

Questron's Quest

INNOVATIVE SOLUTIONS FOR ANALYTICAL LABORATORIES

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Redefining the Economics of Sample Preparation

Vulcan 84 sets new standards for cost efficiency in analytical laboratories

Questron Technologies Corp., Canada

Facing rising costs and growing awareness of occupational exposure hazards, a number of medium- to high-volume labs have switched to **Vulcan 84** as a solution to alleviate these issues, resulting in increased efficiency.

In a resource-limited world, the R&D team at Questron Technologies has been on the forefront of pioneering technologies for more efficient use of lab resources. We have been providing tangible solutions to address these issues and are proud of the contributions we have made to increase productivity in the labs.

What could be more appropriate than Vulcan 84 – a true *click-and-walk-away* automated system that handles multiple samples without contamination, improves productivity, provides freedom to the analysts from manual handling of acids, and addresses tracking, tracing and documentation of results.

The true cost of sample preparation is not always easy to determine. For instance, how much does it cost when the analyst's time and lab capacity are inadequate? Vulcan 84 prevents sample preparation costs from taking a big chunk out of your budget.



Perhaps the most significant saving when switching to Vulcan 84 is the value of the analysts' time. Labour required to operate the system has proven to be drastically reduced as analysts need not spend time in measuring, adding, watching, equalizing, transferring and diluting the samples. Time so saved can be better utilised on other productive tasks.

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MESSAGE FROM THE PRESIDENT

Dear Reader:

Questron started its new products development some 5 years ago, and as luck would have it, we are launching the introduction of one of our key products, Vulcan 84, right in the middle of a recession. Counterintuitive as it may seem at first glance, this economic environment actually drives home our message to our customers in some key sectors, particularly the mining and food industries – that productivity improvement is key for companies to stay competitive and profitable. We believe our Vulcan 84 sample prep system provides the innovation to drive that much needed productivity improvement.

If you haven't looked at Vulcan 84 yet, please call us and we will show you how we can save you dollars, while adding safety to your procedures, improving the work environment, and leading to a more enriching and rewarding work experience for your employees.

A big THANK YOU to all of you for your patronage and your support. We at Questron look forward to working with you in the emerging new world economic order.

Manjinder Phull, M.Eng., P.Eng.
President
Questron Technologies Corp.

The additional factors such as small footprint, unattended operation, freedom from manual handling of acids, healthy work environment, increased job satisfaction, and reduced insurance and legal costs are difficult to quantify but they have a direct impact on the overall productivity.

Another important saving is in terms of reagent consumption and waste disposal cost. Thanks to Vulcan 84, significant improvements have been made in digestion efficiency, thus reducing the waste disposal cost.

A careful analysis of how these factors affect your facility should be performed when considering Vulcan 84 specific to your lab conditions and

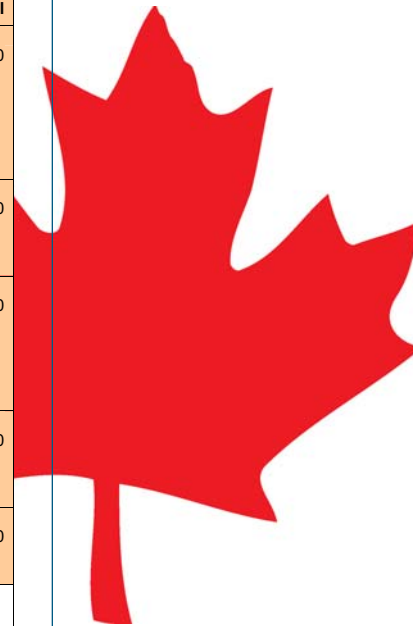
workload. Due to lower operating costs and saving of labour, Vulcan 84 quickly pays itself off. Savings will then depend upon the volume and types of samples being processed and your current sample preparation methods. Once you are aware of the hidden costs of sample prep., you will see why it pays to use Vulcan 84. Having Vulcan 84 in the lab is one of the wisest decisions any lab manager can make.

Questron conducted a detailed cost recovery analysis study based on running Vulcan 84 around the clock to digest 252 samples per day. As evident from the charts below, Vulcan 84 produces a measurable return on investment within a short span of time.

Cost Recovery Analysis – Vulcan 84

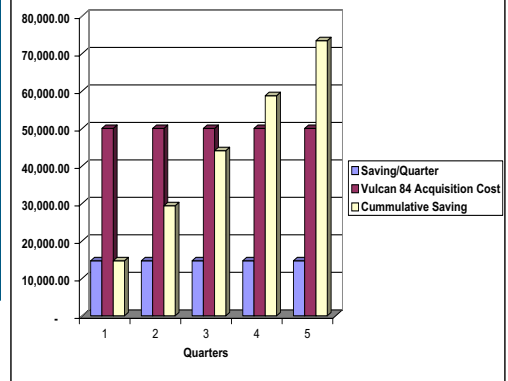
Factor	Manual Method	Cost	Vulcan 84	Cost	Vulcan 84 Savings	
					Per day	Annual
Analyst's Time	24 hours <i>(Time spent in measuring, adding, observing, equalizing, transfer, dilution etc.)</i>	216.00/day <i>(\$15/hour x 24 hours x 0.6* multi-tasking factor)</i>	3 hours <i>(Place the vials in Vulcan 84 and run the batch file)</i>	45.00/day	171.00	42,750.00
Reagent	Reagents <i>(Digestion, washing of glassware etc.)</i>	200.00/day	Reagents <i>(Only for digestion)</i>	150.00/day	50.00	12,500.00
Electricity Cost	Heating of hot block	1.08/day <i>(\$0.24/kwh x 1500w x 3 hours)</i>	Higher heating efficiency due to improved insulation, thus saving electricity by 50%	0.54/day <i>(\$0.24/kwh x 1500w x 1.5 hours)</i>	0.54	135.00
Waste Disposal Cost	Required waste disposal	75.00/day	Reduced due to higher digestion efficiency	50.00/day	25.00	6,250.00
Maintenance Cost	Hot Block + Fume Hood	2,100.00/year	Vulcan 84	5,000.00/year	- 11.60	- 2,900.00
					Saving/year	58,735.00

- *0.4 is factored for other concurrent tasks.
- All amounts are in Canadian dollars.
- The above calculations are based on Vulcan 84 running around the clock to digest 252 samples per day, 250 working days per year.
- All calculations are based on general conditions prevalent in laboratories across Canada.



Cost comparison

Factor	Manual Method	Cost	Vulcan 84	Cost
Acquisition Cost	Hot Block	6,000.00	DIG-6	50,000.00
	Fume Hood	15,000.00	Built-in Fume Hood	0.00
		21,000.00		50,000.00



With several units in use at laboratories around the world and more units rolling out every month, more and more analysts are saving resources by being more productive, thanks to Vulcan 84.

ABOUT QUESTRON

Questron Technologies Corp. is a Canadian manufacturer of sample preparation equipment for analytical laboratories

Our product line includes:

Microwave Digestion Systems

- > **QLAB 8000**
Computer controlled
- > **QWAVE 4000**
Temperature and pressure control
- > **QWAVE 1000**
Power-based sample digestion

Microwave Ashing System

- > **QAsh 1800**
Computer controlled

Hot Block Digestion

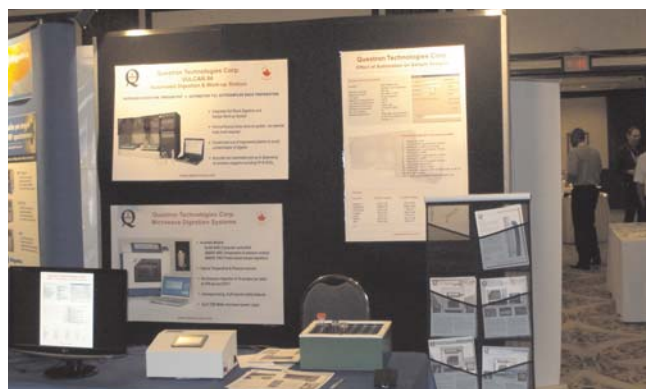
- > **QBlock Digestion System**
with QBlock Commander Quad-Channel Heating Controller

Automated Hot Block Digestion

- > **Vulcan 84**
Automated Digestion and Work-up Station
Computer controlled

Questron at CMA 2009

Questron Technologies Corp. is a regular exhibitor at the Canadian Mineral Analysts Annual Conference. This year, the 41st edition of CMA was held at The Fairmont Winnipeg from September 14 to September 16 and just like every year, we were there. We proudly introduced and exhibited our QBlock Digestion System and made several presentations to the visitors to our booth with reference to the myriad products that we manufacture and market.



Our QBlock Digestion System was the center of attention at CMA and most of the attendees made it a point to visit Questron's booth to have a firsthand look at this system. Its unique features, e.g., QBlock Commander's colour touch screen, its ability to control up to 4 hot blocks simultaneously, its four-step heating control, its PC hook-up capability for digestion data transfer etc. were highly appreciated.

As a Canadian manufacturer of sample preparation equipment, Questron has always considered CMA a unique opportunity and an important platform to communicate the latest technologies to the analysts, technicians, and managers employed in laboratories in the mining industry. We exchange ideas and technical expertise and develop lasting contacts with our esteemed colleagues in the mining industry.

CMA 2009 was a huge success. Our QBlock Digestion System was an instant hit and several qualified and important leads were generated.

CALENDAR OF EVENTS

In January 2010, we will be exhibiting at the following conference:

2010 Winter Conference on Plasma Spectroscopy **January 04 – 09, 2010**

Booth # 04
Sanibel Harbour Resort & Spa
17260 Harbour Pointe Drive
Fort Myers, FL 33908, USA

[Sample Preparation, Treatment and Automation](#)

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