

Emission Measurement Center
Oil and Natural Gas Advanced Methane Technology
Program

Guideline Document

For

Alternative Test Method Requests

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Oil and Natural Gas Advanced Methane Technology Program

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U.S. Environmental Protection Agency
Office of Air Quality Planning and Standards
Research Triangle Park, NC

Version 01: May 2024

Executive Summary of Guideline Document

This guideline document is a resource for applicants and end users of 40 CFR subpart 0000, 0000a, 0000b, and 0000c Advanced Methane Technology *Alternative Test Method (ATM)* program and for federal, state, local, and tribal authorities in understanding the methane ATM request and review process. The EPA has designed this document to describe the aims of the program, guide applicants through the methane Alternative Test Method (ATM) Request process, outline what EPA expects to see in the methane ATM Request, and provide material to assist in the creation of your methane ATM Request.

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1.0 Introduction to this Compliance Guide

This guideline document addresses (1) the Environmental Protection Agency's (EPA) methane alternative test method approval/disapproval authority under Section 60.5398b(d) of 40 CFR part 60 and (2) describes the EPA processes and procedures for requesting and responding to requests for approval of ATMs. This alternative test method approval/disapproval is unique to methane detection technology for use for fugitive monitoring, inspection, and monitoring of covers and closed vents systems, and remote detection technology used in the super emitter under 40 CFR part 60, subpart OOOOb; and is separate to other alternative test method authorities identified the general provisions to parts 59, 60, 61, 63, and 65 of Title 40.

This guideline document specifically addresses how technology developers and other entities (owners and operators) should seek approval for alternative test methods to demonstrate the performance of advanced methane detection technologies. This guideline document provides details on what needs to be submitted in an alternative test method request and the process for submitting ATM Requests via methane detection portal at www.epa.gov/emc/oil-and-gas-alternative-test-methods. Once approved, these advanced technologies could be used as defined in § 60.5498b(b) and (c) of part 60 in lieu of, or in addition to, the required fugitive monitoring and inspection and monitoring of covers and closed vent systems under 40 CFR part 60 subparts OOOOa, OOOOb and OOOOc to identify emissions. Likewise, these technologies could also be used to identify super-emitter events under 40 CFR part 60 subparts OOOO, OOOOa, OOOOb and OOOOc as defined in § 60.5471b of part 60.

The statements in this guideline document are intended solely to aid regulated entities in complying with the published national regulation "Standards of Performance for New, Reconstructed, and Modified Sources and Emissions Guidelines for Existing Sources: Oil and Natural Gas Sector."¹

The U.S. EPA may decide to revise this guideline document without public notice to reflect changes in the EPA's approach to implementing the rule's requirements or to clarify the regulatory text. To determine whether the EPA has revised this guideline document and/or to obtain copies, contact the EPA review team at MethaneATM@epa.gov.

¹ 89 FR 16820 (March 8, 2024).

The full text of the rule is available online at:

[https://www.federalregister.gov/documents/2024/03/08/2024-00366/standards-of-performance-for-new-reconstructed-and-modified-sources-and-emissions-guidelines-for.](https://www.federalregister.gov/documents/2024/03/08/2024-00366/standards-of-performance-for-new-reconstructed-and-modified-sources-and-emissions-guidelines-for)

2.0 Acronyms and Abbreviations

Table 2-1 provides a list of acronyms and abbreviations that are used in this guide along with their “long name”.

Table 1. Acronyms and Abbreviations

Acronym	Long Name
ATM	Alternative Test Method
AVO	Audible, Visual and Olfactory
BMPs	Best Management Practices
BSER	Best Systems of Emission Reduction
BTU	British Thermal Units
CAA	Clean Air Act
CBI	Confidential Business Information
CDX	Central Data Exchange
CVS	Closed Vent System
DQI	Data Quality Indicator
DQO	Data Quality Objective
CEDRI	Compliance and Emissions Data reporting Interface
CFR	Code of Federal Regulations
CO ₂	Carbon Dioxide
CMS	Continuous Monitoring System
eCFR	Electronic Code of Federal Regulations
EMC	Emission Measurement Center
EPA	Environmental Protection Agency
FAQ	Frequently Asked Questions
ft	Feet
hr/yr	Hour per Year
kg/hr	Kilogram per Hour
LDAR	Leak Detection and Repair
MATM	Methane Alternative Test Method
MTG	Measurement Technology Group
m	Meter(s)
NSPS	New Source Performance Standards
OAQPS	Office of Air Quality Planning and Standards
OAR	Office of Air and Radiation
OECA	Office of Enforcement and Compliance Assurance
OGI	Optical Gas Imaging
PII	Personal Identifiable Information
POC	Point of Contact
ppm	Parts per Million
ppmv	Parts per Million Volume
QA/QC	Quality Assurance/Quality Control
SEP	Super Emitter Program

3.0 Background

On December 6, 2023, EPA issued the final rule for “Standards of Performance for New Reconstructed, and Modified Sources and Emissions Guidelines for Existing Sources: Oil and Natural Gas Sector Climate Review,” which can be accessed at <https://www.epa.gov/controlling-air-pollution-oil-and-natural-gas-operations/epas-final-rule-oil-and-natural-gas>. The final rule is expected to sharply reduce emissions of methane and other harmful air pollution from oil and natural gas operations. The final rule recognizes and encourages innovation in advanced methane detection technology which establishes a streamlined pathway allowing alternative options for compliance through the use of advanced methane detection technologies, like satellite monitoring, aerial surveys, and continuous monitors, to find leaks. Owners and operators are allowed to use new technologies as they continue to develop, effectively allowing alternative methods of compliance in lieu of traditional ground-based methods such as AVO, OGI and EPA Method 21. This guideline document describes the alternative test method submittal requests and procedures for seeking approval under 40 CFR §60.5398b(d).

The authority to approve and disapprove alternative test methods fugitive monitoring; inspection and monitoring of covers and closed vents systems; and remote sensing of super emitters in NSPS OOOOb is held by the Administrator. The authority to make this determination may be delegated to the Office of Air and Radiation, when this were to occur, this document will be revised to identify the delegation number in EPA’s Internal Delegation Manual to further clarify the authority.

4.0 Overview of Process, Timeline, and Requirements

4.1 Methane ATM Request Overview

You are making an ATM Request to be used for either fugitive monitoring and inspection and monitoring of closed vent systems or for use in identifying super emitter events. Your ATM Request has three primary pieces: 1) a document describing how your technology works, from first principles through solution; 2) a set of supporting documents demonstrating the technology works as stated and showing applicability; 3) the formal ATM. These three ATM Request pieces will be discussed in section 6 of this guideline. Your request will be submitted as either a periodic screening method or a continuous screening method, and will be evaluated under that framework. The basic requirements for each type of screening method are outlined below in sections 4.3 and 4.4.

4.2 Summary of Review Process and Timeline

The ATM Request must be submitted to the ATM portal and will be reviewed by an EPA technical review team. A completeness check will be performed in the initial 90 days following submission, and a final acceptance or denial will be returned by 270 days from the submission date. If the EPA technical review team determines the completeness check fails within the initial 90 days, the ATM Request may be withdrawn and later resubmitted. In the unlikely case that EPA fails to meet the 270-day decision deadline, the ATM Request will be conditionally approved until the review is complete.

The ATM Request will be reviewed by completeness and the review timeline will depend upon the complexity of the proposed approach. There is no approval timeline benefit for early ATM Requests if the request is incomplete. Please review the required documentation thoroughly during your ATM Request development. Questions for the review team can be submitted through the communication window in the application portal. The EPA has designed this review process to be iterative between the applicant and the reviewers, and the review team may reach out with questions, requests for additional information, or requests to meet and discuss your ATM Request during the review process.

Please review the required documentation thoroughly during your ATM Request development. Questions for the review team can be submitted through the communication window in the ATM Request portal.

4.3 Brief Overview of Periodic Requirements

The methane detection solutions approved through the ATM request and review process will be used as alternatives to the current Best System of Emission Reductions (BSER), which is quarterly OGI surveys. The frequency of deployment of the approved solution is based on the minimum detection threshold of the technology, shown in the following tables. The

frequency of the surveys will be based on the deployed solution with the highest aggregate detection threshold.

Table 2. Table 1 to Subpart OOOOb of Part 60—Alternative Technology Periodic Screening Frequency at Well Sites, Centralized Production Facilities, and Compressor Stations Subject to AVO Inspections with Quarterly OGI or EPA Method 21 Monitoring

Minimum Screening Frequency	Minimum Detection Threshold of Screening Technology
Quarterly	≤1 kg/hr ²
Bimonthly	≤2 kg/hr
Bimonthly + OGI	≤10 kg/hr
Monthly	≤5 kg/hr
Monthly + OGI	≤15 kg/hr

Table 3. Table 2 to Subpart OOOOb of Part 60—Alternative Technology Periodic Screening Frequency at Well Sites and Centralized Production Facilities Subject to AVO Inspections and/or Semiannual OGI or EPA Method 21 Monitoring

Minimum Screening Frequency	Minimum Detection Threshold of Screening Technology
Semiannual	≤1 kg/hr.
Triannual	≤2 kg/hr.
Triannual + OGI	≤10 kg/hr.
Quarterly	≤5 kg/hr.
Quarterly + OGI	≤15 kg/hr.
Bimonthly	≤15 kg/hr.

Events need to be captured at the 90% probability of detection limit; i.e., the solution will catch 90% of the events that occur above the minimum detection threshold of the screening technology. Your method and ATM Request document should detail how the 90% probability of detection was determined.

4.4 Brief Overview of Continuous Requirements

For a continuous monitoring method, the network must operate with no greater than 10% downtime (at least 90% uptime). This is determined on a rolling annual basis each month, meaning at the end of each calendar month, the downtime is calculated for the previous 12 months. Downtime means any of the following:

² 3 kg/hr for a period of 2-years from effective date of the rule.

- A period where the system fails to record methane data at least once every 12-hour block period,
- A period following a failed quality assurance check until the system passes a new quality assurance check, or a replacement monitor is installed, or
- A period when a monitor is outside of its range.

Note that the uptime requirements are separate from the data transmission requirements (once every 24 hours), which are intended to account for sites that have low connectivity. Additionally, note that the requirements simplify to a minimum requirement of one valid emission calculation for the site, with no more than 12 hours between that valid measurement and the next. This is minimum acceptable behavior, to allow for some flexibility in adapting to poor environmental conditions.

Continuous monitoring solutions must be able to determine a minimum leak threshold of 0.4 kg/hr over the site background. The site background should be determined using a 30-day rolling average of the emissions from the site, with all allowed maintenance events removed. This will allow the solution to characterize the baseline methane emissions for the site when it is operating as expected, and fugitive emissions will be quantified as measurements above that background.

Once the system has completed the 30-day background determination, the fugitive events will be calculated as emissions above the site-specific background, action events are determined from a calculated 7-day and 90-day rolling average. When the site exceeds the 7-day rolling average, an investigation must be completed with 5 days of the action level exceedance; for exceedances on the 90-day average the investigation must be completed within 30 days of the exceedance.

5.0 How to Create and Submit a Methane ATM Request

5.1 Creating a login.gov account and New ATM Request

In order to submit methane ATM Request to EPA, a login.gov account is required. Visit www.login.gov for information on account creation. Once you have created the account, navigate back to the submission portal, click the **Login** link and enter your credentials. You will be prompted to enter a one-time code to access the system. Once you are logged into the system, click the **New ATM Request** link to create a new submittal.

5.2 Important ATM Request Website Features

A detailed discussion of how to navigate the website is included in Appendix A. Below is a brief overview of several important ATM Request features.

Figure 1. New ATM Request Input Form – Point of Contact/Company/Product Info

The screenshot displays the 'New ATM Request' input form. On the left is a navigation menu with links: Home, New ATM Request, Review ATM Requests, Approved ATM Requests, Frequently Asked Questions, and Contact us. Below the menu is a 'Note About CBI' box. The main form area contains a 'Please fill out the form below' instruction, a 'Get Help' button, and a 'Request ID' field (Not saved yet). A red arrow labeled 'Communication Window' points to the 'Get Help' button. The form is divided into two sections: '1. Point of Contact' and '2. Company and Product'. The 'Point of Contact' section includes fields for Full Name (Jane Doe), Email (jane@abcsolutions.com), and Phone (555-555-5555). The 'Company and Product' section includes fields for Company Name (ABC Solutions Inc.), Company Website (http://abcsolutions.com), Product Name (My Detection Product), Desired Applicability (Site-specific), Leak Detection Resolution (1 kg/hr), and Technology Type (Satellite). There is also a checkbox for 'Continuous solution' and an 'Additional Information (optional)' text area. A red box highlights the '1. Point of Contact' and '2. Company and Product' sections, with a red arrow labeled 'Header Information' pointing to this area.

Home

New ATM Request

Review ATM Requests

Approved ATM Requests

Frequently Asked Questions

Contact us

Note About CBI

Do not submit information you claim as confidential business information (CBI) to EPA via this website. All information submitted through this website will be made available to the public without further notice to you.

Please visit [Handling CBI](#) to learn more about CBI and the procedures for submitting and associating it with your request.

Please fill out the form below. You can save your progress at any time and return to it later. When you are finished, you can submit it for review. Your application will become publicly visible 7 days after you submit it (or sooner if it's approved.)

If you have questions, get help from the message portal. **Get Help**

Request ID
Not saved yet

Avoid personal information
Contact information will be hidden from the public, but you are encouraged to provide business (non-personal) email and phone.

1. Point of Contact

Full Name: Jane Doe | Email: jane@abcsolutions.com | Phone: 555-555-5555

2. Company and Product

Company Name: ABC Solutions Inc. | Company Website: http://abcsolutions.com

Product Name: My Detection Product | Desired Applicability: Site-specific

Leak Detection Resolution: 1 kg/hr | Technology Type: Satellite

Continuous solution

Additional Information (optional)

Communication Window

Header Information

Figure 2. New ATM Request Input Form – Documentation

3. Documentation

CBI Checkbox CBI also submitted

Executive Summary (recommended) ⓘ

This information is provided in another file or not relevant

Add one or more files

Upload file **Bucket 1**

Description of Technology ⓘ

This information is provided in another file or not relevant

Add one or more files

Bucket 2

Figure 3. New ATM Request Input Form – Supporting Documentation

Supporting Documentation ⓘ

This information is provided in another file or not relevant

Add one or more files

Bucket 3

Formal Alternative Test Method ⓘ

This information is provided in another file or not relevant

Add one or more files

Bucket 4

Save **Submit**

5.2.1 Communication Window

The Communication Window is provided to facilitate communication between submitter and reviewer. The Communication Window can be used as soon as you save your application for the first time. Clicking this link will pop open a text box where you can ask or respond to questions. While the communication window does not allow real time communication, the correspondence will be saved with the records of the review. Please use the communication window for any question you have about the Methane ATM Request materials and process.

5.2.2 Header Information

This information is required to be filled out by the submitter prior to submitting. Additional details regarding the Header Information can be found in Section 6.3 of this guideline document.

5.2.3 Submission Buckets for Methane ATM Request Materials

This is where the bulk of the required materials will be submitted. Specifics regarding what needs to be submitted in each bucket can be found in Section 6.0 of this guideline document. Please try to follow the submission guidelines outlined in Section 6.0 of this guideline document. The more organized your submission is, the more streamlined the review process will be.

5.2.4 Upload File

Click the "Choose file" button to upload a new file. You can upload multiple files into each bucket by clicking the "+" button located across from the "Choose File" button.

5.2.5 Information Elsewhere checkbox

Click this checkbox if the information requested for the bucket is included elsewhere. If this checkbox is clicked, a text box will pop up and you will be prompted to inform us why the information is not included or where exactly it is located.

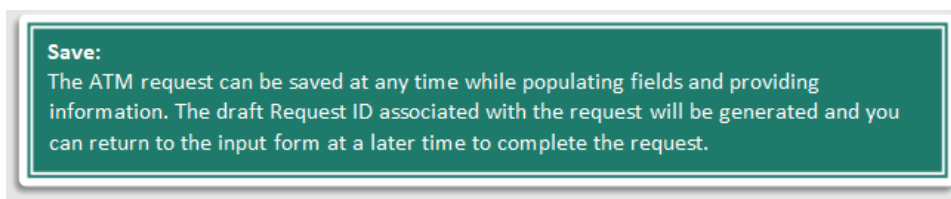
And example of when this checkbox should be used. The EPA requests standard operating procedures to be submitted in bucket 3 (Supporting Information), however, you submitted some documents through the EPA confidential business information (CBI) system.

5.2.6 CBI checkbox

Click this checkbox to inform the EPA that you have also submitted documents through our CBI system (details in Section 6.5 of this guideline document). If you submit documents through our CBI system, but fail to check this checkbox, the review process will likely be delayed.

5.2.7 Save button

Save your work often. You have the ability to save and close out of your ATM Request. You may continue to work on your ATM Request by logging back in to your login.gov account.



5.2.8 Submit Button

When your ATM Request is complete, click the Submit button. The EPA review team will be notified of new submissions on a weekly basis. After submission, your files will be public-facing and you will no longer be able to edit or delete any documents that have been submitted. You will still have the ability to log in to your account and add additional documents per the review team's request (Section 6.6 of this guideline document). The submitter will have the ability to withdraw the ATM Request throughout the review process (Section 6.7 of this guideline document).

5.2.9 Modify a Submitted ATM Request

If you have a solution that is getting a Major Revision (See Section 6.9 of this guideline document), open your original ATM Request and use the "Create Revision" button. This will create a new ATM Request with a unique request ID, but maintain a reference to your original request ID.

6.0 Specific Content of the Methane ATM Request

6.1 Overview of Required Content

The EPA is asking for a complete overview of your solution. The ATM Request must explain how your technology works and demonstrate that the method you have developed works under the range of physical and environmental conditions that you expect to encounter in a real-world deployment.

Your ATM Request will consist of three primary pieces: 1. The Description of Technology Document, a document that explains how your methane detection solution works in detail, from first principles all the way through the determination of leak rate. 2. Supplementary information that provides proof of performance and any documentation that provides additional insight into your solution and develops confidence in your method. 3. a formal Methane Alternative Test Method (ATM), which will document the method protocol for when the solution is deployed for measurement. The ATM is what will ultimately be approved for access by end users.

Only the formal alternative test method has a prescriptive format. For the description of technology and the supplementary materials the EPA is allowing flexibility for individual submitters to determine the best formats and materials to fully and clearly explain your solution. However, the more organized and clearly written your ATM Request materials are, the more quickly the review team will be able to work through your ATM Request. A well organized methane ATM Request is the best strategy for expediting your request through the review process.

As you develop your methane ATM Request, please keep in mind that your request will need to cover the operation and method of your solution in highly technical detail and will need to include details that you would not normally distribute publicly. To protect your Intellectual Property (IP), material in your ATM Request that you consider CBI can be submitted to the review team through the EPA CBI system described below.

Confidential Business Information (CBI):

The EPA may make all the information submitted through the portal available to the public without further notice to you. **Do not use the portal to submit information you claim as confidential business information (CBI).** See section 4.4 of this guideline document for instructions on how to submit CBI.

6.2 Regulatory Language for Methane ATM Request

The rule specifies the ATM Requests requirements at 40 CFR §60.5398b(d) and the regulatory text is provided here as a resource for applicants. For the full Language of §60.5398b(d), please see Appendix D.

1. The submitter's name, mailing address, phone number and email address.
2. The desired applicability of the technology (i.e., site-specific, basin-specific, or broadly applicable across the sector, super-emitter detection).
3. Description of the measurement technology, including the physical components, the scientific theory, and the known limitations. At a minimum, this description must contain the information specified in 40 CFR 60.5398b(d)(3)(iii)(A) through (D).
4. Description of how the measurement technology is converted to a methane mass emission rate (i.e., kg/hr of methane) or equivalent. At a minimum this description must contain the information in paragraphs 40 CFR 60.5398b(d)(3)(iv)(A) through (F).
5. Description of how all data collected and generated by the measurement system are handled and stored. At a minimum this description must contain the information in paragraphs 40 CFR 60.5398b(d)(3)(v)(A) through (C).
6. Supporting information verifying that the technology meets the aggregate detection threshold(s) defined in paragraphs 40 CFR 60.5398b(b) and/or (c) or in §60.5371b, including supporting data to demonstrate the aggregate detection threshold of the measurement technology as applied in the field and if applicable, how probability of detection is determined. At a minimum, the information specified in 40 CFR 60.5398b(d)(vi)(A) through (D) must be provided.
7. If the technology will be used to monitor the collection of fugitive emissions components, covers, and closed vent systems at a well site, centralized production facility, or compressor station, you must submit supporting information verifying the spatial resolution of technology, as defined in 40 CFR 60.5398b(d)(3)(vii)(A) through (C). This supporting information must be in the form of a published reports (e.g., scientific papers) produced by either the submitting entity or an outside entity evaluating the submitted measurement technology that has been independently evaluated. The report must include sufficient supporting data to evaluate whether the performance metrics of the alternative testing procedures in paragraph 40 CFR 60.5398b(d)(3)(vi)(C) are adequate and the data was collected consistent with those alternative testing procedures.

Definitions:

The **average aggregate detection threshold** is the average of all site-level detection thresholds from a single deployment (e.g., a singular flight that surveys multiple well sites, centralized production facility, and/or compressor stations) of a technology, unless this technology is to be applied to 40 CFR §60.5371b.

When the technology is applied to §60.5371b, then the **aggregate detection threshold** is the average of all site-level detection thresholds from a single deployment in the same basin and field.

Definitions:

Facility-level spatial resolution means a technology with the ability to identify emissions within the boundary of a well site, centralized production facility, or compressor station.

Area-level spatial resolution means a technology with the ability to identify emissions within a radius of 2 meters of the emission source.

Component-level spatial resolution means a technology with the ability to identify emissions within a radius of 0.5 meter of the emission source.

6.3 Header Information on the Methane ATM Request

Every methane ATM Request is initiated by filling out the header information that will provide the context for the request. This information will be used to provide a quick check on your solution. A subset of this information will be pinned in the public-facing tables, linked on the left side of the webpage (“Review ATM Requests”). End-users of this web portal will have the ability to sort technology solutions based on this information and identify appropriate solutions for their ATM Requests. The following required information will be entered by the applicant:

- **Company Name:** Enter the name of the company represented by this submission (**Required Field**).
- **Company Website:** Enter a valid company website URL for the company represented by this submission (**Required Field**).
- **Product Name:** Enter the product name of the advanced detection technology you are seeking approval for (**Required Field**).
- **Desired Applicability:** Click on the down arrow to unhide menu and select one of the following dropdown list options: (**Required Selection**).
 - Site-specific,
 - Basin-specific,

- Broadly applicable across the sector,
- Super-emitter detection, or
- Other.
- **Leak Detection Resolution:** Enter the leak detection resolution rate in kg/hr of the advanced methane detection technology you are seeking approval for (**Required Field**).
- **Technology Type:** Click on the down arrow to unhide menu and select one of the following dropdown list options: (**Required Selection**).
 - Satellite,
 - Stationary in-situ sensor,
 - Stationary remote sensor,
 - Ground based mobile in-situ sensor,
 - Ground based mobile remote sensor,
 - Airborne mobile in-situ sensor (aircraft or drone),
 - Airborne mobile remote sensor, or
 - Other.
- **Additional information:** Enter any additional information, as needed. (**Optional Field**).

Request ID:

The Request ID is an auto-generated identification number that will be generated and associated with the request after submitter saves form – e.g., ALTTECH-01.

A note on in-situ vs. remote technologies: in-situ technologies are measurements of the ambient matrix at the point of interest, by contact with the medium. In the case of methane, this would be any chemical monitoring that directly samples air into the measurement instrument. In contrast remote sensors are systems that measure from a distance. LIDAR systems, video monitoring, and other non-interactive monitoring systems would be classified as a remote system.

6.4 The Submission Buckets

The regulatory requirements detailed in section 6.2 must be covered in the documents submitted in the four submission buckets described in sections that follow.

Documentation Checkboxes:

If information is provided in another file or is not relevant, check the box for "This information is provided in another file or not relevant" for each documentation area.

If CBI is associated with the advanced methane technology request, check the box for "CBI also submitted."

6.4.1 Bucket 1 – Executive summary

This is an optional submission that will assist in expediting your request through the review process. Please provide a brief overview of the submitted methane solution and a list of your submitted documents with an optional short (1-2 sentence) description of the file content. Any documentation submitted to CBI should be included in the list of documents, and should indicate that the document was submitted to the CBI system. Please do not include any CBI in the submitted file names or the optional executive summary file descriptions.

An example formatting of the executive summary can be found in Appendix B. The EPA provides flexibility on the formatting of this document, so feel empowered to adjust this formatting to your needs.

6.4.2 Bucket 2 – Description of Technology

The Description of Technology document is a document that explains how your solution works, from initial detection of concentrations all the way through the determination of leak rate. This document should be written for a technical audience, and must address the following elements (but it not limited to these subjects):

- A description of the candidate measurement technology system, including:
 - A description of the scientific theory and appropriate references outlining the underlying technology
 - A description of the physical instrument;
 - Type of measurement and desired application (airborne, in-situ, etc.);
 - Potential limitations of the candidate measurement system, including application limitations
- The request must also include information on how the system converts results to a mass emission rate or equivalent and include the following:
 - Workflow and description covering all steps and processes from measure technology signal output to final, validated mass emission rate (kg/hr) or equivalent

- Description of how any meteorological data are used, including how they are collected and/or sourced
- Identification of any model(s) used, including how inputs are determined or derived
- All calculations used, including the defined variables for any calculations
- A-priori methods and datasets used
- Explanation of any algorithms/machine learning procedures used in the data processing, if applicable
- The request must also include:
 - A description of how data is collected, generated, maintained, and stored
 - How these data streams are processed and manipulated, including how the resultant data processing is documented;
 - A description of which data streams are provided to the end-user of the data and how that information is delivered or supplied

Additionally, The EPA requests a visual workflow of the solution for guiding the reviewers through your technology. A plain language discussion of the workflow can be found below in Section 6.4.3.

There is no required format for this document. The EPA is also not prescriptive about how the information within this document is split between the publicly facing portal and the CBI system. Please make an effort to make it easy for the review team to track where information has been submitted; strategies could be using a redacted version of the document on the publicly facing portal, using a map document submitted to the CBI portal that outlines what is on the CBI system, or making a reference in the publicly facing document to specific documents and document sections that can be found in the CBI system.

6.4.3 Bucket 2 – Workflow Guidance

The workflow is intended to be a complimentary tool in the Description of Technology documentation that allows a reviewer to track how data moves through your solution, and documents processing, There is no required format for the visual workflow included with the Description of Technology document that is requested for submission bucket 2. The workflow should include the following:

- How data move through the system;
- Data sources, transformation and calculation steps;
- Quality control steps; and
- Storage and retrieval processes.

The EPA also requests that automated vs. manually operated steps are clearly indicated within the workflow.

Unless it's critical for understanding the data flow, the internal software architecture of your processing and storage systems is not necessary to include.

The EPA understands that these workflows may need to be broken into pieces depending on your formatting of the Description of Technology document and the complexity of your solution. If you take this approach, please make sure that it is easy to follow and understand how your subsidiary workflows work together. The workflows may be included in either the publicly facing portal or in the CBI system, and as their own document within the Description of Technology submission bucket or as part of the Description of Technology document.

6.4.4 Bucket 3 – Supporting Information

The supporting Information submission bucket is an opportunity for you to attach context documents that will assist the review teams in understanding your solution. These documents can be split between the publicly facing portal and the CBI portal. What follows is an incomplete list of the types of documents that can be included in your request:

Peer reviewed publications – any published peer reviewed literature that details the underlying tech, the methodology, and the application. This type of documentation is highly encouraged for inclusion with your request.

Publicly facing documentation – anything that explains your technology that is publicly available, including white papers, technical slide decks, and informational brochures.

Quality control and internal guidance documents for deploying and applying your technology – Quality assurance/quality control (QA/QC) plans and guidance documents, siting guidelines, best practice documents, and How-to documents that are used by your internal teams are encouraged. Documents that are distributed to your clients for helping interpret and understand your product are also encouraged.

Datasets and validation information – Data that demonstrates the operation, applicability, and resilience of your solution in operation. Documentation or data that shows the spatial resolution. Data showing proof of the aggregate detection threshold of the technology.

6.4.5 Bucket 4 – The Formal ATM

This piece is the most critical document included in your request: The formal ATM is what is officially approved during the ATM process and is the document that will describe the method protocol. This document is the only piece of the submission that has a requested format and contents, and the formatting details can be found in the EMC Guideline Document 45: <https://www.epa.gov/sites/default/files/2020-08/documents/gd-045.pdf>. The text of this document is attached in Appendix C.

This document will explicitly be publicly facing and should not include any material that would be considered confidential business information. These ATM documents should also cover material that will constrain how the solution is applied, and should cover any considerations for the protocol that may not be covered in the Description of Technology document; ie, how sensor siting decisions are made. If there is a section that is not applicable to your solution, you can use “[Reserved]” to indicate that the section will remain blank.

The ATMs are modeled on the EPA’s Reference Methods and Other Test Methods (OTM) formatting, and examples of this format can be found in the EPA EMC web site. These documents are for use by clients, regulators, and the general public to understand how the technologies are deployed.

6.5 Confidential Business Information

If you wish to assert a CBI claim for some of the information in your submittal, submit the portion of the information claimed as CBI to the Office of Air Quality Planning and Standards (OAQPS) CBI office. Clearly mark the information that you claim to be CBI. Information not marked as CBI may be authorized for public release without prior notice. Information marked as CBI will not be disclosed except in accordance with procedures set forth in 40 CFR part 2. All CBI claims must be asserted at the time of submission. Anything submitted using the portal cannot later be claimed CBI.

The preferred method to receive CBI is for it to be transmitted electronically using email attachments, File Transfer Protocol, or other online file sharing services. Electronic submissions must be transmitted directly to the OAQPS CBI Office at the email address oaqpscbi@epa.gov and should include clear CBI markings and be flagged to the attention of the Leader, Measurement Technology Group. If assistance is needed with submitting large electronic files that exceed the file size limit for email attachments, and if you do not have your own file sharing service, please email oaqpscbi@epa.gov to request a file transfer link. When communicating with the CBI office via email, do not include any additional EPA personnel on those communications.

If you cannot transmit the file electronically, you may send CBI information through the postal service to the following address: U.S. EPA, Attn: OAQPS Document Control Officer and Measurement Technology Group Leader, Mail Drop: C404-02, 109 T.W. Alexander Drive, P.O. Box 12055, RTP, North Carolina 27711. The mailed CBI material should be double wrapped and clearly marked. Any CBI markings should not show through the outer envelope.

When submitting CBI, it is paramount that you include your request ID (MATM-xxx) in the title as well as the body of your email or letter. Not including your request ID when submitting CBI will likely cause delays in the review process.

6.6 Submitting Additional Requested Information

The review team may require additional documents as part of their review of your ATM Request. To attach additional documents, select your submitted ATM Request and click the “Update”. This will open a separate window and allow you to add documents to the ATM Request. No documents can be edited or deleted from a submitted request, including documents added post-submission at the request of the review team. If the additional requested information is considered CBI, submit accordingly and inform the reviewer through the communication window.

When new documents are added to the portal or through CBI, the EPA encourages applicants to add an updated executive summary to Bucket 1. The updated portion of the executive summary should be highlighted and detail what documents have been added (document name and extension), where they were submitted (publicly facing portal or CBI system), and a 1 – 2 sentence summary of the document contents.

6.7 Withdrawing a Methane ATM Request

You can withdraw an ATM Request before the review process is completed; when this happens, your material will be saved on the portal but will no longer be publicly facing. Your ability to withdraw is no longer available after the final decision has been reached by the review team. The withdrawal process is available to you through the web portal and is detailed in Appendix A in this document.

6.8 Submissions with multiple emission detection thresholds (tentative placement)

Each alternative method write up should have its own ATM Request. If a submitter would like their solution to be used in multiple different ways (utilizing different operational modes to access multiple measurement thresholds, for example) that could require multiple alternative methods. Therefore, multiple ATM Requests should be submitted. If the submitter is submitting multiple similar ATM Requests, they should add language to the executive summary

that details what the differences are between your related requests and where those differences are recorded in the request. Materials may be duplicated between different detection threshold requests for the same technologies.

6.9 Major Revision to Existing Methane ATM Requests

A method change is considered a major revision when either of the following are true:

- The update causes a relative change in quantified methane emissions of greater than or equal to 5% when compared to the originally submitted product.
- The update changes the scientific theory behind the technology.
- A change in the applicability of the method (basin specific to generally applicable, or from periodic screening to continuous screening)

Implementation of a major revision requires the applicant to revise an approved Methane ATM Request; see Section 5.0 for an example of the revision process. To expediate the review process of the major revision, the submitter should inform the EPA of any previously submitted methane ATM Requests, include a description of the changes and why the changes were made as a part of the executive summary, and identify all locations in the submitted text/documents where new information is provided regarding the major revision.

Please note that a major revision will be approved as its own, separate method with its own request ID, and this approval will be in addition to the originally approved solution, not in substitution of it. A solution provider may work with the review team in case by base scenarios to sunset previously approved solutions, see Section 7.5 for more detail.

6.10 Personal Identifiable Information

To stay in compliance with federal rules, any information that could be considered Personal Identifiable Information (PII) should be purged from your documentation. PII is defined as:

Any representation of information that permits the identity of an individual to whom the information applies to be reasonably inferred by either direct or indirect means. Further, PII is defined as information: (i) that directly identifies an individual (e.g., name, address, social security number or other identifying number or code, telephone number, email address, etc.) or (ii) by which an agency intends to identify specific individuals in conjunction with other data elements, i.e., indirect identification. (These data elements may include a combination of gender, race, birth date, geographic indicator, and other descriptors). Additionally, information permitting the physical or online contacting of a specific individual is the same as personally

identifiable information. This information can be maintained in either paper, electronic or other media.

For this Methane ATM Request process, this would be a combination of contact name, address, phone number, and email address. This information will be collected as part of the Methane ATM Request header information but will be redacted off the publicly facing Methane ATM Request. **Please ensure that this information is not included in your executive summary or Description of Technology documentations.** Any other documents that you submit will not be reviewed for PII and is understood to be voluntarily submitted.

6.11 Checklist for applicants

Table 4. Check list for Applicants

Check Box	Description
-	Does your Description of Technology document fully explain your solution following the guidelines outlined in section 6.4?
-	If you have split some your materials between the publicly facing portal and the CBI system, is it easy for a new reader to navigate which materials are found where?
-	Do the documents you have assembled for the Supporting Information provide adequate additional information to validate your technologies performance?
-	Is your formal ATM laid out to the prescribed formatting?
-	Does your executive summary of your solution succinctly summarize your technology for a general technical audience?
-	Does your executive summary document list all of the submitted documents with location and a brief summary?
-	Double check your header information on the Methane ATM Request, paying particular attention to the detection threshold, the applicability, and the technology type
-	Double check that the Executive summary and Description of Technology documentation do not include PII

6.12 Frequently asked questions

These are questions that have been frequently asked to the Measurement Technology Group.

What is a minor change and what does the EPA require when a minor change is made?

A minor change could be considered quality of life improvements to the software, hardware changes that are considered “replacement in kind”, or any software changes that would result in quantified methane emissions of less than 5% when compared to the originally submitted product.

Are we looking for method data or validation data in these submissions? The EPA is looking for any relevant data used as part of the validation process to define the data quality indicators and data quality objectives (DQI and DQOs) in your method. Proof-of concept or controlled-release data is important for us to see, but it is not sufficient. The reviewers also need to see data that shows how your solution performs in the field where you intend to deploy, under the range of physical and environmental conditions you expect to deploy. In order to be useful to the review team, the data needs to be collected following the exact ATM request protocol you are submitting for approval.

How should a solution provider deal with allowed process emissions or emissions from regulated sources (e.g., stationary engine) The submitted alternative method should detail how known allowed sources are identified and managed within the detection framework, including procedures for determining/identifying sources of allowed emissions and procedures for verifying the emission source.

For the formal ATM, does quantification need to be included? The formal ATM Request should define the detection limit at the leak point and what methods are used to confirm that value. Additional quantification details should be included in the supporting documentation and/or method description submitted to the review team, but unless critical to the method itself does not need to be included in the formatted method. Alternative test methods for continuous monitoring systems must include information on determination of methane mass emissions rates (or equivalent).

For continuous monitoring, does the baseline period need to be a continuous 30-day period? Baseline development is detailed in §60.5398b(c)(5) 40 CFR part 60 subpart OOOOb, which requires that baseline development be performed during a 30-day operating period after conducting inspections and repairing any leaks to the fugitive components, covers, and closed vent systems; ensuring all control devices are in working order; and ensuring all other methane emission sources are operating consistent with any applicable regulations. The intent is that the 30-day period be continuous, depending on the operation of the site, and you must remove any maintenance activities which have occurred from the baseline calculated using the 30-day operating period.

Does OGI Monitoring with drone platforms need to be approved through the ATM process? Not necessarily. In the 2016 response to comments for NSPS OOOOa, the EPA clarified the following: We have also revised the requirements for walking path to observation path. This should alleviate the need for an alternative monitoring plan or alternative means of emission limitation for the use of drone based OGI instruments as long as the drone based OGI system still meets all the requirements of the rule (See 40 CFR 60.5397b). Other drone based

technologies that for example produce results such as a path averaged concentration must apply for a methane alternative test method.

However, to meet the requirements outlined for OGI systems in NSPS 0000a or 0000b, it is also important that the person who understands and is trained in OGI is out in the field with the drone to ensure that the inspection is done in a meaningful way, including dealing with adverse conditions and viewing from appropriate angles. The video footage cannot be taken by someone and then sent to a thermographer after the fact. If all of the requirements for OGI systems in NSPS 0000a or 0000b cannot be met for the drone-based OGI camera, then an alternative test approval would be necessary.

Does OGI Monitoring with helicopter platforms need to be approved through the ATM process? The EPA is concerned whether deployment of OGI in this manner can meet the OGI survey requirements in 60.5397b, as it is unclear if deployment in such a manner would allow an operator to have adequate backgrounds in order to achieve necessary delta Ts, how an operator would deal with interferences (or be aware of them), how an operator would change angles to get better delta Ts and avoid interferences when appropriate, and whether the helicopter blades may affect the detection capability of the OGI camera by creating wind dispersion effects which could reduce the concentration of the emissions below the detection capabilities of the OGI camera. The EPA believes that this type of OGI application is best handled under the alternative technology provisions in NSPS 0000b.

Who can submit an application for alternative technologies for NSPS 0000b? Is it just the technology providers or can operators also submit applications? Owner or operators who have developed proprietary technology or adapted existing technology specific to their needs, can submit applications.

Once a measurement technology is approved, will oil and gas companies be able to use the technology automatically? The rule provides details on how an owner or operator should incorporate the use of an approved alternative technology into their monitoring plans prior to conducting monitoring using an approved alternative test method. For NSPS 0000b, there is not an additional approval process for the monitoring plan. Remember that in some cases technologies will only be approved for specific basins or sites.

How will data be reported, and does US EPA already have a template for data reported from Advanced Methane Technologies? Owners and operators of NSPS 0000b and EG 0000c sources that use advanced methane detection technologies are required to report certain information in their annual reports. Annual reports will be required to be submitted through the compliance and emissions data reporting interface, or CEDRI, using a spreadsheet

template that will be posted on the CEDRI website. A draft version of the reporting form was included in the docket for the proposed rule, and the final version should be available soon.

Will reporting requirements vary by advanced technology type? There are standard reporting requirements for technologies doing periodic screening that vary from the standard reporting requirements for technologies doing continuous monitoring. Depending on the technology and application, alt approval methods may specify reporting requirements specific to the alternative that must be included in the annual report in addition to the standard reporting requirements.

What are the standard data reporting requirements? The requirements are outlined in 40 CFR 60.5424b and are captured in the CEDRI reporting template, so we recommend looking at those for a full list of the requirements. But in general, for periodic screenings, owners and operators would be required to report information on periodic screening events, such as dates, results, method and technology used, information related to follow-up inspections after a confirmed detection, and information on annual OGI inspections, if applicable. For continuous monitoring, owners and operators would be required to report information on exceedances of action levels, or highest rolling averages if there were no exceedances, actions taken in response to an exceedance, and monitor downtime.

If an owner/operator chooses to replace a periodic screening event with an OGI survey, would that survey count as the required annual OGI survey, if an annual OGI survey is required? Per Section 5398b(b)(4)(iii) If you replace a periodic screening event with an OGI survey and you are using screening threshold which requires annual OGI, the replacement OGI survey will fulfill the annual OGI requirement in the matrix. Additionally, if you are required to conduct an OGI survey of the full site in response to a confirmed detection from a periodic screening event, that will also fulfill the annual OGI requirement in the matrix. The next annual OGI survey is required to be conducted no later than 12 calendar months after the date of the replacement OGI survey or the follow-up OGI survey.

How would the emissions monitoring plan, recordkeeping, and reporting requirements be different for fugitive emissions monitoring using alternative test methods at sites subject to NSPS OOOOa versus NSPS OOOOb? NSPS OOOOa directly references the requirements in NSPS OOOOb, so the alternative technology requirements, including recordkeeping and reporting, are the same for both subparts. We are in the process of updating the NSPS OOOOa annual report form to include the reporting tabs for the alternative technology reporting requirements.

Can you clarify the requirements for using periodic screening alternative test methods to determine if a pilot light is present for flares and enclosed combustion devices? The alternative technology standards apply to fugitive components, covers, and closed vent systems. As such, there is no requirement to look at equipment that is not covered by the fugitive component, cover, or closed vent system requirements during a periodic screening event. However, if during a periodic screening event or in response to a periodic screening event, an owner or operator discovers an unlit flare or enclosed combustion device, the control device must be brought back into compliance with the requirement to have a lit pilot light.

If a continuous monitoring system has a reading above an action level and the company identifies the emission source, does EPA need to get a report? Information on continuous monitoring events above an action level are part of the annual report. They don't need to be reported separately.

Is the EPA considering requests for technology that can measure the duration of an emissions leak? For the periodic screening approach, the focus is on detection and EPA will be reviewing, evaluating, and approving that technology based on those metrics. For the continuous approach, EPA will be reviewing, evaluating, and approving technology based on the ability to quantify site level emissions.

Can an alternative measurement protocol be approved as "proven in use" based on existing installations performing the required measurement? EPA finds it critical to evaluate technology and the underlying protocol for their use as applied in the field.

What level of accuracy must the technology have to obtain approval from the EPA? For the periodic screening and super emitter program, EPA is focused on the ability of a technology/solution to detect an emission event. As such, we are more focused on metrics like the probability of detection and proven detection threshold of the technology when it is deployed. For the continuous monitoring paradigm, accuracy of the quantification is important since action is triggered at a specific emission rate. EPA typically uses +/-10% for its accuracy goals for continuous monitoring systems. Given the long-term application of these systems, the accuracy metrics will be based on the long-term rolling average.

Are there any specific requirements for continuous monitors in terms of performance, such as probability of detection for a given emission rate, false positive/negative fraction, and localization precision/accuracy? If yes, do these requirements need to be verified by an independent party? The rule details the performance of these continuous systems, including up-time requirements and procedures for ensuring the health of these systems. Other metrics are taken together as a whole in the alternative test method application, to determine whether the system can meet the requirements in the rule. Additionally, EPA has provided flexibility for

determining detection limits for continuous monitoring systems. It is critical for any verification to be subject to independent evaluation.

Where does fixed OGI fit into the regulation? It has been discussed as fitting into the periodic screening events but since fixed OGI will be continuous in operation, there is some confusion about why it would fit into the periodic screening category. EPA has set the continuous monitoring approach as a site-level emission standard in which the entire site emission rate is determined, if an OGI systems can reliably quantify site-level emissions of methane, it could be considered for that application. EPA believes that these systems could also be used as a periodic screening under a more detection specific approach.

What would be the periodic screening frequency for fixed, continuous OGI? The screening frequency would be based on the detection threshold of the continuous OGI system and the matrix that the site is subject to. EPA does not limit the run time of a screening, meaning more continuous systems could be operated for long periods of times.

Will there be a universal calculation all like sensors will be required to use for kg/hour values, or will individual math (or algorithms) be allowed? No, EPA has not made any prescriptive requirements for technology providers. EPA's approach to technology is to allow providers to determine the best approach for their technology and its application.

§60.5398b(d)(3)(ii) is where the applicant defines the applicability of the technology. Will specific requirements be required for "broadly applicable" vs. "site or basin-specific"? "Broadly Applicable" is used to mean "can be applied in any US location", while the "site specific" or "basin specific" solutions are technologies that have only been tested and validated in specific regions or sites. In order to have a technology get approval as broadly applicable, the requestor will need to prove that the technology can work at any location.

Can I just submit the whole application as Confidential Business Information? No. Everything that is not CBI must be submitted through the website portal. This policy is in place to encourage transparency for these technologies, and allow end users of the technologies (clients, regulators, and the general public) to have information available about how the approved technologies work and are deployed. If a submitter does not submit non-confidential information through the website portal, we may ask for the application to be re-submitted.

Can more than one methane detection solution be combined in a single application? No. Each Application should cover one complete methane detection solution. Each application will be reviewed and approved separately. This helps us and end-users be able to differentiate the supporting information and requirements for each individual alternative test method that is approved.

If our solution is capable of multiple thresholds by modifying the operation conditions, do we need to submit multiple applications, one for each leak rate threshold? Yes, each leak threshold must be submitted as a separate application because each will be approved as an individual alternative test method that end users will then be able to reference. However, if your technology has this capability, you may duplicate your material across the applications, and there is a mechanism to link related applications. As part of your application materials, you should describe how the thresholds are changed, discuss any operational changes that are made to meet a new threshold, and provide validation data that supports your results. We also recommend that you add a note to your executive summary noting that you have a single solution capable of multiple thresholds, list the related applications (by Request ID), and note any changes in the documentation between the related applications.

There is potential overlap between different applications requirements in the rule, such as calculations vs algorithms and machine learning procedures used. How do we know what fits into each category? It's fine if there is overlap between different categories. The main thing to remember is that everything that is relevant to the method and that explains how the method works needs to be in the application.

How much testing and field data is required in the application? At a minimum each technology should provide data for each basin and environment that they are planning to operate in. Controlled release studies are encouraged but not required, however in their absence the application should have some type of validation data showing performance. Testing conditions should also encompass the expected operational conditions for deployment.

Where should field testing take place - do we need to do testing directly with EPA or at an EPA-certified test center? There is no EPA-certified test center for the methane alternative test methods, and EPA will not be conducting or participating in testing of alternative technologies. Applicants can perform field testing at available test sites or by working with owners and operators of regulated sites.

Are there formatting requirements for the description of technology document and the visual workflow? If so, where can these guidelines be found? There are no prescribed formatting guidelines for the description of technology document or the visual workflow. We are also not prescribing how material in these documents is divided between the publicly facing portal and the CBI system. We made this decision to provide flexibility for individual companies to determine the formatting that works the best for clearly documenting their technologies. However, a clearly organized application that allows for a technical reviewer to quickly find data, track information between the public portal and the CBI system, and understand the

technology will expediate the review process. The review team also reserves the right to request edits to these documents if necessary.

Can EPA provide a template or examples of applications for alternative test methods for methane detection technology? The Formal Alternative Test Method must follow the EMMC Methods Format. The formatting guidelines are linked on the submission portal landing page and shown in the Alt Tech guidance document appendices, also linked from the submission portal. Examples of test methods written with this level of required detail can be found in the EPA Other Test Methods (OTMs) on the EMC website.

Once an application is approved, what types of changes would trigger a major modification? There are three situations where a major modification of an approved method should be submitted: 1. when the quantification changes by 5% or more; 2. when an update changes the scientific theory behind the technology; and 3. when there is a change in the applicability of the method (i.e., adding a basin to the applicability). Small changes that improve quality of life (i.e., updating battery packs or minor changes to the processing algorithm that do not change the quantification) do not trigger a modification.

Spatial coverage is only mentioned in the Periodic Screening Requirements (§60.5398b(b)). For a continuous monitoring application, is the Spatial Coverage section of the application required? No. Because the actions taken in response to a periodic screening event detection are specific to the spatial coverage of the technology, it is important for this to be included in the application for technologies used for periodic screenings. Continuous monitoring systems are considered to be facility-level spatial resolution, and the application should describe how the full site is monitored by the system.

Can an alternative technology be type-approved or is acceptance only granted case-by-case for each specific flow measurement application? Approvals for alternative test methods are specific to the technology in the request – other technologies, even if they are the same type of technology, must be approved in a separate application.

How is confidential business information handled by the EPA – is the public able to see this data? The EPA review team is trained to handle confidential business information, with controlled access through internal federal systems. No information submitted to the EPA CBI system will be shared with the public, and it will only be accessible by trained reviewers who are explicitly given access to the methane alternative technology applications as part of their review responsibilities.

Where can I find a list of approved alternative technologies? A list of the approved methane alternative technologies will be hosted on the EPA Air Emissions Measurement Center

(EMC) website. A link to the list of approved technologies is provided on the landing page for the application portal. Additionally, the full applications for approved technologies (excepting any CBI content) will continue to be hosted on the web portal.

7.0 The Methane ATM Review Approval Process

7.1 Timeframe for Methane ATM Review Approval

The Administrator will complete an initial review for completeness within 90 days of receipt. If the entity submitting the request for an alternative test method does not meet the qualifications specified in Section 6.4 of this guideline document or if the request does not contain the information in Section 6.2 of this guideline document, the submitter will be notified by EPA. The submitter may choose to revise the information and submit a new request for an alternative test method.

Within 270 days of receipt of an alternative test method request that was determined to be complete, the Administrator will determine whether the requested alternative test method is adequate for indicating compliance with the requirements for monitoring fugitive emissions components affected facilities in 40 CFR §60.5397b and continuous inspection and monitoring of covers and closed vent systems in 40 CFR §60.5416b and/or for identifying super-emitter events in 40 CFR §60.5371b. Note that the 90 days of initial review is included in the total 270 days period for EPA to make a determination.

7.2 Determination/Submittal of a new Methane ATM Review

The Administrator will issue either an approval or disapproval in writing to the submitter. Approvals may be considered site-specific or more broadly applicable. Broadly applicable methane ATM and approval letters will be posted at <https://www.epa.gov/emc/oil-and-gas-approved-alternative-test-methods-approvals>.

If the Administrator fails to provide the submitter a decision on approval or disapproval within 270 days, the alternative test method will be given conditional approval status and posted on this same webpage. If the Administrator finds any deficiencies in the request and disapproves the request in writing, the owner or operator may choose to revise the information and submit a new request for an alternative test method.

7.3 Post-submission Methane ATM Review Process

This is how the review process will proceed, from submission to decision.

- Company submits a methane ATM request with a stated emission rate threshold:
 - If a solution can do multiple emission rate thresholds, The EPA requests that they are put in as separate methane ATM Requests that reference to the initial request via request ID.
 - The information submitted through the portal (the non-CBI portion of the methane ATM request) will become viewable to the public within 7 days.

- Review Team reads the executive summary (if provided) and assigns the request to a primary and secondary reviewer who are well-suited to handle the solution and method outlined in the request.
- The primary and secondary reviewers may set up a kick-off meeting through the communication window.
 - Kick-off meetings will be no longer than 60 minutes with the goal of providing the review team with a broad overview of what they can expect to find in the submitted request and where they can find it.
 - The following may be discussed during these kick-off meetings:
 - A broad description of the methane detection solutions,
 - A broad description of the method,
 - An overview of the data collected as evidence the method works,
 - How that data was collected, and
 - How to navigate the request.
- The primary and secondary reviewers will conduct the completeness check.
 - If important information is missing from the request, the review team will ask the submitting entity to add the necessary data or documentation.
 - If it is clear that the submitting entity will not be able to provide the additional data or documentation in a timely manner, the review team may suggest that the entity withdraw their request and resubmit once it is complete (withdrawn requests will no longer be public).
 - If, after 90 days, the additional data or documentation have not been provided to the review team, and the submitting entity has chosen not to withdraw their incomplete request, the review team may choose to deny the request (denied request will be public).
 - If the review team determines that the ATM request appears complete, the review team will move on to the more detailed review of the request.
- Methane ATM Request are reviewed.
 - As the request is reviewed in more detail, the review team may continue to ask for additional data and documentation, which can be submitted through the request portal or as CBI.
 - The primary and secondary reviewers conduct this review to fully understand the solution, applicability, weaknesses, etc.
 - The submitted documents and all data included with the ATM Request will be reviewed.
 - The communication window will be used as the primary method of communication between the reviewers and the submitting entity.
 - Additional meetings to discuss details of the request will be scheduled as needed by the reviewers.
 - Throughout this process, the primary and secondary reviewers may bring in additional reviewers depending on the subject matter being discussed.

- After the primary and secondary reviewers are satisfied with the information they have received, the two reviewers will discuss their findings with the entire review team.

7.4 Request Approval or Disapproval

If a methane detection solution is approved, the request status will be changed to “Approved” and will be searchable under the “Approved ATM Requests” link on the left side of the webpage. Information and documents submitted as a part of this request will remain public facing. The approved ATM outlining the protocol will receive an official MATM-XXX identification number. The solution provider will have the ability to make a major revision to the approved request (see Sections 5.2.9 and 6.9 of this guideline document). The solution provider will not have the ability to withdraw an approved request. Under some circumstances an approved request may eventually be sunsetted by the solution provider, see Section 7.5 of this guideline document.

If a methane ATM request is declined by the review team, the request status will be changed to “Declined” and will be removed from the webpage. Information and documents submitted as a part of this request will remain public facing.

If subsequent testing of an approved solution produces evidence that the approved solution does not work, the Administrator has the authority revoke the approval, upon receipt of such evidence, the EPA will review the evidence and discuss the evidence with the solution provider prior to making a final determination. Any monitoring performed with the solution prior to the revocation date will be considered valid. After the revocation date of a solution, owners or operators of using that solution must find another solution or choose to use OGI and must revise their monitoring plan as necessary.

7.5 Sunsetting Approved Technologies

In Section 6.9 of this guideline document this document discussed how major revisions to a solution are handled. The approval of a methane ATM Request means that the approved solution is always approved, and as major revisions are done to the tech those approvals of the major revision exist as their own, separate approved method. Because of this, a solution provider may end up with several near identical methods approved in tandem.

To manage this, the EPA will eventually allow a solution provider to sunset an approved solution that has been replaced with a new, approved version. This sunsetting will be undertaken on a case-by-case basis. If a solution provider is interested in sunsetting an approved solution, please contact the review team to begin the process.

7.6 Solution Provider or Solution Name Change

If the solution provider or solution name changes due to a buy out, you can update your methane ATM Request to reflect the updated name and/or company. Reach out to the review team and this will be handled on a case-by-case basis.

8.0 Super Emitter Program Applications

8.1 Overview of Super Emitter Application

Technology that is allowed to be used within the Super Emitter Program (SEP) must be approved through the methane ATM program. The 3rd Party Notifiers that will leverage these approved technologies and submit events to the SEP portal will be approved separately with a different process that is not covered by this document. The methane detection solutions submitted for the SEP will be evaluated using the same process outlined for all methane ATM requests. Within the SEP ATM review, the “Desired Applicability” dropdown menu should be set to “Super-emitter Detection.” (See Section 6.3 of this document).

8.2 How the Documentation requirements differ from the Methane ATM Request

The only significant difference between a SEP technology and a typical methane ATM technology is that the review team will not be evaluating any satellite sensors; instead, if you have a satellite retrieval solution, your request should focus on the processing steps that occur after you have the data in hand.

8.3 Review Process and notification Differences from the Methane ATM Request

The SEP solutions submitted as ATM requests will be reviewed following the processes outlined in Section 7.0 of this guideline document. Results obtained using an approved SEP methane detection solutions can only be submitted to the SEP program notification portal by an approved third-party notifier. Third-party notifiers will be required to use an approved SEP methane detection solution, meaning the third-party notifier review process will not begin until after SEP ATM requestss have already been approved.

8.4 Frequently Asked Questions

Where do you submit a request to be certified as a third-party notifier for the Super Emitter Program? SEP third-party notifier requests will NOT be submitted to the ATMportal covered in this guideline document. They will be submitted to a separate portal for review. Additional information regarding third-party notifiers will be covered in a separate document.

Who is the certification team? Who is the data management team? SEP ATM requests and third-party notifier requests will be reviewed by the Measurement Technology Group within OAQPS. The SEP notification portal, data management, and notification system will be run by the Office of Enforcement and Compliance Assurance (OECA).

What are the uncertainty limits on the accuracy of the GPS location? 11 m target, 50 m uncertainty bin (to provide flexibility).

Will the EPA be purchasing data as part of the Super Emitter Program? There is no plan or mechanism for the EPA to directly purchase data.

What is the confidence requirement on the detection limits? The EPA leaves it up to the third-party to perform data review, and for the 3rd party to determine if edge cases should be submitted. The certification is to confirm that you have an adequate and documented data review and evaluation process for an approved SEP ATM request.

What sources fall under the Super Emitter Program? New and existing sources covered by NSPS 0000b and EG 0000c are all covered by this program. This program does not cover emissions from other sectors i.e., refinery processes and landfills.

Will 3rd party notifier's credentials be made public along with their unique ID? Unlike the alternative program, we do not currently have a publicly facing system for the public to review a third-party notifiers credentials. However, the information provided by the third-party notifier, including who they are, what technology they are using will be available through the Super Emitter Program.

Appendix A – Methane ATM Request Portal Procedures

A.1 Home

A request for an alternative test method for advanced methane detection technology, along with the required supporting information, must be submitted to the EPA through the alternative methane detection technology portal at <https://www.epa.gov/emc/oil-and-gas-alternative-test-methods>. The EPA may make all the information submitted through the portal available to the public without further notice to you. Do not use the portal to submit information you claim as CBI. If you wish to assert a CBI claim for some of the information in your submittal, submit the portion of the information claimed as CBI to the OAQPS CBI office (see Section 6.5 of this guideline document).

Figure 4. Portal – Home Page

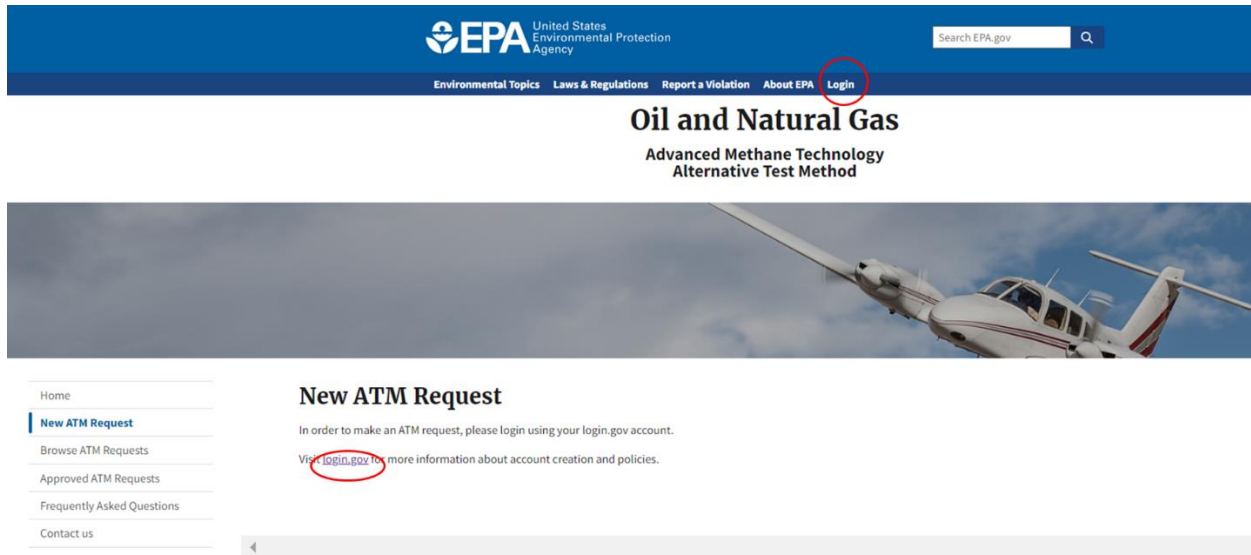


Section 5.0 of this guideline document provide step-by-step instructions on how to utilize the website in order to gain access, create, revise, and submit ATM Requests for EPA approval, along with other useful tools such as the ability to browse submitted and approved ATM requests, view frequently asked questions, and learn who to contact to obtain additional assistance.

A.2 Login.gov Account

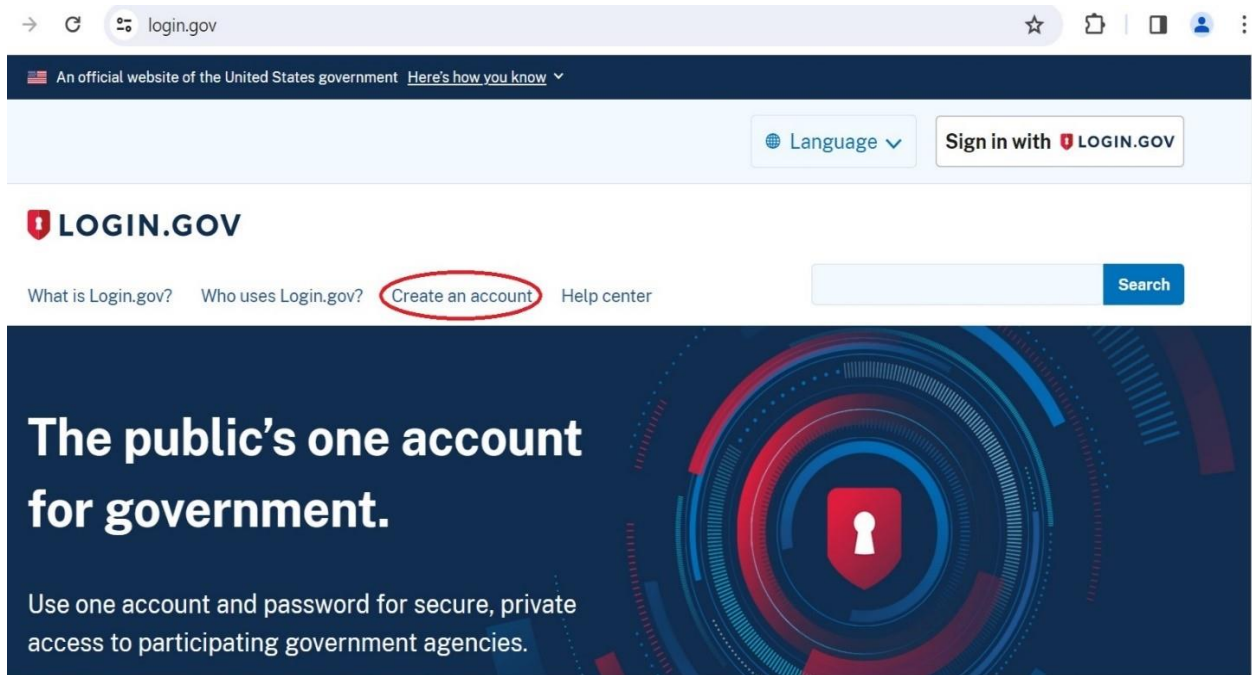
In order to submit a request for ATM approval to EPA, a login.gov account is required. Visit www.login.gov for information on account creation as shown in Figure 5.

Figure 5. Portal – Log-in.gov Account



From www.login.gov, click **Create an account** with login.gov, as shown in Figure 6.

Figure 6. Portal – Log-in.gov Create Account



Once you have created the account, navigate back to the submission portal and click [login.gov](https://www.login.gov). This will route you to the page illustrated below and will prompt you to log in with your login.gov credentials as shown in Figure 7.

Figure 7. Portal – EPA Gateway

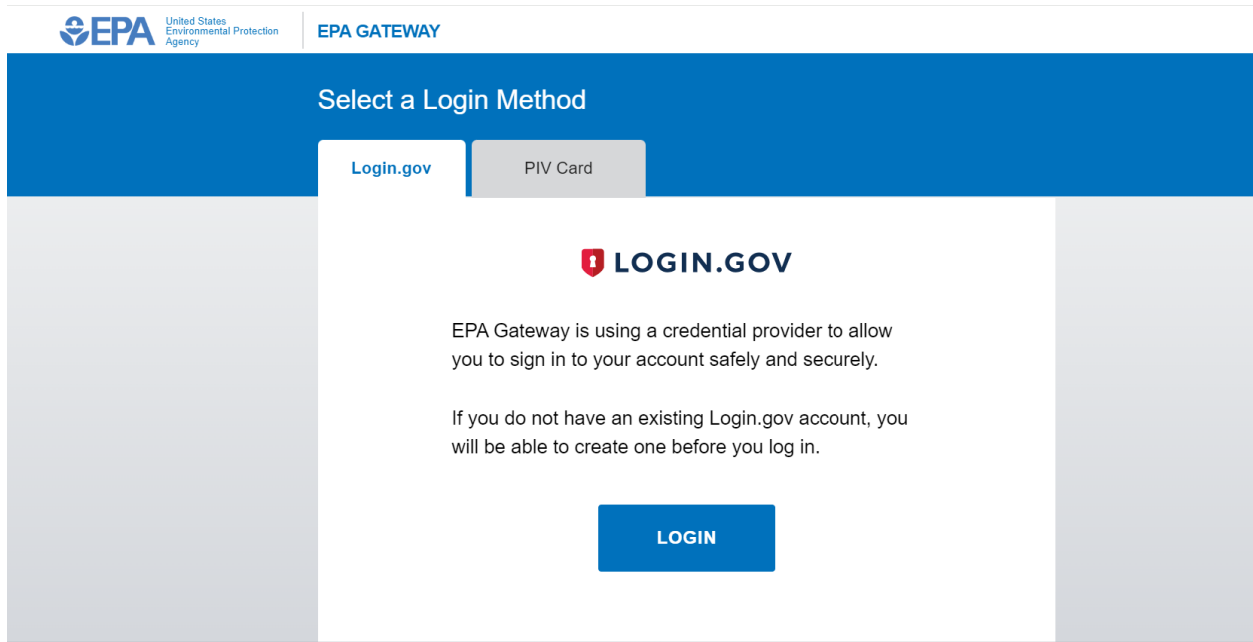
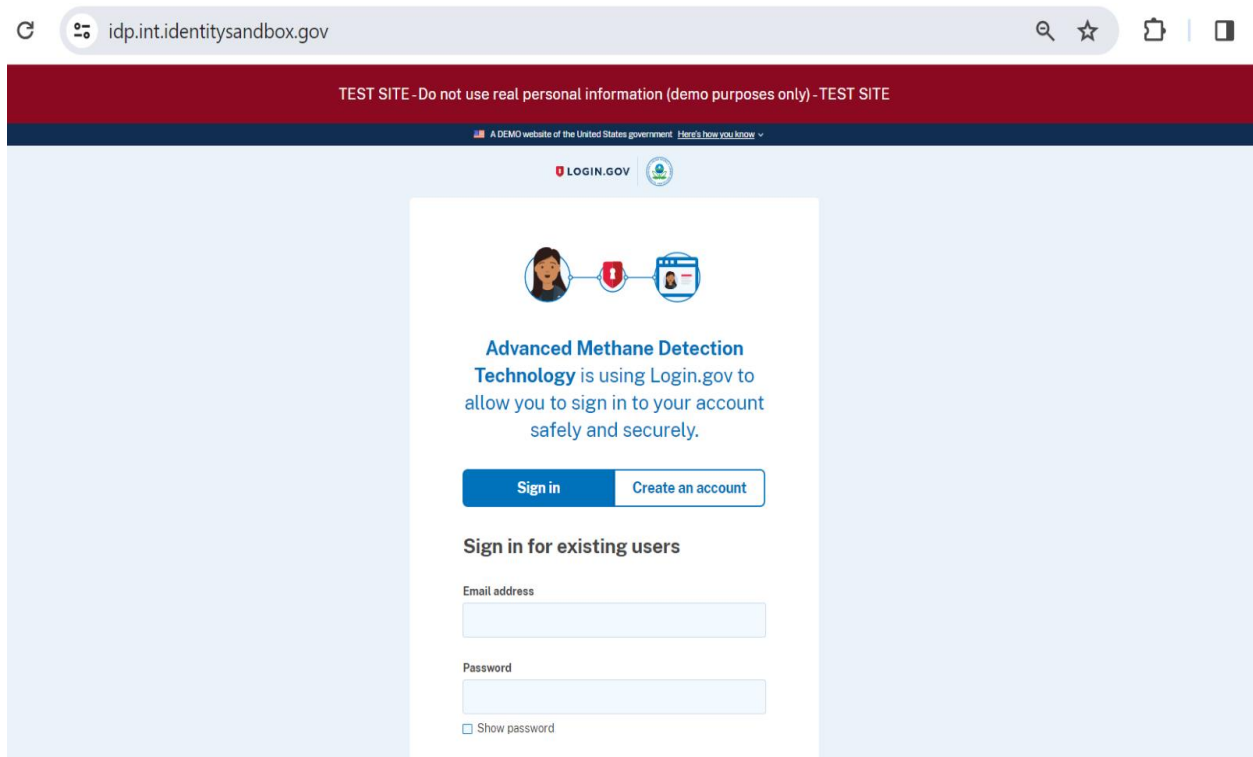
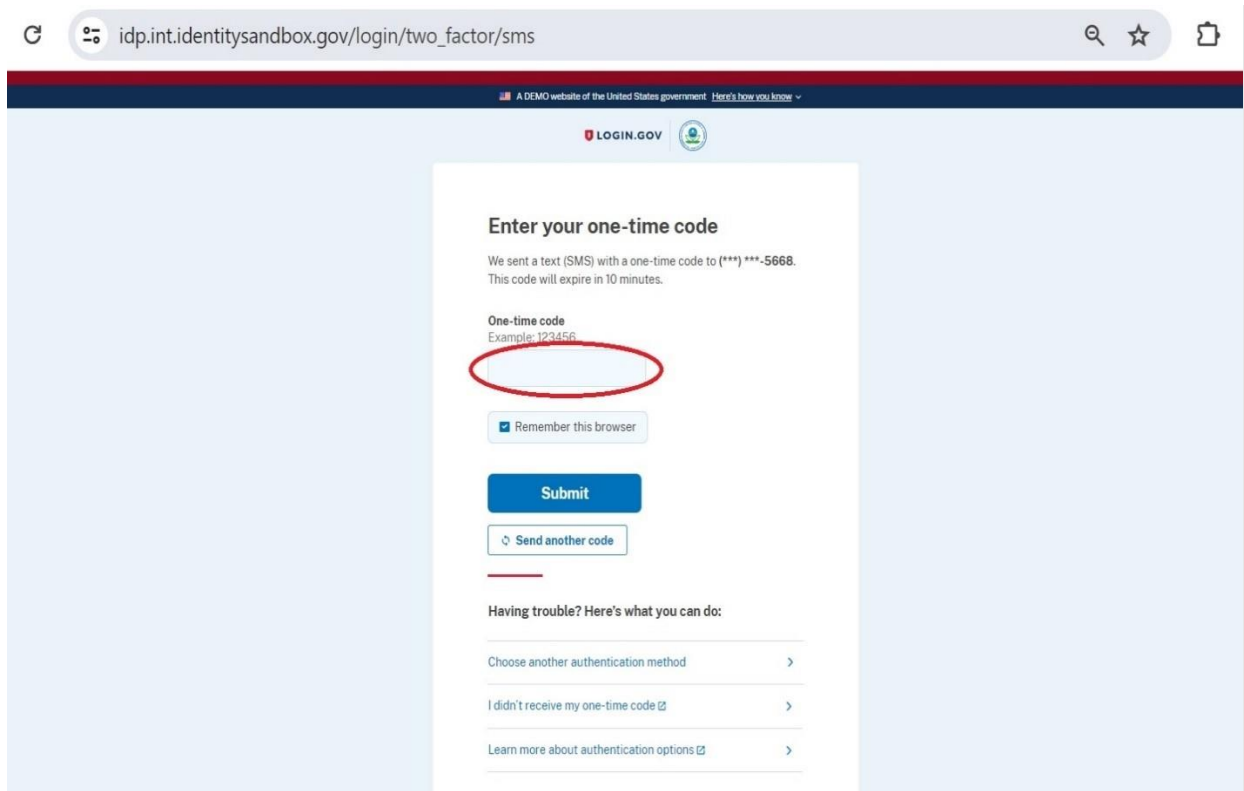


Figure 8. Portal – Login.gov Sign-In



Once you have logged in, you will be prompted to enter a one-time code to access the system, as illustrated in the image as shown in Figure 9. Note that the one-time code expires after 10 minutes of receiving. If you don't access the system within 10 minutes, you will be required to repeat the login procedures.

Figure 9. Portal – Login.gov One-time Code



A.3 New ATM Request

Once you are logged into the system, click the **New ATM Request** link to create a new submittal.

Figure 10. Portal – New ATM Request

The screenshot shows the EPA portal interface. At the top is the EPA logo and navigation links: Environmental Topics, Laws & Regulations, Report a Violation, About EPA, and Logout. The main heading is "Oil and Natural Gas Advanced Methane Technology Alternative Test Method". Below this is a banner image of a small aircraft. On the left is a navigation menu with "New ATM Request" circled in red. The main content area says "Hello, [redacted]" and "It looks like you have 7 existing requests. Click on the links below to review/edit. You can start a [new request](#) at any time." Below this is a table of existing requests.

Company	Product	Leak Resolution (kg/hr)	Technology Type	Applicability	Status	ID
SC&A, Inc.	SCA Sat	100.0	Satellite	Super-emitter detection	Approved on Mar 01, 2024 Create revision	ALTECH-73
SC&A, Inc.	SkyView	80.0	Airborne mobile remote sensor	Broadly applicable across the sector	Submitted on Apr 04, 2024	ALTECH-81
SC&A, Inc.	Methane ONG Aerial	10.0	Airborne mobile remote sensor	Site-specific	Withdrawn on Feb 02, 2024	ALTECH-69

The **New ATM Request** input form will be displayed as shown in Figure 11 through 13.

Figure 11. Portal – New ATM Request Input Form (Point of Contact/Company/Product Info)

- Home
- New ATM Request
- Review ATM Requests
- Approved ATM Requests
- Frequently Asked Questions
- Contact us

Please fill out the form below. You can save your progress at any time and return to it later. When you are finished, you can submit it for review. Your application will become publicly visible 7 days after you submit it (or sooner if it's approved.)

If you have questions, get help from the message portal. [Get Help](#)

Request ID
Not saved yet

Note About CBI

Do not submit information you claim as confidential business information (CBI) to EPA via this website. All information submitted through this website will be made available to the public without further notice to you.

Please visit [Handling CBI](#) to learn more about CBI and the procedures for submitting and associating it with your request.

ⓘ Avoid personal information

Contact information will be hidden from the public, but you are encouraged to provide business (non-personal) email and phone.

1. Point of Contact

Full Name	Email	Phone
Jane Doe	jane@abcsolutions.com	555-555-5555

2. Company and Product

Company Name	Company Website
ABC Solutions Inc.	http://abcsolutions.com
Product Name	Desired Applicability
My Detection Product	Site-specific ▾
Leak Detection Resolution	Technology Type
1 kg/hr	Satellite ▾

Continuous solution

Additional Information (optional)

Figure 12. Portal – New ATM Request Input Form (Documentation)

3. Documentation

CBI also submitted

Executive Summary (recommended) ⓘ

This information is provided in another file or not relevant

Add one or more files

Drag files here or [choose from folder](#)

Description of Technology ⓘ

This information is provided in another file or not relevant

Add one or more files

Drag files here or [choose from folder](#)

Figure 13. Portal – New ATM Request Input Form (Supporting Documentation)

Supporting Documentation ⓘ

This information is provided in another file or not relevant

Add one or more files

Drag files here or [choose from folder](#)

Formal Alternative Test Method ⓘ

This information is provided in another file or not relevant

Add one or more files

Drag files here or [choose from folder](#)

Save **Submit**

Complete the New ATM Request input form as described in Section 5.2 of this guideline document:

A.3.1 Input Form

Section 1. Point of Contact

- **Full Name:** Enter first name, followed by last name, e.g., Jane Doe (**Required Field**).
- **Email:** Enter a valid email address for point of contact, e.g., jane@abcsolutions.com (**Required Field**).
- **Phone:** Enter phone number for point of contact, with area code, in the following format: 555-555-5555 (**Required Field**).

Request ID:
The Request ID is an auto-generated identification number that will be generated and associated with the request after submitter saves form – e.g., ALTTECH-01.

Section 2. Company and Product

- **Company Name:** Enter the name of the company represented by this submission (**Required Field**).
- **Company Website:** Enter a valid company website URL for the company represented by this submission (**Required Field**).
- **Product Name:** Enter the product name of the advanced detection technology you are seeking approval for (**Required Field**).
- **Desired Applicability:** Click on the down arrow to unhide menu and select one of the following dropdown list options: (**Required Selection**).
 - Site-specific,
 - Basin-specific,
 - Broadly applicable across the sector,
 - Super-emitter detection or
 - Other.
- **Leak Detection Resolution:** Enter the leak detection resolution rate in kg/hr. of the advanced methane detection technology you are seeking approval for (**Required Field**). Check the **Continuous solution** checkbox if your ATM Request is for a continuous solution (the system will then bypass this otherwise required field).
- **Technology Type:** Click on the down arrow to unhide menu and select one of the following dropdown list options: (**Required Selection**).
 - Satellite,
 - Stationary in-situ sensor,
 - Stationary remote sensor,
 - Ground based mobile in-situ sensor,
 - Ground based mobile remote sensor,
 - Airborne mobile in-situ sensor (aircraft or drone),
 - Airborne mobile remote sensor, or
 - Other.
- **Additional information:** Enter any additional information, as needed. (**Optional Field**).

Save:

The ATM request can be saved at any time while populating fields and providing information. The draft Request ID associated with the request will be generated and you can return to the input form at a later time to complete the request.

Section 3. Documentation

- **Executive Summary:** Provide a document with a summary of the advanced methane detection solution you are seeking approval for. To learn more what EPA is recommending for this item, hover over the “?” icon to lean more. To attach the document, click **Drag files here** or **choose from folder** and select the file you wish to attach. You can attach multiple files or delete files, as needed. (**Recommended Field**). Note if the information requested in this section is provided in another file or does not apply, click the checkbox for **This information is provided in another file or not relevant** (the system will then bypass this otherwise required field).
- **Description of Technology:** Provide a document describing the advanced methane detection solution you are seeking approval for. To learn more what EPA is requiring for this item, hover over the “?” icon to lean more. To attach the document, click **Drag files here** or **choose from folder** and select the file you wish to attach. You can attach multiple files or delete files, as needed. (**Required Field**). Note if the information requested in this section is provided in another file or does not apply, click the checkbox for **This information is provided in another file or not relevant** (the system will then bypass this otherwise required field).
- **Supporting Information:** Provide a document with supporting information for the advanced methane detection solution you are seeking approval for. To learn more what EPA is requiring for this item, hover over the “?” icon to lean more To attach the document, click **Drag files here** or **choose from folder** and select the file you wish to attach. You can attach multiple files or delete files, as needed. (**Required Field**).
- **Supporting Information for Measurement Technology:** Provide a document with supporting information for measurement technology for the advanced methane detection solution you are seeking approval for. To learn more what EPA is requiring for this item, hover over the “?” icon to lean more. To attach the document, click **Drag files here** or **choose from folder** and select the file you wish to attach. You can attach multiple files or delete files, as needed. (**Required Field**). Note if the information requested in this section is provided in another file or does not apply, click the checkbox for **This information is provided in another file or not relevant** (the system will then bypass this otherwise required field).
- **Formal Alternative Test Method:** Provide a document with your formal ATM Request following the format and contents, and the guidelines for the method can be found at: <https://www.epa.gov/sites/default/files/2020-08/documents/gd-045.pdf>. To attach the document, click **Drag files here** or **choose from folder** and select the file you wish to attach. You can attach multiple files or delete files, as needed. (**Required Field**). Note if the information requested in this section is provided in another file or does not apply, click the checkbox for **This information is**

provided in another file or not relevant (the system will then bypass this otherwise required field).

Documentation Checkboxes:
If information is provided in another file or is not relevant, check the box for “This information is provided in another file or not relevant” for each documentation area.

If CBI is associated with the advanced methane technology request, check the box for “CBI also submitted.”

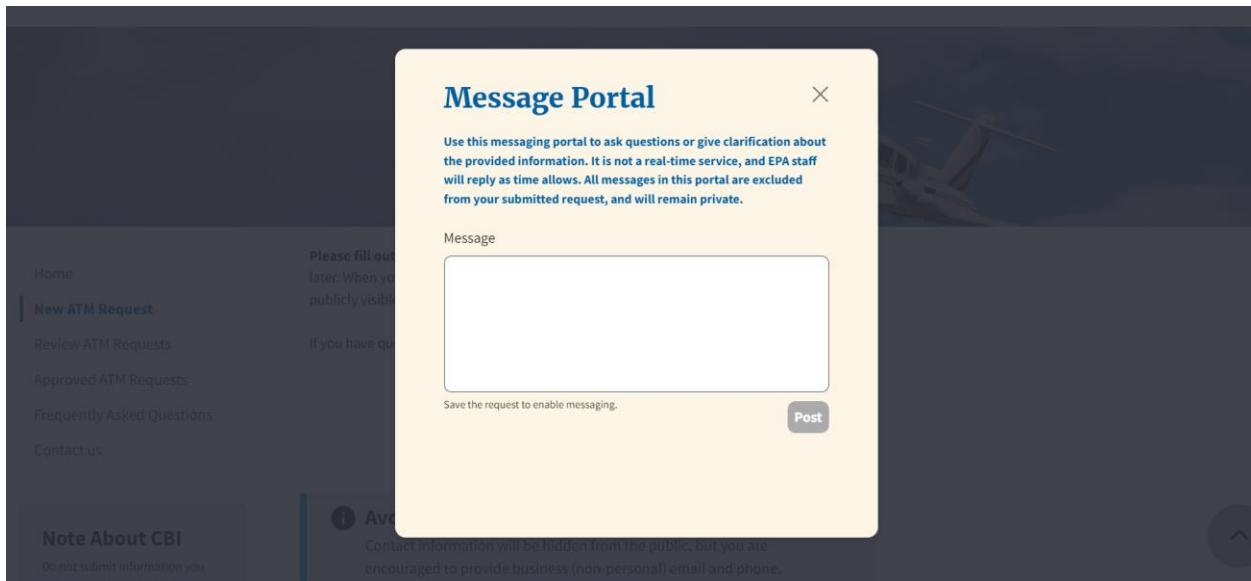
Once all required fields are complete and appropriate supporting documents have been uploaded, click the blue “Submit” button located at the bottom, right-hand corner of the page to finalize and formally submit your request.

Once clicked, a confirmation pop-up window will open to confirm the submission. Users can close the window by clicking on the “Close” button located on the bottom right-hand corner or by clicking on the “X” located on the top, right-hand corner of the window.

A.3.2 Communication Window

At any time during a saved or submitted ATM request, you can communicate with EPA by clicking the **Get Help** button on the **New ATM Request** input form. A separate pop-up window will appear as displayed in Figure A-11.

Figure 14. Portal – New ATM Request Communication Window



The communication window is designed for the submitter to ask clarifying questions related to the specific ATM Request that is being submitted to the EPA. The EPA will reply as time allows to these messages. Please note messages sent in this portal are **NOT** a part of your request and will remain private.

A.3.3 Update/Withdraw ATM Request

After your ATM Request has been saved, you can return to the request to edit it at any time. Once you are logged in, from the home page, click the name of your existing request as shown in Figure 15.

Figure 15. Portal – New ATM Request Update/Withdraw Table

The screenshot shows the EPA portal interface. At the top is the EPA logo and navigation links. The main heading is "Oil and Natural Gas" with a sub-heading "Advanced Methane Technology Alternative Test Method". Below this is a banner image of an airplane. A sidebar on the left contains navigation links: Home, New ATM Request, Review ATM Requests, Approved ATM Requests, Frequently Asked Questions, and Contact us. The main content area displays a personalized greeting "Hello, [redacted]" and a message: "It looks like you have 7 existing requests. Click on the links below to review/edit. You can start a [new request](#) at any time." Below this is a table of existing requests.

Company	Product	Leak Resolution (kg/hr)	Technology Type	Applicability	Status	ID
SC&A, Inc.	SCA Sat	100.0	Satellite	Super-emitter detection	Approved on Mar 01, 2024 Create revision	ALTECH-73
SC&A, Inc.	SkyView	80.0	Airborne mobile remote sensor	Broadly applicable across the sector	Submitted on Apr 04, 2024	ALTECH-81
SC&A, Inc.	Methane ONG Aerial	10.0	Airborne mobile remote sensor	Site-specific	Withdrawn on Feb 02, 2024	ALTECH-69

A page will be displayed where you can edit your ATM Request, save, and submit. Once the ATM Request has been submitted, you have the option to update or withdraw the request before it is approved, as shown in Figure 16.

Figure 16. Portal – New ATM Request Update/Withdraw ATM Request

The screenshot displays a user interface for managing ATM requests. On the left is a navigation menu with links: Home, New ATM Request, Review ATM Requests (highlighted), Approved ATM Requests, Frequently Asked Questions, and Contact us. Below the menu is a 'Review Messages' button. The main content area shows a request status of 'Submitted on Apr 04, 2024 10:49AM' and a 'Request ID' of 'ALTTECH-81'. Two buttons, 'Update' and 'Withdraw', are circled in red. Below this is the 'Point of Contact' section with fields for Full Name (Tanya Parise), Email (tanyaparise@gmail.com), and Phone (555-555-5555). The 'Company and Product' section includes Company Name (SC&A, Inc.), Company Website (http://www.scainc.com), Product Name (SkyView), and Desired Applicability (Broadly applicable across the sector). Other fields include Leak Detection Resolution (80.0 kg/hr) and Technology Type (Airborne mobile remote sensor). An 'Additional Information (optional)' section is also present.

Once you withdraw an ATM Request, you will no longer be able to modify it.

A.3.4 CBI Material

As stated, CBI cannot be included in your submission because it will be made publicly available. If your submittal includes information claimed to be CBI, refer to Section 6.5 of this guideline document.

A.4 Browse ATM Requests

To view existing ATM requests currently in the system, click the **Browse ATM Requests** link from the main menu. A list of active requests will be displayed as shown in Figure 17.

Figure 17. Portal – Browse ATM Requests List

Active Requests

Search companies, products etc.

Company	Product	Leak Resolution (kg/hr)	Technology Type	Applicability	Status
CH4	all seeing	None	Other	Broadly applicable across the sector	Approved on Mar 20, 2024
Cool City Methane Reductions	Killer Queen Methane Solutions	10.0	Stationary in-situ sensor	Site-specific	Submitted on Apr 11, 2024
Jones Sensors	Methane Detect 200+	2.0	Airborne mobile remote sensor	Super-emitter detection	Submitted on Feb 05, 2024
Methane Products, Inc.	MethaneGuard Plus	200.0	Airborne mobile remote sensor	Basin-specific	Approved on Jan 26, 2024
The Phoenix Foundation	Paperclip	1.0	Stationary remote sensor	Broadly applicable across the sector	Approved on Mar 19, 2024
The Phoenix Foundation	Paperclip + Duct Tape	None	Stationary remote sensor	Site-specific	Submitted on Mar 19, 2024
Atmospheric Solutions	Satellite Detect 4000	500.0	Ground based mobile in-situ sensor	Super-emitter detection	Submitted on Jan 25, 2024
SC&A, Inc.	SCA Sat	100.0	Satellite	Super-emitter detection	Approved on Mar 01, 2024
SC&A, Inc.	SkyView	80.0	Airborne mobile remote sensor	Broadly applicable across the sector	Submitted on Apr 04, 2024
Franklin Technology Ltd.	Stationary AtmosLite	1000.0	Stationary in-situ sensor	Basin-specific	Submitted on Jan 25, 2024

1 ... 2 Next >

Click any data item the table of active requests for more information. A new page displaying information related to the request will be displayed with personal information redacted, as shown in in Figure A-15.

Figure 18. Portal – Browse ATM Requests Details

Home

New ATM Request

Browse ATM Requests

Approved ATM Requests

Frequently Asked Questions

Contact us

Status: Approved by EPA staff on Jan 26, 2024

Request ID
ALTTECH-63

Point of Contact (redacted for public)

Full Name	Email	Phone
[Redacted]	[Redacted]	[Redacted]

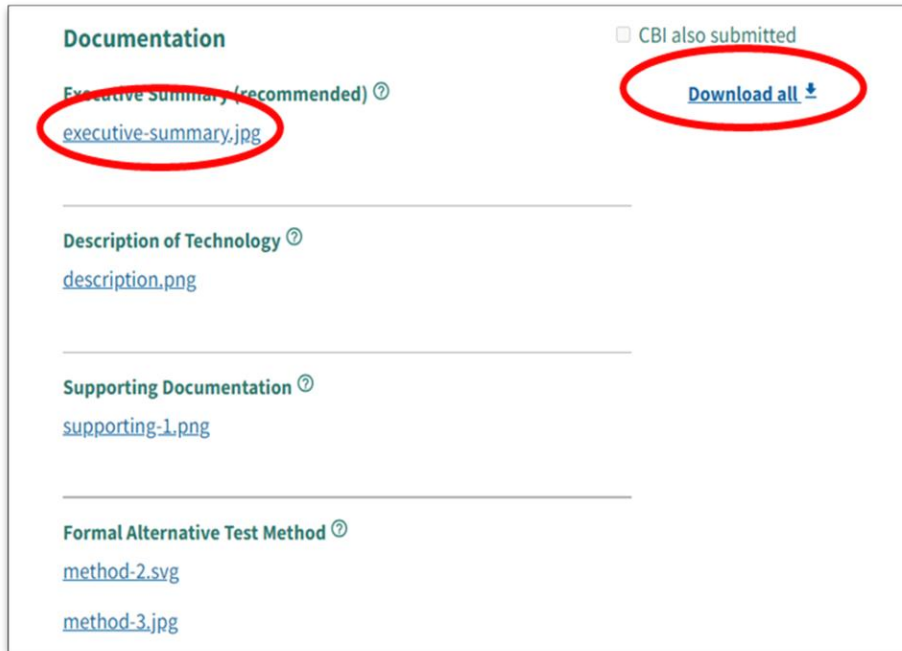
Company and Product

Company Name Methane Products, Inc.	Company Website https://methprod.com/about
Product Name MethaneGuard Plus	Desired Applicability Basin-specific
Leak Detection Resolution 200.0 kg/hr	Technology Type Airborne mobile remote sensor

Additional Information (optional)

Individual documents associated with the request can be viewed by clicking the document name, or you can download all documents associated with the request by clicking the download all link, as shown in Figure 19.

Figure 19. Portal – Browse ATM Requests Details View Documentation



A.5 Approved ATM Requests

To view ATM Requests for advanced methane detection technology that have been approved by EPA, click the **Approved ATM Requests** link from the main menu. A list of approved requests will be displayed as shown in Figure 20.

Figure 20. Portal – Approved ATM Requests

Company	Product	Leak Resolution (kg/hr)	Technology Type	
CH4	all seeing	None	Other	Broadly app
Methane Products, Inc.	MethaneGuard Plus	200.0	Airborne mobile remote sensor	Basin-specif
The Phoenix Foundation	Paperclip	1.0	Stationary remote sensor	Broadly app
SC&A, Inc.	SCA Sat	100.0	Satellite	Super-emitt
SC&A, Inc.	X-OGI	5.0	Other	Basin-specif



Use the horizontal scroll bar to view information related to approved requests as shown in Figure 21.

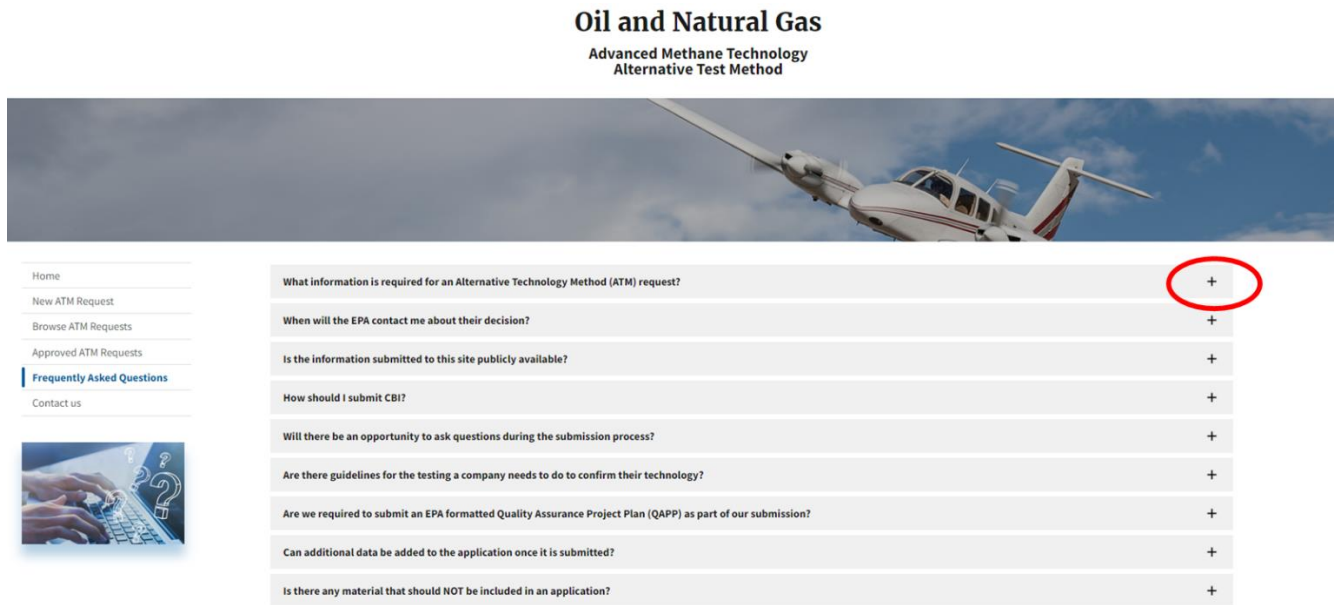
Figure 21. Portal – Approved ATM Requests Details

Technology Type	Applicability	Status	ID
Other	Broadly applicable across the sector	Approved on Mar 20, 2024	ALTTECH-77
Airborne mobile remote sensor	Basin-specific	Approved on Jan 26, 2024	ALTTECH-63
Stationary remote sensor	Broadly applicable across the sector	Approved on Mar 19, 2024	ALTTECH-74
Satellite	Super-emitter detection	Approved on Mar 01, 2024	ALTTECH-73
Other	Basin-specific	Approved on Mar 21, 2024	ALTTECH-78

A.6 Frequently Asked Questions

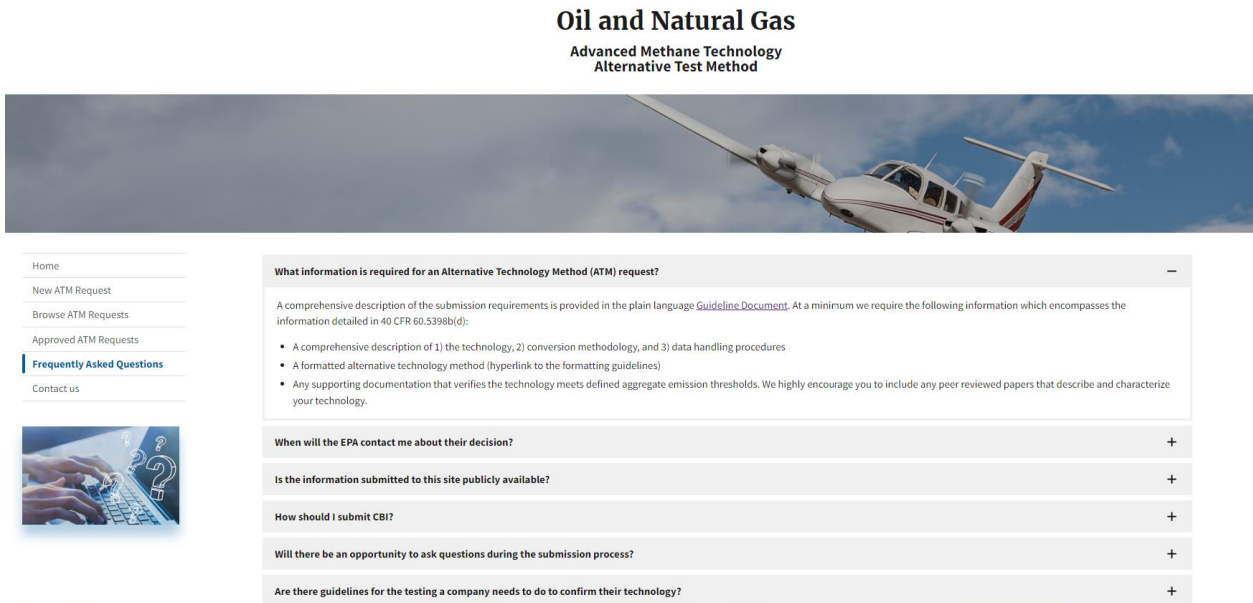
To review frequently asked questions relating to the ATM request procedure for seeking approval for advanced methane detection technology, click the **Frequently Asked Questions** link from the main menu. A new page will be displayed as shown in Figure 22.

Figure 22. Portal – Frequently Asked Questions List



To view answers to Frequently Asked Questions (FAQ) - a series of commonly asked questions and topics expand its response by clicking the plus sign (+) icon. Minimize the response by clicking the minus sign (-) icon. An example FAQ is shown in Figure 23.

Figure 23. Portal – Frequently Asked Questions Example Question



A.7 Contact Us

To learn who to contact to obtain additional assistance for the advanced methane detection technology ATM program, click the **Contact Us** link from the main menu. A new page will be displayed as shown in Figure 24.

Figure 24. Portal – Contact Us



Appendix B – Executive Form Letter

Company Name Methane Alternative Test Method Request – Executive Summary

Request Number – ALTTECH-###

Submission Date –

Company Name	
Submission Point of contact Name	
Product Name	
Technology Type	
Target Applicability	
Target Emission Leak Rate Threshold	
Request Numbers of any connected submitted requests	

Technical Summary of Technology:

Please provide a high-level summary on your solution, technique, and applicability.

Notes of the MATM Review Team:

Helpful notes contextualizing your application for the review team. For example, if you were putting in multiple applications for a solution that can have multiple thresholds, this is where you would list those related applications and add a brief description of how this application differs.

Updates to the Application:

YYYY-MM-DD – If you update your application during the review, please add a description of what documents were added or changed, and why. Please date mark the additions and edits in this document. Add any files to the summary of documents submitted, and mark them in some way – Adding a table with “added on Date” or coloring the text, for example.

Summary of Documents Submitted:

A list of all documents submitted, separated by website submission bucket, with a 1-2 sentence summary for each document.

Description Document Submission Category:

Document Name(s) with extension	Document Description
Company Name LDAR Measurement Document.pdf	The Measurement technology summary document.
Company_Name_Visual_Workflow.pptx	A visual workflow for Company Name MATM submission

Supporting Documents:

Document Name(s) with extension	Document Description
Product_Brochure.pdf	Informational brochure used in sales pitches
Siteing_guidelines.pdf	Site set up guidelines that are used by the installation crew
Technical_summary_presentation.pptx	Executive summary slides for outside shareholders

Alt Test Method:

Document Name(s) with extension	Document Description
Company Name Alt Test Method.pdf	Alt Tech Formatted Method

CBI Submitted Documents:

Document Name(s) with extension	Document Description
CM_standard_operating_procedures.docx	The SOP for the method that is turned over to end users
QA_Baseline_values.csv	Minimum quality assurance values

**Appendix C – Environmental Monitoring Management Council (EMMC) Methods
Format (GD 45)**

Environmental Monitoring Management Council (EMMC) Methods Format

1.0 Scope and Application

Use a tabular format whenever possible for:

- Analyte list(s)
- Chemical Abstract Service (CAS) numbers
- Matrices
- Method Sensitivity (expressed as mass and as concentration with a specific sample size)

Include a list of analytes (by common name) and their CAS registry numbers, the matrices to which the method applies, a generic description of method sensitivity (expressed both as the mass of analyte that can be quantified and as the concentration for a specific sample volume or size), and the data quality objectives which the method is designed to meet. Much of this material may be presented in a tabular format.

2.0 Summary of Method

Sample volume requirements

- Extraction
- Digestion
- Concentration, and other preparation steps employed
- Analytical instrumentation and detector system(s), and
- Techniques used for quantitative determinations

Summarize the method in a few paragraphs. The purpose of the summary is to provide a succinct overview of the technique to aid the reviewer or data user in evaluating the method and the data. List sample volume, extraction, digestion, concentration, other preparation steps employed, the analytical instrumentation and detector system(s), and the techniques used for quantitative determinations.

3.0 Definitions of Method

Include the definitions of all method-specific terms here. For extensive lists of definitions, this section may simply refer to a glossary attached at the end of the method document.

4.0 Interferences

This section should discuss any known interferences, especially those that are specific to the performance-based method. If known interferences in the reference method are not interferences in the performance-based method, this should be clearly stated.

5.0 Safety

- Above and beyond good laboratory practices
- Disclaimer statement (look at ASTM disclaimer)
- Special precautions
- Specific toxicity of target analytes or reagents
- Not appropriate for general safety statements

This section should discuss only those safety issues specific to the method and beyond the scope of routine laboratory practices. Target analytes or reagents that pose specific toxicity or safety issues should be addressed in this section.

6.0 Equipment and Supplies

Use generic language wherever possible. However, for specific equipment such as GC (gas chromatograph) columns, do not assume equivalency of equipment that was not specifically evaluated, and clearly state what equipment and supplies were tested.

7.0 Reagents and Standards

Provide sufficient details on the concentration and preparation of reagents and standards to allow the work to be duplicated, but avoid lengthy discussions of common procedures.

8.0 Sample Collection, Preservation and Storage

- Provide information on sample collection, preservation, shipment, and storage conditions
- Holding times, if evaluated

If effects of holding time were specifically evaluated, provide reference to relevant data, otherwise, do not establish specific holding times.

9.0 Quality Control

Describe specific quality control steps, including such procedures as method blanks, laboratory control samples, QC check samples, instrument checks, etc., defining all terms in Section 3.0. Include frequencies for each such QC operation.

10.0 Calibration and Standardization

Discuss initial calibration procedures here. Indicate frequency of such calibrations, refer to performance specifications, and indicate corrective actions that must be taken when performance specifications are not met. This Section may also include procedures for calibration verification or continuing calibration, or these steps may be included in Section 11.0.

11.0 Procedure

Provide a general description of the sample processing and instrumental analysis steps. Discuss those steps that are essential to the process, and avoid unnecessarily restrictive instructions.

12.0 Data Analysis and Calculations

Describe qualitative and quantitative aspects of the method. List identification criteria used. Provide equations used to derive final sample results from typical instrument data. Provide discussion of estimating detection limits, if appropriate.

13.0 Method Performance

A precision/bias statement should be incorporated in the Section, including:

- detection limits
- source/limitations of data

Provide detailed description of method performance, including data on precision, bias, detection limits (including the method by which they were determined and matrices to which they apply), statistical procedures used to develop performance specification, etc. Where performance is tested relative to the reference method, provide a side-by-side comparison of performance versus reference method specifications.

14.0 Pollution Prevention

Describe aspects of this method that minimize or prevent pollution that may be attributable to the reference method.

15.0 Waste Management

Cite how waste and samples are minimized and properly disposed.

16.0 References

- Source documents
- Publications

17.0 Tables, Diagrams, Flowcharts and Validation Data

Additional information may be presented at the end of the method. Lengthy tables may be included here and referred to elsewhere in the text by number. Diagrams should only include new or unusual equipment or aspects of the method.

Appendix D – 60.5398b(d) Rule Language for the MATM Program

60.5398b(d) (b) Alternative Test Method for Methane Detection Technology. Any alternative test method for methane detection technology used to meet the requirements specified in paragraphs (b) or (c) of this section or § 60.5371b must be approved by the Administrator as specified in this paragraph (d). Approval of an alternative test method for methane detection technology will include consideration of the combination of the measurement technology and the standard protocol for its operation. Any entity meeting the requirements in paragraph (d)(2) of this section may submit a request for an alternative test method for methane detection technology. At a minimum, the request must follow the requirements outlined in paragraph (d)(3) of this section. Approved alternative test methods for methane detection technology that are broadly applicable will be posted on the EPA's Emission Measurement Center web page (<https://www.epa.gov/emc/oil-and-gasalternative-test-methods>). Any owner or operator that meets the specific applicability for the alternative test method, as outlined in the alternative test method for methane detection technology, may use the alternative test method to comply with the requirements of paragraph (b) or (c) of this section, as applicable, in lieu of the requirements for fugitive emissions components affected facilities in § 60.5397b and covers and closed vent systems in § 60.5416b(a)(1)(ii) and (iii), (a)(2)(ii) through (iv), and (a)(3)(iii) and (iv). Certified third-party notifiers may use the alternative test method to identify super-emitter events in § 60.5371b(b)(1)(ii).

(1) A request for an alternative test method for methane detection technology, along with the required supporting information, must be submitted to the EPA through the alternative methane detection technology portal at <https://www.epa.gov/emc/oil-and-gasalternative-test-methods>. The EPA may make all the information submitted through the portal available to the public without further notice to you. Do not use the portal to submit information you claim as confidential business information (CBI). If you wish to assert a CBI claim for some of the information in your submittal, submit the portion of the information claimed as CBI to the OAQPS CBI office. Clearly mark the information that you claim to be CBI. Information not marked as CBI may be authorized for public release without prior notice. Information marked as CBI will not be disclosed except in accordance with procedures set forth in 40 CFR part 2. All CBI claims must be asserted at the time of submission. Anything submitted using the portal cannot later be claimed CBI. The preferred method to receive CBI is for it to be transmitted electronically using email attachments, File Transfer Protocol, or other online file sharing services. Electronic submissions must be transmitted directly to the OAQPS CBI Office at the email address oaqpscbi@epa.gov and should include clear CBI markings and be flagged to the attention of the Leader, Measurement Technology Group. If assistance is needed with submitting large electronic files that exceed the file size limit for email attachments, and if you do not have your own file sharing service, please email oaqpscbi@epa.gov to request a file transfer link. If you cannot transmit the file electronically, you may send CBI information through the postal service to the following address: U.S. EPA, Attn: OAQPS Document Control Officer and Measurement Technology Group Leader, Mail Drop: C404-02, 109 T.W. Alexander

Drive, P.O. Box 12055, RTP, North Carolina 27711. The mailed CBI material should be double wrapped and clearly marked. Any CBI markings should not show through the outer envelope.

(i) The Administrator will complete an initial review for completeness within 90 days of receipt and notify the submitter of the results of the review.

(ii) If the entity submitting the request does not meet the requirements in paragraph (d)(2) of this section or the request does not contain the information in paragraph (d)(3) of this section, the submitter will be notified. The submitter may choose to revise the information and submit a new request for an alternative test method.

(iii) Within 270 days of receipt of an alternative test method request that was determined to be complete, the Administrator will determine whether the requested alternative test method is adequate for indicating compliance with the requirements for monitoring fugitive emissions components affected facilities in § 60.5397b and continuous inspection and monitoring of covers and closed vent systems in § 60.5416b and/or for identifying super-emitter events in § 60.5371b. The Administrator will issue either an approval or disapproval in writing to the submitter. Approvals may be considered site-specific or more broadly applicable. Broadly applicable alternative test methods and approval letters will be posted at <https://www.epa.gov/emc/oil-and-gasapproved-alternative-test-methodsapprovals>. If the Administrator fails to provide the submitter a decision on approval or disapproval within 270 days, the alternative test method will be given conditional approval status and posted on this same web page. If the Administrator finds any deficiencies in the request and disapproves the request in writing, the owner or operator may choose to revise the information and submit a new request for an alternative test method.

(iv) If the Administrator finds reasonable grounds to dispute the results obtained by any alternative test method for the purposes of demonstrating compliance with a relevant standard, the Administrator may require you to demonstrate compliance according to § 60.5397b for fugitive emissions components affected facilities and § 60.5416b for covers and closed vent systems.

(2) Any entity may submit an alternative test method for consideration, so long as you meet the requirements in paragraphs (d)(2)(i) through (iv) of this section.

(i) An entity is limited to any individual or organization located in or that has representation in the United States.

(ii) If an entity is not considered an owner or operator of an affected facility regulated under this subpart or subpart OOOOa of this part or is not the owner or operator of a designated

facility regulated under subpart OOOOc of this part, the provisions of paragraphs (d)(2)(ii)(A) and (B) of this section apply. (

A) The entity must directly represent the provider of the measurement system using advanced methane detection technology.

(B) The measurement system must have been applied to methane measurements or monitoring in the oil and gas sector either domestically or internationally.

(iii) The underlying technology or technologies must be readily available for use, meaning that the measurement system using these technologies has either been:

(A) Sold, leased, or licensed, or offered for sale, lease, or license to the general public or;

(B) Developed by an owner or operator for internal use and/or use by external partners.

(iv) The entity must be able to provide and submit to the Administrator the information required in paragraph (d)(3) of this section.

(3) The request must contain the information specified in paragraphs (d)(3)(i) through (vii) of this section.

(i) The submitter's name, mailing address, phone number and email address.

(ii) The desired applicability of the technology (i.e., site-specific, basin specific, or broadly applicable across the sector, super-emitter detection).

(iii) Description of the measurement technology, including the physical components, the scientific theory, and the known limitations. At a minimum, this description must contain the information in paragraphs (d)(3)(iii)(A) through (D) of this section.

(A) Description of scientific theory and appropriate references outlining the underlying technology (e.g., reference material, literature review).

(B) Description of the physical instrumentation.

(C) Type of measurement and application (e.g., remote or in-situ measurements, mobile, airborne).

(D) Known limitation of the technology, including application limitations and weather limitations.

(iv) Description of how the measurement technology is converted to a methane mass emission rate (i.e., kg/ hr of methane) or equivalent. At a minimum this description must contain the information in paragraphs (d)(3)(iv)(A) through (F) of this section.

(A) Detailed workflow and description covering all steps and processes from measurement technology signal output to final, validated mass emission rate or equivalent. These workflows must cover the material in paragraph (d)(3)(v) of this section and put all technical components into context. The workflow must also cover the technology from data collection to generation of the final product and identify any raw data processing procedures; identification of whether processing steps are manual or automated, and when and what quality assurance checks are made to the data, including raw data, processed data, and output data.

(B) Description of how any meteorological data used are collected or sourced, including a description how the data are used.

(C) Description of any model(s) (e.g., AERMOD) used, including how inputs are determined or derived.

(D) All calculations used, including the defined variables for any of these calculations and a description of their purposes.

(E) Descriptions of a-priori methods and datasets used, including source and version numbers when applicable.

(F) Description of algorithms/machine learning procedures used in the data processing, if applicable.

(v) Description of how all data collected and generated by the measurement system are handled and stored. At a minimum this description must contain the information in paragraphs (d)(3)(v)(A) through (C) of this section.

(A) How the data, including metadata, are collected, maintained, and stored.

(B) A description of how raw data streams are processed and manipulated, including how the resultant data processing is documented and how version controlled is maintained.

(C) A description of what data streams are provided to the end-user of the data and how the data are delivered to the end-user.

(vi) Supporting information verifying that the technology meets the aggregate detection threshold(s) defined in paragraphs (b) and/or (c) of this section or in § 60.5371b, including supporting data to demonstrate the aggregate detection threshold of the measurement

technology as applied in the field and if applicable, how probability of detection is determined. For the purpose of this subpart the average aggregate detection threshold is the average of all site-level detection thresholds from a single deployment (e.g., a singular flight that surveys multiple well sites, centralized production facility, and/or compressor stations) of a technology, unless this technology is to be applied to § 60.5371b. When the technology is applied to § 60.5371b, then the aggregate detection threshold is the average of all site-level detection thresholds from a single deployment in the same basin and field. At a minimum, you provide the information identified in paragraphs (d)(3)(vi)(A) through (D) of this section.

(A) Published reports (e.g., scientific papers) produced by either the submitting entity or an outside entity evaluating the submitted measurement technology that has been independently evaluated. The published reports must identify either a site-level or aggregate detection threshold and be accompanied with sufficient supporting data to evaluate whether the performance metrics of the alternative testing procedures in paragraph (d)(3)(vi)(C) of this section are adequate and the data was collected consistent with those alternative testing procedures. The supporting data may be included in the published report or may be submitted separately.

(B) Standard operating procedures including safety considerations, measurement limitations, personnel qualification/responsibilities, equipment and supplies, data and record management, and quality assurance/quality control (i.e., initial and ongoing calibration procedures, data quality indicators, and data quality objectives).

(C) Detailed description of the alternative testing procedure(s), preferably in the format described in Guideline Document 45 on the Emission Measurement Center's website (available at <https://www.epa.gov/sites/default/files/2020-08/documents/gd045.pdf>). The detailed description must address all key elements of the requested method(s) and must include objectives to ensure the detection threshold(s) required in paragraph (d)(3)(vi) of this section are maintained, including procedures for verifying the detection threshold and/or or probability of detection is maintained under field conditions.

(D) Any documents provided to end users of the data generated by the measurement system, including but not limited to client products, manuals, and frequently asked questions documents.

(vii) If the technology will be used to monitor the collection of fugitive emissions components, covers, and closed vent systems at a well site, centralized production facility, or compressor station, you must submit supporting information verifying the spatial resolution of technology, as defined in paragraphs (d)(3)(vii)(A) through (C) of this section. This supporting information must be in the form of a published reports (e.g., scientific papers) produced by either the submitting entity or an outside entity evaluating the submitted measurement technology that

has been independently evaluated. The report must include sufficient supporting data to evaluate whether the performance metrics of the alternative testing procedures in paragraph (d)(3)(vi)(C) of this section are adequate and the data was collected consistent with those alternative testing procedures.

(A) Facility-level spatial resolution means a technology with the ability to identify emissions within the boundary of a well site, centralized production facility, or compressor station.

(B) Area-level spatial resolution means a technology with the ability to identify emissions within a radius of 2 meters of the emission source.

(C) Component-level spatial resolution means a technology with the ability to identify emissions within a radius of 0.5 meter of the emission source.