

I. **OPENING**

CALL TO ORDER: The Environmental Advisory Council meeting of Lower Saucon Township Council was called to order on Tuesday, December 1, 2009 at 7:02 P.M., at 3700 Old Philadelphia Pike, Bethlehem, PA, with Sandra Yerger, Chairman, presiding.

ROLL CALL:

Members: Sandra Yerger, Chairman; Tom Maxfield, Vice Chairman; Laura Ray, Secretary; Haz Hijazi, Ted Beardsley, and Allan Johnson.

Associate Members: Colin Guerra, Chiharu Tokura (arrived at 7:11 PM) and Glenn Kaye. Absent: Thomas McCormick

Hellertown Liaison: Absent – Terry Boos

Jr. EAC Member: Sara Cote arrived at 7:03 PM.

Planner: Kevin Kochanski – Boucher & James

PLEDGE OF ALLEGIANCE

II. **NEW BUSINESS**

A. **DISCUSSION ON GEOTHERMAL**

Mrs. Yerger said this has been put on the agenda and we are going to welcome Jim Birdsall from Hanover Engineering who helped craft our geothermal ordinance and Tony Lynch who installs geothermal systems.

Mr. Birdsall said back in the early 90's, the Township became pretty concerned about the aquifers within the Township and started to do some additional ground water studies and analysis in a general sense, not a specific sense. As part of that process, and as part of a new and developing industry of geothermal ground source energy production, they were asked to look at various options for making sure that if ground water source wells were put in the Township that they would be done in a matter that was protective of the ground water table. They did a search of documents from other municipalities who had regulations and they patched together some and sent drafts to the Planning Commission. It eventually came to Council and Council adopted the ordinance. The thrust of the ordinance is that if someone is going to do this, and certainly the Township didn't want to discourage it, and if the Township is going to allow folks to do this, they wanted to make sure the systems weren't disrupting or competing with other things on the property that may already be there or be planned for the future, so it had to be kind of organized in a fashion that met reasonable setbacks. If it was going to be drilled as a well for the recirculation system to be put under the ground vertically, that it be a closed loop system, not an open loop system. That if it is going to be drilled, that it be drilled in a safe way and not in an area that has your watershed protection ordinance overlay and not in an area that would be limestone underlay. The reason for prohibiting the vertical ground source systems in those areas is primarily for ground water protection. We know the protected watersheds in the Township feed public water supplies in Springtown and Hellertown, so the more vertical wells there are in those areas, the more chance there is for cross contamination from upper levels of strata, lower levels of strata and the same is true for limestone. The limestone you have so many ways for the ground water to get into the sub surface waters. The Township didn't want to see a proliferation of holes being drilled. The first one that was done was out in the east end of the Township near Laura Ray's property near Lower Saucon Road which kind of spurred things along. The next one that was applied for was a vertical one that was being proposed west of the Society Hill area, east of Bingen Road and that application

was made before the ordinance was passed, so that went in as a vertical well. There were two others that he's aware of that were horizontal tube systems - one in the western part of the Township and the other in the eastern part of the Township. Those all seemed to work out alright. He doesn't know what expense the individuals went to. They were high value properties, so he imagines they were able to afford what they did. Obviously, they went in with their eyes open. With regard to ones since then, he doesn't think there have been any. He didn't check with Chris Garges, but he did check with Dan Miller, and Dan did not remember any coming through. Mrs. Yerger said she doesn't think there has been a whole lot lately. Mr. Birdsall said there may be others put in way before we were worried about this sort of thing. What the ordinance does is set up a procedure for drawing up a drawing to make sure you are not impacting too close to your well, too close to your property line, or too close to a drain field you might have from a sewer system, but then when you get into the actual system design, there's no criteria spelled out. That's up to the installer and the energy experts to do. He did take a look at the latest uniform building code to see if the building code, residential or the mechanical code said anything about this because in these intervening years, the codes have been updated to take care of some things like the solar energy production, but they have not been updated to take care of these things. These are still pretty much unregulated and what they recommend and what the ordinance says is you must go by industry standards and it points you to the basic private industry association that is sort of self regulating itself. If the installer is certified under this program, you can pretty well know they are going to keep their reputation up and design it according to industry standards. We don't try to superimpose design standards on them, other than some very minimal criteria. The tubing has to be 30" below the surface of the ground if it's horizontal. The well, if it's drilled, has to be filled with benite clay or grout to make sure we don't have contamination from the upper levels to the lower levels. The horizontal tubes, where the frost line is, you don't want them to freeze up. The closed loop and the open loop system are you aware of those terms? The open system is where you would actually pump water out of the ground water, circulate it through your system and then put it back in the aquifer. You can do that in a pond if you have proper filter systems, but typically it would be an open system to the ground. Certainly the Township didn't want anything like that as there's a chance for contaminating the water before it goes back into the ground water. Open loop systems are prohibited. The closed loop system is just the opposite. You don't allow any new water in or old water out. The ordinance does allow food grade glycol which is almost like antifreeze that you put into your car, but it's safe to ingest. There was a lot of discussion at that time of leaking systems and whether they would be identifiable and whether the system would shut itself down automatically. There were discussions about what the proper fluid is in the way of allowing a range of fluids and eventually the various boards, and with HEA's direction, honed in on just plain old water or this food grade glycol. That's why you see that sort of restriction. The systems inside the house are basically your normal heat exchange systems. They are not much bigger than a normal furnace. The ground source systems that he's seen have multiple pipes coming through the walls as there are multiple systems out in the yard. You might have four or five horizontal systems or you might have one large horizontal system that has a lot of tubes back and forth. With regard to wells, depending on the amount of heat exchange you need, and he's sure Mr. Lynch can explain more than he can, you can wind up with many wells. It's not just one well that you would drill. You might have to have an array of six or eight or ten wells depending on what kind of house you have and how big your house is and what goals you are trying to set. They are a little bit better at the air conditioning than they are the heating. You need a little bit more help from the electric or gas company with the heat, but otherwise he'll defer to questions or to Mr. Lynch to explain more in detail the engineering or construction of it.

Mr. Maxfield said the general depth of these wells, are they the same, shallower or deeper? Mr. Birdsall said he doesn't know. Ms. Ray said everybody's drinking wells are different also depending on where you hit water. Mr. Maxfield said he was wondering if you need that necessary kind of flow like you need for drinking water. Mr. Birdsall said he doesn't think it depends on the

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water, it depends on heat exchange. Even if you don't have water, you do have heat exchange like a radiator. He's not an expert in the design of it.

Mr. Maxfield said he was at the initial discussions and there was one application over by the Old Mill area. There was discussion about going down and hitting pockets and they were trying to come up with some alternatives. Mr. Birdsall said if you are going into an aquifer or a void, or seam and rock, first of all if they are not cased, then your grout is not going to protect the aquifer. If you are cased, then you are going past that zone of water and separating your tubes from the water and certainly depending how you are drilling it and how carefully you are drilling it, you are opening up the whole concept of draining the one pocket that may have a little bit more of pollution into another ground water source that has a very high purity.

Mr. Kaye said can an open or closed system be either vertical or horizontal, is it one or the other? Mr. Birdsall said you wouldn't have an open looped system horizontally because there's no place to pick up or discharge the water. Ms. Ray said what about a pond? Mr. Birdsall said it's very unlikely that someone would actually take pond water out. Ms. Ray said she's seen it diagrammed already. Mr. Birdsall said where he's heard of a closed loop system being successful is in the bottom of a regular pond, but it's a closed loop system. It saves on excavation. Mr. Johnson said did you write the ordinance that was revised in 9/12/05? Mr. Birdsall said that sounds like the right time. Mr. Johnson said the definition of ground source heat pumps in the ordinance include surface waters as a heat source, but in the actual document, you don't talk about that at all. Mr. Birdsall said with drawing or discharging heat to the ground, ground water or surface waters, it doesn't say you are using surface water. Mr. Johnson said you are taking heat from surface water which is the same as taking heat from water in a well or taking heat from the ground. Mr. Birdsall said true or putting heat in. Mr. Johnson said in the rest of the document you don't mention surface waters at all. Mr. Birdsall said that's a very good point and that's a deficiency in the ordinance. Maybe there should be guidance as to what you do should you have a pond. It's a very good point and you wouldn't need a 30" depth. It could be improved upon and he's glad you are looking at it as you certainly do want to encourage it.

Mr. Johnson said Springtown did a study on the well they have that they supply water with. They studied water flow to Lower Saucon Township and Bucks County. They came up with data that shows there are rocks and it takes very long, like ten years for the water to get from the edge of their area they are concerned about to the well. He didn't know water moved that slow through the rocks. It's not going to carry away heat and it's not going to supply heat. It's just kind of going to hang there. They have drinking wells in that area and most of those wells have eight gallons a minute. Mr. Birdsall said that's why you end up needing multiple wells like a radiator because you need so much surface area so the heat is actually moving away very, very slowly. Mr. Johnson said the heat from a heat pump comes from the compression of the Freon gas, so a lot of the heat comes from the mechanical work of a compressor. That's where you are getting a lot of your heat from. It's like an air conditioner that operates totally above ground. Mr. Johnson said how much heat are you actually taking out of the ground, you don't know. What's going into your house is a combination of mechanical heat from the compressor plus whatever is taken out of the atmosphere.

Ms. Ray said one of the places where she had a question was the 25 feet from anything regulation because it's even more restrictive than putting in septic. Septic was easier to put in than geothermal is. She has a lot of outdoor buildings and farm property and she's going to have to be snaking around all over the place to put her field in. Why the 25 feet as she thinks septic is 10 feet. It's only a pipe in the ground. You have to be 25 feet away from corn crib, garage, shed, barn and so on. The well is more than 100 feet away, which it is. She understands why they would have thoughts about the well even though what we're using in it is food grade stuff, but the 25 feet away from everything, she doesn't understand why on that. Mr. Hijazi said it's conservatively placed to protect for encroachment and foundation. Ms. Ray said you have to go through your foundation to

get to your house with the pipes. You have to cross that 25 feet anyway as you actually have to go in to the house with the pipes. Their description of a structure is a sidewalk, a curb, everything is a structure. With the septic, it was 10 feet. They didn't have problems with the septic. With geothermal, it's going to be a problem. It has to connect to your house somehow. Adding this 25 feet really makes it challenging. Mr. Hijazi said we should be encouraging such alternatives. Ms. Ray said they do have all kinds of things like alarms and bells and whistles and you have to have every kind of thing going off if your system has a failure. Everybody needs to know. You need a visual alarm; you need to call the police. We don't have that for fuel oil systems or propane. People could be blowing up their house with their propane. Fuel oil is stored on properties in tanks that could be leaking all over the place and we don't have any regulations on that. We are really concerned about poly glycol, food grade glycol. Mrs. Yerger said she remembers discussion, right or wrong, about yes, we know when the system would be approved and installed that it was going to be poly glycol. There was concern there would be substitutes. People had the capacity to put other less safe substances in the system that was going to be running underground. Mr. Hijazi said are you going through the process now? Ms. Ray said yes. Mr. Hijazi said you are finding these are things you would question? Ms. Ray said yes she is. She said Mrs. Yerger is saying people could put less safe substances in, but you could illegally dump something down their well if they wanted to. Mr. Kaye said it's probably simply the fact that people had the opportunity to force their opinion and exercise their intervention in regulating this. Even more dangerous are things that are beyond the regulations. Mr. Hijazi said since you are going through the process, do you find that these alarms, are they cost prohibitive or is it part of the system itself? Ms. Ray said actually the system automatically shuts down, and she doesn't know all the systems in the world, but maybe not all of them have a buzzer that goes off. Mr. Johnson said something that is definitely necessary is something that detects a leak. Ms. Ray said it shuts down. Ms. Johnson said you may want to know why it shut down. Ms. Ray said it has diagnostics, but why are we regulating this. If your furnace shuts down, do you think the Township needs to tell you that you need to figure out why? Mr. Johnson said his furnace isn't dumping poly glycol into the environment. Ms. Ray said what about oil. She doesn't we have to regulate it. Mrs. Yerger said if we don't regulate it, they are going to people who aren't going to do it. That's something we feel is necessary. You can't expect people to do the right thing because it's the right thing. They either don't know as they don't know any better or because it's going to save them a few bucks or they just don't feel like it, so it's not a matter of regulating because we want to regulate. It's a matter of are we putting these regulations there because we feel it is necessary for protection of the environment. If they are necessary for the protection of the environment, then in her opinion, they should stay. If we don't deem them to be necessary, then we need to re-examine them. Mr. Maxfield said you say in the ordinance it says you have to call the police? Ms. Ray said she's wondering what they would say if you call them. That is in our regs. You have to notify them within two hours. Mr. Johnson said they probably put that in there so the Township knows the extent of the leakage because a homeowner isn't going to let the Township know it's leaking if he can help it. Mr. Maxfield said we do have alarm registration for security, maybe this is the same kind of thing. If you're not home and it starts to leak, the police at least know to shut it off. Ms. Ray said we have to call the police; the system isn't calling the police. We're getting so your 250 gallon fuel tank leaks, are you calling the police? We have no regulations on other heating systems. Mr. Johnson said the state regulates underground storage tanks. Some of their regulations are pretty wimpy, but they are the ones that regulate it. Mr. Maxfield said there was a fuel leak at Public Works that cost them thousands of dollars to litigate. Mr. Johnson said most people who have fuel leaks in their house take care of it real quick because there's a chance of it catching on fire and burning their house down. Ms. Ray said those are dangerous chemicals that are combustible. Mr. Johnson said if you have a poly glycol leak in the ground, that's not going to endanger the person's house, so they are probably not too worried about it. Is food glycol something you can eat? Ms. Ray said yes, it's in our food. Mr. Johnson said then it shouldn't hurt the ground. If they supplement that with something later on, that's the problem. Mrs. Yerger said that was part of the discussions. To recap, setback is an issue of concern, the 25 foot. You have

some questions about the alarming system. Is there anything else in the current regulation that you had questions on? Ms. Ray said Tony had something about putting the pipes into limestone screenings or a bed of sand to make it not transfer the heat so it makes your system kind of useless. It decreases the heat transfer which is the reason you are putting it in, in the first place. This is for horizontal. For vertical, you are in the well. You don't want it in rock. Mr. Johnson said they were probably trying to make the contractor aware that he has to put something on the soft bed of the sand or something. If you don't say these things, people don't have to do them. That's the problem. It's got to be in the ordinance. You should be able to bury the pipes in some kind of cement. Ms. Ray said that's if you are doing vertical. Mr. Birdsall said also in the horizontal closed loop, the sand bag or limestone was basically to get it away from any rocks. Under B, it says foible backfill consisting of water, sand and cement may be used to surround the pipe or trench. You can use a cheap flow fill that you can get from a cement company and then it talks about pipe locator tapes that you put over the top so you can find the pipe in the future. He doesn't think they were insisting that it be embedded or surrounded in screenings. Mr. Johnson said he'd think that heat transfer is going to take effect through moisture anyway. Ms. Ray said originally she questioned whether you could put it right under your septic because if you get it really wet, it would be excellent, but that's not totally allowed in our regulations. It's a pretty good idea because then you'd only have to be digging up your yard once. It goes down about five feet and the septic is only about two feet, so it's all that water percolating down could make a nice transfer. Mr. Johnson said you don't want to disturb the soil that your drain field is going in after you do a perk test. It's not going to have the same perkability anymore.

Mrs. Yerger said you were concerned about the setback, the alarms, the police, and not allowing open loop at all. She doesn't have the option of vertical at all because she's in the well protection area, but she could dig a well. The systems can run on just water also with nothing added to it.

Mr. Hijazi said with open loop you are returning it to the ground. Mr. Johnson said you are taking water out of the well and putting it back in. It seems like there is nothing wrong with that, but suppose you have a leak in your heat exchanger in your heat pump. Mrs. Yerger said before we start asking each other questions, we have Mr. Lynch here who will speak to us.

Mr. Lynch said he's from Better World Building Technology. He's been doing ground source heat pumps for more than seventeen years. He's got more than 150 installations and hopefully he can put to rest some of your issues and help you maybe redesign your ordinance so maybe it's more compatible and user friendly for your taxpayers and residents. In the current form of your system, it is economically prohibitive to actually take on doing this throughout most of your Township and not likely in many places; and hopefully, he can give you illustrations of other projects that they have done. One thing they can put to rest real quickly is the poly propylene glycol - a non-toxic liquid that is colorless, odorless and is tasteless. A solvent for flavors, extracts, drugs, and food antioxidants; a heat transfer medium; an emollient and humectants and plasticizer for tobacco products, baked goods, coconut, cellophane, cork, adhesives, and paper products; a lubricant and mold inhibitor for food processing equipment and a humectant for pet food. If you are worried about contamination from poly glycol, there are MSDS sheets that confirm what he just told you.

Mr. Lynch said the way this evolved is that Laura called him to do a geothermal system for her. The way he approaches everyone is you'd call him and he'd tailor the system for your house based on what you have there. When he started the process with Laura, he said this will be easy as we have to drill a new well for you anyway, we can use the well. Laura told him you can't do it with a well, you can't do open loop systems. He said then your next best bet is a vertical borehole. Laura said you can't do that either. He's saying he never heard of this and he's been doing it for a long time and at a lot of places. She said the only thing you can do is horizontal. When he reads the ordinance and regulations, the recommendation is to bed the tubing in sand. The absolute number one way to guarantee your system will never work is to embed your pipe in sand. There are four

systems in Saucon or Springfield Township that he knows the contractor put them in. The excavator was telling him about closed loop versus open loop and Tony was telling him which was better. The excavator told Tony this guy does all closed loop, a horizontal slinky. In the middle of the process as he's explaining that he dug a big trench, put down the sand and put the pipe in and more sand. Tony said it can't work. The excavator continued telling Tony about the whole thing. When he got done telling Tony, Tony asked him if he ever went back to any of them. He said yes, and none of them worked - one worked for about eight or nine months and then it failed. Sand is an insulator. He heard some of you discussing the transfer of heat. When you put a closed loop tubing system in the ground, vertical or horizontal, that fluid is going through that tube and extracting and absorbing heat from the surrounding earth or water. As it does it, it's cooling it down when it's in heating mode. When you are in air conditioning mode, it's actually heating it up. If your earth temperature is 50 degrees and you start extracting heat from it, pretty soon it is 30 degrees, then 28 and then 25 degrees. The reason you use poly propylene glycol because it won't freeze at low temperatures; however, that creates an extremely inefficient system. An open loop system is 25% more efficient than the closed loop system and it probably is 10%, 15% or 18% less expensive to put in. When you do the math, you'll find out it makes a lot of sense for your residents to approach it from that perspective. He has put in more than 150 systems, all but four are open loop systems, to the existing domestic well that people use for drinking. His own home is that way. You have to use the calculation of volume and area to give you a median of exchange when you extract water from an open looped well, it usually comes in at about 50 degrees. We extract 8 degrees temperature and it goes back into the well at about 42 degrees. If the well is this big and the house is this big, by the time that goes down to the bottom and comes into your house again, it will warm up eight degrees if you have the right design characteristics, and that's not real hard to do. If you truly want to do anything that is beneficial to your residents, you are precluding people from using the premier technology of today. Geothermal has been around since 1930. It's not anything that's new. It's a transfer of energy. Sustainability is the part of your planning and growth and your community and municipal building. If you keep creating bills that are too expensive for people to pay, they can't continue to live and pay it. As you approach growth, you need to approach it from a perspective of sustainability. Is it more sustainable to put in a system that is 25% more efficient that is less cost? It is in his book. These are the things that you really look at if you genuinely want to do something. He doesn't know what is going to happen for Laura's system. They had to order the piping as it's a horizontal flow system. He does an economical analysis for these and if anyone of you were to say what about my house, he'd come out and do a heat loss calculation, design criteria based on what you have, and he'll tell you how much it's going to cost to heat and cool your home for a year and get your hot water. It's a pretty simple process. He thinks the evolution of when you started looking into this, there were some good intentions, but there was a lot of misinformation that went around. The largest systems in the country are open loop systems. All the people he works with are open loop. Most of the industry is closed loop. He's had the fortune of being trained in open loop system technology and his customers have that opportunity.

Mr. Hijazi said most of the systems are closed loop? Mr. Lynch said most manufacturers only teach closed loop systems. You are going to say why is that? He can only tell you one or two other people that know enough about designing an open loop system because you can't teach them. It's a moving target. He has some houses where people have a spring running through their house. They pull the water out here and they dump it back in on the other side of the weir. That's their geothermal heat pump - the most inexpensive system in the world. The water was already there. It never dries up. It's the best way to go. When you don't have that kind of parameter, the next thing is do you have a well. A lot of times your well won't be sufficient. He'll go in and drill the well a little deeper. He maybe has three systems that are multiple wells. Not all the designs can be aesthetic solutions when you are dealing with open loop technology. In closed loop technology, it can be because the vertical borehole is this, the surface area is this and the glycol is this and they can teach that to people. It's very simple. The design temperature for a closed loop system is 30

degrees. The design temperature for an open loop system is 50 degrees. So it's 25% more efficient. It's a shame that the industry doesn't spend more effort in teaching open loop. He's been fortunate that the people he's been with from day one. All your manufacturers make open loop systems, but when you go to their schools, they don't train you in open loop technology. He could literally take a giant swimming pool and heat every house down this side of the street and back up with the same water back into the pool or pond right there when you know and understand open loop technology.

Mr. Hijazi said do you see any chances of negatives in terms of the environment? Mr. Lynch said negative environmental issues, in reality, he can't name a one that he has seen from his involvement. Sometimes he runs into a well that has too much sand or dirt. He has designed systems to resolve that. You can actually do acidity and still use the same equipment by changing the quality of the material in the heat exchanger. He did a design for the PA Energy Laboratory out in Pittsburgh. They had a \$2 million a year energy bill and they wanted to cut it in half. He showed them how to get rid of 50% of their energy bill, actually 70% of it, and they wanted to do it with reclaimed mine water, which is very sulfuric and acidic. By putting a stainless steel heat exchanger in, they could use that water and it was going to more than cut their energy bill by 50%. The rest could have been eliminated by a wind turbine.

Ms. Ray said the big question with open loop vertical is that you would have the ability or the system would have the ability to pump contaminants into the aquifer. Mr. Lynch said what would that contaminant be? It's already been identified as poly propylene glycol. You were right when you said there are alternate products, but nobody is using them. Methanol is one of them and that is sort of like mixing alcohol in it. Mrs. Yerger said she knew that was one of the concerns. Mr. Lynch said as a concern that needs to be asked and answered adequately. Well be it for him he's going to contaminate your water supply and he's pumping water right back into your well that he's taking out and he's been doing it for seventeen years.

Mr. Kaye said he thought the open looped system didn't use the poly glycol. Mr. Lynch said it doesn't. It uses pure water. Mr. Kaye said you were saying with an open loop system, water is coming out of the ground and going into the house, going into a heat exchanger, is there some means by which that water could get contaminated in the heat exchange process and then go back into the well? Mr. Lynch said no, it's a separated canister, your 410 refrigerant circulates in one median and the other circulates outside. They are two separate vessels that they exchange it. Mr. Kaye said is there some way that something could fail and the water could get contaminated with Freon or the refrigerant and ends up back in the well? Mr. Lynch said let's assume that it does. It's not going to hurt a thing as 410 refrigerant is inert and will evacuate into the air so fast you won't know what happened. It's never happened that he knows of and none of the people he works with has it ever happened. Mr. Kaye said there is an unrealistic fear and that is the only thing that the water is coming in to contact with during the heat exchange process. Mr. Lynch said if someone had a concern for that, you can put a double walled heat exchanger in and it would even eliminate that fear. It just makes it a little less efficient, that's all.

Mr. Johnson said what does the heat exchanger look like in one of these things? Mr. Lynch said there are different types of heat exchangers. There's the flat plate heat exchanger and there's a canister type heat exchanger. There are actually several other types of heat exchangers, but those are the two predominant ones. A canister – if you think in terms of having a paint can and inside that paint can is a tube going around. So inside that tube, that's excited gas and outside that tube in the can is the water. The water comes in and sucks the heat off of that and then it sends it to the compressor and then there are other components in the equipment. You'll end up with 94 to 120 degree exit temperature. Mr. Johnson said if the tube that's inside the canister has a leak in it, then you would have the possibility of the Freon leaking out. Mr. Lynch said that could be true or your machine would shut down almost instantly. As soon as you lose your head pressure, your machine

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shuts down and you wouldn't lose anything. It's got a lot of safety built into it. Mr. Johnson said even if it did happen, you'd say the heat pump would shut down because of the loss of pressure of the Freon? Mr. Lynch said yes. Mr. Kaye said you also said the refrigerant won't stay soluble in the water? Mr. Lynch said as soon as the refrigerant went back into the well, the gases would just evaporate.

Mr. Hijazi said it comes down to sustainability as well as protecting the resource. Mr. Johnson said it's always a risk, but how much risk do you want to take if something bad happened. Mr. Lynch said he thinks the risk should be zero. You've got to have that measure of confidence.

Mrs. Yerger said they don't teach open systems, just closed systems? There are really few people who have the open system? Mr. Lynch said yes. There's a school in Florida that teaches open loop technology and he sent some people to that school. It just isn't the kind of thing you'd want 30 different installers. Mrs. Yerger said that in itself says to her that for us to be able to regulate it, we are mandated in a way to promote the closed loops because you can regulate that. You said you can do a, b, c, and d. She doesn't think we can guess. Her concern is that you yourself are admitting that there are very few people who know how to deal with an open loop system and deal with it properly. So to her, that makes her want to take a step back and say, until the industry catches up and until the industry has that expertise on a broad scale, maybe a closed system is the way we need to stay for now. Mr. Lynch said your open loop technology was far more advanced than closed loop. It came ahead of a closed loop. Mrs. Yerger said she's worried about the installation. Mr. Lynch said when you think and speak in terms of sustainability and efficiency, if he's going to charge you \$40,000 to put in a system, you are paying \$10,000 a year now for your heating bill. What he's doing, you are going to pay \$2,000 or if you restrict what he can do for you, you are going to pay \$3,000. You've paid \$40,000 where you could have paid \$35,000 to have a cheaper system put in that's more efficient and a lower energy bill. When that falls outside the parameter of common sense and logic, then you should regulate it. One hundred fifty units, four closed loop, the rest open loop, pretty well speaks for itself. Mrs. Yerger said she's not questioning your ability. Her concern as a municipal official is we have to look at the broad scope, not you. What she is hearing there are very few people that know how to do the open loop system. Mr. Lynch said he thinks your residents should have that option and you'll find out a whole lot more people will suddenly become more knowledgeable and get more involved in it. If you regulate it out, they won't. The person paying the penalty here is you. It's roughly 15% to 20% more for a closed loop system versus an open looped system. If you are building a new house in the country and you were going to be drilling a well anyway, it's only going to add \$1,500 or \$1,600 to your cost and you've got a ground source heat pump. What your regulations call for, you are now going to start over here, and just drill for the geothermal or dig a whole field of them for the geothermal. That's going to be a replicated cost where you already have 80% of the system because you needed it for the domestic water supply.

Mr. Kaye said based on everything the gentlemen is saying, the open loop system is the less expensive, more efficient and less environmentally impacting system of the two. To prohibit it simply because we potentially know less about it than the other system or the other system is more easily installed, it seems short sighted. Mrs. Yerger said it wasn't installed. It's regulated. It's the installation regulation. Ideally, Mr. Lynch is an extremely reputable installer, but that's not where she's coming from. She's coming from people aren't going to do the right thing because it's the right thing. You have a system that you can say you have to do a, b, c, and d to have it correctly installed, and that's what our regs say; and we have some assurance that is going to be able to be followed, implemented and regulated, as opposed to him saying the other one is open and more efficient. It's going to be on a case-by-case basis and they are going to have to figure it out. There's probably no way we can regulate that at all. It makes her nervous. Then we're throwing it onto the property owner and the installer that they are going to do the "right" thing. Mr. Kaye said maybe the thing is the open loop system doesn't require the same types of regulations,

mechanically speaking. With the closed loop system, you are talking about installing a great deal more piping. The piping has to be filled with a chemical that the ground has to be protected from, and with the open loop system, you are taking the water out of the ground and putting it through the heat exchanger in your house. That device is regulated by its own manufacturer and then the water is just going back into the well. As far as the system being custom designed, that's with respect to volume of water. It's not with respect to contaminating or doing a dangerous job. That's just with respect to figuring out water flow heat exchange units and so forth to enable to make the system efficient. If somebody isn't a good installer as Mr. Lynch is and makes an inappropriate system, it's not that the system is going to be a danger to the environment, it's not just going to be as efficient as it's supposed to be.

Mr. Hijazi said it could be dangerous to the environment. Mr. Kaye said in what way. Mr. Lynch said when you leave here tonight, go to that website and find out what kind of a well you can use. It will show you how deep it must be, a picture of it, etc. Efficiencies are very important to him and cost is part of the efficiency.

Mr. Hijazi said are you busy these days? Mr. Lynch said within the next three weeks, he has to do three systems.

Mr. Johnson said where did you want to take this discussion? Mr. Maxfield said we've now heard all sides. Why don't we think about this for the next meeting, visit the website and come back in January and put together some recommendations. Mrs. Yerger said a couple of you seem you might be interested in going to the website he mentioned.

Mr. Hijazi said he thinks sometime we tend to think about it as chemical or pollution. Sometimes even thermal will change the temperature in the aquifer. Mrs. Yerger said just as you are worried about the groundwater draw for wells, depending where we are, if it's in our source water area, and we start putting these vertical systems in and pulling out all of this water, what is it going to do to the ground water. She's just not sure. Mr. Johnson said after listening to Mr. Lynch, there's probably a greater chance of polluting the well if you have a pipe filled with glycol that goes down into your well and comes back out again. The only way it is going to pollute the well is if you have a leak. The big thing is what are the chances of a pipe leaking to contaminate the well. The other thing is in the case of an open loop system, what are the chances of it inside the leak exchanger leaking and contaminating the ground water with Freon inside the heat exchanger. All these things are a risk and you have to consider. Mr. Kaye said he thought that system didn't go into your well. Ms. Ray said you can use your same well. Mr. Johnson said if have to drill a drinking well and a well for the geothermal, those two places are getting water from the same place. Mr. Maxfield said from a Township perspective it's always going to always be safety, health and welfare. If there's any chance of pollution to ground water, then we shouldn't do it. If you have a closed system and you are dealing with it in your own house, at least you do with it as much as you can. If you are recycling water, that goes back down into the aquifer that could go to somebody else's well that they drink out of, you could have a big cave full of water and that's the water that gets tapped into the well. Mr. Johnson said if the heat exchanger doesn't leak, then the water that comes out of the well isn't going to get polluted and it goes back into the well. Mr. Maxfield said there is that opportunity. Mr. Johnson said there's also the opportunity that you put pipes down into the well that are filled with poly glycol and those pipes get a leak down in the well. Ms. Ray said they all have these built in things where it shuts down when there is change in pressure. Mr. Maxfield said he's asking for it to be as safe as it can be. If there's a possibility and we're taking the chance, he doesn't think we should do it. A regulation we have with the horizontal system makes sense. Mr. Johnson said you are saying don't allow any vertical closed loop systems, only horizontal closed loop systems. Mr. Maxfield said in a watershed protection area, yes. Just like the ordinance says now. It's that way because of the concern. Mr. Johnson said the way the ordinance says now you can use a vertical system in a water protection area. Ms. Ray said no, you can't use any vertical in

the watershed. She's stuck with what she's stuck with. The only thing you can do in a watershed is closed loop, but she can dig a well. Mr. Maxfield said you're not in a limestone area. Limestone is porous like a sponge. Ms. Ray said we are questioning what the pollutant contaminant is. Is it the glycol? Mr. Maxfield said if you read that MSDS sheet, it says a relative nontoxic liquid. Ms. Ray said it is in our food and dog food. They have it in all kinds of other stuff. Mr. Kaye said with the open loop system, you don't have to worry about the glycol. Mrs. Yerger said she thinks we should look at is the setbacks, the 25 feet. Ms. Ray said they put these systems under buildings. Mrs. Yerger said there is some merit in revisiting this in the ordinance. Mr. Birdsall said when you start to look at that, the paragraph above that says the edge of the horizontal field or well. If you are going to be coming closer to the property line, you want to separate well. If you are going with a vertical closed system, still say back from the property line more than you would with a closed horizontal system. Maybe 25 feet is a little but much for that, but he could see putting a closed loop system within five or ten feet of the property line other than soil erosion and whatnot during construction. He can't see drilling a well five or ten feet from the property line, you might want to be a little bit further.

Mr. Maxfield said what it boils down to is the more holes you punch, the more chance of pollution.

Mr. Johnson said the open loop vertical system is even more efficient than a closed system as you don't have to worry about heat transfers between the walls of the pipe. You got that increasing efficiency and decreasing expense. Mr. Lynch was talking a lot about efficiency of the heat pump system to heat the house. They are talking about efficiency; they are talking about the cost of heating the house. If the system is more efficient, you use less electricity to heat the house. That's the bottom line.

Mr. Johnson said what kind of leak detection system is on the loop? Ms. Ray said it's by pressure. Any change in pressure up or down, it stops. Mr. Johnson said if you have a constant amount of water in that system, and you have a level switch and a tank, the level of the water in that tank should never vary unless you have a leak someplace. Then you can see how much you lose if the level goes down. If you have a small leak in your pipe, the level won't go down that much. Mr. Maxfield said you are saying there has to be a wide range of pressure because of the difference in pressure that occurs. Mr. Johnson said the change in pressure has to be large enough. Mr. Kaye said if there's a leak, you are going to get air in it.

Mrs. Yerger said we will come back in January and have some clear ideas on some of the things we want to ask as far as the regulations. Please take a look at the regulations and we'll get this squared away in January.

Mr. Johnson said in all these systems, wind, solar, geothermal, you are always going to be trading off the risks against the increased costs or increased efficiency. You are always going to be balancing the efficiency of the system against the risks. Ms. Ray said we don't regulate too much about the risks of fuel oil, kerosene, propane, natural gas. Mr. Johnson said that is controlled by the state. We can't regulate fuel.

Mr. Scott Douglas, Chairman of the Springfield Township Watershed Association was present. He said Springfield is going to be talking about alternate energy ordinances also. The only suggestion he might have is the setback.

Mr. Beardsley said when state and federal government make regulations, they are usually minimum regulations. Mr. Birdsall said there are certain limitations, like with landfills.

Mr. Maxfield said what is propylene glycol? Mr. Kaye said it's a synthetic compound. It's not a mixture of anything. It's a molecule all by itself. The most well known use for it is antifreeze.

Antifreeze is a combination of propylene glycol and ethanol glycol. It has good heat transfer properties. It doesn't freeze in low temperatures. In small quantities, it's used in processing foods. Mr. Hijazi said it is relatively non-toxic. Regardless how non-toxic it is, if somebody tells me they are going to put chocolate in his well, he is going to say no. We need to take it from that perspective. Maybe it's lesser toxic than other types of chemicals or what was used before, but in our perspective, we need to look it as introduction of any kinds of foreign material to ground water.

B. DISCUSSION ON SOLAR ENERGY REGULATIONS

Mrs. Yerger said this will be tabled and we will talk about it in January. Take time to read the information. Her goal is to do this whole alternative energy ordinance so we can start packaging it together and get it in a neat package to PC and Council.

Mr. Kochanski said on the additional information that you received, is part of the discussions we had at last month's EAC meeting. These regulations are very adaptable to your specific situation. The regulations that were put forth in the wind energy ordinance for Doylestown, they felt were appropriate. It doesn't mean you have to take all of those or take none of those. You can take them and mold them to the specific circumstance you feel is appropriate. That goes from setbacks to tower height to size of the windmills. We didn't necessarily discuss this last month, but you can customize it as you see fit. It's very open ended. That's just the nature of those types of systems. Mrs. Yerger said one thing she wants to add as we go through these types of systems, try to put yourself in the position of the person who wants to install one of these systems and what you would like to see happen. Also, put yourself in the position of the immediate neighbor and what you would like to see ten feet off your property line or not see ten feet off your property line, or maybe twenty-five feet off your property line. Whether we like to admit it or not, visual aspects of our communities and our neighborhoods are important to us and to a lot of people. She just doesn't want it to hinge on that, but wants it incorporated. Try to figure out what you can live with if you are the person who wants to own or have one of these systems and try to visualize what it's like to live next door to one of these systems.

Mr. Johnson said the wind ordinance Kevin is working on, does it specifically say no wind farms. Mr. Kochanski said they are not currently working on an ordinance. They were asked to provide some of the research and a draft of one they prepared for Doylestown as a guide for you to start your thinking. Mr. Johnson said are you going to allow wind farms in LST? Mr. Maxfield said he doesn't think that's a problem as we don't have the wind capacity. Mr. Johnson said then you ought to say no wind farms are allowed. You are talking about a wind farm with 200 foot tall, three or four megawatt wind turbines. Those wind turbines are totally different than the small ones people are going to be using in their yards. They consider a small wind turbine to be 25 kilowatts or less which is a pretty hefty wind turbine. If you aren't going to allow these wind turbines, then you ought to say so. Ms. Ray said you can't say that because economically they are not going to put a large wind farm here as it doesn't make common sense. Mr. Johnson said the information Kevin supplied to us refers to large wind farms. All the stuff in the back from the American Wind Energy Association is all talking about large wind farm type of equipment, a flicker of a noise, etc., etc. The flicker and noise from a large wind turbine is going to be different than one from a small wind turbine. Therefore, you have to find information on the small ones. Mr. Maxfield said it gives us things to think about and consider. Mr. Kochanski said from a practical standpoint, there is not enough wind power to operate a wind farm. Even up in the Pocono mountain tops, it is not conducive enough in this region. Mr. Johnson said they might come up with a better blade design.

Mrs. Yerger said in January they will try to put together an alternative energy package. If you have any questions or concerns. Start trying to pull things out. She'd like to wrap it up in January or February. Mr. Kochanski said you can start looking at these things and see what works for you and what doesn't.

III. DEVELOPER ITEMS - None

IV. OLD/MISCELLANEOUS BUSINESS

A. REVIEW AND APPROVAL OF NOVEMBER 10, 2009 MINUTES

Ms. Tokura said page 3, line 5, the second sentence should read “If we add some explanation as to why we recycle and why we change, this will encourage residents to recycle. Same page, line 9, the second sentence should read “The information is very important because we are charging for the monitors.

Mr. Johnson said page 2, line 17, “demeanor” should be “manner”. Page 2, line 33, the second sentence should read “The final process, the gold reclamation,” Page 2, line 48, last line, it should read “presentation, would be A-Plus’s problem.” Page 2, line 50, second sentence should read “Those are still okay”. Page 5, line 15, change “turbined” to “turbulent”. Mr. Maxfield said page 5, line 16, Divinchi should be corrected to “DaVinci”. Mr. Johnson said page 5, line 17, after the word work, add “well.”. Page 5, line 18, it should read “generate much electricity”. Page 6, line 3 should read “laminar flow”. Page 6, line 4 add a word, “to be able to create a high torque. Page 6, line 7, take out “energy” and replace it with “electricity”. Page 6, line 12, “not” should be “now your lot”. Page 10, line 10, should read “Mrs. Yerger said she will see if she can get an expert”. Page 13, line 9, put a period after dig into it. Take out “and not withstand it”. Ms. Ray said page 5, line 39, change “house” to “front yard”.

MOTION BY: Mr. Johnson moved for approval of the November minutes, with corrections.

SECOND BY: Mrs. Yerger

ROLL CALL: 6-0

B. REVIEW OF DRAFT LANDOWNER ACQUISITION LETTER – MR. MCCORMICK

This will be tabled as Mr. McCormick is absent for this meeting. It will be brought back at the January meeting.

C. REVIEW OF POTENTIAL CONSERVATION EASEMENT LETTER

Mrs. Yerger said the first part of the letter is pretty much the same. There were two things that were added. The second to the last paragraph was added and revised. The last bullet point on the second page was added. They were done because of issues that arose with the potential land acquisition.

EAC made some changes as follow:

1st page, first bullet: last sentence should read “How do you plan to develop the property, if at all?”.

2nd page, second bullet: The sentence should read “Do you have a mortgage or other lien on the property”. Eliminate the next sentence.

2nd page, first sentence should read “The Township Council has adopted a policy that no commercial timbering will be allowed in any acquired Conservation Easement by Township funds”.

2nd page, first paragraph, sixth line, after However, put a comma.

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2nd page, first paragraph, after the first sentence, make the next sentence that starts with “Many of these”, make that a new paragraph.

Mrs. Yerger will take this back to Council.

MOTION BY: Mr. Beardsley moved for approval of the Potential Conservation Easement Letter, with corrections.
SECOND BY: Ms. Ray
ROLL CALL: 6-0

V. UPDATES/REPORTS

A. OPEN SPACE SUB-COMMITTEE

1. PROPERTY UPDATE

Mr. Beardsley said Jeff Marshall sent him an email and Mr. Benner wants the Sub-Committee to look at the property on Easton Road. He has not gotten in touch with Mr. Benner yet. They will do an evaluation of the property probably on a Sunday as hunting season goes until January.

Mr. Beardsley said he thinks on the agenda, they should push this agenda item up on the agenda so they don't have to sit through the entire meeting. Mrs. Yerger said that's a good idea.

B. SPRING ELECTRONICS RECYCLING DATE – TED BEARDSLEY

Mr. Beardsley said the Spring Electronics Recycling date is tentatively scheduled for April 24, 2010 from 9 am to noon. Get the information out to the County and they will help promote it. They are going to charge \$10 for old monitors. Springfield Township would like to work with us and have them included in this recycling day. He'd like to circulate it to his residents. The more A-Plus gets, the happier they are. Ms. Brown said with the recycling market being so up and down and not knowing whether you might have charges as you are planning this so far ahead, she'd like to suggest a disclaimer saying that most likely we're not going to charge you, but because of market conditions, charges may be incurred after the date we set all of this up. In the world of recycling you can't get past that anymore. Look what the whole clunkers did to the whole scrap market. She doesn't want to pay, but it's a reality anymore. Mr. Beardsley said did A-Plus imply once we put our advertising out, whatever charges there were, they wouldn't change it. Mrs. Yerger said yes, they would absorb the cost. If we want to confirm it with them this early and they are willing to start putting the information out, it's going to go on our website. It will go out that we are charging for the monitors. Dittmar wants from the County that they don't take microwaves, TV's, etc. As long as we have the parameters, she can forward it to the County. LCD's are not charged. We'll run it by Council tomorrow evening.

VI. TERRY BOOS – HELLERTOWN REPRESENTATIVE – REPORT - Absent

VII. NON-AGENDA ITEMS

- Mrs. Yerger said we talked about it at a previous meeting about changing the EAC meetings to the second Tuesday of each month. Diane has typed up a list of the dates and we need a motion.

MOTION BY: Mr. Maxfield moved for approval of the EAC meeting dates to the second Tuesday of each month at 7:00 pm at Town Hall for 2010.

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SECOND BY: Mr. Kaye
ROLL CALL: 6-0

- Mrs. Yerger said she's not sure how many of you have read the paper, but there are some rumblings going around about the County Open Space money that they are definitely looking at taking the EIT money that was designated for open space preservation to be put aside in a special pot for open space preservation and doing away with that and using it to balance their budget. The Bushkill Streams Conservancy came up with a letter that they sent to the County respectfully saying that they don't want to see this happen. It would go to Frank Flisser the Clerk to Council. Do we want to request Jack Cahalan to write something similar like this letter on behalf of the LST EAC? Mr. Hijazi said was this confirmed or is it rumors? Ms. Maxfield said they already passed it as it was in the paper today. Mr. Guerra said this is tax money. Mrs. Yerger said we could write a letter of protest then. The letter would have to change and say we are not happy with the fact about using the open space tax money for their 2010 budget. We could have Jack write a letter saying we object. Ms. Maxfield said she sent the newspaper article to Mr. Cahalan so he could distribute it to the EAC. Mrs. Yerger said we can take this to Council tomorrow. Mr. Beardsley said what Mr. Moser from Bushkill is saying in the first paragraph is that during this economic downturn, those dollars will buy a lot more land than they will ten years from now. Mrs. Yerger said Mr. Cahalan can reword the letter a little bit different.

MOTION BY: Mr. Maxfield moved to have Mr. Cahalan send a letter to the County to express our dissatisfaction over County Council's actions.

SECOND BY: Ms. Ray
ROLL CALL: 6-0

- Mrs. Yerger said there is a lehighvalleyramblings.blog.com website, and despite recession, open space remains popular. They want you to go on this poll and Jack recommends that we may want to go on there and vote. Northampton County residents have a chance to go on there and vote. They are hoping if they get 100,000 people in Northampton County that say open space is still important to us. Mr. Beardsley said we should send this to the email list that the Township has. It would cost postage to send it out in the postal mail. Mrs. Yerger said she can request the Township to do that. She will also forward it to the EAC.
- Mrs. Yerger said the next meeting of the EAC is Tuesday, January 12 at 7 PM.
- Ms. Stephanie Brown said she knows Mrs. Yerger asked you to think about some of the regulations you are considering in terms of aesthetics. As a resident who can't cut a tree down without a permit, that she planted, she's having some problems with, as she'd like to call it, all of the "false worship of the property value God" that is going on all over, not just at LST, but the whole Lehigh Valley. It's a shame that things have become so lunacy when it comes to zoning. It's a lot easier to not do the right thing in life than it is to do the right thing and it shouldn't be that way. Some of the things she sees coming out of this Township, in general, are making it that way. She hopes that you don't make it too hard, just things in general. She doesn't know if you are familiar with the case in Salisbury with the tree house, but everything in life anymore is about people's property values. Her neighbor can't do this as it's going to affect her property value; my neighbor can't do that as it's going to affect my property value, etc., etc. There's just way too much emphasis in the world with being able to control your neighbor through zoning ordinances when you are the person paying the property taxes on the property and having your neighbors constantly tell you what you can and what you can't do is just lunacy in her opinion. She thinks most people are good people. These things will happen and will happen no matter what kind of relationship you have. She finds it very sickening as people are so worried about how things look on their property. It just doesn't work that way, in her opinion. She just tried to sell a house and buy a house, and it has nothing to do with your neighbor's property, unless you live in Lowhill Township. With her recent trying to find out what do with cutting the tree down on her property, has really led her to believe that there is too much lunacy. She can't even cut down a tree without a permit and her family planted it. She

doesn't want to go clear cutting her property; she just wants to cut down a dead tree. A dead tree is going to produce more carbon dioxide than oxygen, so you are not really gaining anything. The fact that she's still so confused about whether or not she's allowed to cut this tree down or not, it's just more hassle and more this and more that. She just wants to cut the tree down and get it over with. She just hopes you think about these regulations in the real world. Mr. Johnson said he didn't think there was a problem with cutting down dead trees. Ms. Brown said you need a permit. The Township website says one thing and she's told something different by the Township Zoning Officer. Chris went on vacation and she had called him and never got her answer. Mrs. Yerger said there's no charge, you just have to notify the Zoning Officer you are cutting it down. Ms. Brown said Chris Garges did not tell her that. Mr. Kaye said he thought we were protecting the environmental, not the property values. Ms. Brown said sitting here, it is about protecting the environmental, but you have to balance it and balance it carefully. If you are causing people all kinds of extra money and just extra hassle to cut a tree down, it's not worth it. You have to have common sense when it comes to the environment. She always believes that was what the environmental movement was all about. She's seeing environmental groups just get away from it too much. That's just her opinion.

- Ms. Brown said she's been at one Rail to Trails meeting, even though it's not formal. She really would have to say, just from what she's seen and read, it's not going to be an environmentally sensitive trail. That bothers her. It's going to be very commercialized, and she couldn't find a better word. It's going to be regulated like a park with certain hours. To her, a trail like that one, the way it's set up, you should be able to have 24 hour access if you want to commute to work or something like that, and she understands that is not going to be allowed. She's very disappointed with our representatives. One hasn't shown up in a while and the one, she thinks 5:00 PM is a great time to have a meeting. This whole initiative should be about public input and she argued with Ms. Brown that most people are either home from work or are on their way home from work and have time to stop for a 5:00 PM meeting. Ms. Brown said most people she knows are still at work at 5:00 PM. Having some flexibility in the meetings is nice. Maybe having a 5:00 PM meeting one month and then a 7:00 PM meeting another month. She was really disappointed with what she's seen so far with the Rail Trails. She knows nothing has been formalized, but that's just from one meeting. Mr. Hijazi said do we have a representative from the Township? Mrs. Yerger said yes, we do. Ms. Brown said two representatives. What she understands is one is a woman and one is a doctor and the doctor hasn't been at one meeting yet. Ms. Ray said Donna Bristol is one of the representatives.
- Ms. Brown said with the electric rates going up, she hangs her laundry outside. The people who live behind her, and the HOA, certainly don't appreciate that. They think she is doing something evil and wrong and it affects their property value somehow. One thing she'd like the EAC to come out in support of saying let's start hanging our wash out. There's nothing wrong with it. There's an organization, Clotheslines Across America, she found that wants to introduce a "Right to Dry" legislation. Ms. Ray said people complain about you hanging out your laundry? Ms. Brown said no one has complained in the Township, but she's heard comments. Mr. Kaye said out in the country, people do that. Mrs. Yerger said there are HOA's that prohibit having laundry lines and hanging out laundry. They will not allow it.
- Ms. Brown said 2010 is approaching, and from what she knows, the Meadows Road Bridge is going to be torn down. She's heard that Jack said it was moved back to 2011, but we have the problems with the County as they own the bridge. The County is having problems with the budget, and not raising taxes. She's not getting much community support, but she's decided to go to County Council in January, and bring up the issue again. She's been going on her own for the past two years talking to the County about not tearing the bridge down. What she needs now is support. She needs a letter of support from the various community organizations. She's a volunteer for the Saucon Valley Conservancy, and they've already been asked. She was going to go to the Watershed people also. She doesn't know if the EAC can do this. She also wants to go to the Historical Society. She wants the letter to say this bridge is important, not only historically, but environmental because when the Saucon Valley Watershed management plan was done, she

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remembers reading in the report that they came to the conclusion that the flooding that takes place on Meadows Road is not from the design of the bridge. She knows and has heard those very words come out of John Stoffa's mouth that the bridge is what causes the flooding and that is not true. She needs to find a way to get a part of that to him to show what they found. Mr. Kaye said he thought they were taking the bridge down because it was too small and falling apart. Ms. Brown said it's not technically falling apart, it has some issues. Mr. Kaye said that was the premise, not that it was causing the flooding. Mrs. Yerger said no, it's too expensive in their eyes to repair it. It's cheaper to tear it down and put up a modern structure with two lanes and that's how the County is looking at it – through dollar signs. It's going to be more expensive to repair than replace. Ms. Brown said if they would stop using concrete and start using lime putty. She saw there were some very ugly repairs done to the bridge over the summer with more concrete. She has to look up a little bit more about lime putty. It's something that's very important to her and she's got to get more people in the Township involved because doing it herself isn't doing anything. She was wondering if the EAC could consider this? Mrs. Yerger said they can discuss it.

- Mrs. Yerger said we are going to reorganize in January at the first meeting on the 12th.

VIII. ADJOURNMENT

MOTION BY: Mr. Johnson moved for adjournment. The time was 9:46 PM.
SECOND BY: Mr. Maxfield
ROLL CALL: 6-0