MINNESOTA POLLUTION CONTROL AGENCY

Air Individual Permit
Major Amendment
07500003-101

Permittee: **Northshore Mining - Silver Bay**

Facility name: **Northshore Mining - Silver Bay**
10 Outer Drive
Silver Bay, MN 55614
Lake County

Operating permit issuance date: February 24, 2004

Expiration date: February 24, 2009
* All Title I Conditions do not expire

Major Amendment: January 6, 2020

Permit characteristics: Federal; Part 70/ Major for NSR

*The Permittee may continue to operate this facility after the expiration date of the permit, per the provision under Minn. R. 7007.0450, subp. 3. (Title V Reissuance Application was received August 28, 2008)

The emission units, control equipment and emission stacks at the stationary source authorized in this amendment are as described in the Permit Applications Table.

This permit amends Air Emission Permit No. 07500003- 010 and authorizes the Permittee to operate the stationary source at the address listed above unless otherwise noted in the permit. This permit amendment consists of replacement pages for Air emission Permit No. 07500003-010. Use the amended page 2 to replace the existing "Permit Applications Table;" use page 8 to replace the page preceding the existing page A-1; use the amended pages A-2 and A-3 to replace the existing pages A-2 and A-3; use pages A-7a, A-7b, and A-7c to replace existing page A-7; use the amended page B-1 to replace the existing page B-1; and use the amended Appendix B pages 2 and 3 to replace the existing Appendix B pages 2 and 3 in Air Emission Permit No. 07500003-010. Do not discard the existing pages. All unchanged conditions in Air Emission Permit No. 07500003-010 remain in effect. The Permittee must comply with all the conditions of the permit. Any changes or modifications to the stationary source must be performed in compliance with Minn. R. 7007.1150 to 7007.1500. Terms used in the permit are as defined in the state air pollution control rules unless the term is explicitly defined in the permit.

Unless otherwise indicated, all the Minnesota rules cited as the origin of the permit terms are incorporated into the SIP under 40 CFR § 52.1220 and as such are enforceable by U.S. Environmental Protection Agency (EPA) Administrator or citizens under the Clean Air Act.

Signature: Toni Volkmeier

This document has been electronically signed.

for Carolina Espejel-Schutt, P.E., Acting Manager
Air Quality Permits Section
Industrial Division

for the Minnesota Pollution Control Agency

Permit Applications Table

Permit Type	Application Date	Permit Action
Total Facility Operating Permit	January 17, 1995	001
Major Amendment (Primary) Administrative Amendment	May 17, 2004 April 8, 2004	002
Major Amendment	October 25, 2004	003
Major Amendment	January 24, 2006	004
Major Amendment	Not Issued	005
Major Amendment	Not Issued	006
Major Amendment (Primary) Major Amendment Major Amendment Major Amendment Major Amendment Administrative Amendment Administrative Amendment	July 10, 2009 August 17, 2009 May 12, 2009 February 26, 2009 January 30, 2009 August 29, 2006 January 23, 2007	007
Major Amendment (Primary) Administrative Amendment Administrative Amendment Administrative Amendment	May 1, 2013 August 22, 2011 September 2, 2010 June 12, 2009	008
Moderate Amendment	August 4, 2014	009
Major Amendment	May 21, 2013	010
Major Amendment	June 10, 2013	101

permitting and required modeling to demonstrate compliance with National Ambient Air Quality Standards (NAAQS) as well as implementation of Best Available Control Technology (BACT) on the affected equipment.

The February 18, 2014 and July 9, 2014, administrative amendments requested extensions of 120 days for the PM and PM_{10} performance testing required for two furnaces (on a rotating basis, one from Furnaces 11and 12 and the other from Furnaces 5 and 6) in GP 014, with sampling performed for at least two stacks for Furnace 11or 12, and for at least one stack for Furnace 5 or 6. The test was originally required to be performed by August 28, 2014 and every three years thereafter. For recurring performance tests, extensions do not change the due date for future performance tests. Therefore, the next performance test for Furnace 5 or 6 and Furnace 11or 12 is due by August 28, 2017. There are no emissions increases associated with these amendments.

Permit Action 010:

This permit action authorized the construction of four new conveyors (EUs 643-646) and the addition of three new fugitive sources, a conveyor transfer to a pile (FS013f) and front end loader activity (FS016h and FS016i). These units emit particulate matter emissions (PM_{10}/$PM_{2.5}$) which are controlled by building enclosures and/or water sprays. The new emission units and fugitive sources are subject to the New Source Performance Standards (NSPS) for Metallic Mineral Processing Plants (40 CFR pt. 60, subp. LL).

Permit Action 101:

This permit action is for a Major Amendment. In 2008, and again in 2013, the Permittee submitted applications to amend its permit to remove the “control city standard” and related Minnesota Fiber air monitoring. The air permit currently contains state-only requirements to control concentrations of ‘Minnesota Fibers’, which are defined as “any amphibole or chrysotile mineral with 3:1 or greater aspect ratio (length:width),” in the ambient air near the processing plant and tailings basin. This limit is known as the “control city standard” because it requires concentrations of Minnesota Fibers in the ambient air to be at or lower than those found in the ambient air of a “control city,” which has been St. Paul, Minnesota. In this amendment, the MPCA agrees to remove the control city standard. However, the MPCA is also proposing to replace the control city standard with a state-only ambient fiber “Action Level.” If the concentration of fibers in the nearby communities of Silver Bay and Beaver Bay increase to levels greater than or equal to the Action Level, the amendment requires actions taken by the facility to attempt to prevent and control the release of Minnesota Fibers until the ambient concentrations are below the Action Level. In addition to setting the Action Level, this permit amendment describes additional fiber related permit requirements that are intended to ensure that the facility is well controlled with respect to Minnesota Fiber emissions. The Action Level intentionally does not include the language of a health-based ‘standard’, as this would imply that the value was based upon health risk information. The Action Level is not based upon a human health risk value, as one does not exist, and should not be interpreted as such.

This permit amendment does not authorize any construction of any new emissions sources.

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The plume dispersion characteristics due to the revisions of the information must be equivalent to or better than the dispersion characteristics modeled in the most recent air quality impacts analysis. The Permittee shall demonstrate this equivalency in the proposal. If the information does not demonstrate equivalent or better dispersion characteristics, or if a conclusion cannot readily be made about the dispersion, the Permittee must submit full remodeling. For changes that do not require a permit amendment or require a minor permit amendment, the proposal must be submitted as soon as practicable, but no less than 60 days before beginning actual construction on the stack or associated emission unit. For changes that require a permit amendment other than a minor amendment, the proposal must be submitted with the permit application.	Title I Condition: 40 CFR Section 52.21(k); Minn. R. 7007.3000; Minn. Stat. Section 116.07, subds. 4a & 9; Minn. R. 7007.0100, subp. 7(A), 7(L), & 7(M); Minn. R. 7007.0800, subps. 1, 2 & 4; Minn. R. 7009.0010-7009.0080
For any future re-modeling (or new modeling) subject to 40 CFR Section 52.21 (Prevention of Significant Deterioration, PSD) or Minn. R. ch. 7009 (Minnesota Ambient Air Quality Standards), the Permittee shall follow all applicable rules or regulations.	Title I Condition: 40 CFR Section 52.21(k); Minn. R. 7007.3000; Minn. Stat. Section 116.07, subds. 4a & 9; Minn. R. 7009.0020; Minn. R. 7011.0150; Minn. R. 7007.0100; Minn. R. 7007.0800, subps. 2 & 4
Comply with Subpart RRRRR - National Emission Standards for Hazardous Air Pollutants: Taconite Iron Ore Processing: a. For an existing affected source, comply with each emission limitation, work practice standard, and operation and maintenance requirement that applies to the source no later than October 30, 2006; b. For a new affected source with an initial startup date on or before October 30, 2003, comply with each emission limitation, work practice standard, and O&M requirement that applies to the source by October 30, 2003; c. For a new affected source with an initial startup date after October 30, 2003, comply with each emission limitation, work practice standard, and O&M requirement that applies to the source upon initial startup. Also comply with applicable requirements of 40 CFR 63, General Provisions.	40 CFR 63.9580 to 63.9652; Tables to Subpart RRRRR of 40 CFR 63; 40 CFR 63, subp. A; Minn. R. 7011.7000
Comply with Subpart DDDDD - National Emission Standards for Hazardous Air Pollutants: Industrial, Commercial, and Institutional Boilers and Process Heaters: a. Submit an Initial Notification not later than May 31, 2013 or within 120 calendar days after a boiler or process heater becomes subject to Subpart DDDDD, whichever is later. b. For an existing affected source, comply with applicable requirements no later than, January 31, 2016; c. For a new affected source with an initial startup date on or before January 31, 2016, comply with applicable requirements by January 31, 2016; d. For a new affected source with an initial startup date after January 31, 2016, comply with requirements upon initial startup. Also comply with applicable requirements of 40 CFR 63, General Provisions.	40 CFR 63.7480 to 63.7585; Tables to Subpart DDDDD of 40 CFR 63; 40 CFR 63, subp. A; Minn. R. 7011.7000

TABLE A: LIMITS AND OTHER REQUIREMENTS

Facility Name: Northshore Mining – Silver Bay

Permit Number: 07500003-101 (Amends Permit No 07500003-010)

Daily Visible Emission Checklists for the O&M Plan: All stacks equipped with dry control equipment must appear individually in at least one of the Daily Visible Emission Checklists. Observations and observation dates, weather condition codes, whether and what corrective action(s) had been taken, and observer's ID must be included in the checklists. Appendix C provides explanations for the checklists and an example checklist. Note that fabric filters (baghouses) that are equipped with MPCA-approved broken bag detectors are not subject to daily visible emission inspection.	Minn. R. 7007.0800, subps. 4(D), 14, & 16(J)
Check visible emissions from GP 003 through GP 013, SV 005, SV 043, and SV 097 once daily when in operation during daylight hours. Use the daily visible emission checklists in the O&M Plan (see Appendix C for detail) as a means to indicate when appropriate corrective actions in the O&M Plan should be taken.	Minn. R. 7007.0800, subps. 4(D), 14, & 16(J)
Daily Visible Emission Checklists for the Fugitive Control Plan at the Silver Bay Facility: FS 001 through FS 017 and FS 019 must appear individually in at least one of the Daily Visible Emission Checklists. Observations and observation dates, weather condition codes, whether and what corrective action(s) had been taken, and observer's ID must be included in the checklists. Appendix C provides explanations for the checklists.	Minn. R. 7007.0800, subps. 4(D), 14, & 16(J)
Observe fugitive dust sources FS 001 through FS 017 and FS 019 once daily during daylight hours. Use the daily visible emission checklist(s) in the fugitive dust control plan (see Appendix C for detail) as a means to indicate when appropriate corrective actions in the fugitive control plan are taken.	Minn. R. 7007.0800, subps. 4(D), 14, & 16(J)
Visible Emissions Training: The Permittee shall (1) ensure that one plant employee obtains an initial EPA Method 9 certification and be recertified every three years or (2) employ a similarly certified contractor. This person will train other plant employees to perform the daily visible emission check as detailed in the O&M Plan and Fugitive Control Plan.	Minn. R. 7007.0800, subps. 4(D), 14, & 16(J)
Ambient Air Quality Monitoring: The Permittee shall continue to operate TSP and PM-10 ambient air quality monitors at the existing sites, in accordance with the MPCA approved ambient monitoring plans and MPCA Exhibit M.	Minn. R. 7007.0800, subps. 4(D) & 16(J)
DETERMINING IF A PROJECT/MODIFICATION IS SUBJECT TO NSR	hdr
Reasonable Possibility - Pellet Handling Modification. The Pellet Handling Modification triggers the monitoring, recordkeeping and reporting requirements as defined in 40 CFR Section 52.21(r)(6) and detailed below. This requirement effects EUs 007-010, 012-19, 021-031, 036-042, 044-053, 097, 100, 104, 110, 114, 120-125, 262, 265, 634-636, and 643-646, and FSs: 010a, 011a-b, 012a, 013a-f, 014, 015, 016a-l, and 017. The following language may also apply to other changes at the facility where there may be a reasonable possibility that a significant emissions increase may occur.	Title I Condition: 40 CFR Section 52.21(r)(6); Minn. R. 7007.3000; Minn. R. 7007.0800, subp. 2
These requirements apply if a reasonable possibility (RP) as defined in 40 CFR Section 52.21(r)(6)(vi) exists that a proposed project, analyzed using the actual-to-projected-actual (ATPA) test (either by itself or as part of the hybrid test at Section 52.21(a)(2)(iv)(f)) and found to not be part of a major modification, may result in a significant emissions increase (SEI). If the ATPA test is not used for the project, or if there is no RP that the proposed project could result in a SEI, these requirements do not apply to that project. The Permittee is only subject to the Preconstruction Documentation requirement for a project where a RP occurs only within the meaning of Section 52.21(r)(6)(vi)(b). Even though a particular modification is not subject to New Source Review (NSR), or where there isn't a RP that a proposed project could result in a SEI, a permit amendment, recordkeeping, or notification may still be required by Minn. R. 7007.1150 - 7007.1500.	Title I Condition: 40 CFR Section 52.21(r)(6); Minn. R. 7007.3000; Minn. R. 7007.0800, subp. 2

TABLE A: LIMITS AND OTHER REQUIREMENTS

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Extension Requests: The Permittee may apply for an Administrative Amendment to extend a deadline in a permit by no more than 120 days, provided the proposed deadline extension meets the requirements of Minn. R. 7007.1400, subp. 1(H). Performance testing deadlines from the General Provisions of 40 CFR pt. 60 and pt. 63 are examples of deadlines for which the MPCA does not have authority to grant extensions and therefore do not meet the requirements of Minn. R. 7007.1400, subp. 1(H).	Minn. R. 7007.1400, subp. 1(H)
Emission Inventory Report: due on or before April 1 of each calendar year following permit issuance, to be submitted on a form approved by the Commissioner.	Minn. R. 7019.3000 – 7019.3100
Emission Fees: due 30 days after receipt of an MPCA bill.	Minn. R. 7002.0005 – 7002.0095
DEFINITION OF MINNESOTA FIBERS	
Minnesota fibers ("fibers") for the purpose of this permit are any amphibole or chrysotile mineral fiber with a 3:1 or greater aspect ratio.	Minn. Stat. § 116.07, subd. 4a(a); This is a state only requirement and is not enforceable by the EPA Administrator or citizens under the Clean Air Act.
OPERATIONS AND MAINTENANCE PLAN REQUREMENTS	
Within 75 days of permit issuance, the Permittee shall update the facility's Operations and Maintenance (O&M) Plan to include identification of sources of potential fibers emissions. This shall include, at a minimum, recognition that fibers may be generated from fine crusher and concentrator sources. The O&M plan shall include written descriptions and maps of these and any potential stationary sources of fibers. Any potential sources of fiber emissions that may be added to the facility shall be reflected in an update to the O&M plan. If additional point source control measures are taken at the facility in the future to control fibers, these control measures shall be added to the Operation and Maintenance Plan.	Minn. Stat. § 116.07, subd. 4a(a); This is a state only requirement and is not enforceable by the EPA Administrator or citizens under the Clean Air Act.
FUGITIVE DUST CONTROL PLAN REQUREMENTS	
Within 75 days of permit issuance, the Permittee shall update the facility's Fugitive Dust Control Plan to include identification of fugitive sources of potential fiber emissions. This shall include at a minimum written recognition that fugitive fiber emissions may be generated from the following sources: Coarse tails handling and Mile Post 7 tailings basin. The Fugitive Dust Control Plan shall include written descriptions and maps of these and any potential fugitive sources of fibers. Any potential sources of fugitive fiber emissions that may be added to the facility shall be reflected in an update to the fugitive emission control plan. If additional fugitive dust control measures are taken at the facility in the future to attempt to control fibers, these control measures shall be added to the Fugitive Emissions Control Plan.	Minn. Stat. § 116.07, subd. 4a(a); This is a state only requirement and is not enforceable by the EPA Administrator or citizens under the Clean Air Act.
AMBIENT FIBER MONITORING REQUIREMENTS	
The Permittee shall operate and maintain ambient fiber monitors for the purpose of measuring ambient fiber concentrations at the Beaver Bay (F1) and Silver Bay (F7) monitoring sites. Within 75 days of the issuance of this permit, the Permittee shall develop and submit an Ambient Fiber Monitoring Plan to the MPCA. The Ambient Fiber Monitoring Plan shall include, at a minimum, a description of the monitor equipment, operating, maintenance, and data collection protocols. This shall include documenting all Quality Assurance/Quality Control procedures and standard operating procedures associated with ambient fiber monitoring activities. The Permittee shall operate the fiber monitors and conduct fiber monitoring in accordance with the Ambient Fiber Monitoring Plan. The Permittee must maintain a current monitoring plan on site and made available to the MPCA upon request.	Minn. Stat. § 116.07, subd. 4a(a); Minn. R. 7007.0800, subps. 4, 5 & 16(J); This is a state only requirement and is not enforceable by the EPA Administrator or citizens under the Clean Air Act.

TABLE A: LIMITS AND OTHER REQUIREMENTS

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The Permittee shall collect at least one 96-hour sample every 12-calendar days at each monitoring site. The sample collection dates shall correspond with the EPA Sampling Schedule Calendar. The Permittee shall submit the monitor filters to a laboratory for analysis within 45 calendar days of sample collection. The Permittee must use a lab that is approved by the MPCA. Fiber sample analysis shall use Minnesota *Department of Health T.E.M. Analysis for Mineral Fibers in Air – Method 852*. Any proposed alternatives to this method must be approved by the MPCA. The Permittee can use either the standard 'short count' procedure in which 20 fibers are counted or 10 grid squares are surveyed, or the 'long count' procedure, in which 40 fibers are counted or 20 grid squares are surveyed.	Minn. Stat. § 116.07, subd. 4a(a); Minn. R. 7007.0800, subps. 4, 5 & 16(J). This is a state only requirement and is not enforceable by the EPA Administrator or citizens under the Clean Air Act.
The Permittee must recover at least 75 percent of all data each quarter. If the Permittee collects less than 75 percent of all data each quarter, the Permittee shall notify the MPCA in its semi-annual fiber report. The use of less than complete data is subject to the approval of the MPCA.	Minn. Stat. § 116.07, subd. 4a(a); Minn. R. 7007.0800, subp. 4; This is a state only requirement and is not enforceable by the EPA Administrator or citizens under the Clean Air Act.
CALCULATION OF THE GEOMEAN	
The Permittee shall calculate and record the value of the 365-day rolling geometric mean value (Geomean) of ambient fiber concentrations for each monitor location. The Permittee shall calculate the Geomean using the following equation: $$G = \sqrt[n]{x_1 x_2 \cdots x_n}$$ Where : *G* =365-day rolling geometric mean value (Geomean) in fibers/m^3 x_i = individual Minnesota Fiber concentrations from sample results collected during the previous 365 days *n* = number of individual samples, x_i The final calculated value shall be rounded to the nearest whole number. Results for all intermediate calculations shall not be rounded. For samples that are below the detection level of the analytical method (i.e. censored data), the sensitivity level associated with that sample shall be substituted for the value of the censored data.	Minn. Stat. § 116.07, subd. 4a(a); Minn. R. 7007.0800, subp. 5; This is a state only requirement and is not enforceable by the EPA Administrator or citizens under the Clean Air Act.
The Permittee may reanalyze any monitoring sample. The results from the first analysis shall apply toward the calculation of the Geomean until the results of the reanalysis have been completed and returned. The permittee shall apply the lowest result of the two sample results in the recalculation of the Geomean. Requirements of the "Action Level for Fibers" section of this permit apply any time the Geomean is greater than the Action Level, even if the Permittee is awaiting reanalysis of a sample.	Minn. Stat. § 116.07, subd. 4a(a); Minn. R. 7007.0800, subps. 4, 5 & 16(J); This is a state only requirement and is not enforceable by the EPA Administrator or citizens under the Clean Air Act.
ACTION LEVEL FOR FIBERS	
The Action Level for fibers is set at a concentration of 4,000 fibers per cubic meter in air. The Action Level applies to each of the ambient fiber monitoring sites, F1 and F7.	Minn. Stat. § 116.07, subd. 4a(a); This is a state only requirement and is not enforceable by the EPA Administrator or citizens under the Clean Air Act.
If the Geomean is calculated to be greater than or equal to the Action Level, within 45 days of receipt of the monitoring result that resulted in the Geomean to increase above the Action Level, the Permittee shall: 1) Conduct an investigation into the potential causes that led to the increase in the Geomean to a value greater than or equal to the Action Level. The investigation shall: a. Identify any deviations from the Operations and Maintenance Plan and Fugitive Emissions Control Plan that may have caused or contributed to an increase in the Geomean to a level greater than or equal to the Action Level; b. Identify the likely source(s) of fibers that may have caused or contributed to an increase of fiber concentrations;	Minn. Stat. § 116.07, subd. 4a(a); This is a state only requirement and is not enforceable by the EPA Administrator or citizens under the Clean Air Act.

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c. Identify and describe any meteorological events or environmental conditions that may have caused or contributed to the increase in fiber concentrations d. Identify operations at the facility that may have caused or contributed to an increase in fiber concentrations e. Identify any changes to particulate and fugitive dust control measures that may have caused or contributed to triggering the Action Level. 2) Based on the results of the investigation, correct deviation(s) or implement additional control measures in an effort to reduce fibers concentrations and Geomean to below the Action Level. Additional control measures shall be selected based on their anticipated effect of reducing fiber emissions at the source(s) that may have caused or contributed to the increase in fiber concentrations. The Permittee may use particulate controls as a surrogate for fiber controls. 3) The Permittee shall develop and implement a Fiber Action Level Plan (FALP), which becomes an enforceable part of this permit. The FALP is a written plan that shall include: a. Documentation of the investigation per the requirements above; b. Justification for selection of the additional control measure(s); c. A list of the necessary steps and timeline to correct deviation(s) or implement the selected additional control measure(s). The timeline shall be the shortest reasonable period of time; d. The date that each of the necessary steps will occur and; e. The date the FALP is effective. For as long as the Geomean remains greater than the Action Level, the Permittee shall continue to investigate, select, implement additional controls, and update the FALP. The FALP terminates once the Geomean remains below the Action Level for 60 consecutive days	
The Permittee must maintain the FALP at the facility and make it available to the MPCA upon request.	Minn. Stat. § 116.07, subd. 4a(a); Minn. R. 7007.0800, subp. 5; This is a state only requirement and is not enforceable by the EPA Administrator or citizens under the Clean Air Act.
RECORDKEEPING:	
The Permittee shall maintain all versions of the FALP onsite for five years.	Minn. Stat. § 116.07, subd. 4a(a); Minn. R. 7007.0800, subp. 5; This is a state only requirement and is not enforceable by the EPA Administrator or citizens under the Clean Air Act
REPORTING/SUBMITTALS	
The Permittee shall submit semiannual fiber reports to the MPCA AQ Compliance Tracking Coordinator. Each report is due 30 days after the end of each calendar half-year following Permit Issuance. The semiannual fiber report shall contain the following: a. The Ambient Fiber Monitoring Plan, if it has been modified since the last reporting period, or a statement indicating that the plan has not been modified since the last reporting period; b. A statement whether the Geomean had increased to levels greater than or equal to the Action Level during the reporting period. If the Geomean is greater than or equal to the Action Level for more than 180 consecutive days after receiving the monitoring result that resulted in the Geomean to increase above the Action Level, the Permittee shall submit the FALP to the MPCA AQ Compliance Tracking Coordinator. The FALP shall be submitted within 30 days after the end of each calendar quarter, until the Geomean decreases below the Action Level or the MPCA approves less frequent submittals. If the MPCA finds the FALP inadequate in reducing ambient fiber concentrations, it reserves its authorities to require the Permittee to revise the FALP and take additional actions to reduce fiber concentrations.	Minn. Stat. § 116.07, subd. 4a(a); Minn. R. 7007.0800, subps. 6 & 16(L). This is a state only requirement and is not enforceable by the EPA Administrator or citizens under the Clean Air Act

TABLE B: SUBMITTALS

Facility Name: Northshore Mining – Silver Bay

Permit Number: 07500003-101 (Amends Permit No 07500003-010)

Where to send submittals

Send submittals that are required to be submitted to the U.S. EPA regional office to:

Chief Air Enforcement
Air and Radiation Branch
EPA Region V
77 West Jackson Boulevard
Chicago, Illinois 60604

Each submittal must be postmarked or received by the date specified in the applicable Table. Those submittals required by Minn. R. 7007.0100 to 7007.1850 must be certified by a responsible official, defined in Minn. R. 7007.0100, subp. 21. Other submittals shall be certified as appropriate if certification is required by an applicable rule or permit condition.

Send submittals that are required by the Acid Rain Program to:

U.S. Environmental Protection Agency
Clean Air Markets Division
1200 Pennsylvania Avenue NW (6204N)
Washington, D.C. 20460

Send any application for a permit or permit amendment to:

Fiscal Services – 6th Floor
Minnesota Pollution Control Agency
520 Lafayette Road North
St. Paul, Minnesota 55155-4194

Also, where required by an applicable rule or permit condition, send to the Permit Document Coordinator notices of:

a. Accumulated insignificant activities
b. Installation of control equipment
c. Replacement of an emissions unit, and
d. Changes that contravene a permit term

Unless another person is identified in the applicable Table, send all other submittals to:

AQ Compliance Tracking Coordinator
Industrial Division
Minnesota Pollution Control Agency
520 Lafayette Road North
St. Paul, Minnesota 55155-4194

Or

Email a signed and scanned PDF copy to:
submitstacktest.pca@state.mn.us
(for submittals related to stack testing)
AQRoutineReport.PCA@state.mn.us
(for other compliance submittals)
(See complete email instructions in "Routine Air Report Instructions Letter" at http://www.pca.state.mn.us/nwqh472.)

There shall be no more than a 400-foot wide exposed coarse tailings surface on the basin splitter dikes (including safety berms), and no more than a 200-foot wide exposed coarse tailings surface on railroad roadbeds not located on basin splitter dikes. The total exposed area of coarse tailings shall at no time exceed 300 acres. Estimates of the total exposed coarse tailings area shall be performed monthly, and reported to the MPCA upon request.

(5) Exposed Coarse Tailings - Vegetation and Treatment

The balance of the exposed coarse tailings area shall be vegetated or treated with dust suppressants of such concentration and applied with such frequency that, except for emissions caused by extreme meteorological conditions, the visible emissions from these areas shall be essentially zero. Field tests for selected dust suppressant chemicals to be used for various application situations have been conducted, and a Fugitive Emissions Control Plan provided to the MPCA for approval and the MPCA hereby approves the continued use of the chemicals and methods described in the Fugitive Emissions Control Plan. This plan must be resubmitted within 90 days of the issuance of this Permit, for MPCA review and approval.

Should future studies or information prove that Coherex, or any other dust suppressants approved by the MPCA, are environmentally unsound, the MPCA may require a change in the use of dust suppressants.

The Regulated Party shall continue implementation of the approved vegetation plan to provide sufficient vegetative cover which will become self-sustaining, will minimize the emission of dust and fibers and will minimize the erosion of basin structures. The vegetation plan shall continue to be included as part of the Milepost 7 Five Year Operations Plan, as conditionally approved by the MPCA on August 21, 1997, and any revisions thereto as approved by the MPCA and in compliance with the terms of NPDES/SDS Permit MN 0055301 and this Permit. In addition, the vegetation activities shall be recorded monthly, and reported to the MPCA upon request.

(6) Treatment Technology

The Regulated Party shall be required to apply the Best Available Technology (BAT) to maintain air quality and to comply with all applicable laws, rules, court orders, and decisions, specifically including Minn. R. 7009.0010 to 7009.0080 and other duly adopted rules and standards which now or in the future may be applied to the facility.

(7) Air Quality Limits

The air quality standards at or beyond the property line of the disposal system to which the Regulated Party shall adhere, consistent with the determination of the Minnesota Supreme Court, are, among others, as follows:

a. Compliance with Minn. R. 7009.0010 to 7009.0080, 7011.0700 to 7011.0735 and 7011.0150.

(8) Definitions

“Fugitive dust” means particulate emissions from open sources exposed to the air environment which enter the atmosphere due to the forces of wind, man's activity, or both.

“Coarse tailings” means a mixture of 65-75 percent dry cobs and 25-35 percent filtered tailings.

“Exposed coarse tailings" means coarse tailings surfaces that have not been treated by artificial means including but not limited to watering, chemical stabilization, mulching or vegetation, or natural methods (rainfall or snow cover).

TECHNICAL SUPPORT DOCUMENT
For
AIR EMISSION PERMIT NO. 07500003-101

This technical support document (TSD) is intended for all parties interested in the permit and to meet the requirements that have been set forth by the federal and state regulations (40 CFR § 70.7(a)(5) and Minn. R. 7007.0850, subp. 1). The purpose of this document is to provide the legal and factual justification for each applicable requirement or policy decision considered in the determination to issue the permit.

1. General Information

1.1. Applicant and Stationary Source Location

Table 1. Applicant and Source Address

Applicant/Address	Stationary Source/Address (SIC Code: 1011)
Owner: Cleveland-Cliffs, Inc 200 Public Square, Suite 300 Cleveland, OH 44114	Operator: Northshore Mining Company - Silver Bay 10 Outer Dr Silver Bay Lake County, Minnesota 55614
Contact: Jennifer Ramsdell Phone: 218-226-6231	Contact: Jennifer Ramsdell Phone: 218-226-6231

1.2 Facility Description

Cleveland-Cliffs, Inc. is the parent company of both Northshore Mining Company and Silver Bay Power Company. Northshore Mining Company operates a taconite processing plant at the Silver Bay facility. Silver Bay Power Company operates a power plant at the Silver Bay facility to provide electricity for the taconite processing operations and the grid. The three companies are the Permittee of this Title V permit for the Silver Bay facility. The Silver Bay facility was originally built in the mid-1950s by Reserve Mining Company and was briefly owned by Cyprus Minerals from 1989 to 1994 (Northshore was purchased in 1994 by Cleveland Cliffs, Inc.). The Silver Bay facility is located on the north shore of Lake Superior.

Through a company owned, 47-mile railroad, the Northshore plant receives crushed ore that has been processed in the primary and secondary crushers at the Peter Mitchell Mine, near Babbitt, Minnesota. The taconite plant further crushes the ore in tertiary crushers, dry cobs the ore (removes the larger nonmetallic chunks of ore with magnetic separation of the un-concentrated ore), and then concentrates the iron content from roughly 25 percent to 65 percent in a series of ball mills, rod mills, magnetic concentrators and froth flotation cells. The iron concentrate is then mixed with a variety of binders and fluxing agents (i.e., limestone/dolomite mixture) and formed into small balls referred to as green balls. The green balls are then fired in traveling grate furnaces and indurated into taconite pellets. The pellets are shipped through the Great Lakes system to customers in the lower Great Lakes and made into a variety of steel products.

The primary air emission units at the Silver Bay facility (the taconite plant and power plant) consist of electric generating boilers, steam heating boilers, rail car unloading, crushed ore storage bins, tertiary crushers, dry cobbers, coarse tailings handling operations, additive storage and handling operations, indurating furnaces, and fired pellet handling and screening. In addition, there are fugitive emission sources at the plant that consist of haul roads, concentrate storage piles, taconite pellet cooling piles, taconite pellet storage piles, pellet transfer

operations, pellet ship loadout operations, coal piles, fluxstone piles, coal/fluxstone handling operations, coal ash handling operations, and tailings basin operations.

Fabric filters are used to control particulate matter (PM) emissions from the two large power boilers, the rail car unloading operations, tertiary crushers, dry cobbers, coarse tailings handling operations, crushed ore storage bins, pellet screening for the hearth layer, and the additive storage and handling operations. A multiclone is used to control PM emissions from fluxstone handling in the Concentrator (CE 043). The indurating furnaces are controlled with wet-walled electrostatic precipitators (WWESP) to collect PM as well as sulfur dioxide (SO2), acid gases, and various other air pollutants. Particulate Matter emissions from furnace discharges and indoor pellet screening are controlled with wet scrubbers.

1.3 Description of the Activities Allowed by this Permit Action

This permit action is for a Major Amendment. In 2008, and again in 2013, the Permittee submitted applications to amend its permit to remove the "control city standard" and related Minnesota Fiber air monitoring. The air permit currently contains state-only requirements to control concentrations of 'Minnesota Fibers', which are defined as "any amphibole or chrysotile mineral with 3:1 or greater aspect ratio (length:width)," in the ambient air near the processing plant and tailings basin. This limit is known as the "control city standard" because it requires concentrations of Minnesota Fibers in the ambient air to be at or lower than those found in the ambient air of a "control city," which has been St. Paul, Minnesota. In this amendment, the MPCA agrees to remove the control city standard. However, the MPCA is also proposing to replace the control city standard with a state-only ambient fiber "Action Level." If the concentration of fibers in the nearby communities of Silver Bay and Beaver Bay increase to levels greater than or equal to the Action Level, the amendment requires actions taken by the facility to attempt to prevent and control the release of Minnesota Fibers until the ambient concentrations are below the Action Level. In addition to setting the Action Level, this permit amendment describes additional fiber related permit requirements that are intended to ensure that the facility is well controlled with respect to Minnesota Fiber emissions. The Action Level intentionally does not include the language of a health-based 'standard', as this would imply that the value was based upon health risk information. The Action Level is not based upon a human health risk value, as one does not exist, and should not be interpreted as such.

This permit amendment does not authorize any construction of any new emissions sources.

2. Regulatory and/or Statutory Basis

Table 2. Facility Classification

Classification	Major	Synthetic Minor/Area	Minor/Area
PSD	X		
Part 70 Permit Program	X		
Part 63 NESHAP	X		

New Source Review
The facility is an existing major source under New Source Review regulations.

Part 70 Permit Program
The facility is a major source under the Part 70 permit program.

New Source Performance Standards (NSPS)
This modification is not regulated by any NSPSs.

National Emission Standards for Hazardous Air Pollutants (NESHAP)
The facility is a major source of HAPs under 40 CFR pt. 63. Existing units at the facility are subject to emissions and operating limits from the Taconite MACT. This modification is not regulated by any NESHAPs. Minnesota Fibers do not meet the definition of asbestos as defined under the NESHAP and, as such, are not regulated by that rule.

Compliance Assurance Monitoring (CAM)
CAM does not apply to the modification allowed in this permit amendment.

Environmental Review & Air Emissions Risk Analysis (AERA)
The project is not subject to environmental review; an AERA is not required.

Minnesota State Rules
This modification does not add new emission sources or change the existing equipment's applicability to Minnesota rules.

3. Technical Information

The following subsections describe the technical details that support the permit amendment. These include providing background on the issue of Minnesota Fibers at Northshore Mining Company, introducing the definitions of fiber-related terms, and the occurrence of fibers at the Northshore Mining Company. This information is provided as it was considered in the development of this permit amendment. This permit amendment continues ambient fiber monitoring and requires the Permittee take additional actions to prevent and control the release of Minnesota Fibers.

3.1 History of Regulating Fibers at Northshore Mining Company

The history of regulating Minnesota Fibers from the Permittee's Silver Bay facility dates back to the mid-1970s, when a series of federal court cases involving the Reserve Mining Company resulted in the first fiber related conditions written into the facility's air and water permits. The conditions within the air permit require the control of what are called Minnesota Fibers and have remained essentially unchanged since they were originally introduced. Since then, many legal, scientific, and administrative limitations with the original court-ordered permit conditions have become known. This permit amendment seeks to improve the way Minnesota Fibers are regulated at the facility.

The federal court cases between 1974 and 1975 resulted in a federal injunction and the control city standard that, for the first time required the Permittee to control Minnesota Fibers in the ambient air. Although the legal proceedings began as an effort to require Reserve Mining to cease disposal of taconite tailings into Lake Superior, the deliberations eventually became focused on the potential health impacts of inhalation of "asbestos-like" mineral fibers that were found in the taconite tailings. The scientific and medical evidence presented in the trial was strongly disputed and consequently did not provide a clear answer to the risk to human health posed through exposure to these mineral fibers via inhalation. The control city standard was eventually written in the permittee's air permit. It limited the Minnesota Fiber concentration in the ambient air near the plant and tailings basin to a concentration no greater than those found in the ambient air of a control city, such as St. Paul, Minnesota.

On December 20, 2007, the United States District Court for the District of Minnesota ruled that the federal injunction no longer had any force or effect. The Eighth Circuit Court of Appeals later affirmed the District Court's determination that the federal injunction was unenforceable and moot. The Minnesota Pollution Control Agency (MPCA) had relied upon the federal injunction as a basis for including the control city standard in the air permit. The court decision impacted the permit by making future regulation of Minnesota Fibers at Northshore a state-only issue.

While the control city standard establishes a limit for ambient Minnesota Fiber concentrations near the plant and limits exposure in the surrounding communities, several limitations with the standard have been identified and are described below.

- Fiber concentrations in St. Paul vary over time and thus the control city standard is constantly changing. If fiber concentrations in St. Paul decrease, the allowable ambient concentration in Silver Bay and Beaver Bay also decreases. If fiber concentrations in St. Paul increase, the allowable concentrations of fibers in Silver Bay and Beaver Bay also increase. Standards are often reconsidered and revised based on new science, but it is highly unusual for standards to vary unpredictably and be based on the levels found in another location.

- The concentration of Minnesota Fibers that will comply with the control city standard is not known until after the ambient air monitoring samples are collected, sent to a lab for analysis, results are reported, and concentrations for the locations are calculated. This time between when fibers are monitored and when concentrations can be calculated makes it difficult for the Permittee to anticipate how the concentrations of fibers around its facility compare to those in St. Paul. Additionally, the Permittee cannot take any actions that may influence fiber concentrations until after the comparison is made, sometimes months after the dates fiber samples were collected.

- The control city standard does not specifically address whether the ambient air in Silver Bay, Beaver Bay, or St. Paul poses a health risk to the nearby populations. The control city standard is not a traditional health based standard in that the level is not a result of an evaluation of the potential risks of Minnesota Fibers to human health. The purpose of the control city standard was only to ensure that the residents of Silver Bay and Beaver Bay were not exposed to a greater concentration of fibers in the ambient air than the residents of a city not affected by taconite mining.

- Historical Minnesota Fiber monitoring data has shown that the predominant fiber type in St. Paul air is chrysotile, while ambient fiber concentrations identified near Northshore primarily consist of amphibole minerals. This results in comparing the ambient concentration of two different fiber populations that have different health risk.

- The federal court provided no guidance on how the control city standard should be implemented, including not providing information on how compliance with the standard is determined. As a result, MPCA has developed its own interpretation on how to determine compliance. Without adding specificity to the permit language, the MPCA would have difficulty defending any exceedance of the control city standard.

Because of the limitations of the control city standard, the MPCA supports, in part, the Permittee's request to modify its air permit to remove the control city standard. However, the MPCA believes that the existing permit can be augmented under the statutory authority afforded to MPCA under Minnesota Statute 116.07, subd. 4a(a) to establish best management practices to minimize emissions of Minnesota Fibers. This permit amendment adds updated ambient fiber monitoring requirements, requires updates to the facility's Operations and Maintenance (O&M) and Fugitive Dust Control Plan specific for Minnesota Fibers, and requires the Permittee to

take additional actions to reduce Minnesota Fiber concentrations if they are greater than a set Action Level. The Action Level is not based upon a human health risk value, as one does not exist, and should not be interpreted as such. Reporting, recordkeeping, and notification requirements have also been added to support these requirements.

3.2 Definitions of Fibers

Fibers are of interest to regulatory agencies concerned with public health. These agencies have relied heavily upon the multidisciplinary work of the geological, analytical, and environmental health communities, as well as industry, as a source of information when making decisions to regulate asbestos and other fibers. Each discipline has historically used terminology specific to its own work, which has often resulted in inconsistencies in the terms and definitions applied to fibers. There are multiple ways of defining a fiber. These typically rely on defining them on the basis of their physical, mineralogical, chemical, and biological properties. This lack of clarity on terminology makes regulating fibers more difficult. Thus, having some familiarity with the terminology and concepts is necessary for discussing fibers, the potential for associated community health issues via inhalation, and for ultimately regulating them effectively.

The definition of a fiber in this permit amendment is any airborne amphibole or chrysotile mineral fiber with a 3:1 or greater aspect ratio, with no minimum length cutoff. This definition can be found in the permit conditions associated with this amendment. This specific definition of a fiber is referred to as a 'Minnesota Fiber'. This particular naming is due to the fact that the Minnesota Department of Health (MDH) used this definition in the analytical methods (MDH Method 852) developed for quantifying and identifying fibers in air and water (Minnesota Department of Health 1976), and is being used here for consistency with historic measurements as opposed to any specific health effects attributed to this definition.

3.3 The Geology of Fibers

The term "mineral fiber" has been frequently used by non-mineralogists to encompass amphibole or chrysotile particles that occur either in an asbestiform habit (e.g., as long thin flexible bundles of fibrils) or in a non-asbestiform habit (e.g., as needle-like acicular or prismatic crystals). The term 'habit' is a general description given to the external shape and appearance of the formation of a mineral crystal. From a mineralogical perspective, an asbestiform mineral is chemically and elementally identical to its non-asbestiform analogue. The distinction between an asbestiform and non-asbestiform fiber begins with the geologic conditions in which the mineral crystal developed, which affects the morphology and shape of the crystal. Minerals that form in an asbestiform habit develop in a one-dimensional linear arrangement. This results in asbestiform minerals having long, flexible, poly-filamentous bundles that separate along grain boundaries between fibrils (Ross et al. 2008). These physical properties are commonly associated with regulated asbestos and have contributed to the physical and chemical properties that made asbestos commercially relevant. These properties include thermal, chemical, and electrical resistivity, which made them widely used in residential, commercial, and industrial applications where these material characteristics are desired. Conversely, non-asbestiform mineral crystals form in multiple dimensions that often result in 2-dimensional cleavage planes within the crystal (NIOSH 2011). Non-asbestiform minerals do not share the same properties that have made their asbestiform analogues commercially sought after, thus reducing their commercial significance.

Commonly regulated asbestiform fibers come from two different families of minerals: serpentine (chrysotile) and amphibole. Amphibole minerals are a group of 40 to 50 silicate minerals that can occur in either a fibrous (asbestiform) or non-fibrous (non-asbestiform) habit. Although asbestiform amphiboles are relatively rare, non-asbestiform amphibole minerals commonly occur and represent 5% by volume of the earth's crust (Liebau 1985). Non-asbestiform amphibole minerals can generate microscopic particles when mechanically broken or crushed, as in the case of mining-related processes (NIOSH 2011). These microscopic particles can then be released into the environment and emitted into the atmosphere (Wylie and Candela 2015). These particles tend

to be shorter and wider than their asbestiform counterparts and possess different crystallographic properties. These particles are sometimes called cleavage fragments and may be difficult to determine if they are asbestiform or non-asbestiform based on size alone.

Geology and Fibers at Northshore Mining
The Biwabik Iron Formation is a 1.9 billion year old sequence of iron-rich sedimentary rock near the earth's surface that extends from Grand Rapids to Babbitt, Minnesota. This formation extends several hundred feet in depth. The Biwabik Iron Formation corresponds to a geographic area known as the Mesabi Iron Range that has a history of modern iron mining dating back to the late 1800s. The geology at the eastern end of the Mesabi Iron Range is markedly different from that of the central and western regions. The easternmost extent of the Biwabik Iron Formation was affected by magmatic intrusions of the adjacent Duluth Complex (Jirsa, Miller, and Morey 2008). The intense heat from the Duluth Complex resulted in metamorphism of the nearby iron formation. This zone of metamorphism extends up to several miles into the iron formation and is marked by the presence of several types of amphibole minerals that formed as a result (Severson et al., n.d.). These amphibole minerals are limited to the easternmost end of the Biwabik Iron Formation and have not been identified in the central and western portions of the iron formation.

The Permittee actively mines ore from the Peter Mitchell mine located in the eastern region of the Mesabi Iron Range, an area known to contain amphibole minerals. It is the only active taconite operation in Minnesota mining ore containing an identifiable amount of amphibole minerals, the majority of which are categorized as belonging to the cummingtonite-grunerite series, but also includes some actinolite and hornblende (Zanko, Niles, and Oreskovich 2008).
As noted above, the non-asbestiform habit or type of amphibole mineral is much more common than the asbestiform variety and this generalization holds true for the amphibole minerals found in the Peter Mitchell pit. The asbestiform type of amphibole minerals make up a tiny fraction of 1% of the total rock mass found within the mine. No asbestos of any type was found in the mine pit. (Ross et al. 2008). No chrysotile minerals have been identified within the ore mined from these pits. The source of any chrysotile fibers in the ambient air near the Silver Bay facility is not likely associated with mining. Because chrysotile comprises less than 1% of the total particles, chrysotile minerals have only a minor impact on the total ambient Minnesota Fiber concentrations in the air.

3.4 The Regulation of Fibers

Federal and state regulations controlling exposure to airborne fibers have been in existence for decades. Each agency, including OSHA, NIOSH, MSHA, EPA, and MDH, defines what constitutes a fiber under its specific regulatory goals and responsibilities. The definition of a mineral fiber has been constrained by the analytical counting method used to identify and quantify fibers in environmental samples, and is subsequently not based on the toxicological significance of the fiber in question (Addison and McConnell 2008).

Most existing fiber standards cannot be appropriately applied directly to ambient Minnesota Fiber concentrations in Silver Bay and Beaver Bay because such standards evaluate a different type of fiber and consider different types of exposure settings. Existing fiber regulations are focused on limiting regulated asbestos concentrations and exclude fibers less than 5 µm in length, which would exclude a significant portion of the Minnesota Fibers found in Silver Bay and Beaver Bay. Also, most existing fiber related regulations are intended to protect workers from occupational or short-term exposures to fibers, and not the long-term, environmental exposure setting experienced by the general population. Ambient concentrations of fibers in the community setting are typically lower than in the associated occupational setting. Data about the physical characteristics of fibers indicates that a very small proportion of fibers found in the ambient air would be classified as asbestos according to the traditional regulatory definition (OSHA, NIOSH) of particles longer than 5 microns and with an aspect ratio of greater than 3:1. Note that unlike the traditional regulatory definitions, the

definition of Minnesota Fibers is based only on mineralogy and aspect ratio, and does not include a length factor.

Analytical methods that employ Phase Contrast Microscopy (PCM) continue to be widely used to quantify fibers for most federal regulatory purposes. But PCM does not have the ability to distinguish between asbestiform and non-asbestiform fibers and are unable to identify very thin fibers (less than 0.25 µm in diameter) (Dement et al. 2008). Methods involving the use of scanning electron microscopy (SEM) or transmission electron microscopy (TEM), such as MDH method 852, can resolve very thin fibers and can be coupled with other techniques for mineral identification (Dement et al. 2008).

3.5 Ambient Fiber Concentrations in Silver Bay

As part of the 1976-1979 Regional Copper-Nickel Study Report for the Minnesota Environmental Quality Board, an analysis of ambient air samples for Minnesota Fibers was taken from northeastern Minnesota, including Silver Bay. This analysis found ambient concentrations of total fibers were between 10,000 and 40,000 total fibers/m^3, with amphiboles ranging between 7,500 to 35,000 fibers/m^3, based on a transmission electron microscopy (TEM) analytical method similar to the MDH Method 852 (Ashbrook 1978). Ambient fiber concentrations in Silver Bay and Beaver Bay have decreased since that time. Although

A MPCA analysis of ambient Minnesota Fiber monitoring data collected from Silver Bay and Beaver Bay between 2006 to 2014 found average total concentrations ranged between 700 and 3,000 fibers/m^3. Monitoring samples were analyzed using MDH Method 852. Decreases in ambient Minnesota Fiber concentrations may be attributed in part to the installation of additional particulate controls at Northshore Mining's taconite processing plant in Silver Bay beginning in the 1980s and increased stringency in air quality regulations.

3.6 Fiber Health Risks

The MDH recognizes that a traditional health-based standard, applied to the specific fiber population found in ambient air is the typical approach to establishing a medically significant level of exposure, but sufficient toxicity data to support such a standard for Minnesota Fibers is not available and available evidence does not currently reflect any increased risk for the broader community. The Action Level, proposed in this permit amendment, does not establish a medically significant level of exposure, nor does it include the language of a 'standard', as this would imply that it was based upon health risk information, which is not available. Although ambient Minnesota Fiber concentrations in Silver Bay and Beaver Bay have not been associated with an observable risk of asbestos related diseases within the surrounding communities, the Action Level is not based upon an analysis of human health risk data and should not be interpreted as such. (Brunner, Williams, and Bender 2003)(TWHS, 2014)

Excess cases of mesothelioma in northeastern Minnesota and iron miners

In 1997 it was reported by the Minnesota Cancer Surveillance System (MCSS) that between 1988 and 1994, the rate of mesothelioma among men in Northeastern Minnesota was 70% greater than the statewide average for the disease (Minnesota Department of Health 1997). An updated MDH report in 2003 of MCSS data continued to show an excess of mesothelioma within this same group at 81% greater than the statewide average (Minnesota Department of Health 2003). A follow up report and case-series study published in 2008 linked the MCSS data with data provided from the Minnesota Iron Miner Cohort in order to investigate cases of mesothelioma among former iron miners. The study identified a link between developing mesothelioma and employment in the iron mining industry (Brunner, Williams, and Bender 2008). The study concluded that occupational exposure to regulated asbestos from employment within and outside the taconite mining industry was the likely cause of the excess of mesothelioma cases. However, the authors pointed out that the excess risk is "not solely attributable to exposure within the mining workplace" and that the study did not address other potential health risks associated with exposure to non-asbestiform amphibole mineral fibers.

Minnesota Taconite Workers Health Study
In 2008, the Minnesota Legislature funded the University of Minnesota School of Public Health to conduct a study investigating the excess number of mesothelioma cases among Minnesota taconite workers. The study, named the Taconite Workers Health Study (TWHS), was designed to assess questions relating to the occupational risks associated with developing mesothelioma among taconite workers. The TWHS was made of five different component studies, each designed to accomplish a different study goal; Occupational Exposure Assessment, Mortality (cause of death) Study, Incidence Studies, Respiratory Health Survey of Taconite Workers and Spouses, and Environmental Study of Airborne Particulates (not released). The study was concluded and final report submitted to the Minnesota Legislature on November 24, 2014 (Finnegan and Mandel 2014).

The results suggest that under current levels of community exposure, there does not appear to be an increased risk for developing the diseases associated with exposure to EMPs beyond what would be expected in the general population. Analyses also showed an unexplained contrast between EMP exposures and mesothelioma incidence; showing higher rates of mesothelioma in the western most portion of the Mesabi Iron Range compared to east. Recall that the amphibole mineralogy present at Northshore is present only in the east end of the Iron Range.

3.7 Summary and Conclusion

The Northshore Mining Company mines ore from the eastern end of the Biwabik Iron Formation that is used in the production of taconite pellets. This ore contains amphibole minerals. During the processing of this ore at the Silver Bay facility, these minerals are released into the ambient air in the form of non-asbestiform particles, some of which meet the definition of Minnesota Fibers. Most of the studies on health risk and existing standards have been evaluated for the occupational setting and use a definition of a fiber that would exclude the shorter lengths of fibers that are captured under the definition of a Minnesota Fiber. Thus, existing standards cannot be applied directly in the case of non-occupational Minnesota Fiber concentrations in Silver Bay and Beaver Bay.

The health impacts from exposure to asbestiform chrysotile and amphibole minerals (asbestos) have been well documented in the scientific and medical literature. The MDH recognizes that a traditional health-based standard, applied to the specific fiber population found in ambient air is the typical approach to establishing a medically significant level of exposure, but sufficient toxicity data to support such a standard for Minnesota Fibers is not available and available evidence does not currently reflect any increased risk for the broader community, although some uncertainty remains. Absent a more traditional health-based standard for this type of fiber, the MPCA is requiring the Northshore Mining Company to take actions to maintain the concentrations of fibers in the ambient air around the facility.

4 Permit Amendment

The following sections describe the changes made to this permit for regulating Minnesota Fibers emitted from the Permittee's facility. The amendment removes the control city standard per the Permittee's request. In its place, this amendment requires that the Permittee update the facility's Operation and Maintenance (O&M) and Fugitive Dust Control Plans to identify potential sources of fibers, establishes an Action Level, and requires measures to be taken in the event Minnesota Fiber concentrations increase to levels greater than or equal of the Action Level. Updated monitoring, recordkeeping, reporting, and notification requirements specific to fiber related requirements are also specified in this amendment. The complete requirements can be found in the total facility requirements section of the permit. Nothing in this permit shall be construed to waive the MPCA's authority under Minn. Stat. § 116.07, subd. 4a(a), Minn. R. 7007.0800 subps 4, 5, 6, 16(J) and 16(L), and Minn R. 7007.1600 to reopen this permit.

Due to the similarity in aerodynamic size between Minnesota Fibers and particulate matter, the MPCA believes that particulate control practices that control coarse (PM10) and fine (PM2.5) particulate matter are an appropriate surrogate for controlling fibers. From a public health perspective, these sizes of particles have the greatest chance of being deposited in the airways and gas-exchange regions of the lung (Brown et al. 2013). Fibers of this size fraction may possess similar aerodynamic behavior as general particulate matter of the same diameter. Therefore, this permit amendment contains requirements that are based on the theory that actions that control PM10 and PM2.5 sized particulate matter may also control Minnesota Fiber emissions.

4.1 Northshore's Requested Modification

On August 28, 2008, Northshore Mining Company submitted to the MPCA an application for reissuance of its Air Emission Permit No. 07500003-004. Included with this application was an application for a major permit amendment that requested removal of the control city standard and the fiber monitoring requirements. On May 20, 2013 Northshore Mining Company supplemented its 2008 application for a major amendment to remove the control city standard and the fiber monitoring requirements.

Because of the limitations of the control city standard, the MPCA supports, in part, the Permittee's request to modify its air permit to remove the control city standard. However, the MPCA believes that the existing permit can be augmented under the statutory authority afforded to MPCA under Minnesota Statute 116.07, subd. 4a(a) to establish best management practices to minimize emissions of Minnesota Fibers. This permit amendment adds updated ambient fiber monitoring requirements, requires updates to the facility's O&M and Fugitive Dust Control Plan, and requires the Permittee to take additional actions to reduce Minnesota Fiber concentrations if they are greater than a set Action Level. Reporting, recordkeeping, and notification requirements have been added to support these requirements.

4.2 Operations and Maintenance Plan and Fugitive Dust Control Plan Requirements

The Permittee is required to update the facility's O&M plan to identify all potential sources of fiber emissions. The Permittee maintains the O&M plan for each piece of air pollution control equipment at the facility, which includes procedures for equipment inspection and preventative maintenance. If stationary sources of potential fiber emissions are ever added in the future, the Permittee will update this plan to reflect these changes. Additionally, if control equipment that affect potential sources of stationary fiber emissions are ever changed at the facility, these changes will be reflected in the O&M plan. By requiring that potential sources of fiber emissions be identified, the Permittee can make use of the O&M plan and environmental management system already in place for identification and control of fibers. By adhering to the requirements of the O&M plan, recordkeeping requirements would also be included for potential sources of fiber emissions.

The Permittee is also required to update the facility's Fugitive Dust Control Plan to identify all potential fugitive sources of fiber emissions at the Silver Bay plant site and milepost 7 tailings basin. The Fugitive Dust Control Plan also lists the measures that are put in place to control fugitive dust emissions from fugitive sources. The Permittee maintains the Fugitive Dust Control Plan to minimize fugitive dust generated at the Silver Bay plan site and Mile Post 7 tailings basin. If fugitive sources of potential fiber emissions at the facility or tailings basin are ever added or changed in the future, the Permittee will update this plan to reflect these changes. Additionally, if corrective actions listed in the plan that affect potential sources of fiber emissions are ever added or changed at the facility, these changes will be reflected in the plan. By requiring that potential sources of fiber emissions be identified, the Permittee can adapt the Fugitive Dust Control Plan and environmental management system already in place for identification and control of fibers. By adhering to the requirements of the Fugitive Dust Control plan, recordkeeping requirements would also be included for potential sources of fiber emissions.

4.3 Fiber Monitoring Requirements

This permit requires the operation and maintenance of ambient air monitors at Site F1 (Beaver Bay) and F7 (Silver Bay) for the purpose of quantifying ambient Minnesota Fiber concentrations in Beaver Bay and Silver Bay. This permit requires that the Permittee continue to monitor for fibers at sites F1 and F7 at the rate of at least one 96-hour sample per site every 12 days. The Permittee is required to submit an ambient fiber monitoring plan within 75 days of issuance of this permit to the MPCA for approval. This plan will ensure that the monitoring data is of sufficient quality and can be relied upon in determining accurate fiber concentrations.

The Permittee may request that a reanalysis of a monitoring sample be performed. The results of the first sample shall apply toward the calculation of the Geomean, until the results of the reanalysis have been completed and returned. The Permittee shall apply the lower of the two results toward recalculation of the Geomean. Requirements of all permit conditions apply even if the Permittee is awaiting the results of a reanalysis of a sample.

Table 3 summarizes the monitoring requirements associated with this amendment.

Table 3. Monitoring

Subject Item*	Requirement (rule basis)	Monitoring	Discussion
Total Facility	365-day rolling geometric mean less than or equal to 4,000[1] fibers/m^3 Minn. R. 7007.0800, subps. 4(D) & 16(J)	Fiber ambient air monitoring Monitoring plan	See Section 4.3 – Fiber Monitoring Requirements for Discussion of these monitoring requirements.

*Location of the requirement in the permit (e.g., EU, SV, GP, etc.).

4.4 Calculation of the Geomean

Minnesota fiber concentrations are determined by calculating a 365-day rolling geometric mean (Geomean) using the fiber monitoring data. The use of a 365-day rolling period gathers more monitoring samples into the calculation of a fiber concentration, and reduces variation in the data, as opposed to relying on individual samples that have high variability.

4.5 Fiber Action Level

This permit amendment establishes an Action Level for Minnesota Fibers set at a concentration of 4,000 fibers/m^3 in the ambient air applicable to both fiber monitoring sites F1 at Beaver Bay and F7 at Silver Bay. The Action Level is a statistically derived value that was calculated from monitoring data sampled fiber monitoring at these sites. The Action Level is representative of an upper bound of fiber concentrations. A complete technical paper of how the Action Level was developed can be found in Attachment 1: *Proposed Action Level of 4,000 fibers/m3 for Ambient Air Monitors at Northshore*. The Action Level is set at a reasonably achievable level that is consistent with an upper range of monitored ambient concentrations recorded sites F1 and F7.

[1] The Action Level intentionally does not include the language of a health-based 'standard', as this would imply that the value was based upon health risk information. The Action Level is not based upon a human health risk value, as one does not exist, and should not be interpreted as such.

The Action Level provides a means to determine whether the control measures listed as controlling potential sources of Minnesota Fibers in the O&M plan and fugitive dust control plan are working effectively to prevent Minnesota Fiber emissions in the ambient air. It does this by requiring that the Permittee compare the calculated Geomean (See section 4.4) to the Action Level set at 4,000 fibers/m^3. If the Geomean is equal to or greater than the Action Level, this triggers a series of permit requirements, described in section 4.6, intended to reduce fiber concentrations to below the Action Level.

The Action Level intentionally does not include the language of a health-based 'standard', as this would imply that the value was based upon health risk information. The Action Level is not based upon a human health risk value, as one does not exist, and should not be interpreted as such.

4.6 Response to an Increase in the Geomean

If the Geomean is calculated to be greater than or equal to the Action Level at either fiber monitoring site, the Permittee is required to take steps to reduce Minnesota Fiber concentrations until they are under the Action Level. These steps are designed to follow an iterative adaptive management process that allows the Permittee's response to adapt to the specific circumstances and possible causes of elevated ambient concentrations.

First, the Permittee must conduct an investigation into the likely culpable sources of Minnesota Fibers and potential cause(s) that led to an increase of the Geomean to a level greater than or equal to the Action Level. The second step requires the Permittee to choose and implement an additional control measure(s) that is informed by the findings of the investigation. The choice of an additional control measure(s) should be based on the anticipated effect of reducing Minnesota Fiber concentrations in the ambient air. The third step requires that the Permittee develop a Fiber Action Level Plan (FALP). An FALP is a written plan that documents the investigation, provides the justification for the selection of an additional control measure, lists the necessary steps and associated timeline to complete the additional control measure, and indicates the dates the FALP is effective. For as long as the Geomean is greater than or equal to the Action Level, the Permittee shall continue to investigate, select, implement additional controls, and update the FALP.

The selection and implementation of additional control measures in response to an increase in Minnesota Fiber concentrations greater than the Action Level is intended to reflect a continuous effort to reduce Minnesota Fiber concentrations to below the Action Level. It is not possible to predetermine exactly what additional control measures will be effective at reducing Minnesota Fiber concentrations in each circumstance. In the event that ambient Minnesota Fiber concentrations remain above the Action Level despite the implementation of additional control measures or if new information becomes available, the MPCA may require the company take specific actions to reduce Minnesota Fiber concentrations, re-evaluate the effectiveness of the permit conditions, and/or reopen and revise this permit.

4.7 Recordkeeping

This permit amendment contains specific recordkeeping requirements that support fiber specific updates to the O&M and Fugitive Dust Control Plans, ambient fiber monitoring, and FALPs that are developed in response to the Geomean increasing to levels that are greater than or equal to the Action Level. These are contained in the total facility permit conditions. In addition to these specific requirements, the Permittee shall maintain all versions of the FALP onsite for at least five years.

4.8 Reporting and Submittal Requirements

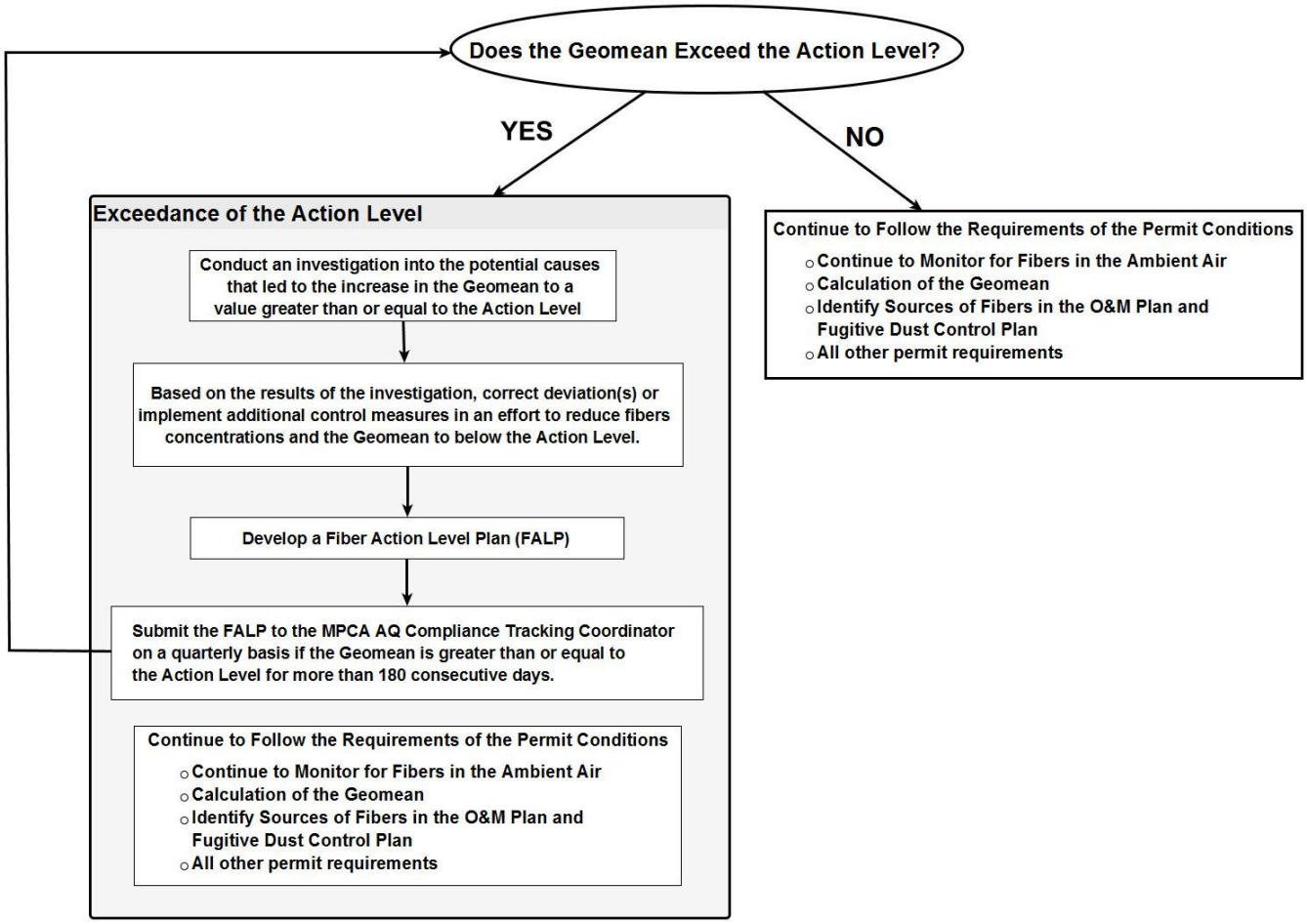
The Permittee is required to submit a semiannual fiber report to the MPCA AQ Compliance Tracking Coordinator, due 30 days after the end of each calendar half-year following the issuance of this permit amendment. The Permittee must submit the Ambient Fiber Monitoring Plan as part of the semi-annual fiber

monitoring report if it has changed since it was last submitted as part of a previous report. If the Permittee has developed an FALP in response to an increase in fiber concentrations such that the Geomean is greater than or equal to the Action Level, the Permittee must begin to submit the FALP to the MPCA if the Geomean has not decreased to below the Action Level within 180 days. The Permittee must submit the FALP on a quarterly basis thereafter until the Geomean decreases below the Action Level, so that the MPCA can monitor progress of the implementation of the additional control measures listed in the plan.

4.9 Flow Diagram of Permit Conditions

Figure 1 below is a flow diagram that shows the general design of how this permit action is intended to regulate Minnesota Fibers. This diagram is not a substitute for, nor does it supersede the language and requirements listed in the permit conditions of this permit.

Figure 1: Flow Diagram of Permit Conditions



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6 Emissions Increase Analysis

This permit action does not authorize any emissions increases or decreases from what is currently authorized.

7 Insignificant Activities

Northshore Mining - Silver Bay has several operations which are classified as insignificant activities under the MPCA’s permitting rules. These are listed in Appendix F to the permit. No additional insignificant activities are included in this modification.

8 Permit Organization

In general, the permit meets the MPCA Guidance for ordering and grouping of requirements. One area where this permit deviates slightly from Delta guidance is in the use of appendices. While appendices are fully enforceable parts of the permit, in general, any requirement that the MPCA thinks should be electronically tracked (e.g., limits, submittals, etc.), should be in Table A or B of the permit. The main reason is that the appendices are word processing sections and are not part of the electronic tracking system. Violation of the appendices can be enforced, but the computer system will not automatically generate the necessary enforcement notices or documents. Staff must generate these.

9 Comments Received

This section will be completed after the review periods.

Public Notice Period: 06/03/2019 – 07/02/2019

The MPCA received a number of comments on the draft permit amendment during the public comment period from the Fond Du Lac Band of Chippewa and 1854 Treaty Authority. Based on the comments received, the permit conditions were changed to require the permittee to submit the monitor filters to a laboratory for analysis within 45 calendar days of sample collection. The original permit conditions required the permittee to submit the filters within 60 calendar days. Because this change is more restrictive, this change did not require an additional public notice of the draft permit. The comments that were received during the public comment period and the MPCAs response to these comments are available in Attachment 1 to this TSD.

EPA Review Period: 10/21/2019—12/04/2019

No comments were received.

10 Permit Fee Assessment

Fees paid at time of permit applications.

11 Conclusion

The MPCA has reasonable assurance that the operation of the emission facility, as described in the Air Emission Permit No. 07500003-101 along with Air Emission Permit No. 07500003-010 and this TSD, will not cause or contribute to a violation of applicable federal regulations and Minnesota Rules.

Staff Members on Permit Team:

Eric Alms (mining sector project manager)
Suzanne Baumann (mining sector supervisor)
Toni Volkmeier (air quality permits supervisor)
Michaela Leach (air quality data coordinator)
Steven Palzkill (enforcement)
Marc Severin (compliance)
Sandy Simbeck (administrative support)

Attachments:

1. Action Level of 4000 fibers/m3 for Ambient Air Monitors at Northshore
2. Public Comments Received and Response to Public Comments

Attachment 1 – Action Level of 4000 fibers/m3 for Ambient Air Monitors at Northshore

Action Level of 4000 fibers/m^3 for Ambient Air Monitors at Northshore

Hongming Jiang, Ph.D., P.E.
Minnesota Pollution Control Agency
March 7, 2019

The Minnesota Pollution Control Agency (MPCA) proposes an Action Level (AL) of 4000 fibers/m^3 based on a 365-day[a] rolling geometric mean for ambient air monitors at Silver Bay (Site F7) and Beaver Bay (Site F1) operated by Northshore Mining Company. This document explains how the MPCA processes the ambient fiber monitoring data, how the AL was developed, and explains the reasonableness of the AL.

Comparing Past Silver Bay and Beaver Bay Ambient Fiber Concentrations to the Action Level

Before we detail the calculation of the AL, it is useful to provide context regarding how the AL compares to Silver Bay and Beaver Bay ambient fiber concentrations. Figure 1 shows the percent difference between the 365-day rolling geometric means of ambient fiber concentrations at Silver Bay and Beaver Bay and the AL. The highest value of the rolling geometric mean at Silver Bay in recent years occurred in October 2017, at approximately 77% of the AL. This shows that Northshore has the ability to maintain ambient fiber concentrations below the Action Level. The AL will serve to keep ambient fiber concentrations at a level similar to recent fiber concentrations at Silver Bay and Beaver Bay. To see the AL's reasonableness, we can take a longer term view of the data, Figure 2, which began at the end of Reserve Mining's bankruptcy and the startup of Northshore.

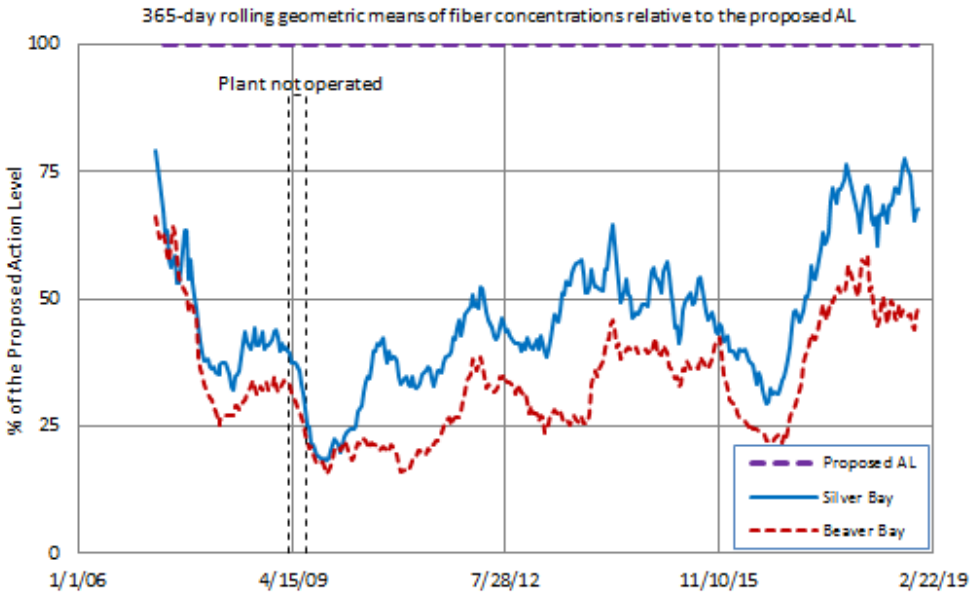


Figure 1. The AL is supported with Silver Bay and Beaver Bay monitoring results in recent years; also marked is a brief period of plant shutdown in 2009.

[a] It is a regulatory practice to smooth the concerned data using a rolling period. In this case, a fixed frame of 365 days is rolled or slid, one sample collection date at a time, toward the present time (the latest sample covered in the analysis reported in this document was collected on 12/4/2018). A chosen statistic (sum, mean, or geometric mean) of the data for the period is used to compare with the required value.

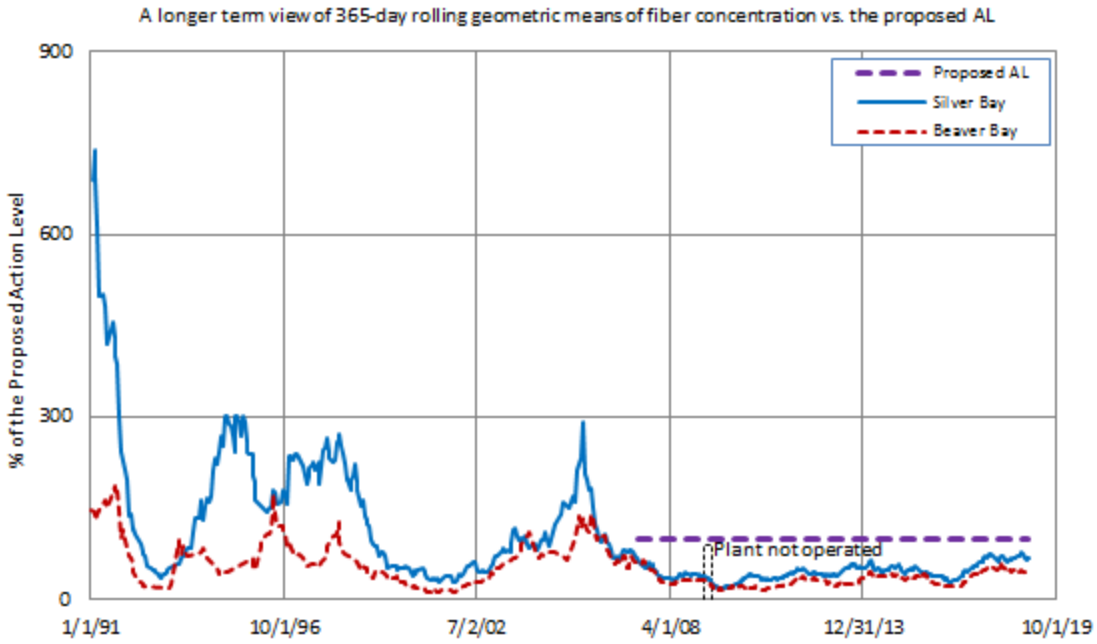


Figure 2. Ambient fiber concentrations at the monitoring sites, as indicated by their 365-day rolling geometric means, have been greatly reduced from the early years of taconite production of Northshore, thanks to various efforts made by all parties involved. The proposed Action Level has been developed from the data collected and analyzed in 3/2006 – 12/2018, which is the period of focus for this document.

Processing the Silver Bay and Beaver Bay Ambient Fiber Monitoring Data

Air monitoring is conducted in two locations near the Northshore Mining Company operations to measure concentrations of fibers in the ambient air. Monitor F7 is located near the plant site in Silver Bay and monitor F1 is located near the tailings basin outside of Beaver Bay. Sampling is conducted every 12 days.[b] For each sample, the ambient air monitor is operated for 96 consecutive hours to capture fibers on a filter. The samples are sent to a third party lab for microscopic analysis using Minnesota Department of Health (MDH) Method 852. At the Silver Bay site, from 3/15/2006[c] to 12/4/2018, concentrations (observed values) of 183 to 44276 fibers/m^3 were reported for the 362 filters (samples). Thirty-one of the samples were below the detection (analytical sensitivity) level (DL)[d] of observing one fiber from the specimen under the electron microscope, which was equivalent to a range of 168 to 1049

[b] This permit amendment requires Norhthshore to sample and collect ambient fiber concentrations at a frequency of one sample every 12 days at each sampling site. Even though Northshore's previous permit required collection of monitoring samples once every 21 days, Northshore collected samples at a frequency to one sample every 12 days. For the 362 filters collected at each site from 3/15/2006 through 12/4/2018, the 12 day sampling frequency was used 322 times at Silver Bay (89%) and 317 times at Beaver Bay (91%).

[c] The start date of the monitoring data sets is close to the start date of the fiber data set the MPCA generated at Site 868 in St. Paul (with filter exposure time of 72 hours), 3/18/2006 - 6/30/2016.

[d] Below DL or non-detects are considered *left-censored* measurements in statistics, as the concentration of any non-detect is known or assumed to fall within a certain range of concentration values (*e.g.*, between 0 and the DL). Censoring is a condition in which the value of a measurement or observation is only partially known. In this document, all non-detects are referred to as censored values, and uncensored (true) values as observed values. How below DL is encountered in fiber data analysis will be explained later in a section of this document.

fibers/m^3. To simplify presentation, and unless otherwise noted, the remainder of this document will focus on the data from Silver Bay.

When graphed, the fiber concentration data reveals a long tail in the distribution pattern as there are more low values than very high values; thus a logarithmic transformation is necessary to change the data distribution into a bell shaped curve for further analysis.[e]

So, for each observed value C_i, let $x_i = \ln C_i$ [1]

Where ln denotes the natural (base e) logarithmic function (e = 2.71828····); inversely,
$C_i = e^{x_i}$, or $C_i = exp(x_i)$; x_i is the transformed value.

Figure 3 is a graphic overview of the 331 observed values, C_i, the 31 values below detection level, as well as 345 365-day rolling geometric means data points. The first 365-day rolling geometric mean period, representing the data collected from 3/15/06 to 3/7/07, is indicated by a hashed blue line, as is the 17th geometric mean period which is further discussed later in this document.

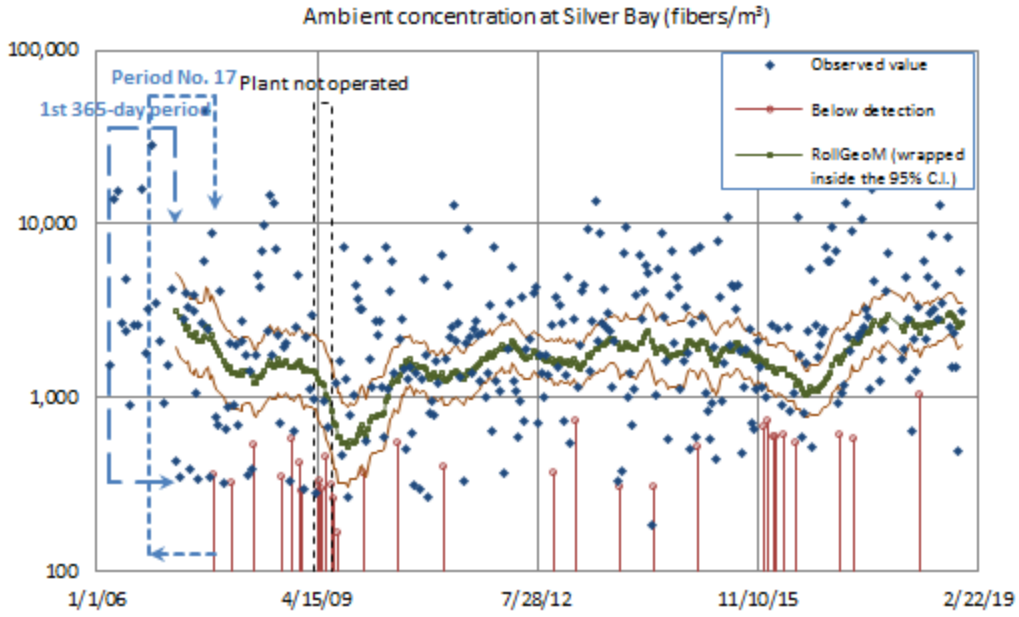


Figure 3. The geometric mean for the first rolling period (ended on 3/7/07) is calculated with 19 observed values (ambient samples results) and is shown as the leftmost green square. The geometric mean for Period No. 17 (ended on 10/3/07) is based on 23 observed values and the first below-detection sample, [d] which is shown as the leftmost red lollipop. The green squares thus constructed for all 345 365-day rolling geometric means show the trend of the ambient fiber concentration until 12/4/2018. The pair of thin red lines on either side of the green squares are the 95% confidence interval (C.I.) for the geometric mean of a rolling period.

[e] Transforming data to a logarithmic scale is done commonly in environmental analyses and is supported by the literature. As the fiber data varies by 3 orders of magnitude, without any transformation, the characterization of the data would be unduly influenced by the few very high values.

Calculating Geometric Means of the Silver Bay Ambient Fiber Monitoring Data

Because a long rolling period gathers more samples and thus tends to reduce data variation better than short periods, and the 365-day rolling period is especially suited to reflect seasonal weather and taconite production cycles at Northsore, the MPCA is using the data collected during 365-day rolling periods to calculate geometric means. Using a data set that starts with the Silver Bay sample collected on 3/15/2006, the first 365-day rolling period includes the sample collected on 3/15/06 and all of the samples collected during the following 365 days. The geometric mean for this period was calculated using the 19 ambient samples collected during this time period.

Figure 4 shows a probability plot developed using Minitab, a commercial statistics software program, to fit a lognormal distribution pattern to this data set.[f] See the data transformation in Eq. [1]. So, what is the geometric mean? For the first rolling period (3/15/06 – 3/7/07), the geometric mean of the 19 values of C_i is defined as follows:

$$Geomean = \sqrt[19]{\prod_{i=1}^{19} C_i} = \sqrt[19]{C_1 \cdot C_2 \cdot C_3 \cdots C_{19}} \qquad [2]$$

In an Excel spreadsheet, the geometric mean is obtained by entering the formula, =GEOMEAN(B2:B20) in cell B21, if the 19 values of C_i are entered in cells B2 through B20. The geometric mean is also obtained using Equations [3a] and [3b]. Recall the data transformation in Eq. [1], Eq. [2] is transformed as follows:[g]

$$\ln Geomean = \frac{\ln C_1 + \ln C_2 + \ln C_3 + \cdots + \ln C_{19}}{19} = \frac{x_1 + x_2 + x_3 + \cdots + x_{19}}{19} = Average(x_1 : x_{19}) \qquad [3a]$$

$$Geomean = e^{Average(x_1 : x_{19})} \qquad [3b]$$

Figure 5 shows how these two ways of getting the geometric mean are implemented in the Excel spreadsheet.

[f] The median, *i.e.*, the 50 percentile, of the fitted lognormal distribution is also the geometric mean of C_i (fibers/m^3), i = 1, 2, …, 19.

[g] Eq. [3] may appear cumbersome, it is not, especially when =STDEV(x_1 *to* x_{19}) is also needed to figure out the 95% confidence interval. For the exact use of AVERAGE and STDEV in Excel, see cells D21:D22 in Figure 5.

Date of sample collection at SB	Input data	Output data table extracted from probability plot			
	C_i, fibers/m^3	Percent	Percentile	95% LCL	95% UCL
3/15/06	1529	1	256	99	662
4/5/06	14018	. . .	. . .	. . .	. . .
4/26/06	15324	10	793	409	1537
5/17/06	2722	20	1276	722	2253
6/5/06	2431	30	1798	1069	3023
6/10/06	4771	40	2410	1470	3950
6/28/06	905	50	**3169**	1949	5153
7/19/06	2648	60	4168	2543	6832
8/9/06	2629	70	5587	3322	9395
8/30/06	15817	80	7873	4458	13903
9/20/06	1797	90	12667	6534	24558
10/11/06	3212	91	13505	6867	26558
11/1/06	28497	92	14477	7246	28926
11/22/06	3482	93	15627	7683	31787
12/13/06	2095	94	17021	8199	35335
1/3/07	939	95	18762	8824	39890
1/24/07	1556	96	21036	9614	46030
2/14/07	4180	97	24213	10672	54939
3/7/07	435	98	29192	12244	69601
		99	39198	15165	101316

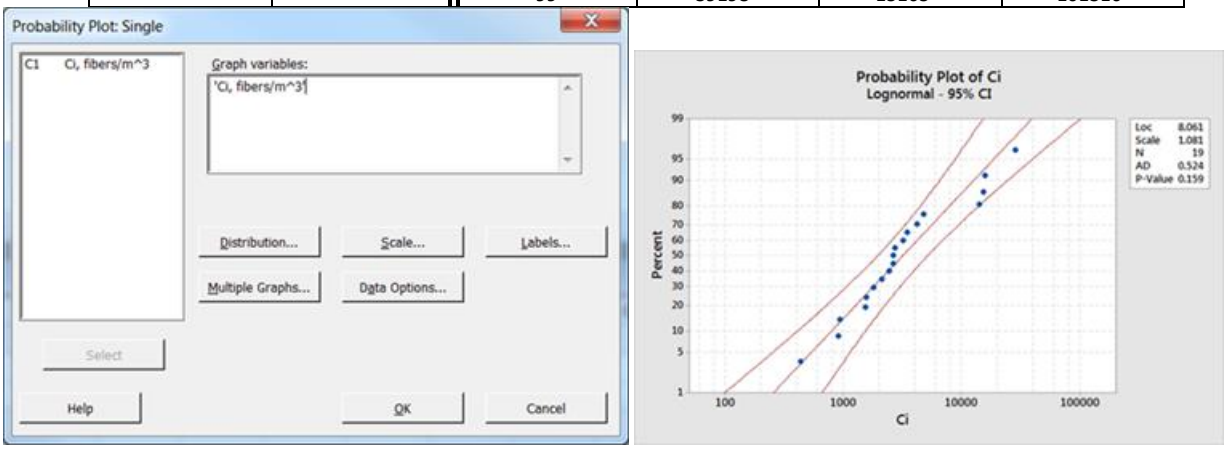


Figure 4. Calculate the geometric mean (3169 fibers/m^3) and 95% C.I. for the first 365-day rolling period using Minitab.

	A	B	C	D
1	Date of SB sample collection	C_i, fibers/m^3	$X_i = \ln C_i$	Remarks
2	3/15/06	1529	7.3324	← Cells A2:B20 are the data
3	4/5/06	14018	9.5481	for the first 365-day period.
4	4/26/06	15324	9.6372	
5	5/17/06	2722	7.9091	
6	6/5/06	2431	7.7961	
7	6/10/06	4771	8.4703	
8	6/28/06	905	6.8079	
9	7/19/06	2648	7.8816	
10	8/9/06	2629	7.8744	
11	8/30/06	15817	9.6688	
12	9/20/06	1797	7.4939	
13	10/11/06	3212	8.0746	
14	11/1/06	28497	10.2576	
15	11/22/06	3482	8.1554	
16	12/13/06	2095	7.6473	
17	1/3/07	939	6.8448	
18	1/24/07	1556	7.3499	
19	2/14/07	4180	8.3381	
20	3/7/07	435	6.0753	
21	From =GEOMEAN(B2:B20) →	Geo. mean of C_i = **3169**	Average of x_i = 8.0612	← from =AVERAGE(C2:C20)
22	From =EXP(C21) →	or Geo. mean of C_i = **3169**	Stdev of x_i = 1.0812	← from =STDEV(C2:C20)
23			Count = 19	← from =Count(C2:C20)
24		95% LCL on geo. mean: 1949	← from =EXP(C21-NORMINV(1-0.05/2,0,1)*C22/SQRT(C23))	
25		95% UCL on geo. mean: 5153	← from =EXP(C21+NORMINV(1-0.05/2,0,1)*C22/SQRT(C23))	

Figure 5. Calculate the geometric mean (3169 fibers/m^3) and the 95% confidence interval for the first period.

Now we move on to the second 365-day rolling period (Period No. 2) which starts with the next sample collected on 4/5/2006 and contains all ambient sampling collected during the following 365 days. This period also has 19 samples; the first was collected on 4/5/06 and the last 3/28/07; all of which are observed values; thus, either Minitab (Figure 4) or the spreadsheet (Figure 5) can be used to find the geometric mean. We repeat this process until Period No. 17.

Detection Level Varies from Sample to Sample

With Period No. 17, we have 24 samples – the first collected on 10/11/06 and the last 10/3/07 – and the last sample is below the detection level (DL = 355 fibers/m^3), which we have offered some explanation. [d]

As the schematic drawing shown in Figure 6, ambient fiber concentration, C_i (fibers/m^3), is calculated as the number of fibers found under the microscope divided by the volume of air passing the filter inside the monitor (sampler) for the sampling duration. Because of its size, fiber identification is carried out under a transmission electron microscope (TEM) for a small area (area analyzed) out of a specimen (PC filter) and subsequently subject to energy dispersive x-ray (EDXA) analysis for fiber characterization.

If one (1) fiber is found under the microscope for the area analyzed, the corresponding concentration, C_i, can be expressed algebraically as follows:[h]

$$\frac{1}{z} = \frac{(1\ fiber)(Original\ filter\ area, mm^2)(PC\ filter\ area, mm^2)}{(z, m^3)(Area\ ashed, mm^2)(Area\ analyzed, mm^2)} = \frac{1150\ \times 1075}{z\ (Area\ ashed)(Area\ analyzed)} \quad [4]$$

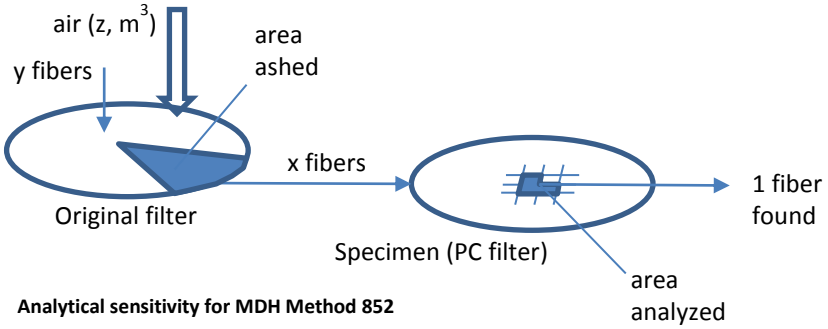


Figure 6. A schematic diagram for calculating the detection (analytical sensitivity) level.

For y fibers (greater than 1), C_i is the multiplication product of y and the right-hand side of Eq. [4], which is the "analytical sensitivity." We would call it detection limit in this document and denote it as DL.

What if no fiber (0) is found for the area analyzed after TEM and EDXA analyses? We cannot let $C_i = 0$; because, from Eq. [1], we would have $x_i \rightarrow -\infty$ (negative infinity) and a breakdown of our fiber data analysis. Now, because the area analyzed is small relative to the PC filter, we can assume the fiber concentration in this situation to be: $0 < C_i < DL$.

Dealing with Samples below Detection Level

There are three ways to deal with a sample below detection level.

First, methods on how to treat censored data are available in the literature;[i, j] maximum likelihood estimation (MLE) is suitable for the $0 < C_i < DL$ situation. Figure 7 shows how the geometric mean for Period 17 of 2076 fibers/m^3 was calculated using the MLE method with Minitab.[k]

[h] The value of 1075 in Eq. [4] is replaced with 1257 for samples collected after 6/12/2017, as the lab started using a new manifold in which the filter area increased. After 3/27/2018, the value becomes 1304.

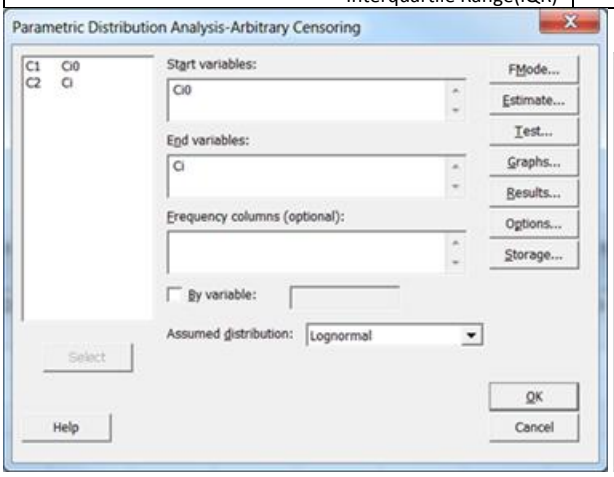
[i] *Statistics for Censored Environmental Data Using Minitab* ® and R, by Dr. Dennis R. Helsel, 2nd ed., © 2012 John Wiley & Sons, Inc.

[j] *Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities; Unified Guidance*. U.S. Environmental Protection Agency, Program Implementation and Information Division, Office of Resource Conservation and Recovery. EPA 530/R-09-007. March 2009.

[k] With Minitab in the interactive (default) mode, select Stat > Reliability/Survival > Distribution Analysis (Arbitrary Censoring) > Parametric Distribution Analysis; with the fibers data selected, the reader can replicate the results shown in Figure 7.

R statistical software[l] can also be used, as in Figure 8. Unlike Minitab, this particular R code does not provide the 95% confidence interval for the geometric mean.

Date of sample collection at SB	Input variables to Minitab[m]		Output data from Minitab in data sheet format			
	Start: C_{i0}, fibers/m³	END: C_i, fibers/m³	Percent	Percentile	95% LCL	95% UCL
10/11/06	3212	3212	1	89	30	262
11/1/06	28497	28497	2	129	48	346
11/22/06	3482	3482	3	163	64	413
12/13/06	2095	2095	4	194	80	473
1/3/07	939	939	5	224	95	528
1/24/07	1556	1556	. . .	. . .	. . .	. . .
2/14/07	4180	4180	10	367	173	776
3/7/07	435	435	20	665	350	1265
3/28/07	349	349	30	1021	569	1834
4/18/07	2801	2801	40	1474	847	2566
4/30/07	3984	3984	50	2076	1206	3575
5/12/07	3298	3298	60	2925	1687	5072
5/24/07	392	392	70	4221	2370	7518
6/11/07	3114	3114	80	6483	3450	12184
6/17/07	3888	3888	90	11756	5639	24509
6/29/07	1070	1070	91	12736	6013	26980
7/11/07	337	337	92	13894	6444	29960
7/23/07	2722	2722	93	15289	6950	33634
8/4/07	6092	6092	94	17013	7559	38293
8/16/07	44276	44276	95	19219	8313	44430
8/28/07	2483	2483	96	22177	9288	52949
9/9/07	349	349	97	26445	10634	65764
9/21/07	8827	8827	98	33417	12710	87860
10/3/07	**0**	355	99	48321	16783	139119
Descriptive Statistics from Minitab's Session window			Estimate	Standard Error	95% LCL	95% UCL
Mean(MTTF) {mean of the fitted lognormal distribution}			5184.77	1994.42	2439.49	11019.5
Standard Deviation {that of the fitted lognormal pattern}			11863.7	7748.70	3298.08	42675.4
Median {Geometric mean of C_i for Period No. 17}			**2076.28**	575.507	1206.00	3574.56
First Quartile (Q1)			833.658	259.479	452.948	1534.36
Third Quartile (Q3)			5171.09	1583.07	2837.90	9422.53
Interquartile Range(IQR)			4337.43	1438.84	2263.95	8309.95



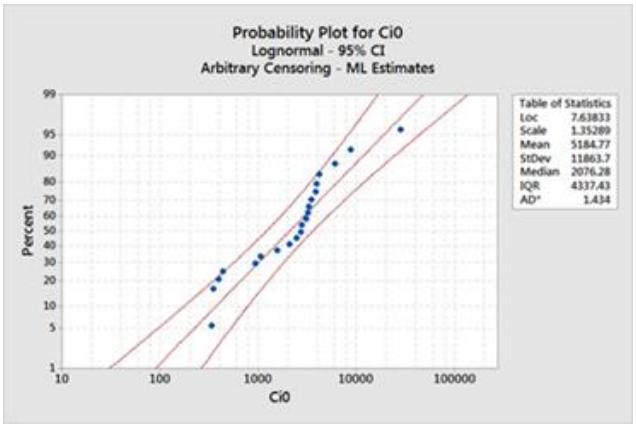


Figure 7. Maximum likelihood estimation for the geometric mean (2076 fibers/m³) for Period No. 17.

[l] *R: A language and environment for statistical computing*, by R Development Core Team. © 2013 R Foundation for Statistical Computing, Vienna, Austria. ISBN 3-900051-07-0; URL http://www.R-project.org/ .

[m] For input to Minitab, censored data are specified as either Arbitrary (*i.e.*, Interval) Censoring or Right Censoring. Left censored data are entered as Arbitrary Censoring with the Start value of 0 and the End value of DL.

```
R version 3.0.3 (2014-03-06) -- "Warm Puppy"
Copyright (C) 2014 The R Foundation for Statistical Computing
Platform: x86_64-w64-mingw32/x64 (64-bit)

R is free software and comes with ABSOLUTELY NO WARRANTY.
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Type 'demo()' for some demos, 'help()' for on-line help, or
'help.start()' for an HTML browser interface to help.
Type 'q()' to quit R.

> library("NADA", lib.loc="[enter location library is stored locally]")
Loading required package: survival
Loading required package: splines

Attaching package: 'NADA'

The following object is masked from 'package:stats':
   Cor

> Data_R <- read.csv("[enter location data file is stored locally]")
>  View(Data_R)
> attach(Data_R)
> head(Data_R)
  CiSB017 BDLis1
1    3212      0
2   28497      0
3    3482      0
4    2095      0
5     939      0
6    1556      0
> BDL <- as.logical(BDLis1)
> Ymle=cenmle(CiSB017,BDL)  # this command generate MLE summary statistics for a lognormal distribution.
> Ymle
       n    n.cen     median       mean         sd
  24.000    1.000  2076.276   5184.770   11863.672  # the median is the geometric mean for Period 17.
>
```

Figure 8. Get the geometric mean computed for Period No. 17 using R statistical software.

The MLE approach (Figures 7 and 8) is increasingly used in environmental studies. "MLE uses three pieces of information to perform computations: (a) numerical values above reporting limits, (b) the proportion of data below each reporting limit, and (c) the mathematical formula for an assumed distribution." [i] The downside of using this approach for compliance work is that it cannot be implemented easily on a spreadsheet.

The second way to deal with a sample below detection, is to assign C_i = DL, *i.e.*, to have a full detection level (1 DL) substitution. Recall that, in Figure 3, few samples were below detection where the 365-day rolling geometric mean is high in values. With DL varying from 168 to 1049 fibers/m^3, not much distortion to the data distribution pattern for the rolling period. Furthermore, the 1 DL substitution is straightforward to be implemented on spreadsheets, which is very convenient for compliance purpose; therefore, it is consistent and desirable to have the action level developed based on the 1 DL substitution. Figure 9 shows how the 1 DL substitution works in columns B:C for Rolling Period 17.

The third way is the blank substitution, which is also shown in Figure 9, columns D:E. Note that Excel's AVERAGE function simply ignore cell E25 (a cell intentionally left blank), resulting in 7.7427 cell E26, even though the formula in cell E26 is: =AVERAGE(E2:E25).

	A	B	C	D	E
1	Date of SB sampling	1DL substitution: C_i	1DL substitution: x_i=lnC_i	Blank substitution: C_i	Blank sub.: x_i = ln C_i
2	10/11/06	3212	8.0746	3212	8.0746
3	11/1/06	28497	10.2576	28497	10.2576
4	11/22/06	3482	8.1554	3482	8.1554
5	12/13/06	2095	7.6473	2095	7.6473
6	1/3/07	939	6.8448	939	6.8448
7	1/24/07	1556	7.3499	1556	7.3499
8	2/14/07	4180	8.3381	4180	8.3381
9	3/7/07	435	6.0753	435	6.0753
10	3/28/07	349	5.8551	349	5.8551
11	4/18/07	2801	7.9377	2801	7.9377
12	4/30/07	3984	8.2900	3984	8.2900
13	5/12/07	3298	8.1011	3298	8.1011
14	5/24/07	392	5.9713	392	5.9713
15	6/11/07	3114	8.0437	3114	8.0437
16	6/17/07	3888	8.2657	3888	8.2657
17	6/29/07	1070	6.9754	1070	6.9754
18	7/11/07	337	5.8201	337	5.8201
19	7/23/07	2722	7.9091	2722	7.9091
20	8/4/07	6092	8.7147	6092	8.7147
21	8/16/07	44276	10.6982	44276	10.6982
22	8/28/07	2483	7.8172	2483	7.8172
23	9/9/07	349	5.8551	349	5.8551
24	9/21/07	8827	9.0856	8827	9.0856
25	10/3/07	355	5.8721		
26	Average of x_i {also referred to as "Location"}:		**7.6648**	From AVERAGE(E2:E25) →	**7.7427**
27	Geometric mean of C_i:	**2132**	← from =EXP(C26)	**2305**	← from =EXP(E26)
28	Std Deviation of x_i {also referred to as "Scale"}:		**1.3345**	← resulted from =STDEV(C2:C25)	
29		Count:	**24**		
30		95% LCL: **1250**	← resulted from =EXP(C26-NORMINV(1-0.05/2,0,1)*C28/SQRT(C29))		
31		95% UCL: **3636**	← resulted from =EXP(C26+NORMINV(1-0.05/2,0,1)*C28/SQRT(C29))		

Figure 9. The 1 DL substitution method (columns B:C) results in small inflation on the geometric mean for Period No. 17 (2132 fibers/m^3 as opposed to 2076 fibers/m^3). The blank substitution method (columns D:E) leads to greater inflate on the geometric mean (2305 fibers/m^3).

The 1 DL substitution method results in 2.7% inflation on the geometric mean for Period No. 17; the blank substitution method results in 11% inflation.[n] Figure 10 compares the geometric means of all 333 365-day rolling periods based on the MLE approach, 1 DL substitution and the blank substitution.

[n] As may become of interest to the reader on the next page, the relative inflation on the geometric mean for Period No. 316 of the 1 DL substitution method and the blank substitution method are 15% and 2.6%, respectively.

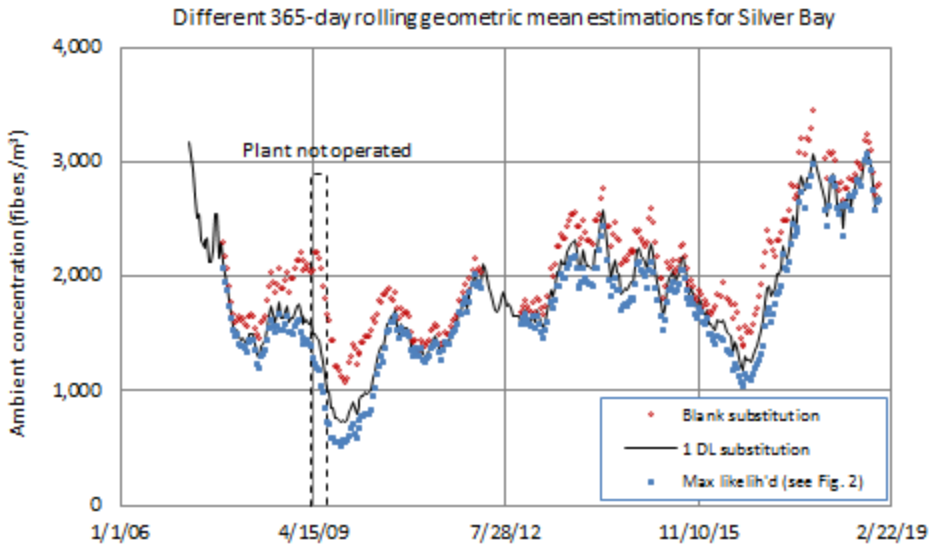


Figure 10. Comparison of methods used to calculate the geometric means for all 345 365-day rolling periods for Silver Bay. Maximum likelihood estimation is a mathematically sound method for calculating the geometric mean. However, the 1 DL substitution method is easier to use, and the difference between the respective geometric means is small for the rolling periods that are more relevant to the development of the proposed Action Level (Period Nos. 4 – 345).

Calculating the Action Level

In evaluating the Silber Bay ambient data, the MPCA found that Period No. 316 (10/27/16 – 10/22/17) has the highest geometric mean, 3064 fibers/m^3 using the 1 DL substitution method (Figure 10), from Period No. 4 (5/17/06 – 4/30/07) to Period No. 345 (1/2/18 – 12/4/18). Figure 11 presents a closer look at the data distribution fit of the period and the geometric mean.

Although the geometric mean of 3064 fibers/m^3 may be useful, it is often more helpful to say that, with a chance of 95 times out of 100, the geometric mean falls between 2214 fibers/m^3 and 4240 fibers/m^3, just to be mindful of data uncertainty. Such a pair of values is called the 2-tail, 95% Confidence Interval (C.I.), similar to those shown in Figure 3 for all 345 rolling periods for Silver Bay.

The upper end of 95% C.I. is often used to set environmental limits. In fact, because the lower end of 95% C.I. serves no meaningful role in regulatory situations, the 1-tail, 95% Confidence Interval (C.I.) is preferred, instead. See Figure 11(b). The 1-tail 95% C.I. can be phrased this way: with a chance of 95 times out of 100, the geometric mean for Period No. 316 is less than 4024 fibers/m^3. Therefore, the proposed Action Level (AL) is set at 4000 fibers/m^3, after rounding.

While the Excel formulas as given in cells B24:B25 in Figure 5[o] can be used to calculate the 2-tail 95% C.I., the formula in cell B52 – with NORMINV(1-0.05/2,0,1) replaced by NORMINV(1-0.05,0,1) – can be used to calculate the 1-tail 95% C.I. Note these are constants: NORMINV(1-0.05/2,0,1) = 1.960, and NORMINV(1-0.05,0,1) = 1.645.

[o] The values in cells B24:B25 in Figure 5 match Minitab's 95% C.I. for the geometric mean of the first rolling period in Figure 4 reveals the use of the inverse normal distribution, instead of the inverse t distribution, to estimate the 95% confidence interval using Minitab.

Thus, applying the 1 DL substitution method, for the j^{th} 365-day rolling period with transformed values[p] $x_i, i = 1, 2, \cdots, n$, we can calculate the geometric mean's upper bound, UpB[Geomean$_C$]$_j$, as follows:

$$UCL_x = \mu + z_{1tail,0.05}\ \sigma/\sqrt{n} = \ AVERAGE(x_1 : x_n) + 1.645\ * STDEV(x_1 : x_n)/SQRT(n) \quad [5a]$$

$$UpB[Geomean_C]_j\ = e^{UCL_x} = EXP(UCL_x) \quad [5b]$$

Where subscript *x* denotes the operation is based on the transformed, not observed, values; subscript *C* denotes observed values; and *j* = 1, 2, …, 345 for Silver Bay.

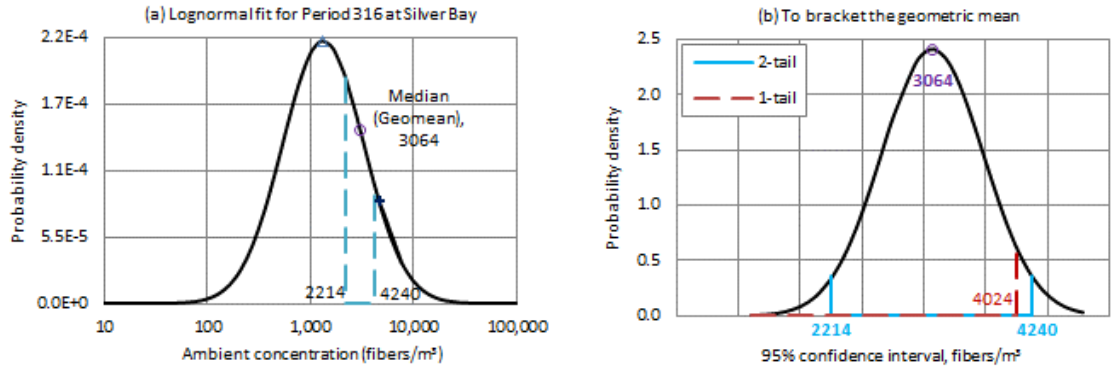


Figure 11. Period No. 316 has 30 observed values and two values below detection level, which are substituted with the DL. (a) the resultant mode, median (geometric mean), and mean of the fitted distribution[q] are 1343 fibers/m^3, 3064 fibers/m^3, and 4627 fibers/m^3, respectively. (b) interval estimates tell the reader: $2214 \leq true\ geomean \leq 4240$ (for 2-tail); or $true\ geomean \leq 4024$ (for 1-tail). The proposed Action Level (AL) is therefore set at 4000 fibers/m^3, after rounding.

The Proposed Action Level is reasonable and appropriate

The proposed action level of 4000 fibers/m^3 based on the 365-day rolling geometric mean for ambient air monitors at Northshore is based on monitoring results from 3/15/2006 to date, more than 12 years. In May 2016, the MPCA staff proposed a value of 3300 fibers/m^3 (rounded from 3328 fibers/m^3) as the proposed AL from Rolling Period No. 211. More recent monitoring results led to the revised AL value of 4000 fibers/m^3.

The highest 365-day rolling geometric mean with 1 DL substitution at Silver Bay since 4/30/2007 is 3064 fibers/m^3, for Rolling Period No. 316 (last sample for this period was collected on 10/22/2017), which is 77% of 4000 fibers/m^3 (see Figure 1), or 93% of 3300 fibers/m^3.

The statistical analyses used in developing the proposed AL are not sophisticated. Because of the long filter exposure time (96 hours) needed to capture enough material for the analytical lab work, it is not possible to quantify the relationship between weather data (*e.g.*, wind speed and direction) and the ambient fiber concentration. The monthly production of taconite pellets, as reported to Minnesota

[p] See Eq. [1].

[q] Let $f(v)$ be the distribution density function; to get mode, solve $Max[f(v)]$ for $v, where\ -\infty < v < \infty$; to get median, solve $\int_{-\infty}^{v} f(v)dv = 0.5$ for v; to get mean, simply evaluate $\int_{-\infty}^{\infty} vf(v)dv$. For the lognormal distribution, mode < median < mean. Median of the lognormal distribution is also the geometric mean of C_i; see Footnote f.

Department of Revenue, does not predict fiber concentration well, either. See Figure 12. Nevertheless, the proposed AL of 4000 fibers/m^3 provides a large enough margin of compliance going forward.

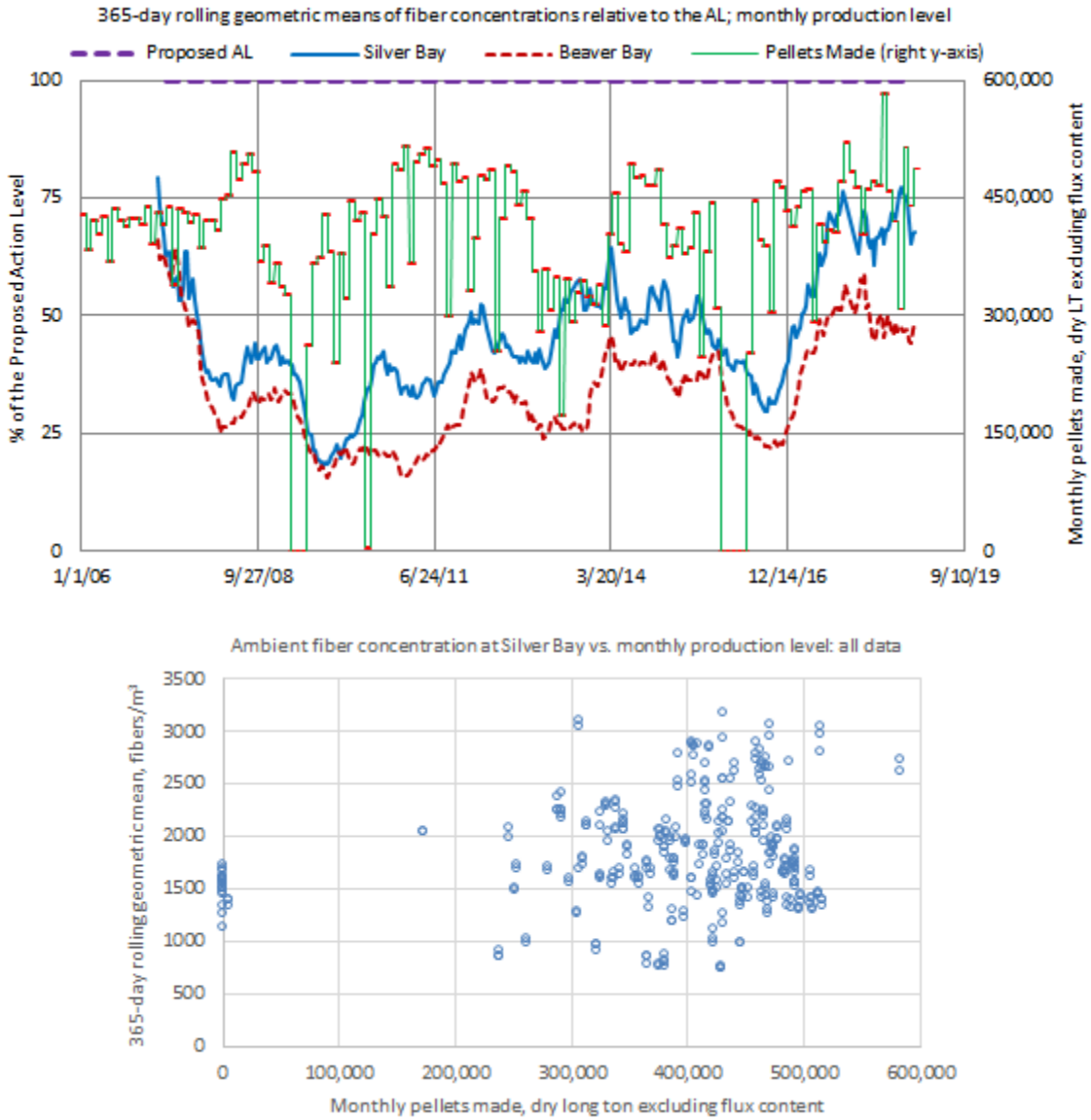


Figure 12. Monthly pellet production does not predict ambient fiber concentration well

The Beaver Bay ambient fiber concentrations are shown in Figure 13, as done in Figure 3 for the Silver Bay site. The MPCA has decided to use one AL (4000 fibers/m^3) for both Silver Bay and Beaver Bay. See Figure 14 for the upper bound estimates and the compliance measure (365-day rolling geometric mean).

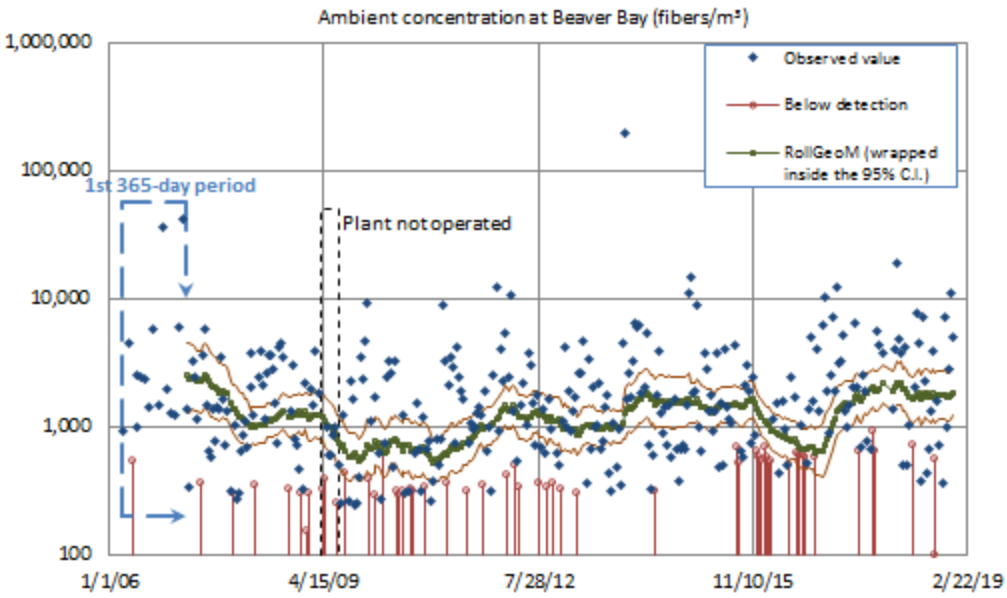


Figure 13. Ambient monitoring results at the Beaver Bay site. Note that the highest individual value (193475 fibers/m^3) is from the sample collected at Beaver Bay on 11/24/2013.

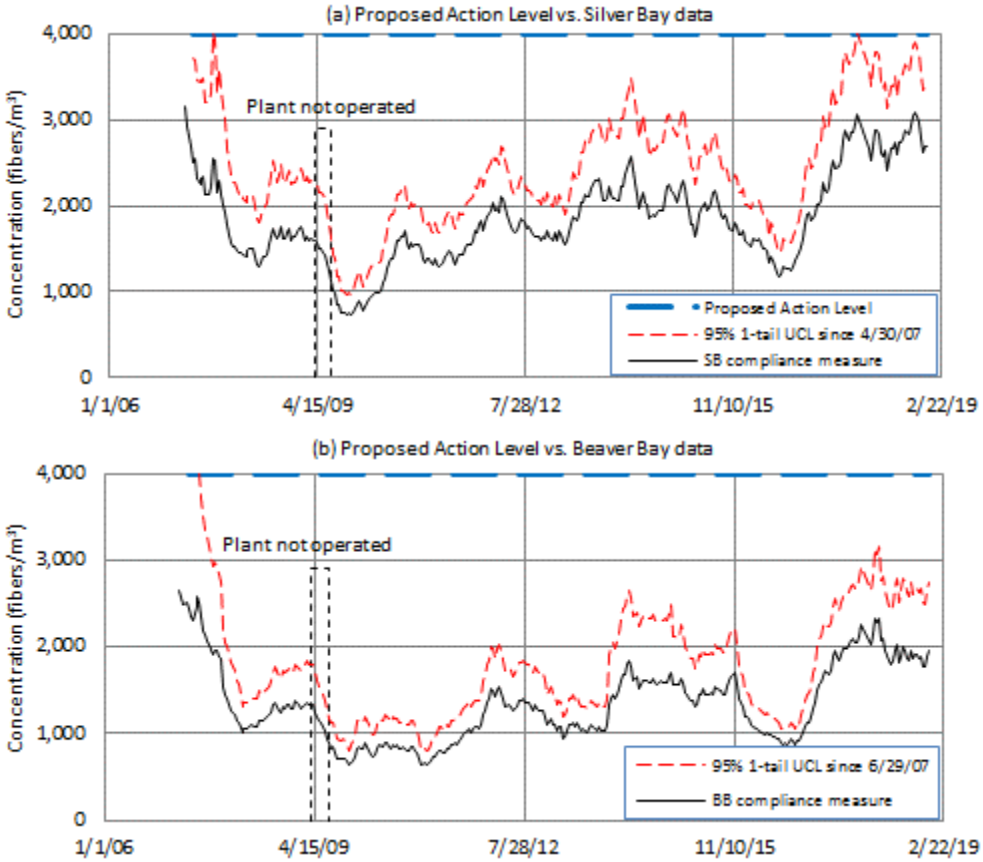


Figure 14. Upper bounds estimated and compliance measures for proposing the Action Level

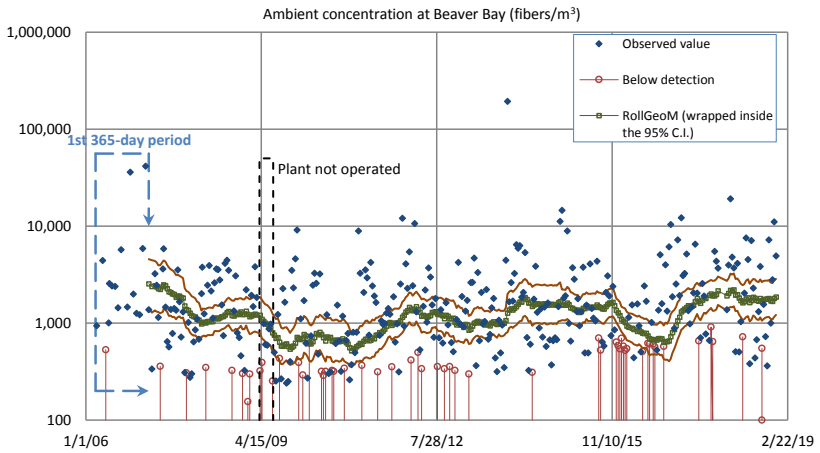
Concluding Remarks

Public interest in ambient fiber monitoring at Silver Bay and Beaver Bay has been high for many years. The MPCA is adding in Northshore's air permit an Action Level of 4000 fibers/m^3 for the ambient fiber monitors at the two sites along with the compliance monitoring described in this document. The Action Level is reasonable in that it is based on actual ambient fiber monitoring data from Silver Bay and address data uncertainty through the use of a confidence interval. It appropriately employs a long averaging period, to address the variability of samples. The Action Level is supported by a comparison of past monitoring data to the proposed Action Level which demonstrates that the facility has the ability to maintain ambient fiber concentrations below the proposed Action Level.

Attachment: ALCalc.xlsx

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
1	ID	Date.coll	Orig.fltr.mm^2	PC.fltr.mm^2	Air.m^3	Chord.mm	Radius.mm	Area.ashed.mm^2	Count.GO	GO.mm^2	Sen.per.m^3	Method 852: µ	CenIndex	2 ways for: Fibers0		Fibers	95% C.I :Method 852
2			1150	1075	<== Constants for specified time intervals			Method 852	Constant periodically				BDL=1	fibers/m^3	v2.pdf	fibers/m^3	lower limit
3			6/24/17-3/27/18:	1257													
4			4/8/18 to date:	1304													
5	1	3/15/06		Radii (mm) are:	105.41	27	19.75	294	10	0.008531	468	2	0	936	**937**	937	113
6	2	4/26/06	19.13	18.50	99.493	27	18.75	283	7		736	6	0	4416	**4418**	4418	1621
7	3	5/17/06			96.8	27	18.75	283	10		530	0	1	0	**0**	530	0
8	4	6/5/06			71.326	20	19.25	202	10		1004	1	0	1004	**1004**	1004	25
9	5	6/10/06			98.136	27	19.25	288	10		513	5	0	2565	**2564**	2564	832
10	6	6/28/06			94.226	18	20.5	191	10		805	3	0	2415	**2415**	2415	498
11	7	7/19/06			93.322	18	18.5	174	10	0.012764	597	4	0	2388	**2387**	2387	650
12	8	8/9/06			94.522	27	19	285	10		359	4	0	1436	**1437**	1437	391
13	9	8/30/06			95.37	25	18.5	254	7		571	10	0	5710	**5714**	5714	2740
14	10	10/11/06			98.467	30.5	19	336	10		292	5	0	1460	**1462**	1462	475
15	11	11/1/06			101.68	26	19.5	277	2		1716	21	0	36036	**36045**	36045	22312
16	12	11/22/06			100.131	26	19.5	277	7		498	4	0	1992	**1992**	1992	543
17	13	12/13/06			99.083	28	20	310	10		315	4	0	1260	**1261**	1261	343
18	14	1/3/07			98.95	23	19.5	240	10		408	3	0	1224	**1224**	1224	252
19	15	1/24/07			104.224	21	20	221	10		420	14	0	5880	**5885**	5885	3217
20	16	2/14/07			105.459	28	20	310	1		2961	14	0	41454	**41455**	41455	22664
21	17	3/7/07			102.266	26	19.25	275	10		345	4	0	1380	**1379**	1379	376
22	18	3/28/07			101.116	27	19	285	10		336	1	0	336	**336**	336	9
23	19	4/18/07			98.617	21	19.5	216	7		649	5	0	3245	**3245**	3245	1053
24	20	4/30/07			73.271	26	18.5	267	10	0.012865	492	5	0	2460	**2459**	2459	798
25	21	5/12/07			97.196	25	19	259	10		381	3	0	1143	**1144**	1144	236
26	22	5/24/07			96.51	26	19.5	277	10		359	0	1	0	**0**	359	0
27	23	6/11/07			94.668	20	18.5	195	10		519	7	0	3633	**3635**	3635	1462
28	24	6/17/07			95.295	24	18	236	8		533	11	0	5863	**5864**	5864	2927
29	25	6/29/07			96.213	26	19	272	10		367	4	0	1468	**1469**	1469	400
30	26	7/11/07			94.504	28	20.5	316	10		322	2	0	644	**644**	644	78
31	27	7/23/07			92.396	19	18.25	182	10		570	1	0	570	**570**	570	14
32	28	8/4/07			95.301	27	19.5	291	10		347	4	0	1388	**1387**	1387	378
33	29	8/16/07			97.653	25	18.25	251	10		392	2	0	784	**783**	783	95
34	30	8/28/07			97.073	27	18.5	280	10		354	4	0	1416	**1414**	1414	385
35	31	9/9/07			99.111	27	19	285	10		340	4	0	1360	**1359**	1359	370
36	32	9/21/07			96.2	20	18.75	198	10		505	7	0	3535	**3536**	3536	1422
37	33	10/3/07			97.535	27	20	296	10		332	5	0	1660	**1662**	1662	540
38	34	10/15/07			98.339	14	19	136	10		717	1	0	717	**717**	717	18
39	35	10/27/07			101.301	27	19.5	291	10		326	4	0	1304	**1305**	1305	356
40	36	11/8/07			101.86	28	19.5	305	10		310	1	0	310	**310**	310	8
41	37	11/20/07			104.692	28	19	299	10		307	0	1	0	**0**	307	0
42	38	12/2/07			106.479	26	18.5	267	10		338	3	0	1014	**1015**	1015	209
43	39	12/14/07			107.747	28.5	20.5	323	10		276	1	0	276	**276**	276	7
44	40	12/26/07			105.227	27.5	20	303	10		301	1	0	301	**301**	301	8
45	41	1/7/08			102.281	27	19.75	294	10		320	2	0	640	**640**	640	78

	A	B	R	S	T	U	V	W	X	Y	Z	AA	AB	AC	AD	AE	AF	AG	AH
1	ID	Date/Cll.	95% CI. :Method 852	ln(Fibers)	RollPeriod	RPspan	# of filters	# of BDL	# of uncen	Location	Scale	Log-likelih'd	$Geom_{miss}$	$Geom_{cen}$	$95\%G_{lower}$	$95\%G_{upper}$	$_{1\text{-tail}}95\%G_{up}$	Loc(1DL)	Scale(1DL)
2			upper limit	Method 852		days				Method 852			fibers/m^3	fibers/m^3	fibers/m^3	fibers/m^3	fibers/m^3	Method 852	Method 852
3																			
4																			
5	1	3/15/06	3383	6.8427															
6	2	4/26/06	9616	8.3934															
7	3	5/17/06	1954	6.2729															
8	4	6/5/06	5592	6.9117															
9	5	6/10/06	5982	7.8493															
10	6	6/28/06	7059	7.7895															
11	7	7/19/06	6113	7.7778															
12	8	8/9/06	3679	7.2703															
13	9	8/30/06	10508	8.6507															
14	10	10/11/06	3412	7.2876															
15	11	11/1/06	55098	10.4925															
16	12	11/22/06	5100	7.5969															
17	13	12/13/06	3228	7.1397															
18	14	1/3/07	3578	7.1099															
19	15	1/24/07	9873	8.6802	Data in this column:														
20	16	2/14/07	69555	10.6324	Must be <= 365														
21	17	3/7/07	3531	7.2291	1	358	17	1	16	7.8441	1.2198	-154.72	2917	2551	1424	4569	4161	7.8780	1.1959
22	18	3/28/07	1871	5.8171	2	337	17	1	16	7.7799	1.2988	-154.65	2736	2392	1286	4451	4028	7.8177	1.2747
23	19	4/18/07	7572	8.0849	3	358	18	1	17	7.7985	1.2607	-163.93	2764	2437	1357	4377	3983	7.8325	1.2382
24	20	4/30/07	5738	7.8075	4	349	18	1	17	7.7660	1.2524	-163.22	2670	2359	1319	4220	3844	7.8000	1.2303
25	21	5/12/07	3344	7.0423	5	361	19	1	18	7.7284	1.2286	-171.56	2547	2272	1304	3959	3621	7.7601	1.2082
26	22	5/24/07	1324	5.8833	6	354	19	1	18	7.7100	1.2610	-172.12	2547	2230	1262	3942	3597	7.7396	1.2378
27	23	6/11/07	7490	8.1984	7	349	18	1	17	7.7733	1.2858	-164.24	2746	2376	1308	4316	3921	7.8050	1.2605
28	24	6/17/07	10493	8.6766	8	355	19	1	18	7.8220	1.2652	-174.32	2865	2495	1409	4417	4030	7.8509	1.2412
29	25	6/29/07	3760	7.2923	9	346	19	1	18	7.7954	1.2717	-173.91	2787	2429	1368	4314	3934	7.8247	1.2478
30	26	7/11/07	2325	6.4677	10	358	20	1	19	7.7284	1.2741	-182.05	2580	2272	1297	3980	3637	7.7569	1.2519
31	27	7/23/07	3178	6.3456	11	349	20	1	19	7.6549	1.3131	-181.16	2392	2111	1184	3763	3429	7.6852	1.2910
32	28	8/4/07	3552	7.2349	12	361	21	1	20	7.6357	1.2827	-189.62	2328	2071	1194	3593	3288	7.6638	1.2621
33	29	8/16/07	2829	6.6631	13	352	21	1	20	7.6061	1.2990	-189.25	2259	2010	1151	3512	3211	7.6349	1.2784
34	30	8/28/07	3622	7.2542	14	364	22	1	21	7.5909	1.2695	-197.71	2209	1980	1162	3373	3096	7.6176	1.2503
35	31	9/9/07	3481	7.2145	15	334	22	1	21	7.5257	1.2498	-195.94	2063	1855	1098	3134	2881	7.5523	1.2311
36	32	9/21/07	7285	8.1708	16	346	23	1	22	7.5546	1.2275	-205.37	2114	1910	1154	3160	2914	7.5792	1.2097
37	33	10/3/07	3879	7.4158	17	358	24	1	23	7.5496	1.2004	-213.91	2092	1900	1173	3076	2847	7.5724	1.1836
38	34	10/15/07	3997	6.5751	18	349	24	1	23	7.5192	1.2167	-213.49	2028	1843	1131	3004	2777	7.5427	1.1998
39	35	10/27/07	3341	7.1740	19	361	25	1	24	7.5060	1.1928	-221.81	1991	1819	1138	2908	2697	7.5279	1.1769
40	36	11/8/07	1726	5.7366	20	352	25	1	24	7.3179	1.0700	-214.44	1633	1507	989	2296	2145	7.3377	1.0559
41	37	11/20/07	1132	5.7268	21	364	26	2	24	7.2341	1.1336	-216.97	1633	1386	893	2150	2003	7.2757	1.0817
42	38	12/2/07	2967	6.9226	22	355	26	2	24	7.2079	1.1334	-216.27	1588	1350	870	2094	1951	7.2498	1.0818
43	39	12/14/07	1538	5.6204	23	346	26	2	24	7.1460	1.1804	-215.66	1491	1269	803	2005	1863	7.1914	1.1280
44	40	12/26/07	1678	5.7071	24	358	27	2	25	7.0914	1.1925	-223.16	1398	1202	764	1891	1758	7.1364	1.1424
45	41	1/7/08	2312	6.4615	25	349	27	2	25	7.0666	1.1998	-222.65	1362	1172	743	1850	1719	7.1124	1.1498



	A	B	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR
1	ID	Date.coll	$Geom_{1DL}$	% $Geom_{1DL}$/AL	95%G_{lower}	95%G_{upper}	$_{1\text{-tail}}$95%G_{up}		Date of	Fibers	Date of	Fibers
2			Method 852:	for plotting	fibers/m^3	fibers/m^3	:Method 852		noncensored	Method 852	censored	Method 852
3												
4												
5	1	3/15/06						1	3/15/06	937	5/17/06	100
6	2	4/26/06						2	4/26/06	4418	5/17/06	530
7	3	5/17/06						3	6/5/06	1004	5/24/07	100
8	4	6/5/06						4	6/10/06	2564	5/24/07	359
9	5	6/10/06						5	6/28/06	2415	11/20/07	100
10	6	6/28/06						6	7/19/06	2387	11/20/07	307
11	7	7/19/06						7	8/9/06	1437	3/31/08	100
12	8	8/9/06						8	8/30/06	5714	3/31/08	348
13	9	8/30/06						9	10/11/06	1462	9/27/08	100
14	10	10/11/06						10	11/1/06	36045	9/27/08	325
15	11	11/1/06						11	11/22/06	1992	12/8/08	100
16	12	11/22/06						12	12/13/06	1261	12/8/08	303
17	13	12/13/06						13	1/3/07	1224	1/13/09	100
18	14	1/3/07						14	1/24/07	5885	1/13/09	155
19	15	1/24/07						15	2/14/07	41455	1/25/09	100
20	16	2/14/07						16	3/7/07	1379	1/25/09	299
21	17	3/7/07	2639	66	1495	4659	4252	17	3/28/07	336	4/7/09	100
22	18	3/28/07	2484	62	1355	4553	4131	18	4/18/07	3245	4/7/09	322
23	19	4/18/07	2521	63	1423	4467	4075	19	4/30/07	2459	4/19/09	100
24	20	4/30/07	2441	61	1383	4308	3932	20	5/12/07	1144	4/19/09	392
25	21	5/12/07	2345	59	1362	4037	3700	21	6/11/07	3635	6/30/09	100
26	22	5/24/07	2298	57	1317	4008	3665	22	6/17/07	5864	6/30/09	254
27	23	6/11/07	2453	61	1370	4391	3999	23	6/29/07	1469	8/17/09	100
28	24	6/17/07	2568	64	1470	4487	4102	24	7/11/07	644	8/17/09	433
29	25	6/29/07	2502	63	1427	4384	4006	25	7/23/07	570	12/27/09	100
30	26	7/11/07	2338	58	1350	4046	3704	26	8/4/07	1387	12/27/09	393
31	27	7/23/07	2176	54	1236	3832	3498	27	8/16/07	783	1/23/10	100
32	28	8/4/07	2130	53	1241	3654	3350	28	8/28/07	1414	1/23/10	293
33	29	8/16/07	2069	52	1198	3575	3274	29	9/9/07	1359	3/9/10	100
34	30	8/28/07	2034	51	1206	3429	3153	30	9/21/07	3536	3/9/10	619
35	31	9/9/07	1905	48	1139	3187	2934	31	10/3/07	1662	6/1/10	100
36	32	9/21/07	1957	49	1194	3209	2963	32	10/15/07	717	6/1/10	319
37	33	10/3/07	1944	49	1211	3121	2892	33	10/27/07	1305	6/13/10	100
38	34	10/15/07	1887	47	1168	3049	2823	34	11/8/07	310	6/13/10	289
39	35	10/27/07	1859	46	1172	2949	2738	35	12/2/07	1015	6/29/10	100
40	36	11/8/07	1537	38	1016	2325	2176	36	12/14/07	276	6/29/10	318
41	37	11/20/07	1445	36	953	2190	2048	37	12/26/07	301	8/12/10	100
42	38	12/2/07	1408	35	929	2134	1996	38	1/7/08	640	8/12/10	325
43	39	12/14/07	1328	33	861	2049	1911	39	1/19/08	855	8/24/10	100
44	40	12/26/07	1257	31	817	1934	1805	40	1/31/08	1108	8/24/10	318
45	41	1/7/08	1227	31	795	1893	1766	41	2/12/08	684	11/4/10	100

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
1	ID	Date.coll	Orig.fltr.mm^2	PC.fltr.mm^2	Air.m^3	Chord.mm	Radius.mm	Area.ashed.mm^2	Count.GO	GO.mm^2	Sen.per.m^3	Method 852: µ	CenIndex	2 ways for: Fibers0		Fibers	95% C.I :Method 852
2			1150	1075	<== Constants for specified time intervals			Method 852	Constant periodically				BDL=1	fibers/m^3	v2.pdf	fibers/m^3	lower limit
3			6/24/17-3/27/18:	1257													
4			4/8/18 to date:	1304													
46	42	1/19/08			111.55	27	19.25	288	7		427	2	0	854	**855**	855	103
47	43	1/31/08			106.7	25	18.75	257	10	0.012225	369	3	0	1107	**1108**	1108	229
48	44	2/12/08			108.634	26	19	272	10		342	2	0	684	**684**	684	83
49	45	3/1/08			105.819	19	19	189	10		506	4	0	2024	**2022**	2022	551
50	46	3/7/08			108.34	21	19.5	216	8		540	7	0	3780	**3777**	3777	1519
51	47	3/19/08			104.159	28	20	310	10		313	4	0	1252	**1252**	1252	341
52	48	3/31/08			102.26	26.5	19.5	284	10		348	0	1	0	**0**	348	0
53	49	4/12/08			99.889	27	19.25	288	10		352	7	0	2464	**2461**	2461	989
54	50	4/24/08			100.4	27	19.25	288	8		437	9	0	3933	**3934**	3934	1799
55	51	5/6/08			99.068	15	18.5	143	10		715	3	0	2145	**2144**	2144	442
56	52	5/18/08			97.941	26	19.25	275	10		376	3	0	1128	**1127**	1127	233
57	53	5/30/08			96.849	20	19	200	10		522	5	0	2610	**2609**	2609	847
58	54	6/11/08			97.893	27	19	285	9		402	9	0	3618	**3621**	3621	1656
59	55	6/23/08			95.41	19	17.75	178	10		596	6	0	3576	**3574**	3574	1312
60	56	7/5/08			95.165	28	19.5	305	10		349	8	0	2792	**2792**	2792	1205
61	57	7/17/08			96.393	26	19	272	10		386	4	0	1544	**1543**	1543	420
62	58	7/29/08			94.529	27	19	285	10	0.012304	373	2	0	746	**745**	745	90
63	59	8/10/08			96.63	27	18.75	283	8		460	9	0	4140	**4140**	4140	1893
64	60	8/22/08			96.633	25	18.75	257	10		405	11	0	4455	**4458**	4458	2226
65	61	9/3/08			98.188	20	19.5	205	10		500	7	0	3500	**3498**	3498	1407
66	62	9/27/08			98.654	28	20.25	313	10		325	0	1	0	**0**	325	0
67	63	10/9/08			98.739	28	19.5	305	10		334	4	0	1336	**1337**	1337	364
68	64	10/21/08			99.948	25	18.5	254	9		440	7	0	3080	**3079**	3079	1238
69	65	11/2/08			93.616	26	18.75	269	10		398	2	0	796	**797**	797	97
70	66	11/14/08			103.144	26	19.25	275	10		355	2	0	710	**709**	709	86
71	67	11/26/08			103.336	21	19	211	10		460	1	0	460	**460**	460	12
72	68	12/8/08			106.966	28	20	310	10		303	0	1	0	**0**	303	0
73	69	12/20/08			107.462	27	19.25	288	10		325	1	0	325	**325**	325	8
74	70	1/1/09			78.963	27	19.25	288	10		442	5	0	2210	**2209**	2209	717
75	71	1/13/09			112.638	38.27	19.13	575	10		155	0	1	0	**0**	155	0
76	72	1/25/09			110.449	28	19.5	305	10		299	0	1	0	**0**	299	0
77	73	2/6/09			103.436	28	20.25	313	8		388	5	0	1940	**1939**	1939	630
78	74	2/18/09			106.932	23	20.75	253	10		372	4	0	1488	**1486**	1486	405
79	75	3/2/09			106.756	21	19.75	219	9		478	8	0	3824	**3826**	3826	1652
80	76	3/14/09			100.91	25.5	19.5	271	10		367	5	0	1835	**1837**	1837	597
81	77	4/7/09			100.893	27	19.5	291	10	0.013073	322	0	1	0	**0**	322	0
82	78	4/19/09			100.587	23	19.5	240	10		392	0	1	0	**0**	392	0
83	79	5/1/09			98.876	27	19.5	291	10		329	3	0	987	**987**	987	203
84	80	5/13/09			97.365	29	19.75	322	10		302	2	0	604	**604**	604	73
85	81	5/25/09			96.883	29	20.5	330	10	0.013075	296	2	0	592	**591**	591	72
86	82	6/6/09			93.181	22	20	233	10		436	2	0	872	**871**	871	106

	A	B	R	S	T	U	V	W	X	Y	Z	AA	AB	AC	AD	AE	AF	AG	AH
1	ID	Date/Cll.	95% CI :Method 852	ln(Fibers)	RollPeriod	RPspan	# of filters	# of BDL	# of uncen	Location	Scale	Log-likelih'd	$Geom_{miss}$	$Geom_{cen}$	$95\%G_{lower}$	$95\%G_{upper}$	$_{1\text{-tail}}95\%G_{up}$	Loc(1DL)	Scale(1DL)
2			upper limit	Method 852		days				Method 852			fibers/m^3	fibers/m^3	fibers/m^3	fibers/m^3	fibers/m^3	Method 852	Method 852
3																			
4																			
46	42	1/19/08	3087	6.7511	26	361	28	2	26	7.0563	1.1777	-230.52	1338	1160	3 748	1801	1678	7.0995	1.1303
47	43	1/31/08	3239	7.0103	27	352	28	2	26	6.9982	1.1325	-227.83	1255	1095	717	1671	1561	7.0399	1.0871
48	44	2/12/08	2472	6.5280	28	364	29	2	27	6.9827	1.1148	-235.48	1227	1078	716	1622	1519	7.0222	1.0717
49	45	3/1/08	5178	7.6118	29	361	29	2	27	6.8896	0.8623	-225.66	1097	982	716	1347	1280	6.9180	0.8272
50	46	3/7/08	7783	8.2367	30	346	29	2	27	6.9231	0.8976	-227.75	1139	1015	731	1411	1338	6.9528	0.8612
51	47	3/19/08	3206	7.1325	31	358	30	2	28	6.9309	0.8816	-235.71	1143	1023	745	1406	1336	6.9588	0.8469
52	48	3/31/08	1284	5.8522	32	349	30	3	27	6.9158	0.9073	-230.48	1196	1008	726	1399	1328	6.9600	0.8452
53	49	4/12/08	5070	7.8083	33	361	31	3	28	6.9452	0.9050	-239.57	1227	1038	753	1432	1360	6.9873	0.8449
54	50	4/24/08	7469	8.2774	34	361	31	3	28	6.9509	0.9146	-240.05	1235	1044	754	1445	1372	6.9935	0.8539
55	51	5/6/08	6264	7.6704	35	361	31	3	28	6.9467	0.9103	-239.79	1229	1040	752	1437	1364	6.9891	0.8499
56	52	5/18/08	3295	7.0273	36	361	31	3	28	6.9462	0.9103	-239.77	1229	1039	752	1436	1363	6.9886	0.8499
57	53	5/30/08	6089	7.8667	37	355	31	2	29	7.0272	0.8726	-246.70	1261	1127	827	1535	1460	7.0526	0.8385
58	54	6/11/08	6874	8.1945	38	361	31	2	29	7.0271	0.8725	-246.69	1261	1127	827	1534	1460	7.0525	0.8383
59	55	6/23/08	7779	8.1814	39	361	31	2	29	7.0122	0.8438	-245.25	1240	1110	823	1496	1426	7.0365	0.8106
60	56	7/5/08	5501	7.9345	40	361	31	2	29	7.0324	0.8592	-246.41	1267	1133	836	1535	1462	7.0572	0.8254
61	57	7/17/08	3950	7.3415	41	361	31	2	29	7.0612	0.8534	-247.12	1306	1166	862	1577	1502	7.0854	0.8195
62	58	7/29/08	2692	6.6134	42	361	31	2	29	7.0702	0.8466	-247.17	1318	1176	872	1587	1513	7.0940	0.8128
63	59	8/10/08	7858	8.3285	43	361	31	2	29	7.1045	0.8772	-249.28	1369	1217	892	1661	1580	7.1293	0.8423
64	60	8/22/08	7977	8.4025	44	361	31	2	29	7.1600	0.9038	-251.90	1453	1287	935	1772	1683	7.1854	0.8678
65	61	9/3/08	7208	8.1599	45	361	31	2	29	7.1887	0.9220	-253.39	1500	1324	956	1835	1742	7.2146	0.8852
66	62	9/27/08	1200	5.7838	46	361	30	3	27	7.0889	0.9873	-238.23	1458	1199	839	1712	1617	7.1351	0.9183
67	63	10/9/08	3422	7.1982	47	361	30	3	27	7.0817	0.9857	-237.96	1446	1190	833	1699	1605	7.1278	0.9168
68	64	10/21/08	6345	8.0324	48	361	30	3	27	7.1304	0.9951	-239.71	1526	1249	872	1790	1689	7.1764	0.9251
69	65	11/2/08	2879	6.6809	49	361	30	3	27	7.1134	0.9995	-239.31	1499	1228	856	1763	1663	7.1600	0.9295
70	66	11/14/08	2562	6.5639	50	361	30	3	27	7.1437	0.9661	-239.30	1545	1266	893	1795	1697	7.1876	0.8975
71	67	11/26/08	2563	6.1312	51	361	30	2	28	7.1741	0.9153	-244.14	1480	1305	939	1814	1721	7.2010	0.8777
72	68	12/8/08	1117	5.7137	52	361	30	3	27	7.1151	0.9871	-239.04	1501	1230	861	1758	1660	7.1607	0.9177
73	69	12/20/08	1809	5.7838	53	361	30	3	27	7.1213	0.9777	-238.96	1510	1238	870	1762	1665	7.1662	0.9087
74	70	1/1/09	5155	7.7003	54	361	30	3	27	7.1915	0.9381	-239.97	1626	1328	947	1863	1765	7.2326	0.8704
75	71	1/13/09	572	5.0434	55	361	30	4	26	7.1217	1.0574	-236.43	1685	1239	844	1817	1709	7.1854	0.9487
76	72	1/25/09	1102	5.7004	56	361	30	5	25	7.0599	1.1344	-230.90	1731	1164	770	1761	1648	7.1503	0.9840
77	73	2/6/09	4526	7.5699	57	361	30	5	25	7.0787	1.1377	-231.56	1771	1186	784	1797	1681	7.1690	0.9866
78	74	2/18/09	3805	7.3038	58	355	30	5	25	7.1062	1.1303	-232.23	1826	1219	808	1841	1723	7.1948	0.9794
79	75	3/2/09	7539	8.2496	59	361	30	5	25	7.1259	1.1489	-233.27	1874	1244	818	1891	1768	7.2161	0.9955
80	76	3/14/09	4287	7.5159	60	361	30	5	25	7.1035	1.1294	-232.12	1820	1216	806	1836	1718	7.1921	0.9786
81	77	4/7/09	1189	5.7746	61	361	29	5	24	7.0964	1.1600	-224.05	1849	1208	785	1858	1733	7.1915	0.9997
82	78	4/19/09	1446	5.9713	62	361	29	6	23	6.9991	1.2223	-216.64	1826	1096	693	1731	1609	7.1281	1.0172
83	79	5/1/09	2884	6.8947	63	361	29	6	23	6.9539	1.1932	-214.68	1720	1047	670	1637	1524	7.0804	0.9936
84	80	5/13/09	2182	6.4036	64	361	29	6	23	6.9085	1.1925	-213.32	1627	1001	640	1564	1456	7.0367	0.9945
85	81	5/25/09	2135	6.3818	65	361	29	6	23	6.8841	1.2000	-212.76	1582	977	623	1531	1424	7.0145	1.0020
86	82	6/6/09	3147	6.7696	66	361	29	6	23	6.8472	1.1839	-211.31	1509	941	604	1467	1366	6.9767	0.9893

	A	B	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR
1	ID	Date.coll	$Geom_{1DL}$	% $Geom_{1DL}$/AL	95%G_{lower}	95%G_{upper}	$_{1\text{-tail}}$95%G_{up}		Date of	Fibers	Date of	Fibers
2			Method 852:	for plotting	fibers/m^3	fibers/m^3	:Method 852		noncensored	Method 852	censored	Method 852
3												
4												
46	42	1/19/08	1211	30	797	1841	1721	42	3/1/08	2022	11/4/10	343
47	43	1/31/08	1141	29	763	1707	1600	43	3/7/08	3777	3/4/11	100
48	44	2/12/08	1121	28	759	1656	1555	44	3/19/08	1252	3/4/11	368
49	45	3/1/08	1010	25	748	1365	1301	45	4/12/08	2461	6/20/11	100
50	46	3/7/08	1046	26	765	1431	1361	46	4/24/08	3934	6/20/11	314
51	47	3/19/08	1052	26	777	1425	1357	47	5/6/08	2144	9/24/11	100
52	48	3/31/08	1054	26	779	1426	1358	48	5/18/08	1127	9/24/11	354
53	49	4/12/08	1083	27	804	1458	1390	49	5/30/08	2609	2/3/12	100
54	50	4/24/08	1090	27	807	1472	1402	50	6/11/08	3621	2/3/12	417
55	51	5/6/08	1085	27	804	1463	1394	51	6/23/08	3574	3/22/12	100
56	52	5/18/08	1084	27	804	1462	1394	52	7/5/08	2792	3/22/12	499
57	53	5/30/08	1156	29	860	1553	1481	53	7/17/08	1543	4/15/12	100
58	54	6/11/08	1156	29	860	1552	1480	54	7/29/08	745	4/15/12	339
59	55	6/23/08	1137	28	855	1513	1445	55	8/10/08	4140	8/1/12	100
60	56	7/5/08	1161	29	868	1553	1482	56	8/22/08	4458	8/1/12	357
61	57	7/17/08	1194	30	895	1594	1522	57	9/3/08	3498	9/18/12	100
62	58	7/29/08	1205	30	905	1604	1532	58	10/9/08	1337	9/18/12	339
63	59	8/10/08	1248	31	928	1679	1601	59	10/21/08	3079	10/24/12	100
64	60	8/22/08	1320	33	973	1792	1706	60	11/2/08	797	10/24/12	357
65	61	9/3/08	1359	34	995	1856	1765	61	11/14/08	709	11/29/12	100
66	62	9/27/08	1255	31	904	1744	1654	62	11/26/08	460	11/29/12	325
67	63	10/9/08	1246	31	898	1730	1641	63	12/20/08	325	3/5/13	100
68	64	10/21/08	1308	33	940	1822	1727	64	1/1/09	2209	3/5/13	299
69	65	11/2/08	1287	32	923	1795	1701	65	2/6/09	1939	5/11/14	100
70	66	11/14/08	1323	33	959	1824	1732	66	2/18/09	1486	5/11/14	311
71	67	11/26/08	1341	34	979	1836	1745	67	3/2/09	3826	8/10/15	100
72	68	12/8/08	1288	32	927	1789	1697	68	3/14/09	1837	8/10/15	703
73	69	12/20/08	1295	32	935	1792	1701	69	5/1/09	987	8/22/15	100
74	70	1/1/09	1384	35	1013	1890	1797	70	5/13/09	604	8/22/15	525
75	71	1/13/09	1320	33	940	1854	1755	71	5/25/09	591	12/8/15	100
76	72	1/25/09	1275	32	896	1812	1713	72	6/6/09	871	12/8/15	636
77	73	2/6/09	1299	32	912	1848	1746	73	6/18/09	977	12/20/15	100
78	74	2/18/09	1333	33	939	1892	1788	74	7/12/09	498	12/20/15	586
79	75	3/2/09	1361	34	953	1944	1835	75	7/24/09	253	1/1/16	100
80	76	3/14/09	1329	33	936	1886	1783	76	8/5/09	1228	1/1/16	544
81	77	4/7/09	1328	33	923	1911	1802	77	8/29/09	267	1/13/16	100
82	78	4/19/09	1247	31	861	1805	1701	78	9/10/09	2275	1/13/16	697
83	79	5/1/09	1188	30	828	1706	1610	79	9/22/09	1641	1/25/16	100
84	80	5/13/09	1138	28	792	1634	1542	80	10/4/09	241	1/25/16	578
85	81	5/25/09	1113	28	773	1602	1511	81	10/16/09	251	2/6/16	100
86	82	6/6/09	1071	27	747	1536	1449	82	10/28/09	403	2/6/16	523

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
1	ID	Date.coll	Orig.fltr.mm^2	PC.fltr.mm^2	Air.m^3	Chord.mm	Radius.mm	Area.ashed.mm^2	Count.GO	GO.mm^2	Sen.per.m^3	Method 852: µ	CenIndex	2 ways for: Fibers0		Fibers	95% C.I :Method 852
2			1150	1075	<== Constants for specified time intervals			Method 852	Constant periodically				BDL=1	fibers/m^3	v2.pdf	fibers/m^3	lower limit
3			6/24/17-3/27/18:	1257													
4			4/8/18 to date:	1304													
87	83	6/18/09			93.587	28	20	310	10		326	3	0	978	**977**	977	202
88	84	6/30/09			95.327	33	20.25	391	10		254	0	1	0	**0**	254	0
89	85	7/12/09			94.74	34	19.25	401	10		249	2	0	498	**498**	498	60
90	86	7/24/09			93.157	33.5	20.5	402	10		253	1	0	253	**253**	253	6
91	87	8/5/09			95.196	34	19.75	404	10		246	5	0	1230	**1228**	1228	399
92	88	8/17/09			94.838	22	19.75	230	10		433	0	1	0	**0**	433	0
93	89	8/29/09			96.936	32	19.5	366	10		267	1	0	267	**267**	267	7
94	90	9/10/09			95.036	21	19.75	219	8		569	4	0	2276	**2275**	2275	620
95	91	9/22/09			95.486	28	19.25	302	10		328	5	0	1640	**1641**	1641	533
96	92	10/4/09			97.163	34	19.75	404	10		241	1	0	241	**241**	241	6
97	93	10/16/09			98.873	33	19.25	382	10		251	1	0	251	**251**	251	6
98	94	10/28/09			99.595	22	20.25	235	10		403	1	0	403	**403**	403	10
99	95	11/9/09			101.396	24	20.75	266	9		390	9	0	3510	**3512**	3512	1606
100	96	11/21/09			100.957	23	19.75	242	10		386	6	0	2316	**2318**	2318	851
101	97	12/3/09			106.209	34.5	19.75	414	7		307	15	0	4605	**4604**	4604	2577
102	98	12/15/09			108.707	15.5	20	159	9		607	15	0	9105	**9108**	9108	5097
103	99	12/27/09			106.694	22	19.25	225	10		393	0	1	0	**0**	393	0
104	100	1/8/10			108.948	28	20.25	313	10		277	4	0	1108	**1109**	1109	302
105	101	1/23/10			103.074	28	20.25	313	10		293	0	1	0	**0**	293	0
106	102	2/1/10			107.849	28	19.75	307	10		285	6	0	1710	**1712**	1712	628
107	103	2/13/10			104.784	27	19.5	291	10		310	2	0	620	**621**	621	75
108	104	2/25/10			106.353	29	20.25	327	10		272	1	0	272	**272**	272	7
109	105	3/9/10			100.579	15	19.75	152	10		619	0	1	0	**0**	619	0
110	106	3/21/10			101.619	23	20.5	250	10	0.013139	370	2	0	740	**740**	740	90
111	107	4/2/10			98.853	29	19.75	322	6		493	5	0	2465	**2466**	2466	801
112	108	4/14/10			99.535	27	19.25	288	7		469	7	0	3283	**3282**	3282	1320
113	109	4/26/10			99.873	28	19.5	305	6		516	5	0	2580	**2578**	2578	837
114	110	5/8/10			101.535	19	19.5	193	10		479	1	0	479	**479**	479	12
115	111	5/20/10			97.283	12	19.75	120	10		803	4	0	3212	**3213**	3213	875
116	112	6/1/10			96.968	28	19.5	305	10		319	0	1	0	**0**	319	0
117	113	6/13/10			97.415	29.5	20.25	335	10		289	0	1	0	**0**	289	0
118	114	6/29/10			96.418	28	19.75	307	10		318	0	1	0	**0**	318	0
119	115	7/7/10			93.437	29	20.5	330	10		305	4	0	1220	**1220**	1220	332
120	116	7/19/10			94.309	29	20.5	330	10		302	1	0	302	**302**	302	8
121	117	7/31/10			93.399	28.5	20.25	320	10		315	1	0	315	**315**	315	8
122	118	8/12/10			93.221	28	20	310	10		325	0	1	0	**0**	325	0
123	119	8/24/10			95.538	28	20	310	10		318	0	1	0	**0**	318	0
124	120	9/5/10			97.222	28	20.25	313	10		309	2	0	618	**618**	618	75
125	121	9/17/10			98.007	28	20.25	313	10		307	5	0	1535	**1533**	1533	498
126	122	9/29/10			98.094	27	19.5	291	10		330	2	0	660	**660**	660	80
127	123	10/11/10			97.625	28	19.25	302	10		319	1	0	319	**319**	319	8

	A	B	R	S	T	U	V	W	X	Y	Z	AA	AB	AC	AD	AE	AF	AG	AH
1	ID	Date/Cll.	95% CI :Method 852	ln(Fibers)	RollPeriod	RPspan	# of filters	# of BDL	# of uncen	Location	Scale	Log-likelih'd	$Geom_{miss}$	$Geom_{cen}$	$95\%G_{lower}$	$95\%G_{upper}$	$_{1\text{-tail}}95\%G_{up}$	Loc(1DL)	Scale(1DL)
2			upper limit	Method 852		days				Method 852			fibers/m^3	fibers/m^3	fibers/m^3	fibers/m^3	fibers/m^3	Method 852	Method 852
3																			
4																			
87	83	6/18/09	2856	6.8845	67	361	29	6	23	6.8053	1.1499	-209.32	1425	903	[3] 587	1389	1296	6.9315	0.9612
88	84	6/30/09	937	5.5373	68	361	29	7	22	6.6797	1.1959	-201.19	1367	796	506	1252	1164	6.8403	0.9638
89	85	7/12/09	1798	6.2106	69	361	29	7	22	6.6213	1.1726	-198.95	1264	751	482	1171	1090	6.7809	0.9469
90	86	7/24/09	1407	5.5334	70	361	29	7	22	6.5514	1.1931	-197.33	1164	700	445	1101	1024	6.7185	0.9680
91	87	8/5/09	2866	7.1131	71	361	29	7	22	6.5689	1.1972	-197.94	1191	713	453	1122	1043	6.7357	0.9705
92	88	8/17/09	1596	6.0707	72	361	29	8	21	6.4588	1.1848	-188.39	1122	638	405	1006	935	6.6579	0.9278
93	89	8/29/09	1485	5.5872	73	361	29	8	21	6.3679	1.1252	-184.35	981	583	378	898	838	6.5608	0.8850
94	90	9/10/09	5825	7.7297	74	349	29	8	21	6.3589	1.0947	-183.36	961	578	379	880	822	6.5460	0.8605
95	91	9/22/09	3829	7.4031	75	361	30	8	22	6.3982	1.0853	-192.21	985	601	399	904	847	6.5746	0.8599
96	92	10/4/09	1341	5.4848	76	361	30	7	23	6.4168	1.0579	-197.78	927	612	413	908	852	6.5646	0.8710
97	93	10/16/09	1396	5.5255	77	361	30	7	23	6.3558	1.0673	-196.15	862	576	387	858	804	6.5088	0.8825
98	94	10/28/09	2246	5.9989	78	361	30	7	23	6.2942	1.0119	-192.82	789	541	371	790	744	6.4410	0.8385
99	95	11/9/09	6667	8.1639	79	361	30	7	23	6.3339	1.0803	-195.80	841	563	376	843	790	6.4905	0.8949
100	96	11/21/09	5045	7.7485	80	361	30	7	23	6.3690	1.1164	-197.78	886	583	385	885	828	6.5300	0.9239
101	97	12/3/09	7594	8.4347	81	361	30	7	23	6.4367	1.1902	-201.60	979	624	400	973	906	6.6067	0.9834
102	98	12/15/09	15022	9.1169	82	361	30	6	24	6.5717	1.2523	-212.78	1074	715	450	1135	1054	6.7202	1.0694
103	99	12/27/09	1450	5.9738	83	361	30	7	23	6.5429	1.2886	-206.78	1132	694	429	1123	1039	6.7265	1.0642
104	100	1/8/10	2839	7.0112	84	361	30	7	23	6.5219	1.2705	-205.74	1098	680	423	1092	1012	6.7036	1.0498
105	101	1/23/10	1081	5.6802	85	364	30	7	23	6.5466	1.2343	-204.99	1098	697	440	1105	1026	6.7248	1.0211
106	102	2/1/10	3725	7.4454	86	361	30	6	24	6.6419	1.1827	-212.32	1119	767	495	1187	1106	6.7829	1.0104
107	103	2/13/10	2242	6.4313	87	361	30	6	24	6.6039	1.1703	-210.87	1067	738	479	1138	1061	6.7450	1.0012
108	104	2/25/10	1513	5.6058	88	361	30	6	24	6.5421	1.1841	-209.32	994	694	447	1076	1002	6.6884	1.0164
109	105	3/9/10	2282	6.4281	89	361	30	7	23	6.4491	1.1633	-199.62	938	632	409	977	911	6.6277	0.9734
110	106	3/21/10	2673	6.6067	90	349	30	7	23	6.4204	1.1442	-198.28	901	614	400	943	880	6.5974	0.9588
111	107	4/2/10	5756	7.8104	91	361	31	7	24	6.4673	1.1493	-207.85	940	644	422	982	918	6.6365	0.9676
112	108	4/14/10	6763	8.0962	92	361	31	6	25	6.5718	1.1400	-216.60	988	715	472	1082	1013	6.7114	0.9883
113	109	4/26/10	6016	7.8548	93	361	31	5	26	6.6620	1.1210	-224.83	1025	782	522	1172	1098	6.7721	0.9991
114	110	5/8/10	2668	6.1717	94	361	31	5	26	6.6370	1.1259	-224.18	997	763	508	1146	1073	6.7488	1.0045
115	111	5/20/10	8227	8.0750	95	361	31	5	26	6.6894	1.1559	-226.59	1063	804	530	1220	1141	6.8027	1.0299
116	112	6/1/10	1175	5.7652	96	361	31	6	25	6.6382	1.2082	-220.59	1088	764	492	1185	1104	6.7828	1.0442
117	113	6/13/10	1065	5.6664	97	361	31	7	24	6.5657	1.2694	-214.17	1099	710	446	1132	1050	6.7473	1.0633
118	114	6/29/10	1171	5.7621	98	365	31	8	23	6.4876	1.3279	-207.35	1104	657	401	1075	993	6.7111	1.0775
119	115	7/7/10	3123	7.1066	99	361	31	7	24	6.5807	1.2616	-214.22	1109	721	454	1146	1064	6.7617	1.0572
120	116	7/19/10	1683	5.7104	100	361	31	7	24	6.5611	1.2746	-213.91	1086	707	443	1129	1047	6.7455	1.0696
121	117	7/31/10	1754	5.7526	101	361	31	7	24	6.5701	1.2664	-214.00	1096	713	448	1136	1054	6.7526	1.0620
122	118	8/12/10	1200	5.7838	102	361	31	8	23	6.4855	1.3210	-206.88	1091	656	401	1071	989	6.7097	1.0737
123	119	8/24/10	1171	5.7621	103	361	31	8	23	6.4753	1.3325	-207.13	1091	649	396	1064	983	6.6998	1.0813
124	120	9/5/10	2234	6.4265	104	361	31	8	23	6.5086	1.3134	-207.74	1131	671	412	1092	1010	6.7268	1.0628
125	121	9/17/10	3579	7.3350	105	361	31	8	23	6.4976	1.3005	-207.10	1112	664	410	1075	995	6.7141	1.0527
126	122	9/29/10	2383	6.4922	106	361	31	8	23	6.4684	1.2895	-205.94	1069	644	399	1040	963	6.6847	1.0456
127	123	10/11/10	1780	5.7652	107	361	31	8	23	6.4804	1.2791	-206.08	1082	652	406	1048	971	6.6938	1.0360

	A	B	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR
1	ID	Date.coll	$Geom_{1DL}$	% $Geom_{1DL}$/AL	95%G_{lower}	95%G_{upper}	$_{1\text{-tail}}$95%G_{up}		Date of	Fibers	Date of	Fibers
2			Method 852:	for plotting	fibers/m^3	fibers/m^3	:Method 852		noncensored	Method 852	censored	Method 852
3												
4												
87	83	6/18/09	1024	26	722	1453	1373	83	11/9/09	3512	2/18/16	100
88	84	6/30/09	935	23	658	1328	1255	84	11/21/09	2318	2/18/16	547
89	85	7/12/09	881	22	624	1243	1176	85	12/3/09	4604	6/5/16	100
90	86	7/24/09	828	21	582	1177	1112	86	12/15/09	9108	6/5/16	510
91	87	8/5/09	842	21	591	1199	1132	87	1/8/10	1109	7/11/16	100
92	88	8/17/09	779	19	556	1092	1034	88	2/1/10	1712	7/11/16	619
93	89	8/29/09	707	18	512	975	926	89	2/13/10	621	7/23/16	100
94	90	9/10/09	696	17	509	953	906	90	2/25/10	272	7/23/16	608
95	91	9/22/09	717	18	527	975	928	91	3/21/10	740	8/16/16	100
96	92	10/4/09	710	18	520	969	922	92	4/2/10	2466	8/16/16	608
97	93	10/16/09	671	17	489	920	875	93	4/14/10	3282	8/28/16	100
98	94	10/28/09	627	16	465	846	807	94	4/26/10	2578	8/28/16	570
99	95	11/9/09	659	16	478	908	862	95	5/8/10	479	10/27/16	100
100	96	11/21/09	685	17	492	954	905	96	5/20/10	3213	10/27/16	577
101	97	12/3/09	740	19	521	1052	994	97	7/7/10	1220	6/24/17	100
102	98	12/15/09	829	21	565	1215	1143	98	7/19/10	302	6/24/17	657
103	99	12/27/09	834	21	570	1221	1148	99	7/31/10	315	9/16/17	100
104	100	1/8/10	815	20	560	1187	1117	100	9/5/10	618	9/16/17	911
105	101	1/23/10	833	21	578	1200	1132	101	9/17/10	1533	9/28/17	100
106	102	2/1/10	883	22	615	1267	1196	102	9/29/10	660	9/28/17	646
107	103	2/13/10	850	21	594	1216	1148	103	10/11/10	319	4/20/18	100
108	104	2/25/10	803	20	558	1155	1090	104	10/23/10	1181	4/20/18	723
109	105	3/9/10	756	19	533	1071	1012	105	11/16/10	665	8/30/18	100
110	106	3/21/10	733	18	520	1033	978	106	11/28/10	783	8/30/18	551
111	107	4/2/10	762	19	542	1072	1015	107	12/10/10	260		
112	108	4/14/10	822	21	580	1164	1100	108	12/22/10	373		
113	109	4/26/10	873	22	614	1241	1173	109	1/3/11	806		
114	110	5/8/10	853	21	599	1215	1148	110	1/15/11	497		
115	111	5/20/10	900	23	627	1294	1220	111	1/27/11	806		
116	112	6/1/10	883	22	611	1275	1201	112	2/8/11	8930		
117	113	6/13/10	852	21	586	1238	1166	113	2/20/11	3274		
118	114	6/29/10	821	21	562	1200	1129	114	3/16/11	2079		
119	115	7/7/10	864	22	596	1254	1181	115	3/28/11	3547		
120	116	7/19/10	850	21	583	1239	1166	116	4/9/11	2941		
121	117	7/31/10	856	21	589	1244	1172	117	4/21/11	754		
122	118	8/12/10	820	21	562	1197	1127	118	5/3/11	4238		
123	119	8/24/10	812	20	555	1188	1118	119	5/15/11	2414		
124	120	9/5/10	835	21	574	1213	1142	120	5/27/11	1902		
125	121	9/17/10	824	21	569	1194	1125	121	6/8/11	1637		
126	122	9/29/10	800	20	554	1156	1090	122	7/2/11	747		
127	123	10/11/10	807	20	561	1163	1096	123	7/14/11	1057		

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
1	ID	Date.coll	Orig.fltr.mm^2	PC.fltr.mm^2	Air.m^3	Chord.mm	Radius.mm	Area.ashed.mm^2	Count.GO	GO.mm^2	Sen.per.m^3	Method 852: µ	CenIndex	2 ways for: Fibers0		Fibers	95% C.I :Method 852
2			1150	1075	<== Constants for specified time intervals			Method 852	Constant periodically				BDL=1	fibers/m^3	v2.pdf	fibers/m^3	lower limit
3			6/24/17-3/27/18:	1257													
4			4/8/18 to date:	1304													
128	124	10/23/10			96.474	29	20.5	330	10		295	4	0	1180	**1181**	1181	322
129	125	11/4/10			100.784	26	19	272	10		343	0	1	0	**0**	343	0
130	126	11/16/10			101.84	25.5	19.5	271	10	0.01348	332	2	0	664	**665**	665	80
131	127	11/28/10			101.608	22	19.75	230	10		392	2	0	784	**783**	783	95
132	128	12/10/10			107.602	29	20.25	327	10		260	1	0	260	**260**	260	7
133	129	12/22/10			104.827	23	19	235	10		373	1	0	373	**373**	373	9
134	130	1/3/11			106.429	21	19.25	214	10		403	2	0	806	**806**	806	98
135	131	1/15/11			106.956	30	20.5	345	10		249	2	0	498	**497**	497	60
136	132	1/27/11			104.291	29	20.25	327	10		269	3	0	807	**806**	806	166
137	133	2/8/11			107.896	21	20.75	228	5		744	12	0	8928	**8930**	8930	4614
138	134	2/20/11			104.179	28	19.75	307	7		409	8	0	3272	**3274**	3274	1413
139	135	3/4/11			104.82	22	20.5	238	10		368	0	1	0	**0**	368	0
140	136	3/16/11			100.876	21	19.75	219	10		416	5	0	2080	**2079**	2079	675
141	137	3/28/11			102.969	21	20.5	226	10		394	9	0	3546	**3547**	3547	1622
142	138	4/9/11			97.626	22	19.75	230	7	0.013347	588	5	0	2940	**2941**	2941	955
143	139	4/21/11			99.247	23	20.25	248	10		377	2	0	754	**754**	754	91
144	140	5/3/11			99.281	29	20.5	330	6		471	9	0	4239	**4238**	4238	1938
145	141	5/15/11			98.751	26	19	272	10		345	7	0	2415	**2414**	2414	970
146	142	5/27/11			97.634	27	20.25	299	10		317	6	0	1902	**1902**	1902	698
147	143	6/8/11			97.309	27	19.5	291	10		327	5	0	1635	**1637**	1637	531
148	144	6/20/11			96.015	28	19.75	307	10		314	0	1	0	**0**	314	0
149	145	7/2/11			93.36	25.5	19	266	10		374	2	0	748	**747**	747	90
150	146	7/14/11			94.351	17	21.25	186	10		528	2	0	1056	**1057**	1057	128
151	147	7/26/11			94.118	27.5	20	303	10		325	3	0	975	**974**	974	201
152	148	8/7/11			94.181	27	20	296	10		332	3	0	996	**995**	995	205
153	149	8/19/11			94.777	21	21	231	10		423	3	0	1269	**1270**	1270	262
154	150	8/31/11			94.582	20	19.75	207	10		473	3	0	1419	**1419**	1419	293
155	151	9/12/11			97.776	28	19.75	307	10		308	4	0	1232	**1233**	1233	336
156	152	9/24/11			97.086	26	18.75	269	10		354	0	1	0	**0**	354	0
157	153	10/6/11			95.779	16	18.75	155	10		624	3	0	1872	**1872**	1872	386
158	154	10/18/11			99.822	27	19.5	291	10		319	2	0	638	**638**	638	77
159	155	10/30/11			99.479	26.5	19.5	284	10		328	3	0	984	**983**	983	203
160	156	11/11/11			98.731	28	19	299	10		314	1	0	314	**314**	314	8
161	157	11/23/11			99.678	15	20.5	157	7		843	3	0	2529	**2530**	2530	522
162	158	12/5/11			105.027	12	22	134	6		1099	11	0	12089	**12094**	12094	6037
163	159	12/17/11			102.505	27	19.5	291	10		311	3	0	933	**932**	932	192
164	160	12/29/11			102.076	27.5	18.75	289	10		314	13	0	4082	**4076**	4076	2170
165	161	1/10/12			103.178	26	19.25	275	10		327	7	0	2289	**2287**	2287	920
166	162	1/22/12			102.438	28	19.5	305	6		495	11	0	5445	**5444**	5444	2717
167	163	2/3/12			102.487	20	20.75	217	10		417	0	1	0	**0**	417	0
168	164	2/15/12			102.919	19	18.5	185	10		488	5	0	2440	**2438**	2438	792

	A	B	R	S	T	U	V	W	X	Y	Z	AA	AB	AC	AD	AE	AF	AG	AH
1	ID	Date95% CI	Method 852	ln(Fibers)	RollPeriod	RPspan	# of filters	# of BDL	# of uncen	Location	Scale	Log-likelih'd	$Geom_{miss}$	$Geom_{cen}$	$95\%G_{lower}$	$95\%G_{upper}$	$_{1\text{-tail}}95\%G_{up}$	Loc(1DL)	Scale(1DL)
2			upper limit	Method 852		days				Method 852			fibers/m^3	fibers/m^3	fibers/m^3	fibers/m^3	fibers/m^3	Method 852	Method 852
3																			
4																			
128	124	10/23/10	3025	7.0741	108	361	31	8	23	6.5384	1.2588	-207.42	1157	691	3 434	1102	1022	6.7437	1.0149
129	125	11/4/10	1266	5.8377	109	361	31	9	22	6.4925	1.3108	-201.38	1214	660	404	1079	997	6.7385	1.0192
130	126	11/16/10	2401	6.4998	110	361	31	9	22	6.4456	1.2640	-198.85	1125	630	392	1012	938	6.6848	0.9849
131	127	11/28/10	2830	6.6631	111	361	31	9	22	6.4144	1.2364	-197.23	1071	611	384	971	901	6.6498	0.9649
132	128	12/10/10	1451	5.5607	112	361	31	9	22	6.3276	1.1784	-193.12	940	560	360	872	812	6.5571	0.9250
133	129	12/22/10	2077	5.9216	113	361	31	9	22	6.2550	1.0173	-186.66	813	521	355	763	717	6.4541	0.7998
134	130	1/3/11	2912	6.6921	114	361	31	8	23	6.3127	0.9811	-193.38	813	552	383	794	749	6.4772	0.7958
135	131	1/15/11	1796	6.2086	115	358	31	8	23	6.2866	0.9730	-192.32	785	537	374	771	728	6.4513	0.7909
136	132	1/27/11	2356	6.6921	116	361	31	7	24	6.3501	0.9281	-198.57	786	573	407	805	762	6.4840	0.7788
137	133	2/8/11	15599	9.0972	117	361	31	7	24	6.3817	1.0639	-203.40	842	591	400	874	820	6.5373	0.8946
138	134	2/20/11	6450	8.0938	118	361	31	7	24	6.4291	1.1160	-206.26	902	620	411	934	874	6.5909	0.9369
139	135	3/4/11	1356	5.9081	119	361	31	8	23	6.4085	1.1438	-200.48	950	607	397	928	867	6.6006	0.9278
140	136	3/16/11	4852	7.6396	120	361	31	7	24	6.4828	1.1362	-209.01	982	654	431	992	927	6.6397	0.9457
141	137	3/28/11	6734	8.1739	121	361	31	7	24	6.5276	1.1844	-211.61	1048	684	443	1055	984	6.6903	0.9849
142	138	4/9/11	6864	7.9865	122	361	31	7	24	6.5321	1.1929	-211.96	1056	687	444	1063	991	6.6960	0.9921
143	139	4/21/11	2723	6.6254	123	361	31	7	24	6.4896	1.1503	-209.57	993	658	432	1003	938	6.6485	0.9575
144	140	5/3/11	8046	8.3518	124	361	31	7	24	6.5012	1.1795	-210.66	1014	666	432	1026	957	6.6645	0.9822
145	141	5/15/11	4973	7.7890	125	361	31	7	24	6.5526	1.2010	-212.79	1084	701	452	1088	1014	6.7167	0.9980
146	142	5/27/11	4140	7.5507	126	361	31	7	24	6.5389	1.1776	-211.80	1061	692	449	1064	993	6.6998	0.9784
147	143	6/8/11	3820	7.4006	127	361	31	6	25	6.6252	1.1324	-219.09	1080	754	500	1137	1064	6.7526	0.9704
148	144	6/20/11	1158	5.7494	128	357	31	6	25	6.6279	1.1285	-218.98	1080	756	502	1139	1066	6.7552	0.9674
149	145	7/2/11	2699	6.6161	129	361	31	5	26	6.6850	1.0748	-225.05	1064	800	543	1179	1108	6.7828	0.9502
150	146	7/14/11	3817	6.9632	130	361	31	5	26	6.6804	1.0733	-224.86	1059	797	541	1173	1102	6.7782	0.9489
151	147	7/26/11	2846	6.8814	131	361	31	5	26	6.7222	1.0518	-225.61	1107	831	569	1213	1141	6.8159	0.9281
152	148	8/7/11	2909	6.9027	132	361	31	5	26	6.7633	1.0299	-226.32	1157	866	598	1254	1181	6.8530	0.9069
153	149	8/19/11	3711	7.1468	133	361	31	4	27	6.8319	0.9764	-232.59	1161	927	654	1314	1242	6.8970	0.8861
154	150	8/31/11	4146	7.2577	134	361	31	3	28	6.9010	0.9229	-238.70	1170	993	715	1379	1308	6.9452	0.8627
155	151	9/12/11	3157	7.1172	135	361	31	3	28	6.9240	0.9181	-239.27	1199	1016	733	1409	1337	6.9675	0.8577
156	152	9/24/11	1307	5.8693	136	361	31	4	27	6.8560	0.9665	-232.94	1188	950	672	1341	1269	6.9202	0.8770
157	153	10/6/11	5471	7.5348	137	361	31	4	27	6.8901	0.9705	-234.14	1235	982	695	1390	1314	6.9539	0.8800
158	154	10/18/11	2306	6.4583	138	361	31	4	27	6.9152	0.9466	-234.24	1267	1007	718	1413	1338	6.9762	0.8573
159	155	10/30/11	2874	6.8906	139	361	31	4	27	6.9092	0.9464	-234.04	1258	1001	714	1404	1330	6.9703	0.8573
160	156	11/11/11	1748	5.7494	140	361	31	3	28	6.9235	0.9217	-239.33	1198	1016	732	1410	1338	6.9675	0.8613
161	157	11/23/11	7394	7.8360	141	361	31	3	28	6.9667	0.9320	-241.01	1256	1061	762	1477	1401	7.0106	0.8705
162	158	12/5/11	21639	9.4005	142	361	31	3	28	7.0494	1.0352	-246.65	1385	1152	797	1665	1569	7.0989	0.9675
163	159	12/17/11	2725	6.8373	143	361	31	3	28	7.0942	0.9923	-246.84	1450	1205	847	1715	1620	7.1401	0.9261
164	160	12/29/11	6970	8.3129	144	361	31	3	28	7.1730	0.9878	-249.19	1579	1304	918	1852	1750	7.2172	0.9208
165	161	1/10/12	4713	7.7350	145	361	31	3	28	7.2072	0.9874	-250.26	1639	1349	950	1916	1811	7.2508	0.9201
166	162	1/22/12	9740	8.6023	146	361	31	3	28	7.2848	0.9989	-253.04	1785	1458	1023	2079	1964	7.3280	0.9301
167	163	2/3/12	1540	6.0331	147	361	31	4	27	7.2423	1.0547	-247.41	1838	1397	959	2036	1916	7.3068	0.9523
168	164	2/15/12	5690	7.7989	148	361	31	4	27	7.2049	0.9952	-244.60	1752	1346	944	1920	1813	7.2649	0.8980

	A	B	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR
1	ID	Date.coll	$Geom_{1DL}$	% $Geom_{1DL}$/AL	95%G_{lower}	95%G_{upper}	$_{1\text{-tail}}$95%G_{up}		Date of	Fibers	Date of	Fibers
2			Method 852:	for plotting	fibers/m^3	fibers/m^3	:Method 852		noncensored	Method 852	censored	Method 852
3												
4												
128	124	10/23/10	849	21	594	1213	1145	124	7/26/11	974		
129	125	11/4/10	844	21	590	1209	1141	125	8/7/11	995		
130	126	11/16/10	800	20	566	1132	1070	126	8/19/11	1270		
131	127	11/28/10	773	19	550	1085	1028	127	8/31/11	1419		
132	128	12/10/10	704	18	509	975	926	128	9/12/11	1233		
133	129	12/22/10	635	16	479	842	805	129	10/6/11	1872		
134	130	1/3/11	650	16	491	860	822	130	10/18/11	638		
135	131	1/15/11	634	16	480	837	800	131	10/30/11	983		
136	132	1/27/11	655	16	498	861	824	132	11/11/11	314		
137	133	2/8/11	690	17	504	946	899	133	11/23/11	2530		
138	134	2/20/11	728	18	524	1013	961	134	12/5/11	12094		
139	135	3/4/11	736	18	531	1020	968	135	12/17/11	932		
140	136	3/16/11	765	19	548	1067	1011	136	12/29/11	4076		
141	137	3/28/11	805	20	569	1138	1076	137	1/10/12	2287		
142	138	4/9/11	809	20	571	1147	1085	138	1/22/12	5444		
143	139	4/21/11	772	19	551	1081	1024	139	2/15/12	2438		
144	140	5/3/11	784	20	555	1108	1048	140	2/27/12	10655		
145	141	5/15/11	826	21	581	1174	1109	141	3/10/12	1308		
146	142	5/27/11	812	20	576	1146	1084	142	4/3/12	530		
147	143	6/8/11	856	21	608	1205	1141	143	4/27/12	1493		
148	144	6/20/11	859	21	611	1207	1143	144	5/9/12	2191		
149	145	7/2/11	883	22	632	1233	1169	145	5/21/12	1023		
150	146	7/14/11	878	22	629	1227	1163	146	6/2/12	3705		
151	147	7/26/11	912	23	658	1265	1200	147	6/14/12	2980		
152	148	8/7/11	947	24	688	1303	1238	148	6/26/12	1543		
153	149	8/19/11	989	25	724	1351	1285	149	7/8/12	714		
154	150	8/31/11	1038	26	766	1407	1340	150	7/20/12	1788		
155	151	9/12/11	1062	27	785	1436	1368	151	8/13/12	705		
156	152	9/24/11	1013	25	744	1379	1312	152	8/25/12	1376		
157	153	10/6/11	1047	26	768	1427	1358	153	9/6/12	625		
158	154	10/18/11	1071	27	792	1448	1380	154	9/30/12	1626		
159	155	10/30/11	1065	27	787	1440	1371	155	10/12/12	959		
160	156	11/11/11	1062	27	784	1437	1369	156	11/5/12	630		
161	157	11/23/11	1108	28	816	1506	1433	157	11/17/12	508		
162	158	12/5/11	1211	30	861	1702	1611	158	12/11/12	1090		
163	159	12/17/11	1261	32	911	1748	1658	159	12/23/12	4233		
164	160	12/29/11	1363	34	985	1884	1789	160	1/4/13	983		
165	161	1/10/12	1409	35	1019	1948	1849	161	1/16/13	1882		
166	162	1/22/12	1522	38	1097	2112	2004	162	1/28/13	920		
167	163	2/3/12	1490	37	1066	2084	1975	163	2/9/13	1330		
168	164	2/15/12	1429	36	1042	1961	1863	164	2/21/13	1717		

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
1	ID	Date.coll	Orig.fltr.mm^2	PC.fltr.mm^2	Air.m^3	Chord.mm	Radius.mm	Area.ashed.mm^2	Count.GO	GO.mm^2	Sen.per.m^3	Method 852: µ	CenIndex	2 ways for: Fibers0		Fibers	95% C.I :Method 852
2			1150	1075	<== Constants for specified time intervals			Method 852	Constant periodically				BDL=1	fibers/m^3	v2.pdf	fibers/m^3	lower limit
3			6/24/17-3/27/18:	1257													
4			4/8/18 to date:	1304													
169	165	2/27/12			102.061	20	20.5	214	5	0.012741	888	12	0	10656	**10655**	10655	5505
170	166	3/10/12			98.85	15	19.5	150	10		654	2	0	1308	**1308**	1308	158
171	167	3/22/12			99.403	19	19.75	196	10		499	0	1	0	**0**	499	0
172	168	4/3/12			100.287	18	19.5	182	10		530	1	0	530	**530**	530	13
173	169	4/15/12			96.239	27.5	19.5	298	10		339	0	1	0	**0**	339	0
174	170	4/27/12			100.322	25	19	259	10		373	4	0	1492	**1493**	1493	407
175	171	5/9/12			97.22	28	20.75	319	10		313	7	0	2191	**2191**	2191	881
176	172	5/21/12			96.362	26.5	20.5	295	10		341	3	0	1023	**1023**	1023	211
177	173	6/2/12			95.311	26	19.25	275	10		371	10	0	3710	**3705**	3705	1777
178	174	6/14/12			94.923	17	19.5	172	10		596	5	0	2980	**2980**	2980	968
179	175	6/26/12			93.547	29	21	336	10		309	5	0	1545	**1543**	1543	501
180	176	7/8/12			94.417	27	19.25	288	10		357	2	0	714	**714**	714	86
181	177	7/20/12			93.324	27	19.5	291	10		358	5	0	1790	**1788**	1788	581
182	178	8/1/12			93.343	27	19.5	291	10		357	0	1	0	**0**	357	0
183	179	8/13/12			94.696	27	19.5	291	10		352	2	0	704	**705**	705	85
184	180	8/25/12			94.504	16	18	149	10		688	2	0	1376	**1376**	1376	167
185	181	9/6/12			96.071	28.5	20.75	326	10	0.012624	313	2	0	626	**625**	625	76
186	182	9/18/12			97.182	27.5	19.5	298	10		339	0	1	0	**0**	339	0
187	183	9/30/12			97.983	28	19.75	307	10		325	5	0	1625	**1626**	1626	528
188	184	10/12/12			99.671	28	19.75	307	10		320	3	0	960	**959**	959	198
189	185	10/24/12			99.838	26	19.25	275	10		357	0	1	0	**0**	357	0
190	186	11/5/12			100.185	28	20	310	10		315	2	0	630	**630**	630	76
191	187	11/17/12			100.911	18	20.5	191	10		508	1	0	508	**508**	508	13
192	188	11/29/12			101.648	27	20	296	10		325	0	1	0	**0**	325	0
193	189	12/11/12			103.94	25	19	259	10		363	3	0	1089	**1090**	1090	225
194	190	12/23/12			106.992	21	19.5	216	10		423	10	0	4230	**4233**	4233	2030
195	191	1/4/13			102.954	19	19.5	193	10		492	2	0	984	**983**	983	119
196	192	1/16/13			105.323	27	20	296	10		314	6	0	1884	**1882**	1882	691
197	193	1/28/13			102.851	20	19.75	207	10		460	2	0	920	**920**	920	111
198	194	2/9/13			102.235	27	19.25	288	10		333	4	0	1332	**1330**	1330	362
199	195	2/21/13			103.209	21	20	221	10		429	4	0	1716	**1717**	1717	468
200	196	3/5/13			104.526	28	20.25	313	10		299	0	1	0	**0**	299	0
201	197	3/17/13			103.038	29	20.25	327	10		290	9	0	2610	**2614**	2614	1195
202	198	3/29/13			100.85	27.5	19.25	295	10		329	8	0	2632	**2635**	2635	1138
203	199	4/10/13			100.85	28	20	310	8		391	12	0	4692	**4696**	4696	2427
204	200	4/22/13			100.584	26	18.5	267	10		365	1	0	365	**365**	365	9
205	201	5/4/13			99.551	23	18.5	230	9		476	7	0	3332	**3333**	3333	1340
206	202	5/16/13			97.742	27.5	20	303	10		330	2	0	660	**661**	661	80
207	203	5/28/13			95.397	25	20.5	276	9		414	5	0	2070	**2069**	2069	672
208	204	6/9/13			95.496	20.5	19.25	208	10		493	2	0	986	**986**	986	119
209	205	6/21/13			95.479	28	19.25	302	10	0.012346	348	3	0	1044	**1043**	1043	215

	A	B	R	S	T	U	V	W	X	Y	Z	AA	AB	AC	AD	AE	AF	AG	AH
1	ID	Date/Ti	95% CI. :Method 852	ln(Fibers)	RollPeriod	RPspan	# of filters	# of BDL	# of uncen	Location	Scale	Log-likelih'd	$Geom_{miss}$	$Geom_{cen}$	$95\%G_{lower}$	$95\%G_{upper}$	$_{1\text{-tail}}95\%G_{up}$	Loc(1DL)	Scale(1DL)
2			upper limit	Method 852		days				Method 852			fibers/m^3	fibers/m^3	fibers/m^3	fibers/m^3	fibers/m^3	Method 852	Method 852
3																			
4																			
169	165	2/27/12	18612	9.2738	149	361	31	4	27	7.2379	1.0600	-247.41	1830	1391	953	2031	1911	7.3030	0.9573
170	166	3/10/12	4724	7.1763	150	361	31	3	28	7.3008	0.9903	-253.15	1809	1481	1042	2106	1990	7.3439	0.9222
171	167	3/22/12	1840	6.2126	151	361	31	4	27	7.2325	1.0420	-246.41	1799	1384	954	2007	1891	7.2979	0.9423
172	168	4/3/12	2955	6.2729	152	361	31	4	27	7.1695	1.0439	-244.47	1677	1299	895	1886	1777	7.2365	0.9453
173	169	4/15/12	1250	5.8260	153	361	31	5	26	7.0743	1.1021	-237.35	1641	1181	795	1755	1647	7.1668	0.9675
174	170	4/27/12	3821	7.3085	154	361	31	5	26	7.0977	1.0973	-237.96	1685	1209	815	1793	1683	7.1889	0.9625
175	171	5/9/12	4514	7.6921	155	361	31	5	26	7.0783	1.0752	-236.78	1643	1186	806	1745	1640	7.1676	0.9431
176	172	5/21/12	2989	6.9305	156	361	31	5	26	7.0507	1.0674	-235.70	1589	1154	786	1693	1592	7.1399	0.9368
177	173	6/2/12	6814	8.2174	157	361	31	5	26	7.0705	1.0871	-236.84	1631	1177	796	1739	1633	7.1614	0.9540
178	174	6/14/12	6954	7.9997	158	361	31	5	26	7.0890	1.0998	-237.75	1669	1199	807	1780	1670	7.1807	0.9651
179	175	6/26/12	3601	7.3415	159	361	31	4	27	7.1663	1.0249	-243.76	1664	1295	898	1868	1761	7.2321	0.9280
180	176	7/8/12	2578	6.5709	160	361	31	4	27	7.1647	1.0260	-243.74	1661	1293	896	1865	1759	7.2306	0.9290
181	177	7/20/12	4172	7.4889	161	361	31	4	27	7.1821	1.0261	-244.29	1694	1316	912	1898	1789	7.2476	0.9288
182	178	8/1/12	1319	5.8777	162	361	31	5	26	7.1245	1.0934	-238.57	1730	1242	839	1840	1727	7.2152	0.9590
183	179	8/13/12	2546	6.5582	163	361	31	5	26	7.1124	1.0994	-238.34	1707	1227	827	1821	1709	7.2041	0.9647
184	180	8/25/12	4971	7.2269	164	361	31	5	26	7.1150	1.0994	-238.42	1712	1230	829	1826	1714	7.2067	0.9646
185	181	9/6/12	2259	6.4378	165	361	31	5	26	7.0865	1.1093	-237.77	1659	1196	803	1782	1671	7.1802	0.9744
186	182	9/18/12	1249	5.8260	166	361	31	6	25	7.0141	1.1808	-231.55	1679	1112	725	1705	1592	7.1386	1.0043
187	183	9/30/12	3795	7.3939	167	361	31	5	26	7.0942	1.1127	-238.15	1677	1205	808	1797	1685	7.1878	0.9770
188	184	10/12/12	2803	6.8659	168	361	31	5	26	7.0720	1.1115	-237.42	1634	1179	790	1757	1648	7.1662	0.9765
189	185	10/24/12	1317	5.8777	169	361	31	6	25	7.0247	1.1716	-231.65	1697	1124	736	1718	1604	7.1475	0.9959
190	186	11/5/12	2277	6.4457	170	361	31	6	25	7.0086	1.1789	-231.32	1667	1106	722	1695	1583	7.1331	1.0029
191	187	11/17/12	2831	6.2305	171	361	31	6	25	7.0278	1.1587	-231.44	1700	1128	741	1715	1603	7.1486	0.9843
192	188	11/29/12	1199	5.7838	172	361	31	7	24	6.9269	1.2230	-224.10	1672	1019	652	1593	1483	7.0824	1.0054
193	189	12/11/12	3187	6.9939	173	361	31	7	24	6.8657	1.1072	-219.38	1512	959	640	1436	1346	7.0048	0.9087
194	190	12/23/12	7785	8.3507	174	361	31	7	24	6.9103	1.1454	-221.74	1611	1003	660	1522	1424	7.0536	0.9395
195	191	1/4/13	3552	6.8906	175	361	31	7	24	6.8684	1.1091	-219.52	1518	961	641	1441	1350	7.0077	0.9102
196	192	1/16/13	4097	7.5401	176	361	31	7	24	6.8628	1.1035	-219.20	1506	956	639	1430	1340	7.0014	0.9057
197	193	1/28/13	3322	6.8244	177	361	31	7	24	6.8131	1.0429	-216.07	1398	910	622	1331	1252	6.9441	0.8559
198	194	2/9/13	3406	7.1929	178	361	31	6	25	6.8801	0.9906	-222.70	1395	973	680	1392	1314	6.9815	0.8399
199	195	2/21/13	4395	7.4483	179	361	31	6	25	6.8699	0.9799	-222.08	1376	963	676	1372	1296	6.9702	0.8309
200	196	3/5/13	1104	5.7004	180	361	31	7	24	6.7448	0.9112	-210.66	1263	850	610	1184	1122	6.8549	0.7439
201	197	3/17/13	4961	7.8686	181	361	31	7	24	6.7640	0.9356	-211.97	1300	866	616	1218	1153	6.8773	0.7640
202	198	3/29/13	5192	7.8766	182	361	31	6	25	6.8416	0.9179	-220.02	1338	936	672	1304	1236	6.9309	0.7742
203	199	4/10/13	8203	8.4545	183	361	31	6	25	6.9084	0.9618	-223.41	1460	1001	707	1416	1339	7.0013	0.8106
204	200	4/22/13	2034	5.8999	184	361	31	5	26	6.9312	0.9244	-228.66	1384	1024	735	1426	1352	7.0037	0.8072
205	201	5/4/13	6866	8.1116	185	361	31	5	26	6.9549	0.9502	-230.17	1427	1048	746	1474	1395	7.0296	0.8299
206	202	5/16/13	2387	6.4938	186	361	31	5	26	6.9157	0.9447	-228.76	1363	1008	718	1415	1340	6.9909	0.8259
207	203	5/28/13	4829	7.6348	187	361	31	5	26	6.9380	0.9541	-229.74	1400	1031	732	1451	1374	7.0137	0.8338
208	204	6/9/13	3561	6.8937	188	361	31	5	26	6.8981	0.9194	-227.45	1331	990	712	1377	1306	6.9710	0.8034
209	205	6/21/13	3047	6.9499	189	361	31	5	26	6.8663	0.8930	-225.65	1278	959	696	1322	1255	6.9371	0.7804

	A	B	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR
1	ID	Date.coll	$Geom_{1DL}$	% $Geom_{1DL}$/AL	95%G_{lower}	95%G_{upper}	$_{1\text{-tail}}$95%G_{up}		Date of	Fibers	Date of	Fibers
2			Method 852:	for plotting	fibers/m^3	fibers/m^3	:Method 852		noncensored	Method 852	censored	Method 852
3												
4												
169	165	2/27/12	1485	37	1060	2080	1970	165	3/17/13	2614		
170	166	3/10/12	1547	39	1118	2140	2031	166	3/29/13	2635		
171	167	3/22/12	1477	37	1060	2058	1951	167	4/10/13	4696		
172	168	4/3/12	1389	35	996	1938	1837	168	4/22/13	365		
173	169	4/15/12	1296	32	922	1822	1724	169	5/4/13	3333		
174	170	4/27/12	1325	33	944	1859	1760	170	5/16/13	661		
175	171	5/9/12	1297	32	930	1807	1713	171	5/28/13	2069		
176	172	5/21/12	1261	32	907	1754	1663	172	6/9/13	986		
177	173	6/2/12	1289	32	921	1803	1708	173	6/21/13	1043		
178	174	6/14/12	1314	33	935	1845	1747	174	7/3/13	2221		
179	175	6/26/12	1383	35	998	1917	1819	175	7/15/13	681		
180	176	7/8/12	1381	35	996	1915	1817	176	7/27/13	767		
181	177	7/20/12	1405	35	1013	1948	1848	177	8/8/13	1442		
182	178	8/1/12	1360	34	970	1906	1805	178	8/20/13	1795		
183	179	8/13/12	1345	34	958	1889	1788	179	9/1/13	437		
184	180	8/25/12	1348	34	960	1894	1793	180	9/13/13	316		
185	181	9/6/12	1313	33	932	1851	1751	181	9/25/13	1074		
186	182	9/18/12	1260	31	885	1794	1695	182	10/7/13	493		
187	183	9/30/12	1323	33	938	1866	1766	183	10/19/13	957		
188	184	10/12/12	1295	32	918	1826	1728	184	10/31/13	348		
189	185	10/24/12	1271	32	895	1804	1706	185	11/12/13	4463		
190	186	11/5/12	1253	31	880	1783	1685	186	11/24/13	193475		
191	187	11/17/12	1272	32	900	1799	1702	187	12/6/13	1657		
192	188	11/29/12	1191	30	836	1697	1603	188	12/18/13	2616		
193	189	12/11/12	1102	28	800	1517	1441	189	12/30/13	1686		
194	190	12/23/12	1157	29	831	1611	1527	190	1/11/14	3249		
195	191	1/4/13	1105	28	802	1523	1446	191	1/23/14	6436		
196	192	1/16/13	1098	27	798	1511	1435	192	2/4/14	5930		
197	193	1/28/13	1037	26	767	1402	1335	193	2/16/14	6314		
198	194	2/9/13	1077	27	801	1447	1380	194	2/28/14	1855		
199	195	2/21/13	1064	27	795	1426	1361	195	3/12/14	2070		
200	196	3/5/13	949	24	730	1233	1182	196	3/24/14	5331		
201	197	3/17/13	970	24	741	1269	1216	197	4/5/14	710		
202	198	3/29/13	1023	26	779	1344	1286	198	4/17/14	325		
203	199	4/10/13	1098	27	825	1461	1395	199	4/29/14	605		
204	200	4/22/13	1101	28	828	1462	1397	200	5/23/14	1770		
205	201	5/4/13	1130	28	843	1513	1443	201	6/4/14	3866		
206	202	5/16/13	1087	27	813	1453	1387	202	6/16/14	1295		
207	203	5/28/13	1112	28	829	1491	1422	203	6/28/14	891		
208	204	6/9/13	1065	27	803	1413	1351	204	7/10/14	1409		
209	205	6/21/13	1030	26	782	1355	1297	205	7/22/14	720		

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
1	ID	Date.coll	Orig.fltr.mm^2	PC.fltr.mm^2	Air.m^3	Chord.mm	Radius.mm	Area.ashed.mm^2	Count.GO	GO.mm^2	Sen.per.m^3	Method 852: µ	CenIndex	2 ways for: Fibers0		Fibers	95% C.I :Method 852
2			1150	1075	<== Constants for specified time intervals			Method 852	Constant periodically				BDL=1	fibers/m^3	v2.pdf	fibers/m^3	lower limit
3			6/24/17-3/27/18:	1257													
4			4/8/18 to date:	1304													
210	206	7/3/13			94.415	18	20.5	191	10		555	4	0	2220	**2221**	2221	605
211	207	7/15/13			93.755	16	19	157	10		681	1	0	681	**681**	681	17
212	208	7/27/13			95.996	26	19	272	10		383	2	0	766	**767**	767	93
213	209	8/8/13			95.543	27	19.5	291	10		360	4	0	1440	**1442**	1442	393
214	210	8/20/13			93.938	18	19	178	10		598	3	0	1794	**1795**	1795	370
215	211	9/1/13			95.622	23	19.5	240	10		437	1	0	437	**437**	437	11
216	212	9/13/13			98.036	28.5	20.5	323	10		316	1	0	316	**316**	316	8
217	213	9/25/13			96.238	27	19.5	291	10		358	3	0	1074	**1074**	1074	221
218	214	10/7/13			96.95	20	20	209	10		493	1	0	493	**493**	493	12
219	215	10/19/13			99.808	28.5	19.75	314	10		319	3	0	957	**957**	957	197
220	216	10/31/13			98.977	27	19.5	291	10		348	1	0	348	**348**	348	9
221	217	11/12/13			101.299	28	19.5	305	8		406	11	0	4466	**4463**	4463	2228
222	218	11/24/13			104.081	8	18.5	75	1		12898	15	0	193470	**193475**	193475	108286
223	219	12/6/13			109.826	29	20.5	330	10		276	6	0	1656	**1657**	1657	608
224	220	12/18/13			105.543	25	18.5	254	10		374	7	0	2618	**2616**	2616	1052
225	221	12/30/13			112.265	25	19.5	265	10		337	5	0	1685	**1686**	1686	547
226	222	1/11/14			101.766	29	20.75	333	10		295	11	0	3245	**3249**	3249	1622
227	223	1/23/14			107.019	27	19.5	291	6		536	12	0	6432	**6436**	6436	3325
228	224	2/4/14			108.633	26	19	272	8		424	14	0	5936	**5930**	5930	3242
229	225	2/16/14			103.27	20	19.5	205	9		526	12	0	6312	**6314**	6314	3263
230	226	2/28/14			110.32	27	19.75	294	10		309	6	0	1854	**1855**	1855	681
231	227	3/12/14			103.15	26.5	19.25	281	10		345	6	0	2070	**2070**	2070	760
232	228	3/24/14			104.332	25	20	270	4		888	6	0	5328	**5331**	5331	1956
233	229	4/5/14			99.78	27	18.75	283	10		355	2	0	710	**710**	710	86
234	230	4/17/14			101.229	28	19.75	307	10	0.012235	325	1	0	325	**325**	325	8
235	231	4/29/14			98.561	29	21.25	339	10		302	2	0	604	**605**	605	73
236	232	5/11/14			98.521	29	20.5	330	10		311	0	1	0	**0**	311	0
237	233	5/23/14			95.186	23	19.5	240	10		443	4	0	1772	**1770**	1770	482
238	234	6/4/14			95.801	25	20.25	273	10		387	10	0	3870	**3866**	3866	1854
239	235	6/16/14			95.382	29	20.25	327	10		324	4	0	1296	**1295**	1295	353
240	236	6/28/14			92.892	22.5	20.5	244	10		446	2	0	892	**891**	891	108
241	237	7/10/14			94.792	21.5	20	227	10		470	3	0	1410	**1409**	1409	291
242	238	7/22/14			94.683	27	20	296	10		360	2	0	720	**720**	720	87
243	239	8/3/14			95.599	27	19.25	288	10		367	4	0	1468	**1468**	1468	400
244	240	8/15/14			94.896	19	18.5	185	10		577	1	0	577	**577**	577	15
245	241	8/27/14			95.816	20	18.5	195	10		540	3	0	1620	**1619**	1619	334
246	242	9/8/14			97.058	28	20	310	10		336	2	0	672	**671**	671	81
247	243	9/20/14			96.271	27	18.75	283	10		371	1	0	371	**371**	371	9
248	244	10/2/14			97.034	29	19.25	316	10		329	2	0	658	**659**	659	80
249	245	10/14/14			98.265	27	19.5	291	10		354	2	0	708	**707**	707	86
250	246	10/26/14			98.459	27.5	20	303	10		338	2	0	676	**677**	677	82

	A	B	R	S	T	U	V	W	X	Y	Z	AA	AB	AC	AD	AE	AF	AG	AH
1	ID	Date/Ti	95% CI. : Method 852	ln(Fibers)	RollPeriod	RPspan	# of filters	# of BDL	# of uncen	Location	Scale	Log-likelih'd	$Geom_{miss}$	$Geom_{cen}$	$95\%G_{lower}$	$95\%G_{upper}$	$_{1\text{-tail}}95\%G_{up}$	Loc(1DL)	Scale(1DL)
2			upper limit	Method 852		days				Method 852			fibers/m^3	fibers/m^3	fibers/m^3	fibers/m^3	fibers/m^3	Method 852	Method 852
3																			
4																			
210	206	7/3/13	5687	7.7057	190	361	31	5	26	6.8772	0.9033	-226.31	1296	970	3 701	1341	1273	6.9488	0.7894
211	207	7/15/13	3793	6.5236	191	361	31	5	26	6.8755	0.9041	-226.28	1294	968	700	1339	1271	6.9473	0.7902
212	208	7/27/13	2770	6.6425	192	361	31	5	26	6.8481	0.8981	-225.22	1252	942	683	1300	1235	6.9200	0.7855
213	209	8/8/13	3691	7.2738	193	361	31	4	27	6.9140	0.8461	-231.29	1259	1006	744	1361	1296	6.9651	0.7634
214	210	8/20/13	5246	7.4928	194	361	31	4	27	6.9446	0.8487	-232.35	1303	1038	767	1404	1338	6.9952	0.7653
215	211	9/1/13	2433	6.0799	195	361	31	4	27	6.9053	0.8652	-231.63	1249	998	733	1358	1293	6.9582	0.7813
216	212	9/13/13	1762	5.7557	196	361	31	4	27	6.8804	0.8911	-231.65	1218	973	708	1337	1271	6.9362	0.8056
217	213	9/25/13	3137	6.9791	197	361	31	3	28	6.9363	0.8358	-237.15	1213	1029	765	1385	1320	6.9734	0.7789
218	214	10/7/13	2748	6.2005	198	361	31	3	28	6.8967	0.8437	-236.16	1162	989	733	1335	1272	6.9349	0.7868
219	215	10/19/13	2798	6.8638	199	361	31	3	28	6.8966	0.8437	-236.16	1162	989	733	1335	1272	6.9348	0.7868
220	216	10/31/13	1939	5.8522	200	361	31	2	29	6.9102	0.8202	-241.32	1115	1002	750	1340	1279	6.9340	0.7880
221	217	11/12/13	7986	8.4036	201	361	31	2	29	6.9723	0.8589	-244.62	1192	1067	787	1446	1377	6.9972	0.8251
222	218	11/24/13	319107	12.1729	202	361	31	2	29	7.1471	1.2779	-261.86	1464	1270	808	1998	1858	7.1889	1.2314
223	219	12/6/13	3606	7.4128	203	361	31	1	30	7.2226	1.2162	-268.39	1470	1370	892	2105	1964	7.2414	1.2038
224	220	12/18/13	5389	7.8694	204	361	31	1	30	7.2509	1.2206	-269.38	1513	1409	916	2169	2023	7.2696	1.2081
225	221	12/30/13	3933	7.4301	205	361	31	1	30	7.2214	1.2041	-268.05	1467	1368	895	2093	1955	7.2400	1.1919
226	222	1/11/14	5813	8.0861	206	361	31	1	30	7.2600	1.2120	-269.45	1527	1422	927	2182	2037	7.2785	1.1995
227	223	1/23/14	11242	8.7697	207	361	31	1	30	7.2993	1.2412	-271.39	1591	1479	954	2293	2137	7.3182	1.2284
228	224	2/4/14	9950	8.6878	208	361	31	1	30	7.3592	1.2620	-273.77	1693	1571	1006	2452	2283	7.3783	1.2489
229	225	2/16/14	11030	8.7505	209	361	31	1	30	7.4092	1.2857	-275.89	1783	1651	1049	2600	2417	7.4285	1.2723
230	226	2/28/14	4038	7.5256	210	361	31	1	30	7.4117	1.2859	-275.97	1788	1655	1051	2606	2423	7.4310	1.2724
231	227	3/12/14	4507	7.6353	211	361	31	0	31	7.4934	1.2315		1796	1796	1164	2771	2584	7.4934	1.2315
232	228	3/24/14	11603	8.5813	212	361	31	0	31	7.5164	1.2453		1838	1838	1186	2849	**2655**	7.5164	1.2453
233	229	4/5/14	2566	6.5653	213	361	31	0	31	7.4741	1.2549		1762	1762	1133	2740	2553	7.4741	1.2549
234	230	4/17/14	1810	5.7838	214	361	31	0	31	7.3880	1.2768		1616	1616	1031	2534	2357	7.3880	1.2768
235	231	4/29/14	2184	6.4052	215	361	31	0	31	7.4043	1.2603		1643	1643	1054	2560	2384	7.4043	1.2603
236	232	5/11/14	1146	5.7398	216	361	31	1	30	7.3074	1.3006	-273.03	1605	1491	942	2360	2192	7.3278	1.2876
237	233	5/23/14	4533	7.4787	217	361	31	1	30	7.3395	1.2915	-273.81	1658	1540	976	2430	2258	7.3595	1.2785
238	234	6/4/14	7110	8.2600	218	361	31	1	30	7.3596	1.3010	-274.66	1693	1571	993	2487	2310	7.3797	1.2878
239	235	6/16/14	3315	7.1663	219	361	31	1	30	7.3685	1.2986	-274.88	1709	1585	1002	2507	2329	7.3885	1.2853
240	236	6/28/14	3219	6.7923	220	361	31	1	30	7.3633	1.3006	-274.77	1700	1577	996	2496	2319	7.3834	1.2874
241	237	7/10/14	4117	7.2506	221	361	31	1	30	7.3486	1.2994	-274.28	1674	1554	982	2459	2284	7.3687	1.2862
242	238	7/22/14	2601	6.5793	222	361	31	1	30	7.3504	1.2982	-274.31	1677	1557	984	2462	2287	7.3705	1.2851
243	239	8/3/14	3758	7.2917	223	361	31	1	30	7.3716	1.2913	-274.81	1714	1590	1008	2509	2331	7.3915	1.2781
244	240	8/15/14	3214	6.3578	224	361	31	1	30	7.3416	1.3045	-274.18	1662	1543	974	2446	2271	7.3619	1.2914
245	241	8/27/14	4730	7.3896	225	361	31	1	30	7.3383	1.3043	-274.07	1657	1538	970	2438	2264	7.3586	1.2912
246	242	9/8/14	2425	6.5088	226	361	31	1	30	7.3525	1.2924	-274.24	1681	1560	988	2462	2288	7.3724	1.2793
247	243	9/20/14	2069	5.9162	227	361	31	1	30	7.3578	1.2859	-274.25	1690	1568	996	2470	2296	7.3776	1.2728
248	244	10/2/14	2380	6.4907	228	361	31	1	30	7.3418	1.2940	-273.94	1662	1543	977	2437	2265	7.3619	1.2809
249	245	10/14/14	2555	6.5610	229	361	31	1	30	7.3537	1.2847	-274.09	1682	1562	992	2458	2285	7.3735	1.2716
250	246	10/26/14	2445	6.5177	230	361	31	1	30	7.3423	1.2908	-273.88	1663	1544	979	2436	2264	7.3623	1.2778

	A	B	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR
1	ID	Date.coll	$Geom_{1DL}$	% $Geom_{1DL}$/AL	95%G_{lower}	95%G_{upper}	$_{1\text{-tail}}$95%G_{up}		Date of	Fibers	Date of	Fibers
2			Method 852:	for plotting	fibers/m^3	fibers/m^3	:Method 852		noncensored	Method 852	censored	Method 852
3												
4												
210	206	7/3/13	1042	26	789	1376	1316	206	8/3/14	1468		
211	207	7/15/13	1040	26	788	1374	1314	207	8/15/14	577		
212	208	7/27/13	1012	25	768	1335	1277	208	8/27/14	1619		
213	209	8/8/13	1059	26	809	1385	1327	209	9/8/14	671		
214	210	8/20/13	1091	27	834	1429	1368	210	9/20/14	371		
215	211	9/1/13	1052	26	799	1385	1325	211	10/2/14	659		
216	212	9/13/13	1029	26	775	1366	1305	212	10/14/14	707		
217	213	9/25/13	1068	27	812	1405	1344	213	10/26/14	677		
218	214	10/7/13	1028	26	779	1355	1296	214	11/7/14	1485		
219	215	10/19/13	1027	26	779	1355	1296	215	11/19/14	11218		
220	216	10/31/13	1027	26	778	1355	1296	216	12/1/14	14598		
221	217	11/12/13	1094	27	818	1462	1395	217	12/13/14	1806		
222	218	11/24/13	1325	33	859	2043	1906	218	12/25/14	1915		
223	219	12/6/13	1396	35	914	2133	1992	219	1/6/15	8945		
224	220	12/18/13	1436	36	939	2197	2052	220	1/18/15	992		
225	221	12/30/13	1394	35	916	2121	1982	221	1/30/15	652		
226	222	1/11/14	1449	36	950	2210	2065	222	2/11/15	3739		
227	223	1/23/14	1507	38	978	2323	2167	223	2/23/15	2836		
228	224	2/4/14	1601	40	1031	2485	2315	224	3/13/15	1312		
229	225	2/16/14	1683	42	1076	2634	2451	225	3/19/15	1784		
230	226	2/28/14	1688	42	1078	2641	2458	226	3/31/15	938		
231	227	3/12/14	1796	45	1164	2771	2584	227	4/12/15	1314		
232	228	3/24/14	1838	46	1186	2849	**2655**	228	4/24/15	3773		
233	229	4/5/14	1762	44	1133	2740	2553	229	5/6/15	493		
234	230	4/17/14	1616	40	1031	2534	2357	230	5/18/15	1531		
235	231	4/29/14	1643	41	1054	2560	2384	231	5/30/15	494		
236	232	5/11/14	1522	38	967	2395	2226	232	6/11/15	4082		
237	233	5/23/14	1571	39	1002	2464	2292	233	6/23/15	1416		
238	234	6/4/14	1603	40	1019	2523	2345	234	7/5/15	1130		
239	235	6/16/14	1617	40	1029	2543	2364	235	7/17/15	1052		
240	236	6/28/14	1609	40	1023	2532	2354	236	7/29/15	4350		
241	237	7/10/14	1586	40	1008	2494	2319	237	9/3/15	636		
242	238	7/22/14	1588	40	1010	2497	2322	238	9/15/15	581		
243	239	8/3/14	1622	41	1034	2544	2366	239	9/27/15	2077		
244	240	8/15/14	1575	39	1000	2481	2306	240	10/9/15	3078		
245	241	8/27/14	1570	39	996	2473	2299	241	10/21/15	1909		
246	242	9/8/14	1592	40	1014	2497	2322	242	11/2/15	746		
247	243	9/20/14	1600	40	1022	2504	2330	243	11/14/15	2398		
248	244	10/2/14	1575	39	1003	2472	2299	244	11/26/15	855		
249	245	10/14/14	1593	40	1018	2493	2320	245	3/1/16	1149		
250	246	10/26/14	1575	39	1005	2470	2298	246	3/25/16	1541		

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
1	ID	Date.coll	Orig.fltr.mm^2	PC.fltr.mm^2	Air.m^3	Chord.mm	Radius.mm	Area.ashed.mm^2	Count.GO	GO.mm^2	Sen.per.m^3	Method 852: µ	CenIndex	2 ways for: Fibers0		Fibers	95% C.I :Method 852
2			1150	1075	<== Constants for specified time intervals			Method 852	Constant periodically				BDL=1	fibers/m^3	v2.pdf	fibers/m^3	lower limit
3			6/24/17-3/27/18:	1257													
4			4/8/18 to date:	1304													
251	247	11/7/14			101.431	25.5	19.25	268	10		371	4	0	1484	**1485**	1485	405
252	248	11/19/14			103.632	21	20.5	226	5		863	13	0	11219	**11218**	11218	5973
253	249	12/1/14			106.759	22	21	243	4		973	15	0	14595	**14598**	14598	8170
254	250	12/13/14			100.757	29	20.75	333	10		301	6	0	1806	**1806**	1806	663
255	251	12/25/14			103.051	20	19.5	205	10		479	4	0	1916	**1915**	1915	522
256	252	1/6/15			109.478	29	20.5	330	5		559	16	0	8944	**8945**	8945	5113
257	253	1/18/15			102.725	27.5	19.5	298	10		331	3	0	993	**992**	992	204
258	254	1/30/15			107.669	27	19.25	288	10		326	2	0	652	**652**	652	79
259	255	2/11/15			108.21	26	19.25	275	10		340	11	0	3740	**3739**	3739	1866
260	256	2/23/15			107.715	19	19	189	7		709	4	0	2836	**2836**	2836	773
261	257	3/13/15			100.655	23	18.5	230	10		437	3	0	1311	**1312**	1312	271
262	258	3/19/15			102.474	21	20	221	10		446	4	0	1784	**1784**	1784	486
263	259	3/31/15			99.686	21	19.5	216	10		469	2	0	938	**938**	938	114
264	260	4/12/15			97.585	24	18	236	10		438	3	0	1314	**1314**	1314	271
265	261	4/24/15			100.602	22	20	233	8		539	7	0	3773	**3773**	3773	1517
266	262	5/6/15			97.79	20	20	209	10		493	1	0	493	**493**	493	12
267	263	5/18/15			98.314	18	19.5	182	10	0.013511	510	3	0	1530	**1531**	1531	316
268	264	5/30/15			99.175	18	20	187	10		494	1	0	494	**494**	494	13
269	265	6/11/15			95.331	16	20	165	10		583	7	0	4081	**4082**	4082	1641
270	266	6/23/15			95.281	15	18.5	143	10	0.012824	708	2	0	1416	**1416**	1416	172
271	267	7/5/15			94.992	17	20.5	180	10		565	2	0	1130	**1130**	1130	137
272	268	7/17/15			92.547	19	20	198	10		526	2	0	1052	**1052**	1052	127
273	269	7/29/15			93.285	19	20	198	6		870	5	0	4350	**4350**	4350	1412
274	270	8/10/15			93.607	15	19	146	10		703	0	1	0	**0**	703	0
275	271	8/22/15			92.689	19	20	198	10		525	0	1	0	**0**	525	0
276	272	9/3/15			93.984	18	17	161	10		636	1	0	636	**636**	636	16
277	273	9/15/15			93.088	18	19	178	10		581	1	0	581	**581**	581	15
278	274	9/27/15			97.371	14	20	143	10		692	3	0	2076	**2077**	2077	428
279	275	10/9/15			95.398	18	19.5	182	9		616	5	0	3080	**3078**	3078	999
280	276	10/21/15			98.553	15	20	154	10		636	3	0	1908	**1909**	1909	394
281	277	11/2/15			97.604	13	20	132	10		746	1	0	746	**746**	746	19
282	278	11/14/15			98.962	12	20	122	10		799	3	0	2397	**2398**	2398	494
283	279	11/26/15			104.27	21	19.5	216	10		428	2	0	856	**855**	855	104
284	280	12/8/15			98.621	15	20	154	10		636	0	1	0	**0**	636	0
285	281	12/20/15			99.87	16	20	165	10		586	0	1	0	**0**	586	0
286	282	1/1/16			103.34	17	19.5	172	10		544	0	1	0	**0**	544	0
287	283	1/13/16			105.3	13	20	132	10	0.012724	697	0	1	0	**0**	697	0
288	284	1/25/16			102.167	16	20	165	10		578	0	1	0	**0**	578	0
289	285	2/6/16			103.33	17	20.5	180	10		523	0	1	0	**0**	523	0
290	286	2/18/16			101.156	17	20	176	10		547	0	1	0	**0**	547	0
291	287	3/1/16			105.004	15	21	161	10		575	2	0	1150	**1149**	1149	139

	A	B	R	S	T	U	V	W	X	Y	Z	AA	AB	AC	AD	AE	AF	AG	AH
1	ID	Date95% CI. :	Method 852	ln(Fibers)	RollPeriod	RPspan	# of filters	# of BDL	# of uncen	Location	Scale	Log-likelih'd	$Geom_{miss}$	$Geom_{cen}$	$95\%G_{lower}$	$95\%G_{upper}$	$_{1\text{-tail}}95\%G_{up}$	Loc(1DL)	Scale(1DL)
2			upper limit	Method 852		days				Method 852			fibers/m^3	fibers/m^3	fibers/m^3	fibers/m^3	fibers/m^3	Method 852	Method 852
3																			
4																			
251	247	11/7/14	3803	7.3032	231	361	31	1	30	7.3901	1.2599	-274.63	1745	1620	1038	2527	2353	7.4091	1.2468
252	248	11/19/14	19183	9.3253	232	361	31	1	30	7.4192	1.2952	-276.38	1800	1668	1056	2634	2448	7.4389	1.2818
253	249	12/1/14	24077	9.5886	233	361	31	1	30	7.3411	1.0329	-267.09	1651	1542	1071	2221	2094	7.3555	1.0212
254	250	12/13/14	3931	7.4989	234	361	31	1	30	7.3439	1.0332	-267.18	1656	1547	1074	2227	2100	7.3583	1.0215
255	251	12/25/14	4904	7.5575	235	361	31	1	30	7.3339	1.0294	-266.76	1639	1531	1065	2202	2077	7.3482	1.0178
256	252	1/6/15	14526	9.0988	236	361	31	1	30	7.3869	1.0774	-269.79	1733	1615	1104	2362	2222	7.4020	1.0653
257	253	1/18/15	2898	6.8997	237	361	31	1	30	7.3486	1.0731	-268.48	1666	1554	1064	2269	2135	7.3638	1.0612
258	254	1/30/15	2354	6.4800	238	361	31	1	30	7.2748	1.0511	-265.55	1543	1444	996	2092	1971	7.2899	1.0396
259	255	2/11/15	6689	8.2266	239	361	31	1	30	7.2603	1.0334	-264.58	1520	1423	988	2049	1932	7.2750	1.0220
260	256	2/23/15	7261	7.9501	240	361	31	1	30	7.2350	1.0044	-262.93	1480	1387	973	1977	1868	7.2492	0.9932
261	257	3/13/15	3833	7.1793	241	355	30	1	29	7.2096	1.0176	-253.89	1445	1352	939	1948	1837	7.2248	1.0061
262	258	3/19/15	4568	7.4866	242	361	31	1	30	7.2190	1.0014	-262.35	1455	1365	959	1944	1836	7.2333	0.9903
263	259	3/31/15	3387	6.8437	243	361	31	1	30	7.1633	0.9709	-259.68	1373	1291	917	1819	1721	7.1772	0.9602
264	260	4/12/15	3840	7.1808	244	361	31	1	30	7.1834	0.9642	-260.09	1402	1317	937	1851	1753	7.1971	0.9535
265	261	4/24/15	7773	8.2356	245	361	31	1	30	7.2633	0.9447	-261.97	1521	1427	1022	1991	1888	7.2761	0.9338
266	262	5/6/15	2749	6.2005	246	361	31	1	30	7.2565	0.9518	-261.98	1511	1417	1013	1983	1879	7.2695	0.9409
267	263	5/18/15	4473	7.3337	247	361	31	0	31	7.3210	0.8970		1512	1512	1102	2073	1970	7.3210	0.8970
268	264	5/30/15	2753	6.2025	248	361	31	0	31	7.2798	0.9186		1451	1451	1050	2004	1903	7.2798	0.9186
269	265	6/11/15	8410	8.3143	249	361	31	0	31	7.2815	0.9205		1453	1453	1051	2009	1907	7.2815	0.9205
270	266	6/23/15	5117	7.2556	250	361	31	0	31	7.2844	0.9203		1457	1457	1054	2015	1913	7.2844	0.9203
271	267	7/5/15	4081	7.0300	251	361	31	0	31	7.2921	0.9171		1469	1469	1063	2028	1926	7.2921	0.9171
272	268	7/17/15	3801	6.9584	252	361	31	0	31	7.2827	0.9190		1455	1455	1053	2011	1909	7.2827	0.9190
273	269	7/29/15	10151	8.3779	253	361	31	0	31	7.3407	0.9298		1542	1542	1111	2139	2029	7.3407	0.9298
274	270	8/10/15	2593	6.5554	254	361	31	1	30	7.2995	0.9477	-262.23	1544	1480	1058	2068	1960	7.3169	0.9405
275	271	8/22/15	1938	6.2634	255	361	31	2	29	7.2793	0.9771	-256.46	1598	1450	1025	2050	1939	7.3139	0.9438
276	272	9/3/15	3544	6.4552	256	361	31	2	29	7.2481	0.9893	-255.86	1547	1405	989	1996	1887	7.2838	0.9562
277	273	9/15/15	3239	6.3648	257	361	31	2	29	7.2432	0.9936	-255.83	1539	1399	983	1990	1880	7.2791	0.9604
278	274	9/27/15	6069	7.6387	258	361	31	2	29	7.3011	0.9613	-256.67	1634	1482	1054	2084	1973	7.3347	0.9282
279	275	10/9/15	7182	8.0320	259	361	31	2	29	7.3517	0.9563	-258.10	1723	1559	1111	2188	2072	7.3844	0.9228
280	276	10/21/15	5577	7.5543	260	361	31	2	29	7.3848	0.9440	-258.75	1783	1611	1153	2252	2134	7.4164	0.9104
281	277	11/2/15	4156	6.6147	261	361	31	2	29	7.3881	0.9409	-258.76	1789	1617	1158	2257	2139	7.4196	0.9073
282	278	11/14/15	7007	7.7824	262	361	31	2	29	7.4036	0.9432	-259.32	1818	1642	1175	2294	2174	7.4350	0.9094
283	279	11/26/15	3089	6.7511	263	361	31	2	29	7.3226	0.8777	-254.64	1664	1514	1109	2067	1966	7.3520	0.8464
284	280	12/8/15	2345	6.4552	264	361	31	3	28	7.2097	0.8023	-242.28	1540	1352	1016	1800	1719	7.2509	0.7522
285	281	12/20/15	2163	6.3733	265	361	31	4	27	7.1548	0.8415	-235.80	1531	1280	947	1730	1649	7.2146	0.7669
286	282	1/1/16	2006	6.2989	266	361	31	5	26	7.0930	0.8830	-229.12	1518	1203	876	1654	1572	7.1740	0.7813
287	283	1/13/16	2571	6.5468	267	361	31	6	25	6.9984	0.8180	-217.63	1414	1095	814	1474	1405	7.0917	0.7022
288	284	1/25/16	2131	6.3596	268	361	31	7	24	6.9567	0.8585	-211.45	1435	1050	767	1438	1367	7.0742	0.7137
289	285	2/6/16	1930	6.2596	269	361	31	8	23	6.9240	0.8986	-205.56	1485	1016	729	1417	1343	7.0671	0.7209
290	286	2/18/16	2018	6.3044	270	361	31	9	22	6.8373	0.9029	-196.75	1424	932	665	1307	1238	7.0051	0.7002
291	287	3/1/16	4151	7.0466	271	355	31	9	22	6.8129	0.8732	-195.07	1366	909	656	1261	1197	6.9760	0.6780

	A	B	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR
1	ID	Date.coll	$Geom_{1DL}$	% $Geom_{1DL}$/AL	95%G_{lower}	95%G_{upper}	$_{1\text{-tail}}$95%G_{up}		Date of	Fibers	Date of	Fibers
2			Method 852:	for plotting	fibers/m^3	fibers/m^3	:Method 852		noncensored	Method 852	censored	Method 852
3												
4												
251	247	11/7/14	1651	41	1064	2561	2386	247	4/6/16	441		
252	248	11/19/14	1701	43	1083	2671	2484	248	4/30/16	1579		
253	249	12/1/14	1565	39	1092	2242	2116	249	5/12/16	942		
254	250	12/13/14	1569	39	1095	2248	2122	250	5/24/16	504		
255	251	12/25/14	1553	39	1086	2223	2098	251	6/17/16	2413		
256	252	1/6/15	1639	41	1127	2385	2246	252	6/29/16	1681		
257	253	1/18/15	1578	39	1086	2292	2159	253	8/4/16	1018		
258	254	1/30/15	1465	37	1016	2113	1992	254	9/9/16	527		
259	255	2/11/15	1444	36	1008	2069	1953	255	9/21/16	1360		
260	256	2/23/15	1407	35	992	1996	1887	256	10/3/16	5077		
261	257	3/13/15	1373	34	958	1968	1857	257	10/15/16	1585		
262	258	3/19/15	1385	35	977	1962	1855	258	11/8/16	3993		
263	259	3/31/15	1309	33	934	1836	1739	259	11/20/16	1330		
264	260	4/12/15	1335	33	955	1868	1770	260	12/2/16	6143		
265	261	4/24/15	1445	36	1040	2008	1905	261	12/14/16	10422		
266	262	5/6/15	1436	36	1031	2000	1896	262	12/26/16	1875		
267	263	5/18/15	1512	38	1102	2073	1970	263	1/7/17	883		
268	264	5/30/15	1451	36	1050	2004	1903	264	1/19/17	2537		
269	265	6/11/15	1453	36	1051	2009	1907	265	1/31/17	7239		
270	266	6/23/15	1457	36	1054	2015	1913	266	2/12/17	1925		
271	267	7/5/15	1469	37	1063	2028	1926	267	2/24/17	12235		
272	268	7/17/15	1455	36	1053	2011	1909	268	3/8/17	3100		
273	269	7/29/15	1542	39	1111	2139	2029	269	3/20/17	3249		
274	270	8/10/15	1506	38	1081	2096	1988	270	4/1/17	5153		
275	271	8/22/15	1501	38	1077	2093	1984	271	4/13/17	1343		
276	272	9/3/15	1456	36	1040	2039	1932	272	4/25/17	984		
277	273	9/15/15	1450	36	1034	2033	1925	273	5/7/17	1469		
278	274	9/27/15	1533	38	1105	2125	2016	274	5/19/17	2057		
279	275	10/9/15	1611	40	1164	2229	2115	275	5/31/17	6521		
280	276	10/21/15	1663	42	1207	2291	2176	276	6/12/17	2044		
281	277	11/2/15	1668	42	1212	2296	2181	277	7/6/17	705		
282	278	11/14/15	1694	42	1230	2334	2216	278	7/18/17	2557		
283	279	11/26/15	1559	39	1158	2100	2002	279	7/30/17	1905		
284	280	12/8/15	1409	35	1082	1837	1760	280	8/11/17	776		
285	281	12/20/15	1359	34	1038	1780	1705	281	9/4/17	665		
286	282	1/1/16	1305	33	991	1718	1644	282	10/10/17	5486		
287	283	1/13/16	1202	30	939	1539	1479	283	10/22/17	4360		
288	284	1/25/16	1181	30	919	1518	1458	284	11/3/17	3699		
289	285	2/6/16	1173	29	910	1512	1451	285	1/2/18	1376		
290	286	2/18/16	1102	28	861	1410	1356	286	1/14/18	3963		
291	287	3/1/16	1071	27	843	1359	1308	287	1/26/18	19168		

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
1	ID	Date.coll	Orig.fltr.mm^2	PC.fltr.mm^2	Air.m^3	Chord.mm	Radius.mm	Area.ashed.mm^2	Count.GO	GO.mm^2	Sen.per.m^3	Method 852: µ	CenIndex	2 ways for: Fibers0		Fibers	95% C.I :Method 852
2			1150	1075	<== Constants for specified time intervals			Method 852	Constant periodically				BDL=1	fibers/m^3	v2.pdf	fibers/m^3	lower limit
3			6/24/17-3/27/18:	1257													
4			4/8/18 to date:	1304													
292	288	3/25/16			101.321	18	20	187	10		514	3	0	1542	**1541**	1541	318
293	289	4/6/16			101.907	21	19.5	216	10		441	1	0	441	**441**	441	11
294	290	4/30/16			98.87	18	20	187	10		526	3	0	1578	**1579**	1579	326
295	291	5/12/16			98.456	20	20	209	10		471	2	0	942	**942**	942	114
296	292	5/24/16			96.659	20	19.5	205	10	0.012394	504	1	0	504	**504**	504	13
297	293	6/5/16			95.577	20	19.5	205	10		510	0	1	0	**0**	510	0
298	294	6/17/16			94.163	17	20	176	10		603	4	0	2412	**2413**	2413	658
299	295	6/29/16	Date analyzing		95.361	18	20	187	10		560	3	0	1680	**1681**	1681	347
300	296	7/11/16	9/16/16		93.374	17	19.5	172	10	0.012465	619	0	1	0	**0**	619	0
301	297	7/23/16	9/26/16		93.406	17	20	176	10	0.012394	608	0	1	0	**0**	608	0
302	298	8/4/16	9/29/16		94.125	19	21	207	10	0.012465	509	2	0	1018	**1018**	1018	123
303	299	8/16/16	10/11/16		93.877	18	18.5	174	10		608	0	1	0	**0**	608	0
304	300	8/28/16	11/7/16		95.436	18	19.5	182	10		570	0	1	0	**0**	570	0
305	301	9/9/16	11/9/16		95.144	19	20	198	10		527	1	0	527	**527**	527	13
306	302	9/21/16	11/9/16		96.787	21	20.5	226	10		453	3	0	1359	**1360**	1360	281
307	303	10/3/16	12/12/16		96.811	21	18	202	6		846	6	0	5076	**5077**	5077	1863
308	304	10/15/16	12/1/16		96.12	18	21	195	10		528	3	0	1584	**1585**	1585	327
309	305	10/27/16	12/19/16		98.842	18	18.5	174	10		577	0	1	0	**0**	577	0
310	306	11/8/16	12/28/16		99.2	19	21.5	212	8	0.012909	570	7	0	3990	**3993**	3993	1605
311	307	11/20/16	12/14/16		103.124	20	20	209	10		443	3	0	1329	**1330**	1330	274
312	308	12/2/16	1/9/17		101.666	23	21	256	6		614	10	0	6140	**6143**	6143	2946
313	309	12/14/16	1/11/17		108.518	11	19.75	110	10		802	13	0	10426	**10422**	10422	5549
314	310	12/26/16	1/19/17		103.712	20	21	219	9		469	4	0	1876	**1875**	1875	511
315	311	1/7/17	1/31/17		107.101	19	20.5	202	10		442	2	0	884	**883**	883	107
316	312	1/19/17	2/23/17		100.438	17	21.5	188	6		846	3	0	2538	**2537**	2537	523
317	313	1/31/17	3/14/17		106.501	19	21	207	3		1448	5	0	7240	**7239**	7239	2351
318	314	2/12/17	3/28/17		102.306	22	21	243	10		385	5	0	1925	**1925**	1925	625
319	315	2/24/17	4/12/17		104.143	20	19	200	6	0.012931	765	16	0	12240	**12235**	12235	6993
320	316	3/8/17	4/24/17		107.351	16	21	172	5		1033	3	0	3099	**3100**	3100	639
321	317	3/20/17	5/4/17		102.983	15	18.5	143	10		650	5	0	3250	**3249**	3249	1055
322	318	4/1/17	5/16/17		99.332	12	21.5	131	10		736	7	0	5152	**5153**	5153	2072
323	319	4/13/17	5/30/17		96	15	19.25	148	10		672	2	0	1344	**1343**	1343	163
324	320	4/25/17	6/9/17		96	19	20.5	202	10		492	2	0	984	**984**	984	119
325	321	5/7/17	6/16/17		96	13	20.5	136	10		734	2	0	1468	**1469**	1469	178
326	322	5/19/17	7/10/17		96.1	19	19.5	193	10		514	4	0	2056	**2057**	2057	560
327	323	5/31/17	7/20/17		96.1	16	21.25	174	8	0.012733	725	9	0	6525	**6521**	6521	2982
328	324	6/12/17	8/2/17		96.1	15	19.25	148	10		681	3	0	2043	**2044**	2044	421
329	325	6/24/17	10/17/17		96	17.5	19.75	179	10	0.012804	657	0	1	0	**0**	657	0
330	326	7/6/17	8/28/17		96.1	16	20.25	167	10		705	1	0	705	**705**	705	18
331	327	7/18/17	9/11/17		96.1	9	20.25	92	10		1278	2	0	2556	**2557**	2557	310
332	328	7/30/17	9/18/17		96.1	12	20.25	123	10		952	2	0	1904	**1905**	1905	231

	A	B	R	S	T	U	V	W	X	Y	Z	AA	AB	AC	AD	AE	AF	AG	AH
1	ID	Date/Cll.	95% CI :Method 852	ln(Fibers)	RollPeriod	RPspan	# of filters	# of BDL	# of uncen	Location	Scale	Log-likelih'd	$Geom_{miss}$	$Geom_{cen}$	$95\%G_{lower}$	$95\%G_{upper}$	$_{1\text{-tail}}95\%G_{up}$	Loc(1DL)	Scale(1DL)
2			upper limit	Method 852		days				Method 852			fibers/m^3	fibers/m^3	fibers/m^3	fibers/m^3	fibers/m^3	Method 852	Method 852
3																			
4																			
292	288	3/25/16	4503	7.3402	272	361	30	9	21	6.7899	0.8903	-186.75	1360	889	3 632	1249	1183	6.9643	0.6852
293	289	4/6/16	2457	6.0890	273	361	30	9	21	6.7576	0.9094	-186.28	1312	861	607	1219	1153	6.9392	0.7034
294	290	4/30/16	4614	7.3645	274	361	29	9	20	6.7163	0.8805	-176.14	1256	826	585	1166	1103	6.9008	0.6747
295	291	5/12/16	3404	6.8480	275	361	29	9	20	6.7444	0.8670	-176.61	1297	849	605	1192	1129	6.9231	0.6613
296	292	5/24/16	2808	6.2226	276	361	29	9	20	6.7012	0.8713	-175.42	1227	813	578	1144	1083	6.8848	0.6688
297	293	6/5/16	1880	6.2344	277	361	29	10	19	6.6699	0.9092	-169.45	1328	788	549	1132	1068	6.8859	0.6677
298	294	6/17/16	6179	7.7886	278	361	29	10	19	6.6633	0.8642	-168.00	1252	783	555	1104	1045	6.8678	0.6338
299	295	6/29/16	4912	7.4271	279	361	29	10	19	6.6679	0.8708	-168.33	1263	787	556	1112	1052	6.8737	0.6383
300	296	7/11/16	2285	6.4281	280	361	29	11	18	6.6065	0.9121	-161.30	1271	740	511	1071	1009	6.8529	0.6428
301	297	7/23/16	2244	6.4102	281	361	29	12	17	6.5410	0.9583	-154.25	1285	693	465	1032	968	6.8340	0.6477
302	298	8/4/16	3677	6.9256	282	361	29	12	17	6.5233	0.8524	-150.81	1180	681	478	970	916	6.7840	0.5762
303	299	8/16/16	2241	6.4102	283	361	29	12	17	6.5174	0.8580	-150.95	1180	677	474	967	913	6.7790	0.5789
304	300	8/28/16	2102	6.3456	284	361	29	12	17	6.5212	0.8540	-150.85	1180	679	477	969	915	6.7818	0.5765
305	301	9/9/16	2933	6.2672	285	361	29	12	17	6.5119	0.8589	-150.71	1167	673	471	962	908	6.7753	0.5813
306	302	9/21/16	3975	7.2152	286	361	29	12	17	6.5432	0.8657	-151.86	1227	694	485	995	939	6.8046	0.5813
307	303	10/3/16	11050	8.5325	287	361	29	12	17	6.5432	0.9595	-154.41	1293	694	466	1034	970	6.8355	0.6471
308	304	10/15/16	4631	7.3683	288	361	29	12	17	6.5352	0.9108	-152.86	1244	689	472	1006	946	6.8126	0.6142
309	305	10/27/16	2129	6.3578	289	361	29	13	16	6.4509	0.9316	-144.63	1211	633	425	943	884	6.7713	0.6027
310	306	11/8/16	8227	8.2923	290	361	29	13	16	6.4769	1.0321	-148.03	1345	650	418	1010	941	6.8292	0.6644
311	307	11/20/16	3887	7.1929	291	361	29	13	16	6.4677	0.9970	-146.86	1296	644	421	986	920	6.8088	0.6429
312	308	12/2/16	11297	8.7231	292	361	29	13	16	6.4875	1.1406	-151.01	1466	657	404	1069	988	6.8768	0.7344
313	309	12/14/16	17822	9.2517	293	361	29	12	17	6.5877	1.2743	-163.39	1645	726	428	1233	1132	6.9733	0.8513
314	310	12/26/16	4801	7.5364	294	361	29	11	18	6.6886	1.2206	-171.45	1657	803	490	1318	1217	7.0134	0.8494
315	311	1/7/17	3190	6.7833	295	361	29	10	19	6.7593	1.1564	-178.30	1603	862	544	1365	1268	7.0301	0.8396
316	312	1/19/17	7416	7.8387	296	361	29	9	20	6.8485	1.1256	-186.71	1640	942	607	1463	1363	7.0746	0.8473
317	313	1/31/17	16894	8.8872	297	361	29	8	21	6.9635	1.1412	-196.77	1761	1057	681	1641	1529	7.1618	0.8995
318	314	2/12/17	4492	7.5627	298	361	29	7	22	7.0483	1.0839	-204.10	1768	1151	762	1738	1626	7.2067	0.8852
319	315	2/24/17	19868	9.4121	299	361	29	6	23	7.1766	1.1312	-215.23	1923	1308	855	2003	1871	7.3139	0.9573
320	316	3/8/17	9060	8.0392	300	349	29	6	23	7.2108	1.1419	-216.49	2008	1354	881	2081	1942	7.3481	0.9651
321	317	3/20/17	7582	8.0861	301	361	30	6	24	7.2437	1.1274	-225.91	2048	1399	923	2122	1984	7.3727	0.9578
322	318	4/1/17	10618	8.5473	302	361	30	6	24	7.2814	1.1560	-227.75	2154	1453	948	2226	2079	7.4129	0.9815
323	319	4/13/17	4851	7.2027	303	349	30	6	24	7.3254	1.1225	-228.30	2256	1518	1004	2297	2149	7.4501	0.9502
324	320	4/25/17	3553	6.8916	304	361	31	6	25	7.3138	1.1027	-236.29	2183	1501	1007	2238	2099	7.4320	0.9396
325	321	5/7/17	5306	7.2923	305	361	31	6	25	7.3113	1.1029	-236.22	2176	1497	1004	2232	2093	7.4297	0.9399
326	322	5/19/17	5266	7.6290	306	361	31	6	25	7.3384	1.0976	-236.94	2245	1538	1034	2289	2147	7.4549	0.9342
327	323	5/31/17	12379	8.7828	307	361	31	6	25	7.4238	1.1018	-239.76	2488	1675	1125	2496	2341	7.5375	0.9348
328	324	6/12/17	5973	7.6227	308	361	31	5	26	7.4974	1.0303	-246.29	2469	1803	1246	2611	2460	7.5823	0.9030
329	325	6/24/17	2423	6.4877	309	361	31	6	25	7.4219	1.0950	-239.42	2471	1672	1125	2485	2332	7.5403	0.9231
330	326	7/6/17	3930	6.5582	310	361	31	6	25	7.3840	1.1183	-238.80	2387	1610	1074	2414	2261	7.5123	0.9397
331	327	7/18/17	9236	7.8466	311	361	31	5	26	7.4538	1.0602	-245.82	2393	1726	1180	2527	2377	7.5580	0.9195
332	328	7/30/17	6881	7.5522	312	361	31	4	27	7.5104	1.0021	-252.26	2373	1827	1277	2613	2467	7.5949	0.8945

	A	B	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR
1	ID	Date.coll	$Geom_{1DL}$	% $Geom_{1DL}$/AL	95%G_{lower}	95%G_{upper}	$_{1\text{-tail}}$95%G_{up}		Date of	Fibers	Date of	Fibers
2			Method 852:	for plotting	fibers/m^3	fibers/m^3	:Method 852		noncensored	Method 852	censored	Method 852
3												
4												
292	288	3/25/16	1058	26	828	1352	1300	288	2/7/18	4808		
293	289	4/6/16	1032	26	802	1327	1275	289	2/19/18	3708		
294	290	4/30/16	993	25	777	1270	1220	290	3/3/18	508		
295	291	5/12/16	1015	25	798	1292	1243	291	3/15/18	4137		
296	292	5/24/16	977	24	766	1247	1199	292	3/27/18	504		
297	293	6/5/16	978	24	767	1248	1200	293	4/8/18	1033		
298	294	6/17/16	961	24	763	1210	1166	294	5/2/18	2036		
299	295	6/29/16	967	24	766	1219	1175	295	5/14/18	7580		
300	296	7/11/16	947	24	749	1196	1152	296	5/26/18	4529		
301	297	7/23/16	929	23	734	1176	1132	297	6/7/18	381		
302	298	8/4/16	884	22	716	1090	1054	298	6/19/18	7084		
303	299	8/16/16	879	22	712	1085	1049	299	7/1/18	2301		
304	300	8/28/16	882	22	715	1087	1051	300	7/13/18	437		
305	301	9/9/16	876	22	709	1082	1046	301	7/25/18	674		
306	302	9/21/16	902	23	730	1115	1077	302	8/6/18	1313		
307	303	10/3/16	930	23	735	1177	1134	303	8/18/18	3850		
308	304	10/15/16	909	23	727	1137	1097	304	9/11/18	1561		
309	305	10/27/16	872	22	701	1086	1049	305	9/23/18	729		
310	306	11/8/16	924	23	726	1177	1132	306	10/5/18	363		
311	307	11/20/16	906	23	717	1145	1102	307	10/17/18	7246		
312	308	12/2/16	970	24	742	1267	1213	308	10/29/18	1001		
313	309	12/14/16	1068	27	783	1455	1385	309	11/10/18	2799		
314	310	12/26/16	1111	28	816	1514	1441	310	11/22/18	11062		
315	311	1/7/17	1130	28	833	1534	1460	311	12/4/18	4938		
316	312	1/19/17	1182	30	868	1608	1531					
317	313	1/31/17	1289	32	929	1789	1697					
318	314	2/12/17	1348	34	977	1861	1767	**Data below are for plotting**				
319	315	2/24/17	1501	38	1059	2127	2011	1st 365-day period			Plant not operated	
320	316	3/8/17	1553	39	1093	2207	2086	3/7/07	200		Date	Value used
321	317	3/20/17	1592	40	1130	2243	2122	3/8/06	200		4/2/2009	100
322	318	4/1/17	1657	41	1166	2355	2225	3/8/06	56000		4/2/2009	50000
323	319	4/13/17	1720	43	1224	2417	2288	3/7/07	56000		7/5/2009	50000
324	320	4/25/17	1689	42	1214	2352	2230	3/7/07	10000		7/5/2009	100
325	321	5/7/17	1685	42	1211	2346	2225					
326	322	5/19/17	1728	43	1244	2401	2278					
327	323	5/31/17	1877	47	1351	2609	2474					
328	324	6/12/17	1963	49	1429	2698	2563					
329	325	6/24/17	1882	47	1360	2605	2473					
330	326	7/6/17	1830	46	1315	2548	2416					
331	327	7/18/17	1916	48	1386	2648	2514					
332	328	7/30/17	1988	50	1451	2724	2589					

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
1	ID	Date.coll	Orig.fltr.mm^2	PC.fltr.mm^2	Air.m^3	Chord.mm	Radius.mm	Area.ashed.mm^2	Count.GO	GO.mm^2	Sen.per.m^3	Method 852: µ	CenIndex	2 ways for: Fibers0		Fibers	95% C.I :Method 852
2			1150	1075	<== Constants for specified time intervals			Method 852	Constant periodically				BDL=1	fibers/m^3	v2.pdf	fibers/m^3	lower limit
3			6/24/17-3/27/18:	1257													
4			4/8/18 to date:	1304													
333	329	8/11/17	10/2/17		96	14	21.25	152	10		776	1	0	776	**776**	776	20
334	330	9/4/17	10/26/17		96.1	17.5	19.5	177	10	0.012784	665	1	0	665	**665**	665	17
335	331	9/16/17	11/6/17		96.1	13	19.5	129	10		911	0	1	0	**0**	911	0
336	332	9/28/17	11/16/17		96	19	20.5	202	9		646	0	1	0	**0**	646	0
337	333	10/10/17	12/4/17		96.1	14.5	20.25	150	10		784	7	0	5488	**5486**	5486	2206
338	334	10/22/17	12/18/17		96	22	21	243	10		484	9	0	4356	**4360**	4360	1994
339	335	11/3/17	1/2/18		96	22	19	223	10		528	7	0	3696	**3699**	3699	1487
340	336	1/2/18	2/15/18		96	25	19	259	10	0.012664	459	3	0	1377	**1376**	1376	284
341	337	1/14/18	2/28/18		96	25	20	270	10		440	9	0	3960	**3963**	3963	1812
342	338	1/26/18	3/21/18		96	28	20	310	2		1917	10	0	19170	**19168**	19168	9192
343	339	2/7/18	3/27/18		96	18.86	20.16	198	10		601	8	0	4808	**4808**	4808	2076
344	340	2/19/18	4/19/18		96	25	18.75	257	10		463	8	0	3704	**3708**	3708	1601
345	341	3/3/18	4/26/18		96	21.91	20.35	235	10	0.0126	508	1	0	508	**508**	508	13
346	342	3/15/18	5/1/18		96	19.8	22.55	231	10		517	8	0	4136	**4137**	4137	1786
347	343	3/27/18	5/21/18		96	23	19.25	237	10		504	1	0	504	**504**	504	13
348	344	4/8/18	5/31/18		96	20.2	22.95	240	10		517	2	0	1034	**1033**	1033	125
349	345	4/20/18	6/19/18		96.1	16.9	19.6	171	10		723	0	1	0	**0**	723	0
350	346	5/2/18	6/19/18		96.1	23.5	19.25	243	10		509	4	0	2036	**2036**	2036	555
351	347	5/14/18	6/28/18		96	22.4	18.05	218	9		632	12	0	7584	**7580**	7580	3916
352	348	5/26/18	7/17/18		96	16.1	18.4	153	10	0.0135	755	6	0	4530	**4529**	4529	1662
353	349	6/7/18	7/26/18		96.1	27.6	19.9	303	10		381	1	0	381	**381**	381	10
354	350	6/19/18	8/7/18		96.1	16.3	19.4	163	10		708	10	0	7080	**7084**	7084	3397
355	351	7/1/18	8/16/18		96	15.9	18.35	151	10		767	3	0	2301	**2301**	2301	474
356	352	7/13/18	8/30/18		96	25.4	19.05	265	10		437	1	0	437	**437**	437	11
357	353	7/25/18	9/20/18		96.1	29.9	20.9	348	10	0.0133	337	2	0	674	**674**	674	82
358	354	8/6/18	10/1/18		96	24.4	20.55	268	10		438	3	0	1314	**1313**	1313	271
359	355	8/18/18	9/27/18		96	16.6	17.65	153	10		770	5	0	3850	**3850**	3850	1250
360	356	8/30/18	10/15/18		96	20.9	19.3	213	10		551	0	1	0	**0**	551	0
361	357	9/11/18	10/31/18		96	14.8	19.85	151	10		780	2	0	1560	**1561**	1561	189
362	358	9/23/18	11/8/18		96.1	15.5	20.25	161	10		729	1	0	729	**729**	729	18
363	359	10/5/18	11/14/18		96	28.9	20.05	324	10		363	1	0	363	**363**	363	9
364	360	10/17/18	11/26/18		96	20.2	18.55	198	9		659	11	0	7249	**7246**	7246	3617
365	361	10/29/18	12/7/18		96	23	19	235	10		500	2	0	1000	**1001**	1001	121
366	362	11/10/18	12/18/18		96	21	19	211	10	0.0132	560	5	0	2800	**2799**	2799	909
367	363	11/22/18	12/20/18		96	27	19	285	6		691	16	0	11056	**11062**	11062	6323
368	364	12/4/18	2/14/19		96	14.4	19.5	144	10		823	6	0	4938	**4938**	4938	1812
369																	
370																	

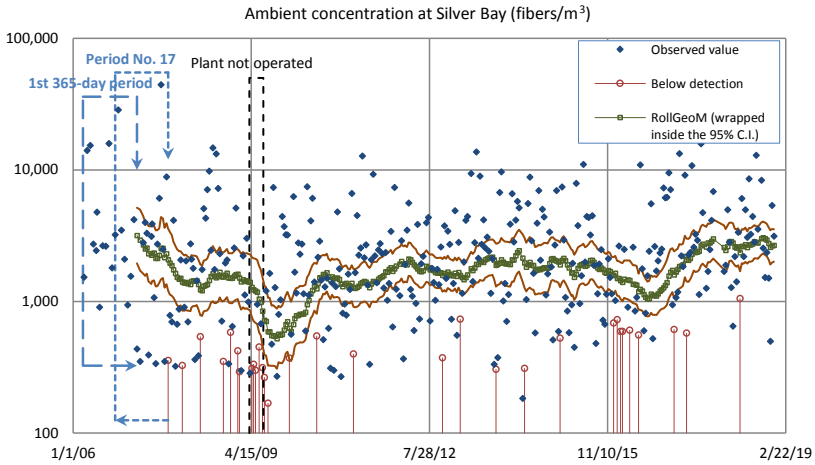
	A	B	R	S	T	U	V	W	X	Y	Z	AA	AB	AC	AD	AE	AF	AG	AH
1	ID	Date/Ti	95% CI : Method 852	ln(Fibers)	RollPeriod	RPspan	# of filters	# of BDL	# of uncen	Location	Scale	Log-likelih'd	$Geom_{miss}$	$Geom_{cen}$	$95\%G_{lower}$	$95\%G_{upper}$	$_{1\text{-tail}}95\%G_{up}$	Loc(1DL)	Scale(1DL)
2			upper limit	Method 852		days				Method 852			fibers/m^3	fibers/m^3	fibers/m^3	fibers/m^3	fibers/m^3	Method 852	Method 852
3																			
4																			
333	329	8/11/17	4323	6.6542	313	361	31	4	27	7.4950	1.0161	-252.17	2349	1799	1251	2586	2440	7.5861	0.9026
334	330	9/4/17	3705	6.4998	314	361	30	2	28	7.5694	0.9484	-255.90	2246	1938	1377	2727	2581	7.6305	0.8835
335	331	9/16/17	3359	6.8145	315	361	30	3	27	7.6025	0.9216	-249.29	2369	2003	1435	2796	2650	7.6487	0.8598
336	332	9/28/17	2384	6.4708	316	361	30	4	26	7.5565	0.9766	-243.24	2421	1913	1341	2729	2577	7.6239	0.8831
337	333	10/10/17	11303	8.6100	317	361	30	4	26	7.5589	0.9798	-243.40	2428	1918	1343	2738	2586	7.6265	0.8860
338	334	10/22/17	8277	8.3802	318	361	30	4	26	7.5924	0.9903	-244.73	2524	1983	1384	2843	2683	7.6602	0.8950
339	335	11/3/17	7622	8.2158	319	361	30	3	27	7.6762	0.9284	-251.61	2560	2156	1541	3017	2858	7.7221	0.8656
340	336	1/2/18	4022	7.2269	320	361	26	3	23	7.5572	0.9112	-211.92	2309	1914	1342	2730	2579	7.6113	0.8408
341	337	1/14/18	7522	8.2848	321	361	26	3	23	7.6168	0.9042	-213.32	2464	2032	1429	2890	2731	7.6691	0.8332
342	338	1/26/18	35251	9.8610	322	361	26	3	23	7.6869	1.0164	-217.97	2691	2180	1467	3238	3039	7.7469	0.9375
343	339	2/7/18	9474	8.4780	323	361	26	3	23	7.6723	0.9985	-217.16	2643	2148	1456	3169	2977	7.7311	0.9209
344	340	2/19/18	7306	8.2182	324	361	26	3	23	7.6977	1.0034	-217.95	2720	2203	1491	3257	3058	7.7563	0.9251
345	341	3/3/18	2828	6.2305	325	361	26	3	23	7.5743	0.9823	-214.17	2368	1947	1328	2856	2685	7.6340	0.9075
346	342	3/15/18	8151	8.3277	326	361	26	3	23	7.5850	0.9898	-214.64	2398	1968	1338	2895	2721	7.6451	0.9144
347	343	3/27/18	2806	6.2226	327	361	26	3	23	7.5084	1.0267	-213.49	2212	1823	1222	2721	2552	7.5734	0.9508
348	344	4/8/18	3732	6.9402	328	361	26	3	23	7.4464	1.0107	-211.47	2062	1714	1155	2542	2386	7.5116	0.9371
349	345	4/20/18	2668	6.5834	329	361	26	4	22	7.3931	1.0639	-204.86	2103	1625	1069	2468	2308	7.4878	0.9530
350	346	5/2/18	5213	7.6187	330	361	26	4	22	7.4229	1.0567	-205.48	2174	1674	1105	2535	2372	7.5157	0.9454
351	347	5/14/18	13240	8.9333	331	361	26	4	22	7.4830	1.1006	-208.06	2342	1778	1154	2739	2555	7.5788	0.9839
352	348	5/26/18	9857	8.4183	332	361	26	4	22	7.5126	1.1165	-209.18	2428	1831	1181	2839	2645	7.6092	0.9976
353	349	6/7/18	2122	5.9428	333	361	26	4	22	7.3971	1.1360	-206.55	2134	1631	1043	2550	2373	7.5000	1.0192
354	350	6/19/18	13027	8.8656	334	361	26	4	22	7.4419	1.1751	-208.56	2258	1706	1075	2708	2514	7.5478	1.0538
355	351	7/1/18	6724	7.7411	335	361	26	3	23	7.5233	1.1119	-215.73	2260	1851	1199	2856	2664	7.5960	1.0318
356	352	7/13/18	2434	6.0799	336	361	26	3	23	7.5023	1.1360	-215.70	2213	1812	1163	2824	2629	7.5776	1.0550
357	353	7/25/18	2435	6.5132	337	361	26	3	23	7.4480	1.1543	-214.67	2088	1716	1093	2694	2506	7.5263	1.0736
358	354	8/6/18	3836	7.1801	338	361	26	3	23	7.4331	1.1561	-214.32	2055	1691	1076	2656	2470	7.5120	1.0758
359	355	8/18/18	8986	8.2558	339	349	26	3	23	7.4968	1.1522	-215.91	2203	1802	1149	2826	2629	7.5736	1.0705
360	356	8/30/18	2033	6.3117	340	361	27	4	23	7.4234	1.1959	-217.71	2203	1675	1056	2655	2466	7.5269	1.0775
361	357	9/11/18	5637	7.3531	341	361	27	4	23	7.4583	1.1766	-218.26	2286	1734	1102	2729	2537	7.5585	1.0585
362	358	9/23/18	4059	6.5917	342	361	27	3	24	7.4804	1.1468	-224.95	2180	1773	1143	2749	2562	7.5502	1.0654
363	359	10/5/18	2023	5.8944	343	361	27	2	25	7.4829	1.1386	-231.19	2029	1777	1153	2741	2557	7.5289	1.0933
364	360	10/17/18	12964	8.8882	344	361	27	2	25	7.4927	1.1509	-231.74	2052	1795	1158	2781	2592	7.5392	1.1051
365	361	10/29/18	3616	6.9088	345	361	27	2	25	7.4378	1.1431	-230.07	1935	1699	1100	2625	2448	7.4847	1.0983
366	362	11/10/18	6533	7.9370	346	313	27	2	25	7.4276	1.1369	-229.65	1913	1682	1091	2592	2418	7.4743	1.0924
367	363	11/22/18	17964	9.3113	347	325	28	2	26	7.4941	1.1714	-241.31	2047	1797	1160	2784	2595	7.5399	1.1268
368	364	12/4/18	10747	8.5047	348	337	29	2	27	7.5298	1.1641	-251.25	2115	1863	1215	2855	2666	7.5732	1.1209
369																	3934		
370																			

	A	B	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR
1	ID	Date.coll	$Geom_{1DL}$	% $Geom_{1DL}$/AL	95%G_{lower}	95%G_{upper}	$_{1\text{-tail}}$95%G_{up}		Date of	Fibers	Date of	Fibers
2			Method 852:	for plotting	fibers/m^3	fibers/m^3	:Method 852		noncensored	Method 852	censored	Method 852
3												
4												
333	329	8/11/17	1971	49	1434	2708	2573					
334	330	9/4/17	2060	51	1502	2826	2686					
335	331	9/16/17	2098	52	1542	2854	2716					
336	332	9/28/17	2047	51	1492	2807	2668					
337	333	10/10/17	2052	51	1494	2817	2677					
338	334	10/22/17	2122	53	1541	2923	2777					
339	335	11/3/17	2258	56	1656	3078	2928					
340	336	1/2/18	2021	51	1463	2792	2651					
341	337	1/14/18	2141	54	1554	2949	2801					
342	338	1/26/18	2314	58	1614	3318	3132					
343	339	2/7/18	2278	57	1599	3246	3066					
344	340	2/19/18	2336	58	1637	3334	3149					
345	341	3/3/18	2067	52	1458	2930	2770					
346	342	3/15/18	2090	52	1471	2971	2807					
347	343	3/27/18	1946	49	1350	2804	2644					
348	344	4/8/18	1829	46	1276	2622	2475					
349	345	4/20/18	1786	45	1238	2576	2429					
350	346	5/2/18	1837	46	1277	2642	2492					
351	347	5/14/18	1956	49	1340	2856	2687					
352	348	5/26/18	2017	50	1374	2959	2782					
353	349	6/7/18	1808	45	1222	2675	2512					
354	350	6/19/18	1897	47	1265	2844	2664					
355	351	7/1/18	1990	50	1339	2959	2776					
356	352	7/13/18	1954	49	1303	2931	2746					
357	353	7/25/18	1856	46	1229	2805	2624					
358	354	8/6/18	1830	46	1210	2767	2589					
359	355	8/18/18	1946	49	1290	2937	2749					
360	356	8/30/18	1857	46	1237	2789	2612					
361	357	9/11/18	1917	48	1286	2858	2680					
362	358	9/23/18	1901	48	1272	2841	2664					
363	359	10/5/18	1861	47	1232	2811	2631					
364	360	10/17/18	1880	47	1239	2853	2668					
365	361	10/29/18	1781	45	1177	2694	2521					
366	362	11/10/18	1762	44	1167	2661	2490					
367	363	11/22/18	1882	47	1240	2856	2671					
368	364	12/4/18	1945	49	1294	2925	2740					
369					← Max →		4006					
370					For RollPeriod Nos. 9-348							

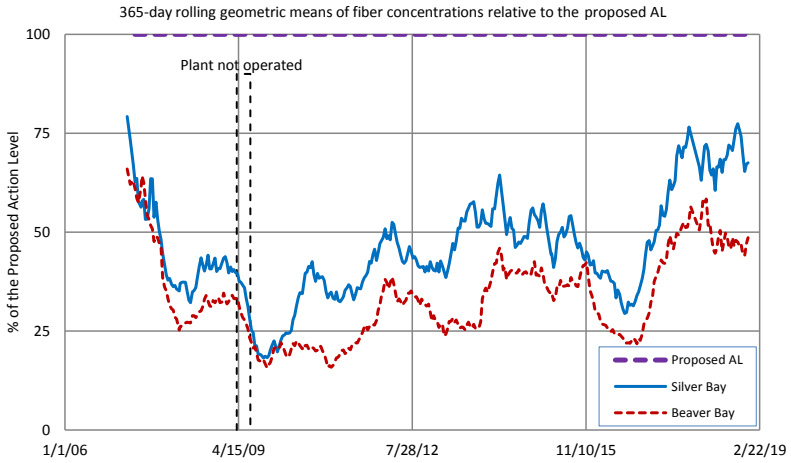
	A	B	C	D	E	F	G	H	I	J	K
1	ID	Date.coll	Orig.fltr.mm^2	PC.fltr.mm^2	Air.m^3	Chord.mm	Radius.mm	Area.ashed.mm^2	Count.GO	GO.mm^2	Sen.per.m^3
2			1150	1075	<== Constants for specified time intervals			Method 852		Constant periodically	
3			6/24/17-3/27/18:	1257							
4			4/8/18 to date:	1304							
5	1	3/15/06		Radii (mm) are:	104.54	24.5	20.75	272	10	0.008531	510
6	2	4/5/06	19.13	18.50	100.072	26.5	19.5	284	4		1274
7	3	4/26/06			99.479	18.5	19.75	190	3		2554
8	4	5/17/06			96.543	18	17.5	165	10		907
9	5	6/5/06			71.202	17	19	167	10		1216
10	6	6/10/06			97.565	19	18.75	187	10		795
11	7	6/28/06			93.352	17	19.5	172	10		905
12	8	7/19/06			93.581	20	18.5	195	10	0.012764	530
13	9	8/9/06			94.789	26	19	272	10		376
14	10	8/30/06			95.679	27	19.25	288	2		1757
15	11	9/20/06			96.172	26	19.75	280	10		359
16	12	10/11/06			99.254	33	19	380	8		321
17	13	11/1/06			102.49	25	18	249	2		1900
18	14	11/22/06			100.241	26	19.5	277	3		1161
19	15	12/13/06			100.021	27	18.25	277	10		349
20	16	1/3/07			99.82	21	18.5	207	10		470
21	17	1/24/07			104.92	19	17.75	178	10		519
22	18	2/14/07			106.326	22	18.5	218	3		1393
23	19	3/7/07			102.643	25.5	19.5	271	8		435
24	20	3/28/07			102.052	26	19	272	10		349
25	21	4/18/07			98.951	22	20	233	9		467
26	22	4/30/07			73.892	25	18.5	254	9	0.012865	569
27	23	5/12/07			97.126	26	18.5	267	9		412
28	24	5/24/07			97.508	25	18.25	251	10		392
29	25	6/11/07			95.855	20	18.25	193	10		519
30	26	6/17/07			94.378	25	19.25	262	5		778
31	27	6/29/07			97.093	26	19.5	277	10		357
32	28	7/11/07			95.35	27	20.25	299	10		337
33	29	7/23/07			93.473	18	20.25	189	6		907
34	30	8/4/07			96.123	25	17.75	246	4		1015
35	31	8/16/07			97.826	10	19.75	100	2		4920
36	32	8/28/07			97.147	17	18	159	10		621
37	33	9/9/07			99.3256	26	19.5	277	10		349
38	34	9/21/07			96.382	17	18.25	161	7		883
39	35	10/3/07			97.535	26	19.5	277	10		355
40	36	10/15/07			98.624	25	18	249	10		392
41	37	10/27/07			100.913	26	19	272	10		350
42	38	11/8/07			101.97	29	19.5	319	5		591
43	39	11/20/07			107.799	26	19.5	277	10		321
44	40	12/2/07			106.669	26	18.75	269	10		334
45	41	12/14/07			107.25	28	19.75	307	10		292
46	42	12/26/07			105.068	28	20	310	10		295
47	43	1/7/08			102.497	27	19.25	288	10		326
48	44	1/19/08			111.68	27	19	285	10		302
49	45	1/31/08			106.435	26	19.75	280	10	0.012225	339
50	46	2/12/08			108.837	25.5	19	266	10		350
51	47	3/1/08			105.91	15	18	139	10		686
52	48	3/7/08			108.04	21	20.25	224	4		1047
53	49	3/19/08			104.225	26	19	272	10		357
54	50	3/31/08			102.442	27.5	20	303	9		362
55	51	4/12/08			101.366	26.5	19	279	10		358
56	52	4/24/08			100.902	25	19	259	10		387
57	53	5/6/08			99.477	19	19	189	10		538
58	54	5/18/08			98.424	27	19.75	294	10		350
59	55	5/30/08			97.315	13	18.5	123	10		846
60	56	6/11/08			94.261	26	19.25	275	10		390
61	57	6/23/08			95.935	20.5	20	215	9		544

	A	B	L	M	N	O	P	Q	R	S	T	U
1	ID	Date.coll	Method 852: μ	CenIndex	2 ways for: Fibers0		Fibers	95% C.I. :Method 852		ln(Fibers)	RollPeriod	RP span
2				BDL=1	fibers/m^3	v2.pdf	fibers/m^3	lower limit	upper limit	Method 852		days
3												
4												
5	1	3/15/06	3	0	1530	**1529**	1529	315	4470	7.3324		
6	2	4/5/06	11	0	14014	**14018**	14018	6998	25083	9.5481		
7	3	4/26/06	6	0	15324	**15324**	15324	5623	33353	9.6372		
8	4	5/17/06	3	0	2721	**2722**	2722	561	7955	7.9091		
9	5	6/5/06	2	0	2432	**2431**	2431	294	8782	7.7961		
10	6	6/10/06	6	0	4770	**4771**	4771	1751	10384	8.4703		
11	7	6/28/06	1	0	905	**905**	905	23	5043	6.8079		
12	8	7/19/06	5	0	2650	**2648**	2648	860	6179	7.8816		
13	9	8/9/06	7	0	2632	**2629**	2629	1057	5418	7.8744		
14	10	8/30/06	9	0	15813	**15817**	15817	7232	30025	9.6688		
15	11	9/20/06	5	0	1795	**1797**	1797	583	4193	7.4939		
16	12	10/11/06	10	0	3210	**3212**	3212	1540	5907	8.0746		
17	13	11/1/06	15	0	28500	**28497**	28497	15949	47001	10.2576		
18	14	11/22/06	3	0	3483	**3482**	3482	718	10176	8.1554		
19	15	12/13/06	6	0	2094	**2095**	2095	769	4560	7.6473		
20	16	1/3/07	2	0	940	**939**	939	114	3394	6.8448		
21	17	1/24/07	3	0	1557	**1556**	1556	321	4548	7.3499		Data in this column:
22	18	2/14/07	3	0	4179	**4180**	4180	862	12215	8.3381		Must be <= 365
23	19	3/7/07	1	0	435	**435**	435	11	2425	6.0753	1	358
24	20	3/28/07	1	0	349	**349**	349	9	1944	5.8551	2	358
25	21	4/18/07	6	0	2802	**2801**	2801	1028	6097	7.9377	3	358
26	22	4/30/07	7	0	3983	**3984**	3984	1602	8208	8.2900	4	349
27	23	5/12/07	8	0	3296	**3298**	3298	1424	6498	8.1011	5	361
28	24	5/24/07	1	0	392	**392**	392	10	2185	5.9713	6	354
29	25	6/11/07	6	0	3114	**3114**	3114	1143	6778	8.0437	7	349
30	26	6/17/07	5	0	3890	**3888**	3888	1262	9073	8.2657	8	355
31	27	6/29/07	3	0	1071	**1070**	1070	221	3127	6.9754	9	346
32	28	7/11/07	1	0	337	**337**	337	9	1876	5.8201	10	358
33	29	7/23/07	3	0	2721	**2722**	2722	561	7954	7.9091	11	349
34	30	8/4/07	6	0	6090	**6092**	6092	2235	13259	8.7147	12	361
35	31	8/16/07	9	0	44280	**44276**	44276	20246	84049	10.6982	13	352
36	32	8/28/07	4	0	2484	**2483**	2483	677	6358	7.8172	14	364
37	33	9/9/07	1	0	349	**349**	349	9	1943	5.8551	15	355
38	34	9/21/07	10	0	8830	**8827**	8827	4233	16233	9.0856	16	346
39	35	10/3/07	0	1	0	**0**	355	0	1310	5.8721	17	358
40	36	10/15/07	2	0	784	**783**	783	95	2830	6.6631	18	349
41	37	10/27/07	2	0	700	**700**	700	85	2529	6.5511	19	361
42	38	11/8/07	7	0	4137	**4138**	4138	1664	8526	8.3280	20	352
43	39	11/20/07	1	0	321	**321**	321	8	1790	5.7714	21	364
44	40	12/2/07	2	0	668	**669**	669	81	2417	6.5058	22	355
45	41	12/14/07	3	0	876	**875**	875	180	2556	6.7742	23	346
46	42	12/26/07	7	0	2065	**2064**	2064	830	4253	7.6324	24	358
47	43	1/7/08	0	1	0	**0**	326	0	1201	5.7869	25	349
48	44	1/19/08	3	0	906	**905**	905	187	2644	6.8079	26	361
49	45	1/31/08	6	0	2034	**2034**	2034	747	4428	7.6178	27	352
50	46	2/12/08	2	0	700	**700**	700	85	2528	6.5511	28	364
51	47	3/1/08	4	0	2744	**2743**	2743	747	7023	7.9168	29	361
52	48	3/7/08	2	0	2094	**2094**	2094	254	7563	7.6468	30	346
53	49	3/19/08	5	0	1785	**1783**	1783	579	4162	7.4861	31	358
54	50	3/31/08	1	0	362	**362**	362	9	2015	5.8916	32	349
55	51	4/12/08	4	0	1432	**1432**	1432	390	3667	7.2668	33	361
56	52	4/24/08	1	0	387	**387**	387	10	2154	5.9584	34	361
57	53	5/6/08	0	1	0	**0**	538	0	1984	6.2879	35	361
58	54	5/18/08	5	0	1750	**1750**	1750	568	4084	7.4674	36	361
59	55	5/30/08	6	0	5076	**5074**	5074	1862	11045	8.5319	37	355
60	56	6/11/08	11	0	4290	**4295**	4295	2144	7686	8.3652	38	361
61	57	6/23/08	13	0	7072	**7074**	7074	3767	12097	8.8642	39	361

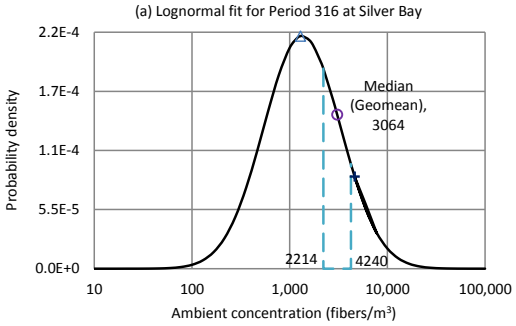
	A	B	V	W	X	Y	Z	AA	AB	AC	AD	AE	AF
1	ID	Date.coll	# of filters	# of BDL	# of uncen	Location	Scale	Log-likelih'd	$Geom_{miss}$	$Geom_{cen}$	$95\%G_{lower}$	$95\%G_{upper}$	$_{1\text{-tail}}95\%G_{up}$
2						Method 852			fibers/m^3	fibers/m^3	fibers/m^3	fibers/m^3	fibers/m^3
3													
4													
5	1	3/15/06											
6	2	4/5/06											
7	3	4/26/06											
8	4	5/17/06											
9	5	6/5/06											
10	6	6/10/06											
11	7	6/28/06											
12	8	7/19/06											
13	9	8/9/06											
14	10	8/30/06											
15	11	9/20/06											
16	12	10/11/06											
17	13	11/1/06											
18	14	11/22/06											
19	15	12/13/06											
20	16	1/3/07											
21	17	1/24/07											
22	18	2/14/07											
23	19	3/7/07	19	0	19	8.0612	1.0812		3169	3169	1949	5153	4766
24	20	3/28/07	19	0	19	7.9834	1.1847		2932	2932	1721	4995	4585
25	21	4/18/07	19	0	19	7.8987	1.1225		2694	2694	1626	4462	4114
26	22	4/30/07	19	0	19	7.8278	1.0465		2509	2509	1567	4017	3725
27	23	5/12/07	20	0	20	7.8414	1.0205		2544	2544	1627	3979	3703
28	24	5/24/07	20	0	20	7.7446	1.1024		2309	2309	1424	3743	3463
29	25	6/11/07	19	0	19	7.7194	1.1215		2252	2252	1360	3728	3438
30	26	6/17/07	20	0	20	7.7467	1.0984		2314	2314	1430	3745	3466
31	27	6/29/07	20	0	20	7.7551	1.0915		2333	2333	1446	3765	3486
32	28	7/11/07	21	0	21	7.6629	1.1446		2128	2128	1304	3472	3209
33	29	7/23/07	21	0	21	7.6642	1.1448		2131	2131	1306	3477	3214
34	30	8/4/07	22	0	22	7.7120	1.1395		2235	2235	1388	3598	3333
35	31	8/16/07	22	0	22	7.8404	1.3056		2541	2541	1473	4385	4017
36	32	8/28/07	23	0	23	7.8393	1.2756		2539	2539	1507	4275	3932
37	33	9/9/07	23	0	23	7.6735	1.2748		2151	2151	1277	3621	3330
38	34	9/21/07	23	0	23	7.7427	1.3074		2305	2305	1351	3933	3609
39	35	10/3/07	24	1	23	7.6383	1.3529	-218.86	2305	2076	1206	3575	3276
40	36	10/15/07	24	1	23	7.5788	1.3648	-217.63	2168	1956	1131	3384	3099
41	37	10/27/07	25	1	24	7.5377	1.3522	-225.68	2068	1878	1103	3196	2934
42	38	11/8/07	25	1	24	7.4631	1.2400	-221.69	1908	1743	1070	2838	2624
43	39	11/20/07	26	1	25	7.3971	1.2607	-229.48	1777	1631	1003	2653	2453
44	40	12/2/07	26	1	25	7.3331	1.2635	-227.87	1663	1530	940	2491	2304
45	41	12/14/07	26	1	25	7.2992	1.2669	-227.05	1606	1479	907	2412	2229
46	42	12/26/07	27	1	26	7.3122	1.2434	-235.87	1622	1499	936	2399	2224
47	43	1/7/08	27	2	25	7.2460	1.3173	-229.90	1658	1403	850	2314	2135
48	44	1/19/08	28	2	26	7.2314	1.2942	-237.95	1620	1382	853	2240	2073
49	45	1/31/08	28	2	26	7.2410	1.2960	-238.26	1636	1395	860	2263	2094
50	46	2/12/08	29	2	27	7.2178	1.2785	-246.12	1586	1363	853	2179	2021
51	47	3/1/08	29	2	27	7.2036	1.2674	-245.46	1561	1344	845	2139	1985
52	48	3/7/08	29	2	27	7.2594	1.2482	-246.66	1655	1421	900	2246	2087
53	49	3/19/08	30	2	28	7.2682	1.2255	-255.30	1659	1434	922	2230	2077
54	50	3/31/08	30	2	28	7.2695	1.2240	-255.30	1661	1436	924	2231	2079
55	51	4/12/08	31	2	29	7.2704	1.2020	-263.68	1653	1437	939	2200	2054
56	52	4/24/08	31	2	29	7.2049	1.2204	-262.09	1544	1346	873	2074	1935
57	53	5/6/08	31	3	28	7.1139	1.2475	-253.68	1492	1229	788	1916	1784
58	54	5/18/08	31	3	28	7.0939	1.2354	-252.77	1459	1205	776	1870	1743
59	55	5/30/08	31	3	28	7.1778	1.2409	-255.52	1599	1310	842	2038	1898
60	56	6/11/08	31	3	28	7.1877	1.2503	-256.05	1617	1323	848	2065	1922
61	57	6/23/08	31	3	28	7.2057	1.2736	-257.17	1652	1347	856	2120	1971



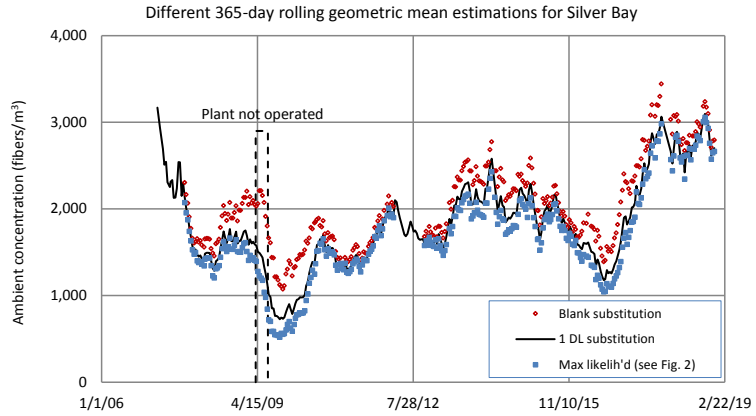
	A	B	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP
1	ID	Date.coll	Loc(1DL)	Scale(1DL)	$Geom_{1DL}$	% $Geom_{1DL}$/AL	95%G_{lower}	95%G_{upper}	1-tail 95%G_{up}		Date of	Fibers
2			Method 852	Method 852	Method 852:	for plotting	fibers/m^3	fibers/m^3	:Method 852		noncensored	M852;1:D178
3												
4												
5	1	3/15/06									1 3/15/06	1529
6	2	4/5/06									2 4/5/06	14018
7	3	4/26/06									3 4/26/06	15324
8	4	5/17/06									4 5/17/06	2722
9	5	6/5/06									5 6/5/06	2431
10	6	6/10/06									6 6/10/06	4771
11	7	6/28/06									7 6/28/06	905
12	8	7/19/06									8 7/19/06	2648
13	9	8/9/06									9 8/9/06	2629
14	10	8/30/06									10 8/30/06	15817
15	11	9/20/06									11 9/20/06	1797
16	12	10/11/06									12 10/11/06	3212
17	13	11/1/06									13 11/1/06	28497
18	14	11/22/06									14 11/22/06	3482
19	15	12/13/06									15 12/13/06	2095
20	16	1/3/07									16 1/3/07	939
21	17	1/24/07									17 1/24/07	1556
22	18	2/14/07									18 2/14/07	4180
23	19	3/7/07	8.0612	1.0812	3169	79	1949	5153	4766		19 3/7/07	435
24	20	3/28/07	7.9834	1.1847	2932	73	1721	4995	4585		20 3/28/07	349
25	21	4/18/07	7.8987	1.1225	2694	67	1626	4462	4114		21 4/18/07	2801
26	22	4/30/07	7.8278	1.0465	2509	63	1567	4017	3725		22 4/30/07	3984
27	23	5/12/07	7.8414	1.0205	2544	64	1627	3979	3703		23 5/12/07	3298
28	24	5/24/07	7.7446	1.1024	2309	58	1424	3743	3463		24 5/24/07	392
29	25	6/11/07	7.7194	1.1215	2252	56	1360	3728	3438		25 6/11/07	3114
30	26	6/17/07	7.7467	1.0984	2314	58	1430	3745	3466		26 6/17/07	3888
31	27	6/29/07	7.7551	1.0915	2333	58	1446	3765	3486		27 6/29/07	1070
32	28	7/11/07	7.6629	1.1446	2128	53	1304	3472	3209		28 7/11/07	337
33	29	7/23/07	7.6642	1.1448	2131	53	1306	3477	3214		29 7/23/07	2722
34	30	8/4/07	7.7120	1.1395	2235	56	1388	3598	3333		30 8/4/07	6092
35	31	8/16/07	7.8404	1.3056	2541	64	1473	4385	4017		31 8/16/07	44276
36	32	8/28/07	7.8393	1.2756	2539	63	1507	4275	3932		32 8/28/07	2483
37	33	9/9/07	7.6735	1.2748	2151	54	1277	3621	3330		33 9/9/07	349
38	34	9/21/07	7.7427	1.3074	2305	58	1351	3933	3609		34 9/21/07	8827
39	35	10/3/07	7.6648	1.3345	2132	53	1250	3636	3337		35 10/15/07	783
40	36	10/15/07	7.6060	1.3467	2010	50	1173	3445	3159		36 10/27/07	700
41	37	10/27/07	7.5638	1.3351	1927	48	1142	3252	2990		37 11/8/07	4138
42	38	11/8/07	7.4866	1.2240	1784	45	1104	2882	2668		38 11/20/07	321
43	39	11/20/07	7.4206	1.2456	1670	42	1035	2696	2496		39 12/2/07	669
44	40	12/2/07	7.3572	1.2487	1567	39	970	2533	2345		40 12/14/07	875
45	41	12/14/07	7.3236	1.2523	1516	38	937	2453	2270		41 12/26/07	2064
46	42	12/26/07	7.3350	1.2294	1533	38	964	2438	2262		42 1/19/08	905
47	43	1/7/08	7.2959	1.2620	1474	37	916	2373	2198		43 1/31/08	2034
48	44	1/19/08	7.2784	1.2419	1449	36	915	2295	2131		44 2/12/08	700
49	45	1/31/08	7.2880	1.2435	1463	37	923	2318	2153		45 3/1/08	2743
50	46	2/12/08	7.2626	1.2287	1426	36	912	2230	2075		46 3/7/08	2094
51	47	3/1/08	7.2481	1.2180	1405	35	902	2189	2039		47 3/19/08	1783
52	48	3/7/08	7.3023	1.1988	1484	37	959	2295	2140		48 3/31/08	362
53	49	3/19/08	7.3084	1.1784	1493	37	979	2276	2127		49 4/12/08	1432
54	50	3/31/08	7.3096	1.1769	1495	37	981	2277	2128		50 4/24/08	387
55	51	4/12/08	7.3082	1.1571	1493	37	993	2243	2101		51 5/18/08	1750
56	52	4/24/08	7.2444	1.1757	1400	35	926	2118	1982		52 5/30/08	5074
57	53	5/6/08	7.1798	1.1713	1313	33	869	1982	1855		53 6/11/08	4295
58	54	5/18/08	7.1593	1.1602	1286	32	855	1935	1812		54 6/23/08	7074
59	55	5/30/08	7.2419	1.1639	1397	35	927	2104	1970		55 7/5/08	9790
60	56	6/11/08	7.2523	1.1727	1411	35	934	2133	1996		56 7/17/08	2448
61	57	6/23/08	7.2716	1.1946	1439	36	945	2191	2048		57 7/29/08	14716

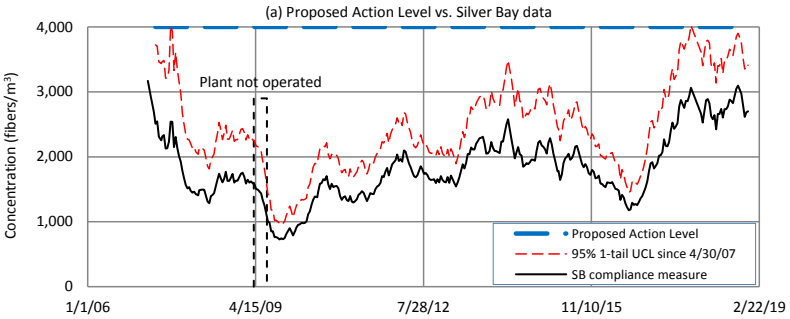


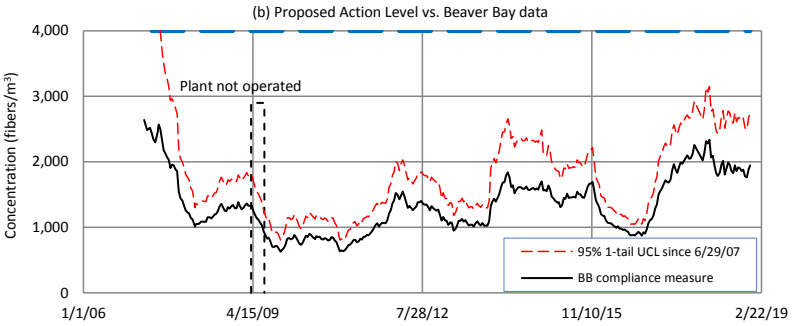
	A	B	AQ	AR	AS	AT	AU	AV	AW	AX	AY	AZ	BA
1	ID	Date.coll	Date of	Fibers	Remarks	The 1 DL sub method for RP No. 316			To bracket the geomean				
2			censored	M852;1:D178		10/22/17	f(x)_MLE	f(x)_1DLs	fibers/m^3	ln(fibers)	f(x)_1DLs		
3													
4													
5	1	3/15/06	10/3/07	100	Added for	10	6.09E-10	1.03E-10	1700	7.4384	4.37E-03		
6	2	4/5/06	10/3/07	355	plotting	12.9	2.29E-09	4.49E-10	1800	7.4955	1.40E-02		
7	3	4/26/06	1/7/08	100		16.7	8.11E-09	1.85E-09	1900	7.5496	3.78E-02		
8	4	5/17/06	1/7/08	326		21.5	2.61E-08	6.81E-09	2000	7.6009	8.80E-02		
9	5	6/5/06	5/6/08	100		27.8	7.96E-08	2.37E-08	2100	7.6497	1.80E-01		
10	6	6/10/06	5/6/08	538		35.9	2.25E-07	7.60E-08	2200	7.6962	3.27E-01		
11	7	6/28/06	10/9/08	100		46.4	5.91E-07	2.25E-07	2214	7.7025	3.53E-01		
12	8	7/19/06	10/9/08	350		59.9	1.44E-06	6.14E-07	2300	7.7407	5.39E-01		
13	9	8/9/06	11/26/08	100		77.4	3.27E-06	1.55E-06	2400	7.7832	8.13E-01		
14	10	8/30/06	11/26/08	582		100	6.91E-06	3.62E-06	2500	7.8240	1.13E+00		
15	11	9/20/06	1/13/09	100		129	1.35E-05	7.76E-06	2600	7.8633	1.47E+00		
16	12	10/11/06	1/13/09	420		167	2.48E-05	1.55E-05	2700	7.9010	1.80E+00		
17	13	11/1/06	1/25/09	100		215	4.18E-05	2.83E-05	2900	7.9725	2.28E+00		
18	14	11/22/06	1/25/09	292		278	6.60E-05	4.81E-05	3000	8.0064	2.39E+00		
19	15	12/13/06	4/19/09	100		359	9.68E-05	7.54E-05	3064	8.0274	2.41E+00		
20	16	1/3/07	4/19/09	309		464	1.32E-04	1.09E-04	3100	8.0392	2.40E+00		
21	17	1/24/07	5/1/09	100		599	1.67E-04	1.46E-04	3200	8.0709	2.32E+00		
22	18	2/14/07	5/1/09	332		774	1.97E-04	1.80E-04	3300	8.1017	2.18E+00		
23	19	3/7/07	5/13/09	100		1000.0	2.16E-04	2.05E-04	3400	8.1315	1.98E+00		
24	20	3/28/07	5/13/09	299	Mode →	1214.2	2.21E-04	2.15E-04	3500	8.1605	1.74E+00		
25	21	4/18/07	6/6/09	100		1290.0	2.20E-04	2.16E-04	3600	8.1887	1.50E+00		
26	22	4/30/07	6/6/09	450	Mode →	1343.213999	2.20E-04	2.17E-04	3700	8.2161	1.26E+00		
27	23	5/12/07	6/30/09	100		1670	2.09E-04	2.10E-04	3800	8.2428	1.03E+00		
28	24	5/24/07	6/30/09	313	LCL →	2123	1.86E-04	1.91E-04	3900	8.2687	8.34E-01		
29	25	6/11/07	7/12/09	100		2150	1.84E-04	1.89E-04	4000	8.2940	6.60E-01		
30	26	6/17/07	7/12/09	264	LCL →	2214	1.81E-04	1.86E-04	4024	8.3001	6.22E-01		
31	27	6/29/07	8/5/09	100		2780	1.51E-04	1.57E-04	4100	8.3187	5.14E-01		
32	28	7/11/07	8/5/09	168	Median →	2985	1.41E-04	1.47E-04	4200	8.3428	3.94E-01		
33	29	7/23/07	12/27/09	100	Median →	3064	1.37E-04	1.43E-04	4240	8.3523	3.53E-01		
34	30	8/4/07	12/27/09	370		3590	1.15E-04	1.21E-04	4400	8.3894	2.22E-01		
35	31	8/16/07	6/29/10	100	1-tail UCL →	3975	1.01E-04	1.06E-04	4600	8.4338	1.19E-01		
36	32	8/28/07	6/29/10	545	1-tail UCL →	4024	9.95E-05	1.04E-04	4800	8.4764	6.15E-02		
37	33	9/9/07	3/4/11	100	UCL →	4199	9.39E-05	9.85E-05	5000	8.5172	3.06E-02		
38	34	9/21/07	3/4/11	399	UCL →	4240	9.26E-05	9.72E-05					
39	35	10/3/07	10/24/12	100	Mean →	4627	8.17E-05	8.56E-05					
40	36	10/15/07	10/24/12	372	Mean →	4681	8.03E-05	8.42E-05					
41	37	10/27/07	2/21/13	100		4640	8.14E-05	8.53E-05					
42	38	11/8/07	2/21/13	733		5990	5.36E-05	5.58E-05					
43	39	11/20/07	10/19/13	100		7740	3.28E-05	3.37E-05					
44	40	12/2/07	10/19/13	304		4640	8.14E-05	8.53E-05					
45	41	12/14/07	4/29/14	100		5990	5.36E-05	5.58E-05					
46	42	12/26/07	4/29/14	310		7740	3.28E-05	3.37E-05					
47	43	1/7/08	12/25/14	100		10000	1.87E-05	1.88E-05					
48	44	1/19/08	12/25/14	526		12900	9.92E-06	9.73E-06					
49	45	1/31/08	12/20/15	100		16700	4.85E-06	4.60E-06					
50	46	2/12/08	12/20/15	686		21500	2.24E-06	2.04E-06					
51	47	3/1/08	1/13/16	100		27800	9.51E-07	8.28E-07					
52	48	3/7/08	1/13/16	725		35900	3.77E-07	3.11E-07					
53	49	3/19/08	2/6/16	100		46400	1.38E-07	1.07E-07					
54	50	3/31/08	2/6/16	590		59900	4.74E-08	3.45E-08					
55	51	4/12/08	2/18/16	100		77400	1.50E-08	1.02E-08					
56	52	4/24/08	2/18/16	590		100000	4.44E-09	2.78E-09					
57	53	5/6/08	4/6/16	100									
58	54	5/18/08	4/6/16	604									
59	55	5/30/08	6/5/16	100									
60	56	6/11/08	6/5/16	556									
61	57	6/23/08	1/31/17	100									

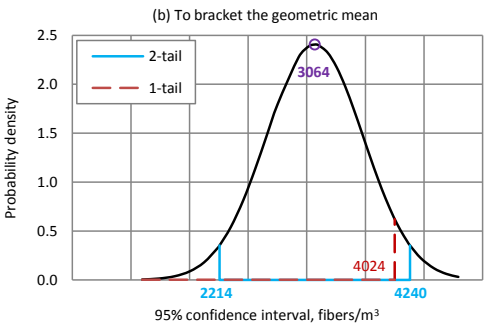


	A	B	BB	BC	BD	BE	BF	BG	BH	BI	BJ
1	ID	Date.coll	Additional plots for the preparation of the revised write-up on the data analysis of ambient fibers								
2											
3											
4											
5	1	3/15/06									
6	2	4/5/06									
7	3	4/26/06									
8	4	5/17/06									
9	5	6/5/06									
10	6	6/10/06									
11	7	6/28/06									
12	8	7/19/06									
13	9	8/9/06									
14	10	8/30/06									
15	11	9/20/06									
16	12	10/11/06									
17	13	11/1/06									
18	14	11/22/06									
19	15	12/13/06									
20	16	1/3/07									
21	17	1/24/07									
22	18	2/14/07									
23	19	3/7/07									
24	20	3/28/07									
25	21	4/18/07									
26	22	4/30/07									
27	23	5/12/07									
28	24	5/24/07									
29	25	6/11/07									
30	26	6/17/07									
31	27	6/29/07									
32	28	7/11/07									
33	29	7/23/07									
34	30	8/4/07									
35	31	8/16/07									
36	32	8/28/07									
37	33	9/9/07									
38	34	9/21/07									
39	35	10/3/07									
40	36	10/15/07									
41	37	10/27/07									
42	38	11/8/07									
43	39	11/20/07									
44	40	12/2/07									
45	41	12/14/07									
46	42	12/26/07									
47	43	1/7/08									
48	44	1/19/08									
49	45	1/31/08									
50	46	2/12/08									
51	47	3/1/08									
52	48	3/7/08									
53	49	3/19/08									
54	50	3/31/08									
55	51	4/12/08									
56	52	4/24/08									
57	53	5/6/08									
58	54	5/18/08									
59	55	5/30/08									
60	56	6/11/08									
61	57	6/23/08									









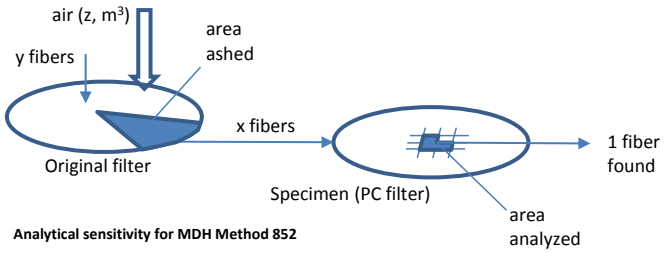
	A	B	C	D	E	F	G	H	I	J	K
1	ID	Date.coll	Orig.fltr.mm^2	PC.fltr.mm^2	Air.m^3	Chord.mm	Radius.mm	Area.ashed.mm^2	Count.GO	GO.mm^2	Sen.per.m^3
2			1150	1075	<== Constants for specified time intervals			Method 852		Constant periodically	
3			6/24/17-3/27/18:	1257							
4			4/8/18 to date:	1304							
62	58	7/5/08			94.623	24	19.75	255	3		1399
63	59	7/17/08			96.599	25	18.75	257	10		408
64	60	7/29/08			94.666	18.5	20	192	3	0.012304	1840
65	61	8/10/08			96.547	27.5	19.5	298	6		583
66	62	8/22/08			96.803	26	19.25	275	2		1889
67	63	9/3/08			98.193	17	18.75	165	6		1031
68	64	9/15/08			98.219	28	20	310	10		330
69	65	9/27/08			98.64	27	19.25	288	10		354
70	66	10/9/08			98.867	27	19.5	291	10		350
71	67	10/21/08			101.09	22	19.25	225	9		490
72	68	11/2/08			98.743	24	19	247	10		412
73	69	11/14/08			103.286	27	19.5	291	10		335
74	70	11/26/08			103.116	17	19	167	10		582
75	71	12/8/08			107.044	27	19.5	291	10		323
76	72	12/20/08			107.316	27.5	20.25	306	6		510
77	73	1/1/09			78.836	27	19.5	291	6		731
78	74	1/13/09			112.488	20.5	19.75	213	10		420
79	75	1/25/09			109.935	28	20.25	313	10		292
80	76	2/6/09			103.1	29	20.25	327	10		298
81	77	2/18/09			106.662	17	19.25	169	10		556
82	78	3/2/09			105.929	24	19.75	255	10		372
83	79	3/14/09			100.332	27	19.5	291	8		431
84	80	3/26/09			103.817	27	19.75	294	10		330
85	81	4/7/09			100.836	29	20.5	330	10	0.013073	284
86	82	4/19/09			100.644	28	19.5	305	10		309
87	83	5/1/09			98.977	27	19.25	288	10		332
88	84	5/13/09			100.141	28	20.5	316	10		299
89	85	5/25/09			99.515	27.5	19.75	300	10	0.013075	316
90	86	6/6/09			100.42	20	20	209	10		450
91	87	6/18/09			96.028	27	19.5	291	10		339
92	88	6/30/09			97.737	27.5	20.5	309	10		313
93	89	7/12/09			97.116	32	19.75	368	10		264
94	90	7/24/09			95.656	29.5	19.75	329	10		300
95	91	8/5/09			97.748	38.27	19.13	575	10		168
96	92	8/17/09			97.353	18	19	178	10		545
97	93	8/29/09			99.097	34	19.5	403	10		237
98	94	9/10/09			97.344	19	20	198	4		1226
99	95	9/22/09			97.897	27.5	20	303	10		319
100	96	10/4/09			100.151	31	19.5	349	10		270
101	97	10/16/09			101.31	31	19.75	352	10		265
102	98	10/28/09			99.6	18	19.75	185	10		514
103	99	11/9/09			101.047	18.5	19.5	188	9		553
104	100	11/21/09			100.706	20	19.25	202	10		464
105	101	12/3/09			106.255	35.5	19.25	435	7		292
106	102	12/15/09			108.346	29	20.25	327	5		533
107	103	12/27/09			106.479	23	19.5	240	10		370
108	104	1/8/10			108.661	28	20	310	10		281
109	105	1/23/10			103.03	15	19	146	4		1566
110	106	2/1/10			107.61	17	20	176	9		556
111	107	2/13/10			104.54	28	20.25	313	10		289
112	108	2/25/10			105.4	16	19.5	161	10		558
113	109	3/9/10			100.716	16	20	165	10		570
114	110	3/21/10			101.602	19.5	20	204	10	0.013139	455
115	111	4/2/10			98.719	28	20.25	313	8		381
116	112	4/14/10			100.322	28.5	19.75	314	10		298
117	113	4/26/10			99.88	11	19.5	109	7		1238
118	114	5/8/10			101.461	16	20.25	167	10		557

	A	B	L	M	N	O	P	Q	R	S	T	U
1	ID	Date.coll	Method 852: μ	CenIndex	2 ways for: Fibers0		Fibers	95% C.I. :Method 852		ln(Fibers)	RollPeriod	RP span
2				BDL=1	fibers/m^3	v2.pdf	fibers/m^3	lower limit	upper limit	Method 852		days
3												
4												
62	58	7/5/08	7	0	9793	**9790**	9790	3936	20171	9.1891	40	361
63	59	7/17/08	6	0	2448	**2448**	2448	898	5329	7.8030	41	361
64	60	7/29/08	8	0	14720	**14716**	14716	6353	28997	9.5967	42	361
65	61	8/10/08	3	0	1749	**1749**	1749	361	5110	7.4668	43	361
66	62	8/22/08	7	0	13223	**13223**	13223	5316	27244	9.4897	44	361
67	63	9/3/08	7	0	7217	**7217**	7217	2902	14870	8.8842	45	361
68	64	9/15/08	7	0	2310	**2309**	2309	928	4757	7.7446	46	361
69	65	9/27/08	2	0	708	**707**	707	86	2555	6.5610	47	361
70	66	10/9/08	0	1	0	**0**	350	0	1289	5.8579	48	361
71	67	10/21/08	4	0	1960	**1960**	1960	534	5018	7.5807	49	361
72	68	11/2/08	5	0	2060	**2062**	2062	669	4811	7.6314	50	361
73	69	11/14/08	1	0	335	**335**	335	8	1864	5.8141	51	361
74	70	11/26/08	0	1	0	**0**	582	0	2147	6.3665	52	361
75	71	12/8/08	2	0	646	**646**	646	78	2332	6.4708	53	361
76	72	12/20/08	5	0	2550	**2549**	2549	828	5949	7.8435	54	361
77	73	1/1/09	7	0	5117	**5114**	5114	2056	10536	8.5397	55	361
78	74	1/13/09	0	1	0	**0**	420	0	1548	6.0403	56	361
79	75	1/25/09	0	1	0	**0**	292	0	1077	5.6768	57	361
80	76	2/6/09	1	0	298	**298**	298	8	1659	5.6971	58	361
81	77	2/18/09	4	0	2224	**2223**	2223	606	5693	7.7066	59	355
82	78	3/2/09	3	0	1116	**1117**	1117	230	3265	7.0184	60	361
83	79	3/14/09	7	0	3017	**3014**	3014	1212	6209	8.0110	61	361
84	80	3/26/09	3	0	990	**989**	989	204	2890	6.8967	62	361
85	81	4/7/09	1	0	284	**284**	284	7	1582	5.6490	63	361
86	82	4/19/09	0	1	0	**0**	309	0	1138	5.7333	64	361
87	83	5/1/09	0	1	0	**0**	332	0	1224	5.8051	65	361
88	84	5/13/09	0	1	0	**0**	299	0	1103	5.7004	66	361
89	85	5/25/09	3	0	948	**949**	949	196	2773	6.8554	67	361
90	86	6/6/09	0	1	0	**0**	450	0	1658	6.1092	68	361
91	87	6/18/09	2	0	678	**677**	677	82	2446	6.5177	69	361
92	88	6/30/09	0	1	0	**0**	313	0	1155	5.7462	70	361
93	89	7/12/09	0	1	0	**0**	264	0	975	5.5759	71	361
94	90	7/24/09	4	0	1200	**1202**	1202	328	3078	7.0917	72	361
95	91	8/5/09	0	1	0	**0**	168	0	621	5.1240	73	361
96	92	8/17/09	3	0	1635	**1636**	1636	337	4780	7.4000	74	361
97	93	8/29/09	2	0	474	**474**	474	57	1712	6.1612	75	361
98	94	9/10/09	6	0	7356	**7359**	7359	2701	16017	8.9037	76	361
99	95	9/22/09	4	0	1276	**1274**	1274	347	3262	7.1499	77	361
100	96	10/4/09	1	0	270	**270**	270	7	1506	5.5984	78	361
101	97	10/16/09	3	0	795	**795**	795	164	2325	6.6783	79	361
102	98	10/28/09	2	0	1028	**1029**	1029	125	3716	6.9363	80	361
103	99	11/9/09	8	0	4424	**4426**	4426	1911	8720	8.3953	81	361
104	100	11/21/09	8	0	3712	**3711**	3711	1602	7311	8.2191	82	361
105	101	12/3/09	11	0	3212	**3216**	3216	1605	5754	8.0759	83	361
106	102	12/15/09	6	0	3198	**3200**	3200	1174	6964	8.0709	84	361
107	103	12/27/09	0	1	0	**0**	370	0	1366	5.9135	85	361
108	104	1/8/10	2	0	562	**561**	561	68	2027	6.3297	86	361
109	105	1/23/10	4	0	6264	**6265**	6265	1707	16040	8.7427	87	364
110	106	2/1/10	3	0	1668	**1668**	1668	344	4875	7.4194	88	361
111	107	2/13/10	4	0	1156	**1156**	1156	315	2959	7.0527	89	361
112	108	2/25/10	5	0	2790	**2790**	2790	906	6512	7.9338	90	361
113	109	3/9/10	4	0	2280	**2281**	2281	622	5841	7.7324	91	361
114	110	3/21/10	6	0	2730	**2728**	2728	1001	5937	7.9113	92	361
115	111	4/2/10	3	0	1143	**1142**	1142	235	3337	7.0405	93	361
116	112	4/14/10	2	0	596	**597**	597	72	2155	6.3919	94	361
117	113	4/26/10	6	0	7428	**7427**	7427	2725	16164	8.9129	95	361
118	114	5/8/10	2	0	1114	**1114**	1114	135	4023	7.0157	96	361

	A	B	V	W	X	Y	Z	AA	AB	AC	AD	AE	AF
1	ID	Date.coll	# of filters	# of BDL	# of uncen	Location	Scale	Log-likelih'd	$Geom_{miss}$	$Geom_{cen}$	$95\%G_{lower}$	$95\%G_{upper}$	$_{1\text{-tail}}95\%G_{up}$
2						Method 852			fibers/m^3	fibers/m^3	fibers/m^3	fibers/m^3	fibers/m^3
3													
4													
62	58	7/5/08	31	3	28	7.2749	1.3241	-260.49	1788	1444	901	2313	2144
63	59	7/17/08	31	3	28	7.3423	1.2934	-261.89	1919	1544	975	2447	2272
64	60	7/29/08	31	3	28	7.3933	1.3570	-264.91	2038	1625	1003	2634	2437
65	61	8/10/08	31	3	28	7.3539	1.3338	-263.17	1950	1562	972	2512	2327
66	62	8/22/08	31	3	28	7.3209	1.2387	-259.95	1867	1512	973	2349	2188
67	63	9/3/08	31	3	28	7.3538	1.2695	-261.70	1940	1562	994	2454	2282
68	64	9/15/08	31	3	28	7.4184	1.2340	-262.88	2075	1666	1074	2584	2408
69	65	9/27/08	31	3	28	7.3376	1.2027	-259.60	1896	1537	1002	2358	2201
70	66	10/9/08	31	3	28	7.3372	1.2035	-259.62	1896	1536	1001	2357	2201
71	67	10/21/08	31	3	28	7.3679	1.1957	-260.39	1959	1584	1035	2424	2264
72	68	11/2/08	31	3	28	7.4041	1.1842	-261.25	2036	1643	1078	2503	2339
73	69	11/14/08	31	3	28	7.3198	1.2104	-259.24	1862	1510	982	2322	2167
74	70	11/26/08	31	4	27	7.3156	1.2208	-253.08	1987	1504	972	2327	2169
75	71	12/8/08	31	4	27	7.3144	1.2218	-253.06	1984	1502	970	2325	2167
76	72	12/20/08	31	4	27	7.3500	1.2190	-254.11	2064	1556	1006	2406	2243
77	73	1/1/09	31	4	27	7.3782	1.2383	-255.46	2135	1601	1028	2492	2321
78	74	1/13/09	31	4	27	7.3864	1.2246	-255.11	2135	1614	1042	2501	2331
79	75	1/25/09	31	5	26	7.3199	1.3101	-249.43	2207	1510	943	2419	2242
80	76	2/6/09	31	5	26	7.2506	1.3526	-248.19	2049	1409	866	2293	2120
81	77	2/18/09	31	5	26	7.2902	1.3446	-249.26	2143	1466	904	2378	2200
82	78	3/2/09	31	5	26	7.2606	1.3415	-248.26	2070	1423	878	2306	2134
83	79	3/14/09	31	5	26	7.2721	1.3469	-248.74	2099	1440	887	2337	2162
84	80	3/26/09	31	5	26	7.2520	1.3497	-248.17	2052	1411	868	2293	2121
85	81	4/7/09	31	5	26	7.2425	1.3613	-248.13	2033	1398	856	2281	2109
86	82	4/19/09	31	6	25	7.1550	1.4463	-241.51	2062	1281	758	2163	1989
87	83	5/1/09	31	7	24	7.1129	1.5053	-235.62	2210	1228	708	2128	1948
88	84	5/13/09	31	7	24	7.0927	1.5327	-236.13	2210	1203	687	2106	1925
89	85	5/25/09	31	7	24	7.0717	1.5338	-235.50	2155	1178	673	2063	1886
90	86	6/6/09	31	8	23	6.9474	1.5769	-226.39	2076	1040	581	1863	1696
91	87	6/18/09	31	8	23	6.8881	1.5561	-224.15	1916	981	552	1743	1589
92	88	6/30/09	31	9	22	6.7407	1.5857	-214.46	1805	846	467	1532	1392
93	89	7/12/09	31	10	21	6.5796	1.5891	-204.02	1666	720	394	1317	1195
94	90	7/24/09	31	10	21	6.5589	1.5728	-203.06	1610	705	388	1282	1165
95	91	8/5/09	31	11	20	6.3790	1.5367	-191.72	1442	589	326	1066	969
96	92	8/17/09	31	11	20	6.3773	1.5346	-191.62	1437	588	325	1064	967
97	93	8/29/09	31	11	20	6.3098	1.3654	-185.95	1217	550	325	932	856
98	94	9/10/09	31	11	20	6.3099	1.3674	-185.99	1218	550	324	932	857
99	95	9/22/09	31	11	20	6.2960	1.3434	-185.03	1182	542	323	911	838
100	96	10/4/09	31	11	20	6.2560	1.3602	-184.17	1126	521	308	882	810
101	97	10/16/09	31	10	21	6.3362	1.2989	-191.10	1108	565	345	925	854
102	98	10/28/09	31	10	21	6.3190	1.2783	-190.09	1074	555	341	902	834
103	99	11/9/09	31	10	21	6.3328	1.3266	-191.62	1114	563	340	932	859
104	100	11/21/09	31	10	21	6.4058	1.3716	-194.88	1249	605	360	1019	937
105	101	12/3/09	31	9	22	6.5048	1.3652	-204.14	1304	668	401	1113	1026
106	102	12/15/09	31	9	22	6.5522	1.3999	-206.36	1403	701	415	1182	1087
107	103	12/27/09	31	10	21	6.4408	1.4405	-197.88	1363	627	363	1083	992
108	104	1/8/10	31	10	21	6.3824	1.3684	-194.52	1227	591	352	994	914
109	105	1/23/10	31	9	22	6.5039	1.3977	-204.93	1322	668	396	1126	1035
110	106	2/1/10	31	8	23	6.6071	1.3346	-212.44	1335	740	452	1212	1120
111	107	2/13/10	31	8	23	6.6579	1.3146	-213.59	1416	779	480	1265	1170
112	108	2/25/10	31	8	23	6.6639	1.3233	-213.97	1430	784	481	1277	1180
113	109	3/9/10	31	8	23	6.6853	1.3383	-214.97	1475	801	489	1311	1211
114	110	3/21/10	31	8	23	6.6827	1.3341	-214.80	1469	799	488	1306	1207
115	111	4/2/10	31	8	23	6.6875	1.3348	-214.96	1478	802	490	1313	1213
116	112	4/14/10	31	8	23	6.7177	1.3120	-215.42	1527	827	510	1341	1241
117	113	4/26/10	31	7	24	6.8517	1.3110	-225.28	1631	946	586	1525	1412
118	114	5/8/10	31	6	25	6.9279	1.2403	-231.84	1606	1020	652	1598	1487

	A	B	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP
1	ID	Date.coll	Loc(1DL)	Scale(1DL)	$Geom_{1DL}$	% $Geom_{1DL}$/AL	95%G_{lower}	95%G_{upper}	$_{1\text{-tail}}$95%G_{up}		Date of	Fibers
2			Method 852	Method 852	Method 852:	for plotting	fibers/m^3	fibers/m^3	:Method 852		noncensored	M852;1:D178
3												
4												
62	58	7/5/08	7.3430	1.2416	1545	39	998	2393	2230	58	8/10/08	1749
63	59	7/17/08	7.4070	1.2112	1647	41	1076	2523	2356	59	8/22/08	13223
64	60	7/29/08	7.4614	1.2710	1740	43	1112	2721	2532	60	9/3/08	7217
65	61	8/10/08	7.4212	1.2496	1671	42	1076	2594	2417	61	9/15/08	2309
66	62	8/22/08	7.3822	1.1595	1607	40	1069	2417	2264	62	9/27/08	707
67	63	9/3/08	7.4166	1.1883	1663	42	1095	2527	2363	63	10/21/08	1960
68	64	9/15/08	7.4776	1.1535	1768	44	1178	2653	2486	64	11/2/08	2062
69	65	9/27/08	7.3961	1.1250	1630	41	1097	2422	2272	65	11/14/08	335
70	66	10/9/08	7.3957	1.1256	1629	41	1096	2421	2272	66	12/8/08	646
71	67	10/21/08	7.4253	1.1177	1678	42	1132	2487	2334	67	12/20/08	2549
72	68	11/2/08	7.4601	1.1064	1737	43	1177	2565	2409	68	1/1/09	5114
73	69	11/14/08	7.3790	1.1325	1602	40	1075	2387	2239	69	2/6/09	298
74	70	11/26/08	7.3982	1.1091	1633	41	1105	2413	2266	70	2/18/09	2223
75	71	12/8/08	7.3971	1.1101	1631	41	1104	2411	2264	71	3/2/09	1117
76	72	12/20/08	7.4316	1.1067	1688	42	1144	2493	2341	72	3/14/09	3014
77	73	1/1/09	7.4609	1.1240	1739	43	1170	2583	2423	73	3/26/09	989
78	74	1/13/09	7.4690	1.1123	1753	44	1185	2593	2435	74	4/7/09	284
79	75	1/25/09	7.4325	1.1525	1690	42	1126	2536	2376	75	5/25/09	949
80	76	2/6/09	7.3706	1.1932	1589	40	1044	2418	2260	76	6/18/09	677
81	77	2/18/09	7.4079	1.1847	1649	41	1087	2502	2340	77	7/24/09	1202
82	78	3/2/09	7.3789	1.1828	1602	40	1056	2429	2272	78	8/17/09	1636
83	79	3/14/09	7.3906	1.1874	1621	41	1067	2462	2302	79	8/29/09	474
84	80	3/26/09	7.3716	1.1905	1590	40	1046	2418	2260	80	9/10/09	7359
85	81	4/7/09	7.3638	1.2013	1578	39	1034	2408	2250	81	9/22/09	1274
86	82	4/19/09	7.3143	1.2365	1502	38	972	2321	2164	82	10/4/09	270
87	83	5/1/09	7.3094	1.2424	1494	37	965	2314	2157	83	10/16/09	795
88	84	5/13/09	7.2904	1.2628	1466	37	940	2287	2129	84	10/28/09	1029
89	85	5/25/09	7.2707	1.2647	1438	36	921	2244	2089	85	11/9/09	4426
90	86	6/6/09	7.1925	1.2591	1329	33	853	2071	1928	86	11/21/09	3711
91	87	6/18/09	7.1329	1.2453	1253	31	808	1942	1810	87	12/3/09	3216
92	88	6/30/09	7.0324	1.2266	1133	28	736	1744	1627	88	12/15/09	3200
93	89	7/12/09	6.9158	1.1858	1008	25	664	1530	1431	89	1/8/10	561
94	90	7/24/09	6.8929	1.1749	985	25	651	1490	1394	90	1/23/10	6265
95	91	8/5/09	6.7486	1.1043	853	21	578	1258	1182	91	2/1/10	1668
96	92	8/17/09	6.7464	1.1030	851	21	577	1255	1179	92	2/13/10	1156
97	93	8/29/09	6.6391	0.9824	764	19	541	1080	1022	93	2/25/10	2790
98	94	9/10/09	6.6397	0.9839	765	19	541	1081	1023	94	3/9/10	2281
99	95	9/22/09	6.6205	0.9673	750	19	534	1055	999	95	3/21/10	2728
100	96	10/4/09	6.5894	0.9846	727	18	514	1029	973	96	4/2/10	1142
101	97	10/16/09	6.6159	0.9753	747	19	530	1053	996	97	4/14/10	597
102	98	10/28/09	6.5951	0.9608	732	18	522	1026	972	98	4/26/10	7427
103	99	11/9/09	6.6198	0.9973	750	19	528	1065	1007	99	5/8/10	1114
104	100	11/21/09	6.6973	1.0257	810	20	565	1163	1097	100	5/20/10	4094
105	101	12/3/09	6.7525	1.0529	856	21	591	1240	1169	101	6/1/10	6074
106	102	12/15/09	6.8041	1.0776	902	23	617	1317	1239	102	6/13/10	1403
107	103	12/27/09	6.7418	1.0713	847	21	581	1235	1162	103	7/7/10	2163
108	104	1/8/10	6.6706	1.0199	789	20	551	1130	1066	104	7/19/10	2864
109	105	1/23/10	6.7577	1.0781	861	22	589	1258	1183	105	7/31/10	1451
110	106	2/1/10	6.8139	1.0652	910	23	626	1325	1247	106	8/12/10	512
111	107	2/13/10	6.8577	1.0455	951	24	658	1374	1295	107	8/24/10	1290
112	108	2/25/10	6.8650	1.0524	958	24	662	1388	1308	108	9/5/10	1502
113	109	3/9/10	6.8880	1.0636	980	25	674	1426	1342	109	9/17/10	623
114	110	3/21/10	6.8848	1.0603	977	24	673	1419	1337	110	9/29/10	311
115	111	4/2/10	6.8895	1.0606	982	25	676	1426	1343	111	10/11/10	1378
116	112	4/14/10	6.9134	1.0398	1006	25	697	1450	1367	112	10/23/10	299
117	113	4/26/10	7.0160	1.0758	1114	28	763	1627	1531	113	11/4/10	1296
118	114	5/8/10	7.0550	1.0520	1159	29	800	1678	1581	114	11/16/10	4790

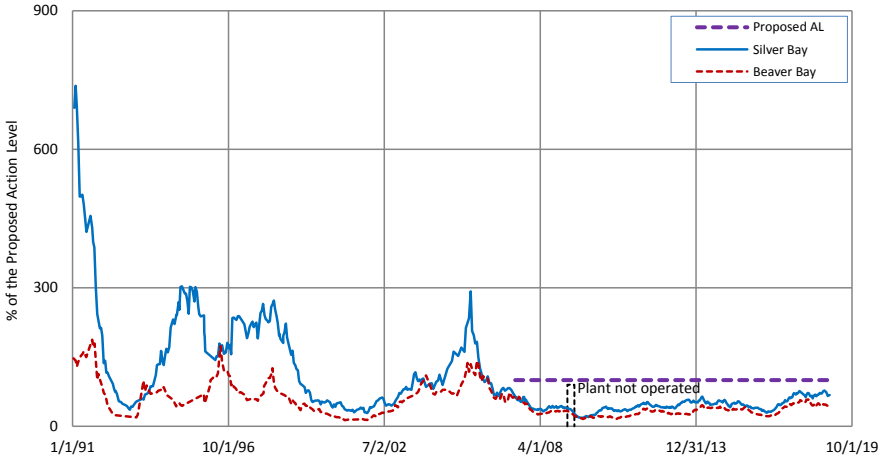
	A	B	AQ	AR	AS	AT	AU	AV	AW	AX	AY	AZ	BA
1	ID	Date.coll	Date of	Fibers	Remarks	The 1 DL sub method for RP No. 316			To bracket the geomean				
2			censored	M852;1:D178		10/22/17	f(x)_MLE	f(x)_1DLs	fibers/m^3	ln(fibers)	f(x)_1DLs		
3													
4													
62	58	7/5/08	1/31/17	611			**Data below are for plotting**						
63	59	7/17/08	4/25/17	100			1st 365-day period		Proposed Action Level				
64	60	7/29/08	4/25/17	574		3/7/07	325		4/30/07	100			
65	61	8/10/08	4/20/18	100		3/8/06	325		12/4/18	100			
66	62	8/22/08	4/20/18	1049		3/8/06	36000		Data update: Yr 2015				
67	63	9/3/08				3/7/07	36000		12/25/14	30			
68	64	9/15/08				3/7/07	10000		12/25/14	80			
69	65	9/27/08							12/20/15	80			
70	66	10/9/08					Period No. 17						
71	67	10/21/08				10/3/07	125		95% C.I. on geomean				
72	68	11/2/08				10/11/06	125		2214	1.86E-04			
73	69	11/14/08				10/11/06	55000		2214	0			
74	70	11/26/08				10/3/07	55000		4240	0			
75	71	12/8/08				10/3/07	12000		4240	9.72E-05			
76	72	12/20/08											
77	73	1/1/09					Plant not operated						
78	74	1/13/09				Date	Value used	Value used	Value used				
79	75	1/25/09				4/2/2009	100	0	0	10			
80	76	2/6/09				4/2/2009	50000	90	2900	1000000			
81	77	2/18/09				7/5/2009	50000	90	2900	1000000			
82	78	3/2/09				7/5/2009	100	0	0	10			
83	79	3/14/09											
84	80	3/26/09				2-tail {geomean}			1-tail {geomean}				
85	81	4/7/09				7.7025	3.53E-01		7.4384	2.18E-03			
86	82	4/19/09				7.7025	0		8.3001	2.18E-03			
87	83	5/1/09				8.3523	0		8.3001	6.22E-01			
88	84	5/13/09				8.3523	3.53E-01						
89	85	5/25/09					Proposed Action Level						
90	86	6/6/09					3/7/07	4000					
91	87	6/18/09					4/30/07	4000					
92	88	6/30/09					12/4/18	4000					
93	89	7/12/09											
94	90	7/24/09											
95	91	8/5/09											
96	92	8/17/09											
97	93	8/29/09											
98	94	9/10/09											
99	95	9/22/09											
100	96	10/4/09											
101	97	10/16/09											
102	98	10/28/09											
103	99	11/9/09											
104	100	11/21/09											
105	101	12/3/09											
106	102	12/15/09											
107	103	12/27/09											
108	104	1/8/10											
109	105	1/23/10											
110	106	2/1/10											
111	107	2/13/10											
112	108	2/25/10											
113	109	3/9/10											
114	110	3/21/10											
115	111	4/2/10											
116	112	4/14/10											
117	113	4/26/10											
118	114	5/8/10											



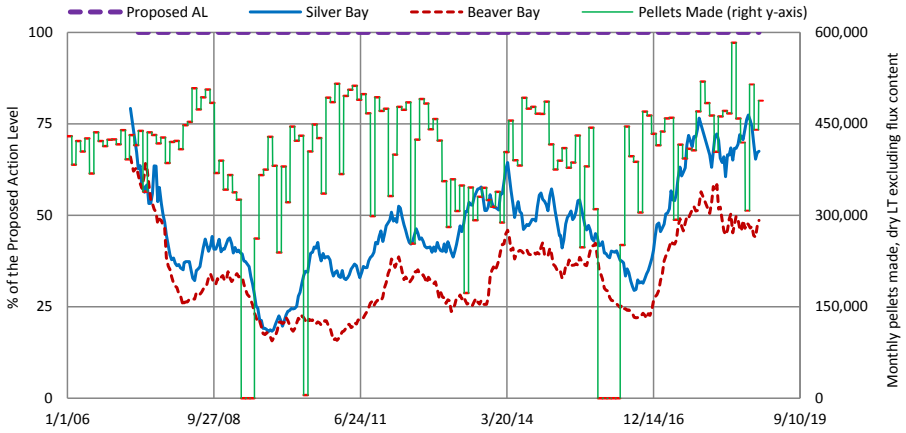
Analytical sensitivity for MDH Method 852

	A	B	BB	BC	BD	BE	BF	BG	BH	BI	BJ
1	ID	Date.coll	Additional plots for the preparation of the revised write-up on the data analysis of ambient fibers								
2											
3											
4											
62	58	7/5/08	The three plots below are made with data in the "Other Data" worksheet:								
63	59	7/17/08									
64	60	7/29/08									
65	61	8/10/08									
66	62	8/22/08									
67	63	9/3/08									
68	64	9/15/08									
69	65	9/27/08									
70	66	10/9/08									
71	67	10/21/08									
72	68	11/2/08									
73	69	11/14/08									
74	70	11/26/08									
75	71	12/8/08									
76	72	12/20/08									
77	73	1/1/09									
78	74	1/13/09									
79	75	1/25/09									
80	76	2/6/09									
81	77	2/18/09									
82	78	3/2/09									
83	79	3/14/09									
84	80	3/26/09									
85	81	4/7/09									
86	82	4/19/09									
87	83	5/1/09									
88	84	5/13/09									
89	85	5/25/09									
90	86	6/6/09									
91	87	6/18/09									
92	88	6/30/09									
93	89	7/12/09									
94	90	7/24/09									
95	91	8/5/09									
96	92	8/17/09									
97	93	8/29/09									
98	94	9/10/09									
99	95	9/22/09									
100	96	10/4/09									
101	97	10/16/09									
102	98	10/28/09									
103	99	11/9/09									
104	100	11/21/09									
105	101	12/3/09									
106	102	12/15/09									
107	103	12/27/09									
108	104	1/8/10									
109	105	1/23/10									
110	106	2/1/10									
111	107	2/13/10									
112	108	2/25/10									
113	109	3/9/10									
114	110	3/21/10									
115	111	4/2/10									
116	112	4/14/10									
117	113	4/26/10									
118	114	5/8/10									

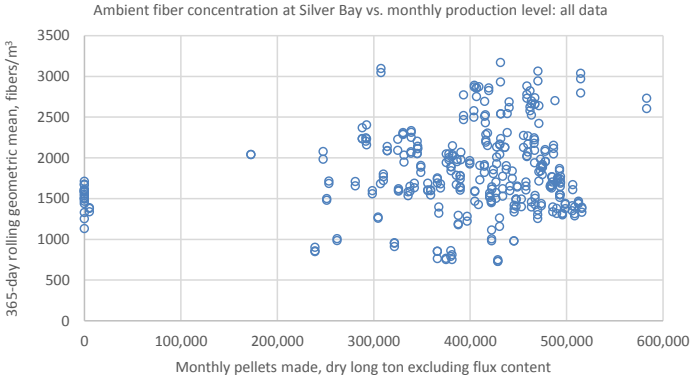
A longer term view of 365-day rolling geometric means of fiber concentration vs. the proposed AL



365-day rolling geometric means of fiber concentrations relative to the AL; monthly production level



Ambient fiber concentration at Silver Bay vs. monthly production level: all data



	A	B	C	D	E	F	G	H	I	J	K
1	ID	Date.coll	Orig.fltr.mm^2	PC.fltr.mm^2	Air.m^3	Chord.mm	Radius.mm	Area.ashed.mm^2	Count.GO	GO.mm^2	Sen.per.m^3
2			1150	1075	<== Constants for specified time intervals			Method 852		Constant periodically	
3			6/24/17-3/27/18:	1257							
4			4/8/18 to date:	1304							
119	115	5/20/10			97.573	14	19.75	141	10		682
120	116	6/1/10			96.823	20.5	19	206	7		675
121	117	6/13/10			97.648	19.5	20.25	206	10		468
122	118	6/29/10			96.434	17.5	19.75	179	10		545
123	119	7/7/10			92.995	9.5	19.5	94	10		1081
124	120	7/19/10			93.672	20.5	19.5	210	10		477
125	121	7/31/10			92.854	20	20	209	10		484
126	122	8/12/10			92.855	19	20	198	10		512
127	123	8/24/10			94.967	28	19.75	307	10		322
128	124	9/5/10			96.543	29	20	324	10		300
129	125	9/17/10			97.412	28	20	310	10		311
130	126	9/29/10			97.401	28	20	310	10		311
131	127	10/11/10			96.929	21	19	211	10		459
132	128	10/23/10			96.143	29	20.25	327	10		299
133	129	11/4/10			99.84	27	19.5	291	10		324
134	130	11/16/10			101.372	18	20.25	189	7	0.01348	684
135	131	11/28/10			100.693	24	20	257	10		354
136	132	12/10/10			106.863	28.5	20.25	320	10		268
137	133	12/22/10			104.28	29	20	324	10		271
138	134	1/3/11			105.697	25	20.25	273	10		318
139	135	1/15/11			106.377	28.5	21	329	10		262
140	136	1/27/11			103.777	25.5	19.75	274	10		323
141	137	2/8/11			106.72	20	20	209	10		410
142	138	2/20/11			103.487	27	19.5	291	6		508
143	139	3/4/11			103.957	21	20	221	10		399
144	140	3/16/11			100.522	21	20	221	10		413
145	141	3/28/11			101.96	19	18	180	10		499
146	142	4/9/11			97.195	29	20.5	330	9	0.013347	321
147	143	4/21/11			98.819	27	19.75	294	10		319
148	144	5/3/11			98.502	19	18.5	185	6		849
149	145	5/15/11			97.875	27.5	20.5	309	10		306
150	146	5/27/11			97.295	27.5	20	303	7		449
151	147	6/8/11			96.928	26.5	19.75	287	10		333
152	148	6/20/11			95.789	27	19.5	291	10		333
153	149	7/2/11			92.779	26	20.5	289	5		692
154	150	7/14/11			93.98	18	19.5	182	7		772
155	151	7/26/11			93.387	28	20.25	313	10		317
156	152	8/7/11			93.631	27	19	285	10		347
157	153	8/19/11			94.22	21	20	221	9		494
158	154	8/31/11			94.13	18.5	18.5	179	10		549
159	155	9/12/11			97.07	27	19.25	288	10		331
160	156	9/24/11			96.437	28	19.5	305	10		315
161	157	10/6/11			95.055	17	18.75	165	10		589
162	158	10/18/11			99.113	26	19.25	275	10		340
163	159	10/30/11			98.705	25.5	19.75	274	10		343
164	160	11/11/11			97.791	26	19.5	277	7		488
165	161	11/23/11			99.003	15	19	146	10		639
166	162	12/5/11			104.423	11	21.75	121	8		917
167	163	12/17/11			101.768	27	19.75	294	10		310
168	164	1/10/12			36.446	38.27	19.13	575	8		552
169	165	1/22/12			101.796	15	20.5	157	10		578
170	166	2/3/12			101.867	22	21.5	248	10		366
171	167	2/15/12			101.932	15	18.5	143	10		636
172	168	2/27/12			101.637	16	20	165	10	0.012741	580
173	169	3/10/12			98.261	14	19.75	141	10		699
174	170	3/22/12			99.014	16	19.25	159	10		617
175	171	4/3/12			99.341	18	19	178	10		548

	A	B	L	M	N	O	P	Q	R	S	T	U
1	ID	Date.coll	Method 852: μ	CenIndex	2 ways for: Fibers0		Fibers	95% C.I. :Method 852		ln(Fibers)	RollPeriod	RP span
2				BDL=1	fibers/m^3	v2.pdf	fibers/m^3	lower limit	upper limit	Method 852		days
3												
4												
119	115	5/20/10	6	0	4092	**4094**	4094	1502	8911	8.3173	97	361
120	116	6/1/10	9	0	6075	**6074**	6074	2777	11530	8.7118	98	361
121	117	6/13/10	3	0	1404	**1403**	1403	289	4101	7.2464	99	361
122	118	6/29/10	0	1	0	**0**	545	0	2010	6.3008	100	365
123	119	7/7/10	2	0	2162	**2163**	2163	262	7812	7.6793	101	361
124	120	7/19/10	6	0	2862	**2864**	2864	1051	6233	7.9600	102	361
125	121	7/31/10	3	0	1452	**1451**	1451	299	4242	7.2800	103	361
126	122	8/12/10	1	0	512	**512**	512	13	2852	6.2383	104	361
127	123	8/24/10	4	0	1288	**1290**	1290	351	3302	7.1624	105	361
128	124	9/5/10	5	0	1500	**1502**	1502	488	3505	7.3146	106	361
129	125	9/17/10	2	0	622	**623**	623	75	2250	6.4345	107	361
130	126	9/29/10	1	0	311	**311**	311	8	1735	5.7398	108	361
131	127	10/11/10	3	0	1377	**1378**	1378	284	4026	7.2284	109	361
132	128	10/23/10	1	0	299	**299**	299	8	1666	5.7004	110	361
133	129	11/4/10	4	0	1296	**1296**	1296	353	3319	7.1670	111	361
134	130	11/16/10	7	0	4788	**4790**	4790	1926	9870	8.4743	112	361
135	131	11/28/10	5	0	1770	**1769**	1769	574	4129	7.4782	113	361
136	132	12/10/10	1	0	268	**268**	268	7	1494	5.5910	114	361
137	133	12/22/10	3	0	813	**813**	813	168	2377	6.7007	115	361
138	134	1/3/11	3	0	954	**954**	954	197	2788	6.8607	116	361
139	135	1/15/11	3	0	786	**786**	786	162	2298	6.6670	117	358
140	136	1/27/11	5	0	1615	**1614**	1614	524	3767	7.3865	118	361
141	137	2/8/11	3	0	1230	**1231**	1231	254	3597	7.1156	119	361
142	138	2/20/11	13	0	6604	**6603**	6603	3516	11292	8.7953	120	361
143	139	3/4/11	0	1	0	**0**	399	0	1472	5.9890	121	361
144	140	3/16/11	4	0	1652	**1651**	1651	450	4226	7.4091	122	361
145	141	3/28/11	9	0	4491	**4494**	4494	2055	8531	8.4105	123	361
146	142	4/9/11	7	0	2247	**2245**	2245	903	4625	7.7165	124	361
147	143	4/21/11	8	0	2552	**2554**	2554	1103	5033	7.8454	125	361
148	144	5/3/11	15	0	12735	**12737**	12737	7129	21008	9.4523	126	361
149	145	5/15/11	7	0	2142	**2144**	2144	862	4418	7.6704	127	361
150	146	5/27/11	6	0	2694	**2691**	2691	988	5857	7.8977	128	361
151	147	6/8/11	4	0	1332	**1333**	1333	363	3412	7.1952	129	361
152	148	6/20/11	1	0	333	**333**	333	8	1853	5.8081	130	357
153	149	7/2/11	3	0	2076	**2075**	2075	428	6064	7.6377	131	361
154	150	7/14/11	12	0	9264	**9262**	9262	4786	16179	9.1337	132	361
155	151	7/26/11	7	0	2219	**2218**	2218	892	4570	7.7044	133	361
156	152	8/7/11	4	0	1388	**1387**	1387	378	3551	7.2349	134	361
157	153	8/19/11	5	0	2470	**2470**	2470	802	5765	7.8120	135	361
158	154	8/31/11	5	0	2745	**2746**	2746	891	6407	7.9179	136	361
159	155	9/12/11	7	0	2317	**2319**	2319	932	4778	7.7489	137	361
160	156	9/24/11	4	0	1260	**1262**	1262	344	3230	7.1405	138	361
161	157	10/6/11	4	0	2356	**2356**	2356	642	6033	7.7647	139	361
162	158	10/18/11	3	0	1020	**1020**	1020	210	2982	6.9276	140	361
163	159	10/30/11	4	0	1372	**1371**	1371	374	3511	7.2233	141	361
164	160	11/11/11	7	0	3416	**3413**	3413	1372	7033	8.1353	142	361
165	161	11/23/11	1	0	639	**639**	639	16	3558	6.4599	143	361
166	162	12/5/11	8	0	7336	**7334**	7334	3166	14452	8.9003	144	361
167	163	12/17/11	4	0	1240	**1240**	1240	338	3175	7.1229	145	361
168	164	1/10/12	2	0	1104	**1105**	1105	134	3991	7.0076	146	361
169	165	1/22/12	5	0	2890	**2890**	2890	938	6745	7.9690	147	361
170	166	2/3/12	1	0	366	**366**	366	9	2041	5.9026	148	361
171	167	2/15/12	3	0	1908	**1908**	1908	394	5576	7.5538	149	361
172	168	2/27/12	6	0	3480	**3480**	3480	1277	7574	8.1548	150	361
173	169	3/10/12	8	0	5592	**5590**	5590	2413	11014	8.6287	151	361
174	170	3/22/12	2	0	1234	**1234**	1234	149	4458	7.1180	152	361
175	171	4/3/12	2	0	1096	**1097**	1097	133	3961	7.0003	153	361

	A	B	V	W	X	Y	Z	AA	AB	AC	AD	AE	AF
1	ID	Date.coll	# of filters	# of BDL	# of uncen	Location	Scale	Log-likelih'd	$Geom_{miss}$	$Geom_{cen}$	$95\%G_{lower}$	$95\%G_{upper}$	$_{1\text{-tail}}95\%G_{up}$
2						Method 852			fibers/m^3	fibers/m^3	fibers/m^3	fibers/m^3	fibers/m^3
3													
4													
119	115	5/20/10	31	5	26	7.0425	1.1927	-239.94	1665	1144	746	1756	1639
120	116	6/1/10	31	5	26	7.0994	1.2340	-242.70	1788	1211	778	1886	1757
121	117	6/13/10	31	4	27	7.1652	1.1762	-249.43	1772	1294	850	1968	1840
122	118	6/29/10	31	5	26	7.1303	1.2184	-243.11	1839	1249	807	1935	1803
123	119	7/7/10	31	4	27	7.2211	1.1436	-249.78	1850	1368	910	2057	1927
124	120	7/19/10	31	3	28	7.3216	1.0615	-256.17	1879	1513	1037	2205	2076
125	121	7/31/10	31	3	28	7.3278	1.0603	-256.33	1892	1522	1044	2218	2088
126	122	8/12/10	31	2	29	7.3814	0.9582	-259.80	1808	1606	1144	2255	2135
127	123	8/24/10	31	2	29	7.3736	0.9592	-259.59	1794	1593	1134	2238	2119
128	124	9/5/10	31	2	29	7.4125	0.9298	-259.90	1866	1657	1192	2302	2184
129	125	9/17/10	31	2	29	7.3332	0.9033	-256.56	1714	1530	1111	2107	2001
130	126	9/29/10	31	2	29	7.2851	0.9512	-256.56	1633	1458	1041	2043	1935
131	127	10/11/10	31	2	29	7.3408	0.8933	-256.47	1727	1542	1124	2116	2011
132	128	10/23/10	31	2	29	7.3070	0.9373	-256.82	1670	1491	1070	2078	1970
133	129	11/4/10	31	2	29	7.3146	0.9348	-256.98	1683	1502	1079	2092	1983
134	130	11/16/10	31	2	29	7.3170	0.9381	-257.16	1688	1506	1080	2099	1990
135	131	11/28/10	31	2	29	7.2935	0.9233	-255.95	1645	1471	1061	2040	1935
136	132	12/10/10	31	2	29	7.2106	0.9645	-254.64	1510	1354	962	1905	1803
137	133	12/22/10	31	2	29	7.1662	0.9556	-252.97	1440	1295	923	1817	1721
138	134	1/3/11	31	1	30	7.2129	0.9003	-258.27	1421	1357	987	1865	1772
139	135	1/15/11	31	1	30	7.2240	0.8910	-258.30	1437	1372	1002	1879	1787
140	136	1/27/11	31	1	30	7.1810	0.8461	-255.40	1373	1314	975	1772	1689
141	137	2/8/11	31	1	30	7.1712	0.8451	-255.05	1359	1301	966	1754	1672
142	138	2/20/11	31	1	30	7.2266	0.8935	-258.47	1441	1376	1003	1886	1793
143	139	3/4/11	31	2	29	7.1478	0.9371	-251.72	1408	1271	912	1772	1680
144	140	3/16/11	31	2	29	7.1375	0.9321	-251.24	1393	1258	904	1751	1660
145	141	3/28/11	31	2	29	7.1529	0.9508	-252.31	1417	1278	912	1790	1696
146	142	4/9/11	31	2	29	7.1748	0.9556	-253.15	1450	1306	931	1833	1735
147	143	4/21/11	31	2	29	7.222496	0.9501	-254.48	1525	1370	978	1918	1817
148	144	5/3/11	31	2	29	7.2383	0.9882	-256.14	1553	1392	981	1975	1867
149	145	5/15/11	31	2	29	7.2596	0.9899	-256.85	1589	1422	1001	2019	1908
150	146	5/27/11	31	2	29	7.2465	0.9773	-256.06	1566	1403	992	1984	1876
151	147	6/8/11	31	2	29	7.1989	0.9374	-253.34	1486	1338	960	1865	1768
152	148	6/20/11	31	2	29	7.1502	0.9732	-252.92	1414	1274	903	1799	1702
153	149	7/2/11	31	1	30	7.2118	0.9370	-259.82	1433	1355	974	1887	1789
154	150	7/14/11	31	1	30	7.2577	0.9961	-263.10	1504	1419	998	2017	1906
155	151	7/26/11	31	1	30	7.2495	0.9912	-262.69	1491	1407	992	1997	1888
156	152	8/7/11	31	1	30	7.2480	0.9912	-262.65	1489	1405	990	1994	1885
157	153	8/19/11	31	1	30	7.2994	0.9771	-263.82	1569	1479	1048	2089	1976
158	154	8/31/11	31	1	30	7.3237	0.9828	-264.75	1609	1516	1071	2144	2028
159	155	9/12/11	31	1	30	7.3378	0.9857	-265.28	1632	1537	1086	2177	2059
160	156	9/24/11	31	1	30	7.3610	0.9717	-265.57	1671	1573	1117	2217	2098
161	157	10/6/11	31	1	30	7.4276	0.9245	-266.15	1788	1682	1214	2330	2211
162	158	10/18/11	31	1	30	7.4178	0.9284	-265.97	1770	1665	1200	2311	2192
163	159	10/30/11	31	1	30	7.4683	0.8715	-265.64	1862	1752	1288	2382	2267
164	160	11/11/11	31	1	30	7.4996	0.8774	-266.82	1923	1807	1326	2463	2343
165	161	11/23/11	31	1	30	7.4343	0.8781	-264.81	1798	1693	1242	2308	2196
166	162	12/5/11	31	1	30	7.4796	0.9170	-267.52	1886	1771	1282	2448	2324
167	163	12/17/11	31	1	30	7.5306	0.8488	-266.80	1985	1864	1382	2515	2397
168	164	1/10/12	30	1	29	7.5634	0.8448	-258.87	2057	1926	1423	2608	2484
169	165	1/22/12	30	1	29	7.6073	0.8297	-259.67	2151	2013	1495	2710	2584
170	166	2/3/12	30	1	29	7.5564	0.8872	-260.08	2044	1913	1392	2630	2499
171	167	2/15/12	30	1	29	7.5712	0.8831	-260.39	2075	1941	1414	2665	2532
172	168	2/27/12	30	1	29	7.5502	0.8597	-258.98	2030	1901	1397	2588	2463
173	169	3/10/12	30	0	30	7.6495	0.8165		2100	2100	1568	2812	2683
174	170	3/22/12	30	0	30	7.6398	0.8211		2079	2079	1550	2790	2661
175	171	4/3/12	30	0	30	7.5928	0.8159		1984	1984	1482	2656	2535

	A	B	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP
1	ID	Date.coll	Loc(1DL)	Scale(1DL)	$Geom_{1DL}$	% $Geom_{1DL}$/AL	95%G_{lower}	95%G_{upper}	1-tail 95%G_{up}		Date of	Fibers
2			Method 852	Method 852	Method 852:	for plotting	fibers/m^3	fibers/m^3	:Method 852		noncensored	M852;1:D178
3												
4												
119	115	5/20/10	7.1395	1.0447	1261	32	873	1821	1717	115	11/28/10	1769
120	116	6/1/10	7.1993	1.0805	1339	33	915	1958	1842	116	12/10/10	268
121	117	6/13/10	7.2360	1.0614	1389	35	956	2018	1900	117	12/22/10	813
122	118	6/29/10	7.2290	1.0669	1379	34	947	2007	1890	118	1/3/11	954
123	119	7/7/10	7.2914	1.0334	1468	37	1020	2111	1992	119	1/15/11	786
124	120	7/19/10	7.3683	0.9892	1585	40	1119	2245	2123	120	1/27/11	1614
125	121	7/31/10	7.3744	0.9880	1595	40	1126	2258	2135	121	2/8/11	1231
126	122	8/12/10	7.4103	0.9214	1653	41	1195	2286	2170	122	2/20/11	6603
127	123	8/24/10	7.4026	0.9225	1640	41	1185	2270	2154	123	3/16/11	1651
128	124	9/5/10	7.4398	0.8936	1702	43	1243	2332	2217	124	3/28/11	4494
129	125	9/17/10	7.3602	0.8685	1572	39	1158	2134	2032	125	4/9/11	2245
130	126	9/29/10	7.3147	0.9155	1502	38	1088	2073	1969	126	4/21/11	2554
131	127	10/11/10	7.3673	0.8587	1583	40	1170	2142	2041	127	5/3/11	12737
132	128	10/23/10	7.3357	0.9017	1534	38	1117	2107	2002	128	5/15/11	2144
133	129	11/4/10	7.3432	0.8993	1546	39	1126	2121	2016	129	5/27/11	2691
134	130	11/16/10	7.3457	0.9024	1550	39	1128	2129	2023	130	6/8/11	1333
135	131	11/28/10	7.3218	0.8882	1513	38	1107	2068	1967	131	6/20/11	333
136	132	12/10/10	7.2417	0.9291	1396	35	1007	1937	1837	132	7/2/11	2075
137	133	12/22/10	7.1975	0.9209	1336	33	966	1848	1754	133	7/14/11	9262
138	134	1/3/11	7.2280	0.8921	1378	34	1006	1886	1793	134	7/26/11	2218
139	135	1/15/11	7.2389	0.8828	1393	35	1021	1900	1808	135	8/7/11	1387
140	136	1/27/11	7.1952	0.8383	1333	33	992	1791	1708	136	8/19/11	2470
141	137	2/8/11	7.1854	0.8374	1320	33	983	1772	1690	137	8/31/11	2746
142	138	2/20/11	7.2416	0.8853	1396	35	1022	1907	1814	138	9/12/11	2319
143	139	3/4/11	7.1788	0.9033	1311	33	954	1802	1712	139	9/24/11	1262
144	140	3/16/11	7.1684	0.8986	1298	32	946	1781	1692	140	10/6/11	2356
145	141	3/28/11	7.1845	0.9166	1319	33	955	1821	1729	141	10/18/11	1020
146	142	4/9/11	7.2063	0.9211	1348	34	975	1864	1769	142	10/30/11	1371
147	143	4/21/11	7.2532	0.9153	1413	35	1024	1950	1851	143	11/11/11	3413
148	144	5/3/11	7.2706	0.9522	1437	36	1028	2010	1904	144	11/23/11	639
149	145	5/15/11	7.2917	0.9537	1468	37	1049	2054	1946	145	12/5/11	7334
150	146	5/27/11	7.2782	0.9415	1448	36	1040	2017	1913	146	12/17/11	1240
151	147	6/8/11	7.2293	0.9032	1379	34	1004	1895	1801	147	1/10/12	1105
152	148	6/20/11	7.1829	0.9385	1317	33	946	1832	1737	148	1/22/12	2890
153	149	7/2/11	7.2260	0.9273	1375	34	992	1905	1808	149	2/3/12	366
154	150	7/14/11	7.2729	0.9859	1441	36	1018	2038	1928	150	2/15/12	1908
155	151	7/26/11	7.2647	0.9810	1429	36	1012	2018	1909	151	2/27/12	3480
156	152	8/7/11	7.2632	0.9810	1427	36	1010	2015	1907	152	3/10/12	5590
157	153	8/19/11	7.3140	0.9668	1501	38	1068	2110	1997	153	3/22/12	1234
158	154	8/31/11	7.3383	0.9724	1538	38	1092	2166	2050	154	4/3/12	1097
159	155	9/12/11	7.3524	0.9752	1560	39	1107	2199	2081	155	4/15/12	600
160	156	9/24/11	7.3751	0.9612	1596	40	1138	2238	2120	156	4/27/12	966
161	157	10/6/11	7.4404	0.9140	1704	43	1235	2350	2232	157	5/9/12	3847
162	158	10/18/11	7.4307	0.9179	1687	42	1221	2331	2213	158	5/21/12	734
163	159	10/30/11	7.4799	0.8612	1772	44	1309	2400	2285	159	6/2/12	1928
164	160	11/11/11	7.5111	0.8670	1828	46	1347	2481	2362	160	6/14/12	2202
165	161	11/23/11	7.4461	0.8679	1713	43	1262	2325	2214	161	7/8/12	3962
166	162	12/5/11	7.4920	0.9064	1794	45	1304	2468	2344	162	7/20/12	4353
167	163	12/17/11	7.5414	0.8385	1884	47	1403	2532	2414	163	8/1/12	712
168	164	1/10/12	7.5743	0.8341	1948	49	1445	2625	2502	164	8/13/12	1781
169	165	1/22/12	7.6177	0.8190	2034	51	1517	2727	2601	165	8/25/12	1392
170	166	2/3/12	7.5683	0.8762	1936	48	1415	2649	2518	166	9/6/12	1020
171	167	2/15/12	7.5829	0.8721	1964	49	1438	2684	2552	167	9/18/12	1756
172	168	2/27/12	7.5615	0.8489	1923	48	1419	2605	2481	168	9/30/12	1341
173	169	3/10/12	7.6495	0.8165	2100	52	1568	2812	2683	169	10/12/12	2591
174	170	3/22/12	7.6398	0.8211	2079	52	1550	2790	2661	170	11/5/12	3754
175	171	4/3/12	7.5928	0.8159	1984	50	1482	2656	2535	171	11/17/12	1496

	A	B	AQ	AR	AS	AT	AU	AV	AW	AX	AY	AZ	BA
1	ID	Date.coll	Date of	Fibers	Remarks	The 1 DL sub method for RP No. 316			To bracket the geomean				
2			censored	M852;1:D178		10/22/17	f(x)_MLE	f(x)_1DLs	fibers/m^3	ln(fibers)	f(x)_1DLs		
3													
4													
119	115	5/20/10											
120	116	6/1/10											
121	117	6/13/10											
122	118	6/29/10											
123	119	7/7/10											
124	120	7/19/10											
125	121	7/31/10											
126	122	8/12/10											
127	123	8/24/10											
128	124	9/5/10											
129	125	9/17/10											
130	126	9/29/10											
131	127	10/11/10											
132	128	10/23/10											
133	129	11/4/10											
134	130	11/16/10											
135	131	11/28/10											
136	132	12/10/10											
137	133	12/22/10											
138	134	1/3/11											
139	135	1/15/11											
140	136	1/27/11											
141	137	2/8/11											
142	138	2/20/11											
143	139	3/4/11											
144	140	3/16/11											
145	141	3/28/11											
146	142	4/9/11											
147	143	4/21/11											
148	144	5/3/11											
149	145	5/15/11											
150	146	5/27/11											
151	147	6/8/11											
152	148	6/20/11											
153	149	7/2/11											
154	150	7/14/11											
155	151	7/26/11											
156	152	8/7/11											
157	153	8/19/11											
158	154	8/31/11											
159	155	9/12/11											
160	156	9/24/11											
161	157	10/6/11											
162	158	10/18/11											
163	159	10/30/11											
164	160	11/11/11											
165	161	11/23/11											
166	162	12/5/11											
167	163	12/17/11											
168	164	1/10/12											
169	165	1/22/12											
170	166	2/3/12											
171	167	2/15/12											
172	168	2/27/12											
173	169	3/10/12											
174	170	3/22/12											
175	171	4/3/12											

	A	B	BB	BC	BD	BE	BF	BG	BH	BI	BJ
1	ID	Date.coll	Additional plots for the preparation of the revised write-up on the data analysis of ambient fibers								
2											
3											
4											
119	115	5/20/10									
120	116	6/1/10									
121	117	6/13/10									
122	118	6/29/10									
123	119	7/7/10									
124	120	7/19/10									
125	121	7/31/10									
126	122	8/12/10									
127	123	8/24/10									
128	124	9/5/10									
129	125	9/17/10									
130	126	9/29/10									
131	127	10/11/10									
132	128	10/23/10									
133	129	11/4/10									
134	130	11/16/10									
135	131	11/28/10									
136	132	12/10/10									
137	133	12/22/10									
138	134	1/3/11									
139	135	1/15/11									
140	136	1/27/11									
141	137	2/8/11									
142	138	2/20/11									
143	139	3/4/11									
144	140	3/16/11									
145	141	3/28/11									
146	142	4/9/11									
147	143	4/21/11									
148	144	5/3/11									
149	145	5/15/11									
150	146	5/27/11									
151	147	6/8/11									
152	148	6/20/11									
153	149	7/2/11									
154	150	7/14/11									
155	151	7/26/11									
156	152	8/7/11									
157	153	8/19/11									
158	154	8/31/11									
159	155	9/12/11									
160	156	9/24/11									
161	157	10/6/11									
162	158	10/18/11									
163	159	10/30/11									
164	160	11/11/11									
165	161	11/23/11									
166	162	12/5/11									
167	163	12/17/11									
168	164	1/10/12									
169	165	1/22/12									
170	166	2/3/12									
171	167	2/15/12									
172	168	2/27/12									
173	169	3/10/12									
174	170	3/22/12									
175	171	4/3/12									

	A	B	C	D	E	F	G	H	I	J	K
1	ID	Date.coll	Orig.fltr.mm^2	PC.fltr.mm^2	Air.m^3	Chord.mm	Radius.mm	Area.ashed.mm^2	Count.GO	GO.mm^2	Sen.per.m^3
2			1150	1075	<== Constants for specified time intervals			Method 852		Constant periodically	
3			6/24/17-3/27/18:	1257							
4			4/8/18 to date:	1304							
176	172	4/15/12			99.622	29	20	324	10		300
177	173	4/27/12			99.365	27.5	20	303	10		322
178	174	5/9/12			96.367	17.5	20.25	183	10		550
179	175	5/21/12			95.893	25	20.5	276	10		367
180	176	6/2/12			94.677	28	20.75	319	10		321
181	177	6/14/12			94.682	14	19.5	140	10		734
182	178	7/8/12			95.900	18	19.5	182	7		792
183	179	7/20/12			95.900	16	18.75	155	9		725
184	180	8/1/12			95.900	26.5	19.5	284	10		356
185	181	8/13/12			95.900	26.5	19.5	284	10		356
186	182	8/25/12			95.900	16	17.5	145	10		696
187	183	9/6/12			95.900	27.5	19.75	300	10	0.012624	340
188	184	9/18/12			95.900	27	19.5	291	10		351
189	185	9/30/12			95.900	28	19.5	305	10		335
190	186	10/12/12			95.900	21	17.5	197	10		518
191	187	10/24/12			95.900	26	19.25	275	10		372
192	188	11/5/12			95.900	26	19	272	10		375
193	189	11/17/12			95.900	19	20.75	205	10		499
194	190	11/29/12			95.900	19	21.25	209	10		488
195	191	12/11/12			95.900	25.5	18.75	263	10		388
196	192	12/23/12			95.900	15	18	139	10		733
197	193	1/4/13			95.900	16	18	149	10		684
198	194	1/16/13			95.900	21	18.75	209	10		489
199	195	1/28/13			95.900	19	18.5	185	10		553
200	196	2/9/13			95.900	27	19.5	291	10		351
201	197	2/21/13			95.900	15	18	139	10		733
202	198	3/5/13			95.900	25.5	19	266	10		385
203	199	3/17/13			95.900	28	19.75	307	10		332
204	200	3/29/13			95.900	24	19	247	9		460
205	201	4/10/13			95.900	27.5	19.5	298	7		490
206	202	5/4/13			95.900	17	18.5	163	4		1562
207	203	5/16/13			95.900	27	19.25	288	10		355
208	204	5/28/13			95.900	28	19.5	305	6		559
209	205	6/9/13			95.900	18	20	187	4		1367
210	206	6/21/13			92.800	28	19.5	305	10	0.012346	354
211	207	7/3/13			95.900	11	21	117	4		2234
212	208	7/15/13			95.900	15	20	154	10		679
213	209	7/27/13			95.900	15	19.5	150	10		696
214	210	8/8/13			95.900	29	20.25	327	10		319
215	211	8/20/13			95.900	15	17.5	136	10		770
216	212	9/1/13			95.900	18	18.5	174	10		600
217	213	9/13/13			95.900	26	19	272	10		384
218	214	9/25/13			96.000	27	20	296	10		352
219	215	10/7/13			96.000	28	20.25	313	10		333
220	216	10/19/13			96.000	29.5	21	343	10		304
221	217	10/31/13			96.000	26.5	19	279	10		374
222	218	11/12/13			96.000	28	20	310	3		1121
223	219	11/24/13			96.000	9	19	86	10		1208
224	220	12/6/13			96.000	28	20	310	10		336
225	221	12/18/13			96.000	28	19.5	305	10		343
226	222	12/30/13			96.000	27	20	296	10		352
227	223	1/11/14			96.000	26	19.5	277	10		376
228	224	1/23/14			96.000	19	19	189	10		552
229	225	2/4/14			96.000	25	18	249	7		599
230	226	2/16/14			96.000	19	18.5	185	10		565
231	227	2/28/14			96.000	25	18.25	251	10		415
232	228	3/12/14			96.000	11	19.5	109	10		959

	A	B	L	M	N	O	P	Q	R	S	T	U
1	ID	Date.coll	Method 852: μ	CenIndex	2 ways for: Fibers0		Fibers	95% C.I. :Method 852		ln(Fibers)	RollPeriod	RP span
2				BDL=1	fibers/m^3	v2.pdf	fibers/m^3	lower limit	upper limit	Method 852		days
3												
4												
176	172	4/15/12	2	0	600	**600**	600	73	2169	6.3969	154	361
177	173	4/27/12	3	0	966	**966**	966	199	2823	6.8732	155	361
178	174	5/9/12	7	0	3850	**3847**	3847	1547	7926	8.2550	156	361
179	175	5/21/12	2	0	734	**734**	734	89	2653	6.5985	157	361
180	176	6/2/12	6	0	1926	**1928**	1928	708	4197	7.5642	158	361
181	177	6/14/12	3	0	2202	**2202**	2202	454	6435	7.6971	159	361
182	178	7/8/12	5	0	3960	**3962**	3962	1286	9245	8.2845	160	361
183	179	7/20/12	6	0	4350	**4353**	4353	1597	9474	8.3786	161	361
184	180	8/1/12	2	0	712	**712**	712	86	2573	6.5681	162	361
185	181	8/13/12	5	0	1780	**1781**	1781	578	4156	7.4849	163	361
186	182	8/25/12	2	0	1392	**1392**	1392	169	5027	7.2385	164	361
187	183	9/6/12	3	0	1020	**1020**	1020	210	2980	6.9276	165	361
188	184	9/18/12	5	0	1755	**1756**	1756	570	4098	7.4708	166	361
189	185	9/30/12	4	0	1340	**1341**	1341	365	3434	7.2012	167	361
190	186	10/12/12	5	0	2590	**2591**	2591	841	6046	7.8598	168	361
191	187	10/24/12	0	1	0	**0**	372	0	1371	5.9189	169	361
192	188	11/5/12	10	0	3750	**3754**	3754	1800	6904	8.2306	170	361
193	189	11/17/12	3	0	1497	**1496**	1496	309	4372	7.3106	171	361
194	190	11/29/12	7	0	3416	**3415**	3415	1373	7037	8.1359	172	361
195	191	12/11/12	7	0	2716	**2719**	2719	1093	5602	7.9080	173	361
196	192	12/23/12	1	0	733	**733**	733	19	4086	6.5971	174	349
197	193	1/4/13	2	0	1368	**1369**	1369	166	4944	7.2218	175	361
198	194	1/16/13	10	0	4890	**4887**	4887	2343	8987	8.4943	176	361
199	195	1/28/13	1	0	553	**553**	553	14	3083	6.3154	177	361
200	196	2/9/13	8	0	2808	**2810**	2810	1213	5536	7.9409	178	361
201	197	2/21/13	0	1	0	**0**	733	0	2705	6.5971	179	361
202	198	3/5/13	3	0	1155	**1154**	1154	238	3371	7.0510	180	361
203	199	3/17/13	6	0	1992	**1994**	1994	732	4339	7.5979	181	361
204	200	3/29/13	9	0	4140	**4138**	4138	1892	7855	8.3280	182	361
205	201	4/10/13	9	0	4410	**4412**	4412	2017	8375	8.3921	183	361
206	202	5/4/13	6	0	9372	**9375**	9375	3440	20405	9.1458	184	361
207	203	5/16/13	4	0	1420	**1418**	1418	386	3631	7.2570	185	361
208	204	5/28/13	5	0	2795	**2794**	2794	907	6521	7.9352	186	361
209	205	6/9/13	10	0	13670	**13673**	13673	6557	25146	9.5232	187	361
210	206	6/21/13	6	0	2124	**2126**	2126	780	4627	7.6620	188	349
211	207	7/3/13	4	0	8936	**8935**	8935	2434	22877	9.0977	189	361
212	208	7/15/13	4	0	2716	**2716**	2716	740	6955	7.9069	190	361
213	209	7/27/13	6	0	4176	**4173**	4173	1532	9083	8.3364	191	361
214	210	8/8/13	8	0	2552	**2552**	2552	1102	5029	7.8446	192	361
215	211	8/20/13	4	0	3080	**3079**	3079	839	7884	8.0324	193	361
216	212	9/1/13	4	0	2400	**2402**	2402	654	6150	7.7841	194	361
217	213	9/13/13	3	0	1152	**1152**	1152	237	3365	7.0493	195	361
218	214	9/25/13	6	0	2112	**2112**	2112	775	4596	7.6554	196	361
219	215	10/7/13	1	0	333	**333**	333	8	1857	5.8081	197	361
220	216	10/19/13	0	1	0	**0**	304	0	1120	5.7170	198	361
221	217	10/31/13	1	0	374	**374**	374	9	2086	5.9243	199	361
222	218	11/12/13	6	0	6726	**6726**	6726	2468	14640	8.8137	200	361
223	219	11/24/13	8	0	9664	**9667**	9667	4173	19048	9.1765	201	361
224	220	12/6/13	3	0	1008	**1009**	1009	208	2948	6.9167	202	361
225	221	12/18/13	4	0	1372	**1370**	1370	373	3508	7.2226	203	361
226	222	12/30/13	2	0	704	**704**	704	85	2543	6.5568	204	361
227	223	1/11/14	3	0	1128	**1128**	1128	233	3296	7.0282	205	361
228	224	1/23/14	7	0	3864	**3863**	3863	1553	7959	8.2592	206	361
229	225	2/4/14	11	0	6589	**6590**	6590	3290	11792	8.7933	207	361
230	226	2/16/14	5	0	2825	**2826**	2826	917	6594	7.9466	208	361
231	227	2/28/14	10	0	4150	**4151**	4151	1990	7633	8.3311	209	361
232	228	3/12/14	6	0	5754	**5756**	5756	2112	12529	8.6580	210	361

	A	B	V	W	X	Y	Z	AA	AB	AC	AD	AE	AF
1	ID	Date.coll	# of filters	# of BDL	# of uncen	Location	Scale	Log-likelih'd	$Geom_{miss}$	$Geom_{cen}$	$95\%G_{lower}$	$95\%G_{upper}$	$_{1\text{-tail}}95\%G_{up}$
2						Method 852			fibers/m^3	fibers/m^3	fibers/m^3	fibers/m^3	fibers/m^3
3													
4													
176	172	4/15/12	30	0	30	7.5488	0.8440		1899	1899	1404	2568	2446
177	173	4/27/12	30	0	30	7.5164	0.8509		1838	1838	1356	2492	2373
178	174	5/9/12	30	0	30	7.4765	0.7823		1766	1766	1335	2337	2234
179	175	5/21/12	30	0	30	7.4408	0.7974		1704	1704	1281	2267	2165
180	176	6/2/12	30	0	30	7.4297	0.7932		1685	1685	1269	2238	2139
181	177	6/14/12	30	0	30	7.4464	0.7934		1714	1714	1290	2276	2175
182	178	7/8/12	29	0	29	7.5252	0.7572		1854	1854	1408	2443	2337
183	179	7/20/12	29	0	29	7.4992	0.7115		1807	1807	1394	2341	2245
184	180	8/1/12	29	0	29	7.4600	0.7309		1737	1737	1331	2266	2172
185	181	8/13/12	29	0	29	7.4686	0.7296		1752	1752	1344	2285	2190
186	182	8/25/12	29	0	29	7.4488	0.7277		1718	1718	1318	2239	2145
187	183	9/6/12	29	0	29	7.4147	0.7282		1660	1660	1274	2164	2074
188	184	9/18/12	29	0	29	7.4051	0.7254		1644	1644	1263	2141	2052
189	185	9/30/12	29	0	29	7.4072	0.7247		1648	1648	1266	2145	2056
190	186	10/12/12	29	0	29	7.4105	0.7266		1653	1653	1269	2154	2064
191	187	10/24/12	29	1	28	7.3645	0.7866	-242.39	1682	1579	1185	2104	2009
192	188	11/5/12	29	1	28	7.3976	0.8006	-243.84	1744	1632	1219	2186	2085
193	189	11/17/12	29	1	28	7.3676	0.7883	-242.53	1693	1584	1188	2111	2016
194	190	11/29/12	29	1	28	7.4238	0.7781	-243.81	1797	1675	1261	2225	2126
195	191	12/11/12	29	1	28	7.3877	0.7287	-240.93	1735	1616	1239	2108	2020
196	192	12/23/12	29	1	28	7.3653	0.7469	-240.96	1703	1580	1203	2075	1986
197	193	1/4/13	30	1	29	7.3584	0.7348	-248.77	1690	1569	1206	2042	1958
198	194	1/16/13	30	1	29	7.4046	0.7555	-250.97	1779	1643	1253	2155	2063
199	195	1/28/13	30	1	29	7.3465	0.7773	-250.04	1680	1551	1173	2049	1959
200	196	2/9/13	30	1	29	7.4134	0.7314	-250.31	1802	1658	1276	2155	2066
201	197	2/21/13	30	2	28	7.3651	0.7710	-244.18	1799	1580	1197	2085	1994
202	198	3/5/13	30	2	28	7.3255	0.7596	-242.56	1729	1519	1155	1996	1910
203	199	3/17/13	30	2	28	7.2902	0.7180	-239.90	1667	1466	1132	1898	1821
204	200	3/29/13	30	2	28	7.3283	0.7400	-241.91	1740	1523	1167	1987	1904
205	201	4/10/13	30	2	28	7.3726	0.7601	-244.01	1829	1592	1211	2092	2002
206	202	5/4/13	29	2	27	7.4823	0.8073	-240.37	2073	1776	1322	2387	2276
207	203	5/16/13	29	2	27	7.4475	0.7944	-238.90	1998	1715	1283	2294	2190
208	204	5/28/13	29	2	27	7.4949	0.7800	-239.81	2100	1799	1352	2393	2286
209	205	6/9/13	29	2	27	7.5591	0.8717	-244.71	2258	1918	1394	2639	2507
210	206	6/21/13	29	2	27	7.5569	0.8714	-244.64	2255	1914	1391	2633	2501
211	207	7/3/13	30	2	28	7.6079	0.9032	-256.04	2368	2014	1455	2787	2645
212	208	7/15/13	30	2	28	7.5957	0.8957	-255.43	2337	1990	1442	2746	2608
213	209	7/27/13	30	2	28	7.5935	0.8935	-255.29	2333	1985	1439	2738	2600
214	210	8/8/13	30	2	28	7.6366	0.8718	-255.91	2442	2073	1515	2836	2697
215	211	8/20/13	30	2	28	7.6552	0.8744	-256.56	2490	2112	1542	2892	2749
216	212	9/1/13	30	2	28	7.6733	0.8707	-257.00	2539	2150	1572	2941	2796
217	213	9/13/13	30	2	28	7.6768	0.8676	-257.00	2550	2158	1579	2948	2804
218	214	9/25/13	30	2	28	7.6834	0.8664	-257.17	2567	2172	1591	2966	2821
219	215	10/7/13	30	2	28	7.6340	0.9341	-257.78	2442	2067	1477	2893	2741
220	216	10/19/13	30	3	27	7.5430	1.0391	-252.67	2437	1888	1297	2747	2586
221	217	10/31/13	30	2	28	7.5600	1.0048	-257.84	2279	1920	1337	2756	2601
222	218	11/12/13	30	2	28	7.5785	1.0232	-258.91	2327	1956	1353	2826	2664
223	219	11/24/13	30	2	28	7.6387	1.0588	-261.71	2488	2077	1419	3041	2860
224	220	12/6/13	30	2	28	7.5946	1.0683	-260.63	2382	1987	1353	2920	2745
225	221	12/18/13	30	2	28	7.5709	1.0715	-260.00	2324	1941	1320	2855	2683
226	222	12/30/13	30	2	28	7.5678	1.0749	-259.99	2321	1935	1314	2849	2677
227	223	1/11/14	30	2	28	7.5615	1.0782	-259.89	2305	1923	1304	2835	2663
228	224	1/23/14	30	2	28	7.5534	1.0723	-259.49	2285	1907	1296	2806	2637
229	225	2/4/14	30	2	28	7.6357	1.0587	-261.62	2497	2071	1415	3031	2851
230	226	2/16/14	30	2	28	7.6356	1.0587	-261.62	2497	2071	1414	3031	2851
231	227	2/28/14	30	1	29	7.7107	1.0099	-268.87	2542	2232	1554	3206	3025
232	228	3/12/14	30	1	29	7.7649	1.0115	-270.55	2686	2356	1640	3386	3195

	A	B	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP
1	ID	Date.coll	Loc(1DL)	Scale(1DL)	$Geom_{1DL}$	% $Geom_{1DL}$/AL	95%G_{lower}	95%G_{upper}	1-tail 95%G_{up}		Date of	Fibers
2			Method 852	Method 852	Method 852:	for plotting	fibers/m^3	fibers/m^3	:Method 852		noncensored	M852;1:D178
3												
4												
176	172	4/15/12	7.5488	0.8440	1899	47	1404	2568	2446	172	11/29/12	3415
177	173	4/27/12	7.5164	0.8509	1838	46	1356	2492	2373	173	12/11/12	2719
178	174	5/9/12	7.4765	0.7823	1766	44	1335	2337	2234	174	12/23/12	733
179	175	5/21/12	7.4408	0.7974	1704	43	1281	2267	2165	175	1/4/13	1369
180	176	6/2/12	7.4297	0.7932	1685	42	1269	2238	2139	176	1/16/13	4887
181	177	6/14/12	7.4464	0.7934	1714	43	1290	2276	2175	177	1/28/13	553
182	178	7/8/12	7.5252	0.7572	1854	46	1408	2443	2337	178	2/9/13	2810
183	179	7/20/12	7.4992	0.7115	1807	45	1394	2341	2245	179	3/5/13	1154
184	180	8/1/12	7.4600	0.7309	1737	43	1331	2266	2172	180	3/17/13	1994
185	181	8/13/12	7.4686	0.7296	1752	44	1344	2285	2190	181	3/29/13	4138
186	182	8/25/12	7.4488	0.7277	1718	43	1318	2239	2145	182	4/10/13	4412
187	183	9/6/12	7.4147	0.7282	1660	42	1274	2164	2074	183	5/4/13	9375
188	184	9/18/12	7.4051	0.7254	1644	41	1263	2141	2052	184	5/16/13	1418
189	185	9/30/12	7.4072	0.7247	1648	41	1266	2145	2056	185	5/28/13	2794
190	186	10/12/12	7.4105	0.7266	1653	41	1269	2154	2064	186	6/9/13	13673
191	187	10/24/12	7.3757	0.7732	1597	40	1205	2116	2022	187	6/21/13	2126
192	188	11/5/12	7.4104	0.7886	1653	41	1241	2203	2103	188	7/3/13	8935
193	189	11/17/12	7.3820	0.7763	1607	40	1211	2131	2037	189	7/15/13	2716
194	190	11/29/12	7.4398	0.7675	1702	43	1287	2251	2152	190	7/27/13	4173
195	191	12/11/12	7.4055	0.7208	1645	41	1265	2139	2050	191	8/8/13	2552
196	192	12/23/12	7.3874	0.7346	1616	40	1237	2111	2022	192	8/20/13	3079
197	193	1/4/13	7.3819	0.7225	1607	40	1241	2081	1996	193	9/1/13	2402
198	194	1/16/13	7.4315	0.7465	1688	42	1292	2205	2113	194	9/13/13	1152
199	195	1/28/13	7.3763	0.7662	1598	40	1215	2102	2011	195	9/25/13	2112
200	196	2/9/13	7.4443	0.7200	1710	43	1322	2213	2123	196	10/7/13	333
201	197	2/21/13	7.4124	0.7360	1656	41	1273	2155	2066	197	10/31/13	374
202	198	3/5/13	7.3756	0.7251	1597	40	1232	2070	1985	198	11/12/13	6726
203	199	3/17/13	7.3412	0.6871	1543	39	1206	1973	1896	199	11/24/13	9667
204	200	3/29/13	7.3816	0.7087	1606	40	1246	2070	1987	200	12/6/13	1009
205	201	4/10/13	7.4280	0.7282	1682	42	1296	2183	2094	201	12/18/13	1370
206	202	5/4/13	7.5419	0.7696	1885	47	1425	2495	2385	202	12/30/13	704
207	203	5/16/13	7.5075	0.7588	1822	46	1382	2401	2297	203	1/11/14	1128
208	204	5/28/13	7.5536	0.7420	1908	48	1456	2499	2393	204	1/23/14	3863
209	205	6/9/13	7.6211	0.8273	2041	51	1510	2758	2627	205	2/4/14	6590
210	206	6/21/13	7.6199	0.8272	2038	51	1508	2754	2624	206	2/16/14	2826
211	207	7/3/13	7.6692	0.8564	2141	54	1576	2909	2769	207	2/28/14	4151
212	208	7/15/13	7.6566	0.8498	2114	53	1560	2866	2729	208	3/12/14	5756
213	209	7/27/13	7.6552	0.8486	2112	53	1559	2861	2724	209	3/24/14	5151
214	210	8/8/13	7.6977	0.8239	2203	55	1641	2959	2822	210	4/17/14	183
215	211	8/20/13	7.7160	0.8250	2244	56	1670	3015	2875	211	5/11/14	1032
216	212	9/1/13	7.7341	0.8202	2285	57	1704	3064	2923	212	5/23/14	5536
217	213	9/13/13	7.7382	0.8163	2294	57	1713	3073	2932	213	6/4/14	8784
218	214	9/25/13	7.7444	0.8149	2308	58	1725	3090	2949	214	6/16/14	2888
219	215	10/7/13	7.6979	0.8837	2204	55	1606	3023	2874	215	6/28/14	1632
220	216	10/19/13	7.6265	0.9540	2052	51	1458	2887	2733	216	7/10/14	577
221	217	10/31/13	7.6267	0.9537	2052	51	1459	2887	2733	217	7/22/14	3927
222	218	11/12/13	7.6461	0.9722	2092	52	1478	2963	2802	218	8/3/14	6949
223	219	11/24/13	7.7083	1.0089	2227	56	1552	3195	3015	219	8/15/14	2056
224	220	12/6/13	7.6677	1.0157	2138	53	1487	3075	2901	220	8/27/14	5012
225	221	12/18/13	7.6448	1.0178	2090	52	1452	3008	2837	221	9/8/14	4383
226	222	12/30/13	7.6435	1.0192	2087	52	1449	3005	2834	222	9/20/14	1119
227	223	1/11/14	7.6370	1.0226	2074	52	1438	2990	2819	223	10/2/14	1622
228	224	1/23/14	7.6292	1.0167	2057	51	1430	2960	2792	224	10/14/14	3362
229	225	2/4/14	7.7118	1.0069	2235	56	1558	3204	3023	225	10/26/14	1827
230	226	2/16/14	7.7120	1.0069	2235	56	1559	3204	3024	226	11/7/14	510
231	227	2/28/14	7.7698	0.9904	2368	59	1661	3375	3188	227	11/19/14	2680
232	228	3/12/14	7.8233	0.9936	2498	62	1751	3565	3367	228	12/1/14	6960

	A	B	AQ	AR	AS	AT	AU	AV	AW	AX	AY	AZ	BA
1	ID	Date.coll	Date of	Fibers	Remarks	The 1 DL sub method for RP No. 316			To bracket the geomean				
2			censored	M852;1:D178		10/22/17	f(x)_MLE	f(x)_1DLs	fibers/m^3	ln(fibers)	f(x)_1DLs		
3													
4													
176	172	4/15/12											
177	173	4/27/12											
178	174	5/9/12											
179	175	5/21/12											
180	176	6/2/12											
181	177	6/14/12											
182	178	7/8/12											
183	179	7/20/12											
184	180	8/1/12											
185	181	8/13/12											
186	182	8/25/12											
187	183	9/6/12											
188	184	9/18/12											
189	185	9/30/12											
190	186	10/12/12											
191	187	10/24/12											
192	188	11/5/12											
193	189	11/17/12											
194	190	11/29/12											
195	191	12/11/12											
196	192	12/23/12											
197	193	1/4/13											
198	194	1/16/13											
199	195	1/28/13											
200	196	2/9/13											
201	197	2/21/13											
202	198	3/5/13											
203	199	3/17/13											
204	200	3/29/13											
205	201	4/10/13											
206	202	5/4/13											
207	203	5/16/13											
208	204	5/28/13											
209	205	6/9/13											
210	206	6/21/13											
211	207	7/3/13											
212	208	7/15/13											
213	209	7/27/13											
214	210	8/8/13											
215	211	8/20/13											
216	212	9/1/13											
217	213	9/13/13											
218	214	9/25/13											
219	215	10/7/13											
220	216	10/19/13											
221	217	10/31/13											
222	218	11/12/13											
223	219	11/24/13											
224	220	12/6/13											
225	221	12/18/13											
226	222	12/30/13											
227	223	1/11/14											
228	224	1/23/14											
229	225	2/4/14											
230	226	2/16/14											
231	227	2/28/14											
232	228	3/12/14											

	A	B	BB	BC	BD	BE	BF	BG	BH	BI	BJ
1	ID	Date.coll	Additional plots for the preparation of the revised write-up on the data analysis of ambient fibers								
2											
3											
4											
176	172	4/15/12									
177	173	4/27/12									
178	174	5/9/12									
179	175	5/21/12									
180	176	6/2/12									
181	177	6/14/12									
182	178	7/8/12									
183	179	7/20/12									
184	180	8/1/12									
185	181	8/13/12									
186	182	8/25/12									
187	183	9/6/12									
188	184	9/18/12									
189	185	9/30/12									
190	186	10/12/12									
191	187	10/24/12									
192	188	11/5/12									
193	189	11/17/12									
194	190	11/29/12									
195	191	12/11/12									
196	192	12/23/12									
197	193	1/4/13									
198	194	1/16/13									
199	195	1/28/13									
200	196	2/9/13									
201	197	2/21/13									
202	198	3/5/13									
203	199	3/17/13									
204	200	3/29/13									
205	201	4/10/13									
206	202	5/4/13									
207	203	5/16/13									
208	204	5/28/13									
209	205	6/9/13									
210	206	6/21/13									
211	207	7/3/13									
212	208	7/15/13									
213	209	7/27/13									
214	210	8/8/13									
215	211	8/20/13									
216	212	9/1/13									
217	213	9/13/13									
218	214	9/25/13									
219	215	10/7/13									
220	216	10/19/13									
221	217	10/31/13									
222	218	11/12/13									
223	219	11/24/13									
224	220	12/6/13									
225	221	12/18/13									
226	222	12/30/13									
227	223	1/11/14									
228	224	1/23/14									
229	225	2/4/14									
230	226	2/16/14									
231	227	2/28/14									
232	228	3/12/14									

	A	B	C	D	E	F	G	H	I	J	K
1	ID	Date.coll	Orig.fltr.mm^2	PC.fltr.mm^2	Air.m^3	Chord.mm	Radius.mm	Area.ashed.mm^2	Count.GO	GO.mm^2	Sen.per.m^3
2			1150	1075	<== Constants for specified time intervals			Method 852		Constant periodically	
3			6/24/17-3/27/18:	1257							
4			4/8/18 to date:	1304							
233	229	3/24/14			96.000	19	20.5	202	6		859
234	230	4/17/14			96.000	38.27	19.13	575	10	0.012235	183
235	231	4/29/14			96.000	29	21.25	339	10		310
236	232	5/11/14			96.000	27.5	20.25	306	10		344
237	233	5/23/14			96.000	18.5	19.75	190	8		692
238	234	6/4/14			96.000	14	20.5	146	9		799
239	235	6/16/14			96.000	21	19.75	219	10		481
240	236	6/28/14			96.000	19	19.5	193	10		544
241	237	7/10/14			96.000	18	19.5	182	10		577
242	238	7/22/14			96.000	13	20.25	134	10		785
243	239	8/3/14			96.000	11	19	106	10		993
244	240	8/15/14			96.000	20	19.5	205	10		514
245	241	8/27/14			96.000	19	19	189	10		557
246	242	9/8/14			96.000	29	20.5	330	8		398
247	243	9/20/14			96.000	25.5	20.5	282	10		373
248	244	10/2/14			96.000	29	20	324	10		324
249	245	10/14/14			96.000	28	20.25	313	6		560
250	246	10/26/14			96.000	27	19.25	288	10		365
251	247	11/7/14			96.000	21	18.5	207	10		510
252	248	11/19/14			96.000	15	15	118	10		893
253	249	12/1/14			96.000	20	16	173	7		870
254	250	12/13/14			96.000	18	19	178	10		591
255	251	12/25/14			96.000	20	19	200	10		526
256	252	1/6/15			96.000	22	19	223	7		675
257	253	1/18/15			96.000	27	19.25	288	10		365
258	254	1/30/15			96.000	27.5	19.25	295	10		357
259	255	2/11/15			96.000	25	18	249	10		423
260	256	2/23/15			96.000	20	17	182	10		579
261	257	3/13/15			96.000	22	19	223	10		472
262	258	3/19/15			96.000	25	20	270	10		390
263	259	3/31/15			96.000	23	19	235	10		448
264	260	4/12/15			96.000	20	19	200	6		877
265	261	4/24/15			96.000	18	21	195	10		539
266	262	5/6/15			96.000	20	21	219	10		481
267	263	5/18/15			96.000	18	19.5	182	10	0.013511	522
268	264	5/30/15			96.000	19	20.5	202	3		1569
269	265	6/11/15			96.000	10	20	101	10		994
270	266	6/23/15			96.000	14	19	136	10	0.012824	737
271	267	7/5/15			96.000	19	20	198	7		725
272	268	7/17/15			96.000	16	19	157	10		640
273	269	7/29/15			96.000	16	19	157	10		640
274	270	8/10/15			96.000	16	19.5	161	10		625
275	271	8/22/15			96.000	20	20	209	10		479
276	272	9/3/15			96.000	17	20	176	10		572
277	273	9/15/15			96.000	16	19	157	10		640
278	274	9/27/15			96.000	12	20	122	10		824
279	275	10/9/15			96.000	14	19.5	140	10		719
280	276	10/21/15			96.000	15	19.5	150	10		669
281	277	11/2/15			96.000	9	19.5	89	10		1134
282	278	11/14/15			96.000	14	20	143	10		702
283	279	11/26/15			96.000	19	20	198	10		507
284	280	12/8/15			96.000	17	20	176	10		572
285	281	12/20/15			96.000	15	19	146	10		686
286	282	1/1/16			96.000	19	20	198	10		507
287	283	1/13/16			96.000	14	19.5	140	10	0.012724	725
288	284	1/25/16			96.000	15	20	154	10		658
289	285	2/6/16			96.000	17	19.5	172	10		590

	A	B	L	M	N	O	P	Q	R	S	T	U
1	ID	Date.coll	Method 852: μ	CenIndex	2 ways for: Fibers0		Fibers	95% C.I. :Method 852		ln(Fibers)	RollPeriod	RP span
2				BDL=1	fibers/m^3	v2.pdf	fibers/m^3	lower limit	upper limit	Method 852		days
3												
4												
233	229	3/24/14	6	0	5154	**5151**	5151	1890	11212	8.5469	211	361
234	230	4/17/14	1	0	183	**183**	183	5	1020	5.2095	212	349
235	231	4/29/14	0	1	0	**0**	310	0	1145	5.7366	213	361
236	232	5/11/14	3	0	1032	**1032**	1032	213	3015	6.9393	214	361
237	233	5/23/14	8	0	5536	**5536**	5536	2390	10908	8.6190	215	361
238	234	6/4/14	11	0	8789	**8784**	8784	4385	15717	9.0807	216	361
239	235	6/16/14	6	0	2886	**2888**	2888	1060	6287	7.9683	217	361
240	236	6/28/14	3	0	1632	**1632**	1632	337	4769	7.3976	218	361
241	237	7/10/14	1	0	577	**577**	577	15	3215	6.3578	219	361
242	238	7/22/14	5	0	3925	**3927**	3927	1275	9165	8.2756	220	361
243	239	8/3/14	7	0	6951	**6949**	6949	2794	14319	8.8464	221	361
244	240	8/15/14	4	0	2056	**2056**	2056	560	5265	7.6285	222	361
245	241	8/27/14	9	0	5013	**5012**	5012	2292	9513	8.5196	223	361
246	242	9/8/14	11	0	4378	**4383**	4383	2188	7842	8.3855	224	361
247	243	9/20/14	3	0	1119	**1119**	1119	231	3271	7.0202	225	361
248	244	10/2/14	5	0	1620	**1622**	1622	527	3786	7.3914	226	361
249	245	10/14/14	6	0	3360	**3362**	3362	1234	7319	8.1203	227	361
250	246	10/26/14	5	0	1825	**1827**	1827	593	4264	7.5104	228	361
251	247	11/7/14	1	0	510	**510**	510	13	2839	6.2344	229	361
252	248	11/19/14	3	0	2679	**2680**	2680	553	7833	7.8936	230	361
253	249	12/1/14	8	0	6960	**6960**	6960	3005	13714	8.8479	231	361
254	250	12/13/14	1	0	591	**591**	591	15	3292	6.3818	232	361
255	251	12/25/14	0	1	0	**0**	526	0	1940	6.2653	233	361
256	252	1/6/15	11	0	7425	**7420**	7420	3704	13277	8.9119	234	361
257	253	1/18/15	8	0	2920	**2924**	2924	1262	5761	7.9807	235	361
258	254	1/30/15	3	0	1071	**1071**	1071	221	3130	6.9763	236	361
259	255	2/11/15	2	0	846	**846**	846	102	3057	6.7405	237	361
260	256	2/23/15	1	0	579	**579**	579	15	3227	6.3613	238	361
261	257	3/13/15	2	0	944	**944**	944	114	3412	6.8501	239	355
262	258	3/19/15	5	0	1950	**1949**	1949	633	4548	7.5751	240	361
263	259	3/31/15	1	0	448	**448**	448	11	2499	6.1048	241	349
264	260	4/12/15	9	0	7893	**7890**	7890	3608	14978	8.9734	242	361
265	261	4/24/15	7	0	3773	**3772**	3772	1517	7772	8.2354	243	361
266	262	5/6/15	2	0	962	**962**	962	116	3474	6.8690	244	361
267	263	5/18/15	3	0	1566	**1567**	1567	323	4581	7.3569	245	361
268	264	5/30/15	7	0	10983	**10983**	10983	4416	22629	9.3041	246	361
269	265	6/11/15	2	0	1988	**1987**	1987	241	7178	7.5944	247	361
270	266	6/23/15	6	0	4422	**4423**	4423	1623	9628	8.3946	248	361
271	267	7/5/15	6	0	4350	**4347**	4347	1595	9462	8.3772	249	361
272	268	7/17/15	5	0	3200	**3200**	3200	1039	7468	8.0709	250	361
273	269	7/29/15	7	0	4480	**4480**	4480	1801	9231	8.4074	251	361
274	270	8/10/15	3	0	1875	**1874**	1874	386	5477	7.5358	252	361
275	271	8/22/15	1	0	479	**479**	479	12	2671	6.1717	253	361
276	272	9/3/15	2	0	1144	**1144**	1144	139	4132	7.0423	254	361
277	273	9/15/15	3	0	1920	**1920**	1920	396	5611	7.5601	255	361
278	274	9/27/15	3	0	2472	**2472**	2472	510	7224	7.8128	256	361
279	275	10/9/15	1	0	719	**719**	719	18	4007	6.5779	257	361
280	276	10/21/15	1	0	669	**669**	669	17	3727	6.5058	258	361
281	277	11/2/15	1	0	1134	**1134**	1134	29	6319	7.0335	259	361
282	278	11/14/15	3	0	2106	**2106**	2106	434	6155	7.6525	260	361
283	279	11/26/15	3	0	1521	**1522**	1522	314	4447	7.3278	261	361
284	280	12/8/15	2	0	1144	**1144**	1144	139	4132	7.0423	262	361
285	281	12/20/15	0	1	0	**0**	686	0	2529	6.5309	263	361
286	282	1/1/16	2	0	1014	**1014**	1014	123	3664	6.9217	264	361
287	283	1/13/16	0	1	0	**0**	725	0	2674	6.5862	265	361
288	284	1/25/16	4	0	2632	**2633**	2633	717	6741	7.8759	266	361
289	285	2/6/16	0	1	0	**0**	590	0	2177	6.3801	267	361

	A	B	V	W	X	Y	Z	AA	AB	AC	AD	AE	AF
1	ID	Date.coll	# of filters	# of BDL	# of uncen	Location	Scale	Log-likelih'd	$Geom_{miss}$	$Geom_{cen}$	$95\%G_{lower}$	$95\%G_{upper}$	$_{1\text{-tail}}95\%G_{up}$
2						Method 852			fibers/m^3	fibers/m^3	fibers/m^3	fibers/m^3	fibers/m^3
3													
4													
233	229	3/24/14	30	1	29	7.7961	1.0181	-271.68	2776	2431	1688	3502	3303
234	230	4/17/14	29	1	28	7.6667	1.1378	-261.80	2442	2136	1410	3235	3026
235	231	4/29/14	30	2	28	7.5821	1.2114	-264.76	2442	1963	1269	3035	2829
236	232	5/11/14	30	2	28	7.5095	1.1815	-261.85	2257	1825	1193	2792	2608
237	233	5/23/14	30	2	28	7.5556	1.1977	-263.63	2370	1911	1242	2941	2744
238	234	6/4/14	30	2	28	7.5926	1.2295	-265.50	2469	1983	1274	3087	2875
239	235	6/16/14	30	2	28	7.5428	1.1741	-262.68	2336	1887	1237	2879	2690
240	236	6/28/14	30	2	28	7.5359	1.1743	-262.48	2314	1874	1228	2859	2672
241	237	7/10/14	30	2	28	7.4445	1.1546	-259.22	2098	1710	1129	2591	2424
242	238	7/22/14	30	2	28	7.4563	1.1619	-259.76	2126	1731	1139	2629	2458
243	239	8/3/14	30	2	28	7.4728	1.1799	-260.70	2165	1760	1151	2690	2513
244	240	8/15/14	30	2	28	7.4659	1.1782	-260.45	2148	1747	1144	2670	2494
245	241	8/27/14	30	2	28	7.4811	1.1898	-261.19	2186	1774	1156	2722	2541
246	242	9/8/14	30	2	28	7.5004	1.2001	-262.02	2233	1809	1175	2786	2599
247	243	9/20/14	30	2	28	7.5001	1.2002	-262.02	2231	1808	1174	2785	2598
248	244	10/2/14	30	2	28	7.4910	1.2002	-261.74	2210	1792	1163	2760	2575
249	245	10/14/14	30	2	28	7.5703	1.1562	-263.07	2400	1940	1280	2940	2750
250	246	10/26/14	30	1	29	7.6491	1.0600	-268.38	2378	2099	1435	3069	2887
251	247	11/7/14	30	1	29	7.6589	1.0445	-268.25	2403	2119	1457	3082	2902
252	248	11/19/14	30	1	29	7.6278	1.0242	-266.73	2328	2054	1423	2966	2796
253	249	12/1/14	30	1	29	7.6163	1.0084	-265.94	2302	2031	1415	2916	2751
254	250	12/13/14	30	1	29	7.6009	1.0249	-265.94	2260	2000	1385	2888	2723
255	251	12/25/14	30	2	28	7.5510	1.0857	-260.11	2301	1903	1287	2812	2641
256	252	1/6/15	30	2	28	7.6312	1.0837	-262.48	2503	2062	1396	3045	2860
257	253	1/18/15	30	2	28	7.6633	1.0762	-263.26	2589	2129	1445	3135	2946
258	254	1/30/15	30	2	28	7.6196	1.0833	-262.12	2473	2038	1380	3009	2826
259	255	2/11/15	30	2	28	7.5507	1.0807	-259.97	2298	1902	1289	2806	2636
260	256	2/23/15	30	2	28	7.4947	1.1076	-258.97	2172	1798	1207	2679	2513
261	257	3/13/15	29	2	27	7.4082	1.1066	-247.40	1983	1650	1100	2474	2318
262	258	3/19/15	30	2	28	7.4126	1.0861	-255.92	1982	1657	1121	2449	2300
263	259	3/31/15	30	2	28	7.3314	1.0967	-253.74	1816	1527	1029	2267	2128
264	260	4/12/15	31	2	29	7.3835	1.1172	-264.76	1911	1609	1083	2390	2243
265	261	4/24/15	31	2	29	7.4857	1.0385	-265.81	2121	1782	1234	2574	2426
266	262	5/6/15	31	1	30	7.5382	0.9589	-270.45	2066	1878	1339	2635	2496
267	263	5/18/15	31	1	30	7.5520	0.9525	-270.68	2095	1905	1361	2666	2525
268	264	5/30/15	31	1	30	7.5722	0.9835	-272.28	2143	1943	1373	2750	2601
269	265	6/11/15	31	1	30	7.5251	0.9427	-269.53	2039	1854	1329	2586	2451
270	266	6/23/15	31	1	30	7.5387	0.9526	-270.27	2069	1879	1343	2630	2492
271	267	7/5/15	31	1	30	7.5695	0.9642	-271.60	2137	1938	1379	2724	2579
272	268	7/17/15	31	1	30	7.6263	0.9414	-272.65	2263	2052	1472	2860	2711
273	269	7/29/15	31	1	30	7.6310	0.9452	-272.92	2273	2061	1476	2877	2727
274	270	8/10/15	31	1	30	7.5898	0.9177	-270.74	2176	1978	1431	2734	2596
275	271	8/22/15	31	1	30	7.5427	0.9516	-270.36	2073	1887	1349	2640	2501
276	272	9/3/15	31	1	30	7.4957	0.9378	-268.46	1973	1800	1293	2507	2377
277	273	9/15/15	31	1	30	7.4706	0.9239	-267.22	1919	1756	1267	2433	2308
278	274	9/27/15	31	1	30	7.4959	0.9214	-267.93	1971	1801	1301	2493	2366
279	275	10/9/15	31	1	30	7.4698	0.9363	-267.60	1918	1754	1261	2441	2315
280	276	10/21/15	31	1	30	7.4171	0.9459	-266.26	1818	1664	1192	2324	2203
281	277	11/2/15	31	1	30	7.4019	0.9487	-265.88	1789	1639	1173	2291	2171
282	278	11/14/15	31	1	30	7.4493	0.9207	-266.45	1876	1719	1242	2379	2258
283	279	11/26/15	31	1	30	7.4308	0.9190	-265.82	1841	1687	1220	2334	2215
284	280	12/8/15	31	1	30	7.3755	0.8889	-263.09	1733	1596	1166	2185	2077
285	281	12/20/15	31	2	29	7.3645	0.9069	-257.09	1798	1579	1145	2177	2068
286	282	1/1/16	31	1	30	7.4008	0.8594	-262.50	1764	1637	1209	2218	2112
287	283	1/13/16	31	2	29	7.3117	0.8578	-253.42	1679	1498	1105	2030	1933
288	284	1/25/16	31	2	29	7.3085	0.8556	-253.25	1673	1493	1102	2022	1926
289	285	2/6/16	31	3	28	7.2734	0.8978	-247.51	1700	1441	1047	1984	1885

	A	B	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP
1	ID	Date.coll	Loc(1DL)	Scale(1DL)	$Geom_{1DL}$	% $Geom_{1DL}$/AL	95%G_{lower}	95%G_{upper}	$_{1\text{-tail}}$95%G_{up}		Date of	Fibers
2			Method 852	Method 852	Method 852:	for plotting	fibers/m^3	fibers/m^3	:Method 852		noncensored	M852;1:D178
3												
4												
233	229	3/24/14	7.8550	1.0012	2579	64	1802	3690	3483	229	12/13/14	591
234	230	4/17/14	7.7289	1.1196	2273	57	1512	3417	3200	230	1/6/15	7420
235	231	4/29/14	7.6625	1.1587	2127	53	1405	3220	3012	231	1/18/15	2924
236	232	5/11/14	7.5890	1.1310	1976	49	1318	2962	2776	232	1/30/15	1071
237	233	5/23/14	7.6344	1.1445	2068	52	1373	3115	2916	233	2/11/15	846
238	234	6/4/14	7.6725	1.1736	2149	54	1412	3270	3056	234	2/23/15	579
239	235	6/16/14	7.6207	1.1223	2040	51	1365	3048	2858	235	3/13/15	944
240	236	6/28/14	7.6119	1.1230	2022	51	1353	3022	2833	236	3/19/15	1949
241	237	7/10/14	7.5206	1.1093	1846	46	1241	2745	2575	237	3/31/15	448
242	238	7/22/14	7.5329	1.1157	1868	47	1253	2785	2612	238	4/12/15	7890
243	239	8/3/14	7.5499	1.1322	1900	48	1267	2850	2670	239	4/24/15	3772
244	240	8/15/14	7.5426	1.1309	1887	47	1259	2828	2650	240	5/6/15	962
245	241	8/27/14	7.5589	1.1416	1918	48	1275	2885	2702	241	5/18/15	1567
246	242	9/8/14	7.5789	1.1510	1957	49	1296	2954	2764	242	5/30/15	10983
247	243	9/20/14	7.5780	1.1514	1955	49	1295	2951	2762	243	6/11/15	1987
248	244	10/2/14	7.5692	1.1518	1938	48	1283	2926	2738	244	6/23/15	4423
249	245	10/14/14	7.6462	1.1064	2093	52	1409	3109	2918	245	7/5/15	4347
250	246	10/26/14	7.7060	1.0453	2222	56	1528	3229	3041	246	7/17/15	3200
251	247	11/7/14	7.7164	1.0285	2245	56	1554	3243	3057	247	7/29/15	4480
252	248	11/19/14	7.6857	1.0082	2177	54	1518	3123	2947	248	8/10/15	1874
253	249	12/1/14	7.6747	0.9931	2153	54	1509	3072	2901	249	8/22/15	479
254	250	12/13/14	7.6569	1.0118	2115	53	1473	3038	2866	250	9/3/15	1144
255	251	12/25/14	7.6250	1.0406	2049	51	1412	2973	2800	251	9/15/15	1920
256	252	1/6/15	7.7035	1.0461	2216	55	1524	3222	3034	252	9/27/15	2472
257	253	1/18/15	7.7353	1.0393	2288	57	1577	3318	3126	253	10/9/15	719
258	254	1/30/15	7.6925	1.0434	2192	55	1509	3184	2998	254	10/21/15	669
259	255	2/11/15	7.6241	1.0360	2047	51	1413	2965	2794	255	11/2/15	1134
260	256	2/23/15	7.5712	1.0592	1942	49	1329	2836	2669	256	11/14/15	2106
261	257	3/13/15	7.4827	1.0534	1777	44	1211	2607	2451	257	11/26/15	1522
262	258	3/19/15	7.4858	1.0352	1782	45	1231	2582	2432	258	12/8/15	1144
263	259	3/31/15	7.4043	1.0448	1643	41	1131	2388	2249	259	1/1/16	1014
264	260	4/12/15	7.4550	1.0652	1728	43	1188	2515	2368	260	1/25/16	2633
265	261	4/24/15	7.5526	0.9885	1906	48	1346	2699	2552	261	3/1/16	2491
266	262	5/6/15	7.5891	0.9388	1977	49	1420	2751	2608	262	3/25/16	905
267	263	5/18/15	7.6026	0.9321	2003	50	1443	2781	2638	263	4/30/16	2585
268	264	5/30/15	7.6247	0.9646	2048	51	1458	2876	2723	264	5/12/16	845
269	265	6/11/15	7.5767	0.9260	1952	49	1409	2705	2566	265	5/24/16	1074
270	266	6/23/15	7.5905	0.9351	1979	49	1424	2751	2609	266	6/17/16	10910
271	267	7/5/15	7.6221	0.9449	2043	51	1465	2849	2701	267	6/29/16	1769
272	268	7/17/15	7.6773	0.9182	2159	54	1563	2983	2832	268	7/11/16	599
273	269	7/29/15	7.6816	0.9213	2168	54	1568	2999	2846	269	7/23/16	813
274	270	8/10/15	7.6393	0.8958	2078	52	1516	2849	2708	270	8/4/16	1565
275	271	8/22/15	7.5923	0.9338	1983	50	1427	2755	2613	271	8/16/16	2402
276	272	9/3/15	7.5447	0.9225	1891	47	1366	2616	2483	272	8/28/16	5533
277	273	9/15/15	7.5180	0.9093	1841	46	1337	2535	2408	273	9/9/16	522
278	274	9/27/15	7.5436	0.9060	1889	47	1373	2598	2468	274	9/21/16	2609
279	275	10/9/15	7.5174	0.9221	1840	46	1330	2545	2416	275	10/3/16	1705
280	276	10/21/15	7.4653	0.9325	1746	44	1258	2425	2300	276	10/15/16	2028
281	277	11/2/15	7.4499	0.9357	1720	43	1237	2391	2267	277	10/27/16	2334
282	278	11/14/15	7.4956	0.9085	1800	45	1307	2479	2354	278	11/8/16	2498
283	279	11/26/15	7.4774	0.9059	1768	44	1285	2432	2310	279	11/20/16	7272
284	280	12/8/15	7.4191	0.8723	1668	42	1227	2267	2158	280	12/2/16	6139
285	281	12/20/15	7.4240	0.8668	1676	42	1235	2274	2165	281	12/14/16	6180
286	282	1/1/16	7.4451	0.8453	1712	43	1271	2305	2197	282	12/26/16	9508
287	283	1/13/16	7.3701	0.8134	1588	40	1192	2114	2019	283	1/7/17	7075
288	284	1/25/16	7.3667	0.8110	1582	40	1189	2105	2011	284	1/19/17	942
289	285	2/6/16	7.3475	0.8274	1552	39	1160	2077	1982	285	2/12/17	1069

	A	B	AQ	AR	AS	AT	AU	AV	AW	AX	AY	AZ	BA
1	ID	Date.coll	Date of	Fibers	Remarks	The 1 DL sub method for RP No. 316			To bracket the geomean				
2			censored	M852;1:D178		10/22/17	f(x)_MLE	f(x)_1DLs	fibers/m^3	ln(fibers)	f(x)_1DLs		
3													
4													
233	229	3/24/14											
234	230	4/17/14											
235	231	4/29/14											
236	232	5/11/14											
237	233	5/23/14											
238	234	6/4/14											
239	235	6/16/14											
240	236	6/28/14											
241	237	7/10/14											
242	238	7/22/14											
243	239	8/3/14											
244	240	8/15/14											
245	241	8/27/14											
246	242	9/8/14											
247	243	9/20/14											
248	244	10/2/14											
249	245	10/14/14											
250	246	10/26/14											
251	247	11/7/14											
252	248	11/19/14											
253	249	12/1/14											
254	250	12/13/14											
255	251	12/25/14											
256	252	1/6/15											
257	253	1/18/15											
258	254	1/30/15											
259	255	2/11/15											
260	256	2/23/15											
261	257	3/13/15											
262	258	3/19/15											
263	259	3/31/15											
264	260	4/12/15											
265	261	4/24/15											
266	262	5/6/15											
267	263	5/18/15											
268	264	5/30/15											
269	265	6/11/15											
270	266	6/23/15											
271	267	7/5/15											
272	268	7/17/15											
273	269	7/29/15											
274	270	8/10/15											
275	271	8/22/15											
276	272	9/3/15											
277	273	9/15/15											
278	274	9/27/15											
279	275	10/9/15											
280	276	10/21/15											
281	277	11/2/15											
282	278	11/14/15											
283	279	11/26/15											
284	280	12/8/15											
285	281	12/20/15											
286	282	1/1/16											
287	283	1/13/16											
288	284	1/25/16											
289	285	2/6/16											

	A	B	BB	BC	BD	BE	BF	BG	BH	BI	BJ
1	ID	Date.coll	Additional plots for the preparation of the revised write-up on the data analysis of ambient fibers								
2											
3											
4											
233	229	3/24/14									
234	230	4/17/14									
235	231	4/29/14									
236	232	5/11/14									
237	233	5/23/14									
238	234	6/4/14									
239	235	6/16/14									
240	236	6/28/14									
241	237	7/10/14									
242	238	7/22/14									
243	239	8/3/14									
244	240	8/15/14									
245	241	8/27/14									
246	242	9/8/14									
247	243	9/20/14									
248	244	10/2/14									
249	245	10/14/14									
250	246	10/26/14									
251	247	11/7/14									
252	248	11/19/14									
253	249	12/1/14									
254	250	12/13/14									
255	251	12/25/14									
256	252	1/6/15									
257	253	1/18/15									
258	254	1/30/15									
259	255	2/11/15									
260	256	2/23/15									
261	257	3/13/15									
262	258	3/19/15									
263	259	3/31/15									
264	260	4/12/15									
265	261	4/24/15									
266	262	5/6/15									
267	263	5/18/15									
268	264	5/30/15									
269	265	6/11/15									
270	266	6/23/15									
271	267	7/5/15									
272	268	7/17/15									
273	269	7/29/15									
274	270	8/10/15									
275	271	8/22/15									
276	272	9/3/15									
277	273	9/15/15									
278	274	9/27/15									
279	275	10/9/15									
280	276	10/21/15									
281	277	11/2/15									
282	278	11/14/15									
283	279	11/26/15									
284	280	12/8/15									
285	281	12/20/15									
286	282	1/1/16									
287	283	1/13/16									
288	284	1/25/16									
289	285	2/6/16									

	A	B	C	D	E	F	G	H	I	J	K
1	ID	Date.coll	Orig.fltr.mm^2	PC.fltr.mm^2	Air.m^3	Chord.mm	Radius.mm	Area.ashed.mm^2	Count.GO	GO.mm^2	Sen.per.m^3
2			1150	1075	<== Constants for specified time intervals			Method 852		Constant periodically	
3			6/24/17-3/27/18:	1257							
4			4/8/18 to date:	1304							
290	286	2/18/16			96.000	17	19.5	172	10		590
291	287	3/1/16			96.000	12	20	122	10		830
292	288	3/25/16			96.000	20	21.5	224	10		453
293	289	4/6/16			96.000	17	19	167	10		604
294	290	4/30/16			96.000	12	19.25	117	10		862
295	291	5/12/16			96.000	13	18	120	10		845
296	292	5/24/16			96.000	19	19.5	193	10	0.012394	537
297	293	6/5/16			96.000	18	20	187	10		556
298	294	6/17/16			96.000	9	21	95	5		2182
299	295	6/29/16	Date analyzing		96.000	16	21.5	176	10		590
300	296	7/11/16	9/19/16		96.000	16	21	172	10	0.012465	599
301	297	7/23/16	9/27/16		96.000	12	21	128	10	0.012394	813
302	298	8/4/16	9/29/16		96.000	19	20	198	10	0.012465	522
303	299	8/16/16	10/12/16		96.000	13	18.5	123	7		1201
304	300	8/28/16	11/7/16		96.000	18	20	187	7		790
305	301	9/9/16	11/9/16		96.000	19	20	198	10		522
306	302	9/21/16	11/9/16		96.000	19	20	198	10		522
307	303	10/3/16	12/12/16		96.000	20	17	182	10		568
308	304	10/15/16	12/2/16		96.000	18	20.5	191	8		676
309	305	10/27/16	12/20/16		96.000	14	18.5	133	10		778
310	306	11/8/16	12/28/16		96.000	18	21.5	200	6	0.012909	833
311	307	11/20/16	12/16/16		96.000	16	20	165	5		1212
312	308	12/2/16	1/10/17		96.000	12	20	122	8		1023
313	309	12/14/16	1/11/17		96.000	21	20.5	226	5		883
314	310	12/26/16	1/20/17		96.000	18	20.25	189	5		1056
315	311	1/7/17	1/31/17		96.000	13.5	20.5	141	9		786
316	312	1/19/17	2/24/17		96.000	20	20.25	212	10		471
317	313	1/31/17	3/21/17		96.000	17	18.5	163	10		611
318	314	2/12/17	4/4/17		96.000	18	20	187	10		534
319	315	2/24/17	4/12/17		96.000	17	19.25	169	5	0.012931	1175
320	316	3/8/17	4/25/17		96.000	14	21	150	3		2215
321	317	3/20/17	5/4/17		96.000	13.5	19.5	134	10		741
322	318	4/1/17	5/16/17		96.000	10	21.5	108	10		918
323	319	4/13/17	5/30/17		96.000	12	19.75	120	10		827
324	320	4/25/17	6/9/17		96.000	17	19.75	174	10		574
325	321	5/7/17	6/19/17		96.000	13	20	132	10		752
326	322	5/19/17	7/10/17		82.000	20	18.75	198	10		590
327	323	5/31/17	10/23/17		96.000	14	21	150	5	0.012784	1344
328	324	6/12/17	8/2/17		96.000	10	23.25	117	10		860
329	325	6/24/17	10/19/17		96.000	17	20.75	182	10	0.012804	647
330	326	7/6/17	8/29/17		96.000	15	21	161	10		730
331	327	7/18/17	9/11/17		96.000	9.5	21.75	104	10		1129
332	328	7/30/17	9/18/17		96.000	12.5	18.75	119	5		1969
333	329	8/11/17	10/3/17		96.000	9.5	20.75	99	10		1183
334	330	9/4/17	10/26/17		96.000	19	18.75	187	10	0.012784	631
335	331	9/16/17	11/6/17		96.000	14	19.5	140	10		844
336	332	9/28/17	11/16/17		96.000	14	20	143	10		824
337	333	10/10/17	12/4/17		96.000	10	18.75	95	9		1379
338	334	10/22/17	12/18/17		96.000	16.5	20.25	172	5		1369
339	335	1/2/18	2/15/18		96.000	7	20	70	10	0.012664	1690
340	336	1/14/18	3/7/18		96.000	19	19	189	10		629
341	337	1/26/18	3/21/18		96.000	17	19	167	10		710
342	338	2/7/18	3/28/18		96.000	19.18	21.21	211	10		563
343	339	2/19/18	4/19/18		96.000	19	18.75	187	10		637
344	340	3/3/18	4/26/18		96.000	18.5	19.1	184	10	0.0126	648
345	341	3/15/18	5/1/18		83.100	19	18.95	189	10		732
346	342	3/27/18	5/22/18		96.000	18	18	170	10		704

	A	B	L	M	N	O	P	Q	R	S	T	U
1	ID	Date.coll	Method 852: μ	CenIndex	2 ways for: Fibers0		Fibers	95% C.I. :Method 852		ln(Fibers)	RollPeriod	RP span
2				BDL=1	fibers/m^3	v2.pdf	fibers/m^3	lower limit	upper limit	Method 852		days
3												
4												
290	286	2/18/16	0	1	0	**0**	590	0	2177	6.3801	268	361
291	287	3/1/16	3	0	2490	**2491**	2491	514	7280	7.8204	269	355
292	288	3/25/16	2	0	906	**905**	905	110	3270	6.8079	270	361
293	289	4/6/16	0	1	0	**0**	604	0	2230	6.4036	271	361
294	290	4/30/16	3	0	2586	**2585**	2585	533	7554	7.8575	272	361
295	291	5/12/16	1	0	845	**845**	845	21	4711	6.7393	273	361
296	292	5/24/16	2	0	1074	**1074**	1074	130	3880	6.9791	274	361
297	293	6/5/16	0	1	0	**0**	556	0	2053	6.3208	275	361
298	294	6/17/16	5	0	10910	**10910**	10910	3542	25459	9.2974	276	361
299	295	6/29/16	3	0	1770	**1769**	1769	365	5169	7.4782	277	361
300	296	7/11/16	1	0	599	**599**	599	15	3340	6.3953	278	361
301	297	7/23/16	1	0	813	**813**	813	21	4530	6.7007	279	361
302	298	8/4/16	3	0	1566	**1565**	1565	323	4575	7.3556	280	361
303	299	8/16/16	2	0	2402	**2402**	2402	291	8678	7.7841	281	361
304	300	8/28/16	7	0	5530	**5533**	5533	2225	11401	8.6185	282	361
305	301	9/9/16	1	0	522	**522**	522	13	2907	6.2577	283	361
306	302	9/21/16	5	0	2610	**2609**	2609	847	6089	7.8667	284	361
307	303	10/3/16	3	0	1704	**1705**	1705	352	4984	7.4413	285	361
308	304	10/15/16	3	0	2028	**2028**	2028	418	5927	7.6148	286	361
309	305	10/27/16	3	0	2334	**2334**	2334	481	6820	7.7553	287	361
310	306	11/8/16	3	0	2499	**2498**	2498	515	7301	7.8232	288	361
311	307	11/20/16	6	0	7272	**7272**	7272	2669	15829	8.8918	289	361
312	308	12/2/16	6	0	6138	**6139**	6139	2253	13362	8.7224	290	361
313	309	12/14/16	7	0	6181	**6180**	6180	2485	12733	8.7291	291	361
314	310	12/26/16	9	0	9504	**9508**	9508	4348	18049	9.1599	292	361
315	311	1/7/17	9	0	7074	**7075**	7075	3235	13430	8.8643	293	361
316	312	1/19/17	2	0	942	**942**	942	114	3403	6.8480	294	361
317	313	1/31/17	0	1	0	**0**	611	0	2252	6.4151	295	361
318	314	2/12/17	2	0	1068	**1069**	1069	129	3860	6.9745	296	361
319	315	2/24/17	1	0	1175	**1175**	1175	30	6548	7.0690	297	361
320	316	3/8/17	6	0	13290	**13290**	13290	4877	28927	9.4948	298	349
321	317	3/20/17	3	0	2223	**2223**	2223	458	6496	7.7066	299	361
322	318	4/1/17	2	0	1836	**1836**	1836	222	6632	7.5153	300	361
323	319	4/13/17	11	0	9097	**9098**	9098	4542	16279	9.1158	301	349
324	320	4/25/17	0	1	0	**0**	574	0	2117	6.3526	302	361
325	321	5/7/17	3	0	2256	**2256**	2256	465	6594	7.7213	303	361
326	322	5/19/17	4	0	2360	**2358**	2358	643	6038	7.7656	304	361
327	323	5/31/17	8	0	10752	**10754**	10754	4643	21190	9.2830	305	361
328	324	6/12/17	3	0	2580	**2579**	2579	532	7538	7.8552	306	361
329	325	6/24/17	5	0	3235	**3236**	3236	1051	7551	8.0821	307	361
330	326	7/6/17	4	0	2920	**2921**	2921	796	7478	7.9797	308	361
331	327	7/18/17	1	0	1129	**1129**	1129	29	6291	7.0291	309	361
332	328	7/30/17	8	0	15752	**15749**	15749	6799	31033	9.6645	310	361
333	329	8/11/17	4	0	4732	**4730**	4730	1289	12112	8.4617	311	361
334	330	9/4/17	2	0	1262	**1261**	1261	153	4556	7.1397	312	361
335	331	9/16/17	2	0	1688	**1687**	1687	204	6095	7.4307	313	361
336	332	9/28/17	3	0	2472	**2471**	2471	509	7220	7.8124	314	361
337	333	10/10/17	3	0	4137	**4137**	4137	853	12091	8.3277	315	361
338	334	10/22/17	5	0	6845	**6845**	6845	2223	15975	8.8313	316	361
339	335	1/2/18	1	0	1690	**1690**	1690	43	9415	7.4325	317	361
340	336	1/14/18	3	0	1887	**1887**	1887	389	5515	7.5427	318	361
341	337	1/26/18	7	0	4970	**4971**	4971	1999	10242	8.5114	319	361
342	338	2/7/18	5	0	2815	**2817**	2817	915	6573	7.9434	320	361
343	339	2/19/18	2	0	1274	**1273**	1273	154	4599	7.1491	321	361
344	340	3/3/18	1	0	648	**648**	648	16	3610	6.4739	322	361
345	341	3/15/18	3	0	2196	**2196**	2196	453	6419	7.6944	323	361
346	342	3/27/18	2	0	1408	**1409**	1409	171	5089	7.2506	324	361

	A	B	V	W	X	Y	Z	AA	AB	AC	AD	AE	AF
1	ID	Date.coll	# of filters	# of BDL	# of uncen	Location	Scale	Log-likelih'd	$Geom_{miss}$	$Geom_{cen}$	$95\%G_{lower}$	$95\%G_{upper}$	$_{1\text{-tail}}95\%G_{up}$
2						Method 852			fibers/m^3	fibers/m^3	fibers/m^3	fibers/m^3	fibers/m^3
3													
4													
290	286	2/18/16	31	4	27	7.2447	0.9354	-241.68	1745	1401	1002	1958	1855
291	287	3/1/16	31	4	27	7.2959	0.9149	-242.68	1841	1474	1063	2045	1940
292	288	3/25/16	30	4	26	7.2850	0.9340	-234.28	1834	1458	1038	2049	1940
293	289	4/6/16	30	5	25	7.2754	0.9515	-228.36	1941	1444	1020	2046	1935
294	290	4/30/16	29	5	24	7.2099	0.8941	-216.15	1802	1353	969	1888	1789
295	291	5/12/16	29	5	24	7.2046	0.8974	-216.09	1792	1346	963	1880	1782
296	292	5/24/16	29	5	24	7.1914	0.8993	-215.75	1764	1328	950	1857	1760
297	293	6/5/16	29	6	23	7.0779	0.8362	-204.41	1630	1185	866	1623	1543
298	294	6/17/16	29	6	23	7.1208	0.9545	-209.04	1755	1237	864	1772	1672
299	295	6/29/16	29	6	23	7.0934	0.9189	-207.24	1686	1204	852	1701	1609
300	296	7/11/16	29	6	23	7.0268	0.8907	-204.45	1547	1126	806	1575	1492
301	297	7/23/16	29	6	23	6.9810	0.8652	-202.33	1458	1076	777	1490	1414
302	298	8/4/16	29	6	23	6.9511	0.8129	-199.85	1392	1044	769	1418	1350
303	299	8/16/16	29	6	23	6.9585	0.8223	-200.37	1407	1052	772	1434	1364
304	300	8/28/16	29	6	23	7.0383	0.8698	-204.19	1565	1139	821	1581	1500
305	301	9/9/16	29	6	23	7.0064	0.8883	-203.77	1513	1104	790	1542	1461
306	302	9/21/16	29	6	23	7.0146	0.8975	-204.27	1533	1113	794	1560	1478
307	303	10/3/16	29	6	23	7.0031	0.8871	-203.63	1509	1100	788	1536	1456
308	304	10/15/16	29	6	23	7.0403	0.8873	-204.76	1578	1142	818	1594	1511
309	305	10/27/16	29	6	23	7.0858	0.8852	-206.07	1666	1195	857	1667	1580
310	306	11/8/16	29	6	23	7.1122	0.8949	-207.14	1725	1227	876	1717	1627
311	307	11/20/16	29	6	23	7.1453	0.9581	-209.86	1820	1268	885	1818	1716
312	308	12/2/16	29	6	23	7.1887	1.0072	-212.44	1934	1324	907	1934	1820
313	309	12/14/16	29	6	23	7.2400	1.0454	-214.94	2081	1394	941	2065	1939
314	310	12/26/16	29	5	24	7.3534	1.0556	-224.93	2217	1562	1054	2314	2172
315	311	1/7/17	29	5	24	7.4179	1.0836	-227.53	2404	1666	1112	2494	2337
316	312	1/19/17	29	4	25	7.4550	1.0364	-233.81	2316	1728	1178	2536	2385
317	313	1/31/17	29	5	24	7.3745	1.0998	-226.83	2303	1595	1059	2402	2249
318	314	2/12/17	29	4	25	7.4227	1.0410	-232.96	2234	1673	1138	2460	2312
319	315	2/24/17	29	3	26	7.4689	0.9846	-238.98	2179	1753	1220	2518	2376
320	316	3/8/17	29	3	26	7.5220	1.0518	-242.32	2324	1848	1255	2722	2558
321	317	3/20/17	30	3	27	7.5274	1.0312	-250.92	2320	1858	1280	2698	2541
322	318	4/1/17	30	3	27	7.5529	1.0186	-251.36	2382	1906	1319	2755	2597
323	319	4/13/17	30	2	28	7.6948	1.0121	-261.50	2498	2197	1526	3163	2983
324	320	4/25/17	31	3	28	7.6323	1.0566	-263.78	2498	2064	1417	3005	2829
325	321	5/7/17	31	3	28	7.6278	1.0560	-263.62	2486	2055	1411	2991	2816
326	322	5/19/17	31	3	28	7.6626	1.0402	-264.28	2579	2127	1470	3079	2901
327	323	5/31/17	31	3	28	7.7359	1.0726	-267.48	2800	2289	1564	3352	3152
328	324	6/12/17	31	2	29	7.8054	1.0025	-273.78	2792	2454	1721	3499	3305
329	325	6/24/17	31	2	29	7.7625	0.9623	-271.23	2678	2351	1672	3305	3129
330	326	7/6/17	31	2	29	7.7738	0.9605	-271.53	2725	2378	1692	3340	3163
331	327	7/18/17	31	2	29	7.7903	0.9395	-271.40	2785	2417	1733	3370	3195
332	328	7/30/17	31	2	29	7.8806	0.9657	-275.04	3084	2645	1880	3723	3524
333	329	8/11/17	31	2	29	7.9116	0.9627	-275.92	3204	2729	1941	3836	3632
334	330	9/4/17	30	2	28	7.8599	0.9867	-265.75	3071	2591	1817	3696	3491
335	331	9/16/17	30	2	28	7.9329	0.9405	-266.62	3202	2788	1988	3910	3703
336	332	9/28/17	30	2	28	7.9311	0.9407	-266.57	3196	2782	1984	3903	3696
337	333	10/10/17	30	2	28	7.9610	0.9379	-267.39	3299	2867	2046	4017	3805
338	334	10/22/17	30	2	28	8.0015	0.9485	-268.94	3445	2985	2123	4199	3975
339	335	1/2/18	25	2	23	7.8527	0.9766	-219.00	3034	2573	1750	3782	3555
340	336	1/14/18	25	2	23	7.8003	0.9548	-217.15	2864	2441	1675	3559	3350
341	337	1/26/18	25	2	23	7.8684	0.9404	-218.52	3079	2613	1803	3788	3568
342	338	2/7/18	25	1	24	7.9485	0.8503	-224.23	3068	2831	2027	3955	3748
343	339	2/19/18	25	1	24	7.9557	0.8424	-224.78	3090	2852	2048	3971	3765
344	340	3/3/18	25	1	24	7.9309	0.8773	-224.53	3015	2782	1971	3928	3716
345	341	3/15/18	25	1	24	7.8601	0.8148	-220.97	2797	2592	1882	3570	3391
346	342	3/27/18	25	1	24	7.8416	0.8239	-220.77	2744	2544	1840	3517	3339

	A	B	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP
1	ID	Date.coll	Loc(1DL)	Scale(1DL)	$Geom_{1DL}$	% $Geom_{1DL}$/AL	95%G_{lower}	95%G_{upper}	$_{1\text{-tail}}$95%G_{up}		Date of	Fibers
2			Method 852	Method 852	Method 852:	for plotting	fibers/m^3	fibers/m^3	:Method 852		noncensored	M852;1:D178
3												
4												
290	286	2/18/16	7.3359	0.8387	1534	38	1142	2061	1966	286	2/24/17	1175
291	287	3/1/16	7.3829	0.8230	1608	40	1204	2149	2051	287	3/8/17	13290
292	288	3/25/16	7.3751	0.8372	1596	40	1183	2153	2052	288	3/20/17	2223
293	289	4/6/16	7.3851	0.8232	1612	40	1200	2164	2064	289	4/1/17	1836
294	290	4/30/16	7.3173	0.7676	1506	38	1139	1992	1904	290	4/13/17	9098
295	291	5/12/16	7.3128	0.7707	1499	37	1133	1985	1897	291	5/7/17	2256
296	292	5/24/16	7.2998	0.7731	1480	37	1117	1961	1874	292	5/19/17	2358
297	293	6/5/16	7.1969	0.6910	1335	33	1038	1717	1649	293	5/31/17	10754
298	294	6/17/16	7.2556	0.7911	1416	35	1062	1889	1803	294	6/12/17	2579
299	295	6/29/16	7.2240	0.7618	1372	34	1040	1810	1731	295	6/24/17	3236
300	296	7/11/16	7.1557	0.7433	1281	32	978	1679	1608	296	7/6/17	2921
301	297	7/23/16	7.1084	0.7264	1222	31	938	1592	1526	297	7/18/17	1129
302	298	8/4/16	7.0722	0.6842	1179	29	919	1512	1453	298	7/30/17	15749
303	299	8/16/16	7.0807	0.6918	1189	30	924	1529	1469	299	8/11/17	4730
304	300	8/28/16	7.1651	0.7253	1294	32	993	1684	1614	300	9/4/17	1261
305	301	9/9/16	7.1381	0.7445	1259	31	960	1651	1580	301	9/16/17	1687
306	302	9/21/16	7.1486	0.7528	1272	32	967	1673	1601	302	9/28/17	2471
307	303	10/3/16	7.1358	0.7442	1256	31	958	1647	1577	303	10/10/17	4137
308	304	10/15/16	7.1716	0.7413	1302	33	994	1705	1633	304	10/22/17	6845
309	305	10/27/16	7.2147	0.7376	1359	34	1039	1778	1703	305	1/2/18	1690
310	306	11/8/16	7.2419	0.7452	1397	35	1065	1832	1754	306	1/14/18	1887
311	307	11/20/16	7.2846	0.8029	1458	36	1088	1952	1863	307	1/26/18	4971
312	308	12/2/16	7.3327	0.8461	1530	38	1124	2081	1981	308	2/7/18	2817
313	309	12/14/16	7.3909	0.8827	1621	41	1176	2235	2123	309	2/19/18	1273
314	310	12/26/16	7.4815	0.9252	1775	44	1268	2486	2355	310	3/3/18	648
315	311	1/7/17	7.5485	0.9531	1898	47	1342	2685	2539	311	3/15/18	2196
316	312	1/19/17	7.5576	0.9448	1915	48	1358	2701	2556	312	3/27/18	1409
317	313	1/31/17	7.5072	0.9660	1821	46	1281	2588	2446	313	4/8/18	3347
318	314	2/12/17	7.5277	0.9473	1859	46	1317	2624	2483	314	5/2/18	6051
319	315	2/24/17	7.5514	0.9259	1903	48	1359	2666	2526	315	5/14/18	2195
320	316	3/8/17	7.6092	0.9931	2017	50	1405	2895	2731	316	5/26/18	4965
321	317	3/20/17	7.6124	0.9760	2023	51	1427	2869	2712	317	6/7/18	3067
322	318	4/1/17	7.6360	0.9643	2071	52	1467	2925	2767	318	6/19/18	8534
323	319	4/13/17	7.7264	0.9719	2267	57	1601	3211	3036	319	7/1/18	3233
324	320	4/25/17	7.6821	0.9869	2169	54	1533	3070	2903	320	7/13/18	4424
325	321	5/7/17	7.6777	0.9864	2160	54	1526	3056	2890	321	7/25/18	2822
326	322	5/19/17	7.7108	0.9710	2232	56	1586	3142	2974	322	8/6/18	12908
327	323	5/31/17	7.7851	1.0008	2405	60	1691	3420	3232	323	8/18/18	3540
328	324	6/12/17	7.8346	0.9632	2527	63	1800	3546	3358	324	9/11/18	8317
329	325	6/24/17	7.7954	0.9257	2429	61	1754	3365	3194	325	9/23/18	2535
330	326	7/6/17	7.8116	0.9243	2469	62	1783	3419	3244	326	10/5/18	1519
331	327	7/18/17	7.8320	0.8986	2520	63	1837	3458	3286	327	10/17/18	2353
332	328	7/30/17	7.9276	0.9313	2773	69	1998	3849	3651	328	10/29/18	1504
333	329	8/11/17	7.9633	0.9299	2874	72	2071	3986	3782	329	11/10/18	497
334	330	9/4/17	7.9200	0.9487	2752	69	1960	3864	3659	330	11/22/18	5372
335	331	9/16/17	7.9591	0.9008	2862	72	2073	3950	3750	331	12/4/18	3129
336	332	9/28/17	7.9573	0.9010	2856	71	2069	3943	3744			
337	333	10/10/17	7.9868	0.8980	2942	74	2133	4057	3853			
338	334	10/22/17	8.0274	0.9081	3064	77	2214	4240	4024			
339	335	1/2/18	7.8869	0.9276	2662	67	1851	3830	3612			
340	336	1/14/18	7.8340	0.9070	2525	63	1770	3603	3403			
341	337	1/26/18	7.9006	0.8926	2699	67	1902	3829	3620			
342	338	2/7/18	7.9617	0.8372	2869	72	2066	3983	3779			
343	339	2/19/18	7.9687	0.8293	2889	72	2087	3999	3795			
344	340	3/3/18	7.9449	0.8641	2821	71	2011	3958	3749			
345	341	3/15/18	7.8729	0.8023	2625	66	1917	3595	3418			
346	342	3/27/18	7.8546	0.8114	2578	64	1875	3543	3366			

	A	B	AQ	AR	AS	AT	AU	AV	AW	AX	AY	AZ	BA
1	ID	Date.coll	Date of	Fibers	Remarks	The 1 DL sub method for RP No. 316			To bracket the geomean				
2			censored	M852;1:D178		10/22/17	f(x)_MLE	f(x)_1DLs	fibers/m^3	ln(fibers)	f(x)_1DLs		
3													
4													
290	286	2/18/16											
291	287	3/1/16											
292	288	3/25/16											
293	289	4/6/16											
294	290	4/30/16											
295	291	5/12/16											
296	292	5/24/16											
297	293	6/5/16											
298	294	6/17/16											
299	295	6/29/16											
300	296	7/11/16											
301	297	7/23/16											
302	298	8/4/16											
303	299	8/16/16											
304	300	8/28/16											
305	301	9/9/16											
306	302	9/21/16											
307	303	10/3/16											
308	304	10/15/16											
309	305	10/27/16											
310	306	11/8/16											
311	307	11/20/16											
312	308	12/2/16											
313	309	12/14/16											
314	310	12/26/16											
315	311	1/7/17											
316	312	1/19/17											
317	313	1/31/17											
318	314	2/12/17											
319	315	2/24/17											
320	316	3/8/17											
321	317	3/20/17											
322	318	4/1/17											
323	319	4/13/17											
324	320	4/25/17											
325	321	5/7/17											
326	322	5/19/17											
327	323	5/31/17											
328	324	6/12/17											
329	325	6/24/17											
330	326	7/6/17											
331	327	7/18/17											
332	328	7/30/17											
333	329	8/11/17											
334	330	9/4/17											
335	331	9/16/17											
336	332	9/28/17											
337	333	10/10/17											
338	334	10/22/17											
339	335	1/2/18											
340	336	1/14/18											
341	337	1/26/18											
342	338	2/7/18											
343	339	2/19/18											
344	340	3/3/18											
345	341	3/15/18											
346	342	3/27/18											

	A	B	BB	BC	BD	BE	BF	BG	BH	BI	BJ
1	ID	Date.coll	Additional plots for the preparation of the revised write-up on the data analysis of ambient fibers								
2											
3											
4											
290	286	2/18/16									
291	287	3/1/16									
292	288	3/25/16									
293	289	4/6/16									
294	290	4/30/16									
295	291	5/12/16									
296	292	5/24/16									
297	293	6/5/16									
298	294	6/17/16									
299	295	6/29/16									
300	296	7/11/16									
301	297	7/23/16									
302	298	8/4/16									
303	299	8/16/16									
304	300	8/28/16									
305	301	9/9/16									
306	302	9/21/16									
307	303	10/3/16									
308	304	10/15/16									
309	305	10/27/16									
310	306	11/8/16									
311	307	11/20/16									
312	308	12/2/16									
313	309	12/14/16									
314	310	12/26/16									
315	311	1/7/17									
316	312	1/19/17									
317	313	1/31/17									
318	314	2/12/17									
319	315	2/24/17									
320	316	3/8/17									
321	317	3/20/17									
322	318	4/1/17									
323	319	4/13/17									
324	320	4/25/17									
325	321	5/7/17									
326	322	5/19/17									
327	323	5/31/17									
328	324	6/12/17									
329	325	6/24/17									
330	326	7/6/17									
331	327	7/18/17									
332	328	7/30/17									
333	329	8/11/17									
334	330	9/4/17									
335	331	9/16/17									
336	332	9/28/17									
337	333	10/10/17									
338	334	10/22/17									
339	335	1/2/18									
340	336	1/14/18									
341	337	1/26/18									
342	338	2/7/18									
343	339	2/19/18									
344	340	3/3/18									
345	341	3/15/18									
346	342	3/27/18									

	A	B	C	D	E	F	G	H	I	J	K
1	ID	Date.coll	Orig.fltr.mm^2	PC.fltr.mm^2	Air.m^3	Chord.mm	Radius.mm	Area.ashed.mm^2	Count.GO	GO.mm^2	Sen.per.m^3
2			1150	1075	<== Constants for specified time intervals			Method 852		Constant periodically	
3			6/24/17-3/27/18:	1257							
4			4/8/18 to date:	1304							
347	343	4/8/18	5/31/18		96.000	14	20.75	148	10		837
348	344	4/20/18	6/19/18		96.000	11.7	19.9	118	10		1049
349	345	5/2/18	6/19/18		96.000	15.9	20.05	164	10		756
350	346	5/14/18	6/29/18		96.000	17	19.25	169	10		732
351	347	5/26/18	7/17/18		96.000	10.75	21.45	117	10	0.0135	993
352	348	6/7/18	7/26/18		96.000	25	19.45	264	10		438
353	349	6/19/18	8/7/18		96.000	8.6	18.75	81	10		1422
354	350	7/1/18	8/17/18		96.000	18.6	18.35	179	10		647
355	351	7/13/18	8/30/18		96.000	17.2	17.45	157	10		737
356	352	7/25/18	9/20/18		96.000	16.5	19.55	167	10	0.0133	705
357	353	8/6/18	10/1/18		96.000	14.8	18.8	143	7		1173
358	354	8/18/18	9/27/18		96.000	17.8	17.8	166	10		708
359	356	9/11/18	10/31/18		96.000	13.9	17.8	127	10		924
360	357	9/23/18	11/8/18		96.000	17.5	20.5	185	10		634
361	358	10/5/18	11/14/18		96.000	27.9	20.05	309	10		380
362	359	10/17/18	11/26/18		96.000	20.3	18.6	200	10		588
363	360	10/29/18	12/7/18		96.000	16.5	18.25	156	10		752
364	361	11/10/18	12/18/18		96.000	23.5	18.75	238	10	0.0132	497
365	362	11/22/18	12/21/18		96.000	16	18.65	154	10		767
366	363	12/4/18	1/11/19		96.000	25.6	18.8	265	10		447
367											
368											
369											
370											
371											
372											

	A	B	L	M	N	O	P	Q	R	S	T	U
1	ID	Date.coll	Method 852: μ	CenIndex	2 ways for: Fibers0		Fibers	95% C.I. :Method 852		ln(Fibers)	RollPeriod	RP span
2				BDL=1	fibers/m^3	v2.pdf	fibers/m^3	lower limit	upper limit	Method 852		days
3												
4												
347	343	4/8/18	4	0	3348	**3347**	3347	912	8570	8.1158	325	361
348	344	4/20/18	0	1	0	**0**	1049	0	3870	6.9556	326	361
349	345	5/2/18	8	0	6048	**6051**	6051	2612	11923	8.7080	327	361
350	346	5/14/18	3	0	2196	**2195**	2195	453	6414	7.6939	328	361
351	347	5/26/18	5	0	4965	**4965**	4965	1612	11586	8.5102	329	361
352	348	6/7/18	7	0	3066	**3067**	3067	1233	6320	8.0285	330	361
353	349	6/19/18	6	0	8532	**8534**	8534	3132	18576	9.0518	331	361
354	350	7/1/18	5	0	3235	**3233**	3233	1050	7544	8.0812	332	361
355	351	7/13/18	6	0	4422	**4424**	4424	1624	9630	8.3948	333	361
356	352	7/25/18	4	0	2820	**2822**	2822	769	7224	7.9452	334	361
357	353	8/6/18	11	0	12903	**12908**	12908	6443	23095	9.4656	335	361
358	354	8/18/18	5	0	3540	**3540**	3540	1149	8261	8.1719	336	349
359	356	9/11/18	9	0	8316	**8317**	8317	3803	15789	9.0261	338	361
360	357	9/23/18	4	0	2536	**2535**	2535	691	6491	7.8379	339	361
361	358	10/5/18	4	0	1520	**1519**	1519	414	3889	7.3258	340	361
362	359	10/17/18	4	0	2352	**2353**	2353	641	6024	7.7634	341	361
363	360	10/29/18	2	0	1504	**1504**	1504	182	5431	7.3159	342	301
364	361	11/10/18	1	0	497	**497**	497	13	2769	6.2086	343	313
365	362	11/22/18	7	0	5369	**5372**	5372	2160	11068	8.5890	344	325
366	363	12/4/18	7	0	3129	**3129**	3129	1258	6448	8.0485	345	337
367												
368												
369												
370												
371										To figure out the inflation on the	316	
372										geometric mean substitution method		

	A	B	V	W	X	Y	Z	AA	AB	AC	AD	AE	AF
1	ID	Date.coll	# of filters	# of BDL	# of uncen	Location	Scale	Log-likelih'd	$Geom_{miss}$	$Geom_{cen}$	$95\%G_{lower}$	$95\%G_{upper}$	$_{1\text{-tail}}95\%G_{up}$
2						Method 852			fibers/m^3	fibers/m^3	fibers/m^3	fibers/m^3	fibers/m^3
3													
4													
347	343	4/8/18	25	1	24	7.8657	0.8224	-221.34	2814	2606	1887	3601	3419
348	344	4/20/18	25	2	23	7.7611	0.8270	-212.15	2674	2348	1693	3254	3088
349	345	5/2/18	25	1	24	7.8717	0.7572	-218.74	2766	2622	1947	3532	3367
350	346	5/14/18	25	1	24	7.8706	0.7575	-218.72	2763	2619	1944	3529	3364
351	347	5/26/18	25	1	24	7.9003	0.7675	-219.79	2850	2698	1995	3649	3476
352	348	6/7/18	25	1	24	7.8514	0.7121	-216.74	2705	2569	1941	3400	3250
353	349	6/19/18	25	1	24	7.8985	0.7515	-219.23	2843	2693	2004	3620	3452
354	350	7/1/18	25	1	24	7.8984	0.7515	-219.23	2843	2693	2004	3620	3451
355	351	7/13/18	25	1	24	7.9150	0.7578	-219.85	2893	2738	2032	3689	3516
356	352	7/25/18	25	1	24	7.9525	0.7340	-220.03	3005	2843	2130	3794	3622
357	353	8/6/18	25	1	24	7.9450	0.7153	-219.22	2981	2821	2130	3738	3573
358	354	8/18/18	25	1	24	7.9335	0.7089	-218.72	2945	2789	2111	3686	3525
359	356	9/11/18	25	1	24	8.0091	0.7203	-221.01	3186	3008	2266	3994	3816
360	357	9/23/18	25	1	24	8.0258	0.7108	-221.12	3240	3059	2313	4045	3868
361	358	10/5/18	25	1	24	8.0059	0.7240	-221.05	3175	2998	2255	3986	3808
362	359	10/17/18	25	1	24	7.9832	0.7226	-220.43	3101	2931	2206	3895	3721
363	360	10/29/18	25	1	24	7.9224	0.7127	-218.56	2911	2759	2084	3651	3490
364	361	11/10/18	26	1	25	7.8544	0.7768	-227.94	2713	2577	1910	3477	3314
365	362	11/22/18	27	1	26	7.8818	0.7743	-237.62	2785	2649	1976	3551	3387
366	363	12/4/18	28	1	27	7.8882	0.7602	-246.35	2797	2666	2010	3536	3379
367													4017
368													
369												For all RPs:	4766
370													
371									3445	2985			
tution method 372									15.4%				

	A	B	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP
1	ID	Date.coll	Loc(1DL)	Scale(1DL)	$Geom_{1DL}$	% $Geom_{1DL}$/AL	95%G_{lower}	95%G_{upper}	$_{1\text{-tail}}$95%G_{up}		Date of	Fibers
2			Method 852	Method 852	Method 852:	for plotting	fibers/m^3	fibers/m^3	:Method 852		noncensored	M852;1:D178
3												
4												
347	343	4/8/18	7.8787	0.8098	2640	66	1922	3627	3446			
348	344	4/20/18	7.7922	0.7872	2422	61	1779	3297	3138			
349	345	5/2/18	7.8865	0.7477	2661	67	1985	3567	3403			
350	346	5/14/18	7.8854	0.7480	2658	66	1983	3564	3400			
351	347	5/26/18	7.9151	0.7578	2738	68	2035	3686	3514			
352	348	6/7/18	7.8650	0.7030	2604	65	1977	3431	3282			
353	349	6/19/18	7.9128	0.7420	2732	68	2043	3654	3487			
354	350	7/1/18	7.9128	0.7419	2732	68	2043	3654	3487			
355	351	7/13/18	7.9294	0.7481	2778	69	2072	3724	3553			
356	352	7/25/18	7.9660	0.7242	2881	72	2169	3827	3657			
357	353	8/6/18	7.9581	0.7057	2859	71	2168	3769	3606			
358	354	8/18/18	7.9465	0.6994	2826	71	2148	3717	3557			
359	356	9/11/18	8.0219	0.7104	3047	76	2306	4026	3849			
360	357	9/23/18	8.0382	0.7009	3097	77	2353	4076	3900			
361	358	10/5/18	8.0188	0.7140	3037	76	2296	4019	3842			
362	359	10/17/18	7.9962	0.7128	2970	74	2246	3927	3754			
363	360	10/29/18	7.9356	0.7032	2795	70	2122	3682	3522			
364	361	11/10/18	7.8692	0.7677	2615	65	1947	3513	3350			
365	362	11/22/18	7.8958	0.7655	2686	67	2012	3585	3423			
366	363	12/4/18	7.9013	0.7517	2701	68	2044	3568	3412			
367					3097		77 ← Max RP Nos. 4 - 345 →		4024			
368							For RollPeriod Nos. 4 - 345		**AL: 4000**			
369								For all RPs:	4766			
370												
371					3064							
372					2.6%							

	A	B	AQ	AR	AS	AT	AU	AV	AW	AX	AY	AZ	BA
1	ID	Date.coll	Date of	Fibers	Remarks	The 1 DL sub method for RP No. 316			To bracket the geomean				
2			censored	M852;1:D178		10/22/17	f(x)_MLE	f(x)_1DLs	fibers/m^3	ln(fibers)	f(x)_1DLs		
3													
4													
347	343	4/8/18											
348	344	4/20/18											
349	345	5/2/18											
350	346	5/14/18											
351	347	5/26/18											
352	348	6/7/18											
353	349	6/19/18											
354	350	7/1/18											
355	351	7/13/18											
356	352	7/25/18											
357	353	8/6/18											
358	354	8/18/18											
359	356	9/11/18											
360	357	9/23/18											
361	358	10/5/18											
362	359	10/17/18											
363	360	10/29/18											
364	361	11/10/18											
365	362	11/22/18											
366	363	12/4/18											
367													
368													
369													
370													
371													
372													

	A	B	BB	BC	BD	BE	BF	BG	BH	BI	BJ
1	ID	Date.coll	Additional plots for the preparation of the revised write-up on the data analysis of ambient fibers								
2											
3											
4											
347	343	4/8/18									
348	344	4/20/18									
349	345	5/2/18									
350	346	5/14/18									
351	347	5/26/18									
352	348	6/7/18									
353	349	6/19/18									
354	350	7/1/18									
355	351	7/13/18									
356	352	7/25/18									
357	353	8/6/18									
358	354	8/18/18									
359	356	9/11/18									
360	357	9/23/18									
361	358	10/5/18									
362	359	10/17/18									
363	360	10/29/18									
364	361	11/10/18									
365	362	11/22/18									
366	363	12/4/18									
367											
368											
369											
370											
371											
372											

	A	B	C	D	E	F	G	H	I	J	K	L
1	F1: ID	Date.coll	F1, fbrs 1DL	CenIndex	ln(F1)	RollPeriod	RP span	# of filters	Geomean	% $Geom_{1DL}$/AL	Production (dry long tons-flux)	
2				BDL=1			days			for plotting	MDOR data	for plotting
3	1	2/2/90	2498		7.8232						Date_step	DLT, no flux
4	2	2/5/90	8490		9.0466						1/1/2006	429,748
5	3	2/8/90	14329		9.5700						1/31/2006	429,748
6	4	2/11/90	9089		9.1148						2/1/2006	383,072
7	5	2/26/90	9464		9.1553						2/28/2006	383,072
8	6	6/26/90	14814		9.6033						3/1/2006	421,815
9	7	7/12/90	6594		8.7939						3/31/2006	421,815
10	8	8/9/90	8543		9.0529						4/1/2006	404,669
11	9	8/27/90	9932		9.2035						4/30/2006	404,669
12	10	9/18/90	1440		7.2724						5/1/2006	426,093
13	11	10/11/90	1289		7.1616						5/31/2006	426,093
14	12	10/30/90	15162		9.6265						6/1/2006	368,602
15	13	11/24/90	121690		11.7092						6/30/2006	368,602
16	14	12/12/90	829		6.7202	Data in this column:					7/1/2006	436,135
17	15	12/17/90	712		6.5681	Must be <= 365					7/31/2006	436,135
18	16	1/14/91	4665		8.4478	-230	347	16	5880	147	8/1/2006	421,838
19	17	2/12/91	9220		9.1291	-229	352	13	5707	143	8/31/2006	421,838
20	18	2/28/91	2660		7.8861	-228	248	13	5177	129	9/1/2006	413,509
21	19	3/19/91	15311		9.6363	-227	267	14	5594	140	9/30/2006	413,509
22	20	4/6/91	10610		9.2696	-226	285	15	5837	146	10/1/2006	424,035
23	21	4/24/91	11912		9.3853	-225	303	16	6104	153	10/31/2006	424,035
24	22	5/12/91	8873		9.0908	-224	321	17	6239	156	11/1/2006	424,550
25	23	6/2/91	12501		9.4336	-223	342	18	6485	162	11/30/2006	424,550
26	24	7/5/91	3450		8.1461	-222	359	18	5981	150	12/1/2006	416,460
27	25	9/1/91	239760		12.3874	-221	349	16	7093	177	12/31/2006	416,460
28	26	9/23/91	3540		8.1719	-220	348	16	7503	188	1/1/2007	439,661
29	27	10/5/91	1757		7.4714	-219	360	17	6889	172	1/31/2007	439,661
30	28	10/24/91	2524		7.8336	-218	360	17	7167	179	2/1/2007	391,842
31	29	11/11/91	336		5.8171	-217	353	17	5728	143	2/28/2007	391,842
32	30	11/29/91	316		5.7557	-216	353	17	4036	101	3/1/2007	431,584
33	31	12/17/91	950		6.8565	-215	338	16	4536	113	3/31/2007	431,584
34	32	1/14/92	370		5.9135	-214	337	16	3872	97	4/1/2007	415,112
35	33	2/5/92	516		6.2461	-213	359	17	3439	86	4/30/2007	415,112
36	34	2/24/92	539		6.2897	-212	362	17	2910	73	5/1/2007	438,509
37	35	3/16/92	884		6.7845	-211	364	17	2727	68	5/31/2007	438,509
38	36	3/31/92	1116		7.0175	-210	361	17	2338	58	6/1/2007	338,910
39	37	4/18/92	136		4.9127	-209	361	17	1809	45	6/30/2007	338,910
40	38	6/17/92	523		6.2596	-208	349	15	1162	29	7/1/2007	436,067
41	39	6/28/92	514		6.2422	-207	360	16	1104	28	7/31/2007	436,067
42	40	7/17/92	454		6.1181	-206	321	16	972	24	8/1/2007	431,751
43	41	8/4/92	642		6.4646	-205	339	17	949	24	8/31/2007	431,751
44	42	5/11/93	3318		8.1071	-204	329	5	764	19	9/1/2007	417,970
45	43	5/29/93	4430		8.3962	-203	347	6	1024	26	9/30/2007	417,970
46	44	8/16/93	4180		8.3381	-202	98	3	3946	99	10/1/2007	427,584
47	45	8/23/93	1871		7.5342	-201	105	4	3274	82	10/31/2007	427,584
48	46	9/3/93	2319		7.7489	-200	116	5	3056	76	11/1/2007	385,771
49	47	9/27/93	7366		8.9046	-199	140	6	3539	88	11/30/2007	385,771
50	48	11/16/93	703		6.5554	-198	190	7	2809	70	12/1/2007	420,347
51	49	2/11/94	4091		8.3165	-197	277	8	2944	74	12/31/2007	420,347
52	50	3/1/94	4280		8.3617	-196	295	9	3069	77	1/1/2008	422,027
53	51	4/8/94	4060		8.3089	-195	333	10	3156	79	1/31/2008	422,027
54	52	4/26/94	2663		7.8872	-194	351	11	3108	78	2/1/2008	408,498
55	53	5/13/94	8640		9.0642	-193	350	11	3390	85	2/29/2008	408,498
56	54	5/31/94	1540		7.3395	-192	289	11	3080	77	3/1/2008	447,784
57	55	6/17/94	718		6.5765	-191	306	12	2728	68	3/31/2008	447,784

	A	B	C	D	E	F	G	H	I	J	K	L
1	F1: ID	Date.coll	F1, fbrs 1DL	CenIndex	ln(F1)	RollPeriod	RP span	# of filters	Geomean	% $Geom_{1DL}$/AL	Production (dry long tons-flux)	
2				BDL=1			days			for plotting	MDOR data	for plotting
58	56	7/6/94	1729		7.4553	-190	325	13	2634	66	4/1/2008	453,277
59	57	9/23/94	497		6.2086	-189	362	11	2265	57	4/30/2008	453,277
60	58	10/4/94	2290		7.7363	-188	323	11	2037	51	5/1/2008	508,421
61	59	10/27/94	292		5.6768	-187	346	12	1732	43	5/31/2008	508,421
62	60	11/8/94	7313		8.8974	-186	358	13	1935	48	6/1/2008	473,731
63	61	11/29/94	871		6.7696	-185	292	13	1967	49	6/30/2008	473,731
64	62	12/9/94	2760		7.9230	-184	302	14	2016	50	7/1/2008	493,509
65	63	12/27/94	552		6.3135	-183	320	15	1849	46	7/31/2008	493,509
66	64	1/15/95	980		6.8876	-182	339	16	1777	44	8/1/2008	506,336
67	65	11/6/95	49550		10.8107	-181	364	6	2790	70	8/31/2008	506,336
68	66	11/11/95	1778		7.4832	-180	348	6	2204	55	9/1/2008	484,473
69	67	11/17/95	1100		7.0031	-179	354	7	1996	50	9/30/2008	484,473
70	68	1/28/96	1560		7.3524	-178	84	4	3506	88	10/1/2008	369,393
71	69	2/2/96	6650		8.8024	-177	89	5	3985	100	10/31/2008	369,393
72	70	4/6/96	7007		8.8547	-176	153	6	4378	109	11/1/2008	389,668
73	71	4/24/96	3890		8.2662	-175	171	7	4305	108	11/30/2008	389,668
74	72	5/14/96	7390		8.9079	-174	191	8	4606	115	12/1/2008	342,187
75	73	5/31/96	51747		10.8541	-173	208	9	6026	151	12/31/2008	342,187
76	74	6/18/96	25241		10.1362	-172	226	10	6954	174	1/1/2009	366,059
77	75	7/7/96	649		6.4754	-171	245	11	5605	140	1/31/2009	366,059
78	76	7/31/96	937		6.8427	-170	269	12	4829	121	2/1/2009	337,677
79	77	8/29/96	5316		8.5785	-169	298	13	4865	122	2/28/2009	337,677
80	78	9/16/96	3959		8.2837	-168	316	14	4794	120	3/1/2009	325,620
81	79	10/4/96	1360		7.2152	-167	334	15	4408	110	3/31/2009	325,620
82	80	10/22/96	3620		8.1942	-166	352	16	4354	109	4/1/2009	0
83	81	11/5/96	2010		7.6059	-165	361	16	3563	89	4/30/2009	0
84	82	11/23/96	1190		7.0817	-164	301	15	3752	94	5/1/2009	0
85	83	12/11/96	830		6.7214	-163	319	16	3415	85	5/31/2009	0
86	84	12/29/96	2493		7.8212	-162	337	17	3352	84	6/1/2009	0
87	85	1/16/97	1310		7.1778	-161	355	18	3181	80	6/30/2009	0
88	86	2/6/97	601		6.3986	-160	307	17	2880	72	7/1/2009	261,904
89	87	3/17/97	4356		8.3793	-159	346	18	2947	74	7/31/2009	261,904
90	88	4/16/97	2962		7.9936	-158	358	18	2810	70	8/1/2009	365,967
91	89	5/4/97	2740		7.9157	-157	356	18	2755	69	8/31/2009	365,967
92	90	6/9/97	5225		8.5612	-156	357	17	2272	57	9/1/2009	374,973
93	91	8/2/97	5336		8.5822	-155	339	15	2362	59	9/30/2009	374,973
94	92	8/20/97	2430		7.7956	-154	357	16	2366	59	10/1/2009	428,727
95	93	9/7/97	3339		8.1134	-153	357	16	2299	57	10/31/2009	428,727
96	94	9/25/97	5620		8.6341	-152	357	16	2350	59	11/1/2009	381,292
97	95	10/13/97	1400		7.2442	-151	357	16	2354	59	11/30/2009	381,292
98	96	10/30/97	1251		7.1317	-150	360	16	2203	55	12/1/2009	239,070
99	97	11/18/97	14969		9.6137	-149	361	16	2497	62	12/31/2009	239,070
100	98	1/16/98	1310		7.1778	-148	345	13	2878	72	1/1/2010	380,065
101	99	1/24/98	41400		10.6310	-147	353	14	3481	87	1/31/2010	380,065
102	100	3/6/98	3576		8.1820	-146	355	14	3954	99	2/1/2010	321,471
103	101	3/24/98	9570		9.1664	-145	343	14	4183	105	2/28/2010	321,471
104	102	4/11/98	4194		8.3414	-144	361	15	4184	105	3/1/2010	445,522
105	103	4/29/98	8329		9.0275	-143	361	15	4482	112	3/31/2010	445,522
106	104	5/17/98	16000		9.6803	-142	343	15	5042	126	4/1/2010	422,384
107	105	6/4/98	55		4.0073	-141	361	16	3801	95	4/30/2010	422,384
108	106	6/22/98	692		6.5396	-140	325	16	3350	84	5/1/2010	430,551
109	107	7/10/98	1160		7.0562	-139	343	17	3148	79	5/31/2010	430,551
110	108	7/28/98	1230		7.1148	-138	361	18	2987	75	6/1/2010	5,144
111	109	9/2/98	1914		7.5570	-137	361	17	2847	71	6/30/2010	5,144
112	110	10/26/98	1530		7.3330	-136	362	15	2708	68	7/1/2010	404,750

	A	B	C	D	E	F	G	H	I	J	K	L
1	F1: ID	Date.coll	F1, fbrs 1DL	CenIndex	ln(F1)	RollPeriod	RP span	# of filters	Geomean	% $Geom_{1DL}$/AL	Production (dry long tons-flux)	
2				BDL=1			days			for plotting	MDOR data	for plotting
113	111	12/1/98	2560		7.8478	-135	320	14	2522	63	7/31/2010	404,750
114	112	12/19/98	2883		7.9666	-134	338	15	2545	64	8/1/2010	448,909
115	113	1/24/99	547		6.3044	-133	325	14	1959	49	8/31/2010	448,909
116	114	2/11/99	16600		9.7172	-132	343	15	2259	56	9/1/2010	426,657
117	115	3/1/99	717		6.5751	-131	361	16	2103	53	9/30/2010	426,657
118	116	3/19/99	1969		7.5853	-130	361	16	2026	51	10/1/2010	335,712
119	117	4/6/99	1070		6.9754	-129	361	16	1767	44	10/31/2010	335,712
120	118	4/24/99	4320		8.3710	-128	361	16	1770	44	11/1/2010	492,985
121	119	5/12/99	1230		7.1148	-127	361	16	1570	39	11/30/2010	492,985
122	120	5/30/99	2190		7.6917	-126	361	16	1387	35	12/1/2010	485,646
123	121	6/17/99	3160		8.0583	-125	361	16	1786	45	12/31/2010	485,646
124	122	7/5/99	2570		7.8517	-124	361	16	1939	48	1/1/2011	515,773
125	123	7/23/99	1430		7.2654	-123	361	16	1965	49	1/31/2011	515,773
126	124	8/10/99	234		5.4553	-122	343	16	1771	44	2/1/2011	367,659
127	125	8/28/99	1740		7.4616	-121	361	17	1769	44	2/28/2011	367,659
128	126	9/15/99	4450		8.4007	-120	325	17	1859	46	3/1/2011	495,820
129	127	10/3/99	221		5.3982	-119	343	18	1652	41	3/31/2011	495,820
130	128	10/21/99	446		6.1003	-118	361	19	1542	39	4/1/2011	505,962
131	129	11/8/99	609		6.4118	-117	343	19	1469	37	4/30/2011	505,962
132	130	11/26/99	217		5.3799	-116	361	20	1335	33	5/1/2011	512,451
133	131	12/14/99	11500		9.3501	-115	361	20	1439	36	5/31/2011	512,451
134	132	1/1/00	2980		7.9997	-114	343	20	1441	36	6/1/2011	489,634
135	133	1/19/00	2050		7.6256	-113	361	21	1466	37	6/30/2011	489,634
136	134	2/6/00	852		6.7476	-112	361	21	1497	37	7/1/2011	498,785
137	135	2/24/00	223		5.4072	-111	361	21	1219	30	7/31/2011	498,785
138	136	3/13/00	1070		6.9754	-110	361	21	1243	31	8/1/2011	467,265
139	137	3/31/00	1342		7.2019	-109	361	21	1220	31	8/31/2011	467,265
140	138	4/18/00	666		6.5013	-108	361	21	1193	30	9/1/2011	298,688
141	139	5/6/00	934		6.8395	-107	361	21	1109	28	9/30/2011	298,688
142	140	5/24/00	689		6.5352	-106	361	21	1079	27	10/1/2011	493,611
143	141	6/29/00	470		6.1527	-105	361	20	947	24	10/31/2011	493,611
144	142	7/17/00	231		5.4424	-104	361	20	839	21	11/1/2011	471,241
145	143	8/4/00	2117		7.6578	-103	361	20	856	21	11/30/2011	471,241
146	144	8/22/00	234		5.4553	-102	361	20	856	21	12/1/2011	474,832
147	145	9/9/00	931		6.8363	-101	361	20	830	21	12/31/2011	474,832
148	146	9/27/00	2048		7.6246	-100	361	20	798	20	1/1/2012	331,564
149	147	10/15/00	224		5.4116	-99	361	20	799	20	1/31/2012	331,564
150	148	11/2/00	225		5.4161	-98	361	20	772	19	2/1/2012	399,575
151	149	11/20/00	212		5.3566	-97	361	20	732	18	2/29/2012	399,575
152	150	12/8/00	511		6.2364	-96	361	20	764	19	3/1/2012	477,902
153	151	12/26/00	206		5.3279	-95	361	20	625	16	3/31/2012	477,902
154	152	1/13/01	108		4.6821	-94	361	20	529	13	4/1/2012	473,115
155	153	2/18/01	13900		9.5396	-93	361	19	571	14	4/30/2012	473,115
156	154	3/8/01	322		5.7746	-92	361	19	582	15	5/1/2012	485,250
157	155	3/26/01	871		6.7696	-91	361	19	576	14	5/31/2012	485,250
158	156	4/13/01	2550		7.8438	-90	361	19	596	15	6/1/2012	253,595
159	157	5/1/01	342		5.8348	-89	361	19	575	14	6/30/2012	253,595
160	158	5/19/01	928		6.8330	-88	361	19	575	14	7/1/2012	424,148
161	159	6/6/01	809		6.6958	-87	343	19	580	14	7/31/2012	424,148
162	160	8/17/01	1050		6.9565	-86	361	17	595	15	8/1/2012	490,778
163	161	9/4/01	1970		7.5858	-85	361	17	674	17	8/31/2012	490,778
164	162	9/22/01	112		4.7185	-84	361	17	595	15	9/1/2012	483,388
165	163	10/10/01	801		6.6859	-83	361	17	563	14	9/30/2012	483,388
166	164	10/28/01	221		5.3982	-82	361	17	563	14	10/1/2012	441,144
167	165	11/15/01	112		4.7185	-81	361	17	540	14	10/31/2012	441,144

	A	B	C	D	E	F	G	H	I	J	K	L
1	F1: ID	Date.coll	F1, fbrs 1DL	CenIndex	ln(F1)	RollPeriod	RP span	# of filters	Geomean	% $Geom_{1DL}$/AL	Production (dry long tons-flux)	
2				BDL=1			days			for plotting	MDOR data	for plotting
168	166	12/3/01	3450		8.1461	-80	361	17	636	16	11/1/2012	457,894
169	167	12/21/01	6858		8.8332	-79	361	17	741	19	11/30/2012	457,894
170	168	1/8/02	223		5.4072	-78	361	17	745	19	12/1/2012	422,632
171	169	1/26/02	1909		7.5543	-77	343	17	882	22	12/31/2012	422,632
172	170	2/13/02	4380		8.3848	-76	361	18	964	24	1/1/2013	356,008
173	171	3/3/02	2290		7.7363	-75	361	18	872	22	1/31/2013	356,008
174	172	3/21/02	14100		9.5539	-74	361	18	1076	27	2/1/2013	280,839
175	173	4/8/02	1100		7.0031	-73	361	18	1090	27	2/28/2013	280,839
176	174	4/26/02	1550		7.3460	-72	361	18	1060	27	3/1/2013	359,070
177	175	5/14/02	672		6.5103	-71	361	18	1101	28	3/31/2013	359,070
178	176	6/1/02	3030		8.0163	-70	361	18	1176	29	4/1/2013	307,074
179	177	6/19/02	696		6.5453	-69	307	18	1166	29	4/30/2013	307,074
180	178	7/7/02	2109		7.6540	-68	325	19	1203	30	5/1/2013	348,854
181	179	7/25/02	948		6.8544	-67	343	20	1188	30	5/31/2013	348,854
182	180	8/12/02	2150		7.6732	-66	361	21	1223	31	6/1/2013	172,572
183	181	8/30/02	3073		8.0304	-65	361	21	1287	32	6/30/2013	172,572
184	182	9/17/02	2071		7.6358	-64	361	21	1290	32	7/1/2013	345,625
185	183	10/5/02	219		5.3891	-63	361	21	1332	33	7/31/2013	345,625
186	184	10/23/02	1070		6.9754	-62	361	21	1350	34	8/1/2013	291,959
187	185	11/10/02	1505		7.3165	-61	361	21	1479	37	8/31/2013	291,959
188	186	11/28/02	10660		9.2743	-60	361	21	1838	46	9/1/2013	330,385
189	187	12/16/02	868		6.7662	-59	361	21	1721	43	9/30/2013	330,385
190	188	1/3/03	2756		7.9215	-58	361	21	1648	41	10/1/2013	345,098
191	189	1/21/03	37430		10.5302	-57	361	21	2103	53	10/31/2013	345,098
192	190	2/8/03	3045		8.0213	-56	361	21	2150	54	11/1/2013	325,060
193	191	2/26/03	2090		7.6449	-55	361	21	2076	52	11/30/2013	325,060
194	192	3/16/03	8446		9.0414	-54	361	21	2209	55	12/1/2013	314,059
195	193	4/3/03	16640		9.7196	-53	361	21	2226	56	12/31/2013	314,059
196	194	4/21/03	5256		8.5671	-52	361	21	2398	60	1/1/2014	338,548
197	195	7/2/03	714		6.5709	-51	361	18	2607	65	1/31/2014	338,548
198	196	7/20/03	2784		7.9316	-50	361	18	2647	66	2/1/2014	288,190
199	197	8/7/03	1409		7.2506	-49	361	18	2706	68	2/28/2014	288,190
200	198	8/25/03	3042		8.0203	-48	361	18	2759	69	3/1/2014	403,763
201	199	9/12/03	6475		8.7757	-47	361	18	2876	72	3/31/2014	403,763
202	200	9/30/03	3690		8.2134	-46	361	18	2969	74	4/1/2014	455,386
203	201	10/18/03	1356		7.2123	-45	361	18	3286	82	4/30/2014	455,386
204	202	11/5/03	6000		8.6995	-44	361	18	3616	90	5/1/2014	390,348
205	203	11/23/03	3702		8.2166	-43	361	18	3802	95	5/31/2014	390,348
206	204	12/11/03	19950		9.9010	-42	361	18	3936	98	6/1/2014	381,716
207	205	1/16/04	4104		8.3197	-41	361	17	4404	110	6/30/2014	381,716
208	206	4/21/04	508		6.2305	-40	295	12	2822	71	7/1/2014	492,789
209	207	5/12/04	2007		7.6044	-39	316	13	2749	69	7/31/2014	492,789
210	208	6/2/04	7938		8.9794	-38	337	14	2965	74	8/1/2014	475,018
211	209	7/14/04	599		6.3953	-37	361	14	2928	73	8/31/2014	475,018
212	210	8/4/04	4238		8.3518	-36	364	14	3017	75	9/1/2014	477,954
213	211	8/25/04	2604		7.8648	-35	349	13	3162	79	9/30/2014	477,954
214	212	10/27/04	3310		8.1047	-34	358	11	3168	79	10/1/2014	466,748
215	213	12/29/04	15539		9.6511	-33	349	9	2820	71	10/31/2014	466,748
216	214	1/19/05	4537		8.4200	-32	274	9	2852	71	11/1/2014	466,344
217	215	2/9/05	1657		7.4128	-31	295	10	2701	68	11/30/2014	466,344
218	216	3/2/05	1905		7.5522	-30	316	11	2617	65	12/1/2014	486,473
219	217	5/5/05	18487		9.8248	-29	359	11	3628	91	12/31/2014	486,473
220	218	6/15/05	15391		9.6415	-28	337	10	4113	103	1/1/2015	416,346
221	219	7/6/05	17660		9.7791	-27	358	11	4696	117	1/31/2015	416,346
222	220	7/27/05	3307		8.1038	-26	358	11	5485	137	2/1/2015	375,198

	A	B	C	D	E	F	G	H	I	J	K	L
1	F1: ID	Date.coll	F1, fbrs 1DL	CenIndex	ln(F1)	RollPeriod	RP span	# of filters	Geomean	% $Geom_{1DL}$/AL	Production (dry long tons-flux)	
2				BDL=1			days			for plotting	MDOR data	for plotting
223	221	8/17/05	802		6.6871	-25	358	11	4714	118	2/28/2015	375,198
224	222	9/7/05	11337		9.3358	-24	316	11	5389	135	3/1/2015	389,616
225	223	9/28/05	1915		7.5575	-23	337	12	4944	124	3/31/2015	389,616
226	224	10/19/05	2128		7.6629	-22	358	13	4633	116	4/1/2015	410,211
227	225	11/9/05	1876		7.5369	-21	316	13	4435	111	4/30/2015	410,211
228	226	11/30/05	140050		11.8498	-20	337	14	5676	142	5/1/2015	378,111
229	227	12/21/05	2567		7.8505	-19	358	15	5383	135	5/31/2015	378,111
230	228	1/11/06	586		6.3733	-18	358	15	4327	108	6/1/2015	386,547
231	229	2/1/06	990		6.8977	-17	358	15	3909	98	6/30/2015	386,547
232	230	2/22/06	7887		8.9730	-16	358	15	4338	108	7/1/2015	430,816
233	231	3/15/06	937	0	6.8427	-15	315	15	4137	103	7/31/2015	430,816
234	232	4/26/06	4418	0	8.3934	-14	357	16	4154	104	8/1/2015	247,493
235	233	5/17/06	530	1	6.2729	-13	337	16	3327	83	8/31/2015	247,493
236	234	6/5/06	1004	0	6.9117	-12	356	17	3101	78	9/1/2015	380,247
237	235	6/10/06	2564	0	7.8493	-11	361	18	3068	77	9/30/2015	380,247
238	236	6/28/06	2415	0	7.7895	-10	358	18	2768	69	10/1/2015	443,723
239	237	7/19/06	2387	0	7.7778	-9	358	18	2477	62	10/31/2015	443,723
240	238	8/9/06	1437	0	7.2703	-8	358	18	2365	59	11/1/2015	310,065
241	239	8/30/06	5714	0	8.6507	-7	358	18	2637	66	11/30/2015	310,065
242	240	10/11/06	1462	0	7.2876	-6	358	17	2382	60	12/1/2015	0
243	241	11/1/06	36045	0	10.4925	-5	358	17	2814	70	12/31/2015	0
244	242	11/22/06	1992	0	7.5969	-4	358	17	2824	71	1/1/2016	0
245	243	12/13/06	1261	0	7.1397	-3	358	17	2140	54	1/31/2016	0
246	244	1/3/07	1224	0	7.1099	-2	358	17	2049	51	2/1/2016	0
247	245	1/24/07	5885	0	8.6802	-1	358	17	2347	59	2/29/2016	0
248	246	2/14/07	41455	0	10.6324	0	358	17	2924	73	3/1/2016	0
249	247	3/7/07	1379	0	7.2291	1	358	17	2639	66	3/31/2016	0
250	248	3/28/07	336	0	5.8171	2	337	17	2484	62	4/1/2016	0
251	249	4/18/07	3245	0	8.0849	3	358	18	2521	63	4/30/2016	0
252	250	4/30/07	2459	0	7.8075	4	349	18	2441	61	5/1/2016	251,263
253	251	5/12/07	1144	0	7.0423	5	361	19	2345	59	5/31/2016	251,263
254	252	5/24/07	359	1	5.8833	6	354	19	2298	57	6/1/2016	445,630
255	253	6/11/07	3635	0	8.1984	7	349	18	2453	61	6/30/2016	445,630
256	254	6/17/07	5864	0	8.6766	8	355	19	2568	64	7/1/2016	396,918
257	255	6/29/07	1469	0	7.2923	9	346	19	2502	63	7/31/2016	396,918
258	256	7/11/07	644	0	6.4677	10	358	20	2338	58	8/1/2016	387,802
259	257	7/23/07	570	0	6.3456	11	349	20	2176	54	8/31/2016	387,802
260	258	8/4/07	1387	0	7.2349	12	361	21	2130	53	9/1/2016	304,647
261	259	8/16/07	783	0	6.6631	13	352	21	2069	52	9/30/2016	304,647
262	260	8/28/07	1414	0	7.2542	14	364	22	2034	51	10/1/2016	470,122
263	261	9/9/07	1359	0	7.2145	15	334	22	1905	48	10/31/2016	470,122
264	262	9/21/07	3536	0	8.1708	16	346	23	1957	49	11/1/2016	463,697
265	263	10/3/07	1662	0	7.4158	17	358	24	1944	49	11/30/2016	463,697
266	264	10/15/07	717	0	6.5751	18	349	24	1887	47	12/1/2016	433,732
267	265	10/27/07	1305	0	7.1740	19	361	25	1859	46	12/31/2016	433,732
268	266	11/8/07	310	0	5.7366	20	352	25	1537	38	1/1/2017	414,859
269	267	11/20/07	307	1	5.7268	21	364	26	1445	36	1/31/2017	414,859
270	268	12/2/07	1015	0	6.9226	22	355	26	1408	35	2/1/2017	437,442
271	269	12/14/07	276	0	5.6204	23	346	26	1328	33	2/28/2017	437,442
272	270	12/26/07	301	0	5.7071	24	358	27	1257	31	3/1/2017	458,980
273	271	1/7/08	640	0	6.4615	25	349	27	1227	31	3/31/2017	458,980
274	272	1/19/08	855	0	6.7511	26	361	28	1211	30	4/1/2017	459,991
275	273	1/31/08	1108	0	7.0103	27	352	28	1141	29	4/30/2017	459,991
276	274	2/12/08	684	0	6.5280	28	364	29	1121	28	5/1/2017	292,735
277	275	3/1/08	2022	0	7.6118	29	361	29	1010	25	5/31/2017	292,735

	A	B	C	D	E	F	G	H	I	J	K	L
1	F1: ID	Date.coll	F1, fbrs 1DL	CenIndex	ln(F1)	RollPeriod	RP span	# of filters	Geomean	% $Geom_{1DL}$/AL	Production (dry long tons-flux)	
2				BDL=1			days			for plotting	MDOR data	for plotting
278	276	3/7/08	3777	0	8.2367	30	346	29	1046	26	6/1/2017	415,929
279	277	3/19/08	1252	0	7.1325	31	358	30	1052	26	6/30/2017	415,929
280	278	3/31/08	348	1	5.8522	32	349	30	1054	26	7/1/2017	393,242
281	279	4/12/08	2461	0	7.8083	33	361	31	1083	27	7/31/2017	393,242
282	280	4/24/08	3934	0	8.2774	34	361	31	1090	27	8/1/2017	409,120
283	281	5/6/08	2144	0	7.6704	35	361	31	1085	27	8/31/2017	409,120
284	282	5/18/08	1127	0	7.0273	36	361	31	1084	27	9/1/2017	406,644
285	283	5/30/08	2609	0	7.8667	37	355	31	1156	29	9/30/2017	406,644
286	284	6/11/08	3621	0	8.1945	38	361	31	1156	29	10/1/2017	470,420
287	285	6/23/08	3574	0	8.1814	39	361	31	1137	28	10/31/2017	470,420
288	286	7/5/08	2792	0	7.9345	40	361	31	1161	29	11/1/2017	519,371
289	287	7/17/08	1543	0	7.3415	41	361	31	1194	30	11/30/2017	519,371
290	288	7/29/08	745	0	6.6134	42	361	31	1205	30	12/1/2017	484,128
291	289	8/10/08	4140	0	8.3285	43	361	31	1248	31	12/31/2017	484,128
292	290	8/22/08	4458	0	8.4025	44	361	31	1320	33	1/1/2018	463,689
293	291	9/3/08	3498	0	8.1599	45	361	31	1359	34	1/31/2018	463,689
294	292	9/27/08	325	1	5.7838	46	361	30	1255	31	2/1/2018	404,249
295	293	10/9/08	1337	0	7.1982	47	361	30	1246	31	2/28/2018	404,249
296	294	10/21/08	3079	0	8.0324	48	361	30	1308	33	3/1/2018	462,201
297	295	11/2/08	797	0	6.6809	49	361	30	1287	32	3/31/2018	462,201
298	296	11/14/08	709	0	6.5639	50	361	30	1323	33	4/1/2018	471,256
299	297	11/26/08	460	0	6.1312	51	361	30	1341	34	4/30/2018	471,256
300	298	12/8/08	303	1	5.7137	52	361	30	1288	32	5/1/2018	467,156
301	299	12/20/08	325	0	5.7838	53	361	30	1295	32	5/31/2018	467,156
302	300	1/1/09	2209	0	7.7003	54	361	30	1384	35	6/1/2018	583,060
303	301	1/13/09	155	1	5.0434	55	361	30	1320	33	6/30/2018	583,060
304	302	1/25/09	299	1	5.7004	56	361	30	1275	32	7/1/2018	458,781
305	303	2/6/09	1939	0	7.5699	57	361	30	1299	32	7/31/2018	458,781
306	304	2/18/09	1486	0	7.3038	58	355	30	1333	33	8/1/2018	419,352
307	305	3/2/09	3826	0	8.2496	59	361	30	1361	34	8/31/2018	419,352
308	306	3/14/09	1837	0	7.5159	60	361	30	1329	33	9/1/2018	307,674
309	307	4/7/09	322	1	5.7746	61	361	29	1328	33	9/30/2018	307,674
310	308	4/19/09	392	1	5.9713	62	361	29	1247	31	10/1/2018	514,684
311	309	5/1/09	987	0	6.8947	63	361	29	1188	30	10/31/2018	514,684
312	310	5/13/09	604	0	6.4036	64	361	29	1138	28	11/1/2018	440,387
313	311	5/25/09	591	0	6.3818	65	361	29	1113	28	11/30/2018	440,387
314	312	6/6/09	871	0	6.7696	66	361	29	1071	27	12/1/2018	488,053
315	313	6/18/09	977	0	6.8845	67	361	29	1024	26	12/31/2018	488,053
316	314	6/30/09	254	1	5.5373	68	361	29	935	23	1/1/2019	
317	315	7/12/09	498	0	6.2106	69	361	29	881	22		
318	316	7/24/09	253	0	5.5334	70	361	29	828	21		
319	317	8/5/09	1228	0	7.1131	71	361	29	842	21		
320	318	8/17/09	433	1	6.0707	72	361	29	779	19		
321	319	8/29/09	267	0	5.5872	73	361	29	707	18		
322	320	9/10/09	2275	0	7.7297	74	349	29	696	17		
323	321	9/22/09	1641	0	7.4031	75	361	30	717	18		
324	322	10/4/09	241	0	5.4848	76	361	30	710	18		
325	323	10/16/09	251	0	5.5255	77	361	30	671	17		
326	324	10/28/09	403	0	5.9989	78	361	30	627	16		
327	325	11/9/09	3512	0	8.1639	79	361	30	659	16		
328	326	11/21/09	2318	0	7.7485	80	361	30	685	17		
329	327	12/3/09	4604	0	8.4347	81	361	30	740	19		
330	328	12/15/09	9108	0	9.1169	82	361	30	829	21		
331	329	12/27/09	393	1	5.9738	83	361	30	834	21		
332	330	1/8/10	1109	0	7.0112	84	361	30	815	20		

	A	B	C	D	E	F	G	H	I	J	K	L
1	F1: ID	Date.coll	F1, fbrs 1DL	CenIndex	ln(F1)	RollPeriod	RP span	# of filters	Geomean	% $Geom_{1DL}$/AL	Production (dry long tons-flux)	
2				BDL=1			days			for plotting	MDOR data	for plotting
333	331	1/23/10	293	1	5.6802	85	364	30	833	21		
334	332	2/1/10	1712	0	7.4454	86	361	30	883	22		
335	333	2/13/10	621	0	6.4313	87	361	30	850	21		
336	334	2/25/10	272	0	5.6058	88	361	30	803	20		
337	335	3/9/10	619	1	6.4281	89	361	30	756	19		
338	336	3/21/10	740	0	6.6067	90	349	30	733	18		
339	337	4/2/10	2466	0	7.8104	91	361	31	762	19		
340	338	4/14/10	3282	0	8.0962	92	361	31	822	21		
341	339	4/26/10	2578	0	7.8548	93	361	31	873	22		
342	340	5/8/10	479	0	6.1717	94	361	31	853	21		
343	341	5/20/10	3213	0	8.0750	95	361	31	900	23		
344	342	6/1/10	319	1	5.7652	96	361	31	883	22		
345	343	6/13/10	289	1	5.6664	97	361	31	852	21		
346	344	6/29/10	318	1	5.7621	98	365	31	821	21		
347	345	7/7/10	1220	0	7.1066	99	361	31	864	22		
348	346	7/19/10	302	0	5.7104	100	361	31	850	21		
349	347	7/31/10	315	0	5.7526	101	361	31	856	21		
350	348	8/12/10	325	1	5.7838	102	361	31	820	21		
351	349	8/24/10	318	1	5.7621	103	361	31	812	20		
352	350	9/5/10	618	0	6.4265	104	361	31	835	21		
353	351	9/17/10	1533	0	7.3350	105	361	31	824	21		
354	352	9/29/10	660	0	6.4922	106	361	31	800	20		
355	353	10/11/10	319	0	5.7652	107	361	31	807	20		
356	354	10/23/10	1181	0	7.0741	108	361	31	849	21		
357	355	11/4/10	343	1	5.8377	109	361	31	844	21		
358	356	11/16/10	665	0	6.4998	110	361	31	800	20		
359	357	11/28/10	783	0	6.6631	111	361	31	773	19		
360	358	12/10/10	260	0	5.5607	112	361	31	704	18		
361	359	12/22/10	373	0	5.9216	113	361	31	635	16		
362	360	1/3/11	806	0	6.6921	114	361	31	650	16		
363	361	1/15/11	497	0	6.2086	115	358	31	634	16		
364	362	1/27/11	806	0	6.6921	116	361	31	655	16		
365	363	2/8/11	8930	0	9.0972	117	361	31	690	17		
366	364	2/20/11	3274	0	8.0938	118	361	31	728	18		
367	365	3/4/11	368	1	5.9081	119	361	31	736	18		
368	366	3/16/11	2079	0	7.6396	120	361	31	765	19		
369	367	3/28/11	3547	0	8.1739	121	361	31	805	20		
370	368	4/9/11	2941	0	7.9865	122	361	31	809	20		
371	369	4/21/11	754	0	6.6254	123	361	31	772	19		
372	370	5/3/11	4238	0	8.3518	124	361	31	784	20		
373	371	5/15/11	2414	0	7.7890	125	361	31	826	21		
374	372	5/27/11	1902	0	7.5507	126	361	31	812	20		
375	373	6/8/11	1637	0	7.4006	127	361	31	856	21		
376	374	6/20/11	314	1	5.7494	128	357	31	859	21		
377	375	7/2/11	747	0	6.6161	129	361	31	883	22		
378	376	7/14/11	1057	0	6.9632	130	361	31	878	22		
379	377	7/26/11	974	0	6.8814	131	361	31	912	23		
380	378	8/7/11	995	0	6.9027	132	361	31	947	24		
381	379	8/19/11	1270	0	7.1468	133	361	31	989	25		
382	380	8/31/11	1419	0	7.2577	134	361	31	1038	26		
383	381	9/12/11	1233	0	7.1172	135	361	31	1062	27		
384	382	9/24/11	354	1	5.8693	136	361	31	1013	25		
385	383	10/6/11	1872	0	7.5348	137	361	31	1047	26		
386	384	10/18/11	638	0	6.4583	138	361	31	1071	27		
387	385	10/30/11	983	0	6.8906	139	361	31	1065	27		

	A	B	C	D	E	F	G	H	I	J	K	L
1	F1: ID	Date.coll	F1, fbrs 1DL	CenIndex	ln(F1)	RollPeriod	RP span	# of filters	Geomean	% $Geom_{1DL}$/AL	Production (dry long tons-flux)	
2				BDL=1			days			for plotting	MDOR data	for plotting
388	386	11/11/11	314	0	5.7494	140	361	31	1062	27		
389	387	11/23/11	2530	0	7.8360	141	361	31	1108	28		
390	388	12/5/11	12094	0	9.4005	142	361	31	1211	30		
391	389	12/17/11	932	0	6.8373	143	361	31	1261	32		
392	390	12/29/11	4076	0	8.3129	144	361	31	1363	34		
393	391	1/10/12	2287	0	7.7350	145	361	31	1409	35		
394	392	1/22/12	5444	0	8.6023	146	361	31	1522	38		
395	393	2/3/12	417	1	6.0331	147	361	31	1490	37		
396	394	2/15/12	2438	0	7.7989	148	361	31	1429	36		
397	395	2/27/12	10655	0	9.2738	149	361	31	1485	37		
398	396	3/10/12	1308	0	7.1763	150	361	31	1547	39		
399	397	3/22/12	499	1	6.2126	151	361	31	1477	37		
400	398	4/3/12	530	0	6.2729	152	361	31	1389	35		
401	399	4/15/12	339	1	5.8260	153	361	31	1296	32		
402	400	4/27/12	1493	0	7.3085	154	361	31	1325	33		
403	401	5/9/12	2191	0	7.6921	155	361	31	1297	32		
404	402	5/21/12	1023	0	6.9305	156	361	31	1261	32		
405	403	6/2/12	3705	0	8.2174	157	361	31	1289	32		
406	404	6/14/12	2980	0	7.9997	158	361	31	1314	33		
407	405	6/26/12	1543	0	7.3415	159	361	31	1383	35		
408	406	7/8/12	714	0	6.5709	160	361	31	1381	35		
409	407	7/20/12	1788	0	7.4889	161	361	31	1405	35		
410	408	8/1/12	357	1	5.8777	162	361	31	1360	34		
411	409	8/13/12	705	0	6.5582	163	361	31	1345	34		
412	410	8/25/12	1376	0	7.2269	164	361	31	1348	34		
413	411	9/6/12	625	0	6.4378	165	361	31	1313	33		
414	412	9/18/12	339	1	5.8260	166	361	31	1260	31		
415	413	9/30/12	1626	0	7.3939	167	361	31	1323	33		
416	414	10/12/12	959	0	6.8659	168	361	31	1295	32		
417	415	10/24/12	357	1	5.8777	169	361	31	1271	32		
418	416	11/5/12	630	0	6.4457	170	361	31	1253	31		
419	417	11/17/12	508	0	6.2305	171	361	31	1272	32		
420	418	11/29/12	325	1	5.7838	172	361	31	1191	30		
421	419	12/11/12	1090	0	6.9939	173	361	31	1102	28		
422	420	12/23/12	4233	0	8.3507	174	361	31	1157	29		
423	421	1/4/13	983	0	6.8906	175	361	31	1105	28		
424	422	1/16/13	1882	0	7.5401	176	361	31	1098	27		
425	423	1/28/13	920	0	6.8244	177	361	31	1037	26		
426	424	2/9/13	1330	0	7.1929	178	361	31	1077	27		
427	425	2/21/13	1717	0	7.4483	179	361	31	1064	27		
428	426	3/5/13	299	1	5.7004	180	361	31	949	24		
429	427	3/17/13	2614	0	7.8686	181	361	31	970	24		
430	428	3/29/13	2635	0	7.8766	182	361	31	1023	26		
431	429	4/10/13	4696	0	8.4545	183	361	31	1098	27		
432	430	4/22/13	365	0	5.8999	184	361	31	1101	28		
433	431	5/4/13	3333	0	8.1116	185	361	31	1130	28		
434	432	5/16/13	661	0	6.4938	186	361	31	1087	27		
435	433	5/28/13	2069	0	7.6348	187	361	31	1112	28		
436	434	6/9/13	986	0	6.8937	188	361	31	1065	27		
437	435	6/21/13	1043	0	6.9499	189	361	31	1030	26		
438	436	7/3/13	2221	0	7.7057	190	361	31	1042	26		
439	437	7/15/13	681	0	6.5236	191	361	31	1040	26		
440	438	7/27/13	767	0	6.6425	192	361	31	1012	25		
441	439	8/8/13	1442	0	7.2738	193	361	31	1059	26		
442	440	8/20/13	1795	0	7.4928	194	361	31	1091	27		

	A	B	C	D	E	F	G	H	I	J	K	L
1	F1: ID	Date.coll	F1, fbrs 1DL	CenIndex	ln(F1)	RollPeriod	RP span	# of filters	Geomean	% $Geom_{1DL}$/AL	Production (dry long tons-flux)	
2				BDL=1			days			for plotting	MDOR data	for plotting
443	441	9/1/13	437	0	6.0799	195	361	31	1052	26		
444	442	9/13/13	316	0	5.7557	196	361	31	1029	26		
445	443	9/25/13	1074	0	6.9791	197	361	31	1068	27		
446	444	10/7/13	493	0	6.2005	198	361	31	1028	26		
447	445	10/19/13	957	0	6.8638	199	361	31	1027	26		
448	446	10/31/13	348	0	5.8522	200	361	31	1027	26		
449	447	11/12/13	4463	0	8.4036	201	361	31	1094	27		
450	448	11/24/13	193475	0	12.1729	202	361	31	1325	33		
451	449	12/6/13	1657	0	7.4128	203	361	31	1396	35		
452	450	12/18/13	2616	0	7.8694	204	361	31	1436	36		
453	451	12/30/13	1686	0	7.4301	205	361	31	1394	35		
454	452	1/11/14	3249	0	8.0861	206	361	31	1449	36		
455	453	1/23/14	6436	0	8.7697	207	361	31	1507	38		
456	454	2/4/14	5930	0	8.6878	208	361	31	1601	40		
457	455	2/16/14	6314	0	8.7505	209	361	31	1683	42		
458	456	2/28/14	1855	0	7.5256	210	361	31	1688	42		
459	457	3/12/14	2070	0	7.6353	211	361	31	1796	45		
460	458	3/24/14	5331	0	8.5813	212	361	31	1838	46		
461	459	4/5/14	710	0	6.5653	213	361	31	1762	44		
462	460	4/17/14	325	0	5.7838	214	361	31	1616	40		
463	461	4/29/14	605	0	6.4052	215	361	31	1643	41		
464	462	5/11/14	311	1	5.7398	216	361	31	1522	38		
465	463	5/23/14	1770	0	7.4787	217	361	31	1571	39		
466	464	6/4/14	3866	0	8.2600	218	361	31	1603	40		
467	465	6/16/14	1295	0	7.1663	219	361	31	1617	40		
468	466	6/28/14	891	0	6.7923	220	361	31	1609	40		
469	467	7/10/14	1409	0	7.2506	221	361	31	1586	40		
470	468	7/22/14	720	0	6.5793	222	361	31	1588	40		
471	469	8/3/14	1468	0	7.2917	223	361	31	1622	41		
472	470	8/15/14	577	0	6.3578	224	361	31	1575	39		
473	471	8/27/14	1619	0	7.3896	225	361	31	1570	39		
474	472	9/8/14	671	0	6.5088	226	361	31	1592	40		
475	473	9/20/14	371	0	5.9162	227	361	31	1600	40		
476	474	10/2/14	659	0	6.4907	228	361	31	1575	39		
477	475	10/14/14	707	0	6.5610	229	361	31	1593	40		
478	476	10/26/14	677	0	6.5177	230	361	31	1575	39		
479	477	11/7/14	1485	0	7.3032	231	361	31	1651	41		
480	478	11/19/14	11218	0	9.3253	232	361	31	1701	43		
481	479	12/1/14	14598	0	9.5886	233	361	31	1565	39		
482	480	12/13/14	1806	0	7.4989	234	361	31	1569	39		
483	481	12/25/14	1915	0	7.5575	235	361	31	1553	39		
484	482	1/6/15	8945	0	9.0988	236	361	31	1639	41		
485	483	1/18/15	992	0	6.8997	237	361	31	1578	39		
486	484	1/30/15	652	0	6.4800	238	361	31	1465	37		
487	485	2/11/15	3739	0	8.2266	239	361	31	1444	36		
488	486	2/23/15	2836	0	7.9501	240	361	31	1407	35		
489	487	3/13/15	1312	0	7.1793	241	355	30	1373	34		
490	488	3/19/15	1784	0	7.4866	242	361	31	1385	35		
491	489	3/31/15	938	0	6.8437	243	361	31	1309	33		
492	490	4/12/15	1314	0	7.1808	244	361	31	1335	33		
493	491	4/24/15	3773	0	8.2356	245	361	31	1445	36		
494	492	5/6/15	493	0	6.2005	246	361	31	1436	36		
495	493	5/18/15	1531	0	7.3337	247	361	31	1512	38		
496	494	5/30/15	494	0	6.2025	248	361	31	1451	36		
497	495	6/11/15	4082	0	8.3143	249	361	31	1453	36		

	A	B	C	D	E	F	G	H	I	J	K	L
1	F1: ID	Date.coll	F1, fbrs 1DL	CenIndex	ln(F1)	RollPeriod	RP span	# of filters	Geomean	% $Geom_{1DL}$/AL	Production (dry long tons-flux)	
2				BDL=1			days			for plotting	MDOR data	for plotting
498	496	6/23/15	1416	0	7.2556	250	361	31	1457	36		
499	497	7/5/15	1130	0	7.0300	251	361	31	1469	37		
500	498	7/17/15	1052	0	6.9584	252	361	31	1455	36		
501	499	7/29/15	4350	0	8.3779	253	361	31	1542	39		
502	500	8/10/15	703	1	6.5554	254	361	31	1506	38		
503	501	8/22/15	525	1	6.2634	255	361	31	1501	38		
504	502	9/3/15	636	0	6.4552	256	361	31	1456	36		
505	503	9/15/15	581	0	6.3648	257	361	31	1450	36		
506	504	9/27/15	2077	0	7.6387	258	361	31	1533	38		
507	505	10/9/15	3078	0	8.0320	259	361	31	1611	40		
508	506	10/21/15	1909	0	7.5543	260	361	31	1663	42		
509	507	11/2/15	746	0	6.6147	261	361	31	1668	42		
510	508	11/14/15	2398	0	7.7824	262	361	31	1694	42		
511	509	11/26/15	855	0	6.7511	263	361	31	1559	39		
512	510	12/8/15	636	1	6.4552	264	361	31	1409	35		
513	511	12/20/15	586	1	6.3733	265	361	31	1359	34		
514	512	1/1/16	544	1	6.2989	266	361	31	1305	33		
515	513	1/13/16	697	1	6.5468	267	361	31	1202	30		
516	514	1/25/16	578	1	6.3596	268	361	31	1181	30		
517	515	2/6/16	523	1	6.2596	269	361	31	1173	29		
518	516	2/18/16	547	1	6.3044	270	361	31	1102	28		
519	517	3/1/16	1149	0	7.0466	271	355	31	1071	27		
520	518	3/25/16	1541	0	7.3402	272	361	30	1058	26		
521	519	4/6/16	441	0	6.0890	273	361	30	1032	26		
522	520	4/30/16	1579	0	7.3645	274	361	29	993	25		
523	521	5/12/16	942	0	6.8480	275	361	29	1015	25		
524	522	5/24/16	504	0	6.2226	276	361	29	977	24		
525	523	6/5/16	510	1	6.2344	277	361	29	978	24		
526	524	6/17/16	2413	0	7.7886	278	361	29	961	24		
527	525	6/29/16	1681	0	7.4271	279	361	29	967	24		
528	526	7/11/16	619	1	6.4281	280	361	29	947	24		
529	527	7/23/16	608	1	6.4102	281	361	29	929	23		
530	528	8/4/16	1018	0	6.9256	282	361	29	884	22		
531	529	8/16/16	608	1	6.4102	283	361	29	879	22		
532	530	8/28/16	570	1	6.3456	284	361	29	882	22		
533	531	9/9/16	527	0	6.2672	285	361	29	876	22		
534	532	9/21/16	1360	0	7.2152	286	361	29	902	23		
535	533	10/3/16	5077	0	8.5325	287	361	29	930	23		
536	534	10/15/16	1585	0	7.3683	288	361	29	909	23		
537	535	10/27/16	577	1	6.3578	289	361	29	872	22		
538	536	11/8/16	3993	0	8.2923	290	361	29	924	23		
539	537	11/20/16	1330	0	7.1929	291	361	29	906	23		
540	538	12/2/16	6143	0	8.7231	292	361	29	970	24		
541	539	12/14/16	10422	0	9.2517	293	361	29	1068	27		
542	540	12/26/16	1875	0	7.5364	294	361	29	1111	28		
543	541	1/7/17	883	0	6.7833	295	361	29	1130	28		
544	542	1/19/17	2537	0	7.8387	296	361	29	1182	30		
545	543	1/31/17	7239	0	8.8872	297	361	29	1289	32		
546	544	2/12/17	1925	0	7.5627	298	361	29	1348	34		
547	545	2/24/17	12235	0	9.4121	299	361	29	1501	38		
548	546	3/8/17	3100	0	8.0392	300	349	29	1553	39		
549	547	3/20/17	3249	0	8.0861	301	361	30	1592	40		
550	548	4/1/17	5153	0	8.5473	302	361	30	1657	41		
551	549	4/13/17	1343	0	7.2027	303	349	30	1720	43		
552	550	4/25/17	984	0	6.8916	304	361	31	1689	42		

	A	B	C	D	E	F	G	H	I	J	K	L
1	F1: ID	Date.coll	F1, fbrs 1DL	CenIndex	ln(F1)	RollPeriod	RP span	# of filters	Geomean	% $Geom_{1DL}$/AL	Production (dry long tons-flux)	
2				BDL=1			days			for plotting	MDOR data	for plotting
553	551	5/7/17	1469	0	7.2923	305	361	31	1685	42		
554	552	5/19/17	2057	0	7.6290	306	361	31	1728	43		
555	553	5/31/17	6521	0	8.7828	307	361	31	1877	47		
556	554	6/12/17	2044	0	7.6227	308	361	31	1963	49		
557	555	6/24/17	657	1	6.4877	309	361	31	1882	47		
558	556	7/6/17	705	0	6.5582	310	361	31	1830	46		
559	557	7/18/17	2557	0	7.8466	311	361	31	1916	48		
560	558	7/30/17	1905	0	7.5522	312	361	31	1988	50		
561	559	8/11/17	776	0	6.6542	313	361	31	1971	49		
562	560	9/4/17	665	0	6.4998	314	361	30	2060	51		
563	561	9/16/17	911	1	6.8145	315	361	30	2098	52		
564	562	9/28/17	646	1	6.4708	316	361	30	2047	51		
565	563	10/10/17	5486	0	8.6100	317	361	30	2052	51		
566	564	10/22/17	4360	0	8.3802	318	361	30	2122	53		
567	565	11/3/17	3699	0	8.2158	319	361	30	2258	56		
568	566	1/2/18	1376	0	7.2269	320	361	26	2021	51		
569	567	1/14/18	3963	0	8.2848	321	361	26	2141	54		
570	568	1/26/18	19168	0	9.8610	322	361	26	2314	58		
571	569	2/7/18	4808	0	8.4780	323	361	26	2278	57		
572	570	2/19/18	3708	0	8.2182	324	361	26	2336	58		
573	571	3/3/18	508	0	6.2305	325	361	26	2067	52		
574	572	3/15/18	4137	0	8.3277	326	361	26	2090	52		
575	573	3/27/18	504	0	6.2226	327	361	26	1946	49		
576	574	4/8/18	1033	0	6.9402	328	361	26	1829	46		
577	575	4/20/18	723	1	6.5834	329	361	26	1786	45		
578	576	5/2/18	2036	0	7.6187	330	361	26	1837	46		
579	577	5/14/18	7580	0	8.9333	331	361	26	1956	49		
580	578	5/26/18	4529	0	8.4183	332	361	26	2017	50		
581	579	6/7/18	381	0	5.9428	333	361	26	1808	45		
582	580	6/19/18	7084	0	8.8656	334	361	26	1897	47		
583	581	7/1/18	2301	0	7.7411	335	361	26	1990	50		
584	582	7/13/18	437	0	6.0799	336	361	26	1954	49		
585	583	7/25/18	674	0	6.5132	337	361	26	1856	46		
586	584	8/6/18	1313	0	7.1801	338	361	26	1830	46		
587	585	8/18/18	3850	0	8.2558	339	349	26	1946	49		
588	586	8/30/18	551	1	6.3117	340	361	27	1857	46		
589	587	9/11/18	1561	0	7.3531	341	361	27	1917	48		
590	588	9/23/18	729	0	6.5917	342	361	27	1901	48		
591	589	10/5/18	363	0	5.8944	343	361	27	1861	47		
592	590	10/17/18	7246	0	8.8882	344	361	27	1880	47		
593	591	10/29/18	1001	0	6.9088	345	361	27	1781	45		
594	592	11/10/18	2799	0	7.9370	346	313	27	1762	44		
595	593	11/22/18	11062	0	9.3113	347	325	28	1882	47		
596	594	12/4/18	4938	0	8.5047	348	337	29	1945	49		
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	A	B	C	D	E	F	G	H	I	J	K	L
1	F1: ID	Date.coll	F1, fbrs 1DL	CenIndex	ln(F1)	RollPeriod	RP span	# of filters	Geomean	% $Geom_{1DL}$/AL	Production (dry long tons-flux)	
2				BDL=1			days			for plotting	MDOR data	for plotting
608												
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1	F7: ID	Date.coll	F7, fbrs 1DL	CenIndex	ln(F7)	RollPeriod	RP span	# of filters	Geomean	% $Geom_{1DL}$/AL	Monthly DLT
2				BDL=1			days			for plotting	
3	1	1/30/90	17160		9.7503						
4	2	2/15/90	27720		10.2299						
5	3	2/20/90	42220		10.6506						
6	4	2/23/90	24470		10.1052						
7	5	2/26/90	14410		9.5757						
8	6	3/5/90	46787		10.7534						
9	7	4/6/90	18199		9.8091						
10	8	8/9/90	67710		11.1230						
11	9	8/27/90	20700		9.9379						
12	10	9/17/90	9058		9.1114						
13	11	10/8/90	11950		9.3885						
14	12	10/31/90	733200		13.5052						
15	13	11/23/90	33851		10.4297						
16	14	12/17/90	36724		10.5112	Data in this column:					
17	15	1/9/91	15932		9.6761	Must be <= 365					
18	16	1/25/91	8490		9.0466	-271	361	16	27591	690	
19	17	2/12/91	50116		10.8221	-270	363	16	29502	738	
20	18	2/28/91	6930		8.8436	-269	361	13	27654	691	
21	19	3/19/91	9740		9.1840	-268	348	13	24509	613	
22	20	4/6/91	1210		7.0984	-267	241	13	19896	497	
23	21	4/24/91	20178		9.9123	-266	259	14	19916	498	
24	22	5/12/91	22386		10.0162	-265	277	15	20072	502	
25	23	6/2/91	10069		9.2172	-264	298	16	19225	481	
26	24	7/8/91	2013		7.6074	-263	334	17	16835	421	
27	25	8/31/91	297960		12.6047	-262	349	16	18232	456	
28	26	9/23/91	3570		8.1803	-261	351	16	17201	430	
29	27	10/5/91	4858		8.4884	-260	363	17	15968	399	
30	28	10/21/91	7080		8.8650	-259	356	17	15484	387	
31	29	11/11/91	10352		9.2449	-258	354	17	12052	301	
32	30	11/29/91	880		6.7799	-257	348	17	9723	243	
33	31	1/4/92	3660		8.2052	-256	361	17	8490	212	
34	32	1/19/92	16924		9.7365	-255	360	17	8520	213	
35	33	2/5/92	2149		7.6728	-254	359	17	7859	196	
36	34	2/24/92	106		4.6634	-253	362	17	5470	137	
37	35	3/16/92	13329		9.4977	-252	364	17	5685	142	
38	36	3/31/92	300		5.7038	-251	361	17	4632	116	
39	37	4/18/92	1304		7.1732	-250	361	17	4653	116	
40	38	5/5/92	5700		8.6482	-249	360	17	4319	108	
41	39	6/28/92	3945		8.2802	-248	357	16	3676	92	
42	40	7/17/92	195		5.2730	-247	322	16	3177	79	
43	41	7/29/92	1051		6.9575	-246	334	17	2977	74	
44	42	8/4/92	4556		8.4242	-245	340	18	3048	76	
45	43	8/20/92	653		6.4816	-244	356	19	2810	70	
46	44	9/15/92	2007		7.6044	-243	359	19	2160	54	
47	45	10/14/92	4660		8.4468	-242	360	18	2096	52	
48	46	11/2/92	1979		7.5903	-241	358	18	1953	49	
49	47	11/24/92	6127		8.7205	-240	362	18	1896	47	
50	48	12/8/92	565		6.3368	-239	340	18	1850	46	
51	49	1/5/93	1180		7.0733	-238	353	18	1738	43	
52	50	1/25/93	1792		7.4911	-237	356	18	1534	38	
53	51	2/10/93	618		6.4265	-236	353	18	1431	36	
54	52	3/1/93	2693		7.8984	-235	351	18	1713	43	
55	53	3/19/93	9190		9.1259	-234	354	18	1678	42	
56	54	4/6/93	2150		7.6732	-233	354	18	1872	47	
57	55	4/23/93	4598		8.4334	-232	354	18	2008	50	

	M	N	O	P	Q	R	S	T	U	V	W
1	F7: ID	Date.coll	F7, fbrs 1DL	CenIndex	ln(F7)	RollPeriod	RP span	# of filters	Geomean	% $Geom_{1DL}$/AL	Monthly DLT
2				BDL=1			days			for plotting	
58	56	5/11/93	17600		9.7757	-231	318	18	2137	53	
59	57	7/29/93	1020		6.9276	-230	360	16	2385	60	
60	58	8/16/93	2617		7.8698	-229	362	16	2304	58	
61	59	9/3/93	10589		9.2676	-228	354	16	2742	69	
62	60	10/8/93	3906		8.2703	-227	360	16	2858	71	
63	61	11/1/93	17500		9.7700	-226	365	16	3105	78	
64	62	11/16/93	11298		9.3324	-225	358	16	3462	87	
65	63	12/20/93	1010		6.9177	-224	350	15	3464	87	
66	64	1/25/94	19045		9.8546	-223	350	14	4429	111	
67	65	2/11/94	7720		8.9516	-222	348	14	5304	133	
68	66	3/1/94	3183		8.0656	-221	348	14	5368	134	
69	67	3/23/94	9381		9.1464	-220	352	14	5376	134	
70	68	4/8/94	32100		10.3766	-219	351	14	6521	163	
71	69	4/26/94	610		6.4135	-218	351	14	5645	141	
72	70	5/13/94	7149		8.8747	-217	289	14	5293	132	
73	71	5/31/94	50300		10.8258	-216	307	15	6150	154	
74	72	6/17/94	25530		10.1476	-215	324	16	6723	168	
75	73	7/6/94	2973		7.9973	-214	343	17	6408	160	
76	74	7/26/94	20701		9.9379	-213	363	18	6839	171	
77	75	8/15/94	57457		10.9588	-212	365	18	8556	214	
78	76	9/16/94	12489		9.4326	-211	344	17	9262	232	
79	77	10/4/94	4123		8.3243	-210	362	18	8855	221	
80	78	10/31/94	19301		9.8679	-209	365	18	9677	242	
81	79	11/8/94	16683		9.7221	-208	358	18	9651	241	
82	80	11/29/94	80101		11.2910	-207	345	18	10761	269	
83	81	12/9/94	3170		8.0615	-206	355	19	10090	252	
84	82	12/27/94	30501		10.3255	-205	337	19	12073	302	
85	83	1/15/95	13100		9.4804	-204	356	20	12122	303	
86	84	2/21/95	4450		8.4007	-203	358	19	11499	287	
87	85	3/10/95	3030		8.0163	-202	353	19	11469	287	
88	86	3/30/95	2950		7.9896	-201	357	19	10792	270	
89	87	4/15/95	4680		8.4511	-200	355	19	9752	244	
90	88	5/2/95	35937		10.4895	-199	355	19	12085	302	
91	89	5/19/95	6765		8.8195	-198	354	19	12050	301	
92	90	6/9/95	30200		10.3156	-197	358	19	11731	293	
93	91	6/30/95	5345		8.5839	-196	360	19	10804	270	
94	92	7/14/95	23948		10.0836	-195	354	19	12058	301	
95	93	8/3/95	10911		9.2975	-194	354	19	11658	291	
96	94	8/21/95	6155		8.7250	-193	340	19	10365	259	
97	95	9/5/95	2810		7.9409	-192	355	20	9710	243	
98	96	9/22/95	8351		9.0301	-191	354	20	9517	238	
99	97	11/6/95	9855		9.1957	-190	364	19	9599	240	
100	98	11/11/95	669		6.5058	-189	348	19	8105	203	
101	99	11/17/95	3060		8.0262	-188	354	20	7719	193	
102	100	11/23/95	198		5.2883	-187	360	21	6484	162	
103	101	4/7/96	8650		9.0653	-186	359	15	5736	143	
104	102	4/24/96	10290		9.2389	-185	359	15	6045	151	
105	103	5/14/96	37538		10.5331	-184	362	15	6063	152	
106	104	5/31/96	82761		11.3237	-183	358	15	7165	179	
107	105	6/18/96	7648		8.9422	-182	355	15	6538	163	
108	106	7/7/96	15827		9.6695	-181	360	15	7029	176	
109	107	7/31/96	4451		8.4009	-180	364	15	6283	157	
110	108	8/29/96	14099		9.5539	-179	360	14	6408	160	
111	109	9/16/96	15401		9.6422	-178	361	14	7236	181	
112	110	10/4/96	3210		8.0740	-177	334	14	6758	169	

	M	N	O	P	Q	R	S	T	U	V	W
1	F7: ID	Date.coll	F7, fbrs 1DL	CenIndex	ln(F7)	RollPeriod	RP span	# of filters	Geomean	% Geom$_{1DL}$/AL	Monthly DLT
2				BDL=1			days			for plotting	
113	111	10/22/96	12799		9.4571	-176	352	15	7052	176	
114	112	11/5/96	1530		7.3330	-175	361	15	6229	156	
115	113	11/23/96	2142		7.6695	-174	231	13	9381	235	
116	114	12/11/96	9950		9.2053	-173	249	14	9420	236	
117	115	12/29/96	8088		8.9981	-172	267	15	9325	233	
118	116	1/16/97	7600		8.9359	-171	285	16	9207	230	
119	117	2/6/97	16900		9.7351	-170	306	17	9541	239	
120	118	2/21/97	9720		9.1819	-169	321	18	9551	239	
121	119	4/16/97	2950		7.9896	-168	358	18	8997	225	
122	120	5/4/97	7543		8.9284	-167	356	18	8843	221	
123	121	6/9/97	28271		10.2496	-166	357	17	7625	191	
124	122	6/27/97	19799		9.8934	-165	356	17	8064	202	
125	123	7/15/97	48045		10.7799	-164	350	17	8608	215	
126	124	8/8/97	8560		9.0549	-163	345	17	8946	224	
127	125	8/20/97	11300		9.3326	-162	357	18	9063	227	
128	126	9/7/97	5280		8.5717	-161	357	18	8581	215	
129	127	9/25/97	26556		10.1870	-160	357	18	8845	221	
130	128	10/13/97	4283		8.3624	-159	357	18	8988	225	
131	129	10/30/97	651		6.4785	-158	360	18	7617	190	
132	130	12/6/97	31000		10.3417	-157	361	17	9796	245	
133	131	12/24/97	14501		9.5820	-156	361	17	10016	250	
134	132	1/11/98	21600		9.9804	-155	361	17	10612	265	
135	133	1/29/98	1470		7.2930	-154	358	17	9634	241	
136	134	2/16/98	9073		9.1131	-153	361	17	9288	232	
137	135	3/6/98	7870		8.9708	-152	325	17	9173	229	
138	136	3/24/98	6670		8.8054	-151	343	18	9012	225	
139	137	4/11/98	11040		9.3093	-150	361	19	9109	228	
140	138	4/29/98	33501		10.4193	-149	361	19	10352	259	
141	139	5/17/98	10600		9.2686	-148	343	19	10539	263	
142	140	6/4/98	20429		9.9247	-147	361	20	10893	272	
143	141	6/22/98	6715		8.8121	-146	361	20	10138	253	
144	142	7/10/98	6190		8.7307	-145	361	20	9565	239	
145	143	7/28/98	13335		9.4981	-144	355	20	8972	224	
146	144	8/15/98	599		6.3953	-143	361	20	7854	196	
147	145	8/15/98	12662		9.4464	-142	361	21	8035	201	
148	146	9/2/98	3057		8.0252	-141	361	21	7550	189	
149	147	10/8/98	7627		8.9394	-140	361	20	7222	181	
150	148	10/8/98	40399		10.6066	-139	361	21	7839	196	
151	149	10/26/98	9070		9.1127	-138	362	21	8124	203	
152	150	11/13/98	4510		8.4141	-137	343	21	8908	223	
153	151	12/1/98	358		5.8805	-136	361	22	7697	192	
154	152	12/19/98	6300		8.7483	-135	361	22	7159	179	
155	153	1/24/99	2151		7.6737	-134	361	21	6203	155	
156	154	2/11/99	4770		8.4701	-133	361	21	6560	164	
157	155	3/1/99	217		5.3799	-132	361	21	5492	137	
158	156	3/19/99	3750		8.2295	-131	361	21	5301	133	
159	157	4/6/99	1720		7.4501	-130	361	21	4970	124	
160	158	4/24/99	6527		8.7837	-129	361	21	4847	121	
161	159	5/12/99	415		6.0283	-128	361	21	3933	98	
162	160	5/30/99	2320		7.7493	-127	361	21	3658	91	
163	161	6/17/99	14200		9.5610	-126	361	21	3595	90	
164	162	7/5/99	3720		8.2215	-125	361	21	3496	87	
165	163	7/23/99	3230		8.0802	-124	361	21	3389	85	
166	164	8/10/99	477		6.1675	-123	361	21	2892	72	
167	165	8/28/99	9539		9.1631	-122	361	20	3085	77	

	M	N	O	P	Q	R	S	T	U	V	W
1	F7: ID	Date.coll	F7, fbrs 1DL	CenIndex	ln(F7)	RollPeriod	RP span	# of filters	Geomean	% $Geom_{1DL}$/AL	Monthly DLT
2				BDL=1			days			for plotting	
168	166	9/15/99	3769		8.2346	-121	343	20	3117	78	
169	167	10/3/99	2190		7.6917	-120	361	20	2929	73	
170	168	10/21/99	222		5.4027	-119	361	20	2258	56	
171	169	11/8/99	2080		7.6401	-118	361	20	2097	52	
172	170	12/14/99	2339		7.7575	-117	361	19	2224	56	
173	171	1/1/00	6390		8.7625	-116	343	19	2225	56	
174	172	1/19/00	2869		7.9617	-115	361	20	2254	56	
175	173	2/6/00	1500		7.3132	-114	361	20	2214	55	
176	174	2/24/00	223		5.4072	-113	361	20	1899	47	
177	175	3/13/00	2570		7.8517	-112	361	20	2149	54	
178	176	3/31/00	1790		7.4900	-111	361	20	2071	52	
179	177	4/18/00	1550		7.3460	-110	361	20	2060	52	
180	178	5/6/00	11600		9.3588	-109	361	20	2121	53	
181	179	5/24/00	1370		7.2226	-108	361	20	2251	56	
182	180	6/29/00	3053		8.0239	-107	361	19	2073	52	
183	181	7/17/00	231		5.4424	-106	361	19	1791	45	
184	182	8/4/00	471		6.1549	-105	361	19	1618	40	
185	183	8/22/00	9869		9.1972	-104	361	19	1898	47	
186	184	9/9/00	934		6.8395	-103	361	19	1679	42	
187	185	9/27/00	86399		11.3667	-102	361	19	1980	50	
188	186	11/20/00	633		6.4505	-101	343	17	2088	52	
189	187	12/8/00	102		4.6250	-100	361	18	1765	44	
190	188	12/26/00	1240		7.1229	-99	361	18	1704	43	
191	189	1/13/01	538		6.2879	-98	361	18	1485	37	
192	190	2/18/01	520		6.2538	-97	361	17	1343	34	
193	191	3/8/01	536		6.2841	-96	361	17	1414	35	
194	192	4/13/01	1320		7.1854	-95	361	16	1336	33	
195	193	5/1/01	4560		8.4251	-94	361	16	1429	36	
196	194	5/19/01	693		6.5410	-93	361	16	1199	30	
197	195	6/6/01	3996		8.2930	-92	343	16	1282	32	
198	196	6/24/01	7061		8.8623	-91	361	17	1417	35	
199	197	7/30/01	1280		7.1546	-90	361	16	1503	38	
200	198	8/17/01	1510		7.3199	-89	361	16	1617	40	
201	199	9/4/01	3277		8.0947	-88	361	16	1509	38	
202	200	9/22/01	2251		7.7191	-87	361	16	1594	40	
203	201	10/10/01	1030		6.9373	-86	325	16	1209	30	
204	202	10/28/01	882		6.7822	-85	343	17	1186	30	
205	203	11/15/01	563		6.3333	-84	361	18	1138	28	
206	204	12/3/01	10500		9.2591	-83	361	18	1331	33	
207	205	12/21/01	5738		8.6549	-82	361	18	1664	42	
208	206	1/8/02	667		6.5028	-81	361	18	1608	40	
209	207	1/26/02	1269		7.1460	-80	343	18	1687	42	
210	208	2/13/02	2500		7.8240	-79	361	19	1722	43	
211	209	3/21/02	11611		9.3597	-78	343	18	2183	55	
212	210	4/8/02	3960		8.2840	-77	361	19	2253	56	
213	211	4/26/02	4414		8.3925	-76	361	19	2401	60	
214	212	6/1/02	2520		7.8320	-75	361	18	2489	62	
215	213	6/19/02	2330		7.7536	-74	361	18	2415	60	
216	214	7/7/02	232		5.4467	-73	343	18	1998	50	
217	215	7/25/02	238		5.4723	-72	361	19	1786	45	
218	216	8/30/02	4099		8.3185	-71	361	18	1923	48	
219	217	9/17/02	1871		7.5342	-70	361	18	1864	47	
220	218	10/5/02	1110		7.0121	-69	361	18	1793	45	
221	219	10/23/02	2387		7.7778	-68	361	18	1878	47	
222	220	11/10/02	1744		7.4639	-67	361	18	1951	49	

	M	N	O	P	Q	R	S	T	U	V	W
1	F7: ID	Date.coll	F7, fbrs 1DL	CenIndex	ln(F7)	RollPeriod	RP span	# of filters	Geomean	% Geom$_{1DL}$/AL	Monthly DLT
2				BDL=1			days			for plotting	
223	221	11/28/02	4320		8.3710	-66	361	18	2185	55	
224	222	12/16/02	54720		10.9100	-65	361	18	2394	60	
225	223	1/3/03	16491		9.7106	-64	361	18	2539	63	
226	224	1/21/03	7304		8.8962	-63	361	18	2900	73	
227	225	2/8/03	820		6.7093	-62	361	18	2831	71	
228	226	2/26/03	7980		8.9847	-61	343	18	3019	75	
229	227	3/16/03	8862		9.0895	-60	361	19	3195	80	
230	228	4/4/03	13452		9.5069	-59	362	19	3220	81	
231	229	4/21/03	11130		9.3174	-58	361	19	3400	85	
232	230	5/9/03	1135		7.0344	-57	343	19	3165	79	
233	231	5/27/03	4995		8.5162	-56	361	20	3239	81	
234	232	7/2/03	1190		7.0817	-55	361	19	3168	79	
235	233	7/20/03	9500		9.1590	-54	361	19	3851	96	
236	234	8/7/03	5000		8.5172	-53	343	19	4520	113	
237	235	8/25/03	8799		9.0824	-52	361	20	4673	117	
238	236	9/12/03	464		6.1399	-51	361	20	4191	105	
239	237	9/30/03	442		6.0913	-50	361	20	3899	97	
240	238	10/18/03	2392		7.7799	-49	361	20	4052	101	
241	239	11/5/03	842		6.7358	-48	361	20	3846	96	
242	240	11/23/03	6447		8.7714	-47	361	20	4106	103	
243	241	12/11/03	4979		8.5130	-46	361	20	4135	103	
244	242	12/29/03	6444		8.7709	-45	361	20	3716	93	
245	243	1/16/04	2958		7.9923	-44	361	20	3410	85	
246	244	3/10/04	17259		9.7561	-43	361	18	3693	92	
247	245	3/31/04	10253		9.2353	-42	363	18	3723	93	
248	246	4/21/04	4037		8.3033	-41	349	17	3252	81	
249	247	5/12/04	5785		8.6630	-40	352	17	3579	89	
250	248	6/2/04	18240		9.8114	-39	337	17	3862	97	
251	249	6/23/04	5730		8.6535	-38	358	18	3948	99	
252	250	7/14/04	10950		9.3011	-37	361	18	4466	112	
253	251	8/4/04	1243		7.1253	-36	364	18	3989	100	
254	252	8/25/04	1794		7.4922	-35	349	17	3585	90	
255	253	10/27/04	5306		8.5766	-34	358	15	4981	125	
256	254	12/29/04	6565		8.7895	-33	349	12	5663	142	
257	255	1/19/05	14780		9.6010	-32	316	12	6475	162	
258	256	3/23/05	8192		9.0109	-31	358	12	6085	152	
259	257	5/5/05	24127		10.0911	-30	359	11	6827	171	
260	258	6/15/05	8809		9.0835	-29	358	10	6454	161	
261	259	7/6/05	92697		11.4371	-28	358	10	8526	213	
262	260	8/17/05	3667		8.2071	-27	358	9	9351	234	
263	261	9/7/05	13429		9.5052	-26	316	9	11695	292	
264	262	9/28/05	360		5.8861	-25	337	10	8257	206	
265	263	10/19/05	4887		8.4943	-24	358	11	7873	197	
266	264	11/9/05	1898		7.5486	-23	316	11	7170	179	
267	265	11/30/05	9325		9.1405	-22	337	12	7329	183	
268	266	12/21/05	499		6.2126	-21	358	13	5960	149	
269	267	1/11/06	704		6.5568	-20	358	13	5020	125	429748
270	268	2/1/06	4437		8.3977	-19	316	13	4576	114	383072
271	269	2/22/06	946		6.8522	-18	337	14	4089	102	383072
272	270	3/15/06	1529	0	7.3324	-17	358	15	3829	96	421815
273	271	4/5/06	14018	0	9.5481	-16	336	15	3969	99	404669
274	272	4/26/06	15324	0	9.6372	-15	357	16	4318	108	404669
275	273	5/17/06	2722	0	7.9091	-14	337	16	3768	94	426093
276	274	6/5/06	2431	0	7.7961	-13	356	17	3672	92	368602
277	275	6/10/06	4771	0	8.4703	-12	361	18	3726	93	368602

	M	N	O	P	Q	R	S	T	U	V	W
1	F7: ID	Date.coll	F7, fbrs 1DL	CenIndex	ln(F7)	RollPeriod	RP span	# of filters	Geomean	% $Geom_{1DL}$/AL	Monthly DLT
2				BDL=1			days			for plotting	
278	276	6/28/06	905	0	6.8079	-11	358	18	3283	82	368602
279	277	7/19/06	2648	0	7.8816	-10	337	18	2695	67	436135
280	278	8/9/06	2629	0	7.8744	-9	358	19	2691	67	421838
281	279	8/30/06	15817	0	9.6688	-8	358	19	2907	73	421838
282	280	9/20/06	1797	0	7.4939	-7	358	19	2615	65	413509
283	281	10/11/06	3212	0	8.0746	-6	358	19	2934	73	424035
284	282	11/1/06	28497	0	10.2576	-5	358	19	3219	80	424550
285	283	11/22/06	3482	0	8.1554	-4	358	19	3324	83	424550
286	284	12/13/06	2095	0	7.6473	-3	358	19	3072	77	416460
287	285	1/3/07	939	0	6.8448	-2	358	19	3176	79	439661
288	286	1/24/07	1556	0	7.3499	-1	358	19	3312	83	439661
289	287	2/14/07	4180	0	8.3381	0	358	19	3301	83	391842
290	288	3/7/07	435	0	6.0753	1	358	19	3169	79	431584
291	289	3/28/07	349	0	5.8551	2	358	19	2932	73	431584
292	290	4/18/07	2801	0	7.9377	3	358	19	2694	67	415112
293	291	4/30/07	3984	0	8.2900	4	349	19	2509	63	415112
294	292	5/12/07	3298	0	8.1011	5	361	20	2544	64	438509
295	293	5/24/07	392	0	5.9713	6	354	20	2309	58	438509
296	294	6/11/07	3114	0	8.0437	7	349	19	2252	56	338910
297	295	6/17/07	3888	0	8.2657	8	355	20	2314	58	338910
298	296	6/29/07	1070	0	6.9754	9	346	20	2333	58	338910
299	297	7/11/07	337	0	5.8201	10	358	21	2128	53	436067
300	298	7/23/07	2722	0	7.9091	11	349	21	2131	53	436067
301	299	8/4/07	6092	0	8.7147	12	361	22	2235	56	431751
302	300	8/16/07	44276	0	10.6982	13	352	22	2541	64	431751
303	301	8/28/07	2483	0	7.8172	14	364	23	2539	63	431751
304	302	9/9/07	349	0	5.8551	15	355	23	2151	54	417970
305	303	9/21/07	8827	0	9.0856	16	346	23	2305	58	417970
306	304	10/3/07	355	1	5.8721	17	358	24	2132	53	427584
307	305	10/15/07	783	0	6.6631	18	349	24	2010	50	427584
308	306	10/27/07	700	0	6.5511	19	361	25	1927	48	427584
309	307	11/8/07	4138	0	8.3280	20	352	25	1784	45	385771
310	308	11/20/07	321	0	5.7714	21	364	26	1670	42	385771
311	309	12/2/07	669	0	6.5058	22	355	26	1567	39	420347
312	310	12/14/07	875	0	6.7742	23	346	26	1516	38	420347
313	311	12/26/07	2064	0	7.6324	24	358	27	1533	38	420347
314	312	1/7/08	326	1	5.7869	25	349	27	1474	37	422027
315	313	1/19/08	905	0	6.8079	26	361	28	1449	36	422027
316	314	1/31/08	2034	0	7.6178	27	352	28	1463	37	422027
317	315	2/12/08	700	0	6.5511	28	364	29	1426	36	408498
318	316	3/1/08	2743	0	7.9168	29	361	29	1405	35	447784
319	317	3/7/08	2094	0	7.6468	30	346	29	1484	37	447784
320	318	3/19/08	1783	0	7.4861	31	358	30	1493	37	447784
321	319	3/31/08	362	0	5.8916	32	349	30	1495	37	447784
322	320	4/12/08	1432	0	7.2668	33	361	31	1493	37	453277
323	321	4/24/08	387	0	5.9584	34	361	31	1400	35	453277
324	322	5/6/08	538	1	6.2879	35	361	31	1313	33	508421
325	323	5/18/08	1750	0	7.4674	36	361	31	1286	32	508421
326	324	5/30/08	5074	0	8.5319	37	355	31	1397	35	508421
327	325	6/11/08	4295	0	8.3652	38	361	31	1411	35	473731
328	326	6/23/08	7074	0	8.8642	39	361	31	1439	36	473731
329	327	7/5/08	9790	0	9.1891	40	361	31	1545	39	493509
330	328	7/17/08	2448	0	7.8030	41	361	31	1647	41	493509
331	329	7/29/08	14716	0	9.5967	42	361	31	1740	43	493509
332	330	8/10/08	1749	0	7.4668	43	361	31	1671	42	506336

	M	N	O	P	Q	R	S	T	U	V	W
1	F7: ID	Date.coll	F7, fbrs 1DL	CenIndex	ln(F7)	RollPeriod	RP span	# of filters	Geomean	% $Geom_{1DL}$/AL	Monthly DLT
2				BDL=1			days			for plotting	
333	331	8/22/08	13223	0	9.4897	44	361	31	1607	40	506336
334	332	9/3/08	7217	0	8.8842	45	361	31	1663	42	484473
335	333	9/15/08	2309	0	7.7446	46	361	31	1768	44	484473
336	334	9/27/08	707	0	6.5610	47	361	31	1630	41	484473
337	335	10/9/08	350	1	5.8579	48	361	31	1629	41	369393
338	336	10/21/08	1960	0	7.5807	49	361	31	1678	42	369393
339	337	11/2/08	2062	0	7.6314	50	361	31	1737	43	389668
340	338	11/14/08	335	0	5.8141	51	361	31	1602	40	389668
341	339	11/26/08	582	1	6.3665	52	361	31	1633	41	389668
342	340	12/8/08	646	0	6.4708	53	361	31	1631	41	342187
343	341	12/20/08	2549	0	7.8435	54	361	31	1688	42	342187
344	342	1/1/09	5114	0	8.5397	55	361	31	1739	43	366059
345	343	1/13/09	420	1	6.0403	56	361	31	1753	44	366059
346	344	1/25/09	292	1	5.6768	57	361	31	1690	42	366059
347	345	2/6/09	298	0	5.6971	58	361	31	1589	40	337677
348	346	2/18/09	2223	0	7.7066	59	355	31	1649	41	337677
349	347	3/2/09	1117	0	7.0184	60	361	31	1602	40	325620
350	348	3/14/09	3014	0	8.0110	61	361	31	1621	41	325620
351	349	3/26/09	989	0	6.8967	62	361	31	1590	40	325620
352	350	4/7/09	284	0	5.6490	63	361	31	1578	39	0
353	351	4/19/09	309	1	5.7333	64	361	31	1502	38	0
354	352	5/1/09	332	1	5.8051	65	361	31	1494	37	0
355	353	5/13/09	299	1	5.7004	66	361	31	1466	37	0
356	354	5/25/09	949	0	6.8554	67	361	31	1438	36	0
357	355	6/6/09	450	1	6.1092	68	361	31	1329	33	0
358	356	6/18/09	677	0	6.5177	69	361	31	1253	31	0
359	357	6/30/09	313	1	5.7462	70	361	31	1133	28	0
360	358	7/12/09	264	1	5.5759	71	361	31	1008	25	261904
361	359	7/24/09	1202	0	7.0917	72	361	31	985	25	261904
362	360	8/5/09	168	1	5.1240	73	361	31	853	21	365967
363	361	8/17/09	1636	0	7.4000	74	361	31	851	21	365967
364	362	8/29/09	474	0	6.1612	75	361	31	764	19	365967
365	363	9/10/09	7359	0	8.9037	76	361	31	765	19	374973
366	364	9/22/09	1274	0	7.1499	77	361	31	750	19	374973
367	365	10/4/09	270	0	5.5984	78	361	31	727	18	428727
368	366	10/16/09	795	0	6.6783	79	361	31	747	19	428727
369	367	10/28/09	1029	0	6.9363	80	361	31	732	18	428727
370	368	11/9/09	4426	0	8.3953	81	361	31	750	19	381292
371	369	11/21/09	3711	0	8.2191	82	361	31	810	20	381292
372	370	12/3/09	3216	0	8.0759	83	361	31	856	21	239070
373	371	12/15/09	3200	0	8.0709	84	361	31	902	23	239070
374	372	12/27/09	370	1	5.9135	85	361	31	847	21	239070
375	373	1/8/10	561	0	6.3297	86	361	31	789	20	380065
376	374	1/23/10	6265	0	8.7427	87	364	31	861	22	380065
377	375	2/1/10	1668	0	7.4194	88	361	31	910	23	321471
378	376	2/13/10	1156	0	7.0527	89	361	31	951	24	321471
379	377	2/25/10	2790	0	7.9338	90	361	31	958	24	321471
380	378	3/9/10	2281	0	7.7324	91	361	31	980	25	445522
381	379	3/21/10	2728	0	7.9113	92	361	31	977	24	445522
382	380	4/2/10	1142	0	7.0405	93	361	31	982	25	422384
383	381	4/14/10	597	0	6.3919	94	361	31	1006	25	422384
384	382	4/26/10	7427	0	8.9129	95	361	31	1114	28	422384
385	383	5/8/10	1114	0	7.0157	96	361	31	1159	29	430551
386	384	5/20/10	4094	0	8.3173	97	361	31	1261	32	430551
387	385	6/1/10	6074	0	8.7118	98	361	31	1339	33	5144

	M	N	O	P	Q	R	S	T	U	V	W
1	F7: ID	Date.coll	F7, fbrs 1DL	CenIndex	ln(F7)	RollPeriod	RP span	# of filters	Geomean	% $Geom_{1DL}$/AL	Monthly DLT
2				BDL=1			days			for plotting	
388	386	6/13/10	1403	0	7.2464	99	361	31	1389	35	5144
389	387	6/29/10	545	1	6.3008	100	365	31	1379	34	5144
390	388	7/7/10	2163	0	7.6793	101	361	31	1468	37	404750
391	389	7/19/10	2864	0	7.9600	102	361	31	1585	40	404750
392	390	7/31/10	1451	0	7.2800	103	361	31	1595	40	404750
393	391	8/12/10	512	0	6.2383	104	361	31	1653	41	448909
394	392	8/24/10	1290	0	7.1624	105	361	31	1640	41	448909
395	393	9/5/10	1502	0	7.3146	106	361	31	1702	43	426657
396	394	9/17/10	623	0	6.4345	107	361	31	1572	39	426657
397	395	9/29/10	311	0	5.7398	108	361	31	1502	38	426657
398	396	10/11/10	1378	0	7.2284	109	361	31	1583	40	335712
399	397	10/23/10	299	0	5.7004	110	361	31	1534	38	335712
400	398	11/4/10	1296	0	7.1670	111	361	31	1546	39	492985
401	399	11/16/10	4790	0	8.4743	112	361	31	1550	39	492985
402	400	11/28/10	1769	0	7.4782	113	361	31	1513	38	492985
403	401	12/10/10	268	0	5.5910	114	361	31	1396	35	485646
404	402	12/22/10	813	0	6.7007	115	361	31	1336	33	485646
405	403	1/3/11	954	0	6.8607	116	361	31	1378	34	515773
406	404	1/15/11	786	0	6.6670	117	358	31	1393	35	515773
407	405	1/27/11	1614	0	7.3865	118	361	31	1333	33	515773
408	406	2/8/11	1231	0	7.1156	119	361	31	1320	33	367659
409	407	2/20/11	6603	0	8.7953	120	361	31	1396	35	367659
410	408	3/4/11	399	1	5.9890	121	361	31	1311	33	495820
411	409	3/16/11	1651	0	7.4091	122	361	31	1298	32	495820
412	410	3/28/11	4494	0	8.4105	123	361	31	1319	33	495820
413	411	4/9/11	2245	0	7.7165	124	361	31	1348	34	505962
414	412	4/21/11	2554	0	7.8454	125	361	31	1413	35	505962
415	413	5/3/11	12737	0	9.4523	126	361	31	1437	36	512451
416	414	5/15/11	2144	0	7.6704	127	361	31	1468	37	512451
417	415	5/27/11	2691	0	7.8977	128	361	31	1448	36	512451
418	416	6/8/11	1333	0	7.1952	129	361	31	1379	34	489634
419	417	6/20/11	333	0	5.8081	130	357	31	1317	33	489634
420	418	7/2/11	2075	0	7.6377	131	361	31	1375	34	498785
421	419	7/14/11	9262	0	9.1337	132	361	31	1441	36	498785
422	420	7/26/11	2218	0	7.7044	133	361	31	1429	36	498785
423	421	8/7/11	1387	0	7.2349	134	361	31	1427	36	467265
424	422	8/19/11	2470	0	7.8120	135	361	31	1501	38	467265
425	423	8/31/11	2746	0	7.9179	136	361	31	1538	38	467265
426	424	9/12/11	2319	0	7.7489	137	361	31	1560	39	298688
427	425	9/24/11	1262	0	7.1405	138	361	31	1596	40	298688
428	426	10/6/11	2356	0	7.7647	139	361	31	1704	43	493611
429	427	10/18/11	1020	0	6.9276	140	361	31	1687	42	493611
430	428	10/30/11	1371	0	7.2233	141	361	31	1772	44	493611
431	429	11/11/11	3413	0	8.1353	142	361	31	1828	46	471241
432	430	11/23/11	639	0	6.4599	143	361	31	1713	43	471241
433	431	12/5/11	7334	0	8.9003	144	361	31	1794	45	474832
434	432	12/17/11	1240	0	7.1229	145	361	31	1884	47	474832
435	433	1/10/12	1105	0	7.0076	146	361	30	1948	49	331564
436	434	1/22/12	2890	0	7.9690	147	361	30	2034	51	331564
437	435	2/3/12	366	0	5.9026	148	361	30	1936	48	399575
438	436	2/15/12	1908	0	7.5538	149	361	30	1964	49	399575
439	437	2/27/12	3480	0	8.1548	150	361	30	1923	48	399575
440	438	3/10/12	5590	0	8.6287	151	361	30	2100	52	477902
441	439	3/22/12	1234	0	7.1180	152	361	30	2079	52	477902
442	440	4/3/12	1097	0	7.0003	153	361	30	1984	50	473115

	M	N	O	P	Q	R	S	T	U	V	W
1	F7: ID	Date.coll	F7, fbrs 1DL	CenIndex	ln(F7)	RollPeriod	RP span	# of filters	Geomean	% $Geom_{1DL}$/AL	Monthly DLT
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443	441	4/15/12	600	0	6.3969	154	361	30	1899	47	473115
444	442	4/27/12	966	0	6.8732	155	361	30	1838	46	473115
445	443	5/9/12	3847	0	8.2550	156	361	30	1766	44	485250
446	444	5/21/12	734	0	6.5985	157	361	30	1704	43	485250
447	445	6/2/12	1928	0	7.5642	158	361	30	1685	42	253595
448	446	6/14/12	2202	0	7.6971	159	361	30	1714	43	253595
449	447	7/8/12	3962	0	8.2845	160	361	29	1854	46	424148
450	448	7/20/12	4353	0	8.3786	161	361	29	1807	45	424148
451	449	8/1/12	712	0	6.5681	162	361	29	1737	43	490778
452	450	8/13/12	1781	0	7.4849	163	361	29	1752	44	490778
453	451	8/25/12	1392	0	7.2385	164	361	29	1718	43	490778
454	452	9/6/12	1020	0	6.9276	165	361	29	1660	42	483388
455	453	9/18/12	1756	0	7.4708	166	361	29	1644	41	483388
456	454	9/30/12	1341	0	7.2012	167	361	29	1648	41	483388
457	455	10/12/12	2591	0	7.8598	168	361	29	1653	41	441144
458	456	10/24/12	372	1	5.9189	169	361	29	1597	40	441144
459	457	11/5/12	3754	0	8.2306	170	361	29	1653	41	457894
460	458	11/17/12	1496	0	7.3106	171	361	29	1607	40	457894
461	459	11/29/12	3415	0	8.1359	172	361	29	1702	43	457894
462	460	12/11/12	2719	0	7.9080	173	361	29	1645	41	422632
463	461	12/23/12	733	0	6.5971	174	349	29	1616	40	422632
464	462	1/4/13	1369	0	7.2218	175	361	30	1607	40	356008
465	463	1/16/13	4887	0	8.4943	176	361	30	1688	42	356008
466	464	1/28/13	553	0	6.3154	177	361	30	1598	40	356008
467	465	2/9/13	2810	0	7.9409	178	361	30	1710	43	280839
468	466	2/21/13	733	1	6.5971	179	361	30	1656	41	280839
469	467	3/5/13	1154	0	7.0510	180	361	30	1597	40	359070
470	468	3/17/13	1994	0	7.5979	181	361	30	1543	39	359070
471	469	3/29/13	4138	0	8.3280	182	361	30	1606	40	359070
472	470	4/10/13	4412	0	8.3921	183	361	30	1682	42	307074
473	471	5/4/13	9375	0	9.1458	184	361	29	1885	47	348854
474	472	5/16/13	1418	0	7.2570	185	361	29	1822	46	348854
475	473	5/28/13	2794	0	7.9352	186	361	29	1908	48	348854
476	474	6/9/13	13673	0	9.5232	187	361	29	2041	51	172572
477	475	6/21/13	2126	0	7.6620	188	349	29	2038	51	172572
478	476	7/3/13	8935	0	9.0977	189	361	30	2141	54	345625
479	477	7/15/13	2716	0	7.9069	190	361	30	2114	53	345625
480	478	7/27/13	4173	0	8.3364	191	361	30	2112	53	345625
481	479	8/8/13	2552	0	7.8446	192	361	30	2203	55	291959
482	480	8/20/13	3079	0	8.0324	193	361	30	2244	56	291959
483	481	9/1/13	2402	0	7.7841	194	361	30	2285	57	330385
484	482	9/13/13	1152	0	7.0493	195	361	30	2294	57	330385
485	483	9/25/13	2112	0	7.6554	196	361	30	2308	58	330385
486	484	10/7/13	333	0	5.8081	197	361	30	2204	55	345098
487	485	10/19/13	304	1	5.7170	198	361	30	2052	51	345098
488	486	10/31/13	374	0	5.9243	199	361	30	2052	51	345098
489	487	11/12/13	6726	0	8.8137	200	361	30	2092	52	325060
490	488	11/24/13	9667	0	9.1765	201	361	30	2227	56	325060
491	489	12/6/13	1009	0	6.9167	202	361	30	2138	53	314059
492	490	12/18/13	1370	0	7.2226	203	361	30	2090	52	314059
493	491	12/30/13	704	0	6.5568	204	361	30	2087	52	314059
494	492	1/11/14	1128	0	7.0282	205	361	30	2074	52	338548
495	493	1/23/14	3863	0	8.2592	206	361	30	2057	51	338548
496	494	2/4/14	6590	0	8.7933	207	361	30	2235	56	288190
497	495	2/16/14	2826	0	7.9466	208	361	30	2235	56	288190

	M	N	O	P	Q	R	S	T	U	V	W
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498	496	2/28/14	4151	0	8.3311	209	361	30	2368	59	288190
499	497	3/12/14	5756	0	8.6580	210	361	30	2498	62	403763
500	498	3/24/14	5151	0	8.5469	211	361	30	2579	64	403763
501	499	4/17/14	183	0	5.2095	212	349	29	2273	57	455386
502	500	4/29/14	310	1	5.7366	213	361	30	2127	53	455386
503	501	5/11/14	1032	0	6.9393	214	361	30	1976	49	390348
504	502	5/23/14	5536	0	8.6190	215	361	30	2068	52	390348
505	503	6/4/14	8784	0	9.0807	216	361	30	2149	54	381716
506	504	6/16/14	2888	0	7.9683	217	361	30	2040	51	381716
507	505	6/28/14	1632	0	7.3976	218	361	30	2022	51	381716
508	506	7/10/14	577	0	6.3578	219	361	30	1846	46	492789
509	507	7/22/14	3927	0	8.2756	220	361	30	1868	47	492789
510	508	8/3/14	6949	0	8.8464	221	361	30	1900	48	475018
511	509	8/15/14	2056	0	7.6285	222	361	30	1887	47	475018
512	510	8/27/14	5012	0	8.5196	223	361	30	1918	48	475018
513	511	9/8/14	4383	0	8.3855	224	361	30	1957	49	477954
514	512	9/20/14	1119	0	7.0202	225	361	30	1955	49	477954
515	513	10/2/14	1622	0	7.3914	226	361	30	1938	48	466748
516	514	10/14/14	3362	0	8.1203	227	361	30	2093	52	466748
517	515	10/26/14	1827	0	7.5104	228	361	30	2222	56	466748
518	516	11/7/14	510	0	6.2344	229	361	30	2245	56	466344
519	517	11/19/14	2680	0	7.8936	230	361	30	2177	54	466344
520	518	12/1/14	6960	0	8.8479	231	361	30	2153	54	486473
521	519	12/13/14	591	0	6.3818	232	361	30	2115	53	486473
522	520	12/25/14	526	1	6.2653	233	361	30	2049	51	486473
523	521	1/6/15	7420	0	8.9119	234	361	30	2216	55	416346
524	522	1/18/15	2924	0	7.9807	235	361	30	2288	57	416346
525	523	1/30/15	1071	0	6.9763	236	361	30	2192	55	416346
526	524	2/11/15	846	0	6.7405	237	361	30	2047	51	375198
527	525	2/23/15	579	0	6.3613	238	361	30	1942	49	375198
528	526	3/13/15	944	0	6.8501	239	355	29	1777	44	389616
529	527	3/19/15	1949	0	7.5751	240	361	30	1782	45	389616
530	528	3/31/15	448	0	6.1048	241	349	30	1643	41	389616
531	529	4/12/15	7890	0	8.9734	242	361	31	1728	43	410211
532	530	4/24/15	3772	0	8.2354	243	361	31	1906	48	410211
533	531	5/6/15	962	0	6.8690	244	361	31	1977	49	378111
534	532	5/18/15	1567	0	7.3569	245	361	31	2003	50	378111
535	533	5/30/15	10983	0	9.3041	246	361	31	2048	51	378111
536	534	6/11/15	1987	0	7.5944	247	361	31	1952	49	386547
537	535	6/23/15	4423	0	8.3946	248	361	31	1979	49	386547
538	536	7/5/15	4347	0	8.3772	249	361	31	2043	51	430816
539	537	7/17/15	3200	0	8.0709	250	361	31	2159	54	430816
540	538	7/29/15	4480	0	8.4074	251	361	31	2168	54	430816
541	539	8/10/15	1874	0	7.5358	252	361	31	2078	52	247493
542	540	8/22/15	479	0	6.1717	253	361	31	1983	50	247493
543	541	9/3/15	1144	0	7.0423	254	361	31	1891	47	380247
544	542	9/15/15	1920	0	7.5601	255	361	31	1841	46	380247
545	543	9/27/15	2472	0	7.8128	256	361	31	1889	47	380247
546	544	10/9/15	719	0	6.5779	257	361	31	1840	46	443723
547	545	10/21/15	669	0	6.5058	258	361	31	1746	44	443723
548	546	11/2/15	1134	0	7.0335	259	361	31	1720	43	310065
549	547	11/14/15	2106	0	7.6525	260	361	31	1800	45	310065
550	548	11/26/15	1522	0	7.3278	261	361	31	1768	44	310065
551	549	12/8/15	1144	0	7.0423	262	361	31	1668	42	0
552	550	12/20/15	686	1	6.5309	263	361	31	1676	42	0

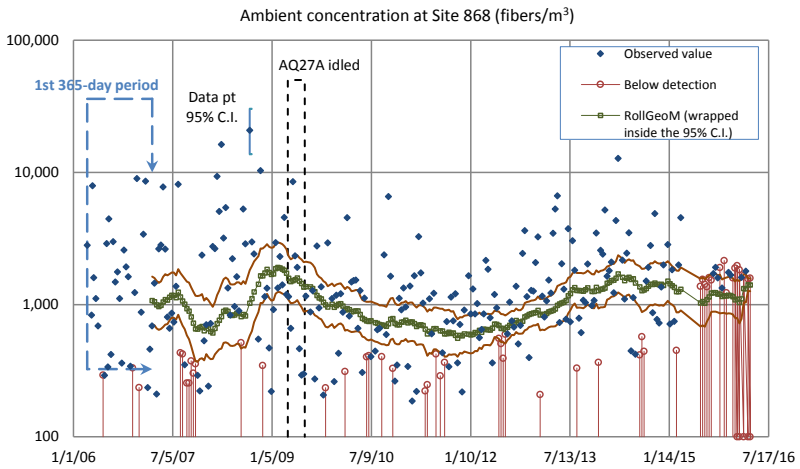
	M	N	O	P	Q	R	S	T	U	V	W
1	F7: ID	Date.coll	F7, fbrs 1DL	CenIndex	ln(F7)	RollPeriod	RP span	# of filters	Geomean	% $Geom_{1DL}$/AL	Monthly DLT
2				BDL=1			days			for plotting	
553	551	1/1/16	1014	0	6.9217	264	361	31	1712	43	0
554	552	1/13/16	725	1	6.5862	265	361	31	1588	40	0
555	553	1/25/16	2633	0	7.8759	266	361	31	1582	40	0
556	554	2/6/16	590	1	6.3801	267	361	31	1552	39	0
557	555	2/18/16	590	1	6.3801	268	361	31	1534	38	0
558	556	3/1/16	2491	0	7.8204	269	355	31	1608	40	0
559	557	3/25/16	905	0	6.8079	270	361	30	1596	40	0
560	558	4/6/16	604	1	6.4036	271	361	30	1612	40	0
561	559	4/30/16	2585	0	7.8575	272	361	29	1506	38	0
562	560	5/12/16	845	0	6.7393	273	361	29	1499	37	251263
563	561	5/24/16	1074	0	6.9791	274	361	29	1480	37	251263
564	562	6/5/16	556	1	6.3208	275	361	29	1335	33	445630
565	563	6/17/16	10910	0	9.2974	276	361	29	1416	35	445630
566	564	6/29/16	1769	0	7.4782	277	361	29	1372	34	445630
567	565	7/11/16	599	0	6.3953	278	361	29	1281	32	396918
568	566	7/23/16	813	0	6.7007	279	361	29	1222	31	396918
569	567	8/4/16	1565	0	7.3556	280	361	29	1179	29	387802
570	568	8/16/16	2402	0	7.7841	281	361	29	1189	30	387802
571	569	8/28/16	5533	0	8.6185	282	361	29	1294	32	387802
572	570	9/9/16	522	0	6.2577	283	361	29	1259	31	304647
573	571	9/21/16	2609	0	7.8667	284	361	29	1272	32	304647
574	572	10/3/16	1705	0	7.4413	285	361	29	1256	31	470122
575	573	10/15/16	2028	0	7.6148	286	361	29	1302	33	470122
576	574	10/27/16	2334	0	7.7553	287	361	29	1359	34	470122
577	575	11/8/16	2498	0	7.8232	288	361	29	1397	35	463697
578	576	11/20/16	7272	0	8.8918	289	361	29	1458	36	463697
579	577	12/2/16	6139	0	8.7224	290	361	29	1530	38	433732
580	578	12/14/16	6180	0	8.7291	291	361	29	1621	41	433732
581	579	12/26/16	9508	0	9.1599	292	361	29	1775	44	433732
582	580	1/7/17	7075	0	8.8643	293	361	29	1898	47	414859
583	581	1/19/17	942	0	6.8480	294	361	29	1915	48	414859
584	582	1/31/17	611	1	6.4151	295	361	29	1821	46	414859
585	583	2/12/17	1069	0	6.9745	296	361	29	1859	46	437442
586	584	2/24/17	1175	0	7.0690	297	361	29	1903	48	437442
587	585	3/8/17	13290	0	9.4948	298	349	29	2017	50	458980
588	586	3/20/17	2223	0	7.7066	299	361	30	2023	51	458980
589	587	4/1/17	1836	0	7.5153	300	361	30	2071	52	459991
590	588	4/13/17	9098	0	9.1158	301	349	30	2267	57	459991
591	589	4/25/17	574	1	6.3526	302	361	31	2169	54	459991
592	590	5/7/17	2256	0	7.7213	303	361	31	2160	54	292735
593	591	5/19/17	2358	0	7.7656	304	361	31	2232	56	292735
594	592	5/31/17	10754	0	9.2830	305	361	31	2405	60	292735
595	593	6/12/17	2579	0	7.8552	306	361	31	2527	63	415929
596	594	6/24/17	3236	0	8.0821	307	361	31	2429	61	415929
597	595	7/6/17	2921	0	7.9797	308	361	31	2469	62	393242
598	596	7/18/17	1129	0	7.0291	309	361	31	2520	63	393242
599	597	7/30/17	15749	0	9.6645	310	361	31	2773	69	393242
600	598	8/11/17	4730	0	8.4617	311	361	31	2874	72	409120
601	599	9/4/17	1261	0	7.1397	312	361	30	2752	69	406644
602	600	9/16/17	1687	0	7.4307	313	361	30	2862	72	406644
603	601	9/28/17	2471	0	7.8124	314	361	30	2856	71	406644
604	602	10/10/17	4137	0	8.3277	315	361	30	2942	74	470420
605	603	10/22/17	6845	0	8.8313	316	361	30	3064	77	470420
606	604	1/2/2018	1690	0	7.4325	317	361	25	2662	67	463689
607	605	1/14/18	1887	0	7.5427	318	361	25	2525	63	463689

	M	N	O	P	Q	R	S	T	U	V	W
1	F7: ID	Date.coll	F7, fbrs 1DL	CenIndex	ln(F7)	RollPeriod	RP span	# of filters	Geomean	% $Geom_{1DL}$/AL	Monthly DLT
2				BDL=1			days			for plotting	
608	606	1/26/18	4971	0	8.5114	319	361	25	2699	67	463689
609	607	2/7/18	2817	0	7.9434	320	361	25	2869	72	404249
610	608	2/19/18	1273	0	7.1491	321	361	25	2889	72	404249
611	609	3/3/18	648	0	6.4739	322	361	25	2821	71	462201
612	610	3/15/18	2196	0	7.6944	323	361	25	2625	66	462201
613	611	3/27/18	1409	0	7.2506	324	361	25	2578	64	462201
614	612	4/8/18	3347	0	8.1158	325	361	25	2640	66	471256
615	613	4/20/18	1049	1	6.9556	326	361	25	2422	61	471256
616	614	5/2/18	6051	0	8.7080	327	361	25	2661	67	467156
617	615	5/14/18	2195	0	7.6939	328	361	25	2658	66	467156
618	616	5/26/18	4965	0	8.5102	329	361	25	2738	68	467156
619	617	6/7/18	3067	0	8.0285	330	361	25	2604	65	583060
620	618	6/19/18	8534	0	9.0518	331	361	25	2732	68	583060
621	619	7/1/18	3233	0	8.0812	332	361	25	2732	68	458781
622	620	7/13/18	4424	0	8.3948	333	361	25	2778	69	458781
623	621	7/25/18	2822	0	7.9452	334	361	25	2881	72	458781
624	622	8/6/18	12908	0	9.4656	335	361	25	2859	71	419352
625	623	8/18/18	3540	0	8.1719	336	349	25	2826	71	419352
626	624	9/11/18	8317	0	9.0261	337	361	25	3047	76	307674
627	625	9/23/18	2535	0	7.8379	338	361	25	3097	77	307674
628	626	10/5/18	1519	0	7.3258	339	361	25	3037	76	514684
629	627	10/17/18	2353	0	7.7634	340	361	25	2970	74	514684
630	628	10/29/18	1504	0	7.3159	341	301	25	2795	70	514684
631	629	11/10/18	497	0	6.2086	342	313	26	2615	65	440387
632	630	11/22/18	5372	0	8.5890	343	325	27	2686	67	440387
633	631	12/4/18	3129	0	8.0485	344	337	28	2701	68	488053

	A	B	C	D	E	F	G	H	I	J	K	L
1	ID	Date.coll	Orig.fltr.mm^2	PC.fltr.mm^2	Air.m^3	Chord.mm	Radius.mm	Area.ashed.mm^2	Count.GO	GO.mm^2	Sen.per.m^3	Method 852: µ
2			1150	1075	<== Constants for all rows			Method 852	Constant periodically			
3	1	3/18/06	Braun Intertec		78.1	19	20	198	20	0.008531	469	6
4	2	4/11/06			71.6	13	18.25	121	20		834	1
5	3	4/17/06	The diameters (mm) are:		72.4	26.5	19.25	281	17		419	19
6	4	4/23/06	38.27	37.00	73.7	19	18.5	185	20		533	3
7	5	5/5/06	MPCA's filter has for d (mm):		73.1	18	19	178	20		556	2
8	6	5/17/06	47		72.4	19	19.5	193	20	0.012764	346	2
9	7	6/14/06	The radii (mm) are:		70.1	22	20.25	235	20		293	0
10	8	6/22/06	19.13	18.50	71.4	23	18.75	232	20		292	1
11	9	7/4/06			71.4	19	18.75	187	20		363	8
12	10	7/11/06	23.5		69.9	20	19.5	205	20		338	1
13	11	7/16/06			69.5	21	19.75	219	20		319	14
14	12	7/28/06			68.8	17	19	167	20		420	1
15	13	8/9/06			72.6	18	19	178	20		374	8
16	14	8/21/06			71.6	18	19.5	182	20		371	4
17	15	9/2/06			70.6	19	19.5	193	20		355	5
18	16	9/14/06			70.8	19	18.5	185	20		371	3
19	17	9/26/06			73.3	18	19.5	182	20		362	1
20	18	10/8/06			73.1	20	19.5	205	20		324	8
21	19	10/20/06			74.3	22.5	19.75	236	20		276	7
22	20	11/1/06			77.7	19	19.25	191	20		326	5
23	21	11/13/06			74.9	19	19	189	20		342	1
24	22	11/25/06			100.6	15	18.75	145	20		333	0
25	23	12/7/06			78.7	16	18	149	20		412	3
26	24	12/19/06			101.1	14	18.25	131	13		562	16
27	25	12/31/06			76.8	25	19.75	267	20		236	0
28	26	1/12/07			81.4	15	17.5	136	20		439	2
29	27	1/24/07			78.1	18	17.25	163	20		380	9
30	28	2/5/07			83.6	21	19	211	7		783	11
31	29	2/17/07			77.7	25	19.5	265	20		236	1
32	30	3/1/07			76.6	26	19.25	275	20		230	2
33	31	3/13/07			75.2	20	17.5	186	20		346	2
34	32	3/25/07			72.3	19	18.5	185	20		363	4
35	33	4/6/07			78.3	27	19.5	291	20	0.012865	211	1
36	34	4/18/07			73.3	19	17.25	174	20		378	7
37	35	4/30/07			72.7	26	19.75	280	20		236	12
38	36	5/12/07			71.1	15	18	139	10		971	8
39	37	5/24/07			73.1	16.5	18.25	156	16		526	5
40	38	6/5/07			70.5	25	18.5	254	20		268	3
41	39	6/17/07			94.5	16	18.5	153	20		332	2
42	40	6/29/07			71.1	23	19	235	20		288	3
43	41	7/11/07			71.1	26	19.25	275	20		246	3
44	42	7/23/07			92.5	16	18.25	151	20		344	4
45	43	8/4/07			70.8	27	19.25	288	11		428	19
46	44	8/16/07			70.6	15.5	19.75	157	20		433	0
47	45	8/28/07			71.5	16	19.25	159	20		423	0
48	46	9/9/07			98	14.5	18.75	140	20		351	1
49	47	9/21/07			71.1	25	19.5	265	20		255	0
50	48	10/3/07			67	26.5	19.25	281	20		255	0
51	49	10/15/07			72.9	17	20	176	20		375	0
52	50	10/27/07			98.9	16.5	18.75	160	20		303	0
53	51	11/8/07			75.6	18	19	178	20		357	0
54	52	11/20/07			77.6	20	20.25	212	20		292	1
55	53	12/2/07			79.3	26	19	272	20		223	1
56	54	12/14/07			80.5	13	19	126	20		474	5
57	55	12/26/07			78.3	22	19.75	230	20		266	2
58	56	1/7/08			84.3	18	18	170	20	0.012225	354	2
59	57	1/19/08			83.3	25	18.25	251	20		242	1
60	58	1/31/08			78.1	26	18.75	269	20		240	3
61	59	2/12/08			79.7	19	19.5	193	19		345	8

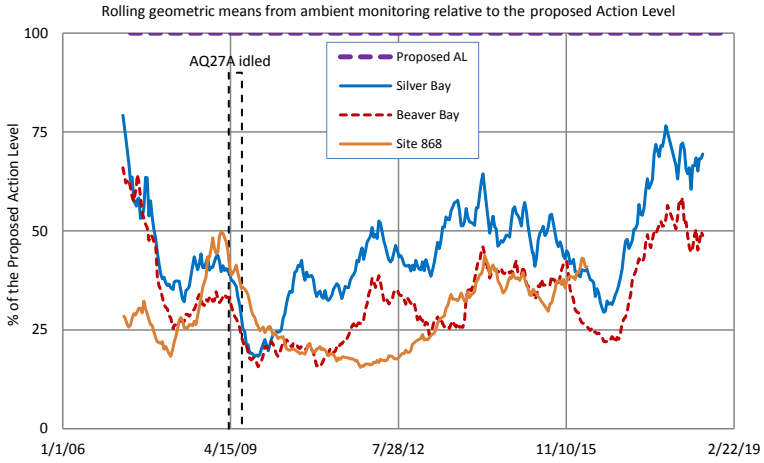
	A	B	M	N	O	P	Q	R	S	T	U	V	W
1	ID	Date.coll	CenIndex	2 ways for: Fibers0		Fibers	95% C.I. :Method 852		ln(Fibers)	RollPeriod	RPspan	# of filters	# of BDL
2			BDL=1	fibers/m^3	v2.pdf	fibers/m^3	lower limit	upper limit	Method 852		days		
3	1	3/18/06	0	2814	**2812**	2812	1032	6120	7.9417				
4	2	4/11/06	0	834	**834**	834	21	4649	6.7262				
5	3	4/17/06	0	7961	**7952**	7952	4788	12418	8.9812				
6	4	4/23/06	0	1599	**1598**	1598	330	4670	7.3765				
7	5	5/5/06	0	1112	**1113**	1113	135	4020	7.0148				
8	6	5/17/06	0	692	**691**	691	84	2497	6.5381				
9	7	6/14/06	1	0	**0**	293	0	1082	5.6802				
10	8	6/22/06	0	292	**292**	292	7	1628	5.6768				
11	9	7/4/06	0	2904	**2905**	2905	1254	5724	7.9742				
12	10	7/11/06	0	338	**338**	338	9	1885	5.8230				
13	11	7/16/06	0	4466	**4462**	4462	2439	7486	8.4034				
14	12	7/28/06	0	420	**420**	420	11	2342	6.0403				
15	13	8/9/06	0	2992	**2996**	2996	1293	5902	8.0050				
16	14	8/21/06	0	1484	**1483**	1483	404	3797	7.3018				
17	15	9/2/06	0	1775	**1773**	1773	576	4136	7.4804				
18	16	9/14/06	0	1113	**1112**	1112	229	3249	7.0139				
19	17	9/26/06	0	362	**362**	362	9	2018	5.8916				
20	18	10/8/06	0	2592	**2588**	2588	1117	5100	7.8586				
21	19	10/20/06	0	1932	**1930**	1930	776	3977	7.5653				
22	20	11/1/06	0	1630	**1629**	1629	529	3802	7.3957				
23	21	11/13/06	0	342	**342**	342	9	1906	5.8348				
24	22	11/25/06	1	0	**0**	333	0	1227	5.8081				
25	23	12/7/06	0	1236	**1237**	1237	255	3615	7.1204				
26	24	12/19/06	0	8992	**8993**	8993	5140	14604	9.1042				
27	25	12/31/06	1	0	**0**	236	0	870	5.4638				
28	26	1/12/07	0	878	**877**	877	106	3169	6.7765				
29	27	1/24/07	0	3420	**3417**	3417	1562	6486	8.1365				
30	28	2/5/07	0	8613	**8613**	8613	4300	15411	9.0610				
31	29	2/17/07	0	236	**236**	236	6	1312	5.4638	Data in this column:			
32	30	3/1/07	0	460	**460**	460	56	1663	6.1312	Must be <= 365			
33	31	3/13/07	0	692	**691**	691	84	2498	6.5381	1	361	31	3
34	32	3/25/07	0	1452	**1452**	1452	396	3717	7.2807	2	349	31	3
35	33	4/6/07	0	211	**211**	211	5	1176	5.3519	3	361	32	3
36	34	4/18/07	0	2646	**2644**	2644	1063	5447	7.8800	4	361	31	3
37	35	4/30/07	0	2832	**2830**	2830	1462	4943	7.9480	5	361	31	3
38	36	5/12/07	0	7768	**7765**	7765	3352	15300	8.9574	6	361	31	3
39	37	5/24/07	0	2630	**2629**	2629	854	6136	7.8744	7	345	31	3
40	38	6/5/07	0	804	**805**	805	166	2353	6.6908	8	357	32	3
41	39	6/17/07	0	664	**664**	664	80	2400	6.4983	9	361	32	2
42	40	6/29/07	0	864	**864**	864	178	2525	6.7616	10	361	32	2
43	41	7/11/07	0	738	**738**	738	152	2156	6.6039	11	361	31	2
44	42	7/23/07	0	1376	**1375**	1375	375	3520	7.2262	12	361	31	2
45	43	8/4/07	0	8132	**8140**	8140	4901	12711	9.0045	13	361	31	2
46	44	8/16/07	1	0	**0**	433	0	1596	6.0707	14	361	31	3
47	45	8/28/07	1	0	**0**	423	0	1561	6.0474	15	361	31	4
48	46	9/9/07	0	351	**351**	351	9	1957	5.8608	16	361	31	4
49	47	9/21/07	1	0	**0**	255	0	942	5.5413	17	361	31	5
50	48	10/3/07	1	0	**0**	255	0	940	5.5413	18	361	31	6
51	49	10/15/07	1	0	**0**	375	0	1385	5.9269	19	361	31	7
52	50	10/27/07	1	0	**0**	303	0	1119	5.7137	20	361	31	8
53	51	11/8/07	1	0	**0**	357	0	1316	5.8777	21	361	31	9
54	52	11/20/07	0	292	**292**	292	7	1629	5.6768	22	361	31	9
55	53	12/2/07	0	223	**223**	223	6	1241	5.4072	23	361	31	8
56	54	12/14/07	0	2370	**2368**	2368	769	5525	7.7698	24	361	31	8
57	55	12/26/07	0	532	**533**	533	65	1924	6.2785	25	361	31	8
58	56	1/7/08	0	708	**707**	707	86	2554	6.5610	26	361	31	7
59	57	1/19/08	0	242	**242**	242	6	1346	5.4889	27	361	31	7
60	58	1/31/08	0	720	**721**	721	149	2107	6.5806	28	361	31	7
61	59	2/12/08	0	2760	**2761**	2761	1192	5440	7.9233	29	361	31	7

	A	B	X	Y	Z	AA	AB	AC	AD	AE	AF	AG	AH
1	ID	Date.coll	# of uncen	Location	Scale	Log-likelih'd	$Geom_{miss}$	$Geom_{cen}$	$95\%G_{lower}$	$95\%G_{upper}$	$_{1\text{-tail}}95\%G_{up}$	Loc(1DL)	Scale(1DL)
2				Method 852			fibers/m^3	fibers/m^3	fibers/m^3	fibers/m^3	fibers/m^3	Method 852	Method 852
3	1	3/18/06											
4	2	4/11/06											
5	3	4/17/06		Data pt 95% C.I.									
6	4	4/23/06	# of fibers:	27									
7	5	5/5/06	Conc.:	20819									
8	6	5/17/06	9/3/08	13720									
9	7	6/14/06	9/3/08	30290									
10	8	6/22/06											
11	9	7/4/06											
12	10	7/11/06											
13	11	7/16/06											
14	12	7/28/06											
15	13	8/9/06											
16	14	8/21/06											
17	15	9/2/06											
18	16	9/14/06											
19	17	9/26/06											
20	18	10/8/06											
21	19	10/20/06											
22	20	11/1/06											
23	21	11/13/06											
24	22	11/25/06											
25	23	12/7/06											
26	24	12/19/06											
27	25	12/31/06											
28	26	1/12/07											
29	27	1/24/07											
30	28	2/5/07											
31	29	2/17/07											
32	30	3/1/07											
33	31	3/13/07	28	6.9795	1.1745	-248.78	1319	1074	707	1631	1525	7.0364	1.0983
34	32	3/25/07	28	6.9586	1.1618	-247.81	1288	1052	696	1591	1488	7.0150	1.0865
35	33	4/6/07	29	6.9062	1.1814	-255.15	1211	998	660	1510	1413	6.9631	1.1086
36	34	4/18/07	28	6.8781	1.1502	-245.00	1179	971	645	1462	1369	6.9352	1.0768
37	35	4/30/07	28	6.8959	1.1638	-245.90	1204	988	653	1495	1399	6.9536	1.0894
38	36	5/12/07	28	6.9554	1.2256	-249.28	1290	1049	678	1622	1512	7.0163	1.1474
39	37	5/24/07	28	6.9988	1.2332	-250.82	1353	1095	706	1699	1583	7.0594	1.1539
40	38	6/5/07	29	6.9904	1.2125	-258.66	1329	1086	711	1660	1551	7.0479	1.1370
41	39	6/17/07	30	7.0383	1.1560	-264.30	1299	1139	762	1705	1598	7.0734	1.1142
42	40	6/29/07	30	7.0738	1.1279	-264.69	1347	1181	797	1749	1642	7.1073	1.0865
43	41	7/11/07	29	7.0705	1.1140	-255.61	1347	1177	793	1746	1639	7.1046	1.0716
44	42	7/23/07	29	7.0334	1.0859	-253.69	1294	1134	772	1666	1566	7.0666	1.0445
45	43	8/4/07	29	7.1283	1.1257	-257.72	1433	1247	837	1857	1742	7.1622	1.0824
46	44	8/16/07	28	7.0423	1.1623	-250.02	1396	1144	757	1730	1619	7.0998	1.0880
47	45	8/28/07	27	6.9746	1.2120	-243.16	1393	1069	693	1650	1539	7.0594	1.1034
48	46	9/9/07	27	6.9192	1.2295	-241.84	1311	1012	651	1571	1464	7.0071	1.1210
49	47	9/21/07	26	6.8404	1.3015	-235.60	1320	935	585	1494	1386	6.9596	1.1515
50	48	10/3/07	25	6.7968	1.3596	-230.04	1390	895	547	1466	1354	6.9483	1.1640
51	49	10/15/07	24	6.6951	1.4030	-221.90	1354	808	484	1351	1244	6.8860	1.1654
52	50	10/27/07	23	6.5900	1.4629	-214.21	1334	728	423	1251	1146	6.8263	1.1768
53	51	11/8/07	22	6.4899	1.5203	-206.44	1322	658	372	1164	1062	6.7773	1.1838
54	52	11/20/07	22	6.4832	1.5251	-206.33	1312	654	369	1159	1057	6.7722	1.1884
55	53	12/2/07	23	6.5127	1.4851	-212.20	1215	674	388	1168	1069	6.7593	1.2013
56	54	12/14/07	23	6.5318	1.5011	-213.12	1250	687	394	1198	1095	6.7802	1.2134
57	55	12/26/07	23	6.4547	1.4036	-208.69	1105	636	378	1070	984	6.6891	1.1367
58	56	1/7/08	24	6.5343	1.3309	-214.99	1085	688	422	1122	1037	6.7245	1.1142
59	57	1/19/08	24	6.4861	1.3527	-213.97	1028	656	399	1078	995	6.6829	1.1360
60	58	1/31/08	24	6.4402	1.3121	-211.63	964	627	387	1015	939	6.6327	1.1035
61	59	2/12/08	24	6.4157	1.2338	-209.05	919	611	388	962	894	6.5960	1.0370



Censored data analysis with 365-day rolling is useful but not easy to use.

	A	B	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR
1	ID	Date.coll	$Geom_{1DL}$	% $Geom_{1DL}$/AL	95%G_{lower}	95%G_{upper}	$_{1\text{-tail}}$95%G_{up}		Date of	Fibers	Date of	Fibers
2			Method 852:	for plotting	fibers/m^3	fibers/m^3	:Method 852		noncensored	Method 852	censored	Method 852
3	1	3/18/06										
4	2	4/11/06										
5	3	4/17/06										
6	4	4/23/06										
7	5	5/5/06										
8	6	5/17/06										
9	7	6/14/06										
10	8	6/22/06										
11	9	7/4/06										
12	10	7/11/06										
13	11	7/16/06										
14	12	7/28/06										
15	13	8/9/06										
16	14	8/21/06										
17	15	9/2/06										
18	16	9/14/06										
19	17	9/26/06										
20	18	10/8/06										
21	19	10/20/06						1	3/18/06	2812	6/14/06	100
22	20	11/1/06						2	4/11/06	834	6/14/06	293
23	21	11/13/06						3	4/17/06	7952	11/25/06	100
24	22	11/25/06						4	4/23/06	1598	11/25/06	333
25	23	12/7/06						5	5/5/06	1113	12/31/06	100
26	24	12/19/06						6	5/17/06	691	12/31/06	236
27	25	12/31/06						7	6/22/06	292	8/16/07	100
28	26	1/12/07						8	7/4/06	2905	8/16/07	433
29	27	1/24/07						9	7/11/06	338	8/28/07	100
30	28	2/5/07						10	7/16/06	4462	8/28/07	423
31	29	2/17/07						11	7/28/06	420	9/21/07	100
32	30	3/1/07						12	8/9/06	2996	9/21/07	255
33	31	3/13/07	1137	28	773	1674	1573	13	8/21/06	1483	10/3/07	100
34	32	3/25/07	1113	28	759	1632	1535	14	9/2/06	1773	10/3/07	255
35	33	4/6/07	1057	26	720	1552	1459	15	9/14/06	1112	10/15/07	100
36	34	4/18/07	1028	26	704	1502	1413	16	9/26/06	362	10/15/07	375
37	35	4/30/07	1047	26	713	1536	1444	17	10/8/06	2588	10/27/07	100
38	36	5/12/07	1115	28	744	1669	1564	18	10/20/06	1930	10/27/07	303
39	37	5/24/07	1164	29	775	1747	1636	19	11/1/06	1629	11/8/07	100
40	38	6/5/07	1150	29	776	1706	1601	20	11/13/06	342	11/8/07	357
41	39	6/17/07	1180	30	802	1736	1632	21	12/7/06	1237	7/17/08	100
42	40	6/29/07	1221	31	838	1779	1675	22	12/19/06	8993	7/17/08	516
43	41	7/11/07	1218	30	835	1775	1671	23	1/12/07	877	11/14/08	100
44	42	7/23/07	1172	29	812	1693	1596	24	1/24/07	3417	11/14/08	347
45	43	8/4/07	1290	32	881	1888	1776	25	2/5/07	8613	10/28/09	100
46	44	8/16/07	1212	30	826	1777	1671	26	2/17/07	236	10/28/09	235
47	45	8/28/07	1164	29	789	1716	1612	27	3/1/07	460	2/13/10	100
48	46	9/9/07	1104	28	744	1639	1538	28	3/13/07	691	2/13/10	312
49	47	9/21/07	1053	26	702	1580	1480	29	3/25/07	1452	6/13/10	100
50	48	10/3/07	1041	26	691	1569	1469	30	4/6/07	211	6/13/10	403
51	49	10/15/07	978	24	649	1475	1381	31	4/18/07	2644	6/25/10	100
52	50	10/27/07	922	23	609	1395	1305	32	4/30/07	2830	6/25/10	412
53	51	11/8/07	878	22	579	1331	1245	33	5/12/07	7765	9/5/10	100
54	52	11/20/07	873	22	575	1327	1241	34	5/24/07	2629	9/5/10	405
55	53	12/2/07	862	22	565	1316	1229	35	6/5/07	805	11/4/10	100
56	54	12/14/07	880	22	574	1349	1260	36	6/17/07	664	11/4/10	330
57	55	12/26/07	804	20	539	1199	1124	37	6/29/07	864	5/3/11	100
58	56	1/7/08	833	21	562	1232	1157	38	7/11/07	738	5/3/11	223
59	57	1/19/08	799	20	535	1191	1117	39	7/23/07	1375	5/15/11	100
60	58	1/31/08	760	19	515	1120	1052	40	8/4/07	8140	5/15/11	248
61	59	2/12/08	732	18	508	1055	995	41	9/9/07	351	7/2/11	100



This plot shows that the Control City Standard would not work.

g is useful but not easy to use

	A	B	C	D	E	F	G	H	I	J	K	L
1	ID	Date.coll	Orig.fltr.mm^2	PC.fltr.mm^2	Air.m^3	Chord.mm	Radius.mm	Area.ashed.mm^2	Count.GO	GO.mm^2	Sen.per.m^3	Method 852: µ
2			1150	1075	<== Constants for all rows			Method 852	Constant periodically			
62	60	2/24/08			78.6	19	19.5	193	20		332	8
63	61	3/7/08			80.6	17	19	167	8		937	10
64	62	3/19/08			76.5	22	19	223	7		847	6
65	63	3/31/08			73.6	20	19.25	202	5		1358	12
66	64	4/12/08			76.3	25.5	19.25	268	17		291	11
67	65	4/24/08			74.0	27	19.5	291	13		362	15
68	66	5/6/08			72.3	16	19	157	20		446	3
69	67	5/18/08			72.4	17	19	167	20		417	2
70	68	5/30/08			71.2	17	18	159	20		446	5
71	69	6/11/08			71.1	15	19	146	20		485	2
72	70	6/23/08			70.3	14	18.5	133	20		542	3
73	71	7/5/08			71.8	16	19	157	20		449	2
74	72	7/17/08			70.4	15	18	139	20		516	0
75	73	7/29/08			69.4	16	19.5	161	17	0.012304	530	10
76	74	8/10/08			71.2	27	20.25	299	18		262	11
77	75	9/3/08			72.3	27.5	19.75	300	6		771	27
78	76	9/15/08			69.4	27	19.5	291	10		498	6
79	77	9/27/08			73.1	19	19	189	9		808	3
80	78	10/21/08			75.0	24	18.75	244	20		274	2
81	79	11/2/08			72.1	21	19.5	216	5		1289	8
82	80	11/14/08			76.5	19	19	189	20		347	0
83	81	11/26/08			76.3	17	19.5	172	20		384	3
84	82	12/8/08			79.7	22.5	19.75	236	20		267	5
85	83	12/20/08			78.2	25	20.25	273	20		235	2
86	84	1/1/09			79.0	27	19.25	288	20		221	1
87	85	1/13/09			80.1	20	19.5	205	20		306	3
88	86	1/25/09			80.4	23.5	18.5	236	9		590	5
89	87	2/6/09			80.0	26.5	19.25	281	20		223	6
90	88	2/18/09			76.1	27	19	285	14		331	7
91	89	3/3/09			74.8	27	19	285	20		235	6
92	90	3/14/09			67.1	27	19.5	291	9		572	8
93	91	3/26/09			72.4	21	19.75	219	20	0.013073	299	4
94	92	4/7/09			76.1	21	19.5	216	20		287	4
95	93	4/19/09			74.3	27	19.25	288	20		221	3
96	94	5/1/09			73.1	18	19.75	185	14		501	17
97	95	5/13/09			71.2	16.5	20	170	20	0.013075	390	6
98	96	5/25/09			71.8	13.5	20	138	20		478	4
99	97	6/6/09			73.5	26	19.5	277	20		232	2
100	98	6/18/09			70.7	22	19.5	228	20		293	1
101	99	6/30/09			70.8	22	19	223	20		300	1
102	100	7/12/09			70.6	22	19.75	230	20		291	4
103	101	8/5/09			71.4	22	19.25	225	20		294	3
104	102	8/17/09			71.6	20	19.75	207	20		319	4
105	103	8/29/09			73.1	22.5	19.75	236	20		274	1
106	104	9/10/09			70.1	24.5	19.5	258	15		348	8
107	105	9/22/09			74.0	25	20	270	20		237	4
108	106	10/4/09			78.8	21.5	19.25	220	16		342	4
109	107	10/16/09			74.4	28	19.75	307	20		207	1
110	108	10/28/09			75.3	25	19.75	267	20		235	0
111	109	11/9/09			74.0	28	20.5	316	11		368	8
112	110	12/3/09			82.2	20	19.75	207	20		278	4
113	111	12/15/09			81.1	22	19	223	20		262	1
114	112	12/27/09			76.9	28	20.25	313	20		196	6
115	113	1/8/10			77.3	27	19	285	20		214	2
116	114	1/20/10			78.8	19	20	198	20		303	4
117	115	2/1/10			78.7	20	19.5	205	20	0.013139	292	3
118	116	2/13/10			79.0	18	20.5	191	20		312	0
119	117	2/25/10			81.3	28	19.5	305	5		760	6
120	118	3/9/10			76.7	21.5	19.75	225	20		273	3

	A	B	M	N	O	P	Q	R	S	T	U	V	W
1	ID	Date.coll	CenIndex	2 ways for: Fibers0		Fibers	95% C.I. :	Method 852	ln(Fibers)	RollPeriod	RPspan	# of filters	# of BDL
2			BDL=1	fibers/m^3	v2.pdf	fibers/m^3	lower limit	upper limit	Method 852		days		
62	60	2/24/08	0	2656	**2660**	2660	1148	5241	7.8861	30	361	31	7
63	61	3/7/08	0	9370	**9366**	9366	4492	17225	9.1448	31	361	31	7
64	62	3/19/08	0	5082	**5083**	5083	1865	11064	8.5337	32	361	31	7
65	63	3/31/08	0	16296	**16291**	16291	8418	28457	9.6984	33	361	31	7
66	64	4/12/08	0	3201	**3197**	3197	1596	5720	8.0700	34	361	31	7
67	65	4/24/08	0	5430	**5423**	5423	3035	8944	8.5984	35	361	31	7
68	66	5/6/08	0	1338	**1337**	1337	276	3908	7.1982	36	361	31	7
69	67	5/18/08	0	834	**834**	834	101	3013	6.7262	37	361	31	7
70	68	5/30/08	0	2230	**2228**	2228	724	5200	7.7089	38	361	31	7
71	69	6/11/08	0	970	**971**	971	118	3507	6.8783	39	361	31	7
72	70	6/23/08	0	1626	**1625**	1625	335	4748	7.3933	40	361	31	7
73	71	7/5/08	0	898	**898**	898	109	3243	6.8002	41	361	31	7
74	72	7/17/08	1	0	**0**	516	0	1903	6.2461	42	361	31	8
75	73	7/29/08	0	5300	**5298**	5298	2541	9743	8.5751	43	361	31	8
76	74	8/10/08	0	2882	**2882**	2882	1439	5157	7.9662	44	361	31	8
77	75	9/3/08	0	20817	**20819**	20819	13720	30290	9.9436	45	361	30	6
78	76	9/15/08	0	2988	**2987**	2987	1096	6502	8.0020	46	361	30	6
79	77	9/27/08	0	2424	**2424**	2424	500	7084	7.7932	47	361	30	5
80	78	10/21/08	0	548	**549**	549	66	1982	6.3081	48	361	29	3
81	79	11/2/08	0	10312	**10312**	10312	4452	20320	9.2411	49	361	29	2
82	80	11/14/08	1	0	**0**	347	0	1282	5.8493	50	361	29	2
83	81	11/26/08	0	1152	**1152**	1152	238	3366	7.0493	51	361	29	2
84	82	12/8/08	0	1335	**1333**	1333	433	3111	7.1952	52	361	29	2
85	83	12/20/08	0	470	**471**	471	57	1701	6.1549	53	361	29	2
86	84	1/1/09	0	221	**221**	221	6	1230	5.3982	54	361	29	2
87	85	1/13/09	0	918	**919**	919	190	2686	6.8233	55	361	29	2
88	86	1/25/09	0	2950	**2948**	2948	957	6879	7.9889	56	361	29	2
89	87	2/6/09	0	1338	**1339**	1339	492	2915	7.1997	57	361	29	2
90	88	2/18/09	0	2317	**2314**	2314	930	4768	7.7467	58	361	29	2
91	89	3/3/09	0	1410	**1413**	1413	518	3075	7.2535	59	362	29	2
92	90	3/14/09	0	4576	**4578**	4578	1976	9020	8.4290	60	361	29	2
93	91	3/26/09	0	1196	**1195**	1195	326	3059	7.0859	61	361	29	2
94	92	4/7/09	0	1148	**1149**	1149	313	2943	7.0466	62	361	29	2
95	93	4/19/09	0	663	**663**	663	137	1937	6.4968	63	361	29	2
96	94	5/1/09	0	8517	**8511**	8511	4958	13627	9.0491	64	361	29	2
97	95	5/13/09	0	2340	**2342**	2342	860	5098	7.7588	65	361	29	2
98	96	5/25/09	0	1912	**1913**	1913	521	4897	7.5564	66	361	29	2
99	97	6/6/09	0	464	**464**	464	56	1675	6.1399	67	361	29	2
100	98	6/18/09	0	293	**293**	293	7	1635	5.6802	68	361	29	2
101	99	6/30/09	0	300	**300**	300	8	1669	5.7038	69	361	29	2
102	100	7/12/09	0	1164	**1162**	1162	317	2976	7.0579	70	361	29	2
103	101	8/5/09	0	882	**881**	881	182	2575	6.7811	71	361	28	1
104	102	8/17/09	0	1276	**1275**	1275	347	3265	7.1507	72	349	28	1
105	103	8/29/09	0	274	**274**	274	7	1524	5.6131	73	361	29	1
106	104	9/10/09	0	2784	**2785**	2785	1202	5488	7.9320	74	361	29	1
107	105	9/22/09	0	948	**946**	946	258	2423	6.8522	75	361	29	1
108	106	10/4/09	0	1368	**1366**	1366	372	3498	7.2196	76	349	29	1
109	107	10/16/09	0	207	**207**	207	5	1152	5.3327	77	361	30	1
110	108	10/28/09	1	0	**0**	235	0	866	5.4596	78	361	30	2
111	109	11/9/09	0	2944	**2941**	2941	1270	5796	7.9865	79	361	30	2
112	110	12/3/09	0	1112	**1111**	1111	303	2844	7.0130	80	361	29	1
113	111	12/15/09	0	262	**262**	262	7	1457	5.5683	81	361	29	1
114	112	12/27/09	0	1176	**1178**	1178	432	2565	7.0716	82	361	29	1
115	113	1/8/10	0	428	**429**	429	52	1549	6.0615	83	361	29	1
116	114	1/20/10	0	1212	**1212**	1212	330	3103	7.1000	84	361	29	1
117	115	2/1/10	0	876	**876**	876	181	2560	6.7754	85	361	29	1
118	116	2/13/10	1	0	**0**	312	0	1150	5.7430	86	361	29	2
119	117	2/25/10	0	4560	**4561**	4561	1674	9926	8.4253	87	360	29	2
120	118	3/9/10	0	819	**820**	820	169	2395	6.7093	88	361	29	2

	A	B	X	Y	Z	AA	AB	AC	AD	AE	AF	AG	AH
1	ID	Date.coll	# of uncen	Location	Scale	Log-likelih'd	$Geom_{miss}$	$Geom_{cen}$	$95\%G_{lower}$	$95\%G_{upper}$	$_{1\text{-tail}}95\%G_{up}$	Loc(1DL)	Scale(1DL)
2				Method 852			fibers/m^3	fibers/m^3	fibers/m^3	fibers/m^3	fibers/m^3	Method 852	Method 852
62	60	2/24/08	24	6.4971	1.2430	-211.81	1017	663	420	1047	973	6.6742	1.0401
63	61	3/7/08	24	6.5813	1.3465	-216.80	1153	721	440	1182	1092	6.7714	1.1250
64	62	3/19/08	24	6.6399	1.3994	-219.78	1252	765	458	1278	1177	6.8358	1.1675
65	63	3/31/08	24	6.6994	1.5263	-224.25	1385	812	464	1421	1299	6.9137	1.2741
66	64	4/12/08	24	6.7950	1.5120	-226.93	1551	893	513	1554	1422	7.0014	1.2564
67	65	4/24/08	24	6.8144	1.5400	-228.09	1598	911	518	1601	1462	7.0246	1.2796
68	66	5/6/08	24	6.7914	1.5258	-227.09	1549	890	509	1557	1423	7.0004	1.2686
69	67	5/18/08	24	6.7269	1.4611	-223.78	1412	835	489	1426	1308	6.9284	1.2161
70	68	5/30/08	24	6.7222	1.4562	-223.53	1402	831	487	1416	1300	6.9231	1.2121
71	69	6/11/08	24	6.7286	1.4558	-223.72	1413	836	490	1425	1308	6.9291	1.2114
72	70	6/23/08	24	6.7589	1.4577	-224.70	1467	862	505	1470	1349	6.9580	1.2115
73	71	7/5/08	24	6.7602	1.4576	-224.74	1469	863	506	1472	1351	6.9593	1.2113
74	72	7/17/08	23	6.7023	1.5104	-217.81	1514	814	465	1424	1302	6.9477	1.2165
75	73	7/29/08	23	6.7397	1.5537	-219.84	1605	845	476	1503	1370	6.9912	1.2504
76	74	8/10/08	23	6.7150	1.5012	-218.02	1534	825	473	1438	1315	6.9577	1.2079
77	75	9/3/08	24	6.9363	1.5455	-229.04	1710	1029	581	1821	1662	7.1172	1.3171
78	76	9/15/08	24	7.0128	1.5351	-231.14	1870	1111	630	1958	1787	7.1886	1.3046
79	77	9/27/08	25	7.1304	1.4476	-238.49	1890	1249	735	2123	1950	7.2636	1.2709
80	78	10/21/08	26	7.2637	1.3263	-242.37	1802	1428	876	2327	2151	7.3362	1.2370
81	79	11/2/08	27	7.4115	1.2949	-251.63	1922	1655	1029	2661	2465	7.4578	1.2452
82	80	11/14/08	27	7.4106	1.2964	-251.66	1922	1653	1028	2660	2464	7.4568	1.2465
83	81	11/26/08	27	7.4609	1.2509	-252.13	2022	1739	1099	2750	2555	7.5041	1.2017
84	82	12/8/08	27	7.5266	1.1822	-252.48	2161	1857	1204	2863	2671	7.5658	1.1343
85	83	12/20/08	27	7.4689	1.2114	-251.47	2035	1753	1124	2732	2544	7.5101	1.1632
86	84	1/1/09	27	7.4359	1.2562	-251.52	1970	1696	1070	2688	2496	7.4797	1.2071
87	85	1/13/09	27	7.4454	1.2500	-251.66	1989	1712	1083	2707	2515	7.4888	1.2010
88	86	1/25/09	27	7.5356	1.1887	-252.89	2182	1874	1212	2896	2700	7.5750	1.1405
89	87	2/6/09	27	7.5579	1.1749	-253.22	2233	1916	1246	2946	2749	7.5963	1.1269
90	88	2/18/09	27	7.5518	1.1735	-253.01	2218	1904	1239	2927	2731	7.5902	1.1256
91	89	3/3/09	27	7.5297	1.1735	-252.36	2167	1863	1212	2863	2672	7.5684	1.1258
92	90	3/14/09	27	7.5062	1.1441	-250.97	2110	1819	1196	2766	2586	7.5437	1.0975
93	91	3/26/09	27	7.4564	1.1294	-249.15	2000	1731	1144	2618	2450	7.4938	1.0837
94	92	4/7/09	27	7.3681	1.0420	-244.34	1813	1585	1082	2321	2183	7.4024	0.9996
95	93	4/19/09	27	7.3129	1.0467	-242.85	1710	1500	1022	2201	2069	7.3481	1.0048
96	94	5/1/09	27	7.3275	1.0708	-243.90	1739	1522	1028	2253	2115	7.3637	1.0280
97	95	5/13/09	27	7.3469	1.0731	-244.53	1776	1551	1047	2299	2158	7.3830	1.0301
98	96	5/25/09	27	7.3763	1.0658	-245.20	1831	1598	1081	2361	2217	7.4116	1.0227
99	97	6/6/09	27	7.3203	1.0909	-244.21	1728	1511	1013	2253	2113	7.3575	1.0476
100	98	6/18/09	27	7.2763	1.1339	-244.00	1653	1446	954	2191	2049	7.3162	1.0899
101	99	6/30/09	27	7.2152	1.1745	-243.19	1552	1360	884	2092	1952	7.2580	1.1301
102	100	7/12/09	27	7.2243	1.1718	-243.39	1567	1372	893	2109	1968	7.2668	1.1274
103	101	8/5/09	27	7.2199	1.1189	-239.35	1467	1366	902	2071	1937	7.2392	1.1063
104	102	8/17/09	27	7.1909	1.1095	-238.30	1423	1327	879	2005	1876	7.2101	1.0972
105	103	8/29/09	28	7.1356	1.1292	-245.91	1342	1256	832	1897	1775	7.1550	1.1175
106	104	9/10/09	28	7.0689	1.0046	-240.65	1249	1175	814	1695	1598	7.0857	0.9938
107	105	9/22/09	28	7.0293	0.9893	-239.06	1198	1129	787	1621	1529	7.0460	0.9788
108	106	10/4/09	28	7.0097	0.9792	-238.20	1174	1107	774	1583	1495	7.0262	0.9689
109	107	10/16/09	29	6.9527	1.0108	-245.82	1106	1046	728	1504	1418	6.9698	1.0010
110	108	10/28/09	28	6.9061	1.0729	-240.91	1134	998	678	1469	1381	6.9415	1.0318
111	109	11/9/09	28	6.8674	0.9968	-237.63	1084	960	671	1375	1298	6.8997	0.9582
112	110	12/3/09	28	6.9201	0.9655	-235.65	1083	1012	712	1440	1361	6.9347	0.9539
113	111	12/15/09	28	6.8630	0.9969	-234.88	1022	956	665	1376	1298	6.8786	0.9854
114	112	12/27/09	28	6.8950	0.9876	-235.55	1056	987	689	1416	1336	6.9102	0.9760
115	113	1/8/10	28	6.9187	0.9581	-235.39	1081	1011	713	1434	1356	6.9330	0.9466
116	114	1/20/10	28	6.9283	0.9584	-235.68	1092	1021	719	1448	1369	6.9426	0.9469
117	115	2/1/10	28	6.8867	0.9368	-233.82	1045	979	696	1378	1305	6.9007	0.9255
118	116	2/13/10	27	6.8176	0.9879	-227.76	1036	914	636	1312	1238	6.8505	0.9480
119	117	2/25/10	27	6.8397	1.0198	-229.29	1062	934	643	1358	1278	6.8739	0.9788
120	118	3/9/10	27	6.8209	1.0172	-228.67	1041	917	632	1331	1253	6.8552	0.9765

	A	B	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR
1	ID	Date.coll	$Geom_{1DL}$	% $Geom_{1DL}$/AL	95%G_{lower}	95%G_{upper}	$_{1\text{-tail}}$95%G_{up}		Date of	Fibers	Date of	Fibers
2			Method 852:	for plotting	fibers/m^3	fibers/m^3	:Method 852		noncensored	Method 852	censored	Method 852
62	60	2/24/08	792	20	549	1142	1076	42	11/20/07	292	7/2/11	424
63	61	3/7/08	873	22	587	1296	1217	43	12/2/07	223	7/26/11	100
64	62	3/19/08	931	23	617	1404	1314	44	12/14/07	2368	7/26/11	290
65	63	3/31/08	1006	25	642	1575	1466	45	12/26/07	533	8/19/11	100
66	64	4/12/08	1098	27	706	1709	1592	46	1/7/08	707	8/19/11	366
67	65	4/24/08	1124	28	716	1763	1640	47	1/19/08	242	6/14/12	100
68	66	5/6/08	1097	27	702	1715	1596	48	1/31/08	721	6/14/12	557
69	67	5/18/08	1021	26	665	1566	1462	49	2/12/08	2761	6/26/12	100
70	68	5/30/08	1015	25	663	1556	1453	50	2/24/08	2660	6/26/12	508
71	69	6/11/08	1022	26	667	1565	1461	51	3/7/08	9366	7/8/12	100
72	70	6/23/08	1052	26	686	1611	1504	52	3/19/08	5083	7/8/12	393
73	71	7/5/08	1053	26	687	1613	1506	53	3/31/08	16291	7/20/12	100
74	72	7/17/08	1041	26	678	1597	1491	54	4/12/08	3197	7/20/12	597
75	73	7/29/08	1087	27	700	1688	1573	55	4/24/08	5423	1/28/13	100
76	74	8/10/08	1051	26	687	1608	1502	56	5/6/08	1337	1/28/13	209
77	75	9/3/08	1233	31	770	1975	1831	57	5/18/08	834	8/20/13	100
78	76	9/15/08	1324	33	830	2112	1959	58	5/30/08	2228	8/20/13	331
79	77	9/27/08	1427	36	906	2249	2091	59	6/11/08	971	12/18/13	100
80	78	10/21/08	1535	38	978	2408	2239	60	6/23/08	1625	12/18/13	366
81	79	11/2/08	1733	43	1102	2727	2535	61	7/5/08	898	8/3/14	100
82	80	11/14/08	1732	43	1100	2726	2534	62	7/29/08	5298	8/3/14	417
83	81	11/26/08	1816	45	1172	2812	2621	63	8/10/08	2882	8/15/14	100
84	82	12/8/08	1931	48	1278	2918	2731	64	9/3/08	20819	8/15/14	573
85	83	12/20/08	1826	46	1196	2789	2606	65	9/15/08	2987	8/27/14	100
86	84	1/1/09	1772	44	1142	2749	2562	66	9/27/08	2424	8/27/14	443
87	85	1/13/09	1788	45	1155	2768	2580	67	10/21/08	549	2/23/15	100
88	86	1/25/09	1949	49	1287	2952	2761	68	11/2/08	10312	2/23/15	451
89	87	2/6/09	1991	50	1321	3000	2809	69	11/26/08	1152	7/5/15	100
90	88	2/18/09	1979	49	1314	2981	2791	70	12/8/08	1333	7/5/15	1375
91	89	3/3/09	1936	48	1285	2917	2731	71	12/20/08	471	7/17/15	100
92	90	3/14/09	1889	47	1267	2816	2641	72	1/1/09	221	7/17/15	1553
93	91	3/26/09	1797	45	1211	2666	2502	73	1/13/09	919	7/29/15	100
94	92	4/7/09	1640	41	1140	2360	2225	74	1/25/09	2948	7/29/15	1423
95	93	4/19/09	1553	39	1078	2239	2111	75	2/6/09	1339	8/10/15	100
96	94	5/1/09	1578	39	1085	2294	2160	76	2/18/09	2314	8/10/15	1364
97	95	5/13/09	1608	40	1106	2340	2203	77	3/3/09	1413	8/22/15	100
98	96	5/25/09	1655	41	1141	2402	2262	78	3/14/09	4578	8/22/15	1601
99	97	6/6/09	1568	39	1071	2296	2159	79	3/26/09	1195	9/3/15	100
100	98	6/18/09	1505	38	1012	2237	2099	80	4/7/09	1149	9/3/15	1533
101	99	6/30/09	1419	35	941	2142	2004	81	4/19/09	663	10/21/15	100
102	100	7/12/09	1432	36	950	2158	2021	82	5/1/09	8511	10/21/15	1910
103	101	8/5/09	1393	35	925	2099	1965	83	5/13/09	2342	11/14/15	100
104	102	8/17/09	1353	34	901	2031	1903	84	5/25/09	1913	11/14/15	2154
105	103	8/29/09	1281	32	853	1923	1801	85	6/6/09	464	11/26/15	100
106	104	9/10/09	1195	30	832	1715	1618	86	6/18/09	293	11/26/15	1228
107	105	9/22/09	1148	29	804	1640	1548	87	6/30/09	300	1/1/16	100
108	106	10/4/09	1126	28	791	1602	1513	88	7/12/09	1162	1/1/16	1592
109	107	10/16/09	1064	27	744	1522	1437	89	8/5/09	881	1/13/16	100
110	108	10/28/09	1034	26	715	1496	1410	90	8/17/09	1275	1/13/16	1892
111	109	11/9/09	992	25	704	1398	1323	91	8/29/09	274	1/25/16	100
112	110	12/3/09	1027	26	726	1454	1375	92	9/10/09	2785	1/25/16	1973
113	111	12/15/09	971	24	679	1390	1312	93	9/22/09	946	2/6/16	100
114	112	12/27/09	1002	25	703	1430	1351	94	10/4/09	1366	2/6/16	1839
115	113	1/8/10	1026	26	727	1447	1369	95	10/16/09	207	3/1/16	100
116	114	1/20/10	1035	26	734	1461	1383	96	11/9/09	2941	3/1/16	1659
117	115	2/1/10	993	25	709	1391	1317	97	12/3/09	1111	3/25/16	100
118	116	2/13/10	944	24	669	1333	1262	98	12/15/09	262	3/25/16	1568
119	117	2/25/10	967	24	677	1380	1304	99	12/27/09	1178	4/6/16	100
120	118	3/9/10	949	24	665	1354	1278	100	1/8/10	429	4/6/16	1589

	A	B	C	D	E	F	G	H	I	J	K	L
1	ID	Date.coll	Orig.fltr.mm^2	PC.fltr.mm^2	Air.m^3	Chord.mm	Radius.mm	Area.ashed.mm^2	Count.GO	GO.mm^2	Sen.per.m^3	Method 852: µ
2			1150	1075	<== Constants for all rows			Method 852	Constant periodically			
121	119	3/21/10			72.2	28	19.75	307	20		212	7
122	120	4/2/10			74.7	28	20	310	8		508	3
123	121	4/14/10			73.1	20	20	209	20		307	5
124	122	4/26/10			73.3	19	19.5	193	20		332	2
125	123	5/8/10			71.8	15	20	154	20		426	3
126	124	5/20/10			70.9	21	19.5	216	20		307	1
127	125	6/1/10			72.5	22.5	19.25	231	20		281	4
128	126	6/13/10			70.6	17	18.75	165	20		403	0
129	127	6/25/10			71.0	16	19.5	161	20		412	0
130	128	7/7/10			69.9	16	20.25	167	20		404	1
131	129	7/31/10			69.5	14.5	20.5	152	20		446	1
132	130	8/12/10			72.4	27	19.75	294	20	0.01348	216	3
133	131	8/24/10			70.8	27	19.75	294	20		221	3
134	132	9/5/10			72.1	16	19	157	20		405	0
135	133	9/17/10			72.8	16	19.25	159	20		397	6
136	134	9/29/10			71.7	20.5	20	215	20		297	2
137	135	10/11/10			72.8	8	19	77	20		823	8
138	136	10/23/10			72.5	26	19.25	275	14		329	5
139	137	11/4/10			79.1	17	20	176	20		330	0
140	138	11/16/10			80.1	20	20.75	217	20		264	1
141	139	11/28/10			76.4	17	19.5	172	20		350	1
142	140	12/10/10			80.1	19	20.75	205	20		280	4
143	141	12/22/10			80.4	18	20	187	20		305	3
144	142	1/3/11			80.1	20	20.5	214	20		267	5
145	143	1/15/11			80.7	17	20.25	178	20		320	3
146	144	1/27/11			79.7	16	20.5	168	20		341	1
147	145	2/8/11			78.3	27	20.25	299	17		230	6
148	146	2/20/11			77.8	28	20.5	316	20		187	1
149	147	3/4/11			75.1	18	19.75	185	20		331	5
150	148	3/16/11			77.5	25.5	19.5	271	20	0.013347	221	1
151	149	3/28/11			75.6	27	19.5	291	18		234	14
152	150	4/9/11			73.9	18	19.25	180	20		348	5
153	151	4/21/11			74.1	28	19.5	305	20		205	5
154	152	5/3/11			72.2	27	19.25	288	20		223	0
155	153	5/15/11			74.3	23.5	20	251	20		248	0
156	154	5/27/11			72.4	17	19.75	174	20		369	3
157	155	6/8/11			76.1	20	19.25	202	20		301	2
158	156	6/20/11			70.1	16	19.75	163	20		406	3
159	157	7/2/11			70.4	16	18.75	155	20		424	0
160	158	7/26/11			70.8	22	19.25	225	20		290	0
161	159	8/7/11			71.1	16.5	17.5	150	20		433	1
162	160	8/19/11			70.2	18	19.25	180	20		366	0
163	161	8/31/11			70.0	17	20.25	178	20		372	2
164	162	9/12/11			73.3	18.5	19.25	186	20		340	1
165	163	9/24/11			74.1	16	20	165	20		380	3
166	164	10/6/11			73.7	23	20.5	250	20		251	3
167	165	10/18/11			73.8	15.5	19.5	155	20		404	3
168	166	10/30/11			74.3	18	18.25	172	20		363	1
169	167	11/11/11			75.3	17	19.75	174	20		354	2
170	168	11/23/11			76.8	26	19.25	275	20		219	1
171	169	12/5/11			79.1	18	20.75	193	20		303	3
172	170	12/29/11			78.4	18	19	178	20		332	5
173	171	1/10/12			78.0	15	18	139	20		426	2
174	172	1/22/12			79.9	15	17	132	20		439	3
175	173	2/3/12			78.0	15	18	139	20		426	2
176	174	2/15/12			76.1	14	16.5	119	20		510	2
177	175	2/27/12			76.9	13	16	107	20		562	1
178	176	3/10/12			74.4	19.5	19.75	201	20	0.012741	324	2
179	177	3/22/12			73.4	15.5	19.5	155	20		425	2

	A	B	M	N	O	P	Q	R	S	T	U	V	W
1	ID	Date.coll	CenIndex	2 ways for: Fibers0		Fibers	95% C.I. :Method 852		ln(Fibers)	RollPeriod	RPspan	# of filters	# of BDL
2			BDL=1	fibers/m^3	v2.pdf	fibers/m^3	lower limit	upper limit	Method 852		days		
121	119	3/21/10	0	1484	**1484**	1484	597	3058	7.3025	89	361	29	2
122	120	4/2/10	0	1524	**1523**	1523	314	4451	7.3284	90	361	29	2
123	121	4/14/10	0	1535	**1536**	1536	499	3585	7.3369	91	361	29	2
124	122	4/26/10	0	664	**663**	663	80	2396	6.4968	92	361	29	2
125	123	5/8/10	0	1278	**1278**	1278	264	3736	7.1531	93	361	29	2
126	124	5/20/10	0	307	**307**	307	8	1710	5.7268	94	361	29	2
127	125	6/1/10	0	1124	**1122**	1122	306	2873	7.0229	95	361	29	2
128	126	6/13/10	1	0	**0**	403	0	1486	5.9989	96	361	29	3
129	127	6/25/10	1	0	**0**	412	0	1521	6.0210	97	361	29	4
130	128	7/7/10	0	404	**404**	404	10	2252	6.0014	98	361	29	4
131	129	7/31/10	0	446	**446**	446	11	2483	6.1003	99	361	29	4
132	130	8/12/10	0	648	**647**	647	133	1892	6.4723	100	361	29	4
133	131	8/24/10	0	663	**662**	662	136	1934	6.4953	101	361	29	4
134	132	9/5/10	1	0	**0**	405	0	1495	6.0039	102	361	29	5
135	133	9/17/10	0	2382	**2380**	2380	873	5179	7.7749	103	361	29	5
136	134	9/29/10	0	594	**594**	594	72	2147	6.3869	104	361	29	5
137	135	10/11/10	0	6584	**6581**	6581	2841	12967	8.7919	105	361	29	5
138	136	10/23/10	0	1645	**1644**	1644	534	3837	7.4049	106	361	29	5
139	137	11/4/10	1	0	**0**	330	0	1218	5.7991	107	361	29	5
140	138	11/16/10	0	264	**264**	264	7	1473	5.5759	108	349	29	5
141	139	11/28/10	0	350	**350**	350	9	1950	5.8579	109	361	30	5
142	140	12/10/10	0	1120	**1118**	1118	305	2863	7.0193	110	361	30	5
143	141	12/22/10	0	915	**916**	916	189	2678	6.8200	111	361	30	5
144	142	1/3/11	0	1335	**1337**	1337	434	3119	7.1982	112	361	30	5
145	143	1/15/11	0	960	**960**	960	198	2805	6.8669	113	361	30	5
146	144	1/27/11	0	341	**341**	341	9	1903	5.8319	114	361	30	5
147	145	2/8/11	0	1380	**1381**	1381	507	3007	7.2306	115	361	30	5
148	146	2/20/11	0	187	**187**	187	5	1039	5.2311	116	361	30	4
149	147	3/4/11	0	1655	**1654**	1654	537	3860	7.4110	117	361	30	4
150	148	3/16/11	0	221	**221**	221	6	1229	5.3982	118	361	30	4
151	149	3/28/11	0	3276	**3277**	3277	1792	5499	8.0947	119	361	30	4
152	150	4/9/11	0	1740	**1738**	1738	564	4056	7.4605	120	361	30	4
153	151	4/21/11	0	1025	**1026**	1026	333	2395	6.9334	121	361	30	4
154	152	5/3/11	1	0	**0**	223	0	822	5.4072	122	361	30	5
155	153	5/15/11	1	0	**0**	248	0	915	5.5134	123	361	30	6
156	154	5/27/11	0	1107	**1106**	1106	228	3232	7.0085	124	361	30	6
157	155	6/8/11	0	602	**601**	601	73	2172	6.3986	125	361	30	6
158	156	6/20/11	0	1218	**1218**	1218	251	3561	7.1050	126	361	30	5
159	157	7/2/11	1	0	**0**	424	0	1566	6.0497	127	361	30	5
160	158	7/26/11	1	0	**0**	290	0	1071	5.6699	128	361	30	6
161	159	8/7/11	0	433	**433**	433	11	2414	6.0707	129	361	30	6
162	160	8/19/11	1	0	**0**	366	0	1350	5.9026	130	361	30	7
163	161	8/31/11	0	744	**745**	745	90	2691	6.6134	131	361	30	7
164	162	9/12/11	0	340	**340**	340	9	1895	5.8289	132	361	30	6
165	163	9/24/11	0	1140	**1139**	1139	235	3329	7.0379	133	361	30	6
166	164	10/6/11	0	753	**753**	753	155	2201	6.6241	134	361	30	6
167	165	10/18/11	0	1212	**1211**	1211	250	3540	7.0992	135	361	30	6
168	166	10/30/11	0	363	**363**	363	9	2022	5.8944	136	361	30	6
169	167	11/11/11	0	708	**709**	709	86	2560	6.5639	137	361	30	5
170	168	11/23/11	0	219	**219**	219	6	1223	5.3891	138	361	30	5
171	169	12/5/11	0	909	**909**	909	188	2657	6.8123	139	361	30	5
172	170	12/29/11	0	1660	**1658**	1658	538	3869	7.4134	140	361	29	5
173	171	1/10/12	0	852	**853**	853	103	3081	6.7488	141	361	29	5
174	172	1/22/12	0	1317	**1317**	1317	272	3848	7.1831	142	361	29	5
175	173	2/3/12	0	852	**853**	853	103	3081	6.7488	143	361	29	5
176	174	2/15/12	0	1020	**1020**	1020	124	3686	6.9276	144	361	29	5
177	175	2/27/12	0	562	**562**	562	14	3133	6.3315	145	361	29	5
178	176	3/10/12	0	648	**648**	648	78	2339	6.4739	146	361	29	5
179	177	3/22/12	0	850	**851**	851	103	3073	6.7464	147	361	29	5

	A	B	X	Y	Z	AA	AB	AC	AD	AE	AF	AG	AH
1	ID	Date.coll	# of uncen	Location	Scale	Log-likelih'd	$Geom_{miss}$	$Geom_{cen}$	$95\%G_{lower}$	$95\%G_{upper}$	$_{1\text{-tail}}95\%G_{up}$	Loc(1DL)	Scale(1DL)
2				Method 852			fibers/m^3	fibers/m^3	fibers/m^3	fibers/m^3	fibers/m^3	Method 852	Method 852
121	119	3/21/10	27	6.7837	0.9721	-226.33	999	883	619	1261	1191	6.8163	0.9330
122	120	4/2/10	27	6.7920	0.9759	-226.68	1008	891	623	1274	1202	6.8247	0.9366
123	121	4/14/10	27	6.8019	0.9801	-227.09	1018	900	628	1288	1216	6.8347	0.9406
124	122	4/26/10	27	6.8019	0.9801	-227.09	1018	900	628	1288	1216	6.8347	0.9406
125	123	5/8/10	27	6.7407	0.8779	-222.27	949	846	613	1167	1108	6.7693	0.8419
126	124	5/20/10	27	6.6699	0.8764	-220.14	881	788	572	1087	1032	6.6992	0.8412
127	125	6/1/10	27	6.6520	0.8622	-219.16	863	774	565	1062	1009	6.6808	0.8275
128	126	6/13/10	26	6.6273	0.8911	-213.53	884	755	544	1049	995	6.6760	0.8312
129	127	6/25/10	25	6.6191	0.9054	-207.87	924	749	536	1048	993	6.6877	0.8189
130	128	7/7/10	25	6.6308	0.8938	-207.88	935	758	544	1056	1001	6.6980	0.8079
131	129	7/31/10	25	6.5964	0.8975	-206.97	900	732	525	1022	968	6.6650	0.8123
132	130	8/12/10	25	6.5854	0.8977	-206.64	889	724	519	1011	958	6.6543	0.8127
133	131	8/24/10	25	6.5628	0.8914	-205.78	866	708	509	986	935	6.6317	0.8075
134	132	9/5/10	24	6.5556	0.904551	-200.12	909	703	502	986	934	6.6452	0.7930
135	133	9/17/10	24	6.5513	0.8948	-199.71	903	700	501	978	927	6.6398	0.7844
136	134	9/29/10	24	6.5346	0.8945	-199.20	885	689	493	962	911	6.6237	0.7847
137	135	10/11/10	24	6.5772	0.9975	-203.32	945	719	495	1043	982	6.6779	0.8763
138	136	10/23/10	24	6.6556	0.9679	-204.86	1030	777	542	1115	1052	6.7494	0.8467
139	137	11/4/10	24	6.6680	0.9483	-204.30	1030	787	552	1121	1059	6.7611	0.8304
140	138	11/16/10	24	6.5829	0.9377	-201.47	932	723	509	1026	970	6.6780	0.8240
141	139	11/28/10	25	6.5586	0.9313	-208.47	896	705	501	993	940	6.6507	0.8234
142	140	12/10/10	25	6.5588	0.9314	-208.48	896	705	501	993	940	6.6509	0.8235
143	141	12/22/10	25	6.6056	0.9053	-209.15	942	739	530	1030	977	6.6926	0.7980
144	142	1/3/11	25	6.6096	0.9081	-209.36	947	742	532	1036	982	6.6968	0.8004
145	143	1/15/11	25	6.6386	0.8997	-210.01	978	764	549	1063	1008	6.7237	0.7919
146	144	1/27/11	25	6.5930	0.9122	-208.97	930	730	522	1020	967	6.6814	0.8048
147	145	2/8/11	25	6.6079	0.9195	-209.65	947	741	529	1038	983	6.6966	0.8109
148	146	2/20/11	26	6.6075	0.9168	-215.08	890	741	530	1035	981	6.6795	0.8367
149	147	3/4/11	26	6.5788	0.8578	-212.36	856	720	526	984	936	6.6457	0.7824
150	148	3/16/11	26	6.5302	0.8908	-211.91	814	686	495	949	901	6.6020	0.8147
151	149	3/28/11	26	6.5534	0.9296	-213.81	839	702	500	985	933	6.6284	0.8502
152	150	4/9/11	26	6.5575	0.9341	-214.07	843	704	501	991	938	6.6328	0.8543
153	151	4/21/11	26	6.5445	0.9248	-213.39	830	695	496	975	923	6.6193	0.8460
154	152	5/3/11	25	6.4832	0.9862	-208.11	837	654	455	940	886	6.5830	0.8743
155	153	5/15/11	24	6.3997	1.0339	-201.51	823	602	410	882	830	6.5284	0.8886
156	154	5/27/11	24	6.4460	1.0262	-202.72	868	630	431	921	867	6.5711	0.8795
157	155	6/8/11	24	6.4249	1.0209	-201.93	846	617	423	900	847	6.5503	0.8758
158	156	6/20/11	25	6.4907	0.9912	-209.04	858	659	458	948	894	6.5871	0.8751
159	157	7/2/11	25	6.4916	0.9902	-209.01	858	660	459	949	895	6.5881	0.8745
160	158	7/26/11	24	6.4535	1.0346	-203.51	886	635	433	931	875	6.5770	0.8842
161	159	8/7/11	24	6.4524	1.0352	-203.49	884	634	432	930	875	6.5761	0.8848
162	160	8/19/11	23	6.4008	1.0787	-197.22	897	602	403	901	845	6.5571	0.8931
163	161	8/31/11	23	6.4050	1.0789	-197.35	901	605	404	905	848	6.5610	0.8931
164	162	9/12/11	24	6.4292	1.0494	-203.26	865	620	420	914	858	6.5552	0.8974
165	163	9/24/11	24	6.4080	1.0202	-201.84	839	607	416	885	833	6.5306	0.8726
166	164	10/6/11	24	6.4163	1.0204	-202.10	847	612	419	892	840	6.5385	0.8724
167	165	10/18/11	24	6.3756	0.9029	-197.57	790	587	421	820	777	6.4821	0.7704
168	166	10/30/11	24	6.3255	0.8854	-195.49	742	559	403	775	735	6.4317	0.7572
169	167	11/11/11	25	6.3758	0.8483	-201.52	740	587	430	802	763	6.4572	0.7480
170	168	11/23/11	25	6.3682	0.8571	-201.56	735	583	426	798	759	6.4510	0.7563
171	169	12/5/11	25	6.4019	0.8521	-202.45	763	603	441	824	784	6.4828	0.7506
172	170	12/29/11	24	6.3969	0.8830	-195.56	770	600	431	834	791	6.4848	0.7746
173	171	1/10/12	24	6.3824	0.8710	-194.77	756	591	427	819	777	6.4693	0.7643
174	172	1/22/12	24	6.3925	0.8803	-195.35	766	597	430	830	787	6.4802	0.7724
175	173	2/3/12	24	6.4265	0.8720	-196.12	796	618	446	856	812	6.5118	0.7636
176	174	2/15/12	24	6.4169	0.8626	-195.56	786	612	444	845	802	6.5014	0.7554
177	175	2/27/12	24	6.4619	0.8205	-195.63	823	640	472	869	828	6.5393	0.7160
178	176	3/10/12	24	6.4314	0.7973	-193.99	791	621	461	836	797	6.5070	0.6961
179	177	3/22/12	24	6.4840	0.7631	-194.48	837	655	493	870	831	6.5535	0.6637

	A	B	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR
1	ID	Date.coll	$Geom_{1DL}$	% $Geom_{1DL}$/AL	95%G_{lower}	95%G_{upper}	$_{1\text{-tail}}$95%G_{up}		Date of	Fibers	Date of	Fibers
2			Method 852:	for plotting	fibers/m^3	fibers/m^3	:Method 852		noncensored	Method 852	censored	Method 852
121	119	3/21/10	913	23	650	1282	1214	101	1/20/10	1212		
122	120	4/2/10	920	23	654	1294	1225	102	2/1/10	876		
123	121	4/14/10	930	23	660	1309	1239	103	2/25/10	4561		
124	122	4/26/10	930	23	660	1309	1239	104	3/9/10	820		
125	123	5/8/10	871	22	641	1183	1126	105	3/21/10	1484		
126	124	5/20/10	812	20	598	1103	1050	106	4/2/10	1523		
127	125	6/1/10	797	20	590	1077	1026	107	4/14/10	1536		
128	126	6/13/10	793	20	586	1073	1022	108	4/26/10	663		
129	127	6/25/10	802	20	596	1081	1031	109	5/8/10	1278		
130	128	7/7/10	811	20	604	1088	1038	110	5/20/10	307		
131	129	7/31/10	784	20	584	1054	1005	111	6/1/10	1122		
132	130	8/12/10	776	19	577	1043	995	112	7/7/10	404		
133	131	8/24/10	759	19	566	1018	971	113	7/31/10	446		
134	132	9/5/10	769	19	576	1026	980	114	8/12/10	647		
135	133	9/17/10	765	19	575	1018	972	115	8/24/10	662		
136	134	9/29/10	753	19	566	1002	957	116	9/17/10	2380		
137	135	10/11/10	795	20	578	1093	1039	117	9/29/10	594		
138	136	10/23/10	854	21	627	1162	1105	118	10/11/10	6581		
139	137	11/4/10	864	22	638	1168	1113	119	10/23/10	1644		
140	138	11/16/10	795	20	589	1073	1022	120	11/16/10	264		
141	139	11/28/10	773	19	576	1038	990	121	11/28/10	350		
142	140	12/10/10	773	19	576	1038	990	122	12/10/10	1118		
143	141	12/22/10	806	20	606	1073	1025	123	12/22/10	916		
144	142	1/3/11	810	20	608	1078	1030	124	1/3/11	1337		
145	143	1/15/11	832	21	627	1104	1055	125	1/15/11	960		
146	144	1/27/11	797	20	598	1064	1015	126	1/27/11	341		
147	145	2/8/11	810	20	606	1082	1033	127	2/8/11	1381		
148	146	2/20/11	796	20	590	1074	1023	128	2/20/11	187		
149	147	3/4/11	769	19	582	1018	973	129	3/4/11	1654		
150	148	3/16/11	737	18	550	986	941	130	3/16/11	221		
151	149	3/28/11	756	19	558	1025	976	131	3/28/11	3277		
152	150	4/9/11	760	19	560	1031	982	132	4/9/11	1738		
153	151	4/21/11	749	19	554	1014	966	133	4/21/11	1026		
154	152	5/3/11	723	18	529	988	940	134	5/27/11	1106		
155	153	5/15/11	684	17	498	940	894	135	6/8/11	601		
156	154	5/27/11	714	18	521	978	930	136	6/20/11	1218		
157	155	6/8/11	699	17	511	957	910	137	8/7/11	433		
158	156	6/20/11	726	18	531	993	944	138	8/31/11	745		
159	157	7/2/11	726	18	531	993	945	139	9/12/11	340		
160	158	7/26/11	718	18	524	986	937	140	9/24/11	1139		
161	159	8/7/11	718	18	523	985	936	141	10/6/11	753		
162	160	8/19/11	704	18	512	969	921	142	10/18/11	1211		
163	161	8/31/11	707	18	514	973	924	143	10/30/11	363		
164	162	9/12/11	703	18	510	969	920	144	11/11/11	709		
165	163	9/24/11	686	17	502	937	891	145	11/23/11	219		
166	164	10/6/11	691	17	506	945	898	146	12/5/11	909		
167	165	10/18/11	653	16	496	861	823	147	12/29/11	1658		
168	166	10/30/11	621	16	474	815	780	148	1/10/12	853		
169	167	11/11/11	637	16	488	833	798	149	1/22/12	1317		
170	168	11/23/11	633	16	483	830	795	150	2/3/12	853		
171	169	12/5/11	654	16	500	855	819	151	2/15/12	1020		
172	170	12/29/11	655	16	494	868	830	152	2/27/12	562		
173	171	1/10/12	645	16	488	852	815	153	3/10/12	648		
174	172	1/22/12	652	16	492	864	826	154	3/22/12	851		
175	173	2/3/12	673	17	510	889	850	155	4/3/12	2161		
176	174	2/15/12	666	17	506	877	839	156	4/15/12	1850		
177	175	2/27/12	692	17	533	898	861	157	4/27/12	795		
178	176	3/10/12	670	17	520	863	828	158	5/9/12	363		
179	177	3/22/12	702	18	551	893	859	159	5/21/12	1196		

	A	B	C	D	E	F	G	H	I	J	K	L
1	ID	Date.coll	Orig.fltr.mm^2	PC.fltr.mm^2	Air.m^3	Chord.mm	Radius.mm	Area.ashed.mm^2	Count.GO	GO.mm^2	Sen.per.m^3	Method 852: µ
2			1150	1075	<== Constants for all rows			Method 852	Constant periodically			
180	178	4/3/12			72.7	17.5	20.5	185	20		360	6
181	179	4/15/12			72.4	17.5	20	181	20		370	5
182	180	4/27/12			72.9	17	19	167	20		397	2
183	181	5/9/12			72.2	17.5	20.5	185	20		363	1
184	182	5/21/12			72.7	17	19	167	20		399	3
185	183	6/2/12			71.7	15	18.5	143	20		474	2
186	184	6/14/12			71.0	14	17	123	20		557	0
187	185	6/26/12			70.4	15	17.5	136	20		508	0
188	186	7/8/12			70.2	18	18.75	176	20		393	0
189	187	7/20/12			70.1	14	16	116	20		597	0
190	188	8/1/12			69.4	14	16	116	20		603	1
191	189	8/13/12			70.3	15	17	132	20		523	2
192	190	8/25/12			72.2	17	20.5	180	20	0.012624	377	2
193	191	9/6/12			74.7	19	19.5	193	20		339	2
194	192	9/18/12			75.2	26	20	283	20		230	6
195	193	9/30/12			75.5	24	20	257	20		252	2
196	194	10/12/12			74.6	26	20	283	20		232	3
197	195	10/24/12			75.1	18	19	178	15		488	5
198	196	11/5/12			75.6	16	19.5	161	20		403	9
199	197	11/17/12			74.5	17	19.5	172	20		383	3
200	198	11/29/12			77.4	16	19.25	159	20		398	1
201	199	12/11/12			80.8	26	20	283	20		214	6
202	200	12/23/12			81.9	26	20	283	20		211	6
203	201	1/4/13			82.3	25	18.75	257	20		232	9
204	202	1/16/13			79.5	22	20.75	241	11		465	7
205	203	1/28/13			77	28	19.5	305	20		209	0
206	204	2/9/13			80.2	20.5	19.5	210	20		290	4
207	205	2/21/13			77.4	16	19	157	20		403	2
208	206	3/5/13			75.9	17.5	20	181	20		356	3
209	207	3/17/13			76.9	16.5	19.5	166	20		383	4
210	208	3/29/13			77.9	25	18.75	257	20		245	5
211	209	4/10/13			74.9	17	20	176	15		496	7
212	210	4/22/13			74.4	20	19.5	205	17		378	14
213	211	5/4/13			72.5	18	18.5	174	7		1110	6
214	212	5/16/13			73.7	26	19	272	20		244	3
215	213	5/28/13			69.9	17	20	176	20	0.012346	408	5
216	214	6/9/13			69.6	16	20	165	20		437	3
217	215	6/21/13			70.6	18	19.5	182	20		389	2
218	216	7/3/13			70.4	17	18.75	165	16		537	7
219	217	7/15/13			70.7	20	18	191	20		371	2
220	218	7/27/13			70.4	17	18.5	163	20		435	7
221	219	8/8/13			71.7	16	18.5	153	20		456	4
222	220	8/20/13			71.5	20	20.25	212	20		331	0
223	221	9/1/13			71.7	17.5	19.5	177	20		395	2
224	222	9/13/13			73.0	21	20.25	224	20		307	2
225	223	9/25/13			71.9	18	20.75	193	20		360	3
226	224	10/7/13			75.8	18	20.5	191	20		346	3
227	225	10/19/13			80.6	18.5	19	184	20		338	6
228	226	11/12/13			75.4	18	21.75	202	20		329	3
229	227	11/24/13			78.3	18	19	178	20		359	3
230	228	12/6/13			77.7	18	19.75	185	18		388	9
231	229	12/18/13			79.2	17.5	19	173	20		366	0
232	230	12/30/13			81.2	22	18.75	220	13		430	6
233	231	1/11/14			83.3	19	19.25	191	13		483	5
234	232	1/23/14			82.6	13	17.5	117	12		867	6
235	233	2/4/14			83.2	19	18.5	185	20	0.012235	329	5
236	234	2/16/14			79.2	14	19.75	141	20		451	4
237	235	2/28/14			77.2	15	20.25	156	20		421	5
238	236	3/12/14			74.8	26	19.25	275	20		246	5

	A	B	M	N	O	P	Q	R	S	T	U	V	W
1	ID	Date.coll	CenIndex	2 ways for: Fibers0		Fibers	95% C.I. :Method 852		ln(Fibers)	RollPeriod	RPspan	# of filters	# of BDL
2			BDL=1	fibers/m^3	v2.pdf	fibers/m^3	lower limit	upper limit	Method 852		days		
180	178	4/3/12	0	2160	**2161**	2161	793	4703	7.6783	148	361	29	5
181	179	4/15/12	0	1850	**1850**	1850	601	4317	7.5229	149	361	29	5
182	180	4/27/12	0	794	**795**	795	96	2871	6.6783	150	361	29	5
183	181	5/9/12	0	363	**363**	363	9	2020	5.8944	151	361	29	4
184	182	5/21/12	0	1197	**1196**	1196	247	3494	7.0867	152	361	29	3
185	183	6/2/12	0	948	**947**	947	115	3422	6.8533	153	361	29	3
186	184	6/14/12	1	0	**0**	557	0	2055	6.3226	154	361	29	4
187	185	6/26/12	1	0	**0**	508	0	1874	6.2305	155	361	29	5
188	186	7/8/12	1	0	**0**	393	0	1448	5.9738	156	349	29	5
189	187	7/20/12	1	0	**0**	597	0	2202	6.3919	157	361	30	6
190	188	8/1/12	0	603	**603**	603	15	3360	6.4019	158	361	30	5
191	189	8/13/12	0	1046	**1045**	1045	127	3776	6.9518	159	361	30	5
192	190	8/25/12	0	754	**755**	755	91	2727	6.6267	160	361	30	4
193	191	9/6/12	0	678	**678**	678	82	2447	6.5191	161	361	30	4
194	192	9/18/12	0	1380	**1380**	1380	507	3004	7.2298	162	361	30	4
195	193	9/30/12	0	504	**504**	504	61	1820	6.2226	163	361	30	4
196	194	10/12/12	0	696	**696**	696	143	2033	6.5453	164	361	30	4
197	195	10/24/12	0	2440	**2440**	2440	792	5694	7.7998	165	361	30	4
198	196	11/5/12	0	3627	**3626**	3626	1658	6884	8.1959	166	361	30	4
199	197	11/17/12	0	1149	**1150**	1150	237	3360	7.0475	167	361	30	4
200	198	11/29/12	0	398	**398**	398	10	2219	5.9865	168	361	30	4
201	199	12/11/12	0	1284	**1285**	1285	471	2796	7.1585	169	349	30	4
202	200	12/23/12	0	1266	**1267**	1267	465	2759	7.1444	170	361	31	4
203	201	1/4/13	0	2088	**2087**	2087	954	3962	7.6435	171	361	31	4
204	202	1/16/13	0	3255	**3258**	3258	1310	6713	8.0889	172	361	31	4
205	203	1/28/13	1	0	**0**	209	0	770	5.3423	173	361	31	5
206	204	2/9/13	0	1160	**1160**	1160	316	2971	7.0562	174	361	31	5
207	205	2/21/13	0	806	**806**	806	98	2913	6.6921	175	361	31	5
208	206	3/5/13	0	1068	**1069**	1069	220	3123	6.9745	176	361	31	5
209	207	3/17/13	0	1532	**1533**	1533	418	3926	7.3350	177	361	31	5
210	208	3/29/13	0	1225	**1225**	1225	398	2859	7.1107	178	361	31	5
211	209	4/10/13	0	3472	**3475**	3475	1397	7160	8.1533	179	361	31	5
212	210	4/22/13	0	5292	**5294**	5294	2894	8882	8.5743	180	361	31	5
213	211	5/4/13	0	6660	**6658**	6658	2443	14492	8.8036	181	361	31	5
214	212	5/16/13	0	732	**733**	733	151	2141	6.5971	182	361	31	5
215	213	5/28/13	0	2040	**2040**	2040	662	4760	7.6207	183	361	31	5
216	214	6/9/13	0	1311	**1311**	1311	270	3831	7.1785	184	361	31	5
217	215	6/21/13	0	778	**778**	778	94	2809	6.6567	185	361	31	4
218	216	7/3/13	0	3759	**3762**	3762	1513	7751	8.2327	186	361	31	3
219	217	7/15/13	0	742	**742**	742	90	2681	6.6093	187	361	31	2
220	218	7/27/13	0	3045	**3047**	3047	1225	6278	8.0219	188	361	31	1
221	219	8/8/13	0	1824	**1825**	1825	497	4673	7.5093	189	361	31	1
222	220	8/20/13	1	0	**0**	331	0	1220	5.8021	190	361	31	2
223	221	9/1/13	0	790	**789**	789	96	2851	6.6708	191	361	31	2
224	222	9/13/13	0	614	**614**	614	74	2217	6.4200	192	361	31	2
225	223	9/25/13	0	1080	**1081**	1081	223	3161	6.9856	193	361	31	2
226	224	10/7/13	0	1038	**1037**	1037	214	3032	6.9441	194	361	31	2
227	225	10/19/13	0	2028	**2030**	2030	745	4419	7.6158	195	361	31	2
228	226	11/12/13	0	987	**987**	987	204	2885	6.8947	196	361	30	2
229	227	11/24/13	0	1077	**1077**	1077	222	3147	6.9819	197	361	30	2
230	228	12/6/13	0	3492	**3491**	3491	1596	6628	8.1579	198	361	30	2
231	229	12/18/13	1	0	**0**	366	0	1350	5.9026	199	361	30	3
232	230	12/30/13	0	2580	**2582**	2582	948	5621	7.8563	200	361	30	3
233	231	1/11/14	0	2415	**2417**	2417	785	5641	7.7903	201	361	30	3
234	232	1/23/14	0	5202	**5201**	5201	1909	11320	8.5566	202	361	30	3
235	233	2/4/14	0	1645	**1645**	1645	534	3839	7.4055	203	361	30	2
236	234	2/16/14	0	1804	**1806**	1806	492	4623	7.4989	204	361	30	2
237	235	2/28/14	0	2105	**2103**	2103	683	4908	7.6511	205	361	30	2
238	236	3/12/14	0	1230	**1229**	1229	399	2869	7.1140	206	361	30	2

	A	B	X	Y	Z	AA	AB	AC	AD	AE	AF	AG	AH
1	ID	Date.coll	# of uncen	Location	Scale	Log-likelih'd	$Geom_{miss}$	$Geom_{cen}$	$95\%G_{lower}$	$95\%G_{upper}$	$_{1\text{-tail}}95\%G_{up}$	Loc(1DL)	Scale(1DL)
2				Method 852			fibers/m^3	fibers/m^3	fibers/m^3	fibers/m^3	fibers/m^3	Method 852	Method 852
180	178	4/3/12	24	6.4736	0.7285	-193.01	822	648	494	850	813	6.5391	0.6329
181	179	4/15/12	24	6.4754	0.7323	-193.19	824	649	494	852	816	6.5413	0.6363
182	180	4/27/12	24	6.4668	0.7277	-192.78	816	643	491	844	808	6.5325	0.6324
183	181	5/9/12	25	6.5011	0.6743	-196.81	790	666	519	855	821	6.5493	0.6074
184	182	5/21/12	26	6.5708	0.6245	-201.89	802	714	567	899	866	6.6035	0.5813
185	183	6/2/12	26	6.5656	0.6211	-201.59	798	710	565	893	860	6.5982	0.5781
186	184	6/14/12	25	6.5462	0.6393	-195.73	807	697	550	883	850	6.5956	0.5793
187	185	6/26/12	24	6.4983	0.6523	-188.86	793	664	520	847	815	6.5654	0.5745
188	186	7/8/12	24	6.4957	0.6557	-189.02	793	662	518	846	814	6.5628	0.5771
189	187	7/20/12	24	6.4743	0.6595	-189.83	793	648	508	828	796	6.5571	0.5679
190	188	8/1/12	25	6.5175	0.6108	-194.37	784	677	541	847	817	6.5815	0.5437
191	189	8/13/12	25	6.5487	0.6070	-195.19	813	698	559	873	842	6.6109	0.5390
192	190	8/25/12	26	6.5884	0.5700	-200.16	810	727	590	895	865	6.6350	0.5221
193	191	9/6/12	26	6.5851	0.5704	-200.08	807	724	588	892	863	6.6319	0.5225
194	192	9/18/12	26	6.6345	0.5594	-201.12	852	761	620	933	903	6.6785	0.5108
195	193	9/30/12	26	6.6063	0.5605	-200.28	826	740	603	908	878	6.6514	0.5127
196	194	10/12/12	26	6.6036	0.5608	-200.21	823	738	601	905	876	6.6487	0.5130
197	195	10/24/12	26	6.6236	0.5999	-202.65	846	753	605	937	905	6.6721	0.5489
198	196	11/5/12	26	6.6975	0.6521	-207.21	924	810	639	1028	989	6.7488	0.5953
199	197	11/17/12	26	6.7139	0.6540	-207.81	941	824	649	1046	1006	6.7649	0.5967
200	198	11/29/12	26	6.7387	0.6131	-206.86	963	844	675	1056	1019	6.7848	0.5579
201	199	12/11/12	26	6.7501	0.6179	-207.43	976	854	682	1070	1032	6.7964	0.5621
202	200	12/23/12	27	6.7640	0.6098	-215.20	986	866	696	1077	1040	6.8076	0.5561
203	201	1/4/13	27	6.7705	0.6205	-215.89	994	872	698	1089	1050	6.8150	0.5659
204	202	1/16/13	27	6.8103	0.6690	-219.26	1045	907	714	1153	1109	6.8583	0.6102
205	203	1/28/13	26	6.7311	0.7516	-215.15	1035	838	639	1099	1052	6.7989	0.6646
206	204	2/9/13	26	6.7411	0.7536	-215.55	1048	846	645	1110	1063	6.8088	0.6662
207	205	2/21/13	26	6.7333	0.7533	-215.28	1038	840	640	1102	1055	6.8012	0.6661
208	206	3/5/13	26	6.7554	0.7484	-215.82	1064	859	656	1124	1076	6.8219	0.6610
209	207	3/17/13	26	6.7836	0.7527	-216.89	1100	883	674	1158	1109	6.8497	0.6639
210	208	3/29/13	26	6.7955	0.7545	-217.34	1116	894	681	1173	1123	6.8615	0.6653
211	209	4/10/13	26	6.8081	0.7819	-218.71	1136	905	683	1199	1146	6.8768	0.6897
212	210	4/22/13	26	6.8356	0.8450	-221.72	1183	930	686	1261	1201	6.9107	0.7461
213	211	5/4/13	26	6.8966	0.9266	-226.21	1284	989	708	1380	1308	6.9793	0.8182
214	212	5/16/13	26	6.9229	0.9036	-226.36	1319	1015	733	1405	1334	7.0019	0.7966
215	213	5/28/13	26	6.9396	0.9126	-227.16	1346	1032	743	1434	1360	7.0192	0.8042
216	214	6/9/13	26	6.9505	0.9129	-227.52	1363	1044	752	1449	1375	7.0297	0.8041
217	215	6/21/13	27	6.9827	0.8780	-233.60	1335	1078	788	1475	1403	7.0404	0.7965
218	216	7/3/13	28	7.0652	0.8674	-241.87	1386	1170	860	1593	1516	7.1050	0.8097
219	217	7/15/13	29	7.1015	0.8195	-247.02	1356	1214	908	1622	1548	7.1255	0.7879
220	218	7/27/13	30	7.1692	0.8023	-254.63	1393	1299	979	1723	1647	7.1781	0.7917
221	219	8/8/13	30	7.2053	0.7909	-255.33	1446	1346	1019	1780	1702	7.2138	0.7804
222	220	8/20/13	29	7.1550	0.8554	-250.68	1462	1281	946	1733	1651	7.1767	0.8196
223	221	9/1/13	29	7.1565	0.8544	-250.69	1464	1282	948	1735	1653	7.1782	0.8186
224	222	9/13/13	29	7.1532	0.8573	-250.69	1459	1278	944	1731	1648	7.1750	0.8215
225	223	9/25/13	29	7.1452	0.8579	-250.45	1447	1268	936	1717	1636	7.1671	0.8221
226	224	10/7/13	29	7.1694	0.8399	-250.60	1483	1299	965	1748	1667	7.1904	0.8045
227	225	10/19/13	29	7.2044	0.8342	-251.51	1539	1345	1002	1807	1723	7.2249	0.7989
228	226	11/12/13	28	7.1412	0.8207	-240.69	1445	1263	940	1696	1618	7.1624	0.7848
229	227	11/24/13	28	7.1390	0.8211	-240.63	1442	1260	938	1693	1614	7.1602	0.7853
230	228	12/6/13	28	7.2125	0.8092	-242.46	1558	1356	1014	1814	1731	7.2326	0.7733
231	229	12/18/13	27	7.1543	0.8751	-237.31	1569	1280	933	1755	1668	7.1907	0.8106
232	230	12/30/13	27	7.1778	0.8849	-238.33	1611	1310	952	1803	1712	7.2144	0.8195
233	231	1/11/14	27	7.1825	0.8882	-238.58	1620	1316	955	1813	1722	7.2193	0.8226
234	232	1/23/14	27	7.1968	0.9108	-239.70	1648	1335	961	1855	1759	7.2349	0.8438
235	233	2/4/14	28	7.2824	0.7991	-243.55	1648	1455	1091	1939	1851	7.3037	0.7646
236	234	2/16/14	28	7.2973	0.7985	-243.98	1674	1476	1108	1967	1879	7.3184	0.7640
237	235	2/28/14	28	7.3299	0.7914	-244.72	1733	1525	1148	2027	1936	7.3504	0.7569
238	236	3/12/14	28	7.3346	0.7894	-244.80	1741	1532	1154	2035	1945	7.3551	0.7549

	A	B	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR
1	ID	Date.coll	$Geom_{1DL}$	% $Geom_{1DL}$/AL	95%G_{lower}	95%G_{upper}	$_{1\text{-tail}}$95%G_{up}		Date of	Fibers	Date of	Fibers
2			Method 852:	for plotting	fibers/m^3	fibers/m^3	:Method 852		noncensored	Method 852	censored	Method 852
180	178	4/3/12	692	17	549	871	839	160	6/2/12	947		
181	179	4/15/12	693	17	550	874	842	161	8/1/12	603		
182	180	4/27/12	687	17	546	865	834	162	8/13/12	1045		
183	181	5/9/12	699	17	560	872	841	163	8/25/12	755		
184	182	5/21/12	738	18	597	912	881	164	9/6/12	678		
185	183	6/2/12	734	18	595	906	875	165	9/18/12	1380		
186	184	6/14/12	732	18	593	904	873	166	9/30/12	504		
187	185	6/26/12	710	18	576	875	846	167	10/12/12	696		
188	186	7/8/12	708	18	574	874	845	168	10/24/12	2440		
189	187	7/20/12	704	18	575	863	835	169	11/5/12	3626		
190	188	8/1/12	722	18	594	877	850	170	11/17/12	1150		
191	189	8/13/12	743	19	613	901	874	171	11/29/12	398		
192	190	8/25/12	761	19	632	918	890	172	12/11/12	1285		
193	191	9/6/12	759	19	629	915	888	173	12/23/12	1267		
194	192	9/18/12	795	20	662	955	927	174	1/4/13	2087		
195	193	9/30/12	774	19	644	930	903	175	1/16/13	3258		
196	194	10/12/12	772	19	642	927	900	176	2/9/13	1160		
197	195	10/24/12	790	20	649	962	932	177	2/21/13	806		
198	196	11/5/12	853	21	689	1056	1020	178	3/5/13	1069		
199	197	11/17/12	867	22	700	1073	1037	179	3/17/13	1533		
200	198	11/29/12	884	22	724	1080	1046	180	3/29/13	1225		
201	199	12/11/12	895	22	732	1094	1059	181	4/10/13	3475		
202	200	12/23/12	905	23	744	1100	1066	182	4/22/13	5294		
203	201	1/4/13	911	23	747	1112	1077	183	5/4/13	6658		
204	202	1/16/13	952	24	768	1180	1140	184	5/16/13	733		
205	203	1/28/13	897	22	710	1133	1091	185	5/28/13	2040		
206	204	2/9/13	906	23	716	1145	1103	186	6/9/13	1311		
207	205	2/21/13	899	22	711	1136	1094	187	6/21/13	778		
208	206	3/5/13	918	23	727	1158	1116	188	7/3/13	3762		
209	207	3/17/13	944	24	747	1192	1148	189	7/15/13	742		
210	208	3/29/13	955	24	755	1207	1162	190	7/27/13	3047		
211	209	4/10/13	970	24	761	1236	1189	191	8/8/13	1825		
212	210	4/22/13	1003	25	771	1304	1250	192	9/1/13	789		
213	211	5/4/13	1074	27	805	1433	1368	193	9/13/13	614		
214	212	5/16/13	1099	27	830	1454	1390	194	9/25/13	1081		
215	213	5/28/13	1118	28	842	1484	1418	195	10/7/13	1037		
216	214	6/9/13	1130	28	851	1499	1433	196	10/19/13	2030		
217	215	6/21/13	1142	29	863	1511	1445	197	11/12/13	987		
218	216	7/3/13	1218	30	916	1620	1547	198	11/24/13	1077		
219	217	7/15/13	1243	31	942	1641	1569	199	12/6/13	3491		
220	218	7/27/13	1310	33	992	1732	1656	200	12/30/13	2582		
221	219	8/8/13	1358	34	1032	1787	1710	201	1/11/14	2417		
222	220	8/20/13	1309	33	981	1746	1667	202	1/23/14	5201		
223	221	9/1/13	1311	33	982	1748	1669	203	2/4/14	1645		
224	222	9/13/13	1306	33	978	1744	1665	204	2/16/14	1806		
225	223	9/25/13	1296	32	970	1731	1652	205	2/28/14	2103		
226	224	10/7/13	1327	33	999	1761	1682	206	3/12/14	1229		
227	225	10/19/13	1373	34	1037	1819	1739	207	3/24/14	4324		
228	226	11/12/13	1290	32	974	1708	1633	208	4/5/14	12788		
229	227	11/24/13	1287	32	972	1705	1629	209	4/29/14	2173		
230	228	12/6/13	1384	35	1049	1825	1745	210	5/11/14	1104		
231	229	12/18/13	1327	33	993	1774	1693	211	5/23/14	2450		
232	230	12/30/13	1359	34	1013	1822	1738	212	6/4/14	3503		
233	231	1/11/14	1366	34	1017	1833	1748	213	6/16/14	448		
234	232	1/23/14	1387	35	1026	1876	1787	214	6/28/14	1132		
235	233	2/4/14	1486	37	1130	1953	1869	215	7/10/14	422		
236	234	2/16/14	1508	38	1147	1982	1897	216	9/8/14	1509		
237	235	2/28/14	1557	39	1187	2041	1954	217	9/20/14	1917		
238	236	3/12/14	1564	39	1194	2049	1962	218	10/2/14	2809		

	A	B	C	D	E	F	G	H	I	J	K	L
1	ID	Date.coll	Orig.fltr.mm^2	PC.fltr.mm^2	Air.m^3	Chord.mm	Radius.mm	Area.ashed.mm^2	Count.GO	GO.mm^2	Sen.per.m^3	Method 852: µ
2			1150	1075	<== Constants for all rows			Method 852	Constant periodically			
239	237	3/24/14			74.4	14	19.75	141	20		480	9
240	238	4/5/14			76.7	13.5	19	131	11		913	14
241	239	4/29/14	Braun Intertec		71.1	13	19.75	131	20		543	4
242	240	5/11/14	Pace Analytical		70.6	18.5	20.25	195	20		368	3
243	241	5/23/14			70.4	18	19.25	180	13		612	4
244	242	6/4/14			72.0	18	19.25	180	20		389	9
245	243	6/16/14			71.1	19	18.75	187	17		448	1
246	244	6/28/14			74.5	17	20.5	180	20		377	3
247	245	7/10/14			74.4	16	19.5	161	20		422	1
248	246	8/3/14			74.7	16.5	19	162	20		417	0
249	247	8/15/14			75.5	11	21	117	20		573	0
250	248	8/27/14			76.4	16	18	149	20		443	0
251	249	9/8/14			76.6	14	18.25	131	20		503	3
252	250	9/20/14			73.7	14	20	143	20		479	4
253	251	10/2/14			73.2	13	18.5	123	20		562	5
254	252	10/14/14			73.1	16	19.25	159	20		435	2
255	253	10/26/14			72.3	12	18.75	115	20		610	8
256	254	11/7/14			78.1	17	19	167	20		386	2
257	255	11/19/14			71.1	20	18.5	195	20		364	2
258	256	12/1/14			74.3	15	19.5	150	20		453	3
259	257	12/13/14			74.7	22	17	203	20		333	6
260	258	1/6/15			75.9	18	20	187	15		475	6
261	259	1/18/15			78.6	17	20.5	180	20		358	2
262	260	1/30/15			80.5	20	19.5	205	20		307	6
263	261	2/11/15			78.7	17	19.5	172	20		374	2
264	262	2/23/15			80.2	14	19.5	140	20		451	0
265	263	3/7/15			77.7	18	21	195	20		333	6
266	264	3/19/15			80.8	17	19.5	172	8		911	5
267	265	7/5/15			69.9	10	20	101	10	0.012724	1375	0
268	266	7/17/15			68.6	10	18	91	10		1553	0
269	267	7/29/15			71.0	10	19	96	10		1423	0
270	268	8/10/15			70.5	10	20	101	10		1364	0
271	269	8/22/15			70.3	9	19	86	10		1601	0
272	270	9/3/15			69.8	9	20	91	10		1533	0
273	271	9/15/15			70.1	8	20	81	10		1721	1
274	272	9/27/15			72.1	7	20	70	10		1915	1
275	273	10/9/15			73.9	8	20.5	83	10		1593	1
276	274	10/21/15			72.3	7	20	70	10		1910	0
277	275	11/2/15			73.7	10	19.5	99	10		1337	1
278	276	11/14/15			74.9	6	20	60	10		2154	0
279	277	11/26/15			78.3	10	20	101	10		1228	0
280	278	12/8/15			76.8	7	20.5	72	10		1755	1
281	279	12/20/15			73.9	8	19.5	79	10		1674	1
282	280	1/1/16			79.7	8	19	77	10		1592	0
283	281	1/13/16			76.8	7	19	67	10		1892	0
284	282	1/25/16			74.6	7	18.75	66	10		1973	0
285	283	2/6/16			77.0	7	19.5	69	10		1839	0
286	284	2/18/16			76.3	7.5	21	79	10		1608	1
287	285	3/1/16			73.1	7.5	21.25	80	10		1659	0
288	286	3/13/16			71.8	7	21.5	76	10		1790	1
289	287	3/25/16			70.0	8	22	88	10		1568	0
290	288	4/6/16			71.5	8	21.25	86	10		1589	0
291												
292												

	A	B	M	N	O	P	Q	R	S	T	U	V	W
1	ID	Date.coll	CenIndex	2 ways for: Fibers0		Fibers	95% C.I. :Method 852		ln(Fibers)	RollPeriod	RPspan	# of filters	# of BDL
2			BDL=1	fibers/m^3	v2.pdf	fibers/m^3	lower limit	upper limit	Method 852		days		
239	237	3/24/14	0	4320	**4324**	4324	1977	8209	8.3719	207	361	30	2
240	238	4/5/14	0	12782	**12788**	12788	6991	21456	9.4563	208	361	30	2
241	239	4/29/14	0	2172	**2173**	2173	592	5563	7.6839	209	361	29	2
242	240	5/11/14	0	1104	**1104**	1104	228	3225	7.0067	210	361	29	2
243	241	5/23/14	0	2448	**2450**	2450	667	6272	7.8038	211	361	29	2
244	242	6/4/14	0	3501	**3503**	3503	1602	6650	8.1614	212	361	29	2
245	243	6/16/14	0	448	**448**	448	11	2494	6.1048	213	361	29	2
246	244	6/28/14	0	1131	**1132**	1132	234	3309	7.0317	214	361	29	2
247	245	7/10/14	0	422	**422**	422	11	2354	6.0450	215	361	29	2
248	246	8/3/14	1	0	**0**	417	0	1539	6.0331	216	361	28	3
249	247	8/15/14	1	0	**0**	573	0	2112	6.3509	217	361	28	4
250	248	8/27/14	1	0	**0**	443	0	1635	6.0936	218	361	28	4
251	249	9/8/14	0	1509	**1509**	1509	311	4410	7.3192	219	361	28	4
252	250	9/20/14	0	1916	**1917**	1917	522	4909	7.5585	220	361	28	4
253	251	10/2/14	0	2810	**2809**	2809	912	6554	7.9406	221	361	28	4
254	252	10/14/14	0	870	**870**	870	105	3144	6.7685	222	361	28	4
255	253	10/26/14	0	4880	**4882**	4882	2108	9619	8.4933	223	349	28	4
256	254	11/7/14	0	772	**773**	773	94	2791	6.6503	224	361	29	4
257	255	11/19/14	0	728	**727**	727	88	2627	6.5889	225	361	29	4
258	256	12/1/14	0	1359	**1359**	1359	280	3971	7.2145	226	361	29	4
259	257	12/13/14	0	1998	**1995**	1995	732	4343	7.5984	227	361	29	4
260	258	1/6/15	0	2850	**2852**	2852	1047	6208	7.9558	228	361	28	3
261	259	1/18/15	0	716	**715**	715	87	2585	6.5723	229	361	28	3
262	260	1/30/15	0	1842	**1839**	1839	675	4003	7.5170	230	361	28	3
263	261	2/11/15	0	748	**749**	749	91	2704	6.6187	231	361	28	3
264	262	2/23/15	1	0	**0**	451	0	1664	6.1115	232	361	28	4
265	263	3/7/15	0	1998	**1997**	1997	733	4347	7.5994	233	361	28	4
266	264	3/19/15	0	4555	**4557**	4557	1480	10635	8.4244	234	361	28	4
267	265	7/5/15	1	0	**0**	1375	0	5073	7.2262	235	361	21	5
268	266	7/17/15	1	0	**0**	1553	0	5729	7.3479	236	349	21	6
269	267	7/29/15	1	0	**0**	1423	0	5251	7.2605	237	361	22	7
270	268	8/10/15	1	0	**0**	1364	0	5030	7.2182	238	361	22	7
271	269	8/22/15	1	0	**0**	1601	0	5906	7.3784	239	361	22	7
272	270	9/3/15	1	0	**0**	1533	0	5656	7.3350	240	361	22	7
273	271	9/15/15	0	1721	**1721**	1721	44	9588	7.4507	241	361	22	7
274	272	9/27/15	0	1915	**1915**	1915	48	10671	7.5575	242	361	22	7
275	273	10/9/15	0	1593	**1593**	1593	40	8876	7.3734	243	361	22	7
276	274	10/21/15	1	0	**0**	1910	0	7045	7.5549	244	361	22	8
277	275	11/2/15	0	1337	**1337**	1337	34	7449	7.1982	245	361	22	8
278	276	11/14/15	1	0	**0**	2154	0	7945	7.6751	246	361	22	9
279	277	11/26/15	1	0	**0**	1228	0	4529	7.1131	247	361	22	10
280	278	12/8/15	0	1755	**1755**	1755	44	9776	7.4702	248	361	22	10
281	279	12/20/15	0	1674	**1674**	1674	42	9325	7.4230	249	349	22	10
282	280	1/1/16	1	0	**0**	1592	0	5873	7.3727	250	361	23	11
283	281	1/13/16	1	0	**0**	1892	0	6978	7.5454	251	361	23	12
284	282	1/25/16	1	0	**0**	1973	0	7278	7.5873	252	361	23	13
285	283	2/6/16	1	0	**0**	1839	0	6783	7.5170	253	361	23	14
286	284	2/18/16	0	1608	**1608**	1608	41	8961	7.3827	254	361	23	14
287	285	3/1/16	1	0	**0**	1659	0	6121	7.4140	255	361	23	14
288	286	3/13/16	0	1790	**1790**	1790	45	9975	7.4900	256	361	23	14
289	287	3/25/16	1	0	**0**	1568	0	5786	7.3576	257	265	23	15
290	288	4/6/16	1	0	**0**	1589	0	5862	7.3709	258	277	24	16
291													
292													

	A	B	X	Y	Z	AA	AB	AC	AD	AE	AF	AG	AH
1	ID	Date.coll	# of uncen	Location	Scale	Log-likelih'd	$Geom_{miss}$	$Geom_{cen}$	$95\%G_{lower}$	$95\%G_{upper}$	$_{1\text{-tail}}95\%G_{up}$	Loc(1DL)	Scale(1DL)
2				Method 852			fibers/m^3	fibers/m^3	fibers/m^3	fibers/m^3	fibers/m^3	Method 852	Method 852
239	237	3/24/14	28	7.3685	0.8128	-246.65	1807	1585	1184	2123	2026	7.3896	0.7774
240	238	4/5/14	28	7.4437	0.9004	-251.80	1965	1709	1236	2362	2243	7.4678	0.8617
241	239	4/29/14	27	7.3889	0.8801	-240.81	1861	1618	1173	2232	2120	7.4135	0.8409
242	240	5/11/14	27	7.3283	0.8374	-237.68	1742	1523	1121	2068	1969	7.3515	0.8001
243	241	5/23/14	27	7.3707	0.8280	-238.63	1821	1589	1174	2151	2048	7.3931	0.7908
244	242	6/4/14	27	7.3889	0.8404	-239.57	1858	1618	1190	2200	2094	7.4118	0.8026
245	243	6/16/14	27	7.3500	0.8765	-239.55	1786	1556	1129	2144	2037	7.3747	0.8377
246	244	6/28/14	27	7.3634	0.8677	-239.68	1811	1577	1148	2166	2059	7.3877	0.8291
247	245	7/10/14	27	7.2864	0.8875	-238.02	1670	1460	1055	2021	1918	7.3122	0.8488
248	246	8/3/14	25	7.2197	0.9489	-223.51	1684	1366	958	1949	1840	7.2663	0.8767
249	247	8/15/14	24	7.1535	0.9970	-216.69	1678	1279	878	1861	1752	7.2249	0.8920
250	248	8/27/14	24	7.1642	0.9786	-216.19	1678	1292	894	1869	1761	7.2353	0.8763
251	249	9/8/14	24	7.1887	0.9717	-216.71	1724	1324	918	1910	1801	7.2585	0.8694
252	250	9/20/14	24	7.2320	0.9573	-217.58	1808	1383	964	1983	1871	7.2991	0.8552
253	251	10/2/14	24	7.2662	0.9647	-218.76	1881	1431	995	2058	1941	7.3333	0.8613
254	252	10/14/14	24	7.2594	0.9684	-218.66	1867	1421	987	2047	1930	7.3270	0.8649
255	253	10/26/14	24	7.2885	0.9978	-220.24	1937	1463	1005	2131	2006	7.3583	0.8912
256	254	11/7/14	25	7.2671	0.9861	-228.01	1867	1432	995	2062	1945	7.3339	0.8850
257	255	11/19/14	25	7.2556	0.9936	-227.86	1844	1416	981	2045	1927	7.3234	0.8922
258	256	12/1/14	25	7.2640	0.9915	-228.06	1862	1428	990	2060	1942	7.3314	0.8901
259	257	12/13/14	25	7.2456	0.9775	-227.14	1820	1402	977	2012	1899	7.3121	0.8775
260	258	1/6/15	25	7.3188	0.9207	-224.69	1828	1508	1068	2129	2015	7.3660	0.8522
261	259	1/18/15	25	7.2738	0.9291	-223.63	1741	1442	1018	2042	1931	7.3225	0.8608
262	260	1/30/15	25	7.2387	0.8931	-221.62	1670	1392	996	1946	1844	7.2853	0.8274
263	261	2/11/15	25	7.2094	0.9022	-221.04	1618	1352	964	1896	1796	7.2572	0.8364
264	262	2/23/15	24	7.1362	0.9615	-214.69	1611	1257	875	1806	1703	7.2077	0.8623
265	263	3/7/15	24	7.1344	0.9604	-214.61	1607	1254	873	1802	1700	7.2059	0.8614
266	264	3/19/15	24	7.1790	0.9940	-216.76	1697	1312	902	1908	1796	7.2527	0.8913
267	265	7/5/15	16	6.9411	0.9273	-143.03	1486	1034	683	1565	1464	7.0800	0.7737
268	266	7/17/15	15	6.9639	0.9175	-136.07	1616	1058	697	1606	1502	7.1420	0.7379
269	267	7/29/15	15	6.9364	0.9158	-136.53	1616	1029	680	1557	1457	7.1474	0.7206
270	268	8/10/15	15	6.9971	0.8477	-135.09	1616	1093	744	1606	1510	7.2013	0.6762
271	269	8/22/15	15	7.0451	0.8006	-133.92	1616	1147	797	1652	1558	7.2480	0.6497
272	270	9/3/15	15	7.1118	0.7254	-132.06	1616	1226	880	1709	1620	7.3044	0.5964
273	271	9/15/15	15	7.1180	0.7276	-132.26	1631	1234	885	1721	1632	7.3104	0.5972
274	272	9/27/15	15	7.1180	0.7275	-132.26	1631	1234	885	1721	1632	7.3104	0.5971
275	273	10/9/15	15	7.0955	0.7027	-131.08	1570	1207	874	1665	1581	7.2846	0.5807
276	274	10/21/15	14	7.0925	0.7154	-123.93	1638	1203	860	1683	1595	7.3203	0.5715
277	275	11/2/15	14	7.0541	0.6206	-120.39	1493	1158	864	1551	1480	7.2615	0.5081
278	276	11/14/15	13	7.0653	0.6241	-113.25	1571	1171	865	1584	1509	7.3080	0.4963
279	277	11/26/15	12	7.0617	0.6338	-106.56	1675	1166	850	1601	1521	7.3319	0.4721
280	278	12/8/15	12	7.0741	0.6387	-106.98	1711	1181	859	1624	1543	7.3435	0.4722
281	279	12/20/15	12	7.0673	0.6313	-106.62	1686	1173	856	1608	1528	7.3355	0.4692
282	280	1/1/16	12	7.0496	0.6305	-106.99	1686	1152	842	1578	1500	7.3371	0.4584
283	281	1/13/16	11	6.9932	0.6120	-97.68	1607	1089	792	1498	1423	7.3193	0.4409
284	282	1/25/16	10	7.0074	0.6121	-90.62	1743	1105	791	1543	1463	7.3634	0.4126
285	283	2/6/16	9	6.9465	0.6360	-82.50	1732	1039	719	1503	1416	7.3634	0.4126
286	284	2/18/16	9	7.0111	0.6101	-83.31	1886	1109	779	1578	1491	7.3966	0.3794
287	285	3/1/16	9	7.1896	0.4244	-80.02	1886	1326	1036	1696	1630	7.4533	0.2560
288	286	3/13/16	9	7.1874	0.4173	-79.69	1863	1323	1038	1686	1621	7.4485	0.2541
289	287	3/25/16	8	7.2569	0.1793	-63.51	1666	1418	1270	1583	1555	7.4021	0.1394
290	288	4/6/16	8	7.2515	0.1794	-63.81	1666	1410	1263	1575	1547	7.4008	0.1364
291											2749		
292													

	A	B	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR
1	ID	Date.coll	$Geom_{1DL}$	% $Geom_{1DL}$/AL	95%G_{lower}	95%G_{upper}	$_{1\text{-tail}}$95%G_{up}		Date of	Fibers	Date of	Fibers
2			Method 852:	for plotting	fibers/m^3	fibers/m^3	:Method 852		noncensored	Method 852	censored	Method 852
239	237	3/24/14	1619	40	1226	2138	2045	219	10/14/14	870		
240	238	4/5/14	1751	44	1286	2383	2268	220	10/26/14	4882		
241	239	4/29/14	1658	41	1221	2252	2144	221	11/7/14	773		
242	240	5/11/14	1559	39	1165	2085	1990	222	11/19/14	727		
243	241	5/23/14	1625	41	1218	2167	2069	223	12/1/14	1359		
244	242	6/4/14	1655	41	1236	2217	2115	224	12/13/14	1995		
245	243	6/16/14	1595	40	1176	2164	2060	225	1/6/15	2852		
246	244	6/28/14	1616	40	1195	2185	2082	226	1/18/15	715		
247	245	7/10/14	1498	37	1100	2041	1942	227	1/30/15	1839		
248	246	8/3/14	1431	36	1034	1980	1880	228	2/11/15	749		
249	247	8/15/14	1373	34	987	1911	1812	229	3/7/15	1997		
250	248	8/27/14	1388	35	1003	1920	1822	230	3/19/15	4557		
251	249	9/8/14	1420	36	1029	1960	1861	231	9/15/15	1721		
252	250	9/20/14	1479	37	1077	2030	1929	232	9/27/15	1915		
253	251	10/2/14	1530	38	1112	2105	2000	233	10/9/15	1593		
254	252	10/14/14	1521	38	1104	2095	1990	234	11/2/15	1337		
255	253	10/26/14	1569	39	1128	2183	2070	235	12/8/15	1755		
256	254	11/7/14	1531	38	1110	2113	2007	236	12/20/15	1674		
257	255	11/19/14	1515	38	1095	2097	1990	237	2/18/16	1608		
258	256	12/1/14	1527	38	1105	2112	2005	238	3/13/16	1790		
259	257	12/13/14	1498	37	1089	2062	1959					
260	258	1/6/15	1581	40	1153	2168	2061					
261	259	1/18/15	1514	38	1101	2082	1978					
262	260	1/30/15	1459	36	1074	1982	1887		**Data below are for plotting**			
263	261	2/11/15	1418	35	1040	1933	1840		1st 365-day period		AQ27A idled	
264	262	2/23/15	1350	34	981	1858	1765	3/13/07	325	Date	Value used	Value used
265	263	3/7/15	1347	34	979	1854	1761	3/18/06	325	4/2/2009	100	0
266	264	3/19/15	1412	35	1015	1964	1863	3/18/06	36000	4/2/2009	50000	90
267	265	7/5/15	1188	30	853	1654	1568	3/13/07	36000	7/5/2009	50000	90
268	266	7/17/15	1264	32	922	1733	1647	3/13/07	10000	7/5/2009	100	0
269	267	7/29/15	1271	32	940	1717	1636					
270	268	8/10/15	1341	34	1011	1779	1700		Data update: Yr 2015			
271	269	8/22/15	1405	35	1071	1844	1765	12/13/14	30			
272	270	9/3/15	1487	37	1159	1908	1833	12/13/14	80			
273	271	9/15/15	1496	37	1165	1920	1844	12/20/15	80			
274	272	9/27/15	1496	37	1165	1920	1844					
275	273	10/9/15	1458	36	1144	1858	1787					
276	274	10/21/15	1511	38	1190	1918	1846					
277	275	11/2/15	1424	36	1152	1761	1702					
278	276	11/14/15	1492	37	1213	1836	1776					
279	277	11/26/15	1528	38	1255	1861	1803					
280	278	12/8/15	1546	39	1269	1883	1825					
281	279	12/20/15	1534	38	1261	1866	1808					
282	280	1/1/16	1536	38	1274	1853	1798					
283	281	1/13/16	1509	38	1260	1807	1756					
284	282	1/25/16	1577	39	1332	1867	1817					
285	283	2/6/16	1577	39	1332	1867	1817					
286	284	2/18/16	1630	41	1396	1904	1857					
287	285	3/1/16	1725	43	1554	1916	1884					
288	286	3/13/16	1717	43	1548	1905	1874					
289	287	3/25/16	1639	41	1549	1736	1720					
290	288	4/6/16	1637	41	1550	1729	1714					
291					← Max →		2809					
292					For RollPeriod Nos. 26-258							

Attachment 2 – Public Comments Received and Response to Public Comments

Comment	Commenter	Response to Comments	Changes to Permit
It is unclear whether the Operations and Maintenance Plan, the Fugitive Dust Control Plan, and the Ambient Fiber Montioring Plan will be enforceable parts of the permit.	Fond Du Lac Band of Chippewa	In this permit amendment, we believe there are clear requirements for the development, update, and use of the O&M plan, fugitive dust control plan, and ambient fiber monitoring plan, which will all be enforceable and subject to compliance inspections.	No change
Under the "Action Level for Fibers" section of the permit, there are three requirements to be met within 45 days if the Geomean is found to be greater than or equal to the Action Level: 1) Conduct and investigation into the causes of the increase, 2) correct deviations or implement additional control measures, and 3) develop and implement a fiber action level plan (FALP). It is unclear whether Northshore must notify the MPCA of the exceedance at this time or whether the results of these three items have to be submitted to the MPCA at this time. The Band recommends that the MPCA be notified and that these items be submitted within the 45 day time frame.	Fond Du Lac Band of Chippewa	There is no requirement for submission of these items within the 45 days. The decision to not have immediate submission of these items is that it allows the facility time to adjust operations in reaction to the elevated fiber concentration levels. We do require submission of the FALP if fiber concentrations are greater than the action level for greater than 180 consecutive days. Thereafter, the FALP shall be submitted quarterly until fiber levels have decreased below the AL. An excursion of the action level is not an immediate public health threat. The MPCA has the authority to request the FALP at any time outside of 180 consecutive day requirement.	No change
With regard to the FALP, the permit requirements are confusing. It seems that if fiber levels meet or exceed the Action Level, the company has 45 days to write up a FALP, but again its is unclear if this plan is submitted to the MPCA. If the plan does not have to be submitted then the 45 day time frame requirement is meaningless. Further, it appears there in another requirement if the fiber levels contintue to meet or exceed the Action Level for 180 days - it appreas that the MPCA complaince staff is notified at this statge. However, if the MPCA first hears of the exceedances six months after they occur, that is too long. Hten Band recommends that the MPCA be notified within 90 days of the time that the Geomeean meets or exceeds the Action Level.	Fond Du Lac Band of Chippewa	The action level and use of a geometric mean for calculating the concentration of fibers were developed together using a statistical approach that essentially states that any time the calculated geomean is greater than the action level, this condition is reflective a "true" deviation/departure of fiber levels from the action level. Stated qualitatively, the concentration of fibers are truly greater than they have been historically. An excursion of the action level is not indicative of an imminent threat to public health and we do not interpret it as such at this time. It remains unknown what activities and control measures at the facility impact fiber levels and each potential excursion of fiber concentrations above action level may have resulted from different sources at the facility and differing temporal/spatial conditions that impact the concentration of fibers. Building in 180 days was intentional as it allows the facility the flexibility to respond to the increase through implementing the permit conditions associated with an excursion of the action level and to figure out how to best. The MPCA will be notified if geomean is greater than or equal to the Action Level for more than 180 consecutive days, and quarterly thereafter. The Permittee must maintain the FALP at the facility and make it available to the MPCA upon request.	No change

Comment	Commenter	Response to Comments	Changes to Permit
Per our comments from December 10, 2018, the Band still believes that monitoring samples should be sent to a lab within 30 days of collection, rather than 60 days, so that results can be obtained sooner and reduction activities can start taking place as soon as possible.	Fond Du Lac Band of Chippewa	The permit conditions were written with every effort to put the onus and incentive on the facility to conduct itself in an expeditious manner.	We can change the required period to 45 days and still afford the facility flexibility in submittal time.
As previously stated in comments, the draft permit does not address whether the monitoring and action requirements apply during periods of shutdowns. While these periods are not specifically exempted, the Band Recommends that the permti clarify that these requrements apply at all times, whether the facility is operating or not, due to the presence of stockpiles and tailings basins.	Fond Du Lac Band of Chippewa	All fiber related requirements including monitoring, the action level, and development of the FALP, will apply during any period of shutdown, as do all provisions required by the permit.	No change
The Band still believes that allowing the facility to reanalyze high monitoring results and use a second, lower result in calculating the geomean is improper, per our comments of December 10, 2018	Fond Du Lac Band of Chippewa	The nature of using the 365 day rolling geometric mean to calculate the concentration of fibers at the facility allows for any variation in any individual or multiple monitoring results to have very little effect on changing the overall calculated value. Allowing the facility to reanalyze results provides consistency with the way the historic monitoring data was used to develop the action level with that of the calculating the geomean in the future. We do not believe re-evaluation of any filter will result in statistically significant differences in the calculated geometric mean.	No change
Is the geomean statistical technique consistant with techniques that were used in developing the proposed wild rice standard and taconite FIP? If not, why not?	Fond Du Lac Band of Chippewa	The FIP does not involve a log transformation of the data, which was used to set the action level. To achieve a relatively normal distribution of fiber concentrations for use in the statistically based development of the action level, historic fiber concentration data were logarithmically transformed. The statistical approach to arrive at the action level was not used in the development of the draft Wild Rice Standard.	No change
The draft permit does not appear to require a periodic literature review on fiber toxicity and health impacts in general. The Band requests that a literature review be performed annually and that permit requirements be updated as needed.	Fond Du Lac Band of Chippewa	The MPCA reserves the right to reevaluate the permit if there are any new developments in the field of public health and EMP research and if that research could be applied appropriately to any regulated facility with respect to fibers.	No change

Comment	Commenter	Response to Comments	Changes to Permit
Action Level: We are concerned about whether the proposed Action Level of 4000 fibers/m3 in table A-7b of the draft permit amendment is an adequate/safe limit since it is not a health-based limit. Further research on fiber toxicity and impacts to human health is warranted. The proposed Action Level is based on the geometric mean of Northshore's emission levels from 2006-2018. This appreas to base the Action Level of fiber emissions thave have been acheived by Northshore Mining Company with their current technology and does not guarantee safe levels for human health. We also question whether using the annual rolling geometric mean of fiber emissions without an understanding of what is safe. According to the fiber emission records provided in the Norhthsore Fiber Permit Amendment-Technical Support Document, there have been times where emissions are an order of magnitude higher than the proposed Action Level (range 20,000 to 40,000 fibers/m3 at times). This futher supports the need for more research on fiber toxicity in order to set an Action Level. We suggest that the permit require a periodic (perhaps annual) review if scientific literature on fiber toxicity and use the information to update the Action Level if the new findings support it.	1854 Treaty Authority	The MPCA agrees that additional research is needed on the public health implications for the type of fibers population found in Silver Bay and Beaver Bay. Because it's not available, the proposed action level is not based on health data or research, but is set at a level the facility has consistently operated under since particulate Best Available Control Technology (BACT) were installed and operated at the facility, resulting in a facility well-controlled for particulates. The MPCA will consider new research on the toxicity of elongate mineral particles as applicable to this situation as it is made available. The period of time when the concentration of fibers was higher (20,000 - 40,000) was prior to the installation and operation of BACT for particulate controls. The method of fiber monitoring results in large sample to sample variability and makes it difficult to know anything about average concentrations or possible trends in concentrations. This variability is reduced when looked at with a 365 day rolling geometric mean.	No change
Compliance: One of the reasons the MPCA proposed eliminating the control city standard from Northshore's air permit was because the concentration of fibers that will comply with the control city standard is not known until after the samples are collected, sent to the lab for analysis, results are reported, and concentrations for the lcoations are calculated. Additionally, the Northshore cannot change its operations in an attempt to reduce fiber concentrations until after compliance is determined, sometimes months after fiber samples were actually collected. It is not clear how the proposed new approach makes any improvement over the current issues as it calls for similar methods in Table A, Section A-7b. Please clarify how the new approach will allow Northshore to detect an exceedance and take action sooner thatn with the control city standard. Including an Ambient Fiber Monitoring Plan with Standard Operating Procedures in the permit amendment should be considered and would help provide clarity on this issue.	1854 Treaty Authority	The action level proposed by this permit amendment is set at a constant level. Therefore the permittee is always aware of the level at which it must try to maintain fiber concentration at or under. This will allow the permittee to anticipate and change the operations before the concentrations of fibers exceed the action level if an upward trend in the concentration of fibers is observed. The permittee does not need to wait for fiber monitoring results from a control city to be reported to know whether or not the facility will be in compliance. The new AL approach will not shorten the time interval between a monitoring event and when the geomean can be calculated, but it does provide a predetermined and pre-known level that is static and not variable.	No change

Comment	Commenter	Response to Comments	Changes to Permit
Timeline for Fiber Action Level Plan: According to Table A, Section A-7c of the draft permit amendment, Northshore must begin to submit the Fiber Action Level Plan (FALP) to the MPCA if the geometric mean has not decreased to below the Action Level within 180 days. This seems to be an artifact from the existing air permit that requires semi-annual reporting. We suggest that the MPCA considera a shorter period for determinning an exceedance and for Nortshore to take action. A time period of 60 days would seem adequate since the draft permit amendment woiuld require more frequest fiber monitoring (96 hours every 12 days), which would allow for approximately five monitor readings to determine if Northshore would need to take action to lower fiber emissions. Wea rea also concerened that there does not appear to be a firm timeline for compliance once the Action Level is exceeded. Instead of setting a timeline, the draft permit amendmne tincludes the langauge "shortest reasonable period of time" (Table A, Section A-7c). This language seems to leave it up to Northshore to determine when they can/will comply. We suggest including langauge in the permit amendment that would set a firmer timeline and support MPCA's authority to determine when Northshore will comply.	1854 Treaty Authority	The 180 day requirement was decided upon for multiple reasons. We did try to find a way to maximize administrative efficiency by timing the submission of the FALP to other periodic semi-annual reporting requirements in the permit. 180 days is consistent with submission of other reporting requirements such as the semi-annual compliance reports for the Taconite MACT, semi-annual monitoring reports, excess emissions and continuous monitoring system performance reports for other types of standards. We also mirrored the notification frequency for any other non-emergency permit violation. An exceedance of the action level does not constitute an immediate public health threat, but is an indicator of when activities at the facility may have changed to allowed for their increase. Additionally, we anticipate that there will be a lag from when the action level is triggered to when any changes may have a detectable effect on fiber concentration, given that the concentration is determined by a 365 day rolling geometric mean. The permittee must develop a FALP within 45 days of the exceedance. The permit requirements were written in such a way to allow the permittee to investigate and respond to an increase in fiber concentrations, while also providing clear and enforceable reporting, record keeping, and response requirements. The 180 day is purely a reporting timeline and does not recuse the permittee from all other fiber related permit requirements. The FALP, monitoring data, O&M plan, and fiber monitoring plan documents must be held on-site at the facility and can be requested at any time. The MPCA has and will continue to be sent all fiber monitoring reports and will have a copy of the compliance calculations and records for our own purposes.	No change

Comment	Commenter	Response to Comments	Changes to Permit
Proper Control of Fibers: It is stated in Table A, Section A-7c of the draft fiber permit amendment that "The permittee may use particulate controls as a surrogate for fiber controls". It is uncertain whether particulate control practices are an appropriate surrogate for controlling fibers. Please provide additional information and/or references to studies that would support this. Thank you for your time and consideration of these comments.	1854 Treaty Authority	The rational for including PM controls as a surrogate for fiber controls is that fibers are a subset of all PM. If this assumption is refuted by evidence that comes to light at a future date, this will be reconsidered.	No change