The Emissions Collection and Monitoring Plan Project

Emissions XML Schema
Version 1.0

Submitted to:

ECMPS Stakeholders

Submitted by:

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List of Figures

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1.0 Introduction

This document is the third in a series that outlines the Extensible Mark-up Language (XML) schema and how data files must be formatted for the Emissions Collection and Monitoring Plan System (ECMPS). A schema will be developed for each data type, i.e., monitoring plan, quality assurance and certification test data, emissions data, and each data type will generate its own XML file. The schema will be used for all data that are imported into the ECMPS client submission tool and exported from the client submission tool. The move to XML will allow users to submit only the necessary data for a given submission of data. It will also allow for more robust data validation through the XML schema, and will keep the file size as small as possible.

The schema is included in a separate file. The schema may be viewed in any application that is able to display text files or an application specifically designed for viewing XML schema.

2.0 Emissions XML Schema Tables

The following tables provide information about the data elements of the Emissions XML schema. The information includes a description of the data element, the type of the element, and, where appropriate, a reference to the relevant EDR record type and column. If an exact correspondence between a single EDR record type and column and a data element could not be made, the column in the table will include the "N/A" designation. In other cases because the data have been restructured, it was not possible to make an exact match between a record type and column and a data element. In these cases, the record type and column are marked as "N/A."

Figures 1 and 2 provide information on the root element of the Emissions XML schema. Figure 3 lists all of the complex data elements and information that indicates the parent-child relationship between the major data elements. Figures 4 through 23 include information on the complex data elements in the XML schema.

Detailed information about the data types is included in Figure 24. The term "optional" is often used in the names of the various data types. The term "optional" in the name of these data validation data types only refers to the fact that the schema validation will accept a data element tag that does not include a value (an empty tag). Depending on the data being reported, these data elements might require data to be reported.

**Figure 1
Emissions**
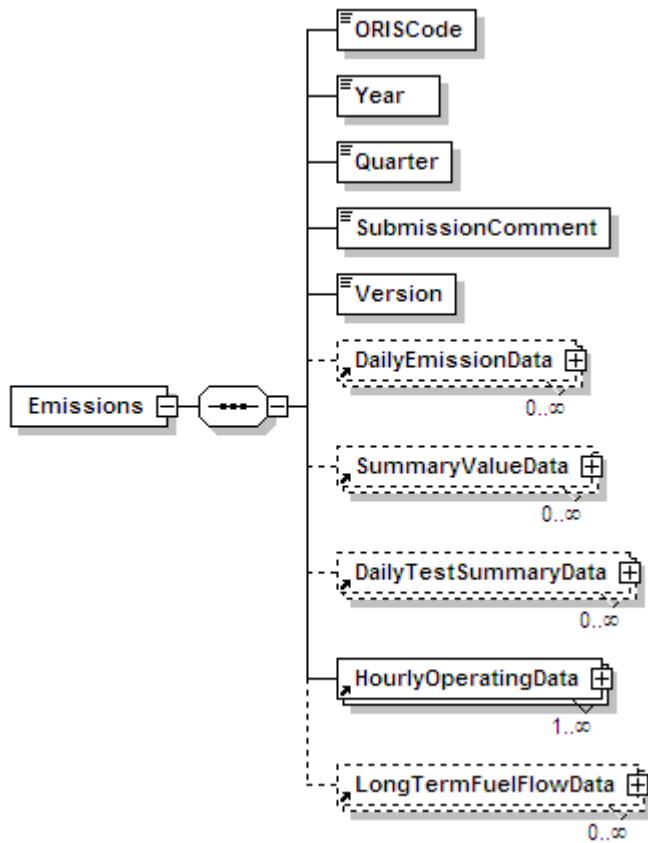
**Figure 2
Emissions Schema XML Elements**

XML Tag	Type	Definition	EDR Reference (RT:Col)
ORISCode	ORISCodeType	EIA-assigned identifier or Facility identifier assigned by CAMD (if EIA number is not applicable).	N/A
Year	ReportingYearType	Reporting Year.	N/A
Quarter	ReportingYearQuarter	Reporting Quarter.	N/A
SubmissionComment	SubmissionCommentType	Comment on an emissions submission.	N/A
Version	VersionType	Identifies the XML schema version.	N/A

Figure 3
Complex Elements of the Root

Complex Element	Parent Element	Minimum Occurrences	Maximum Occurrences
DailyCalibrationData	DailyTestSummaryData	0	unbounded
DailyEmissionData	Emissions	0	unbounded
DailyTestSummaryData	Emissions	0	unbounded
DerivedHourlyValueData	HourlyOperatingData	0	unbounded
Emissions		1	1
HourlyFuelFlowData	HourlyOperatingData	0	unbounded
HourlyOperatingData	Emissions	1	unbounded
HourlyParameterFuelFlow Data	HourlyFuelFlowData	0	unbounded
LongTermFuelFlowData	Emissions	0	unbounded
MonitorHourlyValueData	HourlyOperatingData	0	unbounded
SummaryValueData	Emissions	0	unbounded

Figure 4
DailyCalibrationData
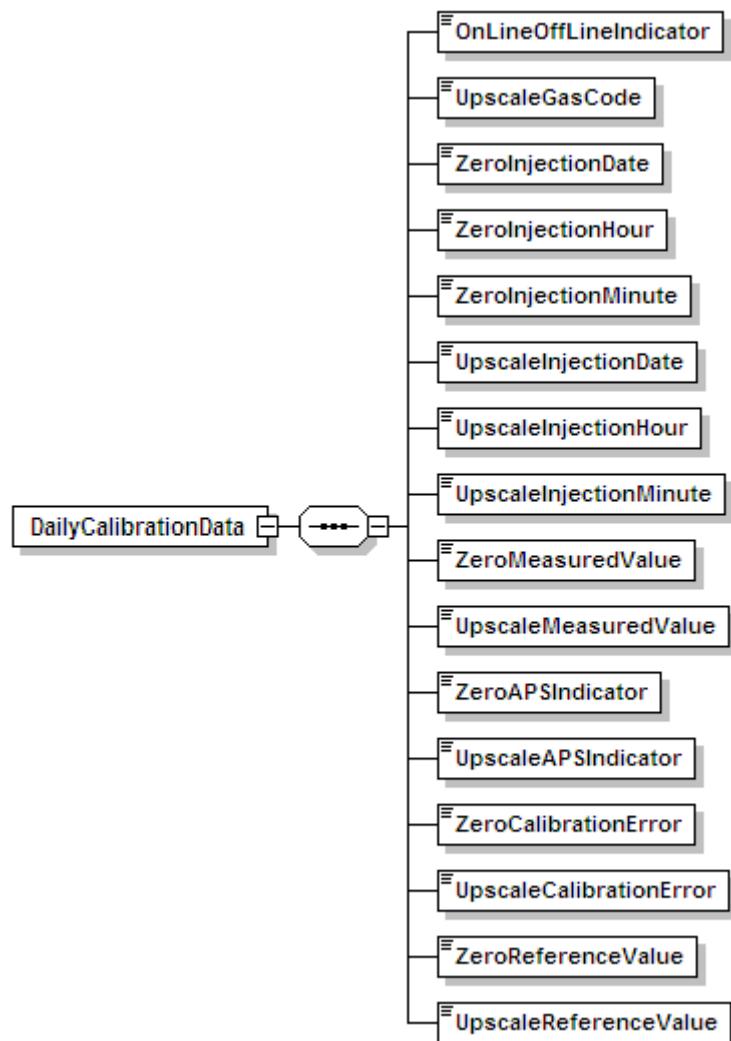
Figure 5
DailyCalibrationData XML Elements

XML Tag	Type	Definition	EDR Reference (RT:Col)
OnLineOffLineIndicator	IndicatorType	Indicates whether the unit or stack is operating at the time of the test.	New
UpscaleGasCode	UpscaleGasCodeType	Code used to identify upscale gas level.	230:71
ZeroInjectionDate	OptionalDateType	Date of zero level injection.	230:16
ZeroInjectionHour	OptionalHourType	Hour of zero level injection.	230:22
ZeroInjectionMinute	OptionalMinuteType	Zero Injection Minute.	New
UpscaleInjectionDate	OptionalDateType	Date of upscale injection.	230:16
UpscaleInjectionHour	OptionalHourType	Hour of upscale injection.	230:22
UpscaleInjectionMinute	OptionalMinuteType	Upscale Injection Minute	New
ZeroMeasuredValue	CalibrationValueType	Zero level measured value.	230:50
UpscaleMeasuredValue	CalibrationValueType	Upscale measured value.	230:50
ZeroAPSIndicator	IndicatorType	Used to indicate if the alternative performance specification (APS) is used.	230:68
UpscaleAPSIndicator	IndicatorType	Used to indicate if the alternative performance specification (APS) is used.	230:68
ZeroCalibrationError	CalibrationErrorType	Reported zero level calibration error.	230:63
UpscaleCalibrationError	CalibrationErrorType	Reported upscale level calibration error.	230:63
ZeroReferenceValue	CalibrationValueType	Zero level reference value.	230:37
UpscaleReferenceValue	CalibrationValueType	Upscale reference value.	230:37

Figure 6
DailyEmissionData
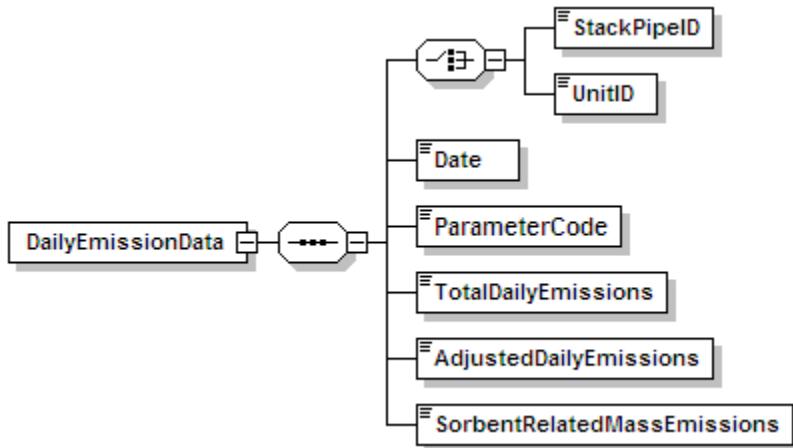
Figure 7
DailyEmissionData XML Elements

XML Tag	Type	Definition	EDR Reference (RT:Col)
StackPipeID	RequiredStackPipe Type	Three to six alphanumeric character code which is assigned by the source to identify a stack or pipe.	331:4
UnitID	RequiredUnitType	One to six alphanumeric character code assigned by the source to identify a unit.	331:4
Date	RequiredDateType	Date corresponding to the daily emissions.	331:10
ParameterCode	DailyEmissionParameter CodeType	Code used to identify the parameter.	N/A
TotalDailyEmissions	DailyEmissionsType	Total daily CO_2 mass emissions.	331:36
AdjustedDaily Emissions	DailyEmissionsType	CO_2 mass emissions adjusted for CO_2 retained in fly ash.	331:16
SorbentRelatedMass Emissions	DailyEmissionsType	Total daily sorbent-related CO_2 mass emissions.	331:26

Figure 8
DailyTestSummaryData
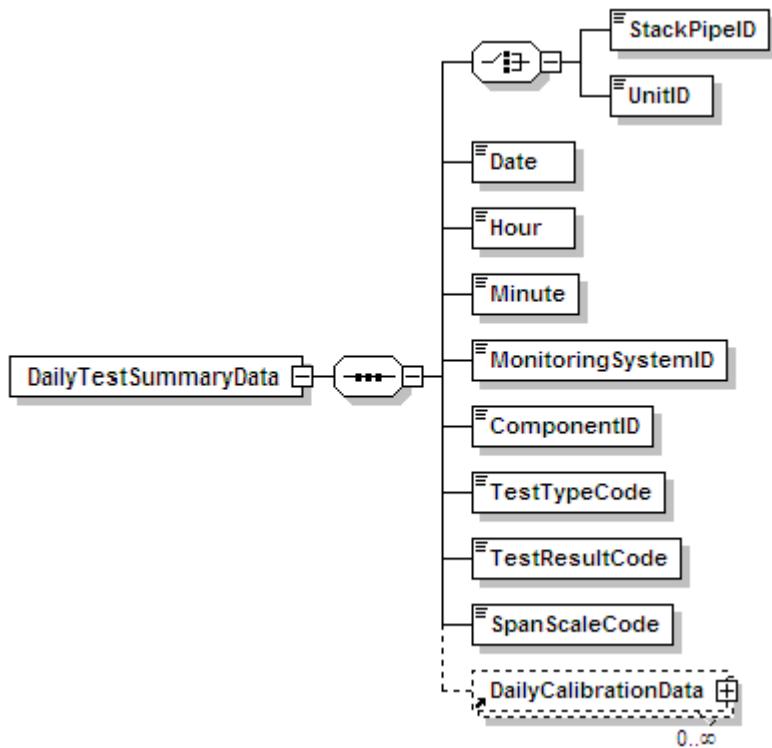
Figure 9
DailyTestSummaryData XML Elements

XML Tag	Type	Definition	EDR Reference (RT:Col)
StackPipeID	RequiredStackPipe Type	Three to six alphanumeric character code which is assigned by the source to identify a stack or pipe.	230:4
UnitID	RequiredUnitType	One to six alphanumeric character code assigned by the source to identify a unit.	230:4
Date	RequiredDateType	Date of the daily test.	231:16
Hour	RequiredHourType	Hour of the daily test.	231:22
Minute	OptionalMinuteType	Minute of the daily test.	New
MonitoringSystemID	OptionalIdentifierType	The three digit code used by the source to identify the monitoring system.	N/A

(cont.)

Figure 9
DailyTestSummaryData XML Elements (cont.)

| XML Tag	Type	Definition	EDR Reference (RT:Col)
ComponentID	OptionalIdentifierType	The three digit code assigned by the source to identify the component.	230:10
TestTypeCode	TestTypeCodeType	Code used to identify test type.	New
TestResultCode	TestResultCodeType	Code used to identify reported test result.	231:24
SpanScaleCode	SpanScaleCodeType	Code used to identify the span scale.	230:72

Figure 10
DerivedHourlyValueData
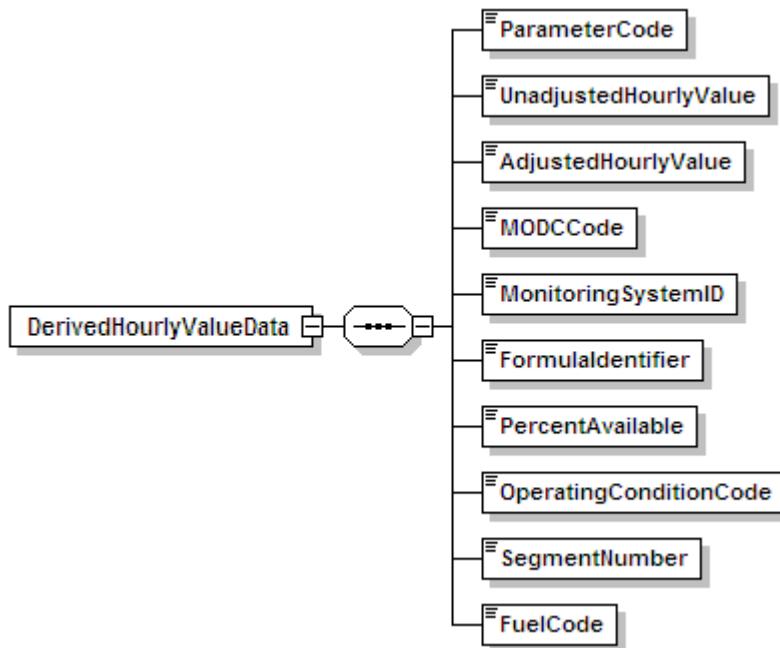
Figure 11
DerivedHourlyValueData XML Elements

XML Tag	Type	Definition	EDR Reference (RT:Col)
ParameterCode	DerivedHourly ParameterCodeType	Code used to identify the parameter.	N/A
UnadjustedHourly Value	HourlyValueType	Unadjusted value calculated from measured values for the hour.	320:36
AdjustedHourlyValue	HourlyValueType	Adjusted parameter value for the hour, as calculated from measured values and then adjusted for bias, or the substitute value for missing data hours.	320:42
MODCCode	MODCCodeType	Code used to identify the method of determination.	320:53
MonitoringSystemID	OptionalIdentifierType	The three digit code used by the source to identify the monitoring system.	320:10
FormulaIdentifier	OptionalIdentifierType	The three character formula ID assigned by the source.	N/A
PercentAvailable	PercentAvailableType	Percent monitor data availability.	320:21
OperatingCondition Code	OperatingCondition CodeType	Code used to identify the operating condition.	N/A
SegmentNumber	SegmentNumberType	Segment number of correlation curve. Rather than a user-assigned identifier, this is just an integer that indicates the segment number (assuming the first segment is number 1).	New
FuelCode	DerivedHourlyFuel CodeType	Code used to identify the type of fuel.	N/A

Figure 12
HourlyFuelFlowData
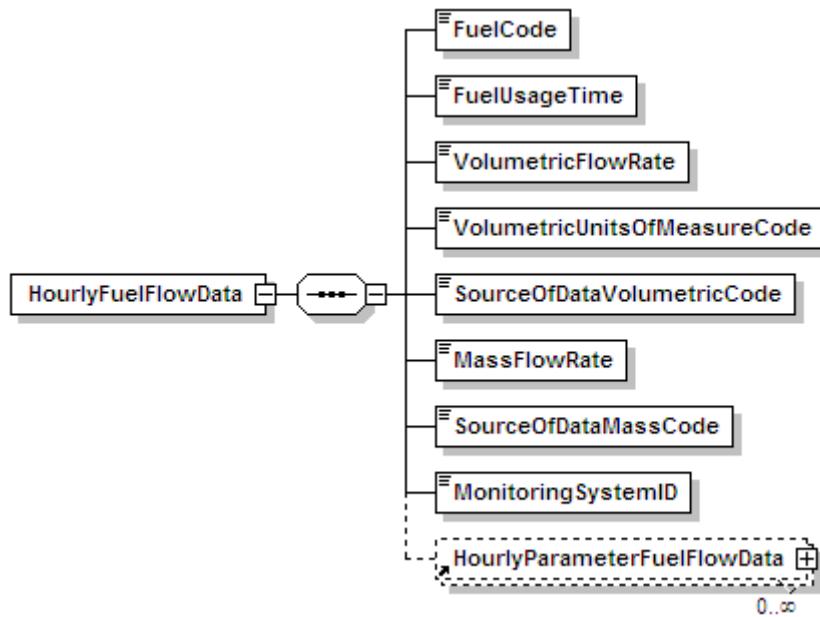
Figure 13
HourlyFuelFlowData XML Elements

XML Tag	Type	Definition	EDR Reference (RT:Col)
FuelCode	HourlyFuelFlowFuel CodeType	Code used to identify the type of fuel.	New
FuelUsageTime	FuelUsageTimeType	Fuel usage time.	302:52
VolumetricFlowRate	VolumetricFlowRate Type	Volumetric flow rate during combustion.	302:59
VolumetricUnitsOf MeasureCode	VolumetricUnitsOf MeasureType	Code used to identify the units of measure for volumetric fuel flow.	N/A
SourceOfData VolumetricCode	SODVolumetricCode Type	Code used to identify the source of volumetric flow rate.	302:74
MassFlowRate	MassFlowRateType	Mass flow rate during combustion.	302:21
SourceOfDataMass Code	SODMassCodeType	Code used to identify the source of mass flow rate.	302:31
MonitoringSystemID	OptionalIdentifierType	The three digit code used by the source to identify the monitoring system.	N/A

Figure 14
HourlyOperatingData
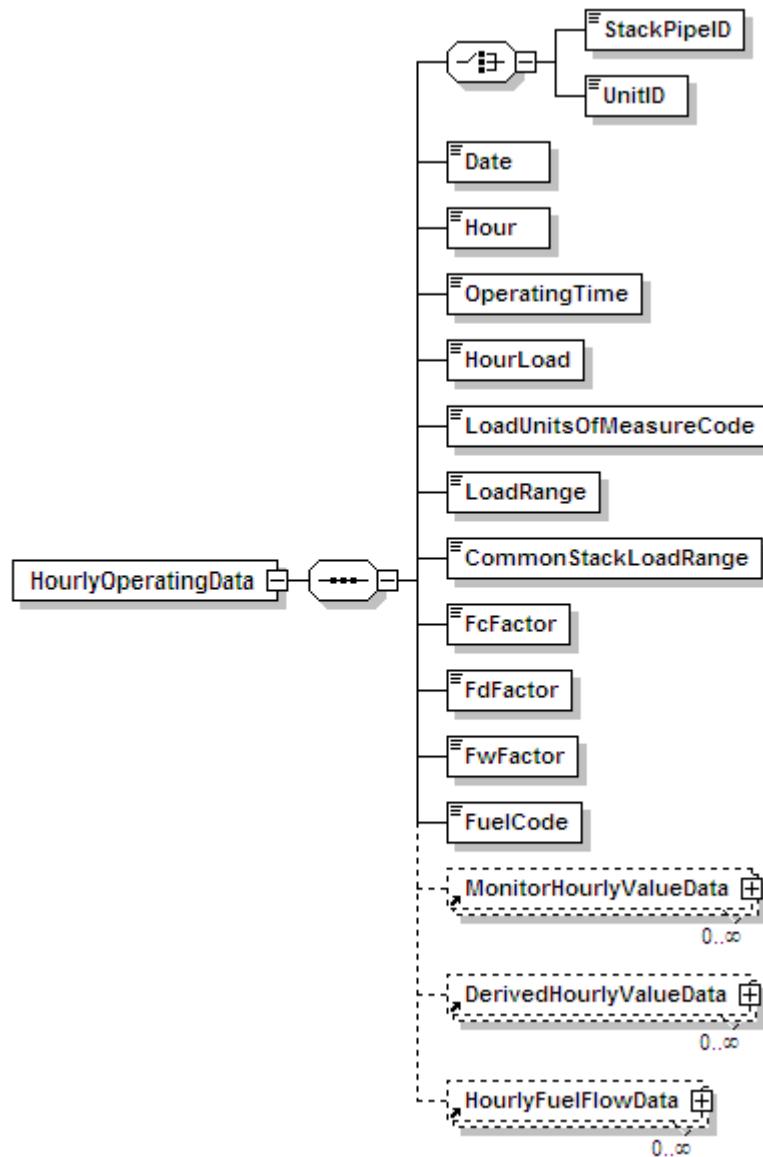
Figure 15
HourlyOperatingData XML Elements

| XML Tag	Type	Definition	EDR Reference (RT:Col)
StackPipeID	RequiredStackPipe Type	Three to six alphanumeric character code which is assigned by the source to identify a stack or pipe.	300:4
UnitID	RequiredUnitType	One to six alphanumeric character code assigned by the source to identify a unit.	300:4
Date	RequiredDateType	Date of the hourly operating data.	300:10
Hour	RequiredHourType	Hour of the hourly operating data.	300:16
OperatingTime	OperatingTimeType	The fraction of the clock hour during which the unit (or any unit venting through the stack) combusted any fuel.	300:18
HourLoad	HourLoadType	Gross unit load or steam load value during unit operation.	300:22
LoadUnitsOfMeasure Code	LoadUnitsOfMeasure CodeType	Code used to identify the load units of measure.	N/A
LoadRange	LoadRangeType	Operating load range or load bin number (1 to 10).	300:34
CommonStackLoad Range	CommonStackLoad RangeType	Load range for stack flow at a common stack (between 1 and 20). Optional alternative to standard load range.	New
FcFactor	FFactorType	Carbon based F-factor corresponding to fuel(s) burned during the hour.	New
FdFactor	FFactorType	Dry basis F-factor corresponding to fuel(s) burned during the hour.	New
FwFactor	FFactorType	Wet basis F-factor corresponding to fuel(s) burned during the hour.	New
FuelCode	HourlyOperatingFuel CodeType	Code used to identify the type of fuel.	N/A

Figure 16
HourlyParameterFuelFlowData
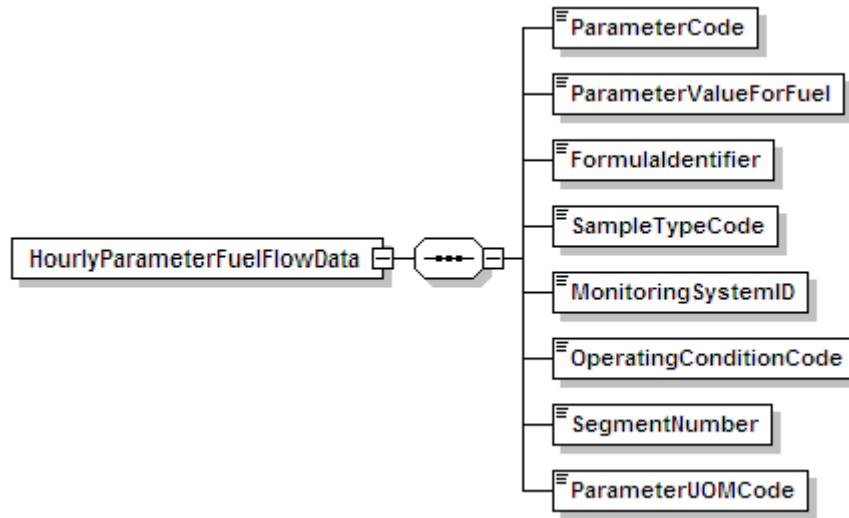
Figure 17
HourlyParameterFuelFlowData XML Elements

XML Tag	Type	Definition	EDR Reference (RT:Col)
ParameterCode	HourlyParameterFuel FlowParameterCode Type	Code used to identify the parameter.	N/A
ParameterValueForFuel	ParameterValueForFuel Type	Hourly parameter value for fuel. (Currently SO_2 mass rate, CO_2 mass rate, or heat input rate.)	313:30
FormulaIdentifier	OptionalIdentifierType	The three character formula ID assigned by the source.	N/A
SampleTypeCode	SulfurSampleTypeCode Type	Code used to identify the sample type.	313:44
MonitoringSystemID	OptionalIdentifierType	The three digit code used by the source to identify the monitoring system.	313:10
OperatingCondition Code	OperatingCondition CodeType	Code used to identify the operating condition.	N/A

(cont.)

Figure 17
HourlyParameterFuelFlowData XML Elements (cont.)

XML Tag	Type	Definition	EDR Reference (RT:Col)
SegmentNumber	SegmentNumberType	Segment number of correlation curve. Rather than a user-assigned identifier, this is just an integer that indicates the segment number (assuming the first segment is number 1).	New
ParameterUOMCode	HourlyParameterFuel FlowUnitsOfMeasure CodeType	Code used to identify the parameter units of measure.	N/A

Figure 18
LongTermFuelFlowData
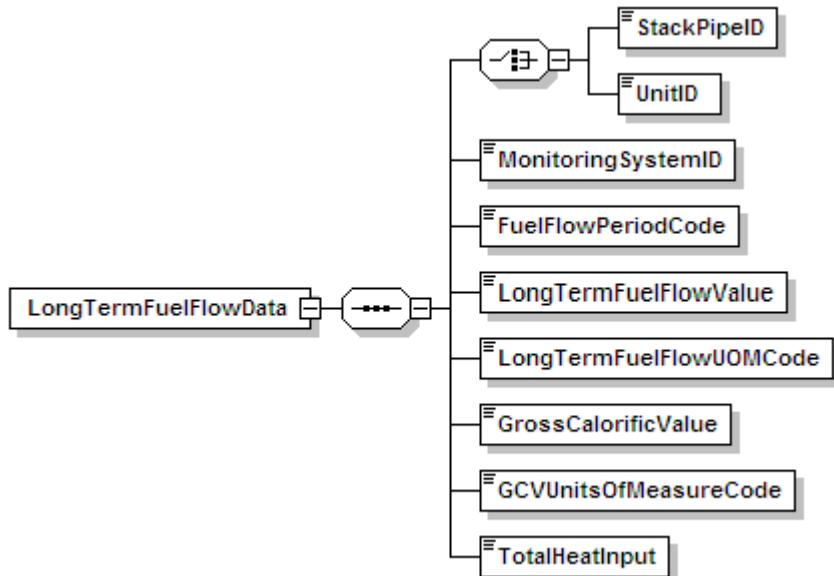
Figure 19
LongTermFuelFlowData XML Elements

XML Tag	Type	Definition	EDR Reference (RT:Col)
StackPipeID	RequiredStackPipeType	Three to six alphanumeric character code which is assigned by the source to identify a stack or pipe.	305:4
UnitID	RequiredUnitType	One to six alphanumeric character code assigned by the source to identify a unit.	305:4
MonitoringSystemID	RequiredIdentifierType	The three digit code used by the source to identify the monitoring system.	305:10
FuelFlowPeriodCode	FuelPeriodCodeType	Code used to identify the long term fuel flow period.	305:16
LongTermFuelFlowValue	LongTermFuelFlowValueType	Long term fuel flow value	305:22
LongTermFuelFlowUOMCode	LongTermFuelFlowUOMCodeType	Code used to identify the units of measure for the long term fuel flow value.	305:32
GrossCalorificValue	GrossCalorificValueType	Gross Calorific Value.	305:37
GCVUnitsOfMeasureCode	GCVUnitsOfMeasureCodeType	Code used to identify the units of measure for the GCV.	305:47
TotalHeatInput	TotalHeatInputType	Total heat input from this long term fuel flow value.	305:55

Figure 20
MonitorHourlyValueData
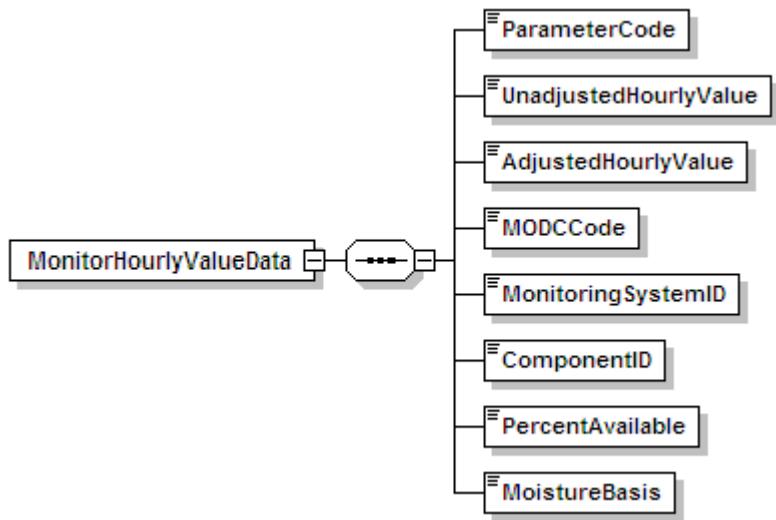
Figure 21
MonitorHourlyValueData XML Elements

XML Tag	Type	Definition	EDR Reference (RT:Col)
ParameterCode	MonitorHourly ParameterCodeType	Code used to identify the parameter.	N/A
UnadjustedHourly Value	HourlyValueType	Unadjusted measured value.	200:29
AdjustedHourlyValue	HourlyValueType	Adjusted average concentration or flow for the hour.	200:35
MODCCode	MODCCodeType	Code used to identify the method of determination.	200:41
MonitoringSystemID	OptionalIdentifierType	The three digit code used by the source to identify the monitoring system.	200:13
ComponentID	OptionalIdentifierType	The three digit code assigned by the source to identify the component.	200:10
PercentAvailable	PercentAvailableType	Percent monitor data availability.	200:24
MoistureBasis	MoistureBasisType	Moisture basis for measured value.	211:31

Figure 22
SummaryValueData
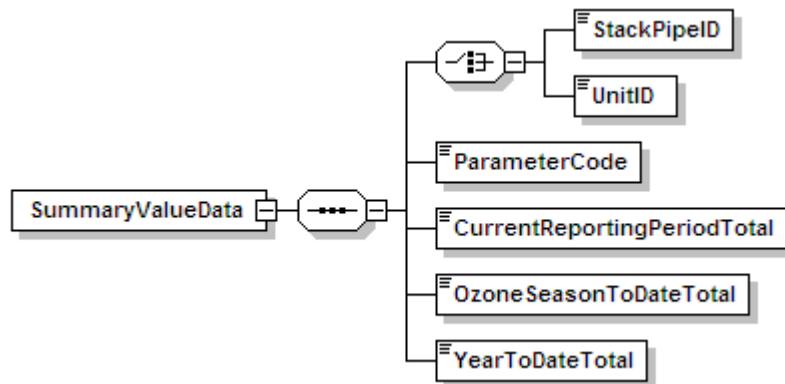
Figure 23
SummaryValueData XML Elements

XML Tag	Type	Definition	EDR Reference (RT:Col)
StackPipeID	RequiredStackPipeType	Three to six alphanumeric character code which is assigned by the source to identify a stack or pipe.	N/A
UnitID	RequiredUnitType	One to six alphanumeric character code assigned by the source to identify a unit.	N/A
ParameterCode	SummaryValue ParameterCodeType	Code used to identify the parameter.	N/A
CurrentReportingPeriod Total	SummaryValueTotal Type	Total value for current reporting period.	New
OzoneSeasonToDate Total	SummaryValueTotal Type	Ozone season year to date total.	New
YearToDateTotal	SummaryValueTotal Type	Year to date total.	New

Figure 24
Simple Types Used for Validation

SimpleType Name	Used By	Base	Allow Null Values	Validation Patterns, Restrictions, and Values	Notes
CalibrationError Type	DailyCalibrationData/ UpscaleCalibration Error DailyCalibrationData/ ZeroCalibrationError	Decimal	Yes	Total Digits = 6, Decimal Places = 1	
CalibrationValue Type	DailyCalibrationData/ UpscaleMeasured Value DailyCalibrationData/ UpscaleReference Value DailyCalibrationData/ ZeroMeasuredValue DailyCalibrationData/ ZeroReferenceValue	Decimal	Yes	Total Digits = 16, Decimal Places = 3	
CommonStack LoadRangeType	HourlyOperatingData/ CommonStackLoad Range	Integer	Yes	Minimum Value (inclusive) = 1, Maximum Value (inclusive) = 20	
DailyEmission ParameterCode Type	DailyEmissionData/ ParameterCode	String	No	CO2M	
DailyEmissions Type	DailyEmissionData/ AdjustedDaily Emissions DailyEmissionData/ SorbentRelatedMass Emissions DailyEmissionData/ TotalDailyEmissions	Decimal	Yes	Total Digits = 11, Decimal Places = 1	

(cont.)

Figure 24
Simple Types Used for Validation (cont.)

SimpleType Name	Used By	Base	Allow Null Values	Validation Patterns, Restrictions, and Values	Notes
DerivedHourly FuelCodeType	DerivedHourlyValue Data/FuelCode	String	Yes	BFG BUT CDG COG DGG DSL LFG LPG MIX NNG OGS OIL OOL PDG PNG PRG PRP RFG SRG	
DerivedHourly ParameterCode Type	DerivedHourlyValue Data/ParameterCode	String	No	CO2 CO2C CO2M H2O HI HIT NOX NOXM NOXR SO2 SO2M	
FFactorType	HourlyOperatingData/ FcFactor HourlyOperatingData/ FdFactor HourlyOperatingData/ FwFactor	Decimal	Yes	Total Digits = 9, Decimal Places = 1	
FuelPeriodCode Type	LongTermFuelFlow Data/FuelFlowPeriod Code	String	Yes	A MJ	
FuelUsageTime Type	HourlyFuelFlowData/ FuelUsageTime	Decimal	No	Total Digits = 6, Decimal Places = 2	

(cont.)

Figure 24
Simple Types Used for Validation (cont.)

SimpleType Name	Used By	Base	Allow Null Values	Validation Patterns, Restrictions, and Values	Notes
GCVUnitsOf MeasureCode Type	LongTermFuelFlowData /GCVUnitsOfMeasure Code	String	Yes	BTUGAL BTULB BTUSCF	
GrossCalorificValue Type	LongTermFuelFlowData /GrossCalorificValue	Decimal	Yes	Total Digits = 10, Decimal Places = 1	
HourLoadType	HourlyOperatingData/ HourLoad	Integer	Yes	Total Digits = 6, Decimal Places = 0	
HourlyFuelFlow FuelCodeType	HourlyFuelFlowData/ FuelCode	String	No	BFG BUT CDG COG DGG DSL LFG LPG MIX NNG OGS OIL OOL PDG PNG PRG PRP RFG SRG	

(cont.)

Figure 24
Simple Types Used for Validation (cont.)

SimpleType Name	Used By	Base	Allow Null Values	Validation Patterns, Restrictions, and Values	Notes
HourlyOperating FuelCodeType	HourlyOperatingData/ FuelCode	String	Yes	BFG BUT C CDG COG CRF DGG DSL LFG LPG MIX NNG OGS OIL OOL OSF PDG PNG PRG PRP PRS PTC R RFG SRG TDF W WL	
HourlyParameter FuelFlowParameter CodeType	HourlyParameterFuel FlowData/Parameter Code	String	No	CO2 DENSOIL FC GCV HI NOXR SO2 SO2R SULFUR	

(cont.)

Figure 24
Simple Types Used for Validation (cont.)

SimpleType Name	Used By	Base	Allow Null Values	Validation Patterns, Restrictions, and Values	Notes
HourlyParameter FuelFlowUnitsOf MeasureCodeType	HourlyParameterFuel FlowData/UnitsOf MeasureCode	String	Yes	BTUBBL BTUGAL BTUHSCF BTUKWH BTULB BTUM3 BTUSCF GRHSCF LBBBL LBGAL LBHR LBM3 LBMMBTU MMBTUHR PCT SCFCBTU TNHR	
HourlyValueType	DerivedHourlyValue Data/AdjustedHourly Value DerivedHourlyValue Data/Unadjusted HourlyValue MonitorHourlyValue Data/AdjustedHourly Value MonitorHourlyValue Data/UnadjustedHourly Value	Decimal	Yes	Total Digits = 14, Decimal Places = 4	
IndicatorType	DailyCalibrationData/ OnLineOffLine Indicator DailyCalibrationData/ UpscaleAPSIndicator DailyCalibrationData/ ZeroAPSIndicator DerivedHourlyValue Data/DiluentCap Indicator	String	Yes	0 1	

(cont.)

Figure 24
Simple Types Used for Validation (cont.)

SimpleType Name	Used By	Base	Allow Null Values	Validation Patterns, Restrictions, and Values	Notes
LoadRangeType	HourlyOperatingData/ LoadRange	Integer	Yes	Minimum Value (inclusive) = 0, Maximum Value (inclusive) = 20	
LoadUnitsOf MeasureCodeType	HourlyOperatingData/ LoadUnitsOfMeasure	String	Yes	KLBHR MMBTUHR MW	
LongTermFuelFlow UOMCodeType	LongTermFuelFlowData /LongTermFuelFlow UOMCode	String	Yes	GAL LB SCF	
LongTermFuel FlowValueType	LongTermFuelFlowData /LongTermFuelFlow Value	Decimal	No	Total Digits = 10, Decimal Places = 0	
MassFlowRate Type	HourlyFuelFlowData/ MassFlowRate	Decimal	Yes	Total Digits = 11, Decimal Places = 1	
MODCCodeType	DerivedHourlyValue Data/MODCCode MonitorHourlyValue Data/MODCCode	String	Yes	01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 19 20 21 22 23 25 26 45 54 55	

(cont.)

Figure 24
Simple Types Used for Validation (cont.)

SimpleType Name	Used By	Base	Allow Null Values	Validation Patterns, Restrictions, and Values	Notes
MoistureBasisType	MonitorHourlyValue Data/MoistureBasis	String	Yes	D W	
MonitorHourly ParameterCodeType	MonitorHourlyValue Data/ParameterCode	String	No	CO2C FLOW H2O NOXC O2C SO2C	
MultipleFuelFlag Type	HourlyOperatingData/ MultipleFuelFlag	String	Yes	M S	
Operating ConditionCode Type	DerivedHourlyValue Data/Operating ConditionCode HourlyParameterFuel FlowData/Operating ConditionCode	String	Yes	A B C E M N P U W X Y Z	
OperatingTime Type	HourlyOperatingData/ OperatingTime	Decimal	No	Total Digits = 6, Decimal Places = 2	
OptionalDateType	DailyCalibrationData/ UpscaleInjectionDate DailyCalibrationData/ ZeroInjectionDate	Date	Yes		Must be a date
OptionalHour Type	DailyCalibrationData/ UpscaleInjectionHour DailyCalibrationData/ ZeroInjectionHour	Decimal	Yes	Minimum Value (inclusive) = 0, Maximum Value (inclusive) = 23	

(cont.)

Figure 24
Simple Types Used for Validation (cont.)

SimpleType Name	Used By	Base	Allow Null Values	Validation Patterns, Restrictions, and Values	Notes
OptionalIdentifier Type	DailyTestSummary Data/ComponentID DerivedHourlyValue Data/FormulaIdentifier DerivedHourlyValue Data/Monitoring SystemID HourlyFuelFlowData/ MonitoringSystemID HourlyParameterFuel FlowData/Formula Identifier HourlyParameterFuel FlowData/Monitoring SystemID MonitorHourlyValue Data/ComponentID MonitorHourlyValue Data/Monitoring SystemID	String	Yes	[A-Z0-9]{1,3}	One to three character alphanumeric string
OptionalMinute Type	DailyCalibrationData/ UpscaleInjection Minute DailyCalibrationData/ ZeroInjectionMinute DailyTestSummaryData/ Minute	Integer	Yes	Minimum Value (inclusive) = 0, Maximum Value (inclusive) = 59	
ORISCodeType	Emissions/ORISCode	Integer	No	Minimum Value (inclusive) = 1, Maximum Value (inclusive) = 999999	

(cont.)

Figure 24
Simple Types Used for Validation (cont.)

SimpleType Name	Used By	Base	Allow Null Values	Validation Patterns, Restrictions, and Values	Notes
ParameterValue ForFuelType	HourlyParameterFuel FlowData/Parameter ValueForFuel	Decimal	No	Total Digits = 13, Decimal Places = 5	
PercentAvailable Type	DerivedHourlyValue Data/PercentAvailable MonitorHourlyValue Data/PercentAvailable	Decimal	Yes	Total Digits = 5, Decimal Places = 2	
QuarterType	Emissions/Quarter	String	No	1 2 3 4	
ReportingYear Type	Emissions/Year	String	No	(20)\d\d	Year 2000-2099
RequiredDate Type	DailyEmissionData/Date DailyTestSummaryData/ Date HourlyOperatingData/ Date	Date	No		Must be a date
RequiredHourType	DailyTestSummary Data/Hour HourlyOperatingData/ Hour	Decimal	No	Minimum Value (inclusive) = 0, Maximum Value (inclusive) =23	
RequiredIdentifier Type	LongTermFuelFlow Data/MonitoringSystem ID	String	No	[A-Z0-9]{1,3}	One to three character alphanumeric string

(cont.)

Figure 24
Simple Types Used for Validation (cont.)

SimpleType Name	Used By	Base	Allow Null Values	Validation Patterns, Restrictions, and Values	Notes
RequiredStackPipe Type	DailyEmissionData/ StackPipeID DailyTestSummaryData/ StackPipeID HourlyOperatingData/ StackPipeID LongTermFuelFlowData /StackPipeID SummaryValueData/ StackPipeID	String	No	(C|c|M|m|X|x)(S|s|P|p) [A-z0-9]{1,4}	Three to six character string beginning with "CS," "CP," "MS," "MP," or "XS"
RequiredUnitType	DailyEmissionData/ UnitID DailyTestSummaryData/ UnitID HourlyOperatingData/ UnitID LongTermFuelFlowData /UnitID SummaryValueData/ UnitID	String	No	[A-Z0-9 \-*#]{1,6}	One to six character alphanumeric string; also allow asterisk (*), hyphen (-), and pound sign (#)
SegmentNumber Type	DerivedHourlyValue Data/SegmentNumber HourlyParameterFuel FlowData/Segment Number	Integer	Yes		Must be an integer
SODMassCode Type	HourlyFuelFlowData/ SourceOfDataMass Code	String	Yes	0 1 2 3 4 5 6 9	

(cont.)

Figure 24
Simple Types Used for Validation (cont.)

SimpleType Name	Used By	Base	Allow Null Values	Validation Patterns, Restrictions, and Values	Notes
SODVolumetric CodeType	HourlyFuelFlowData/ SourceOfData VolumetricCode	String	Yes	0 1 3 4 5 6 9	
SpanScaleCode Type	DailyTestSummaryData/ SpanScaleCode	String	Yes	H L	
Submission CommentType	Emissions/Submission Comment	String	No	Maximum Length = 4,000 characters	
SulfurSample TypeCodeType	HourlyParameterFuel FlowData/SampleType Code	String	Yes	0 1 2 3 4 5 6 7 8 9 10	
SummaryValue ParameterCode Type	SummaryValueData/ ParameterCode	String	No	CO2M HIT NOXM NOXR OPHOURS OPTIME SO2M	
SummaryValue TotalType	SummaryValueData/ CurrentReporting PeriodTotal SummaryValueData/ OzoneSeasonToDate Total SummaryValueData/ YearToDateTotal	Decimal	Yes	Total Digits = 16, Decimal Places = 3	

(cont.)

Figure 24
Simple Types Used for Validation (cont.)

SimpleType Name	Used By	Base	Allow Null Values	Validation Patterns, Restrictions, and Values	Notes
TestResultCode Type	DailyTestSummary Data/TestResultCode	String	No	ABORTED FAILED INC PASSAPS PASSED	
TestTypeCode Type	DailyTestSummary Data/TestTypeCode	String	No	DAYCAL INTCHK PEMSCAL	
TotalHeatInput Type	LongTermFuelFlow Data/TotalHeatInput	Decimal	Yes	Total Digits = 10, Decimal Places = 0	
UpscaleGasCode Type	DailyCalibrationData/ UpscaleGasCode	String	Yes	HIGH MID	
VersionType	Emissions/Version	String	Yes	Maximum Length = 10 characters	
VolumetricFlow RateType	HourlyFuelFlowData/ VolumetricFlowRate	Decimal	Yes	Total Digits = 11, Decimal Places = 1	
VolumetricUnits OfMeasureType	HourlyFuelFlowData/ VolumetricUnitsOf MeasureCode	String	Yes	BBLHR GALHR HSCF M3HR SCFH	

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