

VERITEK

Electricity Industry Participation Code Audit Report

For

Mercury NZ Limited



**Palmerston North Airport Distributed Unmetered
Load**

Prepared by Tara Gannon – Veritek Ltd

Date of Audit: 02/08/17

Date Audit Report Complete: 02/08/17

Executive Summary

Mercury NZ Limited (Mercury) is required, as a reconciliation participant, to ensure their annual audit includes the audit of distributed unmetered load (DUML) databases to verify that the volume information is being calculated accurately, and that profiles have been correctly applied.

This audit of the Palmerston North Airport DUML database and processes was conducted at the request of Mercury, in accordance with clause 15.37B.

The audit was conducted in accordance with the audit guidelines for DUML audits version 1.1, which became effective on 01/06/17.

The audit process included a field audit of all items of load, which found 94% accuracy. Most of the discrepancies related to incorrect lamp types being recorded. Although not all lamp types in the field could be confirmed, the estimated over reporting for the three which were labelled in the field is approximately 618 kWh per annum.

The audit found two non-compliances, and one recommendation was made. The details of these findings are contained in the tables below, and the body of this report.

Table of Non-Compliance

Subject	Section	Clause	Non-compliance	Breach Risk Rating	Audit History	Controls	Remedial Action
ICP identifier	2.2.1	Clause 11(2)(a) of Schedule 15.3	One item of load does not have an ICP number recorded.	2	None	Moderate	Identified
Tracking of load changes	2.3	Clause 11(3) of Schedule 15.3	One item of load was not located, I believe the missing pole is either L1022 or L1023. Three items of load appear to have been replaced (L1022, L1029 and L1031). Three items of load had wattage different to what was recorded on the physical lamp. Pole IDs L1031, L1013 and L1014 all have 150W recorded in the database and 110W recorded on the lamp.	2	None	Moderate	Identified
Breach Risk Rating Score						4	
Indicative Next Audit Frequency						18 months	

Table of Recommendations

Subject	Section	Clause	Recommendation for improvement	Status
Tracking of load changes	2.3	Clause 11(3) of Schedule 15.3	Check the lights in the restricted access area at the McGregor Airport Ext and on Airport Loop, and update the database if necessary.	Identified

Persons Involved in This Audit:

Auditor:

Tara Gannon

Veritek Limited

Electricity Authority Approved Auditor

Other personnel assisting in this audit were:

Name	Title
Andrew Robertson	Regulatory and Compliance Strategist, Mercury Energy Limited
Glen Pleasants	Manager Aeronautical and Infrastructure, Palmerston North Airport Limited
Philip Harris	Street Lighting Contract Administration, The Downs Group

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1. Pre-Audit and Operational Infrastructure Information

1.1 Summary of Previous Audit

Mercury provided a copy of the previous audit report for Palmerston North Airport DUML, conducted in August 2016 by Rebecca Elliot of Veritek Limited. No non-compliances or recommendations were identified.

1.2 Scope of Audit

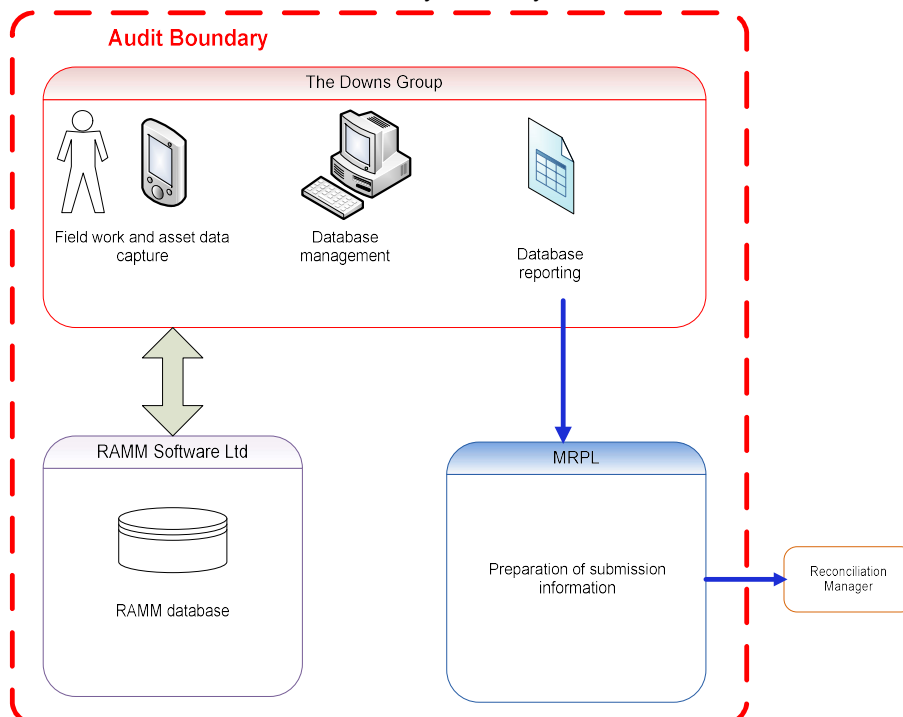
Mercury is required, as a reconciliation participant, to ensure their annual audit includes the audit of distributed unmetered load (DUML) databases to verify that the volume information is being calculated accurately, and that profiles have been correctly applied.

This audit of the Palmerston North Airport DUML database and processes was conducted at the request of Mercury, in accordance with clause 15.37B.

The audit was conducted in accordance with the audit guidelines for DUML audits, which became effective on 01/06/17. The audit process included a field audit of all lamps.

Palmerston North Airport engages the Downs Group as their contractor for maintenance and database population. The Downs Group provides Mercury with a monthly report, which is used to prepare submission information using the HHR profile.

The scope of the audit encompasses the collection, security and accuracy of the data, including the preparation of submission information based on the monthly reporting. The diagram below shows the flow of information and the audit boundary for clarity.



The audit was carried out on 2 August 2017. A field audit was conducted of all 104 individual items of load.

1.3 Exemptions From Obligations to Comply With Code (Section 11 of Electricity Industry Act 2010)

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.

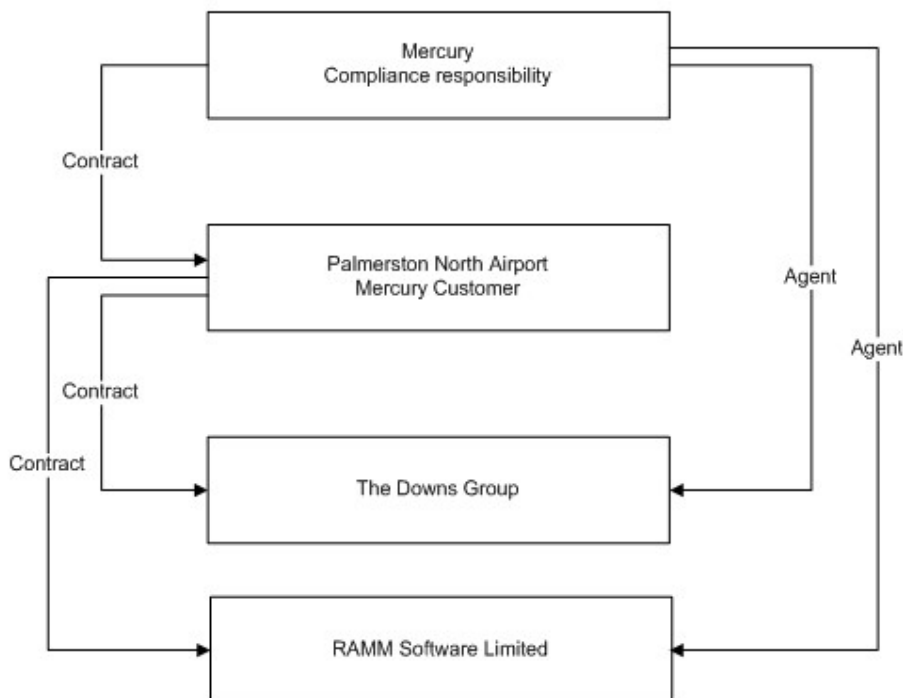
Mercury confirms that there are no exemptions in place relevant to the scope of this audit.

1.4 Use of Agents (Clause 15.34 of Part 15)

The Downs Group is considered an agent under this clause, and Mercury Energy clearly understands that the use of agents does not release them from their compliance obligations.

Mercury does not have a direct contractual relationship with the Downs Group. Mercury's contract is with Palmerston North Airport, and Palmerston North Airport has a contract with the Downs Group and RAMM Software Limited. The Downs Group use their own staff to conduct field activities. The indirect contractual relationship is not seen as an issue, if the processes for updating the database are robust and have appropriate validation controls in place. This is discussed further in Section 2.3.

The diagram below shows the relationships from a compliance and contractual perspective.



1.5 Hardware and Software

Section 1.2 shows that the Downs Group populates a remotely hosted version of the RAMM database. Backup and restoration procedures are in accordance with normal industry protocols.

1.6 Breaches or Breach Allegations

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

1.7 ICP Data

The relevant ICP is as follows:

ICP	Description	Property Name	No. of fixtures
0900091389PC84E	TERMINAL ACCESS ROAD	PN AIRPORT LAND	104
Total			104

1.8 Data Transmission (Clause 20 of Schedule 15.2)

The reporting from the Downs Group to Mercury is by way of email attachment of a password protected spreadsheet. This method is considered secure as required by this clause. Compliance is confirmed.

2. Distributed Unmetered Load Database

2.1 Deriving Submission Information (Clause 11(1) of Schedule 15.3)

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 is reconciling this load using the HHR profile. The “total hours” information is derived from a certified data logger.

Calculations were checked for ICP 0900091389PC84E for the following HHR aggregates submissions:

- January 2017 initial
- February 2017 initial
- April 2017 initial
- April 2017 one month
- May 2017 initial; and
- May 2017 one month.

Compliance is confirmed.

2.2 Database Contents (Clause 11(2) of Schedule 15.3)

The Palmerston North Airport data is maintained in a RAMM database.

2.2.1 ICP Identifier (Clause 11(2)(a) of Schedule 15.3)

The RAMM database contains the ICP identifier for 103 items of load. One lamp does not have the ICP recorded. This is recorded as non-compliance below.

Non-compliance	Description	
<p>With: Clause 11(2)(a) of Schedule 15.3</p> <p>From/to: since 08/06/2017 when record was last updated</p>	<p>One item of load does not have an ICP number recorded.</p> <p>Potential impact: Low Actual impact: Low Audit history: None Controls: Moderate Breach Risk Rating: 2</p>	
Audit Risk Rating	Rationale for audit risk rating	
Low	All items of load in the database are connected to the same ICP. All other items of load have the ICP number correctly recorded.	
Actions taken to resolve the issue	Completion date	Remedial action Status
This has been corrected.	December 2017	Identified
Preventative actions taken to ensure no further issues will occur	Completion date	
MEEN is working with the customer to establish a consistent process with this customers contractor.	October 2018	

2.2.2 Location of Each Item of Load (Clause 11(2)(b) of Schedule 15.3)

The RAMM database contains pole numbers for 100 of the 104 items of load, which are sometimes present in the field. GPS coordinates, displacement, and the street are recorded for all items of load.

Compliance is confirmed.

2.2.3 Description of Load Type (Clause 11(2)(c) of Schedule 15.3)

Each type of load contains the make and model in its description. Compliance is confirmed.

In some cases, these descriptions were inconsistent with what was found during the field audit. This is recorded as non-compliance in section 2.3.

2.2.4 Capacity of Each Item of Load in kW (Clause 11(2)(d) of Schedule 15.3)

Capacities are stated as watts rather than kW. However, the unit of measure is clearly identified.

The database contains two records for wattage, firstly the lamp wattage and secondly the gear wattage, which represents ballast losses. The gear wattage figures in the database are derived from manufacturers catalogues. I checked these against the Veritek table of wattages and found them all to agree.

The field audit found three items of load where wattage appeared to be recorded incorrectly, and a further three items of load where the item appeared to have been replaced. This is recorded as non-compliance in section 2.3.

2.3 Tracking of Load Changes (Clause 11(3) of Schedule 15.3)

The Downs Group maintain the RAMM database and are responsible for fault and maintenance work for the Palmerston North Airport DUML.

The processes for new lamp connections and the tracking of load changes due to faults and maintenance remains unchanged from the last audit. All fault and maintenance work is issued to the Downs Group field staff through "RAMM Contractor" and once each job is completed, the database is updated via field PDAs. Paperwork is also provided to note materials used, and this is compared with the data in the database for each job. Changes in the field are conducted by the Downs Group, and recorded in RAMM using "pocket RAMM" which is a field version of RAMM allowing population of the database through hand held devices. This process also plots the GPS coordinates.

Monthly outage patrols are completed. If any items of load are found to require repairs or maintenance their records are checked and updated as described above.

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. On September 20th 2012, the Authority sent a memo to Retailers and auditors advising that tracking of load changes at a daily level was not required as long as the database contained an audit trail. I have interpreted this to mean that the production of a monthly "snapshot" report is sufficient to achieve compliance.

The field audit found three items of load where wattage appeared to be recorded incorrectly, and a further three items of load where the item appeared to have been replaced. Most of the discrepancies related to incorrect lamp types being recorded. Although not all lamp types in the field could be confirmed, the estimated over reporting for the three which were labelled in the field is approximately 618 kWh per annum.

One item of load was not located in the field, and three were not accessible because they were located in a restricted access area.

Non-compliance is recorded below, and I have raised a recommendation to investigate the discrepancies.

Non-compliance	Description	
<p>With: Clause 11(3) of Schedule 15.3</p> <p>From/to: since 08/06/2017 when record was last updated</p>	<p>One item of load was not located, I believe the missing pole is either L1022 or L1023. Three items of load appear to have been replaced (L1022, L1029 and L1031). Three items of load had wattage different to what was recorded on the physical lamp. Pole IDs L1031, L1013 and L1014 all have 150W recorded in the database and 110W recorded on the lamp.</p> <p>Potential impact: Low Actual impact: Low Audit history: None Controls: Moderate Breach Risk Rating: 2</p>	
Audit Risk Rating	Rationale for audit risk rating	
Low	There were a relatively small number of differences. The estimated volume over reported is approximately 618 kWh per annum.	
Actions taken to resolve the issue	Completion date	Remedial action Status
This has been corrected.	December 2017	Identified
Preventative actions taken to ensure no further issues will occur	Completion date	
MEEN is working with the customer to establish a consistent process with this customers contractor.	October 2018	

Recommendation	Description	Audited party comment	Remedial action
Regarding: Database accuracy	Check the lights in the restricted access area at the McGregor Airport Ext and on Airport Loop, and update the database as necessary.	MEEN is working with the customer to establish a consistent process with this customers contractor.	Identified

2.4 Database Accuracy

All items of load in the database were reviewed. The results are shown in the table below.

Street/Area	Database Count	Field Count	Difference from Database to Field	Comments
AIRPORT DR NORTH	52	52	-	All items of load matched

Street/Area	Database Count	Field Count	Difference from Database to Field	Comments
AIRPORT DR SOUTH	1	1	-	All items of load matched
AIRPORT DR SOUTH LINK	2	2	-	All items of load matched
AIRPORT LOOP	41	40	7	One item of load was not located, I believe the missing pole is either L1022 or L1023. Three items of load appear to have been replaced (L1022, L1029 and L1031). Three items of load had wattage different to what was recorded on the physical lamp. Pole IDs L1031, L1013 and L1014 all have 150W recorded in the database and 110W recorded on the lamp.
MCGREGOR AIRPORT EXT	8	8	-	Due to the incorporation of three lights into the restricted access area, it was not possible to match them to the database records. There were more than three lights present.

The field audit of all 104 items found 94% accuracy. This is recorded as non-compliance in section 2.3.

2.5 Audit Trail (Clause 11(4) of Schedule 15.3)

The RAMM database has a compliant audit trail.

2.6 Database Audit (Clause 11(5) of Schedule 15.3)

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

2.7 Additional Matters

Palmerston North Airport has some streetlights located in its two secure car parks, which are separately metered. These streetlights are correctly excluded from the database.

3. Conclusions

The audit process included a field audit of all items of load, which found 94% accuracy. Most of the discrepancies related to incorrect lamp types being recorded. Although not all lamp types in the field could be confirmed, the estimated over reporting for the three which were labelled in the field is approximately 618 kWh per annum.

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Signed by:

TGannon

Tara Gannon
Veritek Limited
Electricity Authority Approved Auditor

4. Participant comments

Mercury have reviewed this report and their comments are contained within its body.

5. Mercury Response