

**Report By:**

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**Report: TAB Report**  
**Function: Test, Adjust, & Balance**  
**Date: 10/10/2025**  
**Completed By: National TAB**

**PROJECT**  
**09-15-25 QT #1727 EMERSON, GA**

105 OLD ALLATOONA ROAD

EMERSON, GA 30121

**Client**

QUIKTRIP  
4705 SOUTH 129TH EAST AVENUE  
TULSA, OK 74134

# National TAB

Project: 09-15-25 QT #1727 EMERSON, GA

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## **Project Summary**

The Summary below provides a quick understanding of our scope of work and general testing procedures. Enclosed in the report are further details about your building performance including recommendations, asset data, and pictures. Our focus is to work with the trades to remedy any issues or deficiencies during the actual field balancing and not after the balancing has occurred to achieve a positive environment and outcome. The level of success is determined by the availability of the trades, possible parts needed, or time constraints.

## **RTU's (Roof Top Units)**

Each of the RTU's was measured with a flow hood to establish total flow. The total flow was then adjusted via the VFD so that airflow fell within design tolerances. All diffusers on the kitchen RTU were balanced to the engineer's design flow. The diffusers on the sales floor were only adjusted when there were noticeable issues present like drafting or dampers that were found completely closed. The Hoods On outside air rate was set by first establishing the Nominal Hoods ON setpoint of 46% at the Emerson controller and then making manual adjustments on the roof to achieve design. The hoods off airflow setpoint was found by adjusting the damper position at the Emerson controller until the design airflow was achieved. Outside air was measured by reading the intake air opening with a velocity grid and multiplying by the free area. After completion of TAB all overrides were released.

## **Kitchen Exhaust Hood & Associated Fans**

The kitchen exhaust fan was measured at the hood filter bay utilizing a velocity matrix and a manufacturer's correction factor. Each filter velocity is multiplied by the manufacturer's corrected area. The sum of these readings equals the total flow of the exhaust fans. The total flow of the exhaust was then adjusted to within tolerance of the design flow.

## **Restroom Exhaust Fans**

The restroom exhaust fans were measured with a flow hood. Except for the new exhaust grille over the combi-oven, total flow was balanced for the fans. The newly installed grille over the oven was individually balanced to design.

## **Final Building Tests**

After completing the test and balance, the final building pressure was measured in both Hoods On and Hoods Off conditions. It was confirmed that the building pressure fell within acceptable tolerances and that the pressure measurement coincides with the actual and design net airflow. Any deviations from these standards are noted throughout the report. The hood capture was tested at the perimeter of the hood and the cook top level with the equipment heat on to ensure satisfactory hood capture and containment.

### AIR BALANCE SCHEDULE

UNIT	AREA SERVED	HOOD ON OA		HOOD OFF OA		HOOD ON EXHAUST		HOOD OFF EXHAUST	
		DESIGN	ACTUAL	DESIGN	ACTUAL	DESIGN	ACTUAL	DESIGN	ACTUAL
RTU 1	SALES	800	832	350	378				
RTU-2	SALES	800	757	350	351				
RTU-3	BOH/KITCHEN	800	743	350	344				
EF-1	RR/JANITOR					750	803	750	803
EF-3	KITCHEN HD					1350	1302	0	0
<b>TOTALS</b>		<b>2400</b>	<b>2332</b>	<b>1050</b>	<b>1073</b>	<b>2100</b>	<b>2105</b>	<b>750</b>	<b>803</b>

### HOODS ON

#### NET AIRFLOW CALCULATION

TOTALS	DESIGN	ACTUAL
TOTAL OA	2400	2332
TOTAL EXHAUST	2100	2105
<b>NET AIRFLOW</b>	<b>300</b>	<b>227</b>

DOOR TESTED	BUILDING PRESSURE MEASUREMENTS
FRONT	0.0027
SIDE	0.0019
REAR	0.0047
<b>AVERAGE</b>	<b>0.0031</b>

### HOODS OFF

#### NET AIRFLOW CALCULATION

TOTALS	DESIGN	ACTUAL
TOTAL OA	1050	1073
TOTAL EXHAUST	750	803
<b>NET AIRFLOW</b>	<b>300</b>	<b>270</b>

DOOR TESTED	BUILDING PRESSURE MEASUREMENTS
FRONT	0.0073
SIDE	0.0102
REAR	0.0142
<b>AVERAGE</b>	<b>0.0106</b>

NOTES:

## CheckList List

- 01: RTU's/AHU's
- 02: Exhaust Fans
- 03: Hoods
- 04: Final Tests



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CheckList Information

**Name :** 01: RTU's/AHU's **Status :** Completed  
**Assigned Organization :** National TAB **Asset :**  
**Requesting Organization :** National TAB  
**Created Date :** 09/08/2025 - Trinity Dodds - National TAB  
**Completed Date :** 09/19/2025 - Sagar Patel - National TAB

CheckList Item Details

RTU's/AHU's

Evaporator coils are clean? Pass

Comment:

Condenser coils are clean? Pass

Comment:

Gas piping is installed and valves are turned on? N/A

Comment:

Unit free of noticeable noise and vibration Pass

Comment:



**09-15-25 QT #1727 EMERSON, GA**

**CheckList Information**

**Name :** 02: Exhaust Fans **Status :** Completed  
**Assigned Organization :** National TAB **Asset :**  
**Requesting Organization :** National TAB  
**Created Date :** 09/08/2025 - Trinity Dodds - National TAB  
**Completed Date :** 09/19/2025 - Sagar Patel - National TAB

**CheckList Item Details**

EF's

---

Hinge kit installed installed on hood fan? Pass

Comment:

---

Flex conduit is long enough so that fan can be completely tilted back? Pass

Comment:

---

No major leakage around the fan base Pass

Comment:

---

Unit is free of noise and vibration Pass

Comment:



**09-15-25 QT #1727 EMERSON, GA**

**CheckList Information**

**Name :** 03: Hoods **Status :** Completed  
**Assigned Organization :** National TAB **Asset :**  
**Requesting Organization :** National TAB  
**Created Date :** 09/08/2025 - Trinity Dodds - National TAB  
**Completed Date :** 09/19/2025 - Sagar Patel - National TAB

**CheckList Item Details**

**HOODS**

---

**Hood is free of alarms?** Pass

**Comment:**

---

**Hood is free of damage?** Pass

**Comment:**

---

**End panels are installed per prototype?** Pass

**Comment:**

---



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**CheckList Information**

**Name :** 04: Final Tests **Status :** Completed

**Assigned Organization :** National TAB **Asset :**

**Requesting Organization :** National TAB

**Created Date :** 09/08/2025 - Trinity Dodds - National TAB

**Completed Date :** 09/19/2025 - Sagar Patel - National TAB

**CheckList Item Details**

**FINAL CHECKS**

**HOOD CAPTURE TEST**

**List kitchen equipment turned on for testing**

**Comment:**

FRYER AND OVEN

**List smoke candle type used**

**Comment:**

SMOKE EMITTER 45 SECOND

**Smoke test capture % - Perimeter of hood**

**Comment:**

100%

**Smoke test capture % - Top of cooking surface**

**Comment:**

100%

**WITNESS**

**Date test was completed**

09/19/2025

**Comment:**

---

**TAB tech name / Firm**

**Comment:**

SAGAR PATEL / NATIONAL TAB INTELLIGENCE

---

**Site super name / Firm**

**Comment:**

LESLIE HUNTER / LESLIE HUNTER CONTRACTING

---

**Owner representative name / Firm (if Applicable)**

**Comment:**

---

**BUILDING PRESSURE**

---

**Do actual net building airflow, design net building airflow, and pressure coincide? If not why? (All three should either be positive or negative)**

Pass

---

**Comment:**

---

# National TAB

Project: 09-15-25 QT #1727 EMERSON, GA

System/Unit: AHU/RTU



Asset: RT-1

AREA: SALES FLOOR

Unit Data		
	Design	Actual
MFG	NA	AAON
Serial Num	-	202009-ANEK21078
Model Num	NA	RN-013-8-0-EA0A-152
Type	-	RTU
Num OA Filters 1	-	1
OA Filter Size 1	-	45X22"

Motor Data		
	Design	Actual
Motor MFG	-	N/L
Frame	-	N/L
Horsepower	-	3
Motor Rpm	-	1760
Phase	-	3
Rated Voltage	-	208
Rated Amperage	-	10.6

Drive Data	
	Actual
Motor Sheave Size	DD

Test Data		
	Design	Actual
SF CFM	4200	4128
SF RPM	-	1238
RA CFM	3400	3316
OA CFM	800	812
RL Voltage	-	131 VFD
RL Amperage	-	6.19 VFD
SF Rotation	-	CCW
SF System SetPt	-	42.2 Hz
RA Damper Position	-	90%
Min OA Damper Position	-	10%
Min OA Damper Type	-	ECONOMIZER

Performance Data		
	Design	Actual
MA Plenum SP	-	-0.54"
Fan Suction SP	-	-0.81"
Fan Discharge SP	-	0.19"
Total ESP	-	0.73"
Fan Total SP	-	1.00"

General	
	Actual
Fan Rotation Correct	YES
Unit Filters Clean	YES
Condensate Drain Installed	YES

Completed By: Sagar Patel on 09/19/2025

Notes:  
RTU balanced for total flow and diffusers balanced for comfort

Written By: on

# National TAB

Project: 09-15-25 QT #1727 EMERSON, GA

## System/Unit: AHU/RTU



Asset: RT-2

AREA:SALES FLOOR

Unit Data		
	Design	Actual
MFG	NA	AAON
Serial Num	-	202009-ANEK2180
Model Num	NA	RN-013-8-0-EA0A-152
Type	-	RTU
Num OA Filters 1	-	1
OA Filter Size 1	-	45X22"

Motor Data		
	Design	Actual
Motor MFG	-	N/L
Frame	-	N/L
Horsepower	-	3
Motor Rpm	-	1760
Phase	-	3
Rated Voltage	-	208
Rated Amperage	-	10.6

Drive Data	
	Actual
Motor Sheave Size	DD

Test Data		
	Design	Actual
SF CFM	4200	4197
SF RPM	-	1270
RA CFM	3400	3461
OA CFM	800	736
RL Voltage	-	141 VFD
RL Amperage	-	7.24 VFD
SF Rotation	-	CCW
SF System SetPt	-	43.3 Hz
RA Damper Position	-	90%
Min OA Damper Position	-	10%
Min OA Damper Type	-	ECONOMIZER

Performance Data		
	Design	Actual
MA Plenum SP	-	-0.46"
Fan Suction SP	-	-0.72"
Fan Discharge SP	-	0.23"
Total ESP	-	0.69"
Fan Total SP	-	0.95"

General	
	Actual
Fan Rotation Correct	YES
Unit Filters Clean	YES
Condensate Drain Installed	YES

Completed By: Sagar Patel on 09/19/2025

Notes:  
RTU balanced for total flow and diffusers balanced for comfort

Written By: on

# National TAB

Project: 09-15-25 QT #1727 EMERSON, GA

## System/Unit: AHU/RTU



Asset: RT-3

AREA:BOH/KITCHEN

Unit Data		
	Design	Actual
MFG	NA	AAON
Serial Num	-	202009-ANEK21079
Model Num	NA	RN-013-8-0-EA0A-152
Type	-	RTU
Num OA Filters 1	-	1
OA Filter Size 1	-	45X22"

Motor Data		
	Design	Actual
Motor MFG	-	
Frame	-	
Horsepower	-	
Motor Rpm	-	
Phase	-	
Rated Voltage	-	
Rated Amperage	-	

Drive Data	
	Actual
Motor Sheave Size	DD

Test Data		
	Design	Actual
SF CFM	4200	4048
SF RPM	-	1291
RA CFM	3400	3305
OA CFM	800	743
RL Voltage	-	145 VFD
RL Amperage	-	7.45 VFD
SF Rotation	-	CCW
SF System SetPt	-	44.0 Hz
RA Damper Position	-	90%
Min OA Damper Position	-	10%
Min OA Damper Type	-	ECONOMIZER

Performance Data		
	Design	Actual
MA Plenum SP	-	-0.62"
Fan Suction SP	-	-0.83"
Fan Discharge SP	-	0.45"
Total ESP	-	1.07"
Fan Total SP	-	1.28"

General	
	Actual
Fan Rotation Correct	YES
Unit Filters Clean	YES
Condensate Drain Installed	YES

Completed By: Sagar Patel on 09/19/2025



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Project: 09-15-25 QT #1727 EMERSON, GA

System/Unit: FAN - Exhaust

Asset: EF1

AREA:RR/JANITOR'S CLOSET

Unit Data		
	Design	Actual
MFG	NA	CAPTIVEAIRE
Model Num	NA	DR50HFA
Serial Num	-	4639275
Type	-	DOWNBLAST
Configuration	-	VERTICAL

Motor Data		
	Design	Actual
Motor MFG	-	HSSA
Frame	-	N/L
Horsepower	-	0.5
Motor Rpm	-	1625
Phase	-	1
Voltage (rated)	-	115
Amperage (rated)	-	7.6
Service Factor	-	N/L

Test Data		
	Design	Actual
CFM	750	803
Fan Rotation	-	CCW
System SetPt	-	LOW
RL Voltage	-	[1]
RL Amperage	-	[1]
Total ESP	-	-0.16"
Fan Inlet SP	-	-0.16"
Fan Discharge SP	-	1 ATM

Completed By: Sagar Patel on 09/19/2025

Notes:

[1] UNABLE TO READ VOLTS AND AMPS SAFELY

Written By: Sagar Patel on 09/19/2025



# National TAB

Project:09-15-25 QT #1727 EMERSON, GA

Diffuser Ret/Exh (GRD)

## EF1/RR/JANITOR'S CLOSET

Asset									
Asset Name	Location	Type	Size	DESIGN CFM	AK	CFM(1)	CFM(2)	FINAL CFM	% to design
EGRD4	SUPPORT SERVICE	RI	8"	150	1	138	138	140	93.3
Total				150		138	138	140	93.33%



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Project: 09-15-25 QT #1727 EMERSON, GA

## System/Unit: FAN - Exhaust

Asset: EF3

AREA: KITCHEN HOOD

Unit Data		
	Design	Actual
MFG	NA	CAPTIVEAIRE
Model Num	NA	DU50HFA
Serial Num	-	7632101
Type	UPBLAST	UPBLAST
Configuration	VERTICAL	VERTICAL

Motor Data		
	Design	Actual
Motor MFG	-	TELCOGREEN
Frame	-	N/L
Horsepower	1/2	0.5
Motor Rpm	-	1800
Phase	-	1
Voltage (rated)	-	208
Amperage (rated)	-	15
Service Factor	-	N/L

Test Data		
	Design	Actual
CFM	1350	1302
Fan RPM	-	2394
Fan Rotation	-	CCW
Motor RPM	-	2394
System SetPt	-	79.8 Hz
RL Voltage	-	207
RL Amperage	-	14.4
Total ESP	-	-0.58"
Fan Inlet SP	-	-0.58"
Fan Discharge SP	-	1 ATM

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# National TAB

Project: 09-15-25 QT #1727 EMERSON, GA

## System/Unit: Kitchen Hood Type I



Asset: HD1

AREA:GRIDDLE

Unit Data		
	Design	Actual
MFG	CAPTIVEAIRE	CAPTIVEAIRE
Model Num	6030 ND-2-F	6030 ND-2-F
Job / Serial Num	-	7632101
Type	TYPE I CANOPY	TYPE I CANOPY
Hood length	-	109"
Hood Width	-	60"

Test Data Exhaust		
	Design	Actual
Filter Type	-	CAPTRATE
Filter Size 1	-	14X18"
Filter Qty 1	-	6
Filter AK factor size 1	-	1.75
Filter Total AK Area	-	10.5
Filter1 FPM	-	107
Filter2 FPM	-	120
Filter3 FPM	-	125
Filter4 FPM	-	144
Filter5 FPM	-	127
Filter6 FPM	-	124
Filter Ave FPM(corr)	-	124
CFM	1350	1302

Cooking Equipment	
	Actual
Item 1	FRYER
Item 2	OVEN

Completed By: Sagar Patel on 09/19/2025

