BREWING & DISTILLING ANALYTICAL SERVICES LLC

ANALYTICAL SERVICES CATALOG - 2015

BEER - WINE - DISTILLED SPIRITS

05/15

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"We thank all our current and past clients for making us the best lab for alcohol beverage analysis in the US. The first ten years are now behind us. We have maintained steady growth throughout and saw two major expansions one in 2011 with a move to new facilities and in 2013 with new hires, expanded internship programs (continuing with a major University in 2014 and beyond) and significant investments in new state-of-the-art analytical instrumentation. For our breadth of knowledge and expertise and highly trained and qualified staff for beer, wine and spirits analysis we are your one stop call for analytical testing and for certificates of analysis. We welcome you to a unique and quality conscious group of the finest clients in the world as we head into our next ten years. Looking forward to growing with you!"

Gary Spedding, Ph.D. [Managing Owner -BDAS, LLC]

Copies of this catalog and sample submission sheets (including Chain of custody forms) are available on-line. NOTE: We do a lot more than listed here however, this represents simply the most popular requested testing. As always:

"The answer is yes, now what is your question?"

A Few New Features/Changes in the 2015 Catalog

- » Alcohol tests moved to Comprehensive Package (and Certificate of Analysis COA listings). Top p.4.
- » Beer Competition-Ready Package, B0102 p.4.
- » Brewers: Most Popular Brewers Specifications package, B0101 p.4.
- » Distillers: Proof Obscuration and Proofing tests updated D5180 series p.11.
- » Malt analyses p.12 call for details on current state of affairs in malt testing.
- » Minerals (cations, anions) now all listed under Misc/Individual tests, p.14.
- » Microbiological services revised and expanded call for details.
- » New packages on nutritional testing 0170 series to meet new FDA regulations see pages 5, 8 and 10.
- » Reduced GC pricing with newly established diagnostic methods, p.15.
- » Sugars Analyses by HPLC revised test plans and reduced pricing.
- Water analysis comprehensive program details moved under Malt and Water heading, p.12.
- » Malt analyses p.12 call for details on current state of affairs in malt testing.

PLEASE NOTE ALL REQUIREMENTS FOR SUBMITTING SAMPLES INCLUDING SAMPLE SIZES AND ISSUES WITH BILLING CONTACTS - DETAILED WITHIN. Call for information about the best packages and services to better serve YOUR needs. Tests conducted off-site by our chosen qualified affiliates are indicated by this symbol:†

Brewing and Distilling Analytical Services LLC
1141 Red Mile Road, Suite 202,
Lexington, KY, 40504
TEL: 859-278-2533
www.alcbevtesting.com







Brewing and Distilling Analytical Services, LLC, founded in 2003, has rapidly grown and is now regarded as a recognized analytical testing facility for all alcoholic beverages: beer, wines and distilled spirits.

"For the alcohol beverage manufacturer who chooses to put quality first for their own customers, our brewing and distilling analytical services group is the company they select to help them attain the highest quality standards. They know we are a dedicated team with the expertise and the knowledge to best answer their questions and help lead them to the success they desire."

The company is operated by **Gary** Spedding, as Managing Owner, with over 15 years direct experience in the alcohol beverage testing arena and over 30 years laboratory and research experience. A former Director of the Siebel Institute of Technology Analytical Laboratories he brought the highest standards to bear on the brewing industry and more recently extended those standards to the distilling industry. In October 2012 **Matt** Linske, BSc. joined the company as lead microbiologist and has become known as the beer or bug detective - isolating and growing some very difficult to cultivate organisms. In July 2013 **Amber** Weygandt, BSc., with a background in wine and water chemistry became our new lead chemist involved in distillation and Gas Chromatographic analyses of beverages. Her wine background also extends our high standards now to the growing wine industry. Sensory analysis continues to be spearheaded by Gary with highly advanced sensory software and computerized ballots developed for us by Data Collection Solutions and our advisor Mr. **Tony** Aiken.

CONSULTING SERVICES and OVERALL TESTING

Our main commitment is to perform unbiased testing of beverages and raw materials; our core strength! As we are frequently involved in conversations helping clients establish both production and laboratory facilities we now offer consulting services which can add considerable value to our clients' programs. This allows us to focus on priorities while assisting clients in the best ways possible. Telephone conversations are now simply and conveniently billed on an hourly basis for anything other than routine calls regarding test results already reported. Visits by clients to the laboratory (for example for hands-on-training) or visits by staff to off site facilities are billed or charged for at hourly rates and include travel and accommodation reimbursements where necessary. [See page 17 for more information.]

Directly or indirectly we can service every conceivable testing need or provide you with information as to who can best help you. There are few laboratories today that can do everything in house and we are no exception, however, we believe that there is no other fully dedicated laboratory or service geared solely to all branches of potable alcohol production. For highly specialized testing we interface with other nationally recognized laboratories to ensure the most accurate test results available in the industry. Our affiliate laboratories are cognizant of our philosophy regarding outstanding dedication and quality as outlined above. We can also recommend our clients to other consultants in the industry to better serve their needs. From this originates our slogan: "The answer is yes, now what is your question?"

All our tests and services are performed using standardized and approved methods. We work with the latest updates from all the official bodies representing beer, wine and distilled spirits with methods specified when requested. To monitor our own performance we also participate in numerous collaboratives and check-sample service programs and other laboratory proficiency testing programs. Furthermore BDAS, LLC is a regularly certified TTB Laboratory - For Beer, Wine & Spirits!

CATALOG #	SAMPLE QUANTITY REQUIRED	ANALYTICAL TEST -COMPREHENSIVE & COA PACKAGES- Brewers - Beer & Wort	PRICE \$
B0001	1 x 355 mL	Alcohol - Basic (volume and weight at 20 °C and 60 °F and SG) - see below for "legal values")	25.00
B0002	1 x 355 mL	Alcohol–LEGAL CONTENT (Certified and notarized report of alcohol content. % volume and weight at 15.56 °C (60 °F) sometimes required for	50.00
B0101 BREWER'S SPECIFICATIONS	1 x 355 mL Bottle or Can	Alcohol By Volume, Extracts, Calories, IBUs, Color and pH. <i>A Popular VALUE PACKAGE FOR BREWERS WANTING ONLY THE BASICS:</i>	75.00
B0102 CRAFT BREWER'S COMPETITION PACKAGE.	4 or 6 x 355 mL Bottles or Cans	Alcohol By Volume and Weight, Bittering Units, Color, pH and Sensory Analysis (judging with GABF or other specified guidelines).	150.00
B0110 BEER COMPREHENSIVE CHEMICAL PROFILE	6 x 355 mL Bottles or Cans	Acidity, Alcohol By Volume and Weight, Attenuation, Bittering Units, Calories, Color, Dissolved CO ₂ Free Amino Nitrogen (FAN), Original and Final Extract, pH, Haze, Sediment analysis and Total Sulfur Dioxide. See the GC section to add VDK (Diacetyl) and Higher Alcohols and Esters Profiles at a special rate. Samples requiring filtration or additional preparation incur an additional \$10.00 processing fee.	175.00
B0111 BEER COMPREHENSIVE CHEMICAL & SENSORY PROFILE	8 x 355 mL Bottles or Cans	Combine the 0100 chemical package above with one full sensory panel evaluation of your product. 40-attribute ballot with radar (spider) and bar-chart profiles and sensory summary. (See also, Craft Brewers Competition Package, B0102, above.)	275.00
B0120 TASTE PANEL EVALUATION	2 x 355 mL Bottles or Cans/ Session	Single evaluations and multi-time/date testings (each) The full descriptive sensory profiling as outlined above; see package, B0110. For beer we use a full (40) attribute ballot and our panelists now convene in a dedicated fully computerized tasting facility. Some requests include an initial profile and aging profiles (e.g., 30, 45, 60, 90 and/or 120 days for example). BEST VALUE SEVERAL TIME POINTS!	125.0/ 1st - & 100.00 ea. for multiple time tests
B0121 Triangle Taste Tests		For this and other forced-choice sensory tests please call for specifics	CALL
B0160 COMPREHENSIVE WORT ANALYSIS	1 x 1 Liter or 2 x 500 mL Bottles	Acidity, Ash, Bittering Units, Calcium†, Color, FAN, Iron†, Magnesium†, Original Extract, pH, Protein†, Starch Content (Quantitative), and Zinc†.	185.00

Note: Additional Reports such as Notarized for specific tests can be added to any package (see p 16). Note any samples requiring filtration or additional preparation incurs a \$10.00 additional charge. [Continued]

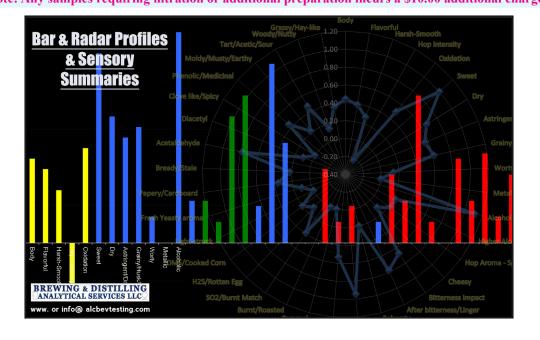
Add a GC Run to Any Brewers Package for just \$100.00!

CATALOG #	SAMPLE QUANTITY REQUIRED	ANALYTICAL TEST -COMPREHENSIVE & COA PACKAGES- Brewers - Beer & Wort	PRICE \$
B0170 NUTRITIONAL LABEL PACKAGE [BASIC]	2 x 355 mL Bottles or Cans	Alcohol By Volume and Weight, Ash, Calories, Original and Final Extract, Protein†, and Total Carbohydrates. State desired serving size if not 12 fl. oz. (355 mL).	110.00
B0171 NUTRITIONAL LABEL PACKAGE [WITH SODIUM]	2 x 355 mL Bottles or Cans	Alcohol By Volume and Weight, Ash, Calories, Original and Final Extract, Protein†, and Total Carbohydrates plus SODIUM†. State desired serving size if not 12 fl. oz. (355 mL).	145.00
B0172 NUTRITIONAL LABEL PACKAGE [WITH HPLC SUGARS]	2 x 355 mL Bottles or Cans	Alcohol By Volume and Weight, Ash, Calories, Original and Final Extract, Protein†, and Total Carbohydrates plus HPLC Sugars (Glucose, Fructose, Maltose, Sucrose and Lactose†). State desired serving size if not 12 fl. oz. (355 mL).	250.00
B0173 NUTRITIONAL LABEL PACKAGE [WITH SODIUM & HPLC SUGARS]	2 x 355 mL Bottles or Cans	Alcohol By Volume and Weight, Ash, Calories, Original and Final Extract, Protein†, and Total Carbohydrates, Sodium plus HPLC Sugars (Glucose, Fructose, Maltose, Sucrose and Lactose†). State desired serving size if not 12 fl. oz. (355 mL).	275.00
B0180 STABILITY PACKAGE	8 x 355 mL Bottles or Cans	Carbon dioxide (and Air), Color, Sediment, Thermal stress number, Turbidity, UV-visible spectrum, and including Basic taste notes. This is a comparative test; half samples retained/tested as the control set and the other subjected to a forced aging process (hence eight total bottles or cans).	250.00
Other t	Other tests are available upon request. Items illustrated above are those most commonly requested. Wort: best shipped frozen and must not be fermenting (plastic containers best!)		

For Bottles/Cans larger than 330-355 mL a lesser number may suffice. Please call to be sure!

Comprehensive packages offer the best value and the ones listed include those recommended by other brewers. We can tailor other packages to best meet YOUR needs. † Covered by affiliates/outsourced testing

Note: Any samples requiring filtration or additional preparation incurs a \$10.00 additional charge.



CATALOG #	SAMPLE QUANTITY REQUIRED	ANALYTICAL TEST -Individual & Misc. Package tests- Brewers: Beer & Wort	PRICE \$
B0210	1 x 355 mL	Acidity (total)	25.00
B0220	2 x 355 mL	Alcohol/ Extract FERMENTATION PROFILE. Real & Original extracts, Real and apparent degrees fermentation/attenuation) and Calories (Anton Paar). (See also B0170 series (for nutritional content). [A separate notary report with alcohol data only can be provided - if required at extra cost!]	40.00
B0260	1 x 355 mL	Beta glucans (new colorimetric method)	50.00
B0270	1 x 355 mL	Bitterness (IBU's) (spectrophotometric)	40.00
B2110	1 x 355 mL	Carbohydrate – sugar/dextrin profile (HPLC†) Simple sugars or dextrin profiles available. Request specific test: Glucose, Fructose, Sucrose, Maltose, Lactose or DP Dextrins Series (G1 to G5 Sugars/dextrins)	150.00
B2111	1 x 100 mL	Enzymatic sugars tests: Glucose and Fructose or Sucrose, Glucose, Fructose [HPLC analysis B2110 is required for official nutritional testing.]	50.00 75.00
B2130	2 x 355 mL	Chill Haze test (Standardized test)	Call
B2140		Clarity and Sediment (visual-microscopic/basic staining protocol). See Microbiology M0704.	
B2150	1 x 355 mL	Color (spectrophotometric)	20.00
B2190	2 x 355 mL Bottles/ Cans	Dissolved CO ₂ (duplicate).	30.00
B2190	2 x 355 mL Bottles/ Cans	Dissolved CO ₂ , air and headspace check (duplicate). Ciders require a different protocol - call for details on cider testing.	60.00
B2200	4 x 355 mL	Fill volume confirmation (bottles or cans) (quadruplicate)	50.00
B2210	2 x 355 mL	Foam collapse rate (Sigma value and comments on visual qualities)	45.00
B2220	1 x 355 mL	FAN (Free amino nitrogen (ninhydrin-spectrophotometric) POPULAR	45.00
B2260	1 x 355 mL	Iodine reaction (Iodometric method – quantitative)	40.00
B2290	1 x 355 mL	рН	10.00
B2300	1 x 355 mL	Polyphenols – total (spectrophotometric)	40.00
B2310	1 x 355 mL	Protein (total –Kjeldahl†) For Nutritional requirements (See B0170)	50.00
B2320	1x 355 mL	Sigma Foam evaluation. [Sigma foam number - collapse rate and visual description of foam quality & properties.]	40.00
B2330	1 x 100 mL	Spectroscopic fingerprinting of sample (UV-visible scan) NEW	25.00
B2370	1 x 355 mL	Sulfur dioxide (SO ₂ - sulfites)	50.00
B2390	1 x 355 mL	Viscosity (Ostwald and/or Falling Ball)	25.00
B2400	1 x 355 mL	Volatile acidity (as lactic, unless otherwise specified)	50.00
B2410	2 x 355 mL	Yeast Fermentable Extract (End fermentation) (in-house – please call before sending samples as this requires preparation of suitable/active yeast.)	75.00

Additional charges will incur for any wort samples that need to be prepared in-house prior to testing. Prices above, applicable to wort samples, refer to liquid wort samples already prepared by the client. See Sections: Hops, GC, Additives/Enzymes/Metals-Minerals/Toxins and Vitamins and Malt for additional tests. † Off-site testing.

CATALOG #	SAMPLE QUANTITY REQUIRED	ANALYTICAL TEST -INDIVIDUAL TESTS- HOPS	PRICE \$
H0420	50 gm.	Alpha and Beta acids content (Spectrophotometric) and Moisture Content. Pellets are processed more easily. Whole cones are subject to an additional processing fee (Higher price).	60.00/ 85.00
H0430	75 gm.	Moisture	20.00
H0440	100 gm.	Taste Panel Evaluation (Hop aqueous-extraction and evaluation)	125.00

Other tests are available upon request. Items illustrated above are those most commonly requested. ^LAlpha and beta acid contents via Conductometric or HPLC methods can be arranged as can hop species identification. Please call in advance for a consult on these types of tests.

This ends the main section for brewers but see the Malt and Water test list below (after Distilled Spirits listings).

"The answer is yes, now what is your question?"

Malt testing applies to Brewers and Distillers. Water testing applies to Brewers, Distillers and Winemakers so these tests appear after the individual listings.







CATALOG #	SAMPLE QUANTITY REQUIRED	ANALYTICAL TEST -COMPREHENSIVE PACKAGES- WINEMAKERS	PRICE \$
W0170 nutritional label package [basic]	750 mL - 1 L	Alcohol By Volume and Weight, (Ash if required), Calories, Final Extract, (Brix or Plato) Protein†, and Total Carbohydrates. [Requires distillation.]	135.00
W0171 NUTRITIONAL LABEL PACKAGE [WITH SODIUM]	750 mL - 1 L	Alcohol By Volume and Weight, (Ash if required), Calories, Final Extract, (Brix or Plato) Protein†, Total Carbohydrates plus SODIUM† [Requires distillation.] State desired serving size for labelling	170.00
W0172 NUTRITIONAL LABEL PACKAGE [WITH HPLC SUGARS]	750 mL - 1 L	Alcohol By Volume and Weight, Ash, Calories, Final Extract (Brix or Plato), Protein†, and Total Carbohydrates plus HPLC Sugars (Glucose, Fructose, Maltose, Sucrose and Lactose†). [Requires distillation.] State desired serving size for labelling	275.00
W0173 NUTRITIONAL LABEL PACKAGE [WITH SODIUM & HPLC SUGARS]	750 mL - 1 L	Alcohol By Volume and Weight, (Ash if required), Calories, Final Extract (Brix or Plato), Protein†, Total Carbohydrates and Sodium plus HPLC Sugars (Glucose, Fructose, Maltose, Sucrose and Lactose†). [Requires distillation.] State desired serving size for labelling	300.00
W0200 WINE COMPREHENSIVE CHEMICAL PROFILE	750 mL - 1 L	Alcohol By Volume and Weight at 60 °F & 20 °C, Ash, pH, Sulfur Dioxide – Free, Fixed, and Total, Volatile and Total Acidity, Residual Extracts/Sugar	175.00
W0210 JUICE COMPREHENSIVE	0.25 L	Juice-Comprehensive:- Brix determination, assimilable amino nitrogen, pH and titratable acidity.	100.00

Individual tests are outlined next and we can set up specific packages to suit your needs. For Wine a standard bottle is 375 mL or 750 mL. Samples must be representative of true final product - no partially filled samples should be sent as these are of compromised quality! Outsourced tests†

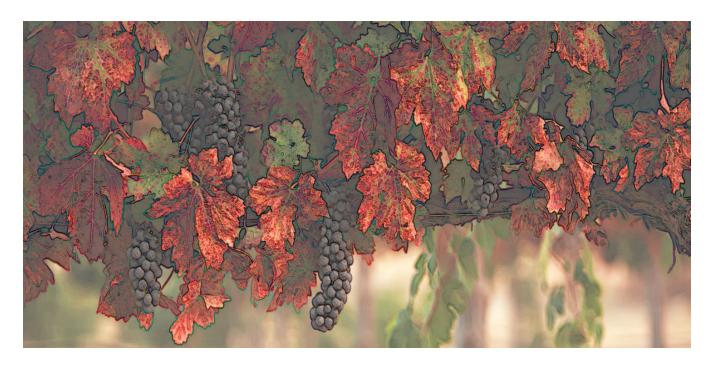
Add a GC Run to Any Wine Test Package for just \$100.00!

CATALOG #	SAMPLE QUANTITY REQUIRED	ANALYTICAL TEST -INDIVIDUAL TESTS- WINEMAKERS	PRICE \$
W0620	1 Bottle	Alcohol (% weight and % volume and SG) [via Distillation]	50.00
W0621	1 Bottle	Alcohol (% weight and % volume and SG) with Extract and Calories. [See W0170 for Nutritional.]	75.00
W0640	1 Bottle	Anthocyanins (total or profile)	Call
W0660	1 Bottle	Carbohydrate-wine sugar profile (HPLC†) Single sugars (glucose, sucrose, fructose)	150.00
		Continued	

CATALOG #	SAMPLE QUANTITY REQUIRED	ANALYTICAL TEST -INDIVIDUAL TESTS- WINEMAKERS	PRICE \$
W6120	1 Bottle	FAN (free amino nitrogen) or YAN (yeast assimilable nitrogen)	45.00
W6140	1 Bottle	Glycerol (Chemical)	50.00
W6290	1 Bottle	Sorbic acid (colorimetric or u/v spectrophotometric)	50.00
W6330	1 Bottle	Sulfur dioxide (sulfites) (total and free)	50.00
W6340		Tannin content [New tests available for tannins testing]	CALL
W6360	1 Bottle	Titratable Acidity (usually as tartaric – but please specify if other req.)	25.00
W6400	1 Bottle	Volatile Acidity (as acetic unless otherwise specified) (Cash still)	50.00

For Wine a standard bottle is 375 mL or 750 mL. Samples must be representative of true final product - no partially filled samples should be sent as these are of compromised quality!

This ends the section for Winemakers but see GC, Microbiology and Additives/Enzymes/Metals-Minerals/ Toxins and Vitamins!



"The answer is yes, now what is your question?"

Next: Distillers tests and General testing of interest to brewers, distillers and winemakers.

CATALOG #	SAMPLE QUANTITY REQUIRED	ANALYTICAL TEST -COMPREHENSIVE PACKAGES- DISTILLERS	PRICE \$
D0170 nutritional label package [basic]	0.75 L	Alcohol By Volume and Weight, (Ash - if required), Calories, Protein†, and Total Carbohydrates. [Requires distillation.] State desired serving size for labelling (e.g., per 1.5 fl. oz.)	135.00
D0171 NUTRITIONAL LABEL PACKAGE [PLUS SODIUM	0.75 L	Alcohol By Volume and Weight, (Ash if required), Calories, Protein†, Total Carbohydrates plus Sodium† [Requires distillation.] State desired serving size for labelling	170.00
D0172 NUTRITIONAL LABEL PACKAGE [WITH HPLC SUGARS]	0.75 L	Alcohol By Volume and Weight, (Ash if required), Calories, Protein†, and Total Carbohydrates plus HPLC Sugars (Glucose, Fructose, Maltose, Sucrose and Lactose†). [Requires distillation.] State desired serving size for labelling	275.00
D0173 NUTRITIONAL LABEL PACKAGE [WITH SODIUM & HPLC SUGARS]	0.75 L	Alcohol By Volume and Weight, (Ash if required), Calories, Protein†, Total Carbohydrates and Sodium plus HPLC Sugars (Glucose, Fructose, Maltose, Sucrose and Lactose†). [Requires distillation.] State desired serving size for labelling	300.00
D5200 DISTILLED SPIRITS COMPREHENSIVE CHEMICAL PROFILE	0.75 L	Acidity – Volatile and Total, Alcohol By Volume and Weight, Color, Higher Alcohols and Esters via GC, pH, and Residual Extracts/Total Solids.	225.00

See individual tests and GC, Microbiology, Additives/Enzymes/Metals-Minerals/Toxins & Vitamins and Malt & Water Sections for other tests. Outsourced tests†

For Spirits a standard bottle is 375 mL or 750 mL. Samples must be representative of true final product - no partially filled samples should be sent as these are of compromised quality!

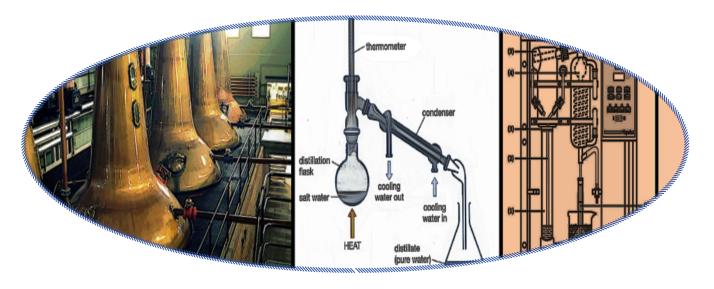
Add a GC Run to Any Distillers Package for just \$100.00!

CATALOG #	SAMPLE QUANTITY REQUIRED	ANALYTICAL TEST -INDIVIDUAL TESTS- DISTILLERS	PRICE \$
D0500	1 Bottle	Acidity (total). Liquid samples (for prepared mashes-ship overnight cold)	25.00
D5010	500mL+	Alcohol (% volume and weight and Proof), (Distillation and Anton Paar density)	50.00
D5011	1 Bottle	Alcohol (% volume and weight and Proof), Extract and Calories [not ash corrected] (Digital density meter) [See D0170 for Nutritional.]	75.00
D5030	1 Bottle	Caramel color (anionic or cationic test methods - specify)	50.00
D5040	1 Bottle	Carbohydrate – sugar/dextrin profile (HPLC†)	150.00
D5060	1 Bottle	Distilled beverage color determination (spectroscopic A_{525})	25.00
D5090	0.1 L	FAN (Free amino nitrogen) (on liquid samples)	45.00
		Continued	

CATALOG #	SAMPLE QUANTITY REQUIRED	ANALYTICAL TEST -INDIVIDUAL TESTS- DISTILLERS	PRICE \$
D5100	100mL	FATS (Total- Hydrolysis)†	100.00
D5120	0.1 L	Iodine reaction (Starch test – qualitative) (on liquid samples)	10.00
D5130	0.1 L	Iodine reaction (Iodometric method- quantitative) (on liquid samples)	40.00
D5150	0.1 L	pH (on liquid samples)	10.00
D5180	750mL	Proofing: True and Apparent Proof [Requires Distillation] (BATF Gauging Manual method)	75.00
D5181	750mL	Proofing: True and Apparent Proof [Requires Distillation] (BATF Gauging Manual method) and Obscuration solids.	100.00
D5182	200mL	Proof Obscuration solids only (via evaporation) (BATF Gauging Manual method). Note only performed on samples between 80-100 degrees Proof!	35.00
D5200	1 Bottle	Solids (Percentage) - Extract (Plato or Brix) via Distillation!	50.00
D2330	1 x 100 mL	Spectroscopic fingerprinting of sample (UV-visible scan) [For authentication, identification and product consistency.] NEW	25.00
D5210	1 Bottle	Sulfur dioxide (sulfites) (free, total and bound)	45.00
D6400	1 Bottle	Volatile Acidity (as acetic unless otherwise specified) (Cash still)	50.00

Other tests are available upon request. Items illustrated above are those most commonly requested. For Spirits a standard bottle is 375 mL or 750 mL. Samples must be representative of true final product - no partially filled samples should be sent as these are of compromised quality! Outsourced tests†

This ends the section for Distillers but see GC, Microbiology and Additives/Enzymes/Metals-Minerals/ Toxins and Vitamins!



"The Craft-distillery movement is growing at a rapid pace and our expertise is often called on first by the new distiller." Contact us at: info@alcbevtesting.com

CATALOG #	SAMPLE QUANTITY REQUIRED	ANALYTICAL TEST -MALT & WATER COMPREHENSIVE & INDIVIDUAL TESTS- (BREWERS AND DISTILLERS)	PRICE \$
M0300 FULL COMPREHEN- SIVE†	1 Kg	Typical comprehensive packages would include: bushel weight, moisture, growth count and seed quality, fine and coarse grind and difference value diastatic power, alpha-amylase content, soluble and total protein and soluble/total ratio, conversion time speed of filtration, odor of mash, wort viscosity, color, pH, and clarity of derived wort.	300.00
M0310 LIMITED COMPREHENSIVE†	1 Kg	Limited Malt Comprehensive. Preparation of Congress Wort Samples. Tests – moisture, growth count, fine and coarse grind extract and difference value, conversion time, speed of filtration, odor of mash, wort viscosity, color, pH and clarity of derived wort.	225.00

NOTE: Your maltster should be able to provide you with comprehensive specifications on any malt they supply you. You should ask for one for every batch ordered. Few outlets for malt analysis in the US (Outsourced†). Contact us for details.

M0320	0.2 Kg	Beta glucans (requires preparation of sample)	100.00
M0340	1 Kg	Extract (coarse and fine grind) and moisture	125.00
M0345	1 Kg	Friability [Leading indicator of malt quality]†	40.00
M0350	1 Kg	Moisture	20.00
M0370	1 Kg	Phenols (total volatile)†	125.00
M380	1 Kg	Taste Panel Evaluation (requires sample preparation)	175.00
M0390	1 Kg	Thousand-kernel weight†	15.00
M0400	1 Kg	Wort color (before and after boiling) [requires sample preparation]	80.00
M0410	1 Kg	Wort Viscosity (Ostwald & Falling-Ball) [requires sample preparation]	80.00
CW0190 COMP WATER ANALYSIS*	2L	Alkalinity, Calcium, Chloride, Conductivity Fluoride, Iron, Hardness, Magnesium, Manganese, Nitrate, pH, Phosphate, Sodium, Silica, Sulfate, and Total Dissolved Solids. [† Some tests outsourced]	125.00

Other tests are available upon request. Items illustrated above are those most commonly requested. Most malt tests are done at our affiliate laboratory or at another designated facility†.

Call for enzyme tests or protein - Kjeldahl or Coaguable protein values
Also Request our Malt Specifications Guide.

^{*}Water analysis - We can follow up with some water treatment/adjustment details as required.

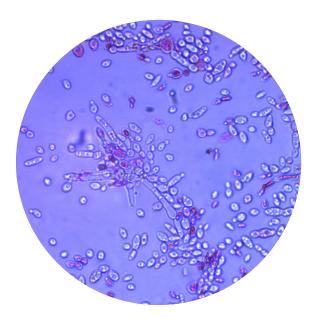
CATALOG #	SAMPLE QUANTITY REQUIRED	ANALYTICAL TEST -INDIVIDUAL TESTS- MICROBIOLOGY	PRICE \$			
M0700 TOTAL PLATE COUNT	100 mL + 1 Bottle*					
M0701 ISOLATE IDENTIFICA- TION		Morphology, Gram stain, Catalase and Oxidase tests On isolated organisms only	50.00			
M0702 CARBON UTILIZATION ANALYSIS		Yeast Identification based on utilization of 32 carbon sources On isolated organisms only	75.00			
M0703 PCR ID		Species identification via PCR (Run at an affiliate/off-site facility). Please call for details.	175.00			
M0704 MICROSCOPIC EVALUATION	50 mL	Photographs of sediment, qualitative only.	50.00			
M0705 YEAST CULTURE PURITY	50 mL	Examination of yeast samples for culture purity.	125.00			
M0706 YEAST VITALITY/ VIABILITY	50 mL	Examination of yeast samples for yeast vitality and viability - cell counts and staining.	50.00			

Other tests are available upon request. Items illustrated above are those most commonly requested.

*More sample may be required per specific growth conditions. Beer samples usually require at least two full bottles/cans. Please call Matt for details.

"Matt Linske, BSc. is in charge of the Microbiology Program. Contact him to set up specific project arrangements."





CATALOG #	SAMPLE QUANTITY REQUIRED	ANALYTICAL TEST -MISCELLANEOUS/INDIVIDUAL TESTS- ADDITIVES/ENZYMES/METALS-MINERALS/TOXINS/ VITAMINS	
Additives/ Preservatives	50 ml	Sodium Benzoate, Sorbic Acid or Quinine (Specify on form - no code)	50.00
0200	100mL	Gluten (Simple strip-testing or ELISA full quantitative)	
0201	100mL	Gluten (ELISA full quantitative)	
0800	Call	Enzymes – Certain enzymes involved in the fermentation industry can be evaluated. Please call for specific details and pricing†.	
0900 series	Cations 100 mL	Metals and minerals (Inductively coupled plasma methods†). Most cations and anions†. Each priced at \$50.00/species Calcium (0901), Copper (0902), Iron (0903), Sodium (0904), Zinc (0905) (see Metals Minerals Packages 1 and 2 for value added combinations)	50.00/ each
0900 series	Anions 100 mL	Anionic minerals (Inductively coupled plasma methods†). Most cations and anions†. Each priced at \$50.00/species Sulfur - total (as Sulfur) by ICP† (0905), Chloride (0930), Sulfate (0932), (see Metals Minerals Package 3 for value added combination)	50.00/ each
0910 Metals/ Minerals 1	100 mL	Calcium, Iron, Magnesium and Zinc†	125.00
0920 Metals/ Minerals 2	100 mL	Potassium and Sodium†	80.00
0930 Metals/ Minerals 3	100 mL	Chloride, Fluoride, Nitrate†	100.00
0940 Metals/ Minerals 4 Complete Nutritional	250 mL+	A special complete minerals package. Will suffice for both yeast nutritional information for fermentation efficiency as well as human nutritional information (composition in final product). Calcium, Copper, Iron, Manganese, Magnesium, Potassium, Sodium, Zinc, Chloride, Phosphorous and Sulfate (Totals)	225.00
01000	Call	Mycotoxins (HPLC† - most common mycotoxins found on brewers and distillers grains). It is recommended that you call first to ascertain your full needs and to inform you as to sample sizes. Specific "toxins packages" can be negotiated as required.	Call
03000	Call	Pesticides† – please call for details and arrangements.	Call
03100	Call	Tannins – simple tests (please call for details and arrangements). Basic price quoted. NEW	50.00
04000	Call	Vitamins† – Please specify the vitamin (s) to be tested by name. *Depending on the source material there may be an additional sample preparation fee. Specific "vitamins packages" can be established on an as-needed basis.	Call

Other tests are available upon request. Items illustrated above are those most commonly requested. *Depending on the type of sample material, and the degree of "statistical sampling" needed, different amounts may be required for testing. Typically, though, about 0.1 L or 0.1 Kg would be required. If in doubt, please call.

[&]quot;Many tests can be handled directly or indirectly at BDAS, LLC. Let us help you find the correct resources today for items not listed or detailed here." info@alcbevtesting.com † Indicates off-site testing.

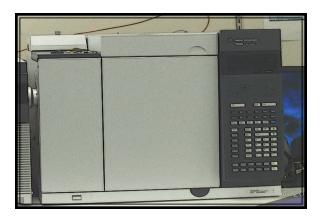
CATALOG #	SAMPLE QUANTITY REQUIRED	TITY -INDIVIDUAL TESTS-			
GC01-I	GC01-I 100 mL Individual Analyte (Specify -e.g, Acetaldehyde, Methanol etc). Higher alcohol and esters profiles only.				
GC02	100 mL	Propylene (or ethylene glycol) <u>qualitative-diagnostic only</u> (Positive/ Negative test)	75.00		
GC03 Alcohols esters	Alcohols 100 mL Higher alcohols and esters ("TTB-series")		125.00		
GC05 Diacetyl	1 Bottle/Can	Vicinal Diketones (DIACETYL and 2,3-pentanedione) [as is or total]. Call for details if both "as is" and total needed.	115.00		
GC0305 Alcohols/Es- ters/Diacetyl	Alcohols/Es- Rottle/Can (DIACETYL and 2,3-pentanedione) [total]. SPECIAL COMBINED		185.00		
GC10	Call	New Analyte/Method Development. Call to establish analytes of interest.	CALL		
GC14 COMPLETE VOLATILE PROFILE	Four x 355 mL Bottles or Cans	Full chemical profile. Gas chromatographic (GC) analysis of dimethyl sulfide (DMS), higher alcohols and esters (full profile) and the vicinal diketones (diacetyl and 2,3-pentanedione).			
		A full "sulfur compounds" profile run can also be performed if requested, though this carries an extra cost (request test 2360). Please call if interested in the sulfides profile.	490.00		

Other tests are available upon request. Items illustrated above are those most commonly requested.

GC-CODE (Specify matrix: Beer, Wine or Distilled Spirit, etc.)

"Amber Weygandt, BSc. is in charge of the GC and Mass Spectroscopy Programs here. Contact her today to set up specific project arrangements." [Call also for DMS analysis]





Brewing & Distilling Analytical Services & Laboratory Policies.

In submitting samples to BDAS, LLC YOU ARE ENTERING INTO A CONTRACT WITH US and in order to ensure the best service as we promise to provide and to maintain full confidentiality it is import for you to follow our terms listed below and on the following pages. A summary of our policies appear in the table below for quick reference - full details then appear on the next two pages.

CALL IF UNSURE ABOUT ANY POLICIES - WE WANT YOU TO HAVE TOTAL SATISFACTION.

	TOTAL SATISFACTION.			
SUMMARY: KEY POL	ICIES - FAQ'S			
RUSH FEES NORMAL TURNAROUND 7-10 WORKING DAYS UNLESS TESTS DONE OFFSITE.	Two days [®] "RUSH REQUEST" service, when possible (longer if outsourced) charged at one and a half times (1.5 x) the list price. Reissued forms if requested on a rush basis will also be subject to the priority fees (see Extra and Notarized reports.) ®NOTE: MOST TESTS ARE IN FACT ACCOMPLISHED IN ONLY A FEW DAYS!			
CONSULTING & RETAINER FEES	Start at our hourly rate of \$125.00. Travel, reasonable accommodation expenses and certain meals are also to be borne by the client. For expensive projects/legal work a retainer fee may be required.			
NON-DISCLOSURE & CONFIDENTIALITY AGREEMENTS	Can be entered into as required - on legal, formulation and project cases. We can provide agreement forms or use yours. Legal cases will require a retainer fee and this will be outlined in any agreement documents.			
SAMPLE SUBMISSION	A sample submission form MUST accompany all samples before work can commence - NO EXCEPTIONS! SAVE US TIME and Expedite YOUR results turnaround by filling out the form.			
SHIPPING SAMPLES	All shipments should be marked "Samples for Analysis Only – Not for Human Consumption.			
REPORTS	We issue reports electronically in the form of PDF's In all cases unless otherwise requested. Invoices will also only be E-mailed unless mailed copies needed.			
	Require hard copies? Please indicate so on the Sample Submission Form. Single copies will be mailed if required using normal mailing times. Rush mailing may carry extra costs to offset expenses.			
EXTRA & NOTARIZED REPORTS	Multiple signed copies of reports will be charged for at \$5.00/additional copy*. Reissued Reports (For reasons Beyond Any Fault of ours) will also be charged at \$20.00 each. Note: for any reissued/renamed reports on previously tested samples we can only back-reference data by one calendar year.			
	Notarized Reports: *Additional notary-signed copies charged for at \$10.00/copy. Any form can be notarized for the \$10.00 charge			
PAYMENT & TERMS	BDAS, LLC accepts credit card payments or checks. Each invoice carries a unique link enabling online payments after service.			
SEE ALSO PAGE 18 for important terms.	First time clients requesting services valued at more than \$200 are required to prepay their first order with the request subject to credit approval. [Check or pre-pay link]			
	Our terms are net 15 days: from your receipt of the E-mailed report of your results and invoice. Late fees accrue after 15 days. Failure to make timely payments may lead to suspension of further services until resolved. It is important for you to indicate billing contact/address details on the sample submission form provided with your samples to ensure timely delivery of our invoices for payment within our net term period.			
ANEXOS, COA'S (COFA'S) &	Prepared for any country to the specifics of the authority being dealt with and in the required language as needed.			
APOSTILLES	As for general reports some additional mailing/processing costs may be involved for rush submissions or multiple Notarized copies etc see also the "Reports" section above			
BDAS, LLC is a triple	certified laboratory in regular standing with the TTB - Beer -Wine & Distilled spirits!			
	AS, LLC you affirm that you are aware of our policies - in return we will do our utmost to panalyze them in an efficient and timely manner - seeking accuracy and precision in all cases.			

Detailed policies are described on the next two pages. Use the table above for quick reference! Please call or E-mail for further clarification. [859-278-2533]/ info@alcbevtesting.com

PRICES, TURNAROUND AND PRIVACY:

All catalog prices remain in effect until further notice (non rush basis!). Prices are inclusive, where relevant, of our own processing and shipping fees. Depending on tests, volume demands and outsourcing we usually provide a 7-10 working day turnaround. For any samples we send off-site the aim is to attain no more than 10 working days for turnaround time in most instances. Rush fees for two days, when possible (longer if outsourced), are charged at one and a half times (1.5x) the list price. For overnight or after hours rush service (again if possible though not encouraged) the charge is to be as negotiated. This is only fair to clients with samples already in the works. Please call ahead to discuss how best we can accommodate your rush requests. We will try to do the best for you on this type of service. Some affiliates can receive samples directly - this facilitates turnaround time. Call for specifics. We usually handle all billing with such outsourcing.

All reports and records concerning your sample results are maintained with the strictest confidence. Unless you indicate otherwise, this also applies to any of the samples we field to our affiliate laboratories [look for the †, symbol in our catalog listings]. We understand the significance of all test results with respect to the fermentation industries and can thus help you understand the consequences related to the data and show you how to interpret and implement the findings in improving your beverage production capabilities. You are always welcome to call us with questions related to your own requested test results. More involved questions, extensive discussions and problem solving or troubleshooting inquiries can be made available on an individual consultation basis (see below).

CONSULTING FEES:

While we can supply information regarding your test results in order to honor our obligations to testing samples for existing clients we do require fees when offering extended consultation. This is only fair when we can offer value to your business. If discussions will take longer than 10 minutes (or if visiting the lab to learn or discuss testing with us) a negotiated payment plan can be discussed. Consulting fees start at our hourly rate of \$125.00. When travelling reasonable accommodation and meals are also to be borne by the client. Non-disclosure and confidentiality agreements can be in place as necessary. We can also direct you to expert consultants for issues beyond our capabilities. Work for legal cases and extended projects or lecturing/teaching may require a retainer fee to be discussed with respect to each particular case or event.

SHIPPING SAMPLES:

Seasoned clients generally know how best to package samples for safe shipment but, sometimes, there are mishaps. We therefore urge all new clients to contact us first in order that we may provide guidance in the best packaging techniques and to inform you as to the best, most economical and the safest way of shipping samples to us. UPS and FEDEX should be your first choices in the US. All shipments should be marked "Samples for Analysis Only – Not for Human Consumption". Clearly mark them "Fragile" and "This side up". AN ORDER FORM MUST ACCOMPANY ALL SAMPLES BEFORE WORK CAN COMMENCE - NO EXCEPTIONS! We cannot start service work unless and until we know specifically and exactly what is being requested of us. Shipments from abroad are best packaged in wooden crates/sturdy cardboard boxes (crowncap boxes work well) and can be handled through an import-export agency. Please call for our advice as to which companies can best handle samples from your own country. Our company does, however, have an Import Permit for "Alcoholic Samples for Analysis Only" and this usually means direct shipping is possible. Foreign samples (as food products) must now (for Bioterrorism clearance purposes) be registered with the Federal Food and Drug Administration (the FDA) and this can be achieved by registering for an Account number and code clearance (for each shipment) via the FDA WEB site. We can help you in this registration process if you encounter any problems. Recent changes may mean we need obtain a COLA waiver for you.

A NOTE ABOUT FORMS: We moved to forms you can fill in electronically but these MUST be saved before E-mailing or printing to ship with samples. Otherwise data may be lost. Once saved you can use as a template for future sample submission - requiring only new sample data to be substituted into the appropriate form fields. Also "Chain of Custody" special forms are available [Call for a copy or find on line on the Catalogs page of the website.]

Finally, PLEASE send samples to the CORRECT ADDRESS – see the Services order form. (Available upon request or to be found on the "Catalogs" page of our website: www.alcbevtesting.com.)

REPORTS:

In our attempts to maintain costs and to reduce paper we issue reports electronically in the form of PDF's. Invoices may also only be E-mailed. Should you require the hard copies please indicate so on the Sample Submission Form. Single copies will be mailed if required using normal mailing times. Rush mailing may carry extra costs to offset our expenses. Multiple copies of reports (especially those requiring Notarization) will be charged for at \$5.00/additional copy.

CONTACT ADDRESSES:

Our regular correspondence address is; 1141 Red Mile Road, Suite 202, Lexington, KY 40504. Telephone: 859-278-2533 (calls forward to the laboratory) You may also contact us via E-mail at info@alcbevtesting.com or gspedding@alcbevtesting.com or call the BDAS cell #: 859-321-3240. We are always just a phone call or E-mail address away. Any missed calls with messages will be responded to promptly. We can all be contacted separately as per needs: gspedding, matt or amber @ alcbevtesting.com (no spaces), respectively.

PAYMENT AND TERMS:

BDAS accepts credit card payment through our Accounting Software - a secure line. Currently no fees for using a credit card are passed along to you though this may change. Sorry AMEX is currently not accepted. A unique link is available to pre-pay and first time clients are encouraged to prepay their first order request until "credit" is established. Each invoice carries a unique and specific link pertaining to the tests requested - this can be used to pay on line if preferred for ongoing non-initial orders. We do accept checks, purchase orders and provide for direct billing. Until credit is established we generally require pre-payments on first orders either by check or via the on-line process.

NOTE WELL: Our terms are net 15 days from your receipt of the E-mailed report of your results; invoices will accompany those reports. Results are issued immediately upon test completion via scanned signed PDF's. Any terms agreed to beyond 15 days are subject to a surcharge to cover our interest charges and payments to our affiliates. Rush charges vary with the affiliate lab involved in any testing and late payment fees may reflect such added interest costs to us. Any payments not received during the net term period will be charged a late fee starting after 15 days - an incremental increase applied for each 15 day period thereafter until the invoice is "paid in full". It is important to note your billing contact information if different from the sample submission team or those to whom reports are to be sent.

ANEXOS, COAS (COFAS) AND APOSTILLES:

BDAS, LLC is often listed as a TTB Certified Laboratory (subject to updated evaluations). As such we handle many Certificates of analysis and ANEXO export documents. These are usually Notarized and sometimes forwarded to TTB for final approval. Each country may request different tests so please check with your authorities and with the country for export and consult with us for specifics. We are happy to prepare reports in any of several languages and can issue you template or example copies to streamline the process. Simple Notary certificates (for State to State official purposes) to full Apostilles are possible. Some additional mailing/processing costs may be involved - see also the "Reports" section above.

CONTRACT PROJECTS AND RESEARCH:

Brewing and Distilling Analytical Services has been involved in a number of specific and private contract projects with major companies involved in the raw materials, packaging, and beverage industries over the past eleven years. We have provided test confirmation services and sensory project advice and we look forward to many other such contracts with our clients. We are also working on refining chemical methods and especially in simplifying those tests so that they may be more readily applied directly and easily in our clients' own laboratories. Collaborations are welcomed.

WEBSITES, WEBLOGS AND THE SOCIAL MEDIA SCENE.

We have a regularly updated website: www.alcbevtesting.com and a new key weblog site: http://bdasllcalcoholbeveragesworld.blogspot.com/ Please join us in conversations and postings at those sites. We frequently post white papers reviews and key information on those sites. Join us on Facebook, Twitter and LinkedIn (private group site for questions and answers) for more information - details on next page.

The Brewing and Distilling Analytical Services, LLC. Services Order Form appears on the next page.

AN ON-LINE-FILLABLE ORDER FORM (REVISED 2015) MUST ACCOMPANY ALL SAMPLES BEFORE WORK CAN COMMENCE - NO EXCEPTIONS! CHAIN OF CUSTODY FORMS ALSO AVAILABLE AS REQUIRED.

YOUR COOPERATION HELPS US GET YOU YOUR IMPORTANT TEST RESULTS MORE EFFICIENTLY.

Brewing and Distilling Analytical Services, LLC
1141 Red Mile Road, Suite 202,
Lexington, KY, 40504
TEL: 859-278-2533
www.alcbevtesting.com
info@alcbevtesting.com
Several active links below click to access

http://www.linkedin.com/pub/gary-spedding-ph-d/3/160/83a

http://bdasllcalcoholbeveragesworld.blogspot.com/

https://www.facebook.com/BDASLLC

https://twitter.com/Gary_at_bdas

http://gspedding.wix.com/gspeddingsalcbevnews

http://alcbevtestingnews.blogspot.com/

http://alcbevmosaic.blogspot.com

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SAMPLE SUBMISSION SHEET - NEXT PAGE or at: http://www.alcbevtesting.com/catalog-and-testing-facilities/

SAVE DATA ENTERED INTO FORM BEFORE PRINTING OR EMAILING!

Form now has active E-mail and web links.

BREWING & DISTILLING DANALYTICAL SERVICES LLC

SERVICES REQUEST FORM

Standard: Priority*: *[See catalog for details on priority testing and pricing.]		Send form with samples to: BDAS, LLC. 1141 Red Mile Road, Suite 202. Lexington, KY 40504. Click-Email form to: info@alcbevtesting.com			Please type or print. No analysis will be performed until all information has been provided. In submitting samples you agree to all terms & policies listed in our current catalog, forms & promotional materials. All data held in the strictest confidence.		
CLI	ENT INFORMATION This	s is an active fillable PDF Forn	n or Print/Typ	e - SA	VE all data first before pri	nting	
Con	npany:						
	tact Name:	,					
Add	ress:						
City	:	State: Z		Zip/I	ip/Postal Code:		
Country:				Do you require hard copies of reports? Y/N Mailing charges may apply.			
Date		P.O./Request #:			g charges may appry.		
Billi [Net	nil: (For reports): ng Contact/Email: Terms 15 Days - Must be filled in	if billing is a different contact]					
Spec	rial Reporting Instructions?						
	ALYSIS REQUEST INFORM are you are sending enough san		d tests (use se	eparat	te forms if necessary).		
#	Sample information as you v	vish it to appear on report	Services 1	reque	sted/Catalog Number	BDAS USE	
1							
2							
3							
4							
5							
6							
7							
9							
10							
	ial Testing Instructions?						

Labels on individual items on multiple packaged samples can become loosened or erased, especially if contents break/leak. Use indelible ink/permanent markings, etc; especially if coding is similar. Package in plastic bags if possible to reduce external wetting/damage to packaging.

Please review all shipping instructions in the catalog or call us for details. Package all samples very carefully and clearly mark the outside of your packaging: "SAMPLES for ANALYSIS ONLY: NOT FOR HUMAN CONSUMPTION" SHIP SAMPLES TO THE ADDRESS NOTED AT THE TOP OF THIS FORM. WE THANK YOU FOR YOUR BUSINESS.

Phone: 859-278-2533 - Email: info@alcbevtesting.com - Web: www.alcbevtesting.com