

**Report By:**

National TAB  
1329 E. KEMPER ROAD  
SUITE 4210  
CINCINNATI, OH 45246



**Report: TAB Report**  
**Function: Test, Adjust, & Balance**  
**Date: 02/17/2026**  
**Completed By: National TAB**

# PROJECT

**03-30-26 QT #1468 TUCSON, AZ**

2670 W RUTHRAUFF RD

TUCSON, AZ

**Client**

QUIKTRIP  
4705 SOUTH 129TH EAST AVENUE  
TULSA, OK 74134

# National TAB

Project: 03-30-26 QT #1468 TUCSON, AZ

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## Project Summary

### 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 typical QT set point at the Emerson controller and then making manually adjustments on the roof. 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. The total flow was balanced for the fan with the exception of the new grille over the combi-oven, which was balanced to the listed design.

### Final Building Tests

After completing the test and balance the final building pressure was measured. 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.

## Issue List

- EF-1 SGRD 1-4 separate EF



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Project Issue Information

**Issue Name :** EF-1 SGRD 1-4 separate EF  
**Description :** Diffuser 1-4 for EF-1 has a separate EF (EF-4) and is not connected to EF-1. EF-4 Not on GRD.  
**Created By :** National TAB                      **Assigned To :** National TAB - Brianna Biggs  
**Status :** Open  
**Priority :** InfoOnly                                      **Asset Tag :** EF4  
**Originated Date :** 03/29/2026 - Ethan Van Orden - National TAB

Project Issue File Details



03/29/2026



03/29/2026



03/29/2026

### 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	802	350	359				
RTU-2	SALES	800	847	350	388				
RTU-3	BOH/KITCHEN	800	786	350	328				
EF-1	RR/JANITORS					600	614	600	614
EF-4	COMBI/OVEN					150	153	150	153
EF-3	HOOD					1350	1322	0	0
<b>TOTALS</b>		<b>2400</b>	<b>2435</b>	<b>1050</b>	<b>1075</b>	<b>2100</b>	<b>2089</b>	<b>750</b>	<b>767</b>

#### HOODS ON

##### NET AIRFLOW CALCULATION

TOTALS	DESIGN	ACTUAL
TOTAL OA	2400	2435
TOTAL EXHAUST	2100	2089
<b>NET AIRFLOW</b>	<b>300</b>	<b>346</b>

DOOR TESTED	BUILDING PRESSURE MEASUREMENTS
FRONT	0.0124
SIDE	0.0103
REAR	0.0089
<b>AVERAGE</b>	<b>0.0105</b>

#### HOODS OFF

##### NET AIRFLOW CALCULATION

TOTALS	DESIGN	ACTUAL
TOTAL OA	1050	1075
TOTAL EXHAUST	750	767
<b>NET AIRFLOW</b>	<b>300</b>	<b>308</b>

DOOR TESTED	BUILDING PRESSURE MEASUREMENTS
FRONT	0.0132
SIDE	0.01
REAR	0.0102
<b>AVERAGE</b>	<b>0.0111</b>

NOTES:

## CheckList List

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



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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 :** 02/17/2026 - Trinity Dodds - National TAB  
**Completed Date :** 03/29/2026 - Ethan Van Orden - 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? Pass

Comment:

---

Unit free of noticeable noise and vibration Pass

Comment:

---



**03-30-26 QT #1468 TUCSON, AZ**

**CheckList Information**

**Name :** 02: Exhaust Fans **Status :** Completed  
**Assigned Organization :** National TAB **Asset :**  
**Requesting Organization :** National TAB  
**Created Date :** 02/17/2026 - Trinity Dodds - National TAB  
**Completed Date :** 03/29/2026 - Ethan Van Orden - 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:



**03-30-26 QT #1468 TUCSON, AZ**

**CheckList Information**

**Name :** 03: Hoods **Status :** Completed  
**Assigned Organization :** National TAB **Asset :**  
**Requesting Organization :** National TAB  
**Created Date :** 02/17/2026 - Trinity Dodds - National TAB  
**Completed Date :** 03/29/2026 - Ethan Van Orden - 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:**

---



03-30-26 QT #1468 TUCSON, AZ

**CheckList Information**

**Name :** 04: Final Tests **Status :** Completed  
**Assigned Organization :** National TAB **Asset :**  
**Requesting Organization :** National TAB  
**Created Date :** 02/17/2026 - Trinity Dodds - National TAB  
**Completed Date :** 03/29/2026 - Ethan Van Orden - National TAB

**CheckList Item Details**

**FINAL CHECKS**

**HOOD CAPTURE TEST**

**List kitchen equipment turned on for testing**

**Comment:**

NA

**List smoke candle type used**

**Comment:**

Smoke Bomb

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

**Comment:**

100%

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

**Comment:**

100%

**WITNESS**

**Date test was completed**

03/29/2026

**Comment:**

---

**TAB tech name / Firm**

**Comment:**

Ethan V/NTI

---

**Site super name / Firm**

**Comment:**

Jeff

---

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

**Comment:**

QT

---

**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:**

---



03-30-26 QT #1468 TUCSON, AZ

**CheckList Information**

**Name :** 05: Smoke Detector Checklist **Status :** Completed

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

**Requesting Organization :** National TAB

**Created Date :** 02/17/2026 - Trinity Dodds - National TAB

**Completed Date :** 03/29/2026 - Ethan Van Orden - National TAB

**CheckList Item Details**

**Smoke Detector Manufacturer:**

**Comment:**

SYSTEM SENSOR

**Smoke Detector Model:**

**Comment:**

AD4P120

**Accpetable Pressure Range Rating:**

**Comment:**

0.01-1.11

**Actual Measured Pressure Range:**

**Comment:**

RTU-1: 0.027" RTU-2: 0.068" RTU-3: 0.389"

**Smoke Detector Shutdown?**

Pass

**Comment:**



# National TAB

Project: 03-30-26 QT #1468 TUCSON, AZ

System/Unit: AHU/RTU

Asset: RT-1

AREA:SALES

Unit Data	
	Actual
MFG	AAON
Serial Num	202203-ANEK23265
Model Num	RN-013-8-0-EA0A-152
Num OA Filters 1	1
OA Filter Size 1	45X2
Num Final Filter 1	2
Final Filter Size 1	48X20

Motor Data	
	Actual
Motor MFG	NL
Frame	NL
Horsepower	3
Motor Rpm	1760
Phase	3
Rated Voltage	208
Rated Amperage	10.6

Test Data		
	Design	Actual
SF CFM	4200	4383
SF RPM	-	1466
OA CFM (Hoods On)	800	802
OA CFM (Hoods Off)	350	359
RL Voltage	-	182@VFD
RL Amperage	-	8.4@VFD
VFD Max SetPt	-	49.98HZ
VFD Min SetPt	-	24HZ
OA Damper Position (Hoods On)	-	46%
OA Damper Position (Hoods Off)	-	23%

Performance Data		
	Design	Actual
MA Plenum SP	-	-0.57"
Fan Suction SP	-	-1.00"
Fan Discharge SP	-	0.42"
Total ESP	-	0.99"
Fan Total SP	-	1.42"

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

Completed By: Ethan Van Orden on 03/29/2026





# National TAB

Project: 03-30-26 QT #1468 TUCSON, AZ

System/Unit: AHU/RTU

Asset: RT-2

AREA:SALES

Unit Data	
	Actual
MFG	AAON
Serial Num	202203-ANEK23266
Model Num	RN-013-8-0-EA0A-152
Num OA Filters 1	1
OA Filter Size 1	45X22
Num Final Filter 1	2
Final Filter Size 1	48X20

Motor Data	
	Actual
Motor MFG	NL
Frame	NL
Horsepower	3
Motor Rpm	1760
Phase	3
Rated Voltage	208
Rated Amperage	10.6

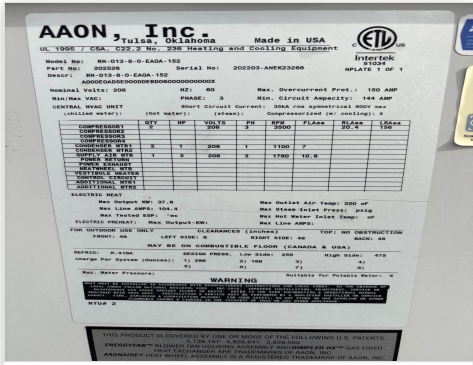
Test Data		
	Design	Actual
SF CFM	4200	4260
SF RPM	-	1408
OA CFM (Hoods On)	800	847
OA CFM (Hoods Off)	350	388
RL Voltage	-	169@VFD
RL Amperage	-	7.8@VFD
VFD Max SetPt	-	48HZ
VFD Min SetPt	-	24HZ
OA Damper Position (Hoods On)	-	46%
OA Damper Position (Hoods Off)	-	23%

Performance Data		
	Design	Actual
MA Plenum SP	-	-0.51"
Fan Suction SP	-	-0.80"
Fan Discharge SP	-	0.36"
Total ESP	-	0.87"
Fan Total SP	-	1.16"

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

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# Unit Data - PHOTO LOG



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# National TAB

Project: 03-30-26 QT #1468 TUCSON, AZ

System/Unit: AHU/RTU

Asset: RT-3

AREA:BOH//KITCHEN

Unit Data	
	Actual
MFG	AAON
Serial Num	202203-ANEK23267
Model Num	RN-013-8-0-EA0A-152
Num OA Filters 1	1
OA Filter Size 1	45X22
Num Final Filter 1	2
Final Filter Size 1	48X20

Motor Data	
	Actual
Motor MFG	NL
Frame	NL
Horsepower	3
Motor Rpm	1760
Phase	3
Rated Voltage	208
Rated Amperage	10.6

Test Data		
	Design	Actual
SF CFM	4200	4123
SF RPM	-	1460
OA CFM (Hoods On)	800	786
OA CFM (Hoods Off)	350	328
RL Voltage	-	181@VFD
RL Amperage	-	8.4@VFD
VFD Max SetPt	-	49.8HZ
VFD Min SetPt	-	24HZ
OA Damper Position (Hoods On)	-	46%
OA Damper Position (Hoods Off)	-	22%

Performance Data		
	Design	Actual
MA Plenum SP	-	-0.63"
Fan Suction SP	-	-1.03"
Fan Discharge SP	-	0.52"
Total ESP	-	1.15"
Fan Total SP	-	1.55"

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

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# National TAB

Project:03-30-26 QT #1468 TUCSON, AZ

## AHU/RTU

**Diffuser Supply (GRD)**

**RT-3/BOH//KITCHEN**

Asset									
Asset Name	Location	Type	Size	DESIGN CFM	AK	CFM(1)	CFM(2)	FINAL CFM	% to design
SGRD1	SUPPORT SERVICE	SI	12"	800	1	722	722	722	90.3
SGRD2	SUPPORT SERVICE	SI	12"	800	1	728	728	728	91.0
SGRD3	SUPPORT SERVICE	SI	12"	800	1	822	822	822	102.8
SGRD4	SUPPORT SERVICE	SI	12"	800	1	771	771	771	96.4
SGRD5	DOCK	ES	10"	500	1	532	532	532	106.4
SGRD6	WORKROOM	ES	8"	500	1	548	548	548	109.6
Total				4200		4123	4123	4123	98.17%

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# National TAB

Project: 03-30-26 QT #1468 TUCSON, AZ

## System/Unit: FAN - Exhaust

Asset: EF-1

AREA:RESTROOMS/JANITOR

Unit Data		
	Design	Actual
MFG	NA	CAPTIVEAIRE
Model Num	NA	DR50HFA
Serial Num	-	5579305
Type	-	DOWNBLAST
Configuration	-	VERTICAL

Motor Data		
	Design	Actual
Motor MFG	-	HSSA
Frame	-	48Y
Horsepower	-	1/2
Motor Rpm	-	1625
Phase	-	1
Voltage (rated)	-	115
Amperage (rated)	-	5.6
Service Factor	-	1.0

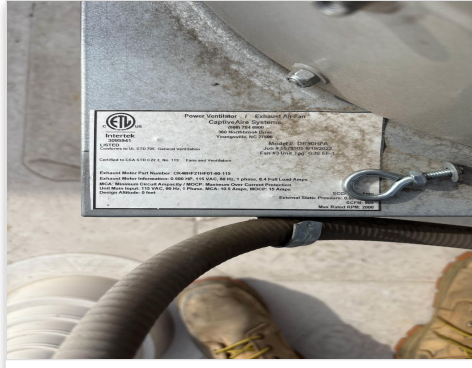
Test Data		
	Design	Actual
CFM	600	614
Fan RPM	-	NA
Fan Rotation	-	CCW
Motor RPM	-	NA
System SetPt	-	LOW
RL Voltage	-	NA
RL Amperage	-	NA
Total ESP	-	0.36"
Fan Inlet SP	-	-0.36"
Fan Discharge SP	-	ATMS

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# Unit Data - PHOTO LOG



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# National TAB

Project: 03-30-26 QT #1468 TUCSON, AZ

## System/Unit: FAN - Exhaust

Asset: EF-3

AREA: KITCHEN HOOD

Unit Data		
	Design	Actual
MFG	NA	CAPTIVEAIRE
Model Num	NA	DU50HFA
Serial Num	-	7662830
Type	UPBLAST	UPBLAST
Configuration	VERTICAL	VERTICAL

Motor Data		
	Design	Actual
Motor MFG	-	NEMA
Frame	-	NL
Horsepower	0.5	0.5
Motor Rpm	-	1800
Phase	1	1
Voltage (rated)	208	208
Amperage (rated)	-	3.8
Service Factor	-	NL

Test Data		
	Design	Actual
CFM	1350	1322
Fan RPM	-	1214
Fan Rotation	-	CCW
Motor RPM	-	1214
System SetPt	-	53.8HZ
RL Voltage	-	211
RL Amperage	-	2.7
Total ESP	0.75"	0.63"
Fan Inlet SP	-	-0.63"
Fan Discharge SP	-	ATMS

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# Unit Data - PHOTO LOG



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# National TAB

Project: 03-30-26 QT #1468 TUCSON, AZ

## System/Unit: Kitchen Hood Type I

Asset: HD-1

AREA:GRIDDLE

Unit Data		
	Design	Actual
MFG	CAPTIVEAIRE	CAPTIVEAIRE
Model Num	6030ND-2-F	6030ND-2-F
Job / Serial Num	-	7662830
Type	TYPE I CANOPY	TYPE I CANOPY
Hood length	108"	108"
Hood Width	60"	60"

Test Data Exhaust		
	Design	Actual
Filter Type	CAPTRATE SOLO FILTER	CAPTRATE SOLO FILTER
Filter Size 1	20X16	20X16
Filter Qty 1	6	6
Filter AK factor size 1	2.08	2.08
Filter Total AK Area	12.48	12.48
Filter1 FPM	-	103
Filter2 FPM	-	113
Filter3 FPM	-	111
Filter4 FPM	-	107
Filter5 FPM	-	101
Filter6 FPM	-	103
Filter Ave FPM(corr)	-	106
CFM	1350	1322

Cooking Equipment	
	Actual
Item 1	FRYER
Item 2	OVEN

Completed By: Ethan Van Orden on 03/29/2026

