NPMS Operator Submission Guide

Tips for Preparing a Complete and Accurate NPMS Submission

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Contents

1. Introduction

1A. Purpose of this Guide

The NPMS Operator Submission Guide was written to assist you, the operator, in preparing NPMS submissions while avoiding common mistakes that can delay submission processing. It includes expanded definitions of terms and submission elements, clarification on requirements, and other notes that we, the NPMS staff, hope will make the process of preparing a submission more efficient and problem-free.

1B. NPMS and Your Annual Report to PHMSA

The NPMS reporting requirement is not the same as the Annual Report reporting requirement. Effective October 1, 2015, NPMS submissions are required by the Pipeline Safety: Miscellaneous Changes to Pipeline Safety Regulations rule which supersedes the Pipeline Safety Improvement Act of 2002). Section 191.29 of the regulations manual pertains to gas transmission and Liquefied Natural Gas (LNG) plant operators; Section 195.61 of the regulations pertains to hazardous liquid pipeline operators. Failure to comply with this requirement will eventually lead to your case being referred to our Enforcement department. Please note that PHMSA frequently compares information in your Annual Report with your NPMS submission. PHMSA's rule 2137-AE59 requires that operators use the same Operator ID (OPID) for reporting all PHMSA requirements about a given asset. In other words, if one of your pipeline systems is under OPID 1234 for your Annual Report, it must be under OPID 1234 in your NPMS submission as well. The mileage included in your NPMS submission should match the mileage reported in the PHMSA Annual Report, with the exception of mileage related to abandoned pipelines. Abandoned pipelines are included in the NPMS submission but are not included in the Annual Report. When Annual Report mileage is compared with NPMS mileage, abandoned pipelines in the NPMS are excluded. The mileage of the pipeline data submitted to the NPMS and the mileage reported in the Annual Report should be within 5% of each other, excluding any abandoned line mileage. Variations greater than 5% could indicate that the same pipelines are not being reported in both places. As a result, your submission may be flagged for PHMSA's review. The interstate/intrastate designation in the Annual Report and NPMS submission must also match. Discrepancies between the Annual Report and the NPMS submission will result in the NPMS submission to be put on hold from processing until clarification is received.

Please also note that if PHMSA changes the Annual Report due date in a given year, your NPMS due date does not automatically change. Consult the What's New section of the NPMS website for any deadline changes.

1C. How to Find Your Operator ID (OPID)

You will need to know your OPID before you can make an NPMS submission. The OPID is a number used for all PHMSA reporting requirements. The link below allows you to search for your OPID based on your operator name. If you cannot find your OPID, need to change your operator name, or have other OPID-related questions, please contact Jamerson Pender by email (Jamerson.Pender@dot.gov).

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

2. Making a Submission

2A. One Submission per Year per OPID

You are required to file one NPMS submission each year. Effective October 1, 2015, per the Pipeline Safety: Miscellaneous Changes to Pipeline Safety Regulations rule, operators of gas transmission pipelines and Liquefied Natural Gas (LNG) plants are required to submit updates (or a notification of no changes) to the NPMS by March 15, and operators of hazardous liquid pipelines are required to submit updates (or a notification of no changes) to the NPMS by June 15. The submitted data should reflect conditions in the field as of December 31 of the previous year. Operators are encouraged to submit prior to the due date. Submissions reflecting December 31 of the previous year are accepted starting January 1 of the current year (e.g., submissions reflecting December 31, 2015, are accepted starting January 1, 2016).

If you operate both liquid and gas pipelines, please make a single data submission (or notification of no changes) for both gas and liquid pipelines by March 15. The submission (or notification of no changes) should clearly specify that BOTH the gas transmission and hazardous liquid pipelines reflect that OPID's assets as of December 31 of the previous year. If you are unable to submit an update for your liquid pipeline data to the NPMS by March 15, then two separate submissions (or notifications of no changes) are acceptable. If you are making two separate submissions (or notifications of no changes), the submission or notification received by March 15 should reflect only the gas transmission pipelines; the submission or notification received by June 15 should reflect only the hazardous liquid pipelines. NPMS staff will merge the two separate submissions and/or notifications together once both complete gas transmission and hazardous liquid portions have been received. When the gas transmission portion is received, NPMS staff will perform an initial review of the data (or notification of no changes) and notify you of the status. Once the hazardous liquid portion is received, NPMS staff will comprehensively review and complete the processing of the submittal as a whole. Please note that the submission date of the data will reflect the two different submission and/or notification dates for the two different types of pipelines.

2B. Operator Submission And Validation Environment (OSAVE)

In the fall of 2016 NPMS staff released the newly developed Operator Submission And Validation Environment (OSAVE). 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. 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 employee who holds the PIMMA account 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. Once logged in, the OPIDs to which the user has access are listed. If an OPID is missing from your list in OSAVE, please email npms@dot.gov requesting that it be added to your PIMMA account.

The NPMS Data Reviewer map viewer has been retired and replaced by the OSAVE map viewer and the new submission history tool. The OSAVE map viewer is intended to be used at anytime throughout the year and allows the operator to view the spatial location and attribute information of the OPID's pipelines, LNG plants, and breakout tanks. Through this viewer, tools are provided to assist the operator in reviewing the pipeline data by summarizing the total pipeline mileage for the OPID by commodity, system name, or county and state location. OSAVE also includes a new submission history tool that lists the submissions and notifications of no changes that NPMS staff has received for the OPID since 2010. It also displays the date when submissions and notifications of no changes were received as well as the date when the submission data and notifications were incorporated into the NPMS national layer. Changes to the contact information for the primary, technical, and public contacts of an OPID may be submitted at any time throughout the year. However, the other OSAVE 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) should only be used to fulfill the yearly NPMS submission requirement.

While the OSAVE map viewer may be used to view the spatial location and attributes of LNG plants and breakout tanks, 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. Please see other subsections within Section 2 of this document for details on how to submit for LNG plants and breakout tanks.

For data submissions, OSAVE eliminates the need for the operator to create separate cover letter and metadata components; 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. Data that is submitted via the full replacement and addition workflows is automatically validated against the requirements defined in the Pipeline Attribute Table in the NPMS Operator Standards Manual. If the submission data passes the automated validation, the submission will be placed in NPMS staff's queue for further review/processing. If the submission data fails the automated validation, the operator must correct the issues and resubmit. After each submittal, the logged in user, the primary contact, and the technical contact will receive either an email alerting them that the submission passed through validation or an email listing the items which need attention and resubmission.

To assist operators who have only attribute changes or to remove specific whole segments, OSAVE contains an edit mode to the map viewer that allows the operator to mark which pipeline segments need changes and indicate the specific change, such as entering a new commodity value or requesting the removal of an entire segment. These changes are submitted to NPMS staff for their review and action; please note that the change is not immediately effective. OSAVE also contains a separate workflow for cases when the entire OPID needs to be removed from the NPMS national layer.

All pipeline notifications of no changes and data submissions should be conveyed to NPMS staff via OSAVE. If you feel that your OPID is a special situation (for instance a combination of submission types) and you are unsure how to proceed within OSAVE, please contact NPMS staff to discuss your particular options.

2C. Types of Data Submissions or Notifications

Each year for each OPID the operator should assess what changes have occurred to the pipelines, LNG plants, and breakout tanks since the last data submission to determine which type of submission or notification is most appropriate. Each of these types is described in more detail in subsequent subsections.

Pipelines

There are five types of pipeline submissions or notifications which fulfill the yearly NPMS submission requirement:

- Notification of no changes,
- Attribute changes and/or removal of whole pipeline segments,
- Addition of pipeline segments to supplement the existing data in the NPMS national layer for the OPID,
- Full replacement of existing data in the NPMS national layer for the OPID, and
- Notification of removal of all data in the NPMS national layer for the OPID.

LNG Plants and Breakout Tanks

There are four types of submissions or notifications for LNG plants and breakout tanks which fulfill the yearly NPMS requirement, in the case of LNG plants, or voluntary submission, in the case of breakout tanks:

- Notification of no changes,
- Addition of LNG plants/breakout tanks to supplement the existing data in the NPMS national layer for the OPID,
- Full replacement of existing data in the NPMS national layer for the OPID, and
- Notification of removal of all data in the NPMS national layer for the OPID.

2D. Data Submission Required Components

Pipelines

An NPMS pipeline data submission has five required components:

- Cover/transmittal letter
- Metadata communicating projection information and primary and technical contact information
- Geospatial data
- Attribute information
- Public contact information

OSAVE is the method data submissions are conveyed to NPMS staff. The OSAVE workflow eliminates the need for each of these components to be submitted as separate files within the data package as required in the past. 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. The geospatial and attribute data file(s), along with any supporting documentation that the operator would like to include, is uploaded via the workflow. Specifics on the requirements are found in the NPMS Operator Standards Manual. For operators' convenience, a template of the required pipeline attribute fields in shapefile format, Esri personal geodatabase, and Microsoft Excel have been created and are downloadable from the "Summary of Required Components" page on the NPMs website.

LNG Plants

An NPMS LNG plant data submission has three required components:

- Cover/transmittal letter capturing details about the submission including changes that have occurred since the last submission, the projection of the submitted data, the states in which the plants fall, and the primary and contact information
- Geospatial data
- Attribute information

LNG plant data submissions should be complied and submitted to NPMS staff via the FTP Upload Tool. Specifics on the requirements are found in the NPMS Operator Standards Manual. For operators' convenience a template of the cover letter and required LNG plant attribute fields in shapefile format, Esri personal geodatabase, and Microsoft Excel have been created and may be downloaded from the "Summary of Required Components" page on the NPMS website.

Breakout Tanks

An NPMS breakout data submission has three required components:

- Cover/transmittal letter capturing details about the submission including changes that have occurred since the last submission
- Geospatial data
- Attribute information

Breakout tank data submissions should be complied and submitted to NPMS staff via the FTP Upload Tool. Specifics on the requirements are found in the NPMS Operator Standards Manual. For operators' convenience a template of the cover letter and breakout tank attributes fields in shapefile, Esri personal geodatabase, and Microsoft Excel have been created and may be downloaded from the "Summary of Required Components" page on the NPMS website. Although breakout tank submissions are voluntary, if the operator opts to make the submission, the operator must adhere to the requirements listed in the

[NPMS Operator Standards Manual](#). If the breakout tank submittal does not meet all of the requirements, NPMS staff will not accept or process the submittal.

2D. Type of Submission: Notification of No Changes

A notification of no changes for pipelines, LNG plants, and/or breakout tanks should never be submitted as a way to meet the submission deadline. All notifications of no changes must be submitted with the intention that the notification is the submission. The notification of no changes states to NPMS staff that the data in the NPMS national layer accurately reflects the data for your OPID as of December 31 of the previous year.

Pipelines

If there have been no changes to the pipeline data in the NPMS national layer since the previous submission, a notification is accepted in lieu of a data submission. This notification should be submitted to NPMS staff via OSAVE. Through the notification of no changes workflow in OSAVE, the operator is also prompted to review and update, if necessary, the primary, technical, and public contact information for the OPID. Upon completion of the notification of no changes workflow, a message confirming receipt of the notification is shown on the screen and is also emailed to the logged in user, the primary contact, and the technical contact. Since some email systems may block this email sent from OSAVE or route it to the Junk/Clutter folder, please make sure to copy and save the on-screen message for your records until you have received the confirmation email.

LNG Plants and Breakout Tanks

If there have been no changes to the LNG plant or breakout tank data in the NPMS national layer since the previous submission, a notification of no changes is accepted in lieu of a data submission. This notification is simply an email to NPMS staff stating that there have been no changes since the last submission. The email should contain the OPID and a statement indicating that the notification relates to the LNG plant(s) or breakout tank(s). If there have been changes to the primary contact (for LNG plants or breakout tanks) or the technical contact (LNG plants only), the new contact information should be included in the email as well. If submitting new contact information, please indicate which contact needs to be updated (i.e. LNG or breakout tank primary contact or LNG technical contact) and include the contact's full name, job title, company name, work mailing address, work phone number, and work email address. Note that there is no public contact for LNG plants or breakout tanks.

2E. Type of Submission: Attribute Changes and/or Removal of Whole Pipeline Segments

Pipelines

For pipeline OPIDs that have had minor changes since the last submission, OSAVE includes an edit mode to assist operators in conveying the changes to the OPID. Through the edit mode, the operator filters the pipeline data based on a query and marks the features in the query results that will be impacted by the change. The operator may enter new attribute values for the marked features. The operator may also indicate that the marked features should be deleted from the NPMS national layer. The attribute changes/deletions will only apply to all of the marked features. The operator may re-query and re-mark

as needed to capture all of the required attribute changes and deletions. **OSAVE does NOT allow the operator to split, move, or spatially change the pipeline feature through the map viewer.** If a spatial edit is required, the operator should submit a full replacement submission. If the change is considered to be unique or a simple switch of one/few pipeline segments, please contact NPMS staff to discuss the situation.

Once the operator is confident the attribute changes/deletions are completed for the feature, the operator must commit the changes/deletions to complete the edit mode submission workflow. In case of deletions, the operator will be prompted to indicate the reason for the deletion. If the pipelines were divested to another operator, please include information about the acquiring company, such as OPID, if known, and a contact name, email address and/or phone number so that NPMS staff can follow-up with the new operator about submitting under the new OPID. If pipelines are being removed or updated because the pipelines were abandoned in place and any of the abandoned lines cross a Commercially Navigable Waterway or are offshore, the operator must complete an Abandonment Certification form for the abandoned pipelines that cross a Commercially Navigable Waterway or are located offshore. NPMS staff has created an Abandonment Certification Form Template to assist operators in fulfilling this requirement. This template can be found in Appendix A of the NPMS Operator Standards Manual or on the "Overview of Submission Process" page on the NPMS website.

Within this workflow, the operator will also be prompted to review and update, if necessary, the primary, technical, and public contact information for the OPID. Upon completion of the edit mode map viewer submission workflow, a message confirming receipt of the changes/deletions is shown on the screen, and is also emailed to the logged in user, the primary contact, and the technical contact. Since some email systems may block this email sent from OSAVE or route it to the Junk/Clutter folder, please make sure to copy and save the on-screen message for your records until you are uncertain that you no longer need it.

Please note that the pipeline data in the NPMS national layer is not directly edited via OSAVE. The operator is only indicating the change/deletions that need to be applied to the OPID, which are saved in a staging data layer. Once the operator completes the edit mode map viewer submission workflow, NPMS staff will be automatically notified through the system that the edits/deletions are in queue for action. NPMS staff will review the requested edits/deletions and will apply the changes to the NPMS national layer on behalf of the operator. If NPMS staff has questions about the requested edits/deletions, the pipeline operator will be contacted before any changes are made.

If the only change is that the operator's OPID has acquired another existing OPID and all of their pipeline assets, and the changes needed are to update the OPID and operator name to the operator's own OPID, please contact NPMS staff for assistance. This type of change cannot be completed via OSAVE. If you are uncertain if your change can be completed through the edit mode map viewer, please contact NPMS staff for discussion.

LNG Plants and Breakout Tanks

LNG plant and breakout tank data in the NPMS national layer cannot be modified via the edit mode map viewer within OSAVE. If the only changes to the data are minor attribute edits or the removal of particular plants/tanks, please contact NPMS staff directly to discuss the options for your unique scenario.

2F. Type of Submission: Additions to Supplement the Existing Data in the NPMS National Layer

Pipelines

If the only change is to add pipelines to the existing data in the NPMS national layer for that OPID, the operator may submit only the supplemental pipelines. These additions should be submitted to the NPMS via the specific addition-based workflow within OSAVE. Through the workflow, the operator will be prompted to answer a series of questions about the submission, including what the additions represent (e.g., new construction). If the pipelines are being added as a result of an acquisition from another operator/OPID, please include information about the previous operator such as operator name and OPID, if known. The operator will also be prompted to indicate if the data matches the mileage reported under the PHMSA Annual Report, when the mileage for the existing NPMS data is also considered. This series of questions replaces the cover letter previously required in the submission package. When the submission is uploaded, the operator is prompted to indicate if the spatial data is projected. If the spatial data is not projected, the operator must indicate the projection information within the online interface. Also within the workflow, the operator will be prompted to review and update, if necessary, the primary, technical, and public contact information for the OPID. This workflow eliminates the need to submit a separate metadata file, which was previously required as a component in the submission package.

The operator is expected to upload both spatial and attribute information. These two items may be combined into one data format, such as an Esri shapefile or a feature class within a personal/file geodatabase.   It may also be two separate complementary files, such as two Microsoft Excel files. Please see [Section 4](#) within this document for details on the various combinations of spatial and attribute files. For operators' convenience a template of the NPMS attributes in shapefile format, Esri personal geodatabase, and Microsoft Excel have been created and are downloadable from the "[Summary of Required Components](#)" page on the NPMS website.

Data that is submitted via the addition workflow is automatically validated against the requirements defined in the Pipeline Attribute Table in the [NPMS Operator Standards Manual](#). If the submission data passes the automated validation, the submission will be placed in NPMS staff's queue for further review/processing. If the submission data fails the automated validation, the operator must correct the issues and resubmit. After each submittal, the logged in user, the primary contact, and the technical contact will receive either an email alerting them that the submission passed through validation or an email listing the items which need attention and resubmission. Once NPMS staff has received the submission, which has passed the automated validation and completed the manual QC steps, NPMS

staff will email the primary and technical contacts to either notify them that the submission is moving to the next step in the processing workflow or to request additional information or re-submission.

If you feel that the required changes are a combination of additions and a minor attribute change to existing pipelines, and you'd like to avoid resubmitting all pipelines, please contact NPMS staff to discuss your particular situation.

LNG Plants and Breakout Tanks

For OPIDs with LNG plants or breakout tanks, if the only change is to add the plant/tank points to the existing data in the NPMS national layer for that OPID, the operator may submit only the supplemental plant/tank data. The addition-based submissions for LNG plants or breakout tanks must be accompanied by a cover letter, which includes questions regarding the changes since the last submission. The cover letter should clearly indicate that the plants/tanks are additions and not a replacement of the existing data. For LNG plant submissions even if the submitted data is projected, the projection information (projection, datum, and units) as well as a list of the states in which the submitted LNG plants fall must be included in the cover letter; this information provided in the cover letter assists NPMS staff in reviewing the data. The information for the primary and technical contacts for LNG plants for the OPID must also be included in the cover letter. For breakout tank submission, this projection information and contact information is not included in the cover letter because these details are captured as attribute values.

In addition to the cover letter the operator is also expected to upload both spatial and attribute information for the LNG plants or breakout tanks additions. These two items may be combined into one data format, such as an Esri shapefile, or two separate complementary files, such as two Microsoft Excel files. Please see Section 4 within this document for details on the various combinations of spatial and attribute files. For operators' convenience when putting together LNG plant and/or breakout tank submissions, a template of the cover letter and LNG plant/breakout tank attributes in shapefile format, Esri personal geodatabase, and Microsoft Excel may be downloaded from the "Summary of Required Components" page for LNG plants or breakout tanks on the NPMS website. The LNG plant or breakout tanks data package should be submitted to NPMS staff via the FTP Upload Tool.

2G. Type of Submission: Full Replacement of Existing Data in the NPMS National Layer

Pipelines

For OPIDs whose pipeline data in the NPMS national layer should be completely replaced (excluding pipelines previously reported as abandoned to the NPMS by the OPID), a submission including all pipelines, reflecting as of December 31 of the previous year, is necessary. The full replacement submission should be submitted to the NPMS via the specific full replacement workflow within OSAVE. Through this workflow, the operator will be prompted to answer a series of questions about the submission, including what changes have occurred and if the data matches the mileage reported under the PHMSA Annual Report. If the pipelines were divested to another operator, please include information about the acquiring company, such as the OPID or Operator Name, if known, and a contact

name, email address and/or phone number so that NPMS staff can follow-up with the new operator about submitting under the new OPID. If pipelines are being added as a result of an acquisition from another operator/OPID, please include information about the previous operator such as operator name and OPID, if known. If pipelines are being removed or updated because the pipelines were abandoned in place and any of the abandoned lines cross a Commercially Navigable Waterway or are offshore, the operator must complete an Abandonment Certification form for the abandoned pipelines that cross a Commercially Navigable Waterway or are located offshore. NPMS staff has created an Abandonment Certification Form Template to assist operators in fulfilling this requirement. This template can be found in Appendix A of the NPMS Operator Standards Manual or on the "Overview of Submission Process" page on the NPMS website. This series of questions replaces the cover letter that was previously required in the submission package. When the submission is uploaded, the operator is prompted to indicate if the spatial data is projected. If the spatial data is not projected, the operator must indicate the projection information within the online interface. Also within that workflow, the operator will be prompted to review and update, if necessary, the primary, technical, and public contact information for the OPID. This workflow eliminates the need to submit a separate metadata file, which was previously required as a component in the submission package.

The operator is expected to upload both spatial and attribute information. These two items may be combined into one data format, such as an Esri shapefile, or two separate complimentary files, such as two Microsoft Excel files. Please see Section 4 within this document for details on the various combinations of spatial and attribute files. For operators' convenience, a template of the NPMS attributes in shapefile format, Esri personal geodatabase, and Microsoft Excel have been created and are downloadable from the "Summary of Required Components" page on the NPMs website.

Data that is submitted via the full replacement workflow is automatically validated against the requirements defined in the Pipeline Attribute Table in the NPMS Operator Standards Manual. If the submission data passes the automated validation, the submission will be placed in NPMS staff's queue for further review/processing. If the submission data fails the automated validation, the operator must correct the issues and resubmit. After each submittal, the logged in user, the primary contact, and the technical contact will receive either an email alerting them that the submission passed through validation or an email listing the items which need attention and resubmission. Once NPMS staff has received the submission, which has passed the automated validation and completed the manual QC steps, staff will email the primary and technical contacts either notify them that the submission is moving to the next step in the processing workflow or to request additional information or re-submission.

LNG Plants and Breakout Tanks
For OPIDs with LNG plants or breakout tanks that have had changes other than additions or removal of the entire OPID, the operator must submit all plant/tank data to replace the existing data in the NPMS national layer. The full replacement-based submission must be accompanied by a cover letter, which includes questions regarding the changes since the last submission. The cover letter should clearly indicate that the plants/tanks are a full replacement of the existing data. For LNG plant submissions even if the submitted data is projected, the projection information (projection, datum, and units) as well

as a list of the states in which the submitted LNG plants fall must be included in the cover letter; this information provided in the cover letter assists NPMS staff in reviewing the data. The information for the primary and technical contacts for LNG plants for the OPID must also be included in the cover letter. For breakout tank submission, this projection information and contact information is not included in the cover letter because these details are captured as attribute values.

In addition to the cover letter the operator is expected to upload both spatial and attribute information for both LNG plants and breakout tanks. These two items may be combined into one data format, such as an Esri shapefile, or two separate complementary files, such as two Microsoft Excel files. Please see Section 4 within this document for details on the various combinations of spatial and attribute files. For operators' convenience when putting together LNG plant and/or breakout tank submissions, a template of the cover letter and required LNG plant/breakout tank attributes in shapefile format, Esri personal geodatabase, and Microsoft Excel may be downloaded from the "Summary of Required Components" page for LNG plants or breakout tanks on the NPMS website. The LNG or breakout tanks data package should be submitted to NPMS staff via the FTP Upload Tool.

2H. Type of Submission: Notification of Removal of All Data in the NPMS National Layer

Pipelines

In the case where all pipelines in the NPMS national layer for that OPID should be removed, the operator should notify NPMS staff by requesting the removal. This notification of removal should be submitted to NPMS staff via OSAVE. In the workflow, the operator will be prompted to indicate why the pipelines should be removed (e.g., reclassified and no longer reported to the NPMS; abandoned; divested to another operator/OPID). If the pipelines were divested to another operator, please include information about the acquiring company, such as the OPID/Operator Name, if known, and a contact name, email address and/or phone number so that NPMS staff can follow-up with the new operator about submitting under the new OPID. If pipelines are being removed or updated because is the pipelines were abandoned in place and any of the abandoned lines cross a Commercially Navigable Waterway or are offshore, the operator must complete an Abandonment Certification form for the abandoned pipelines that cross a Commercially Navigable Waterway or are located offshore. NPMS staff has created an Abandonment Certification Form Template to assist operators in fulfilling this requirement. This template can be found in Appendix A of the NPMS Operator Standards Manual or on the "Overview of Submission Process" page on the NPMS website.

Upon completion of the notification of removal workflow, a message confirming receipt of the notification is shown on the screen, and is also emailed to the logged in user, the primary contact, and the technical contact. Since some email systems may block this email sent from OSAVE or route it to the Junk/Clutter folder, please make sure to copy and save the on-screen message for your records until you are certain that you no longer need it.

LNG Plants and Breakout Tanks

If all LNG plants and/or breakout tanks for a particular OPID should be removed from the NPMS, the operator should notify NPMS staff by sending an email requesting the removal of an LNG plant or breakout tank OPID. If LNG plants were divested to another operator, please include information about the acquiring company, such as the OPID/Operator Name, if known, and a contact name, email address and/or phone number so that NPMS staff can follow-up with the new operator about submitting under the new OPID. Since submissions of breakout tanks are voluntary, NPMS staff does not intend to follow-up with the new operator; therefore, information about the company who acquired the tanks is not necessary.

2G. Purpose of the Primary, Technical, and Public Contacts

Pipelines

For pipeline OPIDs, there are three contacts - primary, technical, and public – that are associated with the OPID. The primary and technical contacts are used by NPMS staff; these contacts are not distributed. During the review and processing of the NPMS data submission, NPMS staff will reach out to the technical contact when clarification or re-submission is needed. If the communication is by email, NPMS staff will often include the primary contact as well. NPMS staff will also email both primary and technical contacts to alert the operator that the submission has passed the initial review and is progressing to the processing workflow step. The primary and technical contacts are also both included on the email NPMS staff sends alerting the operator that the submission data has been incorporated into the NPMS national layer and is viewable on the PIMMA and Public Viewer map viewers.

Once the data submission has completed the entire NPMS submission workflow, if a question about the pipeline data or OPID in general arises, NPMS staff will reach out to the primary contact for assistance. If the communication is by email, depending on the topic, the technical contact may also be included in the email. Additionally, the primary contact is the one to receive mass communication emails from NPMS staff to all operators, for instance, when a change in the submission workflow or requirements has occurred (such as the release of OSAVE) or when a reminder regarding submission dates is sent. Depending upon the topic, the technical contact may also be included on the mass communication emails.

The primary contact must be directly employed by the operating company. The technical contact may be directly employed by the operating company or may be a consultant/subcontractor that the operator designates to fill that role. In some cases, the same person that is directly employed by the operating company may fill the role of both the primary and technical contact. Within OSAVE the operator has the option to mark that the technical contact is the same person as the primary contact; the tool will copy over the information automatically, preventing the operator from expending duplicate effort.

Unlike the primary and technical contacts, the public contact is posted on the NPMS website and is available to every website visitor. Specifically, visitors may view this information via the Find Who's Operating Pipelines in Your Area tool, PIMMA, and the Public Viewer. The public contact may be a person or an entity; however, both a person and an entity cannot be entered. The person/entity

designated as the public contact should expect to receive communications from the general public, emergency responders as well as local, state, and federal government staff with questions regarding the operator's pipelines. Like the primary contact, the public contact must be directly employed by the operating company; the public contact may not be a consultant/subcontractor.

The primary, technical, and public contacts may be updated, as needed, anytime throughout the year. 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. When the operator updates the primary and technical contact information through OSAVE, the NPMS database source tables are edited directly; the operator is not editing a copy/staging table. As a result, changes should be made with extra care. On the other hand, while the operator is directly editing the source table for the public contact information, the exported 'snapshot in time' that PIMMA and the Public Viewer utilize is not automatically edited. The 'snapshot in time' version displayed on PIMMA and the Public Viewer is updated by NPMS staff, along with the other map viewer data, approximately every two months.

LNG Plants

For LNG plant OPIDs, there are two contacts – primary and technical – that are associated with the OPID. Similar to the roles of these two contacts for pipeline OPIDs, generally the technical contact is who NPMS staff will reach out to when clarification or re-submission is needed, while the primary contact receives general questions about the OPID after the submission is incorporated. The LNG plant primary and technical contacts also have the same rules as the pipeline contacts. The primary contact must be directly employed by the operating company, and the technical contact may be directly employed by the operating company or a designated representative from the consultant/subcontractor.

The primary and technical contacts are submitted each year through the LNG plant data submission. The contact information should be captured in the cover letter and included in the submission package. For operators' convenience, a template of the cover letter has been created and is downloadable from the "Summary of Required Components" page on the NPMS website. The primary and technical contact information 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 NPMS staff stating the OPID, which contact (i.e. primary, technical, or both) is being updated, and the contact's name, job title, company name, work mailing address, work phone number, and work email address.

There is no public contact associated with LNG plants.

Breakout Tanks

For breakout tanks OPIDs, only a primary contact is associated with the OPID. The primary contact must be directly employed by the operating company. The primary contact information is captured as part of the required attributes in the NPMS breakout tank data submission. The primary contact 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 NPMS staff stating the OPID, the contact's name, job title, company name, work mailing address, work phone number, and work email address.

There is no technical or public contact associated with breakout tanks.

2H. NPMS Staff Contact Information

Please direct questions about the following topics to NPMS staff (by email at npms@dot.gov or by phone at 703-317-6294):

- Preparing your submission (how-to or technical questions)
- Revising or updating your NPMS submission
- Submitting abandoned lines, lines recently acquired, or new construction
- Removing pipelines from the NPMS due to sale or reclassification
- All other questions about the "nuts and bolts" of making a NPMS submission

Please direct questions about the following topics to Amy Nelson (by email at amy.nelson@dot.gov or by phone at 202-493-0591):

- Whether you are required to make an NPMS submission
- Circumstances requiring an extension to your NPMS submission date
- Questions about PHMSA policies

3. Pipeline Submission Review and Processing

3A. Quality Control Review

Once we receive your NPMS submission, we perform a series of quality control checks to ensure that you have submitted the proper components and have properly categorized and described any changes. In summary, we perform the following checks:

- Review the questions answered via the OSAVE workflow for a summary of the types of changes that have occurred since the last submission.
- Review any complementary files the operator included to help us process the pipeline data more efficiently.
- Review geospatial data to determine:
  - If it was submitted in one of the four acceptable formats (CAD drawing file, coordinate pairs, shapefile, personal/file geodatabase).
  - If it is a CAD file, ensure that the file only contains pipeline data and relates to a projection.
  - If it is coordinate pairs, ensure that the coordinates are in Geographic Latitude Longitude Decimal Degrees.
  - If it is coordinate pairs, take the coordinates in the order that they are listed and convert to points and then into a linear feature.
  - If it is a shapefile, ensure that all individual file components that compose the shapefile have been submitted.
  - If the projection is not inherent to the geospatial data type, apply the projection information provided by the operator in the OSAVE workflow.
  - For all data types, check that the pipelines fall in the states identified in the PHMSA Annual Report.
- Review the attributes to determine:
  - If the attributes are submitted as an incorporated part of the geospatial data or if the attributes are submitted as a separate file.
  - If the attributes and geospatial data are submitted as separate files, the two are joined (using the values in the OPER_LINK or other operator designated attribute) to ensure that there are corresponding attributes for each pipeline feature in the geospatial data.
- Visually compare submission pipelines to the pipelines previously submitted that are currently in the NPMS national layer. Specific items for this step include:
  - Review answers to questions in the OSAVE workflow for specific details regarding pipelines that may have been abandoned, reclassified, constructed, removed from the ground, acquired from another operator, or divested to another operator.
  - Review revision code (REVIS_CD) attribute values to see if they accurately describe the pipeline when compared to the previously submitted pipeline data currently in the NPMS national layer for the OPID, and if they correspond to the responses provided in the OSAVE workflow questions.
  - For instance, if the OSAVE question response mentions that a particular pipeline or pipeline system was divested to another operator, we would look for those pipelines in the NPMS national layer and confirm that they have been omitted from the current year's submission.

    o   For instance, if the revision code attribute is "A" for addition to the NPMS, we would confirm that the pipeline(s) has not been previously submitted to the NPMS under that OPID.

3B. Notifying Operators of the Submission Status

Once the quality control steps are complete, we will send an email to the technical contact regarding the current status of the submission; the primary contact will be copied on the email for reference and response, if applicable. In general, there are four types of status emails that you may receive from us:

- (1) An email stating that all components were received and no additional information is needed at this time. Receiving this email means that there are no known issues or outstanding questions regarding the submission. This submission has passed the initial (automated and manual) QC steps and has advanced to the processing stage.
- (2) An email listing any missing or incorrect components. For instance, you would receive an email identifying if the revision code did not accurately reflect the pipeline or if a certificate of abandonment was missing for an abandoned pipeline that falls offshore or crosses a Commercially Navigable Waterway. We will likely request that you (re)submit the missing/incorrect components. If the issue is easy to resolve with some additional information, we may request that you supply the information in an email so we can edit the data on your behalf. Examples of when this situation would occur include when a single pipeline is missing the system name or when an invalid status code is utilized, such as "A" for active instead of "I" for in service. In this case, our email to you will clearly state what information we expect to receive. A submission in this state is then put on hold until the missing/incorrect components are resubmitted/resolved. **Please note that an NPMS submission is considered to be accepted as a valid submission only when all components have been received as correct; this also sets the received date of the submission.**
- (3) An email seeking clarification on specific items. As the submission is being reviewed, questions arise that do not necessarily relate to a missing or incorrect component.
    - o A common scenario that raises questions is when not all pipelines that were previously submitted to the NPMS are included in this year's submission without details regarding the status of these pipelines included in the OSAVE question responses. Were these pipelines reclassified and are no longer under PHMSA's jurisdiction? Were these pipelines abandoned and are being voluntarily opted out of the submission? Were the pipelines divested to another operator? Were the pipelines left out of this year's submission in error? In this scenario, we would send an email to both the primary and technical contacts asking for the status of the missing pipelines.
    - o Similarly, statements in the OSAVE questions responses, such as "pipelines were sold and not resubmitted," may not have sufficient detail for us to understand the situation. For example, it helps to know which pipelines (by system/subsystem/pipeline ID) specifically were sold and not resubmitted and to whom the pipelines were divested.
    - o Yet another common scenario is when a submission does not contain details in the OSAVE questions response regarding newly added pipelines, yet the submission contains pipelines marked with revision code "A" for additions to the NPMS. Upon comparison to the NPMS national layer, the newly added pipelines appear similar to pipelines already in the national layer under a different operator. Were these pipelines acquired or transferred from another OPID, and are these the same physical pipelines?

Or perhaps the pipelines are coincidently similar to but are not the same pipelines? Ideally in this situation, the operator would indicate in their OSAVE questions response that pipelines were purchased from another operating company and provide additional information regarding from whom, if possible. If the information is not included or is not sufficient, NPMS staff will send an email to the primary and technical contacts requesting clarification. A submission with outstanding questions is put on hold until clarification and the necessary information needed to move forward is provided. Often, these questions can be resolved with an email response or a phone call; however, sometimes these questions reveal a larger problem that requires certain components to be resubmitted.

- (4) An email that is a combination of #2 and #3.

3C. Processing a NPMS Submission

The next phase in the workflow includes the processing steps. During this phase, we add internal attributes, such as submission ID, submission date, and public contact ID, to assist with submission tracking. If necessary, the data is also re-projected from the submitted projection to the Geographic Latitude Longitude NAD83 coordinate system. With the help of a custom change detection tool, we process the data to relate the newly submitted pipelines to the pipelines already in the NPMS national layer. This step captures the history of a pipeline, such as a change in operator or pipeline status, which PHMSA may reference in the future. The Change Detection processing step may reveal issues that were not easily identifiable during the initial review stage, including duplicate geospatial data, missing pipelines that were too small to easily locate during the quality control review phase, and geometry errors in the geospatial data. Depending on its severity, the issue could be resolved with a response email clarifying the situation or a resubmission of the submission component; we will clearly state what we expect to receive.

3D. Finalizing Your Submission

The final step in the submission process is the incorporation of the submission data to the NPMS national layer. The previously submitted data is removed from the internal NPMS national layer, and the newly submitted data is added; please note that this update is not automatically seen on the NPMS map viewers. Approximately every two months, the NPMS national layer data in the NPMS map viewers (PIMMA, Public Viewer, and OSAVE) is updated. Depending on when the submission data is incorporated into the internal national layer in comparison to the map viewer update schedule, it could take up to two months to see the newly incorporated submission data in the NPMS map viewers. Once the incorporated submission is reflected in the updated map viewer data, the primary and technical contacts will receive an email from NPMS staff alerting them of the map viewer update with their OPID. If an error is identified in the incorporated data, please contact NPMS staff to discussion the specific situation and solution.

4. Submitting Your Geospatial and Attribute Data

To accommodate a range of capabilities, we accept the geospatial and attribute data for pipelines, LNG plants, and breakout tanks in several different combinations. There are three unique combinations for submitting geospatial and attribute data:

- Combination 1 – shapefile or geodatabase with incorporated attributes
- Combination 2 – shapefile or geodatabase or CAD drawing with separate attributes
- Combination 3 – coordinate pairs with separate attributes

4A. Shapefile or Geodatabase with Incorporated Attributes (Combination 1)

Some operators have mapping systems that allow the NPMS attributes to be incorporated directly into the geospatial data. The file format for this combination will be a shapefile or geodatabase that includes the NPMS attributes. For operators' convenience, a blank template in shapefile and Esri personal geodatabase formats has been created and is downloadable from the "Summary of Required Components" page for [pipelines](#), [LNG plants](#), or [breakout tanks](#) on the NPMS website. All pipelines should be submitted in a single file with a common projection. If you have separate files because of different projections, ideally you would re-project the data to a common projection/coordinate system, such as Geographic Latitude Longitude NAD83, and merge your pipelines into a single layer to be submitted to the NPMS. Submissions with multiple sets of geospatial data (such as one shapefile per pipeline) should be avoided; please contact us if this is unavoidable in your situation.

If you opt to use this combination of geospatial data with incorporated attributes, you should refer to the Pipeline Attribute Table, the LNG Plant Attribute Table, and the Breakout Tank Attribute Table in the [NPMS Operator Standards Manual](#) for a list of the required and voluntary attributes, attributes definitions, and applicable domain values. If submitting in this combination, the attributes should not be submitted in another format as well: doing so is an unnecessary duplication of effort. Please note that the OPER_LINK attribute is not required for this combination; the OPER_LINK value is used to link the geospatial and attribute data when they are submitted as separate components, which is not applicable in this situation.

4B. Shapefile, Geodatabase, or CAD Drawing with Separate Attributes (Combination 2)

Some operators have mapping systems that store geospatial data and internal attributes but do not have the capability to incorporate the NPMS attributes directly into their spatial data. If you are one of these operators, you will submit a geospatial mapping file and a separate attribute file. The geospatial file may be a shapefile, a geodatabase, or a CAD drawing file. All pipelines should be submitted in a single file with a common projection. Submissions with multiple sets of geospatial data (such as one shapefile per pipeline) should be avoided; please contact us if this is unavoidable in your situation. If submitting a CAD drawing file, please refer to [Section 9](#) of this document for specific file requirements.

If you opt to use this combination of geospatial data and a separate attributes file, you will need to enter the required attributes either in a Microsoft Excel file (preferred) or tab delimited or comma delimited

text document. For operators' convenience, blank templates in Excel format for pipelines, LNG plants, and breakout tanks have been created and are downloadable from the "Summary of Required Components" page for pipelines, LNG plants, and breakout tanks on the NPMS website. When submitting a separate attribute file, it is essential that the OPER_LINK (operator link) attribute be properly completed in both the geospatial file and the attribute file. The OPER_LINK attribute is discussed in more detail in Section 5 of this document. For more detailed information regarding the required and voluntary attributes, including definitions, please refer to the Pipeline Attribute Table, the LNG Plant Attribute Table, and the Breakout Tank Attribute Table in the NPMS Operator Standards Manual.

4C. Coordinate Pairs with Separate Attributes (Combination 3)

Some operators do not have access to a mapping system. If you are one of these operators, you are welcome to submit coordinate pairs representing the location and shape of your pipeline(s); we will build the pipeline line feature from the submitted coordinates. At a minimum, the pipe's starting point, any bend/change in direction in the pipeline, and the pipe's end point should be submitted. For LNG plants and breakout tanks, operator's should submit a single coordinate pair representing each plant/tank that NPMS staff will convert to a point feature. Each point/coordinate pair is represented by one latitude value and one longitude value. The coordinate pair must be in Decimal Degrees. If the coordinates are in Degrees, Minutes, Seconds format, they must be converted to Decimal Degrees before submitting to the NPMS. There are many free online conversion tools that can assist with this task (search the Internet for "convert DMS to DD"). The coordinate pair data must follow the formatting outlined in the NPMS Operator Standards Manual so that our internal tools are able to process the data. You may also refer to the example below to see how we handle coordinate data submissions. The datum and units of the geographic coordinate system will be captured in the OSAVE submission workflow for pipelines. Similarly, the datum and units of the geographic coordinate system will be captured in the cover letter for LNG plant submissions; the datum and units of geographic coordinate system will be captured directly as part of the attribute information for breakout tank submissions.

If you opt to use this combination of coordinate data with a separate attributes file, you will need to enter the required attributes either in a Microsoft Excel file (preferred) or tab delimited or comma delimited text document. For operators' convenience, blank templates in Excel format for pipelines, LNG plants, and breakout tanks have been created and are downloadable from the "Summary of Required Components" page for pipelines, LNG plants, or breakout tanks on the NPMS website. When submitting a separate attribute file, it is essential that the OPER_LINK (operator link) attribute be properly completed in both the geospatial file and the attribute file. The OPER_LINK attribute is discussed in more detail in Section 5 of this document. For more detailed information regarding the required and voluntary attributes, including definitions, please refer to the Pipeline Attribute Table, the LNG Plant Attribute Table, and Breakout Tank Attribute Table in the NPMS Operator Standards Manual.

Pipelines

In this example, the following coordinate pairs represent the operator's pipeline data. We would identify there are two pipeline features as indicated by the two OPER_LINK values.

When we receive this data, we plot the coordinates in our mapping system, taking into consideration the projection information indicated in the OSAVE submission workflow for pipelines.
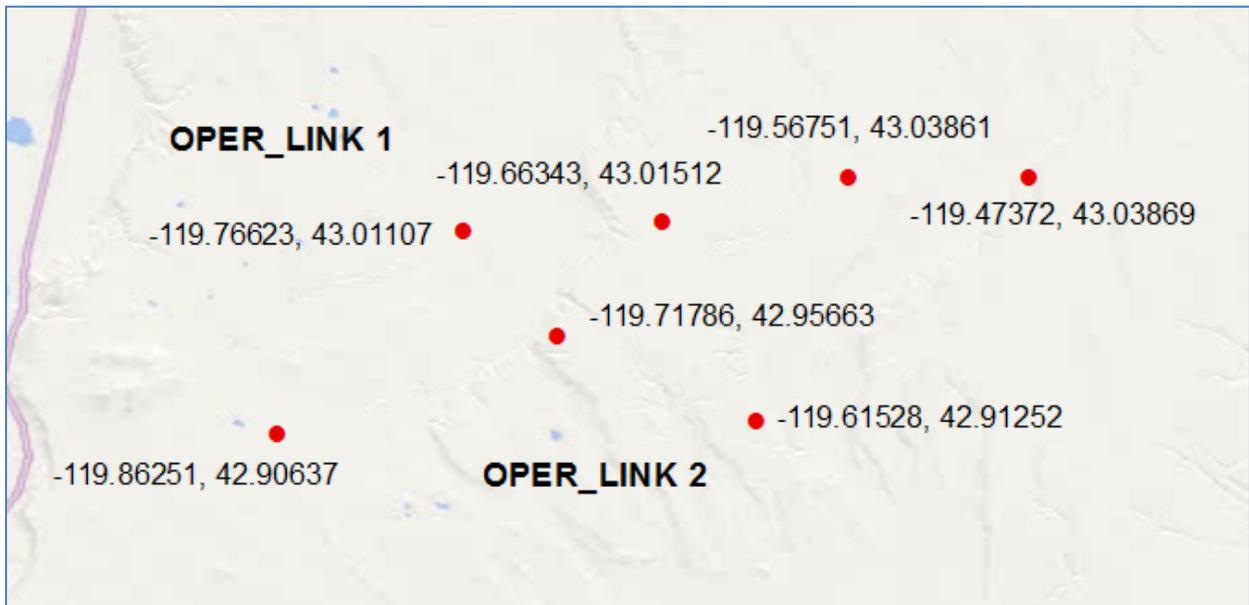

Once the coordinates are plotted as points, the points are converted to lines. The line(s) are built in the same order in which the coordinate pairs are listed in the Excel or text file.
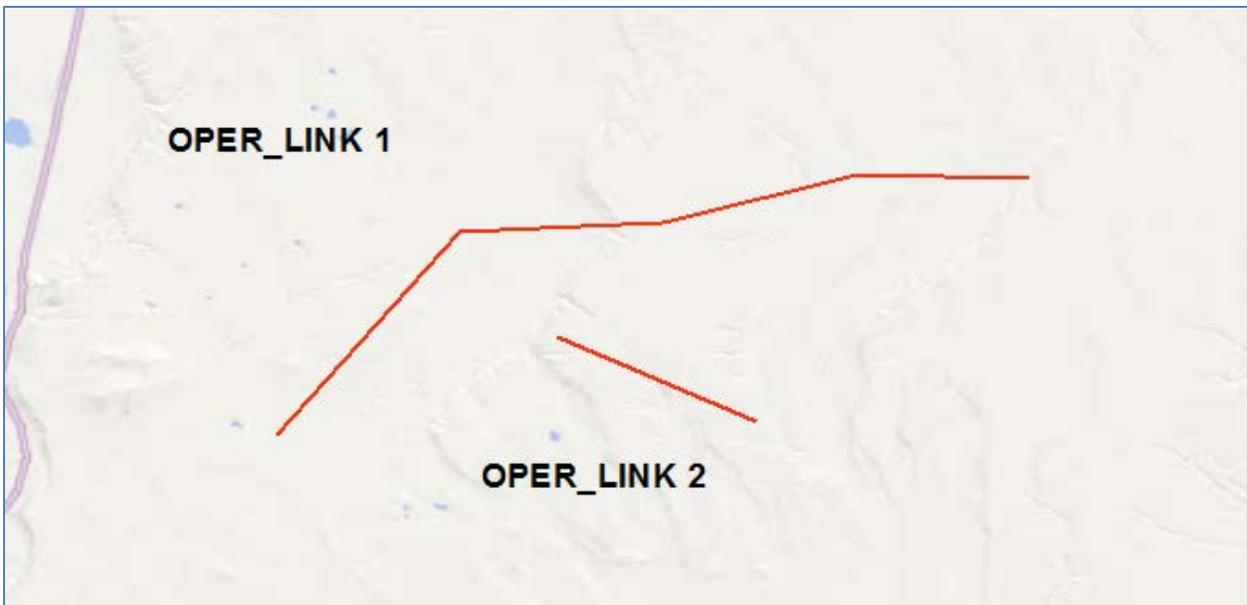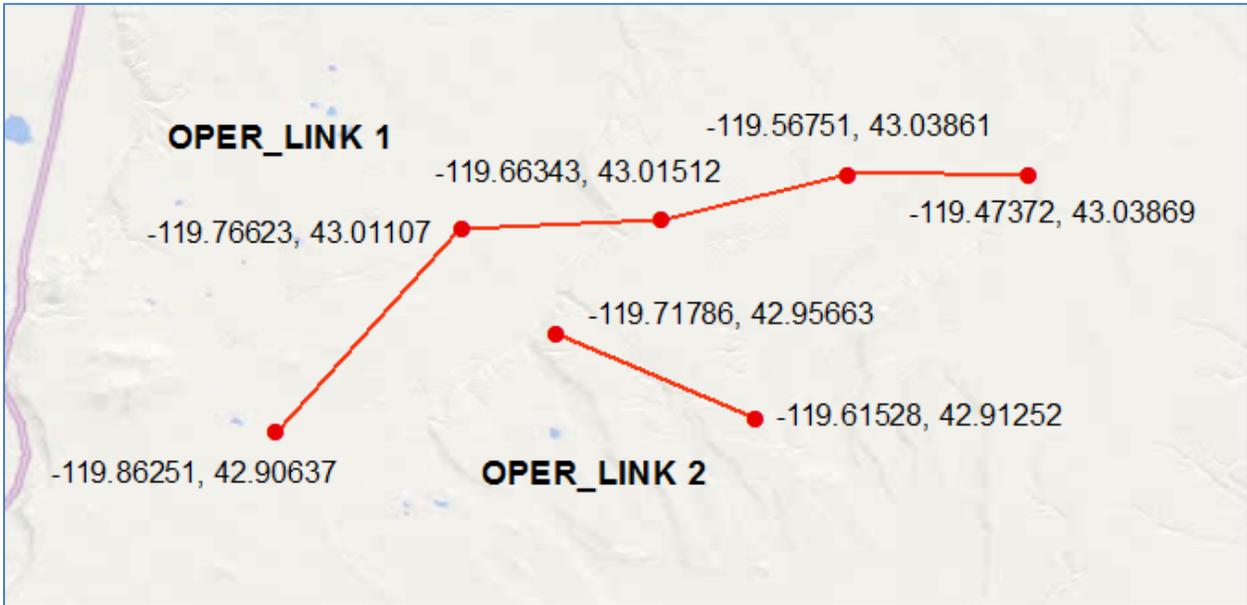
If the coordinate pairs are submitted in the wrong order, the line created will be depicted incorrectly. In some cases, we may be able to identify that there is a potential problem, but in other cases, we may not be able to determine that there is an issue. As a result, it is important that you review and confirm the order of the coordinates before submitting them. The following is an example of coordinates that were submitted with one coordinate pair in the wrong order and the resulting lines:

|	A	B	C
1	OPER_LINK	LONGITUDE	LATITUDE
2	1	-119.86251	42.90637
3	1	-119.66343	43.01512
4	1	-119.56751	43.03861
5	1	-119.47372	43.03869
6	1	-119.76623	43.01107
7	2	-119.71786	42.95663
8	2	-119.61528	42.91252
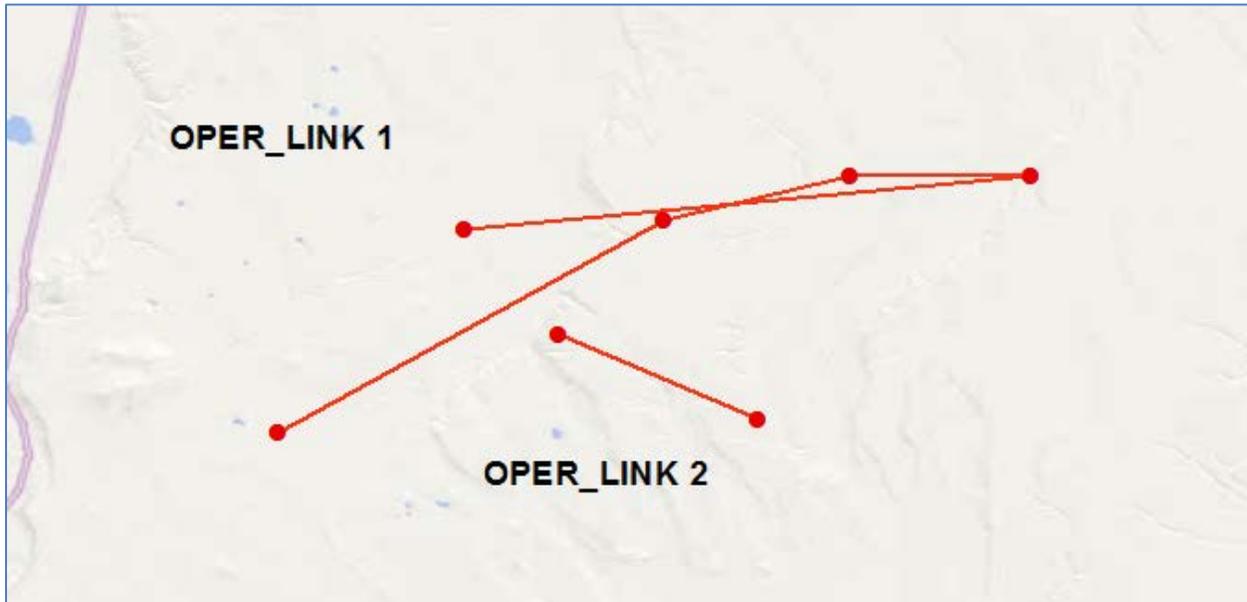
LNG Plants

The requirements for LNG plant submissions are the same as the requirements for pipeline coordinate points. The exception is that each coordinate pair should represent a single LNG plant. Each LNG plant coordinate pair should have a unique OPER_LINK. As with pipelines, the OPER_LINK is a unique (number) value that is strictly used to join the submitted LNG plant to the corresponding LNG attribute record in the submitted Excel/text file. The OPER_LINK field/values are dropped once the link has been made. Alternatively, like the pipeline's PLINE_ID (Pipeline ID) field, operators may also use this concept using the LNG_ID (LNG Plant ID) field, if a text string is preferred rather than a number to identify the unique facility (e.g., Plant A and Plant B rather than 01 and 02). The LNG_ID field is a required attribute value that is retained in the submissions and is included when the processed submission data is

incorporated into the NPMS national layer. The LNG_ID is often used by NPMS staff when questions arise regarding specific LNG plants; having the unique value ensures that all parties are referring to the same plant. The LNG_ID attribute is also displayed on the NPMS web map viewers, and users of the viewers may use this value to reference specific plants when they contact you with questions. Since the LNG_ID is used to reference specific plants, it is especially valuable when the LNG_ID is maintained from year to year. Please note that since each coordinate pair represents just one LNG plant, it does not matter in what order the coordinate pairs are listed in the Excel or text file. In the following example, the operator has three LNG plants:

OPID12345_coordinates.xlsx
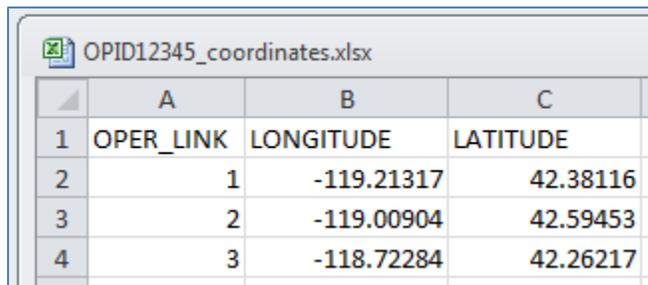
|	A	B	C
1	OPER_LINK	LONGITUDE	LATITUDE
2	1	-119.21317	42.38116
3	2	-119.00904	42.59453
4	3	-118.72284	42.26217
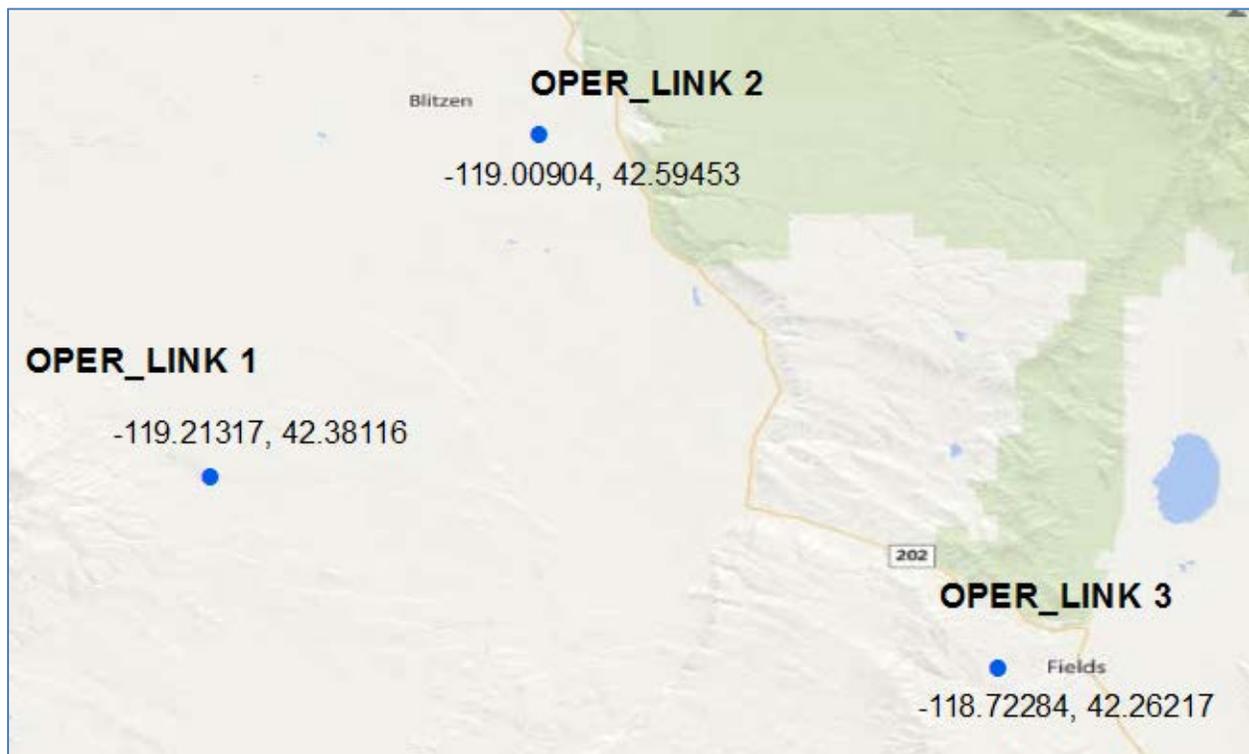
Breakout Tanks

The requirements for breakout tanks submissions are the same as the requirements for LNG coordinate points, where each coordinate pair should represent a single breakout tank. Each breakout tank coordinate pair should have a unique TANK_ID to identify the unique tank included in the submittal (e.g., Tank A and Tank B or 01 and 02). The TANK_ID field is a required attribute value that is retained in the submissions and is included when the processed submission data is incorporated into the NPMS national layer. The TANK_ID is often used by NPMS staff when questions arise regarding specific breakout tanks; having the unique value ensures that all parties are referring to the same tank. The TANK_ID attribute is also displayed on the NPMS web map viewers, and users of the viewers may use this value to reference specific tanks when they contact you with questions. Since the TANK_ID is used to reference specific tanks, it is especially valuable when the TANK_ID is maintained from year to year. Please note that since each coordinate pair represents just one breakout tank, it does not matter in what order the coordinate pairs are listed in the Excel or text file. Please refer to the above LNG Plant section for examples of what the coordinate pairs would look like in an Excel format and what the coordinate pairs would look like when converted to points by NPMS staff.

5. Purpose of the OPER_LINK Attribute

The OPER_LINK attribute is an essential part of the separate geospatial and attribute components. The OPER_LINK attribute is the way the attributes are linked to the geospatial data. In the following example, you can see how using the same OPER_LINK value for all lines in the geospatial data and attribute data is unusable and confusing to NPMS staff. Given data such as this, it is impossible to link the two sets of data together; as a result, the proper attributes cannot be associated with the correct geospatial data. Please note that in this example and the following examples, for read ability some of the non-required attributes are hidden from display in the Excel image.
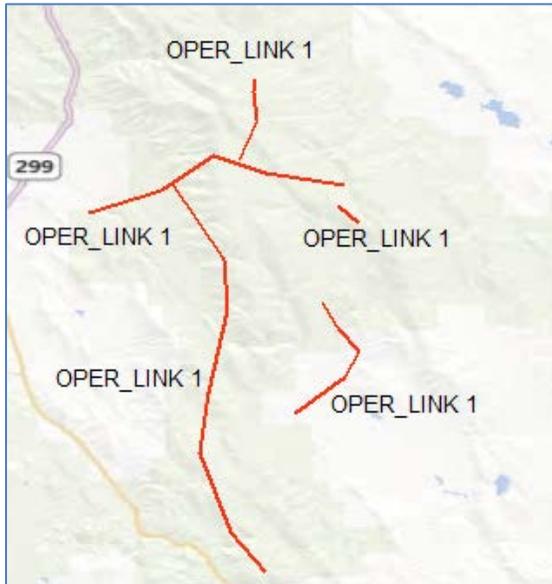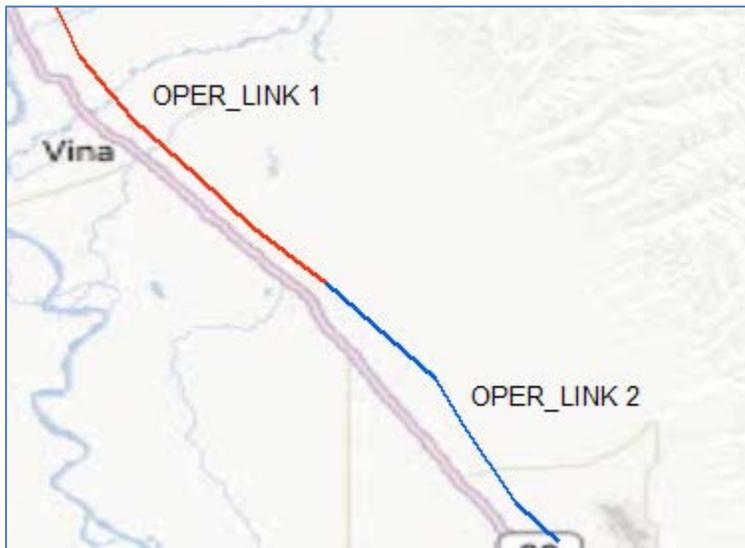

NPMS_Pipeline_Data_Submission_Attribute_Table

	A	B	C	D	E	F	G	H	M	N	O	P	Q
1	OPER_LINK	OPID	OPER_NM	SYS_NM	SUBSYS_NM	PLINE_ID	DIAMETER	COMMODITY	INTERSTATE	LOW_STRESS	STATUS_CD	QUALITY_CD	REVIS_CD
2	1	12345	NR PIPELINE COMPANY	NR-WEST		5	10	AA	N		D	V	T
3	1	12345	NR PIPELINE COMPANY	NR-WEST		4	24	AA	N	N	I	V	B
4	1	12345	NR PIPELINE COMPANY	NR-WEST		1	10	AA	N	N	I	E	B
5	1	12345	NR PIPELINE COMPANY	NR-WEST	FEEDER LINE	3	8	AA	N	Y	I	E	C
6	1	12345	NR PIPELINE COMPANY	NR-WEST	MAIN LINE	2	24	AA	N	N	I	E	B

Please note that the OPER_LINK attribute is different than the PLINE_ID attribute. The PLINE_ID attribute is a unique value that you assign to your pipeline segments. The value may be text, numbers, or a combination of the two. The OPER_LINK attribute is a unique, numeric value used to link the submitted geospatial data and attribute data. Unlike the OPER_LINK attribute, which is removed once the link between the geospatial and attribute data is established, the PLINE_ID attribute is retained in the submission data and is included when the processed submission data is incorporated into the NPMS national layer. The PLINE_ID is often used by NPMS staff when questions arise regarding specific pipeline segments; having the unique value ensures that all parties are referring to the same pipeline. The PLINE_ID attribute is also displayed on the NPMS web map viewers, and users of the viewers may use this value to reference specific pipelines when they contact you with questions. Since the PLINE_ID is used to reference specific pipelines, it is especially valuable when the PLINE_ID is maintained from

year to year. Having that consistency in the submission data helps NPMS staff understand how this year's submission data matches to the previous year's submission for historical tracking purposes

A similar issue involves geospatial data that is submitted without the OPER_LINK attribute or OPER_LINK values that do not match the corresponding geospatial and attribute data. In some cases, operators cannot modify their geospatial data to include an attribute named OPER_LINK. In this case, you are welcome to use any unique, numeric attribute in the geospatial data in place of the OPER_LINK attribute. If you would rather use a text-based attribute, you can use the PLINE_ID attribute in place of the OPER_LINK attribute. If you decide to use the PLINE_ID attribute, you must ensure that the substitute OPER_LINK/PLINE_ID attribute has values that match the attribute records in the Excel/text file. Additionally, to avoid the data being incorrectly linked, you must make a note in the OSAVE submission workflow (for pipelines submissions) or cover letter (for LNG plant and breakout tank submissions) alerting us to which attribute in the geospatial data should be used in place of the OPER_LINK value.

When attributes change along a pipeline, the pipeline must be broken into separate OPER_LINK values even if the segments are physically connected. A pipeline whose diameter changes from 10 inches to 12 inches, for instance, should be segmented at the point where the diameter change occurs.   Attributes for both segments must be included in the Excel/text file.
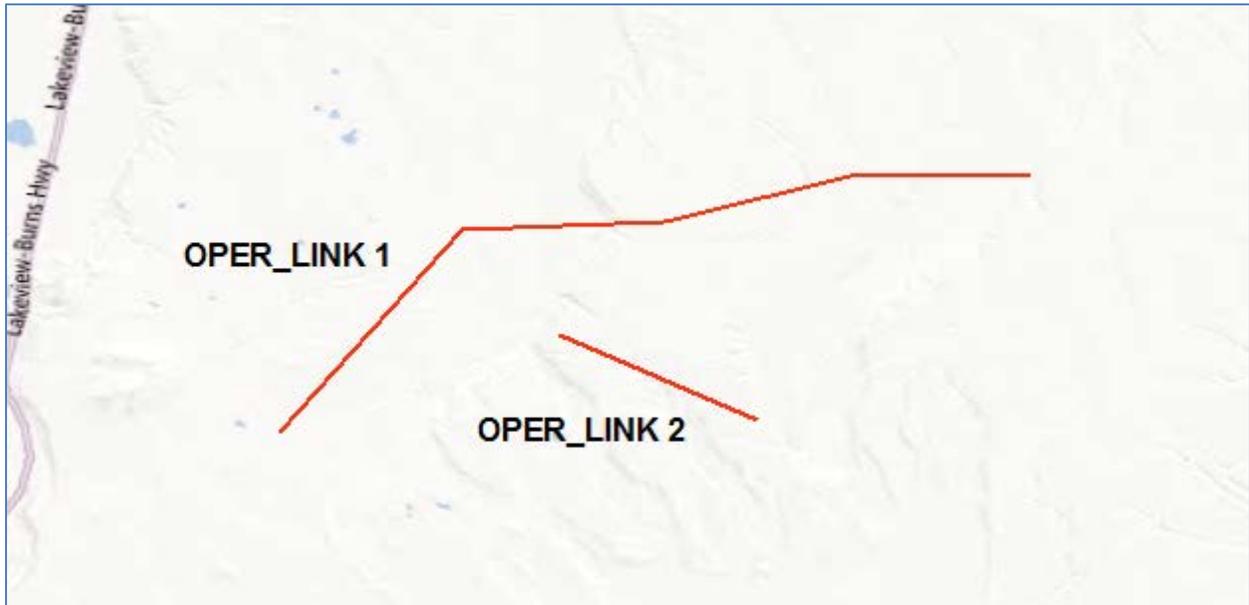

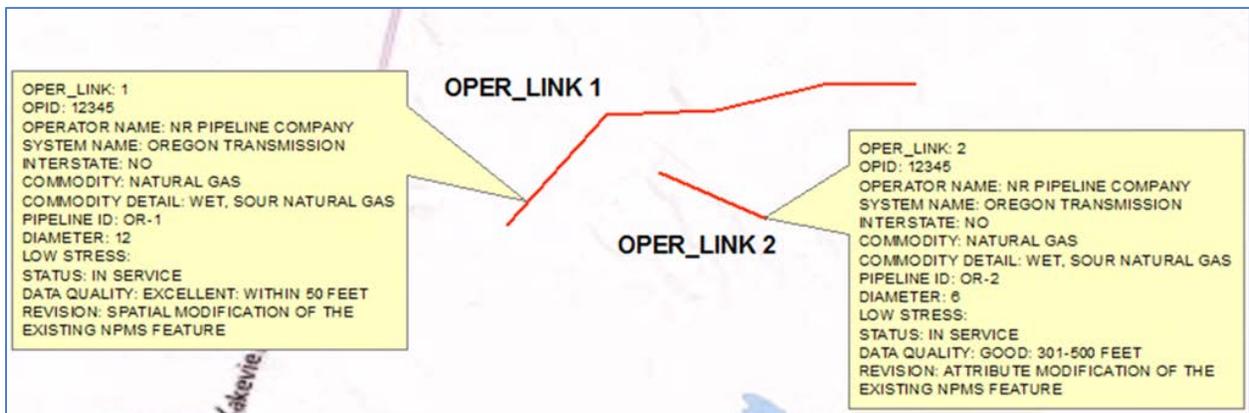|	A	B	C	D	E	F	G	H	M	N	O	P	Q
1	OPER_LINK	OPID	OPER_NM	SYS_NM	SUBSYS_NM	PLINE_ID	DIAMETER	COMMODITY	INTERSTATE	LOW_STRESS	STATUS_CD	QUALITY_CD	REVIS_CD
2	1	12345	NR PIPELINE COMPANY	VINA		65-VINA	12	EPG	Y		D	E	N
3	2	12345	NR PIPELINE COMPANY	VINA		64-VINA	10	EPG	Y		D	E	S

When we receive separate geospatial and attribute files as part of the submission package, we join the two sets of data based on the OPER_LINK. The result of this combination is geospatial data with integrated attributes.

SCENARIO 1

In referring to SCENARIO 1, the following images show how the geospatial and attributes inputs are linked to create geospatial data with joined attributes.

	A	B	C	D	E	F	G	H	I	M	N	O	P	Q
1	OPER_LINK	OPID	OPER_NM	SYS_NM	SUBSYS_NM	PLINE_ID	DIAMETER	COMMODITY	CMDTY_DTL1	INTERSTATE	LOW_STRESS	STATUS_CD	QUALITY_CD	REVIS_CD
2	1	12345	NR PIPELINE COMPANY	OREGON TRANSMISSION		OR-1	12	NG	NG4	N		I	E	S
3	2	12345	NR PIPELINE COMPANY	OREGON TRANSMISSION		OR-2	6	NG	NG4	N		I	G	A

SCENARIO 2

In referring to SCENARIO 2, the following images show how the geospatial and attributes inputs are linked to create geospatial data with joined attributes.
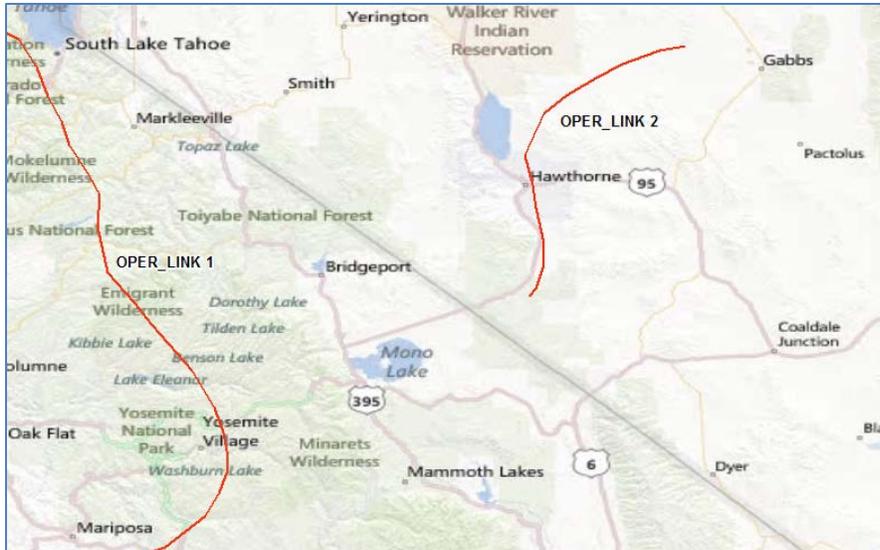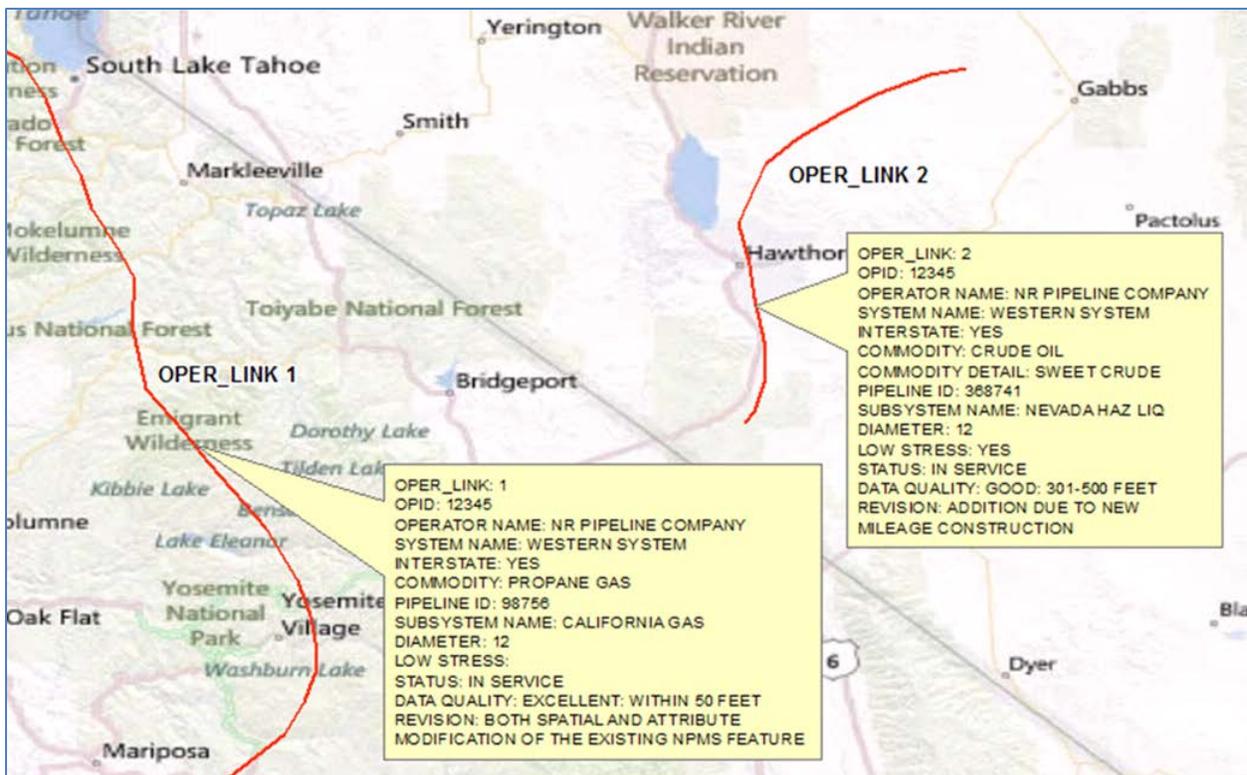

	A	B	C	D	E	F	G	H	I	M	N	O	P	Q
1	OPER_LINK	OPID	OPER_NM	SYS_NM	SUBSYS_NM	PLINE_ID	DIAMETER	COMMODITY	CMDTY_DTL1	INTERSTATE	LOW_STRESS	STATUS_CD	QUALITY_CD	REVIS_CD
2	1	12345	NR PIPELINE COMPANY	WESTERN SYSTEM	CALIFORNIA GAS	98756	12	PG		Y		I	E	B
3	2	12345	NR PIPELINE COMPANY	WESTERN SYSTEM	NEVADA HAZ LIQ	368741	12	CRD	CRW	Y	Y	I	G	C

6. Pipeline Changes to Convey to NPMS Staff

This section contains information about the types of changes in your pipeline assets that need special attention/additional detail when submitted to NPMS staff.

6B. Changes that Occurred in the Present Calendar Year

Just like your Annual Report, all NPMS data submissions should include your pipelines as of December 31 of the previous calendar year. If you sold a pipeline on January 1, 2016, you will still include this pipeline in your 2017 NPMS data submission. If PHMSA notices a difference between your NPMS data submission and Annual Report, your OPID will be flagged and you will be contacted by PHMSA to address the data discrepancy. See Section 1B of this document to read more about the relationship between an NPMS Submission and your Annual Report to PHMSA.

6C. Assets were Sold/Divested or are Now Operated Under a Different OPID

If assets were sold, divested, or operated under a different OPID as of December 31 of the previous calendar year, do not include these sold or divested pipelines in your new NPMS data submission. For instance, in the scenario where OPID 12345 sold some pipelines to OPID 98765 in October 2016, OPID 12345 would not include those pipelines in their 2017 data submission; rather, OPID 98765 would submit those pipelines to the NPMS in their 2017 data submission.

In order for NPMS staff to clearly understand and treat the pipelines in the NPMS national layer appropriately, it is essential that operators notify us when pipelines are sold, divested, or operated under a different OPID. In the appropriate OSAVE workflow question include a detailed description identifying the pipeline segment(s) that were sold, divested, or that changed operatorship. Operators can use previously submitted NPMS attributes (i.e., System Name, Sub System Name, or Pipeline ID) to identify the pipeline segments or describe the area where the pipelines are located (e.g., all NG lines in Allegheny County, PA have been sold to OPID 12345: NR Pipeline Company). NPMS staff will use this information to justify the change during the Change Detection process (read about the Change Detection process in Section 10). Otherwise, data submissions received, without detailed explanations for missing pipelines, will be put on hold until clarification is provided.

Be sure to provide NPMS staff the OPID, company name, and contact person of the new pipeline operator via the OSAVE workflow. If you do not know this information, speak with the person who filed your OPID's PHMSA Operator Registry Notification (Type D or Type G) for this sale, divesture, or change in operating entity.

6D. Jurisdictional Changes (Including Pressure Downgrades)

Only particular types of pipelines are required to be submitted to the NPMS. Since pipelines may move in and out of PHMSA's jurisdiction, please refer to the NPMS Operator Standards Manual for the definition of the types of pipelines that you are required to submit to the NPMS. An example of when a pipeline moves out of NPMS/PHMSA jurisdiction is when a pipeline's pressure is downgraded from the transmission category (which must be included in your NPMS submission) to a gathering category (which should not be included in your NPMS submission). As long as this change occurred during the last calendar year, do not include this pipeline in your new data submission. Include a detailed

description under the appropriate OSAVE workflow question to identify the pipeline segment(s) that no longer meet the NPMS submission requirement due to a jurisdictional change. Operators can use previously submitted NPMS attributes (i.e., System Name, Sub System Name, or Pipeline ID) to identify the pipeline segments or describe the area where the pipelines are located (e.g., all NG pipelines in Allegheny County, PA have been converted to gathering).

When a pipeline moves into NPMS/PHMSA jurisdiction (e.g., a gathering line's pressure is increased to re-characterize it as a transmission line), the pipeline segment(s) should only be included in your new NPMS data submission if the change occurred during the last calendar year. In these instances, the operator must select 'J' (addition to the NPMS national layer due to mileage that is new to PHMSA's jurisdiction) as the Revision Code attribute value for this pipeline segment, as well as include a note in the appropriate OSAVE workflow question to identify the new pipeline segment(s) that meet the NPMS submission requirement due to a jurisdictional change. You can use the submitted NPMS attributes (i.e., System Name, Sub System Name, or Pipeline ID) to identify the pipeline segments or describe the area where the pipelines are located (e.g., all NG lines in Allegheny County, PA have been added due to entering PHMSA jurisdiction). We will use this information to justify the change during the Change Detection process (read about the Change Detection process in [Section 10](#) of this document). Otherwise, data submissions received, without the correct revision code values and/or detailed explanations for newly added pipelines, will be put on hold until clarification is provided..

6E. Newly Acquired Pipelines or Pipelines that were Transferred to Your OPID

Pipelines that were newly acquired or transferred to your OPID during the last calendar year should be included in your new NPMS data submission. Select 'A' (addition to the NPMS national layer not related to construction that adds mileage or changes in jurisdiction) as the Revision Code attribute value for pipeline segments reflecting this scenario. Please note that although a pipeline may have been previously included in the NPMS national layer and does not seem to be an addition, the NPMS classifies it as an addition because it is a newly added pipeline to your OPID. A note should also be included in the appropriate OSAVE workflow question to identify the pipeline segment(s) that were purchased, acquired, or transferred. Operators can use the submitted NPMS attributes (i.e., System Name, Sub System Name, or Pipeline ID) to identify the pipeline segments or describe the area where the pipelines are located (e.g., all NG lines in Allegheny County, PA were acquired from OPID 12345: Pipeline Operating Company, LLC).   For pipelines that are acquired from an OPID not related to your company, please include the OPID, operator name, and contact information of the previous pipeline operator. For pipelines that were transferred from another OPID related to your company, please include the OPID and operator name of the previous pipeline operator.

We will use this information to justify the change during the Change Detection process (read about the Change Detection process in [Section 10](#) of this document). Otherwise, data submissions received, without the correct revision code values and detailed explanations for newly added pipelines that may or may not overlap with existing pipeline data currently in the NPMS national layer under a different OPID, will be put on hold until clarification is provided.

If you do not know this information, speak with the person who filed your OPID's PHMSA Operator Registry Notification (Type D or Type G) for this purchase, acquisition, or change in operating entity.

6F. Newly Constructed Pipelines

Pipelines that were newly constructed that add mileage to the OPID or is considered to be a re-route and went into service during the previous year should be included in your new NPMS data submission. For instance, pipelines that were constructed and went into service in 2016 should be included in your 2017 data submission. Pipelines that were constructed in 2016 but did not go into service until 2017 should be included in your 2018 data submission. Operators must select 'C' (addition due to construction that adds mileage or is a re-route) as the Revision Code attribute value for these types of pipeline segments, as well as include a note in the appropriate OSAVE workflow question to identify the pipeline segment(s) that were newly constructed. Operators can use the submitted NPMS attributes (i.e., System Name, Sub System Name, or Pipeline ID) to identify the pipeline segments or describe the area where the pipelines are located (e.g., all NG lines in Allegheny County, PA were newly constructed and went into service August of last year). We will use this information to justify the change during the Change Detection process (read about the Change Detection process in [Section 10](#) of this document). Otherwise, data submissions received, without the correct revision code values and/or detailed explanations for newly added pipelines, will be put on hold until clarification is provided.

In some cases, you might build a new portion of pipeline as an extension to an existing pipeline. This newly constructed portion must be submitted as its own pipeline segment in your NPMS submission. This new segment would have 'C' as the Revision Code attribute value. The existing pipeline would be a separate segment in your NPMS data submission and would have a revision code that most appropriately fit the changes (or lack thereof) that occurred on that specific segment.

Please note that newly constructed pipelines are related to the re-route of a pipeline or the creation of a pipeline in the physical location where a pipeline did not previously exist. If a pipeline or a portion of pipeline in an existing trench is replaced with a new pipeline in the same location (i.e., the old pipeline is physically removed and the new pipeline is laid in the same location), the NPMS does not consider this to be a newly constructed pipeline. In this situation, the Revision Code attribute value would be 'N' (no change to the existing NPMS feature), 'S' (spatial modification of the existing NPMS feature), 'T' (attribute modification of the existing NPMS feature), or 'B' (both a spatial and an attribute modification of the existing NPMS feature) depending on the other changes (or lack thereof) on the pipeline segment.

6G. Pipeline Segments with Replaced Casings

When you replace casings on an existing pipeline in the national layer for your OPID, the NPMS does not consider this to be a newly constructed pipeline. In this situation, the Revision Code attribute value would be 'N' (no change to the existing NPMS feature), 'S' (spatial modification of the existing NPMS feature), 'T' (attribute modification of the existing NPMS feature), or 'B' (both a spatial and an attribute modification of the existing NPMS feature) depending on the other changes (or lack thereof) on the pipeline.

6H. Resurveyed Lines or Location Corrections

Resurveyed lines or spatial location corrections should be included in your new NPMS data submission. If the spatial shape or location of the pipeline is the only change (i.e., no attribute values changed), operators should select 'S' (spatial modification of the existing NPMS feature) as the Revision Code attribute value for this pipeline segment. Please note that a change to your revision code is not the same as an attribute change to the pipeline segment.

If attribute values changed in addition to the spatial location or shape, operators should select 'B' (both a spatial and an attribute modification of the existing NPMS feature) as the Revision Code attribute value for this pipe segment. NPMS staff will use the Revision Code values to justify the changes to each pipeline segment during the Change Detection process (read about the Change Detection process in Section 10 of this document). Otherwise, data submissions received without the correct revision code values will be put on hold until clarification (or corrections, if necessary) is provided.

6I. Newly Abandoned Pipelines

Pipelines that were newly abandoned during the last calendar year should be included in your new NPMS data submission. Do not resubmit abandoned lines already included as abandoned in the NPMS national layer. If you are unsure what abandonments your OPID has reported to the NPMS, please send an email requesting a shapefile of your abandoned lines to us. You may also view pipelines previously reported as abandoned in the OSAVE web map viewer; there are separate layers in the Map Layers list for abandoned gas transmission pipelines and abandoned hazardous liquid pipelines. When submitting pipelines as abandoned, the Status Code attribute value must be changed to 'B' and the Commodity Code to EPL (empty liquid) or EPG (empty gas) to indicate that the pipeline is abandoned. If you are not sure whether your pipeline is considered to be abandoned according to the NPMS's definition of abandoned, refer to Section 7B of this document for the list and description of each pipeline status.

If the attribute value change is the only change that has occurred (i.e., no spatial data change), select 'T' (attribute modification of the existing NPMS feature) as the Revision Code attribute value for this pipeline segment. Please note that a change to your revision code is not the same as an attribute change to the pipeline segment. If attribute values changed in addition to the spatial location or shape, select 'B' (both a spatial and an attribute modification of the existing NPMS feature) as the Revision Code attribute value for this pipeline segment. Include a note in the appropriate OSAVE workflow question to explain if any such changes should be expected (e.g., all pipelines in Alaska have been abandoned in place). We will use this information to justify the change during the Change Detection process (read about the Change Detection process in Section 10 of this document). Otherwise, data submissions received, without the correct revision code values and/or detailed explanations in the appropriate OSAVE workflow question, will be put on hold until clarification is provided.

If any of the abandoned lines included in your submission cross a Commercially Navigable Waterway or are offshore, you will need to complete an Abandonment Certification form and include it with your NPMS data submission. PHMSA has created an Abandonment Certification Form Template to assist operators in fulfilling this requirement. This template can be found in Appendix B of the NPMS Operator Standards Manual or in the "Overview of Submission Process" page on the NPMS website.

If your review of previously abandoned pipelines reveals a pipeline was previously reported as abandoned when it was actually in service, idle, or retired during the last year, please include the pipeline in your NPMS data submission with the correct Status Code, and include a detailed note in the appropriate OSAVE workflow question explaining the situation and what pipelines are affected. NPMS staff will need to clearly understand the situation so that the pipelines currently marked as abandoned in the NPMS for your OPID may be removed from the NPMS national layer. Submissions received without clear explanation on how to proceed with the OPID's pipeline data may be put on hold until clarification is received regarding the changes we see in your submission.

6J. Attribute Changes

If there have been changes to the attribute values during the last year, update the necessary attribute value(s) and include the pipeline segment(s) in your data submission. If the attribute change is the only change (i.e., no spatial change), operators should select 'T' (attribute modification of the existing NPMS feature) as the Revision Code attribute value for these pipeline segments. Please note that a change to your revision code is not the same as an attribute change to the pipeline segment.

If attribute values changed in addition to the spatial shape or location, operators should select 'B' (both a spatial and an attribute modification of the existing NPMS feature) as the Revision Code attribute value for this pipeline segment. NPMS staff will use the Revision Code values to justify the changes to each pipeline segment during the Change Detection process (read about the Change Detection process in Section 10 of this document). Otherwise, data submissions received without the correct revision code values will be put on hold until clarification (or corrections, if necessary) is provided.

6K. Pipeline Segments with No Changes

In your NPMS data submission, there may be changes to some pipelines but not others. For those pipelines that have had no spatial or attribute changes during the last calendar year, include the same pipeline segments and attribute values that were used in your last NPMS data submission, but change the Revision Code attribute value to 'N' (No Change to the existing NPMS feature) for those pipeline segments. Pipelines that are submitted with a revision code indicating that no change has occurred when it appears that a change has occurred may cause us confusion; in this scenario NPMS staff may be unable to determine whether or not the submitted pipeline is the same pipeline currently in the NPMS national layer for the OPID and will need to reach out to the operator for confirmation. Be careful not to default to 'N' as the Revision Code if it is unknown if changes have occurred. To avoid a delay in the review and processing of your OPID's NPMS submission, please be sure to always apply the correct Revision Code attribute value that best applies to your pipeline segments.

7. Clarifying NPMS Attribute Choices

7A. Determining the Correct Revision Code Value

The Revision Code attribute is a required part of any NPMS data submission. If you have purchased, constructed, or modified a pipeline in some way, you must communicate this change to NPMS staff. Completing the Revision Code value accurately is critical for the Change Detection step to be successful. Using a Revision Code of 'N' when a spatial change has actually occurred may require NPMS staff to put your entire submission on hold and contact you for additional information or corrections to your submission. You can read more about the Change Detection process to understand how NPMS staff uses your Revision Code attribute value in Section 10 of this document.

NPMS staff recommends that operators calculate the Revision Code value to 'N' at the beginning of the year for each segment included in their NPMS data submission. As changes occur to the pipeline data throughout the year, operators can then modify that value(s) or record(s) as necessary with the attribute values that best apply to the pipeline segment(s). As new pipeline segment(s) are added to the OPID, operators should choose the correct Revision Code based on why the pipeline segment is being added:

- A = Addition (related to an acquisition or an error in not reporting the pipeline previously)
- C = Addition due to construction that adds new mileage to the OPID or is considered to be a re-route
- J = Addition due to mileage that is new to PHMSA's jurisdiction

As a pipeline is modified, choose the correct Revision Code based on what was modified:

- S = Spatial modification of the existing NPMS feature
- T = Attribute modification of the existing NPMS feature
- B = Both a spatial and an attribute modification of the existing NPMS feature

If a pipeline segment is not added or altered at any point during the year, the segment's attribute value will remain as 'N' to indicate that no changes were made. If all of your pipeline segments have an 'N' at the end of the calendar year, you can complete a Notification of No Changes in lieu of preparing an NPMS data submission. See Section 2D of this document to read more about preparing a Notification of No Changes for all pipelines in your OPID in lieu of an NPMS data submission.

A pipeline segment that is added/created simply because of a change in the segmentation should reflect the Revision Code a change to the pipeline – 'B,' 'T,' or 'S.' Do not record pipeline segments with Revision Code 'A' to note the change in segmentation.

7B. In Service, Idle, Abandoned, or Retired?

The following tips should help operators determine a pipeline's status:

- Status Code = 'I' - If the pipeline is operating normally, choose In Service.

- Status Code = 'D' - If the pipeline is not currently carrying a regulated commodity, but it still appears on the annual report to PHMSA and the pipeline may be brought back into service at some point in the future, choose Idle.
  - Note that the Commodity attribute value for idle pipelines should reflect the last transported commodity. The use of 'EPL' (empty liquid) and 'EPG' (empty gas) is reserved only for abandoned pipelines.
- Status Code = 'R' - If the pipeline is not currently carrying a regulated commodity, but it still appears on the annual report to PHMSA and there are **no** plans to bring it back into service at some point in the future, choose Retired.
  - Note that the Commodity attribute value for retired pipelines should reflect the last transported commodity. The use of 'EPL' (empty liquid) and 'EPG' (empty gas) is reserved only for abandoned pipelines.
- Status Code = 'B' - If the necessary paperwork to abandon a pipeline has been filed, and the pipeline does not appear in the annual report to PHMSA, choose Abandoned. An abandoned pipeline has been permanently removed from service and has been abandoned in place. Pipelines that were abandoned and were removed from the ground should not be included in your NPMS data submission. Be sure to submit abandoned lines only once (in the first NPMS submission after they are abandoned). Please refer to Section 6I of this document for additional details regarding the abandonment of pipelines.
  - Note that the Commodity attribute value for abandoned pipelines should reflect the type of commodity that was previously transported – select 'EPL' (empty liquid) for pipelines that previously transported a hazardous liquid commodity or select 'EPG' (empty gas) for pipelines that previously transported a gas commodity.

7C. System, Subsystem, and Pipeline ID (PLINE_ID) names

NPMS staff appreciates consistency in operators' System and Subsystem names as well as the Pipeline ID (PLINE_ID) values. This helps NPMS staff perform accurate Change Detection tasks and successfully track the operators' pipeline segments through the years. When possible, please use the exact same names for your systems and subsystems from year to year. If you name a system "Eastern System" one year and "Eastern Sys" the next, we cannot make an automatic match.

7D. Commodity Detail

Commodity detail is an optional attribute in NPMS submissions. However, it gives finer detail about the commodity the pipeline is transporting. Commodity detail is only applicable for the commodities 'CRD' (crude), 'PRD' (product), and 'NG' (natural gas). The commodity detail choices are listed in the Pipeline Attribute Table in the NPMS Operator Standards Manual.

7E. Interstate

Interstate is a required attribute in NPMS submissions. This attribute stores 'Y' for interstate pipelines and 'N' for intrastate pipelines. PHMSA defines an interstate pipeline as one that is regulated by the Federal Energy Regulatory Commission (FERC). The Interstate designation in the NPMS submission must match the designation included in the Annual Report.

7F. Low Stress

Low stress is a required attribute in NPMS submissions for in service pipelines transporting a hazardous liquid. These pipelines must have the value as 'Y' (yes) or 'N' (no) to indicate if the pipeline is low stress. PHMSA defines low stress pipelines as in service hazardous liquid pipelines that operate at 20% or less of SYMS. This attribute should be left blank for all ide/retired/abandoned hazardous liquid pipelines and all gas transmission pipelines.

7G. Best Practices for All Attributes

In order to expedite your submission processing and remain in compliance with the requirement to submit an acceptable NPMS submission each year, please ensure:

- You use only the approved values for each field;
- You complete all of the mandatory fields; and
- You keep text fields, such as System Name, Subsystem Name, and Pipeline ID (PLINE_ID), as consistent as possible through the years.

8. Tips for Accurate Spatial Representation of Pipelines

8A. Pipelines that Share a Right-of-Way

Each pipeline segment in the NPMS submission should represent a unique pipeline, not a pipeline right-of-way (ROW). For operators that have parallel lines that share a ROW, each pipeline needs to be represented separately in the data submission. For example, do not duplicate (copy/paste) the same pipeline feature geometry three times to represent three pipelines that share a ROW. The Subsystem Name or Pipeline ID (PLINE_ID) attributes should also indicate that each line is different.

8B. In-Plant Pipelines

Operators should not submit to the NPMS any pipelines within a plant. Such pipelines make the Change Detection process more difficult and do not benefit the NPMS national layer. If NPMS staff identifies pipelines that appear to be in-plant piping, the data submission will be placed on hold while NPMs staff contacts the operator to confirm and remove the data from the submission, if needed. Pipelines within a gas storage field are not considered in-plant piping. If you have questions about whether or not your pipelines are considered to be in-plant piping, please contact your PHMSA inspector or your regional PHMSA Community Assistance and Technical Services (CATS) representatives for assistance.

8C. Pipeline Segmentation

Please keep pipeline segmentation to a minimum, and keep it consistent. Unless an NPMS attribute is changing, there is no reason to segment a pipeline. Also, unless a pipeline attribute is changing from one year to the next, changes to pipeline segmentation over time should be avoided. If pipeline data is stored in a way where there is a lot of unnecessary segmentation, the data should be dissolved in a way where the results will be consistent from one year to the next.

Submissions with a lot of segmentation, or submissions where segmentation has drastically changed since the previous submission, require additional processing time during the Change Detection process. We will likely have more questions about how to accurately match pipeline segments in these submissions, which can result in unnecessary phone calls or emails asking you for clarification.

## 9. Tips for CAD Drawing Submissions

Some operators store their geospatial data in a CAD (Computer Aided Design) system. The output file is commonly referred to as a CAD file, CAD drawing file, or a drawing file (.dwg or dxf file extension). In order for NPMS staff to accept and process the geospatial component in CAD format, there are a few steps and precautions you need to take beforehand:

1) A coordinate system/projection must be associated with the data. The NAD83 geographic coordinate system is preferred for CAD submissions to the NPMS. For pipeline submissions the projection information is captured via the OSAVE submission workflow. For LNG plant submissions the projection information (projection, datum, and units) is captured in the cover letter. For breakout tank submissions the projection information is captured as attribute values in the required complementary attribute table.

2) The CAD drawing **MUST** be stripped of **ALL** data layers other than the pipelines/LNG plants/breakout tanks intended for submission to the NPMS. We will not be able to accept any CAD submission with other data layers included, such as roads or other non-NPMS pipeline-related facilities.

3) The attributes must be submitted separately from the geospatial data in the CAD drawing if the required NPMS attributes cannot be included within the CAD drawing. For operators' convenience, a template of the required pipeline/LNG plant/breakout tank attribute fields in shapefile format, Esri personal geodatabase, and Microsoft Excel have been created and are downloadable from the "Summary of Required Components" page for pipelines, LNG plants, or breakout tanks on the NPMs website

4) There must be unique information stored in the layer properties of the pipeline layer(s) that NPMS staff can use when joining the attributes from the Excel/text attribute file to the correct pipeline segments in the CAD drawing. Each unique record in the Excel/text attribute file requires an OPER_LINK (number) value (please refer to Section 5 of this document for additional information about the OPER_LINK attribute). The number assigned to this field in the Excel/text attribute file must also be present in the Layer Properties of the corresponding pipeline segment(s). Operators may also apply this concept using the PLINE_ID/LNG_ID/TANK_ID field if a text string is preferred rather than a number to identify the unique systems (e.g., Line A and Line B rather than 01 and 02). Adding the OPER_LINK or PLINE_ID/LNG_ID/TANK_ID values to the drawing as annotation is not acceptable. Operators can use one of the following methods to make sure the submission will be accepted:

> **a.** Calculate a specific Pipeline Layer Property to equal the values assigned to the OPER_LINK or PLINE_ID/LNG_ID/TANK_ID fields in the Excel/text attribute file. For example, calculate the Layer Description of each pipeline segment in the CAD drawing to the value you assigned to the corresponding OPER_LINK or PLINE_ID in the Excel/text attribute file. As a result, the attributes associated with OPERLINK = 123 describe the pipeline with Layer Description = 123. This may require you to separate the pipeline segments into separate layers in the drawing so each layer's description will have the same unique value as its corresponding attribute record in the Excel/text file.

b. Choose a value for the OPER_LINK or PLINE_ID/LNG_ID/TANK_ID field that matches a unique value already stored in the corresponding pipeline segment's Layer Properties (i.e. the handle value). If you choose to use values already stored in the Pipeline Layer Properties, they must be unique to the pipeline segment or group of segments that correspond to that one specific attribute record in the Excel/text file. This is the only way NPMS staff will be able to assure the correct attribute records in the Excel/text file are joined to the correct pipeline segments in the CAD file.

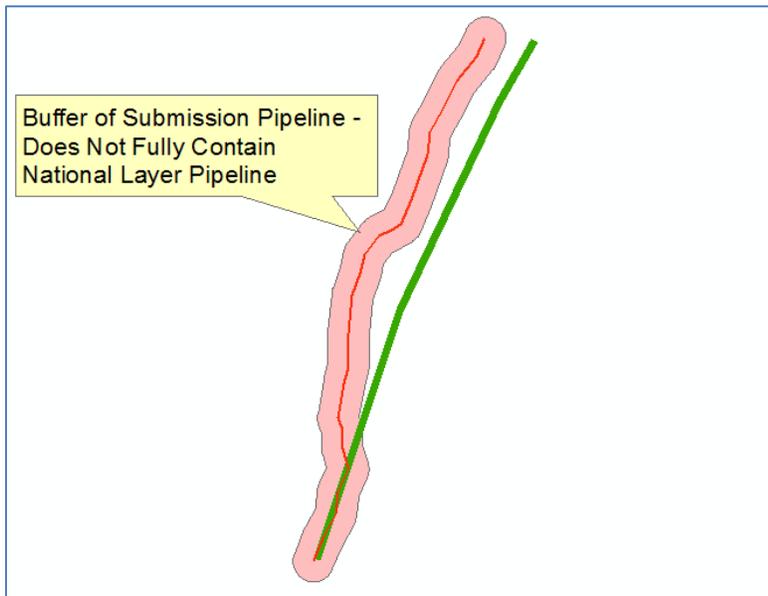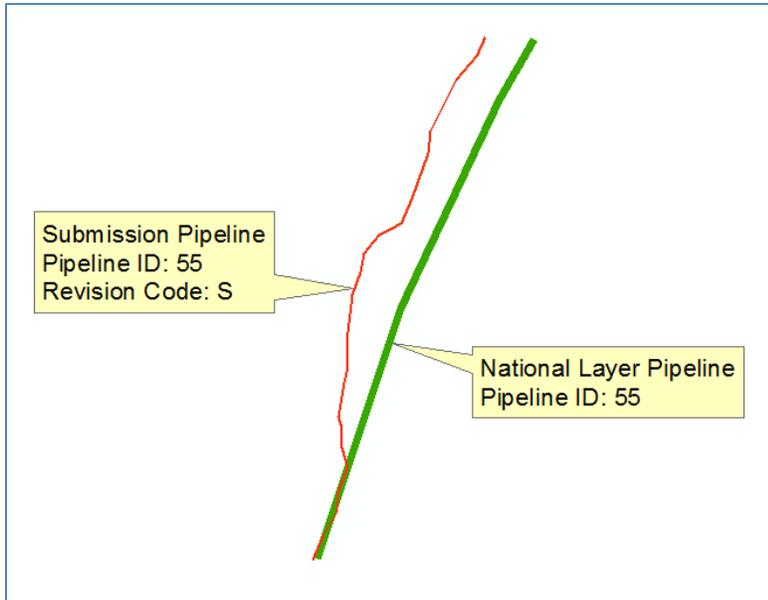## 10. Role and Overview of Change Detection

NPMS staff utilizes a custom tool, called Change Detection, to link newly submitted pipelines to pipelines in the NPMS national layer. Linking the pipelines in this manner from year-to-year builds a history of the pipelines that tracks and displays changes over time. Changes of interest include the transfer of the pipelines from one operator to another, changes in commodities and status, and the addition of pipelines due to new construction. The Change Detection process begins with the tool's automated attempt to match this year's data to existing data. In simple terms, for each line segment in the submission, the tool builds a buffer around the feature and looks to see what pipelines in the NPMS national layer fall within the buffer. If a national layer pipeline is found within the buffer of the submission pipeline, the national layer feature is then cross-buffered to check if it also captures the submission feature. Since the purpose is to identify similar pipelines, including their length, this cross-buffering prevents a long pipeline from being matched to a relatively short pipeline simply because it falls within the buffer.
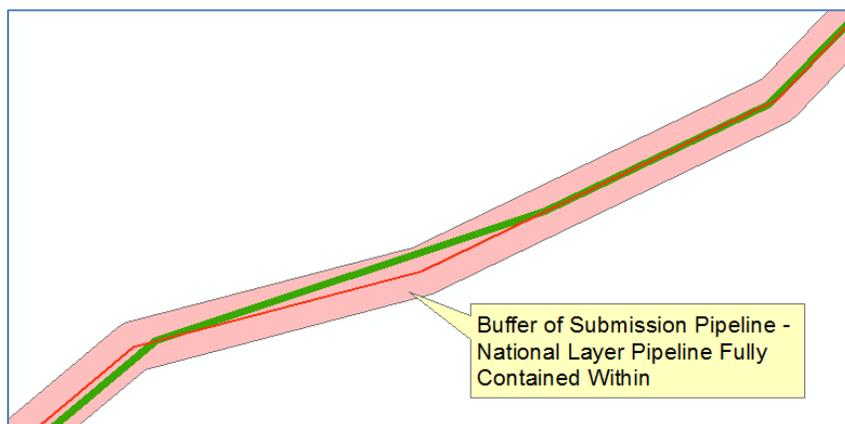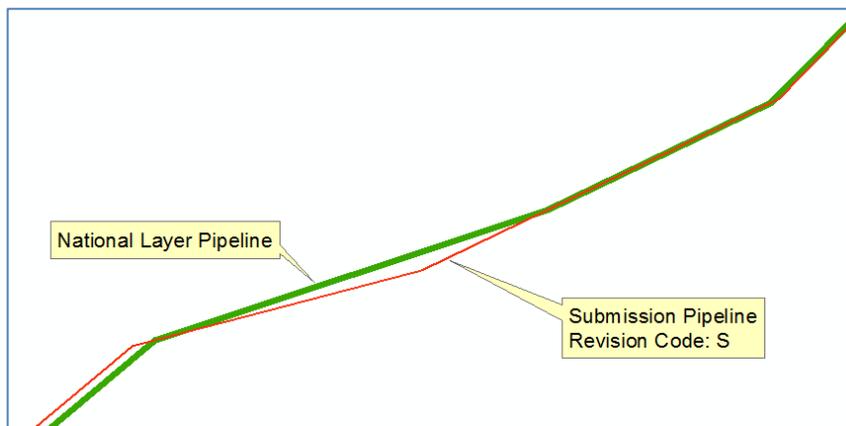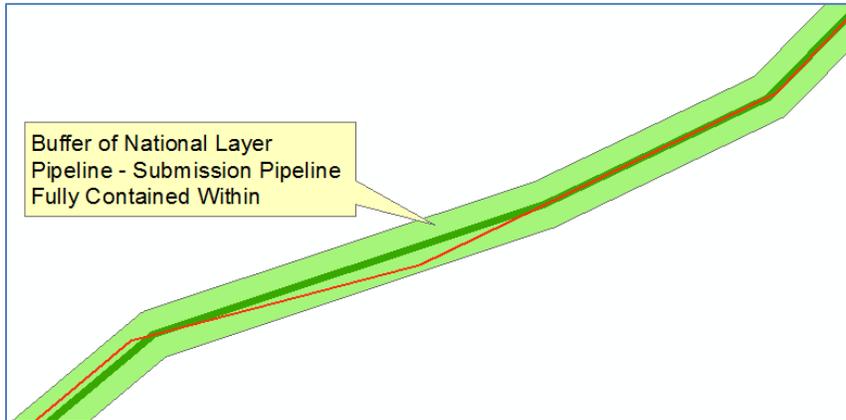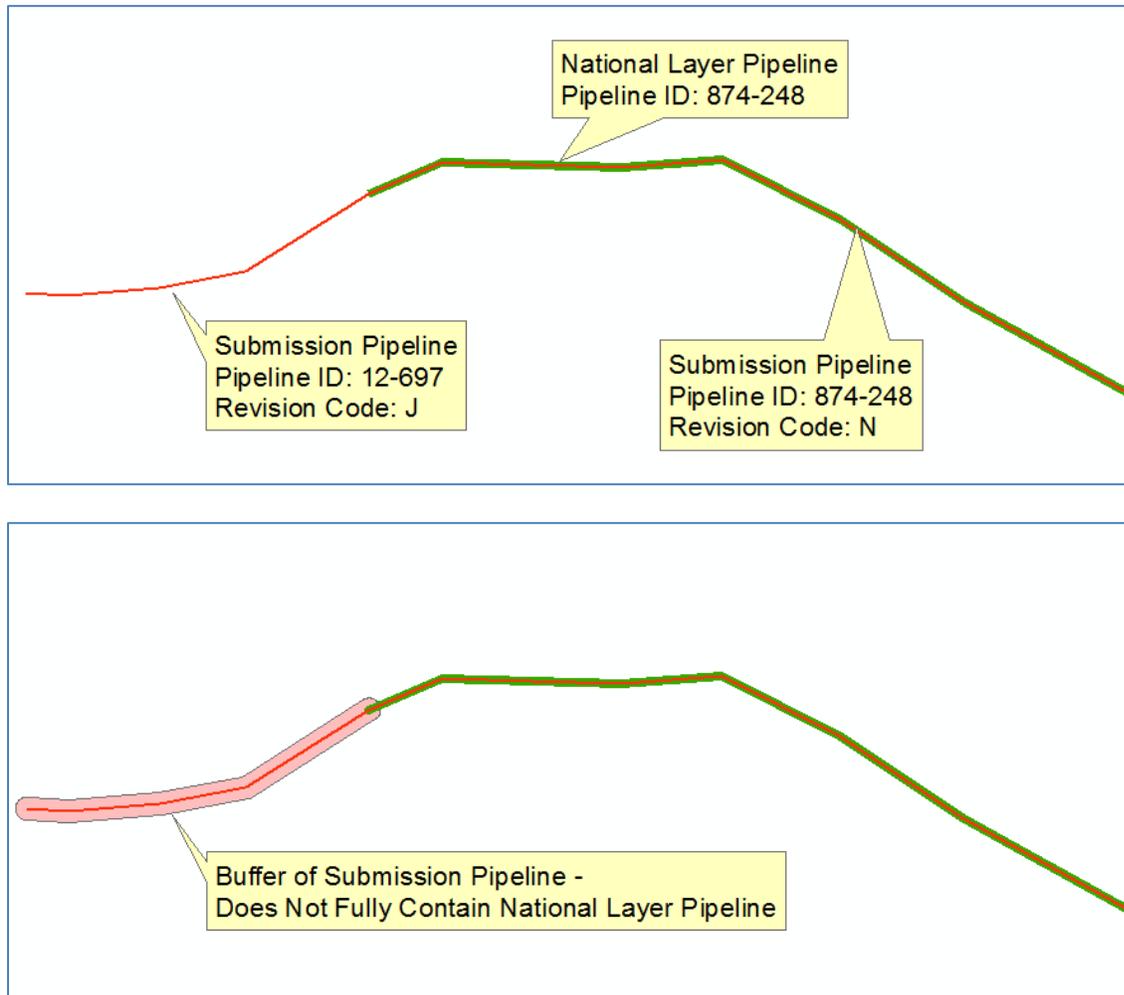
If a similar match is found, the tool links the two pipelines. If no match is found, the tool flags the submission pipeline for manual review.   The tool operates on a series of detailed-use cases that dictate how the tool should treat each matched and unmatched scenario. These use cases help ensure that the right pipelines are being matched. For instance, just because a pipeline in the NPMS national layer is similar to a submitted pipeline, it does not mean that the pipelines should be matched; when matching the data, the use cases take into consideration the OPID of both the submission and national layer data and the submission pipeline's revision code attribute value.
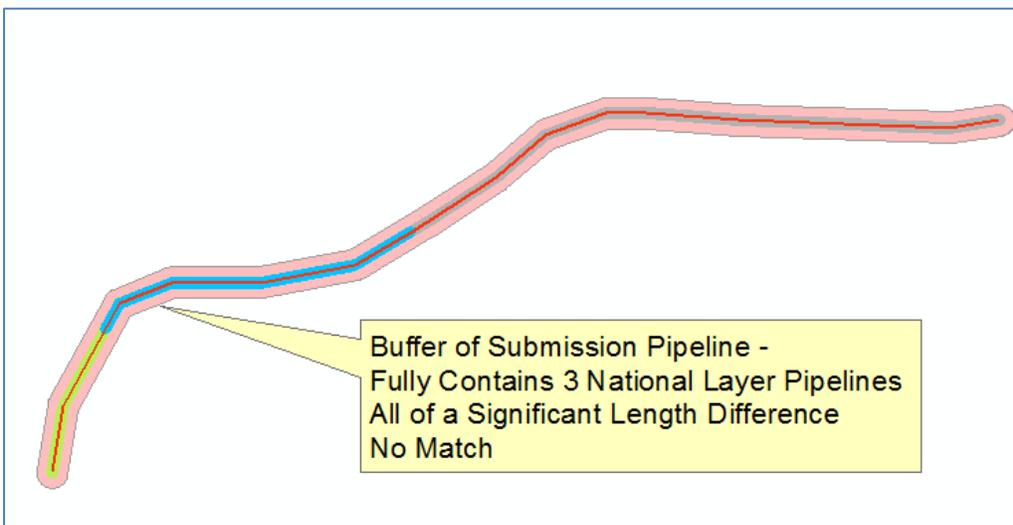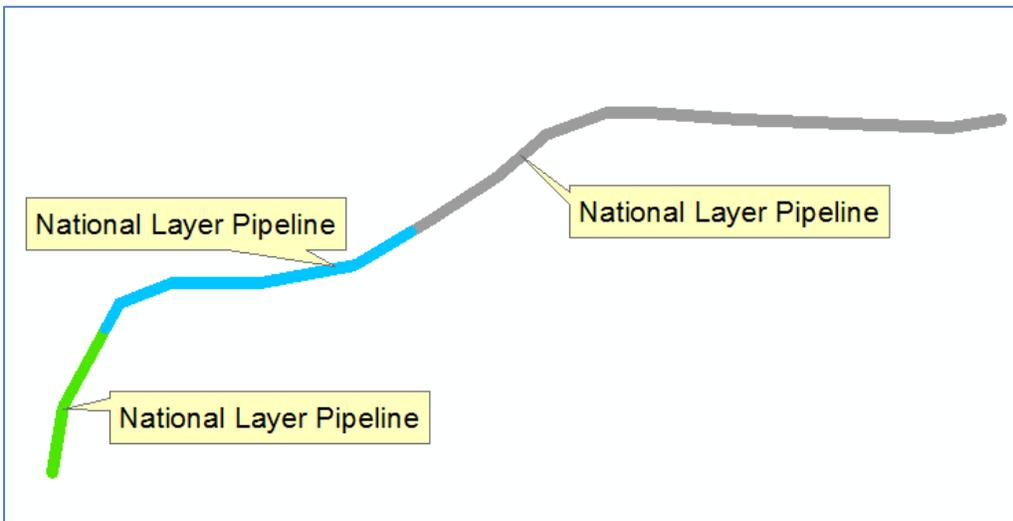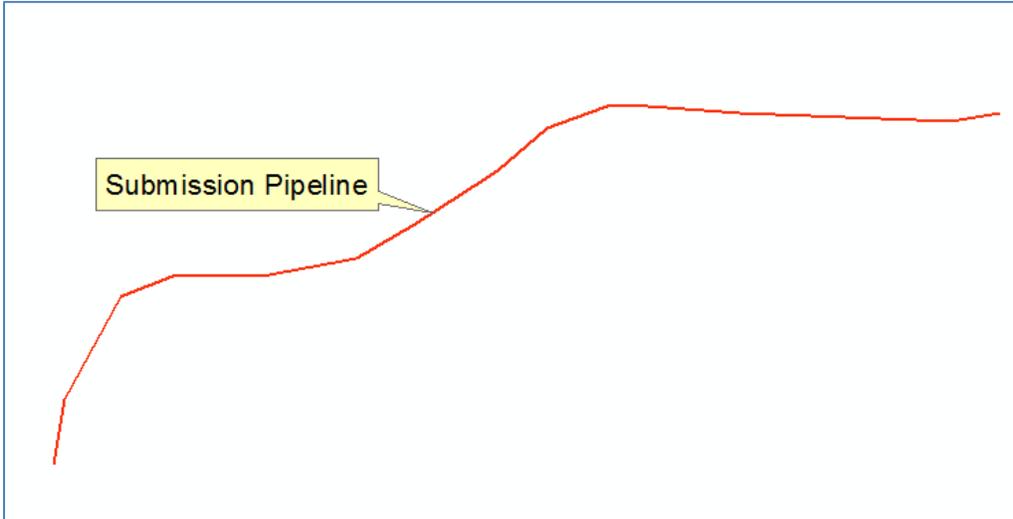
Unmatched pipelines (both unmatched submission pipelines and unmatched NPMS national layer pipelines) are flagged for our review. The unmatched pipelines are associated with various use cases to help us assess the situation. For instance, an unmatched submission pipeline with a revision code of 'S' (spatial modification of the existing NPMS feature) is categorized as a different use case than a submission pipeline with the revision code of 'J' (addition due to mileage that is new to PHMSA's jurisdiction). In the case of the pipeline with the 'S' revision code, it would have been expected that the automated check function would have found a match. Since the national layer pipeline was not captured in the automated buffering of the submission pipeline, it is likely that the corresponding national layer pipeline is too different from the submission pipeline to automatically be considered a match. We would review this submission pipeline and attempt to manually match it to an existing national layer pipeline. If we are unable to find a match, we will contact you to determine what the appropriate revision code should be (i.e., 'J' for new to PHMSA's jurisdiction, 'C' for new construction that adds mileage or is considered to be a re-route, or 'A' for addition due to pipeline purchase or inadvertently forgotten in the past).

Submission Pipeline
Pipeline ID: 55
Revision Code: S

National Layer Pipeline
Pipeline ID: 55

Buffer of Submission Pipeline -
Does Not Fully Contain
National Layer Pipeline

For pipelines submitted with the 'J' revision code, it is not surprising and actually preferred that the automated process fails to locate an acceptable match in the national layer. Since this revision code means that the pipeline is being added to the NPMS since the last submission, it should not have a corresponding pipeline in the national layer. In this case, we will confirm the tool's finding and mark the submission pipeline as newly added. If a likely match is identified, then we would consult the notes in the NPMS cover/transmittal letter and contact you for clarification. Is this the same pipeline and, therefore, the revision code is incorrect? Or is this a different pipeline? If so, what is the status of the existing pipeline in the national layer that was the potential match (i.e., why wasn't this pipeline resubmitted)?

National Layer Pipeline
Pipeline ID: 874-248

Submission Pipeline
Pipeline ID: 12-697
Revision Code: J

Submission Pipeline
Pipeline ID: 874-248
Revision Code: N

Buffer of Submission Pipeline -
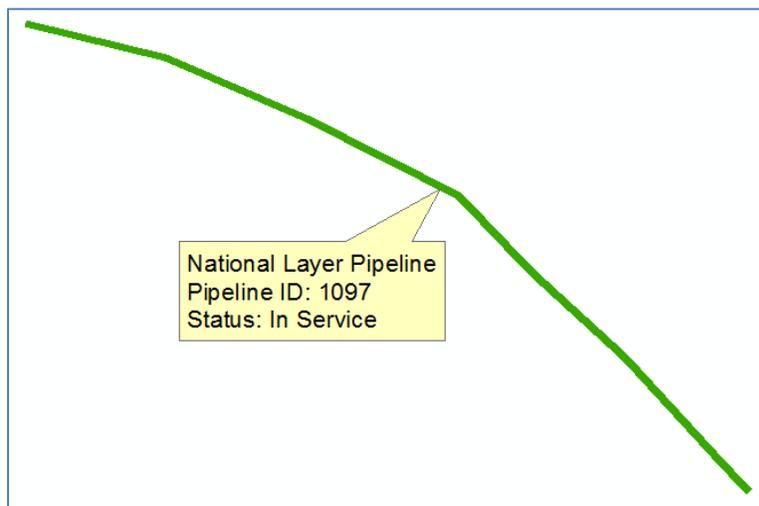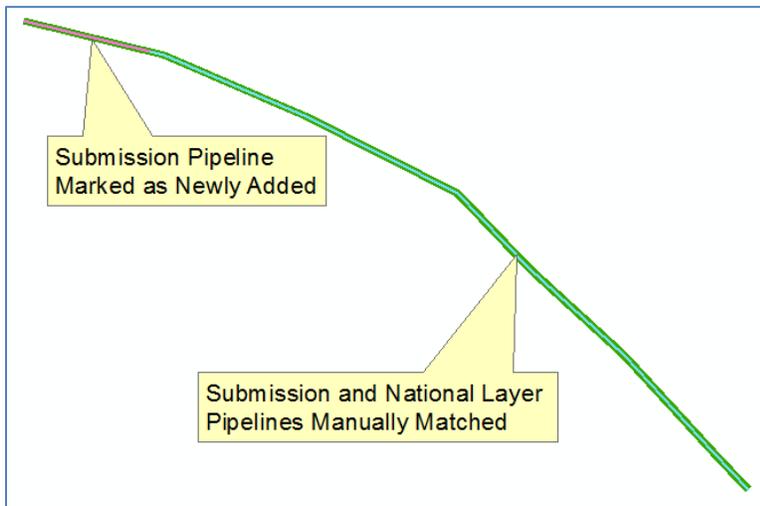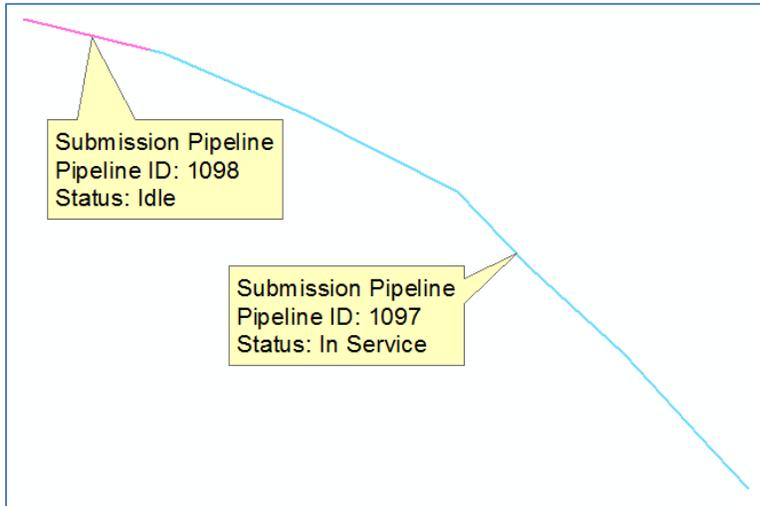Does Not Fully Contain National Layer Pipeline

Segmentation of the submission data in relation to the national layer data greatly impacts how successful the Change Detection tool is at automatically matching the two sets of data. For instance, when a pipeline was originally submitted as a single segment and is then submitted as three segments (even though there have been no changes in the NPMS attributes), the tool is unable to match any of the submission segments to the national layer segments. NPMS staff has to review these pipelines individually and manually match one of the submission segments to the single national layer segment. Since a national layer segment may participate in only one match, the other two submission segments are marked with the use case that defines the submission segments as newly added. A similar situation occurs in the reverse scenario. When the national layer pipeline is composed of three segments and the submission pipeline is a single segment, the tool is unable to create a match. NPSM staff has to manually match the submission segment to one of the three national layer segments; the remaining two national layer segments would be marked with the use case that will delete the national layer segments from the national layer. While this may be minimal effort for us with a submission that has very low mileage, it is a significant effort when you consider the thousands of miles of pipelines that we process each year. This lack of automated matching and resulting manual matching is why we request that the segmentation remain as consistent as possible from year-to-year.

Submission Pipeline

National Layer Pipeline

National Layer Pipeline

National Layer Pipeline

Buffer of Submission Pipeline -
Fully Contains 3 National Layer Pipelines
All of a Significant Length Difference
No Match

Since the use cases depend upon the revision code attribute value, it is essential that the revision code accurately captures what changes occurred to the pipeline segment since the last submission. If the segment requires manual matching, it is also critical that we can rely on the revision code so that poor assumptions are not made. Having accurate revision codes also helps operators avoid receiving emails from NPMS staff asking for clarification about what is occurring at a specific location. Similarly, without having to reach out to operators for clarification or edits, NPMS staff can process submissions faster and can incorporate them into the NPMS national layer more quickly.

In some cases, a pipeline is segmented to accommodate changes in an attribute since the last submission. For instance, this can occur when a portion of the pipeline has changed status from in service to idle. Since the status of the pipeline is one of the attributes included in the NPMS, the pipeline must be segmented at the point where the pipeline goes from in-service to idle. In this situation, the revision code should be set to 'B' to indicate that there is both a spatial and an attribute change since the last submission. In this scenario, for the submission segment that retains the idle status, the revision code should be 'N' to indicate that there have been no other changes to the pipeline (the change to the segmentation should not be recorded as a change). When the data is manually matched in the Change Detection step, the submission segment with the longest portion of the original segment would be matched to the existing national layer segment. The other submission segment that has spatially changed due to segmentation would simply be added to the OPID.

National Layer Pipeline
Pipeline ID: 1097
Status: In Service

Submission Pipeline
Pipeline ID: 1098
Status: Idle

Submission Pipeline
Pipeline ID: 1097
Status: In Service

Submission Pipeline
Marked as Newly Added

Submission and National Layer
Pipelines Manually Matched

It is not uncommon for pipelines to be acquired and, thus, be reported under a different operator. For NPMS submissions, pipelines transferred from one OPID to another OPID under the same parent company should be treated in the same manner as pipelines that are acquired from an operator not associated with the same parent company as the NPMS submitter. In order to assist NPMS staff, these situations should be clearly detailed in the appropriate OSAVE workflow question. For operators including pipelines in their data submission that were acquired from another owner/operator, these pipelines should be marked with the revision code 'A' to indicate that it is an addition to the NPMS. Even if these pipelines were previously included to the NPMS under a different OPID, these pipelines would be submitted with revision code 'A' because they are new to your OPID. During the Change Detection step, the tool will attempt to automatically match the submission data to national layer pipelines regardless of the OPID of the national layer pipeline data. The tool has specific rules it follows where it first attempts to match the submission segment to a national layer segment of the same OPID. If no match is found, the tool then attempts to match the submission segment to a national layer segment of any OPID. If a potential match related to another OPID is found, the tool flags the potential match as needing further verification. Based on information provided in the OSAVE workflow questions

51

by the pipeline buyer and seller, we will confirm if the potential match is valid. If there are questions regarding the validity of the match, we will contact the submitter/buyer for clarification before accepting or rejecting the match.
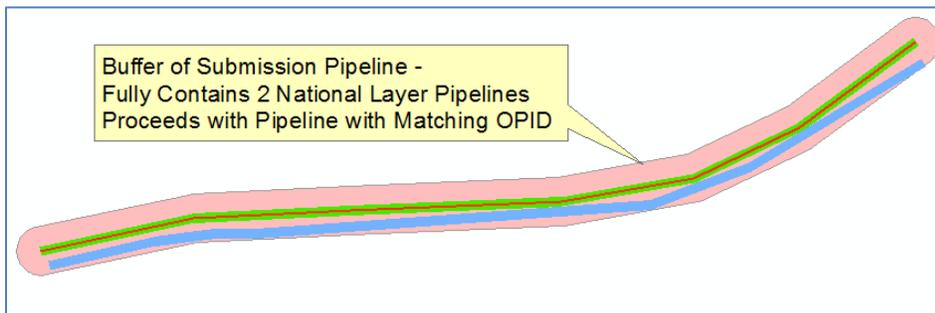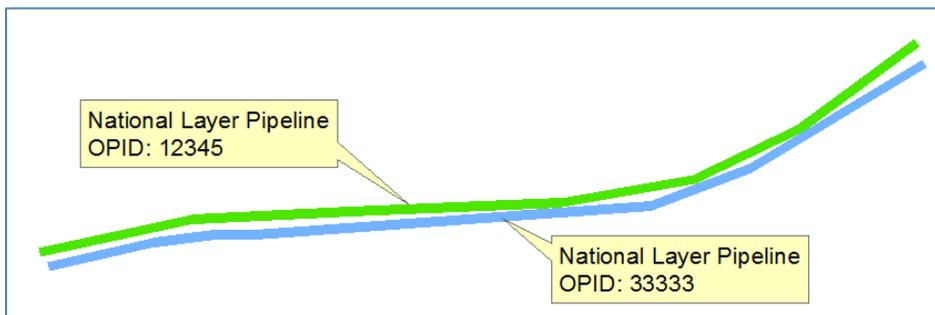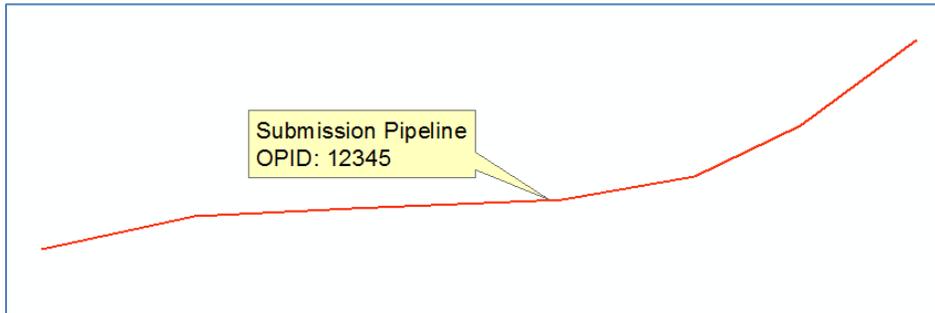
Once all of the submission pipelines are either matched or marked as newly added, we address any unmatched national layer pipelines of the same OPID. As noted before, some of the unmatched national layer pipelines may be marked for deletion due to changes in segmentation. The remaining national layer pipelines are researched to determine what the appropriate action is. NPMS staff refers to the responses to the OSAVE workflow questions to determine the reason a pipeline was not included in a submission. If the pipeline was reclassified and is no longer under PHMSA's jurisdiction or simply was submitted in error in the past, the national layer pipeline is marked for deletion. If the pipeline was abandoned, the national layer pipeline is marked to be converted to abandoned status when the submission is incorporated into the national layer. During the incorporation process, the abandoned pipeline is converted from the operator's OPID and name into a generic NPMS 99999 OPID with the operator name "ABANDONED." Additionally, the operator's public contact information is stripped from the abandoned pipeline. If the pipeline was divested to another operator, the national layer pipeline is

marked to be converted to a sold pipeline when the submission is incorporated into the national layer. During the incorporation process, the sold pipeline is converted from the operator's OPID and name to the generic NPMS 88888 OPID with the operator name "SOLD-PENDING NEW OPERATOR SUBMISSION." Like the abandoned process, the public contact information relating to the original operator is removed from the sold pipeline. If the OSAVE workflow question responses do not describe the situation (at all or with enough detail) regarding the unmatched national layer pipelines, NPMS staff will contact you for clarification.