

Report By:

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



Report: TAB Report
Function: Test, Adjust, & Balance
Date: 10/23/2025
Completed By: National TAB

PROJECT
02-02-26 QT #1447 LAVEEN, AZ

6705 W BASELINE RD

LAVEEN, AZ 85339

Client

QUIKTRIP
4705 SOUTH 129TH EAST AVENUE
TULSA, OK 74134

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Project: 02-02-26 QT #1447 LAVEEN, 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.

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	790	350	336				
RTU-2	SALES	800	804	350	343				
RTU-3	BOH/KITCHEN	800	838	350	371				
EF-1	RR/JANITOR					750	764	750	764
EF-3	HOOD					1350	1460	0	0
TOTALS		2400	2432	1050	1050	2100	2224	750	764

HOODS ON

NET AIRFLOW CALCULATION

TOTALS	DESIGN	ACTUAL
TOTAL OA	2400	2432
TOTAL EXHAUST	2100	2224
NET AIRFLOW	300	208

DOOR TESTED	BUILDING PRESSURE MEASUREMENTS
FRONT	0.0217
SIDE	0.0046
REAR	0.0107
AVERAGE	0.0123

HOODS OFF

NET AIRFLOW CALCULATION

TOTALS	DESIGN	ACTUAL
TOTAL OA	1050	1050
TOTAL EXHAUST	750	764
NET AIRFLOW	300	286

DOOR TESTED	BUILDING PRESSURE MEASUREMENTS
FRONT	0.0187
SIDE	0.0065
REAR	0.0126
AVERAGE	0.0126

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 : 10/02/2025 - Trinity Dodds - National TAB
Completed Date : 02/04/2026 - 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:



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CheckList Information

Name : 02: Exhaust Fans **Status :** Completed

Assigned Organization : National TAB **Asset :**

Requesting Organization : National TAB

Created Date : 10/02/2025 - Trinity Dodds - National TAB

Completed Date : 02/04/2026 - 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:



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CheckList Information

Name : 03: Hoods **Status :** Completed
Assigned Organization : National TAB **Asset :**
Requesting Organization : National TAB
Created Date : 10/02/2025 - Trinity Dodds - National TAB
Completed Date : 02/04/2026 - 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:



02-02-26 QT #1447 LAVEEN, AZ

CheckList Information

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

Assigned Organization : National TAB **Asset :**

Requesting Organization : National TAB

Created Date : 10/02/2025 - Trinity Dodds - National TAB

Completed Date : 02/04/2026 - Ethan Van Orden - National TAB

CheckList Item Details

FINAL CHECKS

HOOD CAPTURE TEST

List kitchen equipment turned on for testing

Comment:

FRYER

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

02/04/2026

Comment:

TAB tech name / Firm

Comment:

Ethan V/NTI

Site super name / Firm

Comment:

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:



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Project: 02-02-26 QT #1447 LAVEEN, AZ

System/Unit: AHU/RTU

Asset: RT-1

AREA:SALES FLOOR

Unit Data	
	Actual
MFG	AAON
Serial Num	202304-ANEK27172
Model Num	RN-013-8-0-HA0A-152
Num OA Filters 1	1
OA Filter Size 1	45X22
Num Final Filter 1	2
Final Filter Size 1	44X20

Motor Data	
	Actual
Motor MFG	NL
Frame	NL
Horsepower	3
Motor Rpm	1760
Phase	3
Rated Voltage	209
Rated Amperage	10.6

Test Data		
	Design	Actual
SF CFM	4200	4193
SF RPM	-	1425
OA CFM (Hoods On)	800	790
OA CFM (Hoods Off)	350	336
RL Voltage	-	175@VFD
RL Amperage	-	8.6@VFD
VFD Max SetPt	-	48.6HZ
VFD Min SetPt	-	24HZ
OA Damper Position (Hoods On)	-	46%
OA Damper Position (Hoods Off)	-	26%

Performance Data	
	Actual
MA Plenum SP	-0.59"
Fan Suction SP	-0.84"
Fan Discharge SP	0.67"
Total ESP	1.26"
Fan Total SP	1.51"

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

Completed By: Ethan Van Orden on 02/04/2026

Unit Data - PHOTO LOG



02/04/2026



02/04/2026



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Project: 02-02-26 QT #1447 LAVEEN, AZ

System/Unit: AHU/RTU

Asset: RT-2

AREA:SALES FLOOR

Unit Data	
	Actual
MFG	AAON
Serial Num	202304-ANEK27171
Model Num	RN-013-8-0-HA0A-152
Num OA Filters 1	1
OA Filter Size 1	45X22
Num Final Filter 1	2
Final Filter Size 1	20X44

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	-	1460
OA CFM (Hoods On)	800	804
OA CFM (Hoods Off)	350	343
RL Voltage	-	182@VFD
RL Amperage	-	8.6@VFD
VFD Max SetPt	-	49.8HZ
VFD Min SetPt	-	24HZ
OA Damper Position (Hoods On)	-	46%
OA Damper Position (Hoods Off)	-	21%

Performance Data	
	Actual
MA Plenum SP	-0.56"
Fan Suction SP	-0.83"
Fan Discharge SP	0.62"
Total ESP	1.18"
Fan Total SP	1.45"

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

Completed By: Ethan Van Orden on 02/04/2026

Unit Data - PHOTO LOG



02/04/2026



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Project: 02-02-26 QT #1447 LAVEEN, AZ

System/Unit: AHU/RTU

Asset: RT-3

AREA:BOH/KITCHEN

Unit Data	
	Actual
MFG	AAON
Serial Num	202304-ANEK27170
Model Num	RN-013-8-0-HA0A-152
Num OA Filters 1	1
OA Filter Size 1	45X22
Num Final Filter 1	2
Final Filter Size 1	44X20

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	4408
SF RPM	-	1302
OA CFM (Hoods On)	800	838
OA CFM (Hoods Off)	350	371
RL Voltage	-	147@VFD
RL Amperage	-	7.4@VFD
VFD Max SetPt	-	44.4HZ
VFD Min SetPt	-	24HZ
OA Damper Position (Hoods On)	-	46%
OA Damper Position (Hoods Off)	-	25%

Performance Data	
	Actual
MA Plenum SP	-0.47"
Fan Suction SP	-0.75"
Fan Discharge SP	0.36"
Total ESP	0.83"
Fan Total SP	1.11"

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

Completed By: Ethan Van Orden on 02/10/2026

Notes:

Diffuser total doesn't match design. The design total was followed.

Written By: Ethan Van Orden on 02/10/2026

Unit Data - PHOTO LOG



02/04/2026



02/04/2026



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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	1183	1053	783	97.9
SGRD2	SUPPORT SERVICE	SI	12"	800	1	1022	924	798	99.8
SGRD3	SUPPORT SERVICE	SI	12"	800	1	1136	994	756	94.5
SGRD4	SUPPORT SERVICE	SI	12"	800	1	701	646	808	101.0
SGRD5	DOCK	ES	10"	500	1	521	444	398	79.6
SGRD6	WORKROOM	ES	10"	500	1	543	426	423	84.6
SGRD7	PLUMBING	ER	8"	540	1	543	439	442	81.9
Total				4740		5649	4926	4408	93%

Completed By: Ethan Van Orden on 02/04/2026



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Project: 02-02-26 QT #1447 LAVEEN, AZ

System/Unit: FAN - Exhaust

Asset: EF1

AREA:RR/JANITOR

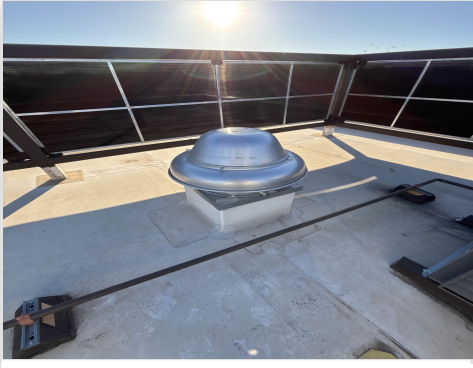
Unit Data	
	Actual
MFG	CAPTIVEAIRE
Model Num	DR50HFA
Serial Num	5920971
Type	DOWNBLAST
Configuration	VERTICAL

Motor Data	
	Actual
Motor MFG	NEMA
Frame	NL
Horsepower	0.500
Motor Rpm	2000
Phase	1
Voltage (rated)	115
Amperage (rated)	8.4
Service Factor	NL

Test Data		
	Design	Actual
CFM	750	764
Fan RPM	-	NA
Fan Rotation	-	CCW
Motor RPM	-	NA
System SetPt	-	LOW
RL Voltage	-	114
RL Amperage	-	3.7
Total ESP	-	0.52"
Fan Inlet SP	-	-0.52"
Fan Discharge SP	-	ATMS

Completed By: Ethan Van Orden on 02/04/2026

Unit Data - PHOTO LOG



02/04/2026



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Project:02-02-26 QT #1447 LAVEEN, AZ

Diffuser Ret/Exh (GRD)

EF1/RR/JANITOR

Asset									
Asset Name	Location	Type	Size	DESIGN CFM	AK	CFM(1)	CFM(2)	FINAL CFM	% to design
EGRD4	SUPPORT SERVICE	RI	8"	150	1	139	139	139	92.7
Total				150		139	139	139	92.67%

Completed By: Ethan Van Orden on 02/04/2026



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Project: 02-02-26 QT #1447 LAVEEN, AZ

System/Unit: FAN - Exhaust

Asset: EF3

AREA:KITCHEN HD

Unit Data	
	Actual
MFG	CAPTIVEAIRE
Model Num	DU50HFA
Serial Num	8257480
Type	UPBLAST
Configuration	VERTICAL

Motor Data	
	Actual
Motor MFG	NEMA
Frame	NL
Horsepower	1/2
Motor Rpm	1800
Phase	1
Voltage (rated)	208
Amperage (rated)	3.8
Service Factor	NL

Test Data		
	Design	Actual
CFM	1350	1460
Fan RPM	-	1249
Fan Rotation	-	CCW
Motor RPM	-	1249
System SetPt	-	52.8HZ
RL Voltage	-	210
RL Amperage	-	2.7
Total ESP	-	0.61"
Fan Inlet SP	-	-0.61"
Fan Discharge SP	-	ATMS

Completed By: Ethan Van Orden on 02/04/2026

Unit Data - PHOTO LOG



02/04/2026



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Project: 02-02-26 QT #1447 LAVEEN, AZ

System/Unit: Kitchen Hood Type I

Asset: HD1

AREA:GRIDDLE

Unit Data	
	Actual
MFG	CAPTIVEAIRE
Model Num	6030ND-2-F
Job / Serial Num	8257480
Type	TYPE I CANOPY
Hood length	108"
Hood Width	60"

Test Data Exhaust		
	Design	Actual
Filter Type	-	BAFFLE
Filter Size 1	-	20X16
Filter Qty 1	-	6
Filter AK factor size 1	-	2.08
Filter Total AK Area	-	12.48
Filter1 FPM	-	108
Filter2 FPM	-	115
Filter3 FPM	-	116
Filter4 FPM	-	131
Filter5 FPM	-	129
Filter6 FPM	-	106
Filter Ave FPM(corr)	-	117
CFM	1350	1460

Cooking Equipment	
	Actual
Item 1	FRYER
Item 2	OVEN

Completed By: Ethan Van Orden on 02/04/2026

Unit Data - PHOTO LOG



02/04/2026



02/04/2026

