



TPMS Attribute Definitions, Valid Codes and Digital Projection Requirements

(updated 11/13/19)

The Texas Pipeline Mapping System (TPMS) is a GIS database that requires pipeline attributes to be represented by certain codes. This document defines the required attribute fields within the database and explains which codes are valid representations of those attributes.

Explanation of Valid Codes

Letters, numbers and special characters that are acceptable representations of pipeline attributes.

For Example: NGT = Natural Gas Transmission

The following **data types** are used to **define** a “valid code” for pipeline attribute fields:

I = Integer only (ex. 1, 2, 3, etc.)

R = Real number with 2 decimal places only (ex. 6.63, 12.75)

C = Characters (letters, numbers and/or special characters)

Note: All numbers must be **POSITIVE**. All letters must be **CAPITALIZED**.

Definitions for Required Attribute Fields

P5_NUM (Data Type: Text, Character Limit: 6)

P5 Operator Number

A six-digit number generated by the RRC to identify a pipeline operator (**not** the pipeline owner).

T4PERMIT (Data Type: Text, Character Limit: 5)

T-4 Permit Number

RRC assigned 5-digit pipeline permit number. **NEW** permits require 5 zeroes (00000).

Characters are **NOT** accepted. Examples: 09999-10000 **or** 00000

SYS_NM (Data Type: Text, Character Limit: 40)

System Name

A name of a single pipeline system assigned by the operator. This can be any alpha/numeric value assigned by the operator. Blank values are **NOT** accepted.

SUBSYS_NM (Data Type: Text, Character Limit: 40)

Sub System Name

Assigned by the operator. A unique name for a smaller sub-section of a pipeline system. This is a subset of SYS_NM. Blank values are **NOT** accepted.

INTERSTATE (Data Type: Text, Character Limit: 1)

Interstate Designation

Identifies if a pipeline segment is Interstate or Intrastate. Permits with both ‘Y’ & ‘N’ are **NOT** accepted.

Valid Code	Code Description
Y	Interstate Pipeline
N	Intrastate Pipeline

DIAMETER (5, R Data Type: Float, Precision 5, Scale 2)**Diameter**

Only use Outside Pipeline Diameters in inches. (ex. 6.63, 12.75) Zero diameters are **NOT** accepted.

The format of the diameter values is as **##.## (two decimal places only)**.

(For diameters of *greater than 12 inches*, outside diameter equals nominal diameter.)

Nominal Pipe Size	Outside Diameter inches
1 "	1.32
1 ¼"	1.66
1 ½"	1.90
2"	2.38
2 ½"	2.88
3"	3.50
3 ½"	4.00
4"	4.50
5"	5.56
6"	6.63
8"	8.63
10"	10.75
12"	12.75

COMMODITY1 (Data Type: Text, Character Limit: 3)**Commodity**

Abbreviation for primary commodity carried by the pipeline system.

For any other manufactured product transported as a gas, use OGT (Other Gas Transmission).

Diameter 10.75" and over should be CRO (Crude Transmission).

To view 49 CFR Part 195.11, visit the Government Publishing Office website at https://www.ecfr.gov/cgi-bin/retrieveECFR?gp=&SID=70ea119524994236fcb2323b9f06fe99&r=PART&n=49y3.1.1.1.11#se49.3.195_111.

For example: (Ethylene Liquid = HVL), (Ethylene Gas = OGT), (10.75" CRD = CRO)

Valid Code	Commodity Description
AA	(ANHYDROUS AMMONIA, TRANSMISSION)
CO2	(CARBON DIOXIDE, TRANSMISSION)
CRO	(CRUDE OIL, TRANSMISSION)
CRL	(CRUDE OIL, GATHERING)
CFL	(CRUDE FULL WELL STREAM, GATHERING)
CRA	(CRUDE OIL, OFFSHORE GATHERING)
HVL	(HIGHLY VOLATILE LIQUID, TRANSMISSION)
NGT	(NATURAL GAS, TRANSMISSION)
NGG	(NATURAL GAS, GATHERING)
NFG	(NATURAL GAS, FULL WELL STREAM GATHERING)
NGZ	(NATURAL GAS, OFFSHORE GATHERING)
PRD	(REFINED LIQUID PRODUCT, TRANSMISSION)
OGT	(OTHER GAS, TRANSMISSION)

PLINE_ID (Data Type: Text, Character Limit: 20)**Pipeline ID**

This is an identifier for a specific section of the pipeline within a pipeline system. This identifier can be any alpha/numeric value assigned by the operator.

STATUS_CD (Data Type: Text, Character Limit: 1)**Pipeline Status Code**

Identifies current status of pipeline segment.

“In Service” lines include idle lines that are maintained according to the rules.

“Abandoned” lines are any lines that are not maintained and have no intention for future use.

Unless the pipeline has been physically removed from the ground, always include every abandoned line under the T-4 Permit in the mapping.

Valid Code	Code Description
I	In-Service
B	Abandoned

TX_REG (Data Type: Text, Character Limit: 1)**Texas Regulated Pipeline**

Regulated and Non-Regulated pipeline segments. See **TX Regulated Calculation** below for assistance.

Valid Code	Code Description
Y	Facilities are subject to 49 CFR Part 191-195 and 16 Texas Administrative Code (TAC) §8.1 . Identify regulated pipelines by pipeline segment or arc.
N	Identify non-regulated pipelines by pipeline segment or arc.

To view 49 CFR Part 191-195, visit the Government Publishing Office website at https://www.ecfr.gov/cgi-bin/retrieveECFR?gp=&SID=70ea119524994236fcb2323b9f06fe99&n=49y3.1.1.1.7&r=PART&ty=HTML#_top.

To view [16 TAC §8.1](#), visit the Texas Secretary of State website at [https://texreg.sos.state.tx.us/public/readtac\\$ext.ViewTAC?tac_view=5&ti=16&pt=1&ch=8&sch=A&rl=Y](https://texreg.sos.state.tx.us/public/readtac$ext.ViewTAC?tac_view=5&ti=16&pt=1&ch=8&sch=A&rl=Y).

There is a new RRC function that validates shapefiles in ArcGIS. It automatically performs the calculation to determine whether a pipeline segment is Texas Regulated, based on logic outlined below.

TX Regulated Calculation for Liquid Permits:

TX_REG = N if INTERSTATE = Y
TX_REG = N if STATUS_CD = B and LOC_DES = N or R
TX_REG = N if COMMODITY1 = CRL and LOC_DES = R
TX_REG = Y if COMMODITY1 = CRA and LOC_DES = R
TX_REG = Y if COMMODITY1 = CRL, USA = Y, SMYS >= 20%, DIAMETER = 6.63" - 8.63" and LOC_DES = R
TX_REG = Y if COMMODITY1 = CFL, USA = Y, SMYS >= 20%, DIAMETER = 6.63" - 8.63" and LOC_DES = R
TX_REG = Y if COMMODITY1 = CRO, PRD, AA, CO2 or HVL
TX_REG = Y if COMMODITY1 = CRL and LOC_DES = N
TX_REG = Y if COMMODITY1 = CFL and LOC_DES = N

TX Regulated Calculation for Gas Permits:

TX_REG = N if INTERSTATE = Y
TX_REG = N if STATUS_CD = B and LOC_DES = 1, 2, 3 or 4
TX_REG = N if COMMODITY1 = NGG and LOC_DES = 1
TX_REG = Y if COMMODITY1 = NGZ and LOC_DES = 1
TX_REG = Y if COMMODITY1 = NGT or OGT
TX_REG = Y if COMMODITY1 = NGG and LOC_DES = 2, 3 or 4
TX_REG = Y if COMMODITY1 = NFG and LOC_DES = 2, 3 or 4

SYS_ID (Data Type: Text, Character Limit: 6)**System ID Number**

A six-digit Identification Number assigned to Regulated (*Jurisdictional to the Safety Section*) pipeline segment(s). This number is assigned by the RRC and should be kept as a reference number by the pipeline operator for field inspection purposes. The **System ID is Required** to be filled in for all Regulated pipeline segment(s) that have been assigned a System ID in the Pipeline Evaluation System (PES). If the ID number is not found in the Pipeline Evaluation System (PES), then **6 zeroes (000000) are Required**.

To access the Pipeline Evaluation System (PES) for a listing of System ID(s), visit the RRC website at <https://www.rrc.texas.gov/pipeline-safety/reports/> and click on the appropriate Operator Systems list:

- **Pipeline Operator Systems - Gas Transmission** - also includes all regulated gathering lines.
- **Pipeline Operator Systems - Hazardous Liquid** - includes all regulated liquid systems.

PLS_SYSNM (Data Type: Text, Character Limit: 40)**Pipeline Evaluation System (PES) System Name**

The system name assigned to Regulated (*Jurisdictional to the Safety Section*) pipeline segment(s). This name is assigned by the operator and should be kept as a reference name by the pipeline operator for field inspection purposes. The **PLS_SYSNM is Required** to be filled in for all Regulated pipeline segment(s) that have been assigned a System ID in the Pipeline Evaluation System (PES).

If the **PLS_SYSNM** is not available fill in as **PENDING**. Can be **NULL** if Non-Regulated.

LOC_DES (Data Type: Text, Character Limit: 1)**Location Designation**

Gas: An area that extends 220 yards on either side of the centerline of any continuous one-mile length of pipeline based on population concentration, number of buildings, or places of public assembly.

Liquid: Designates an area as either Rural or Non-Rural.

Valid Code	Code Description
	1,2,3,4 are Class Location (population) Designations (for gas permits) – an area that extends 220 yards on either side of the centerline of any continuous one-mile length of pipeline based on population concentration, number of buildings, or places of public assembly. Reference 49 CFR Part 192.5 Class Location Definitions.
1	An offshore area; OR any class location unit that has 10 or fewer buildings intended for human occupancy.
2	Any class location unit that has more than 10 but fewer than 46 buildings intended for human occupancy.
3	Any class location unit that has 46 or more buildings intended for human occupancy; OR an area where the pipeline lies within 100 yards of either a building or a small, well-defined outside area (such as a playground, recreation area, outdoor theater, or other place of public assembly) that is occupied by 20 or more persons on at least 5 days a week for 10 weeks in any 12-month period. (The days and weeks need not be consecutive.)
4	Any class location unit where buildings with four or more stories above ground are prevalent.
R	Rural (for liquid permits)
N	Non-rural (for liquid permits)

To view 49 CFR Part 192.5 Class Location Definitions, visit the Government Publishing Office website at https://www.ecfr.gov/cgi-bin/retrieveECFR?gp=&SID=70ea119524994236fcb2323b9f06fe99&mc=true&r=PART&n=pt49.3.192#se49.3.192_15.

USA (Data Type: Text, Character Limit: 1)**Unusually Sensitive Area**

***Required Field if COMMODITY1 = CRL (Crude Gathering) or CFL (Crude FWS) and Diameter is 6.63"– 8.63":**

Designates when segment is within quarter mile of unusually sensitive area; **can be null if not required.**

Valid Code	Code Description
Y	Yes, segment is within a quarter mile of an unusually sensitive area
N	No, segment is NOT within a quarter mile of an unusually sensitive area.

SMYS (Data Type: Float, Precision 5, Scale 2)**Specified Minimum Yield Strength**

***Required Field if COMMODITY1 = CRL (Crude Gathering) or CFL (Crude FWS) and Diameter is 6.63"– 8.63":**

The format of the values is as ##.## (two decimal places only.) Percentage value of the specified minimum yield strength for steel pipe manufactured in accordance with a listed specification.

CRL = 6.63"– 8.63" within a 1-100 percentage of SMYS are Required; zeroes are NOT accepted.

(If a pipeline is idle, where it would be zero, please use 1).

For values other than 6.63"– 8.63" the information is not required, it can either have null values using "0" or left blank.

T4_AMD (Data Type: Text, Character Limit: 2)**T-4 Amendment Code**

Created to link pipeline geography to T-4 amendments and changes with the current T-4 Permit filing. Listed below are the Standard Codes for Submitting T4 Amendments in Digital Form.

For Digital submissions, use T4_AMD as the Database Field Name.

***Note: Use these Codes or Descriptions in the database file (.DBF) and the T-4 Permit Cover Letter, when describing T-4 amendments or changes.**

To view sample cover letters, visit the RRC website at

<https://www.rrc.state.tx.us/pipeline-safety/forms/#PipelinePermitting>.

To view 16 TAC §8.115, visit the Texas Secretary of the State website at

[https://texreg.sos.state.tx.us/public/readtac\\$ext.ViewTAC?tac_view=5&ti=16&pt=1&ch=8&sch=B&rl=Y](https://texreg.sos.state.tx.us/public/readtac$ext.ViewTAC?tac_view=5&ti=16&pt=1&ch=8&sch=B&rl=Y).

Valid Code	Code Description
NC	No Change, for all arcs with no changes.
NP	New Permit (It is used if T-4 permit number is not assigned)
PA	New Pipeline Addition or addition to existing permit.
BP	Abandon in Place but remains under the same permit and operator and there are still active lines under the permit.
MP	Merge Permit, merge entire permit with another permit within the same operator.
PM	Partial Merge, partial transfer (merge) from one permit to another within the same operator.
PT	Partial Transfer, partial transfers from one permit to another, different operators.
OM	Other Modifications: Changes that are not suitable for any of the other T-4 Amendment Codes. For example: diameter change, system name change, pipeline location, etc.
DP	Delete Pipelines, delete pipelines (removed from the ground).
FC	Fluid Change. For example: Natural Gas to Gasoline.

QUALITY_CD (Data Type: Text, Character Limit: 1)

Data Quality Code

Operator's estimate of the positional accuracy of the submitted pipeline segment.

Valid Code	Code Description
E	Excellent: within 50 feet
V	51 –300 feet
G	301 –500 feet
P	501 –1000 feet
U	Unknown

Required Shapefile Projection (.shp, .shx, .dbf, .prj)

The Pipeline Online Permitting System (POPS) only accepts shapefiles using the Geographic Coordinate System (GCS), which means that the x-/y- coordinate values are using the longitude/latitude values for the State of Texas. These values are –93 to –107 decimal degrees for the x-coordinate and 25 to 37 decimal degrees for the y-coordinate value. NAD 1927 or NAD 1983