

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: 30 April 2020

Date audit report completed: 25 May 2020

Audit report due date: 01-Jun-20

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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 largely conducted in accordance with the audit guidelines for DUML audits version 1.1. A field audit was not undertaken due to the restrictions imposed by the Covid-19 lockdown; therefore, I checked the results of the 2019 field audit to ensure the database reflected those findings.

The spreadsheet is maintained by Mercury and the customer is expected to advise Mercury of any changes that occur. The extra lamps found in the last two audits have not been corrected during the audit period and the lights in Village Way have been upgraded to LEDs. The change management process is not working as expected.

I checked the lights in Village Way in the Auckland Transport DUML database extract and found they are also recorded in that database and therefore being submitted twice. I recommend that Mercury liaise with Ardmore Airport to determine which database these should be recorded in.

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 and makes one recommendation. 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	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.	Weak	Low	3	Identified
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.	Weak	Low	3	Identified
All load recorded in the database	2.5	11(2A) of Schedule 15.3	Three additional lights found in the field.	Weak	Low	3	Identified

Subject	Section	Clause	Non-Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
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.	Weak	Low	3	Identified
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.	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
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.

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

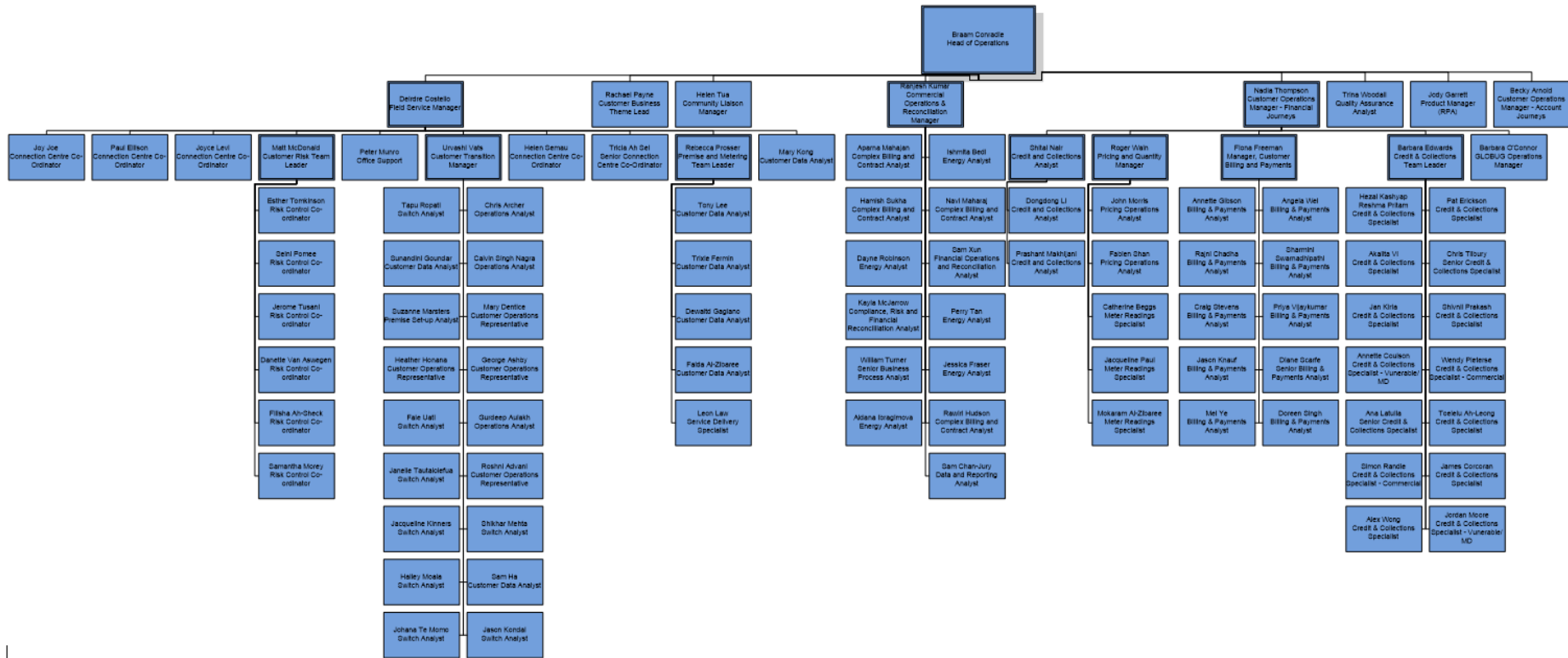
The Electricity Authority's website was reviewed to identify any exemptions relevant to the scope of this audit.

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	24	3,267

1.7. Authorisation Received

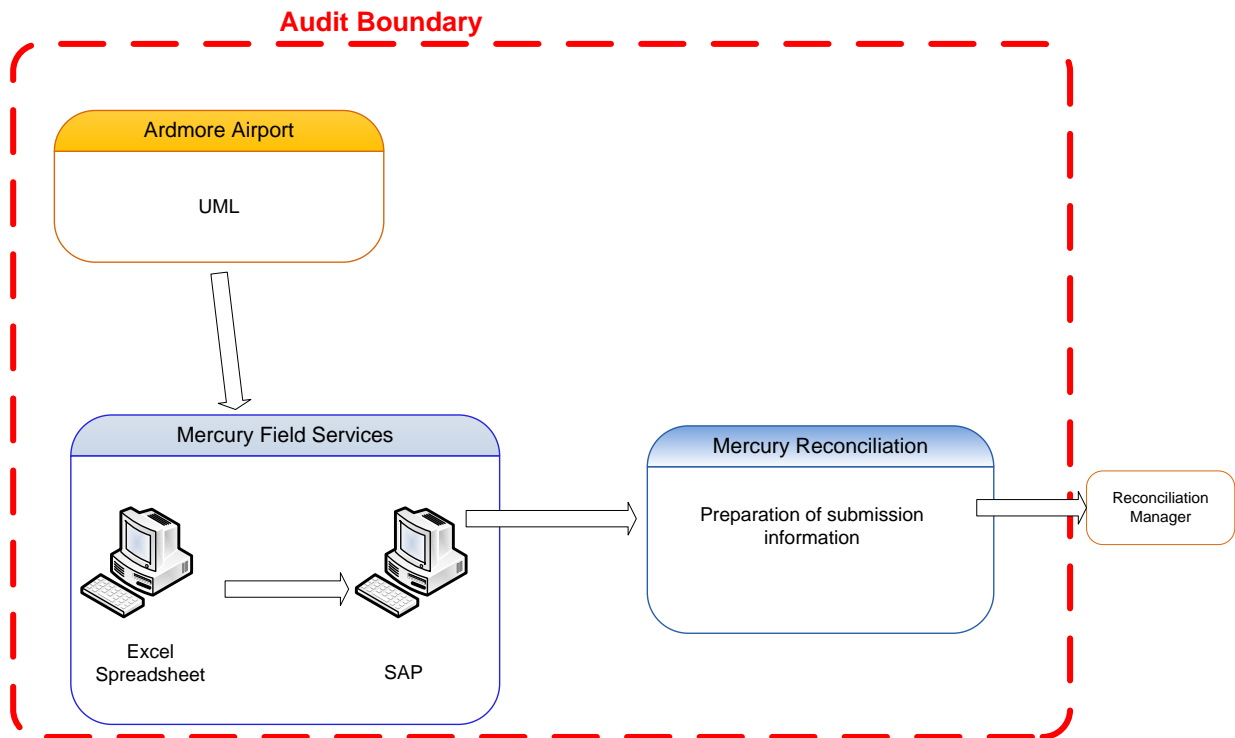
All information was provided directly by Mercury.

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 largely conducted in accordance with the audit guidelines for DUML audits version 1.1. A field audit was not undertaken due to the restrictions imposed by the Covid-19 lockdown; therefore, I checked the results of the 2019 field audit to ensure the database reflected those findings.

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



1.9. Summary of previous audit

The previous audit was completed in May 2019 by Rebecca Elliot of Veritek Limited. Six non-compliances were identified, and two recommendations were made. 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	kWh volume was truncated rather than rounded. The field audit three additional lights, and four HPS lights in Village Way that 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 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 items of load found in the field.	Still existing

Subject	Section	Clause	Non-compliance	Status
Audit trail	2.7	11.4 of Schedule 15.3	The audit trail does not include the details of the person making the change in the spreadsheet.	Cleared
Database accuracy	3.1	15.2 and 15.37B(b)	The field audit three additional lights, and four HPS lights in Village Way that 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)	kWh volume was truncated rather than rounded. The field audit three additional lights, and four HPS lights in Village Way that have been replaced with LED lights, resulting in a potential minor under submission of 316 kWh per annum.	Still existing

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. DUMML 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:

- DUMML 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

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 DUMML 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 which is submitted in the AV080 for the month of March 2020. 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 316 kWh. 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-Jun-17 To: 01-May-20	<p>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.</p> <p>Potential impact: Low</p> <p>Actual impact: Low</p> <p>Audit history: Three times previously</p> <p>Controls: Weak</p> <p>Breach risk rating: 3</p>		
Audit risk rating	Rationale for audit risk rating		
Low	<p>The controls in place are rated as weak as the database is not being maintained as expected.</p> <p>The impact is assessed to be low, based on the minor kWh differences described above.</p>		
Actions taken to resolve the issue		Completion date	Remedial action status

Mercury is working with Ardmore Airport to obtain details of the 3 additional lights. Once confirmed, these will be added to the database as necessary. Ardmore Airport has advised the 4 village way lights are AT not Ardmore. These will be removed from the database accordingly.	Dec 2020	Identified
Preventative actions taken to ensure no further issues will occur	Completion date	
Ardmore Airport has a current copy of the database and we have reiterated the importance of notifying us of any changes. Once we have corrected any discrepancies identified, we will complete twice yearly reviews on the full database as well as ad hoc updates throughout the year.	Dec 2020	

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 13 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-Jun-18 To: 01-May-20	Locations of 13 Items of load do not have street number, or GPS locations to make them individually locatable. Potential impact: None Actual impact: Low Audit history: Once 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 have asked Ardmore Airport for more detailed location information. Once received, the database will be updated accordingly.		Dec 2020	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
Ardmore Airport has a current copy of the database and we have reiterated the importance of notifying us of any changes. Once we have corrected any discrepancies identified, we will complete twice yearly reviews on the full database as well as ad hoc updates throughout the year.		Dec 2020	

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 compared the field audit findings from the 2019 audit against the database provided in April 2020.

Audit commentary

The previous audit found three additional lights in the field compared to the database and there were four wattage discrepancies, as shown in the table below.

Street/Area	Database Count	Field Count	Field count differences	Wattage differences	Comments
Village Way	4	5	1	4	1x extra LED light found in the field. 4x incorrect wattages - recorded as 70HPS in the database but LED lights found in the field NB these lights are also recorded in the Auckland Transport Database. This is discussed in section 3.1 .
Harvard Lane	16	18	2		Double 70W SON lights.
TOTAL	26	29	3	4	

These findings were reported in the last audit report have not been corrected during the audit period. The additional lights found in the field are recorded as non-compliance below.

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-Jun-17 To: 01-May-20	Three additional lights found in the field. Potential impact: Low Actual impact: Low Audit history: Three times previously Controls: Weak Breach risk rating: 3
Audit risk rating	Rationale for audit risk rating

Low	<p>The controls in place are rated as weak as the database is not being maintained as expected.</p> <p>The impact is assessed to be low as the impact on reconciliation is small as detailed in section 3.1.</p>		
Actions taken to resolve the issue		Completion date	Remedial action status
Mercury is working with Ardmore Airport to obtain details of the 3 additional lights. Once confirmed, these will be added to the database as necessary.		Dec 2020	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
Ardmore Airport has a current copy of the database and we have reiterated the importance of notifying us of any changes. Once we have corrected any discrepancies identified, we will complete twice yearly reviews on the full database as well as ad hoc updates throughout the year.		Dec 2020	

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

During the previous audit, it was found that the changes made were detailed and dated, but no record of the person who has made the change was recorded. This has been remedied and the database now contains the details of 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 compared the field audit findings from the 2019 audit against the database provided in April 2020.

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

Audit commentary

The field audit findings from 2019 are detailed in **section 2.5**. There are three lights missing from the database and there are some wattage discrepancies, which will lead to under submission of 316 kWh per annum, which is a 2.2% error.

I have checked these lights in the Auckland Transport RAMM database extract and found they are also recorded against ICPs 0900343060LC471 and 1001282179LC8B1 as part of that database. It appears they have been updated to LED as part of the Auckland Transport LED roll out. I recommend that Mercury liaise with Ardmore Airport to confirm which database they should be recorded in.

Description	Recommendation	Audited party comment	Remedial action
Database Accuracy	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.	Ardmore Airport has advised the 4 village way lights are AT not Ardmore. These will be removed from the database accordingly.	Identified

If the Village Way lights have been submitted twice (by being in two databases) this will have resulted in an estimated annual over submission of 1,773 kWh for the period they had 70W HPS lights and 491 kWh with the LED lights installed.

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. This audit found that the discrepancies found in the last audit have not been updated during the audit period.

Audit outcome

Non-compliant

Non-compliance	Description		
<p>Audit Ref: 3.1</p> <p>With: 15.2 and 15.37B(b)</p> <p>From: 01-Jun-17</p> <p>To: 01-May-20</p>	<p>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.</p> <p>Potential impact: Low</p> <p>Actual impact: Low</p> <p>Audit history: Three times previously</p> <p>Controls: Weak</p> <p>Breach risk rating: 3</p>		
Audit risk rating	Rationale for audit risk rating		
<p>Low</p>	<p>The controls in place are rated as weak as the database is not being maintained as expected.</p> <p>The impact is assessed to be low, based on the kWh differences described above.</p>		
Actions taken to resolve the issue		Completion date	Remedial action status
<p>Mercury is working with Ardmere Airport to obtain details of the 3 additional lights. Once confirmed, these will be added to the database as necessary.</p> <p>Ardmore Airport has advised the 4 village way lights are AT not Ardmere. These will be removed from the database accordingly.</p>		<p>Dec 2020</p>	<p>Identified</p>
Preventative actions taken to ensure no further issues will occur		Completion date	
<p>Ardmore Airport has a current copy of the database and we have reiterated the importance of notifying us of any changes. Once we have corrected any discrepancies identified, we will complete twice yearly reviews on the full database as well as ad hoc updates throughout the year.</p>		<p>Dec 2020</p>	

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 2020. 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 316 kWh. 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	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. Potential impact: Low Actual impact: Low Audit history: Three times previously 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
<p>Mercury is working with Ardmore Airport to obtain details of the 3 additional lights. Once confirmed, these will be added to the database as necessary.</p> <p>Ardmore Airport has advised the 4 village way lights are AT not Ardmore. These will be removed from the database accordingly.</p>	Dec 2020	Identified
Preventative actions taken to ensure no further issues will occur	Completion date	
<p>Ardmore Airport has a current copy of the database and we have reiterated the importance of notifying us of any changes. Once we have corrected any discrepancies identified, we will complete twice yearly reviews on the full database as well as ad hoc updates throughout the year.</p>	Dec 2020	

CONCLUSION

The audit was largely conducted in accordance with the audit guidelines for DUML audits version 1.1. A field audit was not undertaken due to the restrictions imposed by the Covid-19 lockdown; therefore, I checked the results of the 2019 field audit to ensure the database reflected those findings.

The spreadsheet is maintained by Mercury and the customer is expected to advise Mercury of any changes that occur. The extra lamps found in the last two audits have not been corrected during the audit period and the lights in Village Way have been upgraded to LEDs. The change management process is not working as expected.

I checked the lights in Village Way in the Auckland Transport DUML database extract and found they are also recorded in that database and therefore being submitted twice. I recommend that Mercury liaise with Ardmore Airport to determine which database these should be recorded in.

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 and makes one recommendation. The future risk rating indicates that the next audit be completed in 12 months.

PARTICIPANT RESPONSE