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## **LISTS RELATING TO THE PRODUCTION AND USE OF LARGE-VOLUME MATERIALS**

(These lists are incomplete, because much of the intended information is at Managing Earth's Resources, which no longer employs the author of the lists. Most of the lists could be complete, given access to MER.)

### **CURRENT RECYCLERS AND BLENDEERS OF LARGE-VOLUME MATERIALS THROUGHOUT THE UNITED STATES**

The purpose of this list is to show those companies and/or industries that are currently reusing large-volume materials. Specifics for those companies listed here, as well as many other companies that would fit into this list are available at MER.

A statue-maker is using dredged sediment from Saylorville Lake to make statues.

A company is using LVM to build houses and other buildings.

Massachusetts Department of Transportation, and other States, use construction and demolition debris to build highways.

### **CURRENT USES OF LARGE-VOLUME MATERIALS THROUGHOUT THE UNITED STATES**

The purpose of this list is to show current uses for reused large-volume materials. Examples of each of these uses can be found at MER.

Large-volume materials are being used in numerous ways throughout the country. Some of these uses include:

- Golf-course construction
- Building homes and other structures
- Manufacturing products such as:
  - Soils
  - Erosion control blocks
  - Concrete-substitute products

## **LOCAL PRODUCERS AND USES OF LARGE-VOLUME MATERIALS**

The purpose of this list is to show those companies and/or industries that are producing large-volume materials in our community (North Shore of Massachusetts), and what is currently happening to these large-volume materials. Further details are known at MER.

The Salem Power Plant produces large amounts of fly-ash through its electricity production process. According to PG&E, the owners of the plant, a significant percentage of the ash is uncontaminated. In the past, this ash has been carelessly dumped, as can be seen from the Wenham Lake example. These days, all the ash is put in lined landfills in New England.

The South Essex Sewage District (SESD) processing plant produces large amounts of processed sewage. This sewage is currently being transported to landfills in New Hampshire, where it is dumped. Currently, the processed sewage at the end of the line is contaminated, but the processing plant has the ability to decontaminate it. The sewage district has not been decontaminating it because it is cheaper to leave it contaminated and put it in a lined landfill.

Some questions that beg further study are: What could be done with this processed sewage if it was decontaminated? Would reusing uncontaminated processed sewage make money for the community and the SESD by providing jobs and new industry, while at the same time reducing the need to transport the processed sewage and dump it in landfills?

Dredged sediment from lakes, harbors and other waterways is another source of large-volume materials. Some of this sediment is contaminated and some is not. Proposals have been made to put contaminated sediment in "contained aquatic disposal" areas, as was the case in the proposed dredging of Salem Harbor in the 1990s. Uncontaminated sediment is often used as landfill cover.

Construction and Demolition Debris is another category of LVM that exists in this community. Some of this debris is being used by MassHighway in the construction of roads.

## **POSSIBLE FUTURE USES OF LARGE-VOLUME MATERIALS**

The purpose of this list is to offer some possible future uses of LVM. Some of these uses are already being studied. More uses are known at MER.

- Waterways: erosion-control blocks which prevent sediment in waterways can be made from sediment, ash, and other materials.
- Railroads: Railroad ties can be made from ash and other materials.
- Roads: Jersey barriers, retaining walls, road-based aggregate, median soils that do not need chemical fertilizers can be made from various materials.
- Trails: Bike, walking and other trails can be made from materials that MER helps society and communities to manage.
- Logging and Mining Roads: Various materials MER works with can be used in these rough-roads.
- Structures: Garages for heavy equipment and road materials can be made from materials MER helps to manage, and some of these structures can be taken down and moved, easily

Respondent's Name: \_\_\_\_\_ Phone: \_\_\_\_\_ / \_\_\_\_\_  
Address \_\_\_\_\_ City \_\_\_\_\_ Zip \_\_\_\_\_

Interviewer \_\_\_\_\_ Time: Began \_\_\_\_\_ Ended \_\_\_\_\_ Time Lapse \_\_\_\_\_

Hello, my name is \_\_\_\_\_. I am working with a nonprofit organization called Managing Earth's Resources, that is headquartered in Beverly and has work planned in various states.

We would like to ask you to participate in a survey, which will take about 10 minutes, at the most.

The survey has to do with community education about natural resources, the environment, and other issues.

Your name will not be associated with your responses. We assure you that this information is for research purposes only and that your comments are confidential. We are purely trying to find out what citizens know and want to know.

Are you willing to take a few minutes now?

**IDENTITY:**

If respondent wants our telephone number and address, please give it:

Tel. 978/927-2082

Addr. 131 Dodge St (1), Beverly, MA 01915

**IF CAUTIOUS:**

(If respondent is cautious, please don't hesitate to let them know it is alright and that you appreciate their time, anyway – any polite reply.)

If want to know the topic, read the Introduction.

Get firm agreement BEFORE BEGIN:

**Introduction:**

MANAGING EARTH'S RESOURCES is beginning research on how to educate the public about large-volume materials that are in most communities. The three materials we will ask you about today are

- 1) Sewage
- 2) Sediment from our waterways
- 3) Ash

**1. The first question is about sewage.**

- a. Can you tell me how much you feel you know about sewage processing? These are the choices.  
Very Much      Some      Very little      Nothing      Unsure how much

(Reread as much as needed)

- b. Can you tell me how much you know what happens to the sewage after it is processed?  
Very Much      Some      Very little      Nothing      Unsure how much

- c. How interested are you in knowing more about sewage – how its processed or how it is used or disposed of?  
Very Much      Some      Very Little      Not at all      Unsure

- d. Which are you more interested in,  
A) How sewage is processed or  
B) What is done with it after it is processed: Circle which.

- e. Who do you think makes the decisions about what happens to sewage after it is processed?

- f. How interested do you think most citizens are in knowing more about what is done with sewage?  
Very Interested      Some interest      Very Little Interest      No interest      Unsure

(Are pages attached for this question – Yes No)

2. **The SECOND question is about SEDIMENT, OR SOME PEOPLE SAY, DREDGED MATERIAL – FROM OUR WATERWAYS.**

- a. Can you tell me how much you feel you know about sediment? These are the choices.  
Very Much      Some      Very little      Nothing      Unsure how much
- (Reread as much as needed)
- b. Can you tell me how much you know what happens to the dredged material from our waterways?  
Very Much      Some      Very little      Nothing      Unsure how much
- d. How interested are you in knowing more about sewage – how its processed or how it is used or disposed of?  
Very Much      Some      Very Little      Not at all      Unsure
- d. Which are you more interested in,  
A) Why sediment is or is not dredged?  
B) What is done with sediment after it is dredged?
- e. Who do you think makes the decisions about dredging and what is done with dredged material?
- g. How interested do you think most citizens are in knowing more about what is done with dredged material?  
Very Interested      Some interest      Very Little Interest      No interest      Unsure

(Are pages attached for this question – Yes No)

3. **The THIRD question is about ASH..**

- a. Can you tell me how much you feel you know about THE CREATION OF ASH.? These are the choices.  
Very Much      Some      Very little      Nothing      Unsure how much
- (Reread as much as needed)
- b. Can you tell me how much you know what happens to ASH AFTER IT IS CREATED?  
Very Much      Some      Very little      Nothing      Unsure how much
- e. How interested are you in knowing more about ASH – how its processed or how it is used or disposed of?  
Very Much      Some      Very Little      Not at all      Unsure
- d. Which are you more interested in,  
A) How ash is created.  
B) What is done with ASH after it is processed: Circle which.
- e. Who do you think makes the decisions about what happens to ash?
- f. Do you know about uses of ash?
- h. How interested do you think most citizens are in knowing more about what is done with ASH?  
Very Interested      Some interest      Very Little Interest      No interest      Unsure

(Are pages attached for this question – Yes No)

4. **The FOURTH question is, out of these three materials – sewage, sediment and ash, which one is the one you feel you:**

- a. Know most about.
- b. Want to know about, most?

Thank you very much., we're almost finished I need to know about you – what age group and such so we can analyze the results by groups of people.

5) AGE, Ask about age group (what decade – such as teens, 20s,40s, 60s) \_\_\_\_\_

6) How interested are you in environmental issues?

Very      Somewhat      Not very      Not      Unsure

7) Do you think children should be educated about the issues we are talking about today?

8) What is your occupation?

9) In your opinion, can good environmental practices also be good economic practices?

Yes      Maybe      No      Uncertain

9) The next question is optional. What is your approximate income level?

10) Are you a native New Englander –

a.      Where did you grow up

b.      Have you lived other places, outside of this area?

11. Do you feel you are well-informed on most issues:

Very well informed,      Somewhat      Not very      Not      Uncertain

12>      **Finally, can you tell me what you think are THE MAIN REASONS YOU HAVE OR HAVE NOT THOUGHT ABOUT WHAT HAPPENS TO SEWAGE, SEDIMENT AND ASH – how it is disposed of or used?**

Again, my name is Trent Simons. You have been most helpful to us. As I mentioned we are trying to see how to educate the public.

**13.      Do you want to add any thoughts or observations?**

(This is a key question, because 1) we want to begin dialogue, 2) tap what is there before we start educating, 3) improve the interview, and 4) compare what is know before and after, including in this interview.



Boston Globe

Activists upset over move to grant extensions to power plants

By Peter Demarco, Globe Correspondent, 12/15/2002

When Acting Governor Jane Swift approved regulations nearly two years ago

requiring the state's five filthiest power plants to reduce toxic emissions,

residents living near the Salem Harbor Station thought they'd soon be breathing cleaner, healthier air.

But the power plant has yet to meet the new emissions standards, and on Friday residents and environmental advocacy groups learned that the Department of Environmental Protection is on the verge of granting the plant's owners an extra two years to comply with Swift's order.

If granted, the extension will virtually guarantee the plant will continue

to emit toxins linked to smog, acid rain, and respiratory illnesses well

into 2006.

"It's a situation where the public good and very serious health concerns

are pitted against the bottom line for the plant owner," said Cindy Luppi,

organizing director for Clean Water Action, which has lobbied five years for

reduced power plant emissions. "For us, it's disappointing."

Pacific Gas and Electric, which owns the coal-and-oil burning power plant,

says it needs the extension to properly implement \$100 million in renovations.

The "filthy five regulations" that Swift signed into law in April 2001

require the state's dirtiest power plants to reduce emissions of nitrogen

oxides and sulfur dioxide by more than 50 percent by October 2004.

According

to the DEP, the regulations are the most stringent in the country.

Some power plants, including the Mystic Station in Everett, have moved to

comply with the regulations; the owner of Sandwich's Canal Station power

plant is expected to challenge the regulations in court next week.

Neither DEP nor PG&E officials could be reached for comment yesterday.

A statement issued by the DEP on Friday said Salem Harbor's owner would lower

nitrogen oxide emissions an additional 10 percent if granted the extension.

Plant opponents called that concession "negligible" and repeatedly questioned why PG&E has failed to act more quickly to comply.

Opponents, who said they have brought their concerns to Governor-elect Mitt Romney's environmental transition team, will have a chance to oppose the extension at a DEP public hearing scheduled for January. The DEP is expected to formally vote on the extension following a 30-day public comment period.

'We have a great history with robust turnouts at hearings. So once again, we will be there,' said Marblehead resident Lori Ehrlich, of the grass-roots group HealthLink.

'It's the communities who ultimately are going to have to pay the price of putting up with unfettered emissions for another two years. It will be evidenced in numerous asthma attacks and other illnesses.'

This story ran on page B3 of the Boston Globe on 12/15/2002.

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Boston Globe  
Romney says Salem plant must clean up  
Workers decry 2004 deadline  
By David Arnold, Globe Staff, 2/7/2003

Governor Mitt Romney took his first major environmental stand yesterday by calling for the Salem Harbor Station power plant to meet a 2004 deadline to clean up its emissions.

As several dozen plant workers tried to shout him down, the governor said the state Department of Environmental Protection has denied a bid by the oil-and-coal-fired plant, one of the dirtiest in the state, to win a two-year extension of its deadline to meet stricter clean-air standards.

"If the choice is between dirty power plants or protecting the health of the people of Massachusetts, there is no choice in my mind. I will always come down on the side of public health," Romney said to an audience that, according to several accounts, tried to overpower him with jeers.

The 50-year-old Salem plant is owned by PG&E National Energy Group, which may decide to close the plant rather than spend the tens of millions of dollars required to bring it up to code.

"We are considering many options, and those might include legal action, selling an asset, or a shut down. Our policy is not to talk about specific plants," said Shawn Cooper, a spokesman for PG&E.

Closing the plant would be a financial blow to Salem. The plant employs 173 workers and is the city's largest taxpayer. It accounts for 13 percent of all Salem tax revenue, or about \$6.5 million out of the total city tax levy of \$50 million, according to Mayor Stanley Usovicz.

"I'm a team player when it comes to absorbing state funding cuts, but adding this to our burden is just plain unfair," Usovicz said after Romney's announcement. "I couldn't renovate my house in the time this plant has been given. All they want to do is shut it down." Environmentalists see a victory in the strict ruling on a plant that has become known as one of the state's "filthy five" (actually, six plants owned by five companies) because it burns older, dirtier fuels.

''(The governor and Lieutenant Governor Kerry Healey) have decided to restore order to a process that has become cold and heartless, a process that for a half century has ignored the health impacts that our community has born for multiple generations,'' said Lori Ehrlich, whose organization HealthLink has led a five-year campaign to clean up the air for North Shore communities downwind of the plant.

Ehrlich was halfway through her remarks when opponents drowned her out.

Regulations passed in 2001 require the owners of the ''filthy five'' plants to cut in half their release of nitrogen oxides and sulfur dioxide, both of which are linked to smog, respiratory illness, and acid rain. Coal-burning plants also release mercury, carbon dioxide, and carbon monoxide, which they are also required to reduce.

The plants were originally exempted from the air-pollution standards required of newly built gas plants because state officials believed they were going to close. But the older plants' profits have increased significantly since the state restructured its electricity industry, so then-Acting Governor Jane Swift ended their exemption. While the plants have different timetables, Salem was slated to have new scrubbers installed by 2004, but was in negotiations with the Department of Environmental Protection to extend that deadline to 2006 -- until yesterday.

''In 2001 you asked for 2004, in 2003 you asked for 2006, in 2006 you'll ask for 2008,'' Romney yelled to the hecklers. ''I will not protect jobs that kill people,'' he yelled. With a thumb pointing behind him to the facility, he added, ''And that plant kills people.''

Should the 750,000-megawatt Salem Harbor Station close, utility officials said it was too early to estimate the effect on utility rates, or for that matter, how other plants might make up the shortfall. Another plant looking at a similar 2004 deadline change is the oil-fired facility on the east end of the Cape Cod Canal. It is owned by the Mirant New England Corporation, which has also fallen into difficult financial straits.

Salem mayor Usovicz said he had been unaware of Romney's intentions until a resident told him some of the governor's staff members were in the

Conners

Road neighborhood scouting out a location where television cameras might catch the belching stacks of the plant behind the speakers lectern.

This story ran on page B2 of the Boston Globe on 2/7/2003.

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Boston Globe Editorial  
Clean air in Salem  
2/24/2003

TWO YEARS AGO, Acting Governor Jane Swift demonstrated a commitment to clean up the air by requiring that owners of the 'Filthy Five' - the worst-polluting power plants in Massachusetts - take steps to reduce their emissions. Now her successor, Mitt Romney, has shown there will be no backsliding on the issue in his administration. He has denied the request of the owner of a Salem plant for a two-year extension to meet Swift's deadline.

PG&E National Energy Group owns the 750-megawatt plant, which burns both coal and oil. It has said it will be impossible to make the \$110 million worth of improvements on the plant by Oct. 1, 2004, and wants an extension to 2006. Without the extra time, the company has said, it might have to shut down the facility, which worries Salem's mayor. The plant is the city's largest taxpayer and employs 173 people. The company has already filed its appeal of Romney's decision.

Romney did not leave himself much wiggle room on the issue during the campaign when he promised he would enforce the crackdown on the Filthy Five.

If the company's appeal fails and it closes the plant, the immediate effect on Salem's economy will be negative. But it would be a boost to the entire North Shore's air quality, and New England has somewhat more generating capacity than it needs.

That overcapacity, however, complicates the other options for the owner that would have to be considered along with a shutdown. These include converting the plant to cleaner natural gas or selling the plant to a new owner, who could do the conversion himself. With surplus power, the economics of these alternatives would be dicey.

Last December the Globe reported that two Canadian companies were considering the purchase of one or more of PG&E National Energy Group's several generating facilities in Massachusetts. One of the companies is a part owner of both the Sable Island natural gas project off Nova Scotia and

the Maritime Provinces and Northeast pipeline, which brings gas from eastern Canada to New England. An extension of the pipeline, which is under

construction, would pass very close to the Salem plant.

The reductions that Swift called for - 50 to 75 percent of the main pollutants - are rigorous, but they were long overdue. The nitrogen oxide, sulfur dioxide, and carbon dioxide emitted by the plant contribute to acid rain, smog, and global warming. The emissions are blamed for aggravating asthma and other respiratory conditions. Coal burning plants are a major source of toxic mercury.

The Northeastern states have called on the Bush administration to enforce cleanups of coal-burning plants in the South and the Midwest that send their pollution downwind to this region. Governors Swift and Romney have demonstrated with admirable firmness that clean air begins at home.

This story ran on page A14 of the Boston Globe on 2/24/2003.

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Salem plant gets a boost  
A Boston Herald editorial  
Saturday, February 22, 2003

Reports that ISO New England, the nonprofit organization that manages the regional power market, will intervene to keep PG&E's Salem power plant open only underscore the foolhardiness of Gov. Mitt Romney's intention to see it shut down.

The governor went to Salem to stand in the shadow of the plant (and as it turned out hear first-hand the wrath of its work force) and insist that there would be no extension of a compliance order that forces the plant to live up to stricter environmental standards by 2004 or shut down.

ISO president and CEO Gordon van Welie said, ``Looking two or three years out, we're going to need either all or part of Salem's capacity.''

That's the point. Energy needs and environmental responsibility are interrelated issues that require taking a balanced, long-term view.

To justify his position, Romney has cited sketchy data that the plant ``kills people.''

Let's hope he gives at least equal weight to hard data from the ISO on the region's demand - and supply - of energy.

acid  
rain, smog, and respiratory attacks.

"It's only going to be effective if they implement the regulations,"  
said  
Hicks. "PG&E has very strong reasons to delay the implementation of  
the  
technology."

PG&E has also appealed last month's DEP decision denying the company's  
amended 2002 plan. In that ruling, the DEP ordered PG&E to stick by  
its  
original plan that the agency approved in June 2002. That appeal is  
set for  
June 16, 18, and 19.



Boston Globe-North Section  
By Steven Rosenberg  
Globe Staff Correspondent

SALEM--The contentious debate over the future of the Salem Harbor power plant, which has pitted city versus state--and engaged environmentalists and corporations--moves to a Boston courtroom this week, when representatives of the plant present an appeal before a Department of environmental protection administrative judge.

On Wednesday, Thursday, and Friday, DEP Judge Frank Nee will preside over the appeal, filed by PG&E National Energy Group, the company that owns the Salem oil-and coal-burning power plant. The appeal is based on a 2001 PG&E proposal. In its proposal the company agreed to install emission control equipment that would reduce the level of nitrogen oxide and sulfur dioxide released into the atmosphere, thereby complying with tough emissions regulations created by then-acting governor Jane Swift in 2001.

The company's proposal called for the equipment to be installed by 2006, effectively extending the state's 2004 original equipment installation deadline by two years. The company amended the plan in April 2002, the DEP approved the original plan in June 2002 but last month rejected the amended plan.

In the wake of last month's announcement by Governor Mitt Romney to enforce the 2004 deadline, there has been much speculation around the 750-megawatt plant, which at peak capacity provides enough electricity for 750,000 homes and businesses in Massachusetts and New Hampshire. Salem Mayor Stanley J. Usovich Jr. has demanded that the plant, which is the city's largest taxpayer and employs 168 workers, be granted an extension to 2006.

Most of the appeal will consists of a cross-examination of witnesses, based on testimony already submitted to the judge. PG&E and the DEP are parties in the appeal, but are not the only entities involved. The Conservation Law Foundation is an "intervener"; the City of Salem and Mirant, which owns a power plant in Sandwich, are "participants."

According to Ed Coletta, a DEP spokesman, PG&E, the DEP, and the Conservation Law Foundation have already submitted written testimony to

the agency, and will also have an opportunity to cross examine witnesses. They can also present written briefs to Nee after the hearing ends. As participants, the City of Salem and Mirant can also submit briefs after the hearing, but cannot cross-examine witnesses. Coletta said that Nee will rule within 45 days of receiving the written briefs.

PG&E witnesses expected to appear at the appeal include emissions control and permitting consultants David Shotts and Charles Cooper of TRC Environmental, which works out of Lowell and Lyndhurst, NJ; Michael A. Fitzgerald, general manager of the Salem Harbor Station power plant; and Steven Wahlert, engineering manager for Sargent & Lundy, an Illinois energy consulting group. Other witnesses expected at the appeal include Edward Braczyk, a DEP environmental engineer, and Bill Powers of the San Diego-based Powers Engineering, who has testified for the Conservation Law Foundation.

"We hope that the DEP will take our argument into consideration and grant us the 2006 date," said Shawn Cooper, a PG&E spokesperson.

Cooper said he expects the plant to be sold this year, but believes any company that would operate the plant in the future could not comply with the state's 2004 deadline. He also said that PG&E does not have the money to invest in the emissions control upgrade and would close the plant if necessary.

"If our appeals are denied, then we will likely begin the process of announcing that we will have to close the plant, because we will not operate the plant if we're not in compliance," said Cooper.

Cooper said that if the DEP rules against PG&E, the company would consider appealing the decision again to the DEP, or to a state court.

Toni Hicks is a staff attorney for the Conservation Law Foundation, which is representing a group of 55 citizens and advocacy groups including HealthLink, the Wenham Lake Watershed Association, and Clean Water Action.

Hicks believes that the state needs to set a strong precedent in enforcing its own law, which requires the plant to reduce the emissions of nitrogen oxide and sulfur dioxide by as much as 50 percent a year.

Byproducts of nitrogen oxide and sulfur dioxide have been linked to