Bill as Introduced

HB 348-FN - AS INTRODUCED

2001 SESSION

01-0127
08/09

HOUSE BILL ***348-FN***

AN ACT prohibiting the land application of sludge in certain excavation areas.

SPONSORS: Rep. B. Hall, Hills 20; Rep. Messier, Hills 46

COMMITTEE: Environment and Agriculture

ANALYSIS

This bill prohibits the spreading of septage or sludge in any excavation area located over an aquifer.

Explanation: Matter added to current law appears in ***bold italics.***
Matter removed from current law appears [~~in brackets and struckthrough.~~]
Matter which is either (a) all new or (b) repealed and reenacted appears in regular type.

HB 348-FN – AS INTRODUCED

01-0127
08/09

STATE OF NEW HAMPSHIRE

In the Year of Our Lord Two Thousand One

AN ACT prohibiting the land application of sludge in certain excavation areas.

Be it Enacted by the Senate and House of Representatives in General Court convened:

1 New Paragraph; Mining and Reclamation; Duties of Operator; Prohibition on Land Application of Sewage and Sludge in Certain Areas. Amend RSA 12-E:7 by inserting after paragraph II the following new paragraph:

III. Septage or sludge, including but not limited to biosolids and short paper fiber, as defined in RSA 485-A:2, shall not be spread in any affected site located over an aquifer as determined by the most recent United States Geological Survey aquifer map.

2 New Paragraph; Local Regulation Excavations; Reclamation Standards; Use of Sewage and Sludge for Reclamation in Certain Excavation Areas Prohibited. Amend RSA 155-E:5 by inserting after paragraph V the following new paragraph:

VI. Septage or sludge, including but not limited to biosolids and short paper fiber, as defined in RSA 485-A:2, shall not be used for reclamation in any excavation area located over an aquifer as determined by the most recent United States Geological Survey aquifer map.

3 Effective Date. This act shall take effect January 1, 2002.

LBAO
01-0127
1/22/01

HB 348-FN – FISCAL NOTE

AN ACT prohibiting the land application of sludge in certain excavation areas.

FISCAL IMPACT:

The Department of Environmental Services has determined this bill will increase local expenditures by an indeterminable amount in FY 2002 and each year thereafter. There will be no fiscal impact on state, county and local revenue or state and county expenditures.

METHODOLOGY:

The Department stated this bill will result in an indeterminable increase in costs to towns and cities whose wastewater treatment facilities produce biosolids and who continue to rely on reclamation sites for biosolids application. In addition, other towns and cities not currently utilizing reclamation sites would be impacted if this option is eliminated. This bill broadens the areas where biosolids disposal would be prohibited to include any affected site located over an aquifer. An estimate cannot be determined because the Department is unable to predict which of the current 19 municipalities with sludge quality certifications may choose the reclamation versus land application option, nor which sites may be disqualified for use. The prohibition applies to both Class A and Class B biosolids as defined by the federal 503 regulations. Nine facilities either produce a Class A compost or send their sludge to a composting facility for processing, and 10 facilities produce only Class B sludge that is currently certified for land application.

Amendments

Rep. B. Hall, Hills. 20
February 6, 2001
2001-0084h
03/04

Amendment to HB 348-FN

Amend the bill by replacing sections 1-2 with the following:

1 New Paragraph; Mining and Reclamation; Duties of Operator; Prohibition on Land Application of Sewage and Sludge in Certain Areas. Amend RSA 12-E:7 by inserting after paragraph II the following new paragraph:

III. Septage or sludge, including but not limited to biosolids and short paper fiber, as defined in RSA 485-A:2, shall not be spread in any affected site located over a stratified drift aquifer as determined by the most recent United States Geological Survey aquifer map.

2 New Paragraph; Local Regulation Excavations; Reclamation Standards; Use of Sewage and Sludge for Reclamation in Certain Excavation Areas Prohibited. Amend RSA 155-E:5 by inserting after paragraph V the following new paragraph:

VI. Septage or sludge, including but not limited to biosolids and short paper fiber, as defined in RSA 485-A:2, shall not be used for reclamation in any excavation area located over a stratified drift aquifer as determined by the most recent United States Geological Survey aquifer map.

3 Effective Date. This act shall take effect January 1, 2002.

2001-0084h

AMENDED ANALYSIS

This bill prohibits the spreading of septage or sludge in any excavation area located over a stratified drift aquifer.

Committee Minutes

George T. Musler
Chairman
David L. Babson, Jr.
Vice Chairman

State of New Hampshire

HOUSE OF REPRESENTATIVES
Legislative Office Building, 33 North State Street
Concord, NH 03301-6328
TEL: (603) 271-3403
TDD Access: Relay NH 1-800-735-2964

COMMITTEE ON ENVIRONMENT AND AGRICULTURE

MEMORANDUM

TO: Rep. R.P. Brewster

FROM: Chairman George T. Musler

DATE: February 20, 2001

SUBJ: HB 348-FN

I am advised that you and your subcommittee may be considering expanded hearings on the subject bill. According to the House Record, on February 20, 2001, you have one hour in which to convene your subcommittee to review the results of hearing evidence taken earlier, to discuss direction, and prepare a recommendation for the bill to the full committee.

If you feel the need to gather additional information, and find that an additional day/hour might be in order, please do so however, no meetings are to take place on the 3rd floor during the period from February 26 – March 2.

If you have in mind a full-blown hearing, then you should bring the issue back to us. Remember the role of the subcommittee is to sift through what was already presented and to propose to the full committee the following:

- Return to full committee for further consideration
- Ought to Pass
- Ought to pass with amendment
- Inexpedient to legislate
- Refer to interim study

The committee leadership is here to help when you feel a need.

GTM/jal
Cc: Rep. David Babson, Vice-Chairman
Rep. Harold Melcher, Clerk

Speakers

Fill in *ONLY* if *SPEAKING* on Bill

Bill # 344 Date 2/7/01

Committee Env. & Ag

I support the bill ____

I oppose the bill ✓

I have written testimony ____

(Number of copies) ____

Time needed to speak: 1 min

Name Paul Franklin

Address 141 River Rd
Plainfield N.H.

Phone 298-8578

Representing Riverview Farm, owner

SIGN UP SHEET

To Register Opinion If Not Speaking

Bill # HB 348 Date 2/7/01

Committee

** Please Print All Information **

Name	Address	Phone	Representing	(check one) Pro	Con
Judy Silva	PO Box 617 Concord	224-7447	NHMA		X
Beth Wilkins	7 Washer Cove Rd	672-6784		✓	
Ted Lovett	Aetna	968-7532	Capitol6	X	X no
MICHAEL S. GIAIMO	122 N. MAIN CONCORD	224-5988	BIA-NH		X

Hearing Minutes

HOUSE COMMITTEE ON ENVIRONMENT AND AGRICULTURE

PUBLIC HEARING ON HB 0348 FN

BILL TITLE: prohibiting the land application of sludge in certain excavation areas.

DATE: 2/7/01

LOB ROOM: 303 **Time Public Hearing Called to Order:** 1:08

Time Adjourned: 3:25

(please circle if present)

Committee Members: Reps. Musler, Babson, Messier, L. Pratt, Philbrick, Dunlap, Cobb, Brewster, O'Connell, Dunne, Swindlehurst, B. Williams, Owen, B. Hall, Melcher, Phinizy, Robb, Solow and Allen.

Bill Sponsors:

TESTIMONY

* Use asterisk if written testimony and/or amendments are submitted.

Representative Hall, Prime Sponsor – Presented an amendment which replaced the bill but made only one change, substituting the term"stratified drift aquifer" for "acquifer". She gave a history of sludge legislation and said that in spite of it all, and all the corrections made, sludge is still unsafe.
She reported that –
1. EPA inspector general cannot assure safety.
2. CDC cannot guarantee safety of workers.
3. NAS to review entire subject.

She will distribute reports.
Macdowell project not enough. In response to questions she listed DDT, nuclear power and other technologies and then said, " Whenever science tells us that something is OK, it isn't OK." She admitted that nothing can be proven absolutely safe, but it was a question of "how safe". She accepted removing the word"affected" from line seven.

Ned Beecher of NEBRA – Opposed to bill. Submitted testimony in absentia which was entered into the record.

Representative Scanlan, Republican Leader – Opposed to bill. No outright prohibition should be allowed until backed by science.

Carolyn Snyder, CFFNH – Supports bill. Claimed stockpiling and applying sludge were synonymous and said EPA advised no stockpiling, so applying was wrong.
Revegetating necessary but thousands of tons of sludge on a site not responsible. Water table close to surface. Leaching of nitrates complex and not understood. Claimed no research, nor study in NH of this subject.

***Dick Flanders, DES** – Opposed to bill. Bill premature. Should require DES to continue testing and to see final MacDowell report ca. May2002 before action. SMAC working on reclamation. Testing monitoring and correction required at sites. MacDowell reports many factors besides sludge must be considered. Questioned, he said not every load was tested, owners bear risk. Recommendations will come from UNH report or EPA.

***Helane Shields, CFFNH** –Supports bill. Commented on Hooksett results to discredit beneficial use. Named other methods of revegetating.

Jim Taylor, Merrimack WW Facility - Opposed. Cited his own health and that of his coworkers.

Representative Owen – Supports bill. Cited alleged Greenland poisoning case and two Georgia cases. Noted aquifers store water a long time, and that use of chemicals has vastly increased.

***Chris Rueggeberg, Sierra Club** – Supports bill. Says MacDowell report doesn't support use. Claims ban won't have an economic impact.

***Shelagh Connelly, White Mountain Resources** – Opposed. Brought Inspector General's report. Contrasted private septic leach fields 75" from well to conservative treatment of reclamation sites. Pointed out that rules can be changed. Invited members to see her business in action.

Tom Erwin, CLF – Supports bill. Science not all in. SMAC not convinced by MacDowell because;

1. Not controlled studies.
2. Acidification can move metals.
3. Will have metals data later.
4. Other revegetated plants. W/o sludge.

Professor Margolin claims more pathogens than we think, so ban or moratorium until science is in.

Kevin MacLean, Wastewater Operator – Opposes bill. Confident in his knowledge and experience. Don't ban something because of what you don't know about it.

Bruce Kudric, Hooksett WW Department – Opposes bill. Explained high nitrate in Hooksett monitoring wells because had been stockpiling and making biomix there for 14 years. The test results were high only under the stockpile sites. Sensible BMP's will take care of the problem – wait until the final report.

Charlie Hanson, White Mountain Resources – There has been no testing of water under proposed alternate revegetating, but sludge has been highly studied. Can be used for landfill closures. As science tells us more we can keep up with management practices. Opposes moratorium or ban on either old or new sites.

Representative Hall – Concerned about imported sludge even though it must conform to our standards.

Bill assigned to Solid Waste Subcommittee.

Respectfully submitted,

Rep. Harold P. Melcher

Minutes, Feb 7
Hearing opened at 0108 PM
HB 348-FN prohibiting sludge on reclamation sites over aquifers.

Rep Hall, Prime Sponsor:
presented an amendment which replaced the bill but made only one change, substituting the term "stratified drift aquifer" for "aquifer".
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submitted testimony in absentia, which was entered into the record.

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Claimed stockpiling and applying sludge were synonymous and said EPA advised no stockpiling; so applying wrong.
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Testing monitoring and correction required at sites.
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Commented on Hookset results to discredit beneficial use. Named other methods of revegetating.

Jim Taylor, Merrimack WW facility **Opposed**
Cited his own health and that of his coworkers.

Rep Owen **Support**
Cited alleged Greenland poisoning case and two Georgia cases
Noted aquifers store water a long time, and that use of chemicals has vastly increased.

Paul Franklin, Farmer **Opposed**
Related his own use to reclaim barren land, his carefulness to do it right, his confidence in the safety of his well and his children.

Chris Rueggeberg,* Sierra Club **Support**
Says MacDowell report doesn't support use.
Claims ban won't have an economic impact

Shelagh Connelly,* White Mt. Resources **Opposed**
Brough Inspector General's report. Contrasted private septic leacxh fields 75' from well toconservative treatment of reclamation sites. Pointed out that rules can be changed. Invited members to see her business in action.

Tom Erwin, CLF **Support**
Science not all in. SMAC not convinced by MacDowell because
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2.acidification can move metals
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Prof Margolin claims more pathogens than we trhink
So ban or moratorium until science is in.

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Confident in his knowledge and experience. Don't ban something because of what you **don't** know about it.

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Charlie Hansen White Mt.Resources **Opposed**
Thdere has been no trestinvg of water under proposed alternate revegetating.., but sludge has been highly studied. Can be used for landfill closures. As science tells uys more we can keep up with management practices. Opposes moratorium or ban on either olds or new sites.

Rep Hall (second time) **Support**
Concerned about imported sludge, even though it must conform to our standards.

Hearing closed at 0325. Bill assigned to Solid Waste Subcommittee.

AB 348-EN opened 1:05

Rep. Hall: Offered an amendment. To say "statistical drift algorithm" instead of "algorithm"
History of study rep.
Gave authority to DLES rulemaking.
Amendments add incident → Emergency Rules
1997 Random Testing bill → Permanent Rules
Objections: not safe enough.
Don't specify RCL's
SWAK Comm.
EPA Inspectors cannot assure safety.
CDC cannot guarantee safety of workers.
NAS Issues training which exists.
(Will distribute reports.)
Statistical standards from ONA
McDonnell Project
Still not enough.
One employer worst place
Q&A Nature "shrinks" Ecto no is OK is untrue, not true.
Can drinking water prove it safe absolutely?
"Affected" should be removed from line 7.

Nilan Intend intent into record.

Rep. Scanlan Opposed to outright ~~Opposition~~ any prohibitions until backed by science as adopted.

Carolyn Snyder, CFENH (Jan 02)
EPA NH "stockpile" studies on ground pits
putting "stockpiling"
unregulated runoff
1000's of tons not recognized
Absence of enforcement
BMP's not dependable leaching of
nitrates complex
N. Portsmouth
no research on study in NH

Dick Flanders ☆ DES (9/99)
Plumstone started ongoing DES &
ongoing testing + Quadrant McDonald final
report. ~~March 2002~~ May 2002
Practices onsite topsoil + more sludge happening
SMAK working on reclamation.
Grit testing, monitoring at sites, corrective
action
MacDonald report: many factors
Q.A. Don't test every batch
Owners know the risk
Recommendations will hinge on UNH reports
& DES studies.

Robyn Shields ☆ CFENH
Comment on Project results & desire
beneficial use Name of the game is
revegetating.

Jon Taylor - Nunnat WW pretty. (oppose)
Sup healthy, like co-workers
Risk quality ~~water~~ product
Necessity to regulate companies.
protects groundwater

Rep Owen ☆ (favor)
History of laws here.
Care of Greenland
Companies store water for long time.
Chemicals have increased
If you don't need a power don't use it.

Paul Franklin Farmer (oppose)
45 acres Plainfield.
entrusted in the import
used biocides on a known 5 a piece
they poisoned
worms confident of safety, no
will contaminate.

Avis Renegefus Sierra Club (support)
McDowell Report
Sierra Report sup Mar Rpt does support
me
No economic impact.

Gribble was Jeffco dist.

Shelagh Connolly Water Pol Rep. (opposes)
Brings Inspector General Report.
Contends septic fields 50' from well
to conserve treatment of reclamation
Rules can be changed. Look and join.

Tom Ewing C L F Ind. (supports)
Science not all in
SMAC can't continued by Mand study.
1. Not controlled studies.
2. Acidification can mob metals
3. Will have metals data later.
4. Other revegetating plants
Margolin: Pathogens more than pH an issue of.
So how to monitoring until science

Kevin McLean Restaurateur (opposes)
Confident in his knowledge.
Don't tax something because you don't
know something.

Bruce Kudsia Assist NW Dept (opposes)
Opposed monitoring for
14 years Test results means lives kept
under stockpiles
So wait until final report.

Charlie Hansen N.A.P.W.A. Rancher (oppose)

No testing of water on other methods of irrigating.

Sludge has been highly studied. Can be used for small fill areas.

Keep up with others by management practices.

Opposed to moratorium on old & new users

Betty Bell opposed about 2 out of 3 states.

Sub-Committee Minutes

REP. MEACHER

~~NOTICE OF HOUSE~~ SUBCOMMITTEE WORK SESSION

TODAY'S DATE: 2-20-01

NOTE: In accordance with House Rule 43(b).
1) Testimony and executive votes are not taken at work sessions;
2) A minimum of 24-hours notice is required for all work sessions and notice must be posted at both Committee Room and House Clerk's Office.

For use by House Clerk's Office Only
- ☐ Log Book
- ☐ Bill Status
- ☐ Calendar
- ☐ Room Schedule

On this form, please schedule ONLY those meetings occurring on the same date. Use separate form(s) for meeting(s) on other date(s)

Committee ENVIRONMENT AND AGRI SUB COM.-SOLID WASTE will meet CHANGE FROM 3-6 (TUES) MARCH Date

in Room 303 at 1 PM Time — HB 141 LOCAL ([redacted]) JUNK YARDS Bill Number

in Room _____ at _____ Time — _____ Bill Number

in Room _____ at _____ Time — _____ Bill Number

Please deliver this schedule to House Clerk's Office. Richard Brown Chairman

TO

NOTICE OF HOUSE SUBCOMMITTEE WORK SESSION

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On this form, please schedule ONLY those meetings occurring on the same date. Use separate form(s) for meeting(s) on other date(s)

Committee ENVIRON & AGRI SUB-COM, - SOLID WASTE will meet MARCH 3-7 (WED) Date

in Room 303 at 11 AM Time — HB 141 LOCAL ([redacted]) JUNK YARDS Bill Number

in Room _____ at _____ Time — _____ Bill Number

in Room _____ at _____ Time — _____ Bill Number

Please deliver this schedule to House Clerk's Office. Richard Brown Chairman

HOUSE COMMITTEE ON ENVIRONMENT AND AGRICULTURE

SUBCOMMITTEE WORK SESSION ON HB 348 FN

BILL TITLE: prohibiting the land application of sludge in certain excavation areas.

DATE: 3/20/01

Subcommittee Members: Reps. Williams, Swindlehurst, Philbrook, O'Connell

Comments and Recommendations: Proposed Amendment – Proposed Moratorium
There seems to be a general feeling that no action be taken to allow more testing while waiting for a study to be reported in March 2002. Questions were answered by Tom Hall (Waste Management Advisory Committee), Ms. Flanders (Department of Enviromental Safety), Charles Hanson (Waste Management – White Mountain Who offered a field trip.), A representative for Citizens for Future NH, Beverly Parker (resident of Hooksett)

Amendments:

Sponsor: Rep. Betty Hall	OLS Document #:	2001	0247h
Sponsor: Rep.	OLS Document #:		
Sponsor: Rep.	OLS Document #:		

Motions: OTP, OTP/A, (ITL), Interim Study (Please circle one.) AMENDMENT

Moved by Rep. Swindlehurst

Seconded by Rep. Philbrick

Vote:

Motions: OTP, OTP/A, ITL, Interim Study (Please circle one.)

Moved by Rep.

Seconded by Rep.

Vote: General agreement to return to full committee w/o recommendation.

Respectfully submitted,
Rep. Richard Brewster

HOUSE COMMITTEE ON ENVIRONMENT AND AGRICULTURE

SUBCOMMITTEE WORK SESSION ON

BILL TITLE: HB 348-FN PROHIBITING THE LAND APPLICATION IN CERTAIN EXCAVATION AREAS.

DATE: MARCH 20, 2001

Subcommittee Members: Reps. B. Williams, Swinglehurst, Philbrick, O'Connell (who had to leave early.

Comments and Recommendations: PROPOSED AMENDMENT PROPOSED MORATORIUM.
There seemed to be a general feeling no action be taken to allow more testing while waiting for a study to be reported in march of 2002.
Questions were answered by Tom Hall (Waste Mgmt adv. Comm) Mr. Flanders (DES) Chas. Hanson, (Waste Mgmt - WHITE MT.) (who offered a field Trip) a rep. for Citizens for Future N.H., Rev. Parker (resident of Hooksett near Peter King Gravel pit)

Amendments:

Sponsor: Rep. B. Nalle OLS Document #: 2001-0247h Adopted/(Failed)

Sponsor: Rep. _____ OLS Document #: _____ Adopted/Failed

Sponsor: Rep. _____ OLS Document #: _____ Adopted/Failed

Motions: OTP, OTP/A, (ITL,) Interim Study (Please circle one.) (on amendment See attached)

Moved by Rep. Swinglehurst

Seconded by Rep. Philbrick

Vote: _____

Motions: OTP, OTP/A, ITL, Interim Study (Please circle one.)

~~Moved by Rep.~~ Bill as originally submitted

~~Seconded by Rep.~~ ↓

Vote: General Agreement to return to full committee W/O recommendation

Respectfully submitted,

Rep. Richard Ames
Subcommittee Chairman/Clerk

Rep. B. Hall, Hills. 20
February 27, 2001
2001-0247h
03/04

Amendment to HB 348-FN

Amend the title of the bill by replacing it with the following:

AN ACT establishing a moratorium on the land application of sludge and short paper fiber in certain excavation areas.

Amend the bill by replacing all after the enacting clause with the following:

1 Moratorium on Land Application of Sludge and Short Paper Fiber in Certain Areas. Notwithstanding any other law to the contrary, there is hereby established a moratorium on the land application of sludge and short paper fiber, as defined in RSA 485-A:2, in any excavation area, as defined in RSA 155-E:1, VI, located over a stratified drift aquifer as determined by the most recent United States Geological Survey aquifer map or in any affected site, as defined in RSA 12-E:1, I, located over a stratified drift aquifer as determined by the most recent United States Geological Survey aquifer map, which shall be in effect in each municipality of the state from the effective date of this act until the following have occurred:

I. Certification pursuant to section 2 of this act; and

II. The municipality has affirmatively adopted ordinances or regulations permitting land application of sludge and short paper fiber, as defined in RSA 485-A:2.

2 Certification. The commissioner of environmental services shall certify to the secretary of state that conditions for the lifting of the moratorium specified in this act have been met upon the happening of all of the following events:

I. The department of environmental services has adopted rules consistent with recommendations of the sludge management advisory committee regarding land application of sludge and short paper fiber, as defined in RSA 485-A:2, in excavation areas, as defined in RSA 155-E:1, VI, located over stratified drift aquifers as determined by the most recent United States Geological Survey aquifer map and in affected sites, as defined in RSA 12-E:1, I, located over stratified drift aquifers as determined by the most recent United States Geological Survey aquifer map.

II. Sewage treatment plants in the state are in compliance with recommendations of the Centers for Disease Control and Prevention regarding sewage treatment plant worker safety.

III. The National Academy of Sciences has issued its final report on the Risks from Toxicants and Pathogens in Biosolid Fertilizers project, identification number BEST-K-00-02-A.

IV. The reports required by 1999, 208:6 have been submitted and peer-reviewed.

3 Effective Date. This act shall take effect 60 days after its passage.

2001-0247h

AMENDED ANALYSIS

This bill places a moratorium on the land application of sludge and short paper fiber in excavation areas and affected sites located over stratified drift aquifers in each municipality of the state, until the commissioner of environmental services certifies the happening of certain events to the secretary of state and the municipality has affirmatively adopted ordinances or regulations permitting land application of sludge and short paper fiber.

Testimony

Flanders, Dick

From: Bill McDowell [Bill.McDowell@unh.edu]
Sent: Friday, April 06, 2001 1:49 PM
To: 'Flanders, Dick '
Subject: RE: E&A discussion on HB 348

Hi Dick. I do not remember saying anything about "do not support reclamation over stratified drift aquifers," though I might have said something about putting reclamation right over existing drinking water sources. I don't remember. I wasn't pushed by them for any definitive statement of that sort, so I don't remember much context.

In any case, you can quote me "I believe that reclamation of gravel pits, and land application in general, can be done such that groundwater quality is protected. Recent data, however, show that current regulations do not provide sufficient protection of groundwater quality. The challenge is to establish which management practices (timing, application rate, stockpiling) are most important in protecting groundwater quality."

We did talk a lot about how I think stockpiling is the likely cause of excessive N in groundwater, but I also emphasized that there was no contamination with NO3 in other wells at the site, suggesting that application per se may work just fine.

Please keep me informed about the sludge bills. I can't push for Federal earmark funding while this is still up in the air. If you feel that I can, i.e. that all outcomes would still make the research valuable, let me know....

Bill

State of New Hampshire
DEPARTMENT OF ENVIRONMENTAL SERVICES
6 Hazen Drive, P.O. Box 95, Concord, NH 03302-0095
(603) 271-3503 FAX (603) 271-2982

February 7, 2001

The Honorable George T. Musler, Chairman
Environment and Agriculture Committee
Legislative Office Building, Rm 303
Concord, NH 03301

Re: HB 348-FN prohibiting the land application of sludge in certain reclamation areas

Dear Chairman Musler:

The Department of Environmental Services (DES) wishes to thank the Committee for the opportunity to comment on HB 348-FN which would prohibit land application of any sludge, biosolids, short paper fiber (SPF), or septage in excavation areas "located over an aquifer". DES feels that this legislation is premature and should be amended to require that DES submit recommendations to the Legislature by May 15, 2002 following the completion of a relevant research project currently being conducted by the University of New Hampshire (UNH).

Appropriate use of synthetic topsoils derived from sludge, SPF or septage for reclamation and revegetation of excavation areas provides several benefits over the use of native topsoil. These include beneficial reuse of a recyclable waste, conservation of a resource by less removal of natural soils from existing farmlands and woodlands, and better nutrient management because of the greater proportion of organic nitrogen in the synthetic topsoil mix as compared to fertilized topsoils. Nevertheless, we recognize that the use of these residuals for synthetic topsoil to reclaim gravel pits is an issue of some concern. With the assistance of the Sludge Management Advisory Committee (SMAC), DES has committed significant resources over the last year to assess the need for additional regulation or revised best management practices. SMAC consists of municipal officials and representatives of several industry and environmental groups. The objective is to bring together diverse interests in order to build consensus on outstanding, and sometimes contentious, issues involving sludge management. One of the issues that one SMAC workgroup is assessing is gravel pit reclamation using sludge and biosolids.

Existing Sludge Management Rules (Env-Ws 800) already establish strict requirements for use of sludge and other residuals at reclamation areas in order to protect groundwater. In particular, testing of sludge for 177 parameters four times over a one year period is required prior to receiving the sludge quality certification, which is necessary before any land application can be approved. Groundwater monitoring at reclamation sites is also required, as is the reduction of enteric viruses to Class A levels as defined by federal sludge land application regulations. In fact, the rules have strict requirements for corrective action if monitoring shows any groundwater impacts above background. After substantial public input and technical evaluation, DES established these

requirements in the rules to be reasonably protective of groundwater quality, as well as human health and the environment.

Further, the Legislature has authorized continued funding for research on biosolids and SPF use at reclamation sites that is being performed by UNH. The most recent progress report (*Progress Report, April 1999 – April 2000, Monitoring Demonstration at Gravel Pit Reclamation Sites in New Hampshire, William H. McDowell & Tamara J. Chestnut, UNH, July 6, 2000)* by Dr. William McDowell on the three sites tested to date showed that elevated nitrates were detected in certain wells (including background wells) at these sites. It was not conclusive as to whether prior stockpiling and/or time of application was the cause. As noted by the researchers "Many factors must be considered in determining appropriate activities and site locations for the use of biosolids and SPF in reclamation in order to minimize negative impacts on groundwater quality." The ongoing research project will continue through March 15, 2002. The final report is expected to clarify some of the aforementioned issues. Additionally, DES, in cooperation with UNH, is committed to further research on best management practices for stockpiling and timing of application of biosolids and SPF in reclamation projects, and further assessment of the potential for groundwater impacts. Therefore, in view of the current regulatory structure and ongoing research, DES believes that a decision to prohibit reclamation use is premature at this time. Instead, we recommend that DES be directed to submit recommendations to the Legislature by May 15, 2002 following the completion of Dr. McDowell's relevant research project. This would allow sufficient time for DES, in consultation with UNH, to address research findings and make recommendations as to changes in DES rules or statutes if necessary.

We also have a specific concern about an ambiguity in the language of HB 348 that raises a potential conflict between sections 1 and 2. Section 1, III refers to "any affected area located over an aquifer", while section 2, VI refers to "any excavation located over an aquifer". While the title of the bill suggests the prohibition applies only to "certain excavation areas", the language in section 1 is broader. "Aquifer" is not clearly defined in the bill except by reference to United States Geologic Survey (USGS) maps. The USGS maps do not clearly define aquifer but rather establish relative water-bearing capacities of discrete geographic areas. Consequently, the bill could potentially be applicable to the entire state, hence to all land application sites, both reclamation sites and agricultural fields. If this is the case, the ten municipal facilities which produce Class B sludge that are currently certified for land application will not be able to utilize either reclamation or land application sites. These facilities would be forced to either upgrade biosolids treatment processes to include composting or similar treatment to produce Class A product, or to dispose of Class B biosolids in landfills, using up valuable landfill space. Furthermore, the bill is not clear as to whether the prohibition would apply to only Class B biosolids or also to Class A. If the bill applies to Class A biosolids, disposal of all sludge-derived compost would have to be either out-of-state or in landfills.

Thank you for your consideration and if you have any questions, please contact me at 271-3503 or Dick Flanders at 271-3571.

Sincerely,

Robert W. Varney
Commissioner

cc: Representative Betty B. Hall
HB 348-FN 020601-1015

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1776 Massachusetts Ave., NW
Washington, DC 20036
www.worldwatch.org

WORLDWATCH PAPER 154

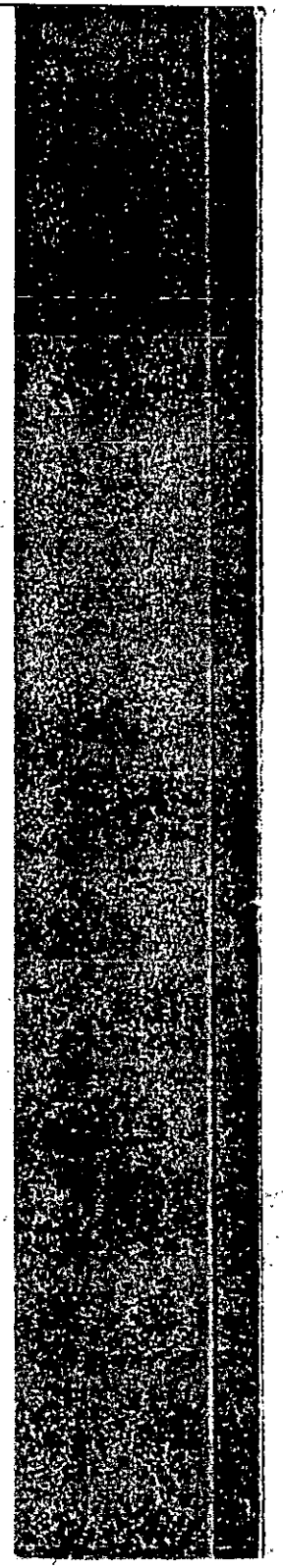
Deep Trouble: The Hidden Threat of Groundwater Pollution

Groundwater hidden beneath our feet in aquifers is essential to life above ground. It provides drinking water to more than 1.5 billion people, irrigates some of the world's most productive cropland, and replenishes rivers and streams. Altogether, aquifers store 97 percent of the planet's freshwater.

These vital services are now at risk. Around the world, human activities are poisoning groundwater with toxic chemicals—including nitrates from fertilizers and sewers, pesticides sprayed on farms, petrochemicals from leaky gas tanks, and industrial solvents discarded by factories.

Scientists tell us that once polluted, aquifers are nearly impossible to purify. And attempts to dilute the contamination can be extremely expensive—in the United States, the estimated tab for groundwater cleanup efforts is $1 trillion over the next 30 years. Fortunately, a large portion of groundwater still remains pure—making it imperative to prevent the pollution in the first place.

Author Payal Sampat shows how pioneering farms, businesses, and governments from China to the United States are overhauling their practices to greatly reduce the amount of chemicals used, and to generate very little waste. Taken together, these strategies will go a long way toward protecting our water—and may help stabilize Earth's systems as a whole.



TO MEMBERS OF HOUSE ENVIRONMENT AND AGRICULTURE COMMITTEE

Documents have been passed out to you which prove what we have been saying all along -- spreading sludge in gravel pits contaminates ground water.

If you look at the chart for Hooksett, you will see 3 of the monitoring wells were contaminated with nitrates from prior sludge activity, even before the BIOMIX was spread.

BIOMIX is a combination of sewage sludge and paper mill sludge. After the BIOMIX was spread in October, 1999, the nitrate concentrations in two of the wells substantially increased.

For example, Well No. H-12 had nitrate concentrations in the range of 20 to 30 ppm before the BIOMIX was spread. After it was spread, the nitrates in Well H-12 spiked up to over 79 ppm in April, 2000. And the report accompanying the Hooksett chart says it went even higher -- up to 95 ppm later in Spring 2000.

This report I gave you -- which was prepared by UNH Professor William McDowell and his assistant, Tamara Chestnut -- was sent to me anonymously. With it was a note saying: "This is not what they told the Legislature."

When I asked Professor McDowell about this report, his answer was that "it was prepared for a different audience" ..... meaning, apparently, it was not meant to be seen by the Legislature or the general public.

This report clearly states that spreading a combination of sewage sludge and paper mill sludge -- even with the carbon to nitrogen ratio adjusted, which is supposed to immobilize the nitrates -- nevertheless has negative impacts on groundwater.

This excess leaching of nitrates indicates acidification is occurring. This means the toxic metals in sludge may also be released to groundwater. We don't know what else from the sludge reached ground water, in addition to the nitrates, because the tests for metals and toxic organics had such high detection limits that they were useless. Also, there was no testing for pathogens in the ground water.

THE GOOD NEWS is there is absolutely no need whatsoever to dispose of sludge in gravel pits. In 1989, the Legislature amended the gravel pit law - RSA 155-e -- to provide that pit operators did not have to save the topsoil because the pits could be revegetated with warm season grasses -- which did not require any topsoil and have very minimal need for any fertilizer.

More information on revegetating gravel pits with warm season grasses is available from the Office of State Planning.

The Clean Water Act describes sewage sludge as a "pollutant". We respectfully urge the committee to protect New Hampshire's clean water supplies by discontinuing this policy of allowing pollutants to be spread over aquifers.

Helane Shields, Box 1133, Alton, NH 03809

HOOKSETT

NITRATES
milligrams per liter
(parts per million)

WELLS	99 JUNE 29	99 JULY 11	99 JULY 21	99 JULY 28	99 AUG. 4	99 AUG 10	99 AUG. 18	99 AUG 25	99 AUG 31	99 SEPT 22	99 SEPT 30	99 OCT 8	99 OCT 14	99 OCT 23	99 OCT 27	99 NOV 4	99 NOV. 10	99 NOV. 17	99 NOV. 29	99 DEC 7	99 DEC 14	00 JAN 3	00 FEB 8	00 MAR 6	00 APR 3	00 APR. 11	00 APR 27
H-4	5.9	0.8	1.4	1.4	1.1	0.4	0.3	.	0.5	5.0		0.9	0.7	0.5	0.1		0.8	0.1		3.5							
H-5	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	—	0.3	0.0	0.1	0.1	0.1	0.1		—										
H-6	0.5	0.3	0.3	0.3	0.4	0.9	0.4	0.7	0.4	2.6	1.8	0.5	0.5	0.4	0.5		1.4			1.1							
H-7	20.7		18.0		13.0	13.1	14.0	8.7	8.2		21.5	22.6	14.3		15.1		24.5	13.2	13.9	43.9	42.3	35.7	22.3	9.3	25.2	18.5	20.0
H-9	0.0	0.1	0.8		0.5	0.0	0.3	0.0	0.0	0.6	0.7	2.9	5.0	4.5	5.2	3.5	4.1	4.2	3.4	3.2	5.4	3.7	1.2	2.0	6.0	6.9	1.9
H-11	0.5	0.5	0.9		0.5	0.5	0.6	2.0	0.8		0.6	0.8	0.8	0.9	1.8	0.8	0.8	0.8	0.9	1.0	1.0	1.1	0.9	0.6	0.4	0.5	0.3
H-12			47.6		36.2	32.7	29.2	27.2	24.7	27.7	28.9	21.5	28.2	27.9	35.4	44.1	55.4	61.4	61.2	68.0	72.4	68.8	79.4	70.6	44.9	41.4	47.1
H-8										29.4									(Well is dry)						25.0	25.0	32.9

10/25/99
Application of sewage sludge & paper mill sludge (BIOMIX) 1600#N/acre

EPA MCL (MAXIMUM CONTAMINANT LEVEL) FOR NITRATES = 10 mg/L (ppm)

Data from Progress Report
Continued Monitoring at a Gravel Pit Reclamation Site in New Hampshire

April 30, 1999 to May 30, 2000

Tamara Chestnut & William H. McDowell

Data from a groundwater monitoring project at a gravel pit reclamation site in Hooksett, NH are presented. The following data focus primarily on samples collected from 2" diameter PVC wells installed in July 1999 and May 2000 in compliance with standard techniques and hydrologic information. An application of Hooksett biosolids, Monadnock short paper fiber and Putnam short paper fiber was completed in October 1999. The biomix application had a C:N ratio of 27 and a total N application of 1600 lbs/acre. This application in October 1999 consisted of 5 times more nitrogen then the previous application at this site in 1998. Results suggest that this level of nitrogen application, even with C:N adjustment, has negative impacts on groundwater quality.

The following is not an official progress report but rather was developed to provide information for discussion and will be synthesized into a formal report upon completion of this monitoring project in September 2000. Graphical and tabular data are referred to numerically and discussed briefly.

Figure 1: Site Map with Categorized Well Data

Data from 2" diameter PVC groundwater monitoring wells were generated from July 1999 until the present and are represented by numbers H-7 through H-16. Six new groundwater monitoring wells were installed in May of 2000 and are represented by numbers H-17 through H-22. Wells and lysimeters within the green shaded area are considered treatment wells, and wells outside the green shaded area are control wells. Well numbers H-10, H-20 and H-21 are considered control and up-gradient of the treatment area. We have color coded groundwater wells based on average NO_3-N concentrations over the course of sampling. Data for groundwater wells numbered H-17 through H-22 only consists of 2 sampling dates. Wells indicated in red have average NO_3-N concentrations greater than 10 mg/L, which exceeds the EPA allowable limit for drinking water. Well number H-12 was exceedingly high in NO_3-N since installation in July 1999. Average concentration in this well was 48 mg/L and concentrations increased following the October biomix application up to 75 mg/L and further increased up to 95 mg/L in the spring of 2000. Wells indicated in yellow are higher than expected for groundwater, but do not exceed the EPA limit of 10 mg/L. Wells indicated in blue are typical or low for groundwater samples at below 3 mg/L. Based on these data we conclude that repeated biosolids applications at rates used at this site does have an

adverse effect on groundwater quality. Due to these elevated NO_3-N concentrations in some wells (red-shaded) prior to the biomix application in October 1999, it is difficult to determine the potential impact of adjusting the C:N ratio in compliance with best management practices.

Figure 2: NO_3-N Timeline

NO_3-N concentrations were averaged for the biosolids treatment and the control wells over the course of the entire study. Initial groundwater data from July 1997 to December 1999 was generated using 0.5" diameter stainless steel wells (3 treatment and 3 control). Additional 2" diameter PVC wells were sampled beginning in July 1999 until present, and 6 new monitoring wells were sampled beginning in May 2000. Nitrate concentrations were elevated to three times EPA allowable limits following the biomix application in October 1999. This increase was driven by three very high concentration wells (H-7, H-8 and H-12). Data generated from new groundwater monitoring wells in May 2000 suggest that these high concentration are from activity in the biosolids treatment area and not from water entering the site from up-gradient (as shown by wells H-20 and H-21). Similarly, two new biosolids treatment area wells (H-17 and H-18) also show elevated NO_3-N levels, suggesting that the NO_3-N is being produced within the biosolids treatment area. As stated earlier, total N applied in October of 1999 was 5 times that of the previous application which could have led to the increased NO_3-N concentrations observed even though the C:N ratio was adjusted.

Figure 3: Flownet Diagram

Hydrologic data shows that the groundwater table at this site is flowing perpendicular to the Merrimack River in both the treatment and control area. Water table elevations are fairly steep compared to the river with the water table nine meters above the river at its highest. Groundwater flowpaths do not appear to cut across the treatment area toward the control plot, therefore application should not be impacting the control area. Water from the Merrimack River does not appear to be infiltrating the treatment or control field at anytime during monitoring.

Figure 4 & 5: Flowpath Transects in the Biosolids Treatment Area

Two transects from upgradient to downgradient through the biosolids treatment area were examined for NO_3-N, Cl and SO_4-S. Wells are not exactly aligned along flowpaths, but provide a good estimate of groundwater movement through the treatment area. For each transect NO_3-N concentrations increase as water moves through the biosolids treatment area. Chloride concentrations follow a pattern similar to NO_3-N for both transects. Chloride concentrations exceeded 10 mg/L for several wells within the biosolids treatment area, which is quite high for groundwater in the Northeastern United States. Sulfate remained fairly consistent along the transects with a slight increase at the most down-gradient well.

Figure 6 & 7: NO_3-N versus Conductivity, NO_3-N versus pH

There is a strong positive relationship between groundwater wells with high NO_3-N concentrations and conductivity ($r^2 = 0.76$). The PVC wells with high average NO_3-N concentrations (greater than 10 mg/L) typically exhibited high conductivity values, in some cases exceedingly high (> 500 umos/cm). Chloride concentrations follow the same pattern as conductivity in the biosolids treatment area, however Cl^- concentrations in three of four groundwater wells in the adjacent control plot were very high at greater than 30 mg/L without a correspondingly high conductivity value in each of the wells. To date we do not have any explanation for the excessive amount of Cl^- in these control wells. Lysimeter data does not suggest that soil solution is similarly high in Cl^-.

Treatment and control wells exhibited fairly consistent responses from date to date for all parameters analyzed. Groundwater pH appears to be slightly depressed in wells with high or moderate NO_3-N concentrations. The relationship is statistically significant but not as strong ($r^2 = 0.33$) as that of NO_3-N and conductivity.

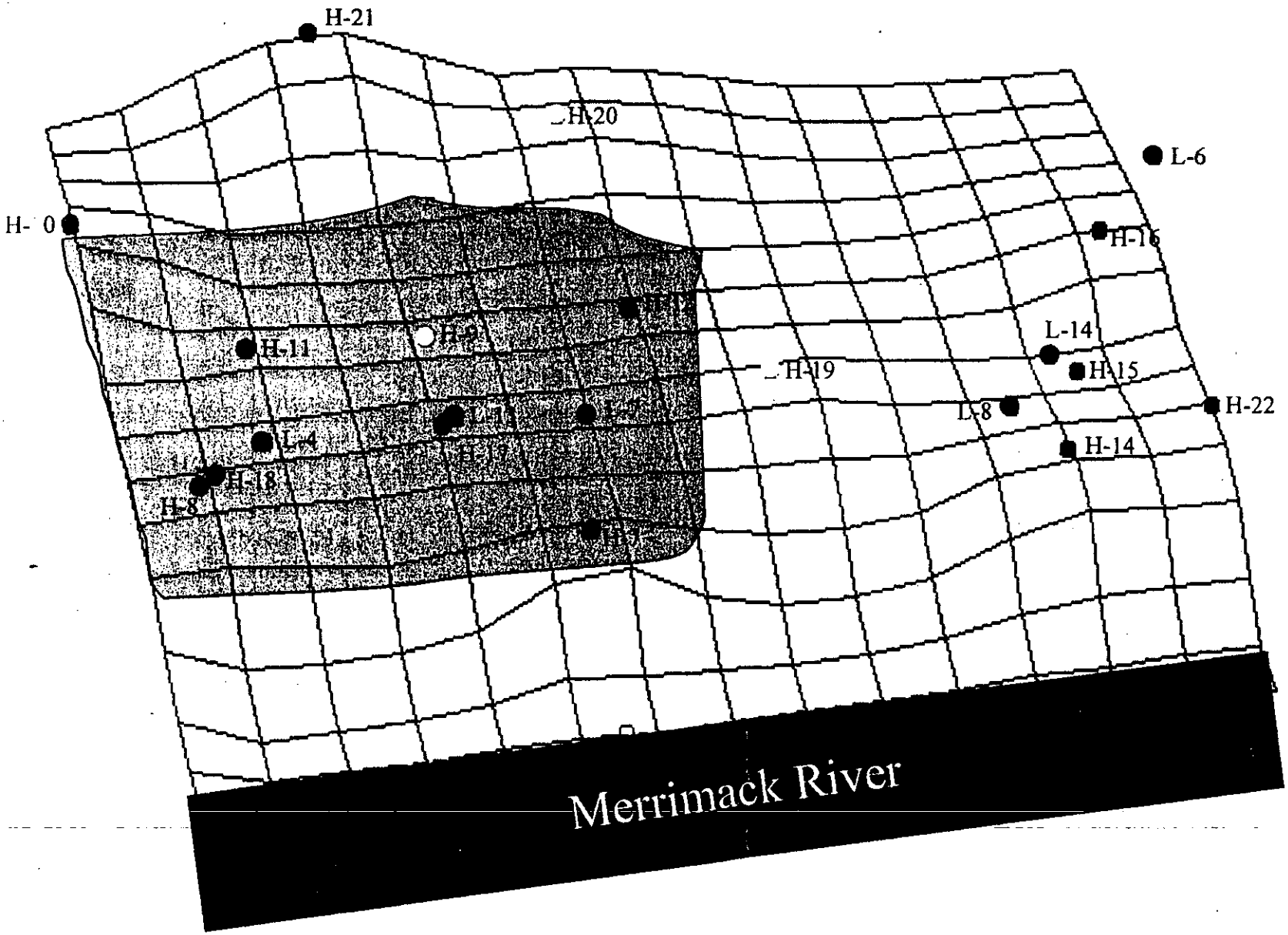


Figure 1: Site Map categorized by NO3-N concentration. Green shaded area = Biosolids and Short-paper fiber Treatment Area. Black = lysimeters, Red = wells ≥ 10 mg/L NO_3-N, Yellow = 10 mg/L NO_3-N < wells < 3 mg/L, Blue = wells < 3 mg/L NO_3-N

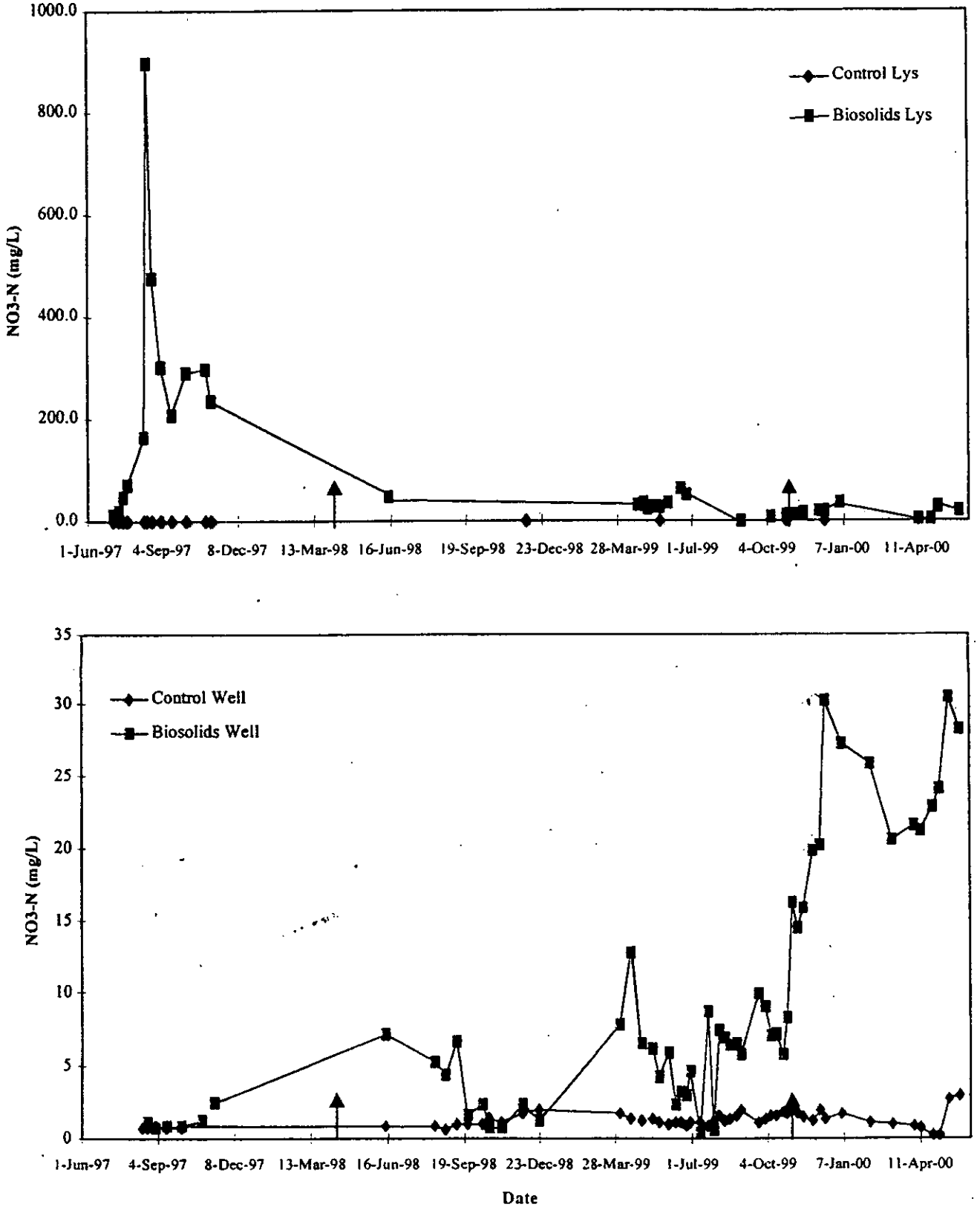


Figure 2: NO3-N timeline for soil solution and groundwater data, respectively. Arrows indicate biosolids and biomix applications in 1998 and 1999, respectively.

Hydrologic Flownet
5/17/00

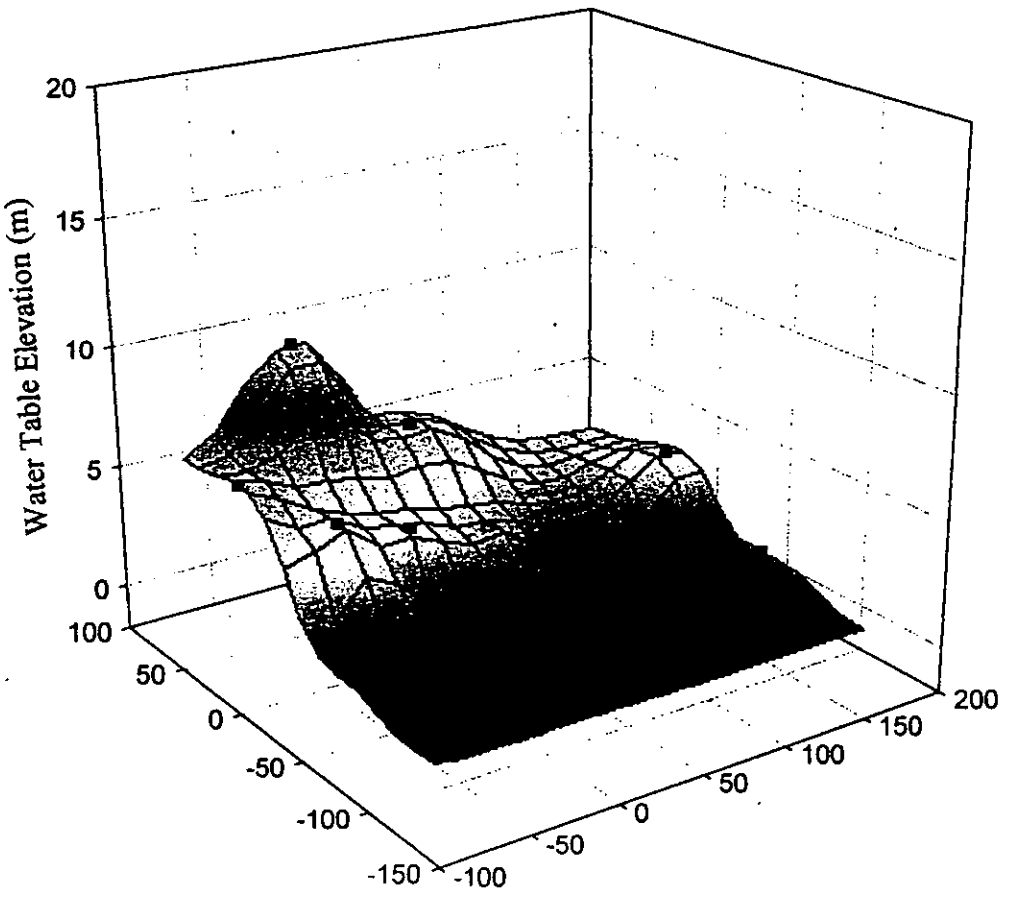


Figure 3: Hydrologic flownet including new wells installed in May 2000 and 2 stations on the Merrimack River.

NOTE: DATA FOR NITRATES (NO3-N) IS MISSING.

("Cl" = chloride ....."SO4-S" - sulfates)

Figure 4

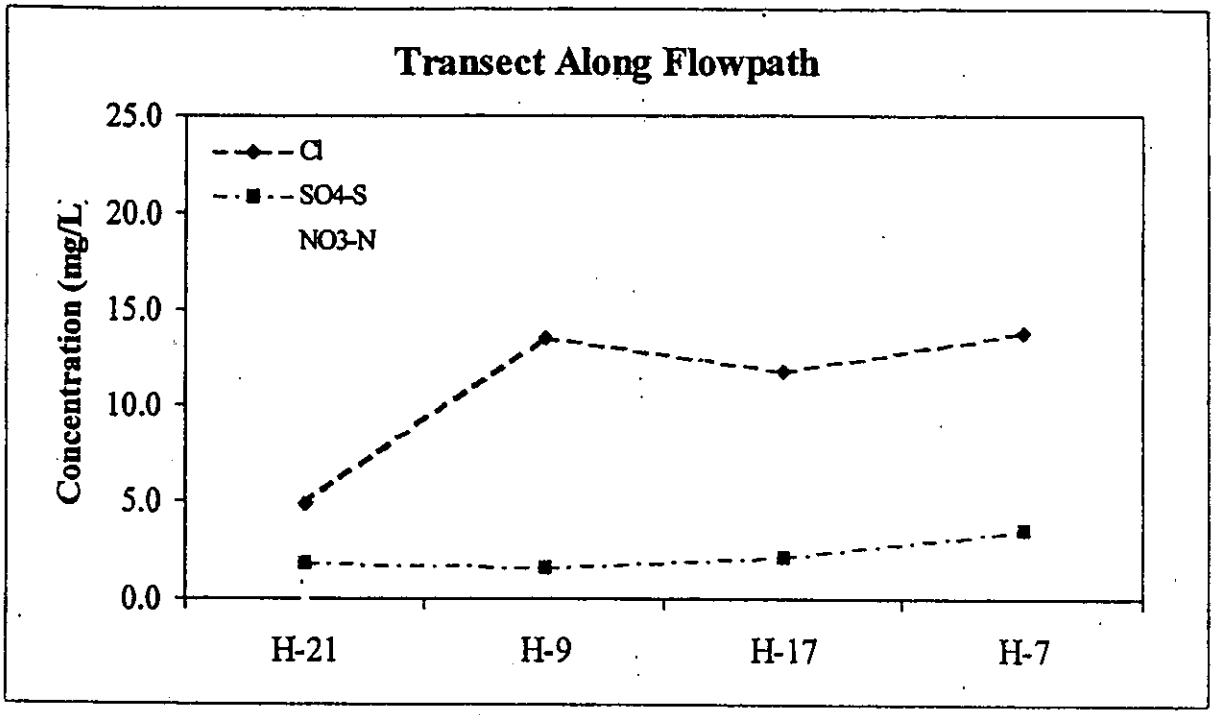


Figure 5

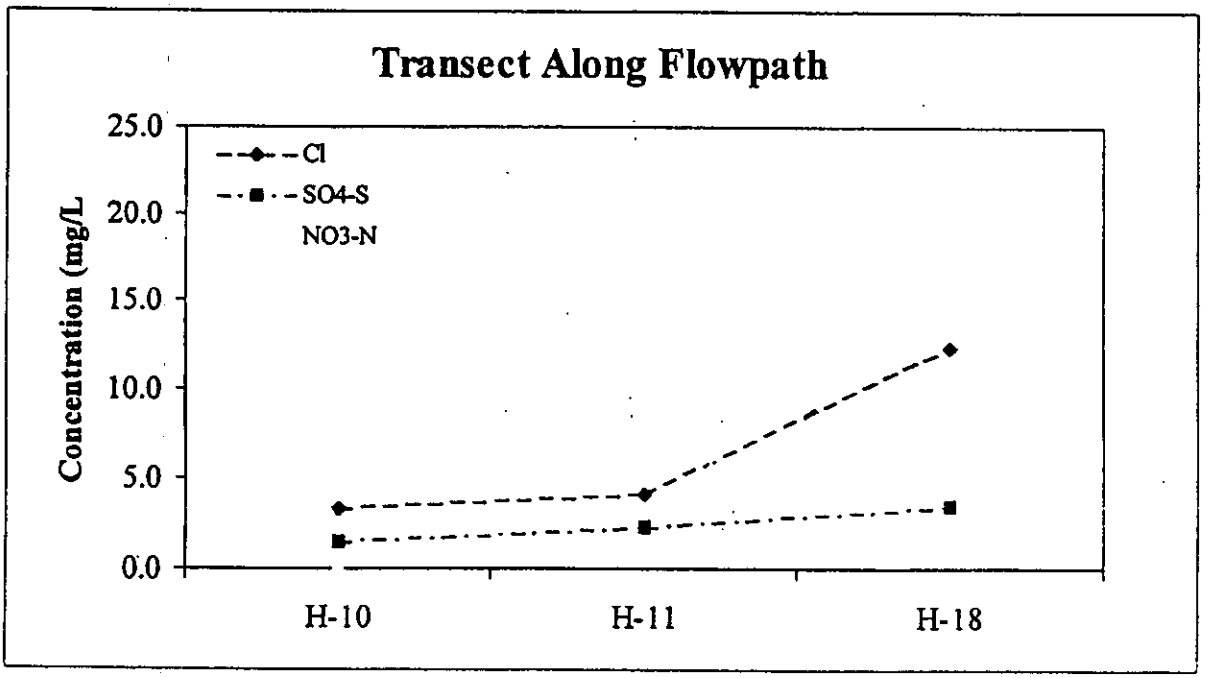


Figure 4 & 5: Transects along the hydrologic flowpath through the biosolids treatment area.

Figure 6:

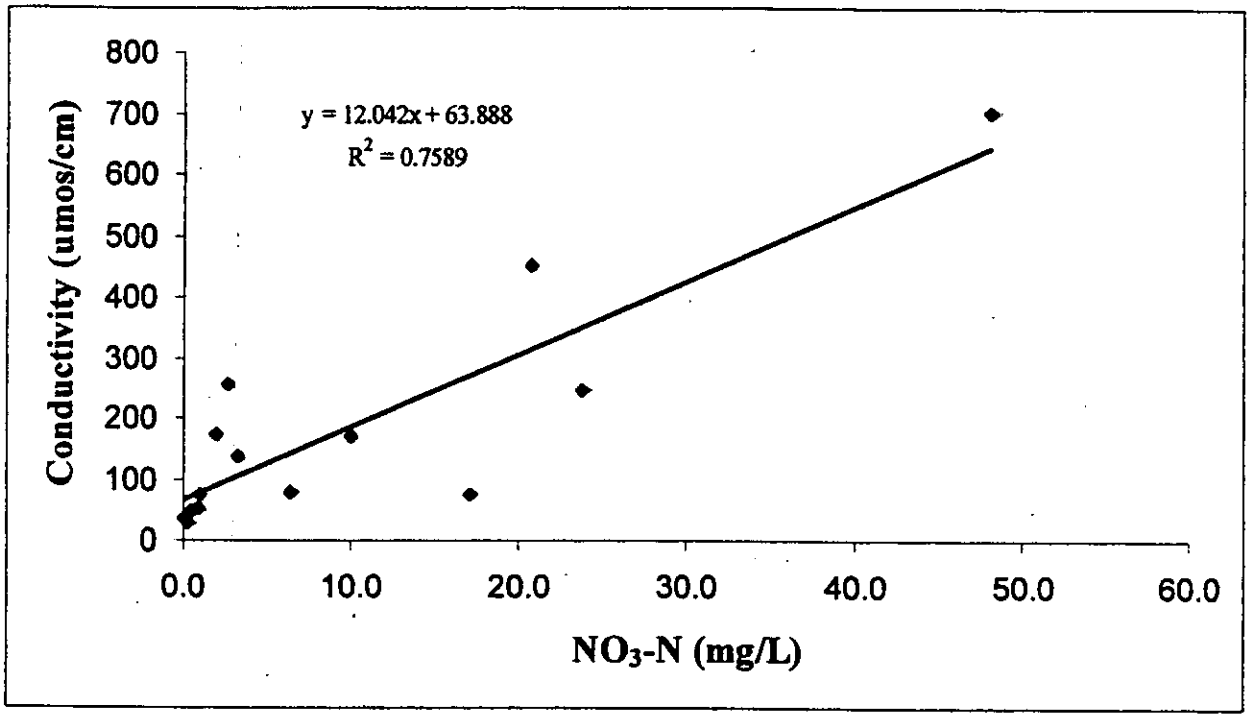


Figure 7:

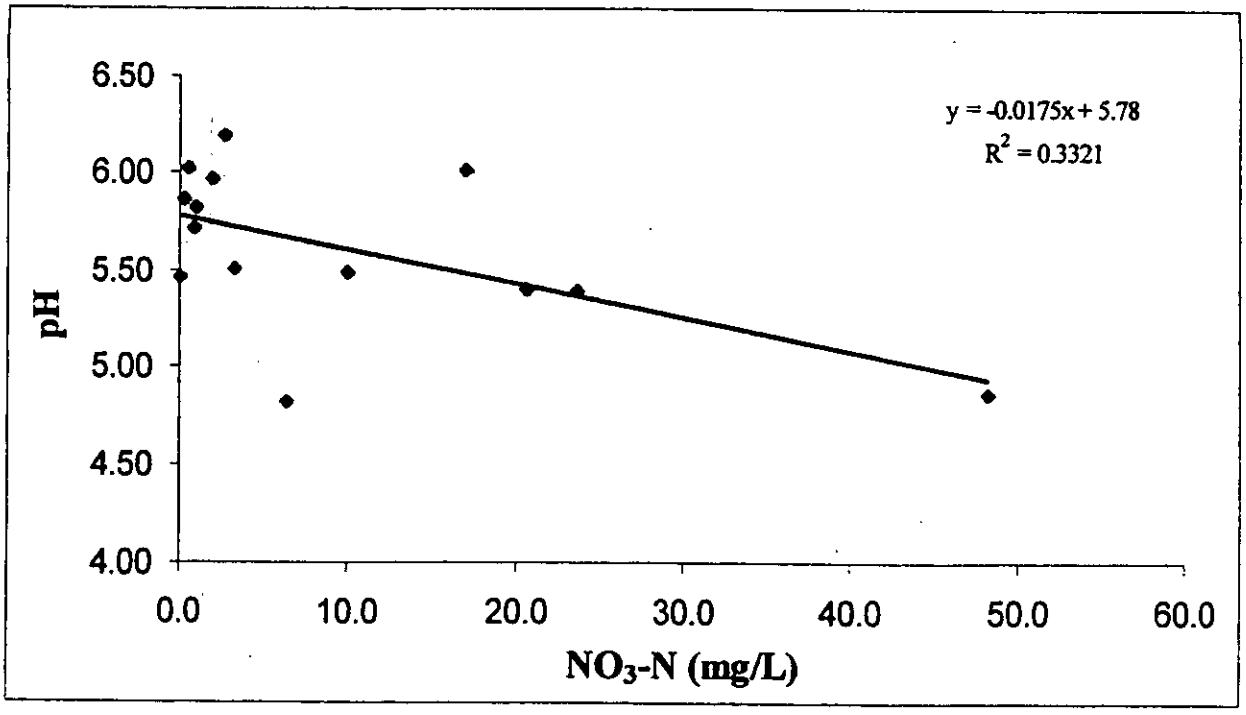


Figure 6 & 7: NO3-N versus Conductivity and NO3-N versus pH respectively.

NO TOPSOIL

AND

NO SLUDGE

NEEDED

FOR GRAVEL

PIT

RECLAMATION

The importance of reclamation cannot be overstated. Reclamation plans should show, at a minimum, the contour lines before and after excavation, location of wetlands and water bodies, line of sight of the area from the nearest public roadway, distances from relevant features, and access points. The final reclamation plan should address safety and erosion control, bearing in mind that a specific plan for the land may not be appropriate if a future use would not call for it.

One of the most important pieces of information for the Board to know is that sand and gravel pit reclamation no longer depends on the importing or stockpiling of topsoil. For many years now, the Natural Resources Conservation Service (formerly the Soil Conservation Service) has been experimenting with seed mixtures for revegetating depleted sand and gravel sites. The problem with gravel pits is that they typically consist of very coarse soils that are susceptible to drought, which makes them difficult to permanently vegetate without applying topsoil. The Conservation Service has been very successful in the use of warm season grasses that do not require topsoil or loam to grow. These grasses do very well in dry, sandy soils. Their roots extend up to five feet below ground, compared to the cool season grasses, which grow barely four inches below ground. Because of the extended root system, warm season grasses tolerate drought conditions very well.

The 1989 amendments to the law reflect this technology, by no longer requiring the stockpiling and use of topsoil for reclamation. This one change can make a difference of as much as $7,000 an acre in reclamation costs for the landowner. Another significant change is that 1991 amendments to the law eliminated the requirement for a 2:1 slope for reclamation; the law now says that the slope shall be graded to whatever is necessary for slope stabilization. When reviewing plans for reclamation, the Board should always consult its county conservation service for more detailed information on seed mixtures, costs per acre, and appropriate techniques based on the particular site.

Another area of concern for Board members is the fueling and maintenance of any equipment used on the site, as gravel pits tend to be located over aquifers or some other groundwater supply. The New Hampshire Department of Environmental Services has published a fact sheet that offers best management practices for protecting groundwater from potential contamination from excavation activities.

P O Box 422 ■ Tamworth, NH 03886-0422
www.nebiosolids.org

phone 603-323-7654
fax 603-323-7666
info@nebiosolids.org

Cooperatively promoting the environmentally sound recycling of biosolids and other residuals

New Hampshire House Environment and Agriculture Committee
Hearing on HB 348-FN: An Act Prohibiting the Land Application of Sludge in Certain Excavation Areas

February 7, 2000

Dear Honorable Members of the Committee:

The New England Biosolids and Residuals Association (NEBRA) is a registered non-profit group of wastewater facilities, water quality professionals, biosolids management companies, farmers, and interested stakeholders whose mission is to cooperatively promote the recycling of biosolids and other organic residuals in the greater New England region. Our members include the wastewater and/or biosolids operations for the municipalities of Claremont, Concord, Franklin and surrounding towns, Hanover, Hooksett, Keene, Lebanon, Merrimack, Milford, and Nashua More information about who we are and what we do can be obtained by calling the central office in Tamworth (323-7654) or viewing our website. A few pictures and a description of the process of land reclamation using biosolids and short paper fiber can be found at www.nebiosolids.org/pulppaper.html.

Thank you for this opportunity to provide input in the legislative process.

Many of us have been here before. A similar bill, and several other bills further restricting the use of municipal biosolids in the state of New Hampshire, have been considered over the past two years. None have passed. Why? Because common sense has prevailed: since 1996 and 1999, when the Department of Environmental Services' current Env-Ws 800 regulations for biosolids/sludge management were adopted, there have been few complaints and, despite the claims of Sierra Club of New Hampshire and others (see "Policy Driven Water Pollution, " 2000), no environmental disasters are looming from the beneficial uses of biosolids.

The debate on biosolids recycling tends to center on two things: 1) a difference of opinion as to how "dangerous" the stuff we call biosolids or sludge is; and 2) a difference in philosophy between those of us who work, day-to-day in an imperfect world, trying to carefully manage a by-product of making clean water from wastewater and those who theorize about a perfect world where humans have no impacts on the environment and there is zero risk.

The difference in opinion about how "dangerous" sludge/biosolids is stems in large part from the fact that NEBRA's members are around sludge (untreated) and biosolids (treated and tested) every working day and have been for years. Wastewater and biosolids personnel nationwide are not considered to be in hazardous jobs, they do not receive hazardous work pay, their insurance rates are not higher, and they have no significant additional medical requirements other than immunizations. Yes, they are routinely

exposed to the trace pathogens, chemicals, and metals in wastewater and biosolids, but they are not sick and dying. No federal or state agency considers biosolids hazardous. Yet Sierra Club of New Hampshire will swear this stuff will kill you. They will tell you it killed a man in Greenland or cows in Canaan. Anything to make you more afraid of a waste that, frankly, we all shun enough. There is still no reasonable scientific evidence whatsoever to support their claims; indeed, the overwhelming majority of scientific evidence, and the overwhelming majority of scientific expert opinion, falls strongly on the other side.

The second major difference of opinion between NEBRA and the Sierra Club of New Hampshire is based on philosophy. We are water quality professionals, doing the day-to-day-work that keeps our rivers and lakes clean. We understand the grave importance of what we do: we are protecting the public health and environment for people downstream. But we also recognize that there is no zero risk and no zero impact of society on the environment. Society could spend many millions more dollars to remove additional traces of chemicals or metals or pathogens from sludge or any other place in the environment, but would it be worth it?

We who work in the environmental field have to think about trade-offs and compare risks. (Five years ago, the New Hampshire Comparative Risk project looked at sludge and septage as one of 53 perceived risks and ranked it close to last in order based on actual risk.) Society has to decide at what point is sludge clean and safe enough to apply to land--any land, including gravel pits. How would we want this to be decided? Mount a huge effort to review thousands of research studies that have been done over decades. Develop complex models and measures for assessing risk. Apply those models and add conservative assumptions. Set national regulations and have them reviewed by the nation's most prestigious scientific peer review body, the National Research Council of the National Academy of Sciences. This is exactlly what has been done.

And now, around the country, more than 60% of the sludge produced at municipal wastewater treatment facilities is recycled. New York City biosolids go to Texas and Colorado and are prized by farmers there. Seattle biosolids are trucked to eastern Washington where they fertilize hops that goes into Budweiser--perhaps at the Merrimack brewery here in New Hampshire. And the wastewater from that brewery flows to the Merrimack wastewater facility where biosolids compost is produced that has been applied on the Great Lawn in New York City. This is a sustainable cycling of nutrients and organic matter that should be celebrated. It should not and need not be the topic of laborious debates such as this. With a bi-partisan voice last year, Governor Shaheen and Senator Carl Johnson and others correctly celebrated with a declaration of Biosolids Recycling Day on May 3rd. Biosolids is a transformed waste that is finally becoming recognized as something truly useful.

While we can agree with Sierra Club and others that gravel pit reclamation using biosolids requires careful management and monitoring, we do not see evidence of any looming disaster, as they suggest. Biosolids and short paper fiber applied in engineered mixes to a barren landscape create an artificial soil with enough organic matter and nutrients to quickly create a sustainable vegetative layer, putting waste land back to productive use. If you have not seen this kind of work in person, we encourage you to do so. The benefits are clearly visible.

A year ago, NEBRA wrote "the fact is that nitrate-nitrogen is a potential threat to groundwater from the use of biosolids and other N-rich organic residuals because 1) it is in relative abundance in biosolids (1 – 6%), and 2) it is highly soluble." This was before the findings by Professor William McDowell at the UNH/McDowell research site in Hooksett. While Sierra Club of New Hampshire and others still try to

suggest that there are other looming threats from application of biosolids for gravel pit reclamation, there is no clear scientific evidence to support such claims. For instance, the fact is that the final mix of biosolids, short paper fiber, and sand that is typically applied for gravel pit reclamation results in *equal or lower* levels of trace metals than are found in average native natural soils. Does this sound like material that is heavily contaminated?

But rather than debate every claim made by Sierra Club of New Hampshire, we urge you to seek further details from scientists who have researched biosolids use at gravel pits: invite Dr. McDowell, Dr. Ballestero, and Dr. Harter and ask them your questions.

Nitrate is *the* concern. At the UNH/McDowell research site at Martin's Ferry/Hooksett, it was found in "unacceptably high" levels in groundwater. The researchers are working to understand why. They do know that that reclamation site is unusual, having had repeated stockpiling and application of nitrogen-rich biosolids over many years. This is not typical of most reclamation projects in the state, and you could check with DES to understand how best management practices have changed to keep this from happening again. The nitrate found in the groundwater at the Martin's Ferry/Hooksett site does not threaten any drinking water. But the key lesson is that nitrate control is *the* concern, and we can and must learn and adapt policies based on continuing monitoring and research (which is happening). But this is no reason to ban this form of reclamation.

Why not?

Because while nitrate in drinking water above 10 mg/L is considered by U.S. EPA to be a health hazard to infants, we must remember that nitrate is a chemical that is everywhere in our environment. In measurable amounts, it is in soils and water everywhere. Any fertilizer application has the potential to cause some impact from nitrate to groundwater (indeed, chemical fertilizers have more potential than biosolids).

Nitrate is the water-soluble and plant-available form of nitrogen, one of the three macronutrients necessary for plant growth. Nitrate is created and consumed by bacteria routinely in soils, surface water, and groundwater. Nitrate is one of the two most important reasons we use biosolids for reclamation purposes (the other reasons is organic matter). Yes, it must be controlled, but gravel pit reclamation will always involve nitrate control as an issue, even if warm season grasses are used instead of biosolids, since some application of fertilizer is required to establish plant growth.

There is considerably more information that we could provide this Committee or a subcommittee that may be formed to research this bill. We encourage you to select a time after snowmelt that would be convenient for you to visit a gravel pit reclamation site and learn more. We encourage you to gather more technical information from researchers at UNH and from the scientists at DES.

And finally, we would like to mention that NEBRA has continued to play a role in the DES Sludge (Biosolids) Management Advisory Committee (SMAC). We have encouraged addressing the underlying philosophical differences between our position and that of Sierra Club of New Hampshire and others. We have encouraged seeking common ground. We have encouraged working on smaller parts of the issues in order to come to a consensus on something, so we can share some success rather than remaining locked in intractible conflict. To date, we have not been successful and we find this process frustrating --as we are sure others do as well. What is even more frustrating, however, is the fact that even as we put in extra time and energy in working through the SMAC process, the ardent opponents of biosolids recycling

introduce bills like this one. What do does this suggest about their commitment to the SMAC process, if they undermine it in this way?

In closing, those of us who manage biosolids recycling for New Hampshire want to repeat that we are excited about the possibilities offered by this resource, biosolids. Here is something that was once disposed of with little thought. As Commissioner Varney said at a seminar in Nashua in November, "re-emphasizing biosolids recycling is the goal." We at NEBRA agree, and look forward to working with you and other interested citizens in furthering that goal.

Please feel free to contact NEBRA at any time for documentation and further information. We are here as a resource.

And thank you for your time and consideration of this matter.

Ned Beecher
Executive Director
For the Board of Directors of NEBRA

New Hampshire SIERRA CLUB®

February 7, 2001

To: Members of the House Environment and Agriculture Committee
From: Chris Rueggeberg
Re: House Bill 348-FN, An Act Prohibiting The Land Application Of Sludge In Certain Excavation Areas

Please support the passage of HB 348-FN. You have already received our memo and report explaining why gravel pit sludging in New Hampshire is an environmentally dangerous practice.

Scientific Uncertainties

During 2000 the New Hampshire Sierra Club examined peer reviewed published research on gravel pit sludging outside New Hampshire; the latest UNH research in progress; and consulted a number of soil scientists. The Sierra Club then released *Policy Driven Water Pollution: The Dangers Of Using Sludge To Reclaim Gravel Pits In New Hampshire.* The reports concludes that using sludge to reclaim gravel pits is not scientifically defensible.

The burden has shifted to the waste industry and the Department of Environmental Services to answer the numerous scientific questions that remain unanswered about the long-term environmental and public health effects of using sludge to reclaim gravel pits. The short-term evidence already shows that gravel pit sludging is not the least harmful available alternative for reclamation.

In September, 1998, the University of New Hampshire Cooperative Extension Service published a report entitled Landspreading of Sludge in New Hampshire: Report of the UNH Sludge Task Force. The concerns raised in the Task Force Report have not been answered. A list of the scientific uncertainties identified in the Report is attached.

DES has published the New Hampshire Nonpoint Source Management Plan. In the section on sludge, DES argues that research around the country shows an absence of public health and environmental impacts from using sludge. At the same time, the agency admits that ***Additional research now underway in New Hampshire will contribute significantly to the limited data on impacts of land application here.*** Section 2-11-2.

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3 Bicentennial Square, Concord, NH 03301
phone: (603) 224-8222 fax: (603) 224-4719
e-mail: chris.rueggeberg@sierraclub.org
website: www.sierraclub.org/chapters/NH

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Economic Impact

In the long run, protecting aquifers that are sources of current and future drinking water from contamination is more cost effective than cleaning up the mess afterwards.

The economic impact on municipalities of not sludging gravel pits will be minimal. In 1999, only 16 percent of the sludge in New Hampshire was land applied. Very little of that involved gravel pits. Preliminary findings show 3 permitted sites for Browning- Ferris Industries in 1999, and 3 permitted sites for White Mountain Resource Management, Inc. in 2000.

Landfills, where 34 percent of our sludge now goes, may soon become an economically viable use for sludge. In bioreactor landfills, sludge is added to speed up the decomposition of waste. Quicker decomposition rates means more room for trash in the same landfill. By controlling it within the landfill environment, long-term risks from landfill gas and leachate are reduced.. *Boston College Environmental Affairs Law Review, Summer 1999.*

Environmentally Friendly Alternatives

The Community School in South Tamworth is experimenting with using organic farming to raise native cranberries, wetland flowers, and low-growing herbs as an alternative reclamation method.

Warm season grasses have successfully been used at reclamation sites in Belmont, Franklin, and Sandbornton. Warm weather grasses do not require topsoil or sludge. Fertilizer is applied in the second year once the roots are established. They require no additional nitrogen, eliminating the water contamination problems showing up in the UNH research. *Testimony of Ted Kelsey, formerly of the Soil Conservation Service. January 8, 2001 SMAC meeting.*

Both approaches are simple alternatives to sludging gravel pits, which requires constant monitoring and constant remediation to prevent the contamination of previously uncontaminated water.

UNH TASK FORCE CONCERNS REGARDING LAND-APPLICATION OF SLUDGE

- There is a potential for organic compounds and excessive nitrates to contaminate surface waters and groundwater;
- There are uncertainties regarding the behavior of metals in ecosystems which warrant further research;
- There is a need for further research regarding the manner in which metals may pair up (complex) with other elements and compounds, and the effect of such speciation on the mobility of metals in soil, and on water quality;
- There is a need for long-term studies of the metals in sludge when land applied, particularly when agricultural lands are abandoned and the pH is not maintained;
- Recent evidence suggests that certain organic compounds which may be contained in sludge may possess estrogen-mimicking properties which could be harmful to humans and animals;
- Additional research is needed regarding the presence, behavior and health effects of organochlorine pesticides, polychlorinated biphenyls (PCBs), dioxins, furans and other persistent trace organic contaminants which can be present in some sludge;
- Further investigation may be warranted regarding the presence of radioactive material in sludge, particularly where potential sources of discharge to sewage treatment plants include hospitals or other facilities where radioactive materials are present;
- Additional research and testing is needed to resolve uncertainties regarding the potential for pathogenic viruses to migrate into groundwater, and for Cryptosporidium and other intestinal parasites to be present in sludge;
- Trace minerals which can be found in sludge can adversely affect ruminant animals;
- There are concerns among some scientists regarding the health impacts that even relatively low levels of metals can have on the health of animals;
- The potential exists for contaminants such as PCBs, dioxins and pesticides to accumulate in meat and dairy products;
- There is a need for greater sampling and testing of forages and animals to determine the long-term impacts of sludge;
- Little is known about the impact on wildlife grazing on sludge-amended land, and the potential health effects for humans consuming such wildlife.
- Scientific uncertainties remain regarding the long-term soil productivity of sludge-amended land, and the ecological affects of sludge application.

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Biosolids Stockpiling Recommendations

submitted to the full SMAC
March 5, 2001

In order to minimize the potential for negative environmental impacts due to stockpiling biosolids, the following guidance is recommended.

Maintain the existing stockpiling standards in Env-Ws 800, and in addition adhere to the following best management practices.

General

- Locate as many stockpile sites as possible to allow for rotating the sites from year to year, minimizing nitrogen saturation in soil that may occur with multiple repeat storage events in one location (Maine Nutrient Management Guidance)
- Use NRCS approved manure storage facilities where practical

Stackability:

- Consolidated and non-flowing (USDA)
- Shaped to facilitate shedding water (ME DEP)
- Sufficient solids content to stack and maintain a side slope such that for every 3 feet of run, the pile must rise at least one foot (ME DEP)
- When stockpiling on slopes, avoid stockpiling across slopes to reduce the potential for piles to become anaerobic at the base where overland flow accumulates (USDA)

Run-on control:

- Slopes 3% or less
- Locate near the top of slopes or on knolls where practical (ME Nutrient Management Guidance)
- When stockpiling mid-slope or at the base of slopes, divert run-on from the stockpiles using berms or diversions to prevent contact with overland flow (short paper fiber and wood ash have been used successfully as berms) (USDA)

Storage Site Clean-up

- Remove as much biosolids as possible from the stockpile location (USDA)
- Harrow, or in some manner, incorporate thoroughly the biosolids remaining at the stockpile location (USDA)
- Reseed the stockpile site with appropriate grass seed mixes immediately after spreading the biosolids (USDA)

Excessively Drained Soil

- November 15 to April 15 use same criteria as above
- April 16 to November 14
  - If less than 30 days, use same criteria as above
  - If 30 days to 8 months;
    - 8" sawdust pad (or other approved carbonaceous material)
    - complete removal of material and pad (to be utilized on site) at least one time per year
- 4' minimum depth to seasonal high water table

Committee Report

Hal, I do not have all paperwork needed for this file.

EXECS - ALL NEEDED FOR OLD AMEND.

NO EXEC SESSION FORM FOR OTP/A 8-6 (0797)

MAJORITY
COMMITTEE REPORT

COMMITTEE: **Environment and Agriculture**

BILL NUMBER: **HB 348-FN**

TITLE: prohibiting the land application of sludge in certain excavation areas.

DATE: 4/10/01 CONSENT CALENDAR YES ☐ NO ☒

☐ OUGHT TO PASS

☒ OUGHT TO PASS WITH AMENDMENT

☐ INEXPEDIENT TO LEGISLATE

☐ REFER TO COMMITTEE FOR INTERIM STUDY
(Available only in second year of biennium.)

STATEMENT OF INTENT
(Include Committee Vote)

The bill as amended by the majority of the committee replaces the entire bill with a suspension on the issuance of new permits to spread sludge on excavation areas. It applies only to gravel pits, which are located over stratified drift aquifers. The very limited prohibition sunsets in two years. Spreading of sludge on currently permitted sites can continue. The majority believes that protecting our aquifers for the next two years while we complete current research (being done here in NH) is a reasonable exercise eof our responsibility for our drinking water sources.

Vote 8-6.

Rep. Betty B. Hall
FOR THE COMMITTEE

Original: House Clerk
cc: Committee Bill file

USE ANOTHER REPORT FOR MINORITY REPORT

Environment and Agriculture

HB 348-FN, prohibiting the land application of sludge in certain excavation areas. **OUGHT TO PASS WITH AMENDMENT**

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(Include Committee Vote)

The minority of the committee felt the bill is unjustified by verifiable evidence of harm, prohibits the very scientific research which could provide the evidence the proponents say they must have to end the moratorium, lays a heavy burden on taxpayers to dispose of a product that is now revenue-producing, threatens landfill capacity, makes gravel pit reclamation impractical, and incidentally takes away the livelihood of the people engaged in the industry.

Vote

Rep. Harold P. Melcher
FOR THE COMMITTEE

Original: House Clerk
cc: Committee Bill file

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