

ELECTRICITY INDUSTRY PARTICIPATION CODE
DISTRIBUTED UNMETERED LOAD AUDIT REPORT



For

WAITOMO DISTRICT COUNCIL AND
MERIDIAN ENERGY LIMITED

NZBN: 9429037696863

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EXECUTIVE SUMMARY

This audit of the **Waitomo District Council (WDC)** DUML database and processes was conducted at the request of **Meridian Energy Limited (Meridian)** 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. The scope of the audit encompasses the collection, security and accuracy of the data, including the preparation of submission information.

A RAMM database is managed by Horizon Networks on behalf of WDC and they provide the monthly reporting to Meridian. This includes the field work, asset data capture and database population. The contract with Horizon is managed by Pinnacle Civil on behalf of WDC. The database is remotely hosted by thinkproject New Zealand Ltd.

The field audit determined that the database is accurate to within $\pm 5\%$ and there were only six discrepancies identified. I checked the discrepancies found in the last audit and found that 29 of 36 had not been corrected. The previous audit recorded that the database was not accurate, therefore, although the current sample indicated accuracy, the database cannot be considered accurate until the discrepancies from the previous audit have been corrected.

It was recorded in the previous audit report that the wattages on some of the lights were different to those in the database. It has been confirmed that the wattages for the three in question are as follows:

- LED22NW 18W,
- LED40NW 36w, and
- LED81NW 70w.

This means the database is correct for these lights.

The audit found five non-compliances and makes two recommendations. The future risk rating of ten indicates that the next audit be completed in 12 months. I have considered this in conjunction with Meridian's comments and recommend a next audit period of 18 months to reflect that the database is deemed to be accurate and that there are clear plans to address the remaining issues.

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	<p>One item of load incorrectly recorded as private resulting in in a very minor estimated under submission of 83 kWh per annum.</p> <p>29 of 36 discrepancies from the previous audit not corrected.</p> <p>The monthly database extract provided does not track changes at a daily basis and is provided as a snapshot.</p>	Moderate	Low	2	Identified
ICP Identifier	2.2	11(2)(a) and (aa) of Schedule 15.3	<p>One item of load incorrectly recorded as private resulting in in a very minor estimated under submission of 83 kWh per annum.</p>	Moderate	Low	2	Identified
All load recorded in database	2.5	11(2A) of Schedule 15.3	<p>One additional light identified in the field.</p> <p>13 additional lights recorded in the previous audit not corrected.</p>	Moderate	Low	2	Identified
Database accuracy	3.1	15.2 and 15.37B(b)	<p>29 of 36 discrepancies from the previous audit not corrected.</p> <p>One item of load incorrectly recorded as private resulting in in a very minor estimated under submission of 83 kWh per annum.</p>	Moderate	Low	2	Identified
Volume information accuracy	3.2	15.2 and 15.37B(c)	<p>One item of load incorrectly recorded as private resulting in in a very minor estimated under submission of 83 kWh per annum.</p> <p>29 of 36 discrepancies from the previous audit not corrected.</p> <p>The monthly database extract provided does not track changes at a daily basis and is provided as a snapshot.</p>	Moderate	Low	2	Identified
Future Risk Rating						10	

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
ICP Identifier	2.2	Add ICP to RAMM database for private lights on Kaka St, Piopio.
New connections	3.1	Review and document the new connection process to ensure the database is updated accurately and in a timely manner.

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.

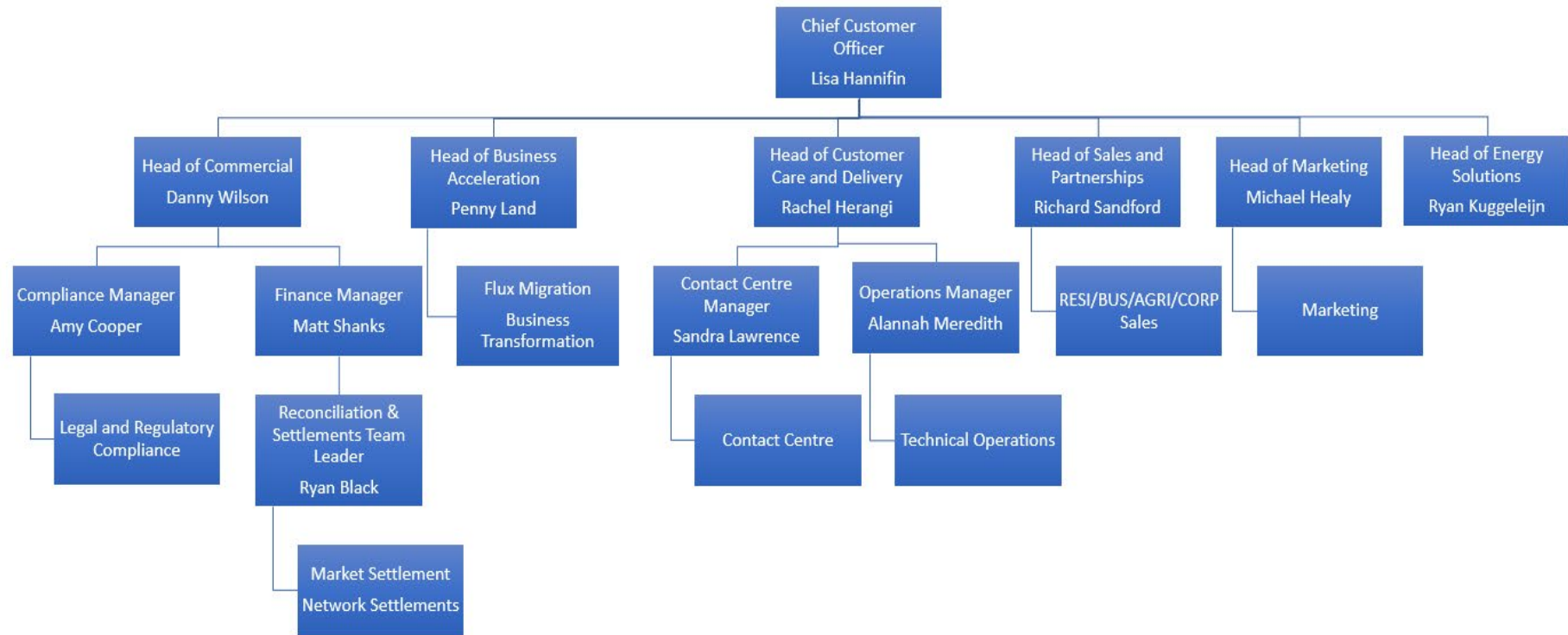
Audit observation

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

Audit commentary

There are no exemptions in place relevant to the scope of this audit.

1.2. Structure of Organisation



1.3. Persons involved in this audit

Auditor:

Name	Title
Steve Woods	Auditor

Other personnel assisting in this audit were:

Name	Title	Company
Amy Cooper	Compliance Manager	Meridian Energy Limited
Melanie Matthews	Quality and Compliance Advisor	Meridian Energy Limited
Stacey Flintoff	Streetlight Project and Vegetation Administrator	Horizon Networks

1.4. Hardware and Software

The SQL database used for the management of DUML is remotely hosted by thinkproject New Zealand Ltd. The database is commonly known as “RAMM” which stands for “Roading Asset and Maintenance Management”. The specific module used for DUML is called RAMM Contractor.

thinkproject New Zealand Ltd backs up the database and assists with disaster recovery as part of their hosting service. Nightly backups are performed. As a minimum, daily backups are retained for the previous five working days, weekly backups are retained for the previous four weeks, and monthly backups are retained for the previous six months.

Access to the database is secure by way of password protection.

Systems used by the trader and their agent 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)
0001060300WMD10	SKATE PARK STREETLIGHT	HTI0331	DST	5	2,190
0008807413WMA59	Waitomo District Council	HTI0331	DST	823	30,949.5
NZTA Urban				197	29,515
Private				10	331.5
Total				1,035	62,986

NZTA lights

The NZTA lights in the database do not have an ICP. These are being reconciled in the NZTA RAMM database and are therefore outside the scope of this audit.

Private lights

Nine of the ten private lights have been confirmed by the distributor as either removed or are being reconciled against another ICP. WDC accepted responsibility for the light on Ruaparaha St, but the ICP has not been updated. This is discussed in **section 3.1**.

1.7. Authorisation Received

All information was provided directly by Meridian or Horizon.

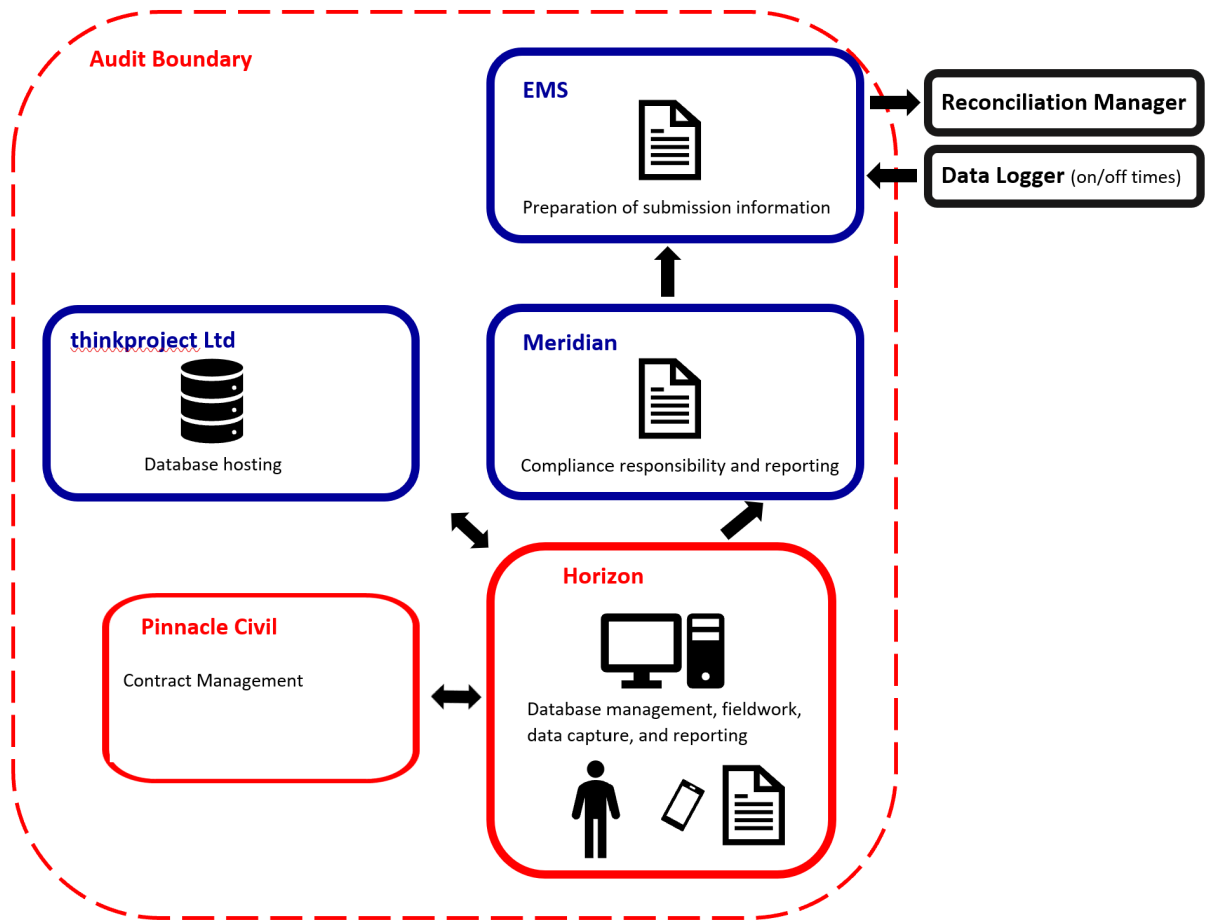
1.8. Scope of Audit

This audit of the Waitomo DC DUMML database and processes was conducted at the request of Meridian 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 DUMML audits version 1.1.

A RAMM database is managed by Horizon on behalf of WDC and they provide the monthly reporting to Meridian. The database is remotely hosted by thinkproject New Zealand Ltd. The field work, asset data capture and database population are conducted by the field contractor, Horizon.

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 boundary for clarity.



The field audit was undertaken of a statistical sample of 186 items of load on 02/10/23.

1.9. Summary of previous audit

The previous audit of this database was undertaken by Rebecca Elliot of Veritek Limited in October 2022. The summary table below shows the statuses of the non-compliances raised in the previous audit. Further comment is made in the relevant sections of this report.

Subject	Section	Clause	Non-compliance	Status
Deriving submission information	2.1	11(1) of Schedule 15.3	The festive light consumption was not submitted for December 2021 and January 2022 season resulting in a very minor under submission of 4.21 kWh.	Cleared
			One item of load incorrectly recorded as private resulting in in a very minor estimated under submission of 83 kWh per annum.	Still existing
			The database accuracy is outside the allowable +/-5% threshold. There is a 95% level of confidence that the annual consumption is between 14,300 kWh p.a. lower and 4,100 kWh p.a. higher than the database indicates.	Still existing
			The monthly database extract provided does not track changes at a daily basis and is provided as a snapshot.	Still existing
ICP Identifier	2.2	11(2)(a) and (aa) of Schedule 15.3	One item of load incorrectly recorded as private resulting in in a very minor estimated under submission of 83 kWh per annum.	Still existing
All load recorded in database	2.5	11(2A) of Schedule 15.3	14 additional lights identified.	Still existing
Database accuracy	3.1	15.2 and 15.37B(b)	The database accuracy is outside the allowable +/-5% threshold. There is a 95% level of confidence that the annual consumption is between 14,300 kWh p.a. lower and 4,100 kWh p.a. higher than the database indicates.	Still existing
			One item of load incorrectly recorded as private resulting in in a very minor estimated under submission of 83 kWh per annum.	Still existing
			The festive light consumption was not submitted for December 2021 and January 2022 season resulting in a very minor under submission of 4.21 kWh.	Cleared
Volume information accuracy	3.2	15.2 and 15.37B(c)	The festive light consumption was not submitted for December 2021 and January 2022 season resulting in a very minor under submission of 4.21 kWh.	Cleared
			One item of load incorrectly recorded as private resulting in in a very minor estimated under submission of 83 kWh per annum.	Still existing
			The database accuracy is outside the allowable +/-5% threshold. There is a 95% level of confidence that the annual consumption is between 14,300 kWh p.a. lower and 4,100 kWh p.a. higher than the database indicates.	Still existing
			The monthly database extract provided does not track changes at a daily basis and is provided as a snapshot.	Still existing

Subject	Section	Recommendation	Status
ICP Identifier	2.2	Add ICP to RAMM database for private lights on Kaka St, Piopio.	Repeated
Light descriptions	3.1	Add further details of the light type for 34 items of load.	Cleared
New connections	3.1	Engage with WDC to review the new connection process to ensure new lights are captured in a timely manner.	Repeated

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

Meridian 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.

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

Meridian reconciles this DUMML load using the DST profile, and on and off times are derived from a data logger read by EMS and are used to create a shape file. Meridian supplies EMS with the capacity information and EMS calculates the kWh figures for the ICPs and includes them in the relevant AV080 file. This process was audited during Meridian's reconciliation participant audit and the EMS agent audit.

I compared the RAMM extract to the capacities provided to EMS for August 2023 and found that submission was correct.

In the last audit, WDC accepted responsibility for the light at 27 Rauparaha Street, Marakopa. The ICP is still recorded as private resulting in a very minor estimated under submission of 83 kWh per annum.

I checked the discrepancies found in the last audit and found that 29 of 36 had not been corrected. The previous audit recorded that the database was not accurate, therefore, although the current sample indicated accuracy, the database cannot be considered accurate until the discrepancies from the previous audit have been corrected.

The current monthly report is provided as a snapshot and is non-compliant as it does not track change on a daily basis as required by the code.

Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 2.1 With: Clause 11(1) of Schedule 15.3 From: 16-Dec-21 To: 15-Oct-23	One item of load incorrectly recorded as private resulting in a very minor estimated under submission of 83 kWh per annum. 29 of 36 discrepancies from the previous audit not corrected. The monthly database extract provided does not track changes at a daily basis and is provided as a snapshot. Potential impact: Medium Actual impact: Low Audit history: Multiple times previously Controls: Moderate Breach risk rating: 2		
Audit risk rating	Rationale for audit risk rating		
Low	The controls are recorded as moderate because they mitigate risk most of the time but there is room for improvement. The impact on settlement and participants is assessed to be low based on the kWh difference.		
Actions taken to resolve the issue		Completion date	Remedial action status
Horizon advise they are in the process of resolving database discrepancies identified in 2022 and 2023 field audits as follows; Lights not found in the field have been removed from the database. Additional lights found in the field will be added to the database. Lights found with wattage not matching the field have been investigated and found database information is accurate and the incorrect asset stickers were supplied. New asset stickers have been ordered for these lights. (x 9). There is no impact on settlement.		Complete 30 Nov 2023 28 Feb 2024	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
We'll follow up with Horizon regularly to ensure all discrepancies are resolved.		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 DUMML database must contain:

- each ICP identifier for which the retailer is responsible for the DUMML,

- *the items of load associated with the ICP identifier.*

Audit observation

The database was checked to confirm an ICP was recorded against each item of load.

Audit commentary

The database records an ICP group. All items of load have a valid ICP number recorded except for ten private lights. Nine of these have been investigated by the distributor and found:

- the light at the beginning of Waitomo Caves Hotel Access Road has been removed by The Lines Company so this can be removed from the database, and
- the Lines Company have accepted that the Kaka Street private lights identified in the last WDC audit do not belong to WDC and have created ICP 0001113548WM792 to account for this unmetered load; I recommend that this ICP is added to the RAMM database for future reference.

Recommendation	Description	Audited party comment	Remedial action
ICP identifier	Add ICP to RAMM database for private lights on Kaka St, Piopio.	ICP has been provided to Horizon to update the database	Identified

In the last audit, WDC accepted responsibility for the light at 27 Rauparaha Street, Marakopa. The ICP is still recorded as private resulting in a very minor estimated under submission of 83 kWh per annum. This is recorded as non-compliance below and in **sections 2.1,3.1 and 3.2.**

Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 2.2 With: Clause 11(2)(a) and (aa) of Schedule 15.3 From: 16-Dec-21 To: 15-Oct-23	One item of load incorrectly recorded as private resulting in a very minor estimated under submission of 83 kWh per annum. Potential impact: Low Actual impact: Low Audit history: Once Controls: Moderate Breach risk rating: 2		
Audit risk rating	Rationale for audit risk rating		
Low	The controls are recorded as moderate because they mitigate risk most of the time but there is room for improvement. The impact on settlement and participants is estimated to be low based on the kWh difference.		
Actions taken to resolve the issue		Completion date	Remedial action status

This issue has been raised again with Horizon for update.	30 Nov 2023	Identified
Preventative actions taken to ensure no further issues will occur	Completion date	
We'll follow up with Horizon regularly to ensure all discrepancies are resolved.	Ongoing	

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 was checked to confirm the location is recorded for all items of load.

Audit commentary

The RAMM database contains road names, displacements, GPS coordinates and pole numbers.

All except two items of load have GPS coordinates, and for these two items of load there is sufficient location information to enable them to be located.

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 was checked to confirm that:

- it contained a field for light type and wattage capacity,
- wattage capacities include any ballast or gear wattage, and
- each item of load has a light type, light wattage, and gear wattage recorded.

Audit commentary

A description of each light is recorded in the lamp model field, and wattages are recorded in the lamp wattage and gear wattage fields.

All items of load have a lamp model, lamp wattage, and gear wattage populated. No lamp or gear wattages were invalidly recorded as zero.

The accuracy of the recorded wattages 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

The field audit was undertaken of a statistical sample of 186 items of load. The sample was selected from three strata, as follows:

- Council A-J,
- Council K-R, and
- Council S-Z.

Audit commentary

The field audit discrepancies are summarised in the table below. A detailed spreadsheet was supplied to Horizon and Meridian.

Discrepancy	Quantity
Lights in the database not in the field	2
Lights in the field not in the database	1
Wattage discrepancies	3
Total	6

I checked the discrepancies recorded in the previous audit and found that 29 of 36 had not been corrected. 14 of these were additional lights identified in the field, including the one mentioned above, which also appeared in this audit.

Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 2.5 With: Clause 11(2A) of Schedule 15.3 From: 17-Dec-21 To: 15-Oct-23	<p>One additional light identified in the field.</p> <p>13 additional lights recorded in the previous audit not corrected.</p> <p>Potential impact: Medium</p> <p>Actual impact: Low</p> <p>Audit history: Three times previously</p> <p>Controls: Moderate</p> <p>Breach risk rating: 2</p>		
Audit risk rating	Rationale for audit risk rating		
Low	<p>The controls are recorded as moderate because they mitigate risk most of the time but there is room for improvement.</p> <p>The impact on settlement and participants is minor; therefore, the audit risk rating is low.</p>		
Actions taken to resolve the issue		Completion date	Remedial action status
Horizon advise they are in the process of resolving database discrepancies identified in 2022 and 2023 field audits as follows;			Identified
Lights not found in the field have been removed from the database.		Complete	
Additional lights found in the field will be added to the database.		30 Nov 2023	
Lights found with wattage not matching the field have been investigated and found database information is accurate and the incorrect asset stickers were supplied. New asset stickers have been ordered for these lights. (x 9). There is no impact on settlement.		28 Feb 2024	
Preventative actions taken to ensure no further issues will occur		Completion date	
We'll follow up with Horizon regularly to ensure all discrepancies are resolved.		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 DUMS 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 was examined.

Audit commentary

The RAMM database functionality achieves compliance with the code.

The change management process and the compliance of the database reporting provided to Meridian is detailed in **sections 3.1** and **3.2**.

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 DUMML 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 was checked for audit trails.

Audit commentary

The database has a complete audit trail.

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

Meridian's submissions are based on a monthly extract from the RAMM database. A RAMM database extract was provided, and I assessed the accuracy of this by using the DUML Statistical Sampling Guideline. The table below shows the survey plan.

Plan Item	Comments
Area of interest	Waitomo District Council Street Lights
Strata	<p>The database contains the WDC items of load for the DUML ICPs in the Waitomo region.</p> <p>The processes for the management of all WDC items of load are the same. I split them into three strata based on street name.</p> <ul style="list-style-type: none"> • Council A-J, • Council K-R, and • Council S-Z.
Area units	I created a pivot table of the roads, and I used a random number generator in a spreadsheet to select a total of 30 sub-units.
Total items of load	186 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

Field audit findings

A field audit was conducted of a statistical sample of 186 items of load. The resulting accuracy is shown below.

Result	Percentage	Comments
The point estimate of R	99.6	Wattage from survey is lower than the database wattage by 0.6%
R _L	97.1	With a 95% level of confidence, it can be concluded that the error could be between -2.9% and +2.0%
R _H	102.0	

These results were categorised in accordance with the “Distributed Unmetered Load Statistical Sampling Audit Guideline”, effective from 1 February 2019. The table below shows that Scenario A (detailed below) applies, confirming the database is with the allowable accuracy threshold of +/-5%.

In absolute terms the installed capacity is estimated to be 0.0 kW lower than the database indicates.

There is a 95% level of confidence that the installed capacity is between 1.0 kW lower and 1.0 kW higher than the database.

In absolute terms, total annual consumption is estimated to be 600 kWh lower than the DUML database indicates.

There is a 95% level of confidence that the annual consumption is between 4,100 kWh p.a. lower and 2,900 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 %

I checked the discrepancies found in the last audit and found that 29 of 36 had not been corrected. The previous audit recorded that the database was not accurate, therefore, although the current sample indicated accuracy, the database cannot be considered accurate until the discrepancies from the previous audit have been corrected.

Light description and capacity accuracy

As discussed in **section 2.4**, all lights have a lamp and gear wattage recorded. Lamp and gear wattages were compared to the expected values for the lamp description and found to match. The previous audit recorded that there were 34 items of load where I recommend further details be captured to assist with identifying light type. This issue is resolved.

ICP number and owner accuracy

As confirmed in the previous audit, NZTA lights are now excluded from the database. There are some private lights without ICPs, and it is now clear who is responsible for these. I've left in the commentary from the last audit report below.

Private lights

Ten lights with "Private" recorded as the ICP. Nine of these have been investigated by the distributor since the last audit and found:

- the light at the beginning of Waitomo Caves Hotel Access Road has been removed by The Lines Company so this can be removed from the database, and
- the Lines Company have accepted that the Kaka Street private lights identified in the last audit do not belong to WDC and have created ICP 0001113548WM792 to account for this unmetered load; I recommend that this ICP is added to the RAMM database for future reference in **section 2.2**.

In the last audit, WDC accepted responsibility for the light at 27 Rauparaha Street, Marakopa. The ICP is still recorded as private resulting in a very minor estimated under submission of 83 kWh per annum. This is recorded as non-compliance below and in **section 2.2**.

Festive lights

Festive lights are added to the monthly report for the months they are connected.

Change management process findings

Horizon carries out the field maintenance and changes in the field are 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.

The previous audit report recorded a recommendation that the new connection process be reviewed and documented to ensure the database is updated accurately and in a timely manner.

I've repeated this recommendation, and I propose the process should include the following steps:

- distributor requests electrical connection permission from Meridian,
- Meridian requests electrical connection permission from Waitomo DC,
- distributor electrically connects once approval received,
- distributor notifies Waitomo DC of electrical connection date, and
- Waitomo DC updates the database.

Recommendation	Description	Audited party comment	Remedial action
New connection and process	Review and document the new connection process to ensure the database is updated accurately and in a timely manner.	Horizon has advised they will complete this documentation.	Identified

Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 3.1 With: Clause 15.2 and 15.37B(b) From: 16-Dec-21 To: 15-Oct-23	<p>29 of 36 discrepancies from the previous audit not corrected.</p> <p>One item of load incorrectly recorded as private resulting in a very minor estimated under submission of 83 kWh per annum.</p> <p>Potential impact: Medium Actual impact: Low Audit history: Multiple times Controls: Moderate Breach risk rating: 2</p>		
Audit risk rating	Rationale for audit risk rating		
Low	<p>The controls are recorded as moderate because they mitigate risk most of the time but there is room for improvement.</p> <p>The impact on settlement and participants is low based on the kWh difference.</p>		
Actions taken to resolve the issue		Completion date	Remedial action status
Horizon advise they are in the process of resolving database discrepancies identified in 2022 and 2023 field audits as follows;			Identified
Lights not found in the field have been removed from the database.		Complete	
Additional lights found in the field will be added to the database.		30 Nov 2023	
Lights found with wattage not matching the field have been investigated and found database information is accurate and the incorrect asset stickers were supplied. New asset stickers have been ordered for these lights. (x 9). There is no impact on settlement.		28 Feb 2024	
Preventative actions taken to ensure no further issues will occur		Completion date	
We'll follow up with Horizon regularly to ensure all discrepancies are resolved.		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 on hours against the submitted figure to confirm accuracy.

Audit commentary

Meridian reconciles this DUML load using the DST profile, and on and off times are derived from a data logger read by EMS and are used to create a shape file. Meridian supplies EMS with the capacity information and EMS calculates the kWh figures for the ICPs and includes them in the relevant AV080 file. This process was audited during Meridian's reconciliation participant audit and the EMS agent audit.

I compared the RAMM extract to the capacities provided to EMS for August 2023 and found that submission was correct.

In the last audit, WDC accepted responsibility for the light at 27 Rauparaha Street, Marakopa. The ICP is still recorded as private resulting in a very minor estimated under submission of 83 kWh per annum.

I checked the discrepancies found in the last audit and found that 29 of 36 had not been corrected. The previous audit recorded that the database was not accurate, therefore, although the current sample indicated accuracy, the database cannot be considered accurate until the discrepancies from the previous audit have been corrected.

The current monthly report is provided as a snapshot and is non-compliant as it does not track change on a daily basis as required by the code.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 3.2 With: Clause 15.2 and 15.37B(c) From: 16-Dec-21 To: 15-Oct-23	One item of load incorrectly recorded as private resulting in a very minor estimated under submission of 83 kWh per annum. 29 of 36 discrepancies from the previous audit not corrected. The monthly database extract provided does not track changes at a daily basis and is provided as a snapshot. Potential impact: Medium Actual impact: Low Audit history: Multiple times previously Controls: Moderate Breach risk rating: 2
Audit risk rating	Rationale for audit risk rating
Low	The controls are recorded as moderate because they mitigate risk most of the time but there is room for improvement. The impact on settlement and participants is assessed to be low based on the kWh difference.

Actions taken to resolve the issue	Completion date	Remedial action status
<p>Horizon advise they are in the process of resolving database discrepancies identified in 2022 and 2023 field audits as follows;</p> <p>Lights not found in the field have been removed from the database.</p> <p>Additional lights found in the field will be added to the database.</p> <p>Lights found with wattage not matching the field have been investigated and found database information is accurate and the incorrect asset stickers were supplied. New asset stickers have been ordered for these lights. (x 9). There is no impact on settlement.</p>	<p>Complete</p> <p>30 Nov 2023</p> <p>28 Feb 2024</p>	<p>Identified</p>
<p>Preventative actions taken to ensure no further issues will occur</p>	<p>Completion date</p>	
<p>We'll follow up with Horizon regularly to ensure all discrepancies are resolved.</p>	<p>Ongoing</p>	

CONCLUSION

The audit was conducted in accordance with the audit guidelines for DUMML audits version 1.1. The scope of the audit encompasses the collection, security and accuracy of the data, including the preparation of submission information.

A RAMM database is managed by Horizon Networks on behalf of WDC and they provide the monthly reporting to Meridian. This includes the field work, asset data capture and database population. The contract with Horizon is managed by Pinnacle Civil on behalf of WDC. The database is remotely hosted by thinkproject New Zealand Ltd.

The field audit determined that the database is accurate to within $\pm 5\%$ and there were only six discrepancies identified. I checked the discrepancies found in the last audit and found that 29 of 36 had not been corrected. The previous audit recorded that the database was not accurate, therefore, although the current sample indicated accuracy, the database cannot be considered accurate until the discrepancies from the previous audit have been corrected.

It was recorded in the previous audit report that the wattages on some of the lights were different to those in the database. It has been confirmed that the wattages for the three in question are as follows:

- LED22NW 18W,
- LED40NW 36w, and
- LED81NW 70w.

This means the database is correct for these lights.

The audit found five non-compliances and makes two recommendations. The future risk rating of ten indicates that the next audit be completed in 12 months. I have considered this in conjunction with Meridian's comments and recommend a next audit period of 18 months to reflect that the database is deemed to be accurate and that there are clear plans to address the remaining issues.

PARTICIPANT RESPONSE