Hp	3	1.26E-05	6.02E-06	1.00	No
ICE, Diesel	PAH	Fluoranthene	lb/MMBtu	NC	O2<13%	<650 Hp	3	3.92E-06	1.76E-07	1.00	NC	O2>13%	>650 Hp	3	2.54E-06	1.96E-06	1.00	No
ICE, Diesel	PAH	Fluoranthene	lb/MMBtu	NC	O2>13%	<650 Hp	3	1.26E-05	6.02E-06	1.00	NC	O2>13%	>650 Hp	3	2.54E-06	1.96E-06	1.00	No
ICE, Diesel	PAH	Fluoranthene	Log lb/MMBtu	NC	O2<13%	<650 Hp	3	-5.41E+00	1.93E-02	1.00	NC	O2>13%	<650 Hp	3	-4.93E+00	2.06E-01	1.00	Yes
ICE, Diesel	PAH	Fluoranthene	Log lb/MMBtu	NC	O2<13%	<650 Hp	3	-5.41E+00	1.93E-02	1.00	NC	O2>13%	>650 Hp	3	-5.74E+00	4.93E-01	1.00	No
ICE, Diesel	PAH	Fluoranthene	Log lb/MMBtu	NC	O2>13%	<650 Hp	3	-4.93E+00	2.06E-01	1.00	NC	O2>13%	>650 Hp	3	-5.74E+00	4.93E-01	1.00	No
ICE, Diesel	PAH	Fluorene	lb/MMBtu	NC	O2<13%	<650 Hp	3	1.25E-05	3.26E-07	1.00	NC	O2>13%	<650 Hp	3	5.20E-05	3.32E-06	1.00	Yes
ICE, Diesel	PAH	Fluorene	lb/MMBtu	NC	O2<13%	<650 Hp	3	1.25E-05	3.26E-07	1.00	NC	O2>13%	>650 Hp	3	6.09E-06	3.96E-06	0.92	Yes
ICE, Diesel	PAH	Fluorene	lb/MMBtu	NC	O2>13%	<650 Hp	3	5.20E-05	3.32E-06	1.00	NC	O2>13%	>650 Hp	3	6.09E-06	3.96E-06	0.92	Yes
ICE, Diesel	PAH	Fluorene	Log lb/MMBtu	NC	O2<13%	<650 Hp	3	-4.90E+00	1.13E-02	1.00	NC	O2>13%	<650 Hp	3	-4.28E+00	2.83E-02	1.00	Yes
ICE, Diesel	PAH	Fluorene	Log lb/MMBtu	NC	O2<13%	<650 Hp	3	-4.90E+00	1.13E-02	1.00	NC	O2>13%	>650 Hp	3	-5.32E+00	4.28E-01	0.92	No
ICE, Diesel	PAH	Fluorene	Log lb/MMBtu	NC	O2>13%	<650 Hp	3	-4.28E+00	2.83E-02	1.00	NC	O2>13%	>650 Hp	3	-5.32E+00	4.28E-01	0.92	Yes
ICE, Diesel	PAH	Indeno(1,2,3-cd)pyrene	lb/MMBtu	NC	O2<13%	<650 Hp	3	4.01E-07	7.11E-08	0.34	NC	O2>13%	<650 Hp	3	2.71E-07	4.81E-08	1.00	No
ICE, Diesel	PAH	Indeno(1,2,3-cd)pyrene	lb/MMBtu	NC	O2<13%	<650 Hp	3	4.01E-07	7.11E-08	0.34	NC	O2>13%	>650 Hp	3	6.55E-07	5.19E-07	0.00	No
ICE, Diesel	PAH	Indeno(1,2,3-cd)pyrene	lb/MMBtu	NC	O2>13%	<650 Hp	3	2.71E-07	4.81E-08	1.00	NC	O2>13%	>650 Hp	3	6.55E-07	5.19E-07	0.00	No
ICE, Diesel	PAH	Indeno(1,2,3-cd)pyrene	Log lb/MMBtu	NC	O2<13%	<650 Hp	3	-6.40E+00	7.94E-02	0.34	NC	O2>13%	<650 Hp	3	-6.57E+00	7.51E-02	1.00	No
ICE, Diesel	PAH	Indeno(1,2,3-cd)pyrene	Log lb/MMBtu	NC	O2<13%	<650 Hp	3	-6.40E+00	7.94E-02	0.34	NC	O2>13%	>650 Hp	3	-6.43E+00	7.10E-01	0.00	No
ICE, Diesel	PAH	Indeno(1,2,3-cd)pyrene	Log lb/MMBtu	NC	O2>13%	<650 Hp	3	-6.57E+00	7.51E-02	1.00	NC	O2>13%	>650 Hp	3	-6.43E+00	7.10E-01	0.00	No
ICE, Diesel	PAH	Naphthalene	lb/MMBtu	NC	O2<13%	<650 Hp	3	1.27E-04	4.74E-06	1.00	NC	O2>13%	<650 Hp	3	5.20E-05	9.18E-06	1.00	Yes
ICE, Diesel	PAH	Naphthalene	lb/MMBtu	NC	O2<13%	<650 Hp	3	1.27E-04	4.74E-06	1.00	NC	O2>13%	>650 Hp	3	1.18E-04	9.16E-05	1.00	No
ICE, Diesel	PAH	Naphthalene	lb/MMBtu	NC	O2>13%	<650 Hp	3	5.20E-05	9.18E-06	1.00	NC	O2>13%	>650 Hp	3	1.18E-04	9.16E-05	1.00	No
ICE, Diesel	PAH	Naphthalene	Log lb/MMBtu	NC	O2<13%	<650 Hp	3	-3.90E+00	1.64E-02	1.00	NC	O2>13%	<650 Hp	3	-4.29E+00	7.52E-02	1.00	Yes
ICE, Diesel	PAH	Naphthalene	Log lb/MMBtu	NC	O2<13%	<650 Hp	3	-3.90E+00	1.64E-02	1.00	NC	O2>13%	>650 Hp	3	-4.02E+00	3.56E-01	1.00	No
ICE, Diesel	PAH	Naphthalene	Log lb/MMBtu	NC	O2>13%	<650 Hp	3	-4.29E+00	7.52E-02	1.00	NC	O2>13%	>650 Hp	3	-4.02E+00	3.56E-01	1.00	No
ICE, Diesel	PAH	Phenanthrene	lb/MMBtu	NC	O2<13%	<650 Hp	3	3.97E-05	1.02E-06	1.00	NC	O2>13%	<650 Hp	3	4.51E-05	7.53E-06	1.00	No
ICE, Diesel	PAH	Phenanthrene	lb/MMBtu	NC	O2<13%	<650 Hp	3	3.97E-05	1.02E-06	1.00	NC	O2>13%	>650 Hp	3	1.34E-05	9.79E-06	1.00	Yes
ICE, Diesel	PAH	Phenanthrene	lb/MMBtu	NC	O2>13%	<650 Hp	3	4.51E-05	7.53E-06	1.00	NC	O2>13%	>650 Hp	3	1.34E-05	9.79E-06	1.00	Yes
ICE, Diesel	PAH	Phenanthrene	Log lb/MMBtu	NC	O2<13%	<650 Hp	3	-4.40E+00	1.12E-02	1.00	NC	O2>13%	<650 Hp	3	-4.35E+00	6.97E-02	1.00	No
ICE, Diesel	PAH	Phenanthrene	Log lb/MMBtu	NC	O2<13%	<650 Hp	3	-4.40E+00	1.12E-02	1.00	NC	O2>13%	>650 Hp	3	-5.03E+00	5.35E-01	1.00	No
ICE, Diesel	PAH	Phenanthrene	Log lb/MMBtu	NC	O2>13%	<650 Hp	3	-4.35E+00	6.97E-02	1.00	NC	O2>13%	>650 Hp	3	-5.03E+00	5.35E-01	1.00	No
ICE, Diesel	PAH	Pyrene	lb/MMBtu	NC	O2<13%	<650 Hp	3	3.61E-06	2.94E-07	1.00	NC	O2>13%	<650 Hp	3	5.30E-06	2.01E-06	1.00	No
ICE, Diesel	PAH	Pyrene	lb/MMBtu	NC	O2<13%	<650 Hp	3	3.61E-06	2.94E-07	1.00	NC	O2>13%	>650 Hp	3	4.26E-06	3.26E-06	1.00	No
ICE, Diesel	PAH	Pyrene	lb/MMBtu	NC	O2>13%	<650 Hp	3	5.30E-06	2.01E-06	1.00	NC	O2>13%	>650 Hp	3	4.26E-06	3.26E-06	1.00	No
ICE, Diesel	PAH	Pyrene	Log lb/MMBtu	NC	O2<13%	<650 Hp	3	-5.44E+00	3.47E-02	1.00	NC	O2>13%	<650 Hp	3	-5.29E+00	1.53E-01	1.00	No
ICE, Diesel	PAH	Pyrene	Log lb/MMBtu	NC	O2<13%	<650 Hp	3	-5.44E+00	3.47E-02	1.00	NC	O2>13%	>650 Hp	3	-5.52E+00	4.95E-01	1.00	No
ICE, Diesel	PAH	Pyrene	Log lb/MMBtu	NC	O2>13%	<650 Hp	3	-5.29E+00	1.53E-01	1.00	NC	O2>13%	>650 Hp	3	-5.52E+00	4.95E-01	1.00	No
ICE, Diesel	VOC	Acetaldehyde	lb/MMBtu	NC	O2<13%	<650 Hp	3	2.44E-05	1.84E-05	1.00	NC	O2>13%	<650 Hp	3	1.06E-03	2.52E-05	1.00	Yes
ICE, Diesel	VOC	Acetaldehyde	lb/MMBtu	NC	O2<13%	<650 Hp	3	2.44E-05	1.84E-05	1.00	NC	O2>13%	>650 Hp	3	4.69E-04	4.18E-05	1.00	Yes
ICE, Diesel	VOC	Acetaldehyde	lb/MMBtu	NC	O2>13%	<650 Hp	3	1.06E-03	2.52E-05	1.00	NC	O2>13%	>650 Hp	3	4.69E-04	4.18E-05	1.00	Yes
ICE, Diesel	VOC	Acetaldehyde	Log lb/MMBtu	NC	O2<13%	<650 Hp	3	-4.69E+00	3.07E-01	1.00	NC	O2>13%	<650 Hp	3	-2.98E+00	1.04E-02	1.00	Yes
ICE, Diesel	VOC	Acetaldehyde	Log lb/MMBtu	NC	O2<13%	<650 Hp	3	-4.69E+00	3.07E-01	1.00	NC	O2>13%	>650 Hp	3	-3.33E+00	3.98E-02	1.00	Yes
ICE, Diesel	VOC	Acetaldehyde	Log lb/MMBtu	NC	O2>13%	<650 Hp	3	-2.98E+00	1.04E-02	1.00	NC	O2>13%	>650 Hp	3	-3.33E+00	3.98E-02	1.00	Yes
ICE, Diesel	VOC	Acrolein	lb/MMBtu	NC	O2<13%	<650 Hp	3	7.57E-06	4.37E-06	0.56	NC	O2>13%	<650 Hp	3	5.24E-05	4.58E-06	0.35	Yes
ICE, Diesel	VOC	Acrolein	lb/MMBtu	NC	O2<13%	<650 Hp	3	7.57E-06	4.37E-06	0.56	NC	O2>13%	>650 Hp	3	1.35E-04	8.43E-05	1.00	No
ICE, Diesel	VOC	Acrolein	lb/MMBtu	NC	O2>13%	<650 Hp	3	5.24E-05	4.58E-06	0.35	NC	O2>13%	>650 Hp	3	1.35E-04	8.43E-05	1.00	No
ICE, Diesel	VOC	Acrolein	Log lb/MMBtu	NC	O2<13%	<650 Hp	3	-5.16E+00	2.30E-01	0.56	NC	O2>13%	<650 Hp	3	-4.28E+00	3.89E-02	0.35	Yes
ICE, Diesel	VOC	Acrolein	Log lb/MMBtu	NC	O2<13%	<650 Hp	3	-5.16E+00	2.30E-01	0.56	NC	O2>13%	>650 Hp	3	-3.93E+00	2.73E-01	1.00	Yes
ICE, Diesel	VOC	Acrolein	Log lb/MMBtu	NC	O2>13%	<650 Hp	3	-4.28E+00	3.89E-02	0.35	NC	O2>13%	>650 Hp	3	-3.93E+00	2.73E-01	1.00	No

TABLE 7-8. RICE STROKES PER CYCLE, OXYGEN, AND CAPACITY COMPARISON.

Major Group	Category	Substance	Value Type	First Sample Statistics							Second Sample Statistics							Significant Difference at 95%Confidence
				Description			Size	Average	Standard Deviation	Detect Ratio	Description			Size	Average	Standard Deviation	Detect Ratio	
				Strokes	Oxygen	Capacity					Strokes	Oxygen	Capacity					
ICE, Diesel	VOC	Benzene	lb/MMBtu	NC	O2<13%	<650 Hp	3	7.11E-04	1.92E-05	1.00	NC	O2>13%	<650 Hp	3	4.95E-04	2.27E-05	1.00	Yes
ICE, Diesel	VOC	Benzene	lb/MMBtu	NC	O2<13%	<650 Hp	3	7.11E-04	1.92E-05	1.00	NC	O2>13%	>650 Hp	3	1.27E-03	1.32E-04	1.00	Yes
ICE, Diesel	VOC	Benzene	lb/MMBtu	NC	O2>13%	<650 Hp	3	4.95E-04	2.27E-05	1.00	NC	O2>13%	>650 Hp	3	1.27E-03	1.32E-04	1.00	Yes
ICE, Diesel	VOC	Benzene	Log lb/MMBtu	NC	O2<13%	<650 Hp	3	-3.15E+00	1.17E-02	1.00	NC	O2>13%	<650 Hp	3	-3.31E+00	2.02E-02	1.00	Yes
ICE, Diesel	VOC	Benzene	Log lb/MMBtu	NC	O2<13%	<650 Hp	3	-3.15E+00	1.17E-02	1.00	NC	O2>13%	>650 Hp	3	-2.90E+00	4.62E-02	1.00	Yes
ICE, Diesel	VOC	Benzene	Log lb/MMBtu	NC	O2>13%	<650 Hp	3	-3.31E+00	2.02E-02	1.00	NC	O2>13%	>650 Hp	3	-2.90E+00	4.62E-02	1.00	Yes
ICE, Diesel	VOC	Formaldehyde	lb/MMBtu	NC	O2<13%	<650 Hp	3	7.68E-05	9.46E-05	1.00	NC	O2>13%	<650 Hp	3	1.37E-03	9.09E-04	1.00	No
ICE, Diesel	VOC	Formaldehyde	lb/MMBtu	NC	O2<13%	<650 Hp	3	7.68E-05	9.46E-05	1.00	NC	O2>13%	>650 Hp	3	1.00E-03	3.87E-04	1.00	Yes
ICE, Diesel	VOC	Formaldehyde	lb/MMBtu	NC	O2>13%	<650 Hp	3	1.37E-03	9.09E-04	1.00	NC	O2>13%	>650 Hp	3	1.00E-03	3.87E-04	1.00	No
ICE, Diesel	VOC	Formaldehyde	Log lb/MMBtu	NC	O2<13%	<650 Hp	3	-4.38E+00	5.97E-01	1.00	NC	O2>13%	<650 Hp	3	-2.93E+00	2.87E-01	1.00	Yes
ICE, Diesel	VOC	Formaldehyde	Log lb/MMBtu	NC	O2<13%	<650 Hp	3	-4.38E+00	5.97E-01	1.00	NC	O2>13%	>650 Hp	3	-3.02E+00	1.77E-01	1.00	Yes
ICE, Diesel	VOC	Formaldehyde	Log lb/MMBtu	NC	O2>13%	<650 Hp	3	-2.93E+00	2.87E-01	1.00	NC	O2>13%	>650 Hp	3	-3.02E+00	1.77E-01	1.00	No
ICE, Diesel	VOC	Propylene	lb/MMBtu	NC	O2<13%	<650 Hp	3	2.71E-03	2.19E-04	1.00	NC	O2>13%	<650 Hp	3	1.27E-03	2.53E-04	1.00	Yes
ICE, Diesel	VOC	Propylene	lb/MMBtu	NC	O2<13%	<650 Hp	3	2.71E-03	2.19E-04	1.00	NC	O2>13%	>650 Hp	3	3.89E-03	4.84E-04	1.00	Yes
ICE, Diesel	VOC	Propylene	lb/MMBtu	NC	O2>13%	<650 Hp	3	1.27E-03	2.53E-04	1.00	NC	O2>13%	>650 Hp	3	3.89E-03	4.84E-04	1.00	Yes
ICE, Diesel	VOC	Propylene	Log lb/MMBtu	NC	O2<13%	<650 Hp	3	-2.57E+00	3.59E-02	1.00	NC	O2>13%	<650 Hp	3	-2.90E+00	8.61E-02	1.00	Yes
ICE, Diesel	VOC	Propylene	Log lb/MMBtu	NC	O2<13%	<650 Hp	3	-2.57E+00	3.59E-02	1.00	NC	O2>13%	>650 Hp	3	-2.41E+00	5.62E-02	1.00	Yes
ICE, Diesel	VOC	Propylene	Log lb/MMBtu	NC	O2>13%	<650 Hp	3	-2.90E+00	8.61E-02	1.00	NC	O2>13%	>650 Hp	3	-2.41E+00	5.62E-02	1.00	Yes
ICE, Diesel	VOC	Toluene	lb/MMBtu	NC	O2<13%	<650 Hp	3	2.63E-04	8.61E-06	1.00	NC	O2>13%	<650 Hp	3	2.56E-04	9.88E-06	1.00	No
ICE, Diesel	VOC	Toluene	lb/MMBtu	NC	O2<13%	<650 Hp	3	2.63E-04	8.61E-06	1.00	NC	O2>13%	>650 Hp	3	5.36E-04	1.07E-05	1.00	Yes
ICE, Diesel	VOC	Toluene	lb/MMBtu	NC	O2>13%	<650 Hp	3	2.56E-04	9.88E-06	1.00	NC	O2>13%	>650 Hp	3	5.36E-04	1.07E-05	1.00	Yes
ICE, Diesel	VOC	Toluene	Log lb/MMBtu	NC	O2<13%	<650 Hp	3	-3.58E+00	1.41E-02	1.00	NC	O2>13%	<650 Hp	3	-3.59E+00	1.68E-02	1.00	No
ICE, Diesel	VOC	Toluene	Log lb/MMBtu	NC	O2<13%	<650 Hp	3	-3.58E+00	1.41E-02	1.00	NC	O2>13%	>650 Hp	3	-3.27E+00	8.69E-03	1.00	Yes
ICE, Diesel	VOC	Toluene	Log lb/MMBtu	NC	O2>13%	<650 Hp	3	-3.59E+00	1.68E-02	1.00	NC	O2>13%	>650 Hp	3	-3.27E+00	8.69E-03	1.00	Yes
ICE, Diesel	VOC	Xylene (Total)	lb/MMBtu	NC	O2<13%	<650 Hp	3	1.89E-04	7.28E-06	1.00	NC	O2>13%	>650 Hp	3	2.59E-04	1.07E-04	1.00	No
ICE, Diesel	VOC	Xylene (Total)	Log lb/MMBtu	NC	O2<13%	<650 Hp	3	-3.72E+00	1.68E-02	1.00	NC	O2>13%	>650 Hp	3	-3.62E+00	2.16E-01	1.00	No
ICE, Field Gas	VOC	Benzene	lb/MMBtu	2S	Lean	<650 Hp	2	1.24E-02	7.33E-04	1.00	2S	Lean	>650 Hp	3	4.18E-03	1.81E-04	1.00	Yes
ICE, Field Gas	VOC	Benzene	lb/MMBtu	2S	Lean	<650 Hp	2	1.24E-02	7.33E-04	1.00	4S	Lean	<650 Hp	6	1.64E-03	5.84E-04	1.00	Yes
ICE, Field Gas	VOC	Benzene	lb/MMBtu	2S	Lean	<650 Hp	2	1.24E-02	7.33E-04	1.00	4S	Rich	<650 Hp	2	1.05E-02	1.20E-04	1.00	No
ICE, Field Gas	VOC	Benzene	lb/MMBtu	2S	Lean	>650 Hp	3	4.18E-03	1.81E-04	1.00	4S	Lean	<650 Hp	6	1.64E-03	5.84E-04	1.00	Yes
ICE, Field Gas	VOC	Benzene	lb/MMBtu	2S	Lean	>650 Hp	3	4.18E-03	1.81E-04	1.00	4S	Rich	<650 Hp	2	1.05E-02	1.20E-04	1.00	Yes
ICE, Field Gas	VOC	Benzene	lb/MMBtu	4S	Lean	<650 Hp	6	1.64E-03	5.84E-04	1.00	4S	Rich	<650 Hp	2	1.05E-02	1.20E-04	1.00	Yes
ICE, Field Gas	VOC	Benzene	Log lb/MMBtu	2S	Lean	<650 Hp	2	-1.91E+00	2.56E-02	1.00	2S	Lean	>650 Hp	3	-2.38E+00	1.87E-02	1.00	Yes
ICE, Field Gas	VOC	Benzene	Log lb/MMBtu	2S	Lean	<650 Hp	2	-1.91E+00	2.56E-02	1.00	4S	Lean	<650 Hp	6	-2.81E+00	1.83E-01	1.00	Yes
ICE, Field Gas	VOC	Benzene	Log lb/MMBtu	2S	Lean	<650 Hp	2	-1.91E+00	2.56E-02	1.00	4S	Rich	<650 Hp	2	-1.98E+00	4.99E-03	1.00	No
ICE, Field Gas	VOC	Benzene	Log lb/MMBtu	2S	Lean	>650 Hp	3	-2.38E+00	1.87E-02	1.00	4S	Lean	<650 Hp	6	-2.81E+00	1.83E-01	1.00	Yes
ICE, Field Gas	VOC	Benzene	Log lb/MMBtu	2S	Lean	>650 Hp	3	-2.38E+00	1.87E-02	1.00	4S	Rich	<650 Hp	2	-1.98E+00	4.99E-03	1.00	Yes
ICE, Field Gas	VOC	Benzene	Log lb/MMBtu	4S	Lean	<650 Hp	6	-2.81E+00	1.83E-01	1.00	4S	Rich	<650 Hp	2	-1.98E+00	4.99E-03	1.00	Yes
ICE, Field Gas	VOC	Formaldehyde	lb/MMBtu	2S	Lean	<650 Hp	3	7.24E-02	7.81E-03	1.00	2S	Lean	>650 Hp	3	2.45E-02	3.29E-02	1.00	No
ICE, Field Gas	VOC	Formaldehyde	lb/MMBtu	2S	Lean	<650 Hp	3	7.24E-02	7.81E-03	1.00	4S	Lean	<650 Hp	9	3.95E-02	3.03E-02	1.00	No
ICE, Field Gas	VOC	Formaldehyde	lb/MMBtu	2S	Lean	<650 Hp	3	7.24E-02	7.81E-03	1.00	4S	Rich	<650 Hp	3	4.81E-03	7.65E-04	1.00	Yes
ICE, Field Gas	VOC	Formaldehyde	lb/MMBtu	2S	Lean	>650 Hp	3	2.45E-02	3.29E-02	1.00	4S	Lean	<650 Hp	9	3.95E-02	3.03E-02	1.00	No
ICE, Field Gas	VOC	Formaldehyde	lb/MMBtu	2S	Lean	>650 Hp	3	2.45E-02	3.29E-02	1.00	4S	Rich	<650 Hp	3	4.81E-03	7.65E-04	1.00	No
ICE, Field Gas	VOC	Formaldehyde	lb/MMBtu	4S	Lean	<650 Hp	9	3.95E-02	3.03E-02	1.00	4S	Rich	<650 Hp	3	4.81E-03	7.65E-04	1.00	No
ICE, Field Gas	VOC	Formaldehyde	Log lb/MMBtu	2S	Lean	<650 Hp	3	-1.14E+00	4.58E-02	1.00	2S	Lean	>650 Hp	3	-1.92E+00	6.29E-01	1.00	No
ICE, Field Gas	VOC	Formaldehyde	Log lb/MMBtu	2S	Lean	<650 Hp	3	-1.14E+00	4.58E-02	1.00	4S	Lean	<650 Hp	9	-1.54E+00	4.02E-01	1.00	No
ICE, Field Gas	VOC	Formaldehyde	Log lb/MMBtu	2S	Lean	<650 Hp	3	-1.14E+00	4.58E-02	1.00	4S	Rich	<650 Hp	3	-2.32E+00	6.65E-02	1.00	Yes
ICE, Field Gas	VOC	Formaldehyde	Log lb/MMBtu	2S	Lean	>650 Hp	3	-1.92E+00	6.29E-01	1.00	4S	Lean	<650 Hp	9	-1.54E+00	4.02E-01	1.00	No
ICE, Field Gas	VOC	Formaldehyde	Log lb/MMBtu	2S	Lean	>650 Hp	3	-1.92E+00	6.29E-01	1.00	4S	Rich	<650 Hp	3	-2.32E+00	6.65E-02	1.00	No
ICE, Field Gas	VOC	Formaldehyde	Log lb/MMBtu	4S	Lean	<650 Hp	9	-1.54E+00	4.02E-01	1.00	4S	Rich	<650 Hp	3	-2.32E+00	6.65E-02	1.00	Yes

TABLE 7-8. RICE STROKES PER CYCLE, OXYGEN, AND CAPACITY COMPARISON.

Major Group	Category	Substance	Value Type	First Sample Statistics							Second Sample Statistics							Significant Difference at 95%Confidence
				Description			Size	Average	Standard Deviation	Detect Ratio	Description			Size	Average	Standard Deviation	Detect Ratio	
				Strokes	Oxygen	Capacity					Strokes	Oxygen	Capacity					
ICE, Field Gas	VOC	Propylene	lb/MMBtu	2S	Lean	<650 Hp	2	3.82E-02	0.00E+00	1.00	2S	Lean	>650 Hp	3	1.40E-02	3.01E-03	1.00	Yes
ICE, Field Gas	VOC	Propylene	lb/MMBtu	2S	Lean	<650 Hp	2	3.82E-02	0.00E+00	1.00	4S	Lean	<650 Hp	6	1.52E-02	4.62E-03	1.00	Yes
ICE, Field Gas	VOC	Propylene	lb/MMBtu	2S	Lean	<650 Hp	2	3.82E-02	0.00E+00	1.00	4S	Rich	<650 Hp	2	2.90E-03	0.00E+00	0.00	NA
ICE, Field Gas	VOC	Propylene	lb/MMBtu	2S	Lean	>650 Hp	3	1.40E-02	3.01E-03	1.00	4S	Lean	<650 Hp	6	1.52E-02	4.62E-03	1.00	No
ICE, Field Gas	VOC	Propylene	lb/MMBtu	2S	Lean	>650 Hp	3	1.40E-02	3.01E-03	1.00	4S	Rich	<650 Hp	2	2.90E-03	0.00E+00	0.00	Yes
ICE, Field Gas	VOC	Propylene	lb/MMBtu	4S	Lean	<650 Hp	6	1.52E-02	4.62E-03	1.00	4S	Rich	<650 Hp	2	2.90E-03	0.00E+00	0.00	Yes
ICE, Field Gas	VOC	Propylene	Log lb/MMBtu	2S	Lean	<650 Hp	2	-1.42E+00	0.00E+00	1.00	2S	Lean	>650 Hp	3	-1.86E+00	9.65E-02	1.00	Yes
ICE, Field Gas	VOC	Propylene	Log lb/MMBtu	2S	Lean	<650 Hp	2	-1.42E+00	0.00E+00	1.00	4S	Lean	<650 Hp	6	-1.84E+00	1.51E-01	1.00	Yes
ICE, Field Gas	VOC	Propylene	Log lb/MMBtu	2S	Lean	<650 Hp	2	-1.42E+00	0.00E+00	1.00	4S	Rich	<650 Hp	2	-2.54E+00	0.00E+00	0.00	NA
ICE, Field Gas	VOC	Propylene	Log lb/MMBtu	2S	Lean	>650 Hp	3	-1.86E+00	9.65E-02	1.00	4S	Lean	<650 Hp	6	-1.84E+00	1.51E-01	1.00	No
ICE, Field Gas	VOC	Propylene	Log lb/MMBtu	2S	Lean	>650 Hp	3	-1.86E+00	9.65E-02	1.00	4S	Rich	<650 Hp	2	-2.54E+00	0.00E+00	0.00	Yes
ICE, Field Gas	VOC	Propylene	Log lb/MMBtu	4S	Lean	<650 Hp	6	-1.84E+00	1.51E-01	1.00	4S	Rich	<650 Hp	2	-2.54E+00	0.00E+00	0.00	Yes
ICE, Field Gas	VOC	Toluene	lb/MMBtu	2S	Lean	<650 Hp	2	4.60E-03	1.23E-03	1.00	2S	Lean	>650 Hp	3	1.47E-03	1.10E-03	1.00	No
ICE, Field Gas	VOC	Toluene	lb/MMBtu	2S	Lean	<650 Hp	2	4.60E-03	1.23E-03	1.00	4S	Lean	<650 Hp	6	7.31E-04	3.74E-04	1.00	Yes
ICE, Field Gas	VOC	Toluene	lb/MMBtu	2S	Lean	<650 Hp	2	4.60E-03	1.23E-03	1.00	4S	Rich	<650 Hp	2	3.28E-03	1.49E-04	1.00	No
ICE, Field Gas	VOC	Toluene	lb/MMBtu	2S	Lean	>650 Hp	3	1.47E-03	1.10E-03	1.00	4S	Lean	<650 Hp	6	7.31E-04	3.74E-04	1.00	No
ICE, Field Gas	VOC	Toluene	lb/MMBtu	2S	Lean	>650 Hp	3	1.47E-03	1.10E-03	1.00	4S	Rich	<650 Hp	2	3.28E-03	1.49E-04	1.00	No
ICE, Field Gas	VOC	Toluene	lb/MMBtu	4S	Lean	<650 Hp	6	7.31E-04	3.74E-04	1.00	4S	Rich	<650 Hp	2	3.28E-03	1.49E-04	1.00	Yes
ICE, Field Gas	VOC	Toluene	Log lb/MMBtu	2S	Lean	<650 Hp	2	-2.35E+00	1.17E-01	1.00	2S	Lean	>650 Hp	3	-3.01E+00	5.74E-01	1.00	No
ICE, Field Gas	VOC	Toluene	Log lb/MMBtu	2S	Lean	<650 Hp	2	-2.35E+00	1.17E-01	1.00	4S	Lean	<650 Hp	6	-3.21E+00	2.95E-01	1.00	Yes
ICE, Field Gas	VOC	Toluene	Log lb/MMBtu	2S	Lean	<650 Hp	2	-2.35E+00	1.17E-01	1.00	4S	Rich	<650 Hp	2	-2.48E+00	1.98E-02	1.00	No
ICE, Field Gas	VOC	Toluene	Log lb/MMBtu	2S	Lean	>650 Hp	3	-3.01E+00	5.74E-01	1.00	4S	Lean	<650 Hp	6	-3.21E+00	2.95E-01	1.00	No
ICE, Field Gas	VOC	Toluene	Log lb/MMBtu	2S	Lean	>650 Hp	3	-3.01E+00	5.74E-01	1.00	4S	Rich	<650 Hp	2	-2.48E+00	1.98E-02	1.00	No
ICE, Field Gas	VOC	Toluene	Log lb/MMBtu	4S	Lean	<650 Hp	6	-3.21E+00	2.95E-01	1.00	4S	Rich	<650 Hp	2	-2.48E+00	1.98E-02	1.00	Yes
ICE, Field Gas	VOC	Xylene (m,p)	lb/MMBtu	2S	Lean	<650 Hp	2	1.07E-03	1.57E-04	1.00	2S	Lean	>650 Hp	3	2.42E-04	6.12E-05	1.00	Yes
ICE, Field Gas	VOC	Xylene (m,p)	lb/MMBtu	2S	Lean	<650 Hp	2	1.07E-03	1.57E-04	1.00	4S	Lean	<650 Hp	6	2.87E-04	2.86E-04	1.00	Yes
ICE, Field Gas	VOC	Xylene (m,p)	lb/MMBtu	2S	Lean	<650 Hp	2	1.07E-03	1.57E-04	1.00	4S	Rich	<650 Hp	2	5.11E-04	3.44E-05	1.00	Yes
ICE, Field Gas	VOC	Xylene (m,p)	lb/MMBtu	2S	Lean	>650 Hp	3	2.42E-04	6.12E-05	1.00	4S	Lean	<650 Hp	6	2.87E-04	2.86E-04	1.00	No
ICE, Field Gas	VOC	Xylene (m,p)	lb/MMBtu	2S	Lean	>650 Hp	3	2.42E-04	6.12E-05	1.00	4S	Rich	<650 Hp	2	5.11E-04	3.44E-05	1.00	Yes
ICE, Field Gas	VOC	Xylene (m,p)	lb/MMBtu	4S	Lean	<650 Hp	6	2.87E-04	2.86E-04	1.00	4S	Rich	<650 Hp	2	5.11E-04	3.44E-05	1.00	No
ICE, Field Gas	VOC	Xylene (m,p)	Log lb/MMBtu	2S	Lean	<650 Hp	2	-2.97E+00	6.38E-02	1.00	2S	Lean	>650 Hp	3	-3.63E+00	1.13E-01	1.00	Yes
ICE, Field Gas	VOC	Xylene (m,p)	Log lb/MMBtu	2S	Lean	<650 Hp	2	-2.97E+00	6.38E-02	1.00	4S	Lean	<650 Hp	6	-3.67E+00	3.47E-01	1.00	Yes
ICE, Field Gas	VOC	Xylene (m,p)	Log lb/MMBtu	2S	Lean	<650 Hp	2	-2.97E+00	6.38E-02	1.00	4S	Rich	<650 Hp	2	-3.29E+00	2.93E-02	1.00	Yes
ICE, Field Gas	VOC	Xylene (m,p)	Log lb/MMBtu	2S	Lean	>650 Hp	3	-3.63E+00	1.13E-01	1.00	4S	Lean	<650 Hp	6	-3.67E+00	3.47E-01	1.00	No
ICE, Field Gas	VOC	Xylene (m,p)	Log lb/MMBtu	2S	Lean	>650 Hp	3	-3.63E+00	1.13E-01	1.00	4S	Rich	<650 Hp	2	-3.29E+00	2.93E-02	1.00	Yes
ICE, Field Gas	VOC	Xylene (m,p)	Log lb/MMBtu	4S	Lean	<650 Hp	6	-3.67E+00	3.47E-01	1.00	4S	Rich	<650 Hp	2	-3.29E+00	2.93E-02	1.00	No
ICE, Field Gas	VOC	Xylene (o)	lb/MMBtu	2S	Lean	<650 Hp	2	5.37E-04	3.67E-05	1.00	2S	Lean	>650 Hp	3	9.84E-05	3.25E-05	1.00	Yes
ICE, Field Gas	VOC	Xylene (o)	lb/MMBtu	2S	Lean	<650 Hp	2	5.37E-04	3.67E-05	1.00	4S	Lean	<650 Hp	6	8.55E-05	2.19E-05	1.00	Yes
ICE, Field Gas	VOC	Xylene (o)	lb/MMBtu	2S	Lean	<650 Hp	2	5.37E-04	3.67E-05	1.00	4S	Rich	<650 Hp	2	2.56E-04	1.72E-05	1.00	Yes
ICE, Field Gas	VOC	Xylene (o)	lb/MMBtu	2S	Lean	>650 Hp	3	9.84E-05	3.25E-05	1.00	4S	Lean	<650 Hp	6	8.55E-05	2.19E-05	1.00	No
ICE, Field Gas	VOC	Xylene (o)	lb/MMBtu	2S	Lean	>650 Hp	3	9.84E-05	3.25E-05	1.00	4S	Rich	<650 Hp	2	2.56E-04	1.72E-05	1.00	Yes
ICE, Field Gas	VOC	Xylene (o)	lb/MMBtu	4S	Lean	<650 Hp	6	8.55E-05	2.19E-05	1.00	4S	Rich	<650 Hp	2	2.56E-04	1.72E-05	1.00	Yes
ICE, Field Gas	VOC	Xylene (o)	Log lb/MMBtu	2S	Lean	<650 Hp	2	-3.27E+00	2.97E-02	1.00	2S	Lean	>650 Hp	3	-4.02E+00	1.52E-01	1.00	Yes
ICE, Field Gas	VOC	Xylene (o)	Log lb/MMBtu	2S	Lean	<650 Hp	2	-3.27E+00	2.97E-02	1.00	4S	Lean	<650 Hp	6	-4.08E+00	1.17E-01	1.00	Yes
ICE, Field Gas	VOC	Xylene (o)	Log lb/MMBtu	2S	Lean	<650 Hp	2	-3.27E+00	2.97E-02	1.00	4S	Rich	<650 Hp	2	-3.59E+00	2.93E-02	1.00	Yes
ICE, Field Gas	VOC	Xylene (o)	Log lb/MMBtu	2S	Lean	>650 Hp	3	-4.02E+00	1.52E-01	1.00	4S	Lean	<650 Hp	6	-4.08E+00	1.17E-01	1.00	No
ICE, Field Gas	VOC	Xylene (o)	Log lb/MMBtu	2S	Lean	>650 Hp	3	-4.02E+00	1.52E-01	1.00	4S	Rich	<650 Hp	2	-3.59E+00	2.93E-02	1.00	Yes
ICE, Field Gas	VOC	Xylene (o)	Log lb/MMBtu	4S	Lean	<650 Hp	6	-4.08E+00	1.17E-01	1.00	4S	Rich	<650 Hp	2	-3.59E+00	2.93E-02	1.00	Yes
ICE, Natural Gas	VOC	Acetaldehyde	lb/MMBtu	4S	Lean	<650 Hp	15	3.80E-03	2.47E-03	1.00	4S	Rich	<650 Hp	3	1.63E-03	1.05E-04	1.00	No
ICE, Natural Gas	VOC	Acetaldehyde	Log lb/MMBtu	4S	Lean	<650 Hp	15	-2.50E+00	2.77E-01	1.00	4S	Rich	<650 Hp	3	-2.79E+00	2.80E-02	1.00	No

TABLE 7-8. RICE STROKES PER CYCLE, OXYGEN, AND CAPACITY COMPARISON.

Major Group	Category	Substance	Value Type	First Sample Statistics							Second Sample Statistics							Significant Difference at 95%Confidence
				Description			Size	Average	Standard Deviation	Detect Ratio	Description			Size	Average	Standard Deviation	Detect Ratio	
				Strokes	Oxygen	Capacity					Strokes	Oxygen	Capacity					
ICE, Natural Gas	VOC	Acrolein	lb/MMBtu	4S	Lean	<650 Hp	14	1.56E-03	1.43E-03	1.00	4S	Rich	<650 Hp	6	5.15E-04	5.44E-04	1.00	No
ICE, Natural Gas	VOC	Acrolein	Log lb/MMBtu	4S	Lean	[illegible]	14	[illegible]	4.07E-01	[illegible]	4S	Rich	<650 Hp	6	-3.82E+00	1.03E+00	1.00	Yes
ICE, Natural Gas	VOC	Benzene	lb/MMBtu	4S	Lean	<650 Hp	14	1.15E-03	5.43E-04	1.00	4S	Rich	≤650 Hp	2	9.40E-03	4.75E-04	1.00	Yes
ICE, Natural Gas	VOC	Benzene	Log lb/MMBtu	4S	Lean	<650 Hp	14	-3.00E+00	2.65E-01	1.00	4S	Rich	≤650 Hp	2	-2.03E+00	2.19E-02	1.00	Yes
ICE, Natural Gas	VOC	Formaldehyde	lb/MMBtu	4S	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	4S	Rich	<650 Hp	6	5.07E-03	5.09E-03	1.00	Yes
ICE, Natural Gas	VOC	Formaldehyde	Log lb/MMBtu	4S	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	4S	Rich	<650 Hp	6	-2.66E+00	7.09E-01	1.00	Yes
ICE, Natural Gas	VOC	Propylene	lb/MMBtu	4S	Lean	<650 Hp	14	1.78E-02	1.94E-02	0.97	4S	Rich	≤650 Hp	2	3.76E-02	3.37E-03	1.00	No
ICE, Natural Gas	VOC	Propylene	Log lb/MMBtu	4S	Lean	<650 Hp	14	-1.95E+00	4.10E-01	0.97	4S	Rich	≤650 Hp	2	-1.43E+00	3.89E-02	1.00	No
ICE, Natural Gas	VOC	Toluene	lb/MMBtu	4S	Lean	<650 Hp	14	3.92E-04	1.33E-04	1.00	4S	Rich	≤650 Hp	2	2.40E-03	1.47E-04	1.00	Yes
ICE, Natural Gas	VOC	Toluene	Log lb/MMBtu	4S	Lean	<650 Hp	14	-3.43E+00	1.74E-01	1.00	4S	Rich	≤650 Hp	2	-2.62E+00	2.67E-02	1.00	Yes
ICE, Natural Gas	VOC	Xylene (m,p)	lb/MMBtu	4S	Lean	<650 Hp	14	8.22E-05	3.80E-05	1.00	4S	Rich	≤650 Hp	2	4.20E-04	1.70E-05	1.00	Yes
ICE, Natural Gas	VOC	Xylene (m,p)	Log lb/MMBtu	4S	Lean	<650 Hp	14	-4.13E+00	2.18E-01	1.00	4S	Rich	≤650 Hp	2	-3.38E+00	1.76E-02	1.00	Yes
ICE, Natural Gas	VOC	Xylene (o)	lb/MMBtu	4S	Lean	<650 Hp	14	4.71E-05	1.86E-05	0.95	4S	Rich	≤650 Hp	2	2.06E-04	6.79E-06	1.00	Yes
ICE, Natural Gas	VOC	Xylene (o)	Log lb/MMBtu	4S	Lean	<650 Hp	14	-4.37E+00	2.19E-01	0.95	4S	Rich	≤650 Hp	2	-3.69E+00	1.43E-02	1.00	Yes

TABLE 7-9. GAS TURBINE DUCT BURNER COMPARISON.

Major Group	Category	Substance	Value Type	First Sample Statistics					Second Sample Statistics					Significant Difference at 95%Confidence
				Description Duct Burner	Size	Average	Standard Deviation	Detect Ratio	Description Duct Burner	Size	Average	Standard Deviation	Detect Ratio	
Turbine, Natural Gas	VOC	Formaldehyde	lb/MMBtu	N	3	1.99E-05	5.94E-06	0.45	Y	3	6.02E-03	5.76E-04	1.00	Yes
Turbine, Natural Gas	VOC	Formaldehyde	Log lb/MMBtu	N	3	-4.71E+00	1.21E-01	0.45	Y	3	-2.22E+00	4.11E-02	1.00	Yes

TABLE 7-10. EXTERNAL COMBUSTION LOAD COMPARISON.

Major Group	Category	Substance	Value Type	First Sample Statistics					Second Sample Statistics					Significant Difference at 95%Confidence
				Description Load	Size	Average	Standard Deviation	Detect Ratio	Description Load	Size	Average	Standard Deviation	Detect Ratio	
Boiler, Ref. Gas	SVOC	Phenol	lb/MMBtu	<80%	9	1.06E-06	1.28E-06	0.68	>80%	3	4.11E-06	1.13E-06	1.00	Yes
Boiler, Ref. Gas	SVOC	Phenol	Log lb/MMBtu	<80%	9	-6.10E+00	2.86E-01	0.68	>80%	3	-5.40E+00	1.32E-01	1.00	Yes
Boiler, Ref. Gas	VOC	Acetaldehyde	lb/MMBtu	<80%	12	3.41E-06	3.09E-06	1.00	>80%	3	1.41E-06	7.44E-07	1.00	No
Boiler, Ref. Gas	VOC	Acetaldehyde	Log lb/MMBtu	<80%	12	-5.95E+00	1.13E+00	1.00	>80%	3	-5.90E+00	2.71E-01	1.00	No
Boiler, Ref. Gas	VOC	Benzene	lb/MMBtu	<80%	13	2.03E-04	3.54E-04	0.86	>80%	3	4.54E-05	1.56E-05	0.00	No
Boiler, Ref. Gas	VOC	Benzene	Log lb/MMBtu	<80%	13	-4.23E+00	7.47E-01	0.86	>80%	3	-4.36E+00	1.53E-01	0.00	No
Boiler, Ref. Gas	VOC	Formaldehyde	lb/MMBtu	<80%	12	1.34E-05	9.28E-06	1.00	>80%	3	1.25E-05	8.47E-06	1.00	No
Boiler, Ref. Gas	VOC	Formaldehyde	Log lb/MMBtu	<80%	12	-4.96E+00	2.74E-01	1.00	>80%	3	-5.02E+00	4.57E-01	1.00	No
Boiler, Ref. Gas	VOC	Hydrogen Sulfide	lb/MMBtu	<80%	13	2.04E-04	2.22E-04	0.00	>80%	3	2.97E-04	1.02E-04	0.00	No
Boiler, Ref. Gas	VOC	Hydrogen Sulfide	Log lb/MMBtu	<80%	13	-3.91E+00	4.43E-01	0.00	>80%	3	-3.55E+00	1.53E-01	0.00	No
Boiler, Ref. Gas	VOC	Toluene	lb/MMBtu	<80%	6	1.06E-03	1.65E-03	0.98	>80%	3	5.36E-05	1.83E-05	0.45	No
Boiler, Ref. Gas	VOC	Toluene	Log lb/MMBtu	<80%	6	-3.41E+00	7.15E-01	0.98	>80%	3	-4.29E+00	1.53E-01	0.45	No
Heater, Ref. Gas	PAH	Acenaphthene	lb/MMBtu	<80%	5	4.45E-09	1.98E-09	0.83	>80%	6	1.46E-09	1.48E-10	1.00	Yes
Heater, Ref. Gas	PAH	Acenaphthene	Log lb/MMBtu	<80%	5	-8.33E+00	2.77E-01	0.83	>80%	6	-8.84E+00	4.65E-02	1.00	Yes
Heater, Ref. Gas	PAH	Acenaphthylene	lb/MMBtu	<80%	5	1.80E-09	7.56E-10	0.58	>80%	6	1.34E-09	5.07E-10	0.47	No
Heater, Ref. Gas	PAH	Acenaphthylene	Log lb/MMBtu	<80%	5	-8.77E+00	1.77E-01	0.58	>80%	6	-8.90E+00	1.39E-01	0.47	No
Heater, Ref. Gas	PAH	Anthracene	lb/MMBtu	<80%	5	3.62E-09	2.33E-09	0.93	>80%	6	2.24E-09	8.89E-10	0.92	No
Heater, Ref. Gas	PAH	Anthracene	Log lb/MMBtu	<80%	5	-8.52E+00	3.03E-01	0.93	>80%	6	-8.68E+00	1.82E-01	0.92	No
Heater, Ref. Gas	PAH	Benzo(a)anthracene	lb/MMBtu	<80%	17	1.07E-08	1.19E-08	0.99	>80%	9	7.27E-08	1.40E-07	1.00	No
Heater, Ref. Gas	PAH	Benzo(a)anthracene	Log lb/MMBtu	<80%	17	-8.19E+00	4.62E-01	0.99	>80%	9	-8.27E+00	1.05E+00	1.00	No
Heater, Ref. Gas	PAH	Benzo(a)pyrene	lb/MMBtu	<80%	17	2.54E-09	2.28E-09	0.25	>80%	9	2.54E-07	5.15E-07	1.00	No
Heater, Ref. Gas	PAH	Benzo(a)pyrene	Log lb/MMBtu	<80%	17	-8.68E+00	2.35E-01	0.25	>80%	9	-8.22E+00	1.31E+00	1.00	No
Heater, Ref. Gas	PAH	Benzo(b)fluoranthene	lb/MMBtu	<80%	17	5.09E-09	5.22E-09	0.94	>80%	9	1.07E-07	2.07E-07	0.99	Yes
Heater, Ref. Gas	PAH	Benzo(b)fluoranthene	Log lb/MMBtu	<80%	17	-8.42E+00	3.16E-01	0.94	>80%	9	-8.25E+00	1.15E+00	0.99	No
Heater, Ref. Gas	PAH	Benzo(g,h,i)perylene	lb/MMBtu	<80%	5	1.30E-09	7.72E-11	0.00	>80%	6	1.07E-09	3.34E-11	0.00	Yes
Heater, Ref. Gas	PAH	Benzo(g,h,i)perylene	Log lb/MMBtu	<80%	5	-8.89E+00	2.54E-02	0.00	>80%	6	-8.97E+00	1.37E-02	0.00	Yes
Heater, Ref. Gas	PAH	Benzo(k)fluoranthene	lb/MMBtu	<80%	17	3.64E-09	3.71E-09	0.70	>80%	9	6.26E-08	1.22E-07	0.99	No
Heater, Ref. Gas	PAH	Benzo(k)fluoranthene	Log lb/MMBtu	<80%	17	-8.57E+00	3.19E-01	0.70	>80%	9	-8.37E+00	1.04E+00	0.99	No
Heater, Ref. Gas	PAH	Chrysene	lb/MMBtu	<80%	5	2.17E-09	1.48E-09	0.76	>80%	6	1.17E-09	2.53E-10	0.40	No
Heater, Ref. Gas	PAH	Chrysene	Log lb/MMBtu	<80%	5	-8.72E+00	2.34E-01	0.76	>80%	6	-8.94E+00	8.21E-02	0.40	No
Heater, Ref. Gas	PAH	Dibenz(a,h)anthracene	lb/MMBtu	<80%	17	9.95E-09	3.27E-08	0.00	>80%	9	1.06E-08	1.96E-08	0.00	No
Heater, Ref. Gas	PAH	Dibenz(a,h)anthracene	Log lb/MMBtu	<80%	17	-8.61E+00	4.73E-01	0.00	>80%	9	-8.64E+00	7.32E-01	0.00	No
Heater, Ref. Gas	PAH	Fluoranthene	lb/MMBtu	<80%	5	3.63E-09	1.14E-09	1.00	>80%	6	2.58E-09	7.07E-10	1.00	No
Heater, Ref. Gas	PAH	Fluoranthene	Log lb/MMBtu	<80%	5	-8.46E+00	1.48E-01	1.00	>80%	6	-8.60E+00	1.14E-01	1.00	No
Heater, Ref. Gas	PAH	Fluorene	lb/MMBtu	<80%	5	1.47E-08	1.03E-08	1.00	>80%	6	7.60E-09	2.12E-09	1.00	No
Heater, Ref. Gas	PAH	Fluorene	Log lb/MMBtu	<80%	5	-7.95E+00	3.86E-01	1.00	>80%	6	-8.13E+00	1.14E-01	1.00	No
Heater, Ref. Gas	PAH	Indeno(1,2,3-cd)pyrene	lb/MMBtu	<80%	17	3.02E-09	3.57E-09	0.60	>80%	9	2.91E-07	6.72E-07	1.00	Yes
Heater, Ref. Gas	PAH	Indeno(1,2,3-cd)pyrene	Log lb/MMBtu	<80%	17	-8.64E+00	2.78E-01	0.60	>80%	9	-8.13E+00	1.35E+00	1.00	No
Heater, Ref. Gas	PAH	Naphthalene	lb/MMBtu	<80%	5	3.62E-07	3.07E-07	1.00	>80%	6	2.72E-07	8.66E-08	1.00	No
Heater, Ref. Gas	PAH	Naphthalene	Log lb/MMBtu	<80%	5	-6.58E+00	3.85E-01	1.00	>80%	6	-6.59E+00	1.45E-01	1.00	No
Heater, Ref. Gas	PAH	Phenanthrene	lb/MMBtu	<80%	5	1.64E-08	5.98E-09	1.00	>80%	6	1.30E-08	3.20E-09	1.00	No
Heater, Ref. Gas	PAH	Phenanthrene	Log lb/MMBtu	<80%	5	-7.82E+00	2.03E-01	1.00	>80%	6	-7.90E+00	1.13E-01	1.00	No

TABLE 7-10. EXTERNAL COMBUSTION LOAD COMPARISON.

Major Group	Category	Substance	Value Type	First Sample Statistics					Second Sample Statistics					Significant Difference at 95%Confidence
				Description Load	Size	Average	Standard Deviation	Detect Ratio	Description Load	Size	Average	Standard Deviation	Detect Ratio	
Heater, Ref. Gas	PAH	Pyrene	lb/MMBtu	≤80%	5	3.27E-09	9.48E-10	1.00	>80%	6	2.48E-09	5.28E-10	1.00	No
Heater, Ref. Gas	PAH	Pyrene	Log lb/MMBtu	≤80%	5	-8.50E+00	1.38E-01	1.00	>80%	6	-8.61E+00	9.34E-02	1.00	No
Heater, Ref. Gas	SVOC	Ethylbenzene	lb/MMBtu	<80%	6	2.88E-05	2.03E-05	0.19	≥80%	6	3.16E-05	4.22E-05	0.88	No
Heater, Ref. Gas	SVOC	Ethylbenzene	Log lb/MMBtu	≤80%	6	-4.74E+00	5.56E-01	0.19	>80%	6	-4.87E+00	6.04E-01	0.88	No
Heater, Ref. Gas	SVOC	Phenol	lb/MMBtu	≤80%	9	[illegible]	[illegible]	1.00	>80%	12	1.74E-06	1.34E-06	0.81	Yes
Heater, Ref. Gas	SVOC	Phenol	Log lb/MMBtu	≤80%	9	[illegible]	[illegible]	1.00	>80%	12	-5.90E+00	3.91E-01	0.81	Yes
Heater, Ref. Gas	VOC	Acetaldehyde	lb/MMBtu	≤80%	12	2.19E-05	2.27E-05	0.82	>80%	12	8.67E-06	1.29E-05	1.00	No
Heater, Ref. Gas	VOC	Acetaldehyde	Log lb/MMBtu	≤80%	12	-4.96E+00	7.55E-01	0.82	>80%	12	-5.58E+00	7.44E-01	1.00	No
Heater, Ref. Gas	VOC	Benzene	lb/MMBtu	≤80%	16	9.19E-05	6.30E-05	0.02	>80%	18	4.20E-05	3.98E-05	0.04	Yes
Heater, Ref. Gas	VOC	Benzene	Log lb/MMBtu	≤80%	15	-4.26E+00	6.02E-01	0.02	>80%	18	-4.60E+00	4.99E-01	0.04	No
Heater, Ref. Gas	VOC	Formaldehyde	lb/MMBtu	≤80%	9	2.21E-04	4.29E-04	1.00	>80%	12	2.86E-05	5.77E-05	1.00	No
Heater, Ref. Gas	VOC	Formaldehyde	Log lb/MMBtu	≤80%	9	-4.12E+00	6.04E-01	1.00	>80%	12	-5.23E+00	7.90E-01	1.00	Yes
Heater, Ref. Gas	VOC	Hydrogen Sulfide	lb/MMBtu	<80%	9	3.14E-04	2.62E-04	0.00	>80%	12	2.75E-04	1.94E-04	0.00	No
Heater, Ref. Gas	VOC	Hydrogen Sulfide	Log lb/MMBtu	<80%	9	-3.62E+00	3.27E-01	0.00	>80%	12	-3.78E+00	5.79E-01	0.00	No
Heater, Ref. Gas	VOC	Propylene	lb/MMBtu	<80%	3	1.97E-06	9.53E-07	0.18	>80%	6	2.27E-06	1.52E-07	0.00	No
Heater, Ref. Gas	VOC	Propylene	Log lb/MMBtu	<80%	3	-5.74E+00	2.20E-01	0.18	>80%	6	-5.64E+00	2.87E-02	0.00	No
Heater, Ref. Gas	VOC	Toluene	lb/MMBtu	≤80%	15	1.52E-04	2.23E-04	0.53	>80%	18	6.91E-05	5.66E-05	0.64	No
Heater, Ref. Gas	VOC	Toluene	Log lb/MMBtu	≤80%	15	-4.14E+00	6.16E-01	0.53	>80%	18	-4.33E+00	4.40E-01	0.64	No
Heater, Ref. Gas	VOC	Xylene (Total)	lb/MMBtu	≤80%	6	4.32E-05	3.31E-05	0.46	>80%	6	3.15E-05	4.30E-05	0.88	No
Heater, Ref. Gas	VOC	Xylene (Total)	Log lb/MMBtu	≤80%	6	-4.52E+00	4.64E-01	0.46	>80%	6	-4.87E+00	6.02E-01	0.88	No
SG, Crude Oil	Metals	Arsenic	lb/MMBtu	≤80%	3	1.27E-05	6.42E-06	1.00	>80%	6	3.65E-06	1.08E-06	1.00	Yes
SG, Crude Oil	Metals	Arsenic	Log lb/MMBtu	≤80%	3	-4.94E+00	2.42E-01	1.00	>80%	6	-5.45E+00	1.30E-01	1.00	Yes
SG, Crude Oil	Metals	Beryllium	lb/MMBtu	≤80%	3	1.97E-06	3.03E-07	1.00	>80%	3	1.86E-06	2.70E-07	0.00	No
SG, Crude Oil	Metals	Beryllium	Log lb/MMBtu	≤80%	3	-5.71E+00	7.04E-02	1.00	>80%	3	-5.73E+00	6.42E-02	0.00	No
SG, Crude Oil	Metals	Cadmium	lb/MMBtu	≤80%	3	1.26E-06	3.36E-07	1.00	>80%	6	9.98E-07	1.35E-06	1.00	No
SG, Crude Oil	Metals	Cadmium	Log lb/MMBtu	≤80%	3	-5.91E+00	1.12E-01	1.00	>80%	6	-6.30E+00	5.47E-01	1.00	No
SG, Crude Oil	Metals	Chromium (Hex)	lb/MMBtu	<80%	3	9.33E-07	5.13E-07	0.86	≥80%	6	1.17E-06	6.76E-07	0.32	No
SG, Crude Oil	Metals	Chromium (Hex)	Log lb/MMBtu	<80%	3	-6.09E+00	2.91E-01	0.86	≥80%	6	-5.99E+00	2.53E-01	0.32	No
SG, Crude Oil	Metals	Chromium (Total)	lb/MMBtu	≤80%	3	1.19E-05	2.35E-06	1.00	>80%	6	2.67E-06	1.40E-06	1.00	Yes
SG, Crude Oil	Metals	Chromium (Total)	Log lb/MMBtu	≤80%	3	-4.93E+00	8.26E-02	1.00	>80%	6	-5.64E+00	2.67E-01	1.00	Yes
SG, Crude Oil	Metals	Copper	lb/MMBtu	≤80%	3	1.04E-05	1.75E-06	1.00	>80%	6	4.74E-06	1.43E-06	1.00	Yes
SG, Crude Oil	Metals	Copper	Log lb/MMBtu	≤80%	3	-4.99E+00	7.04E-02	1.00	>80%	6	-5.34E+00	1.37E-01	1.00	Yes
SG, Crude Oil	Metals	Lead	lb/MMBtu	<80%	3	1.78E-06	2.69E-08	0.00	≥80%	6	1.93E-06	7.81E-07	0.76	No
SG, Crude Oil	Metals	Lead	Log lb/MMBtu	<80%	3	-5.75E+00	6.57E-03	0.00	≥80%	6	-5.74E+00	1.63E-01	0.76	No
SG, Crude Oil	Metals	Manganese	lb/MMBtu	≤80%	3	2.16E-05	1.24E-05	1.00	>80%	4	1.91E-05	1.50E-05	1.00	No
SG, Crude Oil	Metals	Manganese	Log lb/MMBtu	≤80%	3	-4.72E+00	2.59E-01	1.00	>80%	4	-4.92E+00	6.01E-01	1.00	No
SG, Crude Oil	Metals	Mercury	lb/MMBtu	≤80%	3	3.41E-05	6.66E-07	1.00	>80%	4	2.26E-07	1.21E-07	1.00	Yes
SG, Crude Oil	Metals	Mercury	Log lb/MMBtu	≤80%	3	-4.47E+00	8.47E-03	1.00	>80%	4	-6.73E+00	3.50E-01	1.00	Yes
SG, Crude Oil	Metals	Nickel	lb/MMBtu	<80%	3	2.34E-03	1.33E-04	1.00	≥80%	6	2.43E-03	1.32E-04	1.00	No
SG, Crude Oil	Metals	Nickel	Log lb/MMBtu	<80%	3	-2.63E+00	2.49E-02	1.00	≥80%	6	-2.62E+00	2.31E-02	1.00	No
SG, Crude Oil	Metals	Phosphorus	lb/MMBtu	≤80%	3	2.77E-04	2.29E-04	1.00	>80%	3	7.96E-05	3.00E-05	1.00	No
SG, Crude Oil	Metals	Phosphorus	Log lb/MMBtu	≤80%	3	-3.84E+00	7.76E-01	1.00	>80%	3	-4.12E+00	1.81E-01	1.00	No

TABLE 7-10. EXTERNAL COMBUSTION LOAD COMPARISON.

Major Group	Category	Substance	Value Type	First Sample Statistics					Second Sample Statistics					Significant Difference at 95%Confidence
				Description Load	Size	Average	Standard Deviation	Detect Ratio	Description Load	Size	Average	Standard Deviation	Detect Ratio	
SG, Crude Oil	Metals	Selenium	lb/MMBtu	<80%	3	1.94E-05	1.32E-06	1.00	>80%	6	2.25E-06	8.96E-07	0.81	Yes
SG, Crude Oil	Metals	Selenium	Log lb/MMBtu	<80%	3	-4.71E+00	2.92E-02	1.00	>80%	6	-5.68E+00	1.82E-01	0.81	Yes
SG, Crude Oil	Metals	Zinc	lb/MMBtu	<80%	3	1.32E-03	7.17E-04	1.00	>80%	6	1.55E-04	1.52E-04	0.70	Yes
SG, Crude Oil	Metals	Zinc	Log lb/MMBtu	<80%	3	-2.94E+00	3.14E-01	1.00	>80%	6	-4.00E+00	4.79E-01	0.70	Yes
SG, Crude Oil	PAH	Acenaphthene	lb/MMBtu	<80%	3	4.42E-07	2.97E-07	1.00	>80%	3	6.83E-08	9.40E-08	1.00	No
SG, Crude Oil	PAH	Acenaphthene	Log lb/MMBtu	<80%	3	-6.48E+00	4.57E-01	1.00	>80%	3	-7.53E+00	7.11E-01	1.00	No
SG, Crude Oil	PAH	Acenaphthylene	lb/MMBtu	<80%	3	8.06E-08	3.28E-09	0.00	>80%	6	3.46E-08	4.39E-08	1.00	No
SG, Crude Oil	PAH	Acenaphthylene	Log lb/MMBtu	<80%	3	-7.09E+00	1.76E-02	0.00	>80%	6	-7.81E+00	6.77E-01	1.00	No
SG, Crude Oil	PAH	Anthracene	lb/MMBtu	<80%	3	2.20E-08	1.44E-09	1.00	>80%	5	6.84E-08	8.43E-08	1.00	No
SG, Crude Oil	PAH	Anthracene	Log lb/MMBtu	<80%	3	-7.66E+00	2.81E-02	1.00	>80%	5	-7.68E+00	8.63E-01	1.00	No
SG, Crude Oil	PAH	Benzo(a)anthracene	lb/MMBtu	<80%	3	8.06E-08	3.28E-09	0.00	>80%	5	3.45E-08	3.80E-08	1.00	No
SG, Crude Oil	PAH	Benzo(a)anthracene	Log lb/MMBtu	<80%	3	-7.09E+00	1.76E-02	0.00	>80%	5	-7.71E+00	5.54E-01	1.00	No
SG, Crude Oil	PAH	Benzo(a)pyrene	lb/MMBtu	<80%	3	8.06E-08	3.28E-09	0.00	>80%	3	2.71E-08	2.30E-08	0.96	Yes
SG, Crude Oil	PAH	Benzo(a)pyrene	Log lb/MMBtu	<80%	3	-7.09E+00	1.76E-02	0.00	>80%	3	-7.77E+00	6.04E-01	0.96	No
SG, Crude Oil	PAH	Benzo(g,h,i)perylene	lb/MMBtu	<80%	3	8.06E-08	3.28E-09	0.00	>80%	3	2.35E-08	1.78E-08	0.90	Yes
SG, Crude Oil	PAH	Benzo(g,h,i)perylene	Log lb/MMBtu	<80%	3	-7.09E+00	1.76E-02	0.00	>80%	3	-7.73E+00	3.92E-01	0.90	Yes
SG, Crude Oil	PAH	Chrysene	lb/MMBtu	<80%	3	8.06E-08	3.28E-09	0.00	>80%	6	7.12E-08	8.71E-08	1.00	No
SG, Crude Oil	PAH	Chrysene	Log lb/MMBtu	<80%	3	-7.09E+00	1.76E-02	0.00	>80%	6	-7.44E+00	5.66E-01	1.00	No
SG, Crude Oil	PAH	Dibenz(a,h)anthracene	lb/MMBtu	<80%	3	8.06E-08	3.28E-09	0.00	>80%	3	2.59E-08	2.16E-08	0.00	Yes
SG, Crude Oil	PAH	Dibenz(a,h)anthracene	Log lb/MMBtu	<80%	3	-7.09E+00	1.76E-02	0.00	>80%	3	-7.71E+00	4.24E-01	0.00	No
SG, Crude Oil	PAH	Fluoranthene	lb/MMBtu	<80%	3	8.06E-08	3.28E-09	0.00	>80%	6	9.05E-08	1.27E-07	1.00	No
SG, Crude Oil	PAH	Fluoranthene	Log lb/MMBtu	<80%	3	-7.09E+00	1.76E-02	0.00	>80%	6	-7.34E+00	5.50E-01	1.00	No
SG, Crude Oil	PAH	Fluorene	lb/MMBtu	<80%	3	4.97E-08	2.10E-08	1.00	>80%	6	1.16E-07	1.31E-07	1.00	No
SG, Crude Oil	PAH	Fluorene	Log lb/MMBtu	<80%	3	-7.33E+00	1.91E-01	1.00	>80%	6	-7.24E+00	6.18E-01	1.00	No
SG, Crude Oil	PAH	Indeno(1,2,3-cd)pyrene	lb/MMBtu	<80%	3	8.06E-08	3.28E-09	0.00	>80%	3	2.59E-08	2.67E-08	0.91	Yes
SG, Crude Oil	PAH	Indeno(1,2,3-cd)pyrene	Log lb/MMBtu	<80%	3	-7.09E+00	1.76E-02	0.00	>80%	3	-7.75E+00	4.60E-01	0.91	No
SG, Crude Oil	PAH	Naphthalene	lb/MMBtu	<80%	3	1.90E-06	5.89E-07	1.00	>80%	5	7.31E-06	4.26E-06	1.00	No
SG, Crude Oil	PAH	Naphthalene	Log lb/MMBtu	<80%	3	-5.73E+00	1.30E-01	1.00	>80%	5	-5.22E+00	3.42E-01	1.00	No
SG, Crude Oil	PAH	Phenanthrene	lb/MMBtu	<80%	3	4.51E-08	5.90E-09	1.00	>80%	6	2.25E-07	4.19E-07	1.00	No
SG, Crude Oil	PAH	Phenanthrene	Log lb/MMBtu	<80%	3	-7.35E+00	5.89E-02	1.00	>80%	6	-7.20E+00	7.20E-01	1.00	No
SG, Crude Oil	PAH	Pyrene	lb/MMBtu	<80%	3	8.06E-08	3.28E-09	0.00	>80%	6	1.85E-07	1.69E-07	1.00	No
SG, Crude Oil	PAH	Pyrene	Log lb/MMBtu	<80%	3	-7.09E+00	1.76E-02	0.00	>80%	6	-7.00E+00	6.61E-01	1.00	No
SG, Crude Oil	VOC	Acetaldehyde	lb/MMBtu	<80%	3	2.48E-05	1.67E-06	0.00	>80%	6	1.43E-05	9.82E-06	1.00	No
SG, Crude Oil	VOC	Acetaldehyde	Log lb/MMBtu	<80%	3	-4.61E+00	2.98E-02	0.00	>80%	6	-4.91E+00	2.33E-01	1.00	No
SG, Crude Oil	VOC	Acrolein	lb/MMBtu	<80%	3	2.93E-05	1.97E-06	0.00	>80%	6	3.30E-06	7.19E-14	0.00	Yes
SG, Crude Oil	VOC	Acrolein	Log lb/MMBtu	<80%	3	-4.53E+00	2.98E-02	0.00	>80%	6	-5.48E+00	0.00E+00	0.00	Yes
SG, Crude Oil	VOC	Benzene	lb/MMBtu	<80%	3	2.02E-06	2.84E-14	0.00	>80%	6	5.10E-06	1.13E-06	0.43	Yes
SG, Crude Oil	VOC	Benzene	Log lb/MMBtu	<80%	3	-5.69E+00	0.00E+00	0.00	>80%	6	-5.30E+00	9.09E-02	0.43	Yes
SG, Crude Oil	VOC	Formaldehyde	lb/MMBtu	<80%	3	1.06E-05	7.12E-07	0.00	>80%	6	4.17E-06	1.22E-06	1.00	Yes
SG, Crude Oil	VOC	Formaldehyde	Log lb/MMBtu	<80%	3	-4.98E+00	2.98E-02	0.00	>80%	6	-5.40E+00	1.40E-01	1.00	Yes
SG, Crude Oil	VOC	Propylene	lb/MMBtu	<80%	3	1.15E-03	0.00E+00	0.00	>80%	6	1.24E-05	2.49E-13	0.00	Yes
SG, Crude Oil	VOC	Propylene	Log lb/MMBtu	<80%	3	-2.94E+00	0.00E+00	0.00	>80%	6	-4.91E+00	7.54E-08	0.00	Yes

TABLE 7-10. EXTERNAL COMBUSTION LOAD COMPARISON.

Major Group	Category	Substance	Value Type	First Sample Statistics					Second Sample Statistics					Significant Difference at 95%Confidence
				Description Load	Size	Average	Standard Deviation	Detect Ratio	Description Load	Size	Average	Standard Deviation	Detect Ratio	
SG, Crude Oil	VOC	Toluene	lb/MMBtu	<80%	3	4.43E-05	2.95E-05	1.00	>80%	6	1.36E-05	2.03E-13	0.33	Yes
SG, Crude Oil	VOC	Toluene	Log lb/MMBtu	<80%	3	-4.41E+00	2.74E-01	1.00	>80%	6	-4.87E+00	0.00E+00	0.33	Yes
SG, Crude Oil	VOC	Xylene (Total)	lb/MMBtu	<80%	3	2.89E-06	0.00E+00	0.00	>80%	6	3.12E-05	0.00E+00	0.00	NA
SG, Crude Oil	VOC	Xylene (Total)	Log lb/MMBtu	<80%	3	-5.54E+00	0.00E+00	0.00	>80%	6	-4.51E+00	5.33E-08	0.00	Yes
SG, Natural Gas	VOC	Benzene	lb/MMBtu	<80%	3	4.09E-06	1.47E-08	0.00	?	3	3.78E-06	0.00E+00	0.00	Yes
SG, Natural Gas	VOC	Benzene	Log lb/MMBtu	<80%	3	-5.39E+00	1.56E-03	0.00	?	3	-5.42E+00	0.00E+00	0.00	Yes
SG, Natural Gas	VOC	Formaldehyde	lb/MMBtu	<80%	3	5.36E-05	3.92E-05	1.00	?	3	8.50E-06	6.14E-06	1.00	No
SG, Natural Gas	VOC	Formaldehyde	Log lb/MMBtu	<80%	3	-4.35E+00	3.24E-01	1.00	?	3	-5.14E+00	3.06E-01	1.00	Yes
SG, Natural Gas	VOC	Toluene	lb/MMBtu	<80%	3	1.27E-05	4.55E-08	0.00	?	3	1.17E-05	0.00E+00	0.00	Yes
SG, Natural Gas	VOC	Toluene	Log lb/MMBtu	<80%	3	-4.90E+00	1.56E-03	0.00	?	3	-4.93E+00	0.00E+00	0.00	Yes
SG, Natural Gas	VOC	Xylene (Total)	lb/MMBtu	<80%	3	2.92E-05	1.05E-07	0.00	?	3	2.70E-05	0.00E+00	0.00	Yes
SG, Natural Gas	VOC	Xylene (Total)	Log lb/MMBtu	<80%	3	-4.53E+00	1.56E-03	0.00	?	3	-4.57E+00	0.00E+00	0.00	Yes

TABLE 7-11. EXTERNAL COMBUSTION BURNER COMPARISON.

Major Group	Category	Substance	Value Type	First Sample Statistics					Second Sample Statistics					Significant Difference at 95%Confidence
				Description Burner	Size	Average	Standard Deviation	Detect Ratio	Description Burner	Size	Average	Standard Deviation	Detect Ratio	
Boiler, Ref. Gas	SVOC	Phenol	lb/MMBtu	Conventional	6	1.31E-06	1.54E-06	0.75	Low NOx	6	2.34E-06	2.07E-06	0.92	No
Boiler, Ref. Gas	SVOC	Phenol	Log lb/MMBtu	Conventional	6	-6.03E+00	3.34E-01	0.75	Low NOx	6	-5.82E+00	4.74E-01	0.92	No
Boiler, Ref. Gas	VOC	Acetaldehyde	lb/MMBtu	Conventional	9	2.55E-06	3.01E-06	1.00	Low NOx	6	3.70E-06	2.76E-06	1.00	No
Boiler, Ref. Gas	VOC	Acetaldehyde	Log lb/MMBtu	Conventional	9	-6.19E+00	1.23E+00	1.00	Low NOx	6	-5.57E+00	4.11E-01	1.00	No
Boiler, Ref. Gas	VOC	Benzene	lb/MMBtu	Conventional	10	2.52E-04	3.95E-04	0.90	Low NOx	6	4.28E-05	1.04E-05	0.00	No
Boiler, Ref. Gas	VOC	Benzene	Log lb/MMBtu	Conventional	10	-4.18E+00	8.56E-01	0.90	Low NOx	6	-4.38E+00	1.01E-01	0.00	No
Boiler, Ref. Gas	VOC	Formaldehyde	lb/MMBtu	Conventional	9	1.58E-05	9.51E-06	1.00	Low NOx	6	9.28E-06	6.55E-06	1.00	No
Boiler, Ref. Gas	VOC	Formaldehyde	Log lb/MMBtu	Conventional	9	-4.86E+00	2.46E-01	1.00	Low NOx	6	-5.13E+00	3.22E-01	1.00	No
Boiler, Ref. Gas	VOC	Hydrogen Sulfide	lb/MMBtu	Conventional	10	2.12E-04	2.55E-04	0.00	Low NOx	6	2.36E-04	9.28E-05	0.00	No
Boiler, Ref. Gas	VOC	Hydrogen Sulfide	Log lb/MMBtu	Conventional	10	-3.96E+00	5.01E-01	0.00	Low NOx	6	-3.65E+00	1.52E-01	0.00	No
Boiler, Ref. Gas	VOC	Toluene	lb/MMBtu	Conventional	6	1.06E-03	1.65E-03	0.98	Low NOx	3	5.36E-05	1.83E-05	0.45	No
Boiler, Ref. Gas	VOC	Toluene	Log lb/MMBtu	Conventional	6	-3.41E+00	7.15E-01	0.98	Low NOx	3	-4.29E+00	1.53E-01	0.45	No
Heater, Ref. Gas	PAH	Acenaphthene	lb/MMBtu	Conventional	8	2.48E-09	1.90E-09	1.00	Low NOx	3	2.04E-09	7.05E-10	0.80	No
Heater, Ref. Gas	PAH	Acenaphthene	Log lb/MMBtu	Conventional	8	-8.69E+00	2.73E-01	1.00	Low NOx	3	-8.71E+00	1.72E-01	0.80	No
Heater, Ref. Gas	PAH	Acenaphthylene	lb/MMBtu	Conventional	8	1.66E-09	7.36E-10	0.68	Low NOx	3	1.25E-09	1.29E-11	0.00	No
Heater, Ref. Gas	PAH	Acenaphthylene	Log lb/MMBtu	Conventional	8	-8.82E+00	1.87E-01	0.68	Low NOx	3	-8.90E+00	4.50E-03	0.00	No
Heater, Ref. Gas	PAH	Anthracene	lb/MMBtu	Conventional	8	3.21E-09	1.95E-09	0.96	Low NOx	3	1.96E-09	6.55E-10	0.79	No
Heater, Ref. Gas	PAH	Anthracene	Log lb/MMBtu	Conventional	8	-8.56E+00	2.65E-01	0.96	Low NOx	3	-8.73E+00	1.61E-01	0.79	No
Heater, Ref. Gas	PAH	Benzo(a)anthracene	lb/MMBtu	Conventional	17	4.53E-08	1.04E-07	0.99	Low NOx	9	7.28E-09	5.51E-09	1.00	No
Heater, Ref. Gas	PAH	Benzo(a)anthracene	Log lb/MMBtu	Conventional	17	-8.19E+00	8.31E-01	0.99	Low NOx	9	-8.27E+00	3.79E-01	1.00	No
Heater, Ref. Gas	PAH	Benzo(a)pyrene	lb/MMBtu	Conventional	17	1.36E-07	3.86E-07	0.99	Low NOx	9	2.70E-09	3.13E-09	0.45	No
Heater, Ref. Gas	PAH	Benzo(a)pyrene	Log lb/MMBtu	Conventional	17	-8.42E+00	9.56E-01	0.99	Low NOx	9	-8.70E+00	2.99E-01	0.45	No
Heater, Ref. Gas	PAH	Benzo(b)fluoranthene	lb/MMBtu	Conventional	17	5.94E-08	1.55E-07	0.99	Low NOx	9	4.54E-09	2.69E-09	1.00	No
Heater, Ref. Gas	PAH	Benzo(b)fluoranthene	Log lb/MMBtu	Conventional	17	-8.35E+00	8.66E-01	0.99	Low NOx	9	-8.40E+00	2.21E-01	1.00	No
Heater, Ref. Gas	PAH	Benzo(g,h,i)perylene	lb/MMBtu	Conventional	8	1.15E-09	1.52E-10	0.00	Low NOx	3	1.25E-09	1.29E-11	0.00	No
Heater, Ref. Gas	PAH	Benzo(g,h,i)perylene	Log lb/MMBtu	Conventional	8	-8.94E+00	5.43E-02	0.00	Low NOx	3	-8.90E+00	4.50E-03	0.00	No
Heater, Ref. Gas	PAH	Benzo(k)fluoranthene	lb/MMBtu	Conventional	17	3.51E-08	9.12E-08	0.97	Low NOx	9	3.15E-09	3.25E-09	0.81	No
Heater, Ref. Gas	PAH	Benzo(k)fluoranthene	Log lb/MMBtu	Conventional	17	-8.44E+00	7.76E-01	0.97	Low NOx	9	-8.63E+00	3.11E-01	0.81	No
Heater, Ref. Gas	PAH	Chrysene	lb/MMBtu	Conventional	8	1.25E-09	2.73E-10	0.44	Low NOx	3	2.62E-09	1.90E-09	0.84	No
Heater, Ref. Gas	PAH	Chrysene	Log lb/MMBtu	Conventional	8	-8.91E+00	8.98E-02	0.44	Low NOx	3	-8.66E+00	3.03E-01	0.84	Yes
Heater, Ref. Gas	PAH	Dibenz(a,h)anthracene	lb/MMBtu	Conventional	17	6.73E-09	1.45E-08	0.00	Low NOx	9	1.67E-08	4.51E-08	0.00	No
Heater, Ref. Gas	PAH	Dibenz(a,h)anthracene	Log lb/MMBtu	Conventional	17	-8.65E+00	5.27E-01	0.00	Low NOx	9	-8.58E+00	6.52E-01	0.00	No
Heater, Ref. Gas	PAH	Fluoranthene	lb/MMBtu	Conventional	8	2.90E-09	8.91E-10	1.00	Low NOx	3	3.46E-09	1.49E-09	1.00	No
Heater, Ref. Gas	PAH	Fluoranthene	Log lb/MMBtu	Conventional	8	-8.55E+00	1.33E-01	1.00	Low NOx	3	-8.49E+00	1.93E-01	1.00	No
Heater, Ref. Gas	PAH	Fluorene	lb/MMBtu	Conventional	8	1.20E-08	8.49E-09	1.00	Low NOx	3	7.52E-09	4.08E-09	1.00	No
Heater, Ref. Gas	PAH	Fluorene	Log lb/MMBtu	Conventional	8	-8.00E+00	2.66E-01	1.00	Low NOx	3	-8.18E+00	3.02E-01	1.00	No
Heater, Ref. Gas	PAH	Indeno(1,2,3-cd)pyrene	lb/MMBtu	Conventional	17	1.55E-07	4.31E-07	0.99	Low NOx	9	3.43E-09	4.92E-09	0.77	No
Heater, Ref. Gas	PAH	Indeno(1,2,3-cd)pyrene	Log lb/MMBtu	Conventional	17	-8.36E+00	9.94E-01	0.99	Low NOx	9	-8.66E+00	3.56E-01	0.77	No
Heater, Ref. Gas	PAH	Naphthalene	lb/MMBtu	Conventional	8	3.77E-07	2.12E-07	1.00	Low NOx	3	1.40E-07	1.99E-08	1.00	No
Heater, Ref. Gas	PAH	Naphthalene	Log lb/MMBtu	Conventional	8	-6.48E+00	2.33E-01	1.00	Low NOx	3	-6.86E+00	6.35E-02	1.00	Yes
Heater, Ref. Gas	PAH	Phenanthrene	lb/MMBtu	Conventional	8	1.51E-08	4.71E-09	1.00	Low NOx	3	1.32E-08	5.59E-09	1.00	No
Heater, Ref. Gas	PAH	Phenanthrene	Log lb/MMBtu	Conventional	8	-7.84E+00	1.42E-01	1.00	Low NOx	3	-7.91E+00	2.18E-01	1.00	No
Heater, Ref. Gas	PAH	Pyrene	lb/MMBtu	Conventional	8	2.69E-09	6.09E-10	1.00	Low NOx	3	3.23E-09	1.32E-09	1.00	No
Heater, Ref. Gas	PAH	Pyrene	Log lb/MMBtu	Conventional	8	-8.58E+00	1.02E-01	1.00	Low NOx	3	-8.52E+00	1.91E-01	1.00	No

TABLE 7-11. EXTERNAL COMBUSTION BURNER COMPARISON.

Major Group	Category	Substance	Value Type	First Sample Statistics					Second Sample Statistics					Significant Difference at 95%Confidence
				Description Burner	Size	Average	Standard Deviation	Detect Ratio	Description Burner	Size	Average	Standard Deviation	Detect Ratio	
Heater, Ref. Gas	SVOC	Ethylbenzene	lb/MMBtu	Conventional	9	2.52E-05	3.55E-05	0.88	Low NOx	3	4.51E-05	0.00E+00	0.00	No
Heater, Ref. Gas	SVOC	Ethylbenzene	Log lb/MMBtu	Conventional	9	-4.96E+00	5.67E-01	0.88	Low NOx	3	-4.35E+00	0.00E+00	0.00	No
Heater, Ref. Gas	SVOC	Phenol	lb/MMBtu	Conventional	6	2.04E-06	1.35E-06	0.94	Low NOx	15	7.06E-06	7.15E-06	0.97	No
Heater, Ref. Gas	SVOC	Phenol	Log lb/MMBtu	Conventional	6	-5.79E+00	3.28E-01	0.94	Low NOx	15	-5.44E+00	6.04E-01	0.97	No
Heater, Ref. Gas	VOC	Acetaldehyde	lb/MMBtu	Conventional	6	1.60E-05	1.55E-05	1.00	Low NOx	18	1.51E-05	2.08E-05	0.82	No
Heater, Ref. Gas	VOC	Acetaldehyde	Log lb/MMBtu	Conventional	6	-5.20E+00	8.79E-01	1.00	Low NOx	18	-5.29E+00	7.95E-01	0.82	No
Heater, Ref. Gas	VOC	Benzene	lb/MMBtu	Conventional	15	3.73E-05	4.45E-05	0.10	Low NOx	18	8.74E-05	5.66E-05	0.00	Yes
Heater, Ref. Gas	VOC	Benzene	Log lb/MMBtu	Conventional	15	-4.77E+00	6.05E-01	0.10	Low NOx	18	-4.18E+00	3.62E-01	0.00	Yes
Heater, Ref. Gas	VOC	Formaldehyde	lb/MMBtu	Conventional	6	5.57E-05	7.46E-05	1.00	Low NOx	15	1.33E-04	3.43E-04	1.00	No
Heater, Ref. Gas	VOC	Formaldehyde	Log lb/MMBtu	Conventional	6	-4.59E+00	5.89E-01	1.00	Low NOx	15	-4.82E+00	1.01E+00	1.00	No
Heater, Ref. Gas	VOC	Hydrogen Sulfide	lb/MMBtu	Conventional	6	3.56E-04	1.74E-04	0.00	Low NOx	15	2.66E-04	2.37E-04	0.00	No
Heater, Ref. Gas	VOC	Hydrogen Sulfide	Log lb/MMBtu	Conventional	6	-3.49E+00	1.88E-01	0.00	Low NOx	15	-3.80E+00	5.39E-01	0.00	No
Heater, Ref. Gas	VOC	Toluene	lb/MMBtu	Conventional	15	6.95E-05	6.32E-05	0.63	Low NOx	18	1.38E-04	2.05E-04	0.54	No
Heater, Ref. Gas	VOC	Toluene	Log lb/MMBtu	Conventional	15	-4.42E+00	5.83E-01	0.63	Low NOx	18	-4.10E+00	4.38E-01	0.54	No
Heater, Ref. Gas	VOC	Xylene (Total)	lb/MMBtu	Conventional	9	3.48E-05	4.31E-05	0.91	Low NOx	3	4.51E-05	0.00E+00	0.00	No
Heater, Ref. Gas	VOC	Xylene (Total)	Log lb/MMBtu	Conventional	9	-4.81E+00	5.89E-01	0.91	Low NOx	3	-4.35E+00	0.00E+00	0.00	No
SG, Crude Oil	Metals	Arsenic	lb/MMBtu	Conventional	3	4.53E-06	6.46E-07	1.00	Low NOx	6	7.74E-06	6.80E-06	1.00	No
SG, Crude Oil	Metals	Arsenic	Log lb/MMBtu	Conventional	3	-5.35E+00	5.98E-02	1.00	Low NOx	6	-5.25E+00	3.76E-01	1.00	No
SG, Crude Oil	Metals	Cadmium	lb/MMBtu	Conventional	3	1.86E-07	4.44E-08	1.00	Low NOx	6	1.54E-06	1.08E-06	1.00	No
SG, Crude Oil	Metals	Cadmium	Log lb/MMBtu	Conventional	3	-6.74E+00	9.85E-02	1.00	Low NOx	6	-5.89E+00	2.69E-01	1.00	Yes
SG, Crude Oil	Metals	Chromium (Hex)	lb/MMBtu	Conventional	3	6.12E-07	1.85E-08	0.00	Low NOx	6	1.34E-06	6.13E-07	0.58	No
SG, Crude Oil	Metals	Chromium (Hex)	Log lb/MMBtu	Conventional	3	-6.21E+00	1.31E-02	0.00	Low NOx	6	-5.93E+00	2.63E-01	0.58	No
SG, Crude Oil	Metals	Chromium (Total)	lb/MMBtu	Conventional	3	1.44E-06	5.44E-07	1.00	Low NOx	6	7.90E-06	4.63E-06	1.00	No
SG, Crude Oil	Metals	Chromium (Total)	Log lb/MMBtu	Conventional	3	-5.86E+00	1.58E-01	1.00	Low NOx	6	-5.17E+00	2.68E-01	1.00	Yes
SG, Crude Oil	Metals	Copper	lb/MMBtu	Conventional	3	4.27E-06	1.91E-06	1.00	Low NOx	6	7.82E-06	3.12E-06	1.00	No
SG, Crude Oil	Metals	Copper	Log lb/MMBtu	Conventional	3	-5.40E+00	1.79E-01	1.00	Low NOx	6	-5.14E+00	1.78E-01	1.00	No
SG, Crude Oil	Metals	Lead	lb/MMBtu	Conventional	3	2.47E-06	7.88E-07	1.00	Low NOx	6	1.59E-06	2.44E-07	0.15	Yes
SG, Crude Oil	Metals	Lead	Log lb/MMBtu	Conventional	3	-5.62E+00	1.46E-01	1.00	Low NOx	6	-5.80E+00	7.14E-02	0.15	Yes
SG, Crude Oil	Metals	Manganese	lb/MMBtu	Conventional	1	1.62E-06		1.00	Low NOx	6	2.33E-05	1.09E-05	1.00	No
SG, Crude Oil	Metals	Manganese	Log lb/MMBtu	Conventional	1	-5.79E+00		1.00	Low NOx	6	-4.67E+00	2.10E-01	1.00	Yes
SG, Crude Oil	Metals	Mercury	lb/MMBtu	Conventional	1	2.38E-07		1.00	Low NOx	6	1.72E-05	1.86E-05	1.00	No
SG, Crude Oil	Metals	Mercury	Log lb/MMBtu	Conventional	1	-6.62E+00		1.00	Low NOx	6	-5.61E+00	1.28E+00	1.00	No
SG, Crude Oil	Metals	Nickel	lb/MMBtu	Conventional	3	2.46E-03	1.67E-04	1.00	Low NOx	6	2.37E-03	1.13E-04	1.00	No
SG, Crude Oil	Metals	Nickel	Log lb/MMBtu	Conventional	3	-2.61E+00	2.89E-02	1.00	Low NOx	6	-2.63E+00	2.10E-02	1.00	No
SG, Crude Oil	Metals	Selenium	lb/MMBtu	Conventional	3	2.92E-06	6.47E-07	1.00	Low NOx	6	1.05E-05	9.78E-06	0.96	No
SG, Crude Oil	Metals	Selenium	Log lb/MMBtu	Conventional	3	-5.54E+00	9.86E-02	1.00	Low NOx	6	-5.26E+00	6.09E-01	0.96	No
SG, Crude Oil	Metals	Zinc	lb/MMBtu	Conventional	3	2.17E-04	2.16E-04	1.00	Low NOx	6	7.08E-04	8.12E-04	0.93	No
SG, Crude Oil	Metals	Zinc	Log lb/MMBtu	Conventional	3	-3.96E+00	7.52E-01	1.00	Low NOx	6	-3.49E+00	6.31E-01	0.93	No
SG, Crude Oil	PAH	Acenaphthylene	lb/MMBtu	Conventional	3	5.70E-08	5.58E-08	1.00	Low NOx	6	4.64E-08	3.86E-08	0.13	No
SG, Crude Oil	PAH	Acenaphthylene	Log lb/MMBtu	Conventional	3	-7.44E+00	5.55E-01	1.00	Low NOx	6	-7.64E+00	7.25E-01	0.13	No
SG, Crude Oil	PAH	Anthracene	lb/MMBtu	Conventional	2	8.53E-08	1.14E-07	1.00	Low NOx	6	3.96E-08	5.73E-08	1.00	No
SG, Crude Oil	PAH	Anthracene	Log lb/MMBtu	Conventional	2	-7.54E+00	1.08E+00	1.00	Low NOx	6	-7.72E+00	5.95E-01	1.00	No
SG, Crude Oil	PAH	Benzo(a)anthracene	lb/MMBtu	Conventional	2	2.09E-08	1.65E-08	1.00	Low NOx	6	6.21E-08	3.74E-08	0.35	No
SG, Crude Oil	PAH	Benzo(a)anthracene	Log lb/MMBtu	Conventional	2	-7.76E+00	3.87E-01	1.00	Low NOx	6	-7.38E+00	5.59E-01	0.35	No

TABLE 7-11. EXTERNAL COMBUSTION BURNER COMPARISON.

Major Group	Category	Substance	Value Type	First Sample Statistics					Second Sample Statistics					Significant Difference at 95%Confidence
				Description Burner	Size	Average	Standard Deviation	Detect Ratio	Description Burner	Size	Average	Standard Deviation	Detect Ratio	
SG, Crude Oil	PAH	Chrysene	lb/MMBtu	Conventional	3	9.06E-08	1.19E-07	1.00	Low NOx	6	6.62E-08	4.12E-08	0.39	No
SG, Crude Oil	PAH	Chrysene	Log lb/MMBtu	Conventional	3	-7.34E+00	6.26E-01	1.00	Low NOx	6	-7.32E+00	4.60E-01	0.39	No
SG, Crude Oil	PAH	Fluoranthene	lb/MMBtu	Conventional	3	3.74E-08	5.44E-09	1.00	Low NOx	6	1.12E-07	1.18E-07	0.64	No
SG, Crude Oil	PAH	Fluoranthene	Log lb/MMBtu	Conventional	3	-7.43E+00	6.09E-02	1.00	Low NOx	6	-7.17E+00	5.45E-01	0.64	No
SG, Crude Oil	PAH	Fluorene	lb/MMBtu	Conventional	3	1.13E-07	1.32E-07	1.00	Low NOx	6	8.49E-08	1.09E-07	1.00	No
SG, Crude Oil	PAH	Fluorene	Log lb/MMBtu	Conventional	3	-7.16E+00	5.17E-01	1.00	Low NOx	6	-7.33E+00	5.31E-01	1.00	No
SG, Crude Oil	PAH	Naphthalene	lb/MMBtu	Conventional	2	2.70E-06	1.06E-06	1.00	Low NOx	6	6.14E-06	4.67E-06	1.00	No
SG, Crude Oil	PAH	Naphthalene	Log lb/MMBtu	Conventional	2	-5.59E+00	1.76E-01	1.00	Low NOx	6	-5.36E+00	4.19E-01	1.00	No
SG, Crude Oil	PAH	Phenanthrene	lb/MMBtu	Conventional	3	3.09E-08	2.81E-08	1.00	Low NOx	6	2.32E-07	4.15E-07	1.00	No
SG, Crude Oil	PAH	Phenanthrene	Log lb/MMBtu	Conventional	3	-7.62E+00	3.67E-01	1.00	Low NOx	6	-7.06E+00	5.91E-01	1.00	No
SG, Crude Oil	PAH	Pyrene	lb/MMBtu	Conventional	3	2.93E-07	1.67E-07	1.00	Low NOx	6	7.92E-08	5.91E-08	0.49	Yes
SG, Crude Oil	PAH	Pyrene	Log lb/MMBtu	Conventional	3	-6.58E+00	2.48E-01	1.00	Low NOx	6	-7.26E+00	4.83E-01	0.49	No
SG, Natural/CVR Gas	PAH	Acenaphthene	lb/MMBtu	Conventional	3	1.36E-09	9.68E-10	0.90	Low NOx	3	7.60E-10	8.01E-11	0.37	No
SG, Natural/CVR Gas	PAH	Acenaphthene	Log lb/MMBtu	Conventional	3	-8.97E+00	3.88E-01	0.90	Low NOx	3	-9.12E+00	4.45E-02	0.37	No
SG, Natural/CVR Gas	PAH	Acenaphthylene	lb/MMBtu	Conventional	3	4.67E-09	4.98E-09	0.97	Low NOx	3	7.13E-10	2.41E-12	0.00	No
SG, Natural/CVR Gas	PAH	Acenaphthylene	Log lb/MMBtu	Conventional	3	-8.62E+00	7.11E-01	0.97	Low NOx	3	-9.15E+00	1.47E-03	0.00	No
SG, Natural/CVR Gas	PAH	Anthracene	lb/MMBtu	Conventional	3	2.01E-09	1.39E-09	0.93	Low NOx	3	2.35E-09	1.72E-09	1.00	No
SG, Natural/CVR Gas	PAH	Anthracene	Log lb/MMBtu	Conventional	3	-8.83E+00	4.86E-01	0.93	Low NOx	3	-8.71E+00	3.29E-01	1.00	No
SG, Natural/CVR Gas	PAH	Benzo(a)anthracene	lb/MMBtu	Conventional	3	1.11E-09	2.43E-11	0.00	Low NOx	3	1.45E-09	8.75E-10	0.84	No
SG, Natural/CVR Gas	PAH	Benzo(a)anthracene	Log lb/MMBtu	Conventional	3	-8.96E+00	9.45E-03	0.00	Low NOx	3	-8.89E+00	2.66E-01	0.84	No
SG, Natural/CVR Gas	PAH	Benzo(a)pyrene	lb/MMBtu	Conventional	3	7.03E-10	5.26E-10	0.62	Low NOx	3	7.13E-10	2.41E-12	0.00	No
SG, Natural/CVR Gas	PAH	Benzo(a)pyrene	Log lb/MMBtu	Conventional	3	-9.23E+00	2.98E-01	0.62	Low NOx	3	-9.15E+00	1.47E-03	0.00	No
SG, Natural/CVR Gas	PAH	Benzo(b)fluoranthene	lb/MMBtu	Conventional	3	3.30E-09	1.90E-09	1.00	Low NOx	3	7.13E-10	2.41E-12	0.00	No
SG, Natural/CVR Gas	PAH	Benzo(b)fluoranthene	Log lb/MMBtu	Conventional	3	-8.55E+00	3.39E-01	1.00	Low NOx	3	-9.15E+00	1.47E-03	0.00	Yes
SG, Natural/CVR Gas	PAH	Benzo(g,h,i)perylene	lb/MMBtu	Conventional	3	1.28E-09	7.59E-10	0.89	Low NOx	3	7.13E-10	2.41E-12	0.00	No
SG, Natural/CVR Gas	PAH	Benzo(g,h,i)perylene	Log lb/MMBtu	Conventional	3	-8.97E+00	3.62E-01	0.89	Low NOx	3	-9.15E+00	1.47E-03	0.00	No
SG, Natural/CVR Gas	PAH	Benzo(k)fluoranthene	lb/MMBtu	Conventional	3	9.70E-10	5.03E-10	0.86	Low NOx	3	7.13E-10	2.41E-12	0.00	No
SG, Natural/CVR Gas	PAH	Benzo(k)fluoranthene	Log lb/MMBtu	Conventional	3	-9.07E+00	2.84E-01	0.86	Low NOx	3	-9.15E+00	1.47E-03	0.00	No
SG, Natural/CVR Gas	PAH	Chrysene	lb/MMBtu	Conventional	3	1.82E-09	3.99E-11	0.00	Low NOx	3	1.38E-09	9.11E-10	0.83	No
SG, Natural/CVR Gas	PAH	Chrysene	Log lb/MMBtu	Conventional	3	-8.74E+00	9.45E-03	0.00	Low NOx	3	-8.92E+00	2.74E-01	0.83	No
SG, Natural/CVR Gas	PAH	Dibenz(a,h)anthracene	lb/MMBtu	Conventional	3	3.96E-10	8.67E-12	0.00	Low NOx	3	7.13E-10	2.41E-12	0.00	Yes
SG, Natural/CVR Gas	PAH	Dibenz(a,h)anthracene	Log lb/MMBtu	Conventional	3	-9.40E+00	9.45E-03	0.00	Low NOx	3	-9.15E+00	1.47E-03	0.00	Yes
SG, Natural/CVR Gas	PAH	Fluoranthene	lb/MMBtu	Conventional	3	5.94E-09	3.87E-09	1.00	Low NOx	3	1.40E-09	5.24E-10	1.00	No
SG, Natural/CVR Gas	PAH	Fluoranthene	Log lb/MMBtu	Conventional	3	-8.33E+00	4.15E-01	1.00	Low NOx	3	-8.87E+00	1.52E-01	1.00	No
SG, Natural/CVR Gas	PAH	Fluorene	lb/MMBtu	Conventional	3	8.94E-09	5.93E-09	1.00	Low NOx	3	2.37E-09	6.67E-10	1.00	No
SG, Natural/CVR Gas	PAH	Fluorene	Log lb/MMBtu	Conventional	3	-8.16E+00	4.43E-01	1.00	Low NOx	3	-8.64E+00	1.17E-01	1.00	No
SG, Natural/CVR Gas	PAH	Indeno(1,2,3-cd)pyrene	lb/MMBtu	Conventional	3	1.65E-09	1.08E-09	0.92	Low NOx	3	7.13E-10	2.41E-12	0.00	No
SG, Natural/CVR Gas	PAH	Indeno(1,2,3-cd)pyrene	Log lb/MMBtu	Conventional	3	-8.89E+00	4.31E-01	0.92	Low NOx	3	-9.15E+00	1.47E-03	0.00	No
SG, Natural/CVR Gas	PAH	Naphthalene	lb/MMBtu	Conventional	3	4.06E-07	1.40E-07	1.00	Low NOx	3	1.81E-07	2.16E-08	1.00	No
SG, Natural/CVR Gas	PAH	Naphthalene	Log lb/MMBtu	Conventional	3	-6.41E+00	1.56E-01	1.00	Low NOx	3	-6.75E+00	5.34E-02	1.00	Yes
SG, Natural/CVR Gas	PAH	Phenanthrene	lb/MMBtu	Conventional	3	2.15E-08	1.32E-08	1.00	Low NOx	3	1.21E-08	4.32E-09	1.00	No
SG, Natural/CVR Gas	PAH	Phenanthrene	Log lb/MMBtu	Conventional	3	-7.76E+00	3.75E-01	1.00	Low NOx	3	-7.94E+00	1.45E-01	1.00	No
SG, Natural/CVR Gas	PAH	Pyrene	lb/MMBtu	Conventional	3	1.00E-08	7.29E-09	1.00	Low NOx	3	1.99E-09	1.21E-09	1.00	No
SG, Natural/CVR Gas	PAH	Pyrene	Log lb/MMBtu	Conventional	3	-8.11E+00	4.24E-01	1.00	Low NOx	3	-8.76E+00	2.92E-01	1.00	No

TABLE 7-11. EXTERNAL COMBUSTION BURNER COMPARISON.

Major Group	Category	Substance	Value Type	First Sample Statistics					Second Sample Statistics					Significant Difference at 95%Confidence
				Description Burner	Size	Average	Standard Deviation	Detect Ratio	Description Burner	Size	Average	Standard Deviation	Detect Ratio	
SG, Natural/CVR Gas	SVOC	Ethylbenzene	lb/MMBtu	Conventional	3	7.22E-06	6.74E-08	0.00	Low NOx	3	1.21E-05	8.09E-06	0.89	No
SG, Natural/CVR Gas	SVOC	Ethylbenzene	Log lb/MMBtu	Conventional	3	-5.14E+00	4.04E-03	0.00	Low NOx	3	-5.00E+00	3.58E-01	0.89	No
SG, Natural/CVR Gas	VOC	Acetaldehyde	lb/MMBtu	?	9	2.27E-05	1.12E-05	0.95	Low NOx	3	5.77E-06	3.03E-07	0.00	Yes
SG, Natural/CVR Gas	VOC	Acetaldehyde	Log lb/MMBtu	?	9	-4.68E+00	1.87E-01	0.95	Low NOx	3	-5.24E+00	2.28E-02	0.00	Yes
SG, Natural/CVR Gas	VOC	Acrolein	lb/MMBtu	?	9	2.06E-05	2.64E-06	1.00	Low NOx	3	5.77E-06	3.03E-07	0.00	Yes
SG, Natural/CVR Gas	VOC	Acrolein	Log lb/MMBtu	?	9	-4.69E+00	5.35E-02	1.00	Low NOx	3	-5.24E+00	2.28E-02	0.00	Yes
SG, Natural/CVR Gas	VOC	Benzene	lb/MMBtu	?	9	4.45E-06	1.31E-07	0.00	Conventional	3	6.05E-06	5.65E-08	0.00	Yes
SG, Natural/CVR Gas	VOC	Benzene	lb/MMBtu	?	9	4.45E-06	1.31E-07	0.00	Low NOx	3	2.86E-06	9.99E-08	0.00	Yes
SG, Natural/CVR Gas	VOC	Benzene	lb/MMBtu	Conventional	3	6.05E-06	5.65E-08	0.00	Low NOx	3	2.86E-06	9.99E-08	0.00	Yes
SG, Natural/CVR Gas	VOC	Benzene	Log lb/MMBtu	?	9	-5.35E+00	1.27E-02	0.00	Conventional	3	-5.22E+00	4.04E-03	0.00	Yes
SG, Natural/CVR Gas	VOC	Benzene	Log lb/MMBtu	?	9	-5.35E+00	1.27E-02	0.00	Low NOx	3	-5.54E+00	1.53E-02	0.00	Yes
SG, Natural/CVR Gas	VOC	Benzene	Log lb/MMBtu	Conventional	3	-5.22E+00	4.04E-03	0.00	Low NOx	3	-5.54E+00	1.53E-02	0.00	Yes
SG, Natural/CVR Gas	VOC	Formaldehyde	lb/MMBtu	?	9	3.18E-05	3.00E-05	0.73	Low NOx	3	5.77E-06	3.03E-07	0.33	No
SG, Natural/CVR Gas	VOC	Formaldehyde	Log lb/MMBtu	?	9	-4.62E+00	3.07E-01	0.73	Low NOx	3	-5.24E+00	2.28E-02	0.33	Yes
SG, Natural/CVR Gas	VOC	Propylene	lb/MMBtu	?	9	1.14E-04	3.83E-05	0.00	Low NOx	3	5.73E-04	1.14E-04	1.00	Yes
SG, Natural/CVR Gas	VOC	Propylene	Log lb/MMBtu	?	9	-4.01E+00	3.38E-01	0.00	Low NOx	3	-3.25E+00	8.85E-02	1.00	Yes
SG, Natural/CVR Gas	VOC	Toluene	lb/MMBtu	?	9	1.38E-05	4.06E-07	0.00	Conventional	3	2.64E-05	4.56E-06	1.00	Yes
SG, Natural/CVR Gas	VOC	Toluene	lb/MMBtu	?	9	1.38E-05	4.06E-07	0.00	Low NOx	3	1.89E-05	5.15E-06	1.00	Yes
SG, Natural/CVR Gas	VOC	Toluene	lb/MMBtu	Conventional	3	2.64E-05	4.56E-06	1.00	Low NOx	3	1.89E-05	5.15E-06	1.00	No
SG, Natural/CVR Gas	VOC	Toluene	Log lb/MMBtu	?	9	-4.86E+00	1.27E-02	0.00	Conventional	3	-4.58E+00	7.79E-02	1.00	Yes
SG, Natural/CVR Gas	VOC	Toluene	Log lb/MMBtu	?	9	-4.86E+00	1.27E-02	0.00	Low NOx	3	-4.73E+00	1.12E-01	1.00	Yes
SG, Natural/CVR Gas	VOC	Toluene	Log lb/MMBtu	Conventional	3	-4.58E+00	7.79E-02	1.00	Low NOx	3	-4.73E+00	1.12E-01	1.00	No
SG, Natural/CVR Gas	VOC	Xylene (Total)	lb/MMBtu	?	9	3.18E-05	9.36E-07	0.00	Conventional	3	1.44E-05	1.35E-07	0.00	Yes
SG, Natural/CVR Gas	VOC	Xylene (Total)	lb/MMBtu	?	9	3.18E-05	9.36E-07	0.00	Low NOx	3	2.34E-05	1.75E-05	1.00	No
SG, Natural/CVR Gas	VOC	Xylene (Total)	lb/MMBtu	Conventional	3	1.44E-05	1.35E-07	0.00	Low NOx	3	2.34E-05	1.75E-05	1.00	No
SG, Natural/CVR Gas	VOC	Xylene (Total)	Log lb/MMBtu	?	9	-4.50E+00	1.27E-02	0.00	Conventional	3	-4.84E+00	4.04E-03	0.00	Yes
SG, Natural/CVR Gas	VOC	Xylene (Total)	Log lb/MMBtu	?	9	-4.50E+00	1.27E-02	0.00	Low NOx	3	-4.71E+00	3.01E-01	1.00	Yes
SG, Natural/CVR Gas	VOC	Xylene (Total)	Log lb/MMBtu	Conventional	3	-4.84E+00	4.04E-03	0.00	Low NOx	3	-4.71E+00	3.01E-01	1.00	No

TABLE 7-12. EXTERNAL COMBUSTION BURNER AND LOAD COMPARISON.

Major Group	Category	Substance	Value Type	First Sample Statistics						Second Sample Statistics						Significant Difference at 95%Confidence
				Description		Size	Average	Standard Deviation	Detect Ratio	Description		Size	Average	Standard Deviation	Detect Ratio	
				Burner	Load					Burner	Load					
Boiler, Ref. Gas	SVOC	Phenol	lb/MMBtu	Conventional	≤80%	6	1.31E-06	1.54E-06	0.75	Low NOx	<80%	3	5.63E-07	1.70E-08	0.34	No
Boiler, Ref. Gas	SVOC	Phenol	lb/MMBtu	Conventional	<80%	6	1.31E-06	1.54E-06	0.75	Low NOx	≥80%	3	4.11E-06	1.13E-06	1.00	Yes
Boiler, Ref. Gas	SVOC	Phenol	lb/MMBtu	Low NOx	<80%	3	5.63E-07	1.70E-08	0.34	Low NOx	≥80%	3	4.11E-06	1.13E-06	1.00	Yes
Boiler, Ref. Gas	SVOC	Phenol	Log lb/MMBtu	Conventional	≤80%	6	-6.03E+00	3.34E-01	0.75	Low NOx	<80%	3	-6.25E+00	1.31E-02	0.34	No
Boiler, Ref. Gas	SVOC	Phenol	Log lb/MMBtu	Conventional	<80%	6	-6.03E+00	3.34E-01	0.75	Low NOx	≥80%	3	-5.40E+00	1.32E-01	1.00	Yes
Boiler, Ref. Gas	SVOC	Phenol	Log lb/MMBtu	Low NOx	<80%	3	-6.25E+00	1.31E-02	0.34	Low NOx	≥80%	3	-5.40E+00	1.32E-01	1.00	Yes
Boiler, Ref. Gas	VOC	Acetaldehyde	lb/MMBtu	Conventional	<80%	9	2.55E-06	3.01E-06	1.00	Low NOx	≤80%	3	5.98E-06	1.69E-06	1.00	No
Boiler, Ref. Gas	VOC	Acetaldehyde	lb/MMBtu	Conventional	≤80%	9	2.55E-06	3.01E-06	1.00	Low NOx	>80%	3	1.41E-06	7.44E-07	1.00	No
Boiler, Ref. Gas	VOC	Acetaldehyde	lb/MMBtu	Low NOx	≤80%	3	5.98E-06	1.69E-06	1.00	Low NOx	>80%	3	1.41E-06	7.44E-07	1.00	Yes
Boiler, Ref. Gas	VOC	Acetaldehyde	Log lb/MMBtu	Conventional	<80%	9	-6.19E+00	1.23E+00	1.00	Low NOx	≤80%	3	-5.24E+00	1.29E-01	1.00	No
Boiler, Ref. Gas	VOC	Acetaldehyde	Log lb/MMBtu	Conventional	<80%	9	-6.19E+00	1.23E+00	1.00	Low NOx	≥80%	3	-5.90E+00	2.71E-01	1.00	No
Boiler, Ref. Gas	VOC	Acetaldehyde	Log lb/MMBtu	Low NOx	≤80%	3	-5.24E+00	1.29E-01	1.00	Low NOx	>80%	3	-5.90E+00	2.71E-01	1.00	Yes
Boiler, Ref. Gas	VOC	Benzene	lb/MMBtu	Conventional	≤80%	10	2.52E-04	3.95E-04	0.90	Low NOx	<80%	3	4.02E-05	3.30E-06	0.00	No
Boiler, Ref. Gas	VOC	Benzene	lb/MMBtu	Conventional	≤80%	10	2.52E-04	3.95E-04	0.90	Low NOx	>80%	3	4.54E-05	1.56E-05	0.00	No
Boiler, Ref. Gas	VOC	Benzene	lb/MMBtu	Low NOx	<80%	3	4.02E-05	3.30E-06	0.00	Low NOx	>80%	3	4.54E-05	1.56E-05	0.00	No
Boiler, Ref. Gas	VOC	Benzene	Log lb/MMBtu	Conventional	≤80%	10	-4.18E+00	8.56E-01	0.90	Low NOx	<80%	3	-4.40E+00	3.58E-02	0.00	No
Boiler, Ref. Gas	VOC	Benzene	Log lb/MMBtu	Conventional	≤80%	10	-4.18E+00	8.56E-01	0.90	Low NOx	>80%	3	-4.36E+00	1.53E-01	0.00	No
Boiler, Ref. Gas	VOC	Benzene	Log lb/MMBtu	Low NOx	<80%	3	-4.40E+00	3.58E-02	0.00	Low NOx	>80%	3	-4.36E+00	1.53E-01	0.00	No
Boiler, Ref. Gas	VOC	Formaldehyde	lb/MMBtu	Conventional	≤80%	9	1.58E-05	9.51E-06	1.00	Low NOx	<80%	3	6.02E-06	1.91E-06	1.00	No
Boiler, Ref. Gas	VOC	Formaldehyde	lb/MMBtu	Conventional	≤80%	9	1.58E-05	9.51E-06	1.00	Low NOx	>80%	3	1.25E-05	8.47E-06	1.00	No
Boiler, Ref. Gas	VOC	Formaldehyde	lb/MMBtu	Low NOx	<80%	3	6.02E-06	1.91E-06	1.00	Low NOx	≥80%	3	1.25E-05	8.47E-06	1.00	No
Boiler, Ref. Gas	VOC	Formaldehyde	Log lb/MMBtu	Conventional	≤80%	9	-4.86E+00	2.46E-01	1.00	Low NOx	<80%	3	-5.23E+00	1.30E-01	1.00	Yes
Boiler, Ref. Gas	VOC	Formaldehyde	Log lb/MMBtu	Conventional	≤80%	9	-4.86E+00	2.46E-01	1.00	Low NOx	>80%	3	-5.02E+00	4.57E-01	1.00	No
Boiler, Ref. Gas	VOC	Formaldehyde	Log lb/MMBtu	Low NOx	<80%	3	-5.23E+00	1.30E-01	1.00	Low NOx	≥80%	3	-5.02E+00	4.57E-01	1.00	No
Boiler, Ref. Gas	VOC	Hydrogen Sulfide	lb/MMBtu	Conventional	<80%	10	2.12E-04	2.55E-04	0.00	Low NOx	<80%	3	1.76E-04	1.45E-05	0.00	No
Boiler, Ref. Gas	VOC	Hydrogen Sulfide	lb/MMBtu	Conventional	<80%	10	2.12E-04	2.55E-04	0.00	Low NOx	>80%	3	2.97E-04	1.02E-04	0.00	No
Boiler, Ref. Gas	VOC	Hydrogen Sulfide	lb/MMBtu	Low NOx	<80%	3	1.76E-04	1.45E-05	0.00	Low NOx	>80%	3	2.97E-04	1.02E-04	0.00	No
Boiler, Ref. Gas	VOC	Hydrogen Sulfide	Log lb/MMBtu	Conventional	<80%	10	-3.96E+00	5.01E-01	0.00	Low NOx	<80%	3	-3.76E+00	3.60E-02	0.00	No
Boiler, Ref. Gas	VOC	Hydrogen Sulfide	Log lb/MMBtu	Conventional	<80%	10	-3.96E+00	5.01E-01	0.00	Low NOx	>80%	3	-3.55E+00	1.53E-01	0.00	No
Boiler, Ref. Gas	VOC	Hydrogen Sulfide	Log lb/MMBtu	Low NOx	<80%	3	-3.76E+00	3.60E-02	0.00	Low NOx	>80%	3	-3.55E+00	1.53E-01	0.00	No
Boiler, Ref. Gas	VOC	Toluene	lb/MMBtu	Conventional	≤80%	6	1.06E-03	1.65E-03	0.98	Low NOx	>80%	3	5.36E-05	1.83E-05	0.45	No
Boiler, Ref. Gas	VOC	Toluene	Log lb/MMBtu	Conventional	≤80%	6	-3.41E+00	7.15E-01	0.98	Low NOx	>80%	3	-4.29E+00	1.53E-01	0.45	No
Heater, Ref. Gas	PAH	Acenaphthene	lb/MMBtu	Conventional	≤80%	2	5.55E-09	8.75E-11	1.00	Conventional	>80%	6	1.46E-09	1.48E-10	1.00	Yes
Heater, Ref. Gas	PAH	Acenaphthene	lb/MMBtu	Conventional	≤80%	2	5.55E-09	8.75E-11	1.00	Low NOx	<80%	3	2.04E-09	7.05E-10	0.80	Yes
Heater, Ref. Gas	PAH	Acenaphthene	lb/MMBtu	Conventional	>80%	6	1.46E-09	1.48E-10	1.00	Low NOx	≤80%	3	2.04E-09	7.05E-10	0.80	No
Heater, Ref. Gas	PAH	Acenaphthene	Log lb/MMBtu	Conventional	≤80%	2	-8.26E+00	6.84E-03	1.00	Conventional	>80%	6	-8.84E+00	4.65E-02	1.00	Yes
Heater, Ref. Gas	PAH	Acenaphthene	Log lb/MMBtu	Conventional	≤80%	2	-8.26E+00	6.84E-03	1.00	Low NOx	<80%	3	-8.71E+00	1.72E-01	0.80	Yes
Heater, Ref. Gas	PAH	Acenaphthene	Log lb/MMBtu	Conventional	>80%	6	-8.84E+00	4.65E-02	1.00	Low NOx	≤80%	3	-8.71E+00	1.72E-01	0.80	No
Heater, Ref. Gas	PAH	Acenaphthylene	lb/MMBtu	Conventional	≤80%	2	2.62E-09	1.75E-10	1.00	Conventional	>80%	6	1.34E-09	5.07E-10	0.47	Yes
Heater, Ref. Gas	PAH	Acenaphthylene	lb/MMBtu	Conventional	≤80%	2	2.62E-09	1.75E-10	1.00	Low NOx	<80%	3	1.25E-09	1.29E-11	0.00	Yes
Heater, Ref. Gas	PAH	Acenaphthylene	lb/MMBtu	Conventional	≥80%	6	1.34E-09	5.07E-10	0.47	Low NOx	<80%	3	1.25E-09	1.29E-11	0.00	No
Heater, Ref. Gas	PAH	Acenaphthylene	Log lb/MMBtu	Conventional	≤80%	2	-8.58E+00	2.89E-02	1.00	Conventional	>80%	6	-8.90E+00	1.39E-01	0.47	Yes
Heater, Ref. Gas	PAH	Acenaphthylene	Log lb/MMBtu	Conventional	≤80%	2	-8.58E+00	2.89E-02	1.00	Low NOx	<80%	3	-8.90E+00	4.50E-03	0.00	Yes
Heater, Ref. Gas	PAH	Acenaphthylene	Log lb/MMBtu	Conventional	≥80%	6	-8.90E+00	1.39E-01	0.47	Low NOx	<80%	3	-8.90E+00	4.50E-03	0.00	No
Heater, Ref. Gas	PAH	Anthracene	lb/MMBtu	Conventional	≤80%	2	6.11E-09	4.89E-10	1.00	Conventional	>80%	6	2.24E-09	8.89E-10	0.92	Yes
Heater, Ref. Gas	PAH	Anthracene	lb/MMBtu	Conventional	≤80%	2	6.11E-09	4.89E-10	1.00	Low NOx	<80%	3	1.96E-09	6.55E-10	0.79	Yes
Heater, Ref. Gas	PAH	Anthracene	lb/MMBtu	Conventional	≥80%	6	2.24E-09	8.89E-10	0.92	Low NOx	<80%	3	1.96E-09	6.55E-10	0.79	No

TABLE 7-12. EXTERNAL COMBUSTION BURNER AND LOAD COMPARISON.

Major Group	Category	Substance	Value Type	First Sample Statistics						Second Sample Statistics						Significant Difference at 95%Confidence
				Description		Size	Average	Standard Deviation	Detect Ratio	Description		Size	Average	Standard Deviation	Detect Ratio	
				Burner	Load					Burner	Load					
Heater, Ref. Gas	PAH	Anthracene	Log lb/MMBtu	Conventional	≤80%	2	-8.21E+00	3.48E-02	1.00	Conventional	>80%	6	-8.68E+00	1.82E-01	0.92	Yes
Heater, Ref. Gas	PAH	Anthracene	Log lb/MMBtu	Conventional	≤80%	2	-8.21E+00	3.48E-02	1.00	Low NOx	<80%	3	-8.73E+00	1.61E-01	0.79	Yes
Heater, Ref. Gas	PAH	Anthracene	Log lb/MMBtu	Conventional	>80%	6	-8.68E+00	1.82E-01	0.92	Low NOx	<80%	3	-8.73E+00	1.61E-01	0.79	No
Heater, Ref. Gas	PAH	Benzo(a)anthracene	lb/MMBtu	Conventional	<80%	8	1.44E-08	1.60E-08	0.99	Conventional	>80%	9	7.27E-08	1.40E-07	1.00	No
Heater, Ref. Gas	PAH	Benzo(a)anthracene	lb/MMBtu	Conventional	≤80%	8	1.44E-08	1.60E-08	0.99	Low NOx	<80%	9	7.28E-09	5.51E-09	1.00	No
Heater, Ref. Gas	PAH	Benzo(a)anthracene	lb/MMBtu	Conventional	>80%	9	7.27E-08	1.40E-07	1.00	Low NOx	<80%	9	7.28E-09	5.51E-09	1.00	No
Heater, Ref. Gas	PAH	Benzo(a)anthracene	Log lb/MMBtu	Conventional	≤80%	8	-8.10E+00	5.54E-01	0.99	Conventional	>80%	9	-8.27E+00	1.05E+00	1.00	No
Heater, Ref. Gas	PAH	Benzo(a)anthracene	Log lb/MMBtu	Conventional	≤80%	8	-8.10E+00	5.54E-01	0.99	Low NOx	<80%	9	-8.27E+00	3.79E-01	1.00	No
Heater, Ref. Gas	PAH	Benzo(a)anthracene	Log lb/MMBtu	Conventional	>80%	9	-8.27E+00	1.05E+00	1.00	Low NOx	≤80%	9	-8.27E+00	3.79E-01	1.00	No
Heater, Ref. Gas	PAH	Benzo(a)pyrene	lb/MMBtu	Conventional	<80%	8	2.37E-09	7.67E-10	0.00	Conventional	>80%	9	2.54E-07	5.15E-07	1.00	No
Heater, Ref. Gas	PAH	Benzo(a)pyrene	lb/MMBtu	Conventional	<80%	8	2.37E-09	7.67E-10	0.00	Low NOx	≤80%	9	2.70E-09	3.13E-09	0.45	No
Heater, Ref. Gas	PAH	Benzo(a)pyrene	lb/MMBtu	Conventional	>80%	9	2.54E-07	5.15E-07	1.00	Low NOx	<80%	9	2.70E-09	3.13E-09	0.45	No
Heater, Ref. Gas	PAH	Benzo(a)pyrene	Log lb/MMBtu	Conventional	<80%	8	-8.65E+00	1.50E-01	0.00	Conventional	>80%	9	-8.22E+00	1.31E+00	1.00	No
Heater, Ref. Gas	PAH	Benzo(a)pyrene	Log lb/MMBtu	Conventional	<80%	8	-8.65E+00	1.50E-01	0.00	Low NOx	<80%	9	-8.70E+00	2.99E-01	0.45	No
Heater, Ref. Gas	PAH	Benzo(a)pyrene	Log lb/MMBtu	Conventional	>80%	9	-8.22E+00	1.31E+00	1.00	Low NOx	<80%	9	-8.70E+00	2.99E-01	0.45	No
Heater, Ref. Gas	PAH	Benzo(b)fluoranthene	lb/MMBtu	Conventional	<80%	8	5.72E-09	7.30E-09	0.88	Conventional	>80%	9	1.07E-07	2.07E-07	0.99	No
Heater, Ref. Gas	PAH	Benzo(b)fluoranthene	lb/MMBtu	Conventional	≤80%	8	5.72E-09	7.30E-09	0.88	Low NOx	<80%	9	4.54E-09	2.69E-09	1.00	No
Heater, Ref. Gas	PAH	Benzo(b)fluoranthene	lb/MMBtu	Conventional	>80%	9	1.07E-07	2.07E-07	0.99	Low NOx	<80%	9	4.54E-09	2.69E-09	1.00	No
Heater, Ref. Gas	PAH	Benzo(b)fluoranthene	Log lb/MMBtu	Conventional	<80%	8	-8.45E+00	4.13E-01	0.88	Conventional	>80%	9	-8.25E+00	1.15E+00	0.99	No
Heater, Ref. Gas	PAH	Benzo(b)fluoranthene	Log lb/MMBtu	Conventional	<80%	8	-8.45E+00	4.13E-01	0.88	Low NOx	≤80%	9	-8.40E+00	2.21E-01	1.00	No
Heater, Ref. Gas	PAH	Benzo(b)fluoranthene	Log lb/MMBtu	Conventional	>80%	9	-8.25E+00	1.15E+00	0.99	Low NOx	<80%	9	-8.40E+00	2.21E-01	1.00	No
Heater, Ref. Gas	PAH	Benzo(g,h,i)perylene	lb/MMBtu	Conventional	<80%	2	1.39E-09	2.19E-11	0.00	Conventional	>80%	6	1.07E-09	3.34E-11	0.00	Yes
Heater, Ref. Gas	PAH	Benzo(g,h,i)perylene	lb/MMBtu	Conventional	<80%	2	1.39E-09	2.19E-11	0.00	Low NOx	<80%	3	1.25E-09	1.29E-11	0.00	Yes
Heater, Ref. Gas	PAH	Benzo(g,h,i)perylene	lb/MMBtu	Conventional	>80%	6	1.07E-09	3.34E-11	0.00	Low NOx	<80%	3	1.25E-09	1.29E-11	0.00	Yes
Heater, Ref. Gas	PAH	Benzo(g,h,i)perylene	Log lb/MMBtu	Conventional	<80%	2	-8.86E+00	6.84E-03	0.00	Conventional	>80%	6	-8.97E+00	1.37E-02	0.00	Yes
Heater, Ref. Gas	PAH	Benzo(g,h,i)perylene	Log lb/MMBtu	Conventional	<80%	2	-8.86E+00	6.84E-03	0.00	Low NOx	<80%	3	-8.90E+00	4.50E-03	0.00	Yes
Heater, Ref. Gas	PAH	Benzo(g,h,i)perylene	Log lb/MMBtu	Conventional	>80%	6	-8.97E+00	1.37E-02	0.00	Low NOx	<80%	3	-8.90E+00	4.50E-03	0.00	Yes
Heater, Ref. Gas	PAH	Benzo(k)fluoranthene	lb/MMBtu	Conventional	<80%	8	4.18E-09	4.33E-09	0.60	Conventional	>80%	9	6.26E-08	1.22E-07	0.99	No
Heater, Ref. Gas	PAH	Benzo(k)fluoranthene	lb/MMBtu	Conventional	≤80%	8	4.18E-09	4.33E-09	0.60	Low NOx	<80%	9	3.15E-09	3.25E-09	0.81	No
Heater, Ref. Gas	PAH	Benzo(k)fluoranthene	lb/MMBtu	Conventional	>80%	9	6.26E-08	1.22E-07	0.99	Low NOx	<80%	9	3.15E-09	3.25E-09	0.81	No
Heater, Ref. Gas	PAH	Benzo(k)fluoranthene	Log lb/MMBtu	Conventional	<80%	8	-8.52E+00	3.38E-01	0.60	Conventional	>80%	9	-8.37E+00	1.04E+00	0.99	No
Heater, Ref. Gas	PAH	Benzo(k)fluoranthene	Log lb/MMBtu	Conventional	≤80%	8	-8.52E+00	3.38E-01	0.60	Low NOx	<80%	9	-8.63E+00	3.11E-01	0.81	No
Heater, Ref. Gas	PAH	Benzo(k)fluoranthene	Log lb/MMBtu	Conventional	>80%	9	-8.37E+00	1.04E+00	0.99	Low NOx	<80%	9	-8.63E+00	3.11E-01	0.81	No
Heater, Ref. Gas	PAH	Chrysene	lb/MMBtu	Conventional	≤80%	2	1.51E-09	1.53E-10	0.54	Conventional	>80%	6	1.17E-09	2.53E-10	0.40	No
Heater, Ref. Gas	PAH	Chrysene	lb/MMBtu	Conventional	<80%	2	1.51E-09	1.53E-10	0.54	Low NOx	≤80%	3	2.62E-09	1.90E-09	0.84	No
Heater, Ref. Gas	PAH	Chrysene	lb/MMBtu	Conventional	>80%	6	1.17E-09	2.53E-10	0.40	Low NOx	≤80%	3	2.62E-09	1.90E-09	0.84	No
Heater, Ref. Gas	PAH	Chrysene	Log lb/MMBtu	Conventional	≤80%	2	-8.82E+00	4.40E-02	0.54	Conventional	>80%	6	-8.94E+00	8.21E-02	0.40	No
Heater, Ref. Gas	PAH	Chrysene	Log lb/MMBtu	Conventional	<80%	2	-8.82E+00	4.40E-02	0.54	Low NOx	≤80%	3	-8.68E+00	3.03E-01	0.84	No
Heater, Ref. Gas	PAH	Chrysene	Log lb/MMBtu	Conventional	>80%	6	-8.94E+00	8.21E-02	0.40	Low NOx	≤80%	3	-8.66E+00	3.03E-01	0.84	No
Heater, Ref. Gas	PAH	Dibenz(a,h)anthracene	lb/MMBtu	Conventional	<80%	8	2.37E-09	7.67E-10	0.00	Conventional	>80%	9	1.06E-08	1.96E-08	0.00	No
Heater, Ref. Gas	PAH	Dibenz(a,h)anthracene	lb/MMBtu	Conventional	<80%	8	2.37E-09	7.67E-10	0.00	Low NOx	<80%	9	1.67E-08	4.51E-08	0.00	No
Heater, Ref. Gas	PAH	Dibenz(a,h)anthracene	lb/MMBtu	Conventional	>80%	9	1.06E-08	1.96E-08	0.00	Low NOx	<80%	9	1.67E-08	4.51E-08	0.00	No
Heater, Ref. Gas	PAH	Dibenz(a,h)anthracene	Log lb/MMBtu	Conventional	<80%	8	-8.65E+00	1.50E-01	0.00	Conventional	>80%	9	-8.64E+00	7.32E-01	0.00	No
Heater, Ref. Gas	PAH	Dibenz(a,h)anthracene	Log lb/MMBtu	Conventional	<80%	8	-8.65E+00	1.50E-01	0.00	Low NOx	<80%	9	-8.58E+00	6.52E-01	0.00	No
Heater, Ref. Gas	PAH	Dibenz(a,h)anthracene	Log lb/MMBtu	Conventional	>80%	9	-8.64E+00	7.32E-01	0.00	Low NOx	<80%	9	-8.58E+00	6.52E-01	0.00	No
Heater, Ref. Gas	PAH	Fluoranthene	lb/MMBtu	Conventional	≤80%	2	3.88E-09	7.24E-10	1.00	Conventional	>80%	6	2.58E-09	7.07E-10	1.00	No
Heater, Ref. Gas	PAH	Fluoranthene	lb/MMBtu	Conventional	≤80%	2	3.88E-09	7.24E-10	1.00	Low NOx	<80%	3	3.46E-09	1.49E-09	1.00	No

TABLE 7-12. EXTERNAL COMBUSTION BURNER AND LOAD COMPARISON.

Major Group	Category	Substance	Value Type	First Sample Statistics						Second Sample Statistics						Significant Difference at 95%Confidence
				Description		Size	Average	Standard Deviation	Detect Ratio	Description		Size	Average	Standard Deviation	Detect Ratio	
				Burner	Load					Burner	Load					
Heater, Ref. Gas	PAH	Fluoranthene	lb/MMBtu	Conventional	>80%	6	2.58E-09	7.07E-10	1.00	Low NOx	<80%	3	3.46E-09	1.49E-09	1.00	No
Heater, Ref. Gas	PAH	Fluoranthene	Log lb/MMBtu	Conventional	<80%	2	-8.42E+00	8.15E-02	1.00	Conventional	>80%	6	-8.60E+00	1.14E-01	1.00	No
Heater, Ref. Gas	PAH	Fluoranthene	Log lb/MMBtu	Conventional	<80%	2	-8.42E+00	8.15E-02	1.00	Low NOx	<80%	3	-8.49E+00	1.93E-01	1.00	No
Heater, Ref. Gas	PAH	Fluoranthene	Log lb/MMBtu	Conventional	>80%	6	-8.60E+00	1.14E-01	1.00	Low NOx	<80%	3	-8.49E+00	1.93E-01	1.00	No
Heater, Ref. Gas	PAH	Fluorene	lb/MMBtu	Conventional	<80%	2	2.54E-08	2.94E-09	1.00	Conventional	>80%	6	7.60E-09	2.12E-09	1.00	Yes
Heater, Ref. Gas	PAH	Fluorene	lb/MMBtu	Conventional	<80%	2	2.54E-08	2.94E-09	1.00	Low NOx	<80%	3	7.52E-09	4.08E-09	1.00	Yes
Heater, Ref. Gas	PAH	Fluorene	lb/MMBtu	Conventional	>80%	6	7.60E-09	2.12E-09	1.00	Low NOx	<80%	3	7.52E-09	4.08E-09	1.00	No
Heater, Ref. Gas	PAH	Fluorene	Log lb/MMBtu	Conventional	<80%	2	-7.60E+00	5.04E-02	1.00	Conventional	>80%	6	-8.13E+00	1.14E-01	1.00	Yes
Heater, Ref. Gas	PAH	Fluorene	Log lb/MMBtu	Conventional	<80%	2	-7.60E+00	5.04E-02	1.00	Low NOx	<80%	3	-8.18E+00	3.02E-01	1.00	No
Heater, Ref. Gas	PAH	Fluorene	Log lb/MMBtu	Conventional	>80%	6	-8.13E+00	1.14E-01	1.00	Low NOx	<80%	3	-8.18E+00	3.02E-01	1.00	No
Heater, Ref. Gas	PAH	Indeno(1,2,3-cd)pyrene	lb/MMBtu	Conventional	<80%	8	2.57E-09	1.00E-09	0.36	Conventional	>80%	9	2.91E-07	5.72E-07	1.00	No
Heater, Ref. Gas	PAH	Indeno(1,2,3-cd)pyrene	lb/MMBtu	Conventional	<80%	8	2.57E-09	1.00E-09	0.36	Low NOx	<80%	9	3.43E-09	4.92E-09	0.77	No
Heater, Ref. Gas	PAH	Indeno(1,2,3-cd)pyrene	lb/MMBtu	Conventional	>80%	9	2.91E-07	5.72E-07	1.00	Low NOx	<80%	9	3.43E-09	4.92E-09	0.77	No
Heater, Ref. Gas	PAH	Indeno(1,2,3-cd)pyrene	Log lb/MMBtu	Conventional	<80%	8	-8.62E+00	1.73E-01	0.36	Conventional	>80%	9	-8.13E+00	1.35E+00	1.00	No
Heater, Ref. Gas	PAH	Indeno(1,2,3-cd)pyrene	Log lb/MMBtu	Conventional	<80%	8	-8.62E+00	1.73E-01	0.36	Low NOx	<80%	9	-8.66E+00	3.56E-01	0.77	No
Heater, Ref. Gas	PAH	Indeno(1,2,3-cd)pyrene	Log lb/MMBtu	Conventional	>80%	9	-8.13E+00	1.35E+00	1.00	Low NOx	<80%	9	-8.66E+00	3.56E-01	0.77	No
Heater, Ref. Gas	PAH	Naphthalene	lb/MMBtu	Conventional	<80%	2	6.94E-07	8.94E-08	1.00	Conventional	>80%	6	2.72E-07	8.66E-08	1.00	Yes
Heater, Ref. Gas	PAH	Naphthalene	lb/MMBtu	Conventional	<80%	2	6.94E-07	8.94E-08	1.00	Low NOx	<80%	3	1.40E-07	1.99E-08	1.00	Yes
Heater, Ref. Gas	PAH	Naphthalene	lb/MMBtu	Conventional	>80%	6	2.72E-07	8.66E-08	1.00	Low NOx	<80%	3	1.40E-07	1.99E-08	1.00	Yes
Heater, Ref. Gas	PAH	Naphthalene	Log lb/MMBtu	Conventional	<80%	2	-6.16E+00	5.61E-02	1.00	Conventional	>80%	6	-6.59E+00	1.45E-01	1.00	Yes
Heater, Ref. Gas	PAH	Naphthalene	Log lb/MMBtu	Conventional	<80%	2	-6.16E+00	5.61E-02	1.00	Low NOx	<80%	3	-6.86E+00	6.35E-02	1.00	Yes
Heater, Ref. Gas	PAH	Naphthalene	Log lb/MMBtu	Conventional	>80%	6	-6.59E+00	1.45E-01	1.00	Low NOx	<80%	3	-6.86E+00	6.35E-02	1.00	Yes
Heater, Ref. Gas	PAH	Phenanthrene	lb/MMBtu	Conventional	<80%	2	2.12E-08	1.82E-09	1.00	Conventional	>80%	6	1.30E-08	3.20E-09	1.00	Yes
Heater, Ref. Gas	PAH	Phenanthrene	lb/MMBtu	Conventional	<80%	2	2.12E-08	1.82E-09	1.00	Low NOx	<80%	3	1.32E-08	5.59E-09	1.00	No
Heater, Ref. Gas	PAH	Phenanthrene	lb/MMBtu	Conventional	>80%	6	1.30E-08	3.20E-09	1.00	Low NOx	<80%	3	1.32E-08	5.59E-09	1.00	No
Heater, Ref. Gas	PAH	Phenanthrene	Log lb/MMBtu	Conventional	<80%	2	-7.67E+00	3.74E-02	1.00	Conventional	>80%	6	-7.90E+00	1.13E-01	1.00	Yes
Heater, Ref. Gas	PAH	Phenanthrene	Log lb/MMBtu	Conventional	<80%	2	-7.67E+00	3.74E-02	1.00	Low NOx	<80%	3	-7.91E+00	2.18E-01	1.00	No
Heater, Ref. Gas	PAH	Phenanthrene	Log lb/MMBtu	Conventional	>80%	6	-7.90E+00	1.13E-01	1.00	Low NOx	<80%	3	-7.91E+00	2.18E-01	1.00	No
Heater, Ref. Gas	PAH	Pyrene	lb/MMBtu	Conventional	<80%	2	3.33E-09	3.40E-10	1.00	Conventional	>80%	6	2.48E-09	5.28E-10	1.00	No
Heater, Ref. Gas	PAH	Pyrene	lb/MMBtu	Conventional	<80%	2	3.33E-09	3.40E-10	1.00	Low NOx	<80%	3	3.23E-09	1.32E-09	1.00	No
Heater, Ref. Gas	PAH	Pyrene	lb/MMBtu	Conventional	>80%	6	2.48E-09	5.28E-10	1.00	Low NOx	<80%	3	3.23E-09	1.32E-09	1.00	No
Heater, Ref. Gas	PAH	Pyrene	Log lb/MMBtu	Conventional	<80%	2	-8.48E+00	4.45E-02	1.00	Conventional	>80%	6	-8.61E+00	9.34E-02	1.00	No
Heater, Ref. Gas	PAH	Pyrene	Log lb/MMBtu	Conventional	<80%	2	-8.48E+00	4.45E-02	1.00	Low NOx	<80%	3	-8.52E+00	1.91E-01	1.00	No
Heater, Ref. Gas	PAH	Pyrene	Log lb/MMBtu	Conventional	>80%	6	-8.61E+00	9.34E-02	1.00	Low NOx	<80%	3	-8.52E+00	1.91E-01	1.00	No
Heater, Ref. Gas	SVOC	Ethylbenzene	lb/MMBtu	Conventional	<80%	3	1.25E-05	1.52E-05	0.88	Conventional	>80%	6	3.16E-05	4.22E-05	0.88	No
Heater, Ref. Gas	SVOC	Ethylbenzene	lb/MMBtu	Conventional	<80%	3	1.25E-05	1.52E-05	0.88	Low NOx	<80%	3	4.51E-05	0.00E+00	0.00	Yes
Heater, Ref. Gas	SVOC	Ethylbenzene	lb/MMBtu	Conventional	>80%	6	3.16E-05	4.22E-05	0.88	Low NOx	<80%	3	4.51E-05	0.00E+00	0.00	No
Heater, Ref. Gas	SVOC	Ethylbenzene	Log lb/MMBtu	Conventional	<80%	3	-5.14E+00	5.47E-01	0.88	Conventional	>80%	6	-4.87E+00	6.04E-01	0.88	No
Heater, Ref. Gas	SVOC	Ethylbenzene	Log lb/MMBtu	Conventional	<80%	3	-5.14E+00	5.47E-01	0.88	Low NOx	<80%	3	-4.35E+00	0.00E+00	0.00	No
Heater, Ref. Gas	SVOC	Ethylbenzene	Log lb/MMBtu	Conventional	>80%	6	-4.87E+00	6.04E-01	0.88	Low NOx	<80%	3	-4.35E+00	0.00E+00	0.00	No
Heater, Ref. Gas	SVOC	Phenol	lb/MMBtu	Conventional	>80%	6	2.04E-06	1.35E-06	0.94	Low NOx	<80%	9	1.09E-05	6.96E-06	1.00	Yes
Heater, Ref. Gas	SVOC	Phenol	lb/MMBtu	Conventional	>80%	6	2.04E-06	1.35E-06	0.94	Low NOx	>80%	6	1.43E-06	1.39E-06	0.62	No
Heater, Ref. Gas	SVOC	Phenol	lb/MMBtu	Low NOx	<80%	9	1.09E-05	6.96E-06	1.00	Low NOx	>80%	6	1.43E-06	1.39E-06	0.62	Yes
Heater, Ref. Gas	SVOC	Phenol	Log lb/MMBtu	Conventional	>80%	6	-5.79E+00	3.28E-01	0.94	Low NOx	<80%	9	-5.06E+00	3.17E-01	1.00	Yes
Heater, Ref. Gas	SVOC	Phenol	Log lb/MMBtu	Conventional	>80%	6	-5.79E+00	3.28E-01	0.94	Low NOx	>80%	6	-6.02E+00	4.42E-01	0.62	No
Heater, Ref. Gas	SVOC	Phenol	Log lb/MMBtu	Low NOx	<80%	9	-5.06E+00	3.17E-01	1.00	Low NOx	>80%	6	-6.02E+00	4.42E-01	0.62	Yes
Heater, Ref. Gas	VOC	Acetaldehyde	lb/MMBtu	Conventional	>80%	6	1.60E-05	1.55E-05	1.00	Low NOx	<80%	12	2.19E-05	2.27E-05	0.82	No

TABLE 7-12. EXTERNAL COMBUSTION BURNER AND LOAD COMPARISON.

Major Group	Category	Substance	Value Type	First Sample Statistics						Second Sample Statistics						Significant Difference at 95%Confidence
				Description		Size	Average	Standard Deviation	Detect Ratio	Description		Size	Average	Standard Deviation	Detect Ratio	
				Burner	Load					Burner	Load					
Heater, Ref. Gas	VOC	Acetaldehyde	lb/MMBtu	Conventional	>80%	6	1.60E-06	1.56E-06	1.00	Low NOx	>80%	6	1.39E-06	9.74E-07	1.00	Yes
Heater, Ref. Gas	VOC	Acetaldehyde	lb/MMBtu	Low NOx	<80%	12	2.10E-06	2.27E-06	0.82	Low NOx	>80%	6	1.39E-06	9.74E-07	1.00	Yes
Heater, Ref. Gas	VOC	Acetaldehyde	Log lb/MMBtu	Conventional	>80%	6	-5.20E+00	8.79E-01	1.00	Low NOx	<80%	12	-4.96E+00	7.55E-01	0.82	No
Heater, Ref. Gas	VOC	Acetaldehyde	Log lb/MMBtu	Conventional	>80%	6	-5.20E+00	8.79E-01	1.00	Low NOx	>80%	6	-5.95E+00	3.22E-01	1.00	No
Heater, Ref. Gas	VOC	Acetaldehyde	Log lb/MMBtu	Low NOx	<80%	12	-4.96E+00	7.55E-01	0.82	Low NOx	>80%	6	-5.95E+00	3.22E-01	1.00	Yes
Heater, Ref. Gas	VOC	Benzene	lb/MMBtu	Conventional	<80%	3	8.92E-06	1.04E-05	0.88	Conventional	>80%	12	4.44E-05	4.72E-05	0.06	No
Heater, Ref. Gas	VOC	Benzene	lb/MMBtu	Conventional	<80%	3	8.92E-06	1.04E-05	0.88	Low NOx	<80%	12	1.13E-04	5.18E-05	0.00	Yes
Heater, Ref. Gas	VOC	Benzene	lb/MMBtu	Conventional	<80%	3	8.92E-06	1.04E-05	0.88	Low NOx	>80%	6	3.71E-05	2.13E-05	0.00	No
Heater, Ref. Gas	VOC	Benzene	lb/MMBtu	Conventional	>80%	12	4.44E-05	4.72E-05	0.06	Low NOx	<80%	12	1.13E-04	5.18E-05	0.00	Yes
Heater, Ref. Gas	VOC	Benzene	lb/MMBtu	Conventional	>80%	12	4.44E-05	4.72E-05	0.06	Low NOx	>80%	6	3.71E-05	2.13E-05	0.00	No
Heater, Ref. Gas	VOC	Benzene	lb/MMBtu	Low NOx	<80%	12	1.13E-04	5.18E-05	0.00	Low NOx	>80%	6	3.71E-05	2.13E-05	0.00	Yes
Heater, Ref. Gas	VOC	Benzene	Log lb/MMBtu	Conventional	<80%	3	-5.25E+00	5.01E-01	0.88	Conventional	>80%	12	-4.65E+00	5.84E-01	0.06	No
Heater, Ref. Gas	VOC	Benzene	Log lb/MMBtu	Conventional	<80%	3	-5.25E+00	5.01E-01	0.88	Low NOx	<80%	12	-4.02E+00	2.86E-01	0.00	Yes
Heater, Ref. Gas	VOC	Benzene	Log lb/MMBtu	Conventional	<80%	3	-5.25E+00	5.01E-01	0.88	Low NOx	>80%	6	-4.50E+00	2.78E-01	0.00	Yes
Heater, Ref. Gas	VOC	Benzene	Log lb/MMBtu	Conventional	>80%	12	-4.65E+00	5.84E-01	0.06	Low NOx	<80%	12	-4.02E+00	2.86E-01	0.00	Yes
Heater, Ref. Gas	VOC	Benzene	Log lb/MMBtu	Conventional	>80%	12	-4.65E+00	5.84E-01	0.06	Low NOx	>80%	6	-4.50E+00	2.78E-01	0.00	No
Heater, Ref. Gas	VOC	Benzene	Log lb/MMBtu	Low NOx	<80%	12	-4.02E+00	2.86E-01	0.00	Low NOx	>80%	6	-4.50E+00	2.78E-01	0.00	Yes
Heater, Ref. Gas	VOC	Formaldehyde	lb/MMBtu	Conventional	>80%	6	5.57E-05	7.46E-05	1.00	Low NOx	<80%	9	2.21E-04	4.29E-04	1.00	No
Heater, Ref. Gas	VOC	Formaldehyde	lb/MMBtu	Conventional	>80%	6	5.57E-05	7.46E-05	1.00	Low NOx	>80%	6	1.53E-06	8.35E-07	1.00	No
Heater, Ref. Gas	VOC	Formaldehyde	lb/MMBtu	Low NOx	<80%	9	2.21E-04	4.29E-04	1.00	Low NOx	>80%	6	1.53E-06	8.35E-07	1.00	No
Heater, Ref. Gas	VOC	Formaldehyde	Log lb/MMBtu	Conventional	>80%	6	-4.59E+00	5.89E-01	1.00	Low NOx	<80%	9	-4.12E+00	6.04E-01	1.00	No
Heater, Ref. Gas	VOC	Formaldehyde	Log lb/MMBtu	Conventional	>80%	6	-4.59E+00	5.89E-01	1.00	Low NOx	>80%	6	-5.87E+00	2.32E-01	1.00	Yes
Heater, Ref. Gas	VOC	Formaldehyde	Log lb/MMBtu	Low NOx	<80%	9	-4.12E+00	6.04E-01	1.00	Low NOx	>80%	6	-5.87E+00	2.32E-01	1.00	Yes
Heater, Ref. Gas	VOC	Hydrogen Sulfide	lb/MMBtu	Conventional	>80%	6	3.56E-04	1.74E-04	0.00	Low NOx	<80%	9	3.14E-04	2.62E-04	0.00	No
Heater, Ref. Gas	VOC	Hydrogen Sulfide	lb/MMBtu	Conventional	>80%	6	3.56E-04	1.74E-04	0.00	Low NOx	>80%	6	1.95E-04	1.92E-04	0.00	No
Heater, Ref. Gas	VOC	Hydrogen Sulfide	lb/MMBtu	Low NOx	<80%	9	3.14E-04	2.62E-04	0.00	Low NOx	>80%	6	1.95E-04	1.92E-04	0.00	No
Heater, Ref. Gas	VOC	Hydrogen Sulfide	Log lb/MMBtu	Conventional	>80%	6	-3.49E+00	1.88E-01	0.00	Low NOx	<80%	9	-3.62E+00	3.27E-01	0.00	No
Heater, Ref. Gas	VOC	Hydrogen Sulfide	Log lb/MMBtu	Conventional	>80%	6	-3.49E+00	1.88E-01	0.00	Low NOx	>80%	6	-4.07E+00	7.04E-01	0.00	No
Heater, Ref. Gas	VOC	Hydrogen Sulfide	Log lb/MMBtu	Low NOx	<80%	9	-3.62E+00	3.27E-01	0.00	Low NOx	>80%	6	-4.07E+00	7.04E-01	0.00	No
Heater, Ref. Gas	VOC	Propylene	lb/MMBtu	Conventional	<80%	3	1.97E-06	9.53E-07	0.18	Conventional	>80%	6	2.27E-06	1.52E-07	0.00	No
Heater, Ref. Gas	VOC	Propylene	Log lb/MMBtu	Conventional	<80%	3	-5.74E+00	2.20E-01	0.18	Conventional	>80%	6	-5.64E+00	2.87E-02	0.00	No
Heater, Ref. Gas	VOC	Toluene	lb/MMBtu	Conventional	<80%	3	2.37E-05	3.31E-05	0.94	Conventional	>80%	12	8.10E-05	6.45E-05	0.60	No
Heater, Ref. Gas	VOC	Toluene	lb/MMBtu	Conventional	<80%	3	2.37E-05	3.31E-05	0.94	Low NOx	<80%	12	1.84E-04	2.40E-04	0.52	No
Heater, Ref. Gas	VOC	Toluene	lb/MMBtu	Conventional	<80%	3	2.37E-05	3.31E-05	0.94	Low NOx	>80%	6	4.54E-05	2.70E-05	0.77	No
Heater, Ref. Gas	VOC	Toluene	lb/MMBtu	Conventional	>80%	12	8.10E-05	6.45E-05	0.60	Low NOx	<80%	12	1.84E-04	2.40E-04	0.52	No
Heater, Ref. Gas	VOC	Toluene	lb/MMBtu	Conventional	>80%	12	8.10E-05	6.45E-05	0.60	Low NOx	>80%	6	4.54E-05	2.70E-05	0.77	No
Heater, Ref. Gas	VOC	Toluene	lb/MMBtu	Low NOx	<80%	12	1.84E-04	2.40E-04	0.52	Low NOx	>80%	6	4.54E-05	2.70E-05	0.77	No
Heater, Ref. Gas	VOC	Toluene	Log lb/MMBtu	Conventional	<80%	3	-4.96E+00	6.56E-01	0.94	Conventional	>80%	12	-4.29E+00	5.05E-01	0.60	No
Heater, Ref. Gas	VOC	Toluene	Log lb/MMBtu	Conventional	<80%	3	-4.96E+00	6.56E-01	0.94	Low NOx	<80%	12	-3.94E+00	4.18E-01	0.52	Yes
Heater, Ref. Gas	VOC	Toluene	Log lb/MMBtu	Conventional	<80%	3	-4.96E+00	6.56E-01	0.94	Low NOx	>80%	6	-4.42E+00	2.89E-01	0.77	No
Heater, Ref. Gas	VOC	Toluene	Log lb/MMBtu	Conventional	>80%	12	-4.29E+00	5.05E-01	0.60	Low NOx	<80%	12	-3.94E+00	4.18E-01	0.52	No
Heater, Ref. Gas	VOC	Toluene	Log lb/MMBtu	Conventional	>80%	12	-4.29E+00	5.05E-01	0.60	Low NOx	>80%	6	-4.42E+00	2.89E-01	0.77	No
Heater, Ref. Gas	VOC	Toluene	Log lb/MMBtu	Low NOx	<80%	12	-3.94E+00	4.18E-01	0.52	Low NOx	>80%	6	-4.42E+00	2.89E-01	0.77	Yes
Heater, Ref. Gas	VOC	Xylene (Total)	lb/MMBtu	Conventional	<80%	3	4.13E-05	5.23E-05	0.96	Conventional	>80%	6	3.15E-05	4.30E-05	0.88	No
Heater, Ref. Gas	VOC	Xylene (Total)	lb/MMBtu	Conventional	<80%	3	4.13E-05	5.23E-05	0.96	Low NOx	<80%	3	4.51E-05	0.00E+00	0.00	No
Heater, Ref. Gas	VOC	Xylene (Total)	lb/MMBtu	Conventional	>80%	6	3.15E-05	4.30E-05	0.88	Low NOx	<80%	3	4.51E-05	0.00E+00	0.00	No
Heater, Ref. Gas	VOC	Xylene (Total)	Log lb/MMBtu	Conventional	<80%	3	-4.69E+00	6.70E-01	0.96	Conventional	>80%	6	-4.87E+00	6.02E-01	0.88	No

TABLE 7-12. EXTERNAL COMBUSTION BURNER AND LOAD COMPARISON.

Major Group	Category	Substance	Value Type	First Sample Statistics						Second Sample Statistics						Significant Difference at 95%Confidence
				Description		Size	Average	Standard Deviation	Detect Ratio	Description		Size	Average	Standard Deviation	Detect Ratio	
				Burner	Load					Burner	Load					
Heater, Ref. Gas	VOC	Xylene (Total)	Log lb/MMBtu	Conventional	<80%	3	-4.69E+00	6.70E-01	0.96	Low NOx	<80%	3	-4.35E+00	0.00E+00	0.00	No
Heater, Ref. Gas	VOC	Xylene (Total)	Log lb/MMBtu	Conventional	>80%	6	-4.87E+00	6.02E-01	0.88	Low NOx	<80%	3	-4.35E+00	0.00E+00	0.00	No
SG, Crude Oil	Metals	Arsenic	lb/MMBtu	Conventional	>80%	3	4.53E-06	6.46E-07	1.00	Low NOx	<80%	3	1.27E-05	6.42E-06	1.00	No
SG, Crude Oil	Metals	Arsenic	lb/MMBtu	Conventional	>80%	3	4.53E-06	6.46E-07	1.00	Low NOx	>80%	3	2.77E-06	4.04E-07	1.00	Yes
SG, Crude Oil	Metals	Arsenic	lb/MMBtu	Low NOx	<80%	3	1.27E-05	6.42E-06	1.00	Low NOx	>80%	3	2.77E-06	4.04E-07	1.00	No
SG, Crude Oil	Metals	Arsenic	Log lb/MMBtu	Conventional	>80%	3	-5.35E+00	5.98E-02	1.00	Low NOx	<80%	3	-4.94E+00	2.42E-01	1.00	Yes
SG, Crude Oil	Metals	Arsenic	Log lb/MMBtu	Conventional	>80%	3	-5.35E+00	5.98E-02	1.00	Low NOx	>80%	3	-5.56E+00	6.36E-02	1.00	Yes
SG, Crude Oil	Metals	Arsenic	Log lb/MMBtu	Low NOx	<80%	3	-4.94E+00	2.42E-01	1.00	Low NOx	>80%	3	-5.56E+00	6.36E-02	1.00	Yes
SG, Crude Oil	Metals	Beryllium	lb/MMBtu	Low NOx	<80%	3	1.97E-06	3.03E-07	1.00	Low NOx	>80%	3	1.86E-06	2.70E-07	0.00	No
SG, Crude Oil	Metals	Beryllium	Log lb/MMBtu	Low NOx	<80%	3	-5.71E+00	7.04E-02	1.00	Low NOx	>80%	3	-5.73E+00	6.42E-02	0.00	No
SG, Crude Oil	Metals	Cadmium	lb/MMBtu	Conventional	>80%	3	1.86E-07	4.44E-08	1.00	Low NOx	<80%	3	1.26E-06	3.36E-07	1.00	Yes
SG, Crude Oil	Metals	Cadmium	lb/MMBtu	Conventional	>80%	3	1.86E-07	4.44E-08	1.00	Low NOx	>80%	3	1.81E-06	1.60E-06	1.00	No
SG, Crude Oil	Metals	Cadmium	lb/MMBtu	Low NOx	<80%	3	1.26E-06	3.36E-07	1.00	Low NOx	>80%	3	1.81E-06	1.60E-06	1.00	No
SG, Crude Oil	Metals	Cadmium	Log lb/MMBtu	Conventional	>80%	3	-6.74E+00	9.85E-02	1.00	Low NOx	<80%	3	-5.91E+00	1.12E-01	1.00	Yes
SG, Crude Oil	Metals	Cadmium	Log lb/MMBtu	Conventional	>80%	3	-6.74E+00	9.85E-02	1.00	Low NOx	>80%	3	-5.87E+00	4.09E-01	1.00	Yes
SG, Crude Oil	Metals	Cadmium	Log lb/MMBtu	Low NOx	<80%	3	-5.91E+00	1.12E-01	1.00	Low NOx	>80%	3	-5.87E+00	4.09E-01	1.00	No
SG, Crude Oil	Metals	Chromium (Hex)	lb/MMBtu	Conventional	>80%	3	6.12E-07	1.85E-08	0.00	Low NOx	<80%	3	9.33E-07	5.13E-07	0.86	No
SG, Crude Oil	Metals	Chromium (Hex)	lb/MMBtu	Conventional	>80%	3	6.12E-07	1.85E-08	0.00	Low NOx	>80%	3	1.74E-06	4.37E-07	0.43	Yes
SG, Crude Oil	Metals	Chromium (Hex)	lb/MMBtu	Low NOx	<80%	3	9.33E-07	5.13E-07	0.86	Low NOx	>80%	3	1.74E-06	4.37E-07	0.43	No
SG, Crude Oil	Metals	Chromium (Hex)	Log lb/MMBtu	Conventional	>80%	3	-6.21E+00	1.31E-02	0.00	Low NOx	<80%	3	-6.09E+00	2.91E-01	0.86	No
SG, Crude Oil	Metals	Chromium (Hex)	Log lb/MMBtu	Conventional	>80%	3	-6.21E+00	1.31E-02	0.00	Low NOx	>80%	3	-5.77E+00	1.06E-01	0.43	Yes
SG, Crude Oil	Metals	Chromium (Hex)	Log lb/MMBtu	Low NOx	<80%	3	-6.09E+00	2.91E-01	0.86	Low NOx	>80%	3	-5.77E+00	1.06E-01	0.43	No
SG, Crude Oil	Metals	Chromium (Total)	lb/MMBtu	Conventional	>80%	3	1.44E-06	5.44E-07	1.00	Low NOx	<80%	3	1.19E-05	2.35E-06	1.00	Yes
SG, Crude Oil	Metals	Chromium (Total)	lb/MMBtu	Conventional	>80%	3	1.44E-06	5.44E-07	1.00	Low NOx	>80%	3	3.90E-06	1.81E-07	1.00	Yes
SG, Crude Oil	Metals	Chromium (Total)	lb/MMBtu	Low NOx	<80%	3	1.19E-05	2.35E-06	1.00	Low NOx	>80%	3	3.90E-06	1.81E-07	1.00	Yes
SG, Crude Oil	Metals	Chromium (Total)	Log lb/MMBtu	Conventional	>80%	3	-5.86E+00	1.58E-01	1.00	Low NOx	<80%	3	-4.93E+00	8.26E-02	1.00	Yes
SG, Crude Oil	Metals	Chromium (Total)	Log lb/MMBtu	Conventional	>80%	3	-5.86E+00	1.58E-01	1.00	Low NOx	>80%	3	-5.41E+00	1.99E-02	1.00	Yes
SG, Crude Oil	Metals	Chromium (Total)	Log lb/MMBtu	Low NOx	<80%	3	-4.93E+00	8.26E-02	1.00	Low NOx	>80%	3	-5.41E+00	1.99E-02	1.00	Yes
SG, Crude Oil	Metals	Copper	lb/MMBtu	Conventional	>80%	3	4.27E-06	1.91E-06	1.00	Low NOx	<80%	3	1.04E-05	1.75E-06	1.00	Yes
SG, Crude Oil	Metals	Copper	lb/MMBtu	Conventional	>80%	3	4.27E-06	1.91E-06	1.00	Low NOx	>80%	3	5.21E-06	9.12E-07	1.00	No
SG, Crude Oil	Metals	Copper	lb/MMBtu	Low NOx	<80%	3	1.04E-05	1.75E-06	1.00	Low NOx	>80%	3	5.21E-06	9.12E-07	1.00	Yes
SG, Crude Oil	Metals	Copper	Log lb/MMBtu	Conventional	>80%	3	-5.40E+00	1.79E-01	1.00	Low NOx	<80%	3	-4.99E+00	7.04E-02	1.00	Yes
SG, Crude Oil	Metals	Copper	Log lb/MMBtu	Conventional	>80%	3	-5.40E+00	1.79E-01	1.00	Low NOx	>80%	3	-5.29E+00	7.58E-02	1.00	No
SG, Crude Oil	Metals	Copper	Log lb/MMBtu	Low NOx	<80%	3	-4.99E+00	7.04E-02	1.00	Low NOx	>80%	3	-5.29E+00	7.58E-02	1.00	Yes
SG, Crude Oil	Metals	Lead	lb/MMBtu	Conventional	>80%	3	2.47E-06	7.88E-07	1.00	Low NOx	<80%	3	1.78E-06	2.69E-08	0.00	No
SG, Crude Oil	Metals	Lead	lb/MMBtu	Conventional	>80%	3	2.47E-06	7.88E-07	1.00	Low NOx	>80%	3	1.40E-06	2.01E-07	0.34	No
SG, Crude Oil	Metals	Lead	lb/MMBtu	Low NOx	<80%	3	1.78E-06	2.69E-08	0.00	Low NOx	>80%	3	1.40E-06	2.01E-07	0.34	Yes
SG, Crude Oil	Metals	Lead	Log lb/MMBtu	Conventional	>80%	3	-5.62E+00	1.46E-01	1.00	Low NOx	<80%	3	-5.75E+00	6.57E-03	0.00	No
SG, Crude Oil	Metals	Lead	Log lb/MMBtu	Conventional	>80%	3	-5.62E+00	1.46E-01	1.00	Low NOx	>80%	3	-5.86E+00	6.38E-02	0.34	No
SG, Crude Oil	Metals	Lead	Log lb/MMBtu	Low NOx	<80%	3	-5.75E+00	6.57E-03	0.00	Low NOx	>80%	3	-5.86E+00	6.38E-02	0.34	Yes
SG, Crude Oil	Metals	Manganese	lb/MMBtu	Conventional	>80%	1	1.62E-06		1.00	Low NOx	<80%	3	2.16E-05	1.24E-05	1.00	No
SG, Crude Oil	Metals	Manganese	lb/MMBtu	Conventional	>80%	1	1.62E-06		1.00	Low NOx	>80%	3	2.50E-05	1.15E-05	1.00	No
SG, Crude Oil	Metals	Manganese	lb/MMBtu	Low NOx	<80%	3	2.16E-05	1.24E-05	1.00	Low NOx	>80%	3	2.50E-05	1.15E-05	1.00	No
SG, Crude Oil	Metals	Manganese	Log lb/MMBtu	Conventional	>80%	1	-5.79E+00		1.00	Low NOx	<80%	3	-4.72E+00	2.59E-01	1.00	No
SG, Crude Oil	Metals	Manganese	Log lb/MMBtu	Conventional	>80%	1	-5.79E+00		1.00	Low NOx	>80%	3	-4.63E+00	1.94E-01	1.00	Yes
SG, Crude Oil	Metals	Manganese	Log lb/MMBtu	Low NOx	<80%	3	-4.72E+00	2.59E-01	1.00	Low NOx	>80%	3	-4.63E+00	1.94E-01	1.00	No
SG, Crude Oil	Metals	Mercury	lb/MMBtu	Conventional	>80%	1	2.38E-07		1.00	Low NOx	<80%	3	3.41E-05	6.66E-07	1.00	Yes

TABLE 7-12. EXTERNAL COMBUSTION BURNER AND LOAD COMPARISON.

Major Group	Category	Substance	Value Type	First Sample Statistics						Second Sample Statistics						Significant Difference at 95%Confidence
				Description		Size	Average	Standard Deviation	Detect Ratio	Description		Size	Average	Standard Deviation	Detect Ratio	
				Burner	Load					Burner	Load					
SG, Crude Oil	Metals	Mercury	lb/MMBtu	Conventional	>80%	1	2.38E-07		1.00	Low NOx	>80%	3	2.21E-07	1.48E-07	1.00	No
SG, Crude Oil	Metals	Mercury	lb/MMBtu	Low NOx	<80%	3	3.41E-05	6.66E-07	1.00	Low NOx	>80%	3	2.21E-07	1.48E-07	1.00	Yes
SG, Crude Oil	Metals	Mercury	Log lb/MMBtu	Conventional	>80%	1	-6.62E+00		1.00	Low NOx	<80%	3	-4.47E+00	8.47E-03	1.00	Yes
SG, Crude Oil	Metals	Mercury	Log lb/MMBtu	Conventional	>80%	1	-6.62E+00		1.00	Low NOx	>80%	3	-6.76E+00	4.20E-01	1.00	No
SG, Crude Oil	Metals	Mercury	Log lb/MMBtu	Low NOx	<80%	3	-4.47E+00	8.47E-03	1.00	Low NOx	>80%	3	-6.76E+00	4.20E-01	1.00	Yes
SG, Crude Oil	Metals	Nickel	lb/MMBtu	Conventional	>80%	3	2.46E-03	1.67E-04	1.00	Low NOx	<80%	3	2.34E-03	1.33E-04	1.00	No
SG, Crude Oil	Metals	Nickel	lb/MMBtu	Conventional	>80%	3	2.46E-03	1.67E-04	1.00	Low NOx	>80%	3	2.40E-03	1.11E-04	1.00	No
SG, Crude Oil	Metals	Nickel	lb/MMBtu	Low NOx	<80%	3	2.34E-03	1.33E-04	1.00	Low NOx	>80%	3	2.40E-03	1.11E-04	1.00	No
SG, Crude Oil	Metals	Nickel	Log lb/MMBtu	Conventional	>80%	3	-2.61E+00	2.89E-02	1.00	Low NOx	<80%	3	-2.63E+00	2.49E-02	1.00	No
SG, Crude Oil	Metals	Nickel	Log lb/MMBtu	Conventional	>80%	3	-2.61E+00	2.89E-02	1.00	Low NOx	>80%	3	-2.62E+00	2.01E-02	1.00	No
SG, Crude Oil	Metals	Nickel	Log lb/MMBtu	Low NOx	<80%	3	-2.63E+00	2.49E-02	1.00	Low NOx	>80%	3	-2.62E+00	2.01E-02	1.00	No
SG, Crude Oil	Metals	Phosphorus	lb/MMBtu	Low NOx	<80%	3	2.77E-04	2.29E-04	1.00	Low NOx	>80%	3	7.96E-05	3.00E-05	1.00	No
SG, Crude Oil	Metals	Phosphorus	Log lb/MMBtu	Low NOx	<80%	3	-3.84E+00	7.76E-01	1.00	Low NOx	>80%	3	-4.12E+00	1.81E-01	1.00	No
SG, Crude Oil	Metals	Selenium	lb/MMBtu	Conventional	>80%	3	2.92E-06	6.47E-07	1.00	Low NOx	<80%	3	1.94E-05	1.32E-06	1.00	Yes
SG, Crude Oil	Metals	Selenium	lb/MMBtu	Conventional	>80%	3	2.92E-06	6.47E-07	1.00	Low NOx	>80%	3	1.57E-06	4.83E-07	0.45	Yes
SG, Crude Oil	Metals	Selenium	lb/MMBtu	Low NOx	<80%	3	1.94E-05	1.32E-06	1.00	Low NOx	>80%	3	1.57E-06	4.83E-07	0.45	Yes
SG, Crude Oil	Metals	Selenium	Log lb/MMBtu	Conventional	>80%	3	-5.54E+00	9.86E-02	1.00	Low NOx	<80%	3	-4.71E+00	2.92E-02	1.00	Yes
SG, Crude Oil	Metals	Selenium	Log lb/MMBtu	Conventional	>80%	3	-5.54E+00	9.86E-02	1.00	Low NOx	>80%	3	-5.82E+00	1.28E-01	0.45	Yes
SG, Crude Oil	Metals	Selenium	Log lb/MMBtu	Low NOx	<80%	3	-4.71E+00	2.92E-02	1.00	Low NOx	>80%	3	-5.82E+00	1.28E-01	0.45	Yes
SG, Crude Oil	Metals	Zinc	lb/MMBtu	Conventional	>80%	3	2.17E-04	2.16E-04	1.00	Low NOx	<80%	3	1.32E-03	7.17E-04	1.00	No
SG, Crude Oil	Metals	Zinc	lb/MMBtu	Conventional	>80%	3	2.17E-04	2.16E-04	1.00	Low NOx	>80%	3	9.33E-05	1.33E-05	0.00	No
SG, Crude Oil	Metals	Zinc	lb/MMBtu	Low NOx	<80%	3	1.32E-03	7.17E-04	1.00	Low NOx	>80%	3	9.33E-05	1.33E-05	0.00	Yes
SG, Crude Oil	Metals	Zinc	Log lb/MMBtu	Conventional	>80%	3	-3.96E+00	7.52E-01	1.00	Low NOx	<80%	3	-2.94E+00	3.14E-01	1.00	No
SG, Crude Oil	Metals	Zinc	Log lb/MMBtu	Conventional	>80%	3	-3.96E+00	7.52E-01	1.00	Low NOx	>80%	3	-4.03E+00	6.32E-02	0.00	No
SG, Crude Oil	Metals	Zinc	Log lb/MMBtu	Low NOx	<80%	3	-2.94E+00	3.14E-01	1.00	Low NOx	>80%	3	-4.03E+00	6.32E-02	0.00	Yes
SG, Crude Oil	PAH	Acenaphthene	lb/MMBtu	Low NOx	<80%	3	4.42E-07	2.97E-07	1.00	Low NOx	>80%	3	6.83E-08	9.40E-08	1.00	No
SG, Crude Oil	PAH	Acenaphthene	Log lb/MMBtu	Low NOx	<80%	3	-6.48E+00	4.57E-01	1.00	Low NOx	>80%	3	-7.53E+00	7.11E-01	1.00	No
SG, Crude Oil	PAH	Acenaphthylene	lb/MMBtu	Conventional	>80%	3	5.70E-08	5.58E-08	1.00	Low NOx	<80%	3	8.06E-08	3.28E-09	0.00	No
SG, Crude Oil	PAH	Acenaphthylene	lb/MMBtu	Conventional	>80%	3	5.70E-08	5.58E-08	1.00	Low NOx	>80%	3	1.22E-08	1.41E-08	1.00	No
SG, Crude Oil	PAH	Acenaphthylene	lb/MMBtu	Low NOx	<80%	3	8.06E-08	3.28E-09	0.00	Low NOx	>80%	3	1.22E-08	1.41E-08	1.00	Yes
SG, Crude Oil	PAH	Acenaphthylene	Log lb/MMBtu	Conventional	>80%	3	-7.44E+00	5.55E-01	1.00	Low NOx	<80%	3	-7.09E+00	1.76E-02	0.00	No
SG, Crude Oil	PAH	Acenaphthylene	Log lb/MMBtu	Conventional	>80%	3	-7.44E+00	5.55E-01	1.00	Low NOx	>80%	3	-8.18E+00	6.51E-01	1.00	No
SG, Crude Oil	PAH	Acenaphthylene	Log lb/MMBtu	Low NOx	<80%	3	-7.09E+00	1.76E-02	0.00	Low NOx	>80%	3	-8.18E+00	6.51E-01	1.00	Yes
SG, Crude Oil	PAH	Anthracene	lb/MMBtu	Conventional	>80%	2	8.53E-08	1.14E-07	1.00	Low NOx	<80%	3	2.20E-08	1.44E-09	1.00	No
SG, Crude Oil	PAH	Anthracene	lb/MMBtu	Conventional	>80%	2	8.53E-08	1.14E-07	1.00	Low NOx	>80%	3	5.72E-08	8.52E-08	1.00	No
SG, Crude Oil	PAH	Anthracene	lb/MMBtu	Low NOx	<80%	3	2.20E-08	1.44E-09	1.00	Low NOx	>80%	3	5.72E-08	8.52E-08	1.00	No
SG, Crude Oil	PAH	Anthracene	Log lb/MMBtu	Conventional	>80%	2	-7.54E+00	1.08E+00	1.00	Low NOx	<80%	3	-7.66E+00	2.81E-02	1.00	No
SG, Crude Oil	PAH	Anthracene	Log lb/MMBtu	Conventional	>80%	2	-7.54E+00	1.08E+00	1.00	Low NOx	>80%	3	-7.78E+00	9.35E-01	1.00	No
SG, Crude Oil	PAH	Anthracene	Log lb/MMBtu	Low NOx	<80%	3	-7.66E+00	2.81E-02	1.00	Low NOx	>80%	3	-7.78E+00	9.35E-01	1.00	No
SG, Crude Oil	PAH	Benzo(a)anthracene	lb/MMBtu	Conventional	>80%	2	2.09E-08	1.65E-08	1.00	Low NOx	<80%	3	8.06E-08	3.28E-09	0.00	Yes
SG, Crude Oil	PAH	Benzo(a)anthracene	lb/MMBtu	Conventional	>80%	2	2.09E-08	1.65E-08	1.00	Low NOx	>80%	3	4.35E-08	4.95E-08	1.00	No
SG, Crude Oil	PAH	Benzo(a)anthracene	lb/MMBtu	Low NOx	<80%	3	8.06E-08	3.28E-09	0.00	Low NOx	>80%	3	4.35E-08	4.95E-08	1.00	No
SG, Crude Oil	PAH	Benzo(a)anthracene	Log lb/MMBtu	Conventional	>80%	2	-7.76E+00	3.87E-01	1.00	Low NOx	<80%	3	-7.09E+00	1.76E-02	0.00	Yes
SG, Crude Oil	PAH	Benzo(a)anthracene	Log lb/MMBtu	Conventional	>80%	2	-7.76E+00	3.87E-01	1.00	Low NOx	>80%	3	-7.67E+00	7.31E-01	1.00	No
SG, Crude Oil	PAH	Benzo(a)anthracene	Log lb/MMBtu	Low NOx	<80%	3	-7.09E+00	1.76E-02	0.00	Low NOx	>80%	3	-7.67E+00	7.31E-01	1.00	No
SG, Crude Oil	PAH	Benzo(a)pyrene	lb/MMBtu	Low NOx	<80%	3	8.06E-08	3.28E-09	0.00	Low NOx	>80%	3	2.71E-08	2.30E-08	0.96	Yes
SG, Crude Oil	PAH	Benzo(a)pyrene	Log lb/MMBtu	Low NOx	<80%	3	-7.09E+00	1.76E-02	0.00	Low NOx	>80%	3	-7.77E+00	6.04E-01	0.96	No

TABLE 7-12. EXTERNAL COMBUSTION BURNER AND LOAD COMPARISON.

Major Group	Category	Substance	Value Type	First Sample Statistics						Second Sample Statistics						Significant Difference at 95%Confidence
				Description		Size	Average	Standard Deviation	Detect Ratio	Description		Size	Average	Standard Deviation	Detect Ratio	
				Burner	Load					Burner	Load					
SG, Crude Oil	PAH	Benzo(g,h,i)perylene	lb/MMBtu	Low NOx	<80%	3	8.06E-08	3.28E-09	0.00	Low NOx	>80%	3	2.35E-08	1.78E-08	0.90	Yes
SG, Crude Oil	PAH	Benzo(g,h,i)perylene	Log lb/MMBtu	Low NOx	<80%	3	-7.09E+00	1.76E-02	0.00	Low NOx	>80%	3	-7.73E+00	3.92E-01	0.90	Yes
SG, Crude Oil	PAH	Chrysene	lb/MMBtu	Conventional	>80%	3	9.06E-08	1.19E-07	1.00	Low NOx	<80%	3	8.06E-08	3.28E-09	0.00	No
SG, Crude Oil	PAH	Chrysene	lb/MMBtu	Conventional	>80%	3	9.06E-08	1.19E-07	1.00	Low NOx	>80%	3	5.18E-08	6.01E-08	1.00	No
SG, Crude Oil	PAH	Chrysene	lb/MMBtu	Low NOx	<80%	3	8.06E-08	3.28E-09	0.00	Low NOx	>80%	3	5.18E-08	6.01E-08	1.00	No
SG, Crude Oil	PAH	Chrysene	Log lb/MMBtu	Conventional	>80%	3	-7.34E+00	6.26E-01	1.00	Low NOx	<80%	3	-7.09E+00	1.76E-02	0.00	No
SG, Crude Oil	PAH	Chrysene	Log lb/MMBtu	Conventional	>80%	3	-7.34E+00	6.26E-01	1.00	Low NOx	>80%	3	-7.54E+00	6.15E-01	1.00	No
SG, Crude Oil	PAH	Chrysene	Log lb/MMBtu	Low NOx	<80%	3	-7.09E+00	1.76E-02	0.00	Low NOx	>80%	3	-7.54E+00	6.15E-01	1.00	No
SG, Crude Oil	PAH	Dibenz(a,h)anthracene	lb/MMBtu	Low NOx	<80%	3	8.06E-08	3.28E-09	0.00	Low NOx	>80%	3	2.59E-08	2.16E-08	0.00	Yes
SG, Crude Oil	PAH	Dibenz(a,h)anthracene	Log lb/MMBtu	Low NOx	<80%	3	-7.09E+00	1.76E-02	0.00	Low NOx	>80%	3	-7.71E+00	4.24E-01	0.00	No
SG, Crude Oil	PAH	Fluoranthene	lb/MMBtu	Conventional	>80%	3	3.74E-08	5.44E-09	1.00	Low NOx	<80%	3	8.06E-08	3.28E-09	0.00	Yes
SG, Crude Oil	PAH	Fluoranthene	lb/MMBtu	Conventional	>80%	3	3.74E-08	5.44E-09	1.00	Low NOx	>80%	3	1.44E-07	1.79E-07	1.00	No
SG, Crude Oil	PAH	Fluoranthene	lb/MMBtu	Low NOx	<80%	3	8.06E-08	3.28E-09	0.00	Low NOx	>80%	3	1.44E-07	1.79E-07	1.00	No
SG, Crude Oil	PAH	Fluoranthene	Log lb/MMBtu	Conventional	>80%	3	-7.43E+00	6.09E-02	1.00	Low NOx	<80%	3	-7.09E+00	1.76E-02	0.00	Yes
SG, Crude Oil	PAH	Fluoranthene	Log lb/MMBtu	Conventional	>80%	3	-7.43E+00	6.09E-02	1.00	Low NOx	>80%	3	-7.24E+00	8.53E-01	1.00	No
SG, Crude Oil	PAH	Fluoranthene	Log lb/MMBtu	Low NOx	<80%	3	-7.09E+00	1.76E-02	0.00	Low NOx	>80%	3	-7.24E+00	8.53E-01	1.00	No
SG, Crude Oil	PAH	Fluorene	lb/MMBtu	Conventional	>80%	3	1.13E-07	1.32E-07	1.00	Low NOx	<80%	3	4.97E-08	2.10E-08	1.00	No
SG, Crude Oil	PAH	Fluorene	lb/MMBtu	Conventional	>80%	3	1.13E-07	1.32E-07	1.00	Low NOx	>80%	3	1.20E-07	1.60E-07	1.00	No
SG, Crude Oil	PAH	Fluorene	lb/MMBtu	Low NOx	<80%	3	4.97E-08	2.10E-08	1.00	Low NOx	>80%	3	1.20E-07	1.60E-07	1.00	No
SG, Crude Oil	PAH	Fluorene	Log lb/MMBtu	Conventional	>80%	3	-7.16E+00	5.17E-01	1.00	Low NOx	<80%	3	-7.33E+00	1.91E-01	1.00	No
SG, Crude Oil	PAH	Fluorene	Log lb/MMBtu	Conventional	>80%	3	-7.16E+00	5.17E-01	1.00	Low NOx	>80%	3	-7.32E+00	8.17E-01	1.00	No
SG, Crude Oil	PAH	Fluorene	Log lb/MMBtu	Low NOx	<80%	3	-7.33E+00	1.91E-01	1.00	Low NOx	>80%	3	-7.32E+00	8.17E-01	1.00	No
SG, Crude Oil	PAH	Indeno(1,2,3-cd)pyrene	lb/MMBtu	Low NOx	<80%	3	8.06E-08	3.28E-09	0.00	Low NOx	>80%	3	2.59E-08	2.67E-08	0.91	Yes
SG, Crude Oil	PAH	Indeno(1,2,3-cd)pyrene	Log lb/MMBtu	Low NOx	<80%	3	-7.09E+00	1.76E-02	0.00	Low NOx	>80%	3	-7.75E+00	4.60E-01	0.91	No
SG, Crude Oil	PAH	Naphthalene	lb/MMBtu	Conventional	>80%	2	2.70E-06	1.06E-06	1.00	Low NOx	<80%	3	1.90E-06	5.89E-07	1.00	No
SG, Crude Oil	PAH	Naphthalene	lb/MMBtu	Conventional	>80%	2	2.70E-06	1.06E-06	1.00	Low NOx	>80%	3	1.04E-05	4.54E-07	1.00	Yes
SG, Crude Oil	PAH	Naphthalene	lb/MMBtu	Low NOx	<80%	3	1.90E-06	5.89E-07	1.00	Low NOx	>80%	3	1.04E-05	4.54E-07	1.00	Yes
SG, Crude Oil	PAH	Naphthalene	Log lb/MMBtu	Conventional	>80%	2	-5.59E+00	1.76E-01	1.00	Low NOx	<80%	3	-5.73E+00	1.30E-01	1.00	No
SG, Crude Oil	PAH	Naphthalene	Log lb/MMBtu	Conventional	>80%	2	-5.59E+00	1.76E-01	1.00	Low NOx	>80%	3	-4.98E+00	1.92E-02	1.00	Yes
SG, Crude Oil	PAH	Naphthalene	Log lb/MMBtu	Low NOx	<80%	3	-5.73E+00	1.30E-01	1.00	Low NOx	>80%	3	-4.98E+00	1.92E-02	1.00	Yes
SG, Crude Oil	PAH	Phenanthrene	lb/MMBtu	Conventional	>80%	3	3.09E-08	2.81E-08	1.00	Low NOx	<80%	3	4.51E-08	5.90E-09	1.00	No
SG, Crude Oil	PAH	Phenanthrene	lb/MMBtu	Conventional	>80%	3	3.09E-08	2.81E-08	1.00	Low NOx	>80%	3	4.19E-07	5.70E-07	1.00	No
SG, Crude Oil	PAH	Phenanthrene	lb/MMBtu	Low NOx	<80%	3	4.51E-08	5.90E-09	1.00	Low NOx	>80%	3	4.19E-07	5.70E-07	1.00	No
SG, Crude Oil	PAH	Phenanthrene	Log lb/MMBtu	Conventional	>80%	3	-7.62E+00	3.67E-01	1.00	Low NOx	<80%	3	-7.35E+00	5.89E-02	1.00	No
SG, Crude Oil	PAH	Phenanthrene	Log lb/MMBtu	Conventional	>80%	3	-7.62E+00	3.67E-01	1.00	Low NOx	>80%	3	-6.78E+00	7.90E-01	1.00	No
SG, Crude Oil	PAH	Phenanthrene	Log lb/MMBtu	Low NOx	<80%	3	-7.35E+00	5.89E-02	1.00	Low NOx	>80%	3	-6.78E+00	7.90E-01	1.00	No
SG, Crude Oil	PAH	Pyrene	lb/MMBtu	Conventional	>80%	3	2.93E-07	1.67E-07	1.00	Low NOx	<80%	3	8.06E-08	3.28E-09	0.00	No
SG, Crude Oil	PAH	Pyrene	lb/MMBtu	Conventional	>80%	3	2.93E-07	1.67E-07	1.00	Low NOx	>80%	3	7.77E-08	9.34E-08	1.00	No
SG, Crude Oil	PAH	Pyrene	lb/MMBtu	Low NOx	<80%	3	8.06E-08	3.28E-09	0.00	Low NOx	>80%	3	7.77E-08	9.34E-08	1.00	No
SG, Crude Oil	PAH	Pyrene	Log lb/MMBtu	Conventional	>80%	3	-6.58E+00	2.48E-01	1.00	Low NOx	<80%	3	-7.09E+00	1.76E-02	0.00	Yes
SG, Crude Oil	PAH	Pyrene	Log lb/MMBtu	Conventional	>80%	3	-6.58E+00	2.48E-01	1.00	Low NOx	>80%	3	-7.42E+00	7.09E-01	1.00	No
SG, Crude Oil	PAH	Pyrene	Log lb/MMBtu	Low NOx	<80%	3	-7.09E+00	1.76E-02	0.00	Low NOx	>80%	3	-7.42E+00	7.09E-01	1.00	No
SG, Crude Oil	VOC	Acetaldehyde	lb/MMBtu	Low NOx	<80%	3	2.48E-05	1.67E-06	0.00	Low NOx	>80%	6	1.43E-05	9.82E-06	1.00	No
SG, Crude Oil	VOC	Acetaldehyde	Log lb/MMBtu	Low NOx	<80%	3	-4.61E+00	2.98E-02	0.00	Low NOx	>80%	6	-4.91E+00	2.33E-01	1.00	No
SG, Crude Oil	VOC	Acrolein	lb/MMBtu	Low NOx	<80%	3	2.93E-05	1.97E-06	0.00	Low NOx	>80%	6	3.30E-06	7.19E-14	0.00	Yes
SG, Crude Oil	VOC	Acrolein	Log lb/MMBtu	Low NOx	<80%	3	-4.53E+00	2.98E-02	0.00	Low NOx	>80%	6	-5.48E+00	0.00E+00	0.00	Yes
SG, Crude Oil	VOC	Benzene	lb/MMBtu	Low NOx	<80%	3	2.02E-06	2.84E-14	0.00	Low NOx	>80%	6	5.10E-06	1.13E-06	0.43	Yes

TABLE 7-12. EXTERNAL COMBUSTION BURNER AND LOAD COMPARISON.

Major Group	Category	Substance	Value Type	First Sample Statistics						Second Sample Statistics						Significant Difference at 95%Confidence
				Description		Size	Average	Standard Deviation	Detect Ratio	Description		Size	Average	Standard Deviation	Detect Ratio	
				Burner	Load					Burner	Load					
SG, Crude Oil	VOC	Benzene	Log lb/MMBtu	Low NOx	<80%	3	-5.69E+00	0.00E+00	0.00	Low NOx	>80%	6	-5.30E+00	9.09E-02	0.43	Yes
SG, Crude Oil	VOC	Formaldehyde	lb/MMBtu	Low NOx	<80%	3	1.06E-05	7.12E-07	0.00	Low NOx	>80%	6	4.17E-06	1.22E-06	1.00	Yes
SG, Crude Oil	VOC	Formaldehyde	Log lb/MMBtu	Low NOx	<80%	3	-4.98E+00	2.98E-02	0.00	Low NOx	>80%	6	-5.40E+00	1.40E-01	1.00	Yes
SG, Crude Oil	VOC	Propylene	lb/MMBtu	Low NOx	<80%	3	1.15E-03	0.00E+00	0.00	Low NOx	>80%	6	1.24E-05	2.49E-13	0.00	Yes
SG, Crude Oil	VOC	Propylene	Log lb/MMBtu	Low NOx	<80%	3	-2.94E+00	0.00E+00	0.00	Low NOx	>80%	6	-4.91E+00	7.54E-08	0.00	Yes
SG, Crude Oil	VOC	Toluene	lb/MMBtu	Low NOx	<80%	3	4.43E-05	2.95E-05	1.00	Low NOx	>80%	6	1.36E-05	2.03E-13	0.33	Yes
SG, Crude Oil	VOC	Toluene	Log lb/MMBtu	Low NOx	<80%	3	-4.41E+00	2.74E-01	1.00	Low NOx	>80%	6	-4.87E+00	0.00E+00	0.33	Yes
SG, Crude Oil	VOC	Xylene (Total)	lb/MMBtu	Low NOx	<80%	3	2.89E-06	0.00E+00	0.00	Low NOx	>80%	6	3.12E-05	0.00E+00	0.00	NA
SG, Crude Oil	VOC	Xylene (Total)	Log lb/MMBtu	Low NOx	<80%	3	-5.54E+00	0.00E+00	0.00	Low NOx	>80%	6	-4.51E+00	5.33E-08	0.00	Yes
SG, Natural Gas	VOC	Benzene	lb/MMBtu	NC	<80%	3	4.09E-06	1.47E-08	0.00	NC	?	3	3.78E-06	0.00E+00	0.00	Yes
SG, Natural Gas	VOC	Benzene	Log lb/MMBtu	NC	<80%	3	-5.39E+00	1.56E-03	0.00	NC	?	3	-5.42E+00	0.00E+00	0.00	Yes
SG, Natural Gas	VOC	Formaldehyde	lb/MMBtu	NC	<80%	3	5.36E-05	3.92E-05	1.00	NC	?	3	8.50E-06	6.14E-06	1.00	No
SG, Natural Gas	VOC	Formaldehyde	Log lb/MMBtu	NC	<80%	3	-4.35E+00	3.24E-01	1.00	NC	?	3	-5.14E+00	3.06E-01	1.00	Yes
SG, Natural Gas	VOC	Toluene	lb/MMBtu	NC	<80%	3	1.27E-05	4.55E-08	0.00	NC	?	3	1.17E-05	0.00E+00	0.00	Yes
SG, Natural Gas	VOC	Toluene	Log lb/MMBtu	NC	<80%	3	-4.90E+00	1.56E-03	0.00	NC	?	3	-4.93E+00	0.00E+00	0.00	Yes
SG, Natural Gas	VOC	Xylene (Total)	lb/MMBtu	NC	<80%	3	2.92E-05	1.05E-07	0.00	NC	?	3	2.70E-05	0.00E+00	0.00	Yes
SG, Natural Gas	VOC	Xylene (Total)	Log lb/MMBtu	NC	<80%	3	-4.53E+00	1.56E-03	0.00	NC	?	3	-4.57E+00	0.00E+00	0.00	Yes
SG, Natural/CVR Gas	PAH	Acenaphthene	lb/MMBtu	Conventional	<80%	3	1.36E-09	9.68E-10	0.90	Low NOx	<80%	3	7.60E-10	8.01E-11	0.37	No
SG, Natural/CVR Gas	PAH	Acenaphthene	Log lb/MMBtu	Conventional	<80%	3	-8.97E+00	3.88E-01	0.90	Low NOx	<80%	3	-9.12E+00	4.45E-02	0.37	No
SG, Natural/CVR Gas	PAH	Acenaphthylene	lb/MMBtu	Conventional	<80%	3	4.67E-09	4.98E-09	0.97	Low NOx	<80%	3	7.13E-10	2.41E-12	0.00	No
SG, Natural/CVR Gas	PAH	Acenaphthylene	Log lb/MMBtu	Conventional	<80%	3	-8.62E+00	7.11E-01	0.97	Low NOx	<80%	3	-9.15E+00	1.47E-03	0.00	No
SG, Natural/CVR Gas	PAH	Anthracene	lb/MMBtu	Conventional	<80%	3	2.01E-09	1.39E-09	0.93	Low NOx	<80%	3	2.35E-09	1.72E-09	1.00	No
SG, Natural/CVR Gas	PAH	Anthracene	Log lb/MMBtu	Conventional	<80%	3	-8.83E+00	4.86E-01	0.93	Low NOx	<80%	3	-8.71E+00	3.29E-01	1.00	No
SG, Natural/CVR Gas	PAH	Benzo(a)anthracene	lb/MMBtu	Conventional	<80%	3	1.11E-09	2.43E-11	0.00	Low NOx	<80%	3	1.45E-09	8.75E-10	0.84	No
SG, Natural/CVR Gas	PAH	Benzo(a)anthracene	Log lb/MMBtu	Conventional	<80%	3	-8.96E+00	9.45E-03	0.00	Low NOx	<80%	3	-8.89E+00	2.66E-01	0.84	No
SG, Natural/CVR Gas	PAH	Benzo(a)pyrene	lb/MMBtu	Conventional	<80%	3	7.03E-10	5.26E-10	0.62	Low NOx	<80%	3	7.13E-10	2.41E-12	0.00	No
SG, Natural/CVR Gas	PAH	Benzo(a)pyrene	Log lb/MMBtu	Conventional	<80%	3	-9.23E+00	2.98E-01	0.62	Low NOx	<80%	3	-9.15E+00	1.47E-03	0.00	No
SG, Natural/CVR Gas	PAH	Benzo(b)fluoranthene	lb/MMBtu	Conventional	<80%	3	3.30E-09	1.90E-09	1.00	Low NOx	<80%	3	7.13E-10	2.41E-12	0.00	No
SG, Natural/CVR Gas	PAH	Benzo(b)fluoranthene	Log lb/MMBtu	Conventional	<80%	3	-8.55E+00	3.39E-01	1.00	Low NOx	<80%	3	-9.15E+00	1.47E-03	0.00	Yes
SG, Natural/CVR Gas	PAH	Benzo(g,h,i)perylene	lb/MMBtu	Conventional	<80%	3	1.28E-09	7.59E-10	0.89	Low NOx	<80%	3	7.13E-10	2.41E-12	0.00	No
SG, Natural/CVR Gas	PAH	Benzo(g,h,i)perylene	Log lb/MMBtu	Conventional	<80%	3	-8.97E+00	3.62E-01	0.89	Low NOx	<80%	3	-9.15E+00	1.47E-03	0.00	No
SG, Natural/CVR Gas	PAH	Benzo(k)fluoranthene	lb/MMBtu	Conventional	<80%	3	9.70E-10	5.03E-10	0.86	Low NOx	<80%	3	7.13E-10	2.41E-12	0.00	No
SG, Natural/CVR Gas	PAH	Benzo(k)fluoranthene	Log lb/MMBtu	Conventional	<80%	3	-9.07E+00	2.84E-01	0.86	Low NOx	<80%	3	-9.15E+00	1.47E-03	0.00	No
SG, Natural/CVR Gas	PAH	Chrysene	lb/MMBtu	Conventional	<80%	3	1.82E-09	3.99E-11	0.00	Low NOx	<80%	3	1.38E-09	9.11E-10	0.83	No
SG, Natural/CVR Gas	PAH	Chrysene	Log lb/MMBtu	Conventional	<80%	3	-8.74E+00	9.45E-03	0.00	Low NOx	<80%	3	-8.92E+00	2.74E-01	0.83	No
SG, Natural/CVR Gas	PAH	Dibenz(a,h)anthracene	lb/MMBtu	Conventional	<80%	3	3.96E-10	8.67E-12	0.00	Low NOx	<80%	3	7.13E-10	2.41E-12	0.00	Yes
SG, Natural/CVR Gas	PAH	Dibenz(a,h)anthracene	Log lb/MMBtu	Conventional	<80%	3	-9.40E+00	9.45E-03	0.00	Low NOx	<80%	3	-9.15E+00	1.47E-03	0.00	Yes
SG, Natural/CVR Gas	PAH	Fluoranthene	lb/MMBtu	Conventional	<80%	3	5.94E-09	3.87E-09	1.00	Low NOx	<80%	3	1.40E-09	5.24E-10	1.00	No
SG, Natural/CVR Gas	PAH	Fluoranthene	Log lb/MMBtu	Conventional	<80%	3	-8.33E+00	4.15E-01	1.00	Low NOx	<80%	3	-8.87E+00	1.52E-01	1.00	No
SG, Natural/CVR Gas	PAH	Fluorene	lb/MMBtu	Conventional	<80%	3	8.94E-09	5.93E-09	1.00	Low NOx	<80%	3	2.37E-09	6.67E-10	1.00	No
SG, Natural/CVR Gas	PAH	Fluorene	Log lb/MMBtu	Conventional	<80%	3	-8.16E+00	4.43E-01	1.00	Low NOx	<80%	3	-8.64E+00	1.17E-01	1.00	No
SG, Natural/CVR Gas	PAH	Indeno(1,2,3-cd)pyrene	lb/MMBtu	Conventional	<80%	3	1.65E-09	1.08E-09	0.92	Low NOx	<80%	3	7.13E-10	2.41E-12	0.00	No
SG, Natural/CVR Gas	PAH	Indeno(1,2,3-cd)pyrene	Log lb/MMBtu	Conventional	<80%	3	-8.89E+00	4.31E-01	0.92	Low NOx	<80%	3	-9.15E+00	1.47E-03	0.00	No
SG, Natural/CVR Gas	PAH	Naphthalene	lb/MMBtu	Conventional	<80%	3	4.06E-07	1.40E-07	1.00	Low NOx	<80%	3	1.81E-07	2.16E-08	1.00	No
SG, Natural/CVR Gas	PAH	Naphthalene	Log lb/MMBtu	Conventional	<80%	3	-6.41E+00	1.56E-01	1.00	Low NOx	<80%	3	-6.75E+00	5.34E-02	1.00	Yes
SG, Natural/CVR Gas	PAH	Phenanthrene	lb/MMBtu	Conventional	<80%	3	2.15E-08	1.32E-08	1.00	Low NOx	<80%	3	1.21E-08	4.32E-09	1.00	No
SG, Natural/CVR Gas	PAH	Phenanthrene	Log lb/MMBtu	Conventional	<80%	3	-7.76E+00	3.75E-01	1.00	Low NOx	<80%	3	-7.94E+00	1.45E-01	1.00	No

TABLE 7-12. EXTERNAL COMBUSTION BURNER AND LOAD COMPARISON.

Major Group	Category	Substance	Value Type	First Sample Statistics						Second Sample Statistics						Significant Difference at 95%Confidence
				Description		Size	Average	Standard Deviation	Detect Ratio	Description		Size	Average	Standard Deviation	Detect Ratio	
				Burner	Load					Burner	Load					
SG, Natural/CVR Gas	PAH	Pyrene	lb/MMBtu	Conventional	<80%	3	1.00E-08	7.29E-09	1.00	Low NOx	<80%	3	1.99E-09	1.21E-09	1.00	No
SG, Natural/CVR Gas	PAH	Pyrene	Log lb/MMBtu	Conventional	<80%	3	-8.11E+00	4.24E-01	1.00	Low NOx	<80%	3	-8.76E+00	2.92E-01	1.00	No
SG, Natural/CVR Gas	SVOC	Ethylbenzene	lb/MMBtu	Conventional	<80%	3	7.22E-06	6.74E-08	0.00	Low NOx	<80%	3	1.21E-05	8.09E-06	0.89	No
SG, Natural/CVR Gas	SVOC	Ethylbenzene	Log lb/MMBtu	Conventional	<80%	3	-5.14E+00	4.04E-03	0.00	Low NOx	<80%	3	-5.00E+00	3.58E-01	0.89	No
SG, Natural/CVR Gas	VOC	Acetaldehyde	lb/MMBtu	?	<80%	9	2.27E-05	1.12E-05	0.95	Low NOx	<80%	3	5.77E-06	3.03E-07	0.00	Yes
SG, Natural/CVR Gas	VOC	Acetaldehyde	Log lb/MMBtu	?	<80%	9	-4.68E+00	1.87E-01	0.95	Low NOx	<80%	3	-5.24E+00	2.28E-02	0.00	Yes
SG, Natural/CVR Gas	VOC	Acrolein	lb/MMBtu	?	<80%	9	2.08E-05	2.64E-06	1.00	Low NOx	<80%	3	5.77E-06	3.03E-07	0.00	Yes
SG, Natural/CVR Gas	VOC	Acrolein	Log lb/MMBtu	?	<80%	9	-4.69E+00	5.35E-02	1.00	Low NOx	<80%	3	-5.24E+00	2.28E-02	0.00	Yes
SG, Natural/CVR Gas	VOC	Benzene	lb/MMBtu	?	<80%	9	4.45E-06	1.31E-07	0.00	Conventional	<80%	3	6.05E-06	5.65E-08	0.00	Yes
SG, Natural/CVR Gas	VOC	Benzene	lb/MMBtu	?	<80%	9	4.45E-06	1.31E-07	0.00	Low NOx	<80%	3	2.86E-06	9.99E-08	0.00	Yes
SG, Natural/CVR Gas	VOC	Benzene	lb/MMBtu	Conventional	<80%	3	6.05E-06	5.65E-08	0.00	Low NOx	<80%	3	2.86E-06	9.99E-08	0.00	Yes
SG, Natural/CVR Gas	VOC	Benzene	Log lb/MMBtu	?	<80%	9	-5.35E+00	1.27E-02	0.00	Conventional	<80%	3	-5.22E+00	4.04E-03	0.00	Yes
SG, Natural/CVR Gas	VOC	Benzene	Log lb/MMBtu	?	<80%	9	-5.35E+00	1.27E-02	0.00	Low NOx	<80%	3	-5.54E+00	1.53E-02	0.00	Yes
SG, Natural/CVR Gas	VOC	Benzene	Log lb/MMBtu	Conventional	<80%	3	-5.22E+00	4.04E-03	0.00	Low NOx	<80%	3	-5.54E+00	1.53E-02	0.00	Yes
SG, Natural/CVR Gas	VOC	Formaldehyde	lb/MMBtu	?	<80%	9	3.18E-05	3.00E-05	0.73	Low NOx	<80%	3	5.77E-06	3.03E-07	0.33	No
SG, Natural/CVR Gas	VOC	Formaldehyde	Log lb/MMBtu	?	<80%	9	-4.62E+00	3.07E-01	0.73	Low NOx	<80%	3	-5.24E+00	2.28E-02	0.33	Yes
SG, Natural/CVR Gas	VOC	Propylene	lb/MMBtu	?	<80%	9	1.14E-04	3.83E-05	0.00	Low NOx	<80%	3	5.73E-04	1.14E-04	1.00	Yes
SG, Natural/CVR Gas	VOC	Propylene	Log lb/MMBtu	?	<80%	9	-4.01E+00	3.38E-01	0.00	Low NOx	<80%	3	-3.25E+00	8.85E-02	1.00	Yes
SG, Natural/CVR Gas	VOC	Toluene	lb/MMBtu	?	<80%	9	1.38E-05	4.06E-07	0.00	Conventional	<80%	3	2.64E-05	4.56E-06	1.00	Yes
SG, Natural/CVR Gas	VOC	Toluene	lb/MMBtu	?	<80%	9	1.38E-05	4.06E-07	0.00	Low NOx	<80%	3	1.89E-05	5.15E-06	1.00	Yes
SG, Natural/CVR Gas	VOC	Toluene	lb/MMBtu	Conventional	<80%	3	2.64E-05	4.56E-06	1.00	Low NOx	<80%	3	1.89E-05	5.15E-06	1.00	No
SG, Natural/CVR Gas	VOC	Toluene	Log lb/MMBtu	?	<80%	9	-4.86E+00	1.27E-02	0.00	Conventional	<80%	3	-4.58E+00	7.79E-02	1.00	Yes
SG, Natural/CVR Gas	VOC	Toluene	Log lb/MMBtu	?	<80%	9	-4.86E+00	1.27E-02	0.00	Low NOx	<80%	3	-4.73E+00	1.12E-01	1.00	Yes
SG, Natural/CVR Gas	VOC	Toluene	Log lb/MMBtu	Conventional	<80%	3	-4.58E+00	7.79E-02	1.00	Low NOx	<80%	3	-4.73E+00	1.12E-01	1.00	No
SG, Natural/CVR Gas	VOC	Xylene (Total)	lb/MMBtu	?	<80%	9	3.18E-05	9.36E-07	0.00	Conventional	<80%	3	1.44E-05	1.35E-07	0.00	Yes
SG, Natural/CVR Gas	VOC	Xylene (Total)	lb/MMBtu	?	<80%	9	3.18E-05	9.36E-07	0.00	Low NOx	<80%	3	2.34E-05	1.75E-05	1.00	No
SG, Natural/CVR Gas	VOC	Xylene (Total)	lb/MMBtu	Conventional	<80%	3	1.44E-05	1.35E-07	0.00	Low NOx	<80%	3	2.34E-05	1.75E-05	1.00	No
SG, Natural/CVR Gas	VOC	Xylene (Total)	Log lb/MMBtu	?	<80%	9	-4.50E+00	1.27E-02	0.00	Conventional	<80%	3	-4.84E+00	4.04E-03	0.00	Yes
SG, Natural/CVR Gas	VOC	Xylene (Total)	Log lb/MMBtu	?	<80%	9	-4.50E+00	1.27E-02	0.00	Low NOx	<80%	3	-4.71E+00	3.01E-01	1.00	Yes
SG, Natural/CVR Gas	VOC	Xylene (Total)	Log lb/MMBtu	Conventional	<80%	3	-4.84E+00	4.04E-03	0.00	Low NOx	<80%	3	-4.71E+00	3.01E-01	1.00	No

SECTION 8
STATISTICAL ANALYSIS OF COMBINED GROUPS ON HEAT INPUT BASIS

TABLE 8-1. FUEL TYPE t-TEST COMPARISON.

System Type	Category	Substance	Value Type	First Sample Statistics					Second Sample Statistics					Significant Difference at 95%Confidence
				Description Fuel	Size	Average	Standard Deviation	Detect Ratio	Description Fuel	Size	Average	Standard Deviation	Detect Ratio	
External	Aldehyde Total	Aldehyde Total	lb/MMBtu	Crude oil	9	2.41E-05	1.18E-05	0.51	NG	6	3.97E-05	4.18E-05	0.92	No
External	Aldehyde Total	Aldehyde Total	lb/MMBtu	Crude oil	9	2.41E-05	1.18E-05	0.51	NG/CVRG	12	4.38E-05	3.43E-05	0.78	No
External	Aldehyde Total	Aldehyde Total	lb/MMBtu	Crude oil	9	2.41E-05	1.18E-05	0.51	NG/RG	3	2.90E-05	2.20E-05	1.00	No
External	Aldehyde Total	Aldehyde Total	lb/MMBtu	Crude oil	9	2.41E-05	1.18E-05	0.51	No. 6 fuel oil	6	5.21E-05	4.92E-05	0.25	No
External	Aldehyde Total	Aldehyde Total	lb/MMBtu	Crude oil	9	2.41E-05	1.18E-05	0.51	Pipeline oil	3	3.03E-05	2.90E-07	0.00	No
External	Aldehyde Total	Aldehyde Total	lb/MMBtu	Crude oil	9	2.41E-05	1.18E-05	0.51	RG	36	8.11E-05	2.28E-04	0.98	No
External	Aldehyde Total	Aldehyde Total	lb/MMBtu	NG	6	3.97E-05	4.18E-05	0.92	NG/CVRG	12	4.38E-05	3.43E-05	0.78	No
External	Aldehyde Total	Aldehyde Total	lb/MMBtu	NG	6	3.97E-05	4.18E-05	0.92	NG/RG	3	2.90E-05	2.20E-05	1.00	No
External	Aldehyde Total	Aldehyde Total	lb/MMBtu	NG	6	3.97E-05	4.18E-05	0.92	No. 6 fuel oil	6	5.21E-05	4.92E-05	0.25	No
External	Aldehyde Total	Aldehyde Total	lb/MMBtu	NG	6	3.97E-05	4.18E-05	0.92	Pipeline oil	3	3.03E-05	2.90E-07	0.00	No
External	Aldehyde Total	Aldehyde Total	lb/MMBtu	NG	6	3.97E-05	4.18E-05	0.92	RG	36	8.11E-05	2.28E-04	0.98	No
External	Aldehyde Total	Aldehyde Total	lb/MMBtu	NG/CVRG	12	4.38E-05	3.43E-05	0.78	NG/RG	3	2.90E-05	2.20E-05	1.00	No
External	Aldehyde Total	Aldehyde Total	lb/MMBtu	NG/CVRG	12	4.38E-05	3.43E-05	0.78	No. 6 fuel oil	6	5.21E-05	4.92E-05	0.25	No
External	Aldehyde Total	Aldehyde Total	lb/MMBtu	NG/CVRG	12	4.38E-05	3.43E-05	0.78	Pipeline oil	3	3.03E-05	2.90E-07	0.00	No
External	Aldehyde Total	Aldehyde Total	lb/MMBtu	NG/CVRG	12	4.38E-05	3.43E-05	0.78	RG	36	8.11E-05	2.28E-04	0.98	No
External	Aldehyde Total	Aldehyde Total	lb/MMBtu	NG/RG	3	2.90E-05	2.20E-05	1.00	No. 6 fuel oil	6	5.21E-05	4.92E-05	0.25	No
External	Aldehyde Total	Aldehyde Total	lb/MMBtu	NG/RG	3	2.90E-05	2.20E-05	1.00	Pipeline oil	3	3.03E-05	2.90E-07	0.00	No
External	Aldehyde Total	Aldehyde Total	lb/MMBtu	NG/RG	3	2.90E-05	2.20E-05	1.00	RG	36	8.11E-05	2.28E-04	0.98	No
External	Aldehyde Total	Aldehyde Total	lb/MMBtu	No. 6 fuel oil	6	5.21E-05	4.92E-05	0.25	Pipeline oil	3	3.03E-05	2.90E-07	0.00	No
External	Aldehyde Total	Aldehyde Total	lb/MMBtu	No. 6 fuel oil	6	5.21E-05	4.92E-05	0.25	RG	36	8.11E-05	2.28E-04	0.98	No
External	Aldehyde Total	Aldehyde Total	lb/MMBtu	Pipeline oil	3	3.03E-05	2.90E-07	0.00	RG	36	8.11E-05	2.28E-04	0.98	No
External	Aldehyde Total	Aldehyde Total	Log lb/MMBtu	Crude oil	9	-4.67E+00	2.22E-01	0.51	NG	6	-4.62E+00	4.86E-01	0.92	No
External	Aldehyde Total	Aldehyde Total	Log lb/MMBtu	Crude oil	9	-4.67E+00	2.22E-01	0.51	NG/CVRG	12	-4.48E+00	3.42E-01	0.78	No
External	Aldehyde Total	Aldehyde Total	Log lb/MMBtu	Crude oil	9	-4.67E+00	2.22E-01	0.51	NG/RG	3	-4.61E+00	3.02E-01	1.00	No
External	Aldehyde Total	Aldehyde Total	Log lb/MMBtu	Crude oil	9	-4.67E+00	2.22E-01	0.51	No. 6 fuel oil	6	-4.58E+00	6.81E-01	0.25	No
External	Aldehyde Total	Aldehyde Total	Log lb/MMBtu	Crude oil	9	-4.67E+00	2.22E-01	0.51	Pipeline oil	3	-4.52E+00	4.16E-03	0.00	No
External	Aldehyde Total	Aldehyde Total	Log lb/MMBtu	Crude oil	9	-4.67E+00	2.22E-01	0.51	RG	36	-4.65E+00	6.60E-01	0.98	No
External	Aldehyde Total	Aldehyde Total	Log lb/MMBtu	NG	6	-4.62E+00	4.86E-01	0.92	NG/CVRG	12	-4.48E+00	3.42E-01	0.78	No
External	Aldehyde Total	Aldehyde Total	Log lb/MMBtu	NG	6	-4.62E+00	4.86E-01	0.92	NG/RG	3	-4.61E+00	3.02E-01	1.00	No
External	Aldehyde Total	Aldehyde Total	Log lb/MMBtu	NG	6	-4.62E+00	4.86E-01	0.92	No. 6 fuel oil	6	-4.58E+00	6.81E-01	0.25	No
External	Aldehyde Total	Aldehyde Total	Log lb/MMBtu	NG	6	-4.62E+00	4.86E-01	0.92	Pipeline oil	3	-4.52E+00	4.16E-03	0.00	No
External	Aldehyde Total	Aldehyde Total	Log lb/MMBtu	NG	6	-4.62E+00	4.86E-01	0.92	RG	36	-4.65E+00	6.60E-01	0.98	No
External	Aldehyde Total	Aldehyde Total	Log lb/MMBtu	NG/CVRG	12	-4.48E+00	3.42E-01	0.78	NG/RG	3	-4.61E+00	3.02E-01	1.00	No
External	Aldehyde Total	Aldehyde Total	Log lb/MMBtu	NG/CVRG	12	-4.48E+00	3.42E-01	0.78	No. 6 fuel oil	6	-4.58E+00	6.81E-01	0.25	No
External	Aldehyde Total	Aldehyde Total	Log lb/MMBtu	NG/CVRG	12	-4.48E+00	3.42E-01	0.78	Pipeline oil	3	-4.52E+00	4.16E-03	0.00	No
External	Aldehyde Total	Aldehyde Total	Log lb/MMBtu	NG/CVRG	12	-4.48E+00	3.42E-01	0.78	RG	36	-4.65E+00	6.60E-01	0.98	No
External	Aldehyde Total	Aldehyde Total	Log lb/MMBtu	NG/RG	3	-4.61E+00	3.02E-01	1.00	No. 6 fuel oil	6	-4.58E+00	6.81E-01	0.25	No
External	Aldehyde Total	Aldehyde Total	Log lb/MMBtu	NG/RG	3	-4.61E+00	3.02E-01	1.00	Pipeline oil	3	-4.52E+00	4.16E-03	0.00	No
External	Aldehyde Total	Aldehyde Total	Log lb/MMBtu	NG/RG	3	-4.61E+00	3.02E-01	1.00	RG	36	-4.65E+00	6.60E-01	0.98	No
External	Aldehyde Total	Aldehyde Total	Log lb/MMBtu	No. 6 fuel oil	6	-4.58E+00	6.81E-01	0.25	Pipeline oil	3	-4.52E+00	4.16E-03	0.00	No
External	Aldehyde Total	Aldehyde Total	Log lb/MMBtu	No. 6 fuel oil	6	-4.58E+00	6.81E-01	0.25	RG	36	-4.65E+00	6.60E-01	0.98	No
External	Aldehyde Total	Aldehyde Total	Log lb/MMBtu	Pipeline oil	3	-4.52E+00	4.16E-03	0.00	RG	36	-4.65E+00	6.60E-01	0.98	No
External	Aldehyde Total	Formaldehyde	lb/MMBtu	Crude oil	9	6.31E-06	3.38E-06	0.44	NG	9	2.23E-05	3.08E-05	0.96	No
External	Aldehyde Total	Formaldehyde	lb/MMBtu	Crude oil	9	6.31E-06	3.38E-06	0.44	NG/CVRG	12	2.53E-05	2.82E-05	0.71	No
External	Aldehyde Total	Formaldehyde	lb/MMBtu	Crude oil	9	6.31E-06	3.38E-06	0.44	NG/RG	3	2.19E-05	2.20E-05	1.00	Yes
External	Aldehyde Total	Formaldehyde	lb/MMBtu	Crude oil	9	6.31E-06	3.38E-06	0.44	No. 6 fuel oil	3	1.65E-05	2.54E-05	0.93	No
External	Aldehyde Total	Formaldehyde	lb/MMBtu	Crude oil	9	6.31E-06	3.38E-06	0.44	Pipeline oil	3	2.65E-05	2.53E-07	0.00	Yes
External	Aldehyde Total	Formaldehyde	lb/MMBtu	Crude oil	9	6.31E-06	3.38E-06	0.44	RG	36	7.02E-05	2.26E-04	1.00	No

TABLE 8-1. FUEL TYPE t-TEST COMPARISON.

System Type	Category	Substance	Value Type	First Sample Statistics					Second Sample Statistics					Significant Difference at 95%Confidence
				Description Fuel	Size	Average	Standard Deviation	Detect Ratio	Description Fuel	Size	Average	Standard Deviation	Detect Ratio	
External	Aldehyde Total	Formaldehyde	lb/MMBtu	NG	9	2.23E-05	3.08E-05	0.96	NG/CVRG	12	2.53E-05	2.82E-05	0.71	No
External	Aldehyde Total	Formaldehyde	lb/MMBtu	NG	9	2.23E-05	3.08E-05	0.96	NG/RG	3	2.19E-05	2.20E-05	1.00	No
External	Aldehyde Total	Formaldehyde	lb/MMBtu	NG	9	2.23E-05	3.08E-05	0.96	No. 6 fuel oil	3	1.65E-05	2.54E-05	0.93	No
External	Aldehyde Total	Formaldehyde	lb/MMBtu	NG	9	2.23E-05	3.08E-05	0.96	Pipeline oil	3	2.65E-05	2.53E-07	0.00	No
External	Aldehyde Total	Formaldehyde	lb/MMBtu	NG	9	2.23E-05	3.08E-05	0.96	RG	36	7.02E-05	2.26E-04	1.00	No
External	Aldehyde Total	Formaldehyde	lb/MMBtu	NG/CVRG	12	2.53E-05	2.82E-05	0.71	NG/RG	3	2.19E-05	2.20E-05	1.00	No
External	Aldehyde Total	Formaldehyde	lb/MMBtu	NG/CVRG	12	2.53E-05	2.82E-05	0.71	No. 6 fuel oil	3	1.65E-05	2.54E-05	0.93	No
External	Aldehyde Total	Formaldehyde	lb/MMBtu	NG/CVRG	12	2.53E-05	2.82E-05	0.71	Pipeline oil	3	2.65E-05	2.53E-07	0.00	No
External	Aldehyde Total	Formaldehyde	lb/MMBtu	NG/CVRG	12	2.53E-05	2.82E-05	0.71	RG	36	7.02E-05	2.26E-04	1.00	No
External	Aldehyde Total	Formaldehyde	lb/MMBtu	NG/RG	3	2.19E-05	2.20E-05	1.00	No. 6 fuel oil	3	1.65E-05	2.54E-05	0.93	No
External	Aldehyde Total	Formaldehyde	lb/MMBtu	NG/RG	3	2.19E-05	2.20E-05	1.00	Pipeline oil	3	2.65E-05	2.53E-07	0.00	No
External	Aldehyde Total	Formaldehyde	lb/MMBtu	NG/RG	3	2.19E-05	2.20E-05	1.00	RG	36	7.02E-05	2.26E-04	1.00	No
External	Aldehyde Total	Formaldehyde	lb/MMBtu	No. 6 fuel oil	3	1.65E-05	2.54E-05	0.93	Pipeline oil	3	2.65E-05	2.53E-07	0.00	No
External	Aldehyde Total	Formaldehyde	lb/MMBtu	No. 6 fuel oil	3	1.65E-05	2.54E-05	0.93	RG	36	7.02E-05	2.26E-04	1.00	No
External	Aldehyde Total	Formaldehyde	lb/MMBtu	Pipeline oil	3	2.65E-05	2.53E-07	0.00	RG	36	7.02E-05	2.26E-04	1.00	No
External	Aldehyde Total	Formaldehyde	Log lb/MMBtu	Crude oil	9	-5.26E+00	2.39E-01	0.44	NG	9	-4.94E+00	5.05E-01	0.96	No
External	Aldehyde Total	Formaldehyde	Log lb/MMBtu	Crude oil	9	-5.26E+00	2.39E-01	0.44	NG/CVRG	12	-4.77E+00	3.85E-01	0.71	Yes
External	Aldehyde Total	Formaldehyde	Log lb/MMBtu	Crude oil	9	-5.26E+00	2.39E-01	0.44	NG/RG	3	-4.80E+00	4.10E-01	1.00	Yes
External	Aldehyde Total	Formaldehyde	Log lb/MMBtu	Crude oil	9	-5.26E+00	2.39E-01	0.44	No. 6 fuel oil	3	-5.27E+00	8.08E-01	0.93	No
External	Aldehyde Total	Formaldehyde	Log lb/MMBtu	Crude oil	9	-5.26E+00	2.39E-01	0.44	Pipeline oil	3	-4.58E+00	4.14E-03	0.00	Yes
External	Aldehyde Total	Formaldehyde	Log lb/MMBtu	Crude oil	9	-5.26E+00	2.39E-01	0.44	RG	36	-4.84E+00	7.13E-01	1.00	No
External	Aldehyde Total	Formaldehyde	Log lb/MMBtu	NG	9	-4.94E+00	5.05E-01	0.96	NG/CVRG	12	-4.77E+00	3.85E-01	0.71	No
External	Aldehyde Total	Formaldehyde	Log lb/MMBtu	NG	9	-4.94E+00	5.05E-01	0.96	NG/RG	3	-4.80E+00	4.10E-01	1.00	No
External	Aldehyde Total	Formaldehyde	Log lb/MMBtu	NG	9	-4.94E+00	5.05E-01	0.96	No. 6 fuel oil	3	-5.27E+00	8.08E-01	0.93	No
External	Aldehyde Total	Formaldehyde	Log lb/MMBtu	NG	9	-4.94E+00	5.05E-01	0.96	Pipeline oil	3	-4.58E+00	4.14E-03	0.00	No
External	Aldehyde Total	Formaldehyde	Log lb/MMBtu	NG	9	-4.94E+00	5.05E-01	0.96	RG	36	-4.84E+00	7.13E-01	1.00	No
External	Aldehyde Total	Formaldehyde	Log lb/MMBtu	NG/CVRG	12	-4.77E+00	3.85E-01	0.71	NG/RG	3	-4.80E+00	4.10E-01	1.00	No
External	Aldehyde Total	Formaldehyde	Log lb/MMBtu	NG/CVRG	12	-4.77E+00	3.85E-01	0.71	No. 6 fuel oil	3	-5.27E+00	8.08E-01	0.93	No
External	Aldehyde Total	Formaldehyde	Log lb/MMBtu	NG/CVRG	12	-4.77E+00	3.85E-01	0.71	Pipeline oil	3	-4.58E+00	4.14E-03	0.00	No
External	Aldehyde Total	Formaldehyde	Log lb/MMBtu	NG/CVRG	12	-4.77E+00	3.85E-01	0.71	RG	36	-4.84E+00	7.13E-01	1.00	No
External	Aldehyde Total	Formaldehyde	Log lb/MMBtu	NG/RG	3	-4.80E+00	4.10E-01	1.00	No. 6 fuel oil	3	-5.27E+00	8.08E-01	0.93	No
External	Aldehyde Total	Formaldehyde	Log lb/MMBtu	NG/RG	3	-4.80E+00	4.10E-01	1.00	Pipeline oil	3	-4.58E+00	4.14E-03	0.00	No
External	Aldehyde Total	Formaldehyde	Log lb/MMBtu	NG/RG	3	-4.80E+00	4.10E-01	1.00	RG	36	-4.84E+00	7.13E-01	1.00	No
External	Aldehyde Total	Formaldehyde	Log lb/MMBtu	No. 6 fuel oil	3	-5.27E+00	8.08E-01	0.93	Pipeline oil	3	-4.58E+00	4.14E-03	0.00	No
External	Aldehyde Total	Formaldehyde	Log lb/MMBtu	No. 6 fuel oil	3	-5.27E+00	8.08E-01	0.93	RG	36	-4.84E+00	7.13E-01	1.00	No
External	Aldehyde Total	Formaldehyde	Log lb/MMBtu	Pipeline oil	3	-4.58E+00	4.14E-03	0.00	RG	36	-4.84E+00	7.13E-01	1.00	No
External	BTX Total	Benzene	lb/MMBtu	Crude oil	9	4.07E-06	1.78E-06	0.36	NG	9	3.38E-06	1.02E-06	0.12	No
External	BTX Total	Benzene	lb/MMBtu	Crude oil	9	4.07E-06	1.78E-06	0.36	NG/CVRG	15	4.45E-06	1.05E-06	0.00	No
External	BTX Total	Benzene	lb/MMBtu	Crude oil	9	4.07E-06	1.78E-06	0.36	RG	25	1.14E-04	2.68E-04	0.81	No
External	BTX Total	Benzene	lb/MMBtu	NG	9	3.38E-06	1.02E-06	0.12	NG/CVRG	15	4.45E-06	1.05E-06	0.00	Yes
External	BTX Total	Benzene	lb/MMBtu	NG	9	3.38E-06	1.02E-06	0.12	RG	25	1.14E-04	2.68E-04	0.81	No
External	BTX Total	Benzene	lb/MMBtu	NG/CVRG	15	4.45E-06	1.05E-06	0.00	RG	25	1.14E-04	2.68E-04	0.81	No
External	BTX Total	Benzene	Log lb/MMBtu	Crude oil	9	-5.43E+00	2.09E-01	0.36	NG	9	-5.50E+00	1.69E-01	0.12	No
External	BTX Total	Benzene	Log lb/MMBtu	Crude oil	9	-5.43E+00	2.09E-01	0.36	NG/CVRG	15	-5.36E+00	1.08E-01	0.00	No
External	BTX Total	Benzene	Log lb/MMBtu	Crude oil	9	-5.43E+00	2.09E-01	0.36	RG	25	-4.60E+00	7.28E-01	0.81	Yes
External	BTX Total	Benzene	Log lb/MMBtu	NG	9	-5.50E+00	1.69E-01	0.12	NG/CVRG	15	-5.36E+00	1.08E-01	0.00	Yes
External	BTX Total	Benzene	Log lb/MMBtu	NG	9	-5.50E+00	1.69E-01	0.12	RG	25	-4.60E+00	7.28E-01	0.81	Yes
External	BTX Total	Benzene	Log lb/MMBtu	NG/CVRG	15	-5.36E+00	1.08E-01	0.00	RG	25	-4.60E+00	7.28E-01	0.81	Yes

TABLE 8-1. FUEL TYPE t-TEST COMPARISON.

System Type	Category	Substance	Value Type	First Sample Statistics					Second Sample Statistics					Significant Difference at 95%Confidence
				Description Fuel	Size	Average	Standard Deviation	Detect Ratio	Description Fuel	Size	Average	Standard Deviation	Detect Ratio	
External	BTX Total	BTX Total	lb/MMBtu	Crude oil	9	4.97E-05	1.48E-05	0.39	NG	9	4.69E-05	2.31E-05	0.36	No
External	BTX Total	BTX Total	lb/MMBtu	Crude oil	9	4.97E-05	1.48E-05	0.39	NG/CVRG	15	4.84E-05	6.31E-06	0.28	No
External	BTX Total	BTX Total	lb/MMBtu	Crude oil	9	4.97E-05	1.48E-05	0.39	NG/RG	3	3.72E-05	1.79E-06	0.00	No
External	BTX Total	BTX Total	lb/MMBtu	Crude oil	9	4.97E-05	1.48E-05	0.39	RG	9	7.60E-05	6.49E-05	0.92	No
External	BTX Total	BTX Total	lb/MMBtu	NG	9	4.69E-05	2.31E-05	0.36	NG/CVRG	15	4.84E-05	6.31E-06	0.28	No
External	BTX Total	BTX Total	lb/MMBtu	NG	9	4.69E-05	2.31E-05	0.36	NG/RG	3	3.72E-05	1.79E-06	0.00	No
External	BTX Total	BTX Total	lb/MMBtu	NG	9	4.69E-05	2.31E-05	0.36	RG	9	7.60E-05	6.49E-05	0.92	No
External	BTX Total	BTX Total	lb/MMBtu	NG/CVRG	15	4.84E-05	6.31E-06	0.28	NG/RG	3	3.72E-05	1.79E-06	0.00	Yes
External	BTX Total	BTX Total	lb/MMBtu	NG/CVRG	15	4.84E-05	6.31E-06	0.28	RG	9	7.60E-05	6.49E-05	0.92	No
External	BTX Total	BTX Total	lb/MMBtu	NG/RG	3	3.72E-05	1.79E-06	0.00	RG	9	7.60E-05	6.49E-05	0.92	No
External	BTX Total	BTX Total	Log lb/MMBtu	Crude oil	9	-4.32E+00	1.26E-01	0.39	NG	9	-4.37E+00	1.97E-01	0.36	No
External	BTX Total	BTX Total	Log lb/MMBtu	Crude oil	9	-4.32E+00	1.26E-01	0.39	NG/CVRG	15	-4.32E+00	5.99E-02	0.28	No
External	BTX Total	BTX Total	Log lb/MMBtu	Crude oil	9	-4.32E+00	1.26E-01	0.39	NG/RG	3	-4.43E+00	2.10E-02	0.00	No
External	BTX Total	BTX Total	Log lb/MMBtu	Crude oil	9	-4.32E+00	1.26E-01	0.39	RG	9	-4.30E+00	4.47E-01	0.92	No
External	BTX Total	BTX Total	Log lb/MMBtu	NG	9	-4.37E+00	1.97E-01	0.36	NG/CVRG	15	-4.32E+00	5.99E-02	0.28	No
External	BTX Total	BTX Total	Log lb/MMBtu	NG	9	-4.37E+00	1.97E-01	0.36	NG/RG	3	-4.43E+00	2.10E-02	0.00	No
External	BTX Total	BTX Total	Log lb/MMBtu	NG	9	-4.37E+00	1.97E-01	0.36	RG	9	-4.30E+00	4.47E-01	0.92	No
External	BTX Total	BTX Total	Log lb/MMBtu	NG/CVRG	15	-4.32E+00	5.99E-02	0.28	NG/RG	3	-4.43E+00	2.10E-02	0.00	Yes
External	BTX Total	BTX Total	Log lb/MMBtu	NG/CVRG	15	-4.32E+00	5.99E-02	0.28	RG	9	-4.30E+00	4.47E-01	0.92	No
External	BTX Total	BTX Total	Log lb/MMBtu	NG/RG	3	-4.43E+00	2.10E-02	0.00	RG	9	-4.30E+00	4.47E-01	0.92	No
External	Metals	Arsenic	lb/MMBtu	Crude oil	9	6.67E-06	6.62E-06	1.00	RG	6	7.19E-07	4.29E-07	1.00	Yes
External	Metals	Arsenic	Log lb/MMBtu	Crude oil	9	-6.28E+00	3.03E-01	1.00	RG	6	-6.24E+00	3.40E-01	1.00	Yes
External	Metals	Cadmium	lb/MMBtu	Crude oil	9	1.09E-06	1.09E-06	1.00	Pipeline oil	3	5.73E-06	4.70E-06	1.00	Yes
External	Metals	Cadmium	lb/MMBtu	Crude oil	9	1.09E-06	1.09E-06	1.00	RG	6	1.49E-06	6.67E-07	1.00	No
External	Metals	Cadmium	lb/MMBtu	Pipeline oil	3	5.73E-06	4.70E-06	1.00	RG	6	1.49E-06	6.67E-07	1.00	No
External	Metals	Cadmium	Log lb/MMBtu	Crude oil	9	-6.17E+00	4.79E-01	1.00	Pipeline oil	3	-5.56E+00	8.38E-01	1.00	No
External	Metals	Cadmium	Log lb/MMBtu	Crude oil	9	-6.17E+00	4.79E-01	1.00	RG	6	-5.86E+00	1.87E-01	1.00	No
External	Metals	Cadmium	Log lb/MMBtu	Pipeline oil	3	-5.56E+00	8.38E-01	1.00	RG	6	-5.86E+00	1.87E-01	1.00	No
External	Metals	Chromium (Total)	lb/MMBtu	Crude oil	9	5.75E-06	4.89E-06	1.00	No. 6 fuel oil	3	3.28E-05	8.43E-06	1.00	Yes
External	Metals	Chromium (Total)	lb/MMBtu	Crude oil	9	5.75E-06	4.89E-06	1.00	Pipeline oil	3	1.77E-05	1.97E-06	1.00	Yes
External	Metals	Chromium (Total)	lb/MMBtu	Crude oil	9	5.75E-06	4.89E-06	1.00	RG	6	5.74E-06	9.50E-06	0.96	No
External	Metals	Chromium (Total)	lb/MMBtu	No. 6 fuel oil	3	3.28E-05	8.43E-06	1.00	Pipeline oil	3	1.77E-05	1.97E-06	1.00	Yes
External	Metals	Chromium (Total)	lb/MMBtu	No. 6 fuel oil	3	3.28E-05	8.43E-06	1.00	RG	6	5.74E-06	9.50E-06	0.96	Yes
External	Metals	Chromium (Total)	lb/MMBtu	Pipeline oil	3	1.77E-05	1.97E-06	1.00	RG	6	5.74E-06	9.50E-06	0.96	No
External	Metals	Chromium (Total)	Log lb/MMBtu	Crude oil	9	-5.40E+00	4.13E-01	1.00	No. 6 fuel oil	3	-4.49E+00	1.20E-01	1.00	Yes
External	Metals	Chromium (Total)	Log lb/MMBtu	Crude oil	9	-5.40E+00	4.13E-01	1.00	Pipeline oil	3	-4.75E+00	5.00E-02	1.00	Yes
External	Metals	Chromium (Total)	Log lb/MMBtu	Crude oil	9	-5.40E+00	4.13E-01	1.00	RG	6	-5.63E+00	5.98E-01	0.96	No
External	Metals	Chromium (Total)	Log lb/MMBtu	No. 6 fuel oil	3	-4.49E+00	1.20E-01	1.00	Pipeline oil	3	-4.75E+00	5.00E-02	1.00	Yes
External	Metals	Chromium (Total)	Log lb/MMBtu	No. 6 fuel oil	3	-4.49E+00	1.20E-01	1.00	RG	6	-5.63E+00	5.98E-01	0.96	Yes
External	Metals	Chromium (Total)	Log lb/MMBtu	Pipeline oil	3	-4.75E+00	5.00E-02	1.00	RG	6	-5.63E+00	5.98E-01	0.96	Yes
External	Metals	Lead	lb/MMBtu	Crude oil	9	1.88E-06	6.23E-07	0.52	Pipeline oil	3	2.07E-06	1.52E-06	0.62	No
External	Metals	Lead	lb/MMBtu	Crude oil	9	1.88E-06	6.23E-07	0.52	RG	5	3.75E-06	2.25E-06	1.00	Yes
External	Metals	Lead	lb/MMBtu	Pipeline oil	3	2.07E-06	1.52E-06	0.62	RG	5	3.75E-06	2.25E-06	1.00	No
External	Metals	Lead	Log lb/MMBtu	Crude oil	9	-5.74E+00	1.29E-01	0.52	Pipeline oil	3	-5.76E+00	2.94E-01	0.62	No
External	Metals	Lead	Log lb/MMBtu	Crude oil	9	-5.74E+00	1.29E-01	0.52	RG	5	-5.48E+00	2.34E-01	1.00	Yes
External	Metals	Lead	Log lb/MMBtu	Pipeline oil	3	-5.76E+00	2.94E-01	0.62	RG	5	-5.48E+00	2.34E-01	1.00	No
External	Metals	Mercury	lb/MMBtu	Crude oil	7	1.48E-05	1.81E-05	1.00	No. 6 fuel oil	3	7.02E-08	2.67E-08	0.00	No
External	Metals	Mercury	lb/MMBtu	Crude oil	7	1.48E-05	1.81E-05	1.00	Pipeline oil	3	1.20E-07	6.78E-08	0.00	No

TABLE 8-1. FUEL TYPE t-TEST COMPARISON.

System Type	Category	Substance	Value Type	First Sample Statistics					Second Sample Statistics					Significant Difference at 95%Confidence
				Description Fuel	Size	Average	Standard Deviation	Detect Ratio	Description Fuel	Size	Average	Standard Deviation	Detect Ratio	
External	Metals	Mercury	lb/MMBtu	Crude oil	7	1.48E-05	1.81E-05	1.00	RG	3	1.80E-07	1.17E-08	0.36	No
External	Metals	Mercury	lb/MMBtu	No. 6 fuel oil	3	7.02E-08	2.67E-08	0.00	Pipeline oil	3	1.20E-07	6.78E-08	0.00	No
External	Metals	Mercury	lb/MMBtu	No. 6 fuel oil	3	7.02E-08	2.67E-08	0.00	RG	3	1.80E-07	1.17E-08	0.36	Yes
External	Metals	Mercury	lb/MMBtu	Pipeline oil	3	1.20E-07	6.78E-08	0.00	RG	3	1.80E-07	1.17E-08	0.36	No
External	Metals	Mercury	Log lb/MMBtu	Crude oil	7	-5.76E+00	1.23E+00	1.00	No. 6 fuel oil	3	-7.17E+00	1.59E-01	0.00	No
External	Metals	Mercury	Log lb/MMBtu	Crude oil	7	-5.76E+00	1.23E+00	1.00	Pipeline oil	3	-6.96E+00	2.29E-01	0.00	No
External	Metals	Mercury	Log lb/MMBtu	Crude oil	7	-5.76E+00	1.23E+00	1.00	RG	3	-6.75E+00	2.78E-02	0.36	No
External	Metals	Mercury	Log lb/MMBtu	No. 6 fuel oil	3	-7.17E+00	1.59E-01	0.00	Pipeline oil	3	-6.96E+00	2.29E-01	0.00	No
External	Metals	Mercury	Log lb/MMBtu	No. 6 fuel oil	3	-7.17E+00	1.59E-01	0.00	RG	3	-6.75E+00	2.78E-02	0.36	Yes
External	Metals	Mercury	Log lb/MMBtu	Pipeline oil	3	-6.96E+00	2.29E-01	0.00	RG	3	-6.75E+00	2.78E-02	0.36	No
External	Metals	Nickel	lb/MMBtu	Crude oil	9	2.40E-03	1.31E-04	1.00	No. 6 fuel oil	3	2.27E-03	4.30E-04	1.00	No
External	Metals	Nickel	lb/MMBtu	Crude oil	9	2.40E-03	1.31E-04	1.00	Pipeline oil	3	2.41E-03	4.48E-04	1.00	No
External	Metals	Nickel	lb/MMBtu	Crude oil	9	2.40E-03	1.31E-04	1.00	RG	5	7.54E-06	1.03E-05	0.97	Yes
External	Metals	Nickel	lb/MMBtu	No. 6 fuel oil	3	2.27E-03	4.30E-04	1.00	Pipeline oil	3	2.41E-03	4.48E-04	1.00	No
External	Metals	Nickel	lb/MMBtu	No. 6 fuel oil	3	2.27E-03	4.30E-04	1.00	RG	5	7.54E-06	1.03E-05	0.97	Yes
External	Metals	Nickel	lb/MMBtu	Pipeline oil	3	2.41E-03	4.48E-04	1.00	RG	5	7.54E-06	1.03E-05	0.97	Yes
External	Metals	Nickel	Log lb/MMBtu	Crude oil	9	-2.62E+00	2.34E-02	1.00	No. 6 fuel oil	3	-2.65E+00	7.90E-02	1.00	No
External	Metals	Nickel	Log lb/MMBtu	Crude oil	9	-2.62E+00	2.34E-02	1.00	Pipeline oil	3	-2.62E+00	8.19E-02	1.00	No
External	Metals	Nickel	Log lb/MMBtu	Crude oil	9	-2.62E+00	2.34E-02	1.00	RG	5	-5.41E+00	5.39E-01	0.97	Yes
External	Metals	Nickel	Log lb/MMBtu	No. 6 fuel oil	3	-2.65E+00	7.90E-02	1.00	Pipeline oil	3	-2.62E+00	8.19E-02	1.00	No
External	Metals	Nickel	Log lb/MMBtu	No. 6 fuel oil	3	-2.65E+00	7.90E-02	1.00	RG	5	-5.41E+00	5.39E-01	0.97	Yes
External	Metals	Nickel	Log lb/MMBtu	Pipeline oil	3	-2.62E+00	8.19E-02	1.00	RG	5	-5.41E+00	5.39E-01	0.97	Yes
External	Metals	Selenium	lb/MMBtu	Crude oil	9	7.95E-06	8.61E-06	0.96	No. 6 fuel oil	3	1.96E-05	8.45E-06	0.17	No
External	Metals	Selenium	lb/MMBtu	Crude oil	9	7.95E-06	8.61E-06	0.96	RG	6	8.75E-07	1.07E-06	0.16	No
External	Metals	Selenium	lb/MMBtu	No. 6 fuel oil	3	1.96E-05	8.45E-06	0.17	RG	6	8.75E-07	1.07E-06	0.16	Yes
External	Metals	Selenium	Log lb/MMBtu	Crude oil	9	-5.36E+00	5.04E-01	0.96	No. 6 fuel oil	3	-4.74E+00	2.29E-01	0.17	No
External	Metals	Selenium	Log lb/MMBtu	Crude oil	9	-5.36E+00	5.04E-01	0.96	RG	6	-6.76E+00	1.07E+00	0.16	Yes
External	Metals	Selenium	Log lb/MMBtu	No. 6 fuel oil	3	-4.74E+00	2.29E-01	0.17	RG	6	-6.76E+00	1.07E+00	0.16	Yes
External	POM Total	Anthracene	lb/MMBtu	Crude oil	8	5.10E-08	6.81E-08	1.00	NG	3	1.57E-09	3.87E-10	0.76	No
External	POM Total	Anthracene	lb/MMBtu	Crude oil	8	5.10E-08	6.81E-08	1.00	NG/CVRG	6	2.18E-09	1.41E-09	0.97	No
External	POM Total	Anthracene	lb/MMBtu	Crude oil	8	5.10E-08	6.81E-08	1.00	NG/RG	3	5.59E-09	1.82E-09	1.00	No
External	POM Total	Anthracene	lb/MMBtu	Crude oil	8	5.10E-08	6.81E-08	1.00	No. 6 fuel oil	6	2.07E-09	2.04E-09	0.93	No
External	POM Total	Anthracene	lb/MMBtu	Crude oil	8	5.10E-08	6.81E-08	1.00	Pipeline oil	3	4.62E-10	6.23E-11	1.00	No
External	POM Total	Anthracene	lb/MMBtu	Crude oil	8	5.10E-08	6.81E-08	1.00	RG	14	6.31E-09	9.05E-09	0.97	Yes
External	POM Total	Anthracene	lb/MMBtu	NG	3	1.57E-09	3.87E-10	0.76	NG/CVRG	6	2.18E-09	1.41E-09	0.97	No
External	POM Total	Anthracene	lb/MMBtu	NG	3	1.57E-09	3.87E-10	0.76	NG/RG	3	5.59E-09	1.82E-09	1.00	Yes
External	POM Total	Anthracene	lb/MMBtu	NG	3	1.57E-09	3.87E-10	0.76	No. 6 fuel oil	6	2.07E-09	2.04E-09	0.93	No
External	POM Total	Anthracene	lb/MMBtu	NG	3	1.57E-09	3.87E-10	0.76	Pipeline oil	3	4.62E-10	6.23E-11	1.00	Yes
External	POM Total	Anthracene	lb/MMBtu	NG	3	1.57E-09	3.87E-10	0.76	RG	14	6.31E-09	9.05E-09	0.97	No
External	POM Total	Anthracene	lb/MMBtu	NG/CVRG	6	2.18E-09	1.41E-09	0.97	NG/RG	3	5.59E-09	1.82E-09	1.00	Yes
External	POM Total	Anthracene	lb/MMBtu	NG/CVRG	6	2.18E-09	1.41E-09	0.97	No. 6 fuel oil	6	2.07E-09	2.04E-09	0.93	No
External	POM Total	Anthracene	lb/MMBtu	NG/CVRG	6	2.18E-09	1.41E-09	0.97	Pipeline oil	3	4.62E-10	6.23E-11	1.00	No
External	POM Total	Anthracene	lb/MMBtu	NG/CVRG	6	2.18E-09	1.41E-09	0.97	RG	14	6.31E-09	9.05E-09	0.97	No
External	POM Total	Anthracene	lb/MMBtu	NG/RG	3	5.59E-09	1.82E-09	1.00	No. 6 fuel oil	6	2.07E-09	2.04E-09	0.93	Yes
External	POM Total	Anthracene	lb/MMBtu	NG/RG	3	5.59E-09	1.82E-09	1.00	Pipeline oil	3	4.62E-10	6.23E-11	1.00	Yes
External	POM Total	Anthracene	lb/MMBtu	NG/RG	3	5.59E-09	1.82E-09	1.00	RG	14	6.31E-09	9.05E-09	0.97	No
External	POM Total	Anthracene	lb/MMBtu	No. 6 fuel oil	6	2.07E-09	2.04E-09	0.93	Pipeline oil	3	4.62E-10	6.23E-11	1.00	No
External	POM Total	Anthracene	lb/MMBtu	No. 6 fuel oil	6	2.07E-09	2.04E-09	0.93	RG	14	6.31E-09	9.05E-09	0.97	No

TABLE 8-1. FUEL TYPE t-TEST COMPARISON.

System Type	Category	Substance	Value Type	First Sample Statistics					Second Sample Statistics					Significant Difference at 95%Confidence
				Description Fuel	Size	Average	Standard Deviation	Detect Ratio	Description Fuel	Size	Average	Standard Deviation	Detect Ratio	
External	POM Total	Anthracene	lb/MMBtu	Pipeline oil	3	4.62E-10	6.23E-11	1.00	RG	14	6.31E-09	9.05E-09	0.97	No
External	POM Total	Anthracene	Log lb/MMBtu	Crude oil	8	-7.67E+00	6.53E-01	1.00	NG	3	-8.81E+00	1.17E-01	0.76	Yes
External	POM Total	Anthracene	Log lb/MMBtu	Crude oil	8	-7.67E+00	6.53E-01	1.00	NG/CVRG	6	-8.77E+00	3.77E-01	0.97	Yes
External	POM Total	Anthracene	Log lb/MMBtu	Crude oil	8	-7.67E+00	6.53E-01	1.00	NG/RG	3	-8.27E+00	1.32E-01	1.00	No
External	POM Total	Anthracene	Log lb/MMBtu	Crude oil	8	-7.67E+00	6.53E-01	1.00	No. 6 fuel oil	6	-9.02E+00	6.80E-01	0.93	Yes
External	POM Total	Anthracene	Log lb/MMBtu	Crude oil	8	-7.67E+00	6.53E-01	1.00	Pipeline oil	3	-9.34E+00	6.01E-02	1.00	Yes
External	POM Total	Anthracene	Log lb/MMBtu	Crude oil	8	-7.67E+00	6.53E-01	1.00	RG	14	-8.45E+00	4.28E-01	0.97	Yes
External	POM Total	Anthracene	Log lb/MMBtu	NG	3	-8.81E+00	1.17E-01	0.76	NG/CVRG	6	-8.77E+00	3.77E-01	0.97	No
External	POM Total	Anthracene	Log lb/MMBtu	NG	3	-8.81E+00	1.17E-01	0.76	NG/RG	3	-8.27E+00	1.32E-01	1.00	Yes
External	POM Total	Anthracene	Log lb/MMBtu	NG	3	-8.81E+00	1.17E-01	0.76	No. 6 fuel oil	6	-9.02E+00	6.80E-01	0.93	No
External	POM Total	Anthracene	Log lb/MMBtu	NG	3	-8.81E+00	1.17E-01	0.76	Pipeline oil	3	-9.34E+00	6.01E-02	1.00	Yes
External	POM Total	Anthracene	Log lb/MMBtu	NG	3	-8.81E+00	1.17E-01	0.76	RG	14	-8.45E+00	4.28E-01	0.97	No
External	POM Total	Anthracene	Log lb/MMBtu	NG/CVRG	6	-8.77E+00	3.77E-01	0.97	NG/RG	3	-8.27E+00	1.32E-01	1.00	No
External	POM Total	Anthracene	Log lb/MMBtu	NG/CVRG	6	-8.77E+00	3.77E-01	0.97	No. 6 fuel oil	6	-9.02E+00	6.80E-01	0.93	No
External	POM Total	Anthracene	Log lb/MMBtu	NG/CVRG	6	-8.77E+00	3.77E-01	0.97	Pipeline oil	3	-9.34E+00	6.01E-02	1.00	Yes
External	POM Total	Anthracene	Log lb/MMBtu	NG/CVRG	6	-8.77E+00	3.77E-01	0.97	RG	14	-8.45E+00	4.28E-01	0.97	No
External	POM Total	Anthracene	Log lb/MMBtu	NG/RG	3	-8.27E+00	1.32E-01	1.00	No. 6 fuel oil	6	-9.02E+00	6.80E-01	0.93	No
External	POM Total	Anthracene	Log lb/MMBtu	NG/RG	3	-8.27E+00	1.32E-01	1.00	Pipeline oil	3	-9.34E+00	6.01E-02	1.00	Yes
External	POM Total	Anthracene	Log lb/MMBtu	NG/RG	3	-8.27E+00	1.32E-01	1.00	RG	14	-8.45E+00	4.28E-01	0.97	No
External	POM Total	Anthracene	Log lb/MMBtu	No. 6 fuel oil	6	-9.02E+00	6.80E-01	0.93	Pipeline oil	3	-9.34E+00	6.01E-02	1.00	No
External	POM Total	Anthracene	Log lb/MMBtu	No. 6 fuel oil	6	-9.02E+00	6.80E-01	0.93	RG	14	-8.45E+00	4.28E-01	0.97	Yes
External	POM Total	Anthracene	Log lb/MMBtu	Pipeline oil	3	-9.34E+00	6.01E-02	1.00	RG	14	-8.45E+00	4.28E-01	0.97	Yes
External	POM Total	Benzo(a)pyrene	lb/MMBtu	Crude oil	3	2.71E-08	2.30E-08	0.96	NG	3	1.11E-09	5.29E-11	0.00	No
External	POM Total	Benzo(a)pyrene	lb/MMBtu	Crude oil	3	2.71E-08	2.30E-08	0.96	NG/CVRG	6	7.08E-10	3.33E-10	0.31	Yes
External	POM Total	Benzo(a)pyrene	lb/MMBtu	Crude oil	3	2.71E-08	2.30E-08	0.96	NG/RG	3	3.24E-09	2.72E-09	0.97	No
External	POM Total	Benzo(a)pyrene	lb/MMBtu	Crude oil	3	2.71E-08	2.30E-08	0.96	No. 6 fuel oil	6	1.36E-09	9.75E-10	0.00	Yes
External	POM Total	Benzo(a)pyrene	lb/MMBtu	Crude oil	3	2.71E-08	2.30E-08	0.96	Pipeline oil	3	6.84E-10	5.62E-10	1.00	No
External	POM Total	Benzo(a)pyrene	lb/MMBtu	Crude oil	3	2.71E-08	2.30E-08	0.96	RG	29	8.06E-08	3.00E-07	0.98	No
External	POM Total	Benzo(a)pyrene	lb/MMBtu	NG	3	1.11E-09	5.29E-11	0.00	NG/CVRG	6	7.08E-10	3.33E-10	0.31	No
External	POM Total	Benzo(a)pyrene	lb/MMBtu	NG	3	1.11E-09	5.29E-11	0.00	NG/RG	3	3.24E-09	2.72E-09	0.97	No
External	POM Total	Benzo(a)pyrene	lb/MMBtu	NG	3	1.11E-09	5.29E-11	0.00	No. 6 fuel oil	6	1.36E-09	9.75E-10	0.00	No
External	POM Total	Benzo(a)pyrene	lb/MMBtu	NG	3	1.11E-09	5.29E-11	0.00	Pipeline oil	3	6.84E-10	5.62E-10	1.00	No
External	POM Total	Benzo(a)pyrene	lb/MMBtu	NG	3	1.11E-09	5.29E-11	0.00	RG	29	8.06E-08	3.00E-07	0.98	No
External	POM Total	Benzo(a)pyrene	lb/MMBtu	NG/CVRG	6	7.08E-10	3.33E-10	0.31	NG/RG	3	3.24E-09	2.72E-09	0.97	Yes
External	POM Total	Benzo(a)pyrene	lb/MMBtu	NG/CVRG	6	7.08E-10	3.33E-10	0.31	No. 6 fuel oil	6	1.36E-09	9.75E-10	0.00	No
External	POM Total	Benzo(a)pyrene	lb/MMBtu	NG/CVRG	6	7.08E-10	3.33E-10	0.31	Pipeline oil	3	6.84E-10	5.62E-10	1.00	No
External	POM Total	Benzo(a)pyrene	lb/MMBtu	NG/CVRG	6	7.08E-10	3.33E-10	0.31	RG	29	8.06E-08	3.00E-07	0.98	No
External	POM Total	Benzo(a)pyrene	lb/MMBtu	NG/RG	3	3.24E-09	2.72E-09	0.97	No. 6 fuel oil	6	1.36E-09	9.75E-10	0.00	No
External	POM Total	Benzo(a)pyrene	lb/MMBtu	NG/RG	3	3.24E-09	2.72E-09	0.97	Pipeline oil	3	6.84E-10	5.62E-10	1.00	No
External	POM Total	Benzo(a)pyrene	lb/MMBtu	NG/RG	3	3.24E-09	2.72E-09	0.97	RG	29	8.06E-08	3.00E-07	0.98	No
External	POM Total	Benzo(a)pyrene	lb/MMBtu	No. 6 fuel oil	6	1.36E-09	9.75E-10	0.00	Pipeline oil	3	6.84E-10	5.62E-10	1.00	No
External	POM Total	Benzo(a)pyrene	lb/MMBtu	No. 6 fuel oil	6	1.36E-09	9.75E-10	0.00	RG	29	8.06E-08	3.00E-07	0.98	No
External	POM Total	Benzo(a)pyrene	lb/MMBtu	Pipeline oil	3	6.84E-10	5.62E-10	1.00	RG	29	8.06E-08	3.00E-07	0.98	No
External	POM Total	Benzo(a)pyrene	Log lb/MMBtu	Crude oil	3	-7.77E+00	6.04E-01	0.96	NG	3	-8.95E+00	2.09E-02	0.00	Yes
External	POM Total	Benzo(a)pyrene	Log lb/MMBtu	Crude oil	3	-7.77E+00	6.04E-01	0.96	NG/CVRG	6	-9.19E+00	1.94E-01	0.31	Yes
External	POM Total	Benzo(a)pyrene	Log lb/MMBtu	Crude oil	3	-7.77E+00	6.04E-01	0.96	NG/RG	3	-8.74E+00	7.07E-01	0.97	No
External	POM Total	Benzo(a)pyrene	Log lb/MMBtu	Crude oil	3	-7.77E+00	6.04E-01	0.96	No. 6 fuel oil	6	-9.00E+00	4.09E-01	0.00	Yes
External	POM Total	Benzo(a)pyrene	Log lb/MMBtu	Crude oil	3	-7.77E+00	6.04E-01	0.96	Pipeline oil	3	-9.30E+00	4.47E-01	1.00	Yes

TABLE 8-1. FUEL TYPE t-TEST COMPARISON.

System Type	Category	Substance	Value Type	First Sample Statistics					Second Sample Statistics					Significant Difference at 95%Confidence
				Description Fuel	Size	Average	Standard Deviation	Detect Ratio	Description Fuel	Size	Average	Standard Deviation	Detect Ratio	
External	POM Total	Benzo(a)pyrene	Log lb/MMBtu	Crude oil	3	-7.77E+00	6.04E-01	0.96	RG	29	-8.52E+00	7.52E-01	0.98	No
External	POM Total	Benzo(a)pyrene	Log lb/MMBtu	NG	3	-8.95E+00	2.09E-02	0.00	NG/CVRG	6	-9.19E+00	1.94E-01	0.31	No
External	POM Total	Benzo(a)pyrene	Log lb/MMBtu	NG	3	-8.95E+00	2.09E-02	0.00	NG/RG	3	-8.74E+00	7.07E-01	0.97	No
External	POM Total	Benzo(a)pyrene	Log lb/MMBtu	NG	3	-8.95E+00	2.09E-02	0.00	No. 6 fuel oil	6	-9.00E+00	4.09E-01	0.00	No
External	POM Total	Benzo(a)pyrene	Log lb/MMBtu	NG	3	-8.95E+00	2.09E-02	0.00	Pipeline oil	3	-9.30E+00	4.47E-01	1.00	No
External	POM Total	Benzo(a)pyrene	Log lb/MMBtu	NG	3	-8.95E+00	2.09E-02	0.00	RG	29	-8.52E+00	7.52E-01	0.98	No
External	POM Total	Benzo(a)pyrene	Log lb/MMBtu	NG/CVRG	6	-9.19E+00	1.94E-01	0.31	NG/RG	3	-8.74E+00	7.07E-01	0.97	No
External	POM Total	Benzo(a)pyrene	Log lb/MMBtu	NG/CVRG	6	-9.19E+00	1.94E-01	0.31	No. 6 fuel oil	6	-9.00E+00	4.09E-01	0.00	No
External	POM Total	Benzo(a)pyrene	Log lb/MMBtu	NG/CVRG	6	-9.19E+00	1.94E-01	0.31	Pipeline oil	3	-9.30E+00	4.47E-01	1.00	No
External	POM Total	Benzo(a)pyrene	Log lb/MMBtu	NG/CVRG	6	-9.19E+00	1.94E-01	0.31	RG	29	-8.52E+00	7.52E-01	0.98	Yes
External	POM Total	Benzo(a)pyrene	Log lb/MMBtu	NG/RG	3	-8.74E+00	7.07E-01	0.97	No. 6 fuel oil	6	-9.00E+00	4.09E-01	0.00	No
External	POM Total	Benzo(a)pyrene	Log lb/MMBtu	NG/RG	3	-8.74E+00	7.07E-01	0.97	Pipeline oil	3	-9.30E+00	4.47E-01	1.00	No
External	POM Total	Benzo(a)pyrene	Log lb/MMBtu	NG/RG	3	-8.74E+00	7.07E-01	0.97	RG	29	-8.52E+00	7.52E-01	0.98	No
External	POM Total	Benzo(a)pyrene	Log lb/MMBtu	No. 6 fuel oil	6	-9.00E+00	4.09E-01	0.00	Pipeline oil	3	-9.30E+00	4.47E-01	1.00	No
External	POM Total	Benzo(a)pyrene	Log lb/MMBtu	No. 6 fuel oil	6	-9.00E+00	4.09E-01	0.00	RG	29	-8.52E+00	7.52E-01	0.98	No
External	POM Total	Benzo(a)pyrene	Log lb/MMBtu	Pipeline oil	3	-9.30E+00	4.47E-01	1.00	RG	29	-8.52E+00	7.52E-01	0.98	No
External	POM Total	POM Total	lb/MMBtu	Crude oil	6	7.40E-06	4.67E-06	0.94	NG	3	3.10E-07	8.37E-08	0.97	Yes
External	POM Total	POM Total	lb/MMBtu	Crude oil	6	7.40E-06	4.67E-06	0.94	NG/CVRG	6	3.41E-07	1.75E-07	0.98	Yes
External	POM Total	POM Total	lb/MMBtu	Crude oil	6	7.40E-06	4.67E-06	0.94	NG/RG	3	1.77E-06	2.47E-06	1.00	No
External	POM Total	POM Total	lb/MMBtu	Crude oil	6	7.40E-06	4.67E-06	0.94	No. 6 fuel oil	6	6.54E-07	2.84E-07	0.95	Yes
External	POM Total	POM Total	lb/MMBtu	Crude oil	6	7.40E-06	4.67E-06	0.94	Pipeline oil	3	6.79E-06	2.47E-06	1.00	No
External	POM Total	POM Total	lb/MMBtu	Crude oil	6	7.40E-06	4.67E-06	0.94	RG	14	3.64E-07	1.98E-07	0.97	Yes
External	POM Total	POM Total	lb/MMBtu	NG	3	3.10E-07	8.37E-08	0.97	NG/CVRG	6	3.41E-07	1.75E-07	0.98	No
External	POM Total	POM Total	lb/MMBtu	NG	3	3.10E-07	8.37E-08	0.97	NG/RG	3	1.77E-06	2.47E-06	1.00	No
External	POM Total	POM Total	lb/MMBtu	NG	3	3.10E-07	8.37E-08	0.97	No. 6 fuel oil	6	6.54E-07	2.84E-07	0.95	No
External	POM Total	POM Total	lb/MMBtu	NG	3	3.10E-07	8.37E-08	0.97	Pipeline oil	3	6.79E-06	2.47E-06	1.00	Yes
External	POM Total	POM Total	lb/MMBtu	NG	3	3.10E-07	8.37E-08	0.97	RG	14	3.64E-07	1.98E-07	0.97	No
External	POM Total	POM Total	lb/MMBtu	NG/CVRG	6	3.41E-07	1.75E-07	0.98	NG/RG	3	1.77E-06	2.47E-06	1.00	No
External	POM Total	POM Total	lb/MMBtu	NG/CVRG	6	3.41E-07	1.75E-07	0.98	No. 6 fuel oil	6	6.54E-07	2.84E-07	0.95	Yes
External	POM Total	POM Total	lb/MMBtu	NG/CVRG	6	3.41E-07	1.75E-07	0.98	Pipeline oil	3	6.79E-06	2.47E-06	1.00	Yes
External	POM Total	POM Total	lb/MMBtu	NG/CVRG	6	3.41E-07	1.75E-07	0.98	RG	14	3.64E-07	1.98E-07	0.97	No
External	POM Total	POM Total	lb/MMBtu	NG/RG	3	1.77E-06	2.47E-06	1.00	No. 6 fuel oil	6	6.54E-07	2.84E-07	0.95	No
External	POM Total	POM Total	lb/MMBtu	NG/RG	3	1.77E-06	2.47E-06	1.00	Pipeline oil	3	6.79E-06	2.47E-06	1.00	No
External	POM Total	POM Total	lb/MMBtu	NG/RG	3	1.77E-06	2.47E-06	1.00	RG	14	3.64E-07	1.98E-07	0.97	Yes
External	POM Total	POM Total	lb/MMBtu	No. 6 fuel oil	6	6.54E-07	2.84E-07	0.95	Pipeline oil	3	6.79E-06	2.47E-06	1.00	Yes
External	POM Total	POM Total	lb/MMBtu	No. 6 fuel oil	6	6.54E-07	2.84E-07	0.95	RG	14	3.64E-07	1.98E-07	0.97	Yes
External	POM Total	POM Total	lb/MMBtu	Pipeline oil	3	6.79E-06	2.47E-06	1.00	RG	14	3.64E-07	1.98E-07	0.97	Yes
External	POM Total	POM Total	Log lb/MMBtu	Crude oil	6	-5.21E+00	3.03E-01	0.94	NG	3	-6.52E+00	1.16E-01	0.97	Yes
External	POM Total	POM Total	Log lb/MMBtu	Crude oil	6	-5.21E+00	3.03E-01	0.94	NG/CVRG	6	-6.51E+00	2.10E-01	0.98	Yes
External	POM Total	POM Total	Log lb/MMBtu	Crude oil	6	-5.21E+00	3.03E-01	0.94	NG/RG	3	-6.09E+00	6.50E-01	1.00	Yes
External	POM Total	POM Total	Log lb/MMBtu	Crude oil	6	-5.21E+00	3.03E-01	0.94	No. 6 fuel oil	6	-6.22E+00	1.95E-01	0.95	Yes
External	POM Total	POM Total	Log lb/MMBtu	Crude oil	6	-5.21E+00	3.03E-01	0.94	Pipeline oil	3	-5.19E+00	1.84E-01	1.00	No
External	POM Total	POM Total	Log lb/MMBtu	Crude oil	6	-5.21E+00	3.03E-01	0.94	RG	14	-6.49E+00	2.13E-01	0.97	Yes
External	POM Total	POM Total	Log lb/MMBtu	NG	3	-6.52E+00	1.16E-01	0.97	NG/CVRG	6	-6.51E+00	2.10E-01	0.98	No
External	POM Total	POM Total	Log lb/MMBtu	NG	3	-6.52E+00	1.16E-01	0.97	NG/RG	3	-6.09E+00	6.50E-01	1.00	No
External	POM Total	POM Total	Log lb/MMBtu	NG	3	-6.52E+00	1.16E-01	0.97	No. 6 fuel oil	6	-6.22E+00	1.95E-01	0.95	Yes
External	POM Total	POM Total	Log lb/MMBtu	NG	3	-6.52E+00	1.16E-01	0.97	Pipeline oil	3	-5.19E+00	1.84E-01	1.00	Yes
External	POM Total	POM Total	Log lb/MMBtu	NG	3	-6.52E+00	1.16E-01	0.97	RG	14	-6.49E+00	2.13E-01	0.97	No

TABLE 8-1. FUEL TYPE t-TEST COMPARISON.

System Type	Category	Substance	Value Type	First Sample Statistics					Second Sample Statistics					Significant Difference at 95%Confidence
				Description Fuel	Size	Average	Standard Deviation	Detect Ratio	Description Fuel	Size	Average	Standard Deviation	Detect Ratio	
External	POM Total	POM Total	Log lb/MMBtu	NG/CVRG	6	-6.51E+00	2.10E-01	0.98	NG/RG	3	-6.09E+00	6.50E-01	1.00	No
External	POM Total	POM Total	Log lb/MMBtu	NG/CVRG	6	-6.51E+00	2.10E-01	0.98	No. 6 fuel oil	6	-6.22E+00	1.95E-01	0.95	Yes
External	POM Total	POM Total	Log lb/MMBtu	NG/CVRG	6	-6.51E+00	2.10E-01	0.98	Pipeline oil	3	-5.19E+00	1.84E-01	1.00	Yes
External	POM Total	POM Total	Log lb/MMBtu	NG/CVRG	6	-6.51E+00	2.10E-01	0.98	RG	14	-6.49E+00	2.13E-01	0.97	No
External	POM Total	POM Total	Log lb/MMBtu	NG/RG	3	-6.09E+00	6.50E-01	1.00	No. 6 fuel oil	6	-6.22E+00	1.95E-01	0.95	No
External	POM Total	POM Total	Log lb/MMBtu	NG/RG	3	-6.09E+00	6.50E-01	1.00	Pipeline oil	3	-5.19E+00	1.84E-01	1.00	No
External	POM Total	POM Total	Log lb/MMBtu	NG/RG	3	-6.09E+00	6.50E-01	1.00	RG	14	-6.49E+00	2.13E-01	0.97	No
External	POM Total	POM Total	Log lb/MMBtu	No. 6 fuel oil	6	-6.22E+00	1.95E-01	0.95	Pipeline oil	3	-5.19E+00	1.84E-01	1.00	Yes
External	POM Total	POM Total	Log lb/MMBtu	No. 6 fuel oil	6	-6.22E+00	1.95E-01	0.95	RG	14	-6.49E+00	2.13E-01	0.97	Yes
External	POM Total	POM Total	Log lb/MMBtu	Pipeline oil	3	-5.19E+00	1.84E-01	1.00	RG	14	-6.49E+00	2.13E-01	0.97	Yes
Reciprocating ICE	Aldehyde Total	Aldehyde Total	lb/MMBtu	Di	9	1.33E-03	1.13E-03	1.00	FG	3	3.29E-02	3.50E-02	1.00	Yes
Reciprocating ICE	Aldehyde Total	Aldehyde Total	lb/MMBtu	Di	9	1.33E-03	1.13E-03	1.00	NG	18	2.81E-02	1.51E-02	1.00	Yes
Reciprocating ICE	Aldehyde Total	Aldehyde Total	lb/MMBtu	FG	3	3.29E-02	3.50E-02	1.00	NG	18	2.81E-02	1.51E-02	1.00	No
Reciprocating ICE	Aldehyde Total	Aldehyde Total	Log lb/MMBtu	Di	9	-3.19E+00	7.06E-01	1.00	FG	3	-1.64E+00	4.40E-01	1.00	Yes
Reciprocating ICE	Aldehyde Total	Aldehyde Total	Log lb/MMBtu	Di	9	-3.19E+00	7.06E-01	1.00	NG	18	-1.62E+00	2.51E-01	1.00	Yes
Reciprocating ICE	Aldehyde Total	Aldehyde Total	Log lb/MMBtu	FG	3	-1.64E+00	4.40E-01	1.00	NG	18	-1.62E+00	2.51E-01	1.00	No
Reciprocating ICE	Aldehyde Total	Formaldehyde	lb/MMBtu	Di	9	8.17E-04	7.61E-04	1.00	FG	18	2.67E-02	3.16E-02	1.00	Yes
Reciprocating ICE	Aldehyde Total	Formaldehyde	lb/MMBtu	Di	9	8.17E-04	7.61E-04	1.00	NG	27	2.23E-02	1.34E-02	1.00	Yes
Reciprocating ICE	Aldehyde Total	Formaldehyde	lb/MMBtu	FG	18	3.67E-02	3.16E-02	1.00	NG	27	2.23E-02	1.34E-02	1.00	Yes
Reciprocating ICE	Aldehyde Total	Formaldehyde	Log lb/MMBtu	Di	9	-3.44E+00	7.81E-01	1.00	FG	18	-1.67E+00	5.17E-01	1.00	Yes
Reciprocating ICE	Aldehyde Total	Formaldehyde	Log lb/MMBtu	Di	9	-3.44E+00	7.81E-01	1.00	NG	27	-1.84E+00	5.72E-01	1.00	Yes
Reciprocating ICE	Aldehyde Total	Formaldehyde	Log lb/MMBtu	FG	18	-1.67E+00	5.17E-01	1.00	NG	27	-1.84E+00	5.72E-01	1.00	No
Reciprocating ICE	BTX Total	Benzene	lb/MMBtu	Di	9	8.24E-04	3.51E-04	1.00	FG	13	6.24E-03	4.49E-03	1.00	Yes
Reciprocating ICE	BTX Total	Benzene	lb/MMBtu	Di	9	8.24E-04	3.51E-04	1.00	NG	16	2.18E-03	2.86E-03	1.00	No
Reciprocating ICE	BTX Total	Benzene	lb/MMBtu	FG	13	6.24E-03	4.49E-03	1.00	NG	16	2.18E-03	2.86E-03	1.00	Yes
Reciprocating ICE	BTX Total	Benzene	Log lb/MMBtu	Di	9	-3.12E+00	1.80E-01	1.00	FG	13	-2.46E+00	4.10E-01	1.00	Yes
Reciprocating ICE	BTX Total	Benzene	Log lb/MMBtu	Di	9	-3.12E+00	1.80E-01	1.00	NG	16	-2.88E+00	4.14E-01	1.00	No
Reciprocating ICE	BTX Total	Benzene	Log lb/MMBtu	FG	13	-2.45E+00	4.10E-01	1.00	NG	16	-2.88E+00	4.14E-01	1.00	Yes
Reciprocating ICE	BTX Total	BTX Total	lb/MMBtu	Di	9	1.43E-03	4.82E-04	0.97	FG	13	7.75E-03	6.45E-03	1.00	Yes
Reciprocating ICE	BTX Total	BTX Total	lb/MMBtu	Di	9	1.43E-03	4.82E-04	0.97	NG	16	3.01E-03	3.73E-03	1.00	No
Reciprocating ICE	BTX Total	BTX Total	lb/MMBtu	FG	13	7.75E-03	6.45E-03	1.00	NG	16	3.01E-03	3.73E-03	1.00	Yes
Reciprocating ICE	BTX Total	BTX Total	Log lb/MMBtu	Di	9	-2.87E+00	1.37E-01	0.97	FG	13	-2.26E+00	3.79E-01	1.00	Yes
Reciprocating ICE	BTX Total	BTX Total	Log lb/MMBtu	Di	9	-2.87E+00	1.37E-01	0.97	NG	16	-2.71E+00	3.76E-01	1.00	No
Reciprocating ICE	BTX Total	BTX Total	Log lb/MMBtu	FG	13	-2.26E+00	3.79E-01	1.00	NG	16	-2.71E+00	3.76E-01	1.00	Yes
Reciprocating ICE	POM Total	Anthracene	lb/MMBtu	Di	9	1.64E-06	8.32E-07	1.00	FG	2	4.29E-06	2.91E-06	1.00	Yes
Reciprocating ICE	POM Total	Anthracene	lb/MMBtu	Di	9	1.64E-06	8.32E-07	1.00	NG	3	2.44E-07	1.01E-07	1.00	Yes
Reciprocating ICE	POM Total	Anthracene	lb/MMBtu	FG	2	4.29E-06	2.91E-06	1.00	NG	3	2.44E-07	1.01E-07	1.00	No
Reciprocating ICE	POM Total	Anthracene	Log lb/MMBtu	Di	9	-5.88E+00	3.55E-01	1.00	FG	2	-5.42E+00	3.21E-01	1.00	No
Reciprocating ICE	POM Total	Anthracene	Log lb/MMBtu	Di	9	-5.88E+00	3.55E-01	1.00	NG	3	-6.64E+00	1.82E-01	1.00	Yes
Reciprocating ICE	POM Total	Anthracene	Log lb/MMBtu	FG	2	-5.42E+00	3.21E-01	1.00	NG	3	-6.64E+00	1.82E-01	1.00	Yes
Reciprocating ICE	POM Total	Benzo(a)pyrene	lb/MMBtu	Di	6	1.30E-07	1.45E-07	0.43	NG	3	3.38E-08	1.35E-08	0.76	No
Reciprocating ICE	POM Total	Benzo(a)pyrene	Log lb/MMBtu	Di	6	-7.31E+00	7.55E-01	0.43	NG	3	-7.49E+00	1.63E-01	0.76	No
Reciprocating ICE	POM Total	POM Total	lb/MMBtu	Di	9	1.81E-04	5.71E-05	0.99	FG	2	2.40E-04	3.17E-06	0.98	No
Reciprocating ICE	POM Total	POM Total	lb/MMBtu	Di	9	1.81E-04	5.71E-05	0.99	NG	3	1.27E-04	8.10E-05	1.00	No
Reciprocating ICE	POM Total	POM Total	lb/MMBtu	FG	2	2.40E-04	3.17E-06	0.98	NG	3	1.27E-04	8.10E-05	1.00	No
Reciprocating ICE	POM Total	POM Total	Log lb/MMBtu	Di	9	-3.76E+00	1.49E-01	0.99	FG	2	-3.62E+00	5.74E-03	0.98	No
Reciprocating ICE	POM Total	POM Total	Log lb/MMBtu	Di	9	-3.76E+00	1.49E-01	0.99	NG	3	-3.99E+00	4.05E-01	1.00	No
Reciprocating ICE	POM Total	POM Total	Log lb/MMBtu	FG	2	-3.62E+00	5.74E-03	0.98	NG	3	-3.99E+00	4.05E-01	1.00	No

TABLE 8-1. FUEL TYPE t-TEST COMPARISON.

System Type	Category	Substance	Value Type	First Sample Statistics					Second Sample Statistics					Significant Difference at 95%Confidence
				Description Fuel	Size	Average	Standard Deviation	Detect Ratio	Description Fuel	Size	Average	Standard Deviation	Detect Ratio	
Turbine	Aldehyde Total	Aldehyde Total	lb/MMBtu	NG	3	5.77E-05	2.29E-05	0.71	NG/RG	3	1.58E-04	1.36E-04	1.00	No
Turbine	Aldehyde Total	Aldehyde Total	lb/MMBtu	NG	3	5.77E-05	2.29E-05	0.71	RG	3	6.15E-04	3.53E-05	1.00	Yes
Turbine	Aldehyde Total	Aldehyde Total	lb/MMBtu	NG/RG	3	1.58E-04	1.36E-04	1.00	RG	3	6.15E-04	3.53E-05	1.00	Yes
Turbine	Aldehyde Total	Aldehyde Total	Log lb/MMBtu	NG	3	-4.27E+00	1.94E-01	0.71	NG/RG	3	-3.90E+00	3.47E-01	1.00	No
Turbine	Aldehyde Total	Aldehyde Total	Log lb/MMBtu	NG	3	-4.27E+00	1.94E-01	0.71	RG	3	-3.21E+00	2.48E-02	1.00	Yes
Turbine	Aldehyde Total	Aldehyde Total	Log lb/MMBtu	NG/RG	3	-3.90E+00	3.47E-01	1.00	RG	3	-3.21E+00	2.48E-02	1.00	Yes
Turbine	Aldehyde Total	Formaldehyde	lb/MMBtu	NG	6	3.02E-03	3.31E-03	1.00	NG/RG	3	1.54E-04	1.34E-04	1.00	No
Turbine	Aldehyde Total	Formaldehyde	lb/MMBtu	NG	6	3.02E-03	3.31E-03	1.00	RG	3	5.99E-04	3.34E-05	1.00	No
Turbine	Aldehyde Total	Formaldehyde	lb/MMBtu	NG/RG	3	1.54E-04	1.34E-04	1.00	RG	3	5.99E-04	3.34E-05	1.00	Yes
Turbine	Aldehyde Total	Formaldehyde	Log lb/MMBtu	NG	6	-3.47E+00	1.37E+00	1.00	NG/RG	3	-3.91E+00	3.52E-01	1.00	No
Turbine	Aldehyde Total	Formaldehyde	Log lb/MMBtu	NG	6	-3.47E+00	1.37E+00	1.00	RG	3	-3.22E+00	2.41E-02	1.00	No
Turbine	Aldehyde Total	Formaldehyde	Log lb/MMBtu	NG/RG	3	-3.91E+00	3.52E-01	1.00	RG	3	-3.22E+00	2.41E-02	1.00	Yes
Turbine	Metals	Cadmium	lb/MMBtu	NG/LPG/RG	3	3.89E-06	7.04E-07	0.40	NG/RG	3	1.94E-06	1.67E-06	0.67	No
Turbine	Metals	Cadmium	lb/MMBtu	NG/LPG/RG	3	3.89E-06	7.04E-07	0.40	RG	3	5.28E-06	3.39E-06	1.00	No
Turbine	Metals	Cadmium	lb/MMBtu	NG/RG	3	1.94E-06	1.67E-06	0.67	RG	3	5.28E-06	3.39E-06	1.00	No
Turbine	Metals	Cadmium	Log lb/MMBtu	NG/LPG/RG	3	-5.41E+00	7.56E-02	0.40	NG/RG	3	-5.81E+00	3.47E-01	0.67	No
Turbine	Metals	Cadmium	Log lb/MMBtu	NG/LPG/RG	3	-5.41E+00	7.56E-02	0.40	RG	3	-5.33E+00	2.60E-01	1.00	No
Turbine	Metals	Cadmium	Log lb/MMBtu	NG/RG	3	-5.81E+00	3.47E-01	0.67	RG	3	-5.33E+00	2.60E-01	1.00	No
Turbine	Metals	Chromium (Hex)	lb/MMBtu	NG/RG	3	1.73E-06	3.64E-07	0.41	RG	3	1.45E-06	1.02E-08	0.00	No
Turbine	Metals	Chromium (Hex)	Log lb/MMBtu	NG/RG	3	-5.77E+00	8.81E-02	0.41	RG	3	-5.84E+00	3.04E-03	0.00	No
Turbine	Metals	Chromium (Total)	lb/MMBtu	NG/RG	6	4.99E-05	6.03E-05	1.00	RG	3	1.31E-05	1.30E-05	0.82	No
Turbine	Metals	Chromium (Total)	Log lb/MMBtu	NG/RG	6	-4.48E+00	3.95E-01	1.00	RG	3	-5.02E+00	4.24E-01	0.82	No
Turbine	Metals	Lead	lb/MMBtu	NG/LPG/RG	3	3.58E-05	1.87E-06	0.00	RG	3	2.84E-05	2.17E-06	0.30	Yes
Turbine	Metals	Lead	Log lb/MMBtu	NG/LPG/RG	3	-4.45E+00	2.28E-02	0.00	RG	3	-4.55E+00	3.39E-02	0.30	Yes
Turbine	Metals	Mercury	lb/MMBtu	NG/RG	6	4.35E-06	2.26E-06	1.00	RG	3	1.53E-05	9.19E-06	1.00	Yes
Turbine	Metals	Mercury	Log lb/MMBtu	NG/RG	6	-5.41E+00	2.25E-01	1.00	RG	3	-4.86E+00	2.42E-01	1.00	Yes
Turbine	Metals	Nickel	lb/MMBtu	NG/LPG/RG	3	1.46E-04	1.74E-04	1.00	NG/RG	3	7.60E-06	5.21E-06	1.00	No
Turbine	Metals	Nickel	lb/MMBtu	NG/LPG/RG	3	1.46E-04	1.74E-04	1.00	RG	3	1.66E-04	5.29E-05	1.00	No
Turbine	Metals	Nickel	lb/MMBtu	NG/RG	3	7.60E-06	5.21E-06	1.00	RG	3	1.66E-04	5.29E-05	1.00	Yes
Turbine	Metals	Nickel	Log lb/MMBtu	NG/LPG/RG	3	-4.05E+00	5.11E-01	1.00	NG/RG	3	-5.19E+00	3.13E-01	1.00	Yes
Turbine	Metals	Nickel	Log lb/MMBtu	NG/LPG/RG	3	-4.05E+00	5.11E-01	1.00	RG	3	-3.80E+00	1.57E-01	1.00	No
Turbine	Metals	Nickel	Log lb/MMBtu	NG/RG	3	-5.19E+00	3.13E-01	1.00	RG	3	-3.80E+00	1.57E-01	1.00	Yes
Turbine	POM Total	Anthracene	lb/MMBtu	NG	6	3.43E-08	5.80E-08	1.00	NG/RG	3	2.48E-08	8.43E-09	1.00	No
Turbine	POM Total	Anthracene	Log lb/MMBtu	NG	6	-7.90E+00	6.32E-01	1.00	NG/RG	3	-7.62E+00	1.45E-01	1.00	No
Turbine	POM Total	POM Total	lb/MMBtu	NG	6	9.06E-07	2.54E-07	0.98	NG/RG	3	3.87E-05	2.64E-06	1.00	Yes
Turbine	POM Total	POM Total	Log lb/MMBtu	NG	6	-6.06E+00	1.31E-01	0.98	NG/RG	3	-4.41E+00	2.98E-02	1.00	Yes

TABLE 8-2. SYSTEM TYPE t-TEST COMPARISON.

System Type	Category	Substance	Value Type	First Sample Statistics					Second Sample Statistics					Significant Difference at 95%Confidence
				Description SystemC	Size	Average	Standard Deviation	Detect Ratio	Description SystemC	Size	Average	Standard Deviation	Detect Ratio	
External	Aldehyde Total	Aldehyde Total	lb/MMBtu	Boiler	45	3.35E-05	3.13E-05	0.70	Heater	30	9.61E-05	2.48E-04	0.95	No
External	Aldehyde Total	Aldehyde Total	Log lb/MMBtu	Boiler	45	-4.63E+00	3.84E-01	0.70	Heater	30	-4.58E+00	7.05E-01	0.95	No
External	Aldehyde Total	Formaldehyde	lb/MMBtu	Boiler	45	1.77E-05	2.17E-05	0.84	Heater	30	8.29E-05	2.46E-04	0.96	No
External	Aldehyde Total	Formaldehyde	Log lb/MMBtu	Boiler	45	-4.96E+00	4.20E-01	0.84	Heater	30	-4.80E+00	7.77E-01	0.96	No
External	BTX Total	Benzene	lb/MMBtu	Boiler	46	6.32E-05	2.04E-04	0.78	Heater	12	6.45E-06	5.69E-06	0.75	No
External	BTX Total	Benzene	Log lb/MMBtu	Boiler	46	-5.00E+00	6.80E-01	0.78	Heater	12	-5.32E+00	3.48E-01	0.75	No
External	BTX Total	BTX Total	lb/MMBtu	Boiler	30	4.80E-05	9.16E-06	0.26	Heater	15	6.35E-05	5.46E-05	0.82	No
External	BTX Total	BTX Total	Log lb/MMBtu	Boiler	30	-4.33E+00	7.98E-02	0.26	Heater	15	-4.35E+00	3.74E-01	0.82	No
External	POM Total	Anthracene	lb/MMBtu	Boiler	15	5.49E-09	9.00E-09	0.99	Boiler,CO	8	5.10E-08	6.81E-08	1.00	Yes
External	POM Total	Anthracene	lb/MMBtu	Boiler	15	5.49E-09	9.00E-09	0.99	Heater	17	3.12E-09	2.00E-09	0.93	No
External	POM Total	Anthracene	lb/MMBtu	Boiler	15	5.49E-09	9.00E-09	0.99	Heater,PO	3	4.62E-10	6.23E-11	1.00	No
External	POM Total	Anthracene	lb/MMBtu	Boiler,CO	8	5.10E-08	6.81E-08	1.00	Heater	17	3.12E-09	2.00E-09	0.93	Yes
External	POM Total	Anthracene	lb/MMBtu	Boiler,CO	8	5.10E-08	6.81E-08	1.00	Heater,PO	3	4.62E-10	6.23E-11	1.00	No
External	POM Total	Anthracene	lb/MMBtu	Heater	17	3.12E-09	2.00E-09	0.93	Heater,PO	3	4.62E-10	6.23E-11	1.00	Yes
External	POM Total	Anthracene	Log lb/MMBtu	Boiler	15	-8.69E+00	6.66E-01	0.99	Boiler,CO	8	-7.67E+00	6.53E-01	1.00	Yes
External	POM Total	Anthracene	Log lb/MMBtu	Boiler	15	-8.69E+00	6.66E-01	0.99	Heater	17	-8.58E+00	2.66E-01	0.93	No
External	POM Total	Anthracene	Log lb/MMBtu	Boiler	15	-8.69E+00	6.66E-01	0.99	Heater,PO	3	-9.34E+00	6.01E-02	1.00	No
External	POM Total	Anthracene	Log lb/MMBtu	Boiler,CO	8	-7.67E+00	6.53E-01	1.00	Heater	17	-8.58E+00	2.66E-01	0.93	Yes
External	POM Total	Anthracene	Log lb/MMBtu	Boiler,CO	8	-7.67E+00	6.53E-01	1.00	Heater,PO	3	-9.34E+00	6.01E-02	1.00	Yes
External	POM Total	Anthracene	Log lb/MMBtu	Heater	17	-8.58E+00	2.66E-01	0.93	Heater,PO	3	-9.34E+00	6.01E-02	1.00	Yes
External	POM Total	Benzo(a)pyrene	lb/MMBtu	Boiler	15	1.40E-09	1.07E-09	0.38	Boiler,CO	3	2.71E-08	2.30E-08	0.96	Yes
External	POM Total	Benzo(a)pyrene	lb/MMBtu	Boiler	15	1.40E-09	1.07E-09	0.38	Heater	32	7.32E-08	2.86E-07	0.98	No
External	POM Total	Benzo(a)pyrene	lb/MMBtu	Boiler	15	1.40E-09	1.07E-09	0.38	Heater,PO	3	6.84E-10	5.62E-10	1.00	No
External	POM Total	Benzo(a)pyrene	lb/MMBtu	Boiler,CO	3	2.71E-08	2.30E-08	0.96	Heater	32	7.32E-08	2.86E-07	0.98	No
External	POM Total	Benzo(a)pyrene	lb/MMBtu	Boiler,CO	3	2.71E-08	2.30E-08	0.96	Heater,PO	3	6.84E-10	5.62E-10	1.00	No
External	POM Total	Benzo(a)pyrene	lb/MMBtu	Heater	32	7.32E-08	2.86E-07	0.98	Heater,PO	3	6.84E-10	5.62E-10	1.00	No
External	POM Total	Benzo(a)pyrene	Log lb/MMBtu	Boiler	15	-8.99E+00	3.64E-01	0.38	Boiler,CO	3	-7.77E+00	6.04E-01	0.96	Yes
External	POM Total	Benzo(a)pyrene	Log lb/MMBtu	Boiler	15	-8.99E+00	3.64E-01	0.38	Heater	32	-8.58E+00	7.49E-01	0.98	No
External	POM Total	Benzo(a)pyrene	Log lb/MMBtu	Boiler	15	-8.99E+00	3.64E-01	0.38	Heater,PO	3	-9.30E+00	4.47E-01	1.00	No
External	POM Total	Benzo(a)pyrene	Log lb/MMBtu	Boiler,CO	3	-7.77E+00	6.04E-01	0.96	Heater	32	-8.58E+00	7.49E-01	0.98	No
External	POM Total	Benzo(a)pyrene	Log lb/MMBtu	Boiler,CO	3	-7.77E+00	6.04E-01	0.96	Heater,PO	3	-9.30E+00	4.47E-01	1.00	Yes
External	POM Total	Benzo(a)pyrene	Log lb/MMBtu	Heater	32	-8.58E+00	7.49E-01	0.98	Heater,PO	3	-9.30E+00	4.47E-01	1.00	No
External	POM Total	POM Total	lb/MMBtu	Boiler	15	4.73E-07	2.54E-07	0.96	Boiler,CO	6	7.40E-06	4.67E-06	0.94	Yes
External	POM Total	POM Total	lb/MMBtu	Boiler	15	4.73E-07	2.54E-07	0.96	Heater	17	6.01E-07	1.05E-06	0.99	No
External	POM Total	POM Total	lb/MMBtu	Boiler	15	4.73E-07	2.54E-07	0.96	Heater,PO	3	6.79E-06	2.47E-06	1.00	Yes
External	POM Total	POM Total	lb/MMBtu	Boiler,CO	6	7.40E-06	4.67E-06	0.94	Heater	17	6.01E-07	1.05E-06	0.99	Yes
External	POM Total	POM Total	lb/MMBtu	Boiler,CO	6	7.40E-06	4.67E-06	0.94	Heater,PO	3	6.79E-06	2.47E-06	1.00	No
External	POM Total	POM Total	lb/MMBtu	Heater	17	6.01E-07	1.05E-06	0.99	Heater,PO	3	6.79E-06	2.47E-06	1.00	Yes
External	POM Total	POM Total	Log lb/MMBtu	Boiler	15	-6.38E+00	2.23E-01	0.96	Boiler,CO	6	-5.21E+00	3.03E-01	0.94	Yes
External	POM Total	POM Total	Log lb/MMBtu	Boiler	15	-6.38E+00	2.23E-01	0.96	Heater	17	-6.43E+00	3.42E-01	0.99	No
External	POM Total	POM Total	Log lb/MMBtu	Boiler	15	-6.38E+00	2.23E-01	0.96	Heater,PO	3	-5.19E+00	1.84E-01	1.00	Yes
External	POM Total	POM Total	Log lb/MMBtu	Boiler,CO	6	-5.21E+00	3.03E-01	0.94	Heater	17	-6.43E+00	3.42E-01	0.99	Yes
External	POM Total	POM Total	Log lb/MMBtu	Boiler,CO	6	-5.21E+00	3.03E-01	0.94	Heater,PO	3	-5.19E+00	1.84E-01	1.00	No
External	POM Total	POM Total	Log lb/MMBtu	Heater	17	-6.43E+00	3.42E-01	0.99	Heater,PO	3	-5.19E+00	1.84E-01	1.00	Yes

TABLE 8-3. NOx CONTROL t-TEST COMPARISON.

System T	Category	Substance	Value Type	First Sample Statistics					Second Sample Statistics					Significant Difference at 95%Confidence
				Description NOxC	Size	Average	Standard Deviation	Detect Ratio	Description NOxC	Size	Average	Standard Deviation	Detect Ratio	
External	Aldehyde Total	Aldehyde Total	lb/MMBtu	LNB	30	7.71E-05	2.49E-04	0.94	LNB,DeNOx	3	8.72E-05	1.75E-05	0.82	No
External	Aldehyde Total	Aldehyde Total	lb/MMBtu	LNB	30	7.71E-05	2.49E-04	0.94	None	9	4.72E-05	6.13E-05	1.00	No
External	Aldehyde Total	Aldehyde Total	lb/MMBtu	LNB	30	7.71E-05	2.49E-04	0.94	SCR	6	2.84E-05	1.69E-05	1.00	No
External	Aldehyde Total	Aldehyde Total	lb/MMBtu	LNB,DeNOx	3	8.72E-05	1.75E-05	0.82	None	9	4.72E-05	6.13E-05	1.00	No
External	Aldehyde Total	Aldehyde Total	lb/MMBtu	LNB,DeNOx	3	8.72E-05	1.75E-05	0.82	SCR	6	2.84E-05	1.69E-05	1.00	Yes
External	Aldehyde Total	Aldehyde Total	lb/MMBtu	None	9	4.72E-05	6.13E-05	1.00	SCR	6	2.84E-05	1.69E-05	1.00	No
External	Aldehyde Total	Aldehyde Total	Log lb/MMBtu	LNB	30	-4.78E+00	6.50E-01	0.94	LNB,DeNOx	3	-4.07E+00	9.33E-02	0.82	No
External	Aldehyde Total	Aldehyde Total	Log lb/MMBtu	LNB	30	-4.78E+00	6.50E-01	0.94	None	9	-4.55E+00	4.28E-01	1.00	No
External	Aldehyde Total	Aldehyde Total	Log lb/MMBtu	LNB	30	-4.78E+00	6.50E-01	0.94	SCR	6	-4.64E+00	3.45E-01	1.00	No
External	Aldehyde Total	Aldehyde Total	Log lb/MMBtu	LNB,DeNOx	3	-4.07E+00	9.33E-02	0.82	None	9	-4.55E+00	4.28E-01	1.00	No
External	Aldehyde Total	Aldehyde Total	Log lb/MMBtu	LNB,DeNOx	3	-4.07E+00	9.33E-02	0.82	SCR	6	-4.64E+00	3.45E-01	1.00	Yes
External	Aldehyde Total	Aldehyde Total	Log lb/MMBtu	None	9	-4.55E+00	4.28E-01	1.00	SCR	6	-4.64E+00	3.45E-01	1.00	No
External	Aldehyde Total	Formaldehyde	lb/MMBtu	LNB	30	6.46E-05	2.47E-04	0.98	LNB,DeNOx	3	6.15E-05	2.02E-05	1.00	No
External	Aldehyde Total	Formaldehyde	lb/MMBtu	LNB	30	6.46E-05	2.47E-04	0.98	None	9	4.41E-05	6.14E-05	1.00	No
External	Aldehyde Total	Formaldehyde	lb/MMBtu	LNB	30	6.46E-05	2.47E-04	0.98	SCR	6	1.33E-05	1.15E-05	1.00	No
External	Aldehyde Total	Formaldehyde	lb/MMBtu	LNB,DeNOx	3	6.15E-05	2.02E-05	1.00	None	9	4.41E-05	6.14E-05	1.00	No
External	Aldehyde Total	Formaldehyde	lb/MMBtu	LNB,DeNOx	3	6.15E-05	2.02E-05	1.00	SCR	6	1.33E-05	1.15E-05	1.00	Yes
External	Aldehyde Total	Formaldehyde	lb/MMBtu	None	9	4.41E-05	6.14E-05	1.00	SCR	6	1.33E-05	1.15E-05	1.00	No
External	Aldehyde Total	Formaldehyde	Log lb/MMBtu	LNB	30	-5.11E+00	7.02E-01	0.98	LNB,DeNOx	3	-4.23E+00	1.63E-01	1.00	Yes
External	Aldehyde Total	Formaldehyde	Log lb/MMBtu	LNB	30	-5.11E+00	7.02E-01	0.98	None	9	-4.61E+00	4.44E-01	1.00	No
External	Aldehyde Total	Formaldehyde	Log lb/MMBtu	LNB	30	-5.11E+00	7.02E-01	0.98	SCR	6	-4.97E+00	2.91E-01	1.00	No
External	Aldehyde Total	Formaldehyde	Log lb/MMBtu	LNB,DeNOx	3	-4.23E+00	1.63E-01	1.00	None	9	-4.61E+00	4.44E-01	1.00	No
External	Aldehyde Total	Formaldehyde	Log lb/MMBtu	LNB,DeNOx	3	-4.23E+00	1.63E-01	1.00	SCR	6	-4.97E+00	2.91E-01	1.00	Yes
External	Aldehyde Total	Formaldehyde	Log lb/MMBtu	None	9	-4.61E+00	4.44E-01	1.00	SCR	6	-4.97E+00	2.91E-01	1.00	No
External	BTX Total	Benzene	lb/MMBtu	LNB	18	1.68E-05	1.98E-05	0.04	None	19	6.79E-05	1.60E-04	0.85	No
External	BTX Total	Benzene	lb/MMBtu	LNB	18	1.68E-05	1.98E-05	0.04	SCR	3	4.40E-04	6.75E-04	0.92	Yes
External	BTX Total	Benzene	lb/MMBtu	None	19	6.79E-05	1.60E-04	0.85	SCR	3	4.40E-04	6.75E-04	0.92	Yes
External	BTX Total	Benzene	Log lb/MMBtu	LNB	18	-5.10E+00	5.48E-01	0.04	None	19	-4.89E+00	7.05E-01	0.85	No
External	BTX Total	Benzene	Log lb/MMBtu	LNB	18	-5.10E+00	5.48E-01	0.04	SCR	3	-3.84E+00	8.00E-01	0.92	Yes
External	BTX Total	Benzene	Log lb/MMBtu	None	19	-4.89E+00	7.05E-01	0.85	SCR	3	-3.84E+00	8.00E-01	0.92	Yes
External	BTX Total	BTX Total	lb/MMBtu	LNB	12	4.85E-05	1.42E-05	0.52	None	12	6.88E-05	5.69E-05	0.86	No
External	BTX Total	BTX Total	Log lb/MMBtu	LNB	12	-4.33E+00	1.23E-01	0.52	None	12	-4.31E+00	3.82E-01	0.86	No
External	POM Total	Anthracene	lb/MMBtu	LNB	3	2.35E-09	1.72E-09	1.00	LNB,CO/PO	6	3.96E-08	5.73E-08	1.00	No
External	POM Total	Anthracene	lb/MMBtu	LNB	3	2.35E-09	1.72E-09	1.00	LNB,DeNOx	3	1.96E-09	6.55E-10	0.79	No
External	POM Total	Anthracene	lb/MMBtu	LNB	3	2.35E-09	1.72E-09	1.00	None	14	6.32E-09	9.05E-09	0.98	No
External	POM Total	Anthracene	lb/MMBtu	LNB	3	2.35E-09	1.72E-09	1.00	None,CO/PO	2	8.53E-08	1.14E-07	1.00	No
External	POM Total	Anthracene	lb/MMBtu	LNB,CO/PO	6	3.96E-08	5.73E-08	1.00	LNB,DeNOx	3	1.96E-09	6.55E-10	0.79	No
External	POM Total	Anthracene	lb/MMBtu	LNB,CO/PO	6	3.96E-08	5.73E-08	1.00	None	14	6.32E-09	9.05E-09	0.98	Yes
External	POM Total	Anthracene	lb/MMBtu	LNB,CO/PO	6	3.96E-08	5.73E-08	1.00	None,CO/PO	2	8.53E-08	1.14E-07	1.00	No
External	POM Total	Anthracene	lb/MMBtu	LNB,DeNOx	3	1.96E-09	6.55E-10	0.79	None	14	6.32E-09	9.05E-09	0.98	No
External	POM Total	Anthracene	lb/MMBtu	LNB,DeNOx	3	1.96E-09	6.55E-10	0.79	None,CO/PO	2	8.53E-08	1.14E-07	1.00	No
External	POM Total	Anthracene	lb/MMBtu	None	14	6.32E-09	9.05E-09	0.98	None,CO/PO	2	8.53E-08	1.14E-07	1.00	Yes
External	POM Total	Anthracene	Log lb/MMBtu	LNB	3	-8.71E+00	3.29E-01	1.00	LNB,CO/PO	6	-7.72E+00	5.95E-01	1.00	Yes
External	POM Total	Anthracene	Log lb/MMBtu	LNB	3	-8.71E+00	3.29E-01	1.00	LNB,DeNOx	3	-8.73E+00	1.61E-01	0.79	No
External	POM Total	Anthracene	Log lb/MMBtu	LNB	3	-8.71E+00	3.29E-01	1.00	None	14	-8.47E+00	4.80E-01	0.98	No
External	POM Total	Anthracene	Log lb/MMBtu	LNB	3	-8.71E+00	3.29E-01	1.00	None,CO/PO	2	-7.54E+00	1.08E+00	1.00	No
External	POM Total	Anthracene	Log lb/MMBtu	LNB,CO/PO	6	-7.72E+00	5.95E-01	1.00	LNB,DeNOx	3	-8.73E+00	1.61E-01	0.79	Yes

TABLE 8-3. NOx CONTROL t-TEST COMPARISON.

System T	Category	Substance	Value Type	First Sample Statistics					Second Sample Statistics					Significant Difference at 95%Confidence
				Description NOxC	Size	Average	Standard Deviation	Detect Ratio	Description NOxC	Size	Average	Standard Deviation	Detect Ratio	
External	POM Total	Anthracene	Log lb/MMBtu	LNB,CO/PO	6	-7.72E+00	6.98E-01	1.00	None	14	-8.47E+00	4.80E-01	0.98	Yes
External	POM Total	Anthracene	Log lb/MMBtu	LNB,CO/PO	6	-7.72E+00	5.95E-01	1.00	None,CO/PO	2	-7.54E+00	1.08E+00	1.00	No
External	POM Total	Anthracene	Log lb/MMBtu	LNB,DeNOx	3	-8.73E+00	1.61E-01	0.79	None	14	-8.47E+00	4.80E-01	0.98	No
External	POM Total	Anthracene	Log lb/MMBtu	LNB,DeNOx	3	-8.73E+00	1.61E-01	0.79	None,CO/PO	2	-7.54E+00	1.08E+00	1.00	No
External	POM Total	Anthracene	Log lb/MMBtu	None	14	-8.47E+00	4.80E-01	0.98	None,CO/PO	2	-7.54E+00	1.08E+00	1.00	Yes
External	POM Total	Benzo(a)pyrene	lb/MMBtu	LNB	9	2.52E-09	3.23E-09	0.48	LNB,CO/PO	3	2.71E-08	2.30E-08	0.96	Yes
External	POM Total	Benzo(a)pyrene	lb/MMBtu	LNB	9	2.52E-09	3.23E-09	0.48	LNB,DeNOx	3	1.25E-09	1.29E-11	0.00	No
External	POM Total	Benzo(a)pyrene	lb/MMBtu	LNB	9	2.52E-09	3.23E-09	0.48	None	23	1.01E-07	3.35E-07	0.99	No
External	POM Total	Benzo(a)pyrene	lb/MMBtu	LNB,CO/PO	3	2.71E-08	2.30E-08	0.96	LNB,DeNOx	3	1.25E-09	1.29E-11	0.00	No
External	POM Total	Benzo(a)pyrene	lb/MMBtu	LNB,CO/PO	3	2.71E-08	2.30E-08	0.96	None	23	1.01E-07	3.35E-07	0.99	No
External	POM Total	Benzo(a)pyrene	lb/MMBtu	LNB,DeNOx	3	1.25E-09	1.29E-11	0.00	None	23	1.01E-07	3.35E-07	0.99	No
External	POM Total	Benzo(a)pyrene	Log lb/MMBtu	LNB	9	-8.78E+00	3.76E-01	0.48	LNB,CO/PO	3	-7.77E+00	6.04E-01	0.96	Yes
External	POM Total	Benzo(a)pyrene	Log lb/MMBtu	LNB	9	-8.78E+00	3.76E-01	0.48	LNB,DeNOx	3	-8.90E+00	4.50E-03	0.00	No
External	POM Total	Benzo(a)pyrene	Log lb/MMBtu	LNB	9	-8.78E+00	3.76E-01	0.48	None	23	-8.54E+00	8.65E-01	0.99	No
External	POM Total	Benzo(a)pyrene	Log lb/MMBtu	LNB,CO/PO	3	-7.77E+00	6.04E-01	0.96	LNB,DeNOx	3	-8.90E+00	4.50E-03	0.00	Yes
External	POM Total	Benzo(a)pyrene	Log lb/MMBtu	LNB,CO/PO	3	-7.77E+00	6.04E-01	0.96	None	23	-8.54E+00	8.65E-01	0.99	No
External	POM Total	Benzo(a)pyrene	Log lb/MMBtu	LNB,DeNOx	3	-8.90E+00	4.50E-03	0.00	None	23	-8.54E+00	8.65E-01	0.99	No
External	POM Total	POM Total	lb/MMBtu	LNB	3	2.09E-07	3.03E-08	0.97	LNB,CO/PO	6	7.40E-06	4.67E-06	0.94	Yes
External	POM Total	POM Total	lb/MMBtu	LNB	3	2.09E-07	3.03E-08	0.97	LNB,DeNOx	3	1.86E-07	3.41E-08	0.95	No
External	POM Total	POM Total	lb/MMBtu	LNB	3	2.09E-07	3.03E-08	0.97	None	14	4.25E-07	1.85E-07	0.98	No
External	POM Total	POM Total	lb/MMBtu	LNB,CO/PO	6	7.40E-06	4.67E-06	0.94	LNB,DeNOx	3	1.86E-07	3.41E-08	0.95	Yes
External	POM Total	POM Total	lb/MMBtu	LNB,CO/PO	6	7.40E-06	4.67E-06	0.94	None	14	4.25E-07	1.85E-07	0.98	Yes
External	POM Total	POM Total	lb/MMBtu	LNB,DeNOx	3	1.86E-07	3.41E-08	0.95	None	14	4.25E-07	1.85E-07	0.98	Yes
External	POM Total	POM Total	Log lb/MMBtu	LNB	3	-6.68E+00	6.38E-02	0.97	LNB,CO/PO	6	-5.21E+00	3.03E-01	0.94	Yes
External	POM Total	POM Total	Log lb/MMBtu	LNB	3	-6.68E+00	6.38E-02	0.97	LNB,DeNOx	3	-6.73E+00	8.46E-02	0.95	No
External	POM Total	POM Total	Log lb/MMBtu	LNB	3	-6.68E+00	6.38E-02	0.97	None	14	-6.41E+00	1.76E-01	0.98	Yes
External	POM Total	POM Total	Log lb/MMBtu	LNB,CO/PO	6	-5.21E+00	3.03E-01	0.94	LNB,DeNOx	3	-6.73E+00	8.46E-02	0.95	Yes
External	POM Total	POM Total	Log lb/MMBtu	LNB,CO/PO	6	-5.21E+00	3.03E-01	0.94	None	14	-6.41E+00	1.76E-01	0.98	Yes
External	POM Total	POM Total	Log lb/MMBtu	LNB,DeNOx	3	-6.73E+00	8.46E-02	0.95	None	14	-6.41E+00	1.76E-01	0.98	Yes
RICE	Aldehyde Total	Aldehyde Total	lb/MMBtu	Di,4S,O2<13%	3	1.01E-04	8.33E-05	1.00	Di,4S,O2>13%	6	1.95E-03	8.28E-04	1.00	Yes
RICE	Aldehyde Total	Aldehyde Total	lb/MMBtu	Di,4S,O2<13%	3	1.01E-04	8.33E-05	1.00	FG,2S,Lean	3	3.29E-02	3.50E-02	1.00	No
RICE	Aldehyde Total	Aldehyde Total	lb/MMBtu	Di,4S,O2<13%	3	1.01E-04	8.33E-05	1.00	NG,4S,Lean	15	3.15E-02	1.42E-02	1.00	Yes
RICE	Aldehyde Total	Aldehyde Total	lb/MMBtu	Di,4S,O2<13%	3	1.01E-04	8.33E-05	1.00	NG,4S,Rich	3	1.13E-02	1.58E-03	1.00	Yes
RICE	Aldehyde Total	Aldehyde Total	lb/MMBtu	Di,4S,O2>13%	6	1.95E-03	8.28E-04	1.00	FG,2S,Lean	3	3.29E-02	3.50E-02	1.00	No
RICE	Aldehyde Total	Aldehyde Total	lb/MMBtu	Di,4S,O2>13%	6	1.95E-03	8.28E-04	1.00	NG,4S,Lean	15	3.15E-02	1.42E-02	1.00	Yes
RICE	Aldehyde Total	Aldehyde Total	lb/MMBtu	Di,4S,O2>13%	6	1.95E-03	8.28E-04	1.00	NG,4S,Rich	3	1.13E-02	1.58E-03	1.00	Yes
RICE	Aldehyde Total	Aldehyde Total	lb/MMBtu	FG,2S,Lean	3	3.29E-02	3.50E-02	1.00	NG,4S,Lean	15	3.15E-02	1.42E-02	1.00	No
RICE	Aldehyde Total	Aldehyde Total	lb/MMBtu	FG,2S,Lean	3	3.29E-02	3.50E-02	1.00	NG,4S,Rich	3	1.13E-02	1.58E-03	1.00	No
RICE	Aldehyde Total	Aldehyde Total	lb/MMBtu	NG,4S,Lean	15	3.15E-02	1.42E-02	1.00	NG,4S,Rich	3	1.13E-02	1.58E-03	1.00	Yes
RICE	Aldehyde Total	Aldehyde Total	Log lb/MMBtu	Di,4S,O2<13%	3	-4.09E+00	3.32E-01	1.00	Di,4S,O2>13%	6	-2.74E+00	1.69E-01	1.00	Yes
RICE	Aldehyde Total	Aldehyde Total	Log lb/MMBtu	Di,4S,O2<13%	3	-4.09E+00	3.32E-01	1.00	FG,2S,Lean	3	-1.64E+00	4.40E-01	1.00	Yes
RICE	Aldehyde Total	Aldehyde Total	Log lb/MMBtu	Di,4S,O2<13%	3	-4.09E+00	3.32E-01	1.00	NG,4S,Lean	15	-1.55E+00	2.16E-01	1.00	Yes
RICE	Aldehyde Total	Aldehyde Total	Log lb/MMBtu	Di,4S,O2<13%	3	-4.09E+00	3.32E-01	1.00	NG,4S,Rich	3	-1.95E+00	6.28E-02	1.00	Yes
RICE	Aldehyde Total	Aldehyde Total	Log lb/MMBtu	Di,4S,O2>13%	6	-2.74E+00	1.69E-01	1.00	FG,2S,Lean	3	-1.64E+00	4.40E-01	1.00	Yes
RICE	Aldehyde Total	Aldehyde Total	Log lb/MMBtu	Di,4S,O2>13%	6	-2.74E+00	1.69E-01	1.00	NG,4S,Lean	15	-1.55E+00	2.16E-01	1.00	Yes
RICE	Aldehyde Total	Aldehyde Total	Log lb/MMBtu	Di,4S,O2>13%	6	-2.74E+00	1.69E-01	1.00	NG,4S,Rich	3	-1.95E+00	6.28E-02	1.00	Yes
RICE	Aldehyde Total	Aldehyde Total	Log lb/MMBtu	FG,2S,Lean	3	-1.64E+00	4.40E-01	1.00	NG,4S,Lean	15	-1.55E+00	2.16E-01	1.00	No

TABLE 8-3. NOx CONTROL t-TEST COMPARISON.

System T	Category	Substance	Value Type	First Sample Statistics					Second Sample Statistics					Significant Difference at 95%Confidence
				Description NOxC	Size	Average	Standard Deviation	Detect Ratio	Description NOxC	Size	Average	Standard Deviation	Detect Ratio	
RICE	Aldehyde Total	Aldehyde Total	Log lb/MMBtu	FG,2S,Lean	3	-1.64E+00	4.40E-01	1.00	NG,4S,Rich	3	-1.95E+00	6.28E-02	1.00	No
RICE	Aldehyde Total	Aldehyde Total	Log lb/MMBtu	NG,4S,Lean	15	-1.55E+00	2.16E-01	1.00	NG,4S,Rich	3	-1.95E+00	6.28E-02	1.00	Yes
RICE	Aldehyde Total	Formaldehyde	lb/MMBtu	Di,4S,O2<13%	3	7.68E-05	9.46E-05	1.00	Di,4S,O2>13%	6	1.19E-03	6.56E-04	1.00	Yes
RICE	Aldehyde Total	Formaldehyde	lb/MMBtu	Di,4S,O2<13%	3	7.68E-05	9.46E-05	1.00	FG,2S,Lean	6	4.85E-02	3.38E-02	1.00	Yes
RICE	Aldehyde Total	Formaldehyde	lb/MMBtu	Di,4S,O2<13%	3	7.68E-05	9.46E-05	1.00	FG,4S,Lean	9	3.95E-02	3.03E-02	1.00	No
RICE	Aldehyde Total	Formaldehyde	lb/MMBtu	Di,4S,O2<13%	3	7.68E-05	9.46E-05	1.00	FG,4S,Rich	3	4.81E-03	7.65E-04	1.00	Yes
RICE	Aldehyde Total	Formaldehyde	lb/MMBtu	Di,4S,O2<13%	3	7.68E-05	9.46E-05	1.00	NG,4S,Lean	21	2.73E-02	1.05E-02	1.00	Yes
RICE	Aldehyde Total	Formaldehyde	lb/MMBtu	Di,4S,O2<13%	3	7.68E-05	9.46E-05	1.00	NG,4S,Rich	6	5.07E-03	5.09E-03	1.00	No
RICE	Aldehyde Total	Formaldehyde	lb/MMBtu	Di,4S,O2>13%	6	1.19E-03	6.56E-04	1.00	FG,2S,Lean	6	4.85E-02	3.38E-02	1.00	Yes
RICE	Aldehyde Total	Formaldehyde	lb/MMBtu	Di,4S,O2>13%	6	1.19E-03	6.56E-04	1.00	FG,4S,Lean	9	3.95E-02	3.03E-02	1.00	Yes
RICE	Aldehyde Total	Formaldehyde	lb/MMBtu	Di,4S,O2>13%	6	1.19E-03	6.56E-04	1.00	FG,4S,Rich	3	4.81E-03	7.65E-04	1.00	Yes
RICE	Aldehyde Total	Formaldehyde	lb/MMBtu	Di,4S,O2>13%	6	1.19E-03	6.56E-04	1.00	NG,4S,Lean	21	2.73E-02	1.05E-02	1.00	Yes
RICE	Aldehyde Total	Formaldehyde	lb/MMBtu	Di,4S,O2>13%	6	1.19E-03	6.56E-04	1.00	NG,4S,Rich	6	5.07E-03	5.09E-03	1.00	No
RICE	Aldehyde Total	Formaldehyde	lb/MMBtu	FG,2S,Lean	6	4.85E-02	3.38E-02	1.00	FG,4S,Lean	9	3.95E-02	3.03E-02	1.00	No
RICE	Aldehyde Total	Formaldehyde	lb/MMBtu	FG,2S,Lean	6	4.85E-02	3.38E-02	1.00	FG,4S,Rich	3	4.81E-03	7.65E-04	1.00	No
RICE	Aldehyde Total	Formaldehyde	lb/MMBtu	FG,2S,Lean	6	4.85E-02	3.38E-02	1.00	NG,4S,Lean	21	2.73E-02	1.05E-02	1.00	Yes
RICE	Aldehyde Total	Formaldehyde	lb/MMBtu	FG,2S,Lean	6	4.85E-02	3.38E-02	1.00	NG,4S,Rich	6	5.07E-03	5.09E-03	1.00	Yes
RICE	Aldehyde Total	Formaldehyde	lb/MMBtu	FG,4S,Lean	9	3.95E-02	3.03E-02	1.00	FG,4S,Rich	3	4.81E-03	7.65E-04	1.00	No
RICE	Aldehyde Total	Formaldehyde	lb/MMBtu	FG,4S,Lean	9	3.95E-02	3.03E-02	1.00	NG,4S,Lean	21	2.73E-02	1.05E-02	1.00	No
RICE	Aldehyde Total	Formaldehyde	lb/MMBtu	FG,4S,Lean	9	3.95E-02	3.03E-02	1.00	NG,4S,Rich	6	5.07E-03	5.09E-03	1.00	Yes
RICE	Aldehyde Total	Formaldehyde	lb/MMBtu	FG,4S,Rich	3	4.81E-03	7.65E-04	1.00	NG,4S,Lean	21	2.73E-02	1.05E-02	1.00	Yes
RICE	Aldehyde Total	Formaldehyde	lb/MMBtu	FG,4S,Rich	3	4.81E-03	7.65E-04	1.00	NG,4S,Rich	6	5.07E-03	5.09E-03	1.00	No
RICE	Aldehyde Total	Formaldehyde	lb/MMBtu	NG,4S,Lean	21	2.73E-02	1.05E-02	1.00	NG,4S,Rich	6	5.07E-03	5.09E-03	1.00	Yes
RICE	Aldehyde Total	Formaldehyde	Log lb/MMBtu	Di,4S,O2<13%	3	-4.38E+00	5.97E-01	1.00	Di,4S,O2>13%	6	-2.97E+00	2.20E-01	1.00	Yes
RICE	Aldehyde Total	Formaldehyde	Log lb/MMBtu	Di,4S,O2<13%	3	-4.38E+00	5.97E-01	1.00	FG,2S,Lean	6	-1.53E+00	5.82E-01	1.00	Yes
RICE	Aldehyde Total	Formaldehyde	Log lb/MMBtu	Di,4S,O2<13%	3	-4.38E+00	5.97E-01	1.00	FG,4S,Lean	9	-1.54E+00	4.02E-01	1.00	Yes
RICE	Aldehyde Total	Formaldehyde	Log lb/MMBtu	Di,4S,O2<13%	3	-4.38E+00	5.97E-01	1.00	FG,4S,Rich	3	-2.32E+00	6.65E-02	1.00	Yes
RICE	Aldehyde Total	Formaldehyde	Log lb/MMBtu	Di,4S,O2<13%	3	-4.38E+00	5.97E-01	1.00	NG,4S,Lean	21	-1.60E+00	1.89E-01	1.00	Yes
RICE	Aldehyde Total	Formaldehyde	Log lb/MMBtu	Di,4S,O2<13%	3	-4.38E+00	5.97E-01	1.00	NG,4S,Rich	6	-2.66E+00	7.09E-01	1.00	Yes
RICE	Aldehyde Total	Formaldehyde	Log lb/MMBtu	Di,4S,O2>13%	6	-2.97E+00	2.20E-01	1.00	FG,2S,Lean	6	-1.53E+00	5.82E-01	1.00	Yes
RICE	Aldehyde Total	Formaldehyde	Log lb/MMBtu	Di,4S,O2>13%	6	-2.97E+00	2.20E-01	1.00	FG,4S,Lean	9	-1.54E+00	4.02E-01	1.00	Yes
RICE	Aldehyde Total	Formaldehyde	Log lb/MMBtu	Di,4S,O2>13%	6	-2.97E+00	2.20E-01	1.00	FG,4S,Rich	3	-2.32E+00	6.65E-02	1.00	Yes
RICE	Aldehyde Total	Formaldehyde	Log lb/MMBtu	Di,4S,O2>13%	6	-2.97E+00	2.20E-01	1.00	NG,4S,Lean	21	-1.60E+00	1.89E-01	1.00	Yes
RICE	Aldehyde Total	Formaldehyde	Log lb/MMBtu	Di,4S,O2>13%	6	-2.97E+00	2.20E-01	1.00	NG,4S,Rich	6	-2.66E+00	7.09E-01	1.00	No
RICE	Aldehyde Total	Formaldehyde	Log lb/MMBtu	FG,2S,Lean	6	-1.53E+00	5.82E-01	1.00	FG,4S,Lean	9	-1.54E+00	4.02E-01	1.00	No
RICE	Aldehyde Total	Formaldehyde	Log lb/MMBtu	FG,2S,Lean	6	-1.53E+00	5.82E-01	1.00	FG,4S,Rich	3	-2.32E+00	6.65E-02	1.00	No
RICE	Aldehyde Total	Formaldehyde	Log lb/MMBtu	FG,2S,Lean	6	-1.53E+00	5.82E-01	1.00	NG,4S,Lean	21	-1.60E+00	1.89E-01	1.00	No
RICE	Aldehyde Total	Formaldehyde	Log lb/MMBtu	FG,2S,Lean	6	-1.53E+00	5.82E-01	1.00	NG,4S,Rich	6	-2.66E+00	7.09E-01	1.00	Yes
RICE	Aldehyde Total	Formaldehyde	Log lb/MMBtu	FG,4S,Lean	9	-1.54E+00	4.02E-01	1.00	FG,4S,Rich	3	-2.32E+00	6.65E-02	1.00	Yes
RICE	Aldehyde Total	Formaldehyde	Log lb/MMBtu	FG,4S,Lean	9	-1.54E+00	4.02E-01	1.00	NG,4S,Lean	21	-1.60E+00	1.89E-01	1.00	No
RICE	Aldehyde Total	Formaldehyde	Log lb/MMBtu	FG,4S,Lean	9	-1.54E+00	4.02E-01	1.00	NG,4S,Rich	6	-2.66E+00	7.09E-01	1.00	Yes
RICE	Aldehyde Total	Formaldehyde	Log lb/MMBtu	FG,4S,Rich	3	-2.32E+00	6.65E-02	1.00	NG,4S,Lean	21	-1.60E+00	1.89E-01	1.00	Yes
RICE	Aldehyde Total	Formaldehyde	Log lb/MMBtu	FG,4S,Rich	3	-2.32E+00	6.65E-02	1.00	NG,4S,Rich	6	-2.66E+00	7.09E-01	1.00	No
RICE	Aldehyde Total	Formaldehyde	Log lb/MMBtu	NG,4S,Lean	21	-1.60E+00	1.89E-01	1.00	NG,4S,Rich	6	-2.66E+00	7.09E-01	1.00	Yes
RICE	BTX Total	Benzene	lb/MMBtu	Di,4S,O2<13%	3	7.11E-04	1.92E-05	1.00	Di,4S,O2>13%	6	8.81E-04	4.31E-04	1.00	No
RICE	BTX Total	Benzene	lb/MMBtu	Di,4S,O2<13%	3	7.11E-04	1.92E-05	1.00	FG,2S,Lean	5	7.48E-03	4.54E-03	1.00	Yes
RICE	BTX Total	Benzene	lb/MMBtu	Di,4S,O2<13%	3	7.11E-04	1.92E-05	1.00	FG,4S,Lean	6	1.64E-03	5.84E-04	1.00	Yes

TABLE 8-3. NOx CONTROL t-TEST COMPARISON.

System T	Category	Substance	Value Type	First Sample Statistics					Second Sample Statistics					Significant Difference at 95%Confidence
				Description NOxC	Size	Average	Standard Deviation	Detect Ratio	Description NOxC	Size	Average	Standard Deviation	Detect Ratio	
RICE	BTX Total	Benzene	lb/MMBtu	Di,4S,O2<13%	3	7.11E-04	1.92E-05	1.00	FG,4S,Rich	2	1.05E-02	1.20E-04	1.00	Yes
RICE	BTX Total	Benzene	lb/MMBtu	Di,4S,O2<13%	3	7.11E-04	1.92E-05	1.00	NG,4S,Lean	14	1.15E-03	5.43E-04	1.00	No
RICE	BTX Total	Benzene	lb/MMBtu	Di,4S,O2<13%	3	7.11E-04	1.92E-05	1.00	NG,4S,Rich	2	9.40E-03	4.75E-04	1.00	Yes
RICE	BTX Total	Benzene	lb/MMBtu	Di,4S,O2>13%	6	8.81E-04	4.31E-04	1.00	FG,2S,Lean	5	7.48E-03	4.54E-03	1.00	Yes
RICE	BTX Total	Benzene	lb/MMBtu	Di,4S,O2>13%	6	8.81E-04	4.31E-04	1.00	FG,4S,Lean	6	1.64E-03	5.84E-04	1.00	Yes
RICE	BTX Total	Benzene	lb/MMBtu	Di,4S,O2>13%	6	8.81E-04	4.31E-04	1.00	FG,4S,Rich	2	1.05E-02	1.20E-04	1.00	Yes
RICE	BTX Total	Benzene	lb/MMBtu	Di,4S,O2>13%	6	8.81E-04	4.31E-04	1.00	NG,4S,Lean	14	1.15E-03	5.43E-04	1.00	No
RICE	BTX Total	Benzene	lb/MMBtu	Di,4S,O2>13%	6	8.81E-04	4.31E-04	1.00	NG,4S,Rich	2	9.40E-03	4.75E-04	1.00	Yes
RICE	BTX Total	Benzene	lb/MMBtu	FG,2S,Lean	5	7.48E-03	4.54E-03	1.00	FG,4S,Lean	6	1.64E-03	5.84E-04	1.00	Yes
RICE	BTX Total	Benzene	lb/MMBtu	FG,2S,Lean	5	7.48E-03	4.54E-03	1.00	FG,4S,Rich	2	1.05E-02	1.20E-04	1.00	No
RICE	BTX Total	Benzene	lb/MMBtu	FG,2S,Lean	5	7.48E-03	4.54E-03	1.00	NG,4S,Lean	14	1.15E-03	5.43E-04	1.00	Yes
RICE	BTX Total	Benzene	lb/MMBtu	FG,2S,Lean	5	7.48E-03	4.54E-03	1.00	NG,4S,Rich	2	9.40E-03	4.75E-04	1.00	No
RICE	BTX Total	Benzene	lb/MMBtu	FG,4S,Lean	6	1.64E-03	5.84E-04	1.00	FG,4S,Rich	2	1.05E-02	1.20E-04	1.00	Yes
RICE	BTX Total	Benzene	lb/MMBtu	FG,4S,Lean	6	1.64E-03	5.84E-04	1.00	NG,4S,Lean	14	1.15E-03	5.43E-04	1.00	No
RICE	BTX Total	Benzene	lb/MMBtu	FG,4S,Lean	6	1.64E-03	5.84E-04	1.00	NG,4S,Rich	2	9.40E-03	4.75E-04	1.00	Yes
RICE	BTX Total	Benzene	lb/MMBtu	FG,4S,Rich	2	1.05E-02	1.20E-04	1.00	NG,4S,Lean	14	1.15E-03	5.43E-04	1.00	Yes
RICE	BTX Total	Benzene	lb/MMBtu	FG,4S,Rich	2	1.05E-02	1.20E-04	1.00	NG,4S,Rich	2	9.40E-03	4.75E-04	1.00	No
RICE	BTX Total	Benzene	lb/MMBtu	NG,4S,Lean	14	1.15E-03	5.43E-04	1.00	NG,4S,Rich	2	9.40E-03	4.75E-04	1.00	Yes
RICE	BTX Total	Benzene	Log lb/MMBtu	Di,4S,O2<13%	3	-3.15E+00	1.17E-02	1.00	Di,4S,O2>13%	6	-3.10E+00	2.25E-01	1.00	No
RICE	BTX Total	Benzene	Log lb/MMBtu	Di,4S,O2<13%	3	-3.15E+00	1.17E-02	1.00	FG,2S,Lean	5	-2.19E+00	2.60E-01	1.00	Yes
RICE	BTX Total	Benzene	Log lb/MMBtu	Di,4S,O2<13%	3	-3.15E+00	1.17E-02	1.00	FG,4S,Lean	6	-2.81E+00	1.83E-01	1.00	Yes
RICE	BTX Total	Benzene	Log lb/MMBtu	Di,4S,O2<13%	3	-3.15E+00	1.17E-02	1.00	FG,4S,Rich	2	-1.98E+00	4.99E-03	1.00	Yes
RICE	BTX Total	Benzene	Log lb/MMBtu	Di,4S,O2<13%	3	-3.15E+00	1.17E-02	1.00	NG,4S,Lean	14	-3.00E+00	2.65E-01	1.00	No
RICE	BTX Total	Benzene	Log lb/MMBtu	Di,4S,O2<13%	3	-3.15E+00	1.17E-02	1.00	NG,4S,Rich	2	-2.03E+00	2.19E-02	1.00	Yes
RICE	BTX Total	Benzene	Log lb/MMBtu	Di,4S,O2>13%	6	-3.10E+00	2.25E-01	1.00	FG,2S,Lean	5	-2.19E+00	2.60E-01	1.00	Yes
RICE	BTX Total	Benzene	Log lb/MMBtu	Di,4S,O2>13%	6	-3.10E+00	2.25E-01	1.00	FG,4S,Lean	6	-2.81E+00	1.83E-01	1.00	Yes
RICE	BTX Total	Benzene	Log lb/MMBtu	Di,4S,O2>13%	6	-3.10E+00	2.25E-01	1.00	FG,4S,Rich	2	-1.98E+00	4.99E-03	1.00	Yes
RICE	BTX Total	Benzene	Log lb/MMBtu	Di,4S,O2>13%	6	-3.10E+00	2.25E-01	1.00	NG,4S,Lean	14	-3.00E+00	2.65E-01	1.00	No
RICE	BTX Total	Benzene	Log lb/MMBtu	Di,4S,O2>13%	6	-3.10E+00	2.25E-01	1.00	NG,4S,Rich	2	-2.03E+00	2.19E-02	1.00	Yes
RICE	BTX Total	Benzene	Log lb/MMBtu	FG,2S,Lean	5	-2.19E+00	2.60E-01	1.00	FG,4S,Lean	6	-2.81E+00	1.83E-01	1.00	Yes
RICE	BTX Total	Benzene	Log lb/MMBtu	FG,2S,Lean	5	-2.19E+00	2.60E-01	1.00	FG,4S,Rich	2	-1.98E+00	4.99E-03	1.00	No
RICE	BTX Total	Benzene	Log lb/MMBtu	FG,2S,Lean	5	-2.19E+00	2.60E-01	1.00	NG,4S,Lean	14	-3.00E+00	2.65E-01	1.00	Yes
RICE	BTX Total	Benzene	Log lb/MMBtu	FG,2S,Lean	5	-2.19E+00	2.60E-01	1.00	NG,4S,Rich	2	-2.03E+00	2.19E-02	1.00	No
RICE	BTX Total	Benzene	Log lb/MMBtu	FG,4S,Lean	6	-2.81E+00	1.83E-01	1.00	FG,4S,Rich	2	-1.98E+00	4.99E-03	1.00	Yes
RICE	BTX Total	Benzene	Log lb/MMBtu	FG,4S,Lean	6	-2.81E+00	1.83E-01	1.00	NG,4S,Lean	14	-3.00E+00	2.65E-01	1.00	No
RICE	BTX Total	Benzene	Log lb/MMBtu	FG,4S,Lean	6	-2.81E+00	1.83E-01	1.00	NG,4S,Rich	2	-2.03E+00	2.19E-02	1.00	Yes
RICE	BTX Total	Benzene	Log lb/MMBtu	FG,4S,Rich	2	-1.98E+00	4.99E-03	1.00	NG,4S,Lean	14	-3.00E+00	2.65E-01	1.00	Yes
RICE	BTX Total	Benzene	Log lb/MMBtu	FG,4S,Rich	2	-1.98E+00	4.99E-03	1.00	NG,4S,Rich	2	-2.03E+00	2.19E-02	1.00	No
RICE	BTX Total	Benzene	Log lb/MMBtu	NG,4S,Lean	14	-3.00E+00	2.65E-01	1.00	NG,4S,Rich	2	-2.03E+00	2.19E-02	1.00	Yes
RICE	BTX Total	BTX Total	lb/MMBtu	Di,4S,O2<13%	3	1.16E-03	1.98E-05	1.00	Di,4S,O2>13%	6	1.56E-03	5.56E-04	0.95	No
RICE	BTX Total	BTX Total	lb/MMBtu	Di,4S,O2<13%	3	1.16E-03	1.98E-05	1.00	FG,2S,Lean	5	1.10E-02	7.07E-03	1.00	No
RICE	BTX Total	BTX Total	lb/MMBtu	Di,4S,O2<13%	3	1.16E-03	1.98E-05	1.00	FG,4S,Lean	6	2.74E-03	8.81E-04	1.00	Yes
RICE	BTX Total	BTX Total	lb/MMBtu	Di,4S,O2<13%	3	1.16E-03	1.98E-05	1.00	FG,4S,Rich	2	1.45E-02	2.18E-04	1.00	Yes
RICE	BTX Total	BTX Total	lb/MMBtu	Di,4S,O2<13%	3	1.16E-03	1.98E-05	1.00	NG,4S,Lean	14	1.67E-03	6.71E-04	1.00	No
RICE	BTX Total	BTX Total	lb/MMBtu	Di,4S,O2<13%	3	1.16E-03	1.98E-05	1.00	NG,4S,Rich	2	1.24E-02	6.46E-04	1.00	Yes
RICE	BTX Total	BTX Total	lb/MMBtu	Di,4S,O2>13%	6	1.56E-03	5.56E-04	0.95	FG,2S,Lean	5	1.10E-02	7.07E-03	1.00	Yes
RICE	BTX Total	BTX Total	lb/MMBtu	Di,4S,O2>13%	6	1.56E-03	5.56E-04	0.95	FG,4S,Lean	6	2.74E-03	8.81E-04	1.00	Yes

TABLE 8-3. NOx CONTROL t-TEST COMPARISON.

System T	Category	Substance	Value Type	First Sample Statistics					Second Sample Statistics					Significant
				Description NOxC	Size	Average	Standard Deviation	Detect Ratio	Description NOxC	Size	Average	Standard Deviation	Detect Ratio	Difference at 95%Confidence
RICE	BTX Total	BTX Total	lb/MMBtu	Di,4S,O2>13%	6	1.56E-03	5.56E-04	0.95	FG,4S,Rich	2	1.45E-02	2.18E-04	1.00	Yes
RICE	BTX Total	BTX Total	lb/MMBtu	Di,4S,O2>13%	6	1.56E-03	5.56E-04	0.95	NG,4S,Lean	14	1.67E-03	6.71E-04	1.00	No
RICE	BTX Total	BTX Total	lb/MMBtu	Di,4S,O2>13%	6	1.56E-03	5.56E-04	0.95	NG,4S,Rich	2	1.24E-02	6.46E-04	1.00	Yes
RICE	BTX Total	BTX Total	lb/MMBtu	FG,2S,Lean	5	1.10E-02	7.07E-03	1.00	FG,4S,Lean	6	2.74E-03	8.81E-04	1.00	Yes
RICE	BTX Total	BTX Total	lb/MMBtu	FG,2S,Lean	5	1.10E-02	7.07E-03	1.00	FG,4S,Rich	2	1.45E-02	2.18E-04	1.00	No
RICE	BTX Total	BTX Total	lb/MMBtu	FG,2S,Lean	5	1.10E-02	7.07E-03	1.00	NG,4S,Lean	14	1.67E-03	6.71E-04	1.00	Yes
RICE	BTX Total	BTX Total	lb/MMBtu	FG,2S,Lean	5	1.10E-02	7.07E-03	1.00	NG,4S,Rich	2	1.24E-02	6.46E-04	1.00	No
RICE	BTX Total	BTX Total	lb/MMBtu	FG,4S,Lean	6	2.74E-03	8.81E-04	1.00	FG,4S,Rich	2	1.45E-02	2.18E-04	1.00	Yes
RICE	BTX Total	BTX Total	lb/MMBtu	FG,4S,Lean	6	2.74E-03	8.81E-04	1.00	NG,4S,Lean	14	1.67E-03	6.71E-04	1.00	Yes
RICE	BTX Total	BTX Total	lb/MMBtu	FG,4S,Lean	6	2.74E-03	8.81E-04	1.00	NG,4S,Rich	2	1.24E-02	6.46E-04	1.00	Yes
RICE	BTX Total	BTX Total	lb/MMBtu	FG,4S,Rich	2	1.45E-02	2.18E-04	1.00	NG,4S,Lean	14	1.67E-03	6.71E-04	1.00	Yes
RICE	BTX Total	BTX Total	lb/MMBtu	FG,4S,Rich	2	1.45E-02	2.18E-04	1.00	NG,4S,Rich	2	1.24E-02	6.46E-04	1.00	Yes
RICE	BTX Total	BTX Total	lb/MMBtu	NG,4S,Lean	14	1.67E-03	6.71E-04	1.00	NG,4S,Rich	2	1.24E-02	6.46E-04	1.00	Yes
RICE	BTX Total	BTX Total	Log lb/MMBtu	Di,4S,O2<13%	3	-2.93E+00	7.42E-03	1.00	Di,4S,O2>13%	6	-2.83E+00	1.60E-01	0.95	No
RICE	BTX Total	BTX Total	Log lb/MMBtu	Di,4S,O2<13%	3	-2.93E+00	7.42E-03	1.00	FG,2S,Lean	5	-2.03E+00	2.81E-01	1.00	Yes
RICE	BTX Total	BTX Total	Log lb/MMBtu	Di,4S,O2<13%	3	-2.93E+00	7.42E-03	1.00	FG,4S,Lean	6	-2.59E+00	1.71E-01	1.00	Yes
RICE	BTX Total	BTX Total	Log lb/MMBtu	Di,4S,O2<13%	3	-2.93E+00	7.42E-03	1.00	FG,4S,Rich	2	-1.84E+00	6.53E-03	1.00	Yes
RICE	BTX Total	BTX Total	Log lb/MMBtu	Di,4S,O2<13%	3	-2.93E+00	7.42E-03	1.00	NG,4S,Lean	14	-2.82E+00	2.25E-01	1.00	No
RICE	BTX Total	BTX Total	Log lb/MMBtu	Di,4S,O2<13%	3	-2.93E+00	7.42E-03	1.00	NG,4S,Rich	2	-1.91E+00	2.26E-02	1.00	Yes
RICE	BTX Total	BTX Total	Log lb/MMBtu	Di,4S,O2>13%	6	-2.83E+00	1.60E-01	0.95	FG,2S,Lean	5	-2.03E+00	2.81E-01	1.00	Yes
RICE	BTX Total	BTX Total	Log lb/MMBtu	Di,4S,O2>13%	6	-2.83E+00	1.60E-01	0.95	FG,4S,Lean	6	-2.59E+00	1.71E-01	1.00	Yes
RICE	BTX Total	BTX Total	Log lb/MMBtu	Di,4S,O2>13%	6	-2.83E+00	1.60E-01	0.95	FG,4S,Rich	2	-1.84E+00	6.53E-03	1.00	Yes
RICE	BTX Total	BTX Total	Log lb/MMBtu	Di,4S,O2>13%	6	-2.83E+00	1.60E-01	0.95	NG,4S,Lean	14	-2.82E+00	2.25E-01	1.00	No
RICE	BTX Total	BTX Total	Log lb/MMBtu	Di,4S,O2>13%	6	-2.83E+00	1.60E-01	0.95	NG,4S,Rich	2	-1.91E+00	2.26E-02	1.00	Yes
RICE	BTX Total	BTX Total	Log lb/MMBtu	FG,2S,Lean	5	-2.03E+00	2.81E-01	1.00	FG,4S,Lean	6	-2.59E+00	1.71E-01	1.00	Yes
RICE	BTX Total	BTX Total	Log lb/MMBtu	FG,2S,Lean	5	-2.03E+00	2.81E-01	1.00	FG,4S,Rich	2	-1.84E+00	6.53E-03	1.00	No
RICE	BTX Total	BTX Total	Log lb/MMBtu	FG,2S,Lean	5	-2.03E+00	2.81E-01	1.00	NG,4S,Lean	14	-2.82E+00	2.25E-01	1.00	Yes
RICE	BTX Total	BTX Total	Log lb/MMBtu	FG,2S,Lean	5	-2.03E+00	2.81E-01	1.00	NG,4S,Rich	2	-1.91E+00	2.26E-02	1.00	No
RICE	BTX Total	BTX Total	Log lb/MMBtu	FG,4S,Lean	6	-2.59E+00	1.71E-01	1.00	FG,4S,Rich	2	-1.84E+00	6.53E-03	1.00	Yes
RICE	BTX Total	BTX Total	Log lb/MMBtu	FG,4S,Lean	6	-2.59E+00	1.71E-01	1.00	NG,4S,Lean	14	-2.82E+00	2.25E-01	1.00	Yes
RICE	BTX Total	BTX Total	Log lb/MMBtu	FG,4S,Lean	6	-2.59E+00	1.71E-01	1.00	NG,4S,Rich	2	-1.91E+00	2.26E-02	1.00	Yes
RICE	BTX Total	BTX Total	Log lb/MMBtu	FG,4S,Rich	2	-1.84E+00	6.53E-03	1.00	NG,4S,Lean	14	-2.82E+00	2.25E-01	1.00	Yes
RICE	BTX Total	BTX Total	Log lb/MMBtu	FG,4S,Rich	2	-1.84E+00	6.53E-03	1.00	NG,4S,Rich	2	-1.91E+00	2.26E-02	1.00	No
RICE	BTX Total	BTX Total	Log lb/MMBtu	NG,4S,Lean	14	-2.82E+00	2.25E-01	1.00	NG,4S,Rich	2	-1.91E+00	2.26E-02	1.00	Yes
RICE	POM Total	Anthracene	lb/MMBtu	Di,4S,O2<13%	3	1.20E-06	7.48E-07	1.00	Di,4S,O2>13%	6	1.86E-06	8.40E-07	1.00	No
RICE	POM Total	Anthracene	lb/MMBtu	Di,4S,O2<13%	3	1.20E-06	7.48E-07	1.00	FG,2S,Lean	2	4.29E-06	2.91E-06	1.00	No
RICE	POM Total	Anthracene	lb/MMBtu	Di,4S,O2<13%	3	1.20E-06	7.48E-07	1.00	NG,4S,Lean	3	2.44E-07	1.01E-07	1.00	No
RICE	POM Total	Anthracene	lb/MMBtu	Di,4S,O2>13%	6	1.86E-06	8.40E-07	1.00	FG,2S,Lean	2	4.29E-06	2.91E-06	1.00	No
RICE	POM Total	Anthracene	lb/MMBtu	Di,4S,O2>13%	6	1.86E-06	8.40E-07	1.00	NG,4S,Lean	3	2.44E-07	1.01E-07	1.00	Yes
RICE	POM Total	Anthracene	lb/MMBtu	FG,2S,Lean	2	4.29E-06	2.91E-06	1.00	NG,4S,Lean	3	2.44E-07	1.01E-07	1.00	No
RICE	POM Total	Anthracene	Log lb/MMBtu	Di,4S,O2<13%	3	-5.98E+00	2.66E-01	1.00	Di,4S,O2>13%	6	-5.83E+00	4.05E-01	1.00	No
RICE	POM Total	Anthracene	Log lb/MMBtu	Di,4S,O2<13%	3	-5.98E+00	2.66E-01	1.00	FG,2S,Lean	2	-5.42E+00	3.21E-01	1.00	No
RICE	POM Total	Anthracene	Log lb/MMBtu	Di,4S,O2<13%	3	-5.98E+00	2.66E-01	1.00	NG,4S,Lean	3	-6.64E+00	1.82E-01	1.00	Yes
RICE	POM Total	Anthracene	Log lb/MMBtu	Di,4S,O2>13%	6	-5.83E+00	4.05E-01	1.00	FG,2S,Lean	2	-5.42E+00	3.21E-01	1.00	No
RICE	POM Total	Anthracene	Log lb/MMBtu	Di,4S,O2>13%	6	-5.83E+00	4.05E-01	1.00	NG,4S,Lean	3	-6.64E+00	1.82E-01	1.00	Yes
RICE	POM Total	Anthracene	Log lb/MMBtu	FG,2S,Lean	2	-5.42E+00	3.21E-01	1.00	NG,4S,Lean	3	-6.64E+00	1.82E-01	1.00	Yes
RICE	POM Total	Benzo(a)pyrene	lb/MMBtu	Di,4S,O2<13%	3	2.49E-07	9.94E-08	0.45	Di,4S,O2>13%	3	1.03E-08	1.94E-10	0.00	Yes

TABLE 8-3. NOx CONTROL t-TEST COMPARISON.

System T	Category	Substance	Value Type	First Sample Statistics					Second Sample Statistics					Significant Difference at 95%Confidence
				Description NOxC	Size	Average	Standard Deviation	Detect Ratio	Description NOxC	Size	Average	Standard Deviation	Detect Ratio	
RICE	POM Total	Benzo(a)pyrene	lb/MMBtu	Di,4S,O2<13%	3	2.49E-07	9.94E-08	0.45	NG,4S,Lean	3	3.38E-08	1.35E-08	0.76	Yes
RICE	POM Total	Benzo(a)pyrene	lb/MMBtu	Di,4S,O2>13%	3	1.03E-08	1.94E-10	0.00	NG,4S,Lean	3	3.38E-08	1.35E-08	0.76	Yes
RICE	POM Total	Benzo(a)pyrene	Log lb/MMBtu	Di,4S,O2<13%	3	-6.63E+00	1.97E-01	0.45	Di,4S,O2>13%	3	-7.99E+00	8.28E-03	0.00	Yes
RICE	POM Total	Benzo(a)pyrene	Log lb/MMBtu	Di,4S,O2<13%	3	-6.63E+00	1.97E-01	0.45	NG,4S,Lean	3	-7.49E+00	1.63E-01	0.76	Yes
RICE	POM Total	Benzo(a)pyrene	Log lb/MMBtu	Di,4S,O2>13%	3	-7.99E+00	8.28E-03	0.00	NG,4S,Lean	3	-7.49E+00	1.63E-01	0.76	Yes
RICE	POM Total	POM Total	lb/MMBtu	Di,4S,O2<13%	3	2.06E-04	5.28E-06	0.99	Di,4S,O2>13%	6	1.68E-04	6.81E-05	0.99	No
RICE	POM Total	POM Total	lb/MMBtu	Di,4S,O2<13%	3	2.06E-04	5.28E-06	0.99	FG,2S,Lean	2	2.40E-04	3.17E-06	0.98	Yes
RICE	POM Total	POM Total	lb/MMBtu	Di,4S,O2<13%	3	2.06E-04	5.28E-06	0.99	NG,4S,Lean	3	1.27E-04	8.10E-05	1.00	No
RICE	POM Total	POM Total	lb/MMBtu	Di,4S,O2>13%	6	1.68E-04	6.81E-05	0.99	FG,2S,Lean	2	2.40E-04	3.17E-06	0.98	No
RICE	POM Total	POM Total	lb/MMBtu	Di,4S,O2>13%	6	1.68E-04	6.81E-05	0.99	NG,4S,Lean	3	1.27E-04	8.10E-05	1.00	No
RICE	POM Total	POM Total	lb/MMBtu	FG,2S,Lean	2	2.40E-04	3.17E-06	0.98	NG,4S,Lean	3	1.27E-04	8.10E-05	1.00	No
RICE	POM Total	POM Total	Log lb/MMBtu	Di,4S,O2<13%	3	-3.69E+00	1.12E-02	0.99	Di,4S,O2>13%	6	-3.80E+00	1.73E-01	0.99	No
RICE	POM Total	POM Total	Log lb/MMBtu	Di,4S,O2<13%	3	-3.69E+00	1.12E-02	0.99	FG,2S,Lean	2	-3.62E+00	5.74E-03	0.98	Yes
RICE	POM Total	POM Total	Log lb/MMBtu	Di,4S,O2<13%	3	-3.69E+00	1.12E-02	0.99	NG,4S,Lean	3	-3.99E+00	4.05E-01	1.00	No
RICE	POM Total	POM Total	Log lb/MMBtu	Di,4S,O2>13%	6	-3.80E+00	1.73E-01	0.99	FG,2S,Lean	2	-3.62E+00	5.74E-03	0.98	No
RICE	POM Total	POM Total	Log lb/MMBtu	Di,4S,O2>13%	6	-3.80E+00	1.73E-01	0.99	NG,4S,Lean	3	-3.99E+00	4.05E-01	1.00	No
RICE	POM Total	POM Total	Log lb/MMBtu	FG,2S,Lean	2	-3.62E+00	5.74E-03	0.98	NG,4S,Lean	3	-3.99E+00	4.05E-01	1.00	No
Turbine	Aldehyde Total	Aldehyde Total	lb/MMBtu	NG,DB=N,None	3	5.77E-05	2.29E-05	0.71	NG/RG,DB=Y,SCR/COC	3	1.58E-04	1.36E-04	1.00	No
Turbine	Aldehyde Total	Aldehyde Total	lb/MMBtu	NG,DB=N,None	3	5.77E-05	2.29E-05	0.71	RG,DB=N,COC	3	6.15E-04	3.53E-05	1.00	Yes
Turbine	Aldehyde Total	Aldehyde Total	lb/MMBtu	NG/RG,DB=Y,SCR/COC	3	1.58E-04	1.36E-04	1.00	RG,DB=N,COC	3	6.15E-04	3.53E-05	1.00	Yes
Turbine	Aldehyde Total	Aldehyde Total	Log lb/MMBtu	NG,DB=N,None	3	-4.27E+00	1.94E-01	0.71	NG/RG,DB=Y,SCR/COC	3	-3.90E+00	3.47E-01	1.00	No
Turbine	Aldehyde Total	Aldehyde Total	Log lb/MMBtu	NG,DB=N,None	3	-4.27E+00	1.94E-01	0.71	RG,DB=N,COC	3	-3.21E+00	2.48E-02	1.00	Yes
Turbine	Aldehyde Total	Aldehyde Total	Log lb/MMBtu	NG/RG,DB=Y,SCR/COC	3	-3.90E+00	3.47E-01	1.00	RG,DB=N,COC	3	-3.21E+00	2.48E-02	1.00	Yes
Turbine	Aldehyde Total	Formaldehyde	lb/MMBtu	NG,DB=N,None	3	1.99E-05	5.94E-06	0.45	NG,DB=Y,SCR	3	6.02E-03	5.76E-04	1.00	Yes
Turbine	Aldehyde Total	Formaldehyde	lb/MMBtu	NG,DB=N,None	3	1.99E-05	5.94E-06	0.45	NG/RG,DB=Y,SCR/COC	3	1.54E-04	1.34E-04	1.00	No
Turbine	Aldehyde Total	Formaldehyde	lb/MMBtu	NG,DB=N,None	3	1.99E-05	5.94E-06	0.45	RG,DB=N,COC	3	5.99E-04	3.34E-05	1.00	Yes
Turbine	Aldehyde Total	Formaldehyde	lb/MMBtu	NG,DB=Y,SCR	3	6.02E-03	5.76E-04	1.00	NG/RG,DB=Y,SCR/COC	3	1.54E-04	1.34E-04	1.00	Yes
Turbine	Aldehyde Total	Formaldehyde	lb/MMBtu	NG,DB=Y,SCR	3	6.02E-03	5.76E-04	1.00	RG,DB=N,COC	3	5.99E-04	3.34E-05	1.00	Yes
Turbine	Aldehyde Total	Formaldehyde	lb/MMBtu	NG/RG,DB=Y,SCR/COC	3	1.54E-04	1.34E-04	1.00	RG,DB=N,COC	3	5.99E-04	3.34E-05	1.00	Yes
Turbine	Aldehyde Total	Formaldehyde	Log lb/MMBtu	NG,DB=N,None	3	-4.71E+00	1.21E-01	0.45	NG,DB=Y,SCR	3	-2.22E+00	4.11E-02	1.00	Yes
Turbine	Aldehyde Total	Formaldehyde	Log lb/MMBtu	NG,DB=N,None	3	-4.71E+00	1.21E-01	0.45	NG/RG,DB=Y,SCR/COC	3	-3.91E+00	3.52E-01	1.00	Yes
Turbine	Aldehyde Total	Formaldehyde	Log lb/MMBtu	NG,DB=N,None	3	-4.71E+00	1.21E-01	0.45	RG,DB=N,COC	3	-3.22E+00	2.41E-02	1.00	Yes
Turbine	Aldehyde Total	Formaldehyde	Log lb/MMBtu	NG,DB=Y,SCR	3	-2.22E+00	4.11E-02	1.00	NG/RG,DB=Y,SCR/COC	3	-3.91E+00	3.52E-01	1.00	Yes
Turbine	Aldehyde Total	Formaldehyde	Log lb/MMBtu	NG,DB=Y,SCR	3	-2.22E+00	4.11E-02	1.00	RG,DB=N,COC	3	-3.22E+00	2.41E-02	1.00	Yes
Turbine	Aldehyde Total	Formaldehyde	Log lb/MMBtu	NG/RG,DB=Y,SCR/COC	3	-3.91E+00	3.52E-01	1.00	RG,DB=N,COC	3	-3.22E+00	2.41E-02	1.00	Yes
Turbine	BTX Total	BTX Total	lb/MMBtu	NG,DB=N,None	3	5.33E-05	3.20E-05	0.77	NG,DB=N,SCR/COC	3	1.81E-04	4.05E-05	0.68	Yes
Turbine	BTX Total	BTX Total	Log lb/MMBtu	NG,DB=N,None	3	-4.33E+00	2.83E-01	0.77	NG,DB=N,SCR/COC	3	-3.75E+00	9.42E-02	0.68	Yes
Turbine	Metals	Cadmium	lb/MMBtu	NG/LPG/RG,DB=Y,SCR/COC	3	3.89E-06	7.04E-07	0.40	NG/RG,DB=Y,SCR/COC	3	1.94E-06	1.67E-06	0.67	No
Turbine	Metals	Cadmium	lb/MMBtu	NG/LPG/RG,DB=Y,SCR/COC	3	3.89E-06	7.04E-07	0.40	RG,DB=N,COC	3	5.28E-06	3.39E-06	1.00	No
Turbine	Metals	Cadmium	lb/MMBtu	NG/RG,DB=Y,SCR/COC	3	1.94E-06	1.67E-06	0.67	RG,DB=N,COC	3	5.28E-06	3.39E-06	1.00	No
Turbine	Metals	Cadmium	Log lb/MMBtu	NG/LPG/RG,DB=Y,SCR/COC	3	-5.41E+00	7.56E-02	0.40	NG/RG,DB=Y,SCR/COC	3	-5.81E+00	3.47E-01	0.67	No
Turbine	Metals	Cadmium	Log lb/MMBtu	NG/LPG/RG,DB=Y,SCR/COC	3	-5.41E+00	7.56E-02	0.40	RG,DB=N,COC	3	-5.33E+00	2.60E-01	1.00	No
Turbine	Metals	Cadmium	Log lb/MMBtu	NG/RG,DB=Y,SCR/COC	3	-5.81E+00	3.47E-01	0.67	RG,DB=N,COC	3	-5.33E+00	2.60E-01	1.00	No
Turbine	Metals	Chromium (Hex)	lb/MMBtu	NG/RG,DB=Y,SCR/COC	3	1.73E-06	3.64E-07	0.41	RG,DB=N,COC	3	1.45E-06	1.02E-08	0.00	No

TABLE 8-3. NOx CONTROL t-TEST COMPARISON.

System T	Category	Substance	Value Type	First Sample Statistics					Second Sample Statistics					Significant Difference at 95%Confidence
				Description NOxC	Size	Average	Standard Deviation	Detect Ratio	Description NOxC	Size	Average	Standard Deviation	Detect Ratio	
Turbine	Metals	Chromium (Hex)	Log lb/MMBtu	NG/RG,DB=Y,SCR/COC	3	-5.77E+00	8.81E-02	0.41	RG,DB=N,COC	3	-5.84E+00	3.04E-03	0.00	No
Turbine	Metals	Chromium (Total)	lb/MMBtu	NG/RG,DB=Y,SCR/COC	6	4.99E-05	6.03E-05	1.00	RG,DB=N,COC	3	1.31E-05	1.30E-05	0.82	No
Turbine	Metals	Chromium (Total)	Log lb/MMBtu	NG/RG,DB=Y,SCR/COC	6	-4.48E+00	3.95E-01	1.00	RG,DB=N,COC	3	-5.02E+00	4.24E-01	0.82	No
Turbine	Metals	Lead	lb/MMBtu	NG/LPG/RG,DB=Y,SCR/COC	3	3.58E-05	1.87E-06	0.00	RG,DB=N,COC	3	2.84E-05	2.17E-06	0.30	Yes
Turbine	Metals	Lead	Log lb/MMBtu	NG/LPG/RG,DB=Y,SCR/COC	3	-4.45E+00	2.28E-02	0.00	RG,DB=N,COC	3	-4.55E+00	3.39E-02	0.30	Yes
Turbine	Metals	Mercury	lb/MMBtu	NG/RG,DB=Y,SCR/COC	6	4.35E-06	2.26E-06	1.00	RG,DB=N,COC	3	1.53E-05	9.19E-06	1.00	Yes
Turbine	Metals	Mercury	Log lb/MMBtu	NG/RG,DB=Y,SCR/COC	6	-5.41E+00	2.25E-01	1.00	RG,DB=N,COC	3	-4.86E+00	2.42E-01	1.00	Yes
Turbine	Metals	Nickel	lb/MMBtu	NG/LPG/RG,DB=Y,SCR/COC	3	1.46E-04	1.74E-04	1.00	NG/RG,DB=Y,SCR/COC	3	7.60E-06	5.21E-06	1.00	No
Turbine	Metals	Nickel	lb/MMBtu	NG/LPG/RG,DB=Y,SCR/COC	3	1.46E-04	1.74E-04	1.00	RG,DB=N,COC	3	1.66E-04	5.29E-05	1.00	No
Turbine	Metals	Nickel	lb/MMBtu	NG/RG,DB=Y,SCR/COC	3	7.60E-06	5.21E-06	1.00	RG,DB=N,COC	3	1.66E-04	5.29E-05	1.00	Yes
Turbine	Metals	Nickel	Log lb/MMBtu	NG/LPG/RG,DB=Y,SCR/COC	3	-4.05E+00	5.11E-01	1.00	NG/RG,DB=Y,SCR/COC	3	-5.19E+00	3.13E-01	1.00	Yes
Turbine	Metals	Nickel	Log lb/MMBtu	NG/LPG/RG,DB=Y,SCR/COC	3	-4.05E+00	5.11E-01	1.00	RG,DB=N,COC	3	-3.80E+00	1.57E-01	1.00	No
Turbine	Metals	Nickel	Log lb/MMBtu	NG/RG,DB=Y,SCR/COC	3	-5.19E+00	3.13E-01	1.00	RG,DB=N,COC	3	-3.80E+00	1.57E-01	1.00	Yes
Turbine	POM Total	Anthracene	lb/MMBtu	NG,DB=N,None	3	1.54E-08	1.57E-08	1.00	NG,DB=N,SCR/COC	3	5.33E-08	8.41E-08	1.00	No
Turbine	POM Total	Anthracene	lb/MMBtu	NG,DB=N,None	3	1.54E-08	1.57E-08	1.00	NG/RG,DB=Y,SCR/COC	3	2.48E-08	8.43E-09	1.00	No
Turbine	POM Total	Anthracene	lb/MMBtu	NG,DB=N,SCR/COC	3	5.33E-08	8.41E-08	1.00	NG/RG,DB=Y,SCR/COC	3	2.48E-08	8.43E-09	1.00	No
Turbine	POM Total	Anthracene	Log lb/MMBtu	NG,DB=N,None	3	-7.97E+00	4.59E-01	1.00	NG,DB=N,SCR/COC	3	-7.83E+00	8.80E-01	1.00	No
Turbine	POM Total	Anthracene	Log lb/MMBtu	NG,DB=N,None	3	-7.97E+00	4.59E-01	1.00	NG/RG,DB=Y,SCR/COC	3	-7.62E+00	1.45E-01	1.00	No
Turbine	POM Total	Anthracene	Log lb/MMBtu	NG,DB=N,SCR/COC	3	-7.83E+00	8.80E-01	1.00	NG/RG,DB=Y,SCR/COC	3	-7.62E+00	1.45E-01	1.00	No
Turbine	POM Total	POM Total	lb/MMBtu	NG,DB=N,None	3	7.16E-07	1.95E-07	0.97	NG,DB=N,SCR/COC	3	1.09E-06	1.26E-07	0.99	Yes
Turbine	POM Total	POM Total	lb/MMBtu	NG,DB=N,None	3	7.16E-07	1.95E-07	0.97	NG/RG,DB=Y,SCR/COC	3	3.87E-05	2.64E-06	1.00	Yes
Turbine	POM Total	POM Total	lb/MMBtu	NG,DB=N,SCR/COC	3	1.09E-06	1.26E-07	0.99	NG/RG,DB=Y,SCR/COC	3	3.87E-05	2.64E-06	1.00	Yes
Turbine	POM Total	POM Total	Log lb/MMBtu	NG,DB=N,None	3	-6.15E+00	1.11E-01	0.97	NG,DB=N,SCR/COC	3	-5.96E+00	4.96E-02	0.99	No
Turbine	POM Total	POM Total	Log lb/MMBtu	NG,DB=N,None	3	-6.15E+00	1.11E-01	0.97	NG/RG,DB=Y,SCR/COC	3	-4.41E+00	2.98E-02	1.00	Yes
Turbine	POM Total	POM Total	Log lb/MMBtu	NG,DB=N,SCR/COC	3	-5.96E+00	4.96E-02	0.99	NG/RG,DB=Y,SCR/COC	3	-4.41E+00	2.98E-02	1.00	Yes

TABLE 8-4. EMISSION FACTOR GROUP t-TEST COMPARISON.

System Type	Category	Substance	Value Type	First Sample Statistics					Second Sample Statistics					Significant Difference at 95%Confidence
				Description Group	Size	Average	Standard Deviation	Detect Ratio	Description Group	Size	Average	Standard Deviation	Detect Ratio	
External	Aldehyde Total	Aldehyde Total	lb/MMBtu	CO/PO	12	2.57E-05	1.05E-05	0.36	FO6	6	5.21E-05	4.92E-05	0.25	No
External	Aldehyde Total	Aldehyde Total	lb/MMBtu	CO/PO	12	2.57E-05	1.05E-05	0.36	Gas	57	6.61E-05	1.82E-04	0.95	No
External	Aldehyde Total	Aldehyde Total	lb/MMBtu	FO6	6	5.21E-05	4.92E-05	0.25	Gas	57	6.61E-05	1.82E-04	0.95	No
External	Aldehyde Total	Aldehyde Total	Log lb/MMBtu	CO/PO	12	-4.63E+00	2.01E-01	0.36	FO6	6	-4.58E+00	6.81E-01	0.25	No
External	Aldehyde Total	Aldehyde Total	Log lb/MMBtu	CO/PO	12	-4.63E+00	2.01E-01	0.36	Gas	57	-4.61E+00	5.70E-01	0.95	No
External	Aldehyde Total	Aldehyde Total	Log lb/MMBtu	FO6	6	-4.58E+00	6.81E-01	0.25	Gas	57	-4.61E+00	5.70E-01	0.95	No
External	Aldehyde Total	Formaldehyde	lb/MMBtu	CO/PO	12	1.14E-05	9.60E-06	0.18	FO6	3	1.65E-05	2.54E-05	0.93	No
External	Aldehyde Total	Formaldehyde	lb/MMBtu	CO/PO	12	1.14E-05	9.60E-06	0.18	Gas	60	5.16E-05	1.76E-04	0.97	No
External	Aldehyde Total	Formaldehyde	lb/MMBtu	FO6	3	1.65E-05	2.54E-05	0.93	Gas	60	5.16E-05	1.76E-04	0.97	No
External	Aldehyde Total	Formaldehyde	Log lb/MMBtu	CO/PO	12	-5.09E+00	3.69E-01	0.18	FO6	3	-5.27E+00	8.08E-01	0.93	No
External	Aldehyde Total	Formaldehyde	Log lb/MMBtu	CO/PO	12	-5.09E+00	3.69E-01	0.18	Gas	60	-4.84E+00	6.10E-01	0.97	No
External	Aldehyde Total	Formaldehyde	Log lb/MMBtu	FO6	3	-5.27E+00	8.08E-01	0.93	Gas	60	-4.84E+00	6.10E-01	0.97	No
External	BTX Total	Benzene	lb/MMBtu	CO/PO	9	4.07E-06	1.78E-06	0.36	Gas	49	6.01E-05	1.98E-04	0.79	No
External	BTX Total	Benzene	Log lb/MMBtu	CO/PO	9	-5.43E+00	2.09E-01	0.36	Gas	49	-5.00E+00	6.67E-01	0.79	No
External	BTX Total	BTX Total	lb/MMBtu	CO/PO	9	4.97E-05	1.48E-05	0.39	Gas	36	5.40E-05	3.57E-05	0.51	No
External	BTX Total	BTX Total	Log lb/MMBtu	CO/PO	9	-4.32E+00	1.26E-01	0.39	Gas	36	-4.34E+00	2.40E-01	0.51	No
External	Metals	Arsenic	lb/MMBtu	CO/PO	9	6.67E-09	6.82E-09	1.00	Gas	6	7.19E-07	4.29E-07	1.00	Yes
External	Metals	Arsenic	Log lb/MMBtu	CO/PO	9	-8.28E+00	3.03E-01	1.00	Gas	6	-6.24E+00	3.40E-01	1.00	Yes
External	Metals	Cadmium	lb/MMBtu	CO/PO	12	2.25E-06	3.05E-06	1.00	Gas	6	1.49E-06	6.67E-07	1.00	No
External	Metals	Cadmium	Log lb/MMBtu	CO/PO	12	-6.02E+00	6.09E-01	1.00	Gas	6	-5.86E+00	1.87E-01	1.00	No
External	Metals	Chromium (Total)	lb/MMBtu	CO/PO	12	8.74E-06	6.88E-06	1.00	FO6	3	3.28E-05	8.43E-06	1.00	Yes
External	Metals	Chromium (Total)	lb/MMBtu	CO/PO	12	8.74E-06	6.88E-06	1.00	Gas	6	5.74E-06	9.50E-06	0.96	No
External	Metals	Chromium (Total)	lb/MMBtu	FO6	3	3.28E-05	8.43E-06	1.00	Gas	6	5.74E-06	9.50E-06	0.96	Yes
External	Metals	Chromium (Total)	Log lb/MMBtu	CO/PO	12	-5.24E+00	4.58E-01	1.00	FO6	3	-4.49E+00	1.20E-01	1.00	Yes
External	Metals	Chromium (Total)	Log lb/MMBtu	CO/PO	12	-5.24E+00	4.58E-01	1.00	Gas	6	-5.63E+00	5.98E-01	0.96	No
External	Metals	Chromium (Total)	Log lb/MMBtu	FO6	3	-4.49E+00	1.20E-01	1.00	Gas	6	-5.63E+00	5.98E-01	0.96	Yes
External	Metals	Lead	lb/MMBtu	CO/PO	12	1.93E-06	8.43E-07	0.55	Gas	6	3.75E-06	2.25E-06	1.00	Yes
External	Metals	Lead	Log lb/MMBtu	CO/PO	12	-5.75E+00	1.67E-01	0.55	Gas	6	-5.48E+00	2.34E-01	1.00	Yes
External	Metals	Mercury	lb/MMBtu	CO/PO	10	1.04E-05	1.64E-05	1.00	FO6	3	7.02E-08	2.67E-08	0.00	No
External	Metals	Mercury	lb/MMBtu	CO/PO	10	1.04E-05	1.64E-05	1.00	Gas	3	1.80E-07	1.17E-08	0.36	No
External	Metals	Mercury	lb/MMBtu	FO6	3	7.02E-08	2.67E-08	0.00	Gas	3	1.80E-07	1.17E-08	0.36	Yes
External	Metals	Mercury	Log lb/MMBtu	CO/PO	10	-6.12E+00	1.17E+00	1.00	FO6	3	-7.17E+00	1.59E-01	0.00	No
External	Metals	Mercury	Log lb/MMBtu	CO/PO	10	-6.12E+00	1.17E+00	1.00	Gas	3	-6.75E+00	2.78E-02	0.36	No
External	Metals	Mercury	Log lb/MMBtu	FO6	3	-7.17E+00	1.59E-01	0.00	Gas	3	-6.75E+00	2.78E-02	0.36	Yes
External	Metals	Nickel	lb/MMBtu	CO/PO	12	2.40E-03	2.21E-04	1.00	FO6	3	2.27E-03	4.30E-04	1.00	No
External	Metals	Nickel	lb/MMBtu	CO/PO	12	2.40E-03	2.21E-04	1.00	Gas	5	7.54E-06	1.03E-05	0.97	Yes
External	Metals	Nickel	lb/MMBtu	FO6	3	2.27E-03	4.30E-04	1.00	Gas	5	7.54E-06	1.03E-05	0.97	Yes
External	Metals	Nickel	Log lb/MMBtu	CO/PO	12	-2.62E+00	4.02E-02	1.00	FO6	3	-2.65E+00	7.90E-02	1.00	No
External	Metals	Nickel	Log lb/MMBtu	CO/PO	12	-2.62E+00	4.02E-02	1.00	Gas	5	-5.41E+00	5.39E-01	0.97	Yes
External	Metals	Nickel	Log lb/MMBtu	FO6	3	-2.65E+00	7.90E-02	1.00	Gas	5	-5.41E+00	5.39E-01	0.97	Yes
External	Metals	Selenium	lb/MMBtu	CO/PO	9	7.95E-06	8.61E-06	0.96	FO6	3	1.96E-05	8.45E-06	0.17	No
External	Metals	Selenium	lb/MMBtu	CO/PO	9	7.95E-06	8.61E-06	0.96	Gas	6	8.75E-07	1.07E-06	0.16	No
External	Metals	Selenium	lb/MMBtu	FO6	3	1.96E-05	8.45E-06	0.17	Gas	6	8.75E-07	1.07E-06	0.16	Yes
External	Metals	Selenium	Log lb/MMBtu	CO/PO	9	-5.36E+00	5.04E-01	0.96	FO6	3	-4.74E+00	2.29E-01	0.17	No
External	Metals	Selenium	Log lb/MMBtu	CO/PO	9	-5.36E+00	5.04E-01	0.96	Gas	6	-6.76E+00	1.07E+00	0.16	Yes
External	Metals	Selenium	Log lb/MMBtu	FO6	3	-4.74E+00	2.29E-01	0.17	Gas	6	-6.76E+00	1.07E+00	0.16	Yes

TABLE 8-4. EMISSION FACTOR GROUP t-TEST COMPARISON.

System Type	Category	Substance	Value Type	First Sample Statistics					Second Sample Statistics					Significant Difference at 95%Confidence
				Description Group	Size	Average	Standard Deviation	Detect Ratio	Description Group	Size	Average	Standard Deviation	Detect Ratio	
External	POM Total	Anthracene	lb/MMBtu	CO/PO	11	3.72E-08	6.17E-08	1.00	FO6	6	2.07E-09	2.04E-09	0.93	No
External	POM Total	Anthracene	lb/MMBtu	CO/PO	11	3.72E-08	6.17E-08	1.00	Gas	26	4.73E-09	6.89E-09	0.97	Yes
External	POM Total	Anthracene	lb/MMBtu	FO6	6	2.07E-09	2.04E-09	0.93	Gas	26	4.73E-09	6.89E-09	0.97	No
External	POM Total	Anthracene	Log lb/MMBtu	CO/PO	11	-8.13E+00	9.50E-01	1.00	FO6	6	-9.02E+00	6.80E-01	0.93	No
External	POM Total	Anthracene	Log lb/MMBtu	CO/PO	11	-8.13E+00	9.50E-01	1.00	Gas	26	-8.54E+00	4.02E-01	0.97	No
External	POM Total	Anthracene	Log lb/MMBtu	FO6	6	-9.02E+00	6.80E-01	0.93	Gas	26	-8.54E+00	4.02E-01	0.97	Yes
External	POM Total	Benzo(a)pyrene	lb/MMBtu	CO/PO	6	1.39E-08	2.05E-08	0.96	FO6	6	1.36E-09	9.75E-10	0.00	No
External	POM Total	Benzo(a)pyrene	lb/MMBtu	CO/PO	6	1.39E-08	2.05E-08	0.96	Gas	41	5.74E-08	2.53E-07	0.98	No
External	POM Total	Benzo(a)pyrene	lb/MMBtu	FO6	6	1.36E-09	9.75E-10	0.00	Gas	41	5.74E-08	2.53E-07	0.98	No
External	POM Total	Benzo(a)pyrene	Log lb/MMBtu	CO/PO	6	-8.53E+00	9.62E-01	0.96	FO6	6	-9.00E+00	4.09E-01	0.00	No
External	POM Total	Benzo(a)pyrene	Log lb/MMBtu	CO/PO	6	-8.53E+00	9.62E-01	0.96	Gas	41	-8.67E+00	6.98E-01	0.98	No
External	POM Total	Benzo(a)pyrene	Log lb/MMBtu	FO6	6	-9.00E+00	4.09E-01	0.00	Gas	41	-8.67E+00	6.98E-01	0.98	No
External	POM Total	POM Total	lb/MMBtu	CO/PO	9	7.20E-08	3.11E-08	0.96	FO6	6	6.54E-07	2.84E-07	0.95	Yes
External	POM Total	POM Total	lb/MMBtu	CO/PO	9	7.20E-08	3.11E-08	0.96	Gas	26	5.15E-07	8.53E-07	0.99	Yes
External	POM Total	POM Total	lb/MMBtu	FO6	6	6.54E-07	2.84E-07	0.95	Gas	26	5.15E-07	8.53E-07	0.99	No
External	POM Total	POM Total	Log lb/MMBtu	CO/PO	9	-6.21E+00	2.47E-01	0.96	FO6	6	-6.22E+00	1.95E-01	0.95	Yes
External	POM Total	POM Total	Log lb/MMBtu	CO/PO	9	-6.21E+00	2.47E-01	0.96	Gas	26	-6.45E+00	2.93E-01	0.99	Yes
External	POM Total	POM Total	Log lb/MMBtu	FO6	6	-6.22E+00	1.95E-01	0.95	Gas	26	-6.45E+00	2.93E-01	0.99	No
RICE	Aldehyde Total	Aldehyde Total	lb/MMBtu	Di,O2<13%	3	1.01E-04	8.33E-05	1.00	Di,O2>13%	6	1.95E-03	8.28E-04	1.00	Yes
RICE	Aldehyde Total	Aldehyde Total	lb/MMBtu	Di,O2<13%	3	1.01E-04	8.33E-05	1.00	Gas,2S,Lean	3	3.29E-02	3.50E-02	1.00	No
RICE	Aldehyde Total	Aldehyde Total	lb/MMBtu	Di,O2<13%	3	1.01E-04	8.33E-05	1.00	Gas,4S,Lean	15	3.15E-02	1.42E-02	1.00	Yes
RICE	Aldehyde Total	Aldehyde Total	lb/MMBtu	Di,O2<13%	3	1.01E-04	8.33E-05	1.00	Gas,4S,Rich	3	1.13E-02	1.58E-03	1.00	Yes
RICE	Aldehyde Total	Aldehyde Total	lb/MMBtu	Di,O2>13%	6	1.95E-03	8.28E-04	1.00	Gas,2S,Lean	3	3.29E-02	3.50E-02	1.00	No
RICE	Aldehyde Total	Aldehyde Total	lb/MMBtu	Di,O2>13%	6	1.95E-03	8.28E-04	1.00	Gas,4S,Lean	15	3.15E-02	1.42E-02	1.00	Yes
RICE	Aldehyde Total	Aldehyde Total	lb/MMBtu	Di,O2>13%	6	1.95E-03	8.28E-04	1.00	Gas,4S,Rich	3	1.13E-02	1.58E-03	1.00	Yes
RICE	Aldehyde Total	Aldehyde Total	lb/MMBtu	Gas,2S,Lean	3	3.29E-02	3.50E-02	1.00	Gas,4S,Lean	15	3.15E-02	1.42E-02	1.00	No
RICE	Aldehyde Total	Aldehyde Total	lb/MMBtu	Gas,2S,Lean	3	3.29E-02	3.50E-02	1.00	Gas,4S,Rich	3	1.13E-02	1.58E-03	1.00	No
RICE	Aldehyde Total	Aldehyde Total	lb/MMBtu	Gas,4S,Lean	15	3.15E-02	1.42E-02	1.00	Gas,4S,Rich	3	1.13E-02	1.58E-03	1.00	Yes
RICE	Aldehyde Total	Aldehyde Total	Log lb/MMBtu	Di,O2<13%	3	-4.09E+00	3.32E-01	1.00	Di,O2>13%	6	-2.74E+00	1.69E-01	1.00	Yes
RICE	Aldehyde Total	Aldehyde Total	Log lb/MMBtu	Di,O2<13%	3	-4.09E+00	3.32E-01	1.00	Gas,2S,Lean	3	-1.64E+00	4.40E-01	1.00	Yes
RICE	Aldehyde Total	Aldehyde Total	Log lb/MMBtu	Di,O2<13%	3	-4.09E+00	3.32E-01	1.00	Gas,4S,Lean	15	-1.55E+00	2.16E-01	1.00	Yes
RICE	Aldehyde Total	Aldehyde Total	Log lb/MMBtu	Di,O2<13%	3	-4.09E+00	3.32E-01	1.00	Gas,4S,Rich	3	-1.95E+00	6.28E-02	1.00	Yes
RICE	Aldehyde Total	Aldehyde Total	Log lb/MMBtu	Di,O2>13%	6	-2.74E+00	1.69E-01	1.00	Gas,2S,Lean	3	-1.64E+00	4.40E-01	1.00	Yes
RICE	Aldehyde Total	Aldehyde Total	Log lb/MMBtu	Di,O2>13%	6	-2.74E+00	1.69E-01	1.00	Gas,4S,Lean	15	-1.55E+00	2.16E-01	1.00	Yes
RICE	Aldehyde Total	Aldehyde Total	Log lb/MMBtu	Di,O2>13%	6	-2.74E+00	1.69E-01	1.00	Gas,4S,Rich	3	-1.95E+00	6.28E-02	1.00	Yes
RICE	Aldehyde Total	Aldehyde Total	Log lb/MMBtu	Gas,2S,Lean	3	-1.64E+00	4.40E-01	1.00	Gas,4S,Lean	15	-1.55E+00	2.16E-01	1.00	No
RICE	Aldehyde Total	Aldehyde Total	Log lb/MMBtu	Gas,2S,Lean	3	-1.64E+00	4.40E-01	1.00	Gas,4S,Rich	3	-1.95E+00	6.28E-02	1.00	No
RICE	Aldehyde Total	Aldehyde Total	Log lb/MMBtu	Gas,4S,Lean	15	-1.55E+00	2.16E-01	1.00	Gas,4S,Rich	3	-1.95E+00	6.28E-02	1.00	Yes
RICE	Aldehyde Total	Formaldehyde	lb/MMBtu	Di,O2<13%	3	7.68E-05	9.46E-05	1.00	Di,O2>13%	6	1.19E-03	6.56E-04	1.00	Yes
RICE	Aldehyde Total	Formaldehyde	lb/MMBtu	Di,O2<13%	3	7.68E-05	9.46E-05	1.00	Gas,2S,Lean	6	4.85E-02	3.38E-02	1.00	Yes
RICE	Aldehyde Total	Formaldehyde	lb/MMBtu	Di,O2<13%	3	7.68E-05	9.46E-05	1.00	Gas,4S,Lean	30	3.10E-02	1.90E-02	1.00	Yes
RICE	Aldehyde Total	Formaldehyde	lb/MMBtu	Di,O2<13%	3	7.68E-05	9.46E-05	1.00	Gas,4S,Rich	9	4.98E-03	4.05E-03	1.00	No
RICE	Aldehyde Total	Formaldehyde	lb/MMBtu	Di,O2>13%	6	1.19E-03	6.56E-04	1.00	Gas,2S,Lean	6	4.85E-02	3.38E-02	1.00	Yes
RICE	Aldehyde Total	Formaldehyde	lb/MMBtu	Di,O2>13%	6	1.19E-03	6.56E-04	1.00	Gas,4S,Lean	30	3.10E-02	1.90E-02	1.00	Yes
RICE	Aldehyde Total	Formaldehyde	lb/MMBtu	Di,O2>13%	6	1.19E-03	6.56E-04	1.00	Gas,4S,Rich	9	4.98E-03	4.05E-03	1.00	Yes
RICE	Aldehyde Total	Formaldehyde	lb/MMBtu	Gas,2S,Lean	6	4.85E-02	3.38E-02	1.00	Gas,4S,Lean	30	3.10E-02	1.90E-02	1.00	No

TABLE 8-4. EMISSION FACTOR GROUP t-TEST COMPARISON.

System Type	Category	Substance	Value Type	First Sample Statistics					Second Sample Statistics					Significant Difference at 95%Confidence
				Description Group	Size	Average	Standard Deviation	Detect Ratio	Description Group	Size	Average	Standard Deviation	Detect Ratio	
RICE	Aldehyde Total	Formaldehyde	lb/MMBtu	Gas,2S,Lean	6	4.65E-02	3.38E-02	1.00	Gas,4S,Rich	9	4.98E-03	4.05E-03	1.00	Yes
RICE	Aldehyde Total	Formaldehyde	lb/MMBtu	Gas,4S,Lean	30	3.10E-02	1.90E-02	1.00	Gas,4S,Rich	9	4.98E-03	4.05E-03	1.00	Yes
RICE	Aldehyde Total	Formaldehyde	Log lb/MMBtu	Di,O2<13%	3	-4.38E+00	5.97E-01	1.00	Di,O2>13%	6	-2.97E+00	2.20E-01	1.00	Yes
RICE	Aldehyde Total	Formaldehyde	Log lb/MMBtu	Di,O2<13%	3	-4.38E+00	5.97E-01	1.00	Gas,2S,Lean	6	-1.53E+00	5.82E-01	1.00	Yes
RICE	Aldehyde Total	Formaldehyde	Log lb/MMBtu	Di,O2<13%	3	-4.38E+00	5.97E-01	1.00	Gas,4S,Lean	30	-1.58E+00	2.65E-01	1.00	Yes
RICE	Aldehyde Total	Formaldehyde	Log lb/MMBtu	Di,O2<13%	3	-4.38E+00	5.97E-01	1.00	Gas,4S,Rich	9	-2.55E+00	5.87E-01	1.00	Yes
RICE	Aldehyde Total	Formaldehyde	Log lb/MMBtu	Di,O2>13%	6	-2.97E+00	2.20E-01	1.00	Gas,2S,Lean	6	-1.53E+00	5.82E-01	1.00	Yes
RICE	Aldehyde Total	Formaldehyde	Log lb/MMBtu	Di,O2>13%	6	-2.97E+00	2.20E-01	1.00	Gas,4S,Lean	30	-1.58E+00	2.65E-01	1.00	Yes
RICE	Aldehyde Total	Formaldehyde	Log lb/MMBtu	Di,O2>13%	6	-2.97E+00	2.20E-01	1.00	Gas,4S,Rich	9	-2.55E+00	5.87E-01	1.00	No
RICE	Aldehyde Total	Formaldehyde	Log lb/MMBtu	Gas,2S,Lean	6	-1.53E+00	5.82E-01	1.00	Gas,4S,Lean	30	-1.58E+00	2.65E-01	1.00	No
RICE	Aldehyde Total	Formaldehyde	Log lb/MMBtu	Gas,2S,Lean	6	-1.53E+00	5.82E-01	1.00	Gas,4S,Rich	9	-2.55E+00	5.87E-01	1.00	Yes
RICE	Aldehyde Total	Formaldehyde	Log lb/MMBtu	Gas,4S,Lean	30	-1.58E+00	2.65E-01	1.00	Gas,4S,Rich	9	-2.55E+00	5.87E-01	1.00	Yes
RICE	BTX Total	Benzene	lb/MMBtu	Di,O2<13%	3	7.11E-04	1.92E-05	1.00	Di,O2>13%	6	8.81E-04	4.31E-04	1.00	No
RICE	BTX Total	Benzene	lb/MMBtu	Di,O2<13%	3	7.11E-04	1.92E-05	1.00	Gas,2S,Lean	5	7.48E-03	4.54E-03	1.00	Yes
RICE	BTX Total	Benzene	lb/MMBtu	Di,O2<13%	3	7.11E-04	1.92E-05	1.00	Gas,4S,Lean	20	1.30E-03	5.87E-04	1.00	No
RICE	BTX Total	Benzene	lb/MMBtu	Di,O2<13%	3	7.11E-04	1.92E-05	1.00	Gas,4S,Rich	4	9.93E-03	6.81E-04	1.00	Yes
RICE	BTX Total	Benzene	lb/MMBtu	Di,O2>13%	6	8.81E-04	4.31E-04	1.00	Gas,2S,Lean	5	7.48E-03	4.54E-03	1.00	Yes
RICE	BTX Total	Benzene	lb/MMBtu	Di,O2>13%	6	8.81E-04	4.31E-04	1.00	Gas,4S,Lean	20	1.30E-03	5.87E-04	1.00	No
RICE	BTX Total	Benzene	lb/MMBtu	Di,O2>13%	6	8.81E-04	4.31E-04	1.00	Gas,4S,Rich	4	9.93E-03	6.81E-04	1.00	Yes
RICE	BTX Total	Benzene	lb/MMBtu	Gas,2S,Lean	5	7.48E-03	4.54E-03	1.00	Gas,4S,Lean	20	1.30E-03	5.87E-04	1.00	Yes
RICE	BTX Total	Benzene	lb/MMBtu	Gas,2S,Lean	5	7.48E-03	4.54E-03	1.00	Gas,4S,Rich	4	9.93E-03	6.81E-04	1.00	No
RICE	BTX Total	Benzene	lb/MMBtu	Gas,4S,Lean	20	1.30E-03	5.87E-04	1.00	Gas,4S,Rich	4	9.93E-03	6.81E-04	1.00	Yes
RICE	BTX Total	Benzene	Log lb/MMBtu	Di,O2<13%	3	-3.15E+00	1.17E-02	1.00	Di,O2>13%	6	-3.10E+00	2.25E-01	1.00	No
RICE	BTX Total	Benzene	Log lb/MMBtu	Di,O2<13%	3	-3.15E+00	1.17E-02	1.00	Gas,2S,Lean	5	-2.19E+00	2.60E-01	1.00	Yes
RICE	BTX Total	Benzene	Log lb/MMBtu	Di,O2<13%	3	-3.15E+00	1.17E-02	1.00	Gas,4S,Lean	20	-2.94E+00	2.54E-01	1.00	No
RICE	BTX Total	Benzene	Log lb/MMBtu	Di,O2<13%	3	-3.15E+00	1.17E-02	1.00	Gas,4S,Rich	4	-2.00E+00	3.02E-02	1.00	Yes
RICE	BTX Total	Benzene	Log lb/MMBtu	Di,O2>13%	6	-3.10E+00	2.25E-01	1.00	Gas,2S,Lean	5	-2.19E+00	2.60E-01	1.00	Yes
RICE	BTX Total	Benzene	Log lb/MMBtu	Di,O2>13%	6	-3.10E+00	2.25E-01	1.00	Gas,4S,Lean	20	-2.94E+00	2.54E-01	1.00	No
RICE	BTX Total	Benzene	Log lb/MMBtu	Di,O2>13%	6	-3.10E+00	2.25E-01	1.00	Gas,4S,Rich	4	-2.00E+00	3.02E-02	1.00	Yes
RICE	BTX Total	Benzene	Log lb/MMBtu	Gas,2S,Lean	5	-2.19E+00	2.60E-01	1.00	Gas,4S,Lean	20	-2.94E+00	2.54E-01	1.00	Yes
RICE	BTX Total	Benzene	Log lb/MMBtu	Gas,2S,Lean	5	-2.19E+00	2.60E-01	1.00	Gas,4S,Rich	4	-2.00E+00	3.02E-02	1.00	No
RICE	BTX Total	Benzene	Log lb/MMBtu	Gas,4S,Lean	20	-2.94E+00	2.54E-01	1.00	Gas,4S,Rich	4	-2.00E+00	3.02E-02	1.00	Yes
RICE	BTX Total	BTX Total	lb/MMBtu	Di,O2<13%	3	1.16E-03	1.98E-05	1.00	Di,O2>13%	6	1.56E-03	5.56E-04	0.95	No
RICE	BTX Total	BTX Total	lb/MMBtu	Di,O2<13%	3	1.16E-03	1.98E-05	1.00	Gas,2S,Lean	5	1.10E-02	7.07E-03	1.00	No
RICE	BTX Total	BTX Total	lb/MMBtu	Di,O2<13%	3	1.16E-03	1.98E-05	1.00	Gas,4S,Lean	20	1.99E-03	8.77E-04	1.00	No
RICE	BTX Total	BTX Total	lb/MMBtu	Di,O2<13%	3	1.16E-03	1.98E-05	1.00	Gas,4S,Rich	4	1.35E-02	1.27E-03	1.00	Yes
RICE	BTX Total	BTX Total	lb/MMBtu	Di,O2>13%	6	1.56E-03	5.56E-04	0.95	Gas,2S,Lean	5	1.10E-02	7.07E-03	1.00	Yes
RICE	BTX Total	BTX Total	lb/MMBtu	Di,O2>13%	6	1.56E-03	5.56E-04	0.95	Gas,4S,Lean	20	1.99E-03	8.77E-04	1.00	No
RICE	BTX Total	BTX Total	lb/MMBtu	Di,O2>13%	6	1.56E-03	5.56E-04	0.95	Gas,4S,Rich	4	1.35E-02	1.27E-03	1.00	Yes
RICE	BTX Total	BTX Total	lb/MMBtu	Gas,2S,Lean	5	1.10E-02	7.07E-03	1.00	Gas,4S,Lean	20	1.99E-03	8.77E-04	1.00	Yes
RICE	BTX Total	BTX Total	lb/MMBtu	Gas,2S,Lean	5	1.10E-02	7.07E-03	1.00	Gas,4S,Rich	4	1.35E-02	1.27E-03	1.00	No
RICE	BTX Total	BTX Total	lb/MMBtu	Gas,4S,Lean	20	1.99E-03	8.77E-04	1.00	Gas,4S,Rich	4	1.35E-02	1.27E-03	1.00	Yes
RICE	BTX Total	BTX Total	Log lb/MMBtu	Di,O2<13%	3	-2.93E+00	7.42E-03	1.00	Di,O2>13%	6	-2.83E+00	1.60E-01	0.95	No
RICE	BTX Total	BTX Total	Log lb/MMBtu	Di,O2<13%	3	-2.93E+00	7.42E-03	1.00	Gas,2S,Lean	5	-2.03E+00	2.81E-01	1.00	Yes
RICE	BTX Total	BTX Total	Log lb/MMBtu	Di,O2<13%	3	-2.93E+00	7.42E-03	1.00	Gas,4S,Lean	20	-2.75E+00	2.34E-01	1.00	No
RICE	BTX Total	BTX Total	Log lb/MMBtu	Di,O2<13%	3	-2.93E+00	7.42E-03	1.00	Gas,4S,Rich	4	-1.87E+00	4.15E-02	1.00	Yes

TABLE 8-4. EMISSION FACTOR GROUP t-TEST COMPARISON.

System Type	Category	Substance	Value Type	First Sample Statistics					Second Sample Statistics					Significant Difference at 95%Confidence
				Description Group	Size	Average	Standard Deviation	Detect Ratio	Description Group	Size	Average	Standard Deviation	Detect Ratio	
RICE	BTX Total	BTX Total	Log lb/MMBtu	Di,O2>13%	6	-2.83E+00	1.60E-01	0.95	Gas,2S,Lean	5	-2.03E+00	2.81E-01	1.00	Yes
RICE	BTX Total	BTX Total	Log lb/MMBtu	Di,O2>13%	6	-2.83E+00	1.60E-01	0.95	Gas,4S,Lean	20	-2.75E+00	2.34E-01	1.00	No
RICE	BTX Total	BTX Total	Log lb/MMBtu	Di,O2>13%	6	-2.83E+00	1.60E-01	0.95	Gas,4S,Rich	4	-1.87E+00	4.15E-02	1.00	Yes
RICE	BTX Total	BTX Total	Log lb/MMBtu	Gas,2S,Lean	5	-2.03E+00	2.81E-01	1.00	Gas,4S,Lean	20	-2.75E+00	2.34E-01	1.00	Yes
RICE	BTX Total	BTX Total	Log lb/MMBtu	Gas,2S,Lean	5	-2.03E+00	2.81E-01	1.00	Gas,4S,Rich	4	-1.87E+00	4.15E-02	1.00	No
RICE	BTX Total	BTX Total	Log lb/MMBtu	Gas,4S,Lean	20	-2.75E+00	2.34E-01	1.00	Gas,4S,Rich	4	-1.87E+00	4.15E-02	1.00	Yes
RICE	POM Total	Anthracene	lb/MMBtu	Di,O2<13%	3	1.20E-06	7.48E-07	1.00	Di,O2>13%	6	1.86E-06	8.40E-07	1.00	No
RICE	POM Total	Anthracene	lb/MMBtu	Di,O2<13%	3	1.20E-06	7.48E-07	1.00	Gas,2S,Lean	2	4.29E-06	2.91E-06	1.00	No
RICE	POM Total	Anthracene	lb/MMBtu	Di,O2<13%	3	1.20E-06	7.48E-07	1.00	Gas,4S,Lean	3	2.44E-07	1.01E-07	1.00	No
RICE	POM Total	Anthracene	lb/MMBtu	Di,O2>13%	6	1.86E-06	8.40E-07	1.00	Gas,2S,Lean	2	4.29E-06	2.91E-06	1.00	No
RICE	POM Total	Anthracene	lb/MMBtu	Di,O2>13%	6	1.86E-06	8.40E-07	1.00	Gas,4S,Lean	3	2.44E-07	1.01E-07	1.00	Yes
RICE	POM Total	Anthracene	lb/MMBtu	Gas,2S,Lean	2	4.29E-06	2.91E-06	1.00	Gas,4S,Lean	3	2.44E-07	1.01E-07	1.00	No
RICE	POM Total	Anthracene	Log lb/MMBtu	Di,O2<13%	3	-5.98E+00	2.66E-01	1.00	Di,O2>13%	6	-5.83E+00	4.05E-01	1.00	No
RICE	POM Total	Anthracene	Log lb/MMBtu	Di,O2<13%	3	-5.98E+00	2.66E-01	1.00	Gas,2S,Lean	2	-5.42E+00	3.21E-01	1.00	No
RICE	POM Total	Anthracene	Log lb/MMBtu	Di,O2<13%	3	-5.98E+00	2.66E-01	1.00	Gas,4S,Lean	3	-6.64E+00	1.82E-01	1.00	Yes
RICE	POM Total	Anthracene	Log lb/MMBtu	Di,O2>13%	6	-5.83E+00	4.05E-01	1.00	Gas,2S,Lean	2	-5.42E+00	3.21E-01	1.00	No
RICE	POM Total	Anthracene	Log lb/MMBtu	Di,O2>13%	6	-5.83E+00	4.05E-01	1.00	Gas,4S,Lean	3	-6.64E+00	1.82E-01	1.00	Yes
RICE	POM Total	Anthracene	Log lb/MMBtu	Gas,2S,Lean	2	-5.42E+00	3.21E-01	1.00	Gas,4S,Lean	3	-6.64E+00	1.82E-01	1.00	Yes
RICE	POM Total	Benzo(a)pyrene	lb/MMBtu	Di,O2<13%	3	2.49E-07	9.94E-08	0.45	Di,O2>13%	3	1.03E-08	1.94E-10	0.00	Yes
RICE	POM Total	Benzo(a)pyrene	lb/MMBtu	Di,O2<13%	3	2.49E-07	9.94E-08	0.45	Gas,4S,Lean	3	3.38E-08	1.35E-08	0.76	Yes
RICE	POM Total	Benzo(a)pyrene	lb/MMBtu	Di,O2>13%	3	1.03E-08	1.94E-10	0.00	Gas,4S,Lean	3	3.38E-08	1.35E-08	0.76	Yes
RICE	POM Total	Benzo(a)pyrene	Log lb/MMBtu	Di,O2<13%	3	-6.63E+00	1.97E-01	0.45	Di,O2>13%	3	-7.99E+00	8.28E-03	0.00	Yes
RICE	POM Total	Benzo(a)pyrene	Log lb/MMBtu	Di,O2<13%	3	-6.63E+00	1.97E-01	0.45	Gas,4S,Lean	3	-7.49E+00	1.63E-01	0.76	Yes
RICE	POM Total	Benzo(a)pyrene	Log lb/MMBtu	Di,O2>13%	3	-7.99E+00	8.28E-03	0.00	Gas,4S,Lean	3	-7.49E+00	1.63E-01	0.76	Yes
RICE	POM Total	POM Total	lb/MMBtu	Di,O2<13%	3	2.06E-04	5.28E-06	0.99	Di,O2>13%	6	1.68E-04	6.81E-05	0.99	No
RICE	POM Total	POM Total	lb/MMBtu	Di,O2<13%	3	2.06E-04	5.28E-06	0.99	Gas,2S,Lean	2	2.40E-04	3.17E-06	0.98	Yes
RICE	POM Total	POM Total	lb/MMBtu	Di,O2<13%	3	2.06E-04	5.28E-06	0.99	Gas,4S,Lean	3	1.27E-04	8.10E-05	1.00	No
RICE	POM Total	POM Total	lb/MMBtu	Di,O2>13%	6	1.68E-04	6.81E-05	0.99	Gas,2S,Lean	2	2.40E-04	3.17E-06	0.98	No
RICE	POM Total	POM Total	lb/MMBtu	Di,O2>13%	6	1.68E-04	6.81E-05	0.99	Gas,4S,Lean	3	1.27E-04	8.10E-05	1.00	No
RICE	POM Total	POM Total	lb/MMBtu	Gas,2S,Lean	2	2.40E-04	3.17E-06	0.98	Gas,4S,Lean	3	1.27E-04	8.10E-05	1.00	No
RICE	POM Total	POM Total	Log lb/MMBtu	Di,O2<13%	3	-3.69E+00	1.12E-02	0.99	Di,O2>13%	6	-3.80E+00	1.73E-01	0.99	No
RICE	POM Total	POM Total	Log lb/MMBtu	Di,O2<13%	3	-3.69E+00	1.12E-02	0.99	Gas,2S,Lean	2	-3.62E+00	5.74E-03	0.98	Yes
RICE	POM Total	POM Total	Log lb/MMBtu	Di,O2<13%	3	-3.69E+00	1.12E-02	0.99	Gas,4S,Lean	3	-3.99E+00	4.05E-01	1.00	No
RICE	POM Total	POM Total	Log lb/MMBtu	Di,O2>13%	6	-3.80E+00	1.73E-01	0.99	Gas,2S,Lean	2	-3.62E+00	5.74E-03	0.98	No
RICE	POM Total	POM Total	Log lb/MMBtu	Di,O2>13%	6	-3.80E+00	1.73E-01	0.99	Gas,4S,Lean	3	-3.99E+00	4.05E-01	1.00	No
RICE	POM Total	POM Total	Log lb/MMBtu	Gas,2S,Lean	2	-3.62E+00	5.74E-03	0.98	Gas,4S,Lean	3	-3.99E+00	4.05E-01	1.00	No
Turbine	Aldehyde Total	Aldehyde Total	lb/MMBtu	NG,DB=N	3	5.77E-05	2.29E-05	0.71	RFG or DB=Y	6	3.87E-04	2.65E-04	1.00	No
Turbine	Aldehyde Total	Aldehyde Total	Log lb/MMBtu	NG,DB=N	3	-4.27E+00	1.94E-01	0.71	RFG or DB=Y	6	-3.56E+00	4.36E-01	1.00	Yes
Turbine	Aldehyde Total	Formaldehyde	lb/MMBtu	NG,DB=N	3	1.99E-05	5.94E-06	0.45	RFG or DB=Y	9	2.26E-03	2.85E-03	1.00	No
Turbine	Aldehyde Total	Formaldehyde	Log lb/MMBtu	NG,DB=N	3	-4.71E+00	1.21E-01	0.45	RFG or DB=Y	9	-3.12E+00	7.58E-01	1.00	Yes
Turbine	POM Total	Anthracene	lb/MMBtu	NG,DB=N	6	3.43E-08	5.80E-08	1.00	RFG or DB=Y	3	2.48E-08	8.43E-09	1.00	No
Turbine	POM Total	Anthracene	Log lb/MMBtu	NG,DB=N	6	-7.90E+00	6.32E-01	1.00	RFG or DB=Y	3	-7.62E+00	1.45E-01	1.00	No
Turbine	POM Total	POM Total	lb/MMBtu	NG,DB=N	6	9.06E-07	2.54E-07	0.98	RFG or DB=Y	3	3.87E-05	2.64E-06	1.00	Yes
Turbine	POM Total	POM Total	Log lb/MMBtu	NG,DB=N	6	-6.06E+00	1.31E-01	0.98	RFG or DB=Y	3	-4.41E+00	2.98E-02	1.00	Yes

SECTION 9
GRAPHICAL PRESENTATION OF SELECTED HAPS

Description of Figures

One figure is presented for each system (boiler, heater, RICE, and gas turbine) and air toxic. One data set is provided per test condition. A data set includes three or more sampling runs conducted under a defined set of conditions. The minimum, mean, and maximum emission factor expressed in pounds per million Btu (lb/MMBtu) is shown for each data set. For each data set a detection ratio also is provided. The detection ratio is the ratio of the detected emission factors to total of detected and not detected emission factors in a data set. Thus a detection ratio of 1 indicates all of the emissions data in a data set was detected and a detection ratio of zero indicates all of the data in data set is not detected. When an emission result was not detect the full analytical detection limit was used to calculate the emission factor. The label on the x-axis describes the test condition. Data sets are sorted from low to high by fuel type.

The figures in Section 9 illustrate the variability, relative magnitude, and data quality of emissions from different data sets and data groups. A data group includes data sets of the same fuel type. Data sets which have been excluded from the statistical analysis are marked NC for not used in statistical comparisons. In all cases, these sets were excluded for two reasons: (1) all information in the data set was not detected; and (2) the mean of the detection limits is higher than the mean of detected data from data sets with the same fuel phase (liquid or gas). For example, in Figure 9-3 one data set was marked as NC and not included in the statistical analysis. The mean of the emission factors in this data set is higher than the mean of other data sets with detected results for liquid phase fuels (crude oil and fuel oil No. 6). Comparisons between a data set composed of non-detects only and a lower magnitude data set with detect points is not valid. The magnitude of the data set composed of non-detects may actually be lower than the data set composed of detects since the actual emission level of non-detects is between zero and the detection limit. Thus the conclusion that the data set with non-detects is higher than the data set with detects may not be true. However, if the data set with non-detects is lower than the data set with detects, we can make the conclusion detect data set is higher than the non-detect data set.

ACRONYMS

Aldehyde Total: Acetaldehyde, Formaldehyde
APCD: Air Pollution Control Device
BC: Blow Cycle
BTX Total: Benzene, Toluene, Xylene
CB: Conventional Burner
CG: Casing Gas
CO: Crude Oil
COC: CO Oxidation Catalyst
CVRG: Case Vapors Recovered Gas
DB: Duct Burner
Di: Diesel
F: Failed calculation check
FF: Fabric Filter
FG: Field Gas
FO: Fuel Oil No.6
ICE (or RICE): Reciprocating Internal Combustion Engine
LNB: Low NOx Burner
LP: Liquid Petroleum
MMBtu: Million British Thermal Units
NC: Not used in statistical comparison
ND: Not enough data to check calculations
NG: Natural Gas
NR: Calculation check not required because calculations checked for another device in report
Oxy : Oxygen Level
P: Passed calculation check
PAH: Polycyclic Aromatic Hydrocarbon
PC: Post Control
PO: Pipeline Oil
POM Total: Acenaphthene, Acenaphthylene, Anthracene, Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(e)pyrene, Benzo(g,h,i)perylene, Benzo(k)fluoranthene, Chrysene, Dibenz(a,h)anthracene, Fluoranthene, Fluorene, Indeno(1,2,3-cd)pyrene, Naphthalene, Phenanthrene, Pyrene
POM: Polycyclic Organic Matter
RICE (or ICE): Reciprocating Internal Combustion Engine
RG: Refinery Gas
SCR: Selective Catalytic Reduction
Scrub: SO2 Scrubber
SD: Significant Difference at 95% Confidence
TO: Thermal Oxidizer
VOC: Volatile Organic Compound

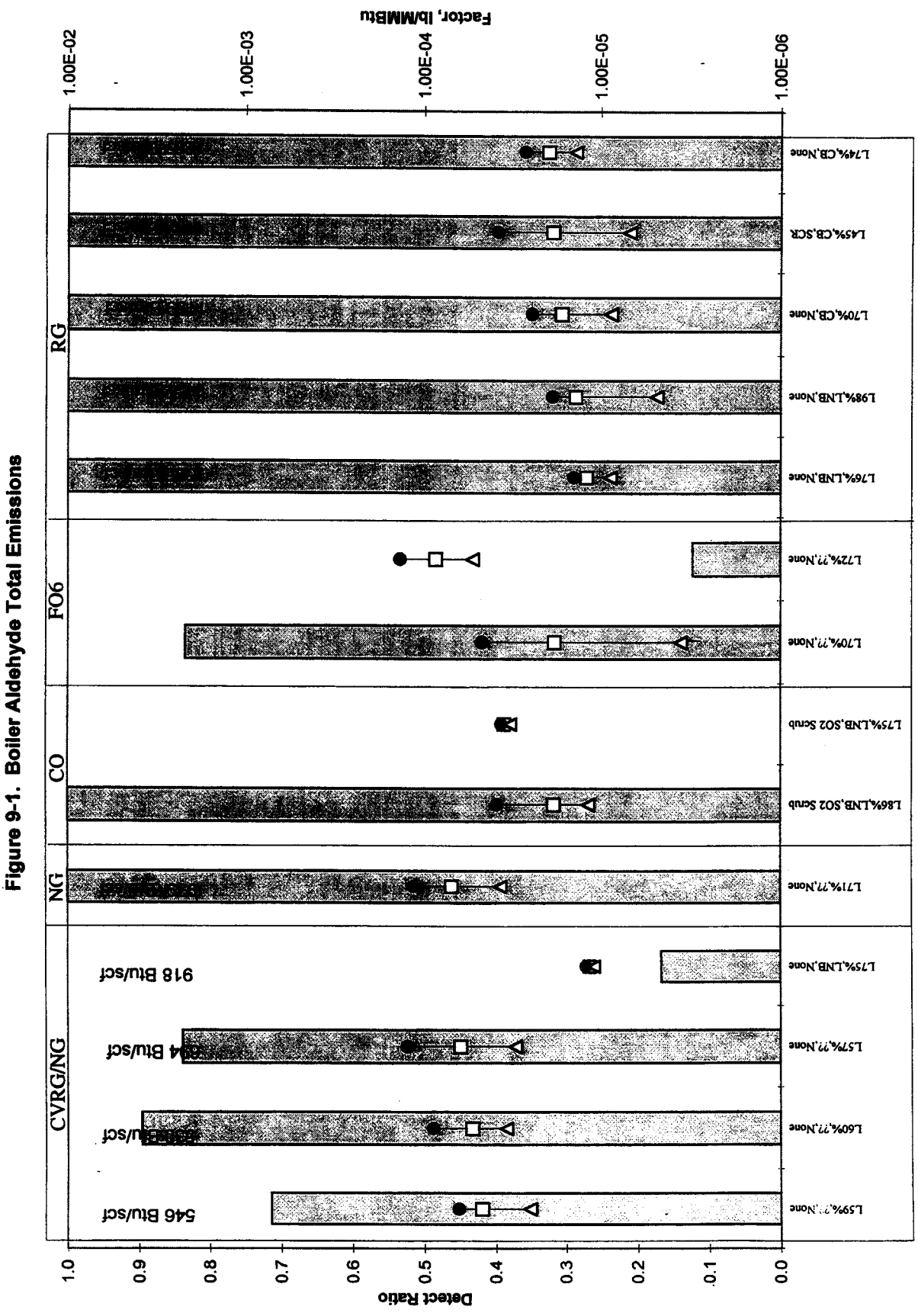


Figure 9-1. Boiler Aldehyde Total Emissions

Detect Ratio: Ratio of Detect to Total of Detect and Non Detect Emissions Data
Label: x,y,z where x is Load, y is Burner Type and z is Post Combustion APCD
NC: Not used in statistical comparison

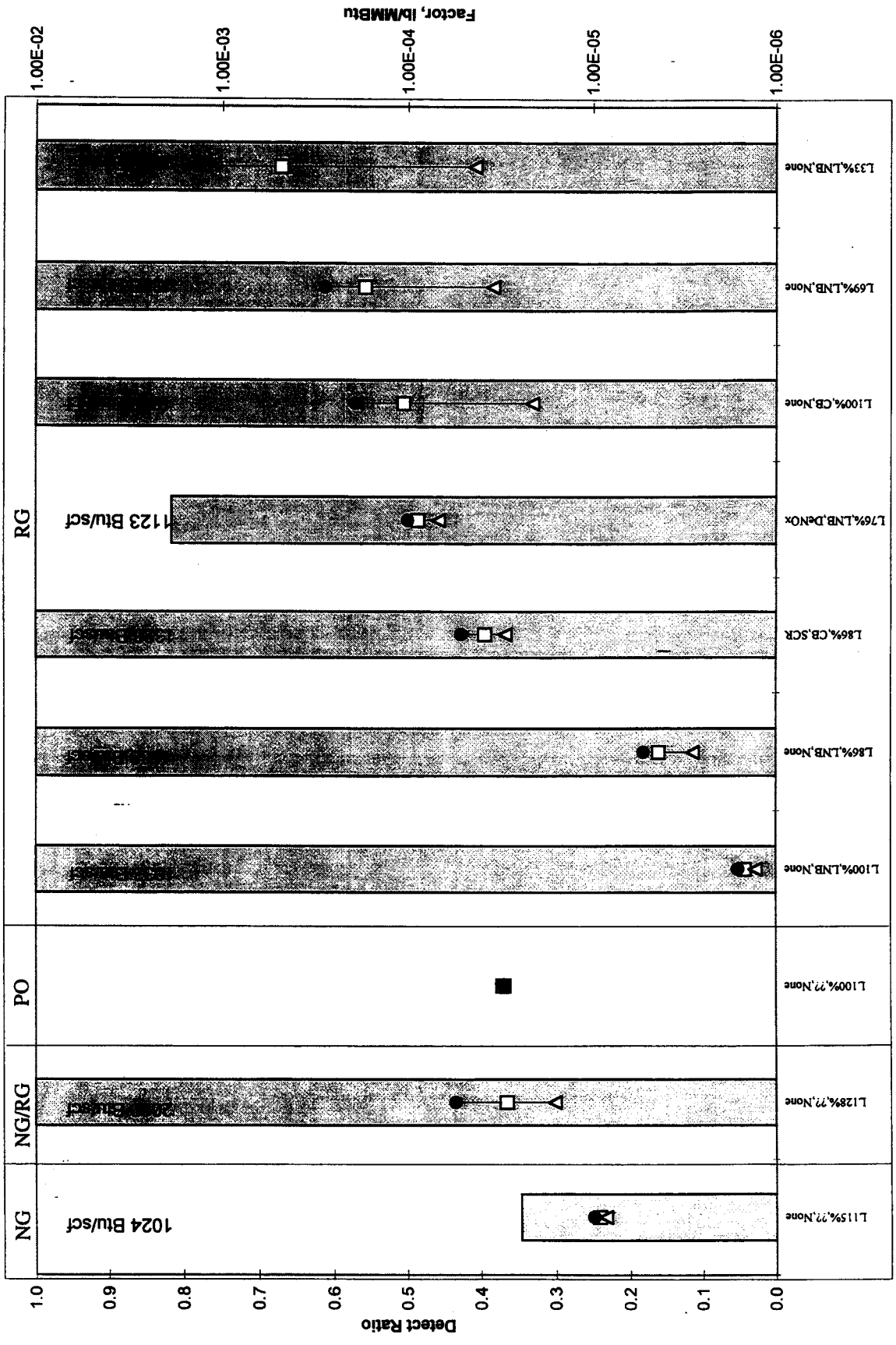


Figure 9-2. Heater Aldehyde Total Emissions

Detect Ratio: Ratio of Detect to Total of Detect and Non Detect Emissions Data
Label: x,y,z where x is Load, y is Burner Type and z is Post Combustion APCD
NC: Not used in statistical comparison

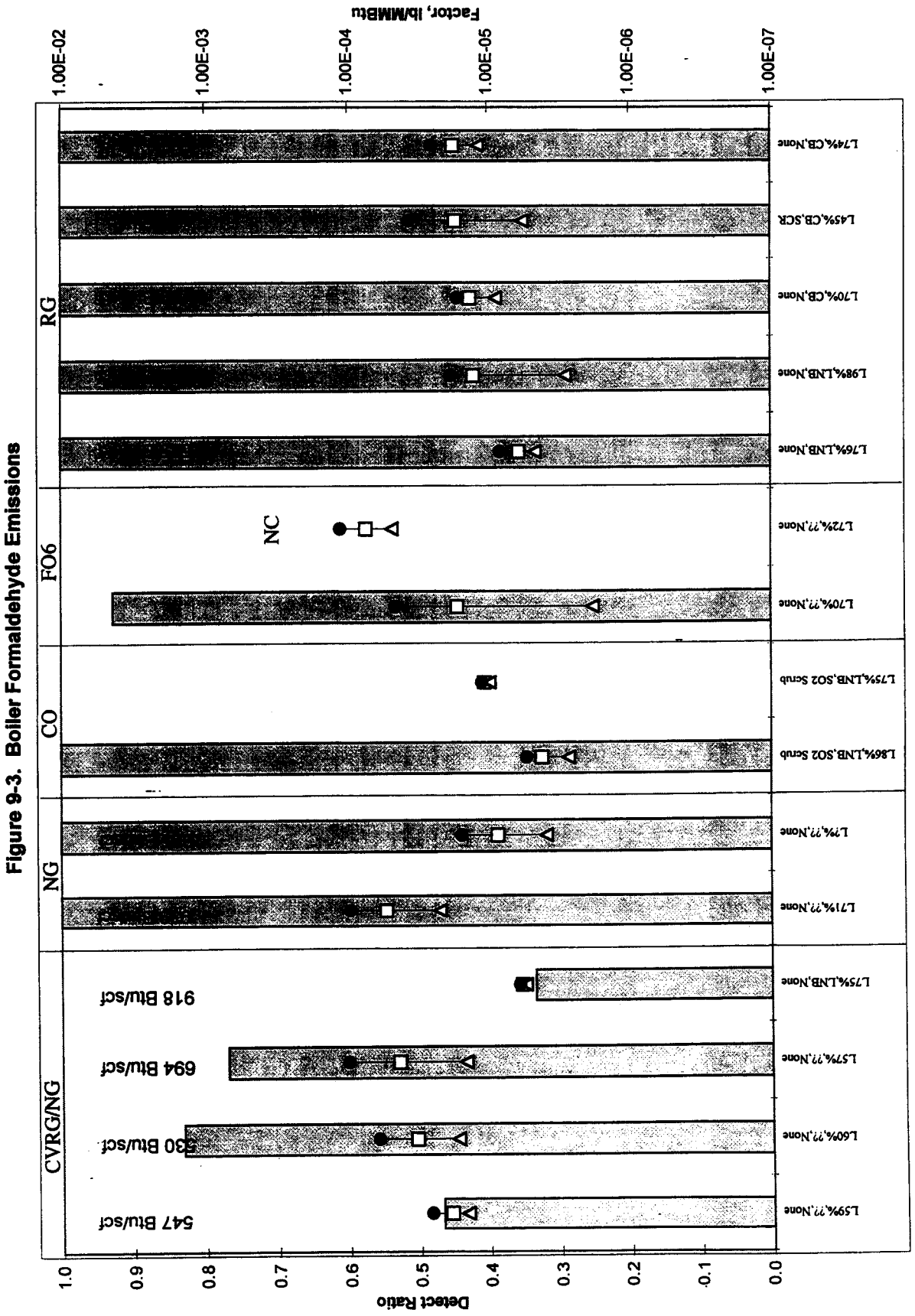


Figure 9-3. Boiler Formaldehyde Emissions

Detect Ratio: Ratio of Detect to Total of Detect and Non Detect Emissions Data
Label: x,y,z where x is Load, y is Burner Type and z is Post Combustion APCD
NC: Not used in statistical comparison

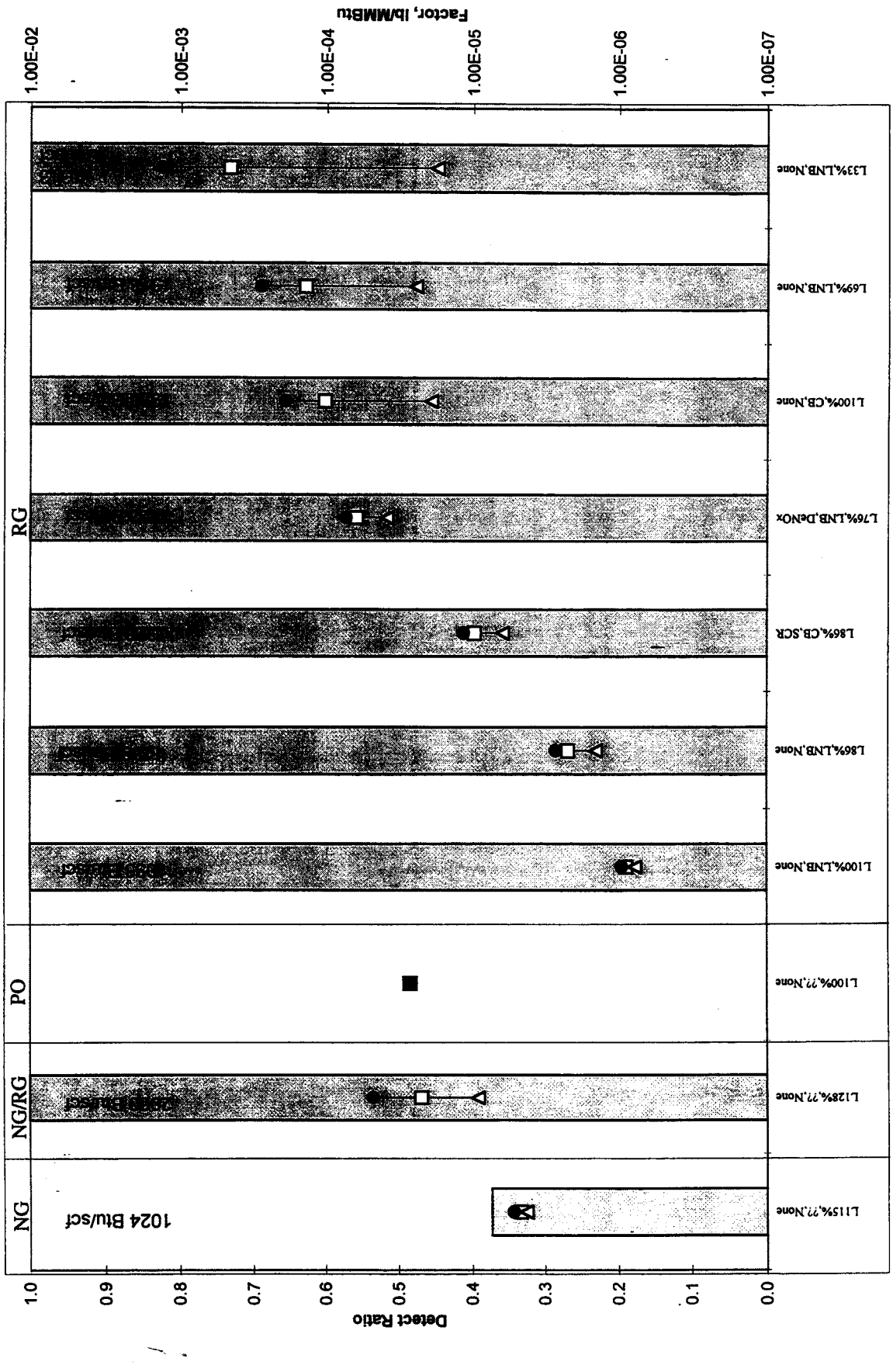
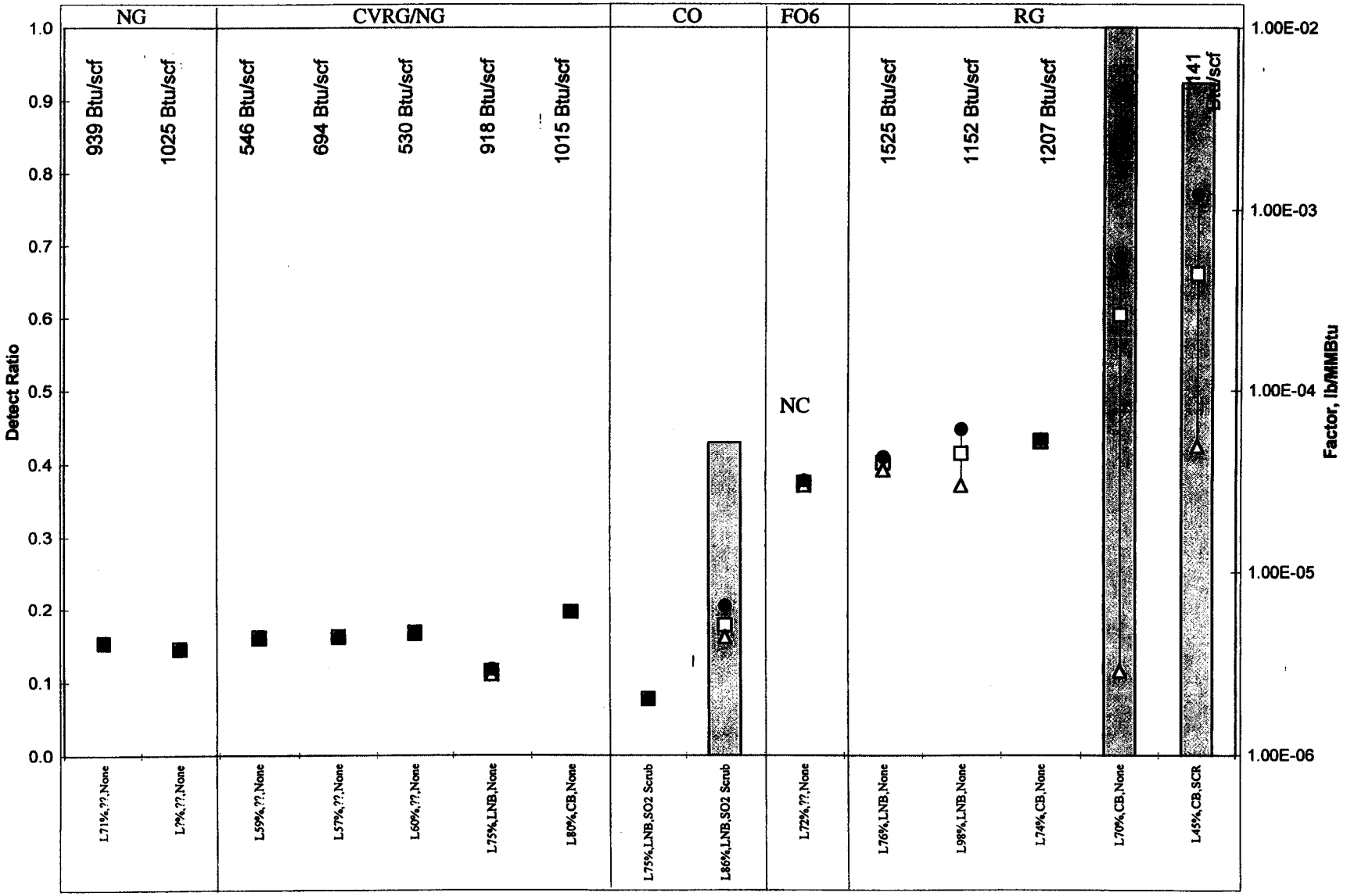


Figure 9-4. Heater Formaldehyde Emissions

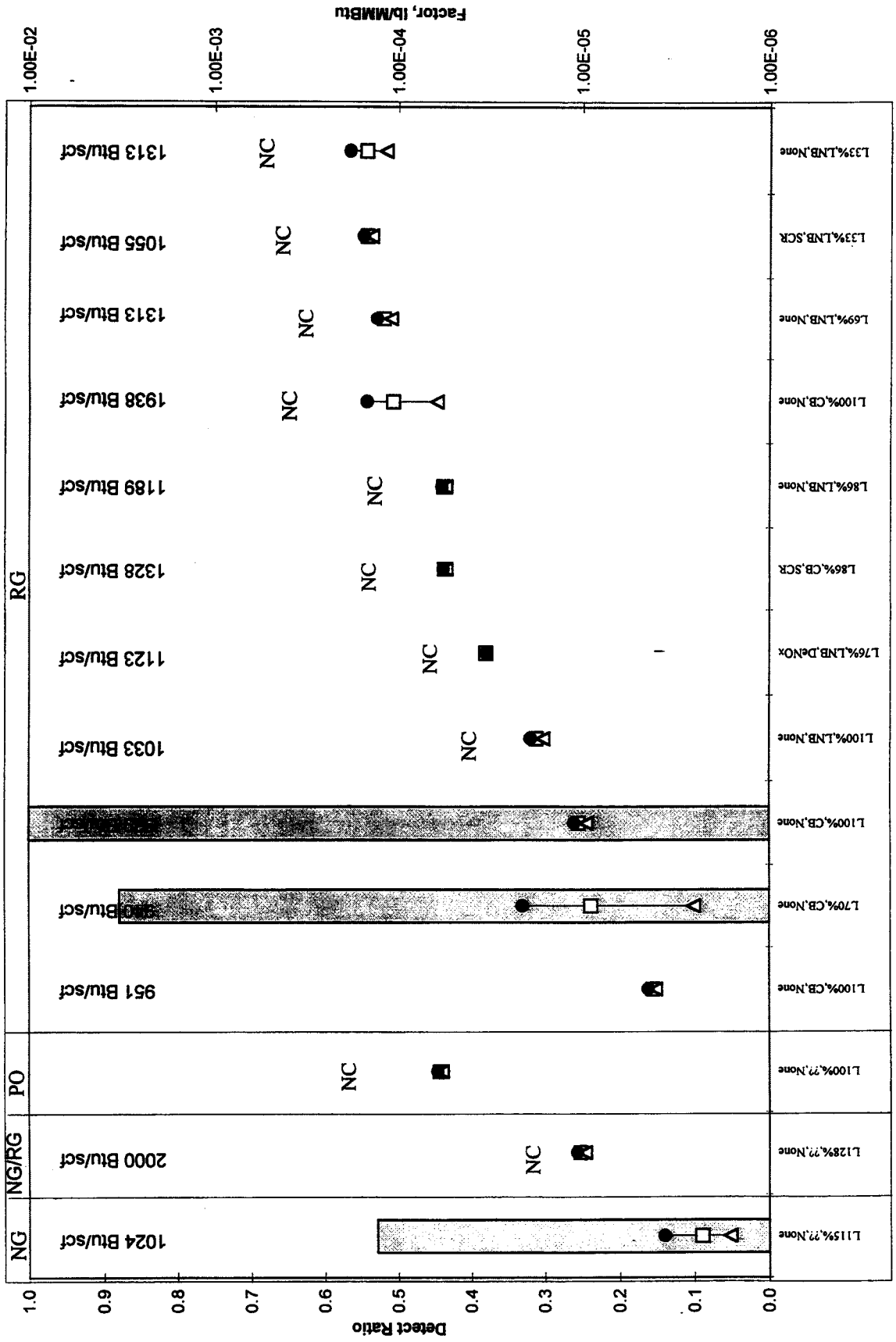
Detect Ratio: Ratio of Detect to Total of Detect and Non Detect Emissions Data
Label: x,y,z where x is Load, y is Burner Type and z is Post Combustion APCD
NC: Not used in statistical comparison

Figure 9-5. Boiler Benzene Emissions



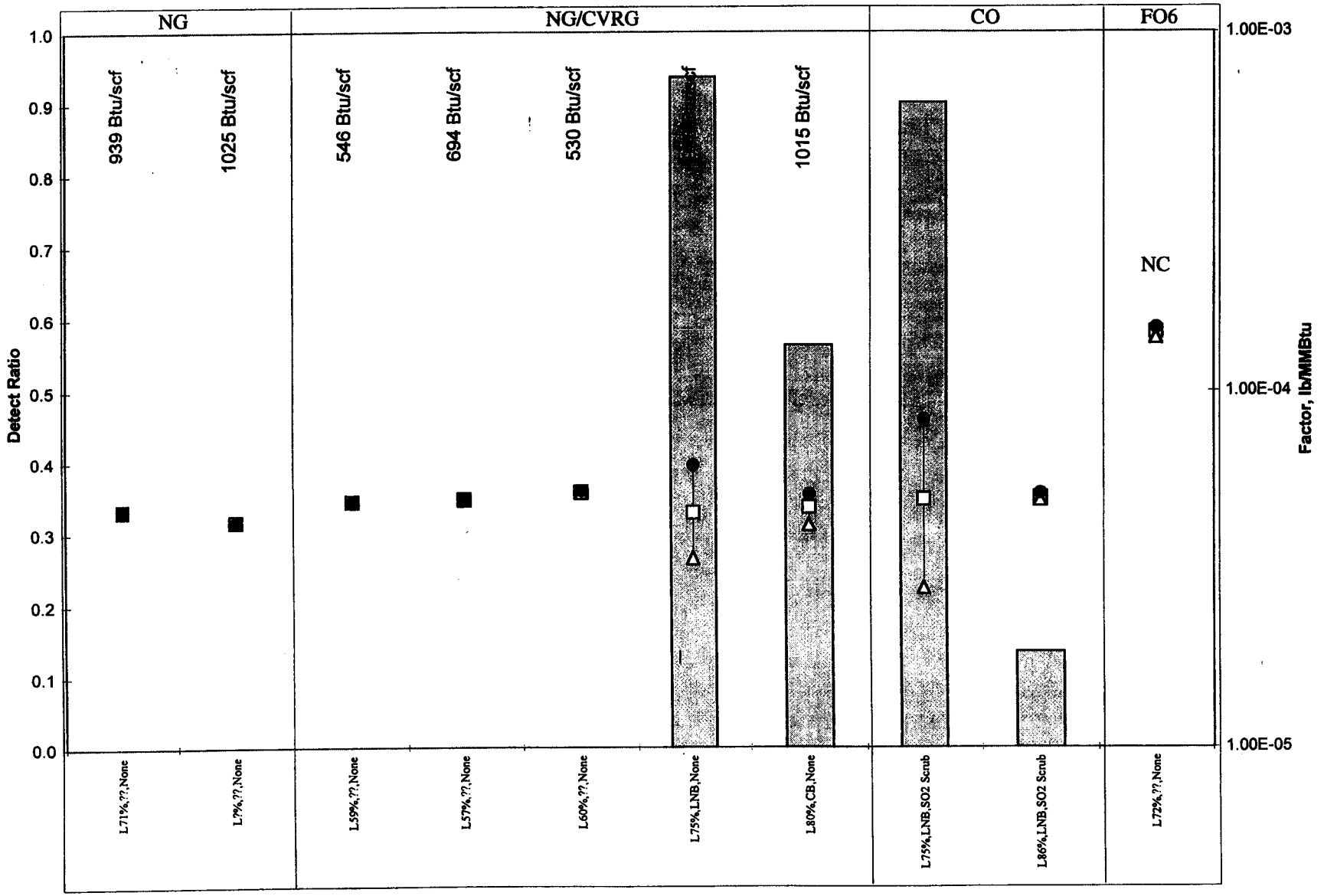
Detect Ratio: Ratio of Detect to Total of Detect and Non Detect Emissions Data
Label: x,y,z where x is Load, y is Burner Type and z is Post Combustion APCD
NC: Not used in statistical comparison

Figure 9-6. Heater Benzene Emissions



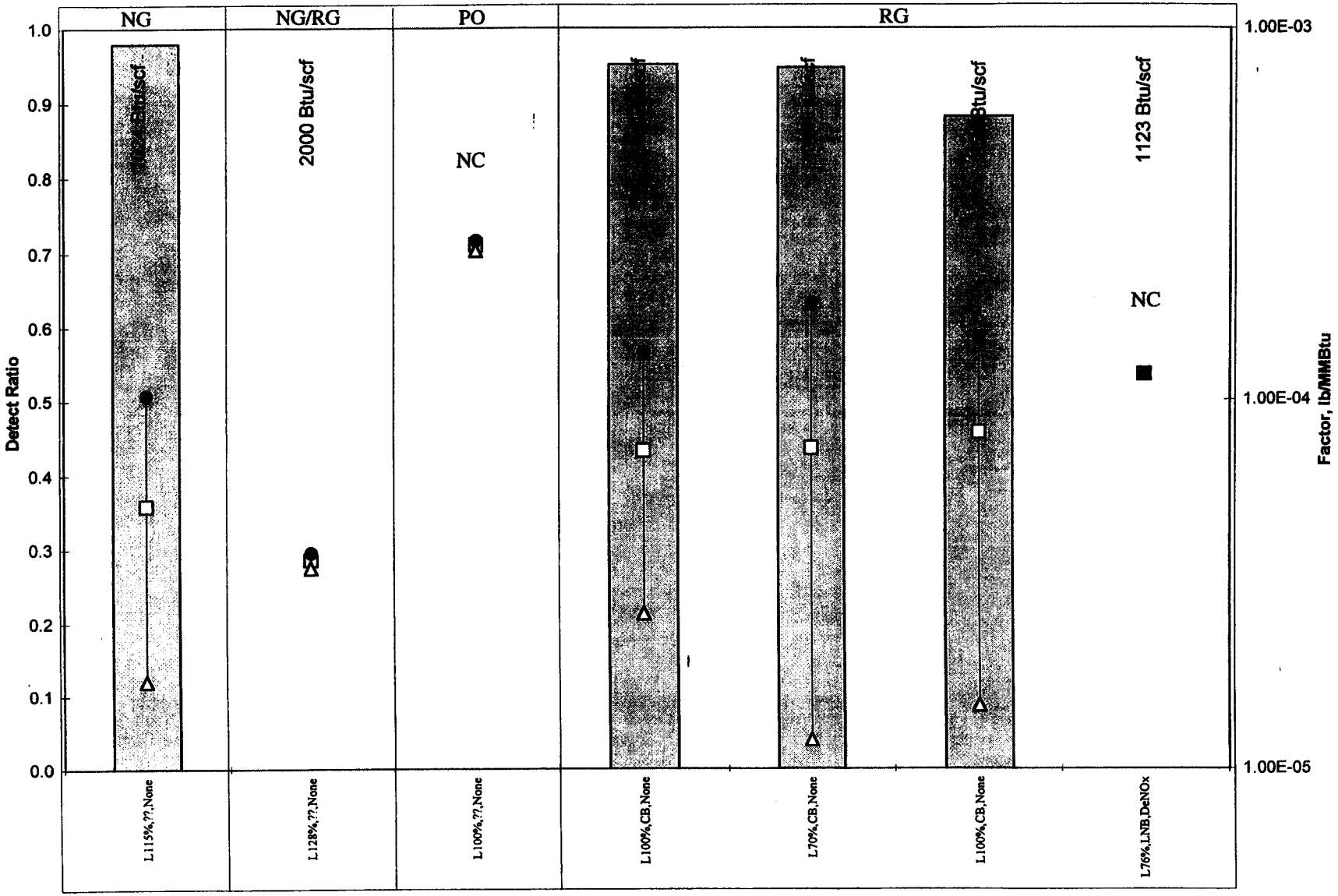
Detect Ratio: Ratio of Detect to Total of Detect and Non Detect Emissions Data
Label: x,y,z where x is Load, y is Burner Type and z is Post Combustion APCD
NC: Not used in statistical comparison

Figure 9-7. Boiler BTX Total Emissions



Detect Ratio: Ratio of Detect to Total of Detect and Non Detect Emissions Data
Label: x,y,z where x is Load, y is Burner Type and z is Post Combustion APCD
NC: Not used in statistical comparison

Figure 9-8. Heater BTX Total Emissions



Detect Ratio: Ratio of Detect to Total of Detect and Non Detect Emissions Data
Label: x,y,z where x is Load, y is Burner Type and z is Post Combustion APCD
NC: Not used in statistical comparison

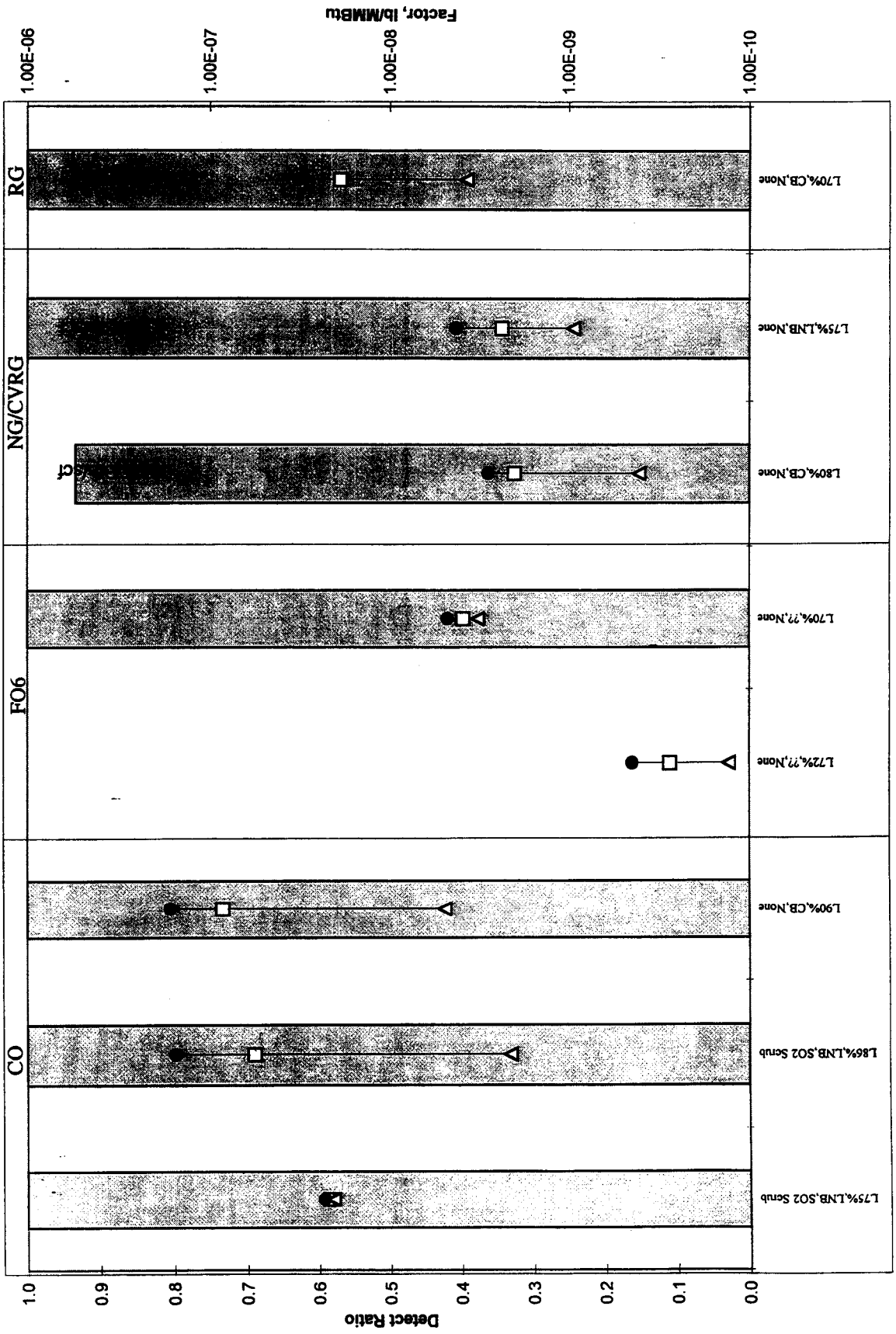


Figure 9-9. Boiler Anthracene Emissions

Detect Ratio: Ratio of Detect to Total of Detect and Non Detect Emissions Data
Label: x,y,z where x is Load, y is Burner Type and z is Post Combustion APCD
NC: Not used in statistical comparison

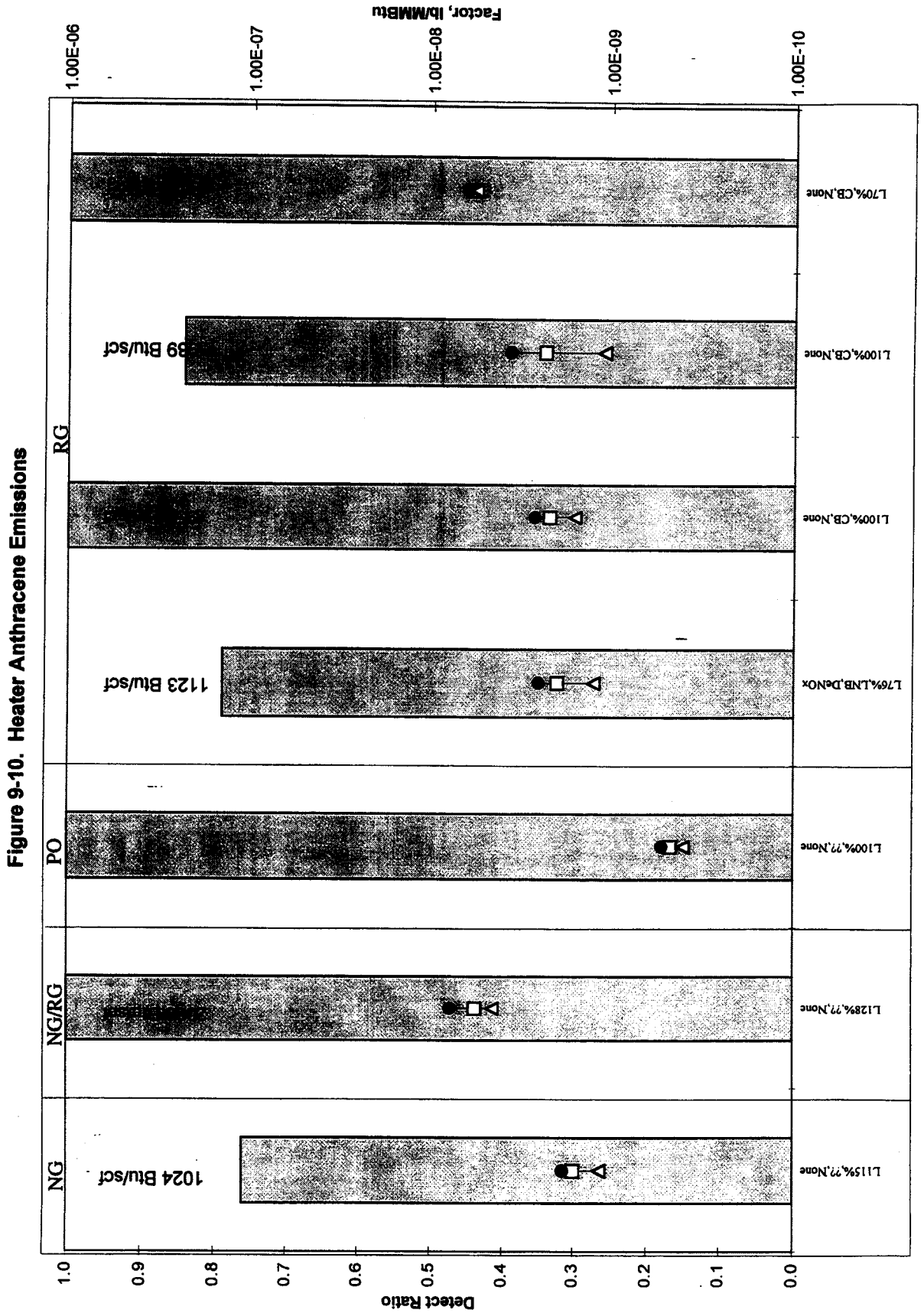
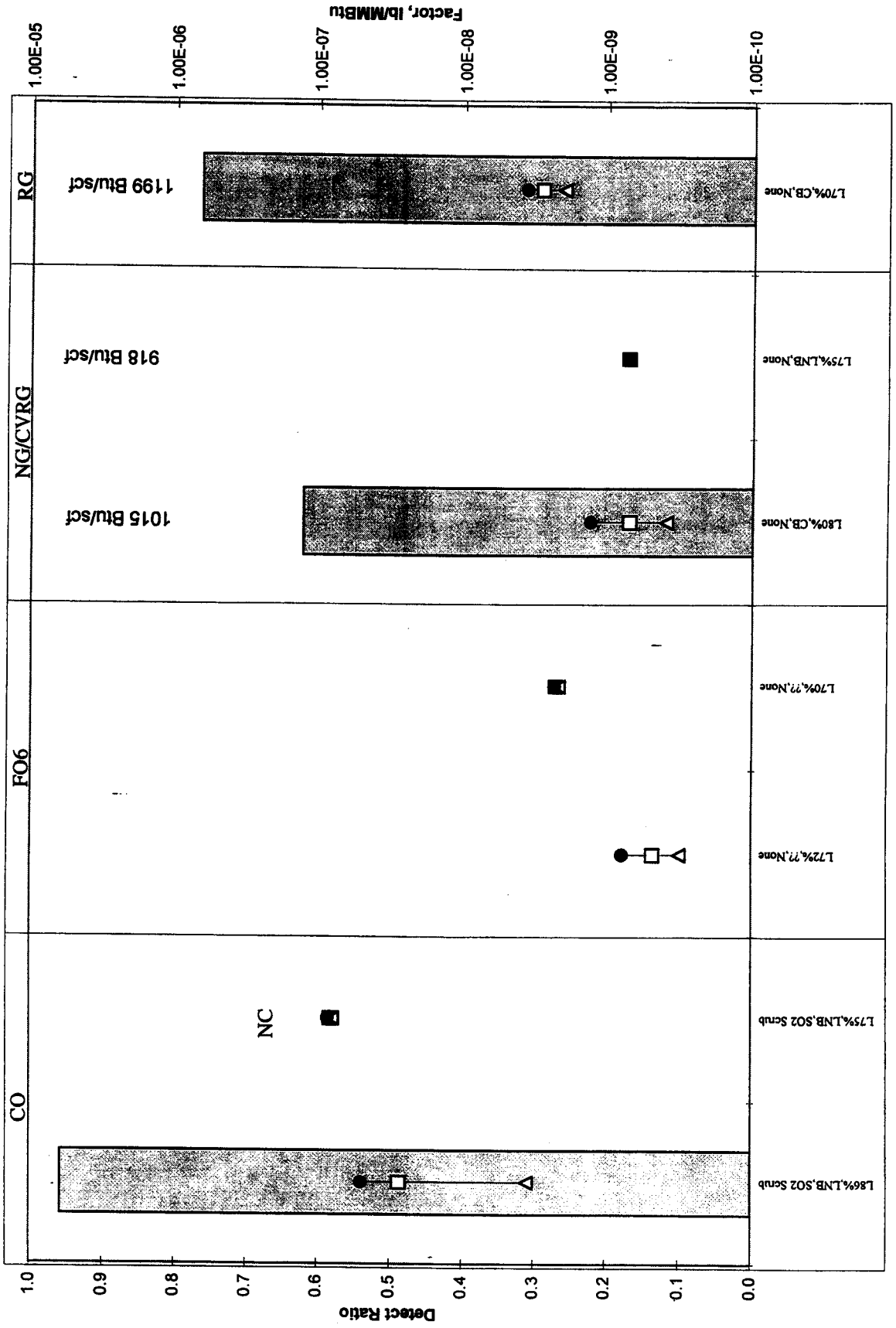


Figure 9-10. Heater Anthracene Emissions

Detect Ratio: Ratio of Detect to Total of Detect and Non Detect Emissions Data
Label: x,y,z where x is Load, y is Burner Type and z is Post Combustion APCD
NC: Not used in statistical comparison

Figure 9-11. Boiler Benzo(a)pyrene Emissions



Detect Ratio: Ratio of Detect to Total of Detect and Non Detect Emissions Data
Label: x,y,z where x is Load, y is Burner Type and z is Post Combustion APCD
NC: Not used in statistical comparison

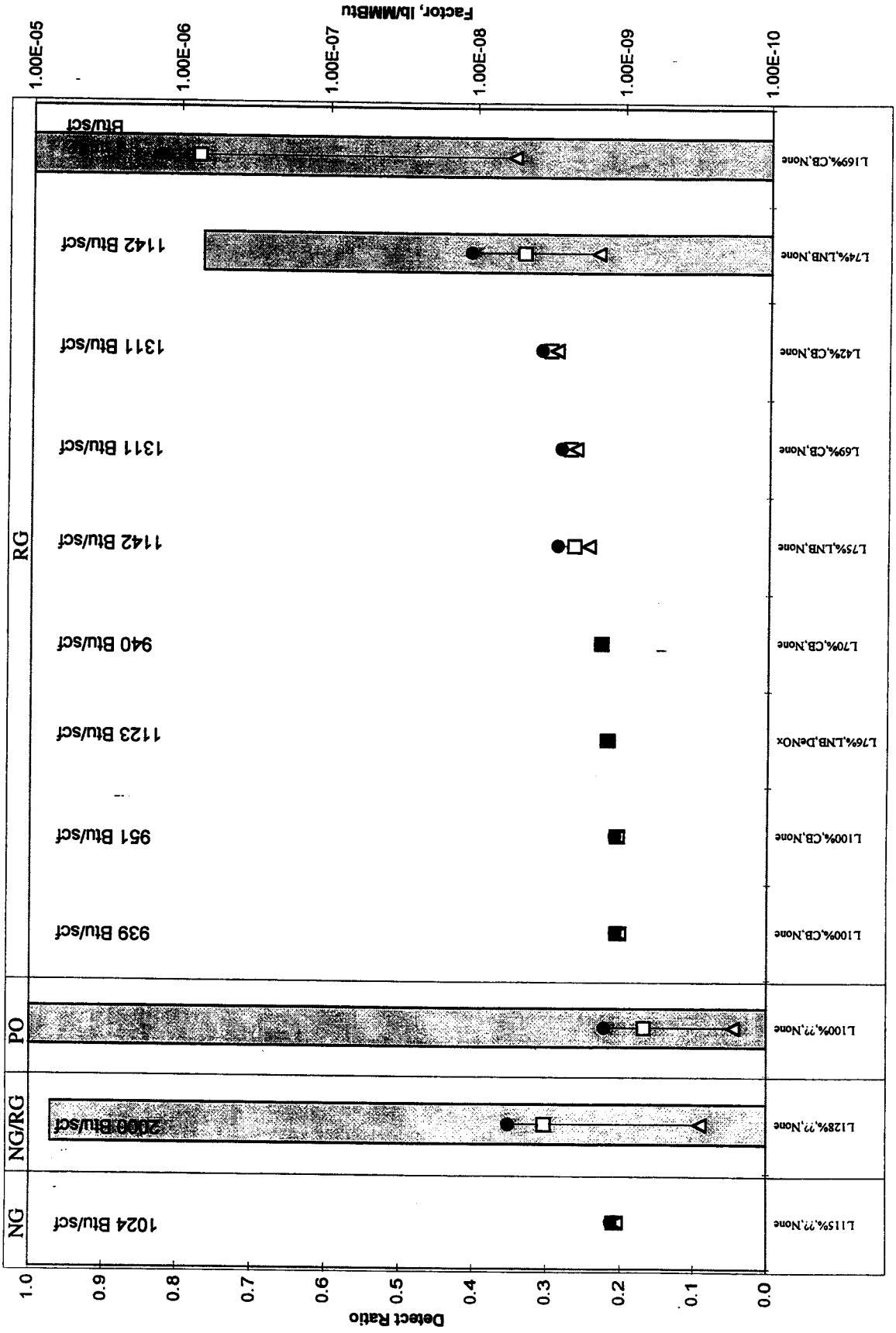
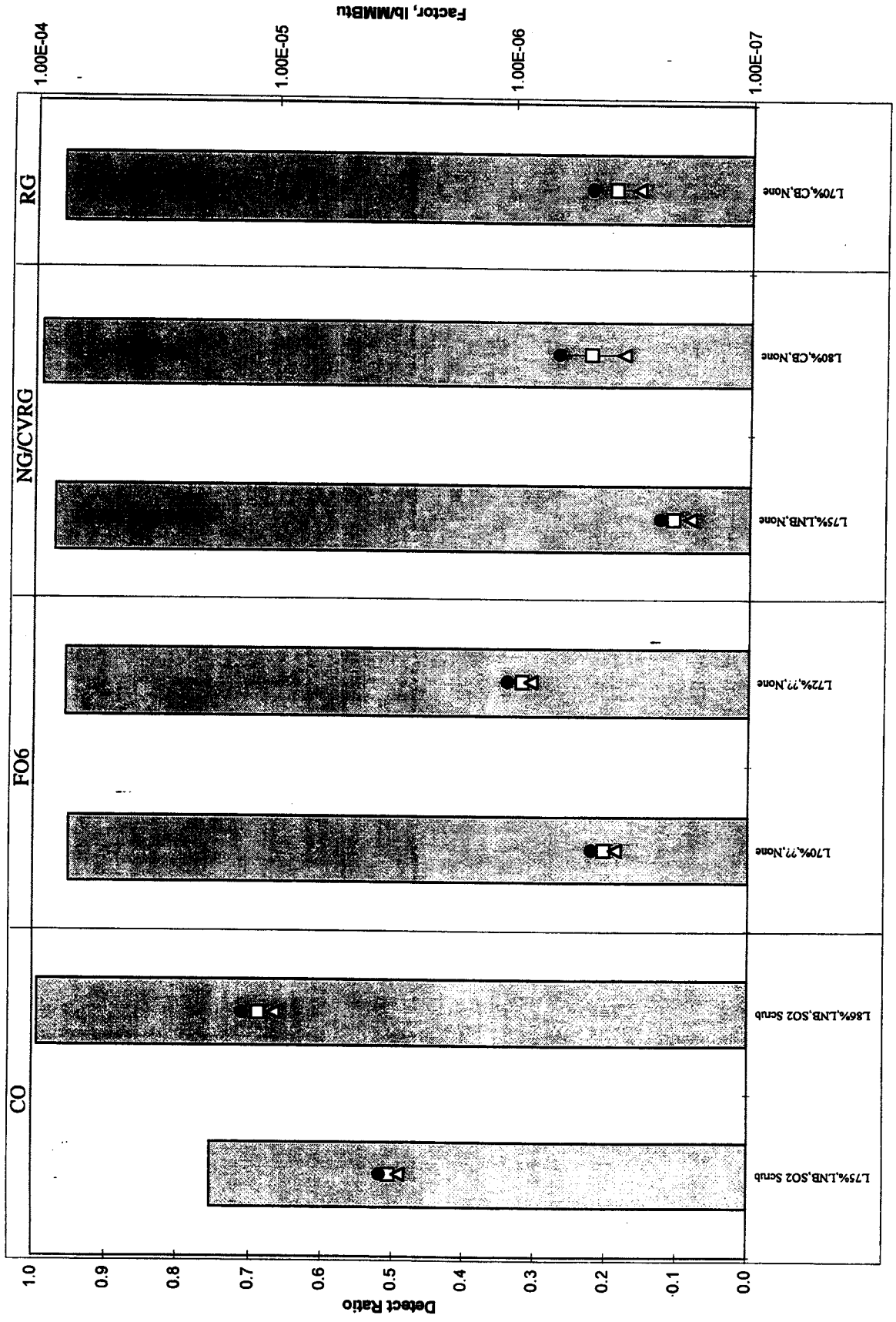


Figure 9-12. Heater Benzo(a)pyrene Emissions

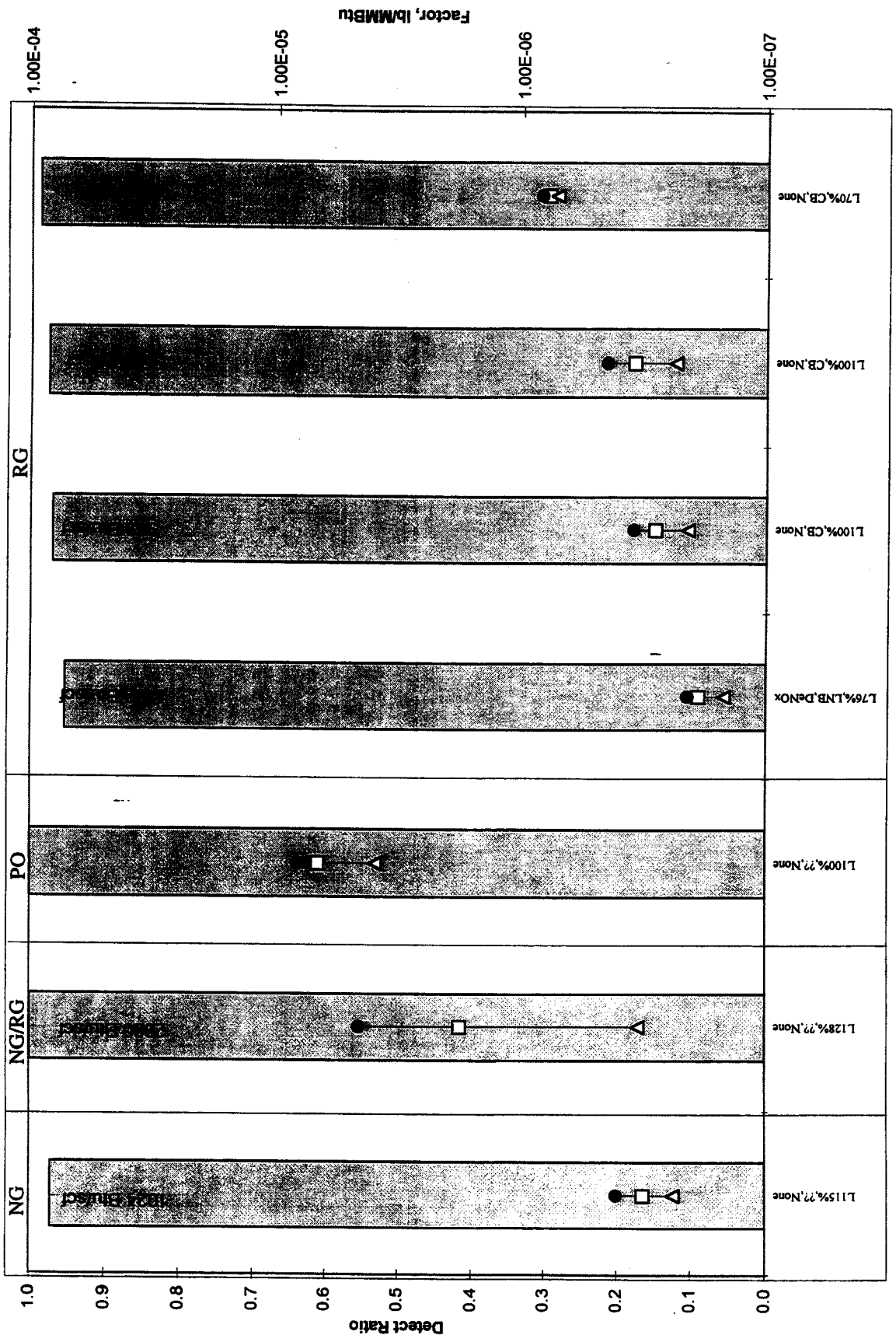
Detect Ratio: Ratio of Detect to Total of Detect and Non Detect Emissions Data
Label: x,y,z where x is Load, y is Burner Type and z is Post Combustion APCD
NC: Not used in statistical comparison

Figure 9-13. Boiler POM Total Emissions



Detect Ratio: Ratio of Detect to Total of Detect and Non Detect Emissions Data
Label: x,y,z where x is Load, y is Burner Type and z is Post Combustion APCD
NC: Not used in statistical comparison

Figure 9-14. Heater POM Total Emissions



Detect Ratio: Ratio of Detect to Total of Detect and Non Detect Emissions Data
Label: x,y,z where x is Load, y is Burner Type and z is Post Combustion APCD
NC: Not used in statistical comparison

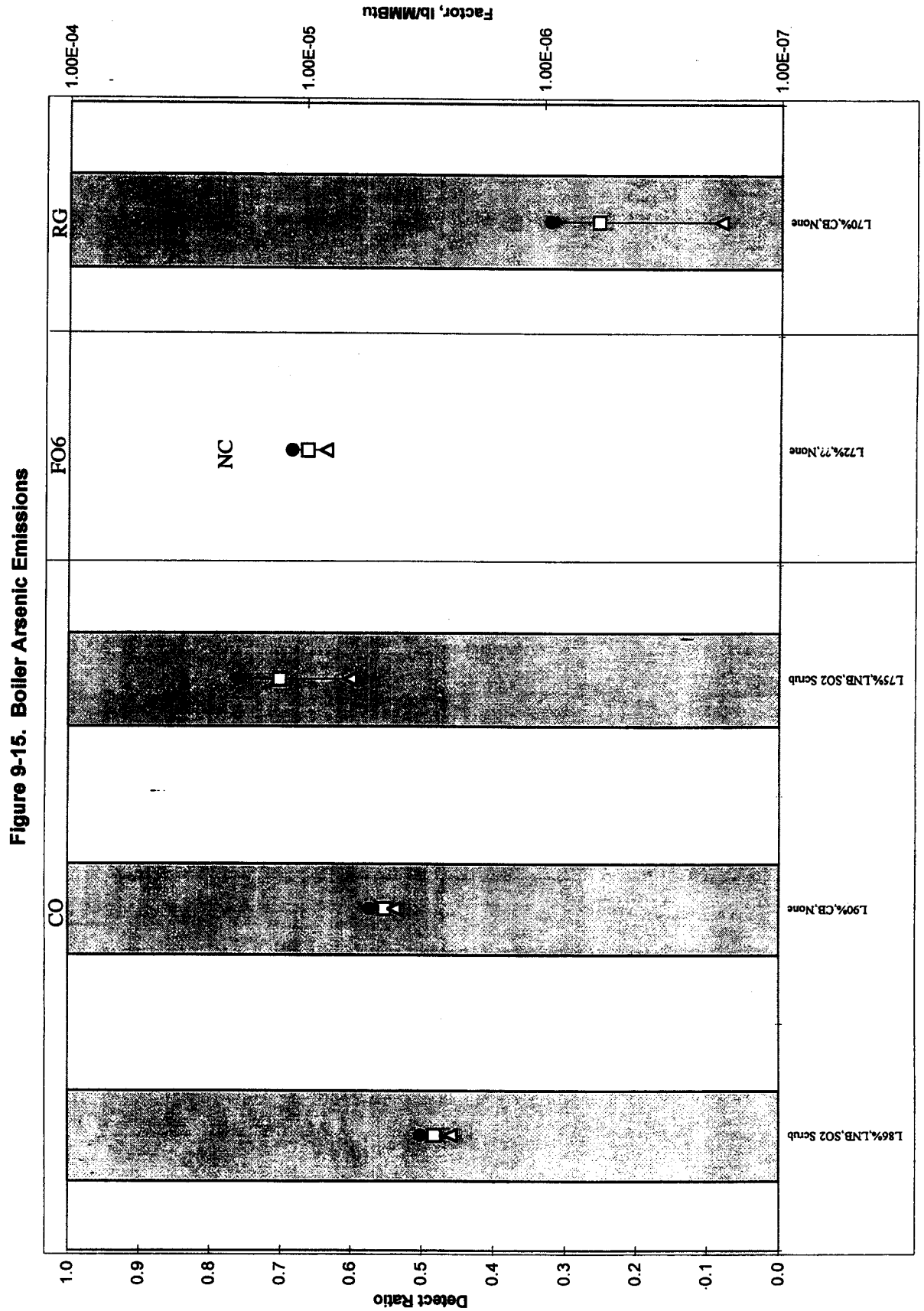
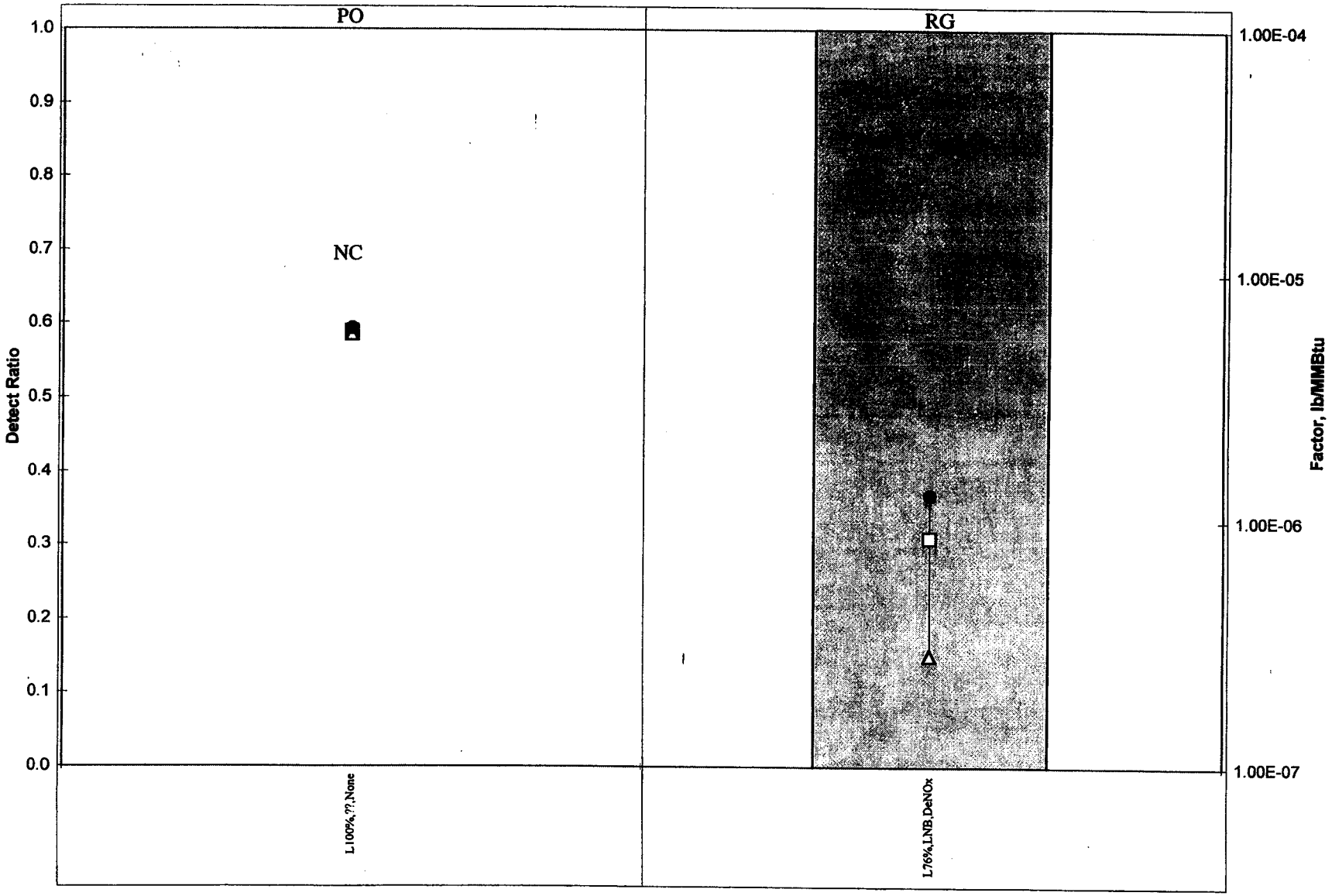


Figure 9-15. Boiler Arsenic Emissions

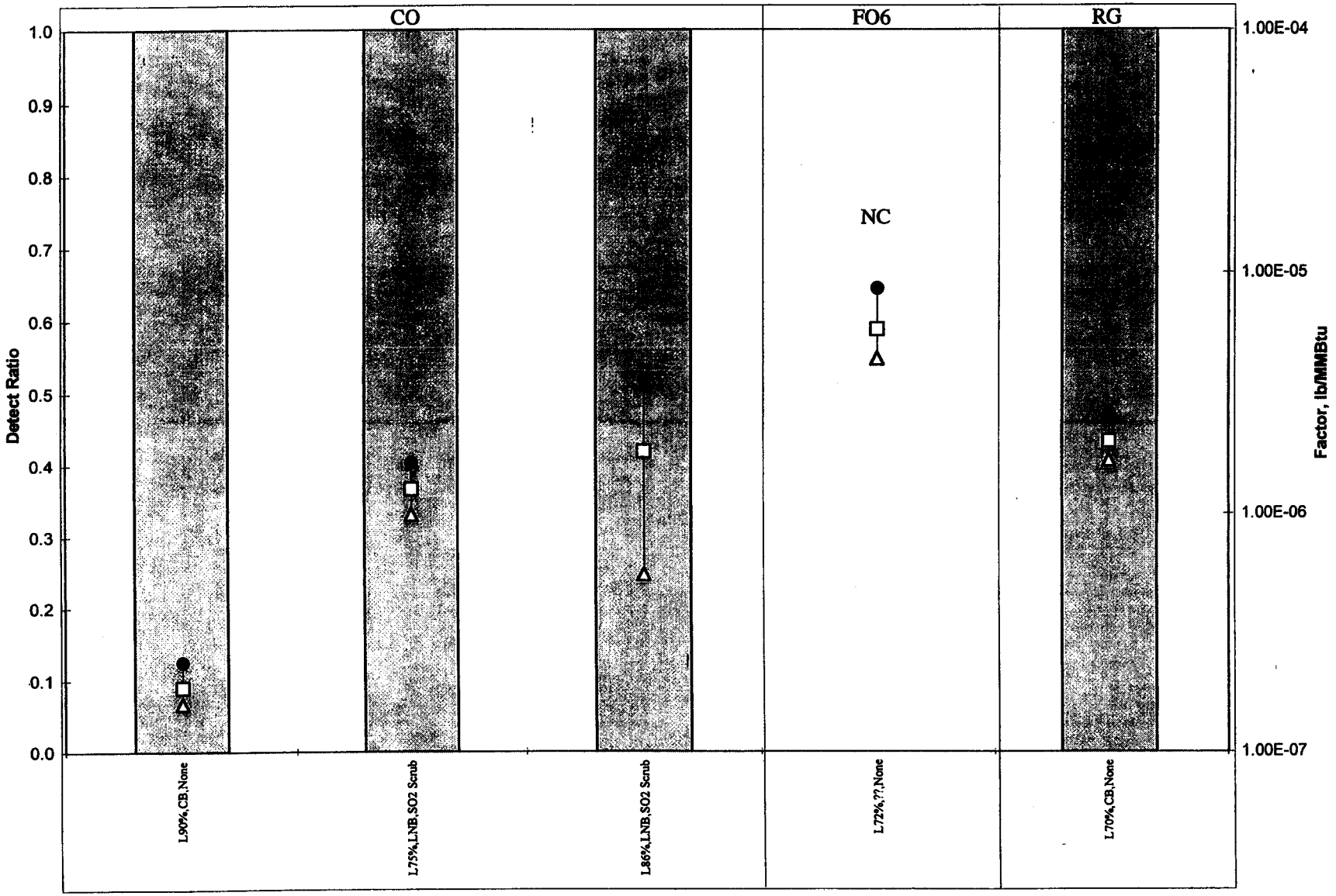
Detect Ratio: Ratio of Detect to Total of Detect and Non Detect Emissions Data
Label: x,y,z where x is Load, y is Burner Type and z is Post Combustion APCD
NC: Not used in statistical comparison

Figure 9-16. Heater Arsenic Emissions



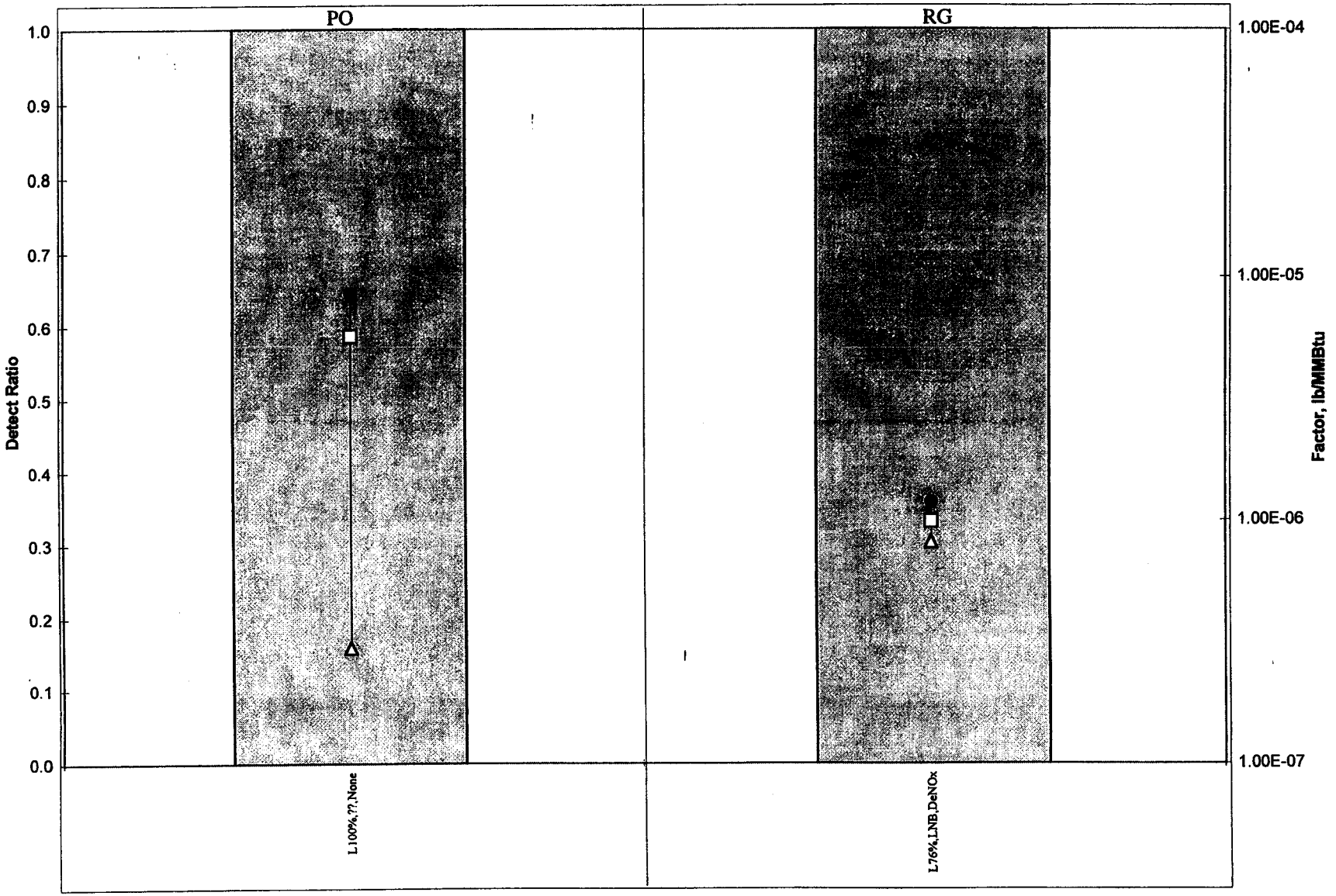
Detect Ratio: Ratio of Detect to Total of Detect and Non Detect Emissions Data
Label: x,y,z where x is Load, y is Burner Type and z is Post Combustion APCD
NC: Not used in statistical comparison

Figure 9-17. Boiler Cadmium Emissions



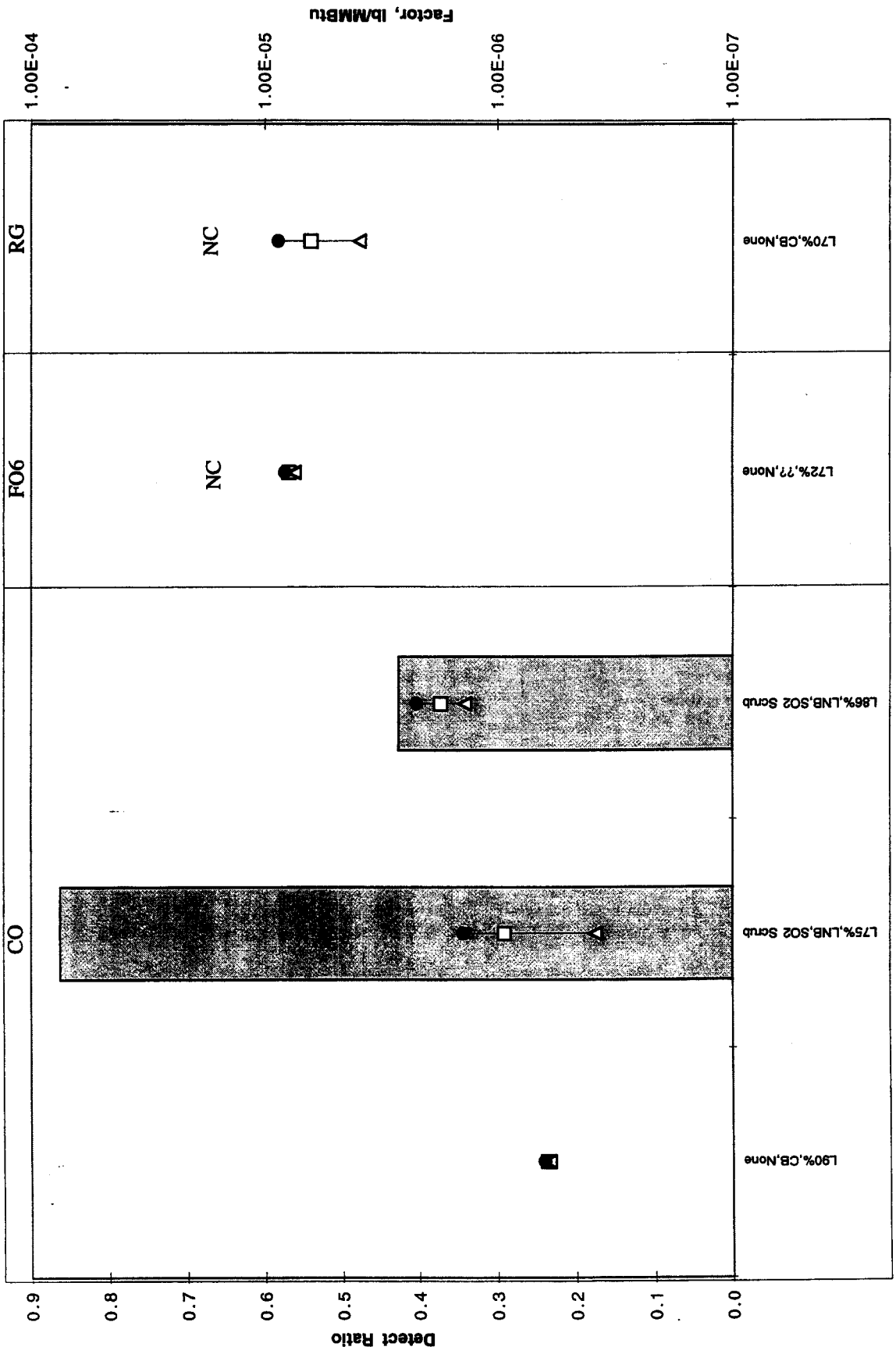
Detect Ratio: Ratio of Detect to Total of Detect and Non Detect Emissions Data
Label: x,y,z where x is Load, y is Burner Type and z is Post Combustion APCD
NC: Not used in statistical comparison

Figure 9-18. Heater Cadmium Emissions



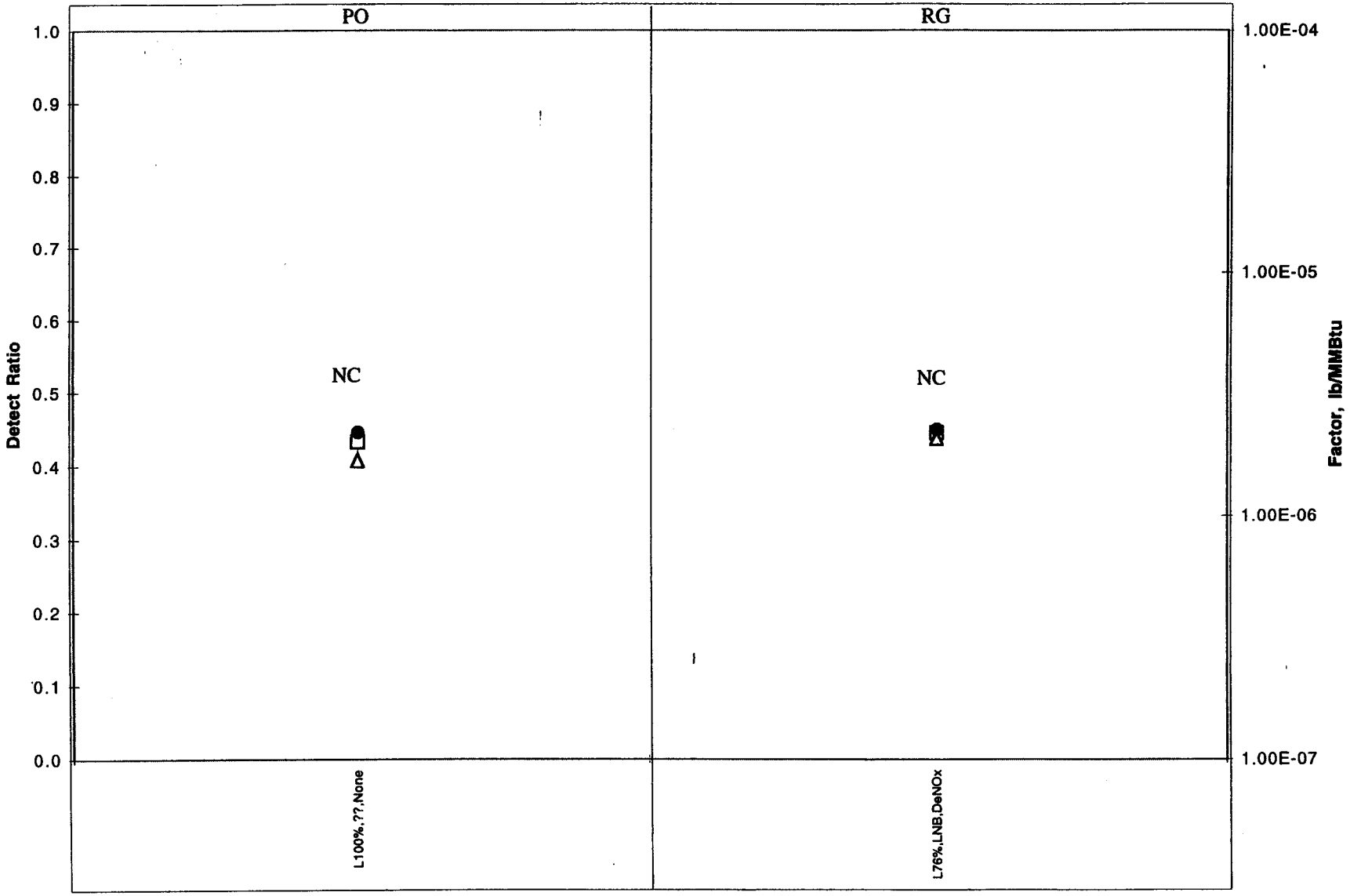
Detect Ratio: Ratio of Detect to Total of Detect and Non Detect Emissions Data
Label: x,y,z where x is Load, y is Burner Type and z is Post Combustion APCD
NC: Not used in statistical comparison

Figure 9-19. Boiler Chromium (Hex) Emissions



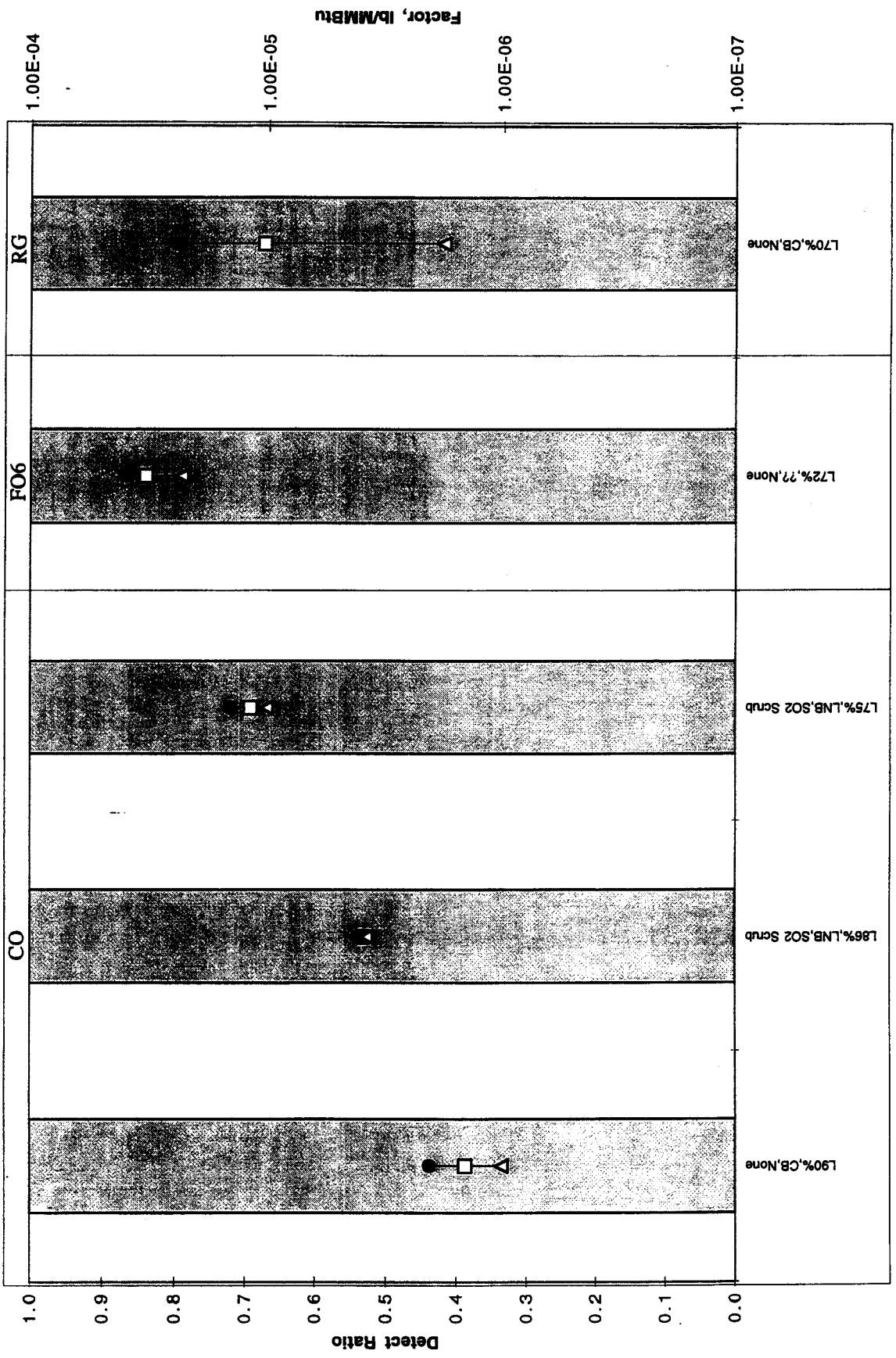
Detect Ratio: Ratio of Detect to Total of Detect and Non Detect Emissions Data
Label: x,y,z where x is Load, y is Burner Type and z is Post Combustion APCD
NC: Not used in statistical comparison

Figure 9-20. Heater Chromium (Hex) Emissions



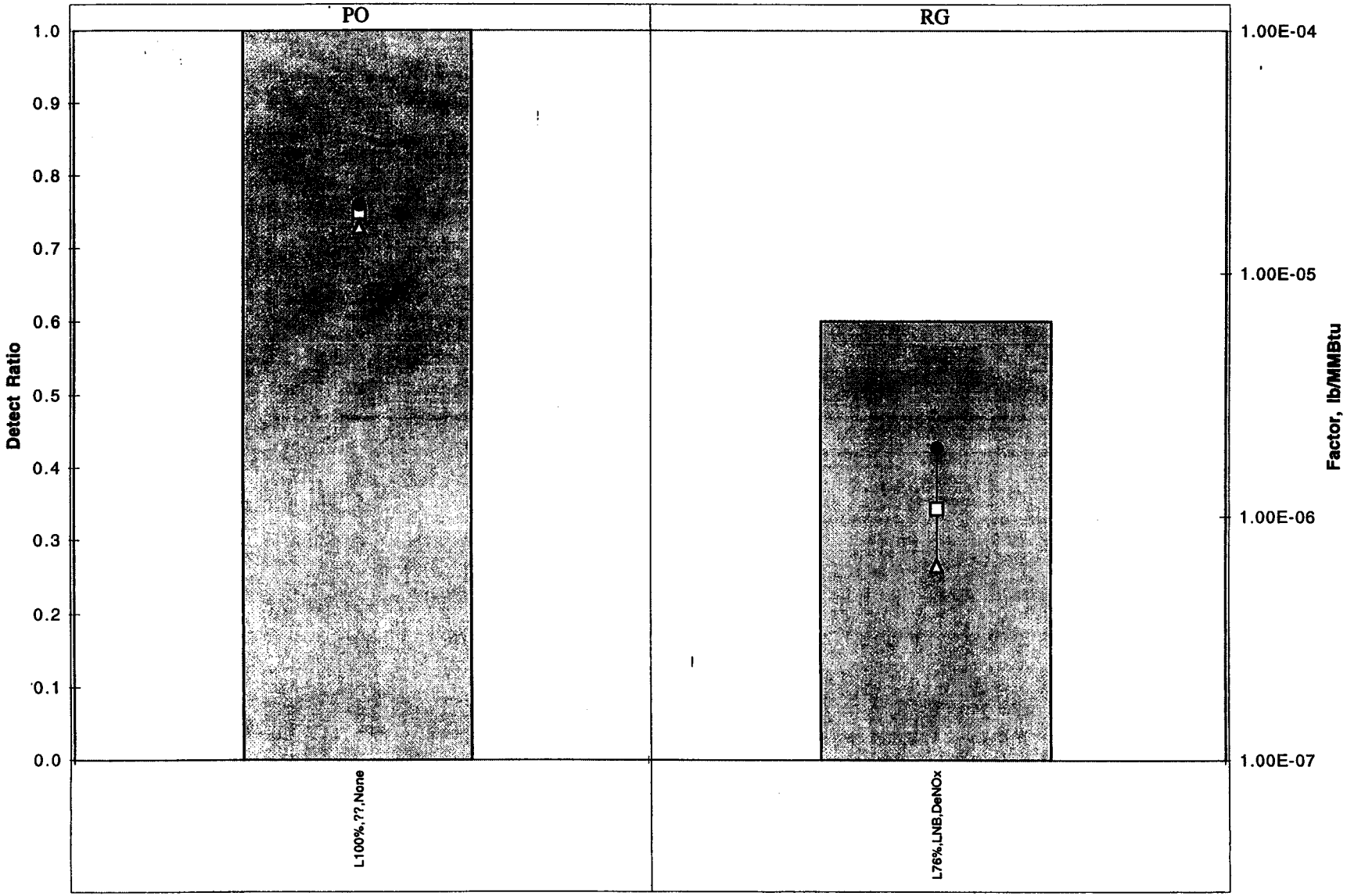
Detect Ratio: Ratio of Detect to Total of Detect and Non Detect Emissions Data
Label: x,y,z where x is Load, y is Burner Type and z is Post Combustion APCD
NC: Not used in statistical comparison

Figure 9-21. Boiler Chromium (Total) Emissions



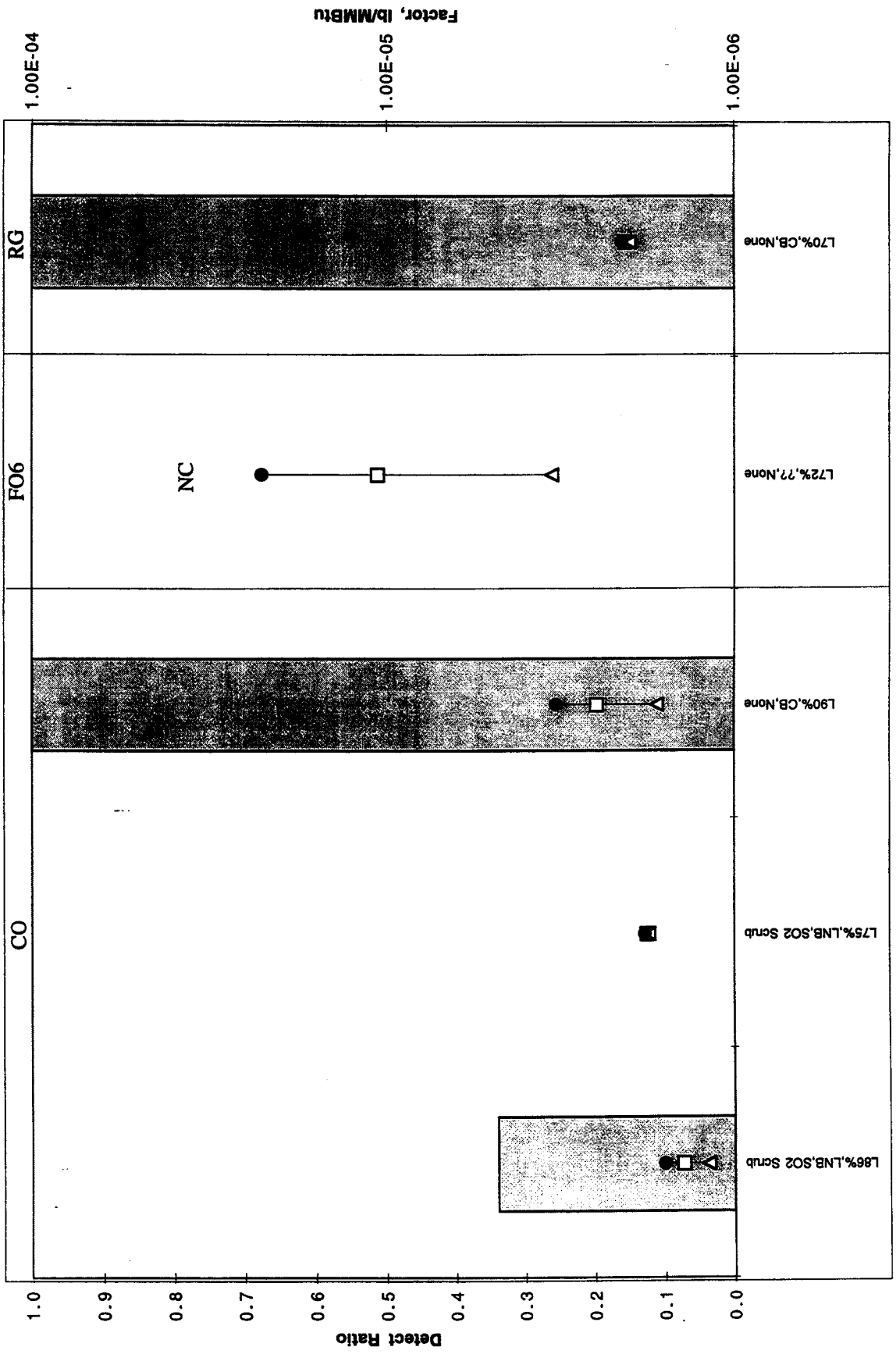
Detect Ratio: Ratio of Detect to Total of Detect and Non Detect Emissions Data
Label: x,y,z where x is Load, y is Burner Type and z is Post Combustion APCD
NC: Not used in statistical comparison

Figure 9-22. Heater Chromium (Total) Emissions



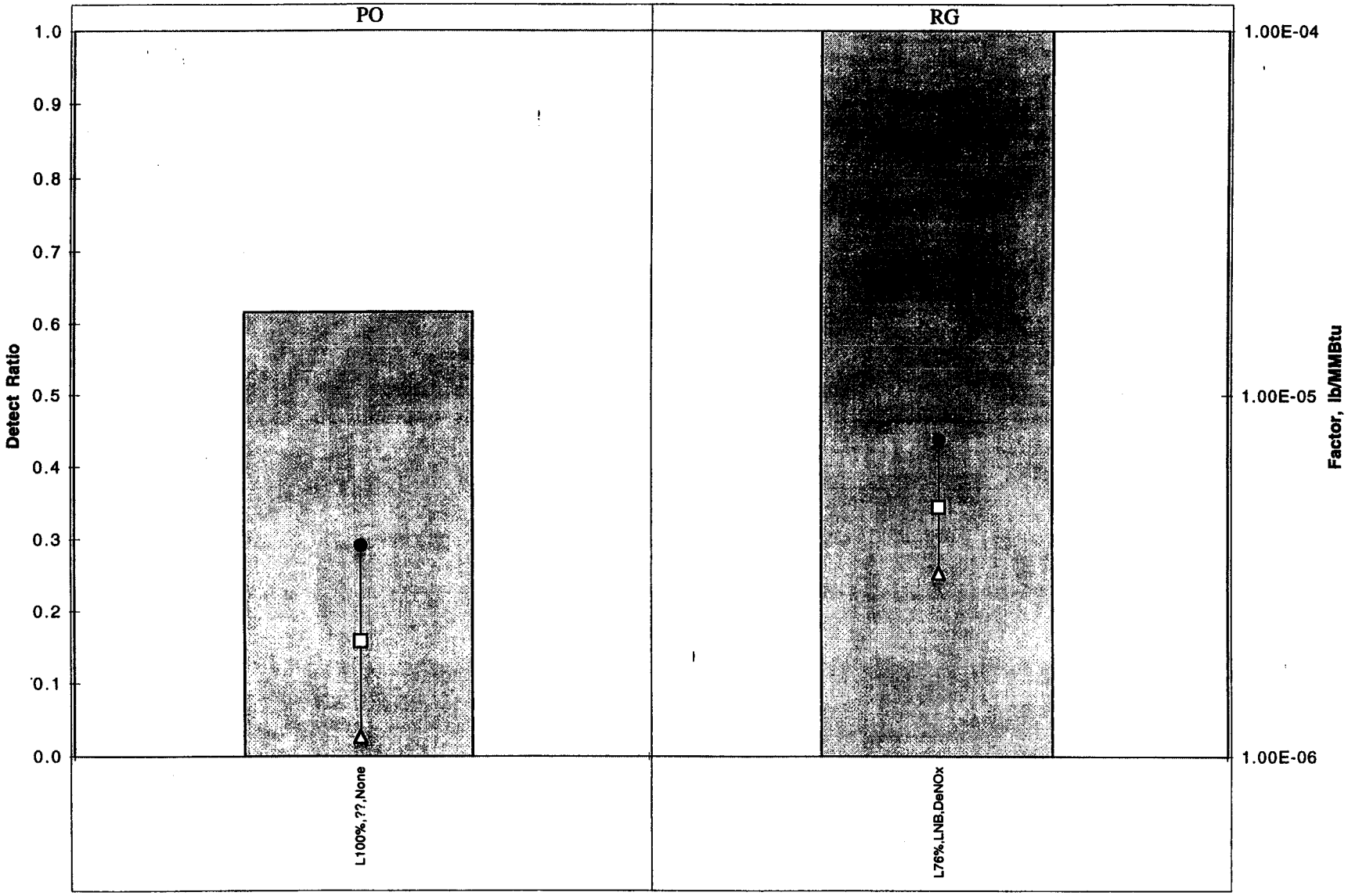
Detect Ratio: Ratio of Detect to Total of Detect and Non Detect Emissions Data
Label: x,y,z where x is Load, y is Burner Type and z is Post Combustion APCD
NC: Not used in statistical comparison

Figure 9-23. Boiler Lead Emissions



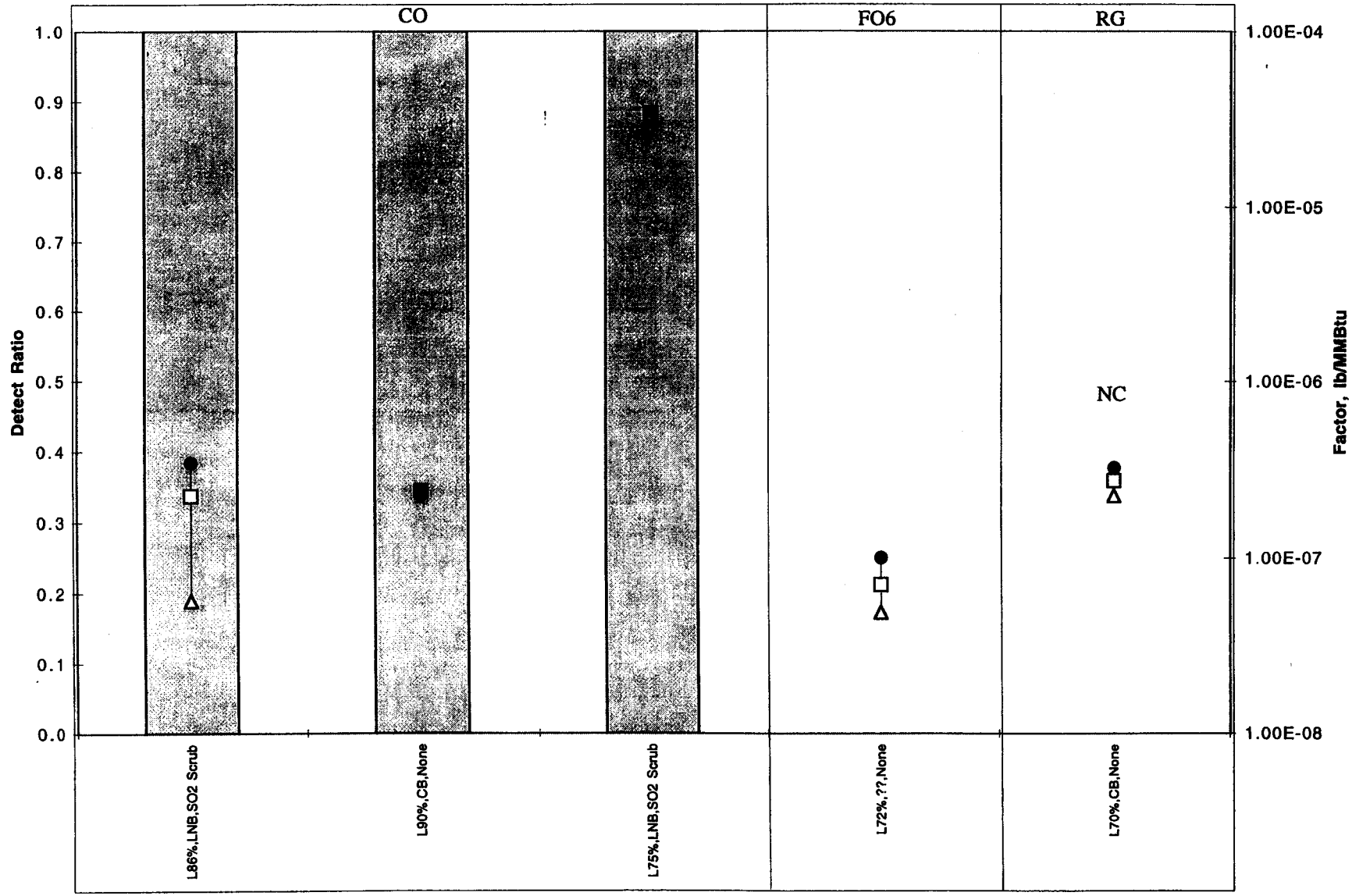
Detect Ratio: Ratio of Detect to Total of Detect and Non Detect Emissions Data
Label: x,y,z where x is Load, y is Burner Type and z is Post Combustion APCD
NC: Not used in statistical comparison

Figure 9-24. Heater Lead Emissions



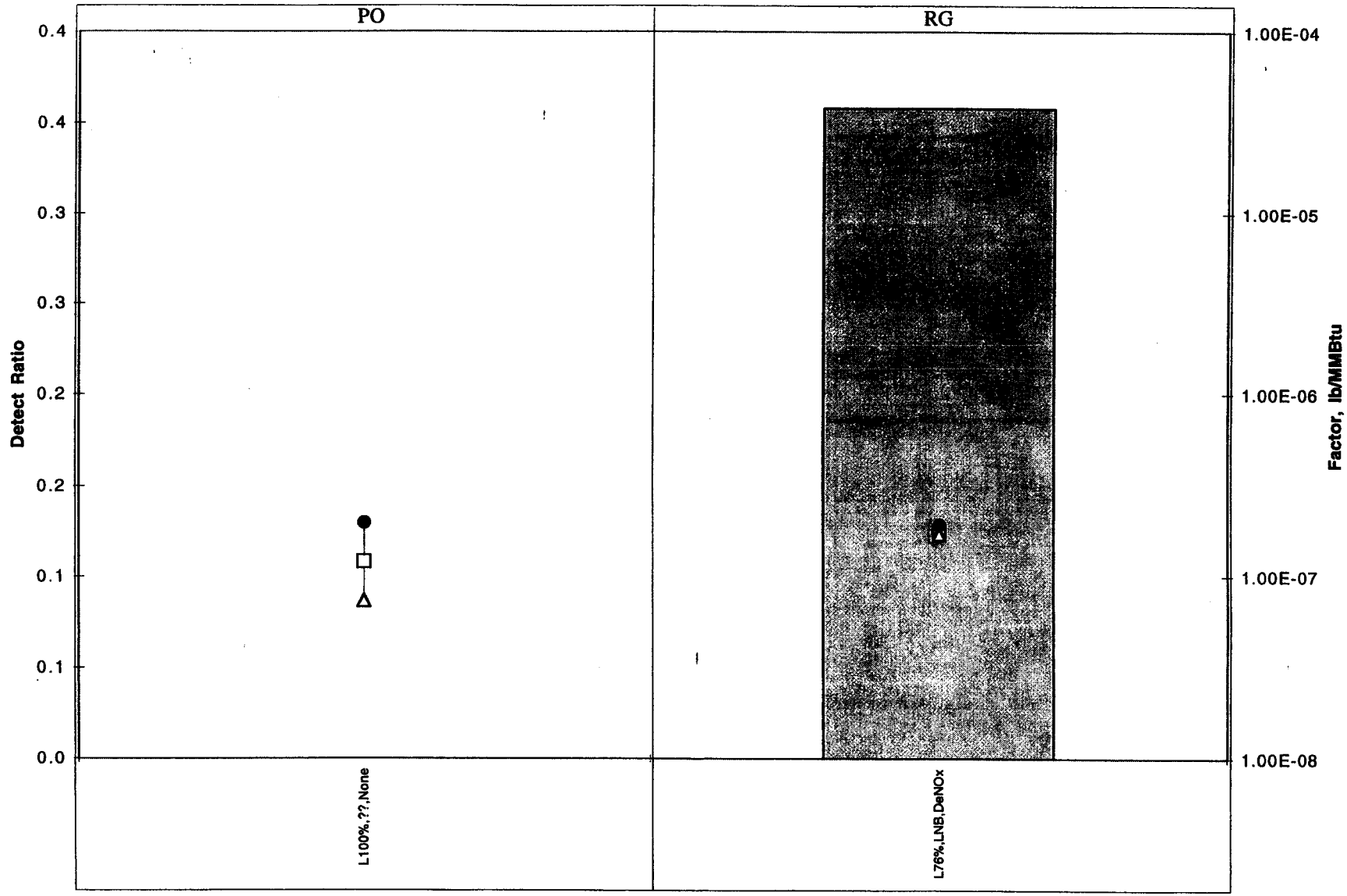
Detect Ratio: Ratio of Detect to Total of Detect and Non Detect Emissions Data
Label: x,y,z where x is Load, y is Burner Type and z is Post Combustion APCD
NC: Not used in statistical comparison

Figure 9-25. Boiler Mercury Emissions



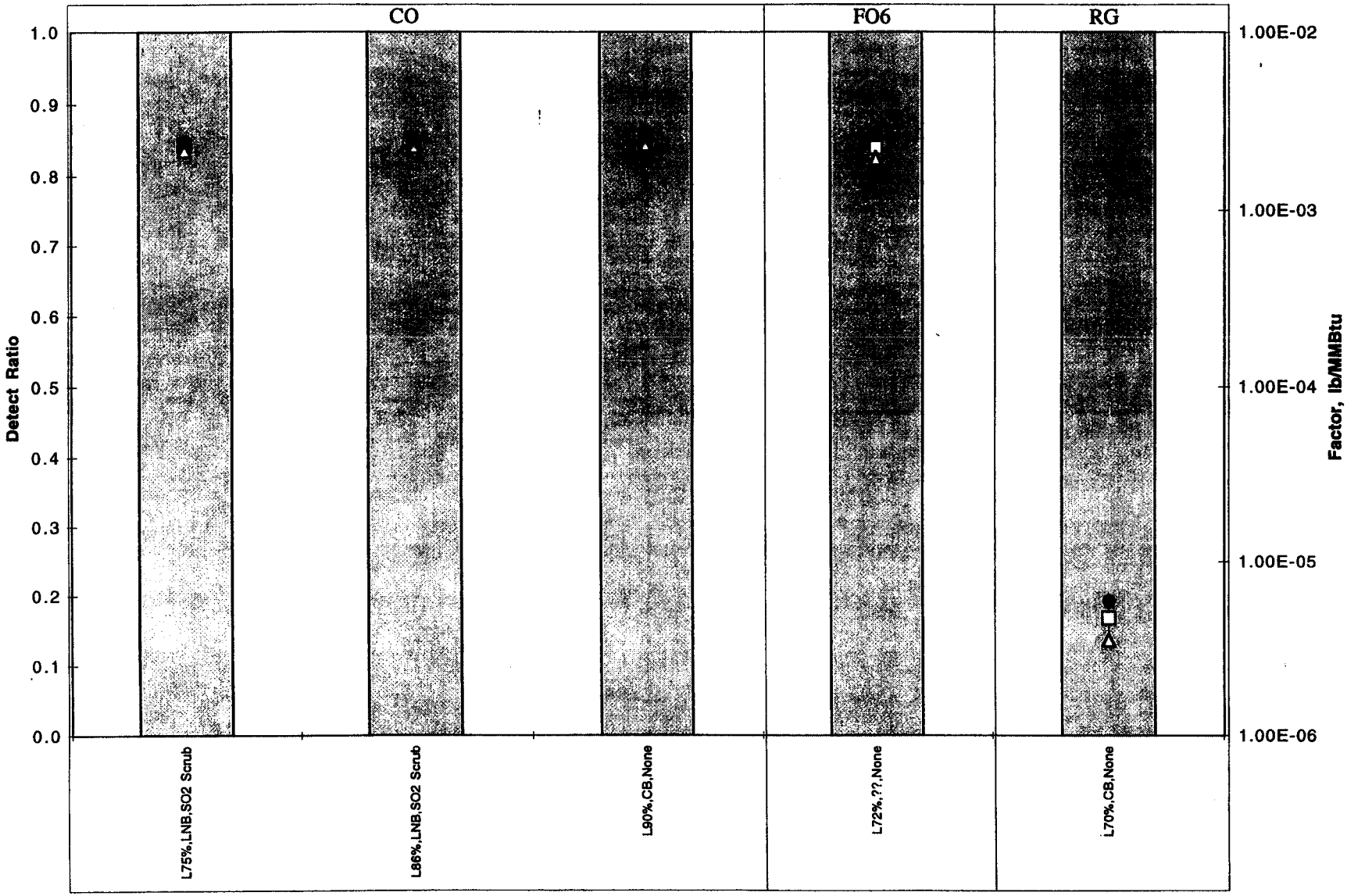
Detect Ratio: Ratio of Detect to Total of Detect and Non Detect Emissions Data
Label: x,y,z where x is Load, y is Burner Type and z is Post Combustion APCD
NC: Not used in statistical comparison

Figure 9-26. Heater Mercury Emissions



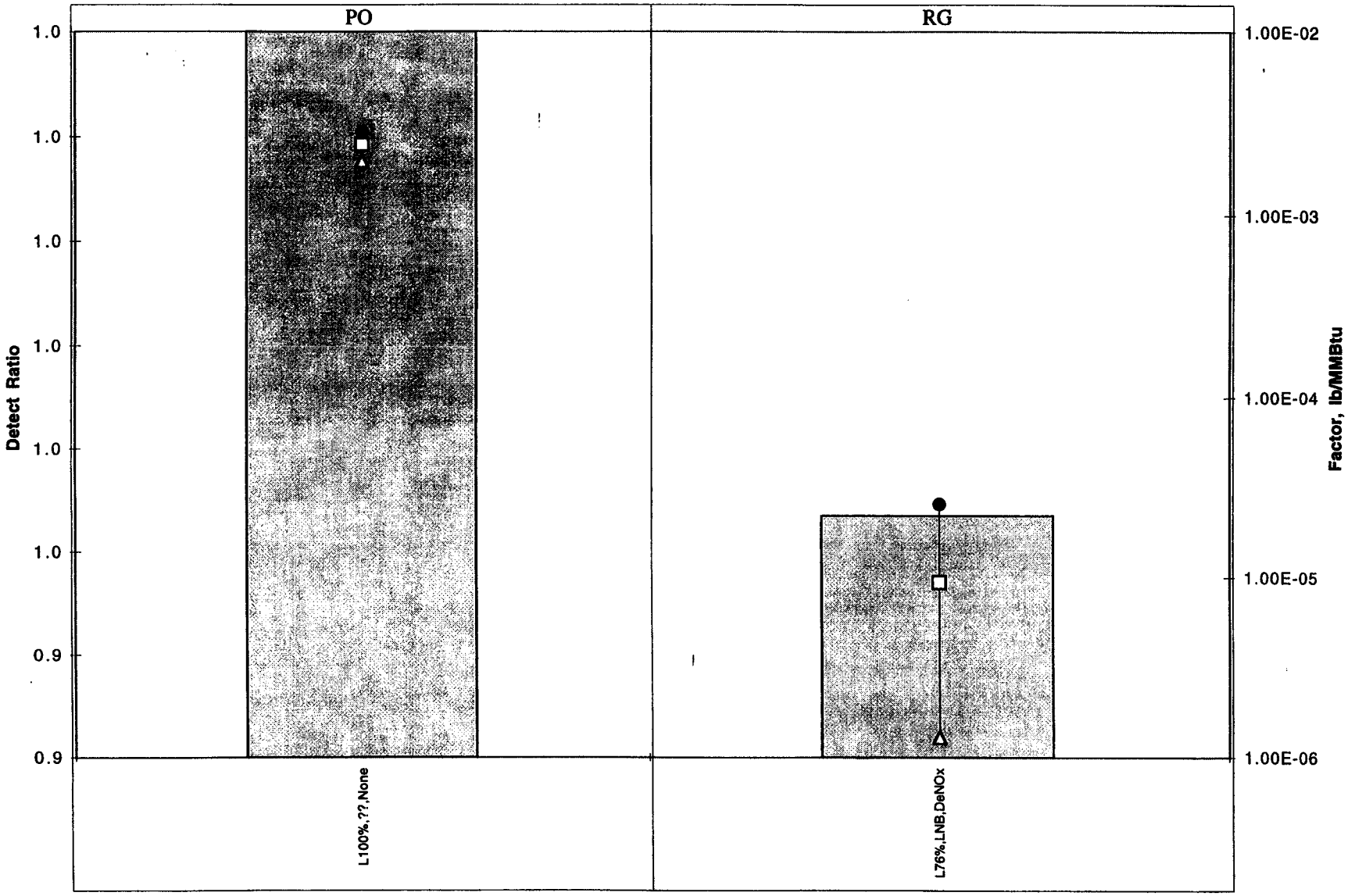
Detect Ratio: Ratio of Detect to Total of Detect and Non Detect Emissions Data
Label: x,y,z where x is Load, y is Burner Type and z is Post Combustion APCD
NC: Not used in statistical comparison

Figure 9-27. Boiler Nickel Emissions



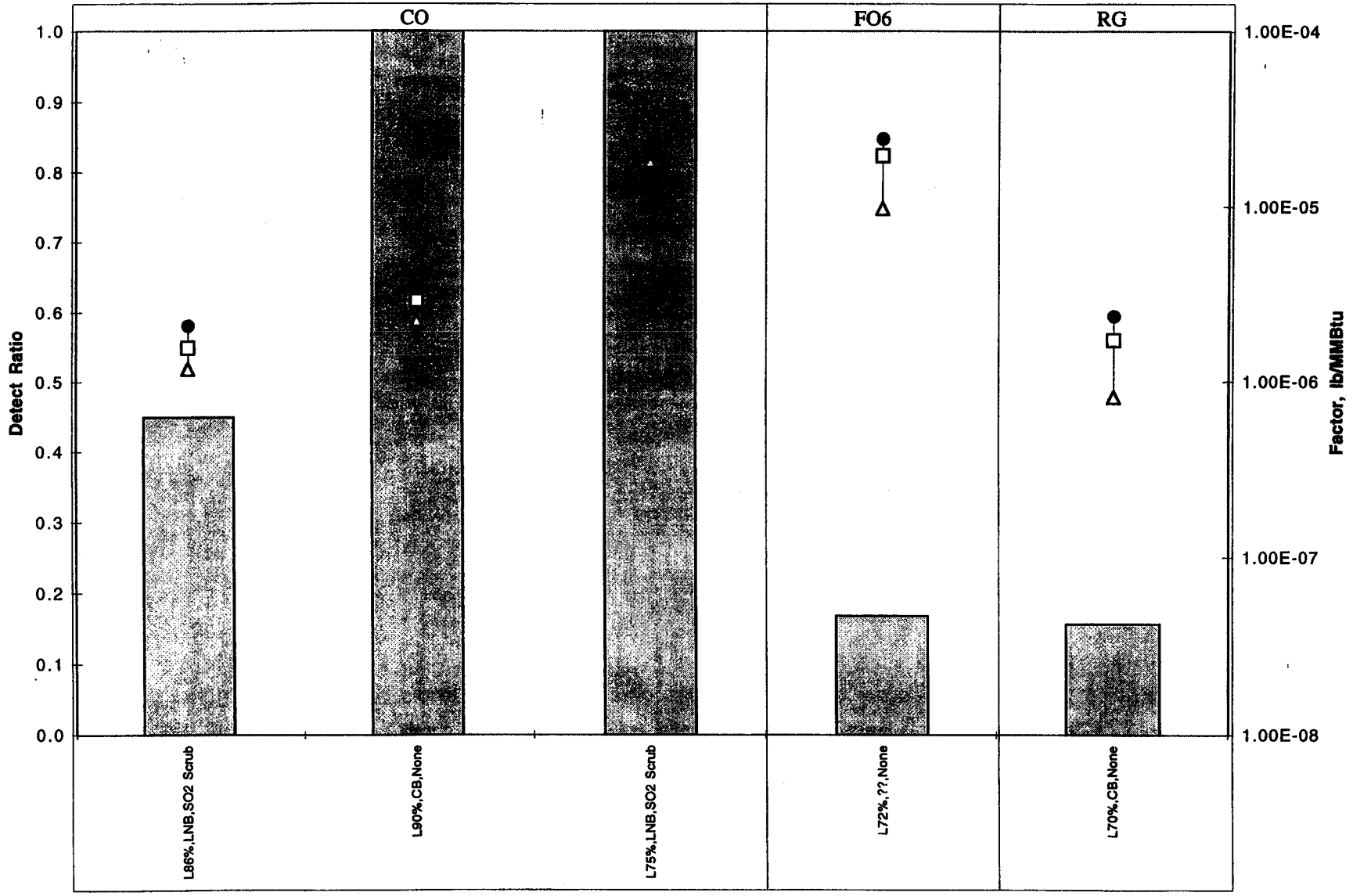
Detect Ratio: Ratio of Detect to Total of Detect and Non Detect Emissions Data
Label: x,y,z where x is Load, y is Burner Type and z is Post Combustion APCD
NC: Not used in statistical comparison

Figure 9-28. Heater Nickel Emissions



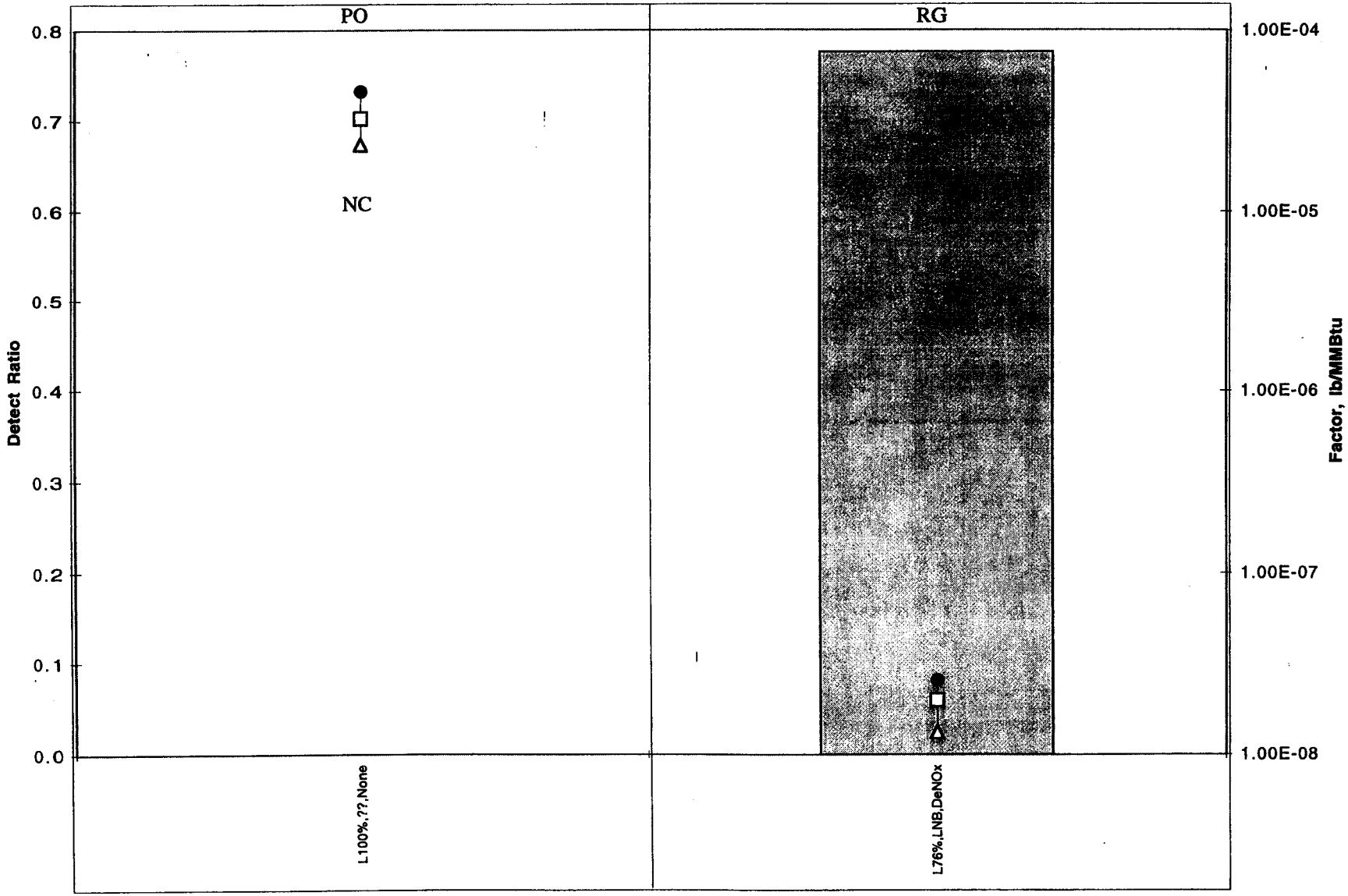
Detect Ratio: Ratio of Detect to Total of Detect and Non Detect Emissions Data
Label: x,y,z where x is Load, y is Burner Type and z is Post Combustion APCD
NC: Not used in statistical comparison

Figure 9-29. Boiler Selenium Emissions



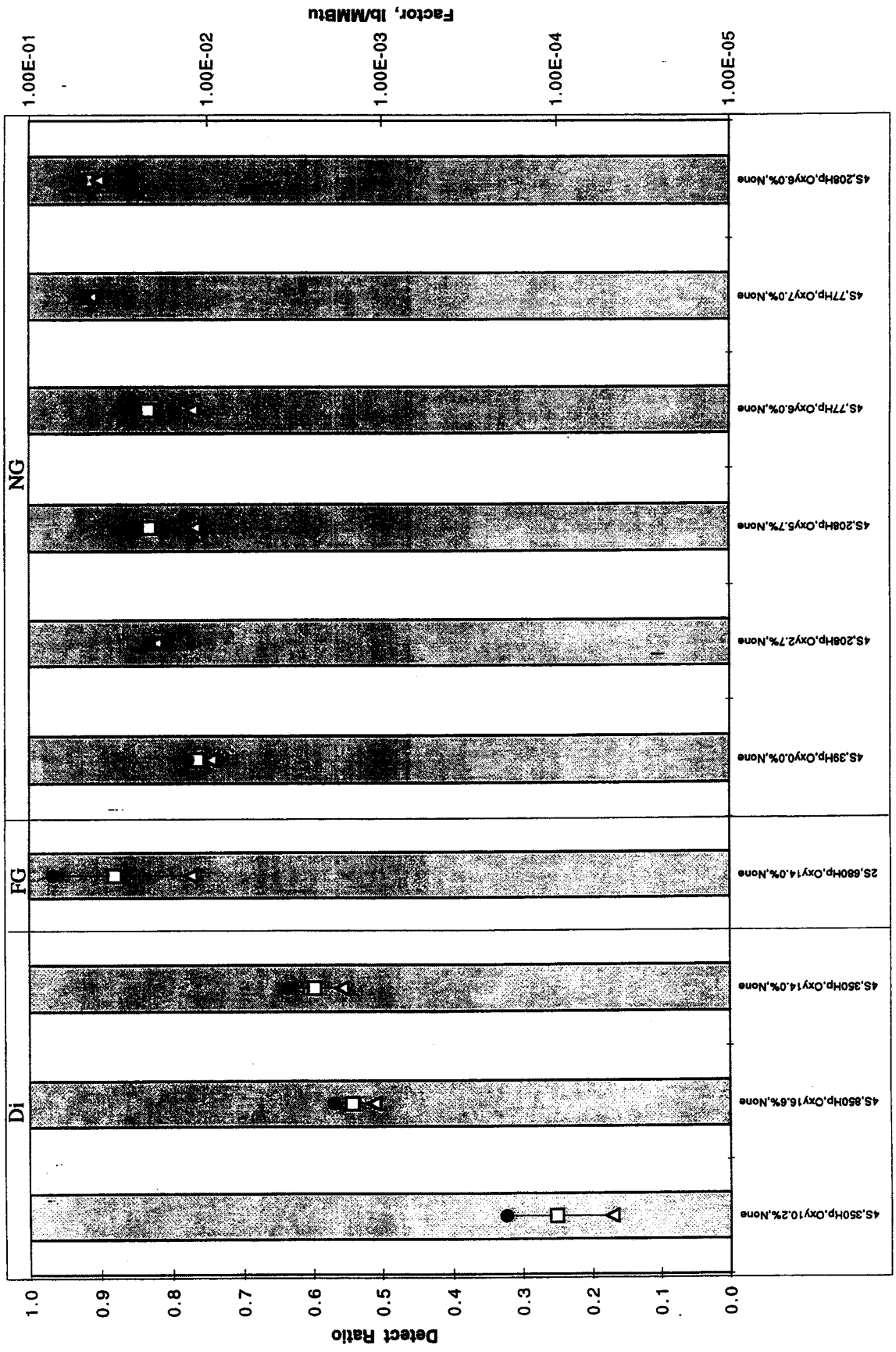
Detect Ratio: Ratio of Detect to Total of Detect and Non Detect Emissions Data
Label: x,y,z where x is Load, y is Burner Type and z is Post Combustion APCD
NC: Not used in statistical comparison

Figure 9-30. Heater Selenium Emissions



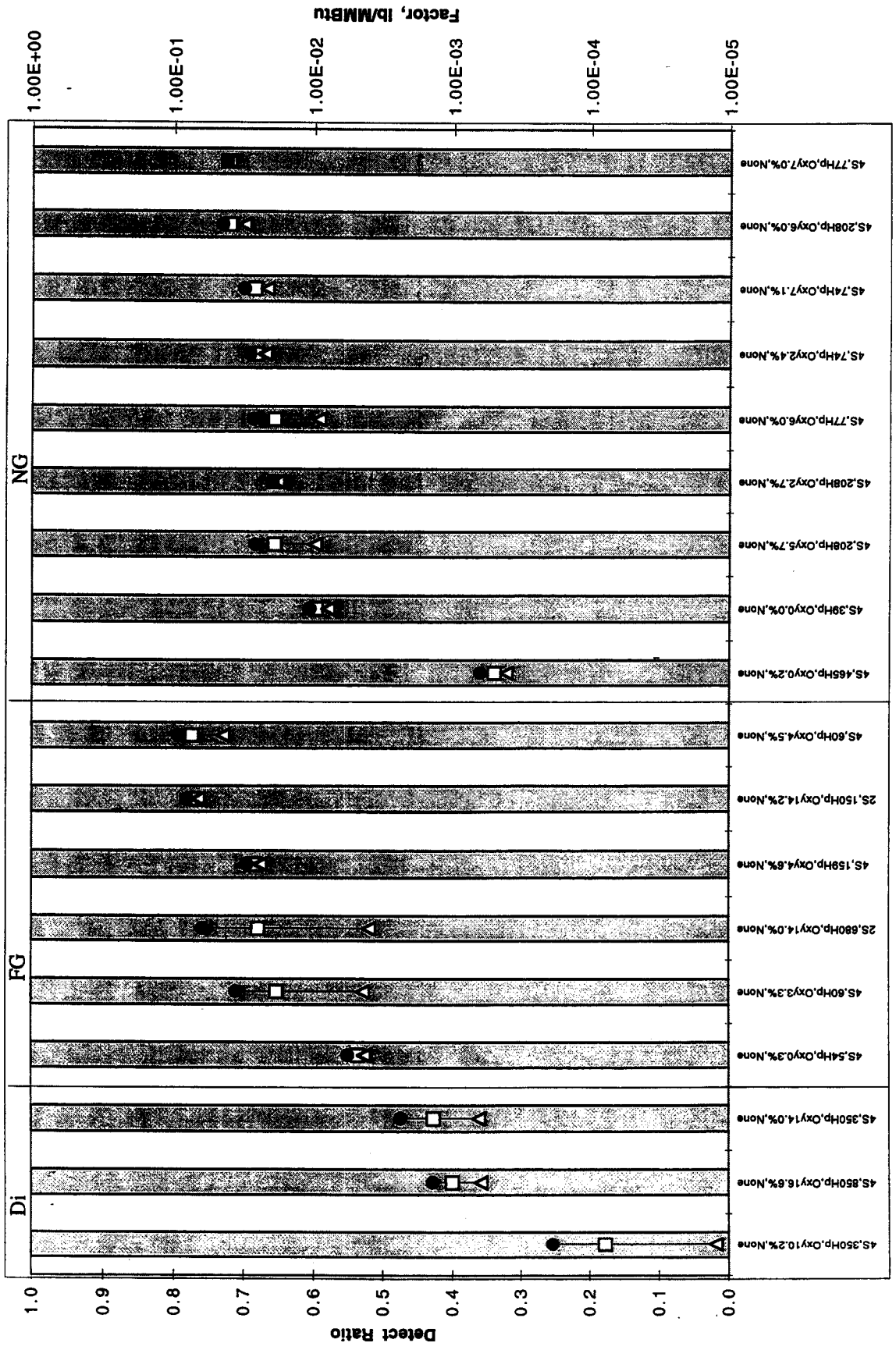
Detect Ratio: Ratio of Detect to Total of Detect and Non Detect Emissions Data
Label: x,y,z where x is Load, y is Burner Type and z is Post Combustion APCD
NC: Not used in statistical comparison

Figure 9-31. Reciprocating ICE Aldehyde Total Emissions



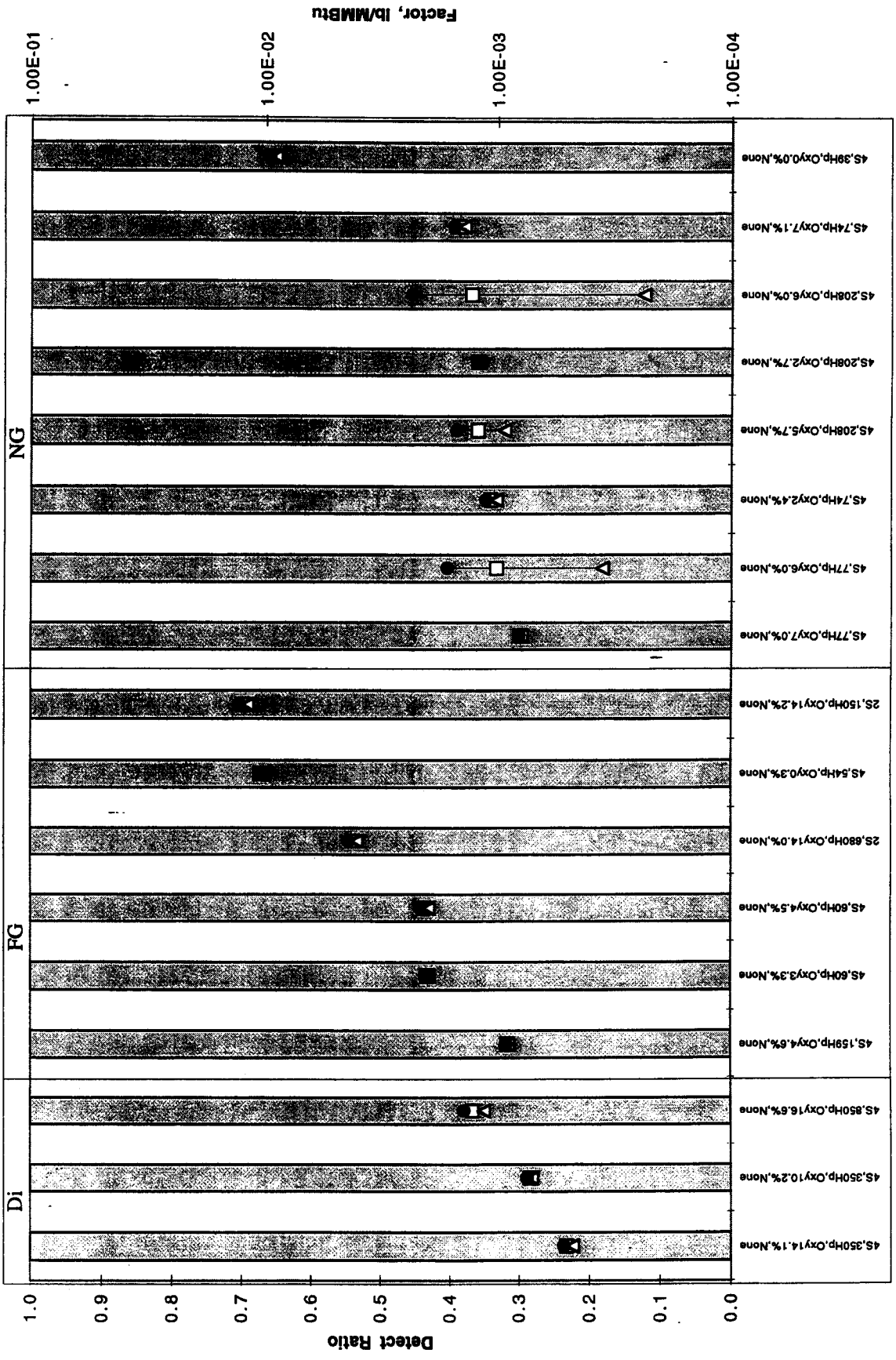
Detect Ratio: Ratio of Detect to Total of Detect and Non Detect Emissions Data
Label: w,x,y,z where w is Strokes per Cycle, x is Capacity, y is Oxygen Level and z is Post Combustion APCD
NC: Not used in statistical comparison

Figure 9-32. Reciprocating ICE Formaldehyde Emissions



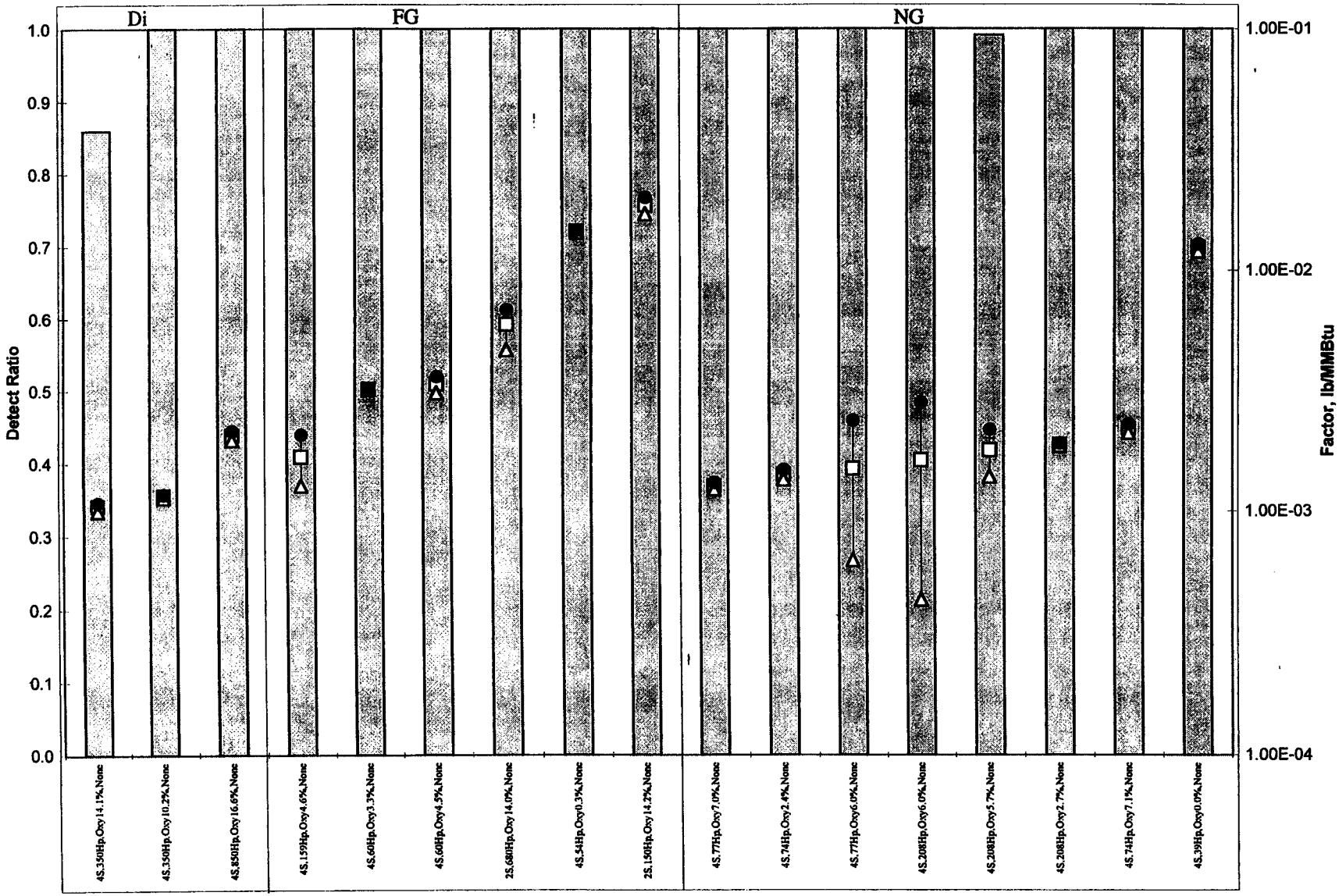
Detect Ratio: Ratio of Detect to Total of Detect and Non Detect Emissions Data
Label: w,x,y,z where w is Strokes per Cycle, x is Capacity, y is Oxygen Level and z is Post Combustion APCD
NC: Not used in statistical comparison

Figure 9-33. Reciprocating ICE Benzene Emissions



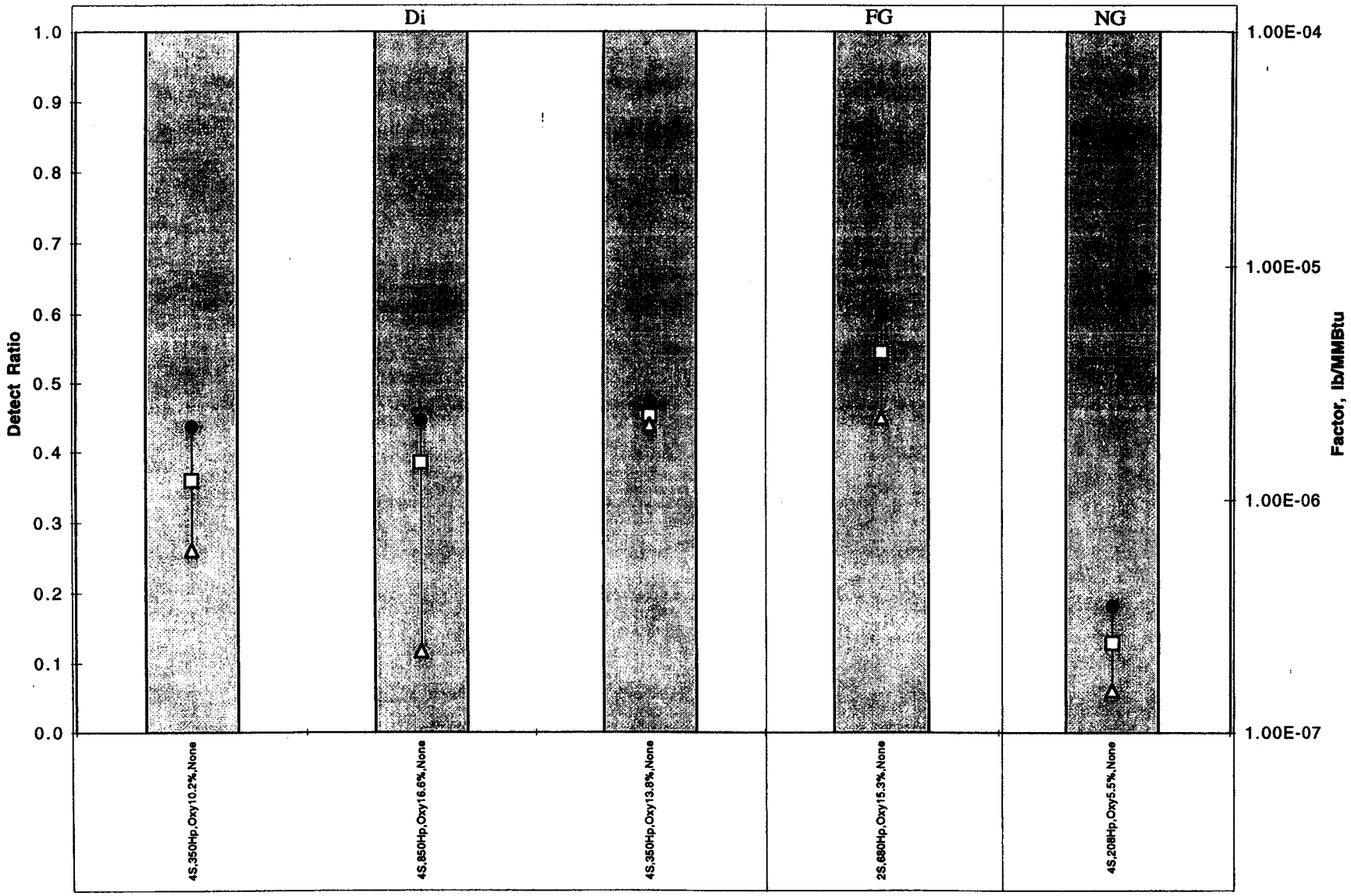
Detect Ratio: Ratio of Detect to Total of Detect and Non Detect Emissions Data
Label: w,x,y,z where w is Strokes per Cycle, x is Capacity, y is Oxygen Level and z is Post Combustion APCD
NC: Not used in statistical comparison

Figure 9-34. Reciprocating ICE BTX Total Emissions



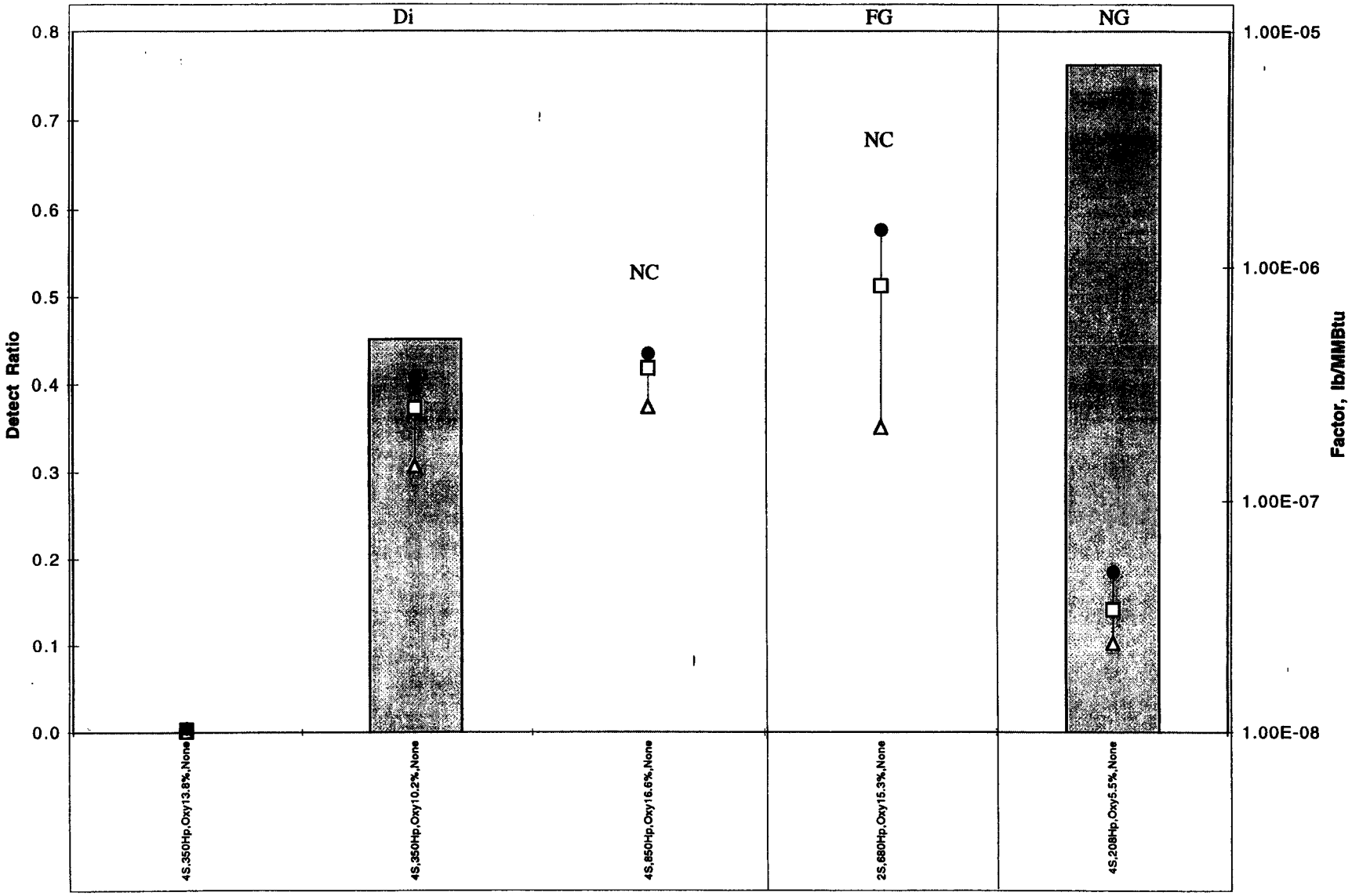
Detect Ratio: Ratio of Detect to Total of Detect and Non Detect Emissions Data
Label: w,x,y,z where w is Strokes per Cycle, x is Capacity, y is Oxygen Level and z is Post Combustion APCD
NC: Not used in statistical comparison

Figure 9-35. Reciprocating ICE Anthracene Emissions



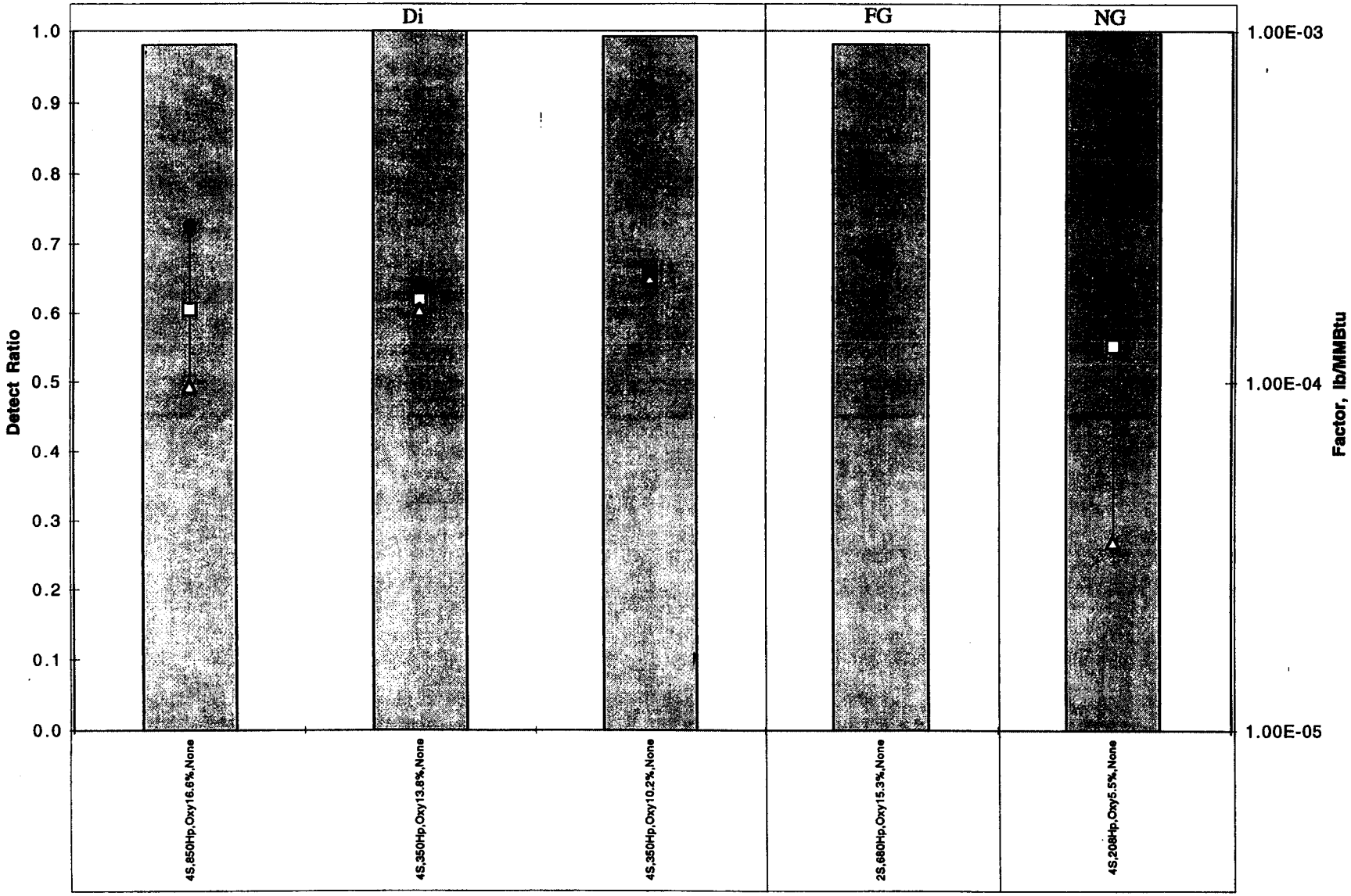
Detect Ratio: Ratio of Detect to Total of Detect and Non Detect Emissions Data
Label: w,x,y,z where w is Strokes per Cycle, x is Capacity, y is Oxygen Level and z is Post Combustion APCD
NC: Not used in statistical comparison

Figure 9-36. Reciprocating ICE Benzo(a)pyrene Emissions



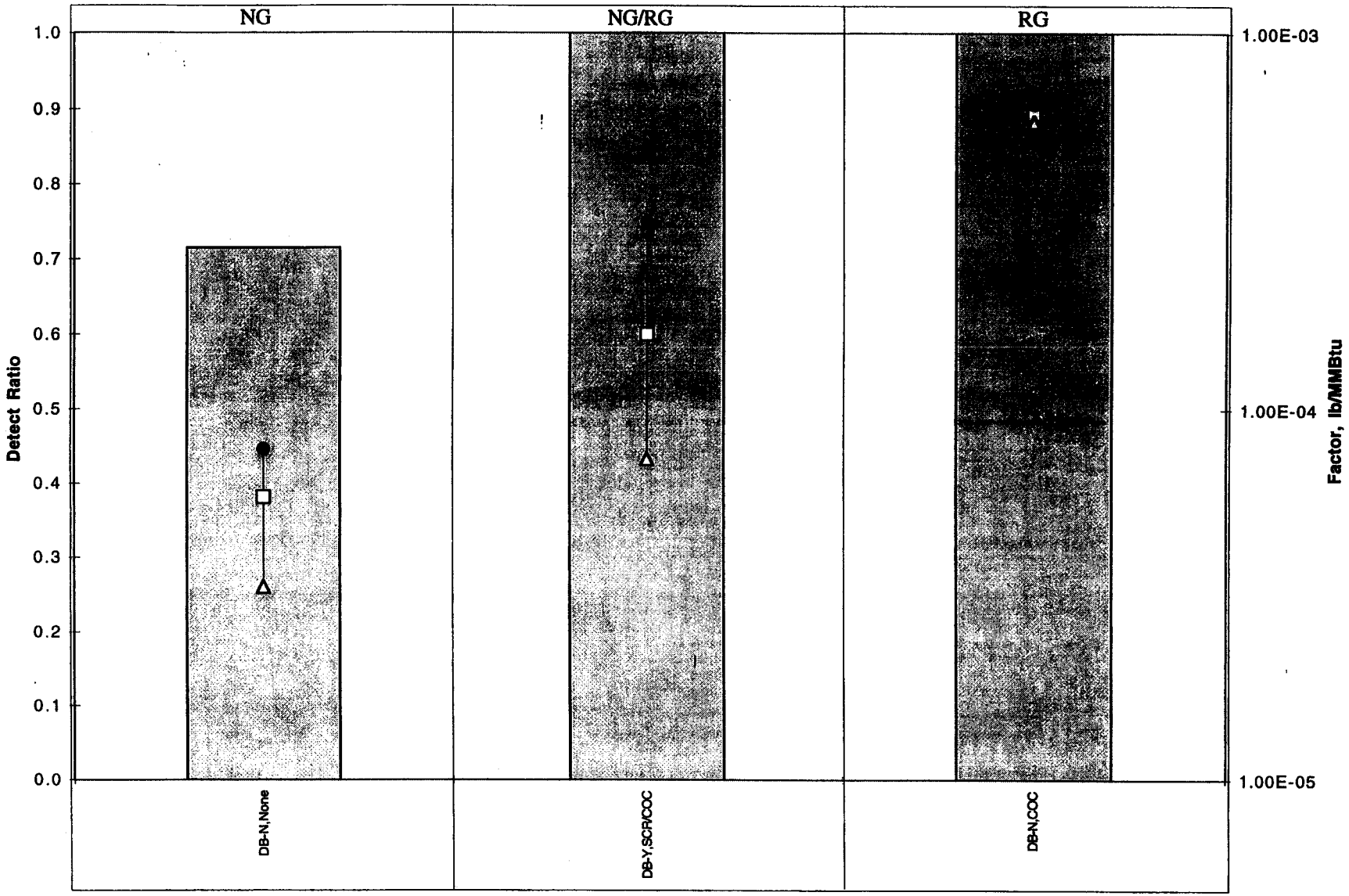
Detect Ratio: Ratio of Detect to Total of Detect and Non Detect Emissions Data
Label: w,x,y,z where w is Strokes per Cycle, x is Capacity, y is Oxygen Level and z is Post Combustion APCD
NC: Not used in statistical comparison

Figure 9-37. Reciprocating ICE POM Total Emissions



Detect Ratio: Ratio of Detect to Total of Detect and Non Detect Emissions Data
Label: w,x,y,z where w is Strokes per Cycle, x is Capacity, y is Oxygen Level and z is Post Combustion APCD
NC: Not used in statistical comparison

Figure 9-38. Turbine Aldehyde Total Emissions



Detect Ratio: Ratio of Detect to Total of Detect and Non Detect Emissions Data
Label: x,y where x is Duct Burner (Yes or No) and y is Post Combustion APCD
NC: Not used in statistical comparison

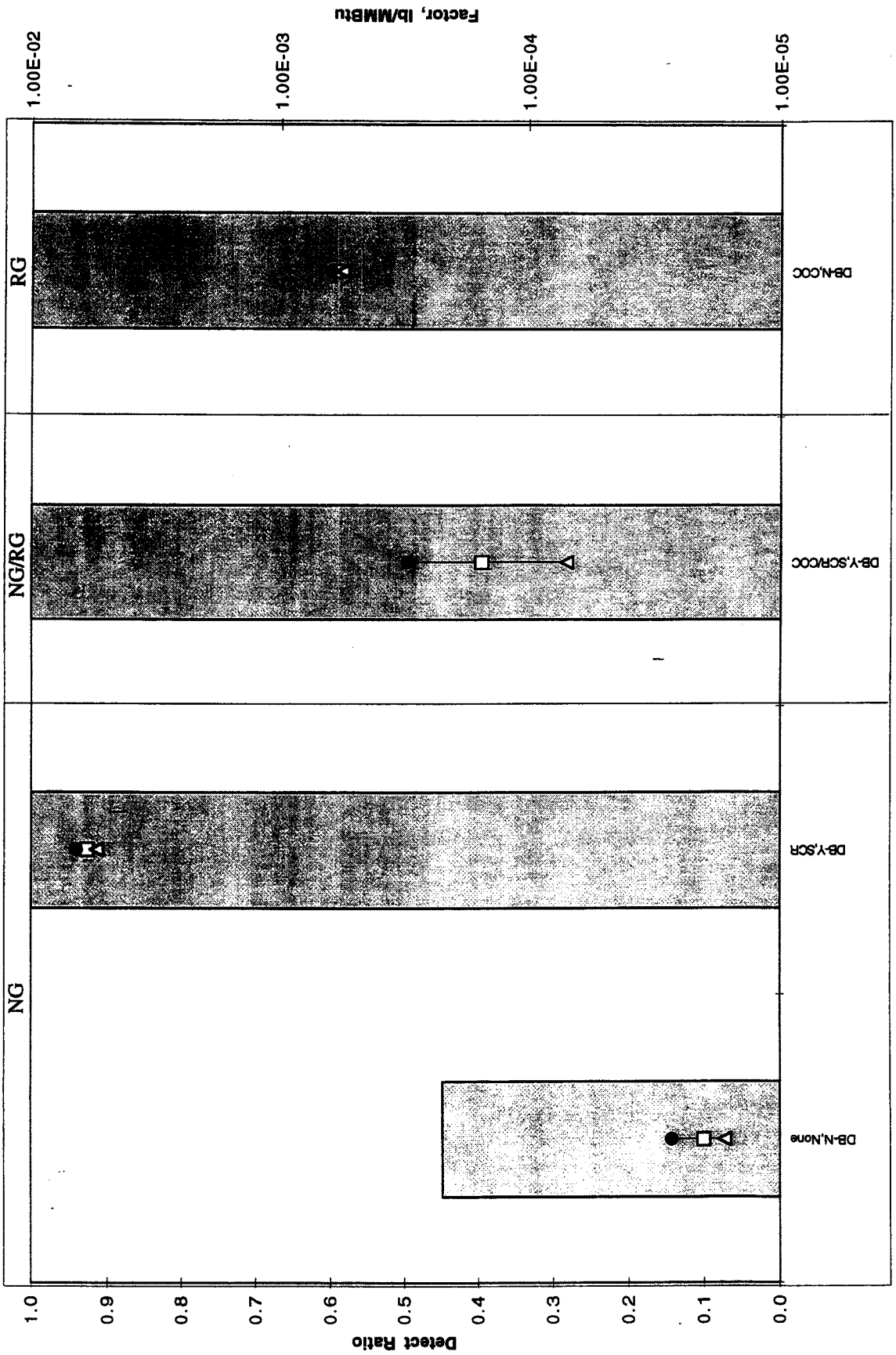
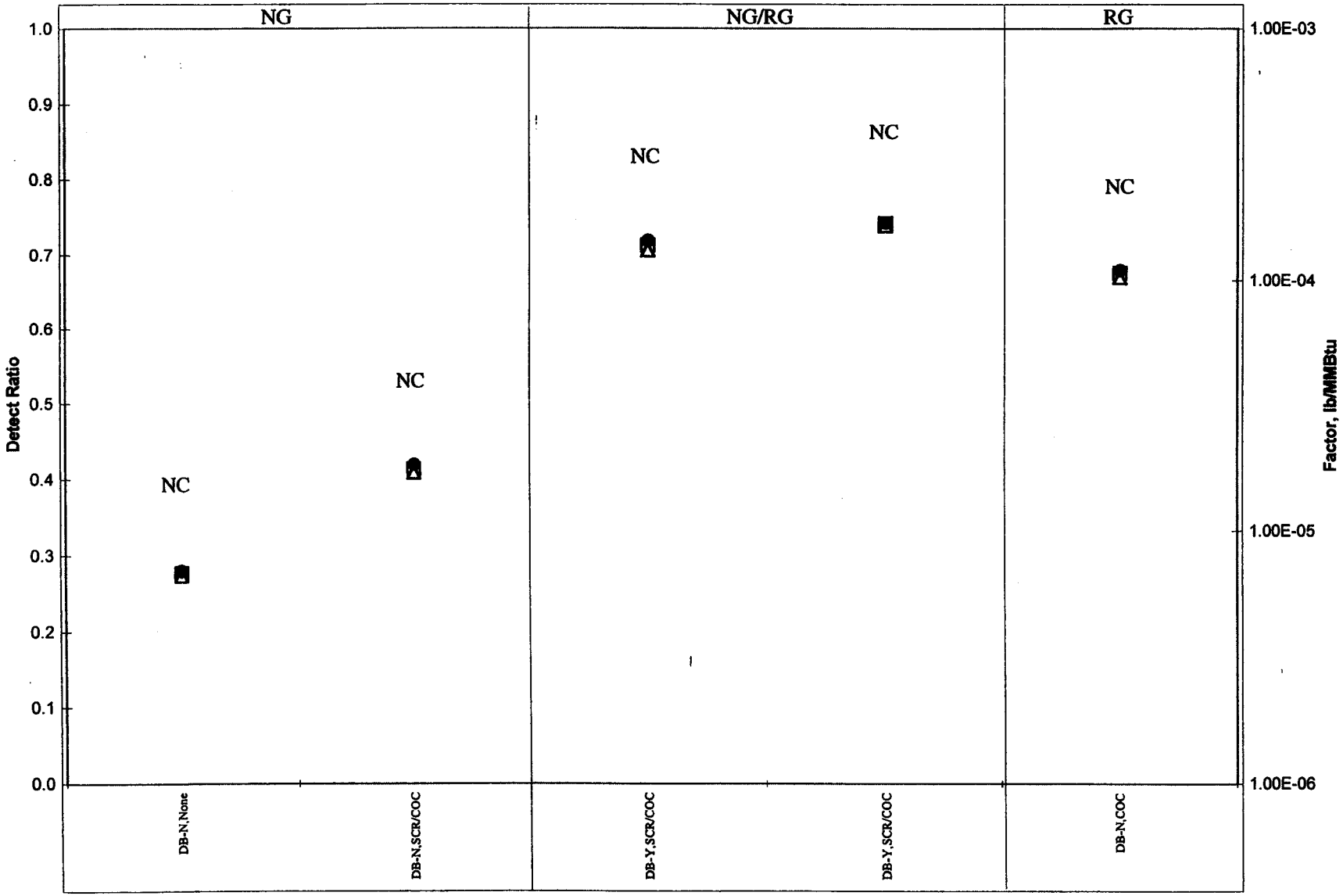


Figure 9-39. Turbine Formaldehyde Emissions

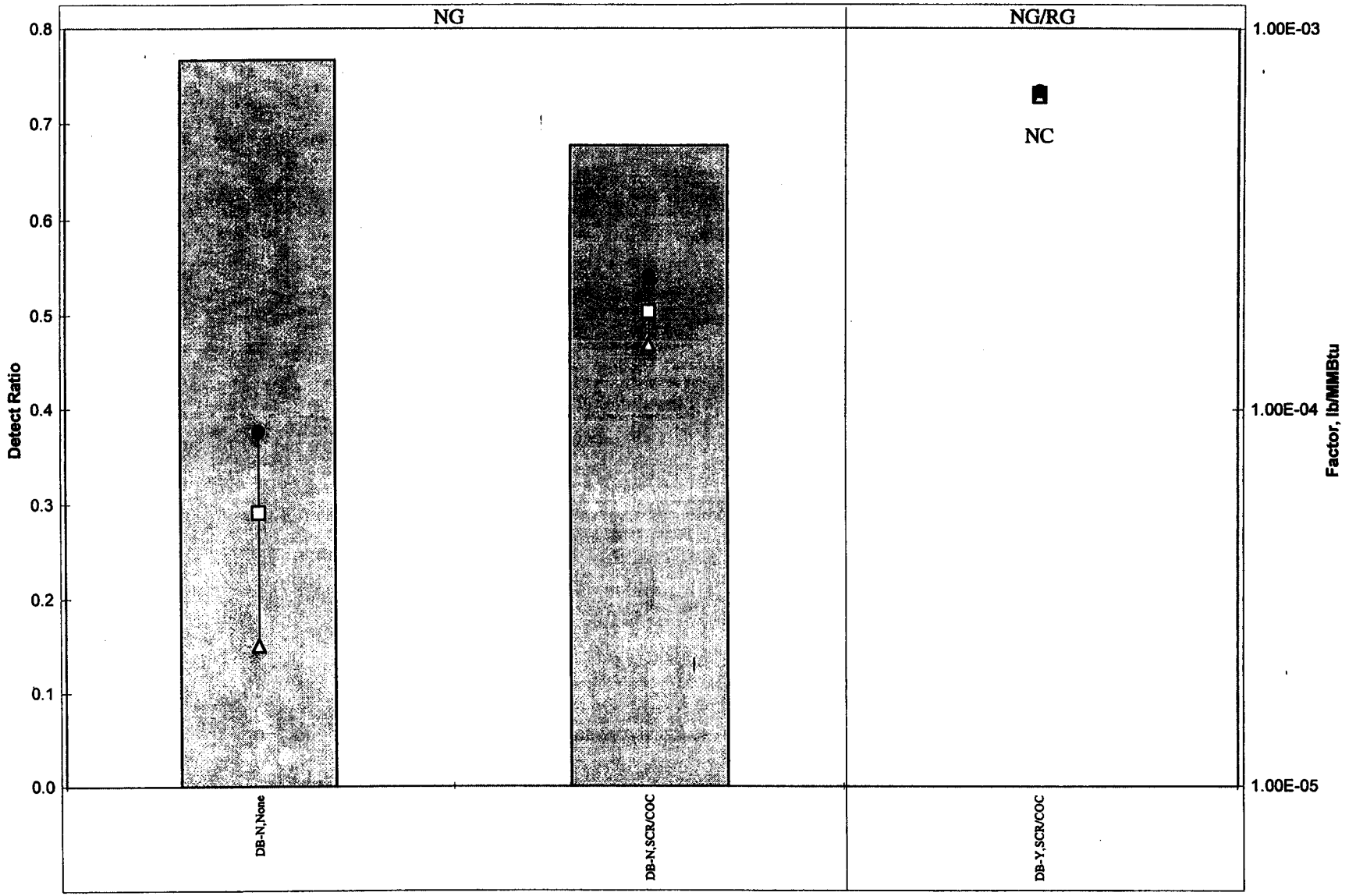
Detect Ratio: Ratio of Detect to Total of Detect and Non Detect Emissions Data
Label: x,y where x is Duct Burner (Yes or No) and y is Post Combustion APCD
NC: Not used in statistical comparison

Figure 9-40. Turbine Benzene Emissions



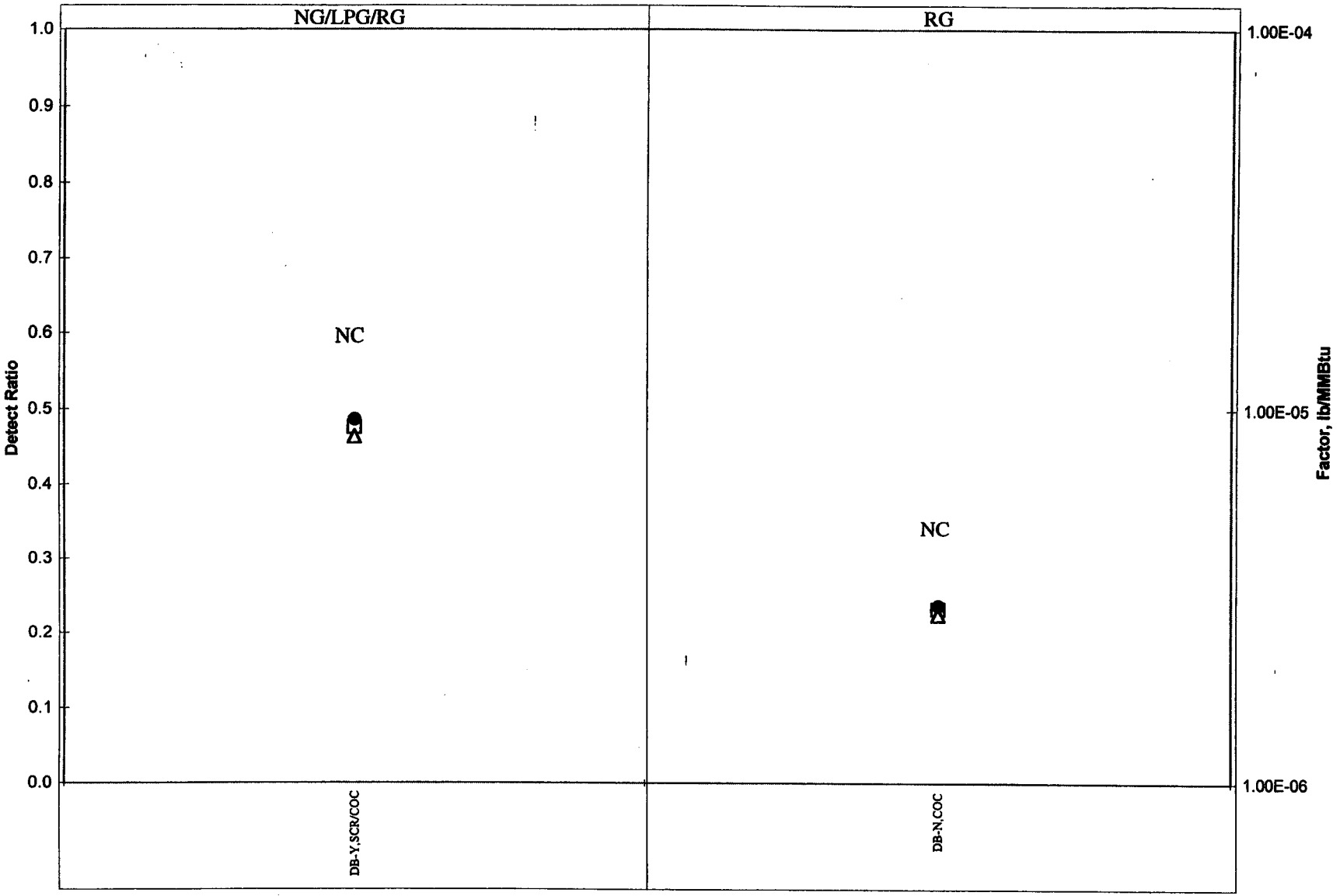
Detect Ratio: Ratio of Detect to Total of Detect and Non Detect Emissions Data
Label: x,y where x is Duct Burner (Yes or No) and y is Post Combustion APCD
NC: Not used in statistical comparison

Figure 9-41. Turbine BTX Total Emissions



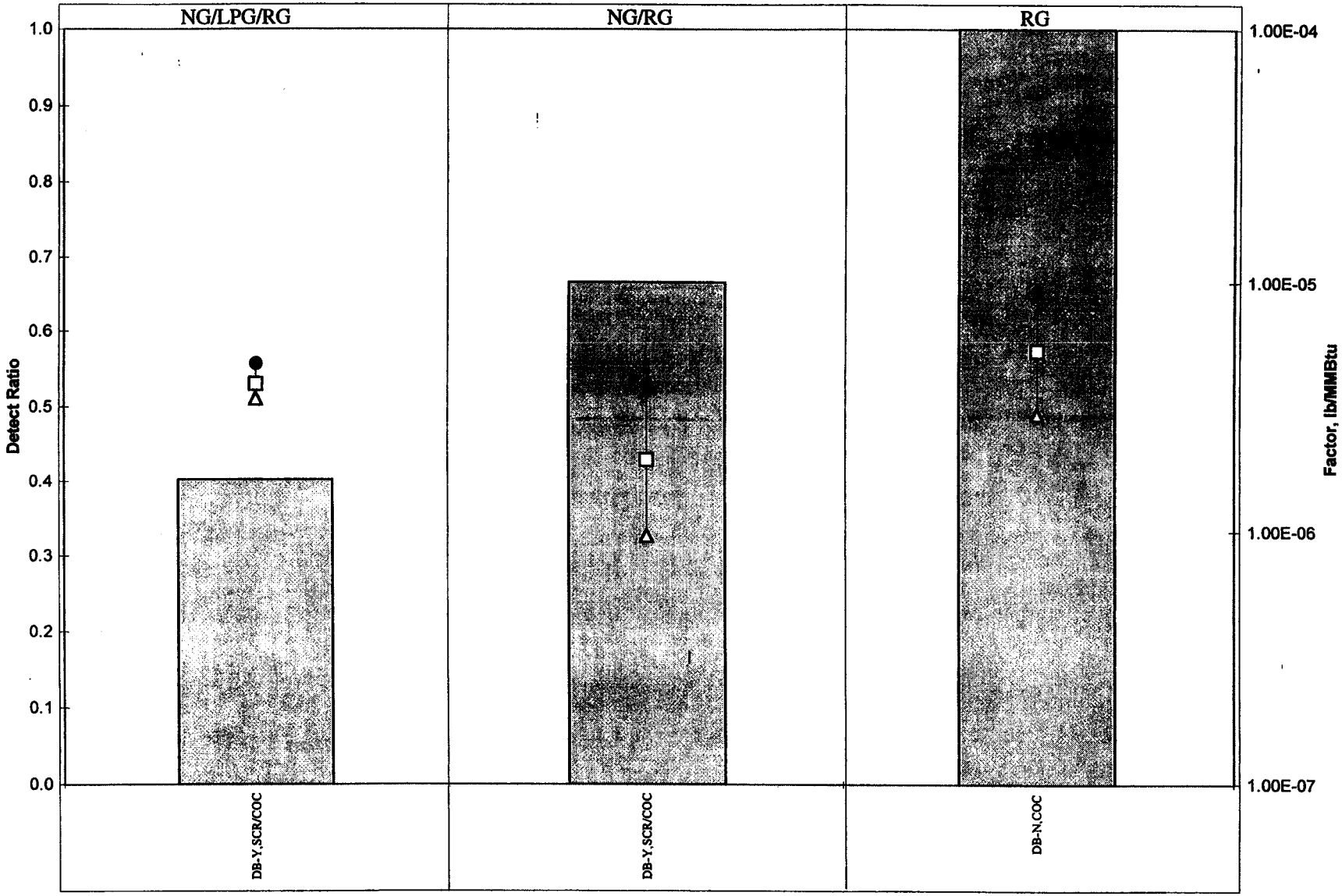
Detect Ratio: Ratio of Detect to Total of Detect and Non Detect Emissions Data
Label: x,y where x is Duct Burner (Yes or No) and y is Post Combustion APCD
NC: Not used in statistical comparison

Figure 9-42. Turbine Arsenic Emissions



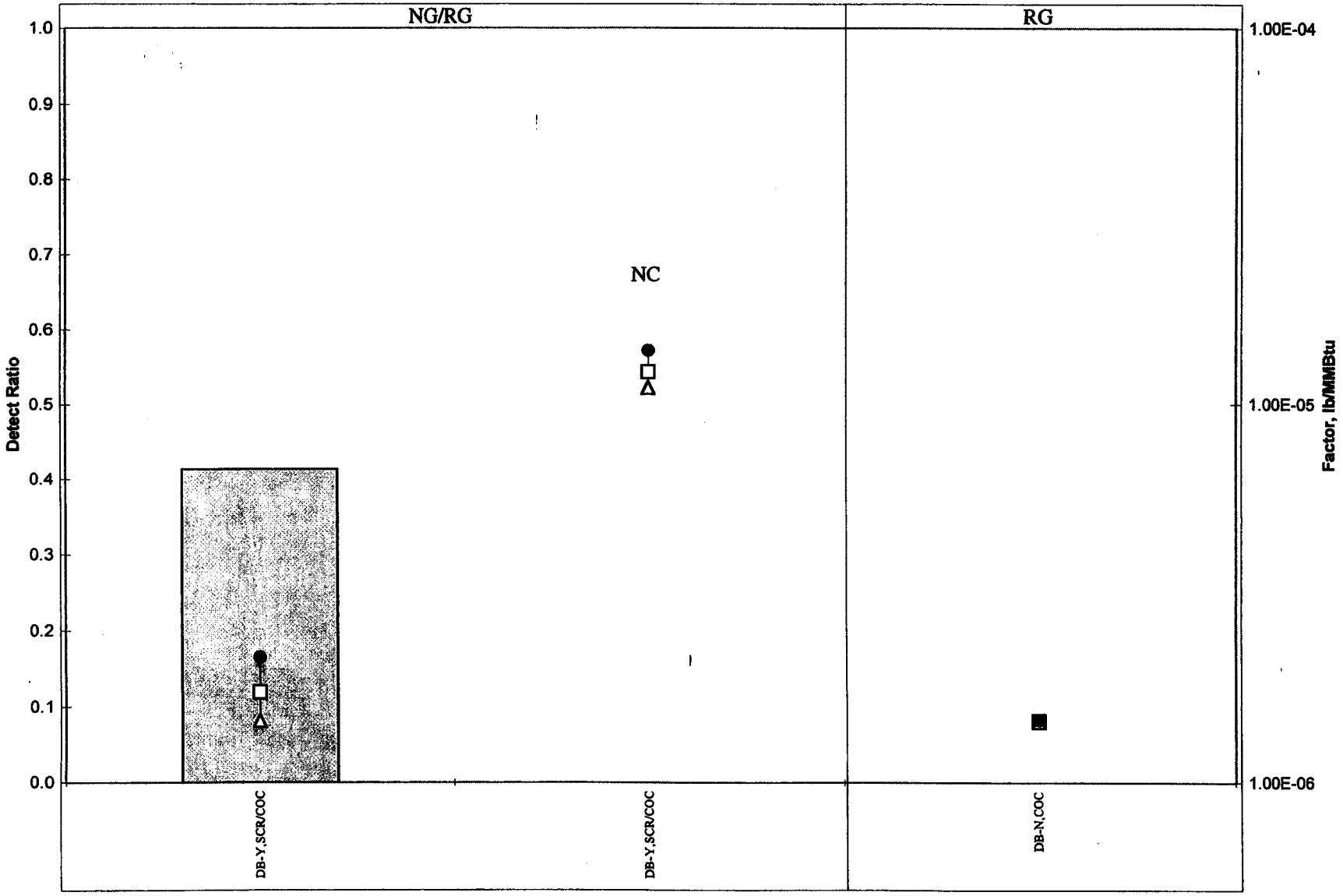
Detect Ratio: Ratio of Detect to Total of Detect and Non Detect Emissions Data
Label: x,y where x is Duct Burner (Yes or No) and y is Post Combustion APCD
NC: Not used in statistical comparison

Figure 9-43. Turbine Cadmium Emissions



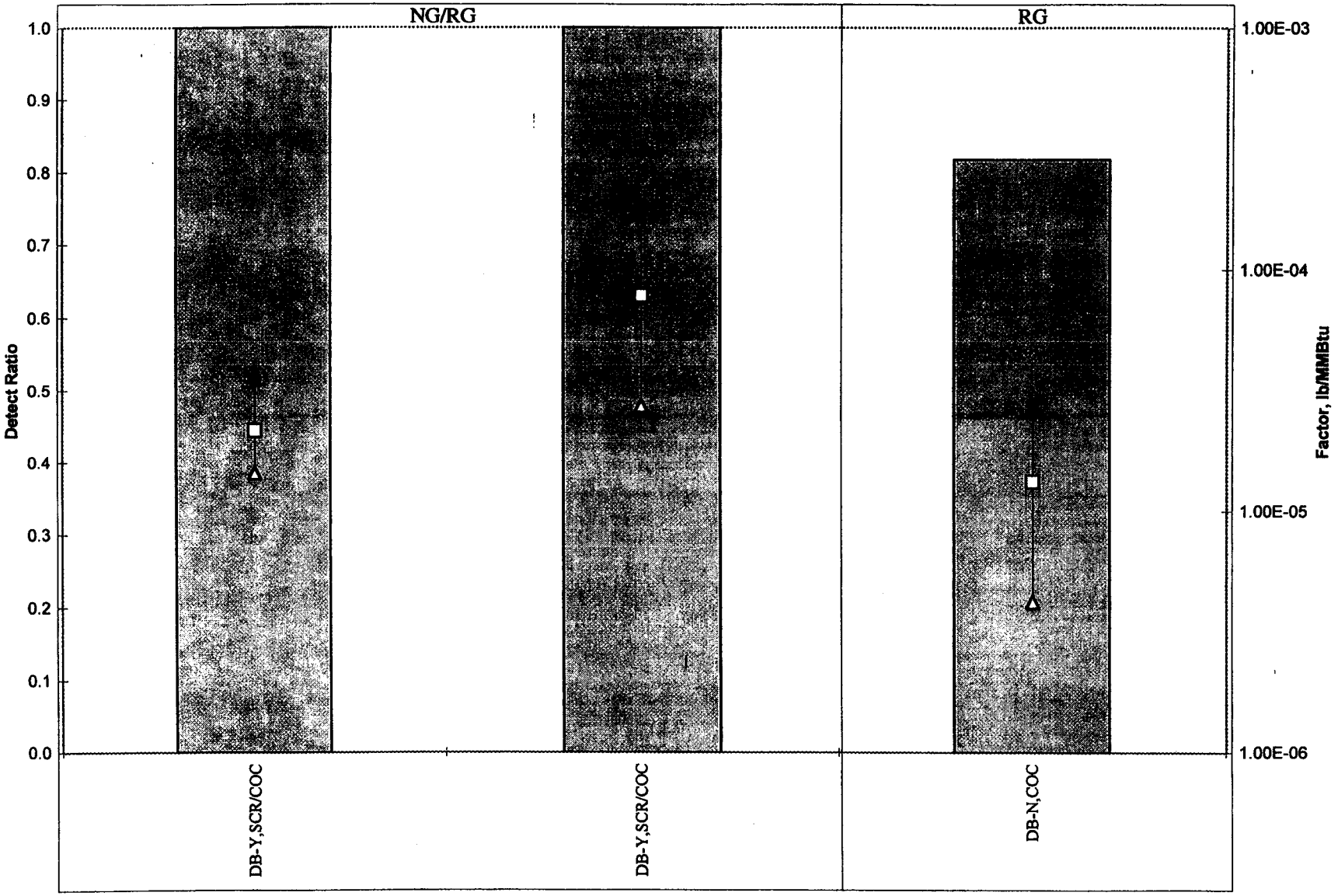
Detect Ratio: Ratio of Detect to Total of Detect and Non Detect Emissions Data
Label: x,y where x is Duct Burner (Yes or No) and y is Post Combustion APCD
NC: Not used in statistical comparison

Figure 9-44. Turbine Chromium (Hex) Emissions



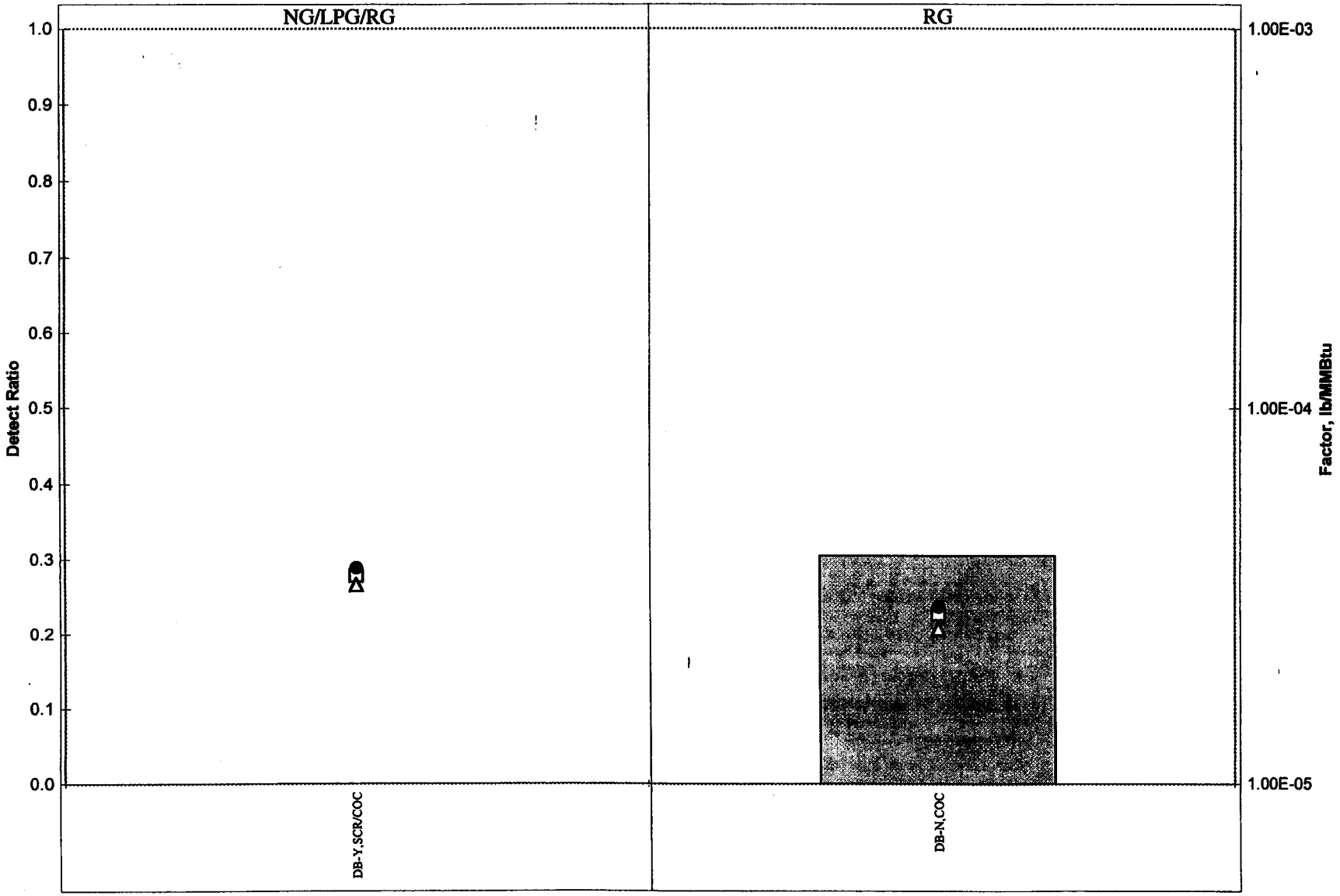
Detect Ratio: Ratio of Detect to Total of Detect and Non Detect Emissions Data
Label: x,y where x is Duct Burner (Yes or No) and y is Post Combustion APCD
NC: Not used in statistical comparison

Figure 9-45. Turbine Chromium (Total) Emissions



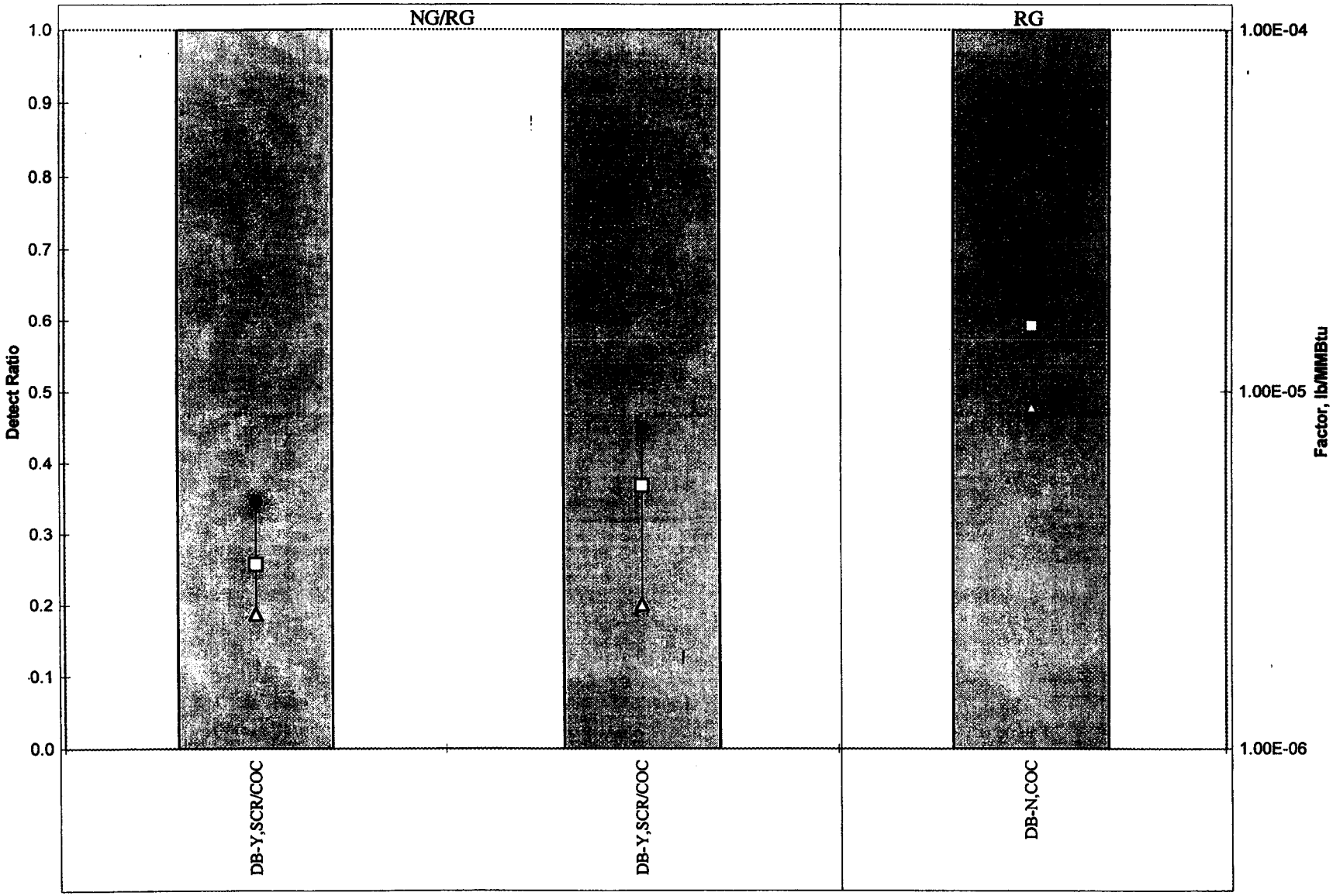
Detect Ratio: Ratio of Detect to Total of Detect and Non Detect Emissions Data
Label: x,y where x is Duct Burner (Yes or No) and y is Post Combustion APCD
NC: Not used in statistical comparison

Figure 9-46. Turbine Lead Emissions



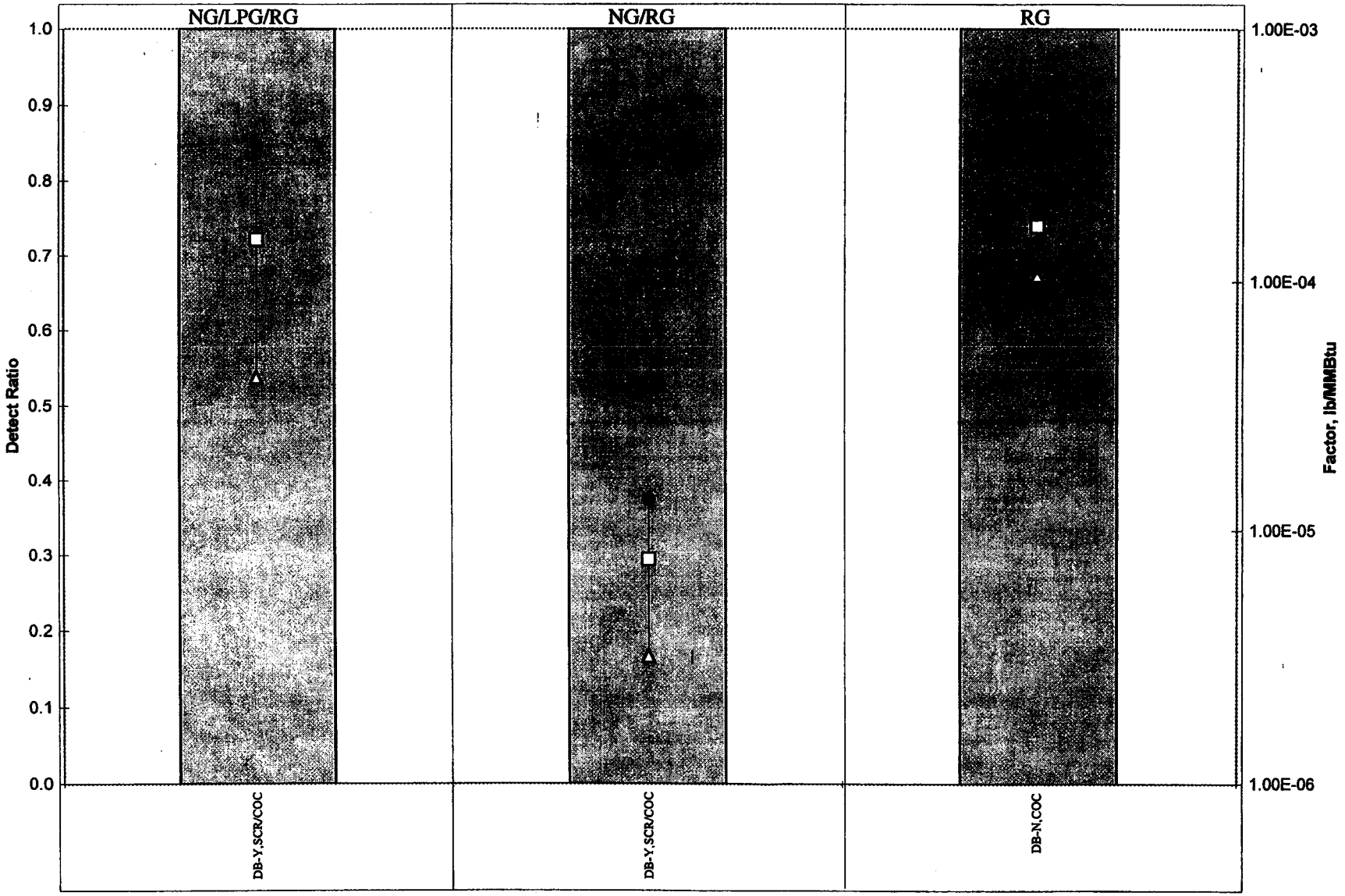
Detect Ratio: Ratio of Detect to Total of Detect and Non Detect Emissions Data
Label: x,y where x is Duct Burner (Yes or No) and y is Post Combustion APCD
NC: Not used in statistical comparison

Figure 9-47. Turbine Mercury Emissions



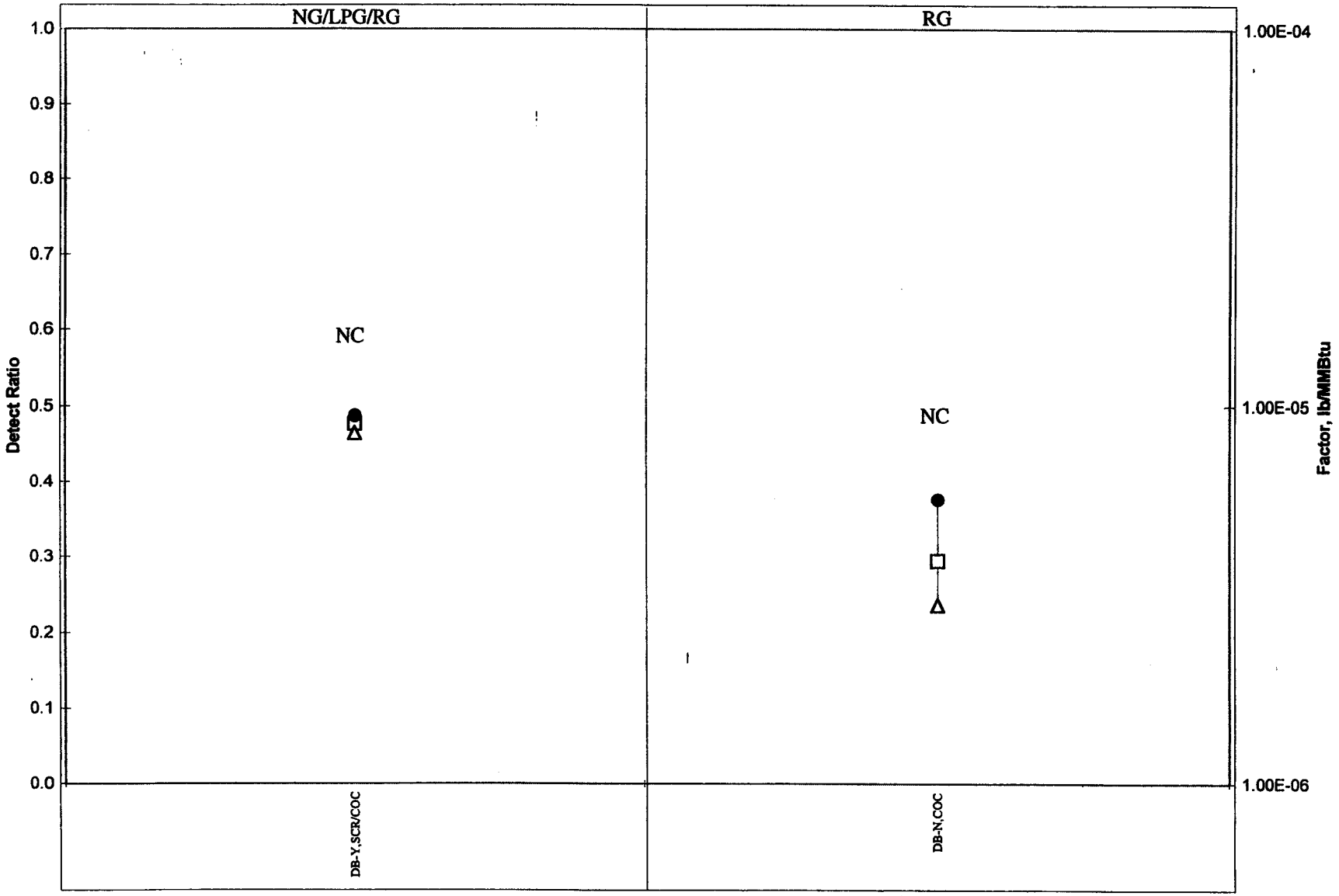
Detect Ratio: Ratio of Detect to Total of Detect and Non Detect Emissions Data
Label: x,y where x is Duct Burner (Yes or No) and y is Post Combustion APCD
NC: Not used in statistical comparison

Figure 9-48. Turbine Nickel Emissions



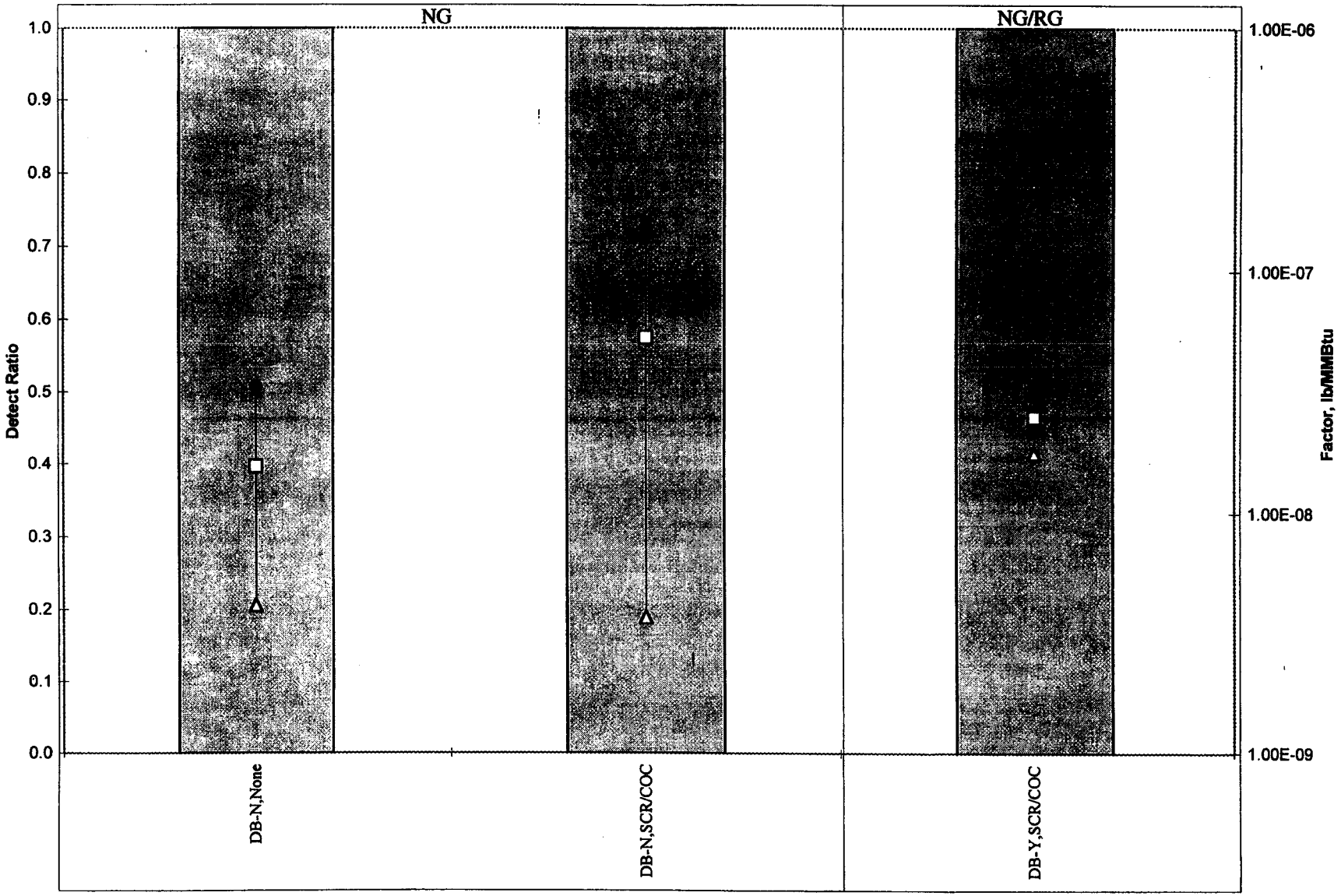
Detect Ratio: Ratio of Detect to Total of Detect and Non Detect Emissions Data
Label: x,y where x is Duct Burner (Yes or No) and y is Post Combustion APCD
NC: Not used in statistical comparison

Figure 9-49. Turbine Selenium Emissions



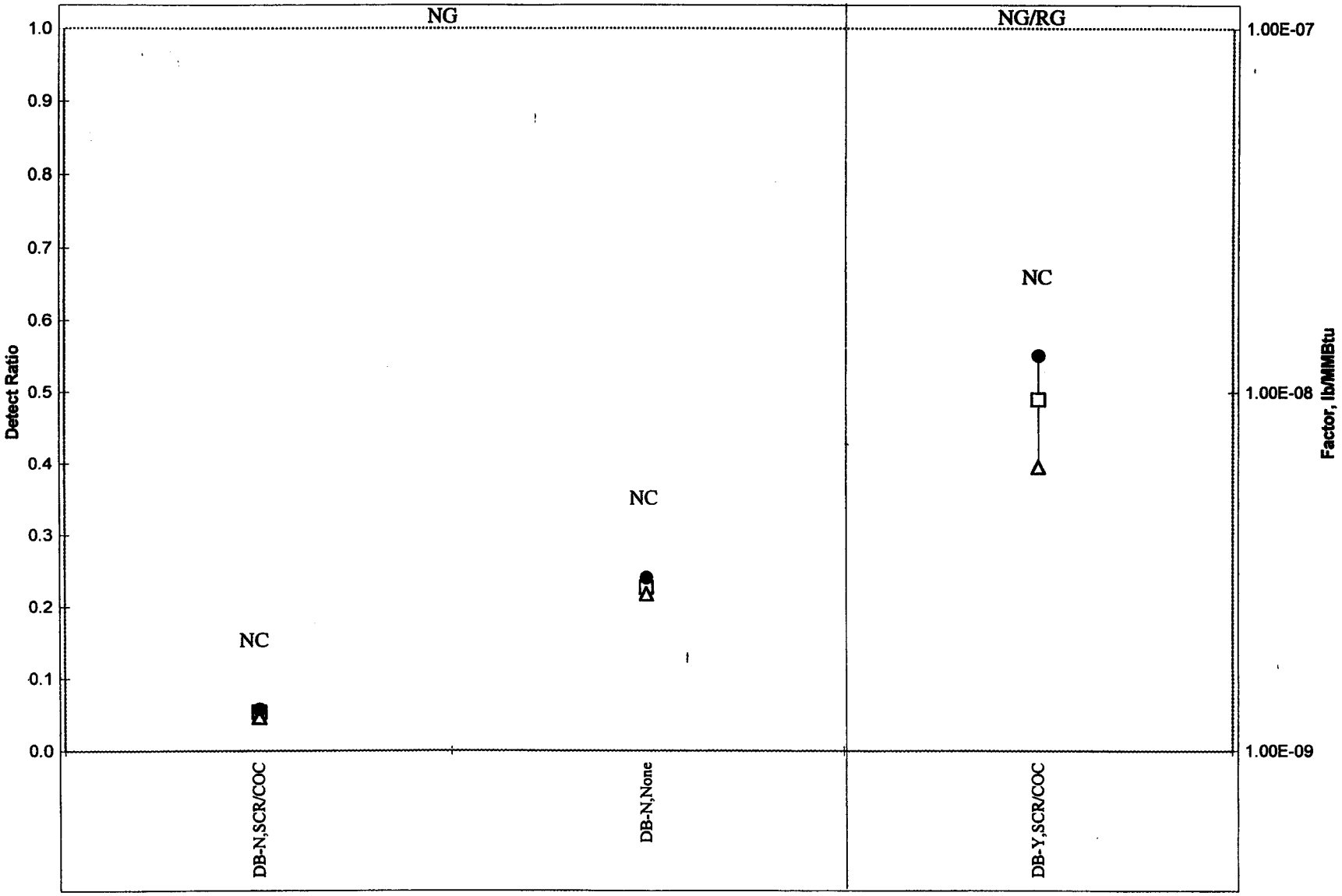
Detect Ratio: Ratio of Detect to Total of Detect and Non Detect Emissions Data
Label: x,y where x is Duct Burner (Yes or No) and y is Post Combustion APCD
NC: Not used in statistical comparison

Figure 9-50. Turbine Anthracene Emissions



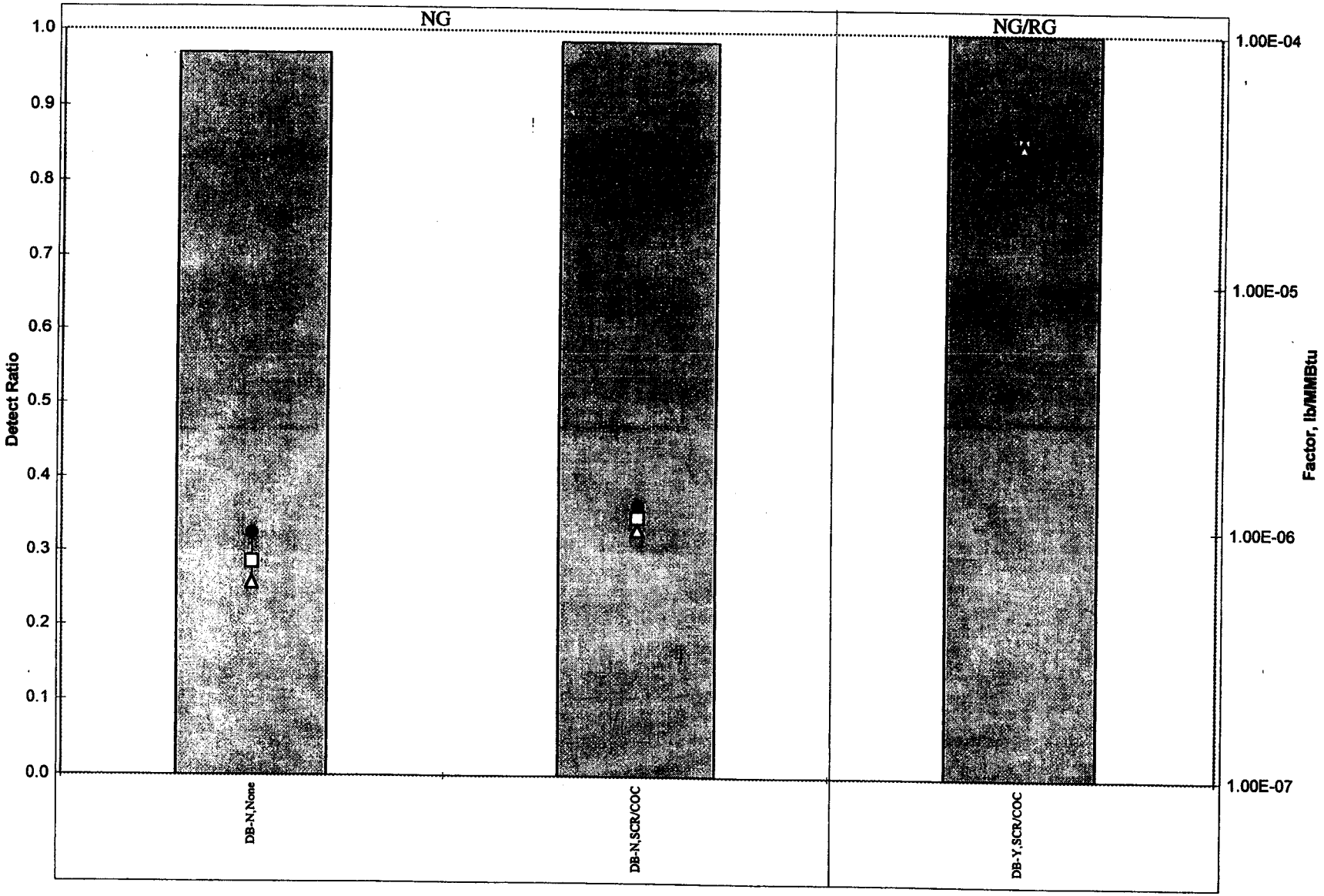
Detect Ratio: Ratio of Detect to Total of Detect and Non Detect Emissions Data
Label: x,y where x is Duct Burner (Yes or No) and y is Post Combustion APCD
NC: Not used in statistical comparison

Figure 9-51. Turbine Benzo(a)pyrene Emissions



Detect Ratio: Ratio of Detect to Total of Detect and Non Detect Emissions Data
Label: x,y where x is Duct Burner (Yes or No) and y is Post Combustion APCD
NC: Not used in statistical comparison

Figure 9-52. Turbine POM Total Emissions



Detect Ratio: Ratio of Detect to Total of Detect and Non Detect Emissions Data
Label: x,y where x is Duct Burner (Yes or No) and y is Post Combustion APCD
NC: Not used in statistical comparison