

The background features a dark blue gradient with faint, light-colored technical diagrams. On the left side, there is a vertical scale with numerical markings from 140 to 260 in increments of 10. Several circular diagrams with arrows and dashed lines are scattered across the background, suggesting a scientific or technical context.

ESSENTIAL INSTRUMENTATION FOR THE WINE LABORATORY – rAPID-XT

BROUGHT TO YOU BY ASTORIA-PACIFIC

SCOPE OF PRESENTATION

- Why Wine?
- TYPES OF ANALYZERS FOR WINE ANALYSIS
- rAPID-XT - AN EXAMPLE OF AN AFFORDABLE DISCRETE ANALYZER
- MOST COMMON AUTOMATED METHODS
- METHOD PROGRAMMING, EXAMPLE ACETIC ACID (enzymatic)
- DATA PARITY WITH REFERENCE LABORATORIES
- “EXPORTABLE” DATA, WHAT DO I DO WHEN THE RUN IS DONE?
- QUESTIONS?

WHY WINE?

The Wine Industry in the USA alone: Size / Annual Case Production / Number of Wineries

- Large-sized Wineries, 500K+ cases/year: 100
- Medium-sized Wineries, 50K – 500K cases/year: 300
- Small-sized Wineries, 5K – 50K cases/year: 1600
- Very Small Wineries, 1K – 5K cases/year: 3700
- Limited Production: <1K cases/year: ~4300

A total of 9997 Wineries in the USA.

ANALYZERS TYPES

SEGMENTED FLOW ANALYZERS

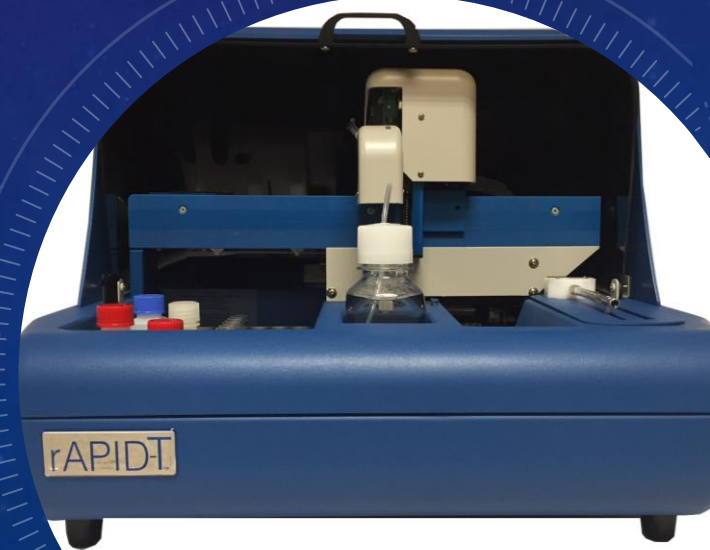
- “MACRO” SFA
- “MICRO” SFA

FLOW INJECTION ANALYZERS / FTIR

DISCRETE ANALYZERS

rAPID-XT

AN AFFORDABLE DISCRETE ANALYZER



rAPID-XT – AN AFFORDABLE DISCRETE ANALYZER

How does the rAPID-XT work?

A discrete analyzer is an automated chemical analyzer in which the instrument performs tests on samples that are kept in discrete cuvettes in contrast to a continuous flow analyzer (SFA and/or FIA) that uses a peristaltic pump for a continuous stream of reagents.

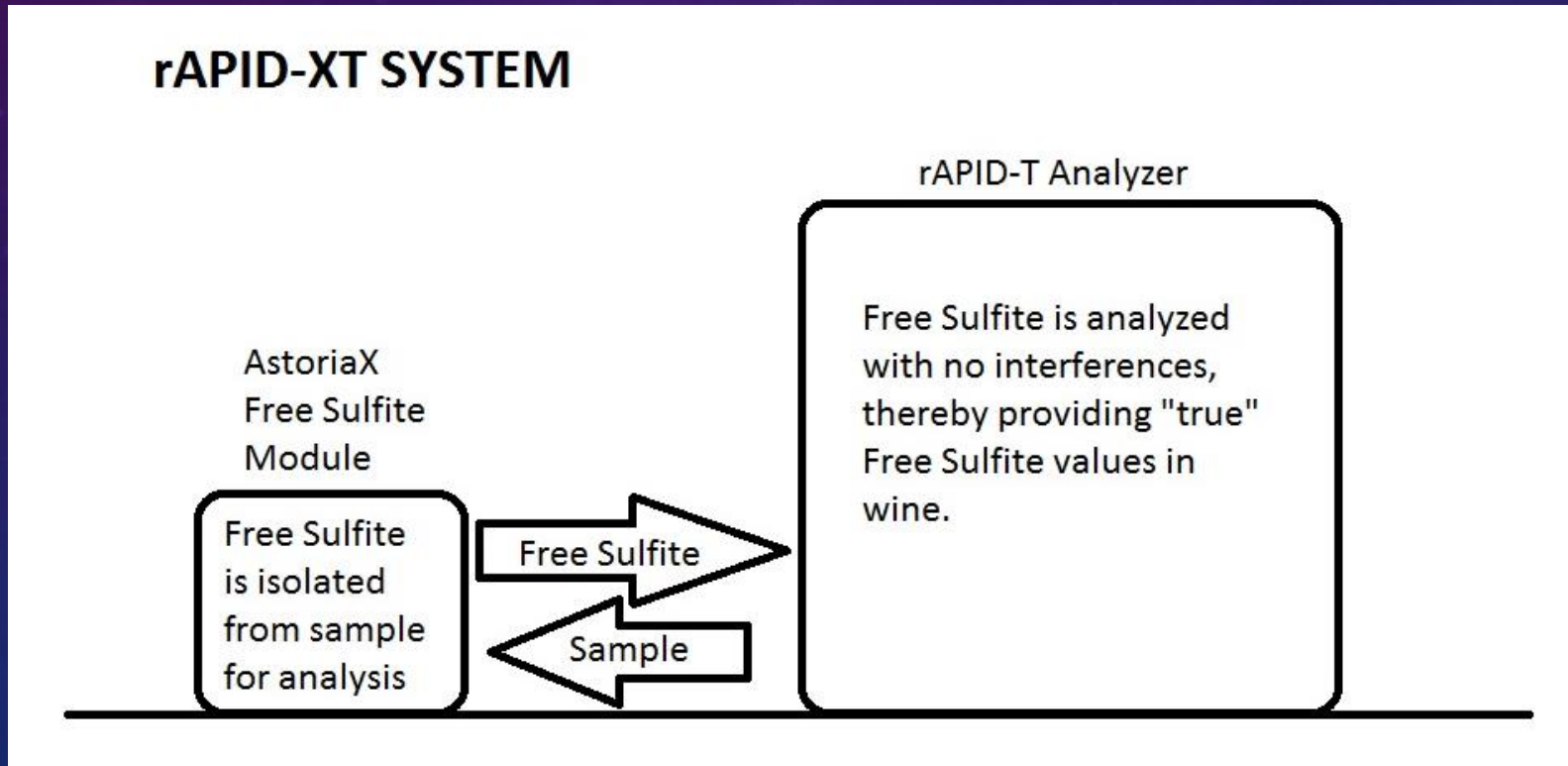
Typical automated discrete analysis workflow

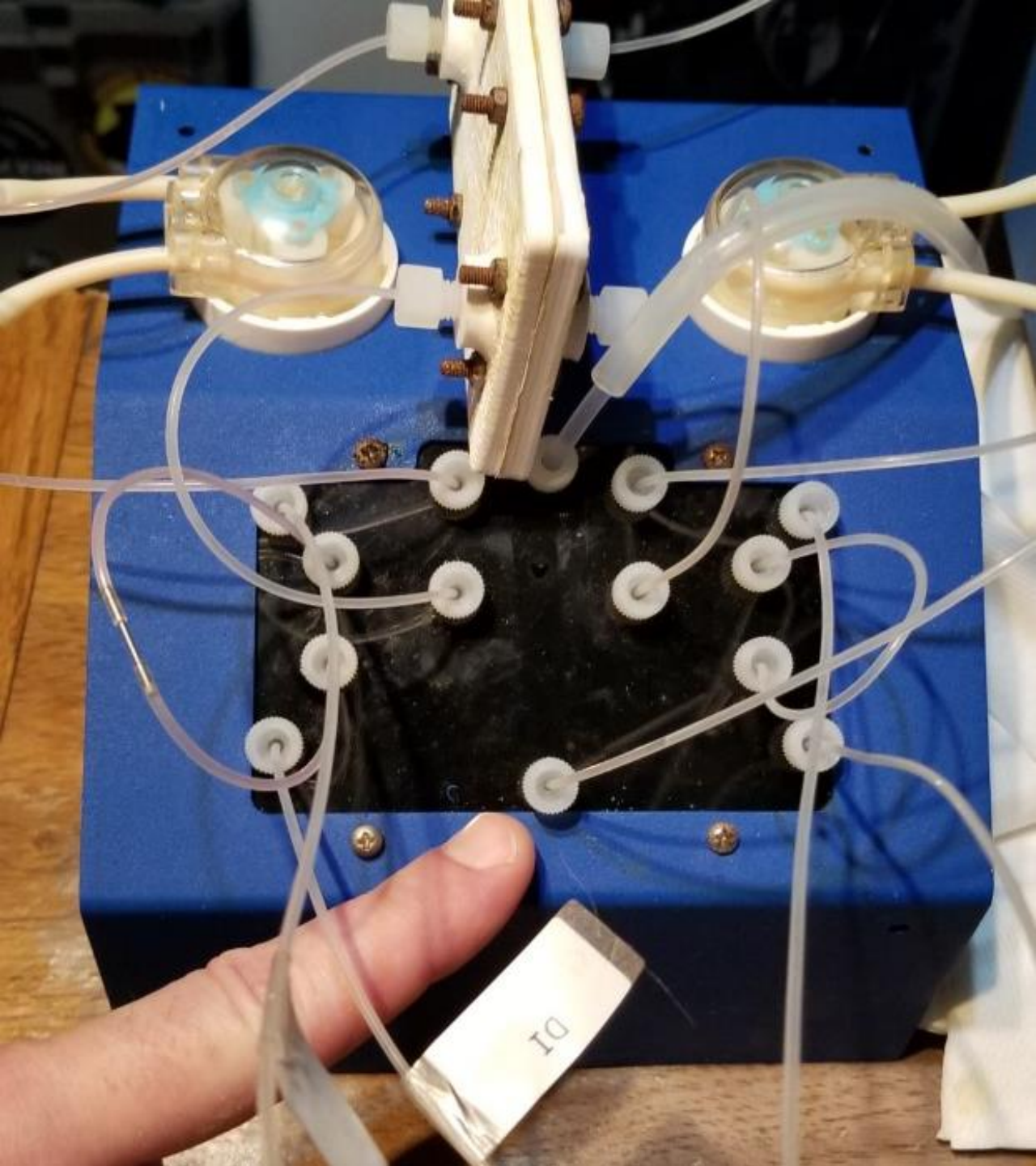


rAPID-XT – AN AFFORDABLE DISCRETE ANALYZER

How does the Sulfite Module work?

The AstoriaX Free Sulfite module works in tandem with the primary rAPID-T analyzer. The integrated system processes the sample by isolating the Free Sulfite entirely from the wine matrix.





WORKING MODULE (PROTOTYPE)

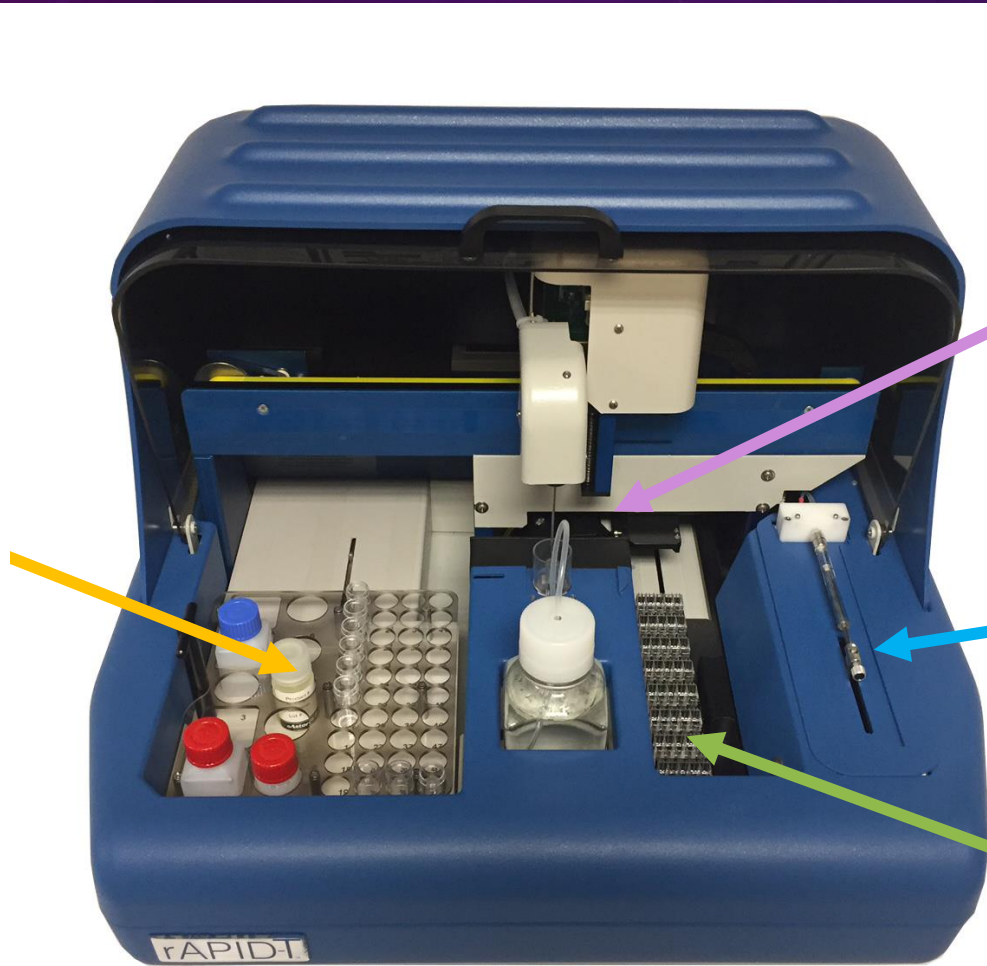
The AstoriaX-FS* interfaces directly with the rAPID-T System. Software controls both the AstoriaX and rAPID-T with seamless integration.

*NOTE: There are some “prototype” pieces in this picture. The final product will be cleaner.

rAPID-XT – AN AFFORDABLE DISCRETE ANALYZER

Sample/Reagent Rack

- 40 Sample Positions
- 10 Reagent Positions



Photometer with 8 different analytical wavelengths

500uL Syringe

40 Cuvette Positions

rAPID-XT – AN EXAMPLE OF AN AFFORDABLE DISCRETE ANALYZER

rAPID-T - brady - 181203 ENZM NO3/NO2 ICAL

File Edit Run System Setup Window Help

Enzymatic Nitrate

Layout

Reagent/Sample Rack

Reaction Plate

1 2 3 4 5

A B C D E F G H

Load / Fill... Replace...

Reagents Progress

Status: Done Temperature:

Sample Table

Number of Samples: 1

Row	Cup	ID	Reps	Comment	Tests	Dilutions		
					Enzymatic N	Pre-Dil	Manual	
<No data to display>								

Run Table

Instrument ID: AES 2368 DA-1 Date:

Analyst:

Row	Sample Info		Dilutions			Enzymatic Nitrate							
	Sample #	Cup	ID	Pre-Dil	Manual	Total	Abs	Cor Abs	ppm	Status	Well	Date	Time
1	N/A	C1	0.000ppm	1	1	1	0.032	-0.019	0.006	Crv	E02	12/3/2018	11:20:54 AM
2	N/A	C2	0.020ppm	1	1	1	0.033	-0.016	0.017		E03	12/3/2018	11:22:26 AM
3	N/A	C3	0.050ppm	1	1	1	0.040	-0.009	0.045		E04	12/3/2018	11:23:57 AM
4	N/A	C4	0.100ppm	1	1	1	0.047	0.002	0.090		E05	12/3/2018	11:25:26 AM
5	N/A	C5	0.200ppm	1	1	1	0.081	0.030	0.205		F02	12/3/2018	11:26:55 AM
6	N/A	C6	0.500ppm	1	1	1	0.154	0.106	0.511		F03	12/3/2018	11:28:25 AM
7	N/A	C7	1.000ppm	1	1	1	0.276	0.226	0.995		F04	12/3/2018	11:29:58 AM
8	N/A	CC1	CCV	1	1	1	0.152	0.105	0.508		F05	12/3/2018	11:31:25 AM
9	N/A	CC5	CCB	1	1	1	0.035	-0.023	-0.009	BR	G02	12/3/2018	11:32:55 AM

MOST COMMON AUTOMATED METHODS

Test	Range	Tests/hour*
Acetic Acid	0.1 – 1.0 g/L	80
Ammonia	10 – 100 mg/L	80
Glucose+Fructose	0.1 – 6.0 g/L	100
Free Sulfite	2.0 – 100 mg/L	15
L-Malic Acid	0.05 – 3.0 g/L	100
NOPA	5.0 – 140 mg/L	80
Total Sulfite	5.0 – 200 mg/L	100

*NOTE: These are the most common tests requested by Astoria-Pacific's customers. There are various reagent kits offered by reagent kit manufacturers; however, Astoria-Pacific stocks only the most common reagent kits.

METHOD PROGRAMMING, EXAMPLE ACETIC ACID (ENZYMATIC)

The image displays a software interface for method programming, specifically for Acetic Acid (T470). It is divided into two main windows: 'Config: Acetic Acid (T470)' and 'rAPID-T - brady - 3_7_2019_VA'.

Config: Acetic Acid (T470) Window:

- Methods available:** A list of methods with checkboxes. 'Acetic Acid (T470)' is selected.
- Buttons:** Edit..., New..., Copy..., Subtract method..., OK & Save, Help, OK, Cancel.
- Checkbox:** 'New samples default to selected' is checked.

rAPID-T - brady - 3_7_2019_VA Window:

Sample Table:

Row	Cup	ID	Reps	Comment	Tests		Dilutions	
					Steroglass Acetic Acid		Pre-Dil	Manual
1	11	BLANK	1		✓		1	1
2	12	0.8 STD NEW	1		✓		1	1
3	13	0.8 STD OLD	1		✓		1	1
4	14	0.9 STD	1		✓		1	1
5	15	1.0 STD	1		✓		1	1
6	16	18CS-BARCLAY	1		✓		1	1
7	17	18CS-CDV-TK	1		✓		2	1
8	18	18CS-TRAIL_DIL	1		✓		2	1
9	19	18CS-LINK-WD	1		✓		1	1
10	20	18CS-CDV-WD	1		✓		1	1
11	21	18CS-GIII-AIA	1		✓		1	1
12	22	18CS-SCHIF-F1-F4	1		✓		1	1
13	23	18CF-STAGE	1		✓		1	1
14	24	18PV-ESTEE	1		✓		1	1
15	25	18CS-SIN-7_DIL	1		✓		2	1
16	22	18CS-SCHIF-F1-F4_DIL	1		✓		2	1

Run Table:

Row	Sample Info			Steroglass Acetic Acid					
	Cup	ID		Abs	Cor Abs	g/L	Status	Well	Time
1	C1	C1		1.168	1.168	38.19	DL	D05	12:57:48 PM
2	C2	C2		0.776	0.776	13.42		E02	1:00:38 PM
3	C3	C3		0.042	0.042	0.02		E03	1:03:28 PM
4	C4	C4		---	---	---	---	---	---
5	C5	C5		---	---	---	---	---	---
6	C6	C6		---	---	---	---	---	---
7	C7	C7		---	---	---	---	---	---
8	11	BLANK		---	---	---	---	---	---
9	12	0.8 STD NEW		---	---	---	---	---	---
10	13	0.8 STD OLD		---	---	---	---	---	---
11	14	0.9 STD		---	---	---	---	---	---
12	15	1.0 STD		---	---	---	---	---	---
13	16	18CS-BARCLAY		---	---	---	---	---	---
14	17	18CS-CDV-TK		---	---	---	---	---	---
15	18	18CS-TRAIL_DIL		---	---	---	---	---	---
16	19	18CS-LINK-WD		---	---	---	---	---	---

Footer: Status: Aborted | Temperature: | Reagents | Progress

PROGRAMMING METHODS

Method Properties: Acetic Acid (T470)

General Monitoring / QC Check Calibrants Dilutions Calibration Definition

Miscellaneous

Conc decimal places: 2

Absorbance decimal places: 3

Report Units: g/L

Test Color: Medium

Inverse chemistry

Blanks

Subtract

Concentration Range

Upper: 1.10 g/L

Lower: 0.00 g/L

Multiple Reads

Is a multi read test

Type: Highest

OK & Save Help OK Cancel

Method Properties: Acetic Acid (T470)

General Monitoring / QC Check Calibrants Dilutions Calibration Definition

Calibration Type

1st Order Polynomial

Formula

Calibration Settings

Force recalibration

Calibrate every 1 days

Make calibrants from stocks

Calibrants

Identifier	Conc	Source
C1	0.00	Acetic Stock
C2	0.10	Acetic Stock
C3	0.20	Acetic Stock
C4	0.50	Acetic Stock
C5	0.75	Acetic Stock
C6	1.00	Acetic Stock

OK & Save Help OK Cancel

Method Properties: Acetic Acid (T470)

General Monitoring / QC Check Calibrants Dilutions Calibration Definition

Steps

- Add Reagent, (Acetic R1), Volume, (220.0ul)
- Add Sample, Volume, (3.0ul)
- Incubate, Time (0:0:30)
- Read Well, Primary (340) Secondary (660)
- Add Reagent, (Acetic R2), Volume, (20.0ul)
- Incubate, Time (0:6:00)
- Read Well, Primary (340) Secondary (660)

Reagents

- Acetic R2
- Acetic R1

Stocks

- Acetic Stock (1.0 g/L)

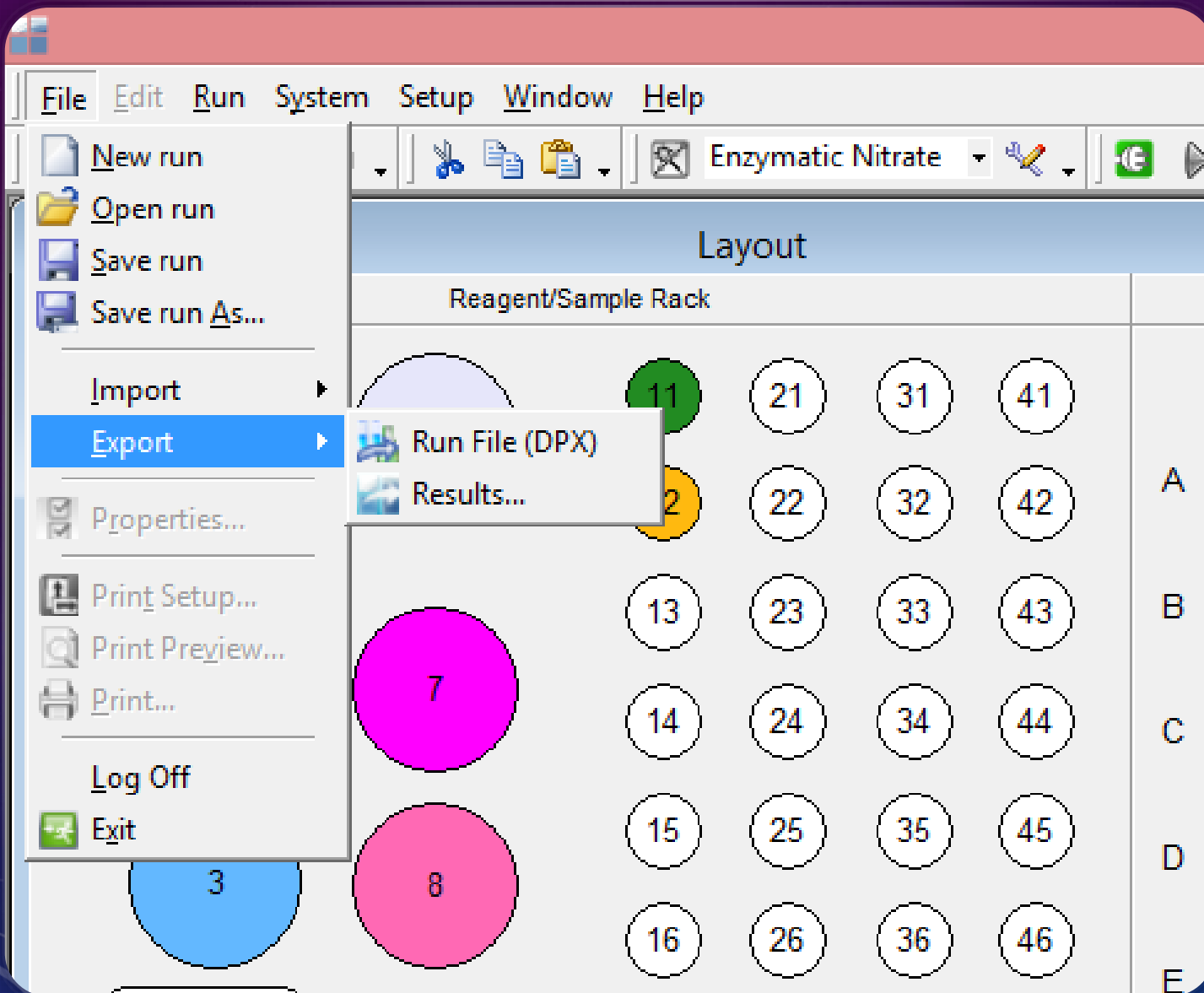
Advanced...

OK & Save Help OK Cancel

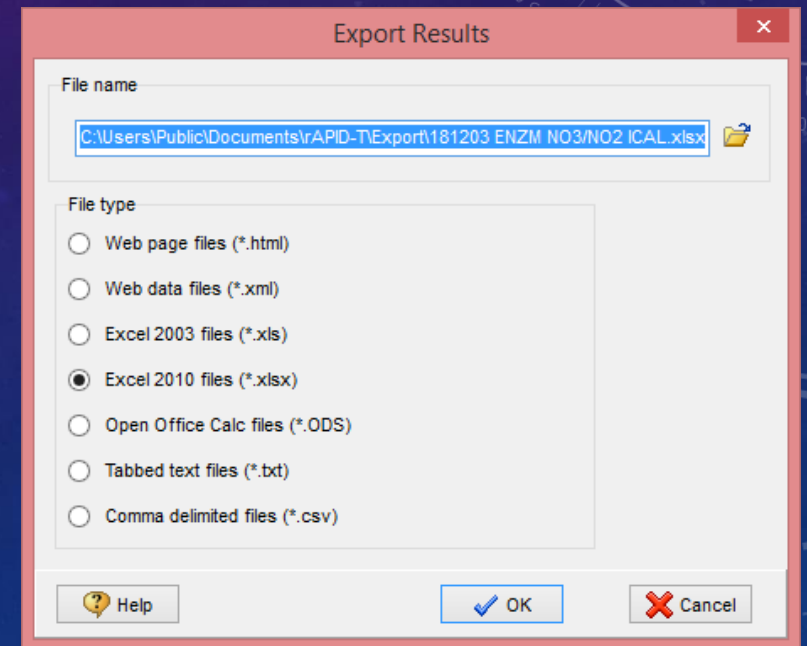
DATA QUALITY

- The rAPID™-XT system is an affordable automated solution for Free and Total Sulfite and other analyses, and it is ideal for small, medium and medium-large wineries.
- The rAPID-XT utilizes a propriety method for Free Sulfite. Prior to analysis, the Free Sulfite is isolated from the wine matrix, thereby ensuring quality data.
- By combining the already popular rAPID-T system with the new Astoria-X Free Sulfite module, Astoria-Pacific offers ease-of-mind by providing an instrument that provides data on par with your client's reference lab of choice.





“EXPORTABLE” DATA:
WHAT DO I DO WHEN
THE RUN IS DONE?



The background is a dark blue gradient with a starry space pattern. On the right side, there are several technical diagrams, including a large circular gauge with numerical markings from 80 to 210 and a smaller circular diagram below it. On the left side, there are faint, partially visible circular diagrams. The text is centered on the left side of the image.

CONTACT US FOR MORE INFO

T. 800-536-3111

E. brady@astoria-pacific.com

W. www.astoria-pacific.com

QUESTIONS???

- What questions might you have?
- Is Astoria-Pacific really based in Clackamas?
- How much wood could a woodchuck chuck if a woodchuck could chuck wood?
- How good are Brady's juggling skills?