March 3, 2015 083-9650614.400

Ms. Jackie Drummond
Department of Environment and Natural Resources
Division of Waste Management - Solid Waste Section
2090 US Highway 70
Swannanoa, NC 28778
828-296-4706

RE: GROUNDWATER CORRECTIVE ACTION PERMIT MODIFICATION APPLICATION HENDERSON COUNTY CLOSED MSW LANDFILL, PERMIT NO. 45-01 HENDERSONVILLE, NORTH CAROLINA

Dear Jackie:

On behalf of Henderson County, Golder Associates NC, Inc. (Golder) is submitting a Permit Modification Application and related documentation for the above referenced facility. This submittal includes a copy of the signed Application and Commissioner Meeting minutes from August 4, 2014, approving the selected remedy. Golder is also submitting information related to the Public Meeting held on June 19, 2014.

Henderson County has completed the Public Meeting requirements discussed on Solid Waste Management Rule 15A NCAC 13B .1635(d). As presented in the attached news releases, a public meeting was held on August 15, 2013, from 6:00 p.m. to 7:00 p.m. at the Stoney Mountain Activity Center in Hendersonville, North Carolina. A news release was published in the Times-News and the Hendersonville Lightning and broadcast on local radio and television stations. The purpose of the meeting was to review the findings of the Nature and Extent Study (NES) and Assessment of Corrective Measures (ACM) for the Closed Henderson County Municipal Solid Waste Landfill and receive public comments prior to the selection of remedy. The transcripts of the meeting are attached.

Based on the findings of the NES and ACM, the County's Board of Commissioners have selected *in situ* enhanced bioremediation using super oxygenated water and institutional controls as the preferred remedial technology due to the ease of implementation, reliability, safety, exposure control, implementation cost, and ability to protect human health and the environment, and ability to obtain applicable groundwater protection standards. As a contingency plan, the recommended alternative would be an alternate type of *in situ* enhance bioremediation, as long as data at that time supports the remedy. A letter verifying financial assurance for the proposed corrective action from the County's chief financial officer is attached.

Following approval of the selected remedy, the County will submit a Corrective Action Plan (CAP) in accordance with Rules .1635 and .1636 for your review and approval. Once the CAP is approved, the County will obtain an Underground Injection Permit as required by the Aquifer Protection Section. If you have any questions or require further explanation, please contact the undersigned at (336) 852-4903.

Sincerely,

GOLDER ASSOCIATES NC, INC.

David "Dusty" Y. Reedy II, P.G.
Senior Project Hydrogeologist

Rachel P. Kirkman, P.G.
Associate and Senior Consultant

g:\projects\henderson county\msw cap\permit modification application\final\final groundwater corrective action permit modification application.docx

Golder Associates NC, Inc.
5B Oak Branch Drive
Greensboro, NC 27407 USA
Tel: (336) 852-4903 Fax: (336) 852-4904 www.golder.com
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cc: Marcus Jones, P.E., Director of Engineering, Henderson County, 1 Historic Courthouse Square, Suite 6, Hendersonville, NC 28792. 828-694-6560. majones@hendersoncountync.org (electronic copy)

Natalie Berry, P.E., Assistant County Engineer, Henderson County Landfill, 100 North King Street, Hendersonville, NC 28792. 828-694-6521. nberry@hendersoncountync.org

Greg Wiggins, Manager, Solid Waste Department, 191 Transfer Station Drive, Hendersonville, NC 28791. 828-694-7982 gwiggins@hendersoncountync.org

Attachments:
News Release Published by Times-News
News Release Published by Hendersonville Lightning
News Release Certification by Radio Station WHKP
News Release Certification by the Henderson County Channel
Public Meeting Transcripts from August 15, 2013
Letter from Chief Financial Officer
Permit Modification Application

NEWS RELEASES

Henderson County Legal
32002034

Henderson County Public Meeting
August 15, 2013

$174.43

Times-News

CERTIFICATION OF PUBLICATION

July 12, 2013

I, Janet Chapin, affirm the following under the penalties of perjury state:

I am employed by Times-News, an affiliate of Halifax Media Group. The Times-News is a daily newspaper of general circulation published in the city of Hendersonville, county of Henderson, and state of North Carolina. I hereby certify that the advertisement annexed hereto was published in the editions of The Times-News on the following date or dates:

07/15/13

And that the said newspaper in which such notice, paper, document, or legal advertisement was published was, at the time of each and every publication, a newspaper meeting all of the requirements and qualifications of Section 1-597 of the General Statutes of North Carolina and was a qualified newspaper within the meaning of Section 1-597 of the General Statutes of North Carolina.

This 15th day of July, 2013.

(Signed) Janet Chapin

Sworn to and subscribed before me, this 15th day of July 2013.

Deborah H. Owen Notary Public
Deborah H. Owen

DEBORAH H OWEN
Notary Public
Henderson County
My Commission Expires
03/01/2016
NORTH CAROLINA

HENDERSON COUNTY PUBLIC MEETING

6:00 p.m., Thursday, August 15, 2013

In accordance with 15A NCAC 13B .1635(d) of the North Carolina Solid Waste Management Regulations (NCSWMR) Henderson County is holding a public meeting at 6:00 p.m. Thursday, August 15, 2013, in the Stoney Mountain Activity Center at 800 Stoney Mountain Road, Hendersonville, North Carolina 28791. The meeting is being conducted to discuss the Assessment of Corrective Measures (ACM) performed as a result of Groundwater Protection Standard exceedances at the closed Henderson County MSW Landfill (Permit No. 45-01). The purpose of the meeting is to acquaint the public with the technical aspects of the results of the Nature and Extent Study (NES) and the ACM, to explain how the standards and the requirements of the NCSWMR may be met, to identify issues of concern, and to facilitate communication between the County and the public.

The County has opened

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July 11, 2013

Natalie J. Berry P.E.
Assistant County Engineer
100 N. King Street, Suite 210
Hendersonville, NC 28792

Public Meeting Notice

I, Bill Moss, affirming the following under penalties of perjury state:

I am editor and publisher of the Hendersonville Lightning, a newspaper published, issued and entered as periodical mail in the City of Hendersonville, county of Henderson and state of North Carolina. I hereby certify that the advertisement annexed hereto was published in the editions of the Hendersonville Lightning on the following date or dates:

7/10/2013

And that the said newspaper in which such notice, paper, document or legal advertisement was published was, at time of each and every such publication, a newspaper meeting all of the requirements and qualifications of Section 1-597 of the General Statutes of North Carolina and is a qualified newspaper within the meaning of Section 1-597 of the General Statues of North Carolina.

This 11th day of July, 2013.

(Signed) Bill Moss

Sworn to and subscribed before me this 11th day of July, 2013.

Denise F. Ward Notary Public

Denise F. Ward

My commission expires October 21, 2017.

HENDERSON COUNTY PUBLIC MEETING
6:00 p.m., Thursday, August 15, 2013

In accordance with 15A NCAC 13B .1635(d) of the North Carolina Solid Waste Management Regulations (NCSWMR), Henderson County is holding a public meeting at 6:00 p.m. Thursday, August 15, 2013, in the Stoney Mountain Activity Center at 800 Stoney Mountain Road, Hendersonville, North Carolina 28791. The meeting is being conducted to discuss the Assessment of Corrective Measures (ACM) performed as a result of Groundwater Protection Standard exceedances at the closed Henderson County MSW Landfill (Permit No. 45-01). The purpose of the meeting is to acquaint the public with the technical aspects of the results of the Nature and Extent Study (NES) and the ACM, to explain how the standards and the requirements of the NCSWMR may be met, to identify issues of concern, and to facilitate communication between the County and the public.

The County has opened a 30 day comment period, beginning Thursday, July 25, 2013. During this comment period, written comments will be accepted and may be sent to Ms. Natalie Berry, P.E., Assistant County Engineer, Henderson County, 100 North King Street, Suite 210, Hendersonville, NC, 28792. Written comments must be received by 5:00 p.m. Friday, August 23, 2013.

The public will be given the opportunity to voice verbal comments at the August 15, 2013, public meeting. The NES and ACM may be examined at the King Street Building at 100 North King Street, Suite 210, Hendersonville, NC 28792 between the hours of 10 a.m. and 3 p.m., Monday through Friday, from July 25, 2013, through August 23, 2013. Contact Ms. Natalie Berry at (828) 694-6521 with any questions.

7/10/13

20: Natalie Berry
694-6521

This is to certify…

That on July 15, 2013 Radio Station WHKP Hendersonville NC ran a news story on possible old county landfill ground water issues, which included "public notice" of an up-coming public hearing on the issues.

WHKP ran the story and "public notice" in our regular local news time periods on July 15th at 7:45am, 11:45am, and 3:10pm.

WHKP News and Program Director
Larry B. Freeman

MARJORIE L DUNCAN
NOTARY PUBLIC
HENDERSON COUNTY, NC

My Commission Expires
8 / 13 / 2015

Public Information Office
112 First Avenue West • Hendersonville, North Carolina 28792
Phone (828) 694-5003 • Fax (828) 698-6184 • www.hendersoncountync.org

July 22, 2013

To Whom it May Concern:

On Monday, July 15, 2013 the Henderson County Government Channel, cable channel 11, ran an advertisement for the August 15, 2013 Public Hearing for Assessment of Corrective Measures for the Henderson County Landfill. This advertisement ran from midnight to 11:59 p.m. on Monday, July 15, 2013.

If you require any additional information please do not hesitate to contact me.

Thank you,

Christina D. Hallingse

Christina D. Hallingse
Henderson County Public Information Officer

STATE OF North Carolina

COUNTY OF Henderson

I, Mary Alice Jackson, a notary public for said State and County, do hereby certify that Christina D. Hallingse personally appeared before me this date and acknowledged the due execution of this document. Witness my hand and official seal this the 22nd day of July, 2013.

Signature of Notary Mary Alice Jackson

My commission expires 5/30/16

MARY ALICE JACKSON
NOTARY
My Comm. Exp.
PUBLIC
HENDERSON COUNTY, N. C.

PUBLIC MEETING TRANSCRIPTS FROM AUGUST 15, 2013

IN RE: Henderson County Closed Municipal Solid Waste Landfill, NC DENR Permit No. 45-01 Assessment of Corrective Measures Public Meeting

PRESENTER: David (Dusty) Yates Reedy, II, P.G.

KNOWN ATTENDEES: Rachel Kirkman, P.G., Golder Associates,

Natalie Berry, P.E., Assistant County Engineer

Marcus Jones, P.E., County Engineer

Greg Wiggins, Henderson County Landfill Manager

PUBLIC ATTENDEES: Jack Levi, Roger Levi, Ricky Levi and Josh Levi

DATE: August 15, 2013

TIME: 6:03 p.m.

LOCATION: Stoney Mountain Activity Center at 800 Stoney Mountain Road, Hendersonville, North Carolina 28791

REPORTED BY: Jeanne M. McLaren, RMR
Official Court Reporter

ASSESSMENT OF CORRECTIVE MEASURES PUBLIC MEETING

MR. REEDY: My name is Dusty Reedy. I introduced myself to you guys earlier, but I'm a geologist with Golder Associates. And on behalf of Henderson County, I'm going to present, basically, a summary of the Assessment of the Corrective Measures' process that has happened to date. And the purpose of getting us together today is to involve the public, which I thank you very much for coming, so that we have a dialogue to discuss what's going on with the landfill. And so tonight we'll basically have a short presentation.

(The reporter asks Mr. Reedy to face her more.)

MR. REEDY: So during this presentation, we'll take a look at the regulatory overview. We'll look at some background information on the landfill, some of the landfill history. We will look at findings from the Nature and Extent Study that was performed as well as some findings from the Assessment of Corrective Measures that was performed as well. And that involves two parts: a risk assessment and a look at remedial technologies. And lastly -- the last part of the presentation, we'll look at the future regulatory requirements. And then afterwards, as was discussed, you'll have a chance to ask any questions, make any comments and those will be recorded.

So here we go. So what the ACM requires -- now,

to sort of set the stage for you guys on where we are in this process, I think it's good to understand what kind of compliance regulations that the Henderson County Landfill must follow as far as groundwater and surface water at the landfill. So basically, there's a groundwater monitoring network around the landfill. There are eight monitoring wells around the MSW landfill alone. And those wells are sampled twice a year, okay? And there's also four surface water sampling points that we also collect samples from twice a year as well. And those samples are sent to a laboratory. They're analyzed, and there's a list of like 22 constituents that are analyzed.

And when we get those results back, we compare those to standards that are set by the State, okay? And we have the 2L and 2B -- 2L drinking water standard and the 2B surface water standard -- that are set by the State. They're used for numerous different facilities for groundwater and surface water issues, and they apply to landfills as well.

Also, there's a solid waste section, groundwater protection standards, that are used to supplement that. So there's some constituents that don't have a 2L standard, so they created these groundwater protection standards for those constituents. Now, if there's an exceedance of any of those standards, then they go to a larger list. So there's

over 200 constituents that are sampled at least once a year. Now, we take all those results and if they are confirmed or conceded that there is an exceedance, then it is moved to corrective action, which is where we are right now. So that's how we're getting to where we are right at this point.

The ACM, or Assessment of Corrective Measures' process, consists of two parts. The first part is the Nature and Extent Study. And the purpose of the Nature and Extent Study is to evaluate the source of any groundwater contamination as well as how far does it extend -- to the extent, okay? And we also look at geologic and hydrogeologic conditions for the site, and these all go together.

Then we move over into the next part, which is the Assessment of Corrective Measures officially, but it consists of two things. First off, you look at risk, okay? Basically, how -- is there any -- is there a potential impact to humans or the ecology?

And then secondly, we look at any remedial -- then we start looking at the data we collected in the Nature and Extent Study, the level of risk that exists, and we start looking at remedial technologies, things we can do to fix the problem and make sure it doesn't get any worse.

Okay. So to move on to some background

information, the landfill -- the MSW landfill, this landfill's been here a long time. The MSW landfill began operation in 1961. It received -- MSW received solid waste, which was basically household garbage, for the most part up until 1998, at which time it continued to receive some CND or construction debris waste until 2001, until the stand-alone construction demolition landfill was built next-door. And that now is closed as well.

Groundwater at this site flows south to southwest, from the topographic high to the topographic low. You're familiar with the area, so it's from the back of the landfill towards Stoney Mountain Road. The uppermost aquifer -- that's basically the water table where the groundwater is setting -- that is mainly in soils and weathered rock. And they have been there since -- the volatile organic compounds -- you'll hear me abbreviate that to VOCs quite a bit -- they have been detected in groundwater samples from the monitoring wells. And I will point out that they have exceeded the NC 2L standards that we discussed earlier.

Keep in mind that these -- these 2L standards are relatively low. We -- we report these samples in concentration of parts per billion, okay? It's very minute when they actually show up, and it's hard to visualize. So you can imagine if you have a thimble of something compared

to an Olympic-size swimming, pool that's roughly what a part per billion is, okay? And so I think that's good for that slide.

They began -- corrective action work began in 2000, so it's been ongoing. All right. To familiarize you guys with the site and what's going on here, we're sitting right here currently. And here's Stoney Mountain Road coming up this way. This is the extent of the MSW landfill. This here is actually the area that I just described that received construction and demolition waste right on top. And the closed construction demolition landfill is located in this area right here.

Also, I want to point out that the blue on this map is actually streams in the area. You see them coming through the facility on both sides and across Stoney Mountain Road. And that's getting to the point now that streams -- they're receiving streams -- receiving water from groundwater act as a barrier or a groundwater divide, that that -- we'll discuss that a little bit later on.

Okay. As I said, there have been volatile organic compounds that have been detected in groundwater and monitoring wells at the facility. There are basically two zones that we have identified. Basically, the first one is southwest of the MSW -- the landfill. The other one is due south of the landfill that I'll map here in a minute.

Just a little side note, something that we'll get into in more detail later on, is that the initial site data indicates favorable results of a natural attenuation. Basically, that is natural processes -- either physical, chemical, biological -- that actually helps reduce contamination of these volatile organic compounds. That has been identified, that that -- the conditions are favorable for that to be occurring.

The Nature and Extent Study was submitted to the State and was approved in May of this year. So here we have -- this is the same area as the aerial photographs you saw a minute ago. And again, we're located right here. Here is the MSW landfill right here. The black lines here are topographic contours. They show elevation of ground surface. As you can see, these are wrapping around right here. You can see the mound, the hill, that the landfill makes right here. The blue lines are actually groundwater surface contours. So that's the elevation of the groundwater as it moves across the site. We have these blue flow arrows. This indicates the direction of groundwater flow, as I said earlier, moving south/southwest from the higher elevations down to the lower elevations.

I mentioned earlier there's a groundwater monitoring network that we monitor. Those wells are actually located around this area right here just below the

MSW landfill. You can see they're -- they don't show up real well in here, but they're rather close to the waste mass.

And the green on this map indicates the two areas where we have identified VOC contamination, volatile organic compounds. The first one is in the southwest portion below the landfill right here. That's the animal shelter right here in this area. And the -- this other one is over here in this area here, and again, that's Stoney Mountain Road. So we have interpreted that it may be crossing somehow.

So then we look at the ACM or the Assessment of Corrective Measures' findings. First we'll look at the risk assessment, okay? The risk assessment is to determine whether there is risk to human health or the environment. And -- give me a second. Let me get back on track here about what I want to talk to you about.

Basically, a risk assessment is performed using protocols that were set by the EPA, and that's what we follow. And -- and basically, those -- whatever results we are going to get are compared to standards that are based by the EPA.

(The reporter asks Mr. Reedy to speak louder.)

MR. REEDY: And there are noncarcinogenic and carcinogenic standards that they are compared to. And so what we do is there are basically three components of risk

that's -- of this risk analysis that we do. And all these -- all three of these have to be present. If there's a break in this chain of these three, then there is no risk. All three have to be there.

So you have to have a potential receptor. That can be humans or it can be ecology that are -- that are -- those are, you know, beings that basically can come in contact with the water or contamination. So then there has to be constituents-of-concern. There has to be the contamination present in order to interact with the receptor. And there has to be an exposure pathway, a route to get the contamination to the people or the critters. And all that has -- all that has to be in place for there to be -- to determine that there is risk. Okay. So -- and when we did our analysis, we determined that there was risk and -- but this is a very conservative estimate. And I'll take a second just to explain how that -- how that was achieved, okay?

We used in our risk assessment the highest concentrations that were recorded in the groundwater monitoring wells, okay? And these monitoring wells are -- you saw how close they are located to the landfill. And risk is kind of -- it's a -- like I said, very conservative. It basically assumes that if you went and drank water from one of those monitoring wells, two liters of water every

single day, over the course of your life you would increase your cancer risk by one in a million, okay? So that's a lot of water everyday. And -- so it's very conservative if you look at it that way.

If you think about it as water moving away from the landfill, moving further downstream, the concentrations get less and less as you get away from the landfill. Also, it does not take away -- take into account any breaks in that pathway that I was talking about, that route to get the contamination to where people actually are unless you're drinking from that well.

So, you know -- and I pointed out the streams earlier that kind of circle back -- let me back up to that slide. I did skip over that a little bit. Remember on the aerial I pointed out the streams that were running down the sides of the landfill here on the other side and across Stoney Mountain Road? It runs across this way. And I discussed that those were acting as barriers.

And as you can see, right now the way we have interpreted the groundwater contamination, it's -- it's trapped sort of within those boundaries because it is a barrier. It's a place where it's had a hard time crossing over. And -- so, I mean, you're looking at risk -- at actual risk, the threat that -- that that pathway actually continues beyond that stream is miniscule. It's nothing --

that -- that's probably more as a break in that pathway and a reduction in risk. But that's not the way we look at it. We have to look at it based on the data we have from the monitoring wells.

So -- so whenever that we do decide that there is risk, we have to go through a process set forth by the solid waste management regulations. And that is, we have to control or minimize exposure to potential receptors. And we have to take corrective actions to reduce or eliminate the groundwater impacts. And so -- and so that leads us into looking into remedial technology that we could use to reduce that risk and to clean up any groundwater contamination.

We start off by looking at many, many remediation technologies that are out there that have been used at various sites. We took those, and we reduced it down to 22 that best suit this -- this site here, okay? And we took each of these 22, and we had to look at using criteria set forth by the solid waste management rules by the State and evaluate it based on this list -- these lists of criteria: On performance, how it was performed at other sites in the past; the reliability; how easy it is to implement those technologies; potential impacts. The potential impacts you can kind of think of as being maybe the side effects from that technology that, you know, with trying to do some good maybe there's something that's not so good that's related to

it -- you've got to take that into consideration. The time it would take to actually set up and begin remediation and as well also how long it's going to take to complete it. The cost is also something we have to look at. And then there's institutional requirements, what kind of permits, what kind of public health requirements that we have to meet in order to do each of these.

Okay. What the Assessment Corrective Measures does not require us to do right now is to pick one of these strategies, okay? We're going to take that 22 in the Assessment of Corrective Measures that's sitting up here, and we reduce it down to some that are the best suited -- the best suited for the site, but it's not time to choose one of those yet. We have to present this to you, give the public time to comment on it. Then the -- then Henderson County will have to take those comments, evaluate those, so -- and use the criteria set forth by the rules and then afterwards choose which technology is going to be best suited for this site.

And when we do that, that -- that -- when it's chosen and -- that selection has to be submitted to the State. They have to buy off on it. They have to approve it, and that will be incorporated into a Corrective Action Plan. And that's basically the details on how that type of technology is going to be implemented and also the type of

monitoring we're going to do to ensure that we are moving forward in the right direction.

And so when we looked at those 22 remedial technologies, we reduced that to four that we think are best suited for this facility. And here they are -- they've got some odd names, but we'll look at each of these in a little more detail. But they are Monitored Natural Attenuation, In Situ Enhanced Bioremediation, In Situ Chemical Oxidation and In Situ Nano-Scale Zero Valent Iron. And "In Situ" is just a word that means "in place." It means it's going to be treated in place instead of removing -- removing that source of material. So we're going to treat it where it is.

So the first one, Monitored Natural Attenuation, sometimes referred to as MNA and -- this is the one I discussed a little bit about natural attenuation processes -- this one relies on naturally occurring physical, chemical and biological processes to -- to deal with these VOC releases. And -- and as I said earlier, in our Nature and Extent Study, we did a preliminary look into the MNA processes.

We took -- took indicator parameters. We looked at them, evaluated them using EPA procedures and also used the software that was designed by the EPA to evaluate the site conditions, and it turned out to be inadequate for natural attenuation to be occurring.

The second one, Enhanced Bioremediation -- a way to look at this, this is basically the biological aspect of monitoring natural attenuation. Basically, what you have is in soils there are these microbes that live there. And it just so happens that a lot of -- that there are a certain species of those that like to munch on -- like to eat these volatile organic compounds. They like to carve them down, make them go away. And so enhanced bioremediation is, basically, a two-part process. It can be.

First off, we try to take that community of microbes that are already living in the soil, and we try to make them happier. We want to feed them nutrients. So we inject nutrients into the ground, grow these colonies, making them bigger, stronger and that way they'll eat more of the bad stuff we don't want.

Secondly, if -- it seems like when that -- when that's done -- you do a lot of laboratory testing and a lot of field testing and test that out. If it doesn't seem like the population is really there, then the actual microbes can be injected into the ground. So you can actually put them in place there to feed on these volatile organic compounds.

The third alternative we came up with was the chemical oxidation. With chemical oxidation, you basically inject a chemical oxidant into the ground, and there's a list of some common ones that are used. And these -- when

they come in contact with volatile organic compounds, they basically destroy those compounds. They break them down into simpler compositions. And in doing so, these chemicals that are put into the ground are also broken down. So when they interact with each other, everything kind of explodes apart into carbon dioxide, some heat, water and some chloride so to things that are relatively harmless, benign. And -- so that's how that works.

And also to -- you know, also to ensure safety, you know, we -- there is a monitoring network that would be put in place to monitor the groundwater to make sure that, first off, the VOCs, the volatile organic compounds, are being broken down but also to ensure that those chemicals that are injected are also breaking down so nothing leaves the area that we don't want them to.

The fourth one, Nano-Scale Zero Valent Iron, NZVI -- this is probably the newest technology of the four. This is -- you take very finely-grained iron, you mix it into a slurry and inject it into the ground. And it's actually kind of -- very similar to the chemical oxidation because it is a chemical reaction. It is some oxidation causing the reducing environment. And again, it will destroy the volatile organic compounds. And this one, there's -- there is an example here. Tetrachloroethene -- that is one of the constituents-of-concern at this site, so

it's one of the things that has a very low NC 2L standard that we keep an eye on. And when it comes into contact with NZVI, it can be broken down to ethene. And that's what we want to get with any -- any of these tetrachloroethene compounds. We want to get them down to ethene. They're benign. You're going from something that's a definite health risk down to something that's definitely manageable.

Okay. So where do we go from here? We -- you can -- the reports are sitting right up here, but if you don't want to look at them tonight and if you want to -- I think some of you have already looked at them some from what I gathered. But if anybody wants to see them, they can go to the North King Street address and look at them there from 10:00 o'clock to 3:00 PM Monday through Friday. And you can submit any comments that you don't make here -- if you would think about it and want to submit any questions, comments, they'll be accepted at the same address. They have to be received by next Friday, August 23rd, at 5:00 PM.

Okay. And once all the comments are received from the public, they will be evaluated and they'll be used, along with the State regulations, in order to determine what kind of strategy -- what kind of remedial technology will be chosen for the site. And as I said earlier, that will be submitted to the State. They will -- they have to approve that technology. And if we're going down the wrong road,

they will tell you we are going down the wrong road with that.

Once everyone's in agreement, a Corrective Action Plan will be put together that basically outlines that process. And then we'll define the remedial technology, the design that goes into it, also the scheduled timeline for the implementation and the -- what we can expect to be the timeline for actually reaching our goals to getting the constituents under the 2L standards by the property line.

And it will also include a monitoring program to -- for each of these to monitor the process, make sure that things are happening the way we want. And as I said, the State will also review this Corrective Action Plan before it's implemented to make sure that they are on board, that they don't have any questions. And it will be done as a permanent modification. And once the State has approved it, then the County will move forward with implementing the Corrective Action Plan.

All right. So that's the end of it.

MR. JACK LEVI: How much are you talking about putting into the ground to do all this? Is there anything that will have fumes out in the air or a odor to it from what you're talking about -- that you're trying to put in there?

MR. REEDY: Right. You're -- just that so we get

everything documented on here, when you ask questions, can you tell us your name?

MR. JACK LEVI: Jack Levi.

MR. REEDY: Jack Levi. So the answer to that -- you know, it depends on the technologies. And I'm assuming more and more -- that you're probably asking about the chemical -- the chemical oxidation compounds that would be put into the ground. And typically, there aren't fumes or odors that are associated with it.

What can happen with that technology in particular is that if it's -- if it's injected into the ground too close to streams and whatnot, that it can dilute in those streams and it can affect biological communities. And some of those like the permanganate has a red color so you can actually -- if there's a well drilled closed by or some streams or whatnot, that color might come out, all right?

So whenever that technology is used, it's very important to do those laboratory tests, those fields tests, early on on a small bench scale, and that way whenever -- that you're not injecting too much of that into the ground. You're getting the right dosage, and also you have the right level of monitoring around that area so that you can pick up on something before it actually gets to where you don't want it to go. So that's -- that's the biggest concern.

MR. JACK LEVI: Well, that was one of the things I

wanted to ask about because at times, even before this starts, the color of the water at times is rust-colored, parts going down the stream have been going on for a good long while. And I was already wondering if that's some of the chemicals that's moving out just like what you're saying, it can get in it if some of the contaminates that's in the ground now has already been going down the stream.

MR. REEDY: That is more than likely based on my -- well, I've actually seen it in some of the streams here when we've been collecting the water samples, and that's typically a ferrous iron bacteria. It's a bacteria that develops. And it's usually in areas where you have warmer -- warmer waters that get to a certain point and then the iron precipitates out. Typically, it's not harmful, but that is -- it is a common thing around -- around -- well, around that site but also other sites as well. It's not indicative of just landfills. But it's -- that's not -- that's not related directly to what we're discussing here tonight.

MR. JACK LEVI: I just wanted to put an end to it. Some of the things -- the reason I ask is when my boys had ponies down there, we had the two streams in there. They always loved to drink out of the stream next to the road because it's a good stream that comes down and runs through the property. That's the only stream that they would drink

out of. But once this started, they wouldn't touch it. They'd blow and snort and go by it, and they went to the other stream that before they didn't want to drink.

MR. REEDY: Okay.

MR. JACK LEVI: And so that's the reason I'm asking about the stuff that's already in the landfill that's been going down, you know, years before.

MR. REEDY: That is interesting. Unfortunately, I don't speak horse. But you know, it could be -- like I said, you typically -- a lot of times you see this whenever water gets a little warmer than what it should be, typically. And it might have been the horses might have been more relating to the temperature more so than it was the actual components of the water.

MR. JACK LEVI: Well, I think it was the smell and taste when they tasted it.

MR. REEDY: It could be. I'm not --

MR. JACK LEVI: Because of the stuff that's been hauled in at that time, I think.

MR. REEDY: It could be related to the bacteria. That's definitely a possibility.

MS. KIRKLAND: You see it a lot naturally occurring depending on the chemistry of the water. But the amount of water flowing on the main creek down there, any contaminates from the landfill would be so diluted with the

amount of water that's going through that stream on a normal basis it's unlikely, based on that alone, that that's a contributing -- a large contributing factor.

MR. ROGER LEVI: If it's moving that fast, it shouldn't be that hot, either.

MR. REEDY: Well, yeah. But I mean, what I'm thinking is maybe some of the smaller -- the smaller streams that lead into it maybe -- that's where I kind of noticed it around here when I've been out to the neighboring areas when I collected the groundwater samples and stuff. So, you know, we have -- we do have ponds here at the landfill that collect storm water and those -- those do discharge to the streams.

MR. ROGER LEVI: Mixed in with it?

MR. REEDY: So that water is sitting there in those ponds and they're getting warm. It's being released on down the line.

MR. ROGER LEVI: Are they monitoring it for --

MR. REEDY: Those streams downgrade --

MR. ROGER LEVI: Those ponds, are they monitored for chemicals?

MR. REEDY: They are not as far as the groundwater monitoring plan for the landfill, but we do sample those downstream of where they discharge into.

MR. RICKY LEVI: The surface water?

MR. REEDY: The surface water. So as the water leaves there and into the streams that are going to the larger stream, we do sample them individually.

MS. KIRKMAN: If the facility was still active and you had waste as opposed to storm water, those landfills are required to monitor the ponds during storm water events, but since the facility's closed, we capped it.

(The reporter asked who was talking.)

MR. ROGER LEVI: Roger Levi.

MR. JACK LEVI: One of the reasons I brought that up since I knew that was coming down probably, what I'm asking is the chemicals that you put in there to try to solve it, could they be getting out in the stream too?

MR. JONES: We haven't done --

MR. REEDY: We haven't done this. Again, this is all theoretical at this point.

MR. JACK LEVI: That's what I mean. When you start -- when you start putting it in is what I'm talking about.

MR. REEDY: So the potential is there. But what -- like I said, what we'll do is we'll do actual small scale tests and that will help us figure out a dosage, what -- what amount we can use when we expand it up to cover that little plume so that we do not inject too much so we can control it -- where we want it and not have it go

downstream. So, you know, all that will be -- all that is going to be a process where we have to figure out how much we can actually inject and not -- not affect those type of areas.

MR. ROGER LEVI: And the contaminants have left the county property and are on private property now, right -- on Stoney Mountain Road?

MR. REEDY: We have interpreted --

MS. KIRKMAN: You can probably see this better.

MR. REEDY: We have -- we have interpreted -- basically, we have been monitoring points that are -- that are further downstream, the monitoring points that are right down here. These are not typical. They're not part of our compliance network. We sampled those because they are adjacent to your property and see what they are doing. Based on that, we infer that it's very likely that it has crossed over Stoney Mountain Road.

MS. KIRKMAN: It's based on concentrations as well at the property line. We don't have any --

MR. ROGER LEVI: You're at the property line?

MS. KIRKMAN: -- testing over the property line.

MR. ROGER LEVI: Right.

MS. KIRKMAN: It's likely, as Dusty pointed out, that stream sort of serves --

MR. ROGER LEVI: It sort of serves as a barrier.

MS. KIRKMAN: I mean, it's data that's inferred. It's all under the ground. And we use the data that we do have to draw these lines, and it's based on a scientific estimation that --

MR. ROGER LEVI: And it's leeching? It doesn't leech down and pull -- and get the higher concentrations as it pulls it at a lower area?

MR. REEDY: You know, in the way these work, as they're -- you know, as the name implies, they are volatile organic compounds. And so as they leave the source and move down -- down the gradient, as they interact with oxygen in the soil, as they -- if they come in contact with the atmosphere or anything like that, they're going to break down. Also, as they are coming in contact with more groundwater, they are also -- it's going to, you know, dilute it. And so it doesn't really -- it's -- you should see it decline in concentrations. You shouldn't see any pooling somewhere.

MR. ROGER LEVI: And that's what you're seeing as far as --

MR. REEDY: Yes. If you look at the data that we've acquired during the Nature and Extent Study, the concentrations are highest in those monitoring wells that are closest to the landfill.

MR. ROGER LEVI: Up top?

MR. REEDY: Yeah. And as we move -- as we move further away from the landfill, they decline.

MS. KIRKMAN: Also your depth of water roughly near the property line, that might help put it in perspective. He's worried about it coming to the surface.

MR. REEDY: It's relatively shallow.

MS. KIRKMAN: It's close to the creek.

MR. REEDY: If I remember correctly, it's around 20 feet below ground. So that's where the water table is, and so -- yeah. So that's where -- that's where it is. So, I mean, there is -- it is shallow enough that there is an interaction and being an unconsolidated aquifer to the soil and the weather drop -- so there is an interface with the atmosphere so, you know -- and based on those natural attenuation processes, it should be dissolved.

And plus, with the EPA modeling that we did do to determine whether a natural attenuation was occurring, our model showed us that the plume was basically stable, meaning that it's not -- it does not appear like it's growing. It's an old landfill, a lot of old waste. And -- and there's a balance with the natural attenuation processes. And it appears with the data we have right now that it's a stable plume. It's not really moving. It's not shrinking. But it's not really actively growing as well. It's kind of just setting there. So that's where we are right now.

MR. ROGER LEVI: That's why it doesn't make any sense. If it's traveling, it's supposed to be getting less and less and less. And why is it not if it's just sitting there? That's why I think that -- it seems like it's pooling there. You say it's breaking down as it travels down. Why is it not dissipating out and going away?

MR. REEDY: Well, I mean, it dissipates away, you know, as it continues to move on down because those processes are going on. But you have a continuous source in that landfill so --

MR. ROGER LEVI: Leeching that far?

MR. REEDY: Right. So it's continuing to release here and then continuing to move down. And as it moves down, it's continuing to degrade -- the compounds are continuing to degrade as they move down. But it's -- right now it just seems like with the age it's reached an equilibrium there.

MR. JONES: The fifth option is important to stop leeching, right?

MS. KIRKMAN: The landfill's capped, but you have to keep in mind especially the amount of rain you've received in this part of the State. It's still going to get through that clay cap. And as long as there's rainwater feeding it, it's going to keep on leeching.

MR. ROGER LEVI: How long has this been across?

MR. REEDY: That I could not tell you.

MR. ROGER LEVI: Is this first the year you actually found it to be across?

MR. REEDY: Well, basically, we've known we've had exceedances for awhile. I'd have to go back to the records to actually find when those actually occurred. We started -- well, that's -- the County started looking into this and -- and traced that back -- started back in 2000.

Basically -- like I said, there's eight monitoring wells. Initially, there were -- there were four monitoring wells. And the other four that were installed were installed originally in order to trace -- in order to map out these constituents -- these compounds that were known to be contaminants. That's why they were installed. And after they were installed, it was determined that it would be a good idea to keep monitoring those wells. And so -- so that's when that process -- that's when that process really kind of began, but I couldn't --

MS. KIRKMAN: Groundwater flow rate out here is?

MR. REEDY: The groundwater flow rate out here is approximately about 15 feet per year.

MS. KIRKMAN: It's pretty slow.

MR. REEDY: So that's how much you can expect groundwater from one point to travel to the next point in a year's time, is roughly about 15 feet. So I mean,

groundwater just moves rather slowly, basically, two and a half, three years, it's been across the road.

MS. KIRKMAN: I mean, if you assume that the day the County put waste in the ground, you immediately had a release, which would be a very conservative assumption, and then mapped the distance -- I don't know the distance to the property line from the edge of waste -- and then take into consideration moving an average of 15 feet a year, you could probably, you know, trace back a worst case scenario. We haven't done that. It's not been part of the scope of what the State has prescribed or the County to do at this point.

MR. REEDY: But based on the data we have, we can't say this is when it happened and, you know, in all honesty, we can state that it is happening. We know it is close to the property line on this side, and we're inferring that it travels on across.

MR. JACK LEVI: There's no way of trenching it across or anything and have a way to catch that?

MR. REEDY: Well, I mean, that is a -- that is a technology that is used, but you're looking at depths that would really exceed the ability to dig an effective trench. And also, you know, you get into material -- because the groundwater table is really in soil and weathered rock -- you'd have to get down into the weathered rock and be able to excavate that. You would have to have access to do that,

which you can't do with most of the long-armed excavators anyway. So it's a technology that's used in shoring walls and that sort of thing, but it's not something that's going to be practical for this facility.

MR. ROGER LEVI: You said it doesn't normally jump streambeds or creeks. Has it done it anywhere else where there's streams? Has it passed that stream?

MR. REEDY: You've got different types of streams. And you have -- really have kind of losing streams and what's called receiving streams. And, you know, we -- we have these nested well pairs that are next to these streams, so we are able to judge -- to evaluate water levels in those wells as deep levels and shallow levels. And you can use your calculations to determine where -- which way water is flowing. And as you approach these streams here, groundwater is flowing up towards those streams. So they're receiving streams.

MR. ROGER LEVI: Um-hum.

MR. REEDY: And that -- that creates a significant barrier and discharge point for water that's come from the landfill down to those streams. There are cases where you do have losing streams. Those are streams that actually work the opposite way. There's water flowing in them, but as they're flowing down, they reach a point where the groundwater actually enters the aquifers, so you're losing

water from the stream going into the water table. And in those cases, they do not provide a barrier. But everything we've done here shows that they're receiving streams.

MR. JONES: The VOCs that we believe are on the property are likely not to have crossed the stream that's on Jack's property between the house and the well.

MR. REEDY: Yes, that's -- that's a pretty substantial stream. And I feel comfortable with that as a groundwater --

MR. JONES: So it --

MR. REEDY: And also you've got to look at groundwater -- groundwater flow is a lot like surface water. It flows from -- topographic -- water -- water flows downhill, right? It goes from high to down low. That's how it goes. Groundwater roughly mimics the same thing. It mimics the topography. So, you know, like -- in their facility here, groundwater is flowing in this direction, from the highs up here, you know, to the lows down here, down to where the stream is. On your property across the road, it's the same thing. You've got a hill down this way, and it's all draining down to the stream.

So water flow on your property is flowing this way as well to the stream. So coming down the stream, it's going to actually sort of bend and flow in a downstream direction there at the stream. So that's also another --

why I call it a groundwater divide is because you have water moving this direction. You have water moving this -- the other direction and then kind of meeting in the middle and going downstream:

MR. JACK LEVI: Anything else?

MR. JONES: Now, the 2B drinking water standards for the surface water, does it apply --

(The reporter says she cannot hear him.)

MS. KIRKMAN: Does the surface water standards apply to aquatic life?

MR. JONES: Aquatic life being?

MR. REEDY: Aquatic life is -- it's -- it's also a conservative standard, and actually the facility has not had any exceedances of the 2B standards. So the surface waters have not -- from the samples we collect twice a year, have not exceeded any standards.

MR. JACK LEVI: Well, these things are coming out. I asked before about maybe a pony or anything eating grass off of it. Would it affect you if you had your garden on there for human consumption?

MR. REEDY: I would say, no, just because they are a low -- we're talking about very miniscule concentrations. There are low concentrations on the landfill property. By the time they're crossing over Stoney Mountain Road, they're even lower.

MR. JACK LEVI: Ordinarily, how deep do you think it would be -- the surface layer? If you're growing apple trees or food to eat or anything like that --

MR. REEDY: Right.

MR. JACK LEVI: -- it would be up high.

MR. REEDY: Up high.

MR. JACK LEVI: It would probably be going under it?

MR. REEDY: Right. And the root systems do not extend down toward where the water table is. And so --

MR. JACK LEVI: In other words, it usually don't come to the top of the ground?

MR. REEDY: Right.

MS. KIRKMAN: Typically, food for human consumption is -- they're looking at a soil pathway, so you'd have to grow your garden on top of a landfill to have an increased chance of a pathway from that.

MR. JACK LEVI: Well, we were on the path last year down here, which was the reason I wondered if it was coming down and seeping over to it.

MS. KIRKMAN: That pathway chain has to have a way to get from the groundwater to your food, and it's not likely that that would happen.

MR. RICKY LEVI: I've got a question about the monitoring. I know you said the eight -- well, the first

four wells were basically for tracing but -- the path of it. And you've got four more now, and that's kind of to help you see what's going on further. Is there any plans for more?

MR. REEDY: Yes. With pretty much any of these technologies that we've discussed tonight, additional wells would probably -- would have to be installed closer down the property line --

MR. RICKY LEVI: But those --

MR. REEDY: -- and within the plumes in order to better evaluate whether that technology is working.

MR. RICKY LEVI: Right. It would be basic considerations?

MR. REEDY: Yeah.

MR. RICKY LEVI: When you put them in, are they like -- are you trying to choose worst case scenarios as to where -- say, like when they do lead copper testing, they'll pick worst case scenarios in the water system. Would you do the same process with this to try to figure out if it's mainly going into this area? Are you going to put more monitoring there or --

MR. REEDY: Yeah, yeah. It would be located in the areas where we have the problems because that's the only way you're going to be able to evaluate whether you're actually fixing that problem.

MR. RICKY LEVI: So you will probably have some on

the outskirts as well to see if it's going any farther --

MR. REEDY: Yeah, yeah.

MR. RICKY LEVI: -- or do the concentrations tell you that?

MR. REEDY: Well, the concentration would give you a clue, but yeah, they'll be spaced -- you know, when we initially do a monitoring plan for a landfill, there are plans within the compliance boundary, which is somewhere between 75 and 150 feet away from the edge of the waste, maybe a little further in some cases. But -- and those are -- those are actually chosen on best pathways that are interpreted with the knowledge that's known in order to -- you know, to detect what may be coming from the landfill.

And if we install any additional monitoring wells at this point, they'll be related to the Corrective Action Plan. Those are -- those are set on purpose because we already know there is something amiss, so we want those placed in a place -- the best places where we can evaluate whether -- whether we're fixing the problem. So we want to make -- we want them in a place where we can see the plumes shrinking or -- or not, if there's something that we've done that's not correct. So, you know, we're not trying to avoid an issue. When you install these things, you want to know -- you want to have it where --

MR. RICKY LEVI: That's good.

MR. REEDY: -- it needs to be.

MR. JONES: The State wouldn't let me pick where they are.

MS. KIRKMAN: The State will have oversight on where. And some will be shallow and some will be deep, depending on where we're detecting things. And your list of over 200 constituents gets even bigger because now we're watching for more what's called indicators, indications that whatever we're doing to fix the problem is working.

MR. REEDY: Right. Because, you know, we'll be monitoring for those actual compounds that we're worried about. But there are also parameters out there that are not health -- you know, health risks. But the science behind it is that you monitor in these particular parameters, and you can tell by the concentrations you have whether you have the -- the chemistry in the soils that you're looking for to achieve your goals. So they can actually sometimes tell you that you're on the right track or on the wrong track before the actual concentrations of the compounds you're actually after start changing.

MR. ROGER LEVI: You said you were monitoring it twice a year?

MR. REEDY: Yes.

MR. ROGER LEVI: Since we're having a problem now,

will you be monitoring it more, or is it still just whatever the State mandate is?

MR. REEDY: The State will, in essence, be able to dictate that. Depending on the technology that's used, there -- there definitely could be -- whenever all that is implemented, there may be more. There might be quarterly monitoring for that first year, you know, to get the system up and going and make sure things are right.

MR. ROGER LEVI: Um-hum.

MR. REEDY: And more than likely after all that's determined, it will go back to a semiannual or a twice-a-year basis.

MR. ROGER LEVI: I see.

MS. KIRKMAN: That's typical with that slow groundwater flow rate. With it moving that slow, you're just -- you'll be able to --

MR. ROGER LEVI: But when you start doing that, you're going to need to check it more often?

MR. REEDY: Right, right. And it can even be more than that depending on the technology, just to make sure things are --

MR. ROGER LEVI: And which choice you are going to use?

MR. REEDY: Exactly, exactly.

MS. KIRKMAN: If we were down in the coastal plain

where groundwater is moving hundreds of feet a year, those sites are under different conditions, so every landfill's different.

MR. ROGER LEVI: Where do you send your water samples to?

MR. REEDY: The laboratory that we use -- I mean, it's nothing special. We just chose this laboratory because it meets our needs for site consistency. It's called ENCO, Environmental Conservation Laboratories. They're located in Cary, North Carolina. That's where we send the ones that we collect here. There are a number of labs across the State that actually can do these analyses. It's just our lab of choice.

MS. KIRKMAN: They're certified by the State.

MR. REEDY: Yeah. They're certified in North Carolina, the laboratory. One reason we use them so often is because we feel that they are a good, reputable laboratory.

MS. KIRKMAN: I think they analyzed over 300 landfill samples, so they --

MR. REEDY: They have lot of experience.

MS. KIRKMAN: They know all the methods that the Federal and the State folks require.

MR. REEDY: Is that it?

(No response.)

MR. REEDY: We'll call this meeting concluded, then.

(End of Assessment of Corrective Measures Public Meeting at 6:56 p.m.)

STATE OF NORTH CAROLINA

COUNTY OF HAYWOOD

I, JEANNE M. MCLAREN, RMR, a notary public in and for the State of North Carolina, do hereby certify that on August 15, 2013, the Assessment of Corrective Measures Public Meeting commenced at 6:03 p.m. at the Stoney Mountain Activity Center at 800 Stoney Mountain Road, Hendersonville, North Carolina; that the foregoing proceedings was taken by me in stenotype and thereafter reduced to typewritten form by me; that the foregoing hearing is a true record of the proceedings to the best of my ability.

I further certify that I am not of kin or associated with any of the parties to this action or their counsel and that I am not interested in the event thereof.

August 21, 2013

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JEANNE MCLAREN, RMR
Notary Public 200903000078

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1998 (1)
5:5

2

20 (1)
25:9
200 (2)
4:1;35:8
2000 (2)
6:5;27:8
2001 (1)
5:6
22 (5)
3:11;11:15,17;12:10;13:3
23rd (1)
16:18
2B (4)
3:15,15;31:6,14
2L (7)
3:15,15,22;5:19,21;16:1;17:9

3

3:00 (1)
16:14
300 (1)
37:19

5

5:00 (1)
16:18

6

6:56 (1)
38:4

7

75 (1)
34:9

LETTER FROM CHIEF FINANCIAL OFFICER

HENDERSON COUNTY
FINANCE DEPARTMENT
113 NORTH MAIN STREET
HISTORIC COURTHOUSE ANNEX
HENDERSONVILLE, NC 28792
PHONE (828) 697-4821
FAX (828) 697-4569
www.hendersoncounty.org/finance/

J. Carey McLelland
Finance Director
carey@hendersoncountync.org

Dena S. Garey
Assist. Finance Director
dgarey@hendersoncountync.org

LETTER FROM CHIEF FINANCIAL OFFICER

December 12, 2014

Compliance Officer
Solid Waste Section
DENR - Division of Waste Management
1646 Mail Service Center
Raleigh, NC 27699-1646

Dear Compliance Officer,

I am the chief financial officer of Henderson County, Finance Department, 113 N. Main Street, Hendersonville, NC 28792. This letter is in support of this unit of local government's use of the financial test to demonstrate financial assurance, as specified in N.C.G.S 130A-295.04.

This unit of local government is the owner or operator of the following facilities for which financial assurance for closure, post-closure, or corrective action is demonstrated through the financial test specified in N.C.G.S 130A-295.04. The current closure, post-closure, or corrective action cost estimates covered by the test are shown for each facility:

Facility Name: Henderson County Solid Waste Facility
Facility Address: 191 Transfer Station Drive, Hendersonville, NC 28791
Permit Number: 45-01
Closure Cost Estimate: Included in the Post-Closure Cost Estimate
Post-Closure Cost Estimate: $1,807,148
Corrective Action Cost Estimate: Included in the Post-Closure Cost Estimate

Total Costs to be Assured: $1,807,148
The fiscal year of this unit of local government ends on June 30th. The figures for the following items marked with an asterisk are derived from this unit of local government's Annual Financial Information Report (AFIR) for the latest completed fiscal year, ended June 30, 2014

RATIO INDICATORS OF FINANCIAL STRENGTH

1. Sum of current closure, post-closure and corrective action cost estimates	$1,807,148
*2. Sum of cash and investments (AFIR Part 7)	$60,326,186
*3. Total expenditures (AFIR Part 4 Columns a & b and Part 5 for municipalities or Part 5 excluding educational capital outlays for counties)	$119,142,581
*4 Annual debt service (AFIR Part 4 Section I)	$14,335,716
5. Assured environmental costs to demonstrate financial responsibility in the following amounts under Division rules:	
Solid waste management facilities under 15A NCAC 13B	$1,807,148
Hazardous waste treatment, storage and disposal facilities under 15A NCAC 13A .0009 and .0010	$0
Petroleum underground storage tanks under 15A NCAC 2N .0100 - .0800	$0
Underground Injection Control System facilities under 15A NCAC 2D .0400 and 15A NCAC 2C .0200	$0
PCB commercial storage facilities under 15A NCAC 2O .0100 and 15A NCAC 2N .0100	$0
Total assured environmental costs	$1,807,148
*6. Total Annual Revenue (AFIR Part 2)	$123,857,270
Circle either "yes" or "no" to the following questions.	
7. Is line 5 divided by line 6 less than or equal to 0.43?	Yes
8. Is line 2 divided by line 3 greater than or equal to 0.05?	Yes
9. Is line 4 divided by line 3 less than or equal to 0.20?	Yes

BOND RATING INDICATOR OF FINANCIAL STRENGTH

1. Sum of current closure, post-closure and corrective action cost estimates	$1,807,148
2. Current bond rating of most recent issuance and name of rating service	S&P: AA Moody's:Aa2
3. Date of issuance bond	6/03/2010
4. Date of maturity of bond	12/01/2020
5. Assured environmental costs to demonstrate financial responsibility in the following amounts under Division rules:	
Solid waste management facilities under 15A NCAC 13B	$1,807,148
Hazardous waste treatment, storage and disposal facilities under 15A NCAC	$0

13A .0009 and .0010	
Petroleum underground storage tanks under 15A NCAC 2N .0100 -.0800	$0
Underground Injection Control System facilities under 15A NCAC 2D .0400 and 15A NCAC 2C .0200	$0
PCB commercial storage facilities under 15A NCAC 2O .0100 and 15A NCAC 2N .0100	$0
Total assured environmental costs	$1,807,148
*6. Total Annual Revenue (AFIR Part 2)	$123,857,270
Circle either "yes" or "no" to the following question.	
7. Is line 5 divided by line 6 less than or equal to 0.43?	Yes

---

I hereby certify the following: (1) that the unit of local government has not operated at a total operating fund deficit equal to five percent or more of total annual revenue in either of the past two fiscal years, (2) that the unit of local government is not in default on any outstanding general obligations bonds or long-term obligations, and (3) does not have any outstanding general obligation bonds rated lower than Baa as issued by Moody's, BBB as issued by Standard & Poor's, BBB as issued by Fitch's, or 75 as issued by the Municipal Council.

Sincerely,

James C. McLelland

J. Carey McLelland
Finance Director
December 12, 2014

PERMIT MODIFICATION APPLICATION

North Carolina Department of Environment and Natural Resources
Division of Waste Management
Solid Waste Section

North CarolinaSolid Waste Groundwater Corrective Action Permit Modification Application

Pursuant to 15A NCAC 13B .1636, "Within 14 days of selecting a remedy, the permittee shall submit an application to modify the permit describing the selected remedy to the Division for evaluation and approval." The application shall include the demonstrations necessary to comply with the financial assurance requirements set forth in Paragraph (d) of Rule .1628.

Please attach the following: (1) a copy of the minutes from the public meeting discussing the Assessment of Corrective Measures, (2) a signed resolution/proclamation/document adopting the remedy, (3) a site map designating locations of groundwater monitoring wells and surface water monitoring locations that will be impacted by the remedy, (4) any draft conceptual schematics/figures/plans relating to the selected remedy, (5) a list of any required registrations, permits, and approvals, (6) a copy of most recent permit issued by the Solid Waste Section, and (7) an amendment to the Financial Assurance Mechanism, including a break-down of the cost estimates for closure, post-closure and corrective action.

Send the application and attachments to NCDENR-DWM, Solid Waste Section, Compliance Unit, 1646 Mail Service Center, Raleigh, NC 27699-1646. This application and any documents attached to this application are "Public Records" as defined in NC General Statute 132-1. As such, these documents are available for inspection and examination by any person upon request (NC General Statute 132-6).

Please type or print all information legibly.

I. Site Identification

Permit Number: 45-01

Solid Waste Rule Designation (.0500 or .1600): .1600

Facility Name: Henderson County Closed Municipal Solid Waste landfill

Facility Physical Address: 191 Transfer Station Drive

City: Hendersonville

Zip: 28791

County: Henderson

Waste Type: Municipal Solid Waste and Construction and Demolition Debris

II. Owner and Operator Information

☒ Check box, if owner and operator are the same.

Owner

Name: Henderson County Government

Address: 191 Transfer Station Drive, Hendersonville, NC 28791

Phone Number: 828-697-4505

Operator

Name:

Address:

Phone Number:

III. Groundwater Corrective Action

Selected remedy (include addition lines if needed):

(1) In-Situ Enhanced Bioremediation (Super Oxygenated Water Injections)

(2)

(3)

Contingency Plan A: In-Situ Enhanced Bioremediation

Contingency Plan B: In-Situ Chemical Oxidation

IV. Financial Assurance

Financial Assurarance Mechanism: Bond

Total Cost Estimate for 30 Years (based upon ACM): $ 796,000.00

V. Project Schedule (upon Division approval)

Approximate Date of Remedy Construction Completion (if applicable): 06/30/2016

Approximate Date of Implementation of Remedy: 10/31/2016

Approximate Date of Baseline Sampling Completion (if applicable): 06/30/2016

Approximate Date of First Remedy Performance and Effectiveness Report Submittal: 10/31/2021

VI. Environmental Consultant

Consulting Company: Golder Associates NC, Inc.

Address: 5B Oak Branch Drive, Greensboro, NC 27407

Phone Number: 336-852-4903

VII. Signatures

To the best of my knowledge, the information reported and statements made in this North Carolina Solid Waste Groundwater Corrective Action Permit Modification Application are true and correct. I am aware that there are significant penalties for making any false statement, representation, or certification including the possibility of fine and imprisonment.

If Owner and Operator are the same, please sign for Owner and type or write SAME for Operator.

Owner

Owner Name (Printed or Typed): Natalie Berry, P.E.

Owner Signature: Natalie J Berry PE

Digitally signed by Natalie J Berry PE
DN: cn=Natalie J Berry PE, o=Henderson County Engineering, ou=Solid Waste Engineering, email=nberry@hendersoncountync.org, c=US
Date: 2015.03.03 10:17:25 -05'00'

Date: 03/03/2015

Operator

Operator Name (Printed or Typed): SAME

Operator Signature: Natalie J Berry PE

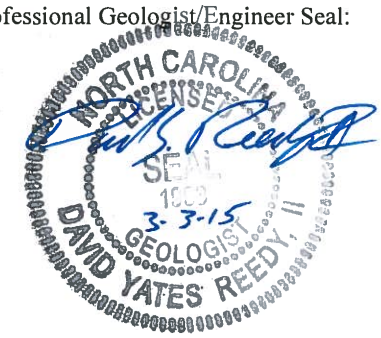
Digitally signed by Natalie J Berry PE
DN: cn=Natalie J Berry PE, o=Henderson County Engineering, ou=Solid Waste Engineering, email=nberry@hendersoncountync.org, c=US
Date: 2015.03.03 10:18:46 -05'00'

Date: 03/03/2015

NC Professional Geologist or NC Professional Engineer

Name (Printed or Typed): David Y. Reedy II, P.G.

Signature:

Date:

AffixNCProfessional Geologist/Engineer Seal: