ELECTRICITY INDUSTRY PARTICIPATION CODE
DISTRIBUTED UNMETERED LOAD AUDIT REPORT

VERITEK

For

DUNEDIN CITY COUNCIL
AND CONTACT ENERGY LIMITED

Prepared by: Rebecca Elliot

Date audit commenced: 19 October 2020

Date audit report completed: 1 December 2020

Audit report due date: 1 December 2020

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EXECUTIVE SUMMARY

This audit of the **Dunedin City Council (DCC)** DUML database and processes was conducted at the request of **Contact Energy Limited (Contact)**, 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 RAMM database is managed by DCC, who is Contact's customer. Fault, maintenance, new connection and upgrade work is completed by Ventia. Ventia's staff update RAMM using pocket RAMM in the field, or RAMM in the office.

The LED roll out is approximately 50% complete and is expected to be complete by April 2021.

The field audit was undertaken of a statistical sample of 445 items of load recorded in the database was undertaken on 9th and 10th November 2020. This found a high level of accuracy and confirmed the database accuracy was within the required +/-5%.

A monthly report from the database is provided to Contact and used to calculate submissions. Contact submits the DUML load as HHR using the HHR profile. On hours are derived using data logger information. This was compared to the database extract provided for the audit and found that there were more lights provided in the database extract than Contact has submitted for. Annualised this is an estimated to result in an annual under submission of 41,957.40 kWh. I recommend the light volume discrepancy is investigated.

Festive lights are recorded in an Excel spreadsheet and reported to Contact Energy with connection and disconnection dates for the months that they are connected.

This audit found five non-compliances were identified, and one recommendation is raised. The future risk rating indicated that the next audit be due in 12 months. I have considered this in conjunction with Contact's responses and agree with that recommendation.

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	Clause 11(1) of Schedule 15.3	Submitted values do not match the database values resulting in an estimated under submission of 41,957.40 kWh per annum. 49 items of load have incorrect gear wattages recorded.	Moderate	Medium	4	Identified
All load recorded in database	2.5	Clause 11(2A) of Schedule 15.3	One light not recorded in the database.	Strong	Low	1	Identified
Audit trail	2.7	Clause 11(4) of Schedule 15.3	Festive lights are recorded in an Excel spreadsheet, which does not have an audit trail.	Weak	Low	3	Identified
Database accuracy	3.1	Clause 15.2 and 15.37B(c)	49 items of load have incorrect gear wattages recorded.	Strong	Low	1	Identified
Volume information accuracy	3.2	Clause 15.2 and 15.37B(c)	Submitted values do not match the database values resulting in an estimated under submission of 41,957.40 kWh per annum. 49 items of load have incorrect gear wattages recorded.	Moderate	Medium	4	Identified
Future Risk Rating						13	

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

Section	Recommendation	Description	Audited party comment	Remedial action
2.1	Deriving submission information	Recommend investigation to identify why there is a lighting volume difference between the monthly report and the database.	Contact will work with Dunedin City Council to understand how different data sets have been provided. Wash-ups will be created to ensure historic billing is accurate.	Identified

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.

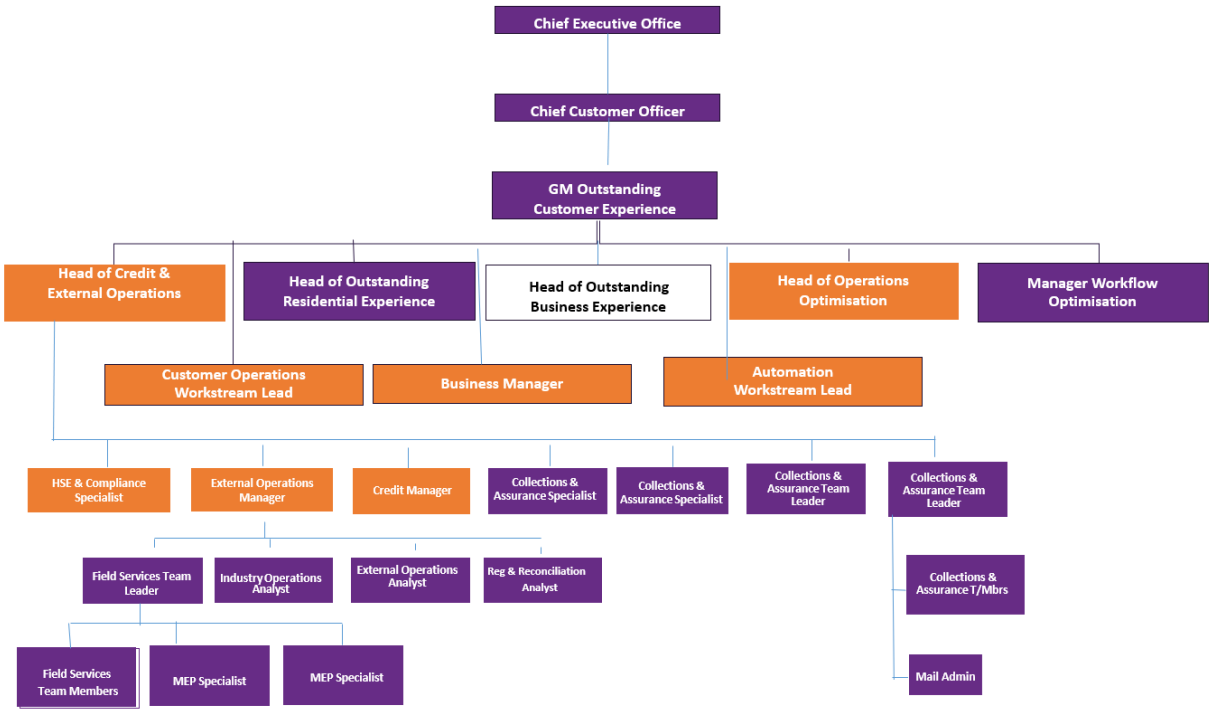
Audit commentary

There is one exemption in place relevant to the scope of this audit:

Exemption No. 177: Exemption to clause 8(g) of schedule 15.3 of the Electricity Industry Participation Code 2010 ("Code") in respect of providing half-hour ("HHR") submission information instead of non half-hour ("NHH") submission information for distributed unmetered load ("DUML"). This exemption expires at the close of 31 October 2023.

1.2. Structure of Organisation

Contact Energy provided a copy of their organisational structure.



1.3. Persons involved in this audit

Auditor:

Name	Company	Role
Rebecca Elliot	Veritek Limited	Lead Auditor
Claire Stanley	Veritek Limited	Supporting Auditor

Other personnel assisting in this audit were:

Name	Title	Company
Luke Cartmell-Gollan	Commercial Operations Manager	Contact Energy
Aaron Wall	Reconciliation Analyst	Contact Energy
Cynthia Wilson	Systems and Information Officer – TL	DCC
Simon Chu	Systems and Information Officer	DCC
Matthew Harris	Contract Engineer LED Streetlights	DCC

1.4. Hardware and Software

The SQL database used for the management of DUML is remotely hosted by RAMM Software Ltd. The database is commonly known as "RAMM" which stands for "Roading Asset and Maintenance Management". Backup and restoration procedures are in place, and access to the database is restricted using logins and passwords.

Festive lights are recorded in an Excel spreadsheet, and is stored in a network area which can be accessed by all transport staff and some staff from other departments who require access to files in the directory. Backup and restoration procedures are in place for all files saved on the network, and access to the network is restricted using logins and passwords.

Systems used by the trader to calculate submissions are assessed as part of their reconciliation participant audits.

1.5. Breaches or Breach Allegations

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

1.6. ICP Data

ICP Number	Description	NSP	Profile	Number of items of load	Database wattage (watts)
0000201300DE692	SDN GXP street lighting	SDN0331	HHR	4,610	448,791
0000203111DE93D	HWB GXP street lighting	HWB0331	HHR	10,218	927,037
0001982460TGA89	DCC STREETLIGHTS ROLLINSONS ROAD	HWB0331	HHR	411	36,628
0001982461TG6CC	DCC STREETLIGHTS SWAMPY RIDGE TRACK	NSY0331	HHR	65	3,817
Total				15,304	1,416,273

1.7. Authorisation Received

All information was provided directly by Contact and DCC.

1.8. Scope of Audit

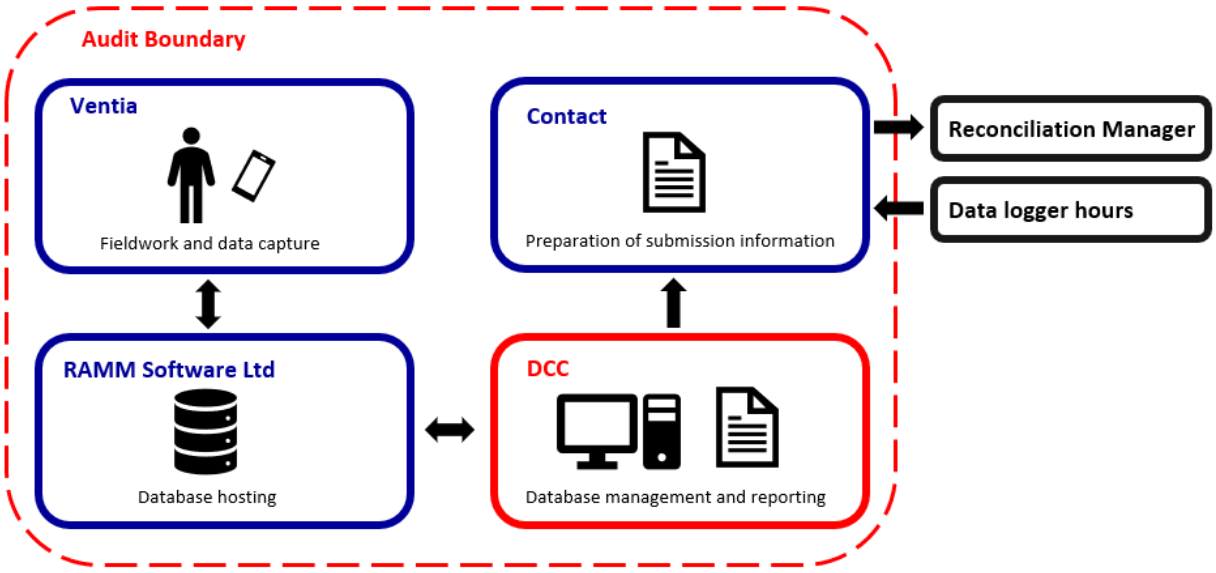
This audit of the DCC DUML database and processes was conducted at the request of Contact, in accordance with clause 15.37B. The purpose of this audit is to verify that the volume information is being calculated accurately, and that profiles have been correctly applied. The audit was conducted in accordance with the audit guidelines for DUML audits version 1.1.

A RAMM database is managed by DCC, who is Contact's customer. Fault, maintenance, new connection and upgrade work is completed by Ventia. Ventia's staff update RAMM using pocket RAMM in the field, or RAMM in the office.

Festive lights are recorded in an Excel spreadsheet and reported to Contact Energy with connection and disconnection dates for the months that they are connected.

A monthly report from the database is provided to Contact, and used to calculate submissions. Contact submits the DUML load as HHR using the HHR profile. On hours are derived using data logger information.

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



A field audit of a statistical sample of 445 items of load recorded in the database was undertaken on 9th and 10th November 2020.

1.9. Summary of previous audit

Contact provided a copy of the last audit report completed by Tara Gannon of Veritek Limited in May 2019. Five non-compliances were identified, and one recommendation was made. The statuses of the non-compliances are described below.

	Section	Clause	Non-compliance	Status
Deriving submission information	2.1	11(1) of Schedule 15.3	298 items of load have incorrect gear wattages recorded. Seven disconnected lights were included in the submission data.	Still existing Cleared
All load recorded in database	2.5	11(2A) of Schedule 15.3	One light not recorded in the database.	Existing for a different light
Audit trail	2.7	11(4) of Schedule 15.3	Festive lights are recorded in an Excel spreadsheet, which does not have an audit trail.	Still existing
Database accuracy	3.1	15.2 and 15.37B(b)	298 items of load have incorrect gear wattages recorded.	Still existing

	Section	Clause	Non-compliance	Status
Volume information accuracy	3.2	15.2 and 15.37B(c)	298 items of load have incorrect gear wattages recorded. Seven disconnected lights were included in the submission data. ICPs 0000201300DE692 and 0000203111DE93D had RPS HHR profile assigned on the registry instead of HHR.	Still existing Cleared 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

Contact have requested Veritek to undertake this streetlight 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

This clause requires that the distributed unmetered load database must satisfy the requirements of schedule 15.5 regarding the methodology for deriving submission information. Contact reconciles this DUML load as HHR using the HHR profile, in accordance with exemption number 177. This exemption is discussed further in **section 1.1**. On and off times are derived from data logger information.

I checked the October 2020 submission data for ICPs 0000201300DE692, 0000203111DE93D, 0001982460TGA89 and 0001982461TG6CC and found differences for three ICPs:

ICPs	Fittings number from Oct 2020 submission	Fittings number from database extract	Differences	kWh value submitted	Calculated kWh value from database	kWh Differences
0000203111DE93D	10,111	10,218	107	312,102.99	314,119.78	2,016.79
0000201300DE692	4,534	4,610	76	150,845.65	151,918.03	1,072.38
0001982460TGA89	383	411	28	11,507.98	11,914.29	406.31
Total month kWh under submission						3,496.45

The database extract recorded more lights than is being submitted by Contact resulting in under submission of 3,496.45 kWh for the month of October 2020. Annualised this is estimated to result in an under submission of 41,957.40 kWh. I recommend that the difference in the volume of lights in the database and the wattage report sent to Contact is investigated.

Recommendation	Description	Audited party comment	Remedial action
Deriving submission information	Recommend investigation to identify why there is a lighting volume difference between the monthly report and the database.	Contact will work with Dunedin City Council to understand how different data sets have been provided. Wash-ups will be created to ensure historic billing is accurate.	Identified

The variance in submission is recorded as non-compliance below.

Festive lights are maintained separately in an Excel spreadsheet, and connection dates are provided to Contact so that they can be included in submissions when connected and excluded when disconnected.

The review of database accuracy based on the field audit detailed in **section 3.1** found that the best available estimate indicates that the database is accurate within ±5%.

The review of database wattages in **section 3.1** found 49 items of load had incorrect gear wattages recorded, resulting in potential over submission of 350W or 1,494 kWh per annum (based on 4271 hours per annum).

Audit outcome

Non-compliant

<table>
<tr><th>Non-compliance</th><th colspan="3">Description</th></tr>
<tr><td>Audit Ref: 2.1
Clause 11(1) of Schedule 15.3

From: 04-May-19
To: 03-Nov-20</td><td colspan="3">Submitted values do not match the database values resulting in an estimated under submission of 41,957.40 kWh per annum.
49 items of load have incorrect gear wattages recorded.
Potential impact: Medium
Actual impact: Medium
Audit history: Three
Controls: Moderate
Breach risk rating: 4</td></tr>
<tr><th>Audit risk rating</th><th colspan="3">Rationale for audit risk rating</th></tr>
<tr><td>Medium</td><td colspan="3">The controls are rated as moderate, because they are sufficient to ensure that the database is accurate most of the time.
The impact is assessed to be medium, based on potential submission errors detailed above.</td></tr>
<tr><th colspan="2">Actions taken to resolve the issue</th><th>Completion date</th><th>Remedial action status</th></tr>
<tr><td colspan="2">A list will be provided to Dunedin City Council to update their RAMM database.</td><td>28/2/2021</td><td rowspan="3">Identified</td></tr>
<tr><th colspan="2">Preventative actions taken to ensure no further issues will occur</th><th>Completion date</th></tr>
<tr><td colspan="2">Quarterly reviews of the asset schedules provided will be completed to proactively manage the data set</td><td>Ongoing</td></tr>
</table>

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 database and festive lights spreadsheet were checked to confirm whether an ICP is recorded for each item of load.

Audit commentary

All items of load in RAMM and the festive lights spreadsheet have an ICP number recorded.

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 database and festive lights spreadsheet were checked to confirm the location is recorded for all items of load.

Audit commentary

Street addresses and GPS coordinates are recorded for all 15,305 items of load in RAMM and all 8,431 items of load in the festive light's spreadsheet.

Audit outcome

Compliant

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 database and festive lights spreadsheet were checked to confirm they contained a field for lamp type and wattage capacity and included any ballast or gear wattage.

Audit commentary

All lamps in RAMM and the festive lights spreadsheet have a lamp model, lamp wattage and gear wattage recorded. No missing, or invalid zero lamp or gear wattages were identified.

The accuracy of the recorded wattage information is discussed in **section 3.1**.

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

A field audit of a statistical sample of 445 items of load recorded in the database was undertaken on 9th and 10th November 2020.

Audit commentary

The field audit discrepancies are detailed in the table below:

Address	Database Count	Field Count	Count differences	Wattage differences	Comments
GLENGARRY CT CUL-DE-SAC - PRIVATE (MSI)	1	0	-1		One 70W HPS was recorded in the database but not located in field.
RATA COURT - PRIVATE (MSI)	1	2	1		One additional 25W LED was not recorded in the database but located in the field.
KENT PL (MSI)	4	3	-1		One 44W LED was recorded in the database but not located in field.
CHERRY DR (MSI)	16	15	-1		One 70W HPS was recorded in the database but not located in field.
Total	**445**	**443**	**4**	**-**	

There was one additional light found in the field. This is recorded as non-compliance in **section 3.1**.

The field audit identified LED lights that had been deployed by the contractor in the following streets:

Echovale Ave – Private (North), Glenholm St – Upper (North), Henry St Loop (North) and Strathmore Cres (Cen).

It was confirmed with Dunedin CC that there was a timing issue between the date the extract from the RAMM database was provided for the field audit, and the updates for the LED roll-out in the RAMM database. These changes have therefore been excluded from the DUML calculations detailed in **section 3.1**.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 2.5 With: Clause 11(2A) of Schedule 15.3 From: 04-May-19 To: 03-Nov-20	One light not recorded in the database. Potential impact: Low Actual impact: Low Audit history: Twice Controls: Strong Breach risk rating:1
Audit risk rating	**Rationale for audit risk rating**
Low	The controls are rated as strong, as the processes in place ensure the database accuracy is high overall. The impact is assessed to be low, based on 25W missing from the database.

Actions taken to resolve the issue	Completion date	Remedial action status
Contact will work with Dunedin City Council to ensure the light is added to the RAMM database and provided monthly with the asset schedule.	31/1/2021	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	

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 database and festive lights spreadsheet were examined.

Audit commentary

The RAMM database functionality achieves compliance with the code.

Festive lights are maintained in an Excel spreadsheet. Each year, the transport team confirms any additions, deletions or changes to the lights with the events team, and the connection and disconnection dates. The spreadsheet is saved as a new version and updated, then sent to Contact.

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 database and festive lights spreadsheet were checked for audit trails.

Audit commentary

The RAMM database has a complete audit trail of all additions and changes to the database information.

The festive lights spreadsheet does not have an audit trail. Each year, the transport team confirms any additions, deletions or changes to the lights with the events team, and the connection and disconnection dates. The spreadsheet is then saved as a new version and sent to Contact. Changes from year to year can be determined by comparing the versions.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 2.7 With: Clause 11(4) of Schedule 15.3 From: 04-May-19 To: 03-Nov-20	Festive lights are recorded in an Excel spreadsheet, which does not have an audit trail. Potential impact: Low Actual impact: Low Audit history: Once Controls: Weak Breach risk rating: 3
Audit risk rating	**Rationale for audit risk rating**
Low	The controls are rated as weak, because a compliant audit trail does not exist for festive lights. The impact is assessed to be low, because changes typically occur only once each year and can be identified by comparing the database versions.

Actions taken to resolve the issue	Completion date	Remedial action status
Contact Energy will discuss this non-compliance and work with DCC to ensure there is an audit trail on this spreadsheet moving forward.	31/5/2021	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	

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

The DUML Statistical Sampling Guideline was used to determine the database accuracy. The table below shows the survey plan.

Plan Item	Comments
Area of interest	Dunedin City Council region
Strata	The database contains items of load in the Dunedin area. The processes for the management of all DDC items of load are the same, and I decided to create five strata: • Crown, • Parks & Amenities, • Street lighting (street name A-F), • Street lighting (street names G-M), and • Street lighting (street names N-Z)
Area units	I created a pivot table of the roads in each stratum, and I used a random number generator in a spreadsheet to select a total of 83 sub-units.
Total items of load	445 items of load were checked.

Wattages were checked for alignment with the published standardised wattage table produced by the Electricity Authority against the database or in the case of LED lights against the LED light specification.

The change management process and timeliness of database updates was evaluated.

Audit commentary

Database accuracy based on the field audit

A field audit was conducted of a statistical sample of 445 items of load. I found a number of roads with LED lights, but the database recorded these as HPS. It was confirmed with Dunedin CC that there was a timing issue between the date the extract from the RAMM database was provided for the field audit, and the updates for the LED roll-out in the RAMM database as part of BAU. These changes have therefore been excluded from the DUML calculations. The “database auditing tool” was used to analyse the results, which are shown in the table below.

Result	Percentage	Comments
The point estimate of R	99.4	Wattage from survey is lower than the database wattage by 3.96%
R_L	97.9	With a 95% level of confidence it can be concluded that the error could be between 2.1% and 0.0%.
R_H	100.0	

These results were categorised in accordance with the "Distributed Unmetered Load Statistical Sampling Audit Guideline", effective from 01/02/19 and the table below shows that Scenario A (detailed below) applies, and the best available estimate indicates that the database is accurate within ± 5.0%.

- In absolute terms the installed capacity is estimated to be 9 kW lower than the database indicates.
- There is a 95% level of confidence that the installed capacity is between 29 kW lower to 0.0 kW higher than the database.
- In absolute terms, total annual consumption is estimated to be 38,500 kWh lower than the DUML database indicates.
- There is a 95% level of confidence that the annual consumption is between 124,400 kWh p.a. lower to 0.00 kWh p.a. higher than the database indicates.

Scenario	Description
A - **Good accuracy, good precision**	This scenario applies if: (a) R_H is less than 1.05; and (b) R_L is greater than 0.95 The conclusion from this scenario is that: (a) the best available estimate indicates that the database is accurate within +/- 5 %; and (b) this is the best outcome.
B - **Poor accuracy, demonstrated with statistical significance**	This scenario applies if: (a) the point estimate of R is less than 0.95 or greater than 1.05 (b) as a result, either R_L is less than 0.95 or R_H is greater than 1.05. There is evidence to support this finding. In statistical terms, the inaccuracy is statistically significant at the 95% level
C - **Poor precision**	This scenario applies if: (a) the point estimate of R is between 0.95 and 1.05 (b) R_L is less than 0.95 and/or R_H is greater than 1.05 The conclusion from this scenario is that the best available estimate is not precise enough to conclude that the database is accurate within +/- 5 %

Lamp description and capacity accuracy

Wattages for all items of load were checked against the published standardised wattage tables produced by the Electricity Authority and Veritek, or the manufacturer's specifications.

The following gear wattage discrepancies were identified, and DCC intends to update their records:

Model	Gear wattage recorded (W)	Gear wattage expected (W)	Quantity	Gear wattage difference (W)
Halogen 300W	25	0	6	-150
High Pressure Sodium 250W	18	28	1	10
Metal Halide 45W	10	5	42	-210
Total			**49**	**-350**

Specifications could not be located to verify the lamp and gear wattages applied for the following lamp types. DCC advised that these are historic values and are believed to be correct.

Model	Lamp wattage recorded (W)	Gear wattage recorded (W)	Quantity	Comment
Compact Fluorescent	52	38	8	Confirmed lamp wattage but not gear
Compact Fluorescent	72	5	1	
High Pressure Sodium	1000	120	7	Confirmed lamp wattage but not gear

NZTA lighting

NZTA lights are not included in the load recorded by Dunedin CC. These are managed by NZTA directly.

Private lights

Private lights are recorded in the database and are associated to an ICP.

ICP accuracy

All items of load have the correct ICP recorded.

Location accuracy

The location details were found to be accurate.

Change management process findings

Processes to track changes to the database were reviewed.

For all new connections, an "as built" are required to be submitted to council before connection can occur. These are added to RAMM once the lights have been confirmed as connected by the Dunedin CC Engineers. Dunedin CC complete a field visit to confirm information for RAMM.

Outage patrols are controlled by Ventia. Any issues identified in the field are fed back to the Contracts team to schedule work, this is all managed in RAMM.

All Festive lights are listed as individual LEDs, and the correct wattages are recorded in the Festive light's spreadsheet.

Fault, maintenance, new connection and upgrade work is completed by Aurora approved contractors e.g. Ventia. Pocket RAMM is used in the field, and in the office.

290 private lights are recorded in the database. DCC passes electricity charges to affected customers as part of their rates. If new private lights are identified, DCC collects the light information and updates the database.

The LED roll-out is approximately 50 % complete and is expected to be complete by April 2021.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 3.1 With: Clause 15.2 and 15.37B(b) From: 04-May-19 To: 03-Nov-20	49 items of load have incorrect gear wattages recorded. Potential impact: Low Actual impact: Low Audit history: Three times previously Controls: Strong Breach risk rating: 1
Audit risk rating	**Rationale for audit risk rating**
Low	The controls are rated as strong as the processes in place are sufficient to ensure that the database is accurate most of the time. The impact is assessed to be low as overall the database has high level of accuracy.

Actions taken to resolve the issue	Completion date	Remedial action status
A list will be provided to Dunedin City Council to update their RAMM database.	28/2/2021	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Quarterly reviews of the asset schedules provided will be completed to proactively manage the data set	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 database extract combined with the burn hours against the submitted figure to confirm 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. Contact reconciles this DUML load as HHR using the HHR profile, in accordance with exemption number 177. This exemption is discussed further in **section 1.1**. On and off times are derived from data logger information.

As detailed in **section2.1**, I found the database extract recorded more lights than is being submitted by Contact resulting in under submission of 3,496.45 kWh for the month of October 2020. Annualised this is estimated to result in an under submission of 41,957.40 kWh. This is recorded as non-compliance below.

The review of database accuracy based on the field audit in **section 3.1** found that the best available estimate indicates that the database is accurate within ±5%.

A check of the database found 49 items of load had incorrect gear wattages recorded, resulting in potential over submission of 350W or 1494 kWh per annum (based on 4,271 hours per annum). This is recorded as non-compliance below.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 3.2 Clause 15.2 and 15.37B(c) From: 04-May-19 To: 03-Nov-20	Submitted values do not match the database values resulting in an estimated under submission of 41,957.40 kWh per annum. 49 items of load have incorrect gear wattages recorded. Potential impact: Medium Actual impact: Medium Audit history: Three times previously Controls: Moderate Breach risk rating: 4
Audit risk rating	**Rationale for audit risk rating**
Medium	The controls are rated as moderate, because they are sufficient to ensure that the database is accurate most of the time. The impact is assessed to be medium, based on potential submission errors detailed above.

Actions taken to resolve the issue	Completion date	Remedial action status
Missing Lights: Contact will work with Dunedin City Council to understand how different data sets have been provided. Wash-ups will be created to ensure historic billing is accurate.	31/3/2021	Identified
Incorrect gear wattages: A list will be provided to Dunedin City Council to update their RAMM database.	28/2/2021	
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Missing Lights: Data provision process from DCC to Contact will be looked at and adjusted as required.	31/3/2021	
Incorrect Gear wattages: Quarterly reviews of the asset schedules provided will be completed to proactively manage the data set	28/2/2021	

CONCLUSION

A RAMM database is managed by DCC, who is Contact's customer. Fault, maintenance, new connection and upgrade work is completed by Ventia. Ventia's staff update RAMM using pocket RAMM in the field, or RAMM in the office.

The LED roll out is approximately 50% complete and is expected to be complete by April 2021.

The field audit was undertaken of a statistical sample of 445 items of load recorded in the database was undertaken on 9th and 10th November 2020. This found a high level of accuracy and confirmed the database accuracy was within the required +/-5%.

A monthly report from the database is provided to Contact and used to calculate submissions. Contact submits the DUML load as HHR using the HHR profile. On hours are derived using data logger information. This was compared to the database extract provided for the audit and found that there were more lights provided in the database extract than Contact has submitted for. Annualised this is an estimated to result in an annual under submission of 41,957.40 kWh. I recommend the light volume discrepancy is investigated.

Festive lights are recorded in an Excel spreadsheet and reported to Contact Energy with connection and disconnection dates for the months that they are connected.

This audit found five non-compliances were identified, and one recommendation is raised. The future risk rating indicated that the next audit be due in 12 months. I have considered this in conjunction with Contact's responses and agree with that recommendation.

PARTICIPANT RESPONSE

Contact believes that DCC continue to do an excellent job of maintaining compliance and code obligations via their RAMM database. Many of the issues identified in the prior audit have been reviewed and resolved and as noted in this audit many of the controls are rated as strong.

The data provision process that has resulted in under reporting of lights/wattage to Contact will be looked into and remedied with the Council and the market.

Total Gear wattage issues have dropped from 298 to 49 and will continue to be monitored and updated where required.