The **MiQ Equivalency Table**, which coves the next two pages of this document, serves as standardized guidance for operators choosing to comply with the MiQ Standard's Monitoring Technology Deployment requirements with an emissions monitoring program that is alternative to the default performance scoring table in the Monitoring Technology Deployment (MTD) pillar of the MiQ Standard (Table 2). This Equivalency Table and its results applies to Onshore Production Facilities. For more information on the development of these tables see the MiQ Equivalency Table modeling methodology.

Questions? Contact us!

For questions regarding the MiQ Equivalency Table, contact info@miq.org

MiQ Equivalency Table

Subcategory Description	Program #	Facility MTD Scoring		Facility Scale monitoring		Source Level monitoring		Continuous Monitoring Systems			Satellite monitoring	
		Gas basin (GOR > 100 mcf bbl^{-1})	Oil basin (GOR ≤ 100 mcf bbl^{-1})	Frequency [surveys yr^{-1}]	Alarm Threshold [kg hr^{-1}]	Frequency [surveys yr^{-1}]	Add'l Monitoring [Facility %]	Sensor Type	Alarm Threshold [kg hr^{-1}]	% of Facility deployed	Frequency [surveys yr^{-1}]	Alarm Threshold [kg hr^{-1}]
Varying Facility Scale *w/ alarm @ 5, 10, or 25 kg/hr* Varying Source Level No CMS	1.01	12	12	2	5	4						
	1.02	12	12	4	5	2						
	1.03	12	12	2	10	4						
	1.04	12	12	4	10	2						
	1.05	8	12	1	25	6						
	1.06	8	8	1	25	4						
	1.07	12	12	1	10	6						
	1.08	8	8	1	10	4						
Varying Facility Scale *w/ alarm @ 10 or 25 kg/hr* 1-1.5x/yr Source Level No CMS	2.01	4	4	2	25	1						
	2.02	4	4	3								
	2.03	4	4	4								
	2.04	4	4	2	10		33%					
	2.05	4	4	3								
	2.06	4	8	4								
	2.07	4	4	2	25							
	2.08	4	4	3								
	2.09	8	8	4								
	2.10	8	4	2	10							
	2.11	8	8	3								
	2.12	8	8	4								
	2.13	4	4	2	25		50%					
	2.14	4	8	3								
	2.15	8	8	4								
	2.16	4	4	2	10							
	2.17	4	8	3								
	2.18	12	8	4								
2x/yr Facility Scale *w/ alarm @ 10 kg/hr* 1-2x/yr Source Level 50% CMS Deployment *Passive Fence-Line Network w/ alarm @ 10 or 25 kg/hr*	3.01	8	8	2	10	1	0%	Passive fence-line network	25	50%		
	3.02	8	8			1	25%					
	3.03	8	8			1	50%					
	3.04	12	12			1	75%					
	3.05	12	12			2	0%					
	3.06	8	8			1	0%		10			
	3.07	8	8			1	25%					
	3.08	8	12			1	50%					
	3.09	12	12			1	75%					
	3.10	12	12			2	0%					
1x/yr Facility Scale *w/ alarm @ 10 or 25 kg/hr* 1x or 2x/yr Source Level Varying CMS Deployment *Passive Fence-Line Network w/ alarm @ 25 kg/hr*	4.01	4	4	1	25	1		Passive fence-line network	25	25%		
	4.02	4	4							33%		
	4.03	4	4							50%		
	4.04	8	8							66%		
	4.05	4	4			2				25%		
	4.06	8	4							33%		
	4.07	12	12							50%		
	4.08	12	12							66%		
	4.09	4	4		10	1				25%		
	4.10	4	4							33%		
	4.11	4	4							50%		
	4.12	8	12							66%		
	4.13	4	4			2				25%		
	4.14	4	8							33%		
	4.15	8	8							50%		
	4.16	12	12							66%		
1x/yr Facility Scale *w/ alarm @ 10 or 25 kg/hr* 1x or 2x/yr Source Level Varying CMS Deployment *Active Scanning System w/ alarm @ 10 kg/hr*	5.01	4	4	1	25	1		Active scanning system	10	25%		
	5.02	4	4							33%		
	5.03	8	8							50%		
	5.04	8	8							66%		
	5.05	4	4			2				25%		
	5.06	4	8							33%		
	5.07	12	12							50%		
	5.08	12	12							66%		
	5.09	4	4		10	1				25%		
	5.10	4	4							33%		
	5.11	4	8							50%		
	5.12	8	12							66%		
	5.13	4	8			2				25%		
	5.14	8	8							33%		
	5.15	8	8							50%		
	5.16	12	12							66%		

MTD Scoring and relation to MiQ Grade[1]

12 points means an operator is eligible to receive an A grade

8 points means an operator is eligible to receive a B grade

4 points means an operator is eligible to receive a C grade

Facility Scale monitoring surveys are modeled as a snapshot detection method at the stated frequency. MiQ is method-agnostic. However, typically these Facility Scale surveys are conducted by plane-based or drone-based methods to represent a three-dimensional survey of sites within the operator's asset.

1 Overall MiQ Grade is also dependent on the operator's performance for the methane intensity and company practices pillars

2 **Alarm threshold** refers to the minimum emission rate of an event identified by the monitoring method that is investigated by operations per LDAR/advanced LDAR procedures. An operator may qualify an alarm threshold based on other parameters such as persistence, or in the case of continuous monitoring technologies, a non-instantaneous emission rate threshold. The MiQ auditor will assess these on a case by case basis to determine if the operator's threshold is expected to lead to similar emission reductions and is more suited towards the monitoring method.

MiQ Equivalency Table

Subcategory Description	Program #	Facility MTD Scoring		Facility Scale monitoring		Source Level monitoring		Continuous Monitoring Systems			Satellite monitoring	
		Gas basin (GOR > 100 mcf bbl^{-1})	Oil basin (GOR ≤ 100 mcf bbl^{-1})	Frequency [surveys yr^{-1}]	Alarm Threshold [kg hr^{-1}]	Frequency [surveys yr^{-1}]	Add'l Monitoring [Facility %]	Sensor Type	Alarm Threshold [kg hr^{-1}]	% of Facility deployed	Frequency [surveys yr^{-1}]	Alarm Threshold [kg hr^{-1}]
No or 1x/yr Facility Scale *w/ alarm @ 10 or 25 kg/hr*	6.01	8	8							25%		
	6.02	8	12							33%		
	6.03	8	12							50%		
	6.04	12	12							66%		
3x/yr Source Level	6.05	8	12							25%		
	6.06	12	12	1	25	3		Passive fence-line network	25	33%		
Varying CMS Deployment *Passive Fence-Line Network w/ alarm @ 25 kg/hr*	6.07	12	12							50%		
	6.08	12	12							66%		
	6.09	12	12							25%		
	6.10	12	12		10					33%		
	6.11	12	12							50%		
	6.12	12	12							66%		
No Facility Scale	7.01	0	0							25%		
1x/yr Source Level	7.02	0	0					Passive fence-line network	25	33%		
	7.03	4	0							50%		
Varying CMS Deployment *Passive Fence-Line Network w/ alarm @ 25 kg/hr* or *Active Scanning System w/ alarm @ 10 kg/hr*	7.04	8	4			1				66%		
	7.05	0	0							25%		
	7.06	0	0					Active scanning system	10	33%		
	7.07	4	4							50%		
	7.08	8	4							66%		
Varying Facility Scale, 1-3x/yr *w/ alarm @ 25 kg/hr*	8.01	8	4								12	500
	8.02	8	4								24	500
	8.03	8	4	1	25						48	500
	8.04	8	12								12	100
	8.05	8	12								24	100
	8.06	8	12								48	100
1x/yr Source Level	8.07	8	8								12	500
	8.08	8	8								24	500
	8.09	8	8	2	25	1					48	500
No CMS	8.10	8	12								12	100
	8.11	8	12								24	100
	8.12	8	12								48	100
Varying satellite monitoring, 12-48x/yr *w/ alarm @ 100 or 500 kg/hr*	8.13	8	8								12	500
	8.14	8	8								24	500
	8.15	8	8	3	25						48	500
	8.16	8	12								12	100
	8.17	8	12								24	100
	8.18	8	12								48	100
Varying Facility Scale, 1-3x/yr *w/ alarm @ 10 kg/hr*	9.01	8	8								12	500
	9.02	8	8								24	500
	9.03	8	8	1	10						48	500
	9.04	8	12								12	100
	9.05	8	12								24	100
	9.06	8	12								48	100
1x/yr Source Level	9.07	8	8								12	500
	9.08	8	8								24	500
	9.09	8	8	2	10	1					48	500
No CMS	9.10	8	12								12	100
	9.11	8	12								24	100
	9.12	8	12								48	100
Varying satellite monitoring, 12-48x/yr *w/ alarm @ 100 or 500 kg/hr*	9.13	12	8								12	500
	9.14	12	12								24	500
	9.15	12	12	3	10						48	500
	9.16	12	12								12	100
	9.17	12	12								24	100
	9.18	12	12								48	100

Assumptions consistent across all programs

- Natural repair delay: 365 days
- OGI reporting delay: 2 days
- Aerial/drone reporting delay: 21 days
- CMS Reporting delay: 0 days
- Satellite method reporting delay: 15 days
- Repair delay (for events detected by all methods): 28 days

Each modeled event captured by a technology is assumed to be repaired by the specific method's reporting delay days + the repair delay days after the survey date. This is consistent across all programs including the simulations of each MiQ grade used to determine the relative effectivness of each program

Relationship to MiQ Compatibility Assessments

MiQ Compatibility Assessments publish the minimum detection limit (MDL) at 90% probability of detection for each methane monitoring technology that has undergone a compatibility assessment to the MiQ Standard. MDL's published in a MiQ compatibility assessment must be based on the results of published independent testing of the technology to a transparent test protocol.

The alarm threshold(s) referenced by operators complying with one of the MiQ Equivalency Table programs must be equal to or above the MDL published in the Compatibility Assessment for that monitoring method. The operator must respond to all events equal to and greater than the alarm threshold they select. Operators using continuous monitoring systems with a non-instantaneous alarm threshold and referencing a program in the MiQ Equivalency Table must possess written justification of their alarm strategy.

Operators referencing the Equivalency Table **may** utilize methane monitoring technologies that have completed MiQ compatibility assessments. Operators may also use other methane monitoring technologies that are compliant with the MiQ Standard's requirements.

A link is provided below for each published compatibility assessment.

MiQ Compatibility Assessments

Bridger Photonics
GHGSat (Data.Air & Data.Sat)
Insight M
Kuva
Longpath
Qube
SeekOps
Sensirion