

Air Monitoring Directive – Summary of Feedback and Responses for Chapter 5 (Quality System)

The following feedback was received following the 60-day public review of the Draft Air Monitoring Directive Chapter 5 which took place in February and March 2014.

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1	General comment in noting that Airsheds are now included in definition for person responsible. This is borne out most evidently in requirements specified in Section 6. Is the intent to eliminate the need for contractors who conduct monitoring reporting operations to have their own QAP's?	With airsheds added to definition of person responsible, this does not remove the requirement for a contractor performing monitoring to have their own QAP. The airshed's QAP would need to outline this and can refer to a contractor's QAP. Airshed/industry is ultimately responsible for contractor's activities.	More guidance was added in section 6.0 of Chapter 5 on industry/airshed/contractor responsibility relationship. See comments 13, 14, 15, 16, 18, 40 and 41.
2	Should include a definition of subcontractor and contractor. Why is the term 'subcontractors' used only in section 6.2? Why not 'contractors'? The person responsible can use both.	Will be using 'contractor' going forward – since that term would also include sub-contractors.	Section 6.2 changed to 'Contracted Services.'
3	Requirements for Airsheds since 'Person Responsible' now includes Airsheds: Subtle change in definition has large implications. See below in several clauses. Does this include contractors or subcontractors?	Person responsible includes industrial operations (through their EPEA approval) and airsheds. Contractors are not the person responsible. All contractors hired by an airshed (or industry) are required to follow the AMD, but they are not the person responsible. Airshed (or industry) is the owner of the data and is ultimately responsible for data and reports that are submitted.	More guidance was added in section 6.0 of Chapter 5 on industry/airshed/contractor responsibility relationship. See comments 13, 14, 15, 16, 18, 40 and 41.
4	QS2-C - Requirement to follow ESRD lab data quality assurance policy. Need to see updated version of this policy also to provide suitable comment on this clause. If approvals list requirements for lab data quality, are they the same as Lab Data Quality Assurance policy? Or if not, which takes precedence?	The current Lab Data Quality Assurance Policy is in place until amended. The approval always takes precedence (over AMD and Lab Data Quality policy).	Kept this requirement in Chapter 5. If there is no requirement in an approval, would need to follow Lab Data Quality policy (use an accredited lab).

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<p>5 QS3-B - approved changes to controlled documents are recorded. This may be Ok for the QAP itself but could get VERY unwieldy with edits to a document or forms or keeping a separate record of the changes. The way it's written it could include formatting changes or phone numbers! Is it not good enough to note when a controlled document was superseded and maintain an archived copy of it? A comparison of old to new can be done at any time if needed.</p>	<p>QS 3-B requires that a documented procedure be established for making changes to controlled documents. So QAP must outline how the person responsible will keep track of changes to documents. This was the intent of this clause and will clarify.</p>	<p>Changed QS 3-B to: (ii) all approved changes to controlled documents are 'traceable'. As long as the new and old versions are kept, once can trace the changes. Guidance added around this clause.</p>
<p>6 QS3-D - Availability of controlled documents. Documents must be available at each continuous monitoring station? At each passive site? At each CEMS location? Could use some clarification here</p>	<p>This requirement has not changed from the 2006 AMD. Personnel should have access to 'applicable' controlled documents at the site where they need them. (This could include having them available on a laptop or printed copies).</p>	<p>No change made</p>
<p>7 QS3-G - Records storage for 10 years. Clarification: 'unless otherwise specified in the AMD or any regulation? What does 'regulation' refer to? Whose regulation? Specify Alberta government regulation? If the federal government specifies 7 years, does this mean we'd be able to adopt that? Or does this mean whichever of the 2 is greater? Whose regulation takes precedence? Could be the <i>regulation</i> of some other governing body....</p>	<p>This was meant to pertain to any other GOA regulation, not other governing bodies. Other regulations (e.g., CEMS code or an approval) supersede the AMD and would take precedence.</p>	<p>Changed to original AMD 2006 requirement: 'The person responsible shall retain all records pursuant to clause QS 3-F for a minimum of three years unless otherwise specified in the AMD.'</p>
<p>8 QS3-J - Need to maintain original records. Should suffice to keep numbered/dated versions of records that were edited and not need to note what was changed. A document comparison (especially for electronic docs) will reveal the differences. This would require a sophisticated document marking tracking system.</p>	<p>In this case, one would keep two copies of a record (e.g., a calibration report) - the original and the changed – showing changes on the hard copy, with initials. For electronic, one would just keep the two versions for comparison, not losing the original record.</p>	<p>Changed bullets (a) and (b) to clarify 'hard copy' records. Bullet (c) pertains to electronic records.</p>
<p>9 QS3-N - Maintain raw data for 10 years instead of 3. Will necessitate a robust system for paper and electronic file storage/retrieval that survives contractor changes etc.</p>		<p>Changed clause back to original 2006 AMD requirement of three years raw data retention.</p>
<p>10 QS4-A,B,D - Internal and 'external' audits can be covered at once. This is apparent duplication. Why would we do an internal audit if we have a 3rd party audit done?</p>	<p>Third party audit of a Quality System is not required. The person auditing the Quality System just has to be independent of the activity being audited (i.e., cannot be the one doing the daily</p>	<p>Removed reference to external audits. Added in guidance that one can hire a third party to conduct an internal audit if one chooses, but this is not required.</p>

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	tasks, or the one carrying out the QAP).	
11	<p>QS4-C - Need to conduct Inspections. It is not specified who can complete inspections. Are there no requirements that the inspections be completed by personnel independent of the activity?</p>	<p>There is no specification on who can conduct inspections. They would just need to be knowledgeable enough about the activity.</p> <p>No change made.</p>
12	<p>QS5-A - Clarification: of Corrective and Preventative action. This should refer only to deviations from the Quality System AMD chapter 5</p> <p>Not realistic to document a deviation from every aspect of the AMD in this way. Way too much paperwork. i.e., every time a span is missed or a tree grows too tall for site requirements. Provide examples of what regulation in ‘where required by regulation’</p>	<p>5-A requires that a ‘process’ be in place for handling non-compliances and dealing with them. This is crucial to the operation of a monitoring station. One would document this process in the QAP. Then if a non-compliance arises, one would document the issue (noin station log) and what was done to address it, whether that is a change to site conditions or invalid data due to a failed audit or faulty equipment.</p> <p>Removed bullet (iv) (notify department when required by regulation). This is handled in the Reporting Chapter and individual regulations (e.g., Substance Release Regulation).</p>
13	<p>QS6-B ii - Requirements for Airsheds since ‘Person Responsible’ now includes Airsheds. Person responsible now has to identify training needs and provide training to contractors, supervise people who are in training and keep records up to date etc. This is contractor’s responsibility!!!</p> <p>Suggest this clause states person responsible can either ‘do it’ or ‘ensure it is done’. What does a procedure to provide training look like? Would it not just be a table of training requirements not a ‘procedure’?</p>	<p>The person responsible needs to either do the tasks to ensure personnel are trained, or they need to ensure that it is done through a contractor.</p> <p>Ultimately, the person responsible (either airshed or industry) is the one responsible for meeting the requirements of the AMD – they are held accountable, not the contractor.</p> <p>Changed definition of ‘personnel’ to include only employees and volunteers (not contractors). Only the person responsible can be enforced.</p> <p>Clause in Contracted Services section requires that the person responsible verify that any contractors meet the requirements of the AMD.</p> <p>Have removed from QS 6-B the ‘(a) establish, (b) implement, and (c) maintain a procedure’.</p>
14	<p>QS6-C – New requirement that all personnel follow the Person Responsible’s Quality system. Should be Contractors responsibility, again can be covered with an overarching clause about responsibility of Airsheds or companies that defer monitoring operations to another agency or contractor.</p>	<p>QS 6-C does not require that all personnel follow the person responsible’s QAP or the AMD. It requires that the person responsible inform all personnel of the importance and their roles. The requirement to follow the AMD should be part of the contract between airshed/industry and contractor.</p> <p>No change made.</p>

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15 QS6-D - Requirements for Airsheds since 'Person Responsible' now includes Airsheds. Same comment as QS6-C above.	It would be difficult for an airshed/industry to maintain personnel competency records for a contractor.	Removed the '(a) establish, (b) implement, and (c) maintain' from clause 6-D and changed to only require that records be maintained on personnel competence. Added guidance on contractors.
16 QS6-E - Same as above comments for QS6-B,C,D. Same comment as QS6-C above.	This is covered by Int 3-D in the Introduction Chapter of the AMD: 'Int Error! No text of specified style in document. -A Upon written request by the Director, the person responsible shall provide the Director, or anyone acting on the Director's behalf, any documents, records and data related to air monitoring, reporting or maintenance activities.'	Removed clause 6-E. This requirement is covered in the AMD Introduction (Int 3-D).
17 QS6-F - Airshed is responsible for all activities. But this was implied before and what FAP was doing.	Agree.	No change made.
18 QS6-H - Verify that activities meet the requirements of Airshed's QAP. This is worded in such a way that Airsheds need to make sure a contractor is meeting their own QAP. Should their own QAP audits and inspections not take care of that? Change to enable Airsheds etc. to just ensure and review contractor's QAP audits.	The airshed would need to ensure that the contractor is meeting the airshed's QAP (the airshed is the person responsible, not the contractor). The contractor likely has a QAP as well, which the airshed needs to be aware of, to verify that contractor meets AMD requirements. ESRD cannot enforce a contractor, only an airshed/industry.	Added guidance to QS 6-H to provide examples of the types of procedures that the person responsible could establish to ensure that a contractor meets the requirements of the AMD.
19 QS6-K - Now applies to all monitoring conducted. Would apply to all short term in-house projects not just that required by, approved by, or reported to the government.	The risk should be low. This clause requires that any material or reagents purchased match what the analysis method calls for. This should be done anyway – assuming that all monitoring conducted will be used in decision making for airshed/facility.	No change made.
20 QS6-L (i) - Requirements for Airsheds since 'Person Responsible' now includes Airsheds. Clarify that an Airshed who contracts may defer to contractors QAP and documents. Otherwise this requires Airsheds to own SOP's. Airsheds may lack the capacity/expertise to write/edit approve SOP's. Should be adequate to state that	The airshed is responsible for ensuring that a contractor meets the requirements of QS 6-L. Airshed's QAP could refer to contractor's QAP/SOPs – as long as airshed is aware of what is	No change made.

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	Airsheds 'ensure' procedures are in place and followed.	contained therein. Refer to QS 6-F. An airshed would write an SOP for any activities that they undertake directly.	
21	QS6-L (ii) - Documented procedure for physically locating equipment in acceptable locations and condition. This is overkill to expect this to be in place for an Airshed or contractor. Should be Ok to just state that manufacturers specs are followed. This documentation would normally be in a Standard Operating Procedure.	What procedure in (ii) might include is stating in the QAP that equipment will be placed as per manufacturer's specifications and could refer to verifying a contractor's SOP or QAP. Requirement has not changed from 2006 AMD.	No change made.
22	QS6-L (v) - Requirements for Airsheds since 'Person Responsible' now includes Airsheds. This is the responsibility of a contractor if one is used. Should be adequate to state that Airsheds 'ensure' procedures are in place and followed.	The airshed is responsible for ensuring that a contractor meets the requirements of QS 6-L. Airshed's QAP could refer to contractor's QAP/SOPs – as long as airshed is aware of what is contained therein. Refer to QS 6-F	No change made.
23	QS6-M - Requirements for Airsheds since 'Person Responsible' now includes Airsheds. Usually outside the capability of most airsheds. Should be adequate to state they either 'do it' or 'ensure it is done'.	Airshed is responsible for contractor following AMD, so must ensure that a contractor does not modify equipment without validating first.	No change made.
24	QS7-B (o) - Estimation of uncertainty. Remove this here also. Clause 2.9.32 & 33 from old AMD were removed.	Agree.	Removed QS 7-B (o) since requirement for estimating measurement uncertainty was removed from original 2006 AMD. Guidance added, recommending that uncertainty of measurement be estimated when a new method is used or a method is modified. Example of how to estimate uncertainty of measurement added to the Appendix.
25	QS7-D - Requirements for Airsheds since 'Person Responsible' now includes Airsheds. Usually outside the capability of most airsheds. Should be adequate to state they either 'do it' or 'ensure it is done'.	Airshed is responsible for this being done, whether they do directly or a contractor does on their behalf. Refer to QS 6-F. Airshed must be knowledgeable of what contractors are doing.	No change made.
26	QS7-E - Requirements for Airsheds since 'Person Responsible' now includes Airsheds. Doesn't make sense for an Airshed to have these if operations are contracted out. Should be adequate to state they either 'do it' or 'ensure it is done'.	Airshed is responsible for this being done, whether they do directly or a contractor does on their behalf. Could refer to contractor's QAP Refer to QS 6-F.	No change made.

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27	QS8-A, B, C, D - Requirements for Airsheds since 'Person Responsible' now includes Airsheds. Doesn't make sense for an Airshed to have these if operations are contracted out. Should be adequate to state they either 'do it' or 'ensure it is done'.	Airshed is responsible for this being done, whether they do directly or a contractor does on their behalf. Could refer to contractor's QAP Refer to QS 6-F.	No change made.
28	QS9-A,B,C, D, E - Requirements for Airsheds since 'Person Responsible' now includes Airsheds. Ok for an Airshed to have a sampling plan. The requirements would normally be in an SOP that the contractors should own. Should be adequate to state Airsheds either 'do it' or 'ensure it is done'. Airshed's sample acceptance should be determined by the analysis lab or within specs of the manufacturer of the device used for sampling.	Airshed is responsible for this being done, whether they do directly or a contractor does on their behalf. Could refer to contractor's QAP Refer to QS 6-F. Airshed should be aware of contractor's or lab's sample acceptance procedure.	No change made.
29	QS9-F - Requirements for Airsheds since 'Person Responsible' now includes Airsheds. Remove this also since Measurement of Uncertainty 2.9.32 & 2.9.33 of AMD2006 was repealed. Or suggest that ESRD take the lead on this and perform this for standard sampling methods in use in Alberta, by Government and others. This is a substantial piece of work that few agencies have the resources for.	Measuring uncertainty in sampling is appropriate. Rather, when a new method is used or a standard method is modified, person responsible needs to verify that new method (as per section 7.0). Could also estimate uncertainty in the new/modified method.	Clause 9-F removed. Guidance added instead, recommending that uncertainty of measurement be estimated when a new method is used or a method is modified. Reference to section 7.0. Example of how to estimate uncertainty of measurement added to the Appendix.
30	QS10-A, B - Evaluation and Improvement clauses. Appears to be duplication of other clauses in this chapter. Unclear how this differs from the audit requirement and corrective and preventative actions already required elsewhere in this chapter.	These clauses refer directly to reviewing a QAP and determining whether it is effective or not and how it can be improved. This does not refer to auditing of monitoring equipment or station. A QAP should continually be updated over time as processes change in order to keep it effective.	Added to guidance in section 10.0.
31	The definition of 'person responsible' is ambiguous for cases where a contractor/subcontractor is hired to conduct most of the air monitoring work. In such cases, it does not seem feasible for the approval holder or airshed to complete the mandatory requirements that are required to be performed by the 'person responsible.' This reasoning applies to many requirements that would normally be fulfilled by a contractor, including: <ul style="list-style-type: none"> • QS 2-A The person responsible shall (a) establish, (b) implement, and (c) maintain a comprehensive Quality System that meets the requirements of the AMD. • QS 2-B The person responsible shall have a Quality Assurance Plan (QAP) that documents the Quality System required by clause QS 2-A. 	Agree with recommendations, as they reflect the intent of Chapter 5 of the revised AMD. Section 6.2 states that 'The person responsible shall retain responsibility for all air monitoring, analysis, reporting, or maintenance activities conducted when a contractor has been hired for part or all of these activities.' The responsible party is the industrial operation or airshed, not the contractor. If services are contracted out, is the responsibility of	Section 6.1 and 6.2 (Personnel and Contracted Services) were edited to provide more clarity on person responsible-contractor relationship.

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<ul style="list-style-type: none"> • QS 3-F The person responsible shall (a) establish and (b) maintain records that: (i) relate to the air monitoring, analysis, reporting, and maintenance activities; (ii) enable determination of compliance with the AMD and the Quality System of the person responsible, including but not limited to, training, purchasing, audits, inspections, and reviews; and (iii) are accessible as necessary for internal or external use or review. • QS 6-B The person responsible shall (a) establish, (b) implement, and (c) maintain procedures to: (i) identify training needs of personnel; (ii) provide training for personnel; (iii) supervise personnel who are in training; (iv) keep training of personnel up-to-date; and (v) evaluate the effectiveness of training. <p>Recommend: It is suggested that the approval holder or airshed be accountable for the completion of the required activities, but that the contractor/ subcontractor – who possesses technical expertise on monitoring equipment and processes – have the ultimate responsibility to complete the requirements, including process documentation. Also, if a contractor is hired by the approval holder to fulfill air monitoring requirements, it is suggested that the approval holder’s Quality Assurance Plan (QAP) be required to reference the contractor’s QAP instead of repeating the same content. This would reduce redundancy, eliminate the potential for discrepancies between documents, and ensure clarity for all parties.</p>	<p>the industrial operation or airshed to ensure that the contractor meets the requirements of the AMD.</p> <p>QS 2-A person responsible must have a QAP, even if some of that QAP refers to a contractor’s QAP and SOPs.</p> <p>A contractor can be hired by the person responsible to perform monitoring, reporting and maintenance activities on behalf of the person responsible, including documentation of these processes and keeping of relevant records pertaining to these activities. A contractor should have a QAP.</p> <p>If an industrial operation or airshed hires a contractor to complete monitoring, reporting or maintenance activities, this should be clear in the industrial operation’s or airshed’s QAP, and records and documentation must be available to the Department upon request.</p>	
<p>32 If an Environmental Protection and Enhancement Act (EPEA) approval holder fulfills air monitoring requirements through an airshed, it is unclear whether both the approval holder and the airshed are considered the ‘person responsible,’ and thereby both required to develop QAPs.</p> <ul style="list-style-type: none"> • Some EPEA approvals have clauses that require ‘participation’ or ‘establishing monitoring through an airshed.’ • The approval holder does not have a contract with the airshed, nor does it have subcontracting through the airshed. The approval holder does participate in airshed activity at a technical working group level, providing guidance and oversight of the network monitoring and reporting work only, including the requirement that the airshed hold a QAP. • The airshed provides the approval holder with copies of monthly reports. If a contravention of an ambient objective occurs and a source is identified, the approval 	<p>An industrial operation would not be required to have a QAP if they are not required to do air monitoring or reporting as per their EPEA approval requirements. Required participation in an airshed does not mean that a QAP is required by the industrial operation. In the example case provided, the airshed would be responsible for a QAP.</p> <p>Section 1.0 (Purpose) of Chapter 5 describes who the Quality System requirements apply to.</p> <p>Those persons responsible who conduct monitoring or reporting OR who hire a contractor to monitor or</p>	<p>Section 1.0 (Purpose) was modified to clarify who Chapter 5 applies to and who needs to have a QAP.</p> <p>Section 6.1 and 6.2 (Personnel and Contracted Services) were edited to provide more clarity on person responsible-contractor relationship.</p>

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<p>holder may be held accountable for investigating the source release and reporting corrective actions to AER per Substance Release Reporting Regulations.</p> <ul style="list-style-type: none"> The person responsible for air monitoring and reporting is the airshed and not the approval holder. <p>Recommend: It would be beneficial for the respective roles of the airshed and approval holder to be clarified as part of the 'person responsible' definition. If the approval holder is explicitly required to participate in an airshed, then the approval holder should not be obligated to have its own QAP.</p>	<p>report on their behalf must have a QAP.</p>	
<p>33 Records retention time - QS 3-G The person responsible shall retain all records pursuant to clause QS 3-F for a minimum of ten years unless otherwise specified in the AMD or any regulation.</p> <p>It is recommended that the reason for the increased record retention period be specified. Given that records are currently being kept for only three years, it should be recognized that several years will be required to build a 10-year record.</p>		<p>Changed clause back to original 2006 AMD requirement of three years records retention.</p>
<p>34 Documentation requirements - QS 4-C, QS 5-A, QS 5-B, QS 6-A: The above clauses highlight some of the proposed revisions that would significantly increase documentation requirements. Before the revisions are accepted, it would be beneficial to compare the administrative burden of the augmented documentation with the added value that this documentation would generate.</p>	<p>Clause 4-C requires that inspections be scheduled and a set procedure followed. Clause 5-A requires that when non-conformances happen, that root cause be identified and corrective actions taken be documented. Clause 5-B has not changed from the 2006 AMD, except for added requirement for verification that corrective action is effective (i.e., problem is fixed). Clause 6-A requires documentation on personnel responsibilities.</p> <p>This does increase documentation requirements from the 2006 AMD. However, the 2006 AMD required that the activities described in QS 4-C, 5-A, 5-B and 6-A be completed, and then clause 2.4.6 required that the person responsible establish and maintain records that demonstrate compliance with the Directive. Therefore these types of things would</p>	<p>No change made.</p>

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	have needed to be documented to generate a record (inspections, non-conformance, corrective action, personnel).		
35	Measurement uncertainty - QS 9-F: It is recommended that further guidance be provided for the new requirements surrounding the determination of uncertainty of measurement. As well, it would be valuable to provide a specific example related to air quality.	Agree.	Clause 9-F removed. Guidance added instead, recommending that uncertainty of measurement be estimated when a new method is used or a method is modified. Reference to section 7.0. Example of how to estimate uncertainty of measurement added to the Appendix.
36	<p>The revisions of the AMD seem to be very much focused on ambient air monitoring, however clause 1.1 of the AMD, 2006 states:</p> <p>1.1.1 The requirements of the Directive apply to all environmental air monitoring data that are:</p> <p>(a) required by an EPEA Approval, Code of Practice, Registration, or other legal instrument, or</p> <p>(b) Submitted to Alberta Environment or anyone else acting on its behalf.</p> <p>With this clause in mind, the AMD requirements extend to other areas of air monitoring including fugitive emissions and source emissions testing. The application of some of the proposed changes to the AMD need to consider these impacts, or conversely the AMD changes need to specify if certain requirements apply only to a specific type of air monitoring. Section 6 for example is titled 'Ambient Data Quality' however it doesn't state that that section only applies to ambient air monitoring required by an EPEA Approval, Code of Practice, Registration or other legal requirement. The relationship of the AMD to the CEMS Code is a similar area where clarity could be added.</p>	<p>Many of the revisions to the AMD focus on ambient monitoring and monitoring conducted by airsheds This is a gap that the 2014 AMD revision is trying to fill.</p> <p>Please note revised definition of 'person responsible' from AMD Chapter 1 (Introduction) which includes both industrial operations and airsheds: 'person responsible' means (i) the owner of a facility that is the subject of an approval or other authorization under the Environmental Protection and Enhancement Act, (ii) the holder of an approval or other authorization under the Environmental Protection and Enhancement Act, (iii) the Alberta airshed, or iv) any other person specified in any other part of the AMD.</p> <p>Not all requirements in the AMD will apply to all industrial operations/airsheds. For industry, the EPEA approval dictates which air monitoring is required. AMD then needs to be followed when conducting that monitoring. The EPEA approval</p>	No change made.

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	<p>requirements always prevail.</p> <p>Similarly for airsheds, the monitoring that they conduct (ambient) must follow the requirements set out in the AMD that apply to them (ambient requirements).</p> <p>All industrial operations and airsheds that conduct air monitoring and report to the Department will need to have QAP.</p> <p>Chapter 6 (Ambient Data Quality) applies to any person responsible who conducts continuous ambient air monitoring. This is stated in DQ 1-A: ‘The person responsible must be in compliance with the requirements set out in the Data Quality Chapter of the AMD on or before XXX for all continuous ambient air monitoring.’</p> <p>The CEMS Code also prevails over the AMD, and includes the requirement to have a QAP (requirements are very similar to those in Chapter 5 of the AMD). AMD requirements do not include requirements for CEMS monitoring – as these are all housed in the CEMS Code. However the Reporting Chapter of the revised AMD will cover both ambient and source reporting requirements.</p>	
37	<p>QS 3-J (a) If this clause is interpreted to extend to reporting (which could be considered a ‘record’), then crossing out errors and entering the ‘correction alongside’ the original data is problematic. This change would require changes to the ambient reporting format that we have in place, and I’m not sure how this clause would apply to fugitive emissions monitoring data. In terms of „non-reporting records“ (log books, procedures and similar), maintaining revision logs and previous versions is a reasonable expectation.</p>	<p>See comment 8 for changes made to QS 3-J.</p>

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<p>38 QS 4-A and C Adding inspections as a requirement will result in increased costs for program operators, and it should be recognized that obtaining a qualified independent inspector requires significant effort to align with the sub-contractor requirements specified in section 2.7 of the AMD, 2006. For all air monitoring programs, there are limited available contractors capable to complete the work.</p> <p>The applicability of this requirement to source emissions and fugitive emissions monitoring programs would be <i>very</i> difficult to implement. I would recommend that including independent inspections could be listed as a best practice rather than a formal requirement of the AMD.</p>	<p>QS 4-A and 4-C do not require audits and inspections from a third-party inspector. These clauses require that those maintaining the monitoring check equipment and stations regularly to ensure that the AMD is adhered to and that the person responsible's QAP is being followed. This would act to catch issues <i>before</i> an external audit is conducted. These audits and inspections should be performed by personnel who are 'independent of the activity' being audited/inspected (clause QS 4-D), that is not the person who does the day-to-day station maintenance/monitoring.</p>	<p>Changed QS 4-D back to AMD 2006 wording: <i>All internal audits shall be carried out by trained and qualified individuals who are, wherever resources permit, independent of the activity to be audited.</i></p>
<p>39 QS 9-F Uncertainty of Measurement would seem to apply for some specific documented sampling methods, however it is more difficult to apply to ambient, source and fugitive monitoring programs. Clarification on this relationship would improve the proposed changes to the AMD.</p>	<p>See comments 29, 35 and 47. Uncertainty of measurement should be estimated for any non-standard methods, or methods used outside of their intended scope.</p>	<p>Clause 9-F removed. Guidance added instead, recommending that uncertainty of measurement be estimated when a new method is used or a method is modified. Reference to section 7.0. Example of how to estimate uncertainty of measurement added to the Appendix.</p>
<p>40 QS 6A(a): 'Identify personnel' is not clear as a self-standing item. Suggest: Identify all personnel who are involved with any of the following: (i) the establishment, implementation, and maintenance of the Quality System; and (ii) any air monitoring, reporting, and maintenance activities;</p>	<p>This is inherent. Definition of personnel (as given in AMD Intro Chapter 1 and the beginning guidance of section 6.0 of Chapter 5) has been changed to: 'Personnel include anyone performing monitoring, maintenance or reporting activities, including, but not limited to: employees and volunteers.'</p>	<p>Refined QS 6-A (a) to require that personnel who perform monitoring, reporting or maintenance be identified.</p>
<p>41 Page 14, QS 6-E: Providing data within five working days could be difficult given potential for illness or other absence of the party designated to receive communications with respect to the Quality System. Suggest: Provide additional flexibility or measure the five working days from confirmation of</p>	<p>This clause was removed since Chapter 1 of the revised AMD (Introduction) states the following: 'Int 3 D Upon written request by the Director, the person responsible shall provide the Director, or anyone acting on the Director's behalf, any</p>	<p>Removed clause QS 6-E.</p>

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receipt of the notice.	documents, records and data related to air monitoring, reporting or maintenance <i>activities.</i> ' This clause does not include a time limit.	
42 QS 2-C states that laboratories being used for analysis of the data required by the Directive must adhere to the Laboratory Data Quality Assurance Policy (Alberta Environment, 2001), as amended. However, it also states that an updated Policy will be available shortly. Consider allowing review of this updated policy prior to implementation of this Chapter.	The Lab Data Quality Assurance Policy is undergoing internal review at the present time. This can be made available for public review before it is finalized. For now, please refer to the current (2001) Lab Data Quality Assurance Policy, which applies in the interim under ADM Toolbox <ul style="list-style-type: none"> • Laboratory Data Quality Assurance Policy 	No change made.
43 QS 3-D states that 'Current editions of applicable controlled documents shall be available at all locations where operations essential to the functioning of the air monitoring and reporting activities are performed.' Controlled documents are kept at the main facility and remote locations are unable to meet the electronic control documentation requirement. Although this is not a change from the 2006 AMD, please provide clarity around the 'controlled documents' definition as a controlled document is the current electronic version.	Documents and records are not required to be electronic. The clause states that 'applicable controlled documents' be available on site. Examples would be SOPs and the QAP. These could be printed copies available at the station, or electronic files on a laptop or computer. It is up to the person responsible to determine which documents are applicable to have on site for use by personnel doing the monitoring/maintenance. For a standalone passive site, there is no place to store documents. An operations practice in this case needs to be documented in the QAP.	No changes made.
44 QS 4-B states that internal audits required under clause QS 4-A shall: (b) include completion of a full Quality System audit a minimum of once every three years; and (c) include all elements of the Quality System. Consider removing (c) as an audit that includes all elements of the quality system is considered a 'full Quality system audit' (b).	Agree.	Removed QA 4-B (c).
45 QS 9-F states that 'the person responsible shall (a) establish, (b) implement, and (c)	See comments 29, 35 and 47. Uncertainty of	Clause 9-F removed. Guidance added

Chapter 5: Quality System		
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maintain documented procedures for estimating the uncertainty of measurement for sample collection, handling and analysis. Please provide more clarity on how to determine, or reference a method for determining uncertainty for sample collection and handling.	measurement should be estimated for any non-standard methods, or methods used outside of their intended scope.	instead, recommending that uncertainty of measurement be estimated when a new method is used or a method is modified. Reference to section 7.0. Example of how to estimate uncertainty of measurement added to the Appendix.
46 Overall the document provides very prescriptive detailed requirements. Husky believes the development of a guidance document on how to meet all of the requirements would be valuable, that stipulates what is considered by the regulator to be acceptable or unacceptable.	Chapter 5 of the AMD is the guidance for developing a QAP – it lays out what is necessary to have documented in a QAP. ESRD is not able to provide a template QAP since facilities and airsheds have a highly variable nature. A ‘one size fits all’ approach would not satisfy the needs of the individual facility or airshed.	No change made.
47 Definitions: ‘Uncertainty of measurement’ - what is the accepted uncertainty of measurement?	Definition in revised AMD states: means a parameter associated with the result of a measurement that characterizes the dispersion of values that could reasonably be attributed to the actual value being measured. E.g., a method gives values with an associated +/- uncertainty.	Guidance added in section 7.0, recommending that uncertainty of measurement be estimated when a new method is used or a method is modified. Example of how to estimate uncertainty of measurement added to the Appendix.
48 QS 1-A ‘Effective date - one year after the chapter comes into effect’ is an aggressive deadline considering the substantial changes in comparison to the existing AMD. Documenting all processes related to air monitoring and reporting will require a significant amount of work. Husky suggests a three (3) year phase in period to allow operators with the required time to implement this improvement and build appropriate processes, mechanisms and/or systems as required.	Most of the requirements in Chapter 5 are not new (e.g., documenting processes related to air monitoring), but were required in the 2006 AMD. The requirements that are new in Chapter 5 are additions to a person responsible’s Quality System and should be doable in a 1-year time frame.	No change made.
49 QS 3-K: Is this intended to be exclusive of amendments (data corrections) when and if an error is identified or is ‘improved data’ (higher accuracy) provided after the reporting? What is the border between the ‘error’ and ‘uncertainty of measurement’?	Clause QS 3-K requires that the person responsible detail in their QAP how they will verify that data are QA/QC’d (verify that reported data are free from error). This section provides a reference to Chapter 6 of the AMD (Ambient Data Quality Chapter), which has requirements for continuous	No change made.

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	ambient data.	
50	QS 4-A: Is the statement exclusive of external audits?	No change made.
51	<p>Section 5.0, first sentence: <i>Non-compliance is the failure to meet a requirement set out within the AMD or the person responsible's Quality System that is detected through internal or external quality control or quality assurance procedures.</i></p> <p>Is amendment of the previously reported data (e.g. due to improved data accuracy) considered a 'non-compliance'? Is the regulator planning to develop standards for services and supplies on the air quality area that manufacturers/vendors need to follow?</p>	No change made.
52	QS 6-J: Will the regulator develop and publish a list of approved vendors?	No change made.
53	Guidance under QS 7-C: 'The person responsible should select appropriate methods' – Is the regulator planning to provide guidance on what 'appropriate methods' are approved or acceptable by the regulator?	No change made.