ELECTRICITY INDUSTRY PARTICIPATION CODE
DISTRIBUTED UNMETERED LOAD AUDIT REPORT

VERITEK

For

ARDMORE AIRPORT DUML AND MERCURY NZ LTD

Prepared by: Steve Woods

Date audit commenced: 21 March 2021

Date audit report completed: 24 May 2021

Audit report due date: 25-May-21

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EXECUTIVE SUMMARY

This audit covers the Ardmore Airport DUML database and processes and was conducted at the request of Mercury NZ Limited (Mercury) in accordance with clause 15.37B. The purpose of this audit is to verify that the volume information is being calculated accurately, and that profiles have been correctly applied.

The audit was conducted in accordance with the audit guidelines for DUML audits version 1.1. A field audit was undertaken of all items of load recorded in the spreadsheet.

The spreadsheet is maintained by Mercury and the customer is expected to advise Mercury of any changes that occur. The discrepancies identified indicate the change management process is not working as expected. The field audit results indicate annual under submission of 709 kWh.

The database is very small, and the impact of the inaccuracies found have only a very minor effect on reconciliation. This audit found five non-compliances. The future risk rating indicates that the next audit be completed in 12 months.

The matters raised are detailed below:

AUDIT SUMMARY

NON-COMPLIANCES

Subject	Section	Clause	Non-Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
Deriving submission information	2.1	11(1) of Schedule 15.3	The field audit results indicate under submission by 709 kWh per annum	Weak	Low	3	Cleared
Location of each item of load	2.3	11(2A) of Schedule 15.3	Locations of four Items of load do not have street number, or GPS locations to make them individually locatable.	Weak	Low	3	Identified
All load recorded in the database	2.5	11(2A) of Schedule 15.3	Five additional lights found in the field.	Weak	Low	3	Identified
Database accuracy	3.1	15.2 and 15.37B(b)	Five additional lights found in the field. Three lights in the database not found in the field.	Weak	Low	3	Identified
Volume information accuracy	3.2	15.2 and 15.37B(c)	The field audit results indicate under submission by 709 kWh per annum.	Weak	Low	3	Identified
Future Risk Rating						15	

Future risk rating	0	1-4	5-8	9-15	16-18	19+
Indicative audit frequency	36 months	24 months	18 months	12 months	6 months	3 months

RECOMMENDATIONS

Subject	Section	Recommendation
		Nil

ISSUES

Subject	Section	Description	Issue
		Nil	

1. ADMINISTRATIVE

1.1. Exemptions from Obligations to Comply with Code

Code reference

Section 11 of Electricity Industry Act 2010.

Code related audit information

Section 11 of the Electricity Industry Act provides for the Electricity Authority to exempt any participant from compliance with all or any of the clauses.

Audit observation

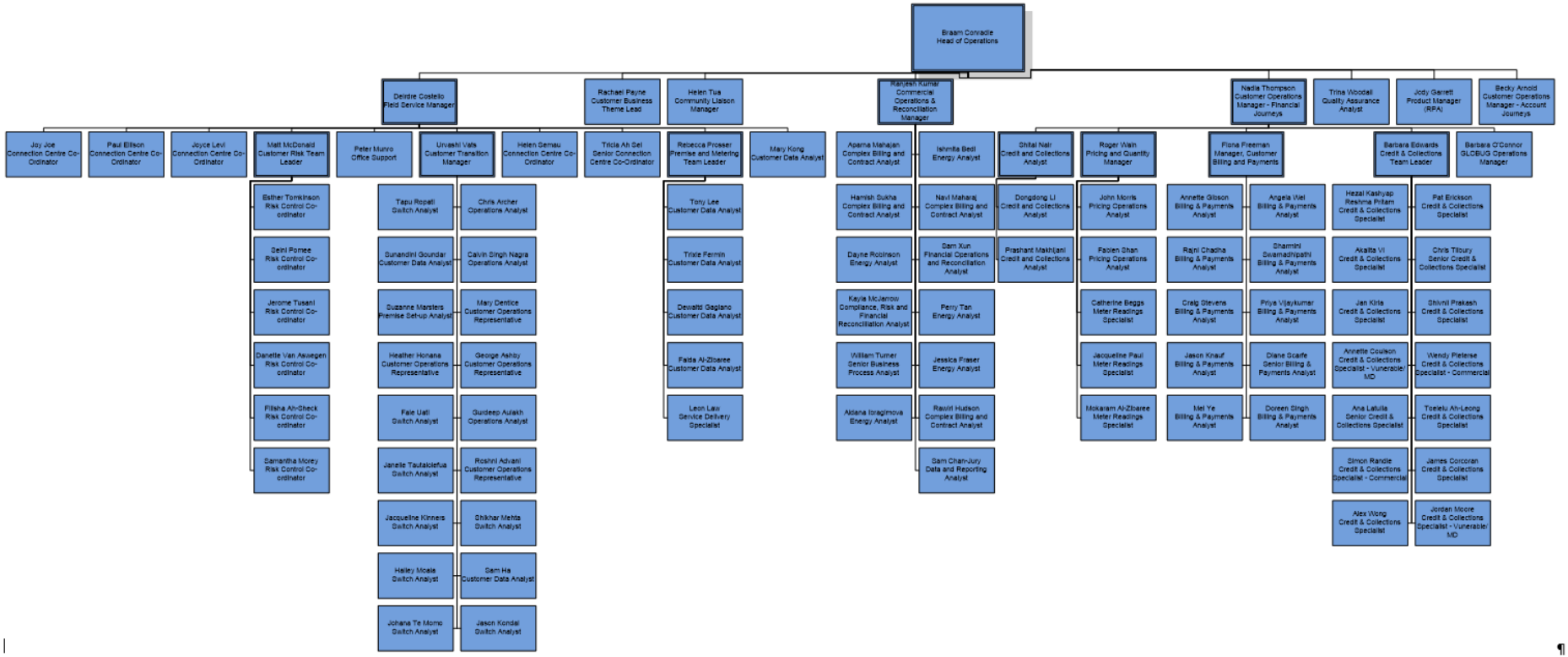
The Electricity Authority's website was reviewed to identify any exemptions relevant to the scope of this audit.

Audit commentary

Mercury has no exemptions in place in relation to the ICP covered by this audit report.

1.2. Structure of Organisation

Mercury provided an organisational structure:



1.3. Persons involved in this audit

Auditor:

Steve Woods

Veritek Limited

Electricity Authority Approved Auditor

Other personnel assisting in this audit were:

Name	Title	Company
Kayla McJarrow	Compliance, Risk and Financial Reconciliation Analyst	Mercury NZ Ltd

1.4. Hardware and Software

The streetlight data for Ardmore Airport is held in an excel spreadsheet. This is backed up in accordance with standard industry procedures. Access to the spreadsheet is restricted by way of user log into the computer drive.

1.5. Breaches or Breach Allegations

There are no breach allegations relevant to the scope of this audit.

1.6. ICP Data

ICP Number	Customer	Description	NSP	Profile	Number of items of load	Database wattage (watts)
0904114678LC7E9	Ardmore Airport	ARDMORE AERODROME BULK UML	TAK0331	RPS	20	2,935

1.7. Authorisation Received

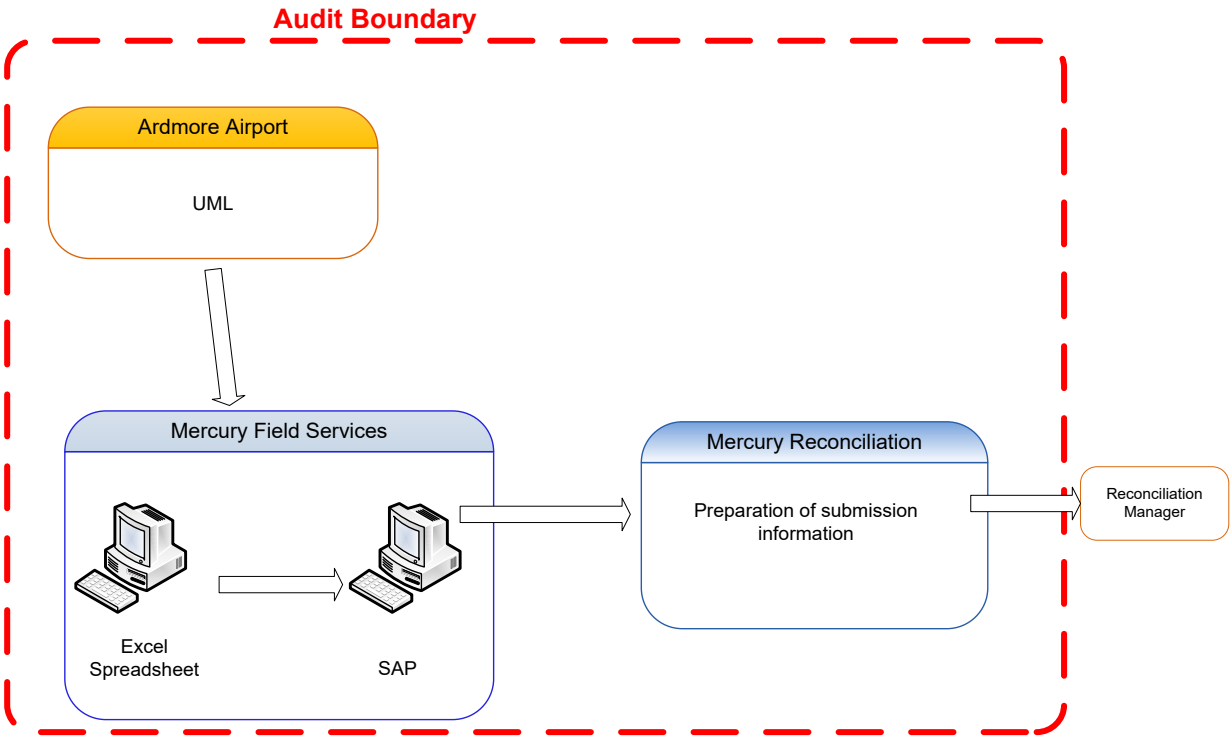
All information was provided directly by Mercury.

1.8. Scope of Audit

This audit covers the Ardmore Airport DUML database and processes was conducted at the request of Mercury NZ Limited (Mercury) in accordance with clause 15.37B. The purpose of this audit is to verify that the volume information is being calculated accurately, and that profiles have been correctly applied.

The audit was conducted in accordance with the audit guidelines for DUML audits version 1.1. A field audit was undertaken of all items of load recorded in the spreadsheet.

The ICP is managed in an excel spreadsheet held by Mercury.



1.9. Summary of previous audit

The previous audit was completed in May 2020 by Steve Woods of Veritek Limited. Five non-compliances were identified. The current status of the non-compliances in relation to the Ardmore Airport lights are detailed below.

Table of Non-Compliance

Subject	Section	Clause	Non-compliance	Status
Deriving submission information	2.1	11(1) of Schedule 15.3	There are three additional lights in the field, and four HPS lights in Village Way have been replaced with LED lights, resulting in a potential minor under submission of 316 kWh per annum.	Still existing
Location of each item of load	2.3	11(2A) of Schedule 15.3	Locations of 13 Items of load do not have street number, or GPS locations to make them individually locatable.	Still existing
All load recorded in the database	2.5	11(2A) of Schedule 15.3	Three additional lights found in the field.	Still existing

Subject	Section	Clause	Non-compliance	Status
Database accuracy	3.1	15.2 and 15.37B(b)	There are three additional lights in the field, and four HPS lights in Village Way have been replaced with LED lights, resulting in a potential minor under submission of 316 kWh per annum.	Still existing
Volume information accuracy	3.2	15.2 and 15.37B(c)	There are three additional lights in the field, and four HPS lights in Village Way have been replaced with LED lights, resulting in a potential minor under submission of 316 kWh per annum.	Still existing

Recommendations

Subject	Section	Recommendation	Status
Database Accuracy	3.1	Liaise with Ardmore Airport to confirm which database the lights in Village Way should be recorded as they are in both Ardmore airport and Auckland Transport's database.	Cleared

1.10. Distributed unmetered load audits (Clause 16A.26 and 17.295F)

Code reference

Clause 16A.26 and 17.295F

Code related audit information

Retailers must ensure that DUML database audits are completed:

1. *by 1 June 2018 (for DUML that existed prior to 1 June 2017)*
2. *within three months of submission to the reconciliation manager (for new DUML)*
3. *within the timeframe specified by the Authority for DUML that has been audited since 1 June 2017.*

Audit observation

Mercury has requested Veritek to undertake this street lighting audit.

Audit commentary

This audit report confirms that the requirement to conduct an audit has been met for this database within the required timeframe.

Audit outcome

Compliant

2. DUML DATABASE REQUIREMENTS

2.1. Deriving submission information (Clause 11(1) of Schedule 15.3)

Code reference

Clause 11(1) of Schedule 15.3

Code related audit information

The retailer must ensure the:

- *DUML database is up to date*
- *methodology for deriving submission information complies with Schedule 15.5.*

Audit observation

The process for calculation of consumption was examined and the application of profiles was checked. The database was checked for accuracy.

Audit commentary

Mercury reconciles this DUML load using the RPS profile. The daily kWh figure recorded in SAP (which is derived from the spreadsheet) is used for submission. The registry was checked and confirmed that the ICP has the correct profile and submission flag.

This clause requires that the distributed unmetered load database must satisfy the requirements of schedule 15.5 regarding the methodology for deriving submission information. Mercury reconciles this DUML load using the RPS profile. The daily kWh figure recorded in SAP, which is derived from the spreadsheet used for submission. I checked the accuracy of the submission information by multiplying the daily kWh by the number of hours in the month and comparing it to the figure in the registry for the month of March 2021. This confirmed the submission was accurate.

As recorded in the last audit, there are some database inaccuracies, and these will be resulting in a very minor under submission of 709 kWh per annum. This is discussed further in **section 3.1.**

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 2.1 With: 11(1) of Schedule 15.3 From: 01-May-20 To: 30-Mar-21	The field audit results indicate under submission by 709 kWh per annum. Potential impact: Low Actual impact: Low Audit history: Multiple times Controls: Weak Breach risk rating: 3
Audit risk rating	**Rationale for audit risk rating**
Low	The controls in place are rated as weak as the database is not being maintained as expected. The impact is assessed to be low, based on the minor kWh differences described above.

Actions taken to resolve the issue	Completion date	Remedial action status

We have updated the database with the field audit findings.	May21	Cleared
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Our customer is aware of the requirements to provide accurate and timely database updates. We will remind our customer of the importance of this and will continue to work with them to improve database maintenance processes.	Ongoing	

2.2. ICP identifier and items of load (Clause 11(2)(a) and (aa) of Schedule 15.3)

Code reference

Clause 11(2)(a) and (aa) of Schedule 15.3

Code related audit information

The DUML database must contain:

- *each ICP identifier for which the retailer is responsible for the DUML*
- *the items of load associated with the ICP identifier.*

Audit observation

The spreadsheets were checked to confirm the correct ICP was recorded correctly for the load.

Audit commentary

The spreadsheet records the correct ICP relative to the load.

Audit outcome

Compliant

2.3. Location of each item of load (Clause 11(2)(b) of Schedule 15.3)

Code reference

Clause 11(2)(b) of Schedule 15.3

Code related audit information

The DUML database must contain the location of each DUML item.

Audit observation

The spreadsheets were checked to confirm the location is recorded for all items of load.

Audit commentary

The spreadsheets contain the street name of each item of load but four do not the street number or GPS co-ordinates. This is recorded as non-compliance.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 2.3 With: 11(2)(b) of Schedule 15.3 From: 01-May-20 To: 30-Mar-21	Locations of four Items of load do not have street number, or GPS locations to make them individually locatable. Potential impact: Low Actual impact: Low Audit history: Twice Controls: Weak Breach risk rating: 3
Audit risk rating	**Rationale for audit risk rating**
Low	The controls in place are rated as weak as the database is not being maintained as expected. The number of items of load is small therefore the audit risk rating is low.

Actions taken to resolve the issue	Completion date	Remedial action status
We will liaise with the customer to update the database with the necessary location details.	Dec21	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Our customer is aware of the requirements to provide accurate and timely database updates. We will remind our customer of the importance of this and will continue to work with them to improve database maintenance processes.	Ongoing	

2.4. Description and capacity of load (Clause 11(2)(c) and (d) of Schedule 15.3)

Code reference

Clause 11(2)(c) and (d) of Schedule 15.3

Code related audit information

The DUML database must contain:

- *a description of load type for each item of load and any assumptions regarding the capacity*
- *the capacity of each item in watts.*

Audit observation

The spreadsheet was checked to confirm that it contained a field for lamp type and wattage capacity and included any ballast or gear wattage and that each item of load had a value recorded in these fields.

Audit commentary

Each item of load contains the lamp type, wattage and ballast in the spreadsheet.

Audit outcome

Compliant

2.5. All load recorded in database (Clause 11(2A) of Schedule 15.3)

Code reference

Clause 11(2A) of Schedule 15.3

Code related audit information

The retailer must ensure that each item of DUML for which it is responsible is recorded in this database.

Audit observation

I conducted a field audit of all items of load and checked each road for additional fittings.

Audit commentary

The table below shows the field audit findings.

Street/Area	Database Count	Field Count	Field count differences	Wattage differences	Comments
Harvard Lane (O/S Ardmore flying sch.)	1	2	+1	-	Additional HPS 150 on the same pole
Harvard Lane (Bondary Airlibne Flying Club)	1	2	+1	-	Additional HPS 150 on the same pole
Harvard Lane (Outside Mares hangar)	1	0	-1	-	Not located in the field
Harvard Lane (Outside hangar 42)	1	0	-1	-	Not located in the field
Harvard Lane	1	0	-1	-	Not located in the field
1080 Harvard Lane	1	2	+1	-	Additional HPS 70 on the same pole
1050 Harvard Lane	1	2	+1	-	Additional HPS 70 on the same pole
McBride Lane (Near gates at bottom of lane)	1	2	+1	-	Additional HPS 150 on the same pole
Net difference			**+1**		

There were four items of load identified in the field that were not in the database.

The accuracy of the database is detailed in **section 3.1**.

Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 2.5 With: 11(2A) of Schedule 15.3 From: 01-May-20 To: 30-Mar-21	Five additional lights found in the field. Potential impact: Low Actual impact: Low Audit history: Multiple times Controls: Weak Breach risk rating: 3		
Audit risk rating	**Rationale for audit risk rating**		
Low	The controls in place are rated as weak as the database is not being maintained as expected. The impact is assessed to be low as the impact on reconciliation is small as detailed in **section 3.1**.		
Actions taken to resolve the issue		**Completion date**	**Remedial action status**
We have updated the database with the field audit findings.		May21	Identified
Preventative actions taken to ensure no further issues will occur		**Completion date**	
Our customer is aware of the requirements to provide accurate and timely database updates. We will remind our customer of the importance of this and will continue to work with them to improve database maintenance processes.		Ongoing	

2.6. Tracking of load changes (Clause 11(3) of Schedule 15.3)

Code reference

Clause 11(3) of Schedule 15.3

Code related audit information

The DUML database must track additions and removals in a manner that allows the total load (in kW) to be retrospectively derived for any given day.

Audit observation

The process for tracking of changes in the spreadsheets was examined.

Audit commentary

Any changes that are made during any given month take effect from the beginning of that month. The information is available which would allow for the total load in kW to be retrospectively derived for any day.

Audit outcome

Compliant

2.7. Audit trail (Clause 11(4) of Schedule 15.3)

Code reference

Clause 11(4) of Schedule 15.3

Code related audit information

The DUML database must incorporate an audit trail of all additions and changes that identify:

- *the before and after values for changes*
- *the date and time of the change or addition*
- *the person who made the addition or change to the database.*

Audit observation

The spreadsheet was checked for audit trails.

Audit commentary

The database contains the details of all changes including the person making the change.

Audit outcome

Compliant

3. ACCURACY OF DUML DATABASE

3.1. Database accuracy (Clause 15.2 and 15.37B(b))

Code reference

Clause 15.2 and 15.37B(b)

Code related audit information

Audit must verify that the information recorded in the retailer's DUML database is complete and accurate.

Audit observation

I conducted a field audit of all items of load.

Wattages were checked for alignment with the published standardised wattage table produced by the Electricity Authority.

Audit commentary

The field audit findings are detailed in **section 2.5**. There are five lights missing from the database and three lights in the database were not present in the field. In total the error is 5.7% leading to under submission of 709 kWh per annum.

The Village Way lights discussed in the last audit report have been removed from the database because they are in the Auckland Transport database, which I checked.

The check of wattages and ballasts confirmed compliance.

An annual audit is expected to be carried out by the property owner to confirm that the database is correct. The customer is expected to advise if any changes occur so that the database can be updated accordingly, and notes of the light type, wattage and ballast and the date of change are recorded. The property owner's audit does not appear to be effective based on these field audit findings.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 3.1 With: 15.2 and 15.37B(b) From: 01-May-20 To: 30-Mar-21	Five additional lights found in the field. Three lights in the database not found in the field. Potential impact: Low Actual impact: Low Audit history: Multiple times Controls: Weak Breach risk rating: 3
Audit risk rating	**Rationale for audit risk rating**
Low	The controls in place are rated as weak as the database is not being maintained as expected. The impact is assessed to be low, based on the kWh differences described above.

Actions taken to resolve the issue	Completion date	Remedial action status
We have updated the database with the field audit findings.	May21	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Our customer is aware of the requirements to provide accurate and timely database updates. We will remind our customer of the importance of this and will continue to work with them to improve database maintenance processes.	Ongoing	

3.2. Volume information accuracy (Clause 15.2 and 15.37B(c))

Code reference

Clause 15.2 and 15.37B(c)

Code related audit information

The audit must verify that:

- *volume information for the DUML is being calculated accurately*
- *profiles for DUML have been correctly applied.*

Audit observation

The submission was checked for accuracy for the month the database extract was supplied. This included:

- checking the registry to confirm that the ICP has the correct profile and submission flag; and
- checking the expected kWh against the submitted figure to confirm accuracy.

Audit commentary

Mercury reconciles this DUML load using the RPS profile. The daily kWh figure recorded in SAP (which is derived from the spreadsheet) is used for submission. The registry was checked and confirmed that the ICP has the correct profile and submission flag.

This clause requires that the distributed unmetered load database must satisfy the requirements of schedule 15.5 regarding the methodology for deriving submission information. Mercury reconciles this DUML load using the RPS profile. The daily kWh figure recorded in SAP, which is derived from the spreadsheet used for submission. I checked the accuracy of the submission information by multiplying the daily kWh by the number of hours in the month and comparing it to the figure in the registry for the month of March 2021. This confirmed the submission was accurate.

As recorded in the last audit, there are some database inaccuracies, and these will be resulting in a very minor under submission of 709 kWh per annum. This is discussed further in **section 3.1.**

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 3.2 With: 15.2 and 15.37B(c) From: 01-Jun-17 To: 01-May-20	The field audit results indicate under submission by 709 kWh per annum. Potential impact: Low Actual impact: Low Audit history: Multiple times Controls: Weak Breach risk rating: 3
Audit risk rating	**Rationale for audit risk rating**
Low	The controls in place are rated as weak as the database is not being maintained as expected. The impact is assessed to be low, based on the minor kWh differences described above.

Actions taken to resolve the issue	Completion date	Remedial action status
We have updated the database with the field audit findings.	May21	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Our customer is aware of the requirements to provide accurate and timely database updates. We will remind our customer of the importance of this and will continue to work with them to improve database maintenance processes.	Ongoing	

CONCLUSION

The audit was conducted in accordance with the audit guidelines for DUML audits version 1.1. A field audit was undertaken of all items of load recorded in the spreadsheet.

The spreadsheet is maintained by Mercury and the customer is expected to advise Mercury of any changes that occur. The discrepancies identified indicate the change management process is not working as expected. The field audit results indicate annual under submission of 709 kWh.

The database is very small, and the impact of the inaccuracies found have only a very minor effect on reconciliation. This audit found five non-compliances. The future risk rating indicates that the next audit be completed in 12 months.

PARTICIPANT RESPONSE