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BETA

Biobased and Biogenic Carbon Testing Laboratory
ISO/IEC 17025:2005 Accredited

Beta Analytic, Inc.
4985 SW 74 Court
Miami, FL 33155 USA
Tel: 305-667-5167
Fax: 305-663-0964
info@betalabservices.com
www.betalabservices.com

April 05, 2018

Robert Trachman
Bioneat, Inc.
101 SE 10TH ST
Fort Lauderdale, FL, 33316-1023
United States

Dear Mr. Trachman

Please find enclosed your radiocarbon (C14) report for the material recently submitted. The result is reported as “% Biobased Carbon”. This indicates the percentage carbon from “natural” (plant or animal by-product) sources versus “synthetic” (petrochemical) sources sources. For reference, 100 % Biobased Carbon indicates that a material is entirely sourced from plants or animal by-products and 0 % Biobased Carbon indicates that a material did not contain any carbon from plants or animal by-products. A value in between represents a mixture of natural and fossil sources.

The analytical measurement is cited as “percent modern carbon (pMC)”. This is the percentage of C14 measured in the sample relative to a modern reference standard (NIST 4990C). The % Biobased Carbon content is calculated from pMC by applying a small adjustment factor for C14 in carbon dioxide in air today. It is important to note is that all internationally recognized standards using C14 assume that the plant or biomass feedstocks were obtained from natural environments.

Reported results are accredited to ISO/IEC 17025:2005 Testing Accreditation PJLA #59423 standards and all chemistry was performed here in our laboratory and counted in our own accelerators in Miami, Florida.

The international standard method utilized for this analysis is cited on your report. The report also indicates if the result is relative to total carbon (TC) or only total organic carbon (TOC). When interpreting the results, please consider any communications you may have had with us regarding the analysis. If you have any questions please contact us. We welcome your inquiries.

Sincerely,

Darden Hood
President

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Summary of Results - % Biobased Carbon Content
ASTM D6866-16 Method B (AMS)

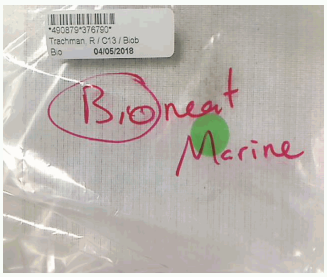
Certificate Number: 37679049087991028

Validation: Christopher Patrick, Deputy Director

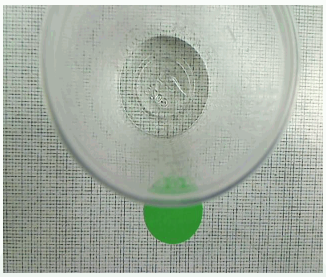
Submitter	Robert Trachman
Company	Bioneat, Inc.
Date Received	March 29, 2018
Date Reported	April 05, 2018
Submitter Label	Bioneat Marine / (USDA Application# 6507)

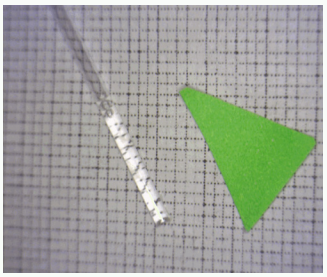
RESULT: 41 % Biobased Carbon Content (as a fraction of total organic carbon)

Laboratory Number	Beta-490879
Percent modern carbon (pMC)	41.67 +/- 0.15 pMC
Atmospheric adjustment factor (REF)	100.5; = pMC/1.005



Package received - labeling COC


Representative content (1mm x 1mm scale)


Representative sample analyzed (1mm x 1mm scale)

Disclosures: All work was done at Beta Analytic in its own chemistry lab and AMSs. No subcontractors were used. Beta's chemistry laboratory and AMS do not react or measure artificial C 14 used in biomedical and environmental AMS studies. Beta is a C14 tracer-free facility. Validating quality assurance is verified with a Quality Assurance report posted separately to the web library containing the PDF downloadable copy of this report.

Precision on the RESULT is cited as +/- 3% (absolute). The cited precision on the analytical measure (pMC) is 1 sigma (1 relative standard deviation). The reported result only applies to the analyzed material. The accuracy of the RESULT relies on the measured carbon in the analyzed material having been in recent equilibrium with CO_2 in the air and/or from fossil carbon (from living more than 40,000 years ago such as petroleum or coal. The RESULT only applies to relative carbon content, not to relative mass content. The RESULT is calculated by adjusting pMC by the applicable "Atmospheric adjustment factor (REF)" cited in this report.

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Summary of Results - % Biobased Carbon Content
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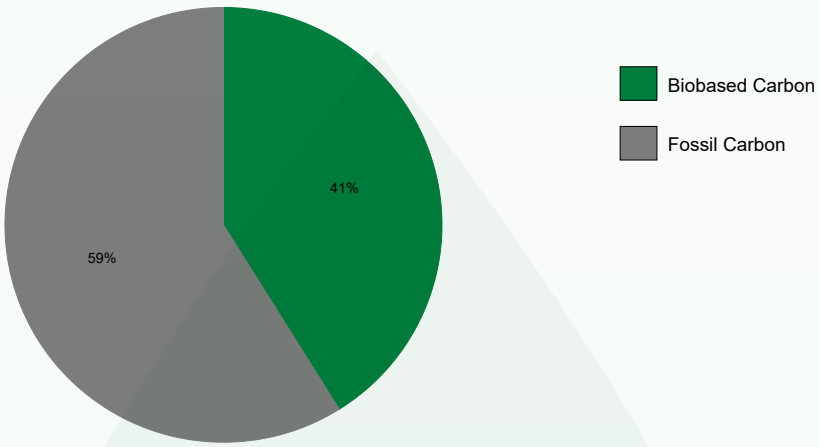

Precision on the RESULT is cited as +/- 3% (absolute). The cited precision on the analytical measure (pMC) is 1 sigma (1 relative standard deviation). The reported result only applies to the analyzed material. The accuracy of the RESULT relies on the measured carbon in the analyzed material having been in recent equilibrium with CO_2 in the air and/or from fossil carbon (from living more than 40,000 years ago such as petroleum or coal. The RESULT only applies to relative carbon content, not to relative mass content. The RESULT is calculated by adjusting pMC by the applicable "Atmospheric adjustment factor (REF)" cited in this report.

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% Biobased Carbon Content ASTM D6866-16 Method B (AMS)

Explanation of Results

The result was obtained using the radiocarbon isotope (also known as Carbon-14, C14 or 14C), a naturally occurring isotope of carbon that is radioactive and decays in such a way that there is none left after about 45,000 years following the death of a plant or animal. Its most common use is radiocarbon dating by archaeologists. An industrial application was also developed to determine if consumer products and CO2 emissions were sourced from plants/biomass or from materials such as petroleum or coal (fossil-based). By 2003 there was growing demand for a standardized methodology for applying Carbon-14 testing within the regulatory environment. The first of these standards was ASTM D6866-04, which was written with the assistance of Beta Analytic. Since ASTM was largely viewed as a US standard, European stakeholders soon began demanding an equivalent CEN standard while global stakeholders called for ISO standardization.

The analytical procedures for measuring radiocarbon content using the different standards are identical. The only difference is the reporting format. Results are usually reported using the standardized terminology "% biobased carbon". Only ASTM D6866 uses the term "% biogenic carbon" when the result represents all carbon present (Total Carbon) rather than just the organic carbon (Total Organic Carbon). The terms "% biobased carbon" and "% biogenic carbon" are now the standard units in regulatory and industrial applications, replacing obscure units of measure historically reported by radiocarbon dating laboratories e.g. disintegrations per minute per gram (dpm/g) or radiocarbon age.

The result was obtained by measuring the ratio of radiocarbon in the material relative to a National Institute of Standards and Technology (NIST) modern reference standard (SRM 4990C). This ratio was calculated as a percentage and is reported as percent modern carbon (pMC). The value obtained relative to the NIST standard is normalized to the year 1950 AD so an adjustment was required to calculate a carbon source value relative to today. This factor is listed on the report sheet as the terminology "REF".

Interpretation and application of the results is straightforward. A value of 100% biobased or biogenic carbon would indicate that 100% of the carbon came from plants or animal by-products (biomass) living in the natural environment and a value of 0% would mean that all of the carbon was derived from petrochemicals, coal and other fossil sources. A value between 0-100% would indicate a mixture. The higher the value, the greater the proportion of naturally sourced components in the material.

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BIOLOGICAL CONSULTING SERVICES
OF NORTH FLORIDA, INC.

December 15, 2016

Vincenzo Gizzi
Bio-Neat Inc
101 SE 10th Street
Ft. Lauderdale FL 33316
954-729-1220
Vince@bioneat.com
Client ID: BioNeat NTS, BioNeat NTS, BioNeat NTS

BCS ID: 1611253, 1611254, 1612119

Project Name: BioNeat NTS 1:3 Solution Efficacy Testing

Dear Vincenzo Gizzi,

We have completed the filtration efficacy study on the submitted units as outlined below. The contaminant species, study conditions, and water parameters utilized were based on client's request and adaptation of the guidance documents and protocols listed below:

AOAC Method 961.02. Germicidal Spray Protocol (NOT ISO17025 Accredited)

Following, you will find our report on the results of the study conducted on the referenced samples. Should you have any questions, please do not hesitate to contact me.

Sincerely,

George Lukasik, Ph.D.
Laboratory Director

BCS LABORATORIES, INC. – GAINESVILLE
4609 NW 6TH STREET. STE. A. GAINESVILLE. FLORIDA 32609
TEL. (352) 377-9272, FAX. (352) 377-5630
WWW.MICROBIOSERVICES.COM
FL DOH #E82924, ISO/IEC 17025:2005 L2422 (L-A-B), PA DEP# 68-03950, EPA# FL01147

Analysis: *S. Aureus Bacteria Reduction Efficacy*					Test Carrier: Glass Slide 25mm		
Application Method: Spray						Temp: 22.3	
Conformance of Study Validation Data: Negative Control: Yes			Positive Control: Yes		Neutralizer Control: Yes		
Start Conc:	7.60E+05 cfu/mL			Contact Time: 10 minutes			
BCS Sample ID 1	1611253	Client ID 1	BioNeat NTS				
End Conc 1:	7.30E+04 cfu/mL		% Reduct 1:	90.3	Log10 Reduct 1:	1	
BCS Sample ID 2	1611254	Client ID 2	BioNeat NTS				
End Conc 2:	7.50E+04 cfu/mL		% Reduct 2:	90.1	Log10 Reduct 2:	1	
BCS Sample ID 3	1612119	Client ID 3	BioNeat NTS				
End Conc 3:	7.40E+04 cfu/mL		% Reduct 3:	90.2	Log10 Reduct 3:	1	
Test Notes:							

BCS Laboratories, Inc. – Gainesville
4609 NW 6th Street. Ste. A. Gainesville. Florida 32609
Tel. (352) 377-9272, Fax. (352) 377-5630
www.microbioservices.com

Project: BioNeat NTS 1:3 Solution Efficacy Testing

Date Received: November 22, 2016 16:30 Analyst: David Sekora, M.S.

Test Start Date: December 08, 2016 Test End Date: December 09, 2016 Qualifier:

Report Notes:

20uL of the bacteria was applied directly to the center of sterile glass slides. The slides were allowed to incubate in a laminar follow hood for 30 minutes with the blower on. After 30 minutes the positive control slides were tranfered to tubes containing 10mL of D/E neutrilizeing buffer (BD, USA). A 1:3 dilution of the provided solution was prepared using laboratory grade reagent water and a set of three 25mm glass slides were sprayed at adistance of 10" over the course of 7 seconds. The slides were completely saturated with the prepared solution following application and given a 10 minute contact time before being tranfered to tubes containing 10mL of neutrilizing buffer. The samples were homogenized on an orbital shaker for 10 minutes to elute the microorganisms. The positive controls were diluted 1/1000 and plated in 0.1 and 1.0 mL duplicates. Negative controls were preformed for the microorganism and plated in 0.1mL and 1.0mL duplicates. Samples were plated onto TSA in 0.1 and 1.0mL duplicates. The plates were incubated for 24 hours at 36.5°C.

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FL DOH #E82924, ISO/IEC 17025:2005 L2422 (L-A-B), PA DEP# 68-03950, EPA# FL01147

*I certify that I have examined I am familiar with the information submitted herein. The results pertain only to the sample(s) analyzed associated identifier #(s). Based on my inquiry of the individuals responsible for the analysis, I believe the data to be true, accurate, and complete. Unit descriptions and names were obtained from the submitted documents. The analysis was authorized and commissioned by the client or client's representative. The resulting data are representative of the analysis conducted on the collected samples and it's/their condition at the time of analysis. The data provided is strictly representative of the study conducted under laboratory conditions using the material/samples/articles provided by the client (or client's representative) and it's (their) condition at the time of test. The data obtained may not be representative or indicative of a real-life process and/or application. The sample(s) were analyzed in accordance with the appropriate method, however due to the inherent limitations of methods, microorganisms may avoid detection. BCS Laboratories offers no express or implied warranties concerning the quality, safety, and/or purity of any sample, batch, source, or the process they are derived from. Quality assurance controls were performed as outlined in the method and as per Good Laboratory Practices. Analyses were performed in accordance with laboratory practices and procedures set-forth by ISO 17025-2005 and NELAP/TNI accreditation standards unless otherwise noted. BCS makes no express or implied warranty regarding the ownership, merchantability, safety or fitness for a particular purpose of any such property or product.

Signature of Laboratory Director/Authorized Rep.  Date: December 15, 2016

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DATA QUALIFIER CODES	
SYMBOL	MEANING
D	Measurement was made in the field.
I	The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.
J1	The sample matrix interfered with the ability to make any accurate determination.
J2	No Quality Control criteria exist for the component.
^	analysis conducted outside the Laboratory's scope of accreditation
L	Off scale high. Actual value is known to be greater than value given.
O	Sampled, but analysis not performed.
Q	Sample held beyond the accepted holding time.
U	Indicates that the compound was analyzed for but not detected. The reported value is the method detection limit.
V	Analyte was detected in both sample and associated method blank. Data may not be accurate.
Y	The laboratory analysis was from an improperly preserved sample. The data may not be accurate.
Z	Too many colonies present (TNTC); the numeric value given represents the upper end of the value that can be determined based on the volume.
?	Data are rejected and should not be used. QC data did not meet acceptance criteria.
**	Analysis of analyte submitted to an accredited sub-contract laboratory.
!	Data deviate from historically established concentration range.
#	BCS Lab specific qualifier. See laboratory analysis notes.

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FL DOH #E82924, ISO/IEC 17025:2005 L2422 (L-A-B), PA DEP# 68-03950, EPA# FL01147

OECD 301B Ready/Ultimate Biodegradability Assessment

Date of Final Report: November 19, 2014

Total Number of Pages: 14

Report Prepared For:
Bio-Neat, Inc.
101 SE 10th Street
Ft. Lauderdale, FL 33316
954-462-2225

Report Prepared By:
RespirTek, Inc.
12450 Shortcut Rd. Bldg F
Biloxi, MS 39532
228-392-7977

Table of Contents

Study Summary

The Test Substance, BioNeat NTS™, was evaluated for ready and ultimate biodegradability in an aqueous medium, when exposed to an inoculum source according to the procedures detailed in the OECD 301B methodology.

Based on the test method employed, the maximum biodegradability of the test materials are as follows:

Test Substance	Percent Biodegradation	Classification
BioNeat NTS™	61.7%	Ultimate

This value is the highest observed during the 28 day test for each test substance.

Project ID: BIO-2413
Date: November 19, 2014
Quality Assurance Unit Statement

The purpose of the Quality Assurance Unit is to monitor the conduct and reporting of laboratory studies. Enclosed is the final report data for project ID BIO-2413. All analyses were conducted following procedures set forth by the ISO/IEC 17025:2005 accreditation program standards. A copy of RespirTek's ISO/IEC 17025:2005 certification and scope is attached at the end of this report. Quality assurance systems and quality control criteria have been reviewed for the data collected, either internally or externally by one of RespirTek's affiliate laboratories, and the data review generated the following response:

QA/QC criteria met for all analyses

Anthony Miranda, M.S.
Technical Director
RespirTek, Inc.
Phone: (228) 392-7977
Fax: (228) 396-3984
www.respirtek.com

Ryan Vandermeulen
Quality Manager
RespirTek, Inc.
Phone: (228) 392-7977
Fax: (228) 396-3984
www.respirtek.com

PJLA Testing
Accreditation #69085

Client: BIO-2413

Test Product(s): BioNeat NTS™

Test Method: OECD 301B - CO_2 Evolution Test

Report Date: November 19, 2014

1.0 Laboratory

Testing as presented in this report was conducted by RespirTek, Inc (RespirTek). The testing facility is located at 12450 Shortcut Rd., Bldg F, Biloxi, MS 39532.

2.0 Sample Receipt

Sample receipt was recorded on September 10, 2014 at the RespirTek testing facility. One box was received from FedEx and contained1 product for testing. The sample material was securely wrapped and the lid was sealed. The sample was labeled as below and given the following laboratory identification:

- BioNeat NTS™ - BIO-TC1

The sample was received at ambient temperature in good condition with no evidence of damage or contamination. No temperature preservation was required.

3.0 Summary of Method

The OECD 301B biodegradability testing monitors the degree of activity of microorganisms exposed to a material that is being tested for a biodegradable status. In the test, if the microorganisms recognize the material as a food source, then an increase in biological activity is observed through data collection specifically designed to assess the biological conversion of organic carbon to inorganic carbon. If the material is not a recognizable food source or is toxic or inhibitory, then there is no measurable increase in biological activity or, in some cases, there is a marked decrease in activity relative to a biodegradable control.

4.0 Project Preparation

Prior to test setup the appropriate number of 5 L Pyrex reactor bottles was washed and rinsed with tap water. The bottles were then rinsed three times with distilled water (DI H_2O) and allowed to dry.

The mineral salt stock solutions for the project was prepared in media bottles using the appropriate chemicals and DI H_2O. The chemicals were weighed out using an analytical balance, and the DI H_2O was measured out using several 1000 mL or 100 mL volumetric flasks. Individual solutions were made up as follows:

Solution 1: The following compounds were added to 1000 mL of DI H_2O:
- 8.50 g of KH_2PO_4
- 21.75 g of K_2HPO_4
- 33.40 g of $Na_2HPO_4 \bullet 2\ H_2O$
- 0.50 g of NH_4Cl

The pH of the solution was then adjusted to 7.4.

Solution 2: 36.40 g of $CaCl_2 \bullet 2\ H_2O$ was added to 1000 mL of DI H_2O.

Solution 3: 22.50 g of $MgSO_4 \bullet 7\ H_2O$ was added to 1000 mL of DI H_2O.

Solution 4: The following compounds were added to 1000 mL of DI H_2O:
- 0.25 g of $FeCl_3 \bullet 6\ H_2O$
- 1 drop of concentrated HCl

All mineral salt stock solutions were kept in cold storage at 4°C chiller until used. A record of all chemical lot numbers and expiration dates are maintained in the laboratory Quality Standards Log.

5.0 Inoculum Collection and Conditioning

The Inoculum was collected from the Escawtapa, Mississippi POTW on October 03, 2014. This inoculum was immediately taken to the lab, homogenized, then placed into a 6 L Erlenmeyer flask. A Teflon stir bar was then added to the flask. The inoculum was placed on a magnetic stir plate. A CO_2-free aeration system, which uses a CO_2 scrubber system consisting of KOH, was used to purge the inoculum. The inoculum continued stirring and aerating, uninterrupted, throughout the 5 day conditioning period.

6.0 Procedure

On October 07, 2014, a mineral stock solution was made up, as follows, according to OECD method 301B specifications:

DI water:	59,220 mL
Solution 1:	600 mL
Solution 2:	60 mL
Solution 3:	60 mL
Solution 4:	60 mL
For a total of:	60 L

Then, 2400 mL of the homogenized mineral stock solution was added to each 5 L reactor bottle. A Teflon stir bar was added to each reactor, which was then placed on a stir plate and connected to a CO_2 scrubber system consisting of series of soda lime and 10N NaOH scrubbers. Air flow to the system was confirmed using a Restek ProFlow 6000 Flowmeter to ensure air flows were within the 30–100 mL/min range that is stated within the method. The remaining nutrient solution was connected to a CO_2 scrubber overnight.

A Total Suspended Solids test was performed on the inoculum using a Hach Lange DR5000. The test was performed on a 1:10 dilution of inoculum to DI H_20 in triplicate. The average TSS was calculated to be 2,199mg/L.

The 301B method requires 30 mg of TSS to be added per liter of nutrient solution for a total of 3 L of nutrient biomass solution. Therefore 41 mL of inoculum was added to each reactor bottle already containing the mineral medium.

The nutrient - inoculum solution (2400 mL nutrient solution + 41 mL Inoculum) remained in the 5 L reactor bottles on a stir plate and hooked to the CO_2 scrubber system for 24 hrs.

On October 07, 2014 RespirTek, Inc. prepared stock solutions for the reference and test material, and performed an analysis of the test and reference materials to obtain Total Organic Carbon (TOC) values.

The TOC concentration values obtained during the preparation of the test and reference material concentrated stock solutions are tabulated below:

Sample ID	TOC
BioNeat NTS™ BIO-TC1	253.1 mg/L
Sodium Benzoate (PC)	328 mg/L

Using the concentrated stock solution TOC values, appropriate test chemicals, and positive control additions were made to obtain a final reactor TOC value of 10 mg/L for both the PC and TC.

The total amount of product to be added to the nutrient inoculum solution was added to enough mineral stock solution (the remaining solution that scrubbed overnight) to obtain a final total reactor composition of 3 L.

- **BioNeat NTS™ (BIO-TC1):** 118 mL BIO-TC1 test material stock solution + 2400 mL CO_2 Free Mineral Stock Solution+ 41 mL biomass + 441 mL DI water.
- **Sodium Benzoate (PC):** 91 mL Sodium Benzoate PC Stock Solution + 2400 mL CO_2 Free Mineral Stock Solution + 41 mL biomass + 468 DI water.
- **Blank (B)**: 2400 mL CO_2 Free Mineral Stock Solution + 41 mL biomass + 559 mL DI water only.

All reactors were delivered CO_2-free air by passing compressed air through several soda lime and 10N NaOH scrubbers. The reactors were then continually stirred, kept in diffuse light and allowed to vent into a three-series 0.05N NaOH scrubber solution. Each scrubber solution was analyzed for TIC (Total Inorganic Carbon) concentrations periodically throughout the extent of the test to determine concentrations of CO_2 produced by each reactor. Scrubber solutions were periodically refreshed to ensure adequate absorption of CO_2 was maintained. TIC analyses were performed on a Shimadzu TOC-V CSH instrument, which was calibrated prior to test initiation and periodically throughout the duration of the

test. Test reactors were setup in duplicate for statistical validation of results, and a total of 9 sampling events was executed.

7.0 Results and Conclusions

Based on the testing conducted in accordance with the specified method above, test product, BioNeat NTS™ achieved 61.7% biodegradation. The product met method requirements for *Ultimate Biodegradability* classification.

8.0 Records

Original raw data are archived at RespirTek, Inc. A copy of the final report and any report amendments are archived at RespirTek, Inc. The original final report, and any protocol amendments or deviations, is forwarded to the client.

All used and unused test substance shall be disposed of by RespirTek 6 months following test termination.

9.0 Confidentiality

Per corporate policy, confidentially shall be maintained in general, and in specific accordance with any relevant agreement specifically executed between RespirTek and the Client.

Project Number: BIO-2413
Final Report Date: November 19, 2014
Project Initiation Date: October 07, 2014
Test Method: OECD 301B CO_2 Evolution Test

Test Chemical	Biodegradation (%)	Classification
BioNeat NTS™	61.7	Ultimate

Prepared for Bio-Neat, Inc.

Prepared by RespirTek, Inc.
12450 Shortcut Road
Building F
Biloxi, MS 39532

The enclosed data relates only to those samples received by the laboratory.

BIO-2413 Data and Calculations

Test Compound BioNeat NTS™: TC1
Positive Control Sodium Benzoate: PC

	Analytical
Positive TOC	10.00
TC 1-1 TOC	10.00
TC 1-2 TOC	10.00
Positive ThCO2	110.00
TC 1-1 ThCO2	110.00
TC 1-2 ThCO2	110.00

Day 0 is a reference point for graphical illustrations only. No samples were collected on Day 0.

TIC (mg/L)

	Day 0	Day 2	Day 5	Day 8	Day 12	Day 15	Day 19	Day 23	Day 26	Day 28
Blank-1	0.0	12.5	17.1	16.6	21.8	15.3	20.6	20.3	18.5	28.1
Blank-2	0.0	13.6	15.4	17.9	21.4	15.1	20.7	22.6	19.9	21.8
PC-1	0.0	36.5	47.5	35.6	36.7	21.1	24.6	26.0	26.6	25.1
PC-2	0.0	40.8	47.2	36.9	39.4	18.9	27.4	25.5	25.3	26.2
TC1-1	0.0	19.7	35.9	37.6	44.6	32.1	32.1	25.5	19.0	23.1
TC1-2	0.0	18.0	38.1	39.6	36.2	24.3	29.5	22.8	18.7	19.6

Total CO2 (mg)

	Day 0	Day 2	Day 5	Day 8	Day 12	Day 15	Day 19	Day 23	Day 26	Day 28
Blank-1	N/A	9.1	12.5	12.1	16.0	11.3	15.1	14.9	13.6	20.6
Blank-2	N/A	10.0	11.3	13.2	15.7	11.1	15.2	16.6	14.6	16.0
PC-1	N/A	26.8	34.9	26.1	26.9	15.5	18.1	19.1	19.5	18.5
PC-2	N/A	29.9	34.6	27.1	28.9	13.9	20.1	18.7	18.5	19.2
TC1-1	N/A	14.4	26.4	27.6	32.7	23.6	23.6	18.7	13.9	16.9
TC1-2	N/A	13.2	27.9	29.0	26.6	17.9	21.7	16.8	13.7	14.4

Cumulative CO2 (mg)***

	Day 0	Day 2	Day 5	Day 8	Day 12	Day 15	Day 19	Day 23	Day 26	Day 28
Blank-1	N/A	9.1	21.7	33.8	49.8	61.1	76.2	91.1	104.7	125.3
Blank-2	N/A	10.0	21.3	34.5	50.2	61.3	76.5	93.1	107.7	123.7
PC-1	N/A	26.8	61.6	87.7	114.6	130.1	148.2	167.3	186.8	205.2
PC-2	N/A	29.9	64.5	91.6	120.5	134.4	154.5	173.3	191.8	211.0
TC1-1	N/A	14.4	40.8	68.4	101.1	124.7	148.3	167.0	180.9	197.9
TC1-2	N/A	13.2	41.1	70.2	96.8	114.6	136.3	153.0	166.7	181.1

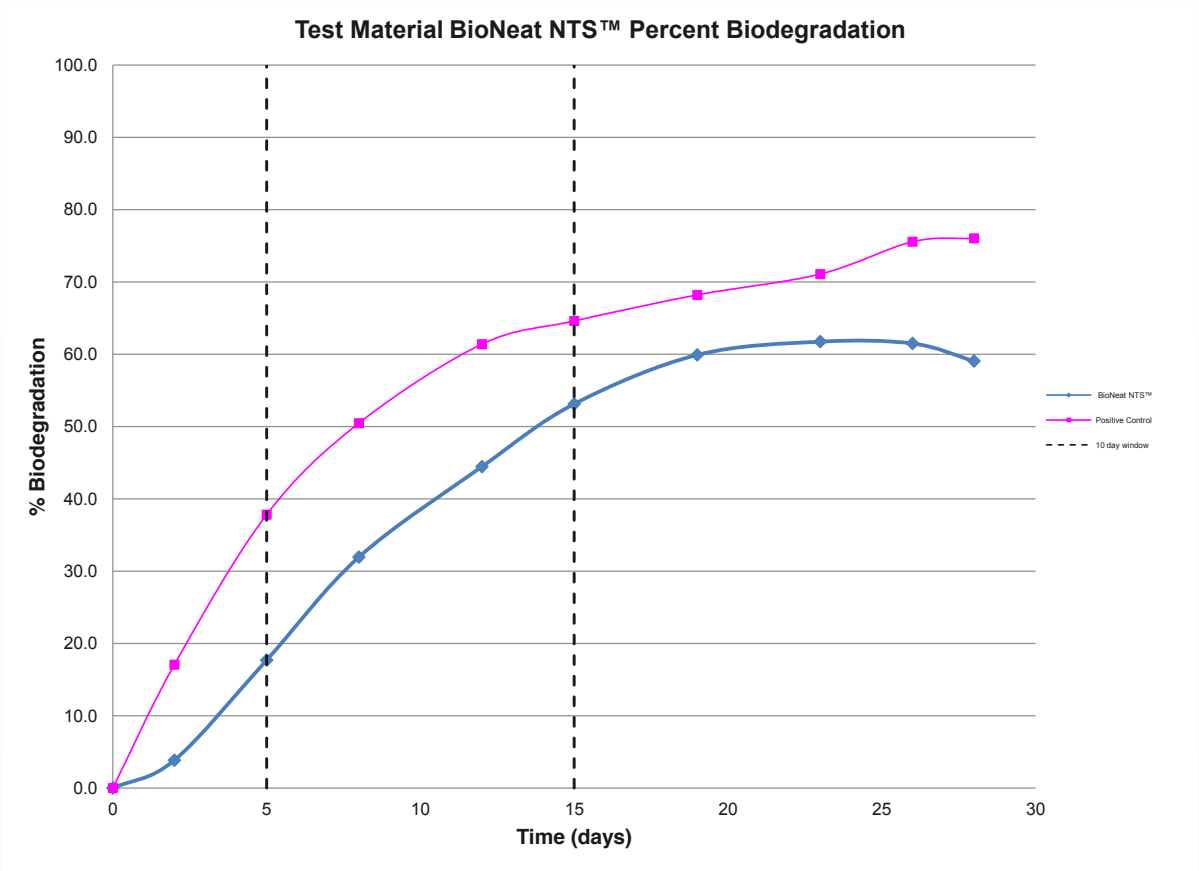
Percent Biodegradation (%)

	Day 0	Day 2	Day 5	Day 8	Day 12	Day 15	Day 19	Day 23	Day 26	Day 28
PC-1	N/A	15.6	36.5	48.7	58.7	62.7	65.3	68.4	73.3	73.4
PC-2	N/A	18.5	39.1	52.2	64.0	66.5	71.1	73.8	77.8	78.7
TC1-1	N/A	4.4	17.5	31.1	46.4	57.7	65.4	68.1	67.9	66.7
TC1-2	N/A	3.3	17.9	32.8	42.5	48.6	54.5	55.4	55.0	51.4
PC Average	**0.00**	**17.1**	**37.8**	**50.5**	**61.4**	**64.6**	**68.2**	**71.1**	**75.6**	**76.0**
TC1 Average	**0.00**	**3.8**	**17.7**	**31.9**	**44.5**	**53.1**	**59.9**	**61.7**	**61.5**	**59.1**

Standard Deviation

	Day 0	Day 2	Day 5	Day 8	Day 12	Day 15	Day 19	Day 23	Day 26	Day 28
PC	N/A	3.0	0.2	0.9	1.9	1.6	2.0	0.3	0.9	0.7
TC1	N/A	1.2	1.5	1.4	5.9	5.5	1.8	1.9	0.2	2.5
Blank	N/A	0.8	1.1	1.0	0.3	0.2	0.1	1.7	1.0	4.4

Sample Days	**0**	**2**	**5**	**8**	**12**	**15**	**19**	**23**	**26**	**28**


Test Material BioNeat NTS™ Percent Biodegradation
% Biodegradation
100.0
90.0
80.0
70.0
60.0
50.0
40.0
30.0
20.0
10.0
0.0
0
5
10
15
20
25
30
Time (days)
BioNeat NTS™
Positive Control
10 day window

PERRY JOHNSON LABORATORY ACCREDITATION, INC.

Certificate of Accreditation

Perry Johnson Laboratory Accreditation, Inc. has assessed the Laboratory of:

RespirTek, Inc.
12450 Shortcut Road, Building F, Biloxi, MS 39532

(Hereinafter called the Organization) and hereby declares that Organization is accredited in accordance with the recognized International Standard:

ISO/IEC 17025:2005

This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system
(as outlined by the joint ISO-ILAC-IAF Communiqué dated January 2009):

Biological and Chemical Testing
(As detailed in the supplement)

Accreditation claims for such testing and/or calibration services shall only be made from addresses referenced within this certificate. This Accreditation is granted subject to the system rules governing the Accreditation referred to above, and the Organization hereby covenants with the Accreditation body's duty to observe and comply with the said rules.

For PJLA:

Tracy Szerszen
President/Operations Manager

Perry Johnson Laboratory Accreditation, Inc. (PJLA)
755 W. Big Beaver, Suite 1325
Troy, Michigan 48084

Initial Accreditation Date:	*Issue Date:*	*Expiration Date:*
September 16, 2011	March 4, 2014	March 4, 2016

Accreditation No.:	*Certificate No.:*
69085	L14-71

The validity of this certificate is maintained through ongoing assessments based on a continuous accreditation cycle. The validity of this certificate should be confirmed through the PJLA website: www.pjlabs.com

Certificate of Accreditation: Supplement

Respirtek, Inc.
12450 Shortcut Road, Building F, Biloxi, MS 39532
Jude Martin Phone: 228-392-7977

Accreditation is granted to the facility to perform the following testing:

FIELD OF TEST	ITEMS, MATERIALS OR PRODUCTS TESTED	SPECIFIC TESTS OR PROPERTIES MEASURED	SPECIFICATION, STANDARD METHOD OR TECHNIQUE USED	RANGE (WHERE APPROPRIATE) AND DETECTION LIMIT
Environmental Biological	Plastic Material	Aerobic Biodegradation	ISO 14855	% Biodegradation
			ASTM D5338	
			ISO 14852	
		Oxobiodegradation & Biodegradation	ASTM D6954	
		Compostability	ASTM D6400	
		Anaerobic Biodegradability	ISO 15985	
	Chemical	Aquatic Aerobic Biodegradation	OECD 301A	
			OECD 301B	
			OECD 301C	
			OECD 301D	
			OECD 301E	
	Water/Soil Samples	Treatability/Toxicity Testing HPC	Internally developed protocols-microcosm studies SM 9215B	
Biological	Chemical Compounds	Aquatic Aerobic Biodegradation	OECD 301F	
			ASTM D5210	CO_2 Gas DL 1% CH_4 Gas DL 0.10 %
			OECD 311 OECD 302B	
			ASTM D5511	
			ASTM D5864	
			ASTM D5271	
			ASTM E1720	
			ASTM D5988	
	Aqueous Sample	TOC	SM5310B	
			ISO 14593	
			ISO 9439	
			ISO 15985	
Chemical	Water Samples	Biological Oxygen Demand	Standard Methods 5210 D	IDL 1 mg/L
	Water Samples	Total Organic/Inorganic Carbon	Standard Methods 5310 C	MDL 0.5 mg/L
	Gas Samples	Carbon Dioxide Instruments	Gas Chromatography	IDL 1%
		Methane Instruments	Gas Chromatography	IDL 1 %