Appendix A

Cross Check Tables

Table of Contents

Calibration Standard Code to Component Type

CalibrationStandardCode	ComponentTypeCode	
SIA	O2	
E	HG	
O	HG	
SBP	SO2	
SBP	NOX	
SBP	CO2	
BBP	SO2	
BBP	NOX	
MBP	SO2	
MBP	NOX	
MBP	CO2	
SRM		
PRM		
NTRM		
RGM		
GMIS		
ZAM	O2	
SBP	O2	

*Appropriate Component Type for Calibration Standard Code

Certification Event Code to Test Type

EventCode	TestTypeCode	
250	RATA	
20		
25		
26		
40		
125		
305	RATA	
27		

*Identifies which events allow a 90/180 deadline to complete the required test type.

Component Type and Basis to Sample Acquisition Method

GenericComponentType	BasisCode	SampleAcquisitionMethodCode
FLOW		DP
FLOW		U
FLOW		T
FLOW		O

Component Type and Basis to Sample Acquisition Method

GenericComponentType	BasisCode	SampleAcquisitionMethodCode
FUELFLOW		COR
FUELFLOW		DP
FUELFLOW		NOZ
FUELFLOW		ORF
FUELFLOW		O
FUELFLOW		T
FUELFLOW		TUR
FUELFLOW		VEN
FUELFLOW		VTX
FUELFLOW		PDP
FUELFLOW		U
TANK		O
TANK		
CONC	W	DIL
CONC	W	DIN
CONC	W	DOU
CONC	W	IS
CONC	W	ISC
CONC	D	EXT
CONC	W	WXT
CONC	W	ISP
CONC	W	O
OP		O
OP		IS
OP		ISC
DAHS		
PLC		
DL		
PRB		
DP		
CALR		
FLC		
TEMP		
PRES		
GCH		
CONC	D	O
H2O		IS
H2O		ISC

Component Type and Basis to Sample Acquisition Method

GenericComponentType	BasisCode	SampleAcquisitionMethodCode
H2O		ISP
H2O		EXT
H2O		WXT
H2O		T
H2O		TUR
H2O		O
STRAIN	D	ADSP
TRAP		TRAP
GFM	D	TRAP
FUELFLOW		VCON
CONC	D	DOD
MS		

*Appropriate Sample Acquisition Method Codes for Component Type and Basis.

Component Type and Span Scale to Span Method

ComponentTypeCode	SpanScaleCode	SpanMethodCode
CO2	H	HD
CO2	H	TB
CO2	L	HD
CO2	L	TB
O2	H	
O2	L	
FLOW		F
FLOW		TR
FLOW		HD
NOX	H	TB
NOX	H	TR
NOX	H	OL
NOX	H	ME
NOX	H	HD
NOX	L	F
NOX	L	TR
NOX	L	HD
NOX	L	OL
NOX	L	PL
SO2	H	F
SO2	H	TR
SO2	H	HD
SO2	H	OL
SO2	L	F
SO2	L	OL
SO2	L	GS
SO2	L	HD
HG	H	TB
HG	H	TR
HG	H	FS
HCL	H	OL

*Appropriate span method for component type and span scale.

Control to Unit Type Cross Check Table

ControlCode	UnitTypeCode	
LNBO	AF	
LNBO	DTF	
H2O	CC	
H2O	CT	
H2O	OT	
H2O	C	
H2O	T	
H2O	OB	
H2O	IGC	
LNB	DB	
LNB	DTF	
LNB	DVF	
LNBO	DVF	
LNB	OB	
LNBO	OB	
LNB	PRH	
LNBO	PRH	
LNC1	T	
LNC2	T	
LNC3	T	
LNCB	CB	
LNCB	DB	
DLNB	CC	
DLNB	CT	
DLNB	OT	
DLNB	IGC	
LNBO	DB	
LNBO	DFF	

*Appropriate Unit Type for Control

Default Parameter to Purpose

ParameterCode	DefaultPurposeCode	
SORX	MD	
O2X	DC	
CO2X	MD	
BWA	PM	
MHHI	LM	
H2O	PM	
CO2R	LM	
NOXR	LM	
SO2R	LM	
SO2R	F23	
MNGF	DM	
MNOF	DM	
CO2N	DC	
O2N	MD	
H2ON	MD	
H2OX	MD	
FLOX	MD	
MNHI	MD	
MNNX	MD	
SO2X	MD	
NOCX	MD	
NORX	MD	

*Links ParameterCode to appropraite DefaultPurposeCode in Monitoring Default record.

Default Parameter to Source of Value

ParameterCode	DefaultSourceCode	
CO2R	DEF	
CO2N	DEF	
CO2X	DATA	
CO2R	SAMP	
FLOX	DATA	
FLOX	TEST	
H2O	DEF	
H2O	APP	
H2ON	DATA	
H2ON	DEF	
H2OX	DATA	
H2OX	DEF	

Default Parameter to Source of Value

ParameterCode	DefaultSourceCode	
MNGF	DATA	
MNOF	DATA	
MNHI	APP	
MNNX	APP	
NOCX	DATA	
NOCX	TEST	
NOCX	DEF	
NOXR	DEF	
NOXR	TEST	
NOXR	DATA	
NORX	DATA	
NORX	TEST	
NORX	DEF	
O2N	DATA	
O2X	DEF	
SO2R	CONT	
SO2R	SAMP	
SO2R	DEF	
SO2X	TEST	
SO2X	DEF	
SO2X	SAMP	
MHHI	MAXD	
MHHI	DATA	
MHHI	APP	
BWA	DATA	
SO2R	PERM	
CO2N	DATA	
O2X	DATA	
H2O	DATA	
SO2R	APP	
SO2X	DATA	
SORX	DATA	
SORX	DEF	
SORX	SAMP	
SORX	TEST	
NOCX	PERM	
NORX	PERM	
NORX	MAXD	

*Links ParameterCode to appropriate DefaultSourceCode in Monitoring Default record.

Default Parameter, Boiler Type, and Fuel Type to Default Value

ParameterCodeAndBoilerType	FuelCode	DefaultValue
SO2R	PNG	.0006
SO2R	NNG	.06
SO2R	OIL	2.1
SO2R	OOL	2.1
SO2R	DSL	.5
CO2R	NNG	.059
CO2R	PNG	.059
CO2R	OIL	.081
CO2R	OOL	.081
CO2R	DSL	.081
NOXR-BOILER	NNG	1.5
NOXR-BOILER	PNG	1.5
NOXR-BOILER	OOL	2
NOXR-BOILER	OIL	2
NOXR-BOILER	DSL	2
NOXR-TURBINE	NNG	.7
NOXR-TURBINE	PNG	.7
NOXR-TURBINE	OOL	1.2
NOXR-TURBINE	OIL	1.2
NOXR-TURBINE	DSL	1.2

*Links default parameter, boiler type, and fuel type to default value.

Event Code to System or Component Type

EventCode1	EventCode2	SystemOrComponentType
160		H2O
170	195	CONC
20	26	CEMNOXP
30	35	CONC
100	108	CONC
109		H2O
110	151	CONC
200		CEM
300	312	FLOW
400	410	FFM
501	504	NOXE
600	630	OP
800		CEM
250	255	NOXP
1	3	DAHS
15		DAHS
5		CONC
10		NOX

*Identifies which types of monitoring systems and components are appropriate for which types of QA certification events.

Event Code to Test Type Codes

EventCode1	EventCode2	TestTypeCode
1	3	DAHS
5	10	RATA
5		LINE
15		DAHS
30	51	LINE
20	26	RATA
40	51	RATA
40		7DAY
51		7DAY
100	101	RATA
100	102	LINE
100	101	7DAY
101		CYCLE
105		RATA
106	107	LINE
108	130	RATA

Event Code to Test Type Codes

EventCode1	EventCode2	TestTypeCode
108		7DAY
120	125	LINE
120	125	7DAY
120	125	CYCLE
140	151	LINE
160		RATA
170	185	LINE
185		CYCLE
185		RATA
185		7DAY
195		RATA
195		7DAY
200		RATA
300	301	RATA
300		7DAY
305		RATA
305		7DAY
311		RATA
400		FFACC
401		FFACCTT
402	403	PEI
405	410	FFACC
501	504	APPE
700		UNITDEF
800		LINE
800		RATA
900		RATA
950		HGLME
300		LEAK
302		LEAK
310		LEAK
191	195	LINE
252		PEMSACC
250	251	RATA
254	255	RATA

*Identifies which types of tests are required for which types of QA certification events.

F-Factor Range Checks

Factor	Lower Value	Upper Value
FC	900	3000
FD	8000	12000
FW	9000	13000

Formula Code to F-Factor Parameter

FormulaCode	ParameterCode	
19-1	FD	
F-5	FD	
19-2	FW	
19-3	FD	
19-3D	FD	
19-4	FD	
19-5	FD	
19-5D	FD	
19-6	FC	
19-7	FC	
F-6	FC	
19-8	FC	
19-9	FC	
F-14A	FC	
F-14A	FD	
F-14B	FC	
F-14B	FD	
G-4	FC	
F-15	FC	
F-16	FC	
F-17	FD	
F-18	FD	

*Links formula code to f-factor parameters that are factors in the formula.

Formula Parameter and Component Type and Basis to Formula Code

ParameterCode	ComponentTypeAndBasis	FormulaCode
HGRE	HGD	A-3
HGRE	HGW	A-2
CO2	CO2W	F-11
HI	O2B	F-17
HGRH	HGW	19-2

Formula Parameter and Component Type and Basis to Formula Code

ParameterCode	ComponentTypeAndBasis	FormulaCode
HGRH	HGW	19-3
HGRH	HGW	19-4
CO2M		G-1
HGRH	HGW	19-8
HGRH	HGD	19-1
CO2M		G-5
HGRH	HGD	19-6
HGRH	HGD	19-9
HGRH	STRAIND	19-1
HGRH	STRAIND	19-5
HGRH	STRAIND	19-9
HGRH	STRAIND	19-6
HGRH	CO2D	19-6
SO2	GFFM	D-4
HGRH	O2D	19-1
HGRH	O2D	19-4
HGRH	O2W	19-2
HGRH	O2W	19-3
HGRH	O2W	19-5
HGRH	CO2W	19-7
HGRH	CO2W	19-9
HGRH	O2B	19-1
HGRH	O2B	19-2
HGRH	O2B	19-3
HGRH	O2B	19-4
HGRH	O2B	19-5
HGRE	STRAIND	A-3
HCLRE	HCLD	HC-3
HFRE	HFW	HF-2
HFRE	HFD	HF-3
HCLRE	HCLW	HC-2
SO2RE	SO2W	S-2
SO2RE	SO2D	S-3
HGRH	HGD	19-5
HGRH	HGW	19-7
HCLRH	HCLD	19-1
HCLRH	HCLD	19-5
HCLRH	HCLD	19-6

Formula Parameter and Component Type and Basis to Formula Code

ParameterCode	ComponentTypeAndBasis	FormulaCode
HCLRH	HCLD	19-9
HCLRH	HCLW	19-2
HCLRH	HCLW	19-3
HCLRH	HCLW	19-4
HCLRH	HCLW	19-7
HCLRH	HCLW	19-8
HFRH	HFD	19-1
HFRH	HFD	19-5
HFRH	HFD	19-6
HFRH	HFD	19-9
HFRH	HFW	19-2
HFRH	HFW	19-3
HFRH	HFW	19-4
HFRH	HFW	19-7
HFRH	HFW	19-8
SO2RH	SO2D	19-1
SO2RH	SO2D	19-5
SO2RH	SO2D	19-6
SO2RH	SO2D	19-9
SO2RH	SO2W	19-2
SO2RH	SO2W	19-3
SO2RH	SO2W	19-4
SO2RH	SO2W	19-7
SO2RH	SO2W	19-8
HGRH	CO2D	19-8
SO2RH	CO2D	19-6
SO2RH	CO2D	19-8
SO2RH	CO2W	19-7
SO2RH	CO2W	19-9
SO2RH	O2B	19-1
SO2RH	O2B	19-3
SO2RH	O2B	19-2
SO2RH	O2B	19-4
SO2RH	O2B	19-5
SO2RH	O2D	19-1
SO2RH	O2D	19-4
SO2RH	O2W	19-2
SO2RH	O2W	19-3

Formula Parameter and Component Type and Basis to Formula Code

ParameterCode	ComponentTypeAndBasis	FormulaCode
SO2RH	O2W	19-5
HCLRH	CO2D	19-6
HCLRH	CO2D	19-8
HCLRH	CO2W	19-7
HCLRH	CO2W	19-9
HCLRH	O2B	19-1
HCLRH	O2B	19-2
HCLRH	O2B	19-3
HCLRH	O2B	19-4
HCLRH	O2B	19-5
HCLRH	O2D	19-1
HCLRH	O2D	19-4
HCLRH	O2W	19-2
HCLRH	O2W	19-3
HCLRH	O2W	19-5
HGRH	CO2D	19-6
HFRH	CO2D	19-6
HFRH	CO2D	19-8
HFRH	CO2W	19-7
HFRH	CO2W	19-9
HFRH	O2B	19-1
HFRH	O2B	19-2
HFRH	O2B	19-3
HFRH	O2B	19-3
HFRH	O2B	19-4
HFRE	O2B	19-5
HFRH	O2D	19-1
HFRH	O2D	19-4
HFRH	O2W	19-2
HFRH	O2W	19-3
HFRH	O2W	19-5
CO2	OFFM	G-4
HI	BOFF	F-19V
HI	OFFM	F-19V
FLOW		T-FL
CO2		G-4A
CO2M		G-1
CO2M		G-2

Formula Parameter and Component Type and Basis to Formula Code

ParameterCode	ComponentTypeAndBasis	FormulaCode
CO2M		G-3
CO2M		G-5
CO2M		G-6
CO2M		G-8
FC		F-7B
FC		F-8
FD		F-7A
FD		F-8
FGAS		N-GAS
FLOW		X-FL
FOIL		N-OIL
FW		F-8
FW		19-14
HI		F-21A
HI		F-21B
HI		F-21C
HI		F-21D
HI		F-25
HI		D-15A
HI		SS-3A
HI		SS-3B
NOXR		E-2
NOX		F-24A
NOX		SS-2A
NOX		SS-2B
NOX		SS-2C
NOXR		NS-1
NOXR		NS-2
NOXR		19-3D
NOXR		19-5D
SO2		D-12
SO2		SS-1A
SO2		SS-1B
SO2		F-23
SO2R		D-1H
NOXR	O2B	19-1
NOXR	O2B	19-2
NOXR	O2B	19-3

Formula Parameter and Component Type and Basis to Formula Code

ParameterCode	ComponentTypeAndBasis	FormulaCode
NOXR	O2B	19-4
NOXR	O2B	19-5
NOXR	O2B	F-5
HIT	BGFF	D-15
HIT	BOFF	D-15
HIT	OFFM	D-15
HIT	GFFM	D-15
CO2	O2B	F-11
CO2	O2B	F-2
CO2C	O2B	F-14A
CO2C	O2B	F-14B
HI	O2B	F-17
HI	O2B	F-18
CO2	CO2W	F-11
CO2	CO2D	F-2
CO2C	O2W	F-14B
CO2C	O2D	F-14A
CO2	O2W	F-11
CO2	O2D	F-2
SO2	SO2W	F-1
SO2	SO2D	F-2
NOXR	CO2D	19-6
NOXR	CO2D	19-8
NOXR	CO2W	F-6
NOXR	CO2W	19-7
NOXR	CO2W	19-9
NOXR	O2D	F-5
NOXR	O2D	19-1
NOXR	O2D	19-4
NOXR	O2W	19-2
NOXR	O2W	19-5
NOXR	O2W	19-3
NOXR	NOXD	F-5
NOXR	NOXD	19-1
NOXR	NOXD	19-5
NOXR	NOXD	19-6
NOXR	NOXD	19-9
NOXR	NOXW	19-2

Formula Parameter and Component Type and Basis to Formula Code

ParameterCode	ComponentTypeAndBasis	FormulaCode
NOXR	NOXW	19-3
NOXR	NOXW	19-4
NOXR	NOXW	19-7
NOXR	NOXW	F-6
NOXR	NOXW	19-8
NOX	NOXD	F-26B
NOX	NOXW	F-26A
HI	O2D	F-18
HI	O2W	F-17
HI	CO2D	F-16
HI	CO2W	F-15
HI	OFFM	D-8
HI	OFFM	F-19
HI	GFFM	D-6
HI	GFFM	F-20
OILM	OFFM	D-3
SO2	OFFM	D-2
SO2	GFFM	D-4
SO2	GFFM	D-5
CO2	GFFM	G-4
H2O		F-31
H2O		M-1K
CO2	BOFF	G-4
CO2	BGFF	G-4
HI	BOFF	D-8
HI	BOFF	F-19
HI	BGFF	D-6
HI	BGFF	F-20
SO2	BOFF	D-2
SO2	BGFF	D-4
SO2	BGFF	D-5
PM		11-3
PM		11-16
PM		11-34
PM		11-37
PM		11-46
PMRE	PMD	C-4
PMRE	PMW	C-3

Formula Parameter and Component Type and Basis to Formula Code

ParameterCode	ComponentTypeAndBasis	FormulaCode
PMRE		MS-1
PMRE		MS-2
PMRH	CO2D	19-6
PMRH	CO2D	19-8
PMRH	CO2W	19-7
PMRH	CO2W	19-9
PMRH	O2B	19-1
PMRH	O2B	19-2
PMRH	O2B	19-3
PMRH	O2B	19-4
PMRH	O2B	19-5
PMRH	O2D	19-1
PMRH	O2D	19-4
PMRH	O2W	19-2
PMRH	O2W	19-3
PMRH	O2W	19-5
PMRH	PMD	19-1
PMRH	PMD	19-5
PMRH	PMD	19-6
PMRH	PMD	19-9
PMRH	PMW	19-2
PMRH	PMW	19-3
PMRH	PMW	19-4
PMRH	PMW	19-7
PMRH	PMW	19-8
PMRH		19-3D
PMRH		19-5D
PMRH		MS-1
SO2RH		19-3D
SO2RH		19-5D
HGRH		19-3D
HGRH		19-5D
HCLRH		19-3D
HCLRH		19-5D
HFRH		19-3D
HFRH		19-5D
HCLRE		MS-2
HFRE		MS-2

Formula Parameter and Component Type and Basis to Formula Code

ParameterCode	ComponentTypeAndBasis	FormulaCode
HGRE		MS-2
SO2RE		MS-2
HI		F-18C
NOX		F-27B
NOX		F-28
HGRE		MS-1
HCLRE		MS-1
HFRE		MS-1
SO2RE		MS-1
HGRH		MS-1
HCLRH		MS-1
HFRH		MS-1
SO2RH		MS-1

*Links formula parameter and component type and basis to the formula code.

Formula to Required Method

FormulaCode	MethodParameter	MethodCode
F-23	SO2	CEMF23
F-23	SO2	F23
F-24A	NOX	CEMNOXR
F-24A	NOX	NOXR
G-1	CO2M	FSA
G-2	CO2M	FSA
G-3	CO2M	FSA
G-5	CO2M	FSA
G-6	CO2M	FSA
G-8	CO2M	FSA

*Identifies the required Parameter and Method codes in a Method record when a Formula record contains a specific Formula code. Each Formula code might match multiple Parameter and Method code pairs.

Formula to Required Unit Fuel

FormulaCode	UnitFuelCode	
G-2	C	
G-3	C	

*Identifies the required Unit Fuel Codes when a Formula record contains a specific Formula code. Each Formula code might match multipleUnit Fuel codes.

Fuel Code to Minimum and Maximum Moisture Default Value

FuelCode	MinimumValue	MaximumValue
ANT	3	5
BT	6	8
SUB	8	12
LIG	11	13
W	13	15
NNG	14	18
PNG	14	18

*Provides minimum and maximum values for moisture defaults.

Fuel Flow to Load Baseline UOM to Load UOM and System Type

BaselineUOM	LoadUOM	SystemTypeList
1	MW	GAS,LTGS
2	KLBHR	GAS,LTGS
3	MW	OILM,OILV,LTOL
4	KLBHR	OILM,OILV,LTOL
5	MW	OILV,LTOL
6	KLBHR	OILV,LTOL
7	MMBTUHR	GAS,LTGS
8	MMBTUHR	OILM,OILV,LTOL
9	MMBTUHR	OILV,LTOL
BTUKBTU	MMBTUHR	
BTUKWH	MW	
BTULB	KLBHR	

*This table identifies appropriate combinations of fuel flow-to-load ratio and GHR units of measure to load and system type.

Fuel Type Reality Checks for Density

Fuel Code - Units of Measure	Lower Value	Upper Value
DSL - LBBBL	42	2100
DSL - LBGAL	1	50
DSL - LBM3	264	13209
DSL - LBSCF	7	374
OIL - LBBBL	42	2100
OIL - LBGAL	1	50
OIL - LBM3	264	13209
OIL - LBSCF	7	374

Fuel Type Reality Checks for FC Factor

FuelType	Lower Value	Upper Value
GAS	900	1600
OIL	1200	1800

Fuel Type Reality Checks for GCV

Fuel Code - Units of Measure	Lower Value	Upper Value
DSL - BTUBBL	420000	7560000
DSL - BTUGAL	10000	180000
DSL - BTUM3	2641729	47551117
DSL - BTUSCF	74806	1346499
OIL - BTUBBL	420000	8400000
OIL - BTUGAL	10000	200000
OIL - BTUM3	2641729	52834575
OIL - BTUSCF	74806	1496110
LPG - BTUHSCF	150000	475000
NNG - BTUHSCF	45000	350000
PNG - BTUHSCF	45000	235000
DSL - BTULB	200	177396
OIL - BTULB	200	177396
PNG - BTUSCF	450	2350

Fuel Type Reality Checks for Sulfur

Fuel Code	Lower Value	Upper Value
DSL	0	10
OIL	0	10
NNG	0	100
PNG	0	10

Fuel Type Warning Levels for Density

Fuel Code - Units of Measure	Lower Value	Upper Value
DSL - LBBBL	252	378
DSL - LBGAL	6	9
DSL - LBM3	1585	2378
DSL - LBSCF	45	67
OIL - LBBBL	294	420
OIL - LBGAL	7	10
OIL - LBM3	1849	2642
OIL - LBSCF	52	75

Fuel Type Warning Levels for GCV

Fuel Code - Units of Measure	Lower Value	Upper Value
DSL - BTUBBL	4200000	6972000
DSL - BTUGAL	100000	166000
DSL - BTUM3	26417287	43852697
DSL - BTUSCF	748055	1241771
OIL - BTUBBL	4200000	6972000
OIL - BTUGAL	100000	166000
OIL - BTUM3	26417287	43852697
OIL - BTUSCF	748055	1241771
LPG - BTUHSCF	235000	395000
NNG - BTUHSCF	90000	115500
PNG - BTUHSCF	90000	115500
DSL - BTULB	11000	30000
OIL - BTULB	9900	29000
PNG - BTUSCF	900	1500

Fuel Type Warning Levels for Sulfur

Fuel Code	Lower Value	Upper Value
DSL	0	2
OIL	0	5
NNG	0	50
PNG	0	1

Hourly Emissions Tolerances

Parameter	UOM	Tolerance
HIT	MMBTU	1
NOXM	LB	0.1
SO2M	LB	0.1
CO2M	TON	0.1
FOIL		0.1
SO2C	PPM	0.1
NOXC	PPM	0.1
FLOW	SCFH	1000
NOXR	LBMMBTU	0.005
CO2C	PCT	0.1
H2O	PCT	0.1
HI	MMBTUHR	1
SO2	LBHR	0.1
NOX	LBHR	0.1
CO2	TNHR	0.1
OILM	LBHR	0.5
HI HPFF	MMBTUHR	0.1
SO2 Oil HPFF	LBHR	0.1
SO2 Gas HPFF	LBHR	0.0001
CARBON	LB	0.1
CO2M DAILY	TON	0.1
LOAD	MW	1

*A tolerance (allowable error) to use when comparing reported values for emissions data to resutls calculated using associated formulas and measured values.

MATS Supplemental Compliance Parameter to Method

ParameterCode	MethodCode	
HG	LEE	
HF	LEE	
HF	QST	
HF	PMO	
TM	LEE	
HCL	LEE	
HCL	QST	
HCL	PMO	
TM	QST	
TM	PMQST	
TM	PMCEMS	
TM	PMCPMS	
TM	CEMS	
TNHGM	LEE	
TNHGM	QST	
TNHGM	PMQST	
TNHGM	PMCEMS	
TNHGM	PMCPMS	
TNHGM	CEMS	
IM	LEE	
IM	QST	
IM	LEST	
IM	CEMS	
INHGM	LEE	
INHGM	QST	
INHGM	LEST	
INHGM	CEMS	
LU	NA	

*Ties MATS Supplemental Compliance Parameters to valid Methods.

Method Parameter Equivalent Crosscheck

ParameterCode	EquivalentCode	
PMRE	PMRH	
PMRH	PMRE	
HCLRE	HCLRH	
HCLRH	HCLRE	
HFRE	HFRH	
HFRH	HFRE	
HGRE	HGRH	
HGRH	HGRE	
SO2RE	SO2RH	
SO2RH	SO2RE	

*Method Parameter Equivalent Crosscheck

Method Parameter to Maximum Default Parameter to Component Type

MethodParameterCode	DefaultParameterCode	ComponentTypeCode
CO2	FLOX	FLOW
HI	FLOX	FLOW
SO2	FLOX	FLOW
NOXR	NORX	
NOX	NOCX	NOX
NOX	FLOX	FLOW
SO2	SO2X	SO2
SO2	SORX	

*Links monitoring method parameter to the default value parameter for maximum substitute data values. Links to span component type that contains corresponding mpc/mer/mpf.

Method Parameter to Method to System Type

MethodParameterCode	MethodCode	SystemTypeCode
CO2	AD	
HI	AD	
HI	ADCALC	
SO2	AD	
CO2M	FSA	
CO2	CEM	CO2
SO2	AMS	SO2
CO2M	LME	
CO2	AMS	CO2
H2O	MDF	
H2O	MTB	H2OT
H2O	MMS	H2OM

Method Parameter to Method to System Type

MethodParameterCode	MethodCode	SystemTypeCode
H2O	MWD	H2O
OP	EXP	
OP	COM	OP
HI	CEM	CO2
HI	CALC	
HIT	MHHI	
HI	AMS	CO2
HIT	LTFF	
NOXR	AE	NOXE
NOXR	CEM	NOX
NOXR	AMS	NOX
NOX	CEM	NOXC
NOX	NOXR	
NOX	CEMNOXR	NOXC
NOXM	LME	
NOX	AMS	NOXC
NOXR	PEM	NOXP
SO2	F23	
HIT	LTFCALC	
SO2	CEM	SO2
SO2	CEMF23	SO2
SO2M	LME	
HI	EXP	
HIT	CALC	
HI	AMS	O2
HI	CEM	O2
HGRE	CEM	HG
HGRH	CEM	HG
HGRE	CEMST	HG
HGRE	ST	ST
HGRH	CEMST	HG
HGRH	ST	ST
HCLRE	CEM	HCL
HCLRH	CEM	HCL
HFRE	CEM	HF
HFRH	CEM	HF
SO2RE	CEM	SO2
SO2RH	CEM	SO2

Method Parameter to Method to System Type

MethodParameterCode	MethodCode	SystemTypeCode
HGRE	CEMST	ST
HGRH	CEMST	ST
HGRE	CALC	
HCLRE	CALC	
HFRE	CALC	
SO2RE	CALC	
HGRH	CALC	
HCLRH	CALC	
HFRH	CALC	
SO2RH	CALC	
NOX	CALC	
PMRE	CALC	
PMRE	CEM	PM
PMRH	CALC	
PMRH	CEM	PM
OP	COM	PM

*Cross check table linking method parameter codes to method method codes.

Method to Substitute Data Code

MethodCode	SubstituteDataCode	ParameterCode
LTFF	MHHI	
LTFCALC	MHHI	
MMS	SPTS	
MTB	SPTS	
MWD	SPTS	
AD	SPTS	
ADCALC	SPTS	
AE	SPTS	
CEMF23	SPTS	
CEMNOXR	SPTS	
CEM	SPTS	
CEM	FSP75	
CEM	FSP75C	
CEMF23	FSP75	
CEMF23	FSP75C	
CEMNOXR	FSP75	
CEMNOXR	FSP75C	
AMS	SPTS	

Method to Substitute Data Code

MethodCode	SubstituteDataCode	ParameterCode
FSA	SPTS	
MMS	REV75	
MTB	REV75	
MWD	REV75	
PEM	SPTS	
PEM	FSP75	
PEM	FSP75C	
AMS	FSP75	
AMS	FSP75C	
AD	NLB	
ADCALC	NLB	
AD	NLBOP	
ADCALC	NLBOP	
AMS	NLB	
AMS	NLBOP	
CEM	NLB	
CEM	NLBOP	
CEMF23	NLB	
CEMF23	NLBOP	
CEMNOXR	NLB	
CEMNOXR	NLBOP	
FSA	NLB	
FSA	NLBOP	
LTFCALC	SPTS	
LTFF	SPTS	
PEM	NLB	
PEM	NLBOP	
CEM	OZN75	NOX
CEMNOXR	OZN75	NOX
CEM	OZN75	NOXR
AMS	OZN75	NOX
AMS	OZN75	NOXR

*Cross check table linking substitute data code to method parameter and method code.

NOX MPC to Fuel Category and Unit Type

NOXMPC	FuelCategory	UnitTypeCode
800	COAL	
1600	COAL	

NOX MPC to Fuel Category and Unit Type

NOXMPC	FuelCategory	UnitTypeCode
400	GAS	
480	GAS	
400	OIL	
400	OIL/GAS	
480	OIL	
480	OIL/GAS	
2000		KLN
200	GAS	PRH
500	OIL	PRH
500	OIL/GAS	PRH
460	COAL	T
460	COAL	CFB
675	COAL	DB
675	COAL	DTF
675	COAL	S
975	COAL	DVF
975	COAL	CB
975	COAL	AF
1200	COAL	WBF
1200	COAL	WBT
1200	COAL	C
380	GAS	T
380	OIL	T
380	OIL/GAS	T
600	GAS	DB
600	OIL	DB
600	OIL/GAS	DB
550	GAS	DVF
550	GAS	AF
550	OIL	DVF
550	OIL	AF
550	OIL/GAS	DVF
550	OIL/GAS	AF
200	OIL	CT
200	OIL/GAS	CT
150	NG	CT
200	GAS	CC
200	GAS	CT

NOX MPC to Fuel Category and Unit Type

NOXMPC	FuelCategory	UnitTypeCode
150	NG	CC
200	OIL	CC
200	OIL/GAS	CC

*Appropriate fuel category (and unit type) for the Part 75 default value for NOx maximum potential concentration.

Oil Volume UOM to Density UOM to GCV UOM

OilVolumeUOM	OilDensityUOM	OilGCVUOM
GAL	LBGAL	BTUGAL
M3	LBM3	BTUM3
SCF	LBSCF	BTUSCF
BBL	LBBBL	BTUBBL

*Identifies valid relationships between UOM codes for Oil Volume, Density, and GCV for Appendix E test.

Operating Condition to Category

OperatingConditionCode	CategoryCode	
A	DEFAULT	
U	LME	
C	LME	
B	LME	
P	LME	
E	AE	
M	AE	
N	AE	
U	AE	
X	AE	
W	AE	
Y	AE	
Z	AE	
C	DEFAULT	
B	DEFAULT	
P	DEFAULT	
U	DEFAULT	

*Links operation condition codes to the categories for which they are appropriate.

Parameter to Category

ParameterCode	CategoryCode	
PM	FORMULA	
PMRE	METHOD	

Parameter to Category

ParameterCode	CategoryCode	
PMRH	METHOD	
PMRE	FORMULA	
PMRH	FORMULA	
SO2RE	METHOD	
SO2RH	METHOD	
HGRE	FORMULA	
HGRE	METHOD	
HGRH	METHOD	
HGRH	FORMULA	
HCLRE	FORMULA	
HCLRH	FORMULA	
HFRE	FORMULA	
HFRH	FORMULA	
SO2RE	FORMULA	
SO2RH	FORMULA	
HCLRE	METHOD	
HCLRH	METHOD	
HFRE	METHOD	
HFRH	METHOD	
AKSF	DEFAULT	
MHHI	DEFAULT	
BWA	DEFAULT	
CO2M	METHOD	
SO2M	METHOD	
NOXM	METHOD	
CO2	METHOD	
H2O	METHOD	
HI	METHOD	
NOXR	METHOD	
NOX	METHOD	
OP	METHOD	
SO2	METHOD	
HIT	METHOD	
CO2N	DEFAULT	
CO2R	DEFAULT	
CO2X	DEFAULT	
FLOX	DEFAULT	
H2O	DEFAULT	

Parameter to Category

ParameterCode	CategoryCode	
H2ON	DEFAULT	
H2OX	DEFAULT	
MNGF	DEFAULT	
MNHI	DEFAULT	
MNNX	DEFAULT	
MNOF	DEFAULT	
NOCX	DEFAULT	
NORX	DEFAULT	
NOXR	DEFAULT	
O2N	DEFAULT	
O2X	DEFAULT	
SO2R	DEFAULT	
SO2X	DEFAULT	
SORX	DEFAULT	
CO2	FORMULA	
CO2C	FORMULA	
CO2M	FORMULA	
FC	FORMULA	
FD	FORMULA	
FGAS	FORMULA	
FLOW	FORMULA	
FOIL	FORMULA	
FW	FORMULA	
H2O	FORMULA	
HI	FORMULA	
HIT	FORMULA	
NOX	FORMULA	
NOXR	FORMULA	
OILM	FORMULA	
SO2	FORMULA	
SO2R	FORMULA	

*Links emission parameter codes to the categories (record types) for which they are appropriate.

Program Parameter to Location Type

ProgramParameterCd	CommonLocationTypeList	MultipleLocationTypeList
CO2	CS,CP	MS,MP
HI	CS,CP	MS,MP
NOX	CS,CP	MS,MP
NOXR	CS,CP	MS,MP
OP	CS	MS
SO2	CS,CP	MS,MP
HCL	CS	MS
HF	CS	MS
HG	CS	MS

*Maps a program parameter to the types of stacks and pipes at which the program parameter may be reported.

Program Parameter to Method Code

ProgramParameterCd	MethodCdList	
OP	LME	

*Maps a program parameter to method codes that implicitly cover the program parameter.

Program Parameter to Method Parameter

ProgramParameterCd	MethodParameterList	MethodParameterDescription
HCL	HCLRE,HCLRH,SO2RE,SO2RH,MATSSUP	HCLRE (or HCLRH version for heat input based method, or equivalent SO2 method, or HCL Supplemental Method)
HF	HFRE,HFRH,MATSSUP	HFRE (or HFRH version for heat input based method or HF Supplemental Method)
HG	HGRE,HGRH,MATSSUP	HGRE (or HGRH version for heat input based method or HG Supplemental Method)
CO2	CO2,CO2M	CO2 (or CO2M for an LME Unit)
HI	HI,HIT	HI (or HIT for an LME Unit)
NOX	NOX,NOXM	NOX (or NOXM for an LME Unit)
NOXR	NOXM,NOXR	NOXR (or NOXM for an LME Unit)
OP	OP	OP
SO2	SO2,SO2M	SO2 (or SO2M for an LME Unit)
H2O	H2O	H2O
PM	PMRE,PMRH,MATSSUP	PMRE (or PMRH version for heat input based method or PM Supplemental Method)

*Maps a program parameter to the related method parameters.

Program Parameter to Severity

ProgramParameterCd	SeverityCd	
CO2	CRIT1	
HI	CRIT1	
NOX	CRIT1	
NOXR	CRIT1	
OP	NONCRIT	
SO2	CRIT1	
HCL	INFORM	
HF	INFORM	
HG	INFORM	

*Maps a program parameter to the program check severity.

Protocol Gas Parameter to Type

ProtocolGasParameter	GasTypeList	
CO2	APPVD,CO2,GMIS,N2C2,N2CC,NC2,NCC,NTRM,NXC2,NXCC,OC2,OCC,PRM,RGM,SC2,SN2C2,SN2CC,SNC2,SNCC,SNXC2,SNXCC,SRM,ZERO	
DIL	AIR,APPVD,CO2,GMIS,N2C2,N2CC,NC2,NCC,NXC2,NTRM,NXCC,O2,OC,OC2,OCC,PRM,RGM,SC2,SN2C2,SN2CC,SNC2,SNCC,SNXC2,SNXCC,SO,SOC,SRM,ZERO	
SO2	APPVD,GMIS,NTRM,PRM,RGM,SC,SC2,SN,SN2,SN2C,SN2C2,SN2CC,SNC,SNC2,SNCC,SNX,SNXC,SNXC2,SNXCC,SO,SO2,SOC,SRM,ZERO	
O2	AIR,APPVD,GMIS,NTRM,O2,OC,OC2,OCC,PRM,RGM,SO,SOC,SRM,ZERO	
NOX	APPVD,GMIS,N2C,N2C2,N2CC,NC,NC2,NCC,NO,NO2,NOX,NTRM,NX,NXC,NXC2,NXCC,PRM,RGM,SN,SN2,SN2C,SN2C2,SN2CC,SNC,SNC2,SNCC,SNX,SNXC,SNXC2,SNXCC,SRM,ZERO	

*Maps a protocol gas parameter and associated protocol gas to the appropriate corresponding protocol gas types.

Quarterly Emissions Tolerances

Parameter	UOM	Tolerance
HIT	MMBTU	50
SO2M	TON	0.1
NOXR	LBMMBTU	0.01
NOXM	TON	0.1
CO2M	TON	0.1
OPHOURS	HR	1
OPTIME	HR	0
CO2M-OLD	TON	200

*A tolerance (allowable error) to use when comparing reported values for emissions quarterly summary values to resutls gained by summing calculations for each parameter across all hours in a quarter

Required Test Code to Required ID and System or Component Type

RequiredTestCode	RequiredIDCode	SystemOrComponentType
82	S	NOXP
80	S	NOXP
81	S	NOXP
29	B	FLOW
1	B	FLOW
10	C	CONC
11	B	CONC
2	B	CONC
3	B	FLOW
4	B	CONC
5	S	RATA
6	S	FLOW
7	S	FLOW
8	B	CONC
9	C	CONC
12	B	CONC
13	B	CONC
14	C	CONC
15	B	CEM
16	B	CONC
17	C	CONC
18	C	CEM
19	C	CONC
20	C	DAHS
21	C	DAHS
22	C	DAHS
23	C	DAHS
24	C	CEM
25	C	CEM
26	S	FLOW
27	B	FLOW
28	B	FLOW
51	C	FFM
52	C	FFM
53	C	FFM
54	C	FFM
55	S	FFM
56	C	FFM

Required Test Code to Required ID and System or Component Type

RequiredTestCode	RequiredIDCode	SystemOrComponentType
57	C	FFM
75	S	NOXE
40	S	OP
42	S	OP
30	B	CONC
31	B	CONC
32	B	CONC
33	B	CONC
34	C	CONC
35	C	CONC
36	B	CONC

*Indicates whether the System ID (S), Component ID (C), or both (B) are required in the event record based on the required test code. Also indicates valid system and/or component types for the required test code.

System Type to Component Type

SystemTypeCode	ComponentTypeCode	Mandatory
H2OM	H2O	Yes
H2O	O2	Yes
CO2	CO2	
CO2	O2	
FLOW	FLOW	Yes
GAS	BGFF	
GAS	GFFM	
NOX	NOX	Yes
NOX	CO2	
NOX	O2	
NOXC	NOX	Yes
O2	O2	Yes
OILM	BOFF	
OILM	OFFM	
OILV	OFFM	
OILV	BOFF	
OP	OP	Yes
SO2	SO2	Yes
HCL	HCL	Yes
HF	HF	Yes
ST	STRAIN	Yes
HG	HG	Yes
PM	PM	Yes

*Required Non-DAHS Components in System

System Type to Formula Parameter

SystemTypeCode	ParameterCode	optional
SO2	SO2RE	SO2RE/CEM
SO2	SO2RH	SO2RH/CEM
SO2	SO2	SO2/CEM
SO2	SO2	SO2/CEMF23
PM	PMRE	PMRE/CEM
PM	PMRH	PMRH/CEM
CO2	HI	
O2	HI	
OILM	HI	
GAS	HI	
OILV	HI	
OILV	OILM	SO2/AD
OILM	SO2	SO2/AD
OILV	SO2	SO2/AD
GAS	SO2	SO2/AD
OILM	CO2	CO2/AD
OILV	CO2	CO2/AD
GAS	CO2	CO2/AD
NOX	NOXR	
NOXC	NOX	
SO2	SO2	SO2/AMS
H2O	H2O	
HG	HGRH	HGRH/CEM
HG	HGRE	HGRE/CEMST
HG	HGRH	HGRH/CEMST
ST	HGRE	HGRE/CEMST
ST	HGRH	HGRH/CEMST
HCL	HCLRE	HCLRE/CEM
HCL	HCLRH	HCLRH/CEM
HF	HFRE	HFRE/CEM
HF	HFRH	HFRH/CEM
HG	HGRE	HGRE/CEM
ST	HGRE	HGRE/ST
ST	HGRH	HGRH/ST

*Links system type to required formula parameter.

System Type to Fuel Group

SystemTypeCode	FuelGroupCode	
H2OM	NFS	
H2OT	NFS	
HG	NFS	
ST	NFS	
PM	NFS	
HCL	NFS	
HF	NFS	
GAS	GAS	
LTGS	GAS	
LTOL	OIL	
NOXE	OIL	
NOXE	GAS	
NOXE	MIX	
NOXP	NFS	
OILM	OIL	
OILV	OIL	
CO2	NFS	
FLOW	NFS	
H2O	NFS	
NOX	NFS	
NOXC	NFS	
O2	NFS	
OP	NFS	
SO2	NFS	

*Links System Type to Fuel Group Codes

System Type to Optional Component Type

SystemTypeCode	OptionalComponentTypeCode	
GAS	MS	
LTGS	MS	
PM	PRB	
HG	PRB	
HCL	PRB	
HF	PRB	
LTGS	GFFM	
LTGS	BGFF	
LTOL	OFFM	
LTOL	BOFF	

System Type to Optional Component Type

SystemTypeCode	OptionalComponentTypeCode	
LTOL	TANK	
H2OM	PRB	
OILM	TEMP	
OILV	TEMP	
LTOL	TEMP	
GAS	CALR	
GAS	DP	
GAS	FLC	
GAS	GCH	
GAS	PRES	
GAS	TEMP	
LTGS	CALR	
LTGS	DP	
LTGS	PRES	
LTGS	TEMP	
LTGS	FLC	
LTGS	GCH	
OILM	DP	
OILM	PRES	
OILV	DP	
OILV	PRES	
LTOL	DP	
CO2	PRB	
H2O	PRB	
O2	PRB	
NOX	PRB	
NOXC	PRB	
SO2	PRB	

*Optional Non-DAHS components in system.

T-Values

NumberOfItems	T-Value	
1	12.706	
2	4.303	
3	3.182	
4	2.776	
5	2.571	
6	2.447	
7	2.365	
8	2.306	
9	2.262	
10	2.228	
11	2.201	
12	2.179	
13	2.160	
14	2.145	
15	2.131	
16	2.120	
17	2.110	
18	2.101	
19	2.093	
20	2.086	
21	2.080	
22	2.074	
23	2.069	
24	2.064	
25	2.060	
26	2.056	
27	2.052	
28	2.048	
29	2.045	
30	2.042	

*A table of t-values for use in calculating relative accuracy.

Table D-6 Missing Data Values

Parameter	FuelCode	MissingDataValue
SULFUR	DSL	1.0
SULFUR	OIL	3.5
DENSOIL - LBGAL	DSL	7.4
DENSOIL - LBGAL	OIL	8.5
GCV - BTULB	DSL	20000
GCV - BTULB	OIL	19500
GCV - BTUHSCF	PNG	110000
GCV - BTUHSCF	NNG	110000
GCV - BTUHSCF	BUT	150000
GCV - BTUHSCF	LFG	110000
GCV - BTUHSCF	RFG	150000
GCV - BTUHSCF		210000
GCV - BTUGAL	DSL	148000
GCV - BTUGAL	OIL	165750

*Appendix D values used for missing data purposes from Table D-6 (Sample Type Code = 8).

Test Tolerances

TestTypeCode	FieldDescription	Tolerance
LINE	PercentError	0.1
LINE	MeanDifferencePCT	0.1
LINE	MeanDifferencePPM	1
RATA	RelativeAccuracy	0.01
RATA	BAF	0.001
RATA	AverageGrossUnitLoad	1
RATA	MeanDifferencePCT	0.01
RATA	MeanDifferencePPM	0.1
RATA	MeanDifferenceRATE	0.001
RATA	MeanDifferenceSCFH	1
RATA	StackArea (PCT)	0.5
GFMCAL	CalibrationFactorY	0.001
LINE	MeanDifferenceUGSCM	0.1
RATA	MeanDifferenceUGSCM	0.1
7DAY	DifferenceUGSCM	0.1
GFMCAL	PercentCalibrationChange	0.1
HGLINE	GasPercentOfSpan	2
HGLINE	MeanDifferencePCT	0.1
HGLINE	MeanDifferenceUGSCM	0.1
HGLINE	PercentError	0.1

Test Tolerances

TestTypeCode	FieldDescription	Tolerance
HGSI3	GasPercentOfSpan	2
HGSI3	MeadDifferencePCT	0.1
HGSI3	MeanDifferenceUGSCM	0.1
HGSI3	PercentError	0.1
APPE	OilMass	0.1
APPE	MeanReferenceValue	0.01
7DAY	DifferenceINH2O	0
RATA	MolecularWeight	0.01
RATA	Velocity (PCT)	0.5
RATA	WAF	0.001
RATA	StackFlow (PCT)	0.5
7DAY	CalibrationError	0.1
7DAY	DifferencePPM	1
7DAY	DifferencePCT	0.1
F2LREF	AverageGrossUnitLoad	1
F2LREF	AverageReferenceMethodFlow	1000
F2LREF	ReferenceFlowLoadRatio	0.01
F2LREF	ReferenceGHR	1
LINE	GasPercentOfSpan	2
7DAY	GasPercentOfSpan	5.0
CYCLE	GasPercentOfSpan	5.0
APPE	HeatInputRate	0.1
RATA	ConfidenceCoefficientUGSCM	0.1

*Acceptable tolerances between reported and recalculated values in test records.

Test Type to Parameter

TestTypeCode	ComponentTypeCode	SystemTypeCode
7DAY	CO2	
7DAY	NOX	
7DAY	O2	
7DAY	FLOW	
7DAY	SO2	
APPE		NOXE
CYCLE		SO2
CYCLE		NOX
CYCLE		NOXC
CYCLE		CO2
CYCLE		O2

Test Type to Parameter

TestTypeCode	ComponentTypeCode	SystemTypeCode
F2LCHK		FLOW
FF2LTST		OILM
FF2LTST		OILV
FF2LTST		GAS
FFACC	OFFM	
FFACC	BGFF	
FFACC	BOFF	
FFACC	GFFM	
FFACCTT	BGFF	
FFACCTT	BOFF	
FFACCTT	GFFM	
FFACCTT	OFFM	
LEAK	FLOW	
ONOFF	CO2	
ONOFF	NOX	
ONOFF	SO2	
ONOFF	FLOW	
ONOFF	O2	
RATA		SO2
RATA		NOX
RATA		NOXC
RATA		CO2
RATA		O2
RATA		H2O
RATA		FLOW
LINE	CO2	
LINE	NOX	
LINE	SO2	
LINE	O2	
RATA		NOXP

*A list of appropriate system/component types for each test type.

Test Type to Required Test Code

TestTypeCode	RequiredTestCode	
RATA3	3	
RATA	80	
PEMSACC	81	
AF2LCHK	26	

Test Type to Required Test Code

TestTypeCode	RequiredTestCode	
AF2LCHK	28	
LEAK	29	
LEAK	15	
LEAK	27	
LINE	2	
LINE	4	
LINE	8	
LINE	11	
LINE	12	
LINE	17	
7DAY	1	
7DAY	2	
7DAY	3	
7DAY	4	
7DAY	10	
7DAY	11	
7DAY	13	
7DAY	14	
7DAY	15	
7DAY	18	
7DAY	25	
APPE	75	
CYCLE	2	
CYCLE	4	
CYCLE	12	
CYCLE	14	
CYCLE	16	
CYCLE	17	
CYCLE	19	
DAHS	20	
DAHS	22	
DAHS	21	
DAHS	23	
FFACC	51	
FFACCTT	52	
FFACCTT	53	
FFACCTT	56	
HGLME	77	

Test Type to Required Test Code

TestTypeCode	RequiredTestCode	
LINE	9	
LINE	10	
ONOFF	24	
ONOFF	25	
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