Subpart W Activity Data Workbook - Section 95157

Activity Data Reporting Requirements
Petroleum and Natural Gas Systems

Regulation Citation	Equipment or Activity and Associated Industry Segment	Reported Activity Data Elements ----->>>
95157(a)(1)-(8)	Report Annual Emissions for Each GHG for Each Industry Segment in Paragraphs 95157(a)(1)-(8)	Report These Data in the "Petroleum and Natural Gas Emissions" Workbook
95157(b)	For Offshore Petroleum and Natural Gas Production, Report Emissions as Applicable to the Source Type	Report These Data in the "Petroleum and Natural Gas Emissions" Workbook

95157(c)(1) — Natural Gas (NG) Pneumatic Devices

Industry Segment(s)	High Bleed NG Pneumatic Devices				Intermittent Bleed NG Pneumatic Devices				Low Bleed NG Pneumatic Devices			
	Actual Count	Count Estimate	CO2 Emissions (MT)	CH4 Emissions (MT)	Actual Count	Estimated Count	CO2 Emissions (MT)	CH4 Emissions (MT)	Actual Count	Estimated Count	CO2 Emissions (MT)	CH4 Emissions (MT)

95157(c)(2) — Natural Gas (NG) Pneumatic Pumps

Industry Segment(s)	Natural Gas Driven Pneumatic Pumps		
	Actual Count	CO2 Emissions (MT)	CH4 Emissions (MT)

95157(c)(3) — Acid Gas Removal Units (AGR Units)

Acid Gas Removal Units (for onshore NG processing, report AGR units individually)

Industry Segment(s)	Unit ID # or Name (add rows as needed)	Total through-put (MMscf/yr)	For Method 1&2-Annual fraction of CO2 content in vent from AGR unit (decimal)	For Method 3-Annual average volume fraction of CO2 content of natural gas into the ARG unit (decimal)	For Method 3-Annual average volume fraction of CO2 content of natural gas out of the AGR unit (decimal)	Annual quantity of CO2 recovered from AGR unit and transferred outside the facility (MT)	Annual CO2 emissions from ARG unit (MT)	Methodology used to calculate emissions (1, 2, or 3)

95157(c)(4)(A) — Glycol Dehydrators

Glycol Dehydrators (for onshore NG processing, report glycol dehydrators individually)

Industry Segment(s)	Unit ID # or Name (add rows as needed)	NG feed flow (MMscf/d)	Glycol circulation pump type	Stripper gas used (y/n)	Flash tank separator used (y/n)	Type of absor-bent	Total glycol dehydrator operating time (hrs)	CO2 concentration in wet gas (mole decimal fraction)	CH4 concentration in wet gas (mole decimal fraction)	Flare vent gas control (y/n)	Fire box vent gas control (y/n)	Other vent gas control (specify)	Temp (deg F) of wet NG	Pressure (psig) of wet NG	Annual CO2 emissions from venting (MT)	Annual CH4 emissions from venting (MT)	Annual CO2 emissions from flaring (MT)	Annual CH4 emissions from flaring (MT)	Annual N2O emissions from flaring (MT)

95157(c)(4)(B) — Absorbent Desiccant Dehydrators

Absorbent Desiccant Dehydrators

Industry Segment(s)	Count	CO2 emissions for all desiccant dehydrators (MT)	CH4 emissions for all desiccant dehydrators (MT)

95157(c)(5)(A) — Well Venting Liquids Unloading - Methodology 1

Method 1 - Well Venting Liquids Unloading (provide casing diameter, well depth, and casing pressure for each well)

Industry Segment(s)	Identification of well(s) (add rows as needed)	Count of wells venting to atmosphere for unloading	Does the well have a plunger lift (yes/no)?	Count of plunger lifts	Cumulative number of well unloadings to the atmosphere	Internal casing diameter or internal tubing diameter (decimal inches)	Well depth (ft)	Casing pressure of each well without plunger lift (psia)	Tubing pressure of each well with plunger lift (psia)	CO2 Emissions (MT)	CH4 Emis-sions (MT)

95157(c)(5)(B) — Well Venting Liquids Unloading - Methodology 2

Method 2 - Well Venting Liquids Unloading (provide casing diameter for each well)

Industry Segment(s)	Identification of well(s) (add rows as needed)	Count of wells venting to atmosphere for unloading	Count of plunger lifts	Cumulative number of well unloadings to the atmosphere	Internal casing diameter or internal tubing diameter (decimal inches)	CO2 Emissions (MT)	CH4 Emissions (MT)

95157(c)(6)(A) — Well Completions

Well Completions

Industry Segment(s)	Well depth interval (ft)	Total field count of gas well completions	Total number of oil well completions	Total number of gas well completions using hydraulic fracturing	Total number of oil well completions using hydraulic fracturing
	0 - 1000				
	1001 - 2000				
	2001 - 3000				
	3001 - 4000				
	4001 - 5000				
	5001 - 6000				
	>6000				

95157(c)(6)(B) — Well Workovers

Well Workovers

Industry Segment(s)	Well depth interval (ft)	Total field count of gas well workovers	Total number of oil well workovers	Total number of gas well workovers using hydraulic fracturing	Total number of oil well workovers using hydraulic fracturing
	0 - 1000				
	1001 - 2000				
	2001 - 3000				
	3001 - 4000				
	4001 - 5000				
	5001 - 6000				
	>6000				

95157(c)(6)(C) — Completions With Gas Capture

Completions With Gas Capture

Industry Segment(s)	Number of completions employing gas capture	Amount of natural gas recovered during well completions (scf)

95157(c)(6)(D) — Workovers With Gas Capture

Workovers With Gas Capture

Industry Segment(s)	Number of workovers employing gas capture	Amount of natural gas recovered during well workovers (scf)

95157(c)(6)(E) — CO2 and CH4 Vented to Atmosphere - Gas Wells

Industry Segment(s)	Vented CO2 and CH4 Emissions - Gas Well Completions		Vented CO2 and CH4 Emissions - Gas Well Workovers	
	Annual CO2 emissions vented to atmosphere (MT)	Annual CH4 emissions vented to atmosphere (MT)	Annual CO2 emissions to atmosphere (MT)	Annual CH4 emissions vented to atmosphere (MT)

CO2 and CH4 Vented to Atmosphere - Oil Wells

Industry Segment(s)	Vented CO2 and CH4 Emissions - Oil Well Completions		Vented CO2 and CH4 Emissions - Oil Well Workovers	
	Annual CO2 emissions vented to atmosphere (MT)	Annual CH4 emissions vented to atmosphere (MT)	Annual CO2 emissions to atmosphere (MT)	Annual CH4 emissions vented to atmosphere (MT)

95157(c)(6)(F) — CO2, CH4, and N2O from Flaring - Gas Wells

Industry Segment(s)	Flaring CO2, CH4, and N2O Emissions - Gas Well Completions			Flaring CO2, CH4, and N2O Emissions - Gas Well Workovers		
	Annual CO2 emissions vented to atmosphere (MT)	Annual CH4 emissions vented to atmosphere (MT)	Annual N2O emissions vented to atmosphere (MT)	Annual CO2 emissions flared (MT)	Annual CH4 emissions flared (MT)	Annual N2O emissions flared (MT)

	CO2, CH4, and N2O from Flaring - Oil Wells	Flaring CO2, CH4, and N2O Emissions - Oil Well Completions			Flaring CO2, CH4, and N2O Emissions - Oil Well Workovers		
	Industry Segment(s)	Annual CO2 emissions vented to atmosphere (MT)	Annual CH4 emissions vented to atmosphere (MT)	Annual N2O emissions vented to atmosphere (MT)	Annual CO2 emissions flared (MT)	Annual CH4 emissions flared (MT)	Annual N2O emissions flared (MT)

	Oil Well Average Activity Data	Oil Well Average Activity Data - Completions & Workovers				
95157(c)(6)(G)	Industry Segment(s)	Average casing diameter (decimal inches)	Average tubing diameter (decimal inches)	Typical well pressure at wellhead (psia)	Typical producing temperature inside well (deg F)	Average time to complete well work (hours)

	Equipment and Pipeline Blowdowns - More than Once per Calendar Year	Blowdowns - More Than Once Per Calendar Year			
95157(c)(7)(A)	Industry Segment(s)	Total number of blowdowns for unique volume	Annual CO2 emissions vented from unique volume (MT)	Annual CH4 emissions vented from unique volume (MT)	Unique volume name or ID number

	Equipment and Pipeline Blowdowns - Once Per Calendar Year	Blowdowns - Once Per Calendar Year		
95157(c)(7)(B)	Industry Segment(s)	Total number of blowdowns for all unique physical volumes	Annual CO2 emissions vented from all volumes, as an aggregate per facility (MT)	Annual CH4 emissions vented from all volumes, as an aggregate per facility (MT)

	Gas Emitted from Produced Oil	Gas Emitted from Produced Oil Sent to Atmospheric Tanks		
95157(c)(8)(A)	Industry Segment(s)	Count of wellhead separators that dump valve factor is applied	Annual CO2 emissions vented due to improperly functioning dump valves (MT)	Annual CH4 emissions vented due to improperly functioning dump valves (MT)

	Transmission Tank - Vent Stack	Venting - Transmission Tank Emissions Identified Using Optical Gas Imaging or Acoustic Leak Detection of Scrubber Dump Valves		
95157(c)(9)(A)	Industry Segment(s)	Annual CO2 emissions from venting gas to atmosphere (MT)	Annual CH4 emissions from venting gas to atmosphere (MT)	Unique name or ID for each vent stack monitored (add rows as needed)

	Transmission Tank - Flaring	Flaring - Transmission Tank Emissions Identified Using Optical Gas Imaging or Acoustic Leak Detection of Scrubber Dump Valves			
95157(c)(9)(B)	Industry Segment(s)	Annual CO2 emissions from flaring tank process gas (MT)	Annual CH4 emissions from flaring tank process gas (MT)	Annual N2O emissions from flaring tank process gas (MT)	Unique name or ID for each vent stack monitored (add rows as needed)

	Well Testing Venting and Flaring	Well Testing Venting and Flaring							
95157(c)(10)	Industry Segment(s)	Number of wells tested in basin	Average basin gas-to-oil ratio (GOR)	Average number of days a well is tested in basin	Annual CO2 emissions from well testing venting (MT)	Annual CH4 emissions from well testing venting (MT)	Annual CO2 emissions from well testing flaring (MT)	Annual CH4 emissions from well testing flaring (MT)	Annual N2O emissions from well testing flaring (MT)

	Associated Gas Venting and Flaring	Associated Natural Gas Venting and Flaring						
95157(c)(11)	Industry Segment(s)	Number of wells venting or flaring associated natural gas in calendar year	Average basin gas-to-oil ratio (GOR)	Annual CO2 emissions from well testing venting (MT)	Annual CH4 emissions from well testing venting (MT)	Annual CO2 emissions from well testing flaring (MT)	Annual CH4 emissions from well testing flaring (MT)	Annual N2O emissions from well testing flaring (MT)

	Flare Stacks	Flare Stacks (add additional rows as needed for each flare)										
95157(c)(12)	Industry Segment(s)	Does flare have continuous flow monitor (y/n)	Volume of gas sent to flare (scf/yr)	Percent of gas sent to unlit flare (0-100)	Does flare have continuous gas analyzer (y/n)	Flare com-bustion efficiency (decimal)	CO2 emissions (MT)	CH4 emissions (MT)	N2O Emissions (MT)	Unique name or ID for each flare (for NG processing reporters)	Is CEMS Used to Measure CO2 in Annual Report (y/n)	If CEMS used, sum of combusted CO2 and uncombusted CO2 (MT)

	Centrifugal Compressors	For each vent for Centrifugal Compressors ≥250hp with wet seals in the operating mode, report the following (add additional rows as needed for each compressor)								
95157(c)(13)(A) add line for each vent	Industry Segment(s)	Vent ID	Number of wet seals connected to the degassing unit	Fraction of vent gas recovered for fuel, sales, or flared (decimal)	Annual Natural Gas throughput (MMscf)	Type of meter used to make measurement	Total time compressor is operating (hrs)	Seal oil degassing CO2 vent emissions from measured compressors (MT)	Seal oil degassing CH4 vent emissions from measured compressors (MT)	Seal oil degassing CO2 vent emission from compressors not measured (MT)	Seal oil degassing CH4 vent emissions from compressors not measured (MT)

	For each vent for Centrifugal Compressors <250hp with wet seals in the operating mode, report the following (add additional rows as needed for each compressor)									
	Vent ID	Number of wet seals connected to the degassing unit	Fraction of vent gas recovered for fuel, sales, or flared (decimal)	Annual Natural Gas throughput (MMscf)	Type of meter used to make measurement	Total time compressor is operating (hrs)	Seal oil degassing CO2 vent emissions from measured compressors (MT)	Seal oil degassing CH4 vent emissions from measured compressors (MT)	Seal oil degassing CO2 vent emission from compressors not measured (MT)	Seal oil degassing CH4 vent emissions from compressors not measured (MT)

95157(c)(13)(B) add line for each compressor	For each wet and dry seal centrifugal compressor ≥250hp in operating mode, report the following:			
	Compres-sor ID	Total time the compressor is in operating mode (hrs)	Blowdown CO2 vent emissions when in operating mode (MT)	Blowdown CH4 vent emissions when in operating mode (MT)

	For each wet and dry seal centrifugal compressor <250hp in operating mode, report the following:			
	Compres-sor ID	Total time the compressor is in operating mode (hrs)	Blowdown CO2 vent emissions when in operating mode (MT)	Blowdown CH4 vent emissions when in operating mode (MT)

95157(c)(13)(C) add line for each compressor	For each wet and dry seal centrifugal compressor ≥250hp in not operating, depressurized mode, report the following:			
	Compres-sor ID	Total time compressor is in shutdown, depressurized mode (hrs)	Isolation valve leak- age CO2 emissions in not operating, depres-surized mode (cu ft/hr)	Isolation valve leakage CH4 emissions in not operating, depres- surized mode (cu ft/hr)

	For each wet and dry seal centrifugal compressor <250hp in not operating, depressurized mode, report the following:			
	Compres-sor ID	Total time compressor is in shutdown, depressurized mode (hrs)	Isolation valve leak- age CO2 emissions in not operating, depres-surized mode (cu ft/hr)	Isolation valve leakage CH4 emissions in not operating, depres- surized mode (cu ft/hr)

95157(c)(13)(D)	Report total annual centrifugal compressor emissions from all modes of operations:	
	Annual CO2 emissions (MT)	Annual CH4 emissions (MT)

95157(c)(14)(A)	Reciprocating Compressors	For reciprocating compressors ≥250hp rod packing emissions, with or without a vent, in operating mode, report the following:

Industry Segment(s)

add lines for additional compressors

95157(c)(14)(B)

For reciprocating compressors <250hp rod packing emissions, with or without a vent, in operating mode, report the following:

Compressor ID	Annual natural gas throughput (MMscf)	Total time recip compressor is in operating mode (hrs)	Rod packing CO2 emissions from measured recip compressors (MT)	Rod packing CH4 emissions from measured recip compressors (MT)

For reciprocating compressor ≥250hp blowdown vents not manifolded to rod packing vents, in operating and standby pressurized modes, report the following:

Compressor ID	Total time compressor is in standby, pressurized mode (hrs)	Blowdown vent CO2 emissions in operating mode (MT)	Blowdown vent CH4 emissions in operating mode (MT)	Blowdown vent CO2 emissions in standby mode (MT)	Blowdown vent CH4 emissions in standby mode (MT)

add lines for additional compressors

For reciprocating compressor <250hp blowdown vents not manifolded to rod packing vents, in operating and standby pressurized modes, report the following:

Compressor ID	Total time compressor is in standby, pressurized mode (hrs)	Blowdown vent CO2 emissions in operating mode (MT)	Blowdown vent CH4 emissions in operating mode (MT)	Blowdown vent CO2 emissions in standby mode (MT)	Blowdown vent CH4 emissions in standby mode (MT)

add lines for additional compressors

95157(c)(14)(C)

For reciprocating compressors ≥250hp in not operating, depressurized mode, report the following:

Compressor ID	Total time compressor is in not operating, pressurized mode (hrs)	Facility operator CO2 EF for isolation valve in not operating, depressurized mode (scf/hr)	Facility operator CH4 EF for isolation valve in not operating, depressurized mode (scf/hr)	Isolation valve leakage CO2 emissions in not operating, depressurized mode (MT)	Isolation valve leakage CH4 emissions in not operating, depressurized mode (MT)

For reciprocating compressors <250hp in not operating, depressurized mode, report the following:

Compressor ID	Total time compressor is in not operating, pressurized mode (hrs)	Facility operator CO2 EF for isolation valve in not operating, depressurized mode (scf/hr)	Facility operator CH4 EF for isolation valve in not operating, depressurized mode (scf/hr)	Isolation valve leakage CO2 emissions in not operating, depressurized mode (MT)	Isolation valve leakage CH4 emissions in not operating, depressurized mode (MT)

95157(c)(14)(D)

Report total annual reciprocating compressor emissions from all modes of operation:

Annual CO2 emissions (MT)	Annual CH4 emissions (MT)

95157(c)(14)(E)

For reciprocating compressors in onshore production, report the following:

Count of reciprocating compressors	Annual CO2 emissions (MT)	Annual CH4 emissions (MT)

95153(c)(15) **Equipment leaks**

For each component type (major equipment type for onshore production), that uses emission factors for estimating emissions (refer to 95152(o) and (p):

95153(c)(15)(A)

For equipment leaks found in each leak survey (refer to section 95153(o)), report the following:
(additional fields are provided for a second leak survey, copy and paste entire block to the right for any additional surveys)

For onshore petroleum and natural gas production, report the following:
(note that onshore production may use either 95153(o) or (p) when reporting 2013 emissions in 2014)

Component	Count of leaking components in gas service	Count of leaking components - light crude	Count of leaking components - heavy crude	Annual CO2 emissions (MT)	Annual CH4 emissions (MT)	First Leak survey date (mm/dd/yr)
Valves						
Connector						
Open-ended lines						
Pressure relief valves		NA	NA			
Low continuous bleed device vents		NA	NA			
High continuous bleed device vents		NA	NA			
Intermittent bleed pneumatic devices		NA	NA			
Pneumatic pumps		NA	NA			
Flanges	NA					
Other	NA					
Pump	NA		NA			

Component	Count of leaking components in gas service	Count of leaking components - light crude	Count of leaking components - heavy crude	Annual CO2 emissions (MT)	Annual CH4 emissions (MT)	Second Leak survey date (mm/dd/yr)
Valves						
Connector						
Open-ended lines						
Pressure relief valves		NA	NA			
Low continuous bleed device vents		NA	NA			
High continuous bleed device vents		NA	NA			
Intermittent bleed pneumatic devices		NA	NA			
Pneumatic pumps		NA	NA			
Flanges	NA					
Other	NA					
Pump	NA		NA			

For onshore NG processing, report the following:

copy entire block and paste to the right for additional surveys

Component	Count of Compressor components in gas service	Count of non-compressor components in gas service	Survey Date (mm/dd/yr)
Valves			
Connectors			
Open-ended lines			
Pressure relief valves			
Meters			

Range of CH4 concentration (decimal mole %)

Annual CH4 emissions (MT)	Annual CO2 emissions (MT)

For onshore natural gas Transmission/Compression report the following:

copy entire block and paste to the right for additional surveys

Component	Count of compressor components in gas service	Count of non-compressor components in gas service	Survey Date (mm/dd/yr)
Valves			
Connectors			
Open-ended lines			
Pressure relief valves			
Meters			

Annual CH4 emissions (MT)	Annual CO2 emissions (MT)

For underground natural gas storage stations in gas service, report the following:

copy entire block and paste to right for additional surveys

Component	Count	Survey Date (mm/dd/yr)
Valves		
Connectors		
Open-ended lines		
Pressure relief valves		
Meters		

Annual CH4 emissions (MT)	Annual CO2 emissions (MT)

For LNG storage components in gas and liquid service

copy entire block and paste to right for additional surveys

Component	Count	Survey Date (mm/dd/yr)
Valves		
Pump seals		
Connectors		
Other		

Annual CH4 emissions (MT)	Annual CO2 emissions (MT)

For LNG import and export facilities, report the following

copy entire block and paste to right for

Component	Count	Survey Date (mm/dd/yr)
Valves		
Pump seals		

Annual CH4 emissions (MT)	Annual CO2 emissions (MT)

additional surveys

Connectors	
Other	

For natural gas distribution, report the following:

Component	Count	Survey Date (mm/dd/yr)
Block valves		
Control valves		
Pressure relief valves		
Orifice meters		
Regulators		

Annual CH4 emissions (MT)	Annual CO2 emissions (MT)

95153(c)(15)(B) **For equipment leaks calculated using population counts and EFs (reporting using 95153(p)), report the following:**

95157(c)(15)(B)(1) **For onshore natural gas Transmission/Compression (95150(a)(4)), report the following:**

Component	Count
Low continuous bleed pneumatic device vents	
High continuous bleed pneumatic device vents	
Intermittent bleed pneumatic device vents	

For underground natural gas storage (95150(a)(5)) report the following:

For storage wells in gas service, report:	
Component	Count
Connectors	
Valves	
Pressure relief valves	
Open ended lines	

For Other components in gas service, report:	
Component	Count
Low continuous bleed pneumatic device vents	
High continuous bleed pneumatic device vents	
Intermittent bleed pneumatic device vents	

For LNG Storage (95150(a)(6)) compressors in gas service, report the following:

Component	Count
Vapor recovery compressors	

For LNG import and export equipment (95150(a)(7)), report the following:

Component	Count
Vapor recovery compressors	

For natural gas distribution, report the following:

For below grade M&R services in gas service, report the following (excluding customer meters)	
Component	Count
Inlet pressure > 300psig	
Inlet pressure 100 to 300 psig	
Inlet pressure < 100 psig	

For distribution mains in gas service, report the following	
Component	Miles
Unprotected steel (miles)	
Protected steel (miles)	
Plastic (miles)	

For distribution services in gas service, report the following:	
Component	Miles
Unprotected steel (miles)	
Protected steel (miles)	
Plastic (miles)	

95157(c)(15)(B)(2) **For onshore production, report the following:**

Major Equipment (by sub-facility)	Count
Sub-facility ID/Name	
Wellheads	
Separators	
Meters/piping	
Comperssors	
In-line heaters	
Dehydrators	
Heater-treaters	
Headers	

Major Equipment (by sub-facility)	Count
Sub-facility ID/Name	
Wellheads	
Separators	
Meters/piping	
Comperssors	
In-line heaters	
Dehydrators	
Heater-treater	
Header	

Major Equipment (by sub-facility)	Count
Sub-facility ID/Name	
Wellheads	
Separators	
Meters/piping	
Comperssors	
In-line heaters	
Dehydrators	
Heater-treater	
Header	

copy/paste additional blocks as needed for additional sub-facilities

95157(c)(15)(B)(3) **Report the following emissions by component type**

Component	Annual CO2 emissions (MT)	Annual CH4 emissions (MT)
Valves		
Flanges		
Connectors		
Open-ended lines		
Pressure relief valves		
Other components		

95157(c)(16) **Local distribution companies**

For local distribution companies, report the following:

Report the following information	Data
(A)Total number of above-grade T-D transfer stations	
(B) Number of years over which all T-D stations will be monitored at least once (time to completely monitor all T-D transfer stations)	
(C) Number of T-D stations monitored in calendar year	
(D) Total number of above grade M-R stations	
(E) Total number of above grade M-R stations (include above ground T-D transfer stations) in facility	
(F) Total number of below grade M-R stations (include above grade T-D transfer stations) at the facility	
(G) Leak factor (EF) for metering/regulator runs developed in Eq 28 of 95153	
(H) Number of miles of unprotected steel distribution mains	
(I) Number of miles of protected steel distribution mains	
(J) Number of miles of plastic distribution mains	
(K) Number of miles of cast iron distribution mains	
(L) Number of unprotected steel distribution services	
(M) Number of protected steel distribution services	
(N) Number of plastic distribution services	
(O) Number of copper distribution services	
(P) Annual CO2 emissions from all below grade T-D stations combined (MT)	
(P) Annual CH4 emissions from all below grade T-D stations combined (MT)	
(Q) Annual CO2 from all above grade M-R stations (including T-D transfer stations) combined	
(Q) Annual CH4 from all above grade M-R stations (including T-D transfer stations) combined	
(R) Annual CO2 emissions from all above grade M-R stations (include T-D transfer stations) (MT)	
(R) Annual CH4 emissions from all above grade M-R stations (include T-D transfer stations) (MT)	
(S) Annual CO2 emissions from all distribution mains combined (MT)	
(S) Annual CH4 emissions from all distribution mains combined (MT)	
(T) Annual CO2 emissions from all distribution services, combined (MT)	
(T) Annual CH4 emissions from all distribution services, combined (MT)	
(U) Annual CH4 emissions from all distribution services, combined (MT)	
(U) Annual CO2 emissions from residential meters (MT)	
(U) Annual CH4 emissions from residential meters (MT)	
(W) Number of residential meters (MT)	
(U) Annual CO2 emissions from commercial meters (MT)	
(U) Annual CH4 emissions from commercial meters (MT)	
(W) Number of commercial meters (MT)	
(U) Annual CO2 emissions from industrial meters (MT)	
(U) Annual CH4 emissions from industrial meters (MT)	
(W) Number of industrial meters (MT)	
(V) Annual CO2 emissions from transmission pipeline dig-ins (MT)	
(V) Annual CH4 emissions from transmission pipeline dig-ins (MT)	
(X) Number of transmission pipeline dig-ins	
(V) Annual CO2 emissions from distribution pipeline dig-ins (MT)	
(V) Annual CH4 emissions from distribution pipeline dig-ins (MT)	
(X) Number of distribution pipeline dig-ins	

95157(c)(17) **EOR injection pumps**

For each EOR injection pump, report the following:

For each EOR injection pump (add additional rows as necessary) report the following:	Pump ID	Pump capacity(bbl/d)	Volume of critical phase gas between isolation valves (scf)	Number of blowdowns in year	Critical phase EOR injection gas density	Annual CO2 emissions (MT)	Annual CH4 emissions (MT)

95157(c)(18)

Crude oil, condensate, produced water

For crude oil, condensate, and produced water, report the following:

Report the following information:	Data
Volume of crude oil produced (bbl/yr)	
Annual CO2 emissions (MT)	
Annual CH4 emissions (MT)	

95157(c)(19)

Combustion emissions

For **onshore petroleum and natural gas production combustion emissions**, report the following, by unit type:

Unit type (add additional rows as necessary)	(A) Number external fuel combustion units with rated heat capacity ≤ 5 MMBtu/hr	(B) Number external fuel combustion units with rated heat capacity > 5 MMBtu/hr	(C) Annual CO2 emissions from external fuel combustion units with rated heat capacity > 5 MMBtu/hr (MT)	(C) Annual CH4 emissions from external fuel combustion units with rated heat capacity > 5 MMBtu/hr (MT)	(C) Annual N2O emissions from external fuel combustion units with rated heat capacity > 5 MMBtu/hr (MT)	(D) Cumulative volume of fuel combusted in external fuel combustion units with a rate heat capacity >5 MMBtu/hr (MMscf)	(E) Cumulative number of internal fuel combustion units, not compressor-drivers, with a rated heat capacity ≤ 1 MMBtu/hr or 130 hp	(F) Annual CO2 emissions from internal fuel combustion units with rated heat capacity > 5 MMBtu/hr (MT)	(F) Annual CH4 emissions from internal fuel combustion units with rated heat capacity > 5 MMBtu/hr (MT)	(F) Annual N2O emissions from internal fuel combustion units with rated heat capacity > 5 MMBtu/hr (MT)	(H) Annual volume associated gas produced using thermal enhanced oil recovery (MMBtu)	(H) Annual volume associated gas produced using non-thermal enhanced oil recovery (MMBtu)

Fuel type (add additional rows as necessary)	(G) Fuel volume combusted in internal combustion units with rated heat capacity > 1 MMBtu/hr or 130hp (MMscf or gallons)

(H) Volume of Associated Gas Produced (MMBtu)
-Report this data in the "Petroleum and Natural Gas Emissions" Workbook

(I) Thermal input to EOR wells generated using renewable energy sources (MMBtu) - VOLUNTARY

For **natural gas distribution combustion emissions**, report the following, by unit type:

Unit type (add additional rows as necessary)	(A) Number external fuel combustion units with rated heat capacity ≤ 5 MMBtu/hr	(B) Number external fuel combustion units with rated heat capacity > 5 MMBtu/hr	(C) Annual CO2 emissions from external fuel combustion units with rated heat capacity > 5 MMBtu/hr (MT)	(C) Annual CH4 emissions from external fuel combustion units with rated heat capacity > 5 MMBtu/hr (MT)	(C) Annual N2O emissions from external fuel combustion units with rated heat capacity > 5 MMBtu/hr (MT)	(D) Cumulative volume of fuel combusted in external fuel combustion units with a rate heat capacity >5 MMBtu/hr (MMscf)	(E) Cumulative number of internal fuel combustion units, not compressor-drivers, with a rated heat capacity ≤ 1 MMBtu/hr or 130 hp	(F) Annual CO2 emissions from internal fuel combustion units with rated heat capacity > 5 MMBtu/hr	(F) Annual CH4 emissions from internal fuel combustion units with rated heat capacity > 5 MMBtu/hr	(F) Annual N2O emissions from internal fuel combustion units with rated heat capacity > 5 MMBtu/hr

Fuel type (add additional rows as necessary)	(G) Fuel volume combusted in internal combustion units with rated heat capacity > 1 MMBtu/hr or 130hp (MMscf or gallons)

95157(d)

Industry throughput

Report annual throughput for each industry segment

Industry Segment	Crude/Condensate Annual throughput (bbls)	Natural Gas throughput (MMBtu)
Onshore petroleum and natural gas production		
Offshore petroleum and natural gas production		
Onshore natural gas processing	NA	
Onshore natural gas transmission/compression	NA	
Underground natural gas storage	NA	
LNG storage	NA	
LNG import and export	NA	
Natural gas distribution	NA	

NA = not applicable

95157(e)

Onshore petroleum and natural gas production

For onshore petroleum and natural gas production, report best available estimate for the following:

Variable	Best available basin wide estimate
API gravity	
Gas-to-Oil Ratio (scf/bbl)	
Ave low pressure separator pressure (psig)	