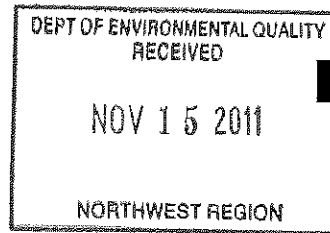


Boise Paper
1300 Kaster Road St. Helens, OR 97051
T 503 397 2900



BOISE

November 10, 2011

Ms. Lorell Miller
Oregon Department of Environmental Quality
2020 SW 4th Ave. #400
Portland, OR 97201-5263

RE: Boise White Paper LLC Tier I Case Specific Beneficial Use Application for
Primary Clarifier Solids

Dear Ms. Miller:

As previously discussed, the Boise Paper Mill at St. Helen's has an opportunity for beneficial reuse of our primary clarifier solids (PCS). At least two potential customers would like to use PCS as an alternative fiber source. RockTenn proposes to use PCS for packing material and could use a load of material each week. Stutzman Environmental Products has requested four truckloads of PCS to run a trial for use in animal bedding under brand name Absorption Corporation. This could provide an ongoing demand for PCS in the future.

A Tier I application meeting the requirements of OAR 34-093-290(1) is enclosed along with the application fee of \$1,000. We believe this project can be beneficial to all concerned and reduce use of the landfill for disposal. I look forward to your quick approval of this application. Should you have any specific questions or comments relating to this application, please call me at 503-397-9259.

Sincerely,

Alison Dean
Environmental Engineer

Enclosures: Tier I application form (4 pages)
Tier I application information (5 pages)
Example MSDS provided by vendor
Fact Sheet provided by vendor
Frequently Asked Questions provided by vendor

CC: Nick Nachbar – Boise White Paper LLC
Mary Lee Ransmeier – Boise Inc
Rich Garber – Boise Inc



State of Oregon
Department of
Environmental
Quality

DEPT OF ENVIRONMENTAL QUALITY
RECEIVED

NOV 15 2011

NORTHWEST REGION

Application for a

Solid Waste Beneficial Use Determination

DEQ USE ONLY - BUSINESS OFFICE

Date Received: _____

Amount Received: _____

Check No.: _____

Deposit No.: _____

Forward confirmation of fee payment for:
Eastern Region to DEQ, The Dalles
Northwestern Region to DEQ-NWR, Portland
Western Region to DEQ, Salem

A. REFERENCE INFORMATION *(Please type or print clearly.)*

Boise White Paper LLC

Legal name of applicant

Business name of applicant if different

1300 Kaster Rd

St Helens

OR

97051

Mailing address

City

State

Zip

503-397-2900

NickNachbar@BoisePaper.com

503-397-9235

Phone

Mobile

E-mail

Fax

Boise White Paper LLC

Generator of solid waste (may be same as applicant)

1300 Kaster Rd

St Helens

OR

97051

Mailing address

City

State

Zip

503-397-2900

NickNachbar@BoisePaper.com

503-397-9235

Phone

Mobile

E-mail

Fax

B. TYPE OF BENEFICIAL USE DETERMINATION REQUESTED Beneficial Use Determination applications are categorized based on the type of information and potential amount of work required by DEQ staff to review application materials and render a decision. A tiered review and fee system has been established in rule. The tiers are:

- Tier 1 For a beneficial use of a solid waste that does not contain hazardous substances significantly exceeding the concentration in a comparable raw material or commercial product and that will be used in a manufactured product;

- Tier 2 For a beneficial use of a solid waste that contains hazardous substances significantly exceeding the concentration in a comparable raw material or commercial product, or involves application on the land;
- Tier 3 For a beneficial use of a solid waste that requires research, such as a literature review or risk assessment, or for a demonstration project to demonstrate compliance with this rule.

I am applying for a ☒ Tier 1 ☐ Tier 2 ☐ Tier 3 determination.

C. DOES THIS PROPOSED BENEFICIAL USE INVOLVE LAND APPLICATION OF ANY MATERIAL?

☐ Yes ☒ No

D. SIGNATURE I hereby certify by my signature below that the information contained in this application, and the documents I have attached, are true and correct to the best of my knowledge and belief.

Nick Nachbar

Site Manager



NICK NACHBAR

SITE MANAGER 11/10/14

Signature of legally authorized representative

Print name

Title

Date

E. REQUIRED ATTACHMENTS TO THIS APPLICATION *(For an application to be complete, it must provide the required information for each listed item of the tier which is being applied for.)*

Tier 1

- ☒ A description of the material, manner of generation, and estimated quantity to be used each year;
- ☒ A description of the proposed use;
- ☒ A comparison of the chemical and physical characteristics of the material proposed for use with the material it will replace;
- ☒ A demonstration of compliance with the performance criteria in OAR 340-093-0280 based on knowledge of the process that generated the material, properties of the finished product, or testing; and
- ☒ Any other information that DEQ may require to evaluate the proposal.

Tier 2

- ☐ The information required for a Tier 1 application;
- ☐ Sampling and analysis that provides chemical, physical, and biological characterization of the material and that identifies potential contaminants in the material or the end product, as applicable;
- ☐ A risk screening comparing the concentration of hazardous substances in the material to existing, DEQ approved, risk-based screening level values, and demonstrating compliance with acceptable risk levels;
- ☐ Location or type of land use where the material will be applied, consistent with the risk scenarios used to evaluate risk;
- ☐ Contact information of property owner(s) if this is a site-specific land application proposal, including name, address, phone number, e-mail, site address and site coordinates (latitude and longitude); and
- ☐ A description of how the material will be managed to minimize potential adverse impacts to public health, safety, welfare, or the environment.

Tier 3

- ☐ The information required for a Tier 1 & 2 application;
- ☐ A discussion of the justification for the proposal;
- ☐ An estimate of the expected length of time that would be required to complete the project, if it is a demonstration; and
- ☐ If it is a demonstration project, the methods proposed to ensure safe and proper management of the material.

F. PERFORMANCE CRITERIA *(For all tiers - An application for a beneficial use determination must demonstrate satisfactory compliance with the following performance criteria.)*

The use is productive, including:

- ♦ There is an identified or reasonably likely use for the material that is not speculative;
- ♦ The use is a valuable part of a manufacturing process, an effective substitute for a valuable raw material or commercial product, or otherwise authorized by DEQ, and does not constitute disposal; and
- ♦ The use is in accordance with applicable engineering standards, commercial standards, and agricultural or horticultural practices.

The use will not create an adverse impact to public health, safety, welfare, or the environment, including:

- ♦ The material is not a hazardous waste under ORS 466.005;
- ♦ Until the time the material is used in accordance with a beneficial use determination, the material will be managed, including any storage, transportation, or processing, to prevent releases to the environment or nuisance conditions;
- ♦ Hazardous substances in the material do not significantly exceed the concentration in a comparable raw material or commercial product, or do not exceed naturally occurring background concentrations, or do not exceed acceptable risk levels, including evaluation of persistence and potential bioaccumulation, when the material is managed according to a beneficial use determination.

The use will not result in the increase of a hazardous substance in a sensitive environment.

The use will not create objectionable odors, dust, unsightliness, fire, or other nuisance conditions.

The use will comply with all applicable federal, state, and local regulations.

G. FEES *(Must accompany the application for it to be considered complete)*

☒	Tier 1 beneficial use determination	\$1,000
☐	Tier 2 beneficial use determination	\$2,000
☐	Tier 3 beneficial use determination	\$5,000

Make checks out to: **Oregon DEQ**Total fees included: \$1,000**H. APPLICATION PROCEDURE**Step 1

Contact a DEQ staff person for assistance with the preparation of the application. DEQ staff will help with: 1) Determination of the eligibility for a beneficial use determination of a particular waste or process; and, 2) If eligible, establish the tier of beneficial use determination review required and associated fee to submit with the application.

Step 2

Mail the original signed application, all attachments, including the fee payment plus one extra copy to the appropriate regional office (see listing below.) Note that DEQ review work will not begin until a complete application packet is received. Incomplete applications may be returned. DEQ recommends the applicant keep a full copy of all application materials to guard against possible loss in transit.

Step 3

DEQ will contact the applicant, acknowledging receipt of the application, and will identify the staff person assigned to carryout the review. This staff person will contact the applicant if any additional information is needed.

Region	Counties Served	Address & Phone
Eastern Region	Baker, Crook, Deschutes, Gilliam, Grant, Harney, Hood River, Jefferson, Klamath, Lake, Malheur, Morrow, Sherman, Umatilla, Union, Wallowa, Wasco, and Wheeler	Eastern Region Department of Environmental Quality 400 E Scenic Drive, Ste 2.307 The Dalles, OR 97058 (541) 298-7255 ext. 221
Northwest Region	Clatsop, Clackamas, Columbia, Multnomah, Tillamook, and Washington	Northwest Region DEQ Solid Waste Programs 2020 SW Fourth Ave. Ste 400 Portland, OR 97201 (503) 229-5353
Western Region	Benton, Coos, Curry, Douglas, Jackson, Josephine, Lane, Lincoln, Linn, Marion, Polk, and Yamhill	Western Region DEQ Solid Waste Programs 750 Front St. NE Suite 120 Salem, OR 97301 (503) 378-5047

Tier I Application information/OAR 340-093-290(1)

(a)	<i>Name, address, and telephone number of the applicant and the generator</i>
-----	---

Boise White Paper LLC
1300 Kaster Rd
St Helens, OR 97051
503-397-2900

(b)	<i>Description of the material, manner of generation, and estimated quantity to be used each year</i>
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PCS is approximately 62.5% water, 32.5% fiber, 3.2% inerts (clay, dirt), and 1.6% calcium carbonate (in house analysis of PCS - this is comparable to the quarterly test results for land application).

Columbia Analytical Services analyzes PCS for land application uses:

PCS	Q1-10	Q2-10	Q3-10	Q4-10	Q1-11	Q2-11	Q3-11	Avg
% Total solids	39.5	41.7	30.3	38.5	33.6	37.4	39.6	36.8
% Total volatile solids	76.7	79.0	85.4	86.3	85.8	82.1	85.8	82.5
% ash	23.4	21.0	14.6	13.7	14.2	17.9	14.2	17.5
Ammonia (N) ppm	70.5			36.3	<1.4	11.4	9.3	39.4
Nitrate (N) ppm		<0.12	<1.7	<1.3		<1.3		ND
Nitrite (N) ppm			<0.83	<0.65		<0.67		ND
CaCO3 eq ppm	7.6	8.0	8.7	9.8	12.9	17.7	5.2	10.8
pH	6.50		5.13		7.13		5.61	6.3
K ppm	296		362		172			276
S ppm	1,233		1,099		780		1,300	1,037
TKN ppm	5,050	3,257	1,507	5,080	2,660	4,660	3,730	3,702
TOC %	34.5	34.9	35.2	37.2	35.0	36.6	35.2	35.6
Ca ppm	24,267	26,133	1,297	5,680	24,700	7,030	3,200	14,851
Mg ppm	1,071	785	940	919	890	807	878	902
As ppm		<1.5	<2.2			<2.4	<2.0	ND
Ba ppm			14.8					14.8
B ppm		<1.5	<2.2	<26		<2.4		ND
Cd ppm		<0.08	0.1			<0.1	0.1	0.1
Cl ppm			1,340	291		302		644
Cr ppm			11.8				8.8	11.8
Cu ppm		15.1	31.0			18.3	18.4	21.5
Pb ppm		<1.5	2.8			20.1	3.1	11.5
Hg ppm		<0.02	<0.05			0.02	0.03	ND
Mo ppm		0.9	2.1			<0.5	0.7	1.5
Ni ppm		4.9	7.8			4.1	5.1	5.6
P ppm	290		234		235		356	253
Se ppm		<3	<4.4			<4.8	<4.0	ND

PCS (cont)	Q1-10	Q2-10	Q3-10	Q4-10	Q1-11	Q2-11	Q3-11	Avg
Na ppm		113	146	127		100	198	122
Zn ppm		21.9	44.9			38.5	42.6	35.1
PCB & furan								
2,3,7,8-TCDD ng/kg			<0.385					ND
1,2,3,7,8-PeCDD ng/kg			<0.372					ND
1,2,3,4,7,8-HxCDD ng/kg			<0.235					ND
1,2,3,6,7,8-HxCDD ng/kg			3.87					3.9
1,2,4,6,7,8-HpCDD ng/kg			81.0					81.0
OCDD ng/kg			609.3					609.3
2,3,7,8-TCDF ng/kg			1.11					1.1
1,2,3,7,8-PeCDF ng/kg			<0.334					ND
2,3,4,7,8-PeCDF ng/kg			<0.348					ND
1,2,3,4,7,8-HxCDF ng/kg			<0.429					ND
1,2,3,6,7,8-HxCDF ng/kg			<0.326					ND
1,2,3,7,8,9-HxCDF ng/kg			<0.457					ND
2,3,4,6,7,8-HxCDF ng/kg			<0.369					ND
1,2,3,4,6,7,8-HpCDF ng/kg			7.44					7.4
1,2,3,4,7,8,9-HpCDF ng/kg			<0.492					ND
OCDF ng/kg			20.1					20.1
sum ng/kg			723.7					723.7
TEF ppt			1.86					1.9
Total fiber, % of PCS as delivered	27.3	32.9	23.3	29.5	24.5	24.1	31.9	28.2

PCS is a byproduct generated at the primary treatment clarifier on site at the paper mill. Solids settle in the clarifier and are periodically pumped out through presses (to remove excess water), and then carried by conveyor belt to the landing.

Generated in 2009: 9660 tons PCS

Generated in 2010: 7068 tons PCS

Generated in 2011: ~7100 tons (est) PCS

We are planning to use 440 tons/year or greater of the PCS generated as alternative fiber.

(c)	<i>A description of the proposed use</i>
-----	--

Alternative fiber source for commercial products including packing material, absorbent (such as kitty litter), cardboard, etc. It will replace in part recycled paper and recycled newsprint.

(d)	<i>A comparison of the chemical and physical characteristics of the material proposed for use with the material it will replace</i>
-----	---

There is not a chemical analysis available for recycled paper or recycled newsprint. The companies we are in contact with currently using recycled paper do not require this. The recycled paper will have similar chemical makeup to PCS. EPA's website refers to ISRI's Scrap Specifications Circular (effective 7/26/2011). The guidelines for recyclable papers includes these parameters:
Residential Mixed Paper consists of various qualities of paper not limited to type; prohibited materials (plastic, agricultural chemicals, hazardous materials, etc.) may not exceed 2%
Unsorted Office Paper consists of printed or unprinted paper including white, colored, coated, uncoated, manila, etc.; prohibited materials may not exceed 2%
Old Newspaper consists of sorted newspapers and other acceptable papers; prohibited materials may not exceed 2%
Regular News, Deink Quality consists of sorted fresh newspapers; prohibited materials may not exceed 2%

(e)	<i>A demonstration of compliance with the performance criteria in OAR 340-093-0280 based on knowledge of the process that generated the material, properties of the finished product, or testing</i>
-----	--

Yes	<i>(1) The applicant has characterized the solid waste and use sufficiently to demonstrate compliance with this rule.</i>
-----	---

The material is solid generated from papermaking processes. Process knowledge as well as test results have been used to characterize this waste stream.

Yes	<i>(2) The use is productive, including:</i>	
	Yes	<i>(a) There is an identified or reasonably likely use for the material that is not speculative;</i>
	Yes	<i>(b) The use is a valuable part of a manufacturing process, an effective substitute for a valuable raw material or commercial product, or otherwise authorized by the Department and does not constitute disposal; and</i>
	Yes	<i>(c) The use is in accordance with applicable engineering standards, commercial standards, and agricultural or horticultural practices.</i>

The identified or reasonably like uses for the material are as an ingredient in packing material, absorbent material (such as kitty litter or cow bedding) and/or cardboard. The material will substitute for other more expensive materials (recycled paper, recycled newsprint, straw, etc.) The use is in accordance with

applicable standards; each of the identified or potential customers must meet their own customers' needs. The mill will only sell the material to those who have a legitimate manufacturing need for it.

	<i>(3) The use will not create an adverse impact to public health, safety, welfare, or the environment, including:</i>	
	Yes	<i>(a) The material is not a hazardous waste under ORS 466.005;</i>
	Yes	<i>(b) Until the time a material is used according to a beneficial use determination, the material must be managed, including any storage, transportation, or processing, to prevent releases to the environment or nuisance conditions;</i>
	Yes	<i>(c) Hazardous substances in the material meet one of the criteria in this subsection,</i>
	Yes	<i>(A) Do not significantly exceed the concentration in a comparable raw material or commercial product,</i>
	NA	<i>(B) Do not exceed naturally occurring background concentrations; or</i>
	Yes	<i>(C) Will not exceed acceptable risk levels, including evaluation of persistence and potential bioaccumulation, when the material is managed according to a beneficial use determination;</i>
	Yes	<i>(d) The use will not result in the increase of a hazardous substance in a sensitive environment;</i>
	Yes	<i>(e) The use will not create objectionable odors, dust, unsightliness, fire, or other nuisance conditions; and</i>
	Yes	<i>(f) The use must comply with applicable federal, state, and local regulations.</i>

The material is not hazardous waste determined by process knowledge and test results. The material is managed to prevent releases to the environment and nuisance conditions as necessary; at the site of generation, it is piled until trucked off site and sites where it will be used it will be shipped in at a rate that the users determine. There should be no excessive dusting (the material clumps and contains a fair amount of water), odor, or other releases. Hazardous substances in the material do not exceed those found in comparable raw material or commercial product. PCS has very low levels of persistent compounds (see section **b.**), these are also present in some inks so presumably would be present in recycled paper and recycled newsprint. The product is not considered to be edible, so no bioaccumulation should occur. The use will not result in the increase in any hazardous substances in the environment. The use will be managed to avoid objectionable odors, dust, etc.

(f)	<i>Any other information the Department may require to evaluate the proposal.</i>
	Attachment 3 is a MSDS from one of the companies interested in using PCS for a product made with recycled paper. Attachment 4 is a fact sheet on the safety of newsprint bedding. Attachment 5 is Absorption Corporation's Frequently Asked Questions.

MATERIAL SAFETY DATA SHEET

Primary Clarifier Solids

1 - Product Identification

Manufacturer Name and Address: Stutzman Environmental Products, Inc.
P.O. Box 307
Canby, OR 97013

Emergency Phone: (503) 266-4610
Phone for Additional Info: (503) 829-8570

Product Name: Cellulose Fiber Animal Bedding
Synonyms: PCS
Date Prepared: 11/1/11
Prepared By: Corporate Safety and Health

2 - Hazardous Ingredients/Identity Information

COMPONENTS	CAS #	PERCENT	OSHA PEL	ACGIH TLV
Paper Fiber (Cellulose)	9004-34-6	>75	15 mg/M3	10 mg/M3
Ash	1332-58-7	<25	15 mg/M3	10mg/M3
Water	7732-18-5	<15		

APPEARANCE AND ODOR:

Gray, yellow, pastel color shades, fibrous material having a slight paper odor

3 - Physical / Chemical Characteristics

BOILING POINT (F OR C): NAP

VAPOR PRESSURE (MM HG): NAP

SPECIFIC GRAVITY (H₂O = 1): < 1

MELTING POINT (F OR C): NAP

EVAPORATION RATE (BUTYL ACETATE = 1): NAP

SOLUBILITY IN WATER: NAP

% VOLATILE BY VOLUME @ 70 F:

NAP

PH: 7.0 - 9.5, USUALLY - 7.5

4 - Fire and Explosion Hazard Data

FLASH POINT (METHOD USED): NAP

FLAMMABLE LIMITS:

LEL: See below under "Unusual Fire and Explosion Hazards"

UEL: NAP

EXTINGUISHING MEDIA: Water

AUTOIGNITION TEMPERATURE (FOR C): 400 - 500 F

SPECIAL FIRE FIGHTING PROCEDURES: None

UNUSUAL FIRE AND EXPLOSION HAZARDS: Depending on moisture content, particle diameter, and rate of heating, cellulose dust may explode in the presence of an ignition source. An airborne concentration of 30,000 mg/m³ is often used as the LEL for cellulose pulp.

5 - Reactivity Data

STABILITY:

() Unstable (X) Stable

Conditions to Avoid: NAP

INCOMPATIBILITY (MATERIALS TO AVOID):

Avoid contact with oxidizing material

HAZARDOUS DECOMPOSITION OR BY-PRODUCTS:

Thermal decomposition products include carbon monoxide, carbon dioxide and aliphatic aldehydes.

HAZARDOUS POLYMERIZATION:

() May Occur (X) Will not occur

Conditions to Avoid: NAP

6 - Precautions for Safe Handling and Use

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:

Not applicable for product in purchased form. Paper dust may be swept or vacuumed for recovery or disposal.

WASTE DISPOSAL METHOD:

If disposed or discarded in purchased form, incineration and/or dry land disposal is acceptable. It is, however, the user's responsibility to determine at the time of disposal whether your product meets RCRA criteria for hazardous waste. Follow applicable federal, state or local regulations.

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE:

No special handling requirements. Store away from open flame.

OTHER PRECAUTIONS:

If this product is used in a process which generates dust levels in excess of the OSHA or state standard for cellulose dust, a mask (NIOSH/MSHA approved) and goggles should be worn.

7 - Health Hazard Data

PRIMARY ROUTE(S) OF EXPOSURE:

- () Ingestion
- (x) Skin - Fiber, water, organics
- (x) Inhalation - Dust

8 - Control Measures

PERSONAL PROTECTIVE EQUIPMENT:

Respiratory Protection:

Not applicable for product in purchased form. A NIOSH/MSHA - approved respirator is recommended when the allowable exposure limits may be exceeded.

Protective Gloves:

Not required. However, cloth, canvas, or leather gloves are recommended to minimize potential mechanical irritation from handling product.

Eye Protection:

Not applicable for product in purchased form. However, safety glasses/goggles are recommended if the product is used in such a way as to generate high dust levels.

Other Protective Clothing or Equipment:

Not applicable for product in purchased form.

Work/Hygienic Practices:

Follow good hygienic and housekeeping practices. Clean up areas where product settles to avoid excessive accumulation; when dry, material is combustible.

Minimize blowdown or other practices which generate high airborne-dust concentrations.

VENTILATION:

Local Exhaust:

Provide local exhaust as needed so that exposure limits are met.

Mechanical (general):

Provide general ventilation in processing and storage areas as needed so that exposure limits are met.

Special:

Self-contained breathing apparatus (SCBA) recommended when fighting fire.

Other: NAP

ACUTE HEALTH HAZARDS: Signs and symptoms of exposure/emergency first aid procedures:

Ingestions: Not applicable under normal use.

Eye Contact:

Dust may mechanically irritate the eyes resulting in redness and watering
Treat dust in eye as foreign object. Flush with water to remove dust particle.
Get medical help if irritation persists.

Skin Contact:

Cellulosic dust of certain species can elicit allergic contact dermatitis in sensitized individuals, as well as mechanical irritation resulting in erythema and hives.

Get medical help if rash, irritation, or dermatitis persists.

Skin Absorption:

Not known to occur under normal use.

Inhalation:

Excessive dust concentrations may cause unpleasant deposit/obstruction in the nasal passages, resulting in dryness of nose, dry cough, and headaches.

Remove to fresh air. Get medical help if persistent irritation, severe coughing, or breathing difficulty occur.

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE:

Cellulosic dust may aggravate preexisting respiratory conditions or allergies.

CHRONIC HEALTH HAZARDS:

Cellulosic dust is a biologically inert dust which has little or no effect on the lungs and does not produce significant organic disease or toxic effect when allowable exposure limits are met.

Carcinogenicity Listing:

() NTP: Not listed

() IARC Monographs: Not listed

() OSHA Regulated: Not listed

9 - User's Responsibility

The information contained in this Material Safety Data Sheet is based on the experience of occupational health and safety professionals and comes from sources believed to be accurate or otherwise technically correct. It is the user's responsibility to determine if this information is suitable for his/her applications and to follow safety precautions as may be necessary. The user has the responsibility to make sure this sheet is the most up-to-date issue.

10 - Additional Information

Definition of Common Terms:

ACGIH = American Conference of Governmental Industrial Hygienists

C = Ceiling Limit

CAS# = Chemical Abstracts System Number

IARC = International Agency for Research on Cancer

MSHA = Mining Safety and Health Administration

NAP = Not Applicable

NAV = Not Available

NIOSH = National Institute for Occupational Safety and Health

NTP = National Toxicology Program

OSHA = Occupational Safety and Healthy Administration

PEL = Permissible Exposure Limit

STEL = Short term Exposure Limit (15 minutes)

TLV = Threshold Limit Value

TWA = Time-Weighted Average (8 hours)



FactSheet

Extension

Ohio State University Fact Sheet

Community Development

700 Ackerman Road, Suite 235, Columbus, OH 43202-1578

The Safety Of Newsprint Bedding

CDFS-122

Sereana Howard
Joe E. Heimlich

This fact sheet, one in a series, reports data from a study that examined newsprint as an alternative bedding material for farm animals. The study was funded in part by the Ohio Department of Natural Resources, Division of Litter Prevention and Recycling.

The study addressed newsprint with black ink and examined the supply of newsprint in Ohio, effects of the paper as a bedding, as well as the absorption and decomposition. The bedding was evaluated on management and disposal, animal behavior, and aesthetics.

The newsprint bedding was shredded into small bales. Evaluators commented on the ease of use, stall maintenance, storage and disposal of the newsprint. They also observed animal behaviors such as grazing on the newsprint, grooming of the animals and insulation qualities. The general appearance of barns and fields were qualitatively assessed as to dust levels and stall and barn appearance.

One major concern for American livestock operations is safe bedding for the animals. In using shredded newspaper for animal bedding, there is a concern about possible harm to animals from the newspaper ink. Newspapers have been used over time as bedding for small animals, but not until recently were newspapers considered for large animal bedding.

What is toxic?

Toxic materials are those that may release toxins or poisons in sufficient quantities to pose a substantial hazard to human health, according to the Environmental Protection Agency. According to The American Heritage Dictionary, toxic is defined as harmful, destructive, or deadly.

The standards used to determine toxicity are defined by the Occupational Safety and Health Administration (OSHA) through results of laboratory tests. OSHA tests determine the maximum level of

toxicity, stress, or exposure that laboratory animals can withstand. These levels are then standardized for human exposure as amounts of safe exposure are usually higher for animals than for humans. If exposure, daily sales, delivery of newspaper, is safe for humans, then daily exposure is also safe for animals.

Newspaper Ink

Carbon black is the standard ink used for newspapers. Carbon black is comprised of carbon black, oil, miscellaneous ingredients for anti-misting and low-rub, and paraffin distillates for quick dry. Many colored inks contain the same basic ingredients except pigments replace the carbon black for the desired color. This fact sheet addresses primarily the carbon black inks because these are most commonly used in daily newspapers.

Threats of Toxicity in Newspaper Ink

There are three ways ink can have contact with the human body. There is dermal absorption (through the skin), inhalation of ink particles into the respiratory tract (breathing), or ingestion through the mouth and into the digestive system (eating).

There is little threat of dermal absorption of ink or its ingredients once the ink is dry because the ink has achieved its stable state. The ingredients that were potentially absorbable become dry and are no longer able to be absorbed. Lead, which can be absorbed through the skin, was banned as an ingredient in ink by the EPA in 1985 and is, therefore, no longer a threat. Stall trials concluded that the ink rub-off from printed newsprint was not a concern for animals.

Inhalation is a concern only when the ink is in liquid form either in transportation or at the place of production. Particle droplets and evaporation of active ingredients are a concern because they can be inhaled if proper prevention techniques are not practiced during the printing of the newspapers. Again, however, once the ink is applied to the paper and dried, it is stable and there is little danger of inhaling ink particulates. There is a threat of inhalation of dust from finely shredded paper. In this case, the concern is over fibrous inhalation rather than the toxicity. To avoid fibrous inhalation, stall trial results suggest using shreds at least 1 inch x 1 1/2 inch or larger.

Ingestion of inks used on newsprint has not been an issue because the ingredients used in the inks are not considered toxic in either the liquid or dry state. The only animal that showed an indication of grazing on the newspaper bedding was the horse and the grazing was in limited amounts. No other animals indicated any interest in the newsprint as a food source.

These trials and ink references are for the black inks used in newsprint. The trials do not include the waxed or glossy inserts or supplements that accompany newspapers, nor does it include colored inks used on those publications.

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Keith L. Smith, Associate Vice President for Ag. Adm. and Director, OSU Extension.

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Environmentally friendly products made from renewable materials.

FAQ's

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Absorption Corp

Absorption Corp, established in 1985, currently manufactures a variety of environmentally friendly pet bedding and litter products that are Safe, Healthy and Fun for small animals. We are best known for CareFRESH® brand small animal bedding, the #1 selling brand of premium small animal bedding in North America.

FREQUENTLY ASKED QUESTIONS

CareFRESH® Pet Bedding FAQ's:

Product Overview:

CareFRESH® Pet Bedding is made from reclaimed cellulose pulp fiber. It is biodegradable and flushable in small quantities. CareFRESH® Pet Bedding promotes a more natural living environment for small animal than other bedding substrates as it promotes foraging, nesting and burrowing! Its patented formula ensures that it is free from pine & cedar oils, which may be harmful to small animals.

Q: Why should I use CareFRESH® Pet Bedding?

A: Most people buy CareFRESH® Pet Bedding because it has superior odor control technology, absorbs up to 3 times its weight in liquid and lasts more than 2 times longer than wood shavings. Its soft fibers protect sensitive skin too. Animals like it because it encourages natural burrowing behavior and it's free from pine and cedar oils, which may be harmful to their respiratory system.

Q: Is CareFRESH® Pet Bedding safe?

A: Yes, CareFRESH® is safe when used according to instructions. It captures liquids deposited by small animals and disperses it quickly so that it lasts up to 2 times longer than shavings. Consumers love it for its superior odor control and small animals like it because their cages stay dryer longer, and they can forage in our product.

Q: Is CareFRESH® Pet Bedding healthy for small animals?

A: Yes, CareFRESH® Pet Bedding suppresses ammonia formation twice as long as wood shavings or corn cob bedding. Your home and your pet's living quarters stay fresher smelling longer.

Q: Which animals use CareFRESH® Pet Bedding?

A: Rabbits, guinea pigs, hamsters, rats, mice, gerbils, ferrets, birds, hedge hogs, reptiles and other small animals.

Q: Can I use CareFRESH® as a cat litter?

A: Yes, A lot of people actually use our CareFRESH® as a cat litter and have done so with great success. Many veterinarians recommend CareFRESH® as a de-claw post surgical litter. It is light and is easy on cats feet. Absorption Corp also markets Healthy Pet™ Cat Litter in 5 varieties and these products can be found in select stores.

Q: Can I use CareFRESH® with my reptiles?

A: Yes. It provides a great bedding that works well with most reptiles except grazing turtles.

Q: What is CareFRESH® Pet Bedding made from?

A: CareFRESH® Pet Bedding is patented pet bedding made from reclaimed cellulose fiber and is processed to remove potentially harmful aromatic hydrocarbons that exist in pine and cedar oils. It is tested for contaminants and is sanitized to 380° F to reduce bacteria, mold and fungus.

Q: Why is CareFRESH® sometimes different in color?

A: Our manufacturing facilities have different sources of raw materials. This includes



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[CareFRESH® Original](#)

[CareFRESH® Ultra™](#)

[CareFRESH® Colors™](#)

[Healthy Pet™ Bedding](#)

[Super Shavin's™](#)

[Healthy Pet™ Cat Litter](#)

[Supreme PetFoods Ltd](#)

[Puppy Go Potty™](#)

[Spill Cleanup and Industrial Products](#)

a variety of color characteristics that carry into the pulp in which we make CareFRESH®

Q: What is the difference between white and natural colored CareFRESH®?

A: Natural colored bedding is a short fiber cellulose pulp. White colored bedding is a pre-consumer long cellulose fiber that has gone through a bleaching process similar to the process with toilet and tissue paper.

Q: What should I do if my small animal eats CareFRESH® Pet Bedding?

A: Animals are curious and will try new things. Please seek veterinary care if your small animal consumes more than incidental quantities of bedding or if there is a change in feed or water consumption.

Q: Where can I buy CareFRESH® Pet Bedding?

A: CareFRESH® Pet Bedding can be purchased at over 5,000 pet specialty retailers in North America. Check your local yellow pages or Super Yellow pages on-line for a store close to you.

Q: How much does CareFRESH® Pet Bedding cost?

A: CareFRESH® Pet Bedding is available in 4 sizes. Your local retailer stocks most sizes. Retail prices vary, but they range from \$2.99 for a 5L package to +\$19.99 for a 50L product. Usage depends on how many animals you own and how often you change your pets' bedding.
