

ELECTRICITY INDUSTRY PARTICIPATION CODE
DISTRIBUTED UNMETERED LOAD AUDIT REPORT



For

WESTERN BOP PARKS AND RESERVES
AND
MERCURY LIMITED
NZBN: 9429041941881

Prepared by: Rebecca Elliot

Date audit commenced: 27 February 2023

Date audit report completed: 19 May 2023

Audit report due date: 28 May 2023

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EXECUTIVE SUMMARY

This audit of the **Western Bay of Plenty Parks and Reserves (WBOP P&R)** DUMML database and processes was conducted at the request of **Mercury NZ Limited (Mercury)** in accordance with clause 15.37B. The purpose of this audit is to verify that the volume information is being calculated accurately, and that profiles have been correctly applied.

The audit was conducted in accordance with the audit guidelines for DUMML audits version 1.1.

These ICPs switched to Mercury on 1 December 2022.

Mercury reconciles this DUMML load using the HHR profile. The data was contained in a Trustpower database, and a spreadsheet containing the DUMML lighting was provided to Mercury by WBOP DC when it switched. The spreadsheet being used does not meet the database requirements as detailed in the code.

The field audit found a large number of errors including:

- 1x 70W HPS light in the field recorded as 23W LED in the database,
- 14x additional lights found in the field, and
- 30x incorrect wattages recorded.

28% more lights were found in the field than are recorded in the spreadsheet. This will be resulting in an estimated over submission of 14,509 kWh per annum.

I also checked this lighting load against the WBOP DC RAMM streetlight database and found 38 of the lights are also recorded and being reconciled in the WBOP DC RAMM streetlight database. This will be resulting in an estimated over submission of 13,817 kWh per annum.

I recommend that the lighting load is added to the WBOP DC RAMM streetlight database. This will remove the duplicated submission and that streetlight database meets the code's database functionality requirements.

The audit found seven non-compliances and makes one recommendation. The future risk rating of 37 indicates that the next audit be due in three months. I have considered this in conjunction with my recommendation that this lighting load is moved to the WBOP DC RAMM streetlight database and expect that this audit will not be required again. If this is not be able to be progressed and another audit is required, I recommend that this be undertaken in nine months time.

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>Incorrect volumes calculated for ICP 1000525283PC07C resulting in an estimated under submission of 4,963 kWh per annum.</p> <p>Database accuracy is outside of the allowable +/- 5% threshold resulting in an estimated over submission of 14,509 kWh per annum.</p> <p>38 of the lights are recorded in both this and the WBOP DC RAMM streetlight database resulting in an estimated over submission of 13,817 kWh per annum.</p> <p>Changes not tracked at a daily level.</p>	Weak	Medium	6	Investigating
Description and capacity of load	2.4	11(2)(c) & (d) of Schedule 15.3	Insufficient lamp description details provided for all LED lights.	Weak	Low	3	Investigating
All load recorded in database	2.5	11(2A) of Schedule 15.3	15 additional lights found in the field.	Weak	Medium	6	Investigating
Tracking of load change	2.6	11(3) of Schedule 15.3	Load changes are not tracked in the excel spreadsheet.	None	Low	5	Investigating
Audit trail	2.7	11(4) of Schedule 15.3	No audit trail in place.	None	Low	5	Investigating
Database accuracy	3.1	15.2 and 15.37B(b)	The field audit found 28% more load than is recorded in the database resulting in an estimated over	Weak	Medium	6	Investigating

Subject	Section	Clause	Non-Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
			<p>submission of 14,509 kWh per annum.</p> <p>38 of the lights are recorded in both this and the WBOP DC RAMM streetlight database resulting in an estimated over submission of 13,817 kWh per annum.</p>				
Volume information accuracy	3.2	15.2 and 15.37B(c)	<p>Incorrect volumes calculated for ICP 1000525283PC07C resulting in an estimated under submission of 4,963 kWh per annum.</p> <p>Database accuracy is outside of the allowable +/- 5% threshold resulting in an estimated over submission of 14,509 kWh per annum.</p> <p>38 of the lights are recorded in both this and the WBOP DC RAMM streetlight database resulting in an estimated over submission of 13,817 kWh per annum.</p> <p>Changes not tracked at a daily level.</p>	Weak	Medium	6	Investigating
Future Risk Rating						37	

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	Clause	Recommendation
Database accuracy	3.1	15.2 and 15.37B(b)	Recommend adding this lighting load to the WBOP DC RAMM streetlight database and cease to use this spreadsheet.

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

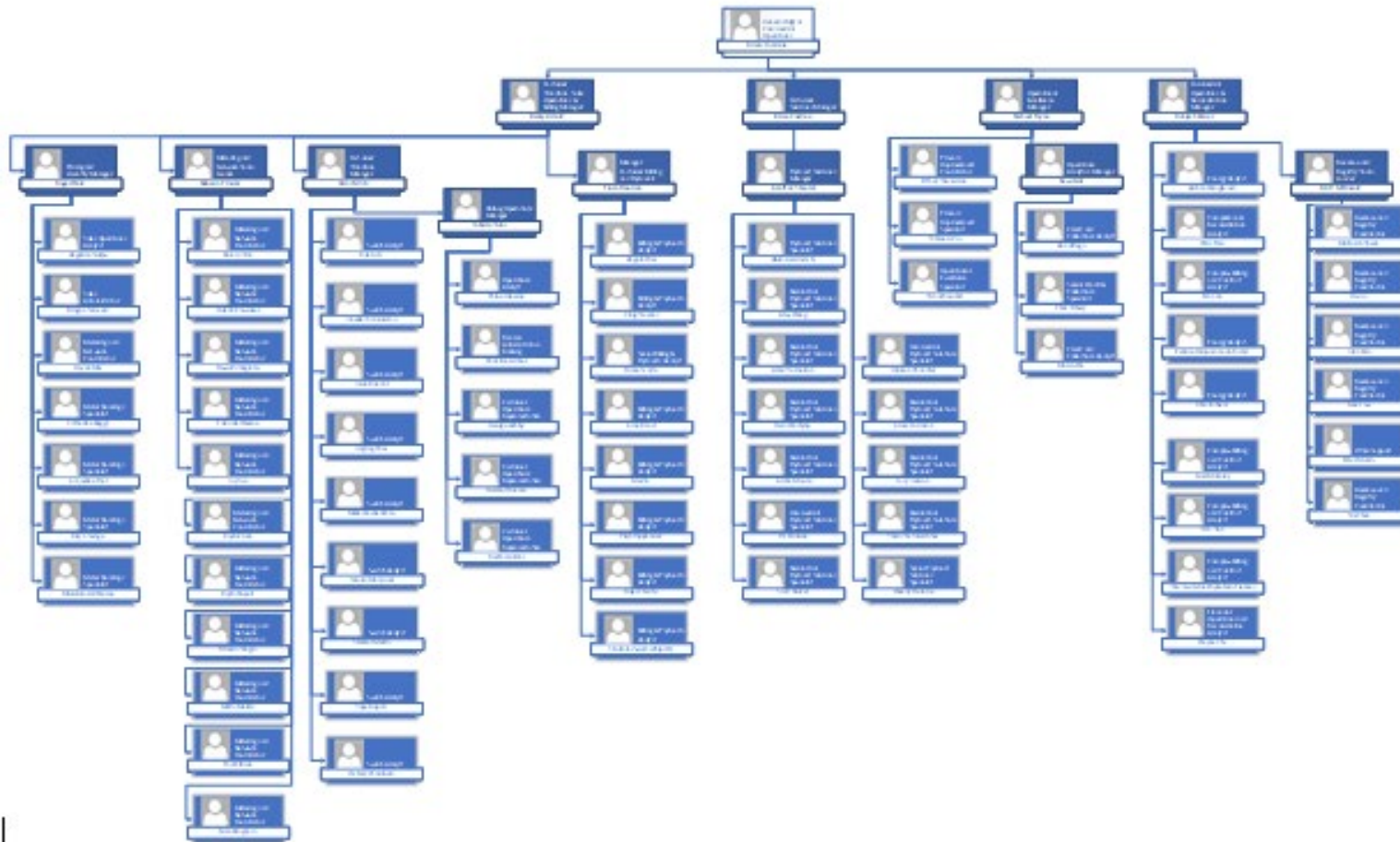
The Electricity Authority's website was reviewed to identify any exemptions relevant to the scope of this audit.

Audit commentary

Under Exemption 233, Mercury is exempted from complying with the obligation in clause 8(g) of Schedule 15.3 of the Electricity Industry Participation Code 2010 ("Code") to provide non-half-hour ("NHH") submission information instead of half-hour ("HHR") submission information for distributed unmetered load ("DUML"). This exemption expires on 31 October 2023.

1.2. Structure of Organisation

Mercury provided a copy of their organisational structure.



1.3. Persons involved in this audit

Auditor:

Rebecca Elliot

Veritek Limited

Electricity Authority Approved Auditor

Other personnel assisting in this audit were:

Name	Title	Company
Chris Posa	Compliance Reconciliation Analyst	Mercury
Keith Sandom	Corporate Services Specialist	WBOP DC
Jackson Jury	Financial Analyst	WBOP DC

1.4. Hardware and Software

Data is contained in a spreadsheet held by WBOP Parks and Reserves department.

The spreadsheet is backed up in accordance with standard industry procedures. Access to the spreadsheet is by way of drive access privileges.

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	Number of items of load	Database wattage (watts)
1000525282PCC39	Western Bay of Plenty Council Parks Streetlights (TGA33)	TGA0331	14	624
1000525283PC07C	Western Bay of Plenty Council Parks Streetlights (TMI0331)	TMI0331	70	13,738
Total			84	14,632

1.7. Authorisation Received

All information was provided directly by Mercury or WBOP DC.

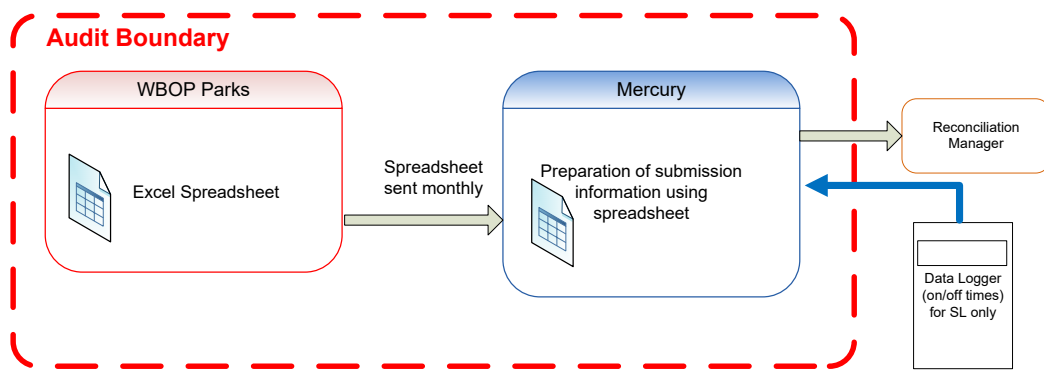
1.8. Scope of Audit

The WBOP Parks and Reserves unmetered load switched to MEEN from 1 December 2022.

The data was contained in a Trustpower database and a spreadsheet containing the DUML lighting was provided to Mercury by WBOP DC when it switched. No changes have been recorded since Mercury gained it.

The data loggers for these lights are stored in the Manawa Energy offices in Tauranga and Manawa Energy continues to be the trader for the WBOP DC DUML RAMM streetlight load.

The diagram below shows the current flow of information and the audit boundary for clarity.



The audit was conducted in accordance with the audit guidelines for DUML audits version 1.1.

A full field audit was carried out on Friday May 5th, 2023.

1.9. Summary of previous audit

The previous audit was completed in May 2021 by Rebecca Elliot of Veritek Limited for Trustpower. One non-compliance was identified, and three recommendations were made. The current status of these is detailed below.

Table of Non-compliance

Subject	Section	Clause	Non-compliance	Status
All load recorded in database	2.5	11(2A) of Schedule 15.3	Two additional lights found in the field.	Still existing

Table of Recommendations

Subject	Section	Clause	Non-compliance	Status
Location of each item of load	2.3	11(2)(b) of Schedule 15.3	Review and correct light co-ordinates for the car park lights in Te Puke.	Not adopted
Database accuracy	3.1	15.2 and 15.37B(b)	Determine light type and correct wattage for double headed light at Tanners Point.	Cleared
			Review change management process with WBOP to ensure changes made in the field are reported.	Not adopted

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 have requested Veritek to undertake this DUML 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 the calculation of consumption was examined.

Audit commentary

Mercury reconciles this DUMML load using the HHR profile. The data was contained in a Trustpower database, and a spreadsheet containing the DUMML lighting was provided to Mercury by WBOP DC when it switched. No changes have been recorded in the database since Mercury gained it. The on and off times are derived from data logger information.

I recalculated the submissions for February 2023 using the data logger and database information. I confirmed that the calculation method and result was correct for ICP 1000525282PCC39. The volume calculation method was incorrect for ICP 1000525283PC07C because it incorrectly excluded 14x 70W HPS (83W total) from the calculations as these are double headed lights that were counted as singular lights. This will have resulted in an estimated under submission of 4,963 kWh per annum. This is recorded as non-compliance below.

As detailed in **section 3.1**:

- the field audit was not confirmed to be within the allowable +/-5% threshold due to the errors found in the field; this will be resulting in an estimated over submission of 14,509 kWh per annum, and
- 38 of the lights are recorded in both this and the WBOP DC RAMM streetlight database so they are being billed and reconciled twice; this will be resulting in an estimated over submission of 13,817 kWh per annum.

I recommend in **section 3.1**, that the items from this database are added to the WBOP DC RAMM streetlight database. This will remove the duplicated submission and the RAMM streetlight database meets the code's database functionality requirements.

No changes have been made since the ICPs switched to Mercury on 1 December 2022. Any future changes will not be tracked at a daily level as the spreadsheet has no mechanism to track changes as detailed in **sections 2.6** and **2.7**.

Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 2.1 With: Clause 11(1) of Schedule 15.3 From: 21-May-21 To: 30-Apr-23	<p>Incorrect volumes calculated for ICP 1000525283PC07C resulting in an estimated under submission of 4,963 kWh per annum.</p> <p>Database accuracy is outside of the allowable +/- 5% threshold resulting in an estimated over submission of 14,509 kWh per annum.</p> <p>38 of the lights are recorded in both this and the WBOP DC RAMM streetlight database resulting in an estimated over submission of 13,817 kWh per annum.</p> <p>Changes not tracked at a daily level.</p> <p>Potential impact: Medium</p> <p>Actual impact: Medium</p> <p>Audit history: None</p> <p>Controls: Weak</p> <p>Breach risk rating: 6</p>		
Audit risk rating	Rationale for audit risk rating		
Medium	<p>The controls are rated as weak as the processes in place to ensure that the database is up to date will not mitigate risk to an acceptable level.</p> <p>The audit risk rating is assessed to be medium based on the potential submission inaccuracies.</p>		
Actions taken to resolve the issue		Completion date	Remedial action status
Western BOP P&R have received details of the updates required, they have advised that they plan to move the items from their database to the WBOP DC RAMM streetlight database as a resolution. We will follow up with them to confirm.		July 2023	Investigating
Preventative actions taken to ensure no further issues will occur		Completion date	
As above.		N/A	

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 was checked to confirm an ICP is recorded for each item of load.

Audit commentary

An ICP is recorded for each item of 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 DUMML database must contain the location of each DUMML item.

Audit observation

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

Audit commentary

The database contains a field for the street address and fields for X and Y coordinates. The GPS coordinates are not accurate with most of the lights mis-plotted, but close to the correct location. I used google maps to plot all the known items of load and this map has been provided to WBOP DC to review.

As detailed in **section 3.1**, I recommend that this lighting load is added to the WBOP DC RAMM streetlight database as this database will be able to accurately plot the lights.

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 DUMML 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 lamp type and wattage capacity and included any ballast or gear wattage.

Audit commentary

The database contains a field for lamp description and wattage. The LED light descriptions do not contain sufficient information to determine if the correct wattage has been applied. As detailed in **section 3.1**, I recommend that this lighting load is added to the WBOP DC RAMM streetlight database, and the lighting descriptions are captured as part of this.

Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 2.4 With: Clause 11(2)(c) & (d) of Schedule 15.3 From: 21-May-21 To: 30-Apr-23	Insufficient lamp description details provided for all LED lights. Potential impact: Low Actual impact: Low Audit history: Once previously Controls: Weak Breach risk rating: 3		
Audit risk rating	Rationale for audit risk rating		
Low	The controls are rated as weak as these details have not been captured as part of the spreadsheet being used to manage this lighting load. The audit risk rating is assessed to be low as most lights have labelling that indicates the lamp wattage.		
Actions taken to resolve the issue		Completion date	Remedial action status
Western BOP P&R have received details of the updates required, they have advised that they plan to move the items from their database to the WBOP DC RAMM streetlight database as a resolution. We will follow up with them to confirm.		July 2023	Investigating
Preventative actions taken to ensure no further issues will occur		Completion date	
As above.		N/A	

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 all 59 items of load recorded in the database was undertaken.

Audit commentary

The field audit found the following errors:

Street	Database count	Field count	Light count difference	Wattage recorded incorrectly	Comments
ICP 1000525283PC07C					
Boucher Rd Carpark	11	11		11	10 x 23.5W LED found in the field recorded as 70W HPS in the database. 1 x 23W LED found in the field recorded as 70W HPS in the database.
Beach Rd Maketu - Park Rd Reserve	8	8	-	3	2x 23W found in the field but recorded in the 150W HPS database. 1x 70W HPS recorded in the database as 23W LED.
Commerce Lane Carpark - Jubilee Park	16	18	+2	16	2x extra 23.5W LED found in the field but missing from the database. 16x 23.5W LED found in the carpark but recorded in the database as 70/100W HPS.
Jubilee Park	9	21	+12		8x 45W est LED circular lights in playground not recorded in the database. Pole with 3 spotlights focussed on skate park has 2 extra spotlights attached. 2x spotlights on individual poles in park not recorded in the database.
ICP 1000525282PCC39					
Tanners Point	4	4	-	1	1x 70W HPS found in the field recorded in the 23W LED in the database.
Grand Total	59		15	31	

The field audit found 15 additional lights in the field.

The WBOP DC RAMM streetlight database was also examined and found some of the lights being reconciled in this data set are also being reconciled in that database.

The extra lights found in field are being investigated by Mercury to determine where these are being supplied from. The accuracy of the database is 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: 21-May-21 To: 29-Apr-23	15 additional lights found in the field. Potential impact: Medium Actual impact: Medium Audit history: Once previously Controls: Weak Breach risk rating: 6		
Audit risk rating	Rationale for audit risk rating		
Medium	The controls are rated as weak as changes made in the field are slow or sometimes not advised at all. The audit risk rating is assessed to be medium based on the potential submission inaccuracies.		
Actions taken to resolve the issue		Completion date	Remedial action status
Western BOP P&R have received details of the updates required, they have advised that they plan to move the items from their database to the WBOP DC RAMM streetlight database as a resolution. We will follow up with them to confirm.		July 2023	Investigating
Preventative actions taken to ensure no further issues will occur		Completion date	
As above.		N/A	

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 spreadsheet was examined.

Audit commentary

This was previously being managed in a Trustpower database but when these ICPs switched to Mercury only an extract was provided on an excel spreadsheet. WBOP DC have not been advised of any changes made in the field since switching to Mercury, but the spreadsheet has no tracking of load change capability.

I recommend in **section 3.1**, that this lighting load is added to the WBOP DC RAMM streetlight database, and this will remove the need for the current spreadsheet.

Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 2.6 With: Clause 11(3) of Schedule 15.3 From: 21-May-21 To: 29-Apr-23	Load changes are not tracked in the excel spreadsheet. Potential impact: Medium Actual impact: Low Audit history: None Controls: None Breach risk rating: 5		
Audit risk rating	Rationale for audit risk rating		
Low	The controls are rated as none as the spreadsheet doesn't track changes. The audit risk rating is assessed to be low based overall number of items of load affected.		
Actions taken to resolve the issue		Completion date	Remedial action status
Western BOP P&R have received details of the updates required, they have advised that they plan to move the items from their database to the WBOP DC RAMM streetlight database as a resolution. We will follow up with them to confirm.		July 2023	Investigating
Preventative actions taken to ensure no further issues will occur		Completion date	
As above.		N/A	

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 being used for this lighting load was checked for audit trails.

Audit commentary

This was previously being managed in a Trustpower database but when these ICPs switched to Mercury only an extract was provided on an excel spreadsheet. WBOP DC have not been advised of any changes made in the field since switching to Mercury, but the spreadsheet has no audit trail to track when changes are made.

I recommend in **section 3.1**, that this lighting load is added to the WBOP DC RAMM streetlight database, and this will remove the need for the current spreadsheet.

Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 2.7 With: Clause 11(4) of Schedule 15.3 From: 21-May-21 To: 29-Apr-23	No audit trail in place. Potential impact: Medium Actual impact: Low Audit history: None Controls: None Breach risk rating: 5		
Audit risk rating	Rationale for audit risk rating		
Low	The controls are rated as none as the spreadsheet doesn't track changes. The audit risk rating is assessed to be low based overall number of items of load affected.		
Actions taken to resolve the issue		Completion date	Remedial action status
Western BOP P&R have received details of the updates required, they have advised that they plan to move the items from their database to the WBOP DC RAMM streetlight database as a resolution. We will follow up with them to confirm.		July 2023	Investigating
Preventative actions taken to ensure no further issues will occur		Completion date	
As above.		N/A	

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

A 100% audit was undertaken to determine the database wattage, and this was also checked against the WBOP DC streetlight database .

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

Audit commentary

Database accuracy

The field audit found the following discrepancies as detailed in **section 2.5**:

ICP 1000525282PCC39

- 1x 70W HPS light in the field recorded as 23W LED in the database.

ICP 1000525283PC07C

- 14x additional lights found in the field.
- 30x incorrect wattages recorded.

The field audit found 28% more load than is recorded in the database. This is outside of the allowable +/- 5% threshold and will be resulting in an estimated over submission of 14,509 kWh per annum. This is recorded as non-compliance below.

The lighting load was checked against the WBOP DC streetlight RAMM database and this found items of load recorded being reconciled twice as detailed below:

ICP 1000525282PCC39

- Two of the lights are also recorded the WBOP DC streetlight database.

ICP 1000525283PC07C

- 36 of the lights are also recorded the WBOP DC streetlight database.

This will be resulting in an estimated over submission of 13,817 kWh per annum. I recommend this lighting load are added to the WBOP DC RAMM streetlight database. This will remove the duplicated submission and that streetlight database meets the code's database functionality requirements.

Recommendation	Description	Audited party comment	Remedial action
Regarding: Clause 15.2 and 15.37B(b)	Recommend adding this lighting load to the WBOP DC RAMM streetlight database and cease to use this spreadsheet.	Western BOP P&R have indicated that this is their plan, we will follow up with them to confirm.	Investigating

Lamp description and capacity accuracy

As detailed in **section 2.5**, I found 31 lights with the incorrect wattage recorded. The effect on submission is considered as part of the overall database accuracy calculation above.

Change Management

WBOP DC are expected to provide a monthly update with any changes, but changes made in the field are not being advised to the holder of the spreadsheet in the council, so updates are not being made to the spreadsheet. I recommend above that this lighting load is added to the WBOP DC RAMM streetlight database and this spreadsheet ceases to be used.

Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 3.1 With: Clauses 15.2 and 15.37B(b) From: 21-May-21 To: 30-Apr-23	The field audit found 28% more load than is recorded in the database resulting in an estimated over submission of 14,509 kWh per annum. 38 of the lights are recorded in both this and the WBOP DC RAMM streetlight database resulting in an estimated over submission of 13,817 kWh per annum. Potential impact: Medium Actual impact: Medium Audit history: None Controls: Weak Breach risk rating: 6		
Audit risk rating	Rationale for audit risk rating		
Medium	The controls are rated as weak as the processes in place to ensure that the database is up to date will not mitigate risk to an acceptable level. The audit risk rating is assessed to be medium based on the potential submission inaccuracies.		
Actions taken to resolve the issue		Completion date	Remedial action status
Western BOP P&R have received details of the updates required, they have advised that they plan to move the items from their database to the WBOP DC RAMM streetlight database as a resolution. We will follow up with them to confirm.		July 2023	Investigating
Preventative actions taken to ensure no further issues will occur		Completion date	
As above.		N/A	

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 all ICPs have 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

Mercury reconciles this DUML load using the HHR profile. The data was contained in a Trustpower database, and a spreadsheet containing the DUML lighting was provided to Mercury by WBOP DC when it switched. No changes have been recorded in the database since Mercury gained it. The on and off times are derived from data logger information.

I recalculated the submissions for February 2023 using the data logger and database information. I confirmed that the calculation method and result was correct for ICP 1000525282PCC39. The volume calculation method was incorrect for ICP 1000525283PC07C because it incorrectly excluded 14x 70W HPS (83W total) from the calculations as these are double headed lights that were counted as singular lights. This will have resulted in an estimated under submission of 4,963 kWh per annum. This is recorded as non-compliance below.

As detailed in **section 3.1**:

- the field audit was not confirmed to be within the allowable +/-5% threshold due to the errors found in the field; this will be resulting in an estimated over submission of 14,509 kWh per annum, and
- 38 of the lights are recorded in both this and the WBOP DC RAMM streetlight database so they are being billed and reconciled twice; this will be resulting in an estimated over submission of 13,817 kWh per annum.

I recommend in **section 3.1**, that the items from this database are added to the WBOP DC RAMM streetlight database. This will remove the duplicated submission and the RAMM streetlight database meets the code's database functionality requirements.

No changes have been made since the ICPs switched to Mercury on 1 December 2022. Any future changes will not be tracked at a daily level as the spreadsheet has no mechanism to track changes as detailed in **sections 2.6** and **2.7**.

Audit outcome

Non-compliant

Non-compliance	Description		
<p>Audit Ref: 3.2 With: Clauses 15.2 and 15.37B(c)</p> <p>From: 21-May-21 To: 30-Apr-23</p>	<p>Incorrect volumes calculated for ICP 1000525283PC07C resulting in an estimated under submission of 4,963 kWh per annum.</p> <p>Database accuracy is outside of the allowable +/- 5% threshold resulting in an estimated over submission of 14,509 kWh per annum.</p> <p>38 of the lights are recorded in both this and the WBOP DC RAMM streetlight database resulting in an estimated over submission of 13,817 kWh per annum.</p> <p>Changes not tracked at a daily level.</p> <p>Potential impact: Medium</p> <p>Actual impact: Medium</p> <p>Audit history: None</p> <p>Controls: Weak</p> <p>Breach risk rating: 6</p>		
Audit risk rating	Rationale for audit risk rating		
<p>Medium</p>	<p>The controls are rated as weak as the processes in place to ensure that the database is up to date will not mitigate risk to an acceptable level.</p> <p>The audit risk rating is assessed to be medium based on the potential submission inaccuracies.</p>		
Actions taken to resolve the issue		Completion date	Remedial action status
<p>Western BOP P&R have received details of the updates required, they have advised that they plan to move the items from their database to the WBOP DC RAMM streetlight database as a resolution. We will follow up with them to confirm.</p>		<p>July 2023</p>	<p>Investigating</p>
Preventative actions taken to ensure no further issues will occur		Completion date	
<p>As above.</p>		<p>N/A</p>	

CONCLUSION

Mercury reconciles this DUML load using the HHR profile. The data was contained in a Trustpower database, and a spreadsheet containing the DUML lighting was provided to Mercury by WBOP DC when it switched. The spreadsheet being used does not meet the database requirements as detailed in the code.

The field audit found a large number of errors including:

- 1x 70W HPS light in the field recorded as 23W LED in the database,
- 14x additional lights found in the field, and
- 30x incorrect wattages recorded.

28% more lights were found in the field than are recorded in the spreadsheet. This will be resulting in an estimated over submission of 14,509 kWh per annum.

I also checked this lighting load against the WBOP DC RAMM streetlight database and found 38 of the lights are also recorded and being reconciled in the WBOP DC RAMM streetlight database. This will be resulting in an estimated over submission of 13,817 kWh per annum.

I recommend that the lighting load is added to the WBOP DC RAMM streetlight database. This will remove the duplicated submission and that streetlight database meets the code's database functionality requirements.

The audit found seven non-compliances and makes one recommendation. The future risk rating of 37 indicates that the next audit be due in three months. I have considered this in conjunction with my recommendation that this lighting load is moved to the WBOP DC RAMM streetlight database and expect that this audit will not be required again. If this is not be able to be progressed and another audit is required, I recommend that this be undertaken in nine months time.

PARTICIPANT RESPONSE

Mercury have reviewed this report and their comments are within the body of the report. No further comments were provided.