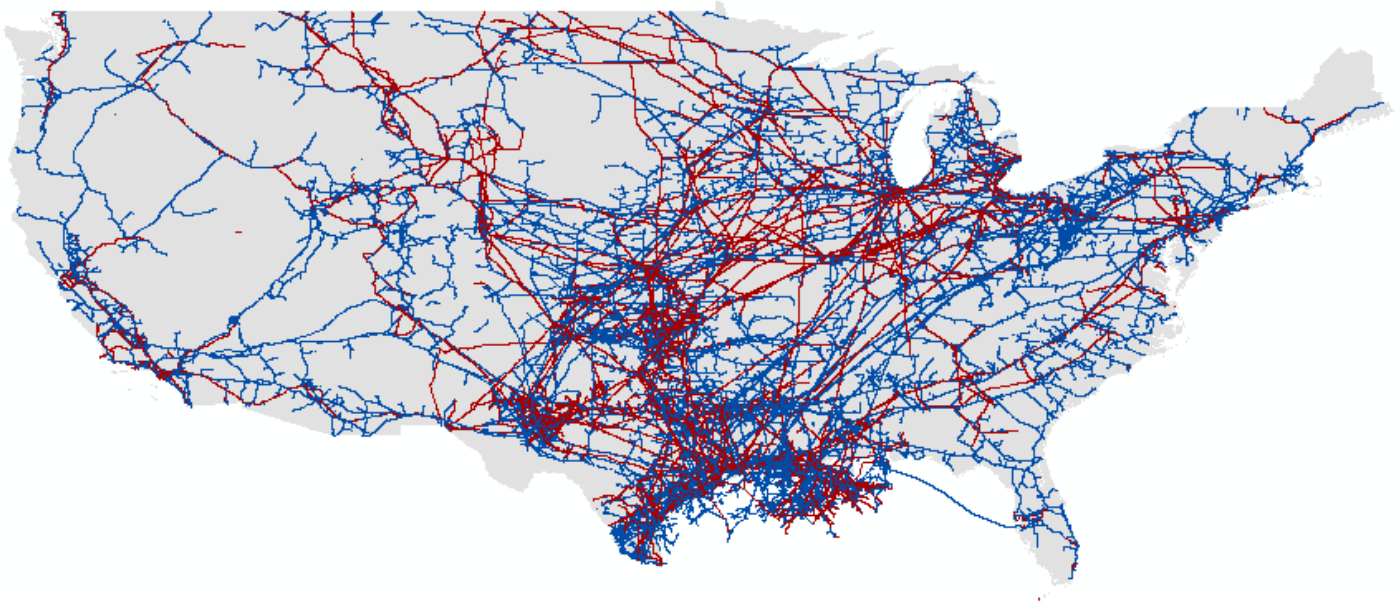# National Pipeline Mapping System

*Standards for*

## Pipeline, Liquefied Natural Gas and Breakout Tank Farm Operator Submissions
*October 2017*



www.npms.phmsa.dot.gov

## Pipeline and Hazardous Materials Safety Administration

## Revisions to the Standards in October 2017

1. In section 3, added guidance to report the fill material in purged pipelines in the Commodity Description field.

# Table of Contents

## List of Acronyms

AA..............................................Anhydrous Ammonia
AGA ...........................................American Gas Association
API.............................................American Petroleum Institute
ASCII ..........................................American Standard Code for Information Interchange
BDB............................................Biodiesel Blend
BTS.............................................Bureau of Transportation Statistics, U.S. Department of Transportation
CAD............................................Computer-Aided Drafting
CADD .........................................Computer-Aided Drafting and Design
CO2............................................Carbon Dioxide
CRD............................................Crude Oil
CRW...........................................Sweet Crude Oil
CRR ............................................Sour Crude Oil
DLG............................................Digital Line Graph
DOE ...........................................Department of Energy
DOS............................................Disk Operating System
DRG ...........................................Digital Raster Graphic
DXF ............................................Drawing Exchange Format
EPG............................................Empty Gas
EPL.............................................Empty Liquid
ETB ............................................Ethanol Blended Gasoline
ETH ............................................Fuel Grade Ethanol
FERC ..........................................Federal Energy Regulatory Commission
FGDC..........................................Federal Geographic Data Committee

FTP site .....................................File Transfer Protocol site
GIS ...........................................Geographic Information System
GPS ...........................................Global Positioning System
HG ............................................Hydrogen Gas
HPC...........................................HVL Petrochemical
HVL ...........................................Highly Volatile Liquid
INGAA.......................................Interstate Natural Gas Association of America
LNG...........................................Liquefied Natural Gas
LPG ...........................................Liquefied Petroleum Gas
LUT ...........................................Look-Up Table
MIF ...........................................MapInfo Interchange File
MQAT .......................................Joint Government-Industry Pipeline Mapping Quality Action Team
NAD27 ......................................North American Datum of 1927
NAD83 ......................................North American Datum of 1983
NG ............................................Natural Gas
NG1 ..........................................Pipeline Quality or Tariff Quality Natural Gas
NG2 ..........................................Wet But Non-Sour Natural Gas
NG3 ..........................................Sour But Non-Wet Natural Gas
NG4 ..........................................Wet, Sour Natural Gas
NGL...........................................Natural Gas Liquids
NPC...........................................Non-HVL Petrochemical
NPMS.........................................National Pipeline Mapping System
OBI............................................Other Biofuels
OHV ..........................................Other HVL
OMB .........................................Office of Management and Budget
OPS...........................................Office of Pipeline Safety
OSAVE ......................................Operator Submission And Validation Environment
OTG ..........................................Other Gas
OTR...........................................Other Refined and/or Non-HVL Petroleum Products
PG.............................................Propane Gas
PHMSA ......................................Pipeline and Hazardous Materials Safety Administration
PRD...........................................Product
RFD...........................................Refined Fuel Oil, Diesel
RGS...........................................Refined Non-Ethanol Blended Gasoline
RKJ............................................Refined Kerosene, Jet Fuel
ROW .........................................Right-Of-Way
SEF............................................Standard Exchange Format
SG ............................................Synthetic Gas
SMYS ........................................Specified Minimum Yield Strength
SPCS..........................................State Plane Coordinate System
USDOT .......................................U.S. Department of Transportation
USGS..........................................United States Geological Survey
UTM...........................................Universal Transverse Mercator

# List of Useful NPMS Website Links

National Pipeline Mapping System (NPMS):
https://www.npms.phmsa.dot.gov

Pipeline Operator page:
https://www.npms.phmsa.dot.gov/PipelineOperator.aspx

Pipeline Information Management and Mapping Application (PIMMA):
https://www.npms.phmsa.dot.gov/PIMMA/

Apply for Operator PIMMA Access:
https://www.npms.phmsa.dot.gov/ApplyForOperatorPIMMAAccess.aspx

Forgot PIMMA Password:
https://www.npms.phmsa.dot.gov/ForgotPassword.aspx

Public Map Viewer:
https://pvnpms.phmsa.dot.gov/PublicViewer/

Find Who's Operating Pipelines in Your Area:
https://www.npms.phmsa.dot.gov/FindWhosOperating.aspx

NPMS Operator Submission Guide:
https://www.npms.phmsa.dot.gov/Documents/Submission_Guide.pdf

Operator Submission And Validation Environment:
https://www.npms.phmsa.dot.gov/OSAVE/

Operator Submission And Validation Environment User Guide:
https://www.npms.phmsa.dot.gov/Documents/OSAVE_User_Guide.pdf

**Summary of Required Components – Pipeline:**
https://www.npms.phmsa.dot.gov/RequiredComponentsSummary.aspx

Overview of the Pipeline Submission Process:
https://www.npms.phmsa.dot.gov/SubmissionProcessOverview.aspx

NPMS Pipeline Shapefile and Personal Geodatabase template:
https://www.npms.phmsa.dot.gov/Documents/PIPE_SHP_PGDB_Template.zip

NPMS Pipeline Data Submission Attribute template:
https://www.npms.phmsa.dot.gov/Documents/NPMS_Pipeline_Data_Submission_Attribute_Table.xlsx

**Summary of Required Components – LNG Plant:**
https://www.npms.phmsa.dot.gov/RequiredComponentsSummaryLNG.aspx

NPMS LNG Plant Cover Letter template:

https://www.npms.phmsa.dot.gov/Documents/LNGplant_CoverLetter_Template.docx

NPMS LNG Plant Shapefile and Personal Geodatabase template:
https://www.npms.phmsa.dot.gov/Documents/LNG_SHP_PGDB_Template.zip

NPMS LNG Plant Data Submission Attribute template:
https://www.npms.phmsa.dot.gov/Documents/NPMS_LNG_Data_Submission_Attribute_Table.xlsx

**Summary of Required Components – Breakout Tank:**
https://www.npms.phmsa.dot.gov/RequiredComponentsSummaryBOT.aspx

NPMS Breakout Tank Cover Letter template:
https://www.npms.phmsa.dot.gov/Documents/BOT_CoverLetter_Template.docx

NPMS Breakout Tank Shapefile and Personal Geodatabase template:
https://www.npms.phmsa.dot.gov/Documents/BOT_SHP_PGDB_Template.zip

NPMS Breakout Tank Data Submission Attribute template:
https://www.npms.phmsa.dot.gov/Documents/NPMS_BOT_Data_Submission_Attribute_Table.xlsx

# List of Useful PHMSA and Industry Website Links

Pipeline and Hazardous Materials Safety Administration (PHMSA):
http://www.phmsa.dot.gov

PHMSA's Office of Pipeline Safety page:
http://phmsa.dot.gov/pipeline

Find an Operator ID (OPID) number:
https://hip.phmsa.dot.gov/analyticsSOAP/saw.dll?PortalPages&NQUser=pdm_web_user&NQPassword=Public_Web_User1&PortalPath=/shared/PDM%20Public%20Website/_portal/Operator%20Search%20NPMS

PHMSA's Community Liaison contacts:
https://primis.phmsa.dot.gov/comm/CATS.htm

U.S. Department of Transportation:
http://www.dot.gov

Bureau of Transportation Statistics:
http://www.rita.dot.gov/bts/

Federal Energy Regulatory Commission:
http://www.ferc.gov

Federal Geographic Data Committee:
http://www.fgdc.gov

U.S. Department of Energy:
http://www.energy.gov

U.S. Geological Survey:
http://www.usgs.gov

# Preface

This document was prepared by the second Joint Government/Industry Pipeline Mapping Quality Action Team (MQAT II). The team was sponsored by the U.S. Department of Transportation (USDOT) Pipeline and Hazardous Materials Safety Administration (PHMSA), American Petroleum Institute (API), American Gas Association (AGA), and Interstate Natural Gas Association of America (INGAA). Representatives on the team included PHMSA, Bureau of Transportation Statistics (BTS), U.S. Department of Energy (USDOE), U.S. Geological Survey (USGS), Federal Energy Regulatory Commission (FERC), state representatives from California, Louisiana, New York, and Texas, and representatives from the pipeline industry.

If you have questions regarding this document, please contact one of the following representatives:

# PHMSA Contacts

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Pipeline and Hazardous Materials Safety
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# 1. Introduction

The National Pipeline Mapping System is a fully-functional Geographic Information System (GIS).  The system contains the location and selected attributes of hazardous liquid and gas transmission pipelines, liquefied natural gas (LNG) plants, and breakout tank farms operating in the United States, including those pipelines that are offshore.  The NPMS also contains pipeline operator contact information that is accessible to the public.  The NPMS accepts voluntary data submissions for breakout tanks under OPS jurisdiction. Breakout tank submissions are discussed in Section 7.

PHMSA works with other governmental agencies and private organizations to add other relevant data layers to the system.  These include layers on natural disaster probability areas, high consequence areas, hydrography, and transportation networks.  PHMSA uses the system to 1) depict pipelines in relation to populated areas and natural resources, 2) coordinate information with other governmental agencies, 3) provide regulatory oversight, 4) better prepare for a possible pipeline release, and 5) work with governmental agencies and private industries in the event of a release.

The NPMS is built and maintained using information supplied by pipeline and LNG plant operators.  On an annual basis operators are asked to provide geospatial and attribute data about their holdings as well as contact information.

## 1.1 Regulatory Requirements

The Pipeline Safety: Miscellaneous Changes to Pipeline Safety Regulations requires that pipeline operators provide the following information to the Department of Transportation.  Section 195.61 of the regulations manual pertains to hazardous liquid pipeline operators and section 191.29 of the regulations manual pertains to gas transmission and LNG plant operators.  This rule is effective on October 1, 2015 and supersedes the Pipeline Safety Improvement Act of 2002.  The Department of Transportation is utilizing the National Pipeline Mapping System to handle all pipeline data.

- Data appropriate for use in the National Pipeline Mapping System (NPMS).  A complete data submission includes the geospatial data, attribute data, and metadata for all LNG, hazardous liquid, and natural gas transmission pipeline operation systems operated by a company.
- The name and address of the person with primary operational control to be identified as its operator.
- Public contact information, which is used by members of the public to contact the operator for additional information about pipeline holdings.
- Updates of the above information to reflect changes in pipeline holdings.

Data updates and data accuracy verification are discussed further in Section 1.4.

It is requested that the data have a **minimal** positional accuracy of ±500 feet of its known geographic location.  Research indicates that most operators can easily achieve ±500 foot accuracy with current in-house data records.

The regulation of abandoned pipelines defined in 49 CFR 195.59 (a) and 49 CFR 192.727 (g) Abandonment or Deactivation of Facilities states that "For each abandoned offshore pipeline facility or each abandoned onshore pipeline facility that crosses over, under or through a commercially navigable waterway, the operator of that facility must file a report upon abandonment of that facility."  The preferred method to submit data on pipelines facilities abandoned after October 10, 2000 is to the NPMS in accordance with the standards defined in this document. In addition to the NPMS-required attributes, operators must submit a letter which contains the date of abandonment, diameter, method of abandonment, and certification that, to the best of the operator's knowledge, all of the reasonably available information

requested was provided and, to the best of the operator's knowledge, the abandonment was completed in accordance with applicable laws.  A template to assist operators in providing this information is available in Appendix A of this document; additionally a MS Word version of the template is available on the <u>Overview of the Pipeline Submission Process</u> page on the <u>NPMS website</u>.

*Note: Once a pipeline is officially abandoned in the NPMS, do not include it in future NPMS submissions.   Please contact NPMS staff if you are unsure of which lines are currently abandoned in the NPMS for your company.  Since abandoned pipelines are disassociated from your Operator ID, your company's abandoned lines will not appear in your PIMMA account; however, pipelines previously reported as abandoned by the OPID may be viewed via the Operator Submission And Validation Environment (OSAVE).*

## 1.2 Development of NPMS and Standards for Data Submission

A Joint Government/Industry Pipeline Mapping Quality Action Team (MQAT II) was formed to work with PHMSA on creating the digital pipeline location and attribute layer of the NPMS.  The team was sponsored by PHMSA, American Petroleum Institute (API), American Gas Association (AGA), and Interstate Natural Gas Association of America (INGAA), and included representatives from multiple federal and state governmental agencies, and the natural gas and hazardous liquid pipeline industry.

MQAT II drafted standards and incorporated appropriate recommendations from outside entities, including comments from mapping vendors, pipeline operators, and state agencies outside the MQAT II.  The standards underwent two pilot tests. These tests helped to determine the:

- Ability of pipeline operators to submit data that meet the standards,
- Problems they encountered while trying to meet the standards,
- Cost and effort required to meet the standards,
- Usability of data formats other than those in the standards, and
- Ability of the pilot repositories to process the submitted data based on the draft standards.

To the greatest extent possible, MQAT II resolved the problems encountered in both pilot tests in an effort to further minimize the time and effort required to meet the standards.  The majority of the operators and repositories that participated in the pilot tests stated that the standards were clear and could be met without an undue burden on their company.

Various state agencies currently request or require that operators submit pipeline and LNG data to them.  Some state agencies are using the operators' data to create a digital pipeline and LNG layer for their state.  NPMS does not supersede or replace state regulations. Operators must still comply with all applicable state regulations.

## 1.3 Data Format, Verification, and Updates

### 1.3.1 Annual Resubmission Requirement

Operators are required to examine their data every year and determine if any part of their submission (geospatial, attribute, metadata, or public contact information) has changed.  If any of these components have changed, the operator must resubmit their data to the NPMS.  The NPMS prefers that operators resubmit the entire pipeline system with the exception of previously abandoned lines.  Do not resubmit lines already abandoned in the NPMS.  If you are

unsure of which lines are already in the NPMS as abandoned for your company please contact NPMS Staff at npms@dot.gov.  Operator ID (OPID) numbers and contact information for the submission must be included.

Effective October 1, 2015 operators submit their NPMS data concurrently with hazardous liquid and gas transmission annual report submissions.  Annual reports are due on March 15 each year for gas transmission operators and on June 15 for hazardous liquid operators.  LNG plant operators would also submit to NPMS by March 15.  The data included in the submission must reflect conditions in the field as of December 31 of the previous year.  NPMS staff appreciates early submissions (as early as January 1).  Submissions are processed by NPMS staff in the order they are received.

For those operators reporting both gas and hazardous liquid transmissions under one OPID number (internal DOT numbers assigned by PHMSA to the operator for specific assets), a single NPMS submission containing the changes for both the gas and hazardous liquid transmissions reflecting as of December 31 of the previous year is preferably submitted by March 15.  If the operator is submitting both updated hazardous liquid and gas transmission pipelines in a single submission, the operator should clearly indicate that both types reflect as of December 31 of previous year on the cover letter which accompanies the submission.  If the operator is unable to submit updated hazardous liquid and gas transmission pipelines in a single submission by March 15, the operator must submit only updated gas transmission pipelines by March 15; in this case, the hazardous liquid pipelines should be left out of the submission.  The updated hazardous liquid pipelines must be submitted by June 15; in this case, the submission should contain only the hazardous liquid pipelines as the gas transmission pipelines should not be resubmitted.  Both of the individual submissions should be accompanied by all required components of the submission.  The cover letter in the individual submissions should clearly denote what pipeline type is included in the submission and what as-of year is reflected.  When NPMS staff receives a submission containing only the gas transmission pipelines, a cursory review of the submission will be conducted and the operator notified; the full review and processing of the submission will be held until the hazardous liquid submission is also received.

The gas transmission and hazardous liquid mileage on the annual report to PHMSA for each OPID must match the assets described in the NPMS submission for that OPID.  Operators must use the same OPID number to describe a pipeline or LNG asset in both the annual report and NPMS submission.  Synchronizing the OPID numbers alleviates confusion in identifying operator assets and improves PHMSA's ability to accurately describe the pipeline operated by a specific pipeline operator.  The ability to accurately identify and track operator physical assets is beneficial to PHMSA, pipeline operators, and all stakeholders who utilize our data, and ultimately helps promote pipeline safety.

The NPMS processing department encourages operators to submit data prior to the deadlines.  Submitting early will speed submission processing and provide time for the processing department to notify operators if a submission is incomplete.  Submissions reflecting December 31 of the previous year will be accepted starting January 2 of the current year (e.g. submissions reflects as of December 31, 2016, will be accepted starting January 2, 2017).

If operators have no changes since their previous NPMS submission, a No Change Notification may be submitted to the NPMS in lieu of making a data submission.  If all of the data currently in the NPMS for the OPID should be removed to reflect a change in classification, permanent abandonment, or divesture, a request to remove all pipeline data from the NPMS may be submitted in lieu of making a data submission as well.

PHMSA has developed the Operator Submission And Validation Environment (OSAVE) to assist operators with the submission process. OSAVE is a one-stop shop for operators to:

- Review the pipeline data currently in the NPMS national layer for the OPID via a web map viewer,
- View the NPMS pipeline submission history for the OPID,
- Update information for the OPID's pipeline-related primary, technical, and public contacts,
- Convey a notification of no changes for pipelines,
- Mark desired attribute edits and spatial deletions for the OPID's pipelines via a web map viewer in lieu of a traditional submission,
- Submit pipeline data to be added to existing data in the NPMS national layer for the OPID in lieu of a traditional data submission,
- Submit pipeline data intended to fully replace existing feature(s) in the NPMS national layer for the OPID, and
- Request that all pipelines in the NPMS national layer for the OPID be removed.

PHMSA prefers that OSAVE be utilized to convey pipeline submission data and notifications to the NPMS. OSAVE is accessible from the web and requires a PIMMA account to login. If you do not have a PIMMA account, please complete the online application on the NPMS website. If you have a PIMMA account but have forgotten your login information, please complete the Forgot Password form or call NPMS staff directly. Only direct employees of the operating company may have PIMMA accounts. If you have a consultant/subcontractor working on the NPMS data submission on your behalf, you may opt to share your PIMMA account with your consultant provided you have a confidentially agreement with the consultant in place that states that the login will only be used for the purposes of the project and will not be redistributed. The operator takes responsibility for the consultant's usage. At the end of the contracted period, the operator should terminate the consultant's access; the operator may wish to contact NPMS staff to change the login password to ensure access is restricted.

The OSAVE map viewer is updated approximately every other month with newly processed data. If your submission data was recently incorporated into the NPMS national layer but is not yet viewable on the map viewer, please contact NPMS staff for information regarding the potential "live" date.

For additional information regarding the Operator Submission And Validation Environment (OSAVE), please refer to the OSAVE User Guide on the NPMS website.

### 1.3.2 OPID Contact Information

All operators must submit primary, technical, and public contact information for their pipeline systems. The public contact information is intended to be used by private citizens outside of PHMSA and the pipeline industry. The public contact information is posted on the NPMS website for any visitor to access. While the public contact information is distributed, the primary and technical contact information is not. The primary and technical contacts are for PHMSA and its contractors in case they have questions regarding your company's submission. The contact information should be reviewed, submitted, and updated via the Update OPID Contact Information section within OSAVE. The contact information may be updated at any time throughout the year. Please see Section 5 for a detailed explanation of the type of information that is required.

## 1.4 Distribution of NPMS Data

Federal, state, and local governmental agencies and the pipeline industry may access all or portions of the pipeline, LNG, and breakout tank farm layers of the NPMS.  Other data layers on high consequence areas, transportation networks, and natural disaster probability areas are being collected from various governmental and private sources, and are available for these users to the extent possible.  The data collected for the NPMS is necessary for regulatory oversight and for monitoring pipeline security.  In 2007, a [Public Viewer](#) was launched.  The Public Viewer allows the general public to view maps of and information about gas transmission pipelines, hazardous liquid pipelines, LNG plants, and breakout tank farms in a user-specified county. Map scale and attributes are limited.

One of the goals of the NPMS is to assist operators in progressing toward a digital mapping environment.  Upon request, digital pipeline and LNG plant data is provided to the contributing operator at no cost.  The NPMS may charge a fee for other products and services.  The data contained in the NPMS are for reference purposes only and are not to be construed as actual survey-quality data or as a replacement for contacting a one-call center.

## 1.5 About these Standards

These standards were created with input from the pipeline industry, governmental agencies, and the public.  They address the submission of digital pipeline and LNG data to support the development of a reasonably accurate NPMS. Operators are responsible for providing data that complies with these standards.  The following sections discuss in detail the format, content, and quality of pipeline and LNG plant data that are to be submitted for inclusion into the NPMS. Three types of data are required: geospatial data (location information), attribute data (descriptive information), and metadata (data about the data).  A cover/transmittal letter, separate metadata file, and contact information for the pipeline operator are required components; however, the OSAVE workflow eliminates the need for each of these components to be submitted as separate files within a data package.  Instead the cover letter information, projection information, and primary, technical, and public contact information are incorporated into the submission workflow as a series of questions for pipeline submissions only.  See Section 5 for more details about contact information.  Although OSAVE may be used to view the location and attributes of existing LNG plants for an OPID, the submission workflows within OSAVE relate only to pipeline submissions.  OSAVE cannot be used to submit a notification of no changes or a data submission for LNG plants or breakout tanks.  Operators should refer to the instructions specifically for LNG plants or breakout tanks for additional details.

# 2. General Requirements (Key Terms and Definitions)

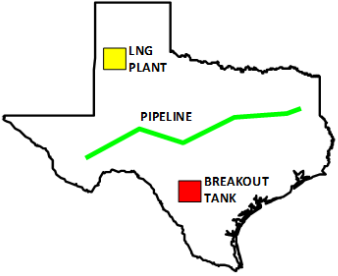This section establishes general NPMS terms and requirements.

| Geospatial Data | Attribute Data | Metadata | Contact Information |
|---|---|---|---|
| Digital data with lines and/or points marking the location of pipelines, LNG Plants, and breakout tanks. | A computer database containing descriptive information about pipelines or LNG Plants. There is one record in the database for each *pipeline segment*. | Descriptive information about how the geospatial and attribute data were prepared (i.e. data about data). This information includes the data projection, datum, and units. | Information about the person or entity who serves as a contact for the pipeline system. Contains **either** a person's name and title **or** the name of an entity. Also contains address, phone, and email information. |

**Pipeline Attribute Table**

Descriptive Field 1

Descriptive Field 2

Descriptive Field …

**LNG Attribute Table**

Descriptive Field 1 …

*(Geospatial Data cell contains a map of Texas labeled LNG PLANT, PIPELINE, BREAKOUT TANK)*

**Figure 2-1. The Types of NPMS data**

The NPMS includes location and selected attributes of hazardous liquid and gas transmission pipelines, LNG plants, and breakout tank farms. Information on other types of pipelines and facilities need not be submitted at this time. **Pipelines and facilities other than those described below should not be included in your NPMS submission.**

**Gas transmission line:** A pipeline system, other than a gathering line, that:

1. Transports gas from a gathering line or storage facility to a distribution center, storage facility, or large-volume customer that is not downstream from a distribution center. A large-volume customer may receive similar volumes of gas as a distribution center. Factories, power plants, and institutional users of gas are included.
2. Operates at a hoop stress of 20 percent or more of specified minimum yield strength (SMYS) or
3. Transports gas within a storage field.

Additional information about PHMSA-regulated gas lines is in CFR §192.

**Hazardous liquid:** Highly volatile liquids, petroleum products, carbon dioxide, crude oil, liquefied petroleum gas, natural gas liquids, fuel grade ethanol, or anhydrous ammonia.

**Hazardous liquid trunk lines:** A hazardous liquid pipeline other than a flow line, gathering line, or in-plant pipeline. More information about PHMSA-regulated liquid lines is in CFR §195.

**Regulated rural hazardous liquid gathering lines:** Rural onshore hazardous liquid pipelines with all of the following characteristics:

1. A nominal diameter between 6.625 and 8.625 inches.

2. Operates at a maximum operating pressure established under §195.406 that corresponds to a stress level greater than 20% of SMYS, or if the stress level is unknown, or the pipeline is not constructed with steel pipe at a pressure of more than 125 pounds per square inch (psi) gauge.

3. Located in or within a quarter mile of an Unusually Sensitive Areas as defined in §195.6.  GIS data layers of Unusually Sensitive Areas are available to pipeline operators who are trying to determine whether their liquid lines are jurisdictional.  More information is at http://www.npms.phmsa.dot.gov/data/data_usa.htm.

**Liquefied natural gas (LNG):**  Natural or synthetic gas, having methane as its major constituent, that has been changed to a liquid or semi-solid.

**LNG Plant:**  A component of a facility that is used for liquefying or solidifying natural gas or transferring, storing, or vaporizing liquefied natural gas.

**Pipeline system:**  All parts of a natural gas transmission line or hazardous liquid line through which gas or hazardous liquid is transported. By definition, only one firm can operate a pipeline system.  Operators should assign unique and consistent names to each of their pipeline systems.  A pipeline system may have an unlimited number of branches.  Each pipeline system must be represented by one or more pipeline segments.
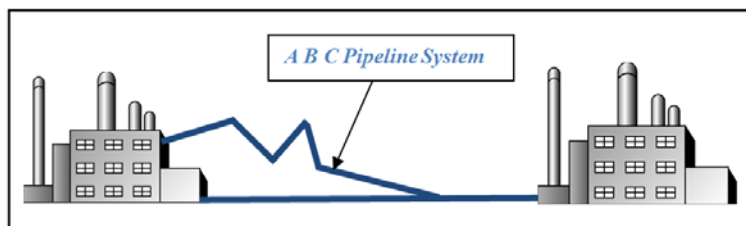


**Figure 2-2. Sample of annotated pipelines system**

**Pipeline segment:**  A linear feature representing part or all of a pipeline system.  A pipeline segment must have only two ends.  No branches are allowed. A pipeline segment may be a straight line or may have any number of vertices.  Each pipeline segment must be uniquely identified.  The number of pipeline segments should be kept to the minimum needed to represent a pipeline system and its associated attributes.  A unique line segment in the computer-aided drafting (CAD) or GIS dataset should represent each pipeline segment.
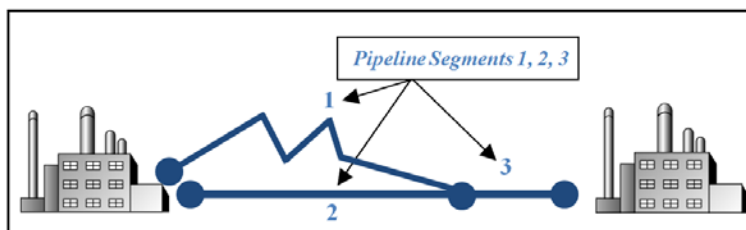


**Figure 2-3. A pipeline system consisting of three pipeline segments**

A pipeline system should be broken into multiple pipeline segments for only two reasons:

1. To represent a branch or intersection with another pipeline segment, and/or
2. To allow for a change of associated attributes such as diameter.

**Pipeline intersection:**  A point where a physical connection between two pipelines occurs.  A commodity from one pipeline can flow into another pipeline(s), either through a branch within a pipeline system or a connection between

two pipeline systems.  When submitting hard-copy maps, intersections should be marked with a clear, visible dot.  When submitting digital geospatial data, line segments in the CAD or GIS data set should be broken at the point of intersection.  The intersection will be a common endpoint (node) representing the two pipeline segments.

**Pipeline crossing:**  A point where two or more pipelines cross, but where there is no physical connection between the pipelines.  Pipeline segments should not be broken at pipeline crossings.
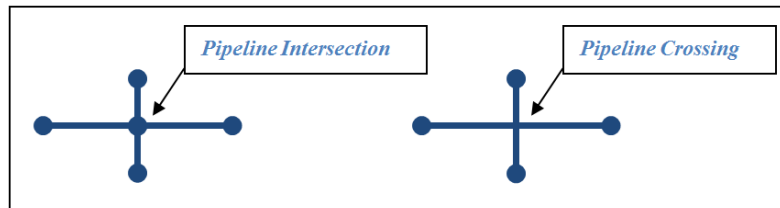


**Figure 2-4. Sample annotation of pipeline intersection and pipeline crossing**

**Pipeline corridor:**  A pipeline corridor is a linear area where two or more pipelines (either part of the same or different pipeline systems) are closely grouped in a single right-of-way.  Each line in a pipeline corridor must be represented as a separate segment including its unique attributes.

**Pipeline status:**  The status of a pipeline or pipeline segment may be defined by one of the following options:

1. **In-service:**      The pipeline or pipeline segments currently transports natural gas or hazardous liquid.

2. **Inactive/Idle:**   The pipeline or pipeline segment is maintained to a degree that it may, in the future, be potentially brought back into service.

3. **Retired:**         The pipeline or pipeline segment has been taken out of service and is no longer being maintained, but it has not yet been permanently abandoned according to pipeline safety regulations.

4. **Abandoned:**       The pipeline or pipeline segment has been permanently removed from service according to PHMSA regulations.

**Breakout tank:**  A tank used to a) relieve surges in a hazardous liquid pipeline system or b) receive and store hazardous liquid transported by a pipeline for re-injection and continued transportation.

## 2.1 NPMS File Naming Conventions

Operators are requested to use the following formula when assigning file names:

Type of File Code **+** OPID **+** hyphen **+** 4-Digit Sequential Number **+** 3-Digit Alphanumeric Extension

*Sample file name*: **G12345-0001.DWG**

**Type of File Code (one-character, alpha):**

G = Geospatial Data Only

A = Attribute Data Only

(For operators unable to submit the required attributes incorporated with the geospatial data, such as in an Esri shapefile, the operator must submit the attribute data as a separate component in a Microsoft Excel format or a comma or tab delimited text format. The NPMS has developed a template of the required attributes in Microsoft Excel format to ease this process, if needed.)

B = Both Geospatial and Attribute Data

T = Metadata Data Only

(*The NPMS Metadata/Attribute Builder* **software has been retired.** OSAVE is the method pipeline data submissions are conveyed to NPMS staff. Pipeline operators submitting via the OSAVE workflow, which includes the metadata-related questions, eliminates the need to submit a separate metadata file.)

**OPID (five digits [maximum], numeric):** This is the identification number assigned by PHMSA to pipeline and LNG plant operators, for user-fee purposes. The OPID has five digits or fewer. If you don't know your OPID, contact PHMSA for assistance.

**4-Digit Sequential Number (four-digit, numeric, starting with -0001):** This is used to avoid assigning several files with the same file name.

**Extension (three-character default from software package):** Use the default extension for export from the software package (e.g., .DWG, .SHP, .DBF, etc.).

## 2.2 Types of NPMS Submissions

Operators must classify submissions according to one of the following types. The various types of submissions are intended to facilitate maintenance of the NPMS and minimize the effort required by operators. OSAVE is the method pipeline data submissions are conveyed to NPMS staff. The OSAVE workflow eliminates the need for the type of pipeline submission to be identified in a separate cover/transmittal letter. Instead operators select the type of pipeline submission before submitting any actions through the submission workflow. However, the type of submission must be identified in the cover/transmittal letter accompanying a LNG plant or breakout tank submission.

**INI – Initial Submissions** to the NPMS contain data for a first time submittal for a given OPID. If data has ever been submitted under your OPID in the past then you cannot make an Initial Submission under that OPID again. The revision codes (REVIS_CD) of all pipeline segments should be set to **"C"** for addition due to construction; **"J"** for addition due to

an asset which is new to PHMSA jurisdiction ; or **"A"** for addition due to reasons other than new construction or new to PHMSA jurisdiction.

**FRP – Full Replacement Submissions** should be made whenever it is necessary to apply changes to your data.  A full replacement must include all data for your OPID as you want it to appear online after processing because it will replace all previously submitted data.  *Abandoned lines should not be included in this resubmission if they were already included in a previous submission as abandoned.  Contact NPMS Staff at [npms@dot.gov](mailto:npms@dot.gov) if you are unsure which abandoned lines your company has previously submitted.*  The revision codes (REVIS_CD) for pipeline segments may be **"C"** for addition due to construction; **"J"** for addition due to an asset which is new to PHMSA jurisdiction; **"A"** for addition due to reasons other than new construction or new to PHMSA jurisdiction; **"S"** for spatial modification; **"T"** for attribute modification; **"B"** for both spatial and attribute modification; or **"N"** for no change.

**RMV – Removal of OPID Submissions** should only be made when all of the data under your OPID needs to be removed from the NPMS for one of the following reasons:

1. All pipelines were sold/divested to another OPID/operator and are no longer operated as that OPID;
2. All pipelines are no longer classified as gas transmission (reclassified to gas gathering or distribution) or hazardous liquid pipelines under PHMSA's jurisdiction (no longer considered to be a hazardous liquid trunk line or regulated rural hazardous liquid gathering line);
3. All pipelines were physically removed from the ground (does not include pipelines that are abandoned in place); or
4. All pipelines were permanently abandoned in place.

If any one of these scenarios describes all of the pipelines under your OPID, you should submit a Request for Removal of OPID via the OSAVE tool.  The OSAVE workflow eliminates the need for a removal request to be submitted using the cover/transmittal letter as required in the past.  Instead the type of pipeline data removal, reason for pipeline data removal, and effective date of pipeline data removal are incorporated into the submission workflow as a series of questions.  Additionally, if the pipelines were sold, the transaction date, company name, contact name, and phone number where NPMS staff can reach the new operator to verify the sale are also incorporated into the submission workflow as a series of questions.

If any of these scenarios describes only some of the pipelines in the NPMS for your OPID, the type of submission needed will depend on the total changes that have occurred for your OPID reflecting as of December 31st of the previous year.  If the only changes to your OPID are the removal of a subset of entire pipeline segments due to any of the scenarios described above, you may submit edits via the OSAVE map viewer in place of a traditional data submission.  However, if the changes to your OPID also include spatial changes, a full replacement data submission must be uploaded to the NPMS, which is best completed via OSAVE.  The OSAVE workflow eliminates the need for each of the required components to be submitted as separate files within a data package as required in the past.

For a Removal of LNG plant OPID submission, please complete the cover/transmittal letter only (see Section 2.3).  Under Question 4 of the cover/transmittal letter include an explanation of why all of the LNG plant data under this OPID should be removed from the NPMS, including an effective date for the change.  If the LNG plants were sold, include the transaction date, company name, contact name, and phone number where NPMS staff can reach the new operator to verify the sale.  If any of these scenarios describes only some of the LNG plants in the NPMS under your OPID and no

other changes have occurred, you may complete the cover/transmittal letter only - clearly identifying the LNG plants that need to be removed, the reason for removal, the effective/transaction date, and if sold, the buyer's contact information - in place of a traditional LNG data submission.  Do not use OSAVE to submit a removal of LNG plant data from the NPMS.  The submission workflows within OSAVE relate only to the pipeline data of an OPID.

**NC – Notification of No Changes** should only be made when all of the data under your OPID has remained the same since the last submission, or in other words, the data for your OPID currently in the NPMS correctly reflects the OPID in regards to both the spatial location and attribute values.  This notification fulfills the yearly NPMS submission requirement.  NPMS staff may be notified that there have been no changes via two methods:

1.    Operator Submission And Validation Environment (OSAVE).  This is the preferred method of sending your No Changes notification.  The tool is accessible on the Pipeline Operator page on the NPMS website or directly via https://www.npms.phmsa.dot.gov/OSAVE/.
2.    Email sent to npms@dot.gov.  The content of the email should include the OPID, a statement saying that the data has not changed, and either a statement saying that the primary, technical, and public contact information has not changed or that the primary, technical, and/or public contact information was updated via OSAVE.  Sample email content may include:
    a.    "There have been no changes to the NPMS data for OPID 12345 since the last submission.  Additionally, there are no changes to the public contact information".
    b.    "There have been no changes to the NPMS data for OPID 12345 since the last submission.  The primary, technical, and/or public contact information has changed; the changes were submitted via OSAVE".

## 2.3 Cover/Transmittal Letter Requirement

**All submissions must be accompanied by a cover/transmittal letter.** This letter is meant to provide NPMS Staff with key information for processing your submission. The content of the letter is dependent upon if your submission is for pipeline or LNG plant data.

If you are submitting pipeline data, the OSAVE workflow, which includes the cover letter-related questions, eliminates the need to submit this component as a separate file within a data package as required in the past.

If you are submitting LNG plant data, a separate cover/transmittal letter must be included in your LNG data package. The Summary of Required Components for LNG Plant Submissions page on the NPMS website has a downloadable template for LNG plant submissions, or operators are welcome to compile their own letter including the following items:

*Pipeline Data Submissions*

*Please note that submitting via the OSAVE workflow eliminates the need for the following questions to be submitted as a separate cover/transmittal letter file within a data package as required in the past.  Instead, the cover letter-related questions are incorporated into the submission workflow as a series of questions.  If OSAVE is not used to submit to the NPMS, these questions must be included the cover letter:*
1.    The submission and operator information (i.e. the Operator ID and the Operator Name).
2.    Provide the primary, technical, and public contact information of the OPID.  The full name, job title, company name, work mailing address, work phone number, and work email address should be included for

each contact person.  (NOTE: *You can review your contact information on the [NPMS website](#) by logging into [OSAVE](#)*)

    a.  **The Primary Contact (required).**  This person must be an employee of the operator and is only used by NPMS staff for questions about the Operator ID and its pipelines.  This contact also receives general notifications from the NPMS that impact submissions, such as when the NPMS Operator Standards is updated or a remainder to operators about the submission deadline dates.

    b.  **The Technical Contact (required).**  This person puts together the submissions to the NPMS and is only used by NPMS Staff for questions about the submission(s) made to the NPMS.  This person may be an employee of the operator or a designated subcontractor.  If the role of the technical contact is fulfilled by the same person as the primary contact then clearly state that the contact represents both the primary and technical contact.

    c.  **The Public Contact (required).**  This person must be an employee of the operator and is expected to receive communications from the general public, emergency responders as well as local, state, and federal government staff.  The contact that is chosen to be responsible for handling public questions about their pipelines may be either an individual (e.g. "Joe Smith") or an entity (e.g. "Public Relations Department").

3.    A brief description of the pipeline data changes reflected in the submission (e.g. were pipelines sold, acquired, re-routed, abandoned, etc. since the previous submission).  If some of the pipelines were sold or transferred to another OPID, please try to include as much information as possible such as affected systems/subsystems or PLINE_ID values.  Be sure to also include the information of who the pipelines were sold or transferred to, if known.  If portions of your data have been reclassified from transmission to gathering or distribution since your last submission, please provide a brief description of the impacted System, Subsystem, or PLINE_ID values to assist NPMS staff in the comparison of this year's submission to your previously submitted pipeline data.

4.    Which of the submission types described below indicates how this submission as a whole should affect the previously submitted data for this OPID.  You can read more about these submission types in Section 2.2:

    a.  **Initial Submission:**  This is the first submission to the NPMS for this OPID.  Pipeline data has never been submitted to the NPMS for this OPID in previous year(s).  This submission type can only include additions as the revision type to the data.

    b.  **Full Replacement Submission:**  This submission should replace all data currently in the NPMS for this OPID.  Submissions to the NPMS have been made in previous year(s) for this OPID.  This submission type can include any type of revision, including additions and modifications, to the existing data.

    c.  **Removal of OPID Submission:**  This submission is to inform the NPMS that all of your pipeline data needs to be removed from the NPMS national layer.  Provide an explanation under Question 3, including an effective date for any change.  If a sale has taken place, include a company name, contact name and phone number for the new company.  If the purchasing company/contact is unknown, please clearly state it under Question 3 as well.  Similarly, if all pipelines in this OPID have been reclassified to gathering/distribution, please indicate so under Question 3.

5.    Does this pipeline data reflect conditions in the field as of December 31 of last year?
(NOTE: *If the OPID operates both gas transmission and hazardous liquid pipelines and both are included in the submission, clearly state if the response to this question pertains to both the gas transmission and hazard liquid portions.*)

6. Include the answers for the following questions:
   a. Does this specific OPID operate only gas, only liquid, or both gas and liquid lines?
   b. Does this specific submission contain only gas, only liquid, or both gas and liquid lines? (NOTE: *It is preferable that operators with both gas and liquid lines make a single NPMS submission with both types included.)*
   c. Does this specific submission contain any abandoned lines (STATUS_CODE value "B")?
   d. If the submission does contain abandoned lines, have you confirmed that the abandoned lines in this submission have not been previously submitted to NPMS? (NOTE: *Never resubmit abandoned lines to the NPMS; even Full Replacement submissions should only include new abandoned lines. Your previously submitted abandoned lines are not visible, when you sign into PIMMA. Previously submitted abandoned pipelines may be viewed via the OSAVE map viewer. Please contact NPMS staff at* [npms@dot.gov](mailto:npms@dot.gov) *with any questions regarding previously submitted abandoned pipelines.*)
7. List the state(s) covered by the submitted Pipeline data.
8. Provide the projection/reference system of the geospatial data.
   a. What is the datum of the geospatial data? (e.g. WGS84, NAD27, NAD83, etc.)
   b. What are the measurement units of the geospatial data? (e.g. Decimal Degrees, Feet, Meters, Miles, etc.)
   c. What is the projection of the geospatial data? (e.g. Geographic (Lat/Long), State Plane Coordinate System (SPCS), Universal Transverse Mercator (UTM), etc.)
   d. If the projection is State Plane Coordinate System (SPCS), Universal Transverse Mercator (UTM), you must also include the State Plane Zone or UTM Zone.
9. Does your NPMS submission match your PHMSA Annual Report? (NOTE: *Your NPMS submission must correspond with your PHMSA Annual Report. Discrepancies between the two in regards to mileage, interstate/intrastate designation or commodities could result in the rejection of your submission.*)
10. Include any additional information you would like to convey to NPMS staff.


### *LNG Plant Data Submissions*

1. The submission and operator information (i.e. the Operator ID and the Operator Name).
2. The primary and technical contact information of the Operator ID. The full name, job title, company name, work mailing address (including city, state, and zip code), work phone number, and work email address should be included for each contact person.
   a. **The Primary Contact (required).** This person must be an employee of the operator and is only used by NPMS staff for questions about the Operator ID and its pipelines. This contact also receives general notifications from the NPMS that impact submissions, such as when the NPMS Operator Standards is updated or a remainder to operators about the submission deadline dates.
   b. **The Technical Contact (required).** This person puts together the submissions to the NPMS and is only used by NPMS Staff for questions about the submission(s) made to the NPMS. This person may be an employee of the operator or a designated subcontractor. If the role of the technical contact is fulfilled by the same person as the primary contact then clearly state that the contact represents both the primary and technical contact.

3. Does this LNG plant data reflect conditions in the field as of December 31st of last year?

4. A brief description of the LNG plant changes reflected in the submission (e.g. were LNG plants sold, acquired, removed from the ground, abandoned, etc. since the previous submission). If portions of the LNG plants were sold or transferred to another OPID, please try to include as much information as possible such as LNG_ID values. Be sure to also include the information of who the LNG plants were sold or transferred to, if known. If the purchasing company is unknown, state that as well.

5. Which of the submission types described below indicates how this submission as a whole should affect the previously submitted data for this OPID. You can read more about these submission types in Section 2.2:

   a. **Initial Submission:** This is the first submission to the NPMS for this OPID. LNG plant data has never been submitted to the NPMS for this OPID. This submission type can only include additions as the revision type to the data.

   b. **Full Replacement Submission:** This submission should replace all data currently in the NPMS for this OPID. Submissions to the NPMS have been made in previous year(s) for this OPID. This submission type can include any type of revision, including additions and modifications, to the existing data.

   c. **Removal of OPID Submission:** This submission is to inform the NPMS staff that all of your LNG plant data needs to be removed from the NPMS national layer. Provide an explanation under Question 4, including an effective date for any change. If a sale has taken place, include a company name, contact name and phone number for the new company. If the purchasing company/contact is unknown, please clearly state that under Question 4 as well.

6. List the state(s) covered by the submitted LNG plant data.

7. Provide the projection/reference system of the geospatial data.

   a. What is the datum of the geospatial data? (e.g. WGS84, NAD27, NAD83, etc.)

   b. What are the measurement units of the geospatial data? (e.g. Decimal Degrees, Feet, Meters, Miles, etc.)

   c. What is the projection of the geospatial data? (e.g. Geographic (Lat/Long), State Plane Coordinate System (SPCS), Universal Transverse Mercator (UTM), etc.)

   d. If the projection is State Plane Coordinate System (SPCS), Universal Transverse Mercator (UTM), you must also include the State Plane Zone or UTM Zone.

8. Include any additional information you would like to convey to NPMS staff.

# 3. Attribute Data

Operators are required to provide descriptive information about the pipelines and LNG plants when submitting data to the National Pipeline Mapping System. The attribute data is essential information about the pipeline or LNG plant such as its name and commodity transported.

## 3.1 Required and Optional Attributes

Each pipeline segment or LNG plant submitted must be accompanied by a corresponding record in the attribute database table. For information about required and optional attributes, refer to the following:

- For pipeline submissions, see Figure 3-1 for the attribute field definitions.
- For LNG submissions, see Figure 3-2 for the attribute field definitions.

## 3.2 Rules for Attribute Data Input

When submitting digital attribute information, adhere to the following rules:

1.    Use only UPPERCASE when defining field names.
2.    Use only UPPERCASE when inputting data into the attribute tables.
3.    Omit all punctuation except for periods (.), spaces ( ), backslashes (\), colons (:), commas (,), hyphens (-), and underscores ( _ ). Semicolons (;) should be used only as a delimiter when submitting attribute data in ASCII-delimited text files.
4.    Use only NPMS-specified abbreviations.
5.    Be consistent. Names and terms should be exactly replicated throughout a submission. For example, if a pipeline system is named Pennsylvania Line (SYS_NM = "PENNSYLVANIA LINE"), the operator should consistently use the full and exact name. The operator should not use alternative names like "Penn Line" or "PA Line" or "Pennsylvania."
6.    Use the correct OPID. OPID is an accounting number assigned by the U.S. Department of Transportation, Pipeline and Hazardous Materials Safety Administration to firms that operate pipelines and LNG plants. If you do not know your firm's OPID number, check with your firm's accounting department. An OPID search tool can be found on the Pipeline Operator page on the NPMS website.

## 3.3 Types of Data Revisions

The type of revision must be specified for each pipeline segment. The revision type, which is indicated with a code, describes the changes that have occurred to that segment since the last NPMS submission. It is likely that one code will not describe the entire submission properly; therefore, a combination of codes will be necessary. A thorough explanation of each code is below:

**A - Addition to the NPMS.** Use this revision code when the segment has not been previously submitted to the NPMS for this OPID for reasons other than new construction that adds mileage or is considered to be a re-route (revision code "C") or changes in PHMSA's jurisdiction (revision code "J"). This revision code is most commonly used for pipelines which were omitted from previous submissions in error or when a pipeline was acquired from another operator and this is the first time it is being submitted under this OPID. In the case of a pipeline acquisition, NPMS staff will add this segment to your OPID and remove it from the previous operator.

**C - Addition due to construction.** Use this revision code when the segment is new construction that adds mileage or is considered a re-route and, therefore, has never before been included in the NPMS under any OPID. For example, this

pipeline segment is a new lateral laid into the ground in time for this year's submission.  NPMS staff will add this segment to your OPID's data in the NPMS.  Note that portions of an existing pipeline that are replaced with a new section of pipe in the same ditch (not a re-route) are considered a repair and not new construction.  Construction related to repairs should be categorized as revision code "S," "T," "B," or "N," depending on what else has changed.

**J - Addition due to mileage which is new to PHMSA jurisdiction.**  Use this revision code when the segment is new to PHMSA's jurisdiction and, therefore, was not included in the NPMS under any OPID last year.  For example, your company previously operated this pipeline segment as a distribution line, but it has been re-categorized as a gas transmission line as of December 31 of the previous year.  This data is new mileage to the NPMS because it was not in your last submission.  NPMS staff will add this segment to your OPID.

**S - Spatial modification of the existing NPMS feature.**  Use this revision code when the pipeline segment data has been spatially modified since the previous submission.  For example, more accurate GPS coordinates have been gathered for this pipeline segment, as a result, its location in the data set has changed slightly.  This segment in the submission still represents the same pipeline that was in last year's submission, and there are no attribute changes.  NPMS staff will find the equivalent segment from your previous submission and replace it with this segment.

**T - Attribute modification of the existing NPMS feature.**  Use this revision code when the only change to a pipeline segment since the previous submission is an attribute change.  For example, this pipeline segment was in service for last year's submission, but for this year's submission the status code has changed to idle to reflect that the line is now empty and there have been no spatial changes to the segment.  NPMS staff will find the equivalent segment from your previous submission and replace it with this segment.

**B - Both a spatial and attribute modification of the existing NPMS feature.**  Use this revision code when both an attribute and spatial change have occurred to this pipeline segment since the previous submission.  For example, this pipeline segment not only has a more accurate location, as a result, the Quality Code has changed from "G" for Good to "E" for Excellent.  NPMS staff will find the equivalent segment from your previous submission and replace it with this segment.

**N - No change to the existing NPMS feature.**  Use this revision code when there have been no changes to the spatial location or to the attributes of this segment since the previous submission.  There is no need for NPMS staff to change this segment, but the attributes in the NPMS will reflect that this segment is up to date.  It is necessary to include these lines in your Full Replacement submission (refer to Section 2.2 for additional details on the types of submissions) even though no changes have occurred.  Any segment previously submitted for your OPID that is not included in your current submission will be considered a pipeline segment that requires deletion.

| Pipeline Attribute Table | | | | | | | |
|---|---|---|---|---|---|---|---|
| Field Name | Field Type[1] | Field Length | Short Description | Full Description | Acceptable Values (UPPERCASE) | Required Field[2] | Public Viewer Attribute[3] |
| OPER_LINK | I | 8 | Unique Link ID | Link between the geospatial elements (pipeline segments) and their respective attribute records. Assigned by the operator or the operator's software package (i.e., COVER-ID, MSLINK_ID, etc.).<br><br>Note the OPER_LINK and the PLINE_ID may be identical.<br><br>Note that once processing is complete, the OPER_LINK value will be removed from the data by NPMS staff as it will no longer be needed. | Positive integer | Y - If your attributes are **not** included in the geospatial file; refer to Section 3.4<br><br>N - If your attributes are included in the geospatial file. | N |
| OPID | I | 5 | Operator Number | Unique tracking number assigned by PHMSA to the company that physically operates the pipeline system. If you do not know your firm's OPID, check with your DOT/Regulatory Compliance department or the NPMS website. | Positive integer | Y | Y |
| OPER_NM | C | 100 | Operator Name | The company name that physically operates the pipeline system. | Character | Y | Y |
| SYS_NM | C | 40 | System Name | Assigned by the operator. The operator's name for a functional grouping of pipelines. | Character | Y | Y |
| SUBSYS_NM | C | 40 | Sub System Name | Assigned by the operator. A unique name for a smaller sub-section of a pipeline system. A subset of SYS_NM. | Character | N | Y |
| PLINE_ID | C | 20 | Pipeline ID | Assigned by the operator. This is a unique identifier for a specific section of pipeline within a pipeline system. | Character | Y | Y |
| DIAMETER | D | 5 | Diameter | Nominal diameter of the pipeline segment, in inches (two decimal places if applicable, ##.##). | Real Number | N | N |
| COMMODITY | C | 3 | Commodity Category | Abbreviation for the primary commodity carried by the pipeline system.<br>Valid Liquid Commodities:<br>CRD=crude oil, PRD=non-HVL product, AA=anhydrous ammonia, LPG=liquefied petroleum gas, NGL=natural gas liquids, OHV=other HVLs, CO2=carbon dioxide, ETH=fuel grade ethanol, and EPL=abandoned pipelines that previously transported a liquid<br><br>Valid Gas Commodities:<br>NG=natural gas, PG=propane gas, SG=synthetic gas, HG=hydrogen gas, OTG=other gas, and EPG=empty gas.<br><br>Note that when propane is transported as a liquid, use the LPG commodity abbreviation. The PG abbreviation should only be used when the commodity is in gaseous form.<br><br>Note that when the pipeline is permanently abandoned, the use of EPL or EPG should represent the commodity that was previously transported. For instance, a natural gas transmission line that was later filled with water during the permanent abandonment process would be coded EPG because a gas commodity was last transported. Please report if the pipeline is filled with water, nitrogen or another fill material in the Commodity Description.<br><br>Note that EPG and EPL may only be used for abandoned pipelines. Idle and Retired pipelines should report the commodity last transported. If the pipeline is purged, | Liquid Commodities: CRD, PRD, AA, LPG, NGL, OHV, CO2, ETH, EPL<br><br>Gas Commodities: NG, PG, SG, HG, OTG, EPG | Y | Y |

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| | | | | please report if the pipeline is filled with water, nitrogen or another fill material in the Commodity Description. | | | |
|---|---|---|---|---|---|---|---|

| Pipeline Attribute Table (continued) | | | | | | | |
|---|---|---|---|---|---|---|---|
| Field Name | Field Type[1] | Field Length | Short Description | Full Description | Acceptable Values (UPPERCASE) | Required Field[2] | Public Viewer Attribute[3] |
| CMDTY_DTL1 | C | 3 | Commodity Detail 1 | Abbreviation for the primary commodity's first subcategory detail. If the primary commodity defined in the COMMODITY field is not CRD, PRD, or NG, this field should be left blank. If the primary commodity in the COMMODITY field is CRD, PRD, or NG and the subcategory is not known or stated, this field should be left blank.<br><br>The primary commodity CRD has the following subcategories:<br>CRW=sweet crude, CRR=sour crude.<br><br>The primary commodity PRD has the following subcategories:<br>RGS=refined non-ethanol blended gasoline, RFD=refined fuel oil, diesel, RKJ=refined kerosene, jet fuel, OTR=other refined and/or non-HVL petroleum products, ETB=ethanol blended gasoline, BDB=biodiesel blend, OBI=other biofuels.<br><br>The primary commodity NG has the following subcategories:<br>NG1=pipeline quality or tariff quality natural gas, NG2=wet but non-sour natural gas, NG3=sour but non-wet natural gas, NG4=wet, sour natural gas. | CRW, CRR, RGS, RFD, RKJ, OTR, ETB, BDB, OBI, NG1, NG2, NG3, NG4, <Null> | N | N |
| CMDTY_DTL2 | C | 3 | Commodity Detail 2 | Abbreviation for the primary commodity's second subcategory detail. Refer to the CMDTY_DTL1 field for additional information and valid values. | CRW, CRR, RGS, RFD, RKJ, OTR, ETB, BDB, OBI, NG1, NG2, NG3, NG4, <Null> | N | N |
| CMDTY_DTL3 | C | 3 | Commodity Detail 3 | Abbreviation for the primary commodity's second subcategory detail. Refer to the CMDTY_DTL1 field for additional information and valid values. | CRW, CRR, RGS, RFD, RKJ, OTR, ETB, BDB, OBI, NG1, NG2, NG3, NG4, <Null> | N | N |
| CMDTY_DESC | C | 40 | Commodity Description | Descriptive information of the commodities carried by the pipeline system. For example, "NATURAL GAS" or "PROPANE." If purged, report if that pipeline was filled with water, nitrogen, or another material. | Character | N | Y |
| INTERSTATE | C | 1 | Interstate Designation | (Y)es / (N)o designator to identify if the pipeline system is an interstate pipeline. Y=Interstate, N=Intrastate. (Use PHMSA definition; see glossary). | Y, N | Y | Y |
| LOW_STRESS | C | 1 | Low Stress | (Y)es / (N)o designator to identify if the hazardous liquid pipeline segment is a low stress pipeline. Field is required for liquid in-service pipelines. If the hazardous liquid pipeline operates at 20% or less of SMYS, the segment is a low stress pipeline.<br><br>Field should be left blank for gas pipelines or for liquid pipelines which are idle, abandoned, or retired. | Y, N, <Null> | Y – for in service liquid pipeline segments<br><br>N – for gas pipeline segments | N |
| STATUS_CD | C | 1 | Pipeline Status Code | Describes the status of the pipeline segment as of the reporting year (i.e., December 31 of the previous year). | I, D, B, R | Y | Y |

| | | | | I=in service, D=idle, R=retired (*all subcategories of an active pipeline as defined by PHMSA*), or B=permanently abandoned.<br><br>See glossary in Appendix B for status code definitions. | | | |

| Pipeline Attribute Table (continued) | | | | | | | |
|---|---|---|---|---|---|---|---|
| Field Name | Field Type[1] | Field Length | Short Description | Full Description | Acceptable Values (UPPERCASE) | Required Field[2] | Public Viewer Attribute[3] |
| QUALITY_CD | C | 1 | Data Quality Code | Operator's estimate of the positional accuracy of the submitted pipeline segment. E=excellent: within 50 feet, V=very good: 50–300 feet, G=good: 301–500 feet, P=poor: 501–1000 feet, U=Unknown. | E, V, G, P, U | Y | N |
| REVIS_CD | C | 1 | Revision Code | Identifies this pipeline segment as an A=addition to the NPMS unrelated to construction or changes in jurisdiction, C=addition due to construction that adds mileage or is a re-route, J=addition due to mileage which is new to PHMSA's jurisdiction, S=spatial modification of the existing NPMS feature, T=attribute modification of the existing NPMS feature, B=both a spatial and attribute modification of the existing NPMS feature, or N=no change to the existing NPMS feature. Refer to Section 3.3 for a more detailed description of each code. | A, C, J, S, T, B, N | Y | N |
| NOTES:  1  I = Integer; C = Character; D = Double.<br>2  Y = Yes; N = No.<br>3  Y = Yes, this attribute is visible on NPMS Public Viewer tools; N = No, this attribute is **not** visible on NPMS Public Viewer tools. | | | | | | | |

**Figure 3-1. Attribute field definitions for Pipelines**

| LNG Plant Attribute Table | | | | | | | |
|---|---|---|---|---|---|---|---|
| Field Name | Field Type[1] | Field Length | Short Description | Full Description | Acceptable Values (UPPERCASE) | Required Field[2] | Public Viewer Attribute[3] |
| OPER_LINK | I | 8 | Unique Link ID | Link between the geospatial elements (points) and their respective attribute records. Assigned by the operator or the operator's software package (i.e., COVER-ID, MSLINK_ID, etc.). Note the OPER_LINK and the LNG_ID can be identical. | Positive integer | Y- If your attributes are not included in your geospatial file; refer to section 3.4  N – If your attributes are included in your geospatial file. | N |
| OPID | I | 5 | Operator Number | Unique tracking number assigned by PHMSA to the company that physically operates the LNG plant. If you do not know your firm's OPID, check with your DOT/Regulatory Compliance department. | Positive integer | Y | Y |
| OPER_NM | C | 100 | Operator Name | The name of the company that physically operates the facility. | Character | Y | Y |
| LNG_NM | C | 40 | LNG Plant Name | Assigned by the operator. The operator's name for the LNG plant. | Character | Y | Y |
| LNG_ID | C | 20 | LNG Plant ID | Assigned by the operator. This is a unique identifier for a specific facility. | Character | Y | Y |
| STATUS_CD | C | 1 | LNG Status Code | Identifies the current status of the facility. I=in service, B=abandoned, R=retired. | I, B, R | Y | Y |
| QUALITY_CD | C | 1 | Data Quality Code | Operator's estimate of the positional accuracy of the submitted facility data. E=excellent: within 50 feet, V=very good: 50–300 feet, G=good: 301–500 feet, P=poor: 501–1000 feet, U=Unknown. | E, V, G, P, U | Y | N |
| REVIS_CD | C | 1 | Revision Code | Identifies the facility as an A=addition to the NPMS unrelated to construction or changes in jurisdiction, C=addition due to construction, J=addition which is new to PHMSA's jurisdiction, S=spatial modification of the existing NPMS feature, T=attribute modification of the existing NPMS feature, B=both a spatial and attribute modification of the existing NPMS feature, or N=no change to the existing NPMS feature. | A, C, J, S, T, B, N | Y | N |

NOTES:  1  I = Integer; C = Character.
2  Y = Yes; N = No.
3  Y = Yes, this attribute is visible on NPMS Public Viewer tools; N = No, this attribute is **not** visible on NPMS Public Viewer tools.

**Figure 3-2. Attribute field definitions for LNG Plants**

**Understanding Pipeline System and Pipeline Segment Attributes**

Some NPMS attributes refer to entire pipeline systems, while other attributes may refer only to a portion of a pipeline system.  For example, the INTERSTATE field obviously refers to the pipeline system as a whole, not its individual pipeline segments.  Therefore, the INTERSTATE field must contain the same value for every pipeline segment that is included in a pipeline system.  On the other hand, a field such as DIAMETER can change during the course of a pipeline system.  In such cases, a new pipeline segment with the appropriate value for DIAMETER must be created.

The following fields must contain the same value for every pipeline segment included in a pipeline system:

> OPID
> OPER_NM
> SYS_NM
> COMMODITY
> CMDTY_DTL1
> CMDTY_DTL2
> CMDTY_DTL3
> CMDTY_DESC
> INTERSTATE

Fields that **may** contain a different value for each pipeline segment include:

> OPER_LINK (must be unique for each segment)
> SUBSYS_NM
> PLINE_ID
> DIAMETER
> LOW_STRESS
> STATUS_CD
> QUALITY_CD
> REVIS_CD

## 3.4 Building the Attribute Data File

Attribute data may be provided in one of the following formats: common GIS export, DBASE (.dbf) format, Microsoft Excel (.xlsx) format, or American Standard Code for Information Interchange (ASCII) text file.  In all cases, operators should be careful to follow the field name, field type, and field length standards listed in Figures 3-1 and 3-2.

The Pipeline and Hazardous Materials Safety Administration has developed blank pipeline and LNG plant attribute templates to be used by operators that do not have the ability to incorporate the NPMS attributes directly into their spatial data (e.g. the submission is a CAD drawing or GPS coordinates).  The attribute templates have been created in Microsoft Excel (.xlsx) format and may be downloaded from the NPMS website.  Please note that this replaces all former metadata and attribute builder templates.  The *NPMS Metadata/Attribute Builder* software has been retired; the NPMS is no longer accepting metadata and attribute submissions made using any versions of the *NPMS Metadata/Attribute Builder*.

Uploading pipeline submissions via the OSAVE workflow allows for the upload of the geospatial and the attribute data file(s), along with any supporting documentation that the pipeline operator would like to include:

- **Common GIS export format:** Operators using GIS systems can package attribute data with the associated geospatial data. Acceptable GIS formats are discussed in section 4.1, General Requirements for Digital Geospatial Data. For your convenience, a template ESRI shapefile and personal geodatabase has been developed that contains attributes that meet the NPMS requirements. If you wish you utilize these templates, you may download a zipped file containing the shapefile and geodatabase for pipelines or LNG plants from the relevant Summary of Required Components page within the Pipeline Operator page on the NPMS website. Please note that the defined projection for these templates is Geographic Latitude/Longitude, NAD83, Decimal Degrees; if your data in not in this projection, please re-project as necessary before adding data.
- **Microsoft Excel (.xlsx):** Operators can use the pipeline or LNG plant attribute template to create a properly formatted .xlsx file for submission, available for download from the relevant Summary of Required Components page within the from the Pipeline Operator page on the NPMS website.
- **ASCII format:** The file should be a comma-delimited text file.

To accommodate a range of capabilities, the NPMS accepts the geospatial and attribute data for pipelines and LNG plants in several different combinations. Please refer to Section 4 of the NPMS Operator Submission Guide regarding the three specific combinations of geospatial and attribute data that are acceptable for submitting to the NPMS.

Additionally, for operators submitting separate geospatial and attribute components for their pipeline or LNG plants, a unique OPER_LINK value that will link each pipeline segment to its corresponding attribute record must be included in both the geospatial data file and attribute file. Please refer to Section 5 of the NPMS Operator Submission Guide, which provides a detailed explanation along with examples and scenarios on how this should be completed.

# 4. Geospatial Data

Geospatial data represent pipeline systems (linear) and LNG plant (point) elements.  Pipeline and LNG plant data must be submitted in digital format.  All submissions should meet the ±500-foot accuracy standard

## 4.1 General Requirements for Digital Geospatial Data

The following discusses various requirements and formats that operators should meet when submitting digital geospatial data.

1.  Use a real world coordinate system such as those based on North American Datum (NAD) 1983. NPMS staff accepts un-projected data in decimal degrees and data that employ a common projection scheme such as Universal Transverse Mercator (UTM) or State Plane.  Projected data may employ either English (feet) or metric (meters) measurement units.  For pipeline data submissions, the OSAVE workflow will gather information about **the datum, coordinate system/ projection, and measurement units** from the operator as part of the submission process.  If the OSAVE workflow is bypassed for the pipeline data submission, the operator must include the datum, coordinate system/projection, and measurement units as part of the cover letter (refer to Section 2.3).  For LNG plant submissions, operators must clearly state the **datum, coordinate system/projection, and measurement units** within the cover/transmittal letter (refer to Section 2.3), which is a required submission component.  Please note that as part of the processing of the NPMS submission, NPMS staff will re-project data to Geographic, NAD83, Latitude Longitude, Decimal Degrees, if necessary, before it is incorporated into the NPMS national layer.
    *Note: Digital data that does not employ real world coordinates, such as CAD files that employ an origin point of 0,0 in the lower left hand corner of the drawing cannot be accepted by the NPMS.*
2.  Provide spatially accurate data.  NPMS strives for minimum accuracy of ±500 feet.  Base maps or other source materials used to develop digital geospatial data submissions should have a scale between 1:24,000 (1" = 2,000') and 1:1,200 (1" = 100').
3.  Always submit pipeline systems (lines) and LNG plants (points) in separate files.
4.  Submit only qualifying pipeline and LNG plant data.  The submitted digital file should contain only pipeline segments representing natural gas transmission lines, hazardous liquid trunk lines, regulated rural hazardous liquid gathering lines, and points representing LNG plants.  The submission data should not contain any other types of  data such as non-regulated gathering lines, spur lines, valves, and base map data including buildings, roads, property lines, political boundaries, scanned images, etc.
    *Note: Curves should be represented by a pipeline segment with as many vertices/shape points as is required to provide the appropriate cartographic appearance.  CAD system arcs should be avoided.*
    *Note: Only submit abandoned pipelines to the NPMS once.  Do not resubmit abandoned lines to the NPMS, even when completing a full replacement submission.  Your company's abandoned lines will not be displayed in the PIMMA web map viewer.  In the OSAVE web map viewer (also accessible to operators via your PIMMA account), however, the pipelines previously reported as abandoned for your OPID are displayed in a separate map layer.  If you wish to receive an export of the abandoned pipelines previously reported by your OPID in GIS format, please contact NPMS staff.*
5.  Review data for quality. Common problems include:
    a.  Overshoots and undershoots at pipeline intersections,

    b.   Stray points and lines that do not represent a pipeline or LNG plants, often left from deleting non-NPMS data, and/or

    c.   Duplicate points and lines.

## 4.2 Digital Submission Techniques

The instructions below provide general assistance to operators using some of the more popular GIS and CAD software packages. Some currently available GIS formats are not discussed, but may be acceptable. Operators interested in submitting data in a format not provided for in these instructions should contact the NPMS staff to determine its acceptability.

The instructions may not correspond to the exact version of the software package the operator is using, nor do they reflect any software customizations that may have been made. Operators who encounter problems are encouraged to contact their software vendor for technical support.

### 4.2.1 Esri ArcGIS Shapefile Format Data Submission

Operators may submit data to the NPMS using the shapefile format of Esri's ArcGIS desktop software. The following describes how shapefiles must be prepared:

1. Isolate the data to be submitted to the NPMS into a single line (pipeline) or point (LNG plant) layer.
2. Right-click on the layer in the Table of Contents and select the Data > Export Data command to export the data. This will create multiple files that work together to form an Esri Shapefile
3. Submit at least the .SHP (geospatial data file), the .SHX (positional index file), the .DBF (attribute data file), and the .PRJ (projection data file) in the submission.

For your convenience, a template Esri shapefile and personal geodatabase has been developed that contains attributes that meet the NPMS requirements. If you wish to utilize these templates, you may download a zipped file containing the shapefile and geodatabase file for pipelines or LNG plants from the relevant Summary of Required Components page on the Pipeline Operator page. Please note that the defined projection for these templates is Geographic, NAD83, Latitude/Longitude, Decimal Degrees; if your data is not in this projection, please re-project as necessary before adding data.

### 4.2.2 Esri ArcGIS Geodatabase Format Data Submissions

Operators may submit data to the NPMS using the personal geodatabase or file geodatabase format from Esri's ArcGIS desktop software. The following describes how the personal/file geodatabase must be prepared:

1. Isolate the data to be submitted to the NPMS into a single line (pipeline) or point (LNG plant) layer.
2. Right-click on the layer in the Table of Contents and select the Data > Export Data command to export the data as a feature class to an existing personal/file geodatabase.
3. In the case of a personal geodatabase, submit the output .mdb file. In the case of a file geodatabase, zip the output folder and submit it to NPMS staff.

For your convenience, a template Esri shapefile and personal geodatabase has been developed that contains attributes that meet the NPMS requirements. If you wish to utilize these templates, you may download a zipped file containing the shapefile and geodatabase file for pipelines or LNG plants from the relevant Summary of Required Components page on the Pipeline Operator page. Please note that the defined projection for these templates is Geographic, NAD83,

Latitude/Longitude, Decimal Degrees; if your data is not in this projection, please re-project as necessary before adding data.

### 4.2.3 AutoCAD Data Submissions

The NPMS accepts geospatial data in a CAD format using the .dwg, .dgn or .dxf file extensions.  Making a CAD submission requires some additional steps and precautions:

1. A coordinate system must be associated with the data and recorded properly in the Metadata.  A NAD83 geographic coordinate system is preferred for CAD submissions to the NPMS.

2. The CAD drawing MUST be stripped of ALL data layers other than the pipelines and/or LNG plants intended for submission to the NPMS.  NPMS staff will not accept any CAD submission with other included data layers, such as roads or other pipeline related facilities.  Every line in the drawing will be considered a pipeline.  Additionally, the submission should not include any annotation.

3. The attributes must be submitted as a separate file if they are unable to be incorporated into the CAD file.  For convenience, templates in Excel format have been created for your use.  The template for pipelines or LNG plants may be downloaded from the relevant Summary of Required Components page within the Pipeline Operator page on the NPMS website.

4. There must be unique information stored in the pipeline Layer Properties for NPMS staff to use when joining the pipeline segment attributes records from your NPMS pipeline attribute file with the correct pipeline segments from your CAD drawing.  In the pipeline attribute file, populate the numeric OPER_LINK field for each unique attribute record with the Layer Description for the corresponding pipeline(s).  Numeric Layer Descriptions matching the corresponding OPER_LINK values is the preferred method; however this concept can be applied to the PLINE_ID if using text Layer Descriptions.  It may be necessary to separate the pipeline segments into multiple layers in the drawing so each layer will have a unique corresponding NPMS pipeline attribute record.  Adding the OPER_LINK or PLINE_ID values to the drawing as annotation is not acceptable.

A CAD submission that disregards any of these requirements will not be accepted as a complete NPMS submission.

*An ESRI Shapefile is the preferred method for NPMS submissions.  CAD data can be exported to an ESRI Shapefile in AutoCAD Map 3D (original AutoCAD cannot export to ESRI Shapefile)

### 4.2.4 Coordinate Digital Data Submissions

This type of submission will include a file containing geospatial coordinate data.  The file formats for pipelines and LNG plants are different. Both file formats are described below, including record layouts.

**Geospatial File for Pipeline Digital Data Submissions.**  To submit digital data for pipelines, the operator has the option of creating one of two types of files: an unformatted comma- delimited text/ASCII file or a Microsoft Excel file.  In both cases, the file will contain longitude coordinate values, latitude coordinate values, and the OPER_LINK value.  Each point contains a single longitude value and a single latitude value.  A single pipeline is represented by a starting point, an end point, and any inflection point.  The number of points needed to represent the pipeline is determined by the operator.  At the minimum two points are needed – the starting point and the end point.  However, the operator should be sure to use enough points to accurately portray the pipeline.  Longitude and latitude coordinates should be stated in decimal degrees (no projection).  A minimum of five decimal places is required. Western Hemisphere longitude should be a

negative value.  Acceptable values are -180.00000 to 0.00000. Northern Hemisphere latitude should be a positive value.  Acceptable values are 0.00000 to 90.00000.

The OPER_LINK value is assigned by the operator and is the link between the geospatial segment and the pipeline attributes.  A collection of points which represents a single pipeline segment is assigned to a single OPER_LINK value.  For instance, a pipeline segment which as a starting point, one inflection point, and an end point has three sets of coordinates all related to the same OPER_LINK value.  Refer to the Operator Submission Guide for a detailed explanation and examples of how OPER_LINK values relate to the geospatial data and attribute information.

*Text/ASCII file format:*

The text/ASCII file format will include the unique identifier (OPER_LINK), followed by the longitude value which is followed by the latitude value; each value should be separated by a comma (note that there should be no space following the comma).  Additional coordinate pairs will be listed in order of appearance along the line segment until all coordinate pairs are displayed. Each line segment submitted must contain a minimum of two coordinate pairs to represent the beginning and end of a straight line.  The text/ASCII file should not include any formatting, including tabs, bold text, or underscoring, as it interferes with processing of the information.  The text/ASCII file extension of the output file should be .txt.  Refer to Figure 4-1 for an example of text/ASCII format geospatial coordinate file.



**Figure 4-1. Text/ASCII file containing pipeline coordinates.**

*Microsoft Excel file format:*

The Microsoft Excel file format contains a separate record/row for each coordinate pair (longitude and latitude).  The file should contain three columns: one column storing the unique identifier (OPER_LINK) value; one column storing the longitude coordinate; and one column storing the latitude coordinate.  Coordinate pairs will be listed in order of appearance along the line segment until all coordinate pairs are displayed.  The Excel file extension of the output file should be .xls or xlsx.  Refer to Figure 4-2 for an example of an Excel format geospatial coordinate file.
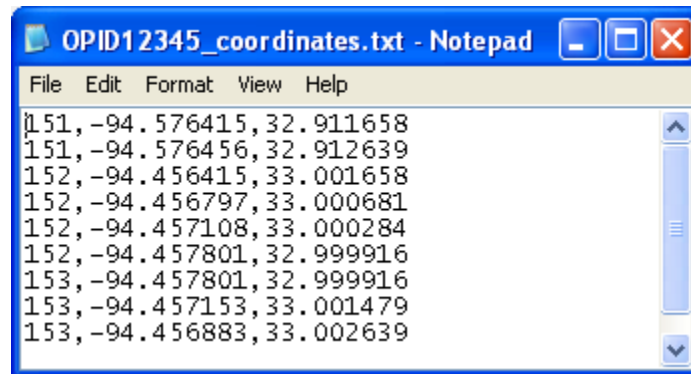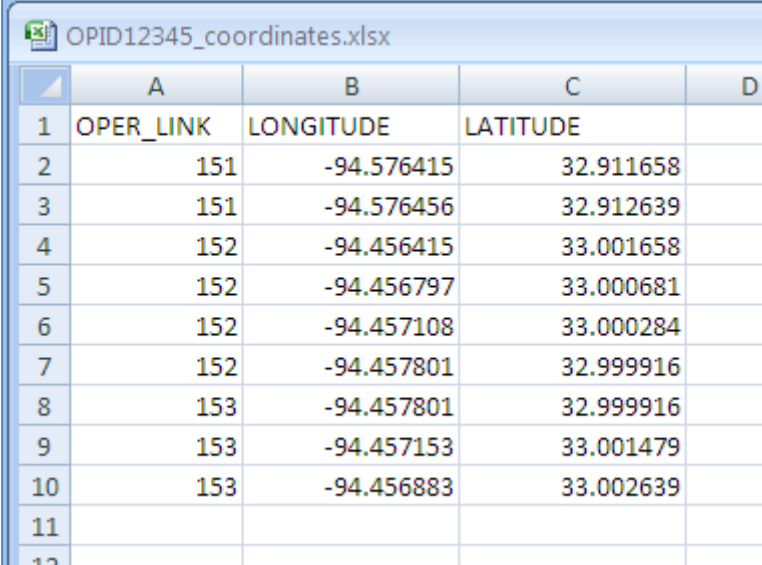
**Figure 4-2. Excel File containing pipeline coordinates.**

**Geospatial File for LNG Plant Digital Data Submissions.**  To submit digital data for LNG plants, the operator has the option of creating one of two types of files: an unformatted comma delimited text/ASCII file or a Microsoft Excel file.  In both cases, the file will contain the longitude coordinate value(s), the latitude coordinate value(s), and the unique identifier (OPER_LINK) value.  Each point contains a single longitude value and a single latitude value.  Longitude and latitude coordinates should be stated in decimal degrees (no projection).  A minimum of five decimal places is required. Western Hemisphere longitude should be a negative value.  Acceptable values are -180.00000 to 0.00000. Northern Hemisphere latitude should be a positive value.  Acceptable values are 0.00000 to 90.00000.  Each point represents a single LNG plant.  Each point should be recorded on a separate line, the case of the text/ASCII file, or separate row, in the case of the Microsoft Excel file.

The OPER_LINK value is assigned by the operator and is the link between the geospatial point and the LNG plant attributes.  Each LNG plant will have a unique OPER_LINK value.

The location should reflect the approximate geographic center of the LNG plant. If the location depicts something other than the approximate center, note this in Question 5 of the cover/transmittal form.

*Text/ASCII file format:*

In the text/ASCII file, the OPER_LINK value is followed by the longitude value which is followed by the latitude value; each value should be separated by a comma (note that there should be no space following the comma). The text/ASCII file should not include any formatting, including tabs, bold text, or underscoring, as it interferes with processing of the information. The text/ASCII file extension of the output file should be .txt. Refer to Figure 4-3 for an example of a text/ASCII format LNG plant geospatial coordinate file.



**Figure 4-3. Text/ASCII file containing LNG plant coordinates.**

*Microsoft Excel file format:*

The Microsoft Excel file format will include a separate record/row for each coordinate pair (longitude and latitude). The file should contain three columns: one column storing the unique identifier (OPER_LINK) value; one column storing the longitude coordinate; and one column storing the latitude coordinate. The Excel file extension of the output file should be .xls or xlsx. Refer to Figure 4-4 for an example of an Excel format LNG plant geospatial coordinate file.
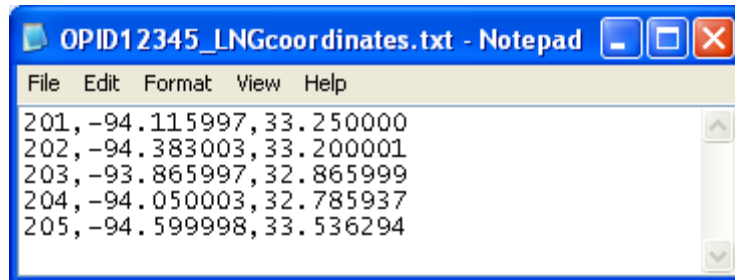


**Figure 4-4. Excel File containing LNG plant coordinates.**

# 5. NPMS OPID Contact Information

For pipeline OPIDs, there are three contacts – primary, technical, and public – that are associated with the OPID. The primary, technical and public contacts may be updated, as needed, at any time throughout the year. A submission is not required to update contact information for an OPID through the NPMS. Additionally, operators are prompted to review and update, if applicable, all contact information as part of the NPMS submission and notification workflows. Through OSAVE, the operator can view the current contact information and change only the information that needs to be updated.

For LNG plant submissions, the primary and technical contacts are submitted each year within the required cover/transmittal letter through the data submission to the NPMS (refer to Section 2.3), but may be updated, as needed, at any time throughout the year. If changes are needed to only the contact information, an email should be sent to the NPMS at [npms@dot.gov](mailto:npms@dot.gov) stating the OPID, which contact person (i.e. primary, technical, or both) is being updated, and the new contact's name, job title, company name, work mailing address, work phone number, and work email address. Unlike pipeline submissions, there is no public contact associated with LNG plants.

## 5.1 Types of NPMS OPID Contacts

For pipeline OPIDs, there are three contacts – primary, technical, and public – that are associated with the OPID. For LNG plant submissions, the NPMS only collects two contacts – primary and technical – that are associated with the OPID.

➢ **Primary Contact Person:**
   o   The primary contact is required for all pipeline and LNG plant OPIDs and must be an employee of the operating company.
   o   This contact is only used by NPMS staff for questions about the OPID and its pipelines.
   o   This contact also receives general notifications from the NPMS that impact submissions, such as updates to the NPMS Operator Standards or the NPMS submission deadline dates.

➢ **Technical Contact Person:**
   o   The technical contact is required for all pipeline and LNG plant OPIDs.
   o   This contact may be an employee of the operating company or a 3rd party company, such as a GIS contractor/consultant.
   o   The same person may fulfill the role of both the primary and technical contact. For pipeline data submissions completed via OSAVE, the operator may indicate that the technical contact is the same as the primary contact. For pipeline data submissions not sent with OSAVE and for LNG plant submission, the cover letter should clearly state that the same person fulfills both of these roles.
   o   This person puts together the submissions to the NPMS and is only used by NPMS staff for questions regarding the submission(s) made to the NPMS.

➢ **Public Contact Person:**
  o The public contact is required for all pipeline OPIDs and must be an employee of the operating company.
  o This contact is posted on the NPMS website, specifically, the [Find Who's Operating Pipelines in Your Area](#) tool, [PIMMA](#), and the [Public Viewer](#), and is expected to receive communications from the general public, emergency responders as well as local, state, and federal government staff.
  o The public contact that is chosen to be responsible for handling public questions about their pipelines may be either an individual (example: "Joe Smith") or an entity (example: "Public Relations Department). **One or the other of these options must be selected; not both.**
  o There may be multiple public contacts based on the geography or operating units within the company; however, **operators with this scenario (i.e. having more than one public contact) must contact NPMS staff before submitting this information via the OSAVE workflow.**

For both pipeline and LNG plant OPIDs, the following information is captured for each contact:
  • Full name
  • Job title
  • Entity (public contact only; in lieu of an individual)
  • Company employed by
  • Work mailing address
  • Work phone number and, if applicable, extension
  • Work fax number (public contact only)
  • Work email address

## 5.2 Submitting NPMS OPID Contact Information via OSAVE

Most of the information is self-explanatory. Please note that you will need to go through each tab on the OSAVE contact information interface before clicking the Submit button.  Under the Technical Contact tab, you will need to select "Same as Primary Contact" if the role of the technical contact is fulfilled by the primary contact.  Under the Public Contact tab, you will need to decide whether you are designating an individual or an entity. If you choose an individual, fill in the individual's first name, last name, and job title. If you choose an entity, fill in the "Contact Entity" field. When finished reviewing/updating all three Contact tabs, click on the Submit button.
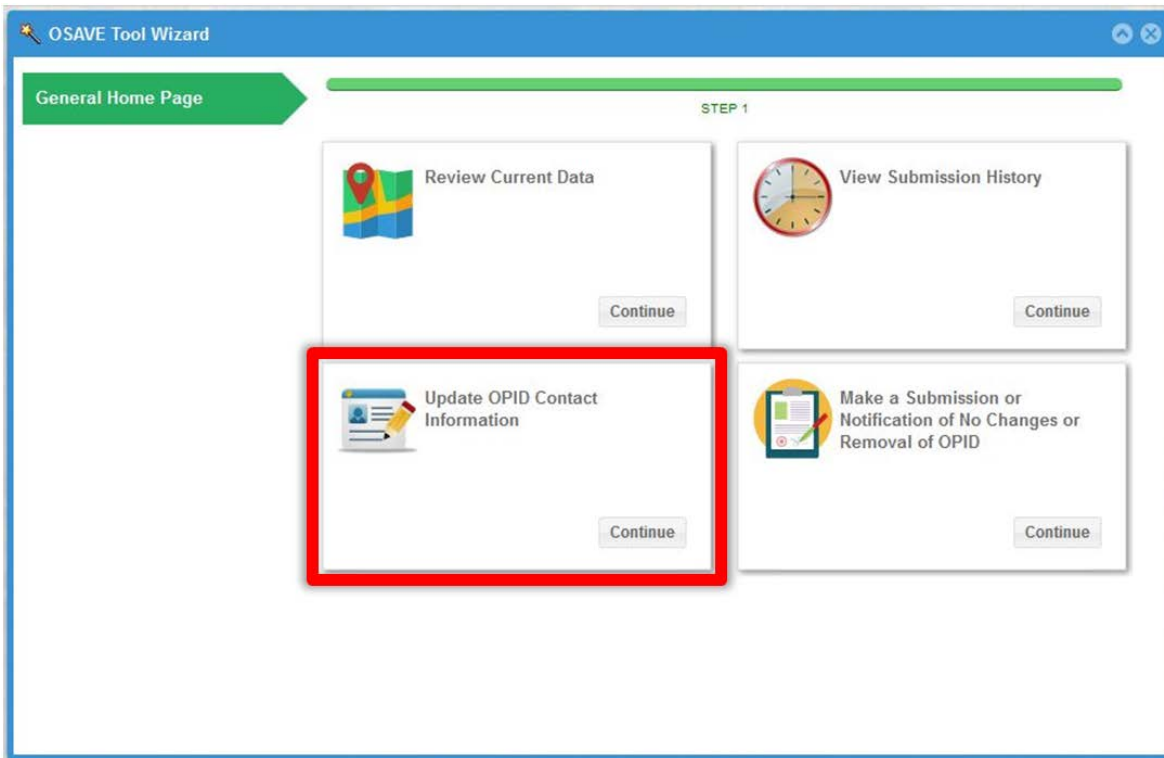


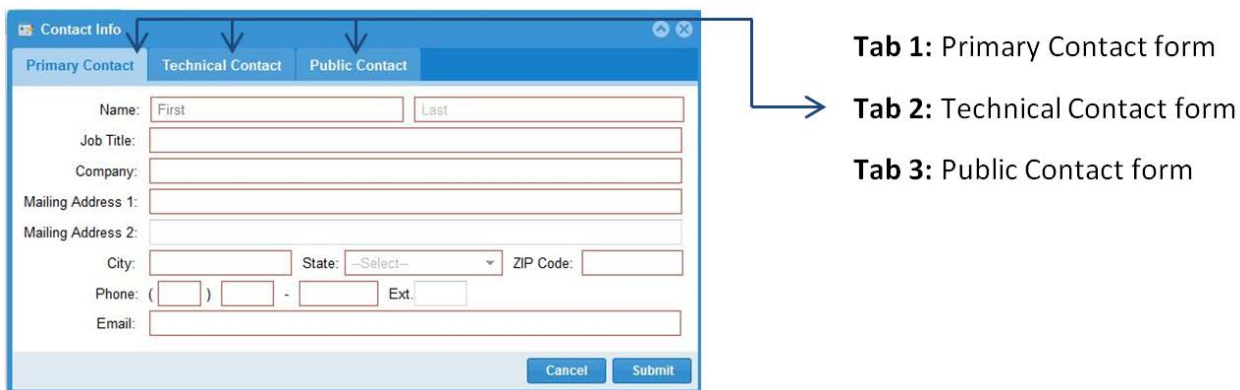**Figure 5-1. Update OPID Contact Information in OSAVE Tool Wizard.**



**Figure 5-2. Contact Information: Primary, Technical, and Public Contact Form.**

# 6. Metadata

Metadata is textual information that describes geospatial data. It describes the content, quality, condition, and other characteristics of data.  It provides additional background information such as descriptions and points of contact.  The *NPMS Metadata/Attribute Builder* software has been retired; the NPMS is no longer accepting metadata and attribute submissions made using any versions of the *NPMS Metadata/Attribute Builder*.  However, submission of the metadata is still an NPMS requirement.

Uploading pipeline submissions via the OSAVE workflow eliminates the need for a separate metadata file within a data package as required in the past.  Instead the metadata-related questions from the *NPMS Metadata/Attribute Builder* software are incorporated into the submission workflow as a series of questions.  This allows for only the geospatial and the pipeline attribute data file(s), along with any supporting documentation that the pipeline operator would like to include, to be uploaded via the workflow.

Since OSAVE is geared specifically for pipelines, LNG plants must still be submitted to the NPMS as a complete data package, if it has been identified that changes have occurred.  However, for LNG plant submissions, the metadata-related questions from the *NPMS Metadata/Attribute Builder* software are incorporated into the LNG cover/transmittal letter template, which are outlined in Section 2.3.

## 6.1 Background

Metadata was developed to help "insure an organization's investment in data. As personnel change or time passes, information may be lost and the data may lose their value."[1]  Where metadata is not collected, future staff may not trust the data due to its unknown quality. Metadata also provides information necessary for data transfer. It allows the receiver to process, interpret, and incorporate the data properly with another data set.

Executive Order 12906 requires that each federal agency use the Federal Geographic Data Committee (FGDC) Metadata Standard, "Content Standards for Digital Geospatial Metadata," to document digital geospatial data that they produce. The FGDC is an interagency committee that promotes the coordinated use, sharing, and dissemination of geospatial data on a national basis. PHMSA must produce metadata compliant with the FGDC Metadata Standard.

The *FGDC Metadata Standard for Digital Geospatial Metadata* provides a standard format, specifies the requirements for data collection, and establishes a common set of terminology and definitions. The standard is somewhat complex and is composed of mandatory, mandatory if applicable, and optional sections. PHMSA is collecting only mandatory information or information that is critical to clear understanding of the operator submittal.

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[1] Content Standards for *Digital Geospatial Metadata Workbook*, Version 1.0, March 24, 1995.

# 7. Voluntary Breakout Tank Submissions

PHMSA accepts voluntary data submissions to the NPMS for breakout tanks under PHMSA jurisdiction. PHMSA accepts breakout tank data in the following formats:

- ESRI shapefile (see Section 7.3 for standards)
- Microsoft Excel spreadsheet (see Section 7.4 for standards)

In order to complete their submission, operators are required to provide geospatial and attribute information for each individual tank they operate and answers to all questions on the cover letter template.  Figure 7-1 shows the attribute table for breakout tank data.  **Although breakout tanks are voluntary, if an operator opts to submit the breakout tank data for their OPID to the NPMS, the submission must adhere to the requirements.**

## 7.1 Types of NPMS Breakout Tank Submissions

Operators must classify breakout tank submissions according to one of the following types.  The various types of submissions are intended to facilitate maintenance of the NPMS and minimize the effort required by pipeline operators.  The type of submission must be identified in the cover/transmittal letter accompanying the submission.

**INI – Initial Submissions** to the NPMS contain data for a first time submittal for a given OPID.  If data has ever been submitted under your OPID in the past then you cannot make an Initial Submission under that OPID again.  The revision codes (SUB_TYPE) of all tanks should be set to **"A"** for addition.

**FRP – Full Replacement Submissions** should be made whenever it is necessary to apply changes to your data.  A full replacement must include all data for your OPID as you want it to appear online after processing because it will replace all previously submitted data.  The revision codes (SUB_TYP) for tanks may be **"M"** for modification or **"A"** for addition.

**RMV – Removal of OPID Submissions** should only be made when all of the data under your OPID needs to be removed from the NPMS because the breakout tanks were sold and are no longer operated by your company or the breakout tanks are no longer in use and were dismantled.  If either one of these scenarios describes all of the breakout tanks under your OPID you can make a Removal of OPID submission.  For a Removal of OPID submission, please complete the cover/transmittal letter only (see Section 7.2).  Under Question 3 of the cover/transmittal letter include an explanation of why all of the data under this OPID should be removed from the NPMS, including an effective date for the change.  If the breakout tanks were sold, include the transaction date, company name, contact name, and phone number where NPMS staff can reach the new operator to verify the sale.  If the purchasing company/contact is unknown, please clearly state that under Question 3 as well.

If either of these scenarios describes only some of the breakout tanks in the NPMS under your OPID do not use a Removal of OPID submission; otherwise, all of your data will be completely removed from the NPMS.  Instead, you must make a Full Replacement Submission submitting only the active breakout tanks operated by your OPID reflecting as of December 31st of the previous year.

## 7.2 Cover/Transmittal Letter Requirement

**All breakout submissions must be accompanied by a cover/transmittal letter.**  This letter is meant to provide NPMS Staff with key information for processing your breakout tank submission, and allows you to communicate any additional information.  A Microsoft Word template of the Breakout Tank Cover/Transmittal Letter is available for download from

the Summary of Required Components for Breakout Tank Submissions page on the NPMS website.  Operators are also welcome to compile a letter themselves which includes the following items:

1. The submission and operator information (i.e. the Operator ID and the Operator Name).
2. Contact information for the person NPMS staff should contact with any questions (i.e. Full Name, Work Phone Number, and Work Email Address).
3. A brief description of the changes reflected in the submission (e.g. sold/abandoned/purchased breakout tanks, etc.).
4. Which of the submission types described below indicates how the submission as a whole should affect the previously submitted breakout tank data for this OPID.  You can read more about these submission types in Section 7.1:
   a. **Initial Submission:**  This is the first submission to the NPMS for this OPID. Breakout tank data has never been submitted to the NPMS for this OPID.  This submission type can only include additions as the revision type to the data.
   b. **Full Replacement Submission:**  This submission should replace all breakout tank data currently in the NPMS for this OPID.  Breakout tank data has been submitted to the NPMS in previous year(s) for this OPID.  This submission type can include any type of revision, including "A" for additions or "M" for modifications, to the existing data.
   c. **Removal of OPID Submission:**  This submission is to inform the NPMS that all of the breakout tank data for the OPID needs to be removed from the system.  Provide an explanation under Question 3, including an effective date for any change.  If a sale has taken place, include a company name, contact name and phone number for the new company.  If the purchasing company/contact is unknown, please clearly state that under Question 3 as well.
5. Any additional information or concerns you would like to relate to NPMS staff.

## 7.3 Submitting via Esri Format

Operators wishing to submit data via shapefile, personal geodatabase, or file geodatabase should follow the procedure below.

- Create a shapefile/geodatabase named "BOT_OPID_<OPID>", where <OPID> is the OPID represented in the data submission (e.g., BOT_OPID_12345.shp).
- Add the attribute fields identified in the table in Figure 7-1.
- Ensure that the values you enter conform to the "Acceptable Values" column in Figure 7-1.
- Create one record (row) in the attribute table for each tank.
- Create one point per breakout tank and ensure that the FACILNAME field contains exactly the same name for each tank in a given tank farm.
- Ensure that the mandatory fields identified in the "Required Field" column in Figure 7-1 are populated with data.
- Longitude should be in the following format: decimal degrees with five decimal places, and a negative sign (for example, -77.04327).
- Latitude should be in the following format: decimal degrees with five decimal places (for example, 38.89664).
- Zip up the shapefile/geodatabase and send it with the cover letter to NPMS staff via the NPMS Submission FTP Upload page accessible from the NPMS website.

For your convenience, a template Esri shapefile and personal geodatabase has been developed that contains attributes that meet the NPMS requirements.  If you wish to utilize this template, you may download a zipped file containing the shapefile and geodatabase files from the Summary of Required Components for Breakout Tank Submissions page on the NPMS website.  Please note that the defined projection for these templates is Geographic, NAD83, Latitude/Longitude, Decimal Degrees; if your data is not in this projection, please re-project as necessary before adding data

## 7.4 Submitting via Microsoft Excel

To make a submission using Microsoft Excel, follow the steps below.

- Create an .xls/.xlsx file named "BOT_OPID_<OPID>", where <OPID> is the OPID being represented in the data submission (e.g., BOT_OPID_12345.xls).
- In the spreadsheet each row represents one tank. Each column should contain one of the Field Names from Figure 7-1.
- Ensure that the values you enter conform to the "Acceptable Values" column in Figure 7-1.
- Ensure that the mandatory fields identified in the "Required Field" column in Figure 7-1 are populated with data.
- Ensure that the FACILNAME column contains exactly the same name for each tank in a given tank farm.
- Longitude should be in the following format: decimal degrees with five decimal places, and a negative sign (for example, -77.04327).
- Latitude should be in the following format: decimal degrees with five decimal places (for example, 38.89664).
- Send the complete .xls/.xlsx file and cover letter to NPMS staff via the NPMS Submission FTP Upload page accessible from the NPMS website.

For your convenience, a template Excel file has been developed that contains attributes that meet the NPMS requirements.  If you wish to utilize this template, you may download it from the Summary of Required Components for Breakout Tank Submissions page on the NPMS website

| Field Name | Field Type[1] | Field Length | Short Description | Full Description | Acceptable Values (UPPERCASE) | Required Field[2] | Public Viewer Attribute[3] |
|---|---|---|---|---|---|---|---|
| | | | | **Breakout Tank Attribute Table** | | | |
| OPID | I | 5 | Operator ID | Unique tracking number assigned by PHMSA to the company that physically operates the breakout tank farm. If you do not know your firm's OPID, check with your DOT/Regulator Compliance department or the NPMS website. | Positive integer | Y | Y |
| COMPANY | C | 100 | Company Name | Name of the company that physically operates the tank or tank farm. | Character | Y | Y |
| FIRSTNAME | C | 50 | Contact First Name | First name of the person to contact for information regarding the tank or tank farm. | Character | Y | N |
| MIDDLENAME | C | 50 | Contact Middle Name | Middle name or initial of the person to contact for information regarding the tank or tank farm, if applicable. | Character | N | N |
| LASTNAME | C | 50 | Contact Last Name | Last name of the person to contact for information regarding the tank or tank farm. | Character | Y | N |
| TITLE | C | 30 | Contact Title | Contact person's title. | Character | Y | N |
| PHONE | C | 10 | Phone Number | Primary telephone number for the contact person including area code. Please do not include dashes or parentheses or spaces. | Character | Y | N |
| FAX | C | 10 | Facsimile Number | Primary fax number for the contact person including area code. Please do not include dashes or parentheses or spaces. | Character | N | N |
| EMAIL | C | 100 | Email Address | Contact person's email address. | Character | Y | N |
| STREET | C | 100 | Street Address | Street address of the contact person. | Character | Y | N |
| CITY | C | 20 | City Name | Name of the city or town. | Character | Y | N |
| STATE | C | 25 | State Name | Standard two-letter postal abbreviation for the state. | Character | Y | N |
| ZIP | C | 10 | ZIP Code | Postal ZIP code (+4 if available). | Character | Y | N |
| FRP | C | 25 | PHMSA Facility Response Plan Number | Tracking number assigned by PHMSA corresponding to the facility response plan (FRP) for the tank/tank farm. The FRP number is usually maintained by the operator's Environmental Health and Safety contact or an operations manager. | Positive Integer | Y | Y |
| SUBMITDATE | C | 8 | Date of Data Submission | Four-number year, two-number month, and two-number day of data submission (i.e. YYYYMMDD). | 8-Digit Date | Y | N |
| FACILNAME | C | 100 | Facility Name | Assigned by the operator. The operator's name for a functional grouping of tanks (e.g. tank farm, tank hotel, etc.). | Character | Y | Y |
| FCITY | C | 30 | Facility City Name | Name of the city in which the tank/tank farm resides. | Character | Y | Y |
| FSTATE | C | 2 | Facility State Name | Standard two-letter postal abbreviation for the name of the state in which the tank/tank farm resides. | Character | Y | N |
| OWNER | C | 60 | Facility Owner | Name of the owner of the tank/tank farm. | Character | Y | Y |
| TANKIDNO | C | 20 | Tank ID | Assigned by the operator. This is an identifier for a specific tank within a functional grouping of tanks. | Character | Y | N |
| CNSTRYR | I | 4 | Construction Year | Four-digit year of facility construction (e.g. "1990"). | Positive Integer | Y | N |
| TANKSIZE | D | 3, 2 | Size of Tank | Nominal size of the tank (bbls ÷ 1000). *Example 1:* A tank with a capacity of 5,000 BBLS would have Tank Size = 5. *Example 2:* A tank with a capacity of 500 BBLS would have Tank Size = 0.5 | Positive Integer | Y | N |
| STOREDLIQ | C | 3 | Primary Commodity Code | Abbreviation for the primary commodity stored in the tank. LNG= liquefied natural gas, CRD= crude oil, G= gasoline, K= kerosene, JF= jet fuel, DF= diesel fuel, HO= heating oil, AA= anhydrous ammonia, CO2= carbon dioxide, | LNG, CRD, G, K, JF, DF, HO, AA, CO2, HVL, OTH | Y | Y |

| | | | | HVL= highly volatile liquid, OTH= other. | | | |
|---|---|---|---|---|---|---|---|

| Breakout Tank Attribute Table (continued) | | | | | | | |
|---|---|---|---|---|---|---|---|
| Field Name | Field Type[1] | Field Length | Short Description | Full Description | Acceptable Values (UPPERCASE) | Required Field[2] | Public Viewer Attribute[3] |
| COMMODITY2 | C | 3 | Secondary Commodity Code | Abbreviation for the secondary commodity stored in the tank. LNG= liquefied natural gas, CRD= crude oil, G= gasoline, K= kerosene, JF= jet fuel, DF= diesel fuel, HO= heating oil, AA= anhydrous ammonia, CO2= carbon dioxide, HVL= highly volatile liquid, OTH= other.  NON = None (if the tank does not store a secondary commodity). | LNG, CRD, G, K, JF, DF, HO, AA, CO2, HVL, OTH, NON | Y | N |
| COMMODITY3 | C | 3 | Tertiary Commodity Code | Abbreviation for the tertiary commodity stored in the tank. LNG= liquefied natural gas, CRD= crude oil, G= gasoline, K= kerosene, JF= jet fuel, DF= diesel fuel, HO= heating oil, AA= anhydrous ammonia, CO2= carbon dioxide, HVL= highly volatile liquid, OTH= other.  NON = None (if the tank does not store a tertiary commodity). | LNG, CRD, G, K, JF, DF, HO, AA, CO2, HVL, OTH, NON | Y | N |
| LONGITUDE | D | 19, 5 | Longitudinal Coordinate | The longitudinal coordinate in decimal degree format; include the "-" (e.g. -###.#####). | Negative Number with 5 Decimal Places | Y | N |
| LATITUDE | D | 19, 5 | Latitudinal Coordinate | The latitudinal coordinate in decimal degree format (e.g. ###.#####). | Positive Number with 5 Decimal Places | Y | N |
| DATUM | C | 50 | Datum | The datum of the data. | Most popular values include NAD27, NAD83, WGS84 | Y | N |
| PROJECTION | C | 60 | Projection | The projection of the geospatial data. | GEOGRAPHIC, STATE PLANE, UTM | Y | N |
| UTMZONE | C | 10 | UTM Zone | If the geospatial data is projected in Universal Transverse Mercator (UTM), the UTM zone of the data is required. If the geospatial data is NOT in UTM, this field is left blank. | 2 - 20 | A | N |
| STPLNCAT | C | 50 | State Plane Category | If the geospatial data is projected in State Plane Coordinate System (SPCS), the State Plane zone of the data is required. If the geospatial data is NOT in SPCS, this field is left blank | Refer to Figure 7-2 for valid values. | A | N |
| MAPUNIT | C | 20 | Map Unit | Map unit of the data. | METERS, FEET, DECIMAL DEGREES | Y | N |
| SUB_TYPE | C | 1 | Submission Type | Identifies this tank/tank farm as an A= addition to the NPMS, M= modification to the existing NPMS, or D= deletion of a previous submission. | A, M, D | Y | N |

NOTES:  1  I = Integer; C = Character; D = Double.
2  Y = Yes; N = No; A = If Applicable.
3  Y = Yes, this attribute is visible on NPMS Public Viewer tools; N = No, this attribute is **not** visible on NPMS Public Viewer tools.

**Figure 7-1. Attribute field definitions for Breakout Tanks.**

| Acceptable Values for State Plane Category (STPLNCAT) | | | |
|---|---|---|---|
| ALABAMA,EAST | GUAM_ISLAND | MINNESOTA,SOUTH | PENNSYLVANIA,NORTH |
| ALABAMA,WEST | HAWAIIAN_ISLANDS,ZONE_1 | MISSISSIPPI,EAST | PENNSYLVANIA,SOUTH |
| ALASKA,ZONE_1 | HAWAIIAN_ISLANDS,ZONE_2 | MISSISSIPPI,WEST | PUERTO_RICO_&_ST._CROIX |
| ALASKA,ZONE_2 | HAWAIIAN_ISLANDS,ZONE_3 | MISSOURI,CENTRAL | PUERTO_RICO_ZONE |
| ALASKA,ZONE_3 | HAWAIIAN_ISLANDS,ZONE_4 | MISSOURI,EAST | RHODE_ISLAND |
| ALASKA,ZONE_4 | HAWAIIAN_ISLANDS,ZONE_5 | MISSOURI,WEST | SOUTH_CAROLINA |
| ALASKA,ZONE_5 | IDAHO,CENTRAL | MONTANA | SOUTH_CAROLINA,NORTH |

| | | | |
|---|---|---|---|
| ALASKA,ZONE_6 | IDAHO,EAST | MONTANA,CENTRAL | SOUTH_CAROLINA,SOUTH |
| ALASKA,ZONE_7 | IDADO,WEST | MONTANA,NORTH | SOUTH_DAKOTA,NORTH |
| ALASKA,ZONE_8 | ILLINOIS,EAST | MONTANA,SOUTH | SOUTH_DAKOTA,SOUTH |
| ALASKA,ZONE_9 | ILLINOIS,WEST | NEBRASKA | ST._CROIX_ZONE |
| ALASKA,ZONE_10 | INDIANA,EAST | NEBRASKA,CENTRAL | TENNESSEE |
| AMERICAN SAMOA | INDIANA,WEST | NEBRASKA,NORTH | TEXAS,CENTRAL |
| ARIZONA,CENTRAL | IOWA,NORTH | NEBRASKA,SOUTH | TEXAS,NORTH |
| ARIZONA,EAST | IOWA,SOUTH | NEVADA,CENTRAL | TEXAS,NORTH_CENTRAL |
| ARIZONA,WEST | KANSAS,NORTH | NEVADA,EAST | TEXAS,SOUTH |
| ARKANSAS,NORTH | KANSAS,SOUTH | NEVADA,WEST | TEXAS,SOUTH_CENTRAL |
| ARKANSAS,SOUTH | KENTUCKY,NORTH | NEW_HAMPSHIRE | UTAH,CENTRAL |
| CALIFORNIA_ZONE1 | KENTUCKY,SOUTH | NEW_JERSEY | UTAH,NORTH |
| CALIFORNIA_ZONE2 | LOUISIANA,NORTH | NEW_MEXICO,CENTRAL | UTAH,SOUTH |
| CALIFORNIA_ZONE3 | LOUISIANA,OFF_SHORE | NEW_MEXICO,EAST | VERMONT |
| CALIFORNIA_ZONE4 | LOUISIANA,SOUTH | NEW_MEXICO,WEST | VIRGINIA,NORTH |
| CALIFORNIA_ZONE5 | MAINE,EAST | NEW_YORK,CENTRAL | VIRGINIA,SOUTH |
| CALIFORNIA_ZONE6 | MAINE,WEST | NEW_YORK,EAST | WASHINGTON,NORTH |
| CALIFORNIA_ZONE7 | MARYLAND | NEW_YORK,LONG_ISLAND | WASHINGTON,SOUTH |
| COLORADO,CENTRAL | MASSACHUSETTS,ISLAND | NEW_YORK,WEST | WESTVIRGINIA,NORTH |
| COLORADO,NORTH | MASSACHUSETTS,MAINLAND | NORTH_CAROLINA | WESTVIRIGINA,SOUTH |
| COLORADO,SOUTH | MICHIGAN,CENTRAL_(NEW) | NORTH_DAKOTA,NORTH | WISCONSIN,CENTRAL |
| CONNECTICUT | MICHIGAN,CENTRAL_(OLD) | NORTH_DAKOTA,SOUTH | WISCONSIN,NORTH |
| DELAWARE | MICHIGAN,EAST_(OLD) | OHIO,NORTH | WINCONSIN,SOUTH |
| FLORIDA,EAST | MICHIGAN,NORTH_(NEW) | OHIO,SOUTH | WYOMING,ZONE_I,EAST |
| FLORIDA,NORTH | MICHIGAN,SOUTH_(NEW) | OKLAHOMA,NORTH | WYOMING,ZONE_II,EAST_CENTRAL |
| FLORIDA,WEST | MICHIGAN,WEST_(OLD) | OKLAHOMA,SOUTH | WYOMING,ZONE_III,WEST_CENTRAL |
| GEORGIA,EAST | MINNESOTA,CENTRAL | OREGON,NORTH | WYOMING,ZONE_IV,WEST |
| GEORGIA,WEST | MINNESOTA,NORTH | OREGON,SOUTH | |

**Figure 7-2. Acceptable values for State Plane Category attribute field.**

# 8. Submitting the Data

## 8.1 Submitting Pipeline Data to the NPMS

In the fall of 2016, NPMS staff released the newly developed Operator Submission And Validation Environment (OSAVE) tool.  OSAVE is a one-stop shop for operators to:

- Review the pipeline data currently in the NPMS national layer for the OPID via a web map viewer,
- View the NPMS submission history for the OPID,
- Update information for the OPID's primary, technical, and public contacts,
- Convey a notification of no changes for pipelines,
- Mark desired attribute edits and spatial deletions for the OPID's pipelines via a web map viewer in lieu of a traditional submission,
- Submit pipeline data to be added to existing data in the NPMS national layer for the OPID in lieu of a traditional data submission,
- Submit pipeline data intended to fully replace existing feature(s) in the NPMS national layer for the OPID, and
- Request that all pipelines in the NPMS national layer for the OPID be removed.

OSAVE is accessible from the web at https://www.npms.phmsa.dot.gov/OSAVE/ and requires a PIMMA account to login. If you do not have a PIMMA account, please complete the online application.

OSAVE is geared specifically for pipelines, and the Data Summary tools only reflect the pipelines in the NPMS national layer for that OPID.  The display of submission history reflects only the pipeline submissions.  **The submission-based workflows (e.g., notification of no changes, edits via a map viewer or additions to existing data in place of a traditional submission, traditional submissions replacing all existing data, and removal of all pipelines) are for pipeline data only.**

For pipeline data submissions, OSAVE eliminates the need for the operator to create separate cover letter and metadata components via the FTP Upload site; this information, including a review of the primary, technical, and public contact information, is gathered from the operator in the form of a series of questions as part of the workflow.  Detailed information and step-by-step instructions on the different submission workflows within the OSAVE tool can be found in the OSAVE User Guide and the NPMS Operator Submission Guide.

To send your Pipeline data to the NPMS via U.S. Postal Service, perform the following steps:

1. Prepare the required digital files.
2. Copy all digital file(s) including cover letter, geospatial data and attribute data to an NPMS-approved medium such as CD-ROM or DVD.
3. Mail submission to:

> NPMS Staff
> Michael Baker International
> 3601 Eisenhower Avenue, Suite 600
> Alexandria, VA 22304

## 8.2 Submitting LNG Plant and Breakout Tank Data to the NPMS

To submit your NPMS LNG plant and/or breakout tank submission package(s) to NPMS staff, you may either transmit your files digitally through the NPMS Submission FTP Upload site or mail a copy of your files on CD-ROM/DVD to the NPMS office location.

To transmit your files digitally through the NPMS Submission FTP Upload site, perform the following steps:

1. Zip together all of your required components (i.e. data files). The zipped data file should contain your OPID and/or submission type for easier processing (e.g. OPID_12345_LNG_submission.zip or OPID_12345_BOT_submission.zip).
2. Navigate to the NPMS Submission FTP Upload site located at https://phmhqnwas071.phmsa.dot.gov/npmsftp/.
3. Browse to the location of your zipped data file and attached it to the site.
4. Enter your email address.
5. Enter your OPID and any other information you wish to convey in the Notes section.
6. Click the Submit button.

This method of receiving LNG plant and/or breakout tank submissions is greatly preferred. Use caution when sending data files to the npms@dot.gov email address as several file types, including .zip and .mdb, are not accepted as attachments and will be automatically rejected by our email system.

To send your LNG plant and/or breakout tank data to the NPMS via U.S. Postal Service, perform the following steps:

1. Prepare the required digital files.
2. Copy all digital file(s) including cover letter, geospatial data, and attribute data to an NPMS-approved medium such as CD-ROM or DVD.
3. Mail submission to:
   NPMS Staff
   Michael Baker International
   3601 Eisenhower Avenue, Suite 600
   Alexandria, VA 22304

# Appendix A:  Abandonment Certificate Template

Ms. Amy Nelson
GIS Manager
US Department of Transportation
Pipeline and Hazardous Materials Safety Administration
East Building, Room E24-462
1200 New Jersey Ave, S.E.
Washington, D.C.  20590

**NPMS-required attributes:**

| OPID | System Name | Sub-System | PLINE_ID | Commodity | Diameter | Date of Abandonment | Method of Abandonment |
|---|---|---|---|---|---|---|---|
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |

I certify that, to the best of my knowledge, all of the reasonably available information requested was provided and, to the best of my knowledge, the abandonment was completed in accordance with applicable laws.

_____     _____     _____

Name                                             Signature                                        Date

# Appendix B:  Glossary

## A

Abandoned pipeline ................................. A pipeline that has been permanently removed from service.  The NPMS accepts geospatial data submissions for pipelines which have been abandoned in place, but not for pipelines abandoned by removal.

Active pipeline ......................................... A pipeline that is subject to federal regulations.  Active pipelines can be operational, not currently operational but may be used in the future for transportation of hazardous liquid or gas, or not yet properly and permanently abandoned according to federal regulations.  Active gas transmission and hazardous liquid pipelines are submitted to the NPMS and included on annual reports to PHMSA.  The Status Code field in the NPMS allows the operator to further define if an active pipeline meets the NPMS definition of an in service, idle, or retired active pipeline.

ASCII ...................................................... American Standard Code for Information Interchange.  A popular standard for the exchange of alphanumeric data.

Attribute ................................................. A characteristic that helps to describe the data.

## B

Base map ............................................... A map containing visible surface features and boundaries that is used for local reference.

Breakout tank ......................................... A tank used to a) relieve surges in a hazardous liquid pipeline system or b) receive and store hazardous liquid transported by a pipeline for reinjection and continued transportation.

## C

CAD or CADD ........................................ Computer Aided Drafting (CAD) and Design (CADD).  An automated system for the drafting and display of graphic oriented information.

Coordinates ............................................ Pairs of numbers expressing a known horizontal location on the earth's surface.

Crude oil ................................................ Liquid petroleum out of the ground, as distinguished from refined oils manufactured from crude oil.

# D–E

Database ................................................Structured collection of data defined for a particular use, user, system, or program; may be sequential, network, hierarchical, relational, or semantic.

Datum (geodetic) ...................................The level surface to which elevations are referenced, such as mean sea level. A datum serves as a frame of reference for measuring a location on the surface of the earth.

# F

Facilities................................................Components of the pipeline system, such as the pipe, valves, and compressor stations.

FGDC.....................................................Federal Geographic Data Committee.  Established through OMB and charged with coordinating the development, use, sharing, and dissemination of geographic data.

# G

GIS ........................................................Geographic Information System.  Computer hardware, software, and geographic data used to capture, store, update, maintain, analyze, and display graphically referenced information.

GPS .......................................................Global Positioning System.  Survey instrument/process using satellite-generated timing data to establish either ground or aerial coordinates.

# H

Hazardous liquid ....................................Petroleum, petroleum products, or anhydrous ammonia.

Hazardous liquid trunk line  ...................A hazardous liquid transmission pipeline other than a flow line, gathering line, or in-plant pipeline.

Highly volatile liquid (HVL)......................A hazardous liquid that will form a vapor cloud when released to the atmosphere and has a vapor pressure exceeding 276 kPa (40 psia) at 37.8° C (100° F).  Note: natural gas liquids are also HVLs.

# I-K

In-plant pipeline ....................................... Piping that is located on the grounds of a plant and used to transfer hazardous liquid or carbon dioxide between plant facilities or between plant facilities and a pipeline or other mode of transportation, not including any device and associated piping that are necessary to control pressure in the pipeline under CFR §195.406(b).

In service pipeline ................................... An active pipeline that currently transports natural gas or hazardous liquid. This pipeline is reported as active on the annual report to PHMSA and with the code "I" in the Status Code field in the NPMS submission.

Idle pipeline............................................. An active pipeline that is not transporting commodity, but is maintained to a degree that it may, in the future, be potentially brought back into service. This pipeline is reported as active on the annual report to PHMSA and with the code "D" in the Status Code in the NPMS submission.

Interstate pipeline.................................... A pipeline or part of a pipeline that is regulated by FERC.

# L

Latitude .................................................. Distance measured north or south of the equator.

Liquefied Natural Gas (LNG).................... Natural gas or synthetic gas having methane as its major constituent that has been changed to a liquid or semi-solid.

Liquefied Petroleum Gas (LPG) ............... Butane and propane separated from natural gasoline and sold in liquid form as fuel. Also known as bottled gas and tank gas.

LNG plant ................................................ A component of a facility that is used for 1) liquefying or solidifying natural gas, or 2) transferring, storing, or vaporizing liquefied natural gas.

Longitude ................................................ Distance measured east or west from the Prime Meridian in Greenwich, England.

Low stress pipeline.................................. Hazardous liquid pipelines operating at 20% or less of SMYS.

# M

Metadata................................................. Descriptive information about data, such as the timeliness of the data, attribute sources, and accuracy of the data.

# N

NAD 27, 83 .............................................North American Datum (of 1927 or 1983).  Two mathematical representations of the earth's surface.

Natural gas liquid ...................................Also referred to as NGL. Can be ethane, butane, propane, or a propane-butane mix.

Natural gas transmission line..................A pipeline system, other than a gathering line, that 1) Transports gas from a gathering line or storage facility to a distribution center, storage facility, or large-volume customer that is not downstream from a distribution center.  A large-volume customer may receive similar volumes of gas as a distribution center, and includes factories, power plants, and institutional users of gas, 2) Operates at a hoop stress of 20 percent or more of specified minimum yield strength (SMYS), or 3) Transports gas within a storage field.

Nominal diameter ...................................A dimensionless designator of pipe that indicates the standard pipe size.

# O

One-Call...................................................Service to notify underground utilities of planned excavations.

Operator...................................................A person or firm who operates a pipeline system and engages in the transportation of gas or hazardous liquid.  The operator may or may not also be the owner of the pipeline system.

# P

Petroleum ...............................................Crude oil, condensate, natural gasoline, natural gas liquids, and liquefied petroleum gas.

Petroleum product..................................Flammable, toxic, or corrosive products obtained from distilling and processing crude oil, unfinished oils, natural gas liquids, blend stocks, and other miscellaneous hydrocarbon compounds.

Pipeline corridor.....................................A linear area where two or more pipelines (either part of the same or different pipeline systems) are closely grouped in a single right-of-way. Pipeline corridors pose a cartographic challenge.  In digital files, multiple lines are required, and operators should separate them into individual layers or files.

Pipeline crossing .....................................A point where two or more pipelines cross, but where there is no physical connection between the pipelines.  Pipeline segments should not be broken at pipeline crossings.

Pipeline intersection ...............................A point where a physical connection between two pipelines occurs.  A commodity from one pipeline can flow into another pipeline(s), either a branch within a pipeline system or a connection between two pipeline systems.

Pipeline segment....................................A linear feature representing part or all of a pipeline system on a map.  A pipeline segment must have only two ends. No branches are allowed.  A pipeline segment may be a straight line or may have any number of vertices.  Each pipeline segment must be uniquely identified.  The number of pipeline segments should be kept to the minimum needed to represent a pipeline system and its associated attributes.  A unique line segment in the computer-aided drafting (CAD) or GIS data set should represent each pipeline segment.

Pipeline system  ....................................All parts of a major natural gas transmission line or hazardous liquid trunkline though which gas or hazardous liquid is transported.  By definition, only one firm can operate a pipeline system.  Operators should assign unique names to each of their pipeline systems.  A pipeline system may have an unlimited number of branches.  Each pipeline system must be represented by one or more pipeline segments.

# R

Retired pipeline.....................................An active pipeline that is no longer maintained, but has not yet been permanently abandoned according to federal pipeline regulations.  This pipeline is reported as active on the annual report to PHMSA and with the code "R" in the Status Code field in the NPMS submission.

ROW ....................................................Right-of-Way.  A section of land designated for use by one or more pipelines.  The NPMS refers to ROWs as pipeline corridors.

# S

Scale (large).........................................Small map area showing greater detail, e.g., 1:2,400 = 1" to 200'.

Scale (small) ........................................Large map area with less detail, e.g., 1:100,000 = 1" to 8333'.

# T–Z

Topographic maps..................................Map showing horizontal and vertical contours, or lines of equal surface elevation.

Vector ...................................................... Data composed of individual coordinate points and lines whose endpoints are defined by coordinate pairs.