Armstrong, Kathy

From: Huyser, Matthew
Sent: Thursday, September 05, 2019 6:01 PM
To: Harper, Greg
Cc: Tanner, Terry; Corey CB. Brown; chris.jones@tetratech.com
Subject: Able - ERT EBAM equipment and VIPER equipment

I am still in the middle of inventorying the equipment from ERT. Nothing should be moved or sent back. Tetra Tech may take some of the VIPER equipment back to Able; Chris Jones has been instructed to provide me with an extremely detailed list of everything that is taken back out to able (including all cables and equipment ID numbers)

Please allow my to continue this inventory on my own. I will let Greg and Corey know when it is ready to ship as well as what missing pieces we need to purchase.

Matthew J. Huyser, PE - On-Scene Coordinator
U.S. Environmental Protection Agency, Region 4 | 61 Forsyth St SW | Atlanta, Georgia | 30303
Emergency Response Removal and Prevention Branch (ERRPB)
office: **404-562-8934** | cell: **678-427-8829** | fax: **404-562-8699**
epaosc.org

Armstrong, Kathy

From: Huyser, Matthew
Sent: Wednesday, August 28, 2019 12:46 PM
To: (b)(6) Personal Privacy
Cc: Tolliver, Ronald
Subject: Able - north ditch

Mr. Stever,

I have made sure that the current incident management team at the Site is aware of the issues regarding the drainage surrounding the property. However, please note that construction work in the ditch north of the Site to address drainage and grading is not within the scope of the EPA's emergency response at the Site.

The response efforts conducted by the EPA at the Able Contracting Fire Site are limited to addressing the release of hazardous substances listed under section 102(a) of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA). Hazardous substances are being released at the Site to the air as a result of the ongoing fire. Surface water is being addressed to mitigate, to the extent practicable, potential impacts downstream from runoff of firefighting water.

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epaosc.org

From: (b)(6) Personal Privacy
Sent: Tuesday, August 27, 2019 1:45 PM
To: Huyser, Matthew <Huyser.Matthew@epa.gov>
Cc: Tolliver, Ronald <Tolliver.Ronald@epa.gov>
Subject: Re: Able - north border walkthrough report back

As we discussed the Water flow from my pond is over a spillway into the ditch at the north side of the Able property. Mr. Lloyd dug this part of the ditch will below the normal gravitational level required to properly allow the water drainage from the ditch. Instead, He dug the ditch below the required level to create a catch pond so he could reuse the water from the trash pile for fire purposes. This newly created pond does not allow a normal Storm water flow and a mosquito hazard. This area of the ditch needs to be return to it normal state. Thanks Jay

-----Original Message-----
From: Huyser, Matthew <Huyser.Matthew@epa.gov>
To: (b)(6) Personal Privacy
Cc: Tolliver, Ronald <Tolliver.Ronald@epa.gov>
Sent: Tue, Aug 27, 2019 11:39 am
Subject: Able - north border walkthrough report back

Mr. Stever,

On 8/19 you and I spoke about inspecting the north border ditch of the Able Contracting Site to determine if there were obstructions in the ditch. I stated that a walkthrough would be conducted and would be reported back to me.

Later on the same day (8/19/2019), a representative from SC DHEC and an EPA START contractor completed a walkthrough of the ditch on the north border of the Able Contracting Site with particular focus on the outfall where the pond on parcel 080-03-0-022 discharges to the ditch. The team did not find any obstructions, natural or artificial, in the ditch but did note that there was ponded/standing water three feet wide at the confluence of the pond discharge to the ditch. The standing water continued throughout the length of the ditch. The water in the ditch was noted as having a reddish brown hue but not fully transparent.

If you have further questions or concerns, the team in the field will be able to speak with you about those matters. Please note that the project remains an emergency response and there are many complex issues being addressed at every moment - not all requests can be addressed immediately or in the same day.

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epaosc.org

Armstrong, Kathy

From: Huyser, Matthew
Sent: Wednesday, August 28, 2019 12:23 PM
To: Hammond, Richard
Subject: Able Contracting Fire - photos

Photos have been made public on the response.epa.gov/ablefire webpage

This is the link to the photos page
https://response.epa.gov/site/image_list.aspx?site_id=14357

Each photo has a caption, a date, and a credit

These are the links for the high res versions
https://response.epa.gov/sites/14357/files/5576west%20flow%20and%20wall.JPG
https://response.epa.gov/sites/14357/files/IMG_20190529_175901.jpg
https://response.epa.gov/sites/14357/files/IMG_1370.JPG
https://response.epa.gov/sites/14357/files/IMG_0167.JPG
https://response.epa.gov/sites/14357/files/Able_StoryMapPhoto_Meters.jpg
https://response.epa.gov/sites/14357/files/IMG_1226.JPEG
https://response.epa.gov/sites/14357/files/IMG_0743.jpg
https://response.epa.gov/sites/14357/files/IMG_1236.JPEG
https://response.epa.gov/sites/14357/files/IMG_1278.JPG
https://response.epa.gov/sites/14357/files/IMG_0036.JPG
https://response.epa.gov/sites/14357/files/IMG_0079.JPG

Matthew J. Huyser, PE - On-Scene Coordinator
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epaosc.org

Armstrong, Kathy

From: Huyser, Matthew
Sent: Wednesday, August 28, 2019 11:45 AM
To: Wise, Katie
Subject: RE: Able - story map updates
Attachments: IMG_0036.JPG; IMG_1278.JPG; IMG_0079.JPG

Remove the following photos and their captions:
https://www.arcgis.com/sharing/rest/content/items/3d81262963bb420097e625b94807a0a9/resources/1564920856603.jpeg?w=1600
https://www.arcgis.com/sharing/rest/content/items/3d81262963bb420097e625b94807a0a9/resources/1564164303327.jpeg?w=1600

Change the following text:
Change From: This map displays the current hotspots recorded by EPA at the Able Contracting Fire Site.
Change To: This map displays the initial hotspots recorded by EPA at the Able Contracting Fire Site.

Begin a new "page" with the following paragraph:
SC DHEC mobilized a response contractor who began water application on August 11 and aggressive firefighting operations with heavy equipment on August 12. The EPA assumed the lead for relocation of residents and aggressive firefighting operations on August 16.

IMG_1278.JPG
Caption: "EPA contractors relocate and load burned debris as water suppression is used for cooling and emission control; August 20, 2019 (Photo from EPA)"

IMG_0079.JPG
Caption: "EPA contractors excavator accesses burned debris that is steaming from latent heat for cooling and relocation or disposal; August 25, 2019 (Photo from EPA)

IMG_0036.JPG
Caption: "EPA contractors load burned debris for disposal and a concrete pumper applies water to a hotspot – this tactic has reduced overall water usage at the Site; August 24, 2019 (Photo from EPA)"

Matthew J. Huyser, PE - On-Scene Coordinator
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epaosc.org

KOBELCO
United Rentals
SK350

Armstrong, Kathy

From: Huyser, Matthew
Sent: Wednesday, August 28, 2019 11:14 AM
To: Wise, Katie
Subject: Able - story map updates

Remove the following photos and their captions:
https://www.arcgis.com/sharing/rest/content/items/3d81262963bb420097e625b94807a0a9/resources/1564920856603.jpeg?w=1600
https://www.arcgis.com/sharing/rest/content/items/3d81262963bb420097e625b94807a0a9/resources/1564164303327.jpeg?w=1600

Change the following text:
Change From: This map displays the current hotspots recorded by EPA at the Able Contracting Fire Site.
Change To: This map displays the initial hotspots recorded by EPA at the Able Contracting Fire Site.

Begin a new "page" with the following paragraph:
SC DHEC mobilized a response contractor who began water application on August 11 and aggressive firefighting operations with heavy equipment on August 12. The EPA assumed the lead for relocation of residents and aggressive firefighting operations on August 16.

(I'll send photos in a bit... it turns out Chris Russel only sent me the low resolution versions)

Matthew J. Huyser, PE - On-Scene Coordinator
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epaosc.org

Armstrong, Kathy

From: Huyser, Matthew
Sent: Wednesday, August 28, 2019 10:19 AM
To: Wise, Allison; Moore, Tony; Myers, Bryan
Subject: RE: Congressman Cunningham August 29th visit to Able Fire Site

Steve Spurlin is the Incident Commander at the Site.
I've already forwarded the email to him. Tony Moore will interface through Steve for any needs, I imagine.

Matthew J. Huyser, PE - On-Scene Coordinator
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office: **404-562-8934** | cell: **678-427-8829** | fax: **404-562-8699**
epaosc.org

From: Wise, Allison <Wise.Allison@epa.gov>
Sent: Wednesday, August 28, 2019 9:56 AM
To: Huyser, Matthew <Huyser.Matthew@epa.gov>; Moore, Tony <moore.tony@epa.gov>; Myers, Bryan <Myers.Bryan@epa.gov>
Subject: RE: Congressman Cunningham August 29th visit to Able Fire Site

Thanks Matt. Please let us know if anything comes up that you want us to follow up on.

Allison

From: Huyser, Matthew <Huyser.Matthew@epa.gov>
Sent: Wednesday, August 28, 2019 9:52 AM
To: Moore, Tony <moore.tony@epa.gov>; Wise, Allison <Wise.Allison@epa.gov>; Myers, Bryan <Myers.Bryan@epa.gov>
Subject: FW: Congressman Cunningham August 29th visit to Able Fire Site

See forwarded emails from below

Matthew J. Huyser, PE - On-Scene Coordinator
U.S. Environmental Protection Agency, Region 4 | 61 Forsyth St SW | Atlanta, Georgia | 30303
Emergency Response Removal and Prevention Branch (ERRPB)
office: **404-562-8934** | cell: **678-427-8829** | fax: **404-562-8699**
epaosc.org

From: Huyser, Matthew
Sent: Wednesday, August 28, 2019 8:15 AM
To: Spurlin, Steve <Spurlin.Steve@epa.gov>; Byrd, Terrence <Byrd.Terrence@epa.gov>; Swanson, Courtney

<Swanson.Courtney@epa.gov>
Subject: Fwd: Congressman Cunningham August 29th visit to Able Fire Site

Matthew J. Huyser, PE - On-Scene Coordinator
U.S. Environmental Protection Agency, Region 4 | 61 Forsyth St SW | Atlanta, Georgia | 30303
Emergency Response Removal and Prevention Branch (ERRPB)
office: **404-562-8934** | cell: **678-427-8829** | fax:**404-562-8699**
epaosc.org

Begin forwarded message:

From: "Casey, Jose" <Jose.Casey@mail.house.gov>
Date: August 27, 2019 at 6:45:09 PM EDT
To: "Shealy, Renee" <shealyrg@dhec.sc.gov>, Able Fire <ablefire@dhec.sc.gov>, Media <Media@dhec.sc.gov>, "Tanner.Terry@epa.gov" <Tanner.Terry@epa.gov>
Cc: "Reece, Myra" <reecemc@dhec.sc.gov>, "Huyser, Matthew" <huyser.matthew@epa.gov>
Subject: RE: Congressman Cunningham August 29th visit to Able Fire Site

Hello all,
The Congressman will now be stopping by with Senator Davis at 11 AM Thursday. We will likely have print and TV media there for the 20-30 minute visit. Sorry for the change of schedule, Sen Davis was unavailable in the afternoon.
Please let me know if you have any questions.
Best,
Jose Casey | Field Representative
Rep. Joe Cunningham (SC-01)
o (843) 525-1311 | (202) 836-1484 m

From: Shealy, Renee <shealyrg@dhec.sc.gov>
Sent: Friday, August 23, 2019 1:47 PM
To: Able Fire <ablefire@dhec.sc.gov>; Huyser, Matthew <huyser.matthew@epa.gov>; Media <Media@dhec.sc.gov>; Casey, Jose <Jose.Casey@mail.house.gov>
Cc: Reece, Myra <reecemc@dhec.sc.gov>; Tanner.Terry@epa.gov
Subject: Re: Congressman Cunningham August 29th visit to Able Fire Site

Mr. Casey,

As discussed, DHEC will be there on Thursday to meet with Congressman Cunningham. I have added Terry Tanner to this email chain as he has replaced Matt Huyser as the EPA OSC so he is aware of this request.

Best,

Renee

From: Casey, Jose <Jose.Casey@mail.house.gov>
Sent: Friday, August 23, 2019 1:26 PM
To: Able Fire <ablefire@dhec.sc.gov>; Huyser, Matthew <huyser.matthew@epa.gov>
Cc: Media <Media@dhec.sc.gov>
Subject: Congressman Cunningham August 29th visit to Able Fire Site

*** Caution. This is an EXTERNAL email. DO NOT open attachments or click links from unknown senders or unexpected email. ***

Hello Matthew and DHEC Representative,
I was at the EPA informational meeting Tuesday night, and spoke with our DC office. Congressman Cunningham will be in Beaufort County next week and is planning on stopping by the site between 4:15 and 4:45 pm Thursday August 29th. We will have about 15 minutes to spend there, if you could give him a 5 minute briefing on what has been happening and next steps, it would be appreciated. Thank you.
Respectfully,
Jose Casey | Field Representative
Rep. Joe Cunningham (SC-01)
o (843) 525-1311 | (202) 836-1484 m

Armstrong, Kathy

From: Huyser, Matthew
Sent: Tuesday, August 27, 2019 4:35 PM
To: Spurlin, Steve; Tolliver, Ronald
Cc: Byrd, Terrence; Swanson, Courtney; Tanner, Terry
Subject: Able - Fwd: Contamination of Okatie River by water run off from Able Superfund site

All, below is an email chain regarding a request from a resident about runoff and confirmation of DHEC's response to the resident.

I received a voicemail message from the resident this morning and an email with essentially the same message. I refrained from responding because I did not want to overstep the work of the current IMT and determined that we could address this at 0900 tomorrow.

Mike Marcus with DHEC has already responded to the resident and provided contact information for further follow up. From the sound of it there is no need for us to respond. I am forwarding this for your awareness.

Matthew J. Huyser, PE - On-Scene Coordinator
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Emergency Response Removal and Prevention Branch (ERRPB)
office: **404-562-8934** | cell: **678-427-8829** | fax:**404-562-8699**
epaosc.org

Begin forwarded message:

> **From:** "Shealy, Renee" <shealyrg@dhec.sc.gov>
> **Date:** August 27, 2019 at 3:54:23 PM EDT
> **To:** "Huyser, Matthew" <huyser.matthew@epa.gov>
> **Cc:** "Marcus, Mike" <MARCUSJM@dhec.sc.gov>, Able Fire <ablefire@dhec.sc.gov>
> **Subject: Fw: Contamination of Okatie River by water run off from Able Superfund site**
>
> Matt,
>
> Dr. Marcus spoke with Mrs. Palmer and her husband today for about 30 minutes. They were very satisfied and appreciative of the call. They have both his office and cell if they need additional information.
>
> Thanks!
> Renee

From: Margaret Palmer (b)(6) Personal Privacy
Sent: Tuesday, August 27, 2019 11:06 AM
To: Shealy, Renee <shealyrg@dhec.sc.gov>
Cc: Able Fire <ablefire@dhec.sc.gov>; Huyser, Matthew <huyser.matthew@epa.gov>
Subject: Re: Contamination of Okatie River by water run off from Able Superfund site

*** Caution. This is an EXTERNAL email. DO NOT open attachments or click links from unknown senders or unexpected email. ***

Yes, my phone number is
(b)(6) Personal . If you would like, you may call me anytime at your convenience.

Thank you.
Margaret Palmer

Sent from my iPhone

On Aug 27, 2019, at 10:34 AM, Shealy, Renee <shealyrg@dhec.sc.gov> wrote:

> Hi Mrs. Palmer,
>
> Acknowledging receipt of your email. I will get it to the correct area for response. If anyone needed to speak with you directly, is there a phone number at which we could reach you?
>
> Regards,
> Renee

Renee G. Shealy

Bureau Chief, Environmental Health Services

S.C. Dept. of Health & Environmental Control

Office: (803) 896-8994

Mobile: (803) 667-0761

Connect: www.scdhec.gov Facebook LinkedIn

<Outlook-1468596227.png>

From: Margaret Palmer (b)(6) Personal Privacy
Sent: Tuesday, August 27, 2019 10:30 AM
To: Able Fire <ablefire@dhec.sc.gov>; Huyser, Matthew <huyser.matthew@epa.gov>
Subject: Contamination of Okatie River by water run off from Able Superfund site

*** Caution. This is an EXTERNAL email. DO NOT open attachments or click links from unknown senders or unexpected email. ***

I am a property owner. Our northern property line is formed by Sports Creek, which is the tidal creek that runs from Riverwalk, and under 170, to the Okatie River. I have heard mention of contamination of a "ditch" that goes under 170.

First, it is not a ditch but a tidal creek. Riverwalk drains into it. When it crosses 170 it is on our property for 4000 or so feet down Okatie Landing Road, until it opens up into the Okatie River. My questions are 1 Can someone tell me if the creek is being compromised or contaminated before, during or will be after the cleanup of the site. 2 If Sports Creek, a tidal creek, is being looked at as a vital creek to the Headwaters of the Okatie and not just a ditch to nowhere? 3. Can monitoring equipment be put in the creek on either or each side of 170 where Sports Creek crosses? 4. Since the site was generated in Jasper County and water will be potentially dumped into Beaufort county is there anyone that I should be contacting in either location?
Thanks.
Margaret Palmer
(b)(6) Personal Privacy
Okatie SC 29909

Sent from my iPhone

Armstrong, Kathy

From: Huyser, Matthew
Sent: Tuesday, August 27, 2019 2:37 PM
To: Tanner, Terry; Spurlin, Steve; Byrd, Terrence; Swanson, Courtney; Russell, Chris; Patel, Subash
Cc: Tolliver, Ronald; Miller, Angela
Subject: Able - I can receive photos

With Steve's approval, I can receive photos to put up on both webpages and the story map. Most of these photos haven't been updated and it would be beneficial to get progress photos posted. I'll take care of the captioning (it'll be generic) as well as the dating and the credits.

I've received several good ones from Chris already if he's okay with me posting some of them.

Notes to remember:

1) No faces
2) Zoom into the subject (no wide shots full of ground and sky)
3) No vertical photos

Matthew J. Huyser, PE - On-Scene Coordinator
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epaosc.org

Armstrong, Kathy

From: Huyser, Matthew
Sent: Tuesday, August 27, 2019 2:29 PM
To: Pinkney, James; Wise, Allison; Tolliver, Ronald
Cc: Tanner, Terry; Spurlin, Steve
Subject: Able - Congressman Cunningham August 29th visit to Able Fire Site

I saw that Terry was copied on the last email and anticipate that Terry has already handled arrangements for this as he passes the Site to Steve Spurlin.

Matthew J. Huyser, PE - On-Scene Coordinator
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epaosc.org

From: Shealy, Renee <shealyrg@dhec.sc.gov>
Sent: Friday, August 23, 2019 1:47 PM
To: Able Fire <ablefire@dhec.sc.gov>; Huyser, Matthew <Huyser.Matthew@epa.gov>; Media <Media@dhec.sc.gov>; Jose.Casey@mail.house.gov
Cc: reecemc@dhec.sc.gov; Tanner, Terry <Tanner.Terry@epa.gov>
Subject: Re: Congressman Cunningham August 29th visit to Able Fire Site

Mr. Casey,

As discussed, DHEC will be there on Thursday to meet with Congressman Cunningham. I have added Terry Tanner to this email chain as he has replaced Matt Huyser as the EPA OSC so he is aware of this request.

Best,

Renee

From: Casey, Jose <Jose.Casey@mail.house.gov>
Sent: Friday, August 23, 2019 1:26 PM
To: Able Fire <ablefire@dhec.sc.gov>; Huyser, Matthew <huyser.matthew@epa.gov>
Cc: Media <Media@dhec.sc.gov>
Subject: Congressman Cunningham August 29th visit to Able Fire Site

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Hello Matthew and DHEC Representative,

I was at the EPA informational meeting Tuesday night, and spoke with our DC office. Congressman Cunningham will be in Beaufort County next week and is planning on stopping by the site between 4:15 and 4:45 pm Thursday August 29th. We will have about 15 minutes to spend there, if you could give him a 5 minute briefing on what has been happening and next steps, it would be appreciated. Thank you.

Respectfully,

Jose Casey | Field Representative
Rep. Joe Cunningham (SC-01)
o (843) 525-1311 | (202) 836-1484 m

Armstrong, Kathy

From: Huyser, Matthew
Sent: Tuesday, August 27, 2019 11:45 AM
To: isaac.j.chavalia@uscg.mil; Ike Chavalia
Subject: Able - USCG GST Increase and revised SOW
Attachments: Able_USCG_SOW_v2.docx

Isaac, attached is the revised SOW and forwarded below is the email documenting the increase request to $50,000. The completion of the revised documentation on our part is likely to take several business days but these should be sufficient records to let you know that everything is in process.

Please take a look at the SOW and see if there's anything that, from you end, need to be adjusted or changed to accommodate what you need. Let me know and I will make those modifications.

Matthew J. Huyser, PE - On-Scene Coordinator
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office: **404-562-8934** | cell: **678-427-8829** | fax: **404-562-8699**
epaosc.org

From: Huyser, Matthew
Sent: Thursday, August 22, 2019 2:58 PM
To: Bates, Lloyd <Bates.Lloyd@epa.gov>; Teasley, Leonna <teasley.leonna@epa.gov>
Cc: Harper, Greg <Harper.Greg@epa.gov>; Patel, Subash <Patel.Subash@epa.gov>
Subject: RE: USCG GULF STRIKE TEAM WAF EST

Attached is an amended SOW to include providing the SO and four (4) personnel which are already on-Site.

Please increase the funding amount to $50,000

If additional information is needed, please contact me.

Matthew J. Huyser, PE - On-Scene Coordinator
U.S. Environmental Protection Agency, Region 4 | 61 Forsyth St SW | Atlanta, Georgia | 30303
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epaosc.org

Scope of Work
USCG Gulf Strike Team Support
Able Contracting Fire
Ridgeland, Jasper County, SC

Site
Able Contracting Fire
472 Schinger Ave
Ridgeland, SC 29936
Site ID: C4A9

Date of Deployment
Aug 14, 2109

Level of Effort and Duration
Four (4) GST personnel is to mobilize to the site. Personnel are anticipated to be on site for 30 days.

Site Description
Able Contracting (the Site) is a construction and demolition debris recycling facility located at 472 Schinger Ave in Ridgeland, Jasper County, South Carolina. The facility reportedly receives construction and demolition debris from residential properties. The Site is estimated at 8.25 acres in size and contains approximately four acres of stockpiled material that has been accumulated over time. The pile is approximately 35 feet high. There are various other buildings onsite including a maintenance shop and office building. The Site is located in a mixed-use area consisting of commercial and residential properties to the south and east of the site.

The stockpiled material has ignited multiple times over the past several years. The current fire began in early July 2019. Since then, local responders, as well as personnel from Able Contracting, have been attempting to extinguish the fire until July 23 when the large water supply pump was damaged by a lightning strike. Smoke from the smoldering fire continued to increase over the next several days when firefighting efforts were ceased. The EPA was requested by South Carolina Department Health and Environmental Conservation (SCDHEC) to conduct air monitoring and sampling to determine if any hazardous substances were being discharged from the smoldering fire.

Scope of Work
- Provide Safety Officer (SO) to the incident management team (IMT)
- Assist with the air monitoring efforts for the response and removal activities
- Assist with the documentation and reporting of site conditions and downwind impacts of the plume
- Assist the OSC with contractor oversight and reporting and advising on safe operational activities

Armstrong, Kathy

From: Huyser, Matthew
Sent: Tuesday, August 27, 2019 11:40 AM
To: (b)(6) Personal Privacy
Cc: Tolliver, Ronald
Subject: Able - north border walkthrough report back

Mr. Stever,

On 8/19 you and I spoke about inspecting the north border ditch of the Able Contracting Site to determine if there were obstructions in the ditch. I stated that a walkthrough would be conducted and would be reported back to me.

Later on the same day (8/19/2019), a representative from SC DHEC and an EPA START contractor completed a walkthrough of the ditch on the north border of the Able Contracting Site with particular focus on the outfall where the pond on parcel 080-03-0-022 discharges to the ditch. The team did not find any obstructions, natural or artificial, in the ditch but did note that there was ponded/standing water three feet wide at the confluence of the pond discharge to the ditch. The standing water continued throughout the length of the ditch. The water in the ditch was noted as having a reddish brown hue but not fully transparent.

If you have further questions or concerns, the team in the field will be able to speak with you about those matters. Please note that the project remains an emergency response and there are many complex issues being addressed at every moment - not all requests can be addressed immediately or in the same day.

Matthew J. Huyser, PE - On-Scene Coordinator
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epaosc.org

Armstrong, Kathy

From: Huyser, Matthew
Sent: Tuesday, August 27, 2019 11:17 AM
To: (b)(6) Personal Privacy
Cc: Tolliver, Ronald
Subject: Able - DHEC response to questions about fecal bacteria data results

https://www.scdhec.gov/environment/ongoing-projects-updates/able-contracting-fire/able-contracting-fire-update-08-16-2019

Mr. Stever,

I was not sure if you were aware of the information that SC DHEC released on August 16, 2019 regarding identification of fecal bacteria data results. The statement is in the link above and I've pasted the text of the statement below. I am simply providing this for your information because these are matters that we discussed previously.

Regarding recent questions about fecal bacteria data results in the Okatie Watershed

High levels of bacteria in the Okatie watershed have been identified for many years. The first portion of the Okatie River was restricted for shellfish harvesting in 1995 and a Total Maximum Daily Load (TMDL) for fecal coliform bacteria was issued in 2010. The goal of a TMDL is to identify potential pollution sources and implement measures to meet water quality standards and improve water quality.

Recent samples taken in this watershed have identified elevated levels of fecal coliform bacteria from warm-blooded animals. It has been alleged that this bacteria is from the Able Contracting site. This bacteria is not associated with the Able Contracting site. Levels such as this are most often associated with untreated sanitary sewage.

Runoff from firefighting activities has shown the presence of some organic chemicals and metals. To minimize downstream impacts to waterbodies, the contractor is recycling the fire suppression water to the extent practicable and testing of this water for proper disposal. The Department will continue to assess any potential environmental impacts to surface water.

DHEC has been investigating the potential source(s) of the fecal coliform. As source(s) are identified, remedial measures can be taken to rectify the situation.

Matthew J. Huyser, PE - On-Scene Coordinator
U.S. Environmental Protection Agency, Region 4 | 61 Forsyth St SW | Atlanta, Georgia | 30303
Emergency Response Removal and Prevention Branch (ERRPB)
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Armstrong, Kathy

From: Huyser, Matthew
Sent: Monday, August 26, 2019 2:42 PM
To: Tolliver, Ronald; Adams, Glenn; Frederick, Tim; Tanner, Terry; Spurlin, Steve
Cc: McCullough, Rachel; Miller, Angela; Garrard, Jordan
Subject: RE: questions re: Able fire and scientific testing

I'm looking back and can confirm that this email was sent to me but I've been inundated with emails so I have not had the time to sit down and deal with this one. Suffice to say that these are good questions but far too detailed for me to address with in the last few days because of the time that they require. These questions will require several hours to answer and we cannot devote the time to answer them unless an individual is devoted to this issue as part of the response.

Initially, here are my answers:

No, there was no site specific sampling plan when initial air samples were taken. A sampling plan is being put in place now. We use EPA SESD Field Branch Quality System and Technical Procedures SOPs for emergency response sampling while the site-specific Sampling and Analysis Plan (SAP) is being developed.

Methods were not listed in the summary table. Methods and minimum detection limits can be provided but it will take time to amend the summary table to include those.

Samples were collected from upwind and background locations as well as in smoke plumes and near residences. The requester must recognize that this is an emergency response and that rapid deployment for collection is a critical component of the project.

Samples were analyzed for asbestos, formaldehyde, phosgene, VOCs, semi-volatile organic compounds (SVOCs), and target analyte list (TAL) metals. The requester must recognize that this is an emergency response and that rapid analysis and information is a critical component of the project.

The EPA has reviewed all products being utilized on the response and are aware of the presences of fluorinated compounds within certain products. Documentation has been requested and received from the manufacturers to address this issue.

The monitor on the school was deployed and maintained by SC DHEC and a direct line of communication is ongoing between the SC DHEC air program and the school district. Particulate monitors are deployed and maintained by EPA and DHEC in within and up to a mile away in all directions to account for changing wind directions.

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From: Tolliver, Ronald <Tolliver.Ronald@epa.gov>
Sent: Monday, August 26, 2019 1:36 PM
To: Adams, Glenn <Adams.Glenn@epa.gov>; Frederick, Tim <Frederick.Tim@epa.gov>; Huyser, Matthew <Huyser.Matthew@epa.gov>; Tanner, Terry <Tanner.Terry@epa.gov>; Spurlin, Steve <Spurlin.Steve@epa.gov>

Cc: McCullough, Rachel <McCullough.Rachel@epa.gov>; Miller, Angela <Miller.Angela@epa.gov>
Subject: RE: questions re: Able fire and scientific testing

O.K. Thanks. If anyone has any input that they would like to add before I respond to this person, please let me know.

From: Adams, Glenn <Adams.Glenn@epa.gov>
Sent: Monday, August 26, 2019 1:21 PM
To: Tolliver, Ronald <Tolliver.Ronald@epa.gov>; Frederick, Tim <Frederick.Tim@epa.gov>; Huyser, Matthew <Huyser.Matthew@epa.gov>; Tanner, Terry <Tanner.Terry@epa.gov>; Spurlin, Steve <Spurlin.Steve@epa.gov>
Cc: McCullough, Rachel <McCullough.Rachel@epa.gov>; Miller, Angela <Miller.Angela@epa.gov>
Subject: RE: questions re: Able fire and scientific testing

Ron,
Tim and I can't really answer these questions. We will be glad to look over the responses and provide input where we can, but this was all done in the field with the OSCs and START. I'm adding Matt, Terry, and Steve to this message because I'm not sure who has the lead this week.

Let us know if we need to be on a call to discuss these issues.
Glenn

From: Tolliver, Ronald <Tolliver.Ronald@epa.gov>
Sent: Monday, August 26, 2019 1:11 PM
To: Adams, Glenn <Adams.Glenn@epa.gov>; Frederick, Tim <Frederick.Tim@epa.gov>
Cc: McCullough, Rachel <McCullough.Rachel@epa.gov>; Miller, Angela <Miller.Angela@epa.gov>
Subject: FW: questions re: Able fire and scientific testing

Glenn and Tim, do you guys have any input that I should use before I respond to this person about the Able Site?

From: Farhana Mather <(b)(6) Personal Privacy
Sent: Monday, August 26, 2019 11:08 AM
To: Tolliver, Ronald <Tolliver.Ronald@epa.gov>
Subject: questions re: Able fire and scientific testing

Dear Ron

I sent the below to Matt last week and did not get a reply so I am sending to you. Dear Mr. Huyser

I am a local Okatie resident (Oldfield) within proximity to the fire and with children at OES and I work very closely with environmental (air and water quality) scientists at Columbia University. In discussions with them about the Able Contracting fire and air quality, they have suggested that we ask EPA and DHEC the following questions so that we can better understand exactly what is being tested. They are willing to look at the answers and let us know if there is additional things that can or should be done or if this is sufficiient for the current situation. I appreciate that you all have a lot going on dealing with the dump debris removal, fires and the air quality. As concerned parents, understanding the below information is important for us to be aware of.

What methods are using for each of the non target compounds? Are they methods that can detect levels well below m(≥10 times below) the maximum contaminant level (state of federal regulation)?

Does the EPA have data that uses the proposed methods that:
1) shows their procedure has low method blanks'
2) that shows replicate measurements have good agreement (within 10% of each other)
3) a sampling plan which has control areas to sample from.
4) a sampling plan showing a control area (upwind, up flow, etc)

Is the EPA doing any untargeted analyses to look for a wider array of compounds rather than just what you are targeting the analyses towards; the type of fire of unknown debris warrants it;

What is being used to fight the fires with aside from water - normally PFAS and PFOA containing foams are used. Thus analyzing for those compounds and other flourinated compounds would make sense.

What data can be provided which validates that this is the approriate location for the air quality monitor on top of the school? That the readings are corroborated with multiple sensor sites within proximity?

I would appreciate any answers that you can provide to these questions.

Thank you,

Farhana Mather

Armstrong, Kathy

From: Huyser, Matthew
Sent: Friday, August 23, 2019 2:23 PM
To: Tanner, Terry
Cc: Negron, Jose
Subject: Able - data posting
Attachments: Able_Viper Summary report_20190819DAY_attachment.docx; Able_Viper Summary Report_081919DAY_attachmentadded.pdf

Terry, I've deleted some of my commentary about this phone call but suffice to say I'm thinking the same thing you are I like what Jim is saying – he's absolutely right

Last week I proposed that I could include my commentary on the data report as an attachment within the data report. Attached is a word document of what I was going to use and a pdf of what it would look like. A few days ago I provided this to Jennifer Guillard and got some calls from James Pinkney and had the impression that they were going to do this with all of the old reports that I sent but I never checked back and was too busy to bother.

If Jim's process is for us to post everything to response.epa.gov/ablefire then I will go back and do ALL of my reports this way and you could do the same... or just assign me to do it for you remotely or assign subash.

I like what Jim is saying. I think this is our way of getting our commentary included.

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Able Contracting Fire

EPA Air Monitoring Summary Report
8/19/2019 0700 to 8/19/2019 1900

Attachment: Discussion of Results

High detections of VOC, CO, H2S, LEL, and HCN were observed at AreaRAE 3 at the NE corner of the pile near the Able Contracting Workshop during this period. A series of high readings were recorded across the same time frame between the hours of 10 and 11.

The instrument is located near the Able Contracting workshop which remains in operation and at which several activities were ongoing throughout the day including maintenance of equipment, operation of a tractor, and loading of equipment to a trailer. The meter is located at the corner of the building on a concrete pad onto which vehicles may be parked. The detections of all related chemical sensors during the same period are consistent with measurements from the exhaust of an idling diesel engine.

The HCN peak of 38.4 ppm is actually consistent the diesel exhaust scenario. H2S is a common component of diesel exhaust fumes, and the Honewell AreaRAE Pro HCN sensor has a natively high cross-sensitivity to H2S. According to RAE TN-114, conditions of H2S at 15 ppm would register a reading of 90 ppm on the AreaRAE Pro HCN sensor - a six-fold increase of the true H2S value. Cross-sensitivities to sensors are common but RAE TN-114 makes a special note of this issue with the HCN sensor, stating: "Due to a very high cross-sensitivity to H2S, this sensor is unsuitable for use in atmospheres that contain H2S". The H2S peak of 7.6 ppm on AreaRAE 3 during this period multiplied by the cross-sensitivity factor of six is equal to 45.6 which is within a reasonable range of +/-20% from the HCN peak of 38.4 ppm.

An isolated VOC reading of 14 ppm was measured at 12:30 at the NE corner of the pile (near the workshop) while an isolated VOC reading of 10 ppm was measured at 9:02 at the SW corner of the pile. These records were single readings with no associated rise and fall to the data trendline to suggest that there was an exposure threshold exceedance or risk.

Air Monitoring Summary Tables

The table below summarize monitoring data collected on using EPA's Viper wireless remote monitoring system.

Project Name: **Able Contracting Fire Site**

From: **8/19/19 7:00** ***To:*** ***8/19/19 19:00***

On Site, Southwest Corner of Pile

Instrument	Analyte	Action Level Exceedances	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level (PEL/TLV/60 min AEGL)
AreaRAE 1	VOC	Yes	4,617	117	0 - 10213 ppb	28.08 ppb	1,000 ppb
	CO	No	4,617	0	0 - 0 ppm	0 ppm	83 ppm
	H_2S	No	4,617	0	0 - 0 ppm	0 ppm	0.5 ppm
	O_2	No	4,617	4,617	20.9 - 20.9 %	20.9 %	<19.5 or >23%
	LEL	No	4,617	0	0 - 0 %	0 %	10%
	HCN	No	4,617	4,612	0 - 0.8 ppm	0.33 ppm	7.1 ppm

Perimeter Collection

Instrument	Analyte	Air Quality Index	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level (PEL/TLV/60 min AEGL)
DustTrak 1	PM-2.5	Good	133	132	0 - 16 µg/m³	6.6 ug/m3	See SOG #: T106

On Site, Northwest Corner of Pile

Instrument	Analyte	Action Level Exceedances	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level (PEL/TLV/60 min AEGL)
AreaRAE 2	VOC	No	4,213	7	0 - 645 ppb	0.37 ppb	1,000 ppb
	CO	No	4,213	181	0 - 8 ppm	0.14 ppm	83 ppm
	H_2S	No	4,213	0	0 - 0 ppm	0 ppm	0.5 ppm
	O_2	No	4,213	4,213	20.9 - 20.9 %	20.9 %	<19.5 or >23%
	LEL	No	4,213	0	0 - 0 %	0 %	10%
	HCN	No	4,213	2,703	0 - 1.4 ppm	0.17 ppm	7.1 ppm

Short Cut Road

Instrument	Analyte	Air Quality Index	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level (PEL/TLV/60 min AEGL)
DustTrak 2	PM-2.5	Good	480	480	4 - 58 µg/m³	9.3 ug/m3	See SOG #: T106

Able Contracting Worksite, Northeast of Pile

Instrument	Analyte	Action Level Exceedances	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level (PEL/TLV/60 min AEGL)
AreaRAE 3	VOC	Yes	4,332	485	0 - 14223 ppb	48.96 ppb	1,000 ppb
	CO	Yes	4,332	535	0 - 500 ppm	8.42 ppm	83 ppm
	H_2S	Yes	4,332	376	0 - 7.6 ppm	0.132 ppm	0.5 ppm
	O_2	No	4,332	4,332	20.9 - 21.3 %	21.1 %	<19.5 or >23%
	LEL	No	4,332	1,647	0 - 5 %	0.8 %	10%
	HCN	Yes	4,332	3,934	0 - 38.4 ppm	1.06 ppm	7.1 ppm

Grace Costal Church

Instrument	Analyte	Air Quality Index	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level (PEL/TLV/60 min AEGL)
DustTrak 3	PM-2.5	Good	753	753	7 - 76 µg/m³	10.8 ug/m3	See SOG #: T106

Forrest Concrete

Instrument	Analyte	Action Level Exceedances	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level (PEL/TLV/60 min AEGL)
AreaRAE 4	VOC	No	4,237	0	0 - 0 ppb	0 ppb	1,000 ppb
	CO	No	4,237	0	0 - 0 ppm	0 ppm	83 ppm
	H_2S	No	4,237	0	0 - 0 ppm	0 ppm	0.5 ppm
	O_2	No	4,237	4,237	20.1 - 20.9 %	20.4 %	<19.5 or >23%
	LEL	No	4,237	0	0 - 0 %	0 %	10%
	HCN	No	4,237	1	0 - 0.1 ppm	0 ppm	7.1 ppm

Sun City

Instrument	Analyte	Air Quality Index	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level (PEL/TLV/60 min AEGL)
EBAM 1	PM-2.5	Moderate	710	391	0 - 76 ug/m3	13 ug/m3	See SOG #: T106

Bowlin Mill Apartments

Instrument	Analyte	Air Quality Index	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level (PEL/TLV/60 min AEGL)
EBAM 2	PM-2.5	Good	566	226	0 - 34 ug/m3	9.6 ug/m3	See SOG #: T106

EPA Mobile Command Post

Instrument	Analyte	Air Quality Index	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level (PEL/TLV/60 min AEGL)
EBAM 3	PM-2.5	Moderate	583	267	0 - 109 ug/m3	15.6 ug/m3	See SOG #: T106

Notes:

%	Percent
<	Less than
>	Greater than
AEGL	Acute Exposure Guideline Levels for Airborne Chemicals
CO	Carbon monoxide
H_2S	Hydrogen Sulfide
HCN	Hydrogen Cyanide
LEL	Lower Explosive Level
min	Minute
O_2	Oxygen
PEL	Permissible exposure limit
ppb	Parts per billion
ppm	Parts per million
PM	Particulate matter
SOG	Standard Operating Guidelines
TLV	Threshold limit value
µg/m³	Micrograms per cubic meter
VOC	Volatile organic compoud

Able Contracting Fire

EPA Air Monitoring Summary Report
8/19/2019 0700 to 8/19/2019 1900

Attachment: Discussion of Results

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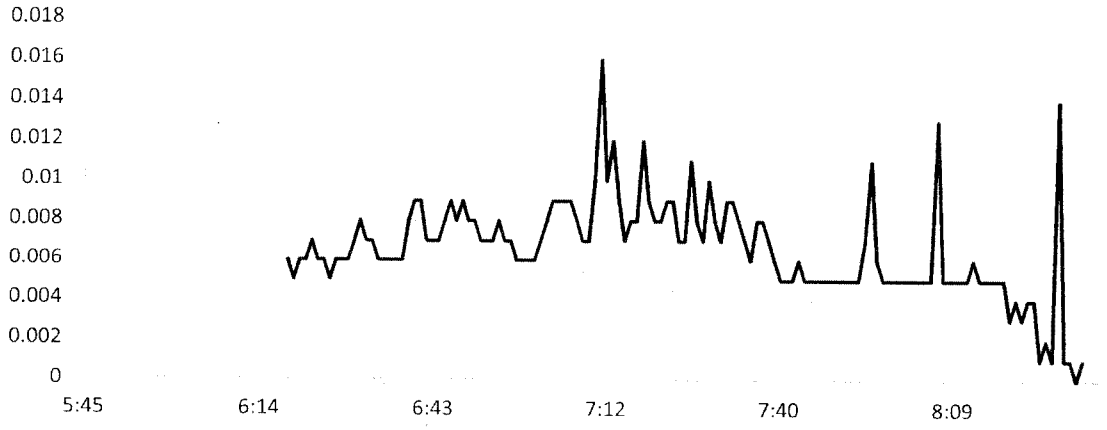
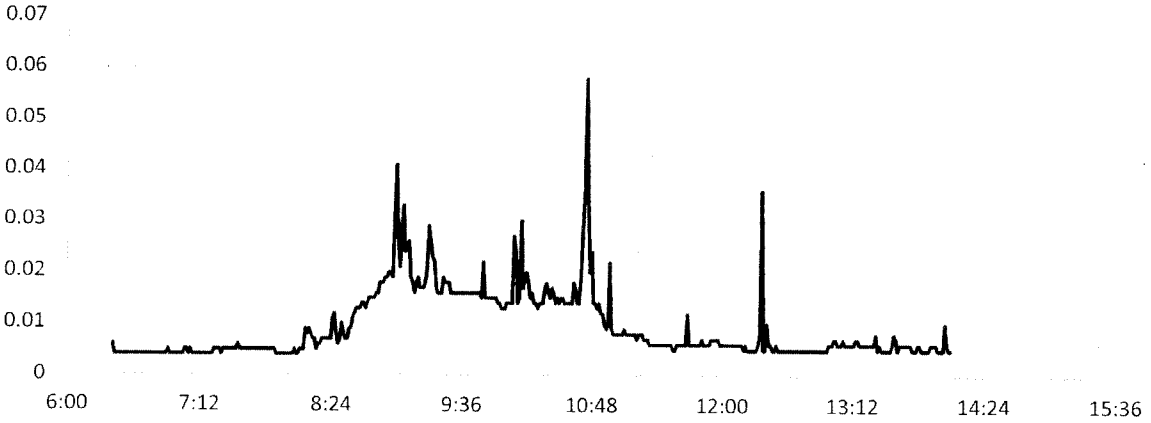
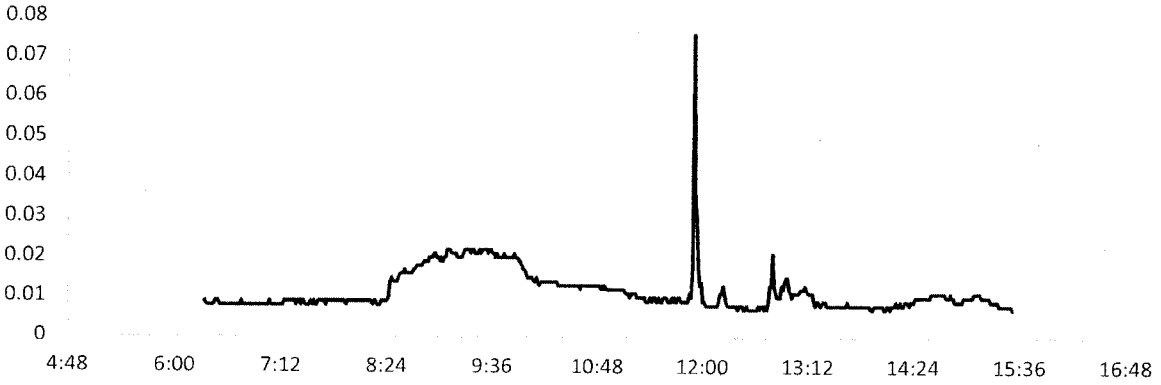
8/19/19 DAY Data for DustTrak 1 ($PM_{2.5}$) - Peacock Collision



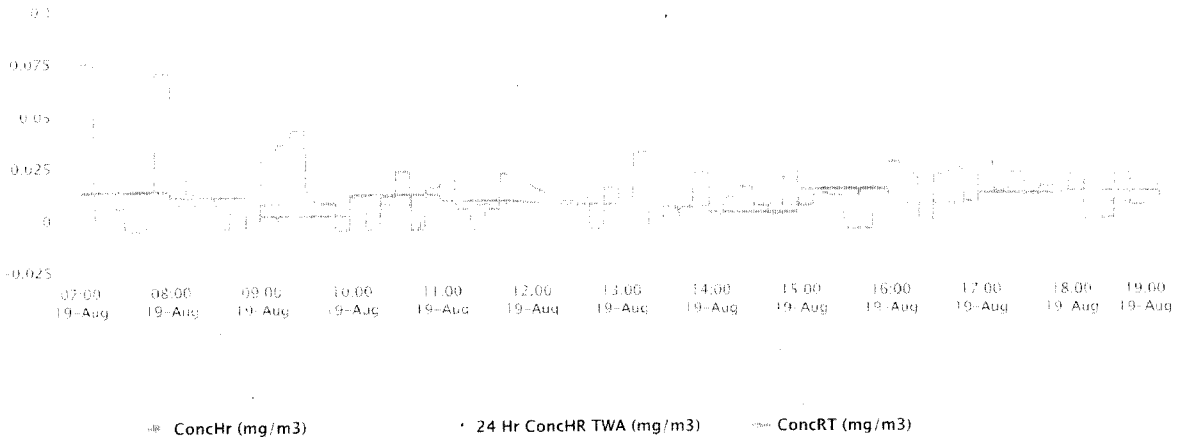
8/19/19 DAY Data for DustTrak 2 ($PM_{2.5}$) – Short Cut Road



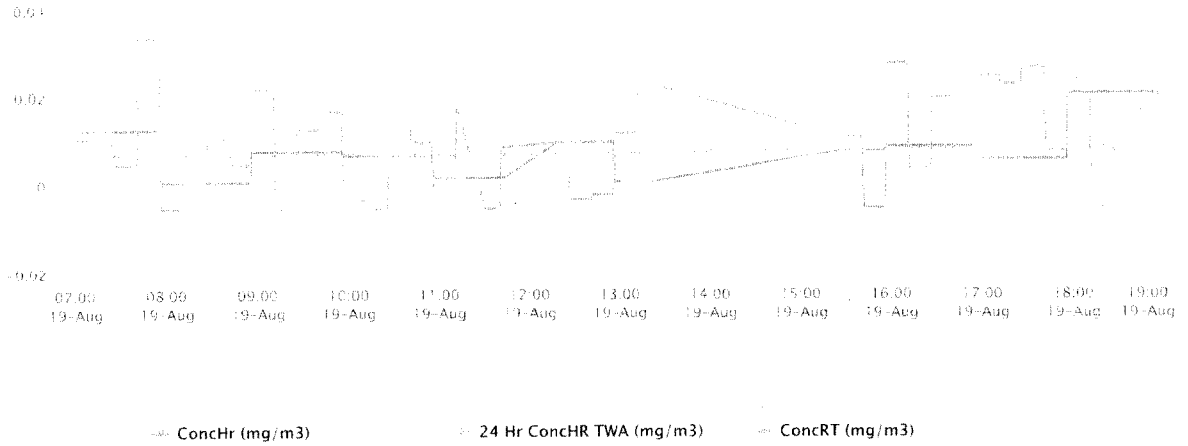
8/19/19 DAY Data for DustTrak 3 ($PM_{2.5}$) – Grace Costal Church



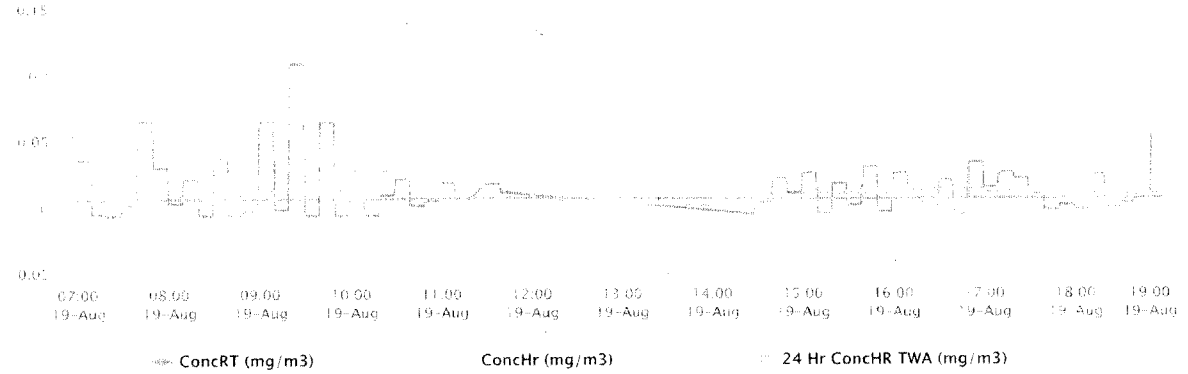
8/19/19 DAY Data for EBAM 1 (ConcRT) – Sun City



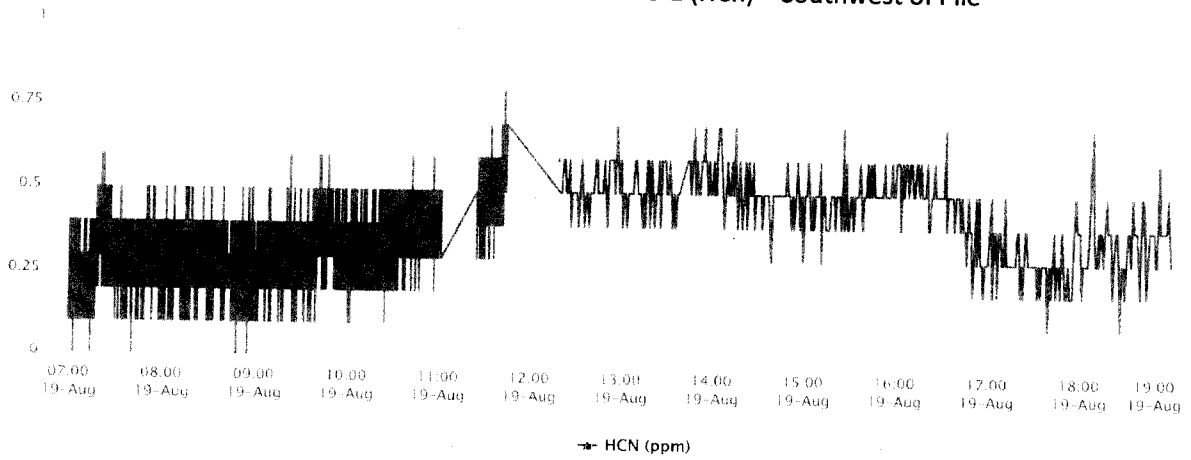
8/19/19 DAY Data for EBAM 2 (ConcRT) – Brooke Mill Apartments



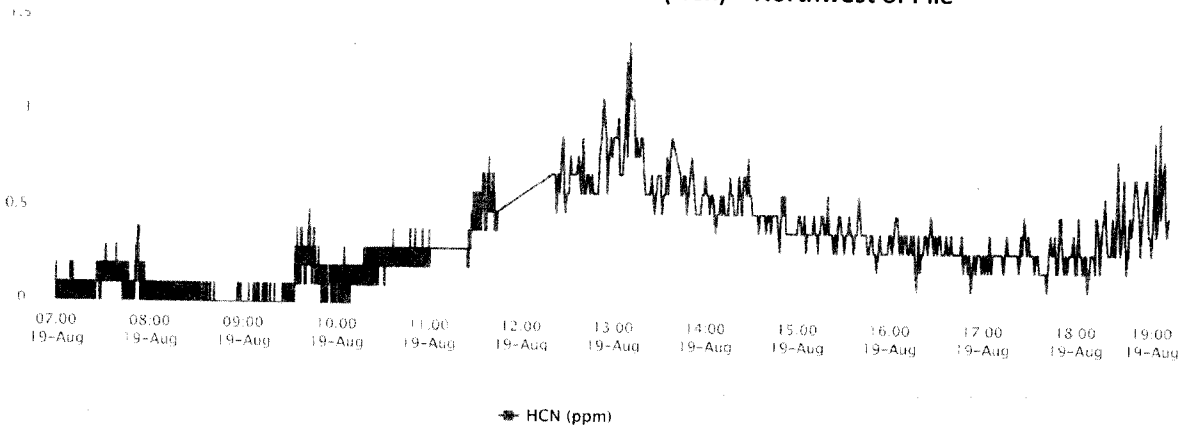
8/19/19 DAY Data for EBAM 3 (ConcRT) – EPA Mobile Command Post



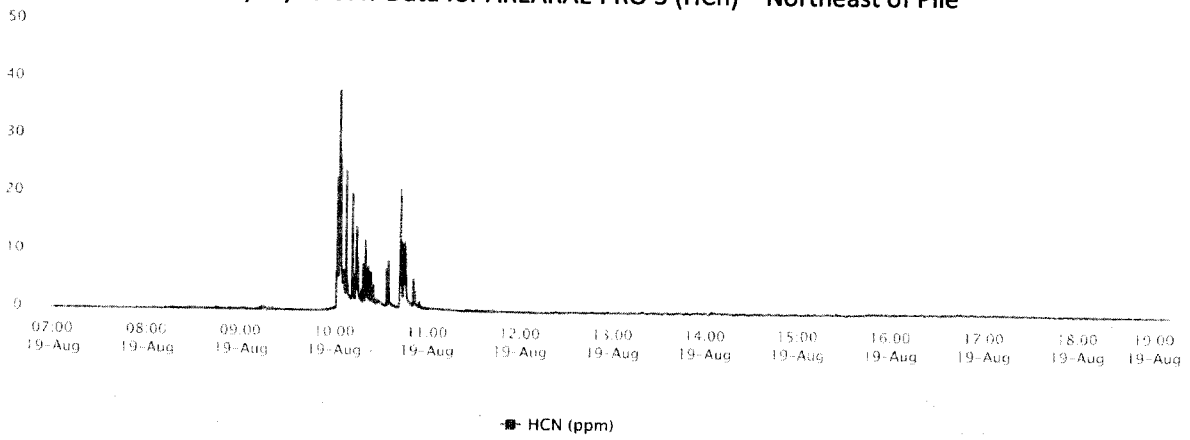
8/19/19 DAY Data for AREARAE PRO 1 (HCn) – Southwest of Pile



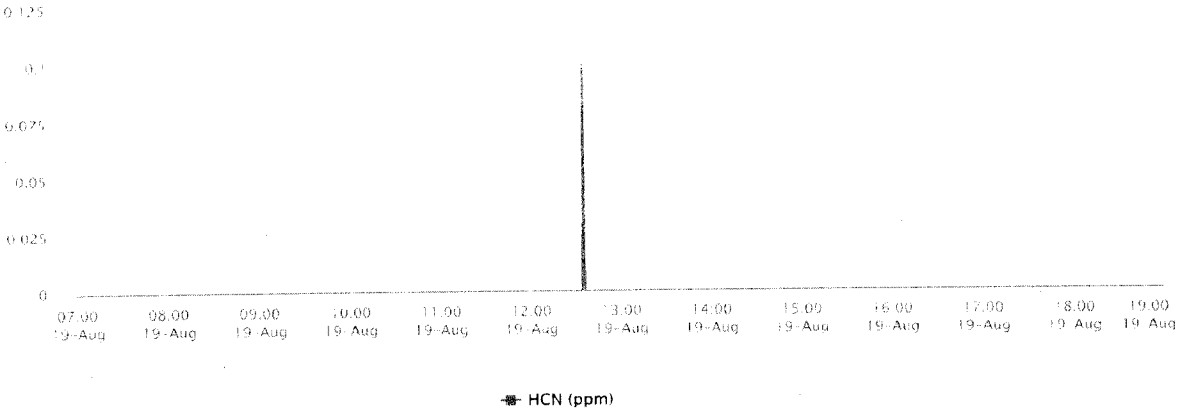
8/19/19 DAY Data for AREARAE PRO 2 (HCn) – Northwest of Pile



8/19/19 DAY Data for AREARAE PRO 3 (HCn) – Northeast of Pile



8/19/19 DAY Data for AREARAE PRO 4 (HCn) – Forrest Concrete



Threshold Values and Air Quality Index Categories for PM2.5

Level of Health Concern	Particulate Matter ≤2.5 microns measured in µg/m3		Interpretation
	1 hour average	24 hour average	
Good	0.0-40.0	0.0-12.0	Air quality is considered satisfactory, and air pollution poses little or no risk
Moderate	40.1-80.0	12.1-35.4	Air quality is acceptable; however, for some pollutants there may be a moderate health concern for a very small number of people who are unusually sensitive to air pollution.
Unhealthy for Sensitive groups	80.1-175.0	35.5-55.4	Members of sensitive groups may experience health effects. The general public is not likely to be affected.
Unhealthy	175.1-300.0	55.5-150.4	Everyone may begin to experience health effects; members of sensitive groups may experience more serious health effects.
Very Unhealthy	300.1-500.0	150.5-250.4	Health warnings of emergency conditions. The entire population is more likely to be affected.
Hazardous	>500.0	>250.5	Health alert: everyone may experience more serious health effects

- Threshold values taken from original EPA AQI online calculator found at http://airnow.gov/index.cfm?action=resources.aqi_conc_calc for PM2.5 (24 hour) and Idaho Department of Environmental Quality AQI for PM2.5 (1 hour) taken from http://app.airsis.com/usfs/aqi.asp.
- Recommendations are from the EPA Air Now web site.
- People who are unusually sensitive to air pollution are a subset of Sensitive Individuals. Unusually sensitive to air pollution can be defined as the very young, the elderly, pregnant women, and the immunocompromised.
- Sensitive individuals defined as people with lung disease, older adults and children who are at a greater risk from exposure to ozone; and persons with heart and lung disease, older adults and children who are at greater risk from the presence of particles in the air.

Armstrong, Kathy

From: Huyser, Matthew
Sent: Friday, August 23, 2019 11:06 AM
Cc: john.kinsey@envirosmart.us
Subject: Fwd: Able - consultation info, Email 4: Fresno and Whitepaper Docs
Attachments: Reference_Fresno_Site Safety Plan Ver5.doc; ATT00001.htm; Reference_Fresno_CrippenItem.ppt; ATT00002.htm; Reference_Guidance__LandfillFireGuide v7a.doc; ATT00003.htm

Attached are two documents from Fresno (powerpoint and safety plan) and one whitepaper from Todd Thalhamer.

The Fresno situation looks pretty dramatic compared to Able Contracting Fire. Descriptions of smoke inundation and low to no visibility are confirmed in the photographs in the powerpoint and in some old news clippings I find from 2003. When describing our Able situation to Michelle Rogow I get the indication that our smoke plume is significantly less intense than Fresno and but our costs are so much higher because we're transporting waste off-site.

The powerpoint presentation gives a visual of some of their tactics from 2003 with some language on their situation.

The attached safety plan is probably a good point of reference but keep in mind that its 16 years old

The attached white paper has a good run-down for consideration of some things. Pretty much all of it we're already doing at Able.

- Skip to page 5, pages 1 through 4 are all stuff we're doing at Able
- Page 5 has a section "Suppression Agents" which gives a good description on foams and usefulness
- Page 5-6 has a section "Strategies for Fire Suppression" which contains mostly stuff we're doing but a good list to run through and think about nonetheless

Matthew J. Huyser, PE - On-Scene Coordinator
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From: Huyser, Matthew
Sent: Friday, August 23, 2019 10:17 AM
To: Tanner, Terry <Tanner.Terry@epa.gov>
Cc: Russell, Chris <Russell.Chris@epa.gov>; Patel, Subash <Patel.Subash@epa.gov>; Swanson, Courtney

<Swanson.Courtney@epa.gov>; john.kinsey@envirosmart.us; Spurlin, Steve <Spurlin.Steve@epa.gov>; Byrd, Terrence <Byrd.Terrence@epa.gov>
Subject: Able - consultation info, Email 3: MCAS Beaufort

Assistant Fire Chief Ramseur, Marine Corps Air Station Beaufort
843-476-9380

I contacted MCAS Beaufort formally to ask them to come out for a "consultation". In all honesty I was wanting to see if they had a road-legal crash tender (https://en.wikipedia.org/wiki/Airport_crash_tender) and if, by getting them to come look at the pile, we could see whether they thought a crash tender could attack the Alpha and Delta sides of the pile.

So, yes, they have a crash tender - but they don't think it would work. They weren't 100% opposed to using their assets but they weren't readily offering it up. They kicked around the conversation internally and called me back to say that they couldn't conceive of anything that would work any better than what we're already doing.

If you want to try again, I bet you could get Chief Ramseur out to look at it. He's not too far away.

Matthew J. Huyser, PE - On-Scene Coordinator
U.S. Environmental Protection Agency, Region 4 | 61 Forsyth St SW | Atlanta, Georgia | 30303
Emergency Response Removal and Prevention Branch (ERRPB)
office: **404-562-8934** | cell: **678-427-8829** | fax: **404-562-8699**
epaosc.org

From: Huyser, Matthew
Sent: Friday, August 23, 2019 10:09 AM
To: Tanner, Terry <Tanner.Terry@epa.gov>
Cc: Russell, Chris <Russell.Chris@epa.gov>; Patel, Subash <Patel.Subash@epa.gov>; Swanson, Courtney <Swanson.Courtney@epa.gov>; 'john.kinsey@envirosmart.us' <john.kinsey@envirosmart.us>; Spurlin, Steve <Spurlin.Steve@epa.gov>; Byrd, Terrence <Byrd.Terrence@epa.gov>; Jose Negron <Negron.Jose@epa.gov>
Subject: Able - consultation info, Email 2: Michelle Rogow

(Jose, can you reply to this email with Michelle's cell phone number? I don't have it on me)

Michelle Rogow
EPA R9 OSC
Rogow.Michelle@epa.gov

Michelle responded to a major waste fire with Todd Thalhamer in Fresno, CA in 2003 and has responded to a number of other waste fires. Michelle is available for consultation over the phone but is not able to travel.

Hazards that Michelle pointed out were CO, even for people walking around the pile. She's gotten to the point where they had single sensor CO meters on everyone in the warm zone. Clouds of CO can unexpectedly appear and even if supplied air isn't worn then having escape paks on-hand are recommended. R9 *may* have a cache of CO meters but she isn't certain.

Phosgene detections are finicky because there may be issues related to particulates and humidity. Reminders to not forget PM2.5 particulates in warm and hot zone monitoring. Particulates remain a health concern in the community even if gases aren't detected in the community and the same goes for the warm and hot zones.

Tactics in Fresno included attacking the hottest area identified – attack the heart first and then go after the limbs. This produced signfiicant smoke plumes and frequently resulted in low to no visibility in the equipment. All operators were on supplied air and each excavator had one to two water monitors on it just to protect the equipment and its cab.

Nozzle at the end of a boom is feasible. Monitors on tripods or quad stands are extremely helpful and foam can be pumped into the nozzle (see attached photo)

If the pile can be reshaped and covered with soil or a liner, there would still be enough oxygen in the void space to fuel the fire for several months.

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From: Huyser, Matthew
Sent: Friday, August 23, 2019 9:54 AM
To: Tanner, Terry <Tanner.Terry@epa.gov>
Cc: Russell, Chris <Russell.Chris@epa.gov>; Patel, Subash <Patel.Subash@epa.gov>; Swanson, Courtney <Swanson.Courtney@epa.gov>; john.kinsey@envirosmart.us
Subject: Able - consultation info, Email 1: Todd Thalhamer

Todd Thalhamer
916-341-6356
ltfire88@gmail.com
Todd.Thalhamer@CalRecycle.ca.gov

I spoke with Todd and he had a LOT of great information about fighting this exact kind of scenario. Todd has been the IC on numerous waste fires of all kinds and is currently the IC at Paradise, CA. He has some time to talk if you need him as his crews have diminished from 129 active teams to "only" 60. Todd may even be able to fly out for a consultation if we pay his airfare.

Hazards that Todd pointed out right off the top of his head were VOCs, benzene, asbestos, CO, H2S, and HCN – all things that we've been looking at. (The benzene is something we measured for early but may need to be looking for more regularly in the ongoing VOC samples and perhaps mobilizing a benzene meter.) We need to watch out for H2S being emitted from sheetrock. Supplied air is recommended.

A firefighting technique Todd focused on "quenching ponds". These can be dug into the pile or in the ground. Place burning material in one side of the pile and use a D8 to push it through the pond to the other side. This is similar to some ops in a tire fire.

"Foam is a friend" but be wary of biodegradable claims because all foam is an asphyxiant to aquatic life and all foams kill fish. Foam reduces water use and reduces runoff. Use Class A structural foams only – class B will be useless on the waste fire. One product he recommended is THUNDERSTRIKE.

Watch out for using too much water and destabilizing the pile. The reason the waste is near vertical at the edge is because it has a lot of structure, but too much water in the pile will cause that structure to slide and may collapse areas that were previously vertical.

Fire travels through the waste in "wormholes". A smoke chimney does not mean there is fire underneath. Cut above wormholes from the side and douse with water and foam.

Todd teaches a class called "Fireflow: Read the Smoke" which uses density and velocity observations in the smoke to see if the waste is deep or shallow. It utilizes FLIR readings of course but also stops equipment activity once every while to observe smoke behavior and track changes. It may be beneficial to bring out a consultant who knows this process.

A procedure which may not work for us is to hot load articulated dumps or mining dumps and drive to a depression deck where they can be doused with foam and water then relocated.

Todd is sending a white paper and some safety plans that I will forward

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epaosc.org

Armstrong, Kathy

From: Huyser, Matthew
Sent: Friday, August 23, 2019 10:56 AM
To: Greenberg, Marc; Eoc, Epahq
Cc: Gaines, Linda; Libelo, Laurence; Schlieger, Brian; Blaze, Stephen
Subject: RE: Able Contracting Fire - immediate consultation requested
Attachments: Reference_Novacool_PFAS testing.pdf; Reference_Novacool_2044938-Novacool UEF 05-21-2019.pdf

Thank you everyone for your help. Attached are data that we received from the manufacturer. Additionally, we are looking at redirecting firefighting runoff water to a POTW instead of managing it on-site.

Material is being mobilized initially for testing purposes.

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From: Greenberg, Marc <Greenberg.Marc@epa.gov>
Sent: Thursday, August 22, 2019 2:59 PM
To: Eoc, Epahq <Eoc.Epahq@epa.gov>; Huyser, Matthew <Huyser.Matthew@epa.gov>
Cc: Gaines, Linda <Gaines.Linda@epa.gov>; Libelo, Laurence <Libelo.Laurence@epa.gov>; Schlieger, Brian <schlieger.brian@epa.gov>; Blaze, Stephen <Blaze.Stephen@epa.gov>; Greenberg, Marc <Greenberg.Marc@epa.gov>
Subject: RE: Able Contracting Fire - immediate consultation requested

Peter and Matt,

We are aware that this fire has been an ongoing challenge and we recognize that the fire needs to be extinguished. We also recognize your efforts to try selecting and obtaining firefighting agents that are as environmentally friendly as possible. Regarding the request for us to see if there is anything that stands out as potentially problematic, we advise that if you do ultimately select the Novacool product, it will be important to know more specifically what is in the formulation before using it. This could be said about any firefighting agent.

Given the information provided for review on the Novacool firefighting agent—primarily marketing material and a very limited MSDS from 2006—we cannot be certain that there are no PFAS in the product currently being considered by the Region. For example, there are several statements including no fluorine, no fluorocarbons, and no PFOA or PFOS. However there are also statements indicating the formulation of the agent includes several organic surfactants being anionic, nonionic and amphoteric in behavior; these are also characteristics of fluorinated surfactants (e.g., PFAS). There is also mention of rates of biodegradation of 37% biodegradable in five days and 50% biodegradable in 30 days which sound relatively high and as an attractive feature, but says nothing about which compounds, or classes of compounds, are biodegraded at those rates. Therefore, we suggest that some additional follow-up with the manufacturer be considered by the Region to better inform their decision on whether to use or not use this particular product. Please consider the following:

- Call the manufacturer and ask if the current formulation contains any fluorinated compounds or feedstock materials from such suppliers as DuPont, Chemours, 3M, Ansell, Chemguard or Tyco. We would be happy to join a call, if you wish.
- Would be good for the Region to get a picture of the all labels from a container of the Novacool product under consideration. This would provide us all with even more information to evaluate. If the fire department has the product already it will be easy to get the pics.
- Whatever product the Region decides to use, they could save a sample of the product and have it analyzed by a laboratory with appropriate capabilities to detect PFAS.
- In addition to the suggestion of controlling runoff to minimize or prevent impacts to surface water due to BOD, it would be advisable for the response to include sampling of leachate and runoff from the fire fighting activities involving the selected product(s). These samples could be analyzed for PFAS.

Please feel free to contact us for further discussions.

Thanks

Marc S. Greenberg, Ph.D.
Deputy Branch Chief
U.S. EPA - Environmental Response Team
OLEM/OSRTI/TIFSD/ERT

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Edison, NJ 08837
+1 (732) 452 6413 office
+1 (609) 865-3924 mobile
greenberg.marc@epa.gov

From: Eoc, Epahq <Eoc.Epahq@epa.gov>
Sent: Thursday, August 22, 2019 11:50 AM
To: Greenberg, Marc <Greenberg.Marc@epa.gov>
Cc: Gaines, Linda <Gaines.Linda@epa.gov>; Libelo, Laurence <Libelo.Laurence@epa.gov>; Huyser, Matthew <Huyser.Matthew@epa.gov>
Subject: FW: Able Contracting Fire - immediate consultation requested

Marc,
Per our discussion, here are the links to product literature provided by R3 for the Able Contracting Facility in Jasper County, SC. Region 4 is looking for a determination today. Really appreciate your help here.

Linda and Laurence,
This e-mail is related to the VMs that I left for you a few moments ago. Please coordinate with Marc if you have any feedback on a determination.

Thanks much, everyone.

Pete Oh, Watch Officer
U.S. Environmental Protection Agency
Headquarters Emergency Operations Center
1200 Pennsylvania Ave
Washington, DC 20460
202-564-3850 (24hrs)
eoc.epahq@epa.gov

From: Huyser, Matthew <Huyser.Matthew@epa.gov>
Sent: Thursday, August 22, 2019 11:25 AM
To: Eoc, Epahq <Eoc.Epahq@epa.gov>
Subject: Able Contracting Fire - immediate consultation requested

Per our phone call, I'm looking for someone who can review some product information and to see if they find any "red flags"
We are looking at using this product on an active fire – review is requested immediately
It does not have to be a full review, report, or approval; all we need is someone to look at it and see if there's anything that stands out as potentially problematic.

The product is a firefighting agent. The company says there is no PFOA/PFOS in the product but we want to be sure there's no issue from the agency side

Novacool UEF
http://novacoolfire.com/
http://novacoolfire.com/wp-content/uploads/2016/06/Baums_UEF_Description-2.pdf
http://novacoolfire.com/wp-content/uploads/2016/07/EPA_0001.pdf
http://novacoolfire.com/wp-content/uploads/2016/06/Aquatic_Toxicity_UEF.pdf
http://novacoolfire.com/wp-content/uploads/2016/06/UEF_BOD_COD.pdf
http://novacoolfire.com/wp-content/uploads/2016/06/Novacool_UEFrev19.MSD_.pdf

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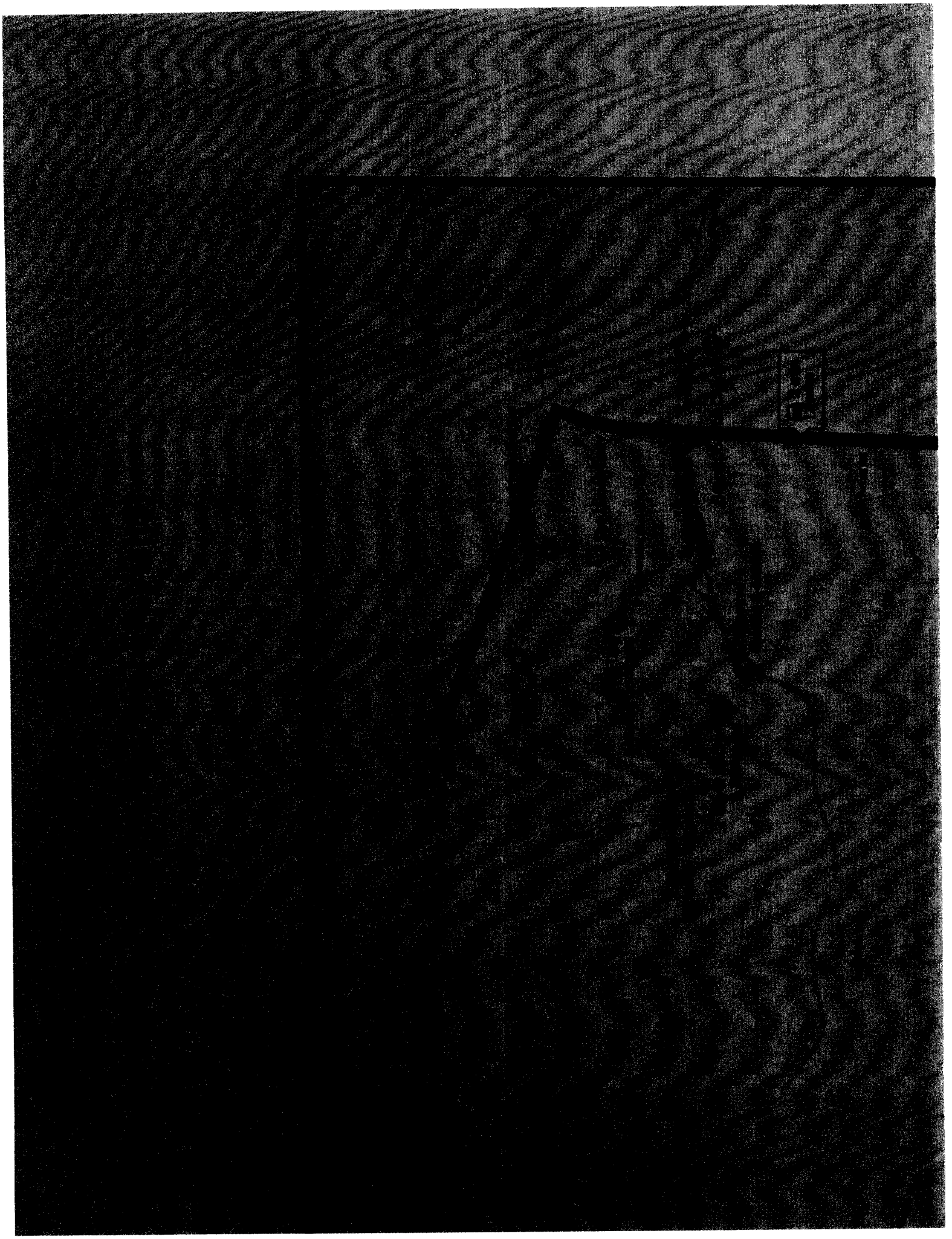
EVACUTION ROUTE



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[illegible]	[illegible]	[illegible]	[illegible]
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[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]

Inversion Begin.....2000

TIME (EDT)	6PM	7PM	8PM	9PM	10P	11P	MID	1AM	2AM	3AM	4
Sky (%).....	57	55	52	50	47	45	43	42	41	42	4
Weather type....	RW	RW	RW	RW	RW	RW	RW	RW	RW	RW	R
Tstm cov.....	CHC	CHC	CHC	CHC	CHC	CHC	CHC	CHC	CHC	CHC	C
Chc of pcpn (%).	30	30	30	30	30	30	30	30	30	30	3
Temp.....	87	84	82	80	79	78	77	77	76	76	7
RH.....	65	74	79	85	88	91	94	94	97	94	9
Aparnt tmp (F)..	95	92	89	85	79	78	77	77	76	76	7
Surface wnd dir.	S	S	S	S	S	S	S	S	SW	SW	S
Surface wnd spd.	6	6	6	4	4	4	4	4	4	4	3
Surface wnd gst.											4
Mix hgt (kft)...	3.6	2.2	0.8	0.7	0.6	0.5	0.4	0.4	0.3	0.3	0
Transp wind dir.	S	S	S	S	S	S	SW	SW	SW	SW	S
Transp wind spd.	8	8	8	6	6	6	4	4	4	4	4

.THURSDAY...

Sky/weather.....Mostly sunny. Chance of showers and thunderstorms.

Chance of pcpn.....30 percent.

Max temperature.....Around 92.

Min humidity.....54 percent.

Max apparent temp.....101.

Surface winds.....Light winds becoming south 6 to 7 mph

Mixing [illegible]

[illegible] southwest 8 to 1

[illegible] afternoon.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 4
ATLANTA FEDERAL CENTER
61 FORSYTH STREET
ATLANTA, GEORGIA 30303-8960

$250,000 EMERGENCY ACTION MEMORANDUM

DATE: August 16, 2019

SUBJECT: Able Contracting Fire Site
Ridgeland, Jasper County, South Carolina

FROM: Matthew J. Huyser, On-Scene Coordinator
Emergency Response, Removal, Prevention, and Preparedness Branch

THRU: James W. Webster, Ph.D., Chief
Emergency Response, Removal, Prevention, and Preparedness Branch
9/16/2019

TO: Regional Emergency Operations Center, 4SEMD-ERRPPB
South Carolina Department of Health and Environmental Control
Site File

I. PURPOSE

The purpose of this memorandum is to document the decision to initiate the emergency response actions described herein for the Able Contracting Fire Site (the Site) located in Ridgeland, Jasper County, South Carolina, pursuant to the On-Scene Coordinator's (OSC) delegated authority under Section 104 of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA).

II. SITE INFORMATION

A. Site Description

Site Name:	Able Contracting Fire Site
Superfund Site ID:	C4A9
NRC Case No.:	1253131
CERCLIS ID:	SCN000407717
Site Location:	Ridgeland, Jasper County, South Carolina
Lat/Long:	32.3237100 / -80.9419330
NPL Status:	Not on the NPL
Start Date:	August 16, 2019

B. Background

1. Removal Site Evaluation

Able Contracting (the Site) is a construction and demolition debris recycling facility located at 472 Schinger Avenue in Ridgeland, Jasper County, South Carolina. The Site contains approximately four acres of stockpiled material that has reportedly ignited multiple times over the past several years. The current fire began in early June 2019. Since then, local responders, as

well as personnel from Able Contracting, attempted to extinguish the fire until a lightning strike damaged a large water supply pump on July 23, 2019. Smoke from the smoldering fire continued to increase over the next several days after firefighting efforts ceased.

On July 25, 2019, the U.S. Environmental Protection Agency was requested by South Carolina Department of Health and Environmental Control (DHEC) to conduct air monitoring and sampling to determine if any hazardous substances were being discharged in the smoke of the smoldering fire. That evening, the EPA and Superfund Technical Assessment and Response Team (START) contractors arrived on-site and established three air monitoring locations each consisting of:

- AreaRAEpro monitor with sensors for oxygen, explosive gas, carbon monoxide, hydrogen sulfide and volatile organic compounds (VOC)

- DustTrak particulate monitor to measure particulate matter <10 microns (PM10), PM1, PM2.5 and total particulates

The monitors transmitted data wirelessly to an EPA database and ran continuously for approximately 84 hours.

On July 27 and 28, 2019, the EPA collected ambient air samples as close to the smoke plume as feasible as well as downwind at the closest residential property. Air sample collection continued for an eight-hour period and included both daytime and nighttime hours. Samples were also collected from background and upwind locations. The samples were sent to an analytical laboratory to measure for asbestos, formaldehyde, phosgene, VOCs, semi-volatile organic compounds (SVOC) and target analyte list (TAL) metals. Samples of the firefighting runoff water were collected in the drainage ditch adjacent to the Site. Surface water samples were also collected from an off-site pond north of the Site based on reports that firefighting runoff water was previously redirected to drain towards that pond. A groundwater sample was collected from the drinking water well at the facility. Water samples were sent to an analytical laboratory to measure for VOCs, SVOCs and metals.

On August 2, 2019, the EPA and START remobilized to the Site to conduct additional air sampling for confirmation of hazardous substances detected in the previous round of sampling. Three air monitoring locations were established to measure for phosgene gas. Air sampling was conducted in three locations: 1) as close to the smoke plume as feasible, 2) near the closest residential property, and 3) upwind. Air sampling was collected over a period of eight hours and included both daytime and nighttime hours. The samples were sent to an analytical laboratory to measure for phosgene and VOCs.

One chemical compound, acrolein, was found in air samples collected in smoke near the Site at a concentration above the EPA's Removal Management Level (RML). The RML serves as a guideline for EPA emergency response. Results of the EPA's sampling of the on-site well did not find any chemicals above drinking water Maximum Contaminant Levels (MCLs) established by the Safe Drinking Water Act. Results from water sampling conducted in the ditch as well as in the nearby pond found elevated concentrations of metals and semi-volatile organic compounds when compared with DHEC and EPA ecological guidance levels for surface water. There is no

known human exposure pathway to the ditch or pond water. Impacts to surface water will be investigated further during the course of the response.

During the initial air sampling activities, the winds were predominately out of the north and east. The smoke plume drifted away from the residential properties, but commercial businesses were impacted. There were noticeable odors and smoke present in the areas adjacent to the Site throughout the day and night. Air quality at the Site and at the adjacent properties degraded as the response progressed into the nighttime hours. In the evening, an atmospheric inversion caused smoke accumulation near the ground. The fire generated smoke throughout the duration of the sampling event. Visible flames were documented at several locations on the stockpile.

2. Physical Location and Site Characteristics

The Site is a construction and demolition debris recycling facility located at geographical coordinates 32.323710 degress north, 80.941933 degrees west. The 8.25-acre facility reportedly received residential construction and demolition debris from and contained approximately four acres of stockpiled material. There are various other buildings on-site including a maintenance shop and office building.

The Site is bordered on the north by an unfinished commercial development. The retention pond of this development was reportedly used for firefighting water by Able Contracting, Inc. To the northeast are several light industrial and commercial businesses. Two large apartment communities are located less than a half-mile to the northwest. Residential units lie to the east. Less than one mile to the east is an elementary school. To the south are light industrial and commercial buildings. A half-mile to the south is a large retirement community consisting of thousands of homes. Within a half-mile to the south and east are several dozen commercial facilities. To the west are several acres of wooded land encompassing two remote homes.

3. Release or Threatened Release into the Environment of a Hazardous Substance or Pollutant or Contaminant

Acrolein was found to have been released at the Site at concentrations of up to 2.56 µg/m3 which exceeds the EPA's RML of 0.063 µg/m3 for acrolein in residential air. During the aggressive firefighting response effort led by DHEC, hydrogen cyanide (HCN) was detected in the air using air monitoring equipment on and near the burning stockpile.

III. THREATS TO PUBLIC HEALTH, WELFARE OR THE ENVIRONMENT

A. Nature of Actual or Threatened Release of Hazard Substances, Pollutants or Contaminants

Title 40 of the Code of Federal Regulations, Part 302.4 lists acrolein and HCN as hazardous substances as designated by Section 102(a) of CERCLA.

B. Applicable factors which were considered in determining the appropriateness of a removal action:

Actual or potential exposure to nearby human populations, animals, or the food chain from hazardous substances or pollutants or contaminants [300.415(b)(2)(i)]

Smoke from a smoldering stockpile of construction debris is impacting adjacent businesses and residents. Air samples collected by the EPA have measured acrolein in the smoke above the EPA's RML of 0.063 µg/m3 for acrolein in residential air. HCN has also been detected at elevated levels.

Detections of HCN were reported near the northeast corner of the landfill stack. Detections of HCN were confirmed with handheld monitors by contractors for DHEC with peak readings of 3.0 parts per million (ppm) and lower readings of approximately 1 ppm downrange. The EPA's air monitors in the area reported detections of HCN at 0.9 ppm.

Even though the particulate matter is not a hazardous substance, at high levels, it may produce adverse health effects. During some hours of the day, particulate matter in air exceeded the "unhealthy" Air Quality Index (AQI) category.

Weather conditions that may cause hazardous substances or pollutants or contaminants to migrate or be released [300.415(b)(2)(v)]

Heavy winds will continue to disperse smoke throughout the surrounding community. Nighttime temperature inversion events continue to hold the smoke close to the ground. There is evidence of acrolein in the smoke plume above the EPA's RML as well as HCN and particulate matter.

The availability of other appropriate federal or state response mechanisms to respond to the release [300.415(b)(2)(vii)]

There are no other federal or state agencies available to respond. The State of South Carolina hired an environmental contractor to extinguish the fire. On August 15, the State of South Carolina notified the EPA that the State had exhausted its resources and requested the EPA take over the response action.

IV. SELECTED REMOVAL ACTION AND ESTIMATED COST

A. Situation and Removal Activities to Date

1. Current Situation

From August 11 – August 16, 2019, contractors for DHEC conducted aggressive firefighting measures at the Site which included opening the stockpile using heavy equipment, water application, loading and hauling fire debris for disposal off-Site, and recovery of runoff water to the extent practicable. The EPA supported DHEC firefighting efforts with air monitoring.

2. Removal Activities to Date

a. Federal Government/Private Party

On August 8, 2019, the EPA remobilized to the Site with air monitoring equipment and resources.

On August 9, 2019, the EPA met with DHEC, Jasper County and Beaufort County officials to discuss planned actions for the DHEC-lead firefighting activities, EPA support activities and preparations for transitioning from locally supplied resources to state and federal resources. Through August 15, 2019, the EPA continued to support DHEC with 24-hour air monitoring and data reports as well as augmenting the community outreach. Information on environmental smoke and the Site was distributed to the community.

On August 16, 2019, the EPA assumed the lead for both the relocation of the residents and the firefighting response activities. An EPA Emergency and Rapid Response Services (ERRS) contractor was mobilized, and the U.S. Coast Guard's (USCG) Strike Team assumed Safety Officer responsibilities for the Site.

b. State/Local

On August 9, 2019, the EPA met with DHEC, Jasper County and Beaufort County officials to discuss planned actions for DHEC-lead firefighting activities. County officials had evacuated several residences and were providing them temporary housing. Local resources were projected to deplete during the following week.

On August 11, 2019, a DHEC contractor mobilized to the Site to begin application of water to hotspots on the stockpile.

On August 12, 2019, DHEC's contractors resumed application of water to smoldering areas. A tank was brought to the Site for firefighting water recovery from the adjacent ditch. Buried utilities at the Site were marked to prevent damage to infrastructure. The stockpile excavation was initiated, and charred material was uncovered at a depth of at least 20 feet.

On August 13, 2019, DHEC's contractors resumed excavation into the stockpile and began hauling extinguished material off-site for disposal. The landfill accepted the surface water and air sampling data for waste profile analysis and classified the material as "special waste." Water in the ditch adjacent to the Site was being pumped to a 20,000-gallon tank and was being recycled to the stockpile as firefighting water. A water curtain was installed over the stockpile's worst smoking area to reduce morning smoke conditions.

On August 14, 2019, DHEC's contractors continued aggressive firefighting and material disposal operations, focusing on stockpiles material in the southwest corner of the Site. The spraying continued on isolated smoke chimneys. Operations ceased by late in the afternoon due to lightning. A water curtain was applied overnight to accessible active smoke plumes.

On August 15, 2019, during firefighting activities, detections of HCN were reported near the northeast corner of the stockpile and DHEC contractors egressed from the Site in accordance with their site-specific health and safety plan.

3. Enforcement

The property is owned by Able Contracting, Inc. A Notice of Federal Interest was issued to Able Contracting on July 26, 2019. Access agreements for parcels including the property on which the stockpile is located as well as the adjoining parcels were signed on August 16, 2019. Able Contracting stated that it was financially unable to continue to respond to the release.

B. Planned Removal Actions

1. Proposed Action Description

Anticipated removal activities for the Site include, but are not limited to, the following:

- Prepare and implement a health and safety plan;
- Continue fire mitigation operations and debris stockpiles management in order to reduce the risk of reignition;
- Continue to mitigate off-site impacts due to firefighting operations to the extent practicable;
- Continue to provide relocation to affected residents until ambient air conditions allow for re-occupancy;
- Maintain air quality monitoring;
- Continue to execute outreach plan to notify the community of response activities and air quality conditions.

2. Contribution to Remedial Performance

The proposed actions will, to the extent practicable, contribute to the efficient performance of any long-term remedial action at the Site.

3. ARARs

Removal actions conducted under CERCLA are required to attain Applicable or Relevant and Appropriate Requirements (ARAR) to the extent practicable. In determining whether compliance with ARARs is practicable, the OSC may consider appropriate factors, including the urgency of the situation and the scope of the removal action to be conducted.

The Federal ARARs identified for the Site include:

- RCRA Land Disposal Restrictions
- RCRA Treatment, Storage and Disposal
- RCRA Transportation
- DOT
- OSHA

The State has not provided any ARARs.

5. Project Schedule

All actions are expected to be completed within 12 months of August 16, 2019.

C. Estimated Costs[1]

The budget has been structured as appears below. Changes in the structure may be made by the OSC at his/her discretion.

ERRS	100,000
START	140,000
USCG	10,000
TOTAL	**$250,000**

V. EXPECTED CHANGE IN THE SITUATION SHOULD ACTION BE DELAYED OR NOT TAKEN

A delay in action or no action at this Site would increase the actual or potential threats to the public and the environment.

VI. OUTSTANDING POLICY ISSUES

None.

VII. APPROVAL

This decision document represents the selected removal action for this Site, developed in accordance with CERCLA as amended, and not inconsistent with the National Contingency Plan. This decision is based on the Administrative Record for the Site.

Conditions at the Site meet the NCP section 300.415(b) criteria for a removal, and through this document, I am approving the proposed removal actions. The total project ceiling is $250,000, of which an estimated $100,000 may be funded from the Regional Removal Allowance.

Matthew Huyser
Federal On-Scene Coordinator

9/16/2019
Date

[1]EPA direct and indirect costs, although cost recoverable, do not count toward the removal ceiling for this removal action. Liable parties may be held financially responsible for costs incurred by the EPA as set forth in Section 107 of CERCLA.

Armstrong, Kathy

From: Huyser, Matthew
Sent: Wednesday, August 14, 2019 6:26 AM
To: Chandler & Angela Lloyd
Subject: FW: Able Fire Response IAP 20190814
Attachments: Able_IAP_20190814signed.pdf

See attached IAP for operational period 8/14/2019 0700 – 8/15/2019 0700

Matthew J. Huyser, PE - On-Scene Coordinator
U.S. Environmental Protection Agency, Region 4 | 61 Forsyth St SW | Atlanta, Georgia | 30303
Emergency Response Removal and Prevention Branch (ERRPB)
office: **404-562-8934** | cell: **678-427-8829** | fax: **404-562-8699**
epaosc.org

1. Incident Name:	2. Operational Period: (Date / Time)	
Able Contracting Fire	From: 8/14/19 0700 To: 8/15/19 0700	**INCIDENT OBJECTIVES** **ICS 202 - EPA**

3. Incident Objective(s):

1) Extinguish fire and leave conditions to reduce the risk of reignition

2) Ensure health and safety of responders on-site

3) Maintain air quality monitoring and inform on-site personnel of adverse conditions

4) Establish and execute an outreach plan to notify community of response activities and air quality conditions

5) Provide for relocation of residents closest to the Site and maintain frequent communication with those residents on status and expected duration

6) Prepare for potential lead agency transition

4. Operational Period Command Emphasis. (Priorities, Key Discussions/Directions):

- Maintain communication between response partners on activities, expectations, and progress.
- Expand aggressive fire fighting operations with heavy equipment
- Water curtain worst chimneys overnight, if possible, to reduce offsite morning smoke
- Prepare for potential meeting with business community on Thursday 8/15

5. General Situation Awareness (Safety bullets, Weather, etc...):

- Wind direction, modify work zone to be upwind when possible. Heat stress awareness.
- Equipment checklist documented before work starts. Personal protection equipment (PPE) check complete as well (SCBA).
- Spotter for power lines provided by Santee Cooper.
- Traffic control for trucks, media, and workers.
- 6Communication with truck drivers and equipment operators while loading/moving.

WEATHER FOR WEDNESDAY 8/14/2019: Inversion lifts 0900 and begins at 2100. Surface winds from SW in morning and shift to S by afternoon and overnight. Chance of thunderstorms in afternoon. Temp high 95 with max apparent temp at 109. Could be morning smoke in commercial area at corner of Short Cut Road and Argent Blvd as well as the Hearthstone community.

■ **Approved Site Safety Plan Located at:** Ensafe Response Trailer

6. Prepared By: (PSC)		(Date / Time)
Name:	Signature:	8/13/19 8/13/19

7. Approved By (Incident Commander(s)):		(Date / Time)
Name:	Signature:	

1. Incident Name:	2. Operational Period: (Date / Time)	ASSIGNMENT LIST ICS 204 - EPA
Able Contracting Fire	From: 8/14/19 0700 To: 8/15/19 0700	

3. Branch:	4. Division/Group/Staging:
Fire Branch	

5. Operations Personnel:

ICS Position	Name	Affiliation	Contact # (s)
Operations Section Chief:	Carol Crooks	DHEC	(803) 315 - 0035
Branch Director:	Steven Hodskins	Ensafe	(706) 455 - 7556
Division/Group Supervisor/STAM:			

6. Resources Assigned: "X" indicates 204a attachment with additional instructions

Strike Team/Task Force/ Resource Identifier	Leader	Contact Info. #	# of Persons	Reporting Info/Notes/Remarks	
Fire Safety Team	John Kinsey	(843) 991 - 0376	5		☐
Enviro Team	Bryan Snow	(843) 609 - 6681	4		☐
Equip Ops Team					☐
Safety	John Kinsey	(843) 991 - 0376	2		☐
					☐
					☐

7. Work Assignments:

Fire Safety Team - Handling all water spraying operations, hydrants, pumper truck. Conduct/oversee fire suppression activities.

Enviro/Equipment Ops Team - Use heavy equipment to move material from stockpiles. Spread material on ground. Load into trucks for off-site disposal

Safety: General oversight of work activities of Fire Safety Team and Enviro/Equip Ops team and safety issues. Documentation of H&S issues, equipment checks, use of SCBAs. Conduct daily H&S meetings. Conduct onsite aire monitoring for worker safety.

8. Special Instructions:

Santee Cooper will provide on-site spotter for high voltage power lines

9. Communications (radio and/or phone contact numbers needed for this assignment):

Name/Function	Radio: Freq./System/Channel	Phone	Cell/Pager
EPA 1	Mutual Aid Ch8 Z4		
Ops Team			

Emergency Communications:

10. Prepared by: (RESL) (Date / Time)	11. Reviewed by: (PSC) (Date / Time)	12. Reviewed by: (OPS) (Date / Time)
	8/13/19	

1. Incident Name:	2. Operational Period: (Date / Time)	ASSIGNMENT LIST ICS 204 - EPA
Able Contracting Fire	From: 8/14/19 0700 To: 8/15/19 0700	

3. Branch:	4. Division/Group/Staging:
Air Monitoring Branch	

5. Operations Personnel:

ICS Position	Name	Affiliation	Contact # (s)
Operations Section Chief:	Carol Crooks	DHEC	(803) 315 - 0035
Branch Director:	Matthew Huyser	EPA	(678) 427 - 8829
Division/Group Supervisor/STAM:			

6. Resources Assigned: "X" indicates 204a attachment with additional instructions

Strike Team/Task Force/ Resource Identifier	Leader	Contact Info. #	# of Persons	Reporting Info/Notes/Remarks	
EPA Air Team	Eric Huss	(610) 348 - 6959	4	Night: Josiah Williams (404) 542 - 6530	☐
DHEC Air Team	Keith Frost	(803) 465 - 1529			☐
					☐
					☐
					☐
					☐

7. Work Assignments:

Maintain air monitor remote data collectoin
Report alarm events to EPA and DHEC IC immediately
- VOC ≥10ppm
- CO ≥25ppm
- PM2.5 ≥0.25mg/m3

Download data at 0700 and 1900, provide data summary report within 1 hour to Air Monitoring Branch Director

8. Special Instructions:

Document and record visible smoke events to ground. Provide log of events to Air Monitoring Branch Director by 0700.
Notify UC of significant downwind smoke observations

9. Communications (radio and/or phone contact numbers needed for this assignment):

Name/Function	Radio: Freq./System/Channel	Phone	Cell/Pager
EPA 1	Mutual Aid Ch8 Z4		

Emergency Communications: 911

10. Prepared by: (RESL) (Date / Time)	11. Reviewed by: (PSC) (Date / Time)	12. Reviewed by: (OPS) (Date / Time)
	8/13/19	8/13/19

1. Incident Name:	2. Operational Period: (Date / Time)	INCIDENT COMMUNICATIONS PLAN ICS 205A - EPA
Able Contracting Fire	From: 8/14/19 0700 To: 8/15/19 0700	

3. Communication Contact List:

NAME	POSITION	PHONE NUMBER	AGENCY / AFFLIATION	EMAIL ADDRESS
Gary Stewart	DHEC IC	(803) 603-1511	DHEC	stewarrg@dhec.sc.gov
Carol Crooks	Ops Section Chief	(803) 315-0035	DHEC	crookscl@dhec.sc.gov
Steven Hodskins	Branch Director	(706) 455-7556	Ensafe	shodskins@ensafe.com
John Kinsey	Fire Safety Team Leader	(843) 991-0376	Envirosmart	john.kinsey@envirosmart.us
Bryan Snow	Enviro/Equip Ops Team	(843) 609-6681	Envirosmart	bryan@envirosmart.us
Keith Frost	DHEC Air Team	(803) 465-1529	DHEC	frostrk@dhec.sc.gov
Fran Marshall	DHEC Situation Team Leader	(803) 898-9556	DHEC	marshaf2@dhec.sc.gov

4. Prepared by:		(Date / Time)
Name/Position:	Signature:	8/13/19

1. Incident Name:	2. Operational Period: (Date / Time)	INCIDENT COMMUNICATIONS PLAN ICS 205A - EPA
Able Contracting Fire	From: 8/14/19 0900 To: 8/15/19 0700	

3. Communication Contact List:

NAME	POSITION	PHONE NUMBER	AGENCY / AFFLIATION	EMAIL ADDRESS
Matthew Huyser	EPA IC	(678) 427-8829	EPA	huyser.matthew@epa.gov
Courtney S. Redd	EPA Air Team Lead	(678) 656-3481	START	courtney.redd@tetratech.com
Eric Huss	EPA Air Team	(610) 348-6959	START	eric.huss@tetratech.com
Otis Halsey	EPA Staging	(678) 241-0856	Basha Services	ohalsey@bashaservices.com
Josiah Williams	EPA Air Team	(404) 542-6530	START	josiah.williams@tetratech.com
Corey Peaslee	EPA Air Team	(443) 977-7698	START	corey.peaslee@tetratech.com
Rick Hollingsworth	EPA Staging	859-333-3644	ERRS	cmcrickh@aol.com
Ronald Tolliver	EPA IO	404-852-9751	EPA	tolliver.ronald@epa.gov

4. Prepared by:		(Date / Time)
Name/Position:	Signature: MJH 8/13/19 RSS 8/13/19	

ICS 207 Organizational Chart

Incident Name:	Able Contracting Fire
Operational Period:	8/14 0700 – 8/19 0700
Prepared by:	
Date:	
Time:	

Unified ~~Incident~~ Commander
Gary Stewart, DHEC and Matthew Huyser, EPA

Safety Officer	John Kinsey, Envirosmart
Liaison Officer	
Information Officer	

Ron Tolliver, EPA
Sandra Carrasco, DHEC
Lisa Wagner, Jasper Co

Operations Section
OPS: Carol Crooks, DHEC
DOPS:

- Staging Area
- Fire Branch Director: Steven Hodskin
  - Fire Teal Lead: John Kinsey, Ensafe
  - Enviro Team Lead: Bryan Snow, Ensafe
  - Equipment Ops Team lead: Bryan Snow, Ensafe
  - Division Supervisor
  - Division Supervisor
- Air Mon. Branch Directo: Matthew Huyser, EPA
  - EPA Air Team: Eric Huss, START
  - DHEC Air Team: DHEC Air Team Keith Frost, DHEC
  - Group Supervisor
  - Group Supervisor
  - Group Supervisor

Planning Section
PSC:
DPSC:

- Resources Unit
- Situation Unit: Fran Marshall, DHEC
- Demobilization Unit
- Documentation Unit
- Environmental Unit
- Technical Specialists: Tim Frederick, EPA
  Toxicologist
  Sue Cameel, ATSDR
  Scott Reynolds, DHEC Air Division

Logistics Section
LSC:
DLSC:

- Service Branch
  - Communication Unit Leader
  - Medical Unit Leader
  - Food Unit Leader
- Support Branch
  - Facilities Unit Leader
  - Supply Unit Leader
  - Ground Support Unit Leader

Finance Section
FSC:
DFSC:

- Time Unit
- Procurement Unit
- Comp/Claims Unit
- Cost Unit

MAA 8/13/19
RDS 8/13/19

1. Incident Name:	2. Operational Period: (Date / Time)	DAILY MEETING/ CONFERENCE CALL SCHEDULE ICS 230 - EPA
ABLE CONTRACTING FIRE	From: 8/14/19 0700 To: 8/15/19 0700	

3. Meeting Schedule (Commonly-held meetings are included) :

Date/ Time	Meeting Name	Purpose	Attendees	Location
8/13 0730	OPERATIONS BRIEFING	Present Objectives Situation and Weather Work Assignments Safety Briefing	IC, OPS, Branch Directors, Team Leaders	ENSAFE Command Post
8/13 ~~0830~~ 0815	OBJECTIVES MEETING	Review/Set objectives Identify critical tasks and command emphasis	DHEC IC, EPA IC, and Information Officers	EPA Command Post
8/13 Before 1200	TACTICS MEETING	Can objectives be acheived? What new tactics needed? What new resources needed? When done? Who responsible?	Operations Section Cheif Fire Branch Dir Air Monitoring Branch Dir	ENSAFE Command Post
8/13 Shift End	PLANNING MEETING	Situation update Results of tactics meeting Changes in work assignments	IC, OPS, Branch Directors	ENSAFE Command Post
8/14 0700	OPERATIONS BRIEFING	Present Objectives Situation and Weather Work Assignments Safety Briefing	IC, OPS, Branch Directors, Team Leaders	ENSAFE Command Post

4. Special and Other Meetings:

8/13 1400	SITUATION UPDATE DUE	Provide situation update for web posting	IC DHEC and IC EPA	send to Information Officers
8/13 0800	NIGHT Data Summary Report	Provide data summary report for distribution	Air Monitoring Team Leader	send to IC EPA
8/13 2000	DAY Data Summary Report	Provide data summary report for distributoin	Air Monitoring Team Leader	send to IC EPA

5. Prepared by: (PSC)

Name:	Signature:	(Date / Time)
	[illegible]	8/13/19
	RDS	8/13/19

Huyser, Matthew

From: National Weather Service <chs.skywarn@noaa.gov>
Sent: Tuesday, August 13, 2019 3:57 PM
Subject: Spot Forecast

FNUS72 KCHS 131957
FWSCHS

Spot Forecast for Able Contracting Fire...USEPA R4
National Weather Service Charleston SC
357 PM EDT Tue Aug 13 2019

Forecast is based on forecast start time of 1700 EDT on August 13.
If conditions become unrepresentative, contact the National Weather
Service.

.DISCUSSION...
High pressure over the region today will give way to an inland
surface trough tonight. A cold front is expected to move into the
area late Wednesday, then linger into Friday before slowly moving
offshore.

Fog potential for tonight: Low

.TONIGHT...

Sky/weather.....Partly cloudy.
Chance of pcpn.....10 percent.
Min temperature.....Around 77.
Max humidity.....97 percent.
Max apparent temp...107.
Surface winds.....South winds 6 to 9 mph early in the evening
becoming light.
Pcpn amount.....0.00 inches.
Inversion Begin.....9 PM.

TIME (EDT)	5PM	6PM	7PM	8PM	9PM	10P	11P	MID	1AM	2AM	3AM	4AM	5AM
Sky (%).....	35	34	33	31	28	26	23	29	38	45	48	47	46
Weather type....													
Tstm cov.....													
Chc of pcpn (%).	10	10	10	10	10	10	10	10	10	10	10	10	10
Temp.....	95	93	90	86	83	83	82	81	80	79	78	79	78
RH.....	53	56	64	72	80	82	85	88	91	94	97	91	94
Aparnt tmp (F)..	107	105	102	96	91	92	90	88	87	79	78	79	78
Surface wnd dir.	S	S	S	S	S	S	S	S	S	S	S	S	S
Surface wnd spd.	9	8	7	6	4	4	4	4	4	4	4	4	4
Surface wnd gst.	12	10	10										
Mix hgt (kft)...	4.0	3.0	2.1	0.7	0.7	0.7	0.7	0.7	0.7	0.6	0.6	0.6	0.6
Transp wind dir.	S	S	S	S	S	S	S	S	S	S	S	S	S
Transp wind spd.	8	10	10	10	6	6	6	4	4	4	4	4	4

.WEDNESDAY...

Sky/weather.....Mostly sunny. Slight chance of showers and
thunderstorms early in the afternoon. Chance of
showers and thunderstorms early in the

afternoon.
Chance of pcpn.....40 percent.
Max temperature.....Around 96.
Min humidity.....54 percent.
Max apparent temp...109.
Surface winds.....Light winds becoming south 6 to 8 mph in the late morning and afternoon.
Mixing Height.....Max 5000 ft AGL.
Transport Winds.....Light winds becoming southwest 10 to 14 mph in the late morning and afternoon.
Pcpn amount.....0.20 inches.
Inversion End.....9 AM.

TIME (EDT)	6 AM	8 AM	10 AM	NOON	2 PM	4 PM
Sky (%).....	44	36	42	48	54	61
Weather type....	NONE	NONE	NONE	RNSHWR	RNSHWR	RNSHWR
Tstm cov.....				S CHC	CHANCE	CHANCE
Chc of pcpn (%).	10	10	10	20	30	40
Temp.....	77	79	86	92	95	94
RH.....	97	94	75	60	54	56
Aparnt tmp (F)..	77	79	97	105	109	107
Surface wind....	SW 4	SW 4	SW 6	SW 7	SW 7	S 7
Surface wnd gst.				8	10	10
Mix hgt (ft)....	600	600	2200	3700	5000	5000
Transport wind..	SW 4	SW 4	SW 10	SW 10	SW 10	SW 14

.WEDNESDAY NIGHT...

Sky/weather.....Mostly cloudy. Chance of showers and thunderstorms.
Chance of pcpn.....50 percent.
Min temperature.....Around 78.
Max humidity.....94 percent.
Max apparent temp...105.
Surface winds.....South winds 6 to 8 mph in the evening becoming light.
Pcpn amount.....0.25 inches.
Inversion Begin.....9 PM.

TIME (EDT)	6 PM	9 PM	MIDNGT	3 AM
Sky (%).....	67	72	73	74
Weather type....	RNSHWR	RNSHWR	RNSHWR	RNSHWR
Tstm cov.....	CHANCE	CHANCE	CHANCE	CHANCE
Chc of pcpn (%).	40	50	40	40
Temp.....	91	83	81	79
RH.....	64	82	88	94
Aparnt tmp (F)..	105	92	88	79
Surface wind....	S 8G10	S 7G10	SW 4	SW 3G4
Mix hgt (ft)....	3400	900	900	800
Transport wind..	S 10	S 6	SW 4	SW 4

.THURSDAY...

Sky/weather.....Mostly cloudy. Chance of showers and thunderstorms early in the morning, then showers and thunderstorms likely.
Chance of pcpn.....60 percent.
Max temperature.....Around 91.
Min humidity.....64 percent.
Max apparent temp...102.
Surface winds.....Light winds becoming south around 6 mph in the afternoon.

Mixing Height.....Max 3600 ft AGL.
Transport Winds.....Light winds becoming southwest around 8 mph in the late morning and afternoon.
Pcpn amount.....0.35 inches.
Inversion End.....9 AM.

TIME (EDT)	6 AM	10 AM	2 PM
Sky (%).....	78	81	80
Weather type....	RNSHWR	RNSHWR	RNSHWR
Tstm cov.....	CHANCE	LIKELY	LIKELY
Chc of pcpn (%).	50	60	60
Temp.....	78	84	90
RH.....	94	77	64
Aparnt tmp (F)..	78	93	102
Surface wind....	SW 4	SW 4	S 6
Mix hgt (ft)....	700	2100	3600
Transport wind..	SW 4	W 8	SW 8

.FORECAST DAYS 3 THROUGH 7...
.FRIDAY...
Showers and thunderstorms likely. Lows in the mid 70s. Highs in the lower 90s. Light winds.
.SATURDAY...
Mostly cloudy. Showers and thunderstorms likely. Lows in the mid 70s. Highs around 90. Light winds.
.SUNDAY...
Mostly cloudy. Chance of showers and thunderstorms. Lows in the mid 70s. Highs in the lower 90s. Light winds.
.MONDAY...
Mostly cloudy. Chance of showers and thunderstorms. Lows in the mid 70s. Highs in the upper 80s.
.TUESDAY...
Mostly cloudy. Chance of showers and thunderstorms. Lows in the mid 70s. Highs around 90.

$$
Forecaster...Stroz
Requested by...Matthew Huyser
Type of request...HAZMAT
.TAG 1913754.0/CHS
.DELDT 08/13/19
.EMAIL huyser.matthew@epa.gov

Armstrong, Kathy

From: Huyser, Matthew
Sent: Wednesday, August 14, 2019 2:42 AM
To: Scott Reynolds; Frost, Keith; thompsrb@dhec.sc.gov; shealyrg@dhec.sc.gov; Marshall, Frances (Fran); reecemc@dhec.sc.gov; Marcus, Mike; Porter, Henry; Keisler, Van; Blalock, Juli; Taylor, Monica N.; Dickman, Jacquelyn S.; Timmerman, Kelsey A.; Threatt, Richard; Boyce, Lawra; Boswell, Wendy; Stewart, R. Gary; Crooks, Carol; Frank Edwards
Cc: Frederick, Tim; Tolliver, Ronald; Jenkins, Brandi; Pinkney, James
Subject: Able - Summary Report DAY 8/13/2019
Attachments: Able_START_Data_Viper Summary report_Able Fire Template_AR and DustTrack-2019-08-13-DAY.pdf

Attached is the EPA data summary report for Daytime on 8/13/19

New equipment is being deployed and significant communication issues were encountered during the day resulting in data loss on some instruments.

High peaks of 1030 ug/m3 were recorded at Brooke Mill Apartments but an investigation of the area recorded no smoke, obstruction, or other jusitification for the peak. The Insturment recorded appropriate data throughout the day – average for the day was just over 30 ug/m3

Average for Sun City was 31 ug/m3 with a peak of 163 ug/m3 in the morning hours which is consistent with the wind and visual smoke observations in the morning hours.

A high detection of 2.3 ppm VOC was recorded on the northeast corner of the pile with a high CO reading of 6 ppm.

Matthew J. Huyser, PE - On-Scene Coordinator
U.S. Environmental Protection Agency, Region 4 | 61 Forsyth St SW | Atlanta, Georgia | 30303
Emergency Response Removal and Prevention Branch (ERRPB)
office: **404-562-8934** | cell: **678-427-8829** | fax: **404-562-8699**
epaosc.org

From: Huyser, Matthew
Sent: Tuesday, August 13, 2019 8:37 AM
To: 'Reynolds, Scott' <REYNOLDS@dhec.sc.gov>; 'Frost, Keith' <frostrk@dhec.sc.gov>; thompsrb@dhec.sc.gov; shealyrg@dhec.sc.gov; 'Marshall, Frances (Fran)' <marshaf2@dhec.sc.gov>; reecemc@dhec.sc.gov; 'Marcus, Mike' <MARCUSJM@dhec.sc.gov>; 'Porter, Henry' <porterhj@dhec.sc.gov>; 'Keisler, Van' <keislecv@dhec.sc.gov>; 'Blalock, Juli' <blalocje@dhec.sc.gov>; 'Taylor, Monica N.' <TAYLORMN@dhec.sc.gov>; 'Dickman, Jacquelyn S.' <DICKMAJS@dhec.sc.gov>; 'Timmerman, Kelsey A.' <timmerka@dhec.sc.gov>; 'Threatt, Richard' <threatrl@dhec.sc.gov>; Boyce, Lawra <boycelc@dhec.sc.gov>; 'Boswell, Wendy' <BOSWELWM@dhec.sc.gov>; Stewart, R. Gary <stewarrg@dhec.sc.gov>; 'Crooks, Carol' <Crookscl@DHEC.SC.GOV>
Cc: Frederick, Tim <Frederick.Tim@epa.gov>; Ronald Tolliver (Tolliver.Ronald@epa.gov) <Tolliver.Ronald@epa.gov>; Brandi Jenkins (Jenkins.Brandi@epa.gov) <Jenkins.Brandi@epa.gov>; James Pinkney (Pinkney.James@epa.gov) <Pinkney.James@epa.gov>
Subject: RE: Able - Summary Report NIGHT 8/11-8/12

Attached is the EPA data summary report for Nighttime 8/12 to 8/13/19

Peak PM2.5 concentrations in Sun City of 162 ug/m3 with an average of 32 ug/m3
Lower PM2.5 readings to the West of 9 ug/m3 and West of 67 ug/m3 with an average of 14 ug/m3

No VOC readings to the Northeast side of pile but peak VOCs of 0.6 ppm and 0.5 ppm to the West and SE corner, respectively. Detections of CO peaked at 7 ppm.

8/12/19 21:15 Debris pile not visibly smoking, slight odor
8/12/19 23:45 Minimal smoke from pile, going east and not visible shortly after coming from pile
8/13/19 01:25 Smoke picking up substantially, headed SW; industrial park has thick smoke, Sun City has odor and sleight haze.
8/13/19 02:05 No odor or visible smoke on highways. Still headed S and SW. The industrial park has thick smoke. Sun City has more odor and haze.
8/13/19 02:46 Smoke in Sun City
8/13/19 03:17 Pile is smoking heavily. Still headed to the S and SW.
8/13/19 05:00 Heavy smoke, mainly headed S
8/13/19 06:20 Heavy smoke, mainly headed S. Industrial park has smoke like dense fog. Sun City still has smoke.

Matthew J. Huyser, PE - On-Scene Coordinator
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Emergency Response Removal and Prevention Branch (ERRPB)
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epaosc.org

From: Huyser, Matthew
Sent: Monday, August 12, 2019 9:09 AM
To: Reynolds, Scott <REYNOLDS@dhec.sc.gov>; Frost, Keith <frostrk@dhec.sc.gov>; thompsrb@dhec.sc.gov; shealyrg@dhec.sc.gov; Marshall, Frances (Fran) <marshaf2@dhec.sc.gov>; reecemc@dhec.sc.gov; Marcus, Mike <MARCUSJM@dhec.sc.gov>; Porter, Henry <porterhj@dhec.sc.gov>; Keisler, Van <keislecv@dhec.sc.gov>; Blalock, Juli <blalocje@dhec.sc.gov>; Taylor, Monica N. <TAYLORMN@dhec.sc.gov>; Dickman, Jacquelyn S. <DICKMAJS@dhec.sc.gov>; Timmerman, Kelsey A. <timmerka@dhec.sc.gov>; Threatt, Richard <threatrl@dhec.sc.gov>; Boyce, Lawra <boycelc@dhec.sc.gov>; Boswell, Wendy <BOSWELWM@dhec.sc.gov>
Cc: Frederick, Tim <Frederick.Tim@epa.gov>; Ronald Tolliver (Tolliver.Ronald@epa.gov) <Tolliver.Ronald@epa.gov>; Brandi Jenkins (Jenkins.Brandi@epa.gov) <Jenkins.Brandi@epa.gov>; James Pinkney (Pinkney.James@epa.gov) <Pinkney.James@epa.gov>
Subject: Able - Summary Report NIGHT 8/11-8/12

Attached is the EPA data summary report for Nightime 8/11 to 8/12/19

Smoke was observed at ground level yesterday evening to the east in Brooke Mill and Abberly Chase Apartments. This was anticipated with generic wind forecasting so Dusttrak 1 was relocated to Brooke Mill apartments at approximately 7pm.
Visible smoke on the morning of 8/12 was traveling South towards Palmetto Exterminators and Sun City

No noteworthy VOC or CO readings

Average PM2.5 readings at Brooke Mill, Sun City, and Command Post (east side) were near 30 ug/m3 which is Moderate for the 24-hour average. Notice in the trendline persistent peaks of over 100 ug/m3 at Brooke Mill in at around 9pm and over 100 ug/m3 in Sun City at 1am.

Matthew J. Huyser, PE - On-Scene Coordinator
U.S. Environmental Protection Agency, Region 4 | 61 Forsyth St SW | Atlanta, Georgia | 30303
Emergency Response Removal and Prevention Branch (ERRPB)
office: **404-562-8934** | cell: **678-427-8829** | fax: **404-562-8699**
epaosc.org

Air Monitoring Summary Tables

The table below summarize monitoring data collected on using EPA's Viper wireless remote monitoring system.

Project Name:

From: **8/13/19 7:00** ***To:*** ***8/13/19 18:58***

SE Corner of Able Contracting

Instrument	Analyte	Period Average Exceedances	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level (PEL/TLV/60 min AEGL)
AreaRAE 1	VOC	No	750	38	0 - 310 ppb	6.6 ppb	1,000 ppb
	CO	No	750	1	0 - 4 ppm	0 ppm	83 ppm
	H_2S	No	750	0	0 - 0 ppm	0 ppm	0.5 ppm
	O_2	No	750	750	20.9 - 20.9%	20.9%	<19.5 or >23%
	LEL	No	750	0	0 - 0%	0%	10%

Brooke Mill Apartments -Peacock Collision[1]

Instrument	Analyte	Period Average Exceedances	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level (PEL/TLV/60 min AEGL)
DustTrak 1	PM-2.5	Moderate	2,326	1,789	0 - 1030 µg/m³	31.8 µg/m³	See SOG #: T106

On Site, Immediately West of Pile

Instrument	Analyte	Period Average Exceedances	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level (PEL/TLV/60 min AEGL)
AreaRAE 2	VOC	No	534	25	0 - 557 ppb	10.1 ppb	1,000 ppb
	CO	No	534	32	0 - 7 ppm	0.2 ppm	83 ppm
	H_2S	No	534	0	0 - 0 ppm	0 ppm	0.5 ppm
	O_2	No	534	534	20.5 - 20.7%	20.6%	<19.5 or >23%
	LEL	No	534	0	0 - 0 %	0%	10%

EPA Mobile Command Post[2]

Instrument	Analyte	Period Average Exceedances	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level (PEL/TLV/60 min AEGL)
DustTrak 2	PM-2.5	Good	292	274	-6 - 68 µg/m³	9 µg/m³	See SOG #: T106

Able Contracting Workshop, Northeast of Pile

Instrument	Analyte	Period Average Exceedances	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level (PEL/TLV/60 min AEGL)
AreaRAE 3	VOC	No	749	15	0 - 2304 ppb	6.9 ppb	1,000 ppb
	CO	No	749	11	0 - 6 ppm	0.1 ppm	83 ppm
	H_2S	No	749	0	0 - 0 ppm	0 ppm	0.5 ppm
	O_2	No	749	749	20.9 - 20.9%	20.9%	<19.5 or >23%
	LEL	No	749	0	0 - 0%	0%	10%

Sun City[3]

Instrument	Analyte	Period Average Exceedances	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level (PEL/TLV/60 min AEGL)
DustTrak 3	PM-2.5	Moderate	1,236	1,236	12 - 163 µg/m³	31 µg/m³	See SOG #: T106

Palmetto Extermination

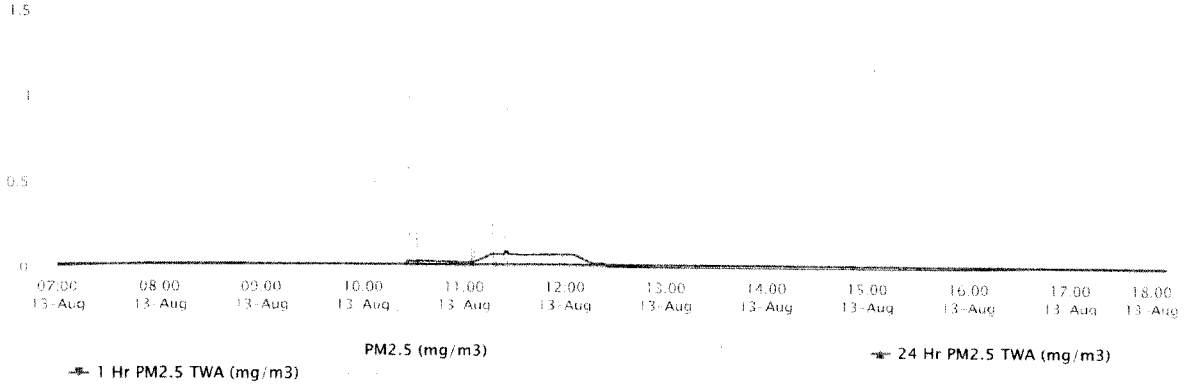
Instrument	Analyte	Period Average Exceedances	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level (PEL/TLV/60 min AEGL)
AreaRAE 4	VOC	No	751	3	0 - 58 ppb	0.1 ppb	1,000 ppb
	CO	No	751	0	0 - 0 ppm	0 ppm	83 ppm
	H_2S	No	751	0	0 - 0 ppm	0 ppm	0.5 ppm
	O_2	No	751	751	20.9 - 21.8%	21.4%	<19.5 or >23%
	LEL	No	751	0	0 - 0%	0%	10%

Notes:

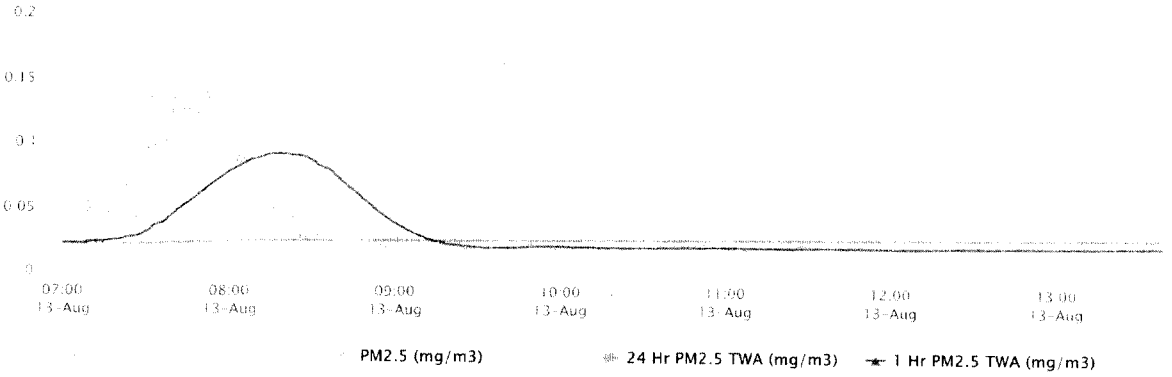
1. DustTrak 1 - Brooke Mill Apartments reported momentary elevated PM2.5 readings during the morning hours. Location was inspected and there was no visible smoke or other materials in the air at the apartments. This DustTrak was relocated to Peacock Collision at 12:35.
2. DustTrak 2 - EPA MCP was switched to different gateway and relocated to Grace Costal Church at 15:15.
3. DustTrak 3 - Sun City was switched to a different gateway and relocated to Short Cut Road at 13:40.

%	Percent	PEL	Permissible exposure limit
<	Less than	ppb	Parts per billion
>	Greater than	ppm	Parts per million
AEGL	Acute Exposure Guideline levels for airborne chemicals	PM	Particulate matter
CO	Carbon monoxide	SOG	Standard Operating Guidelines
H_2S	Hydrogen Sulfide	TLV	Threshold limit value
LEL	Lower Explosive Level	µg/m³	Micrograms per cubic meter
min	Minute	VOC	Volatile organic compoud
O_2	Oxygen		

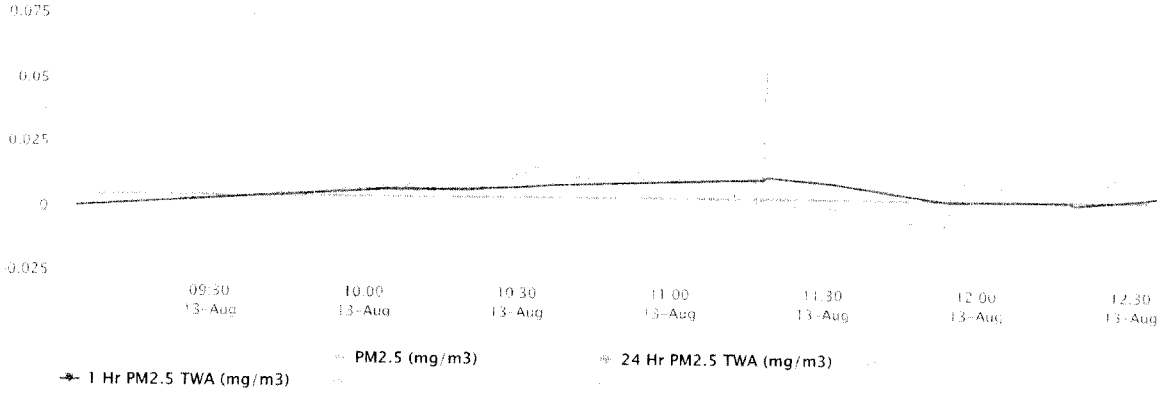
8/13/19 DAY Data for DustTrak 1 ($PM_{2.5}$) - Brooke Mill Apartments and Peacock Colision



8/13/19 DAY Data for DustTrak 3 ($PM_{2.5}$) – Sun City



8/13/19 DAY Data for DustTrak 2 ($PM_{2.5}$) - MCP



Armstrong, Kathy

From: Huyser, Matthew
Sent: Tuesday, August 13, 2019 4:47 PM
To: shealyrg@dhec.sc.gov
Cc: chris.jones@tetratech.com; John Snyder
Subject: RE: Able Risk Messaging Discussion

Chris or John, can you provide the analytical methods on the water testing to Renee? Thanks.

Matthew J. Huyser, PE - On-Scene Coordinator
U.S. Environmental Protection Agency, Region 4 | 61 Forsyth St SW | Atlanta, Georgia | 30303
Emergency Response Removal and Prevention Branch (ERRPB)
office: **404-562-8934** | cell: **678-427-8829** | fax: **404-562-8699**
epaosc.org

From: Shealy, Renee <shealyrg@dhec.sc.gov>
Sent: Tuesday, August 13, 2019 4:41 PM
To: Huyser, Matthew <Huyser.Matthew@epa.gov>
Subject: Fwd: Able Risk Messaging Discussion

Matt - what method was used to analyze the well on Able property?

Sent from my iPhone

Begin forwarded message:

> **From:** "Marshall, Frances (Fran)" <marshaf2@dhec.sc.gov>
> **Date:** August 13, 2019 at 4:30:41 PM EDT
> **To:** "Jenkins, Brandi" <Jenkins.Brandi@epa.gov>, "Reece, Myra" <reecemc@dhec.sc.gov>, "Huyser, Matthew" <huyser.matthew@epa.gov>, "Walker, Mary" <walker.mary@epa.gov>, "Frederick, Tim" <Frederick.Tim@epa.gov>, "Adams, Glenn" <Adams.Glenn@epa.gov>, "Wise, Allison" <Wise.Allison@epa.gov>
> **Cc:** "Shealy, Renee" <shealyrg@dhec.sc.gov>
> **Subject: Re: Able Risk Messaging Discussion**
>
> Brandi, this looks good. The only think that seems to be missing is why we are there - to put out the fire. I would just add an overarchng sentence or two at the beginning. You can probably grab one from our August 9th udate. https://www.scdhec.gov/environment/ongoing-projects-updates/able-contracting-fire/able-contracting-fire-latest-information
>
> Glad to discuss further. We will put up a reference to your data as well as your URL in tomorrow's update on our web page.

Fran

Fran W. Marshall, J.D., M.S.P.H., CIH(r)

Director of Applied Science and Community Engagement

SC DHEC Environmental Affairs

Office: 803.898.9956

From: Jenkins, Brandi <Jenkins.Brandi@epa.gov>
Sent: Tuesday, August 13, 2019 4:18:17 PM
To: Marshall, Frances (Fran) <marshaf2@dhec.sc.gov>; Reece, Myra <reecemc@dhec.sc.gov>; Huyser, Matthew <huyser.matthew@epa.gov>; Walker, Mary <walker.mary@epa.gov>; Frederick, Tim <Frederick.Tim@epa.gov>; Adams, Glenn <Adams.Glenn@epa.gov>; Wise, Allison <Wise.Allison@epa.gov>
Cc: Shealy, Renee <shealyrg@dhec.sc.gov>
Subject: RE: Able Risk Messaging Discussion

*** Caution. This is an EXTERNAL email. DO NOT open attachments or click links from unknown senders or unexpected email. ***

Fran,

We edited the statement that was circulated yesterday to reflect the following. We plan to post this on our website (https://www.epa.gov/superfund/able-contracting-fire) along with the data this afternoon.

EPA and SC DHEC are coordinating on air and water sampling near the Able Contracting facility. Air sampling has included a suite of chemicals, as well as formaldehyde and asbestos to determine their presence in the smoke. Results from samples sent to a laboratory indicate the presence of acrolein, a compound that is a strong irritant and may cause watering of the eyes and burning of the nose, in the area nearest fire. Due to the highly variable nature of the smoke plume coming from the fire, EPA is currently relying on real time measurements for particulates, volatile organic compounds, and carbon monoxide to monitor potential exposure. Real time measurements show that particulate and gas concentrations are highest near the fire. The gases measured do not appear to be elevated in areas further away from the fire, but particulates concentrations can be elevated periodically further away from the fire, depending on the current fire status, wind direction, firefighting efforts, etc. Daily summaries of EPA air monitoring data will be posted (https://www.epa.gov/superfund/able-contracting-fire). The table below can be used to interpret this data and to understand the risks that various levels of particulate matter (PM2.5) may pose.

Level of Health Concern	Particulate Matter Below 2.5 microns, measured in ug/m3		Interpretation
	1 hour average	24 hour average	
Good	[illegible]	[illegible]	[illegible]
Moderate	40.1-80.0	12.1-35.4	Air quality is acceptable; however, for some pollutants there may be a moderate health concern for a very small number of people who are unusually sensitive to air pollution.
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]

Thresholds values taken from original EPA AQI online calculator found at [illegible] for PM2.5 (24 hour) and Idaho Department of Environmental Quality AQI for PM2.5 (1 hour). Taken from [illegible]
Sensitive individuals defined as people with lung disease, older adults and children who are at a greater risk from exposure to ozone, and persons with heart and lung disease, older adults and children who are at greater risk from the presence of particles in the air.

SC DHEC posts daily messages regarding air quality forecasts and, in particular, how individuals can take precautions.

Results from EPA's water sampling of the Able Contracting on-site well, did not identify any compounds in violation of drinking water standards.

**The following background will be rolled into our background statements for the press.

Background

Air Data

DHEC located air sensors that are size-selective (2.5 micron diameter and smaller) consistent with the size of particles in smoke.
EPA collected air samples for 76 volatile compounds, 90 semi-volatile compounds, 22 metals, formaldehyde, and asbestos in the smoke.
Levels of one of those chemicals, acrolein, were found at a concentration above the EPA's Removal Management Level which serves as a guideline for EPA emergency response.
Acrolein is found in cigarette smoke as well as in car exhaust. It is not unexpected to find it in smoke from this fire.
Short term exposure to acrolein or to smoke may cause eyes to water and burning of the nose and throat. These effects usually disappear after exposure stops.
Acrolein is not known to cause cancer in humans.
The precautions found on the DHEC Environmental Smoke Fact Sheet are also effective for acrolein.

Water Data

Results of EPA's sampling of the on-site well did not find any chemicals above the Drinking Water Maximum Contaminant Levels (MCLs) established by the Safe Drinking Water Act.
Results from water sampling conducted in the ditch as well as in the nearby pond did find elevated concentrations of metals when compared with DHEC and EPA ecological guidance levels for surface water. There is no known human exposure pathway to the ditch or pond water.

From: Marshall, Frances (Fran) <marshaf2@dhec.sc.gov>
Sent: Tuesday, August 13, 2019 10:30 AM
To: Jenkins, Brandi <Jenkins.Brandi@epa.gov>; reecemc@dhec.sc.gov; Huyser, Matthew <Huyser.Matthew@epa.gov>; Walker, Mary <walker.mary@epa.gov>; Frederick, Tim

<Frederick.Tim@epa.gov>; Adams, Glenn <Adams.Glenn@epa.gov>; Wise, Allison <Wise.Allison@epa.gov>
Cc: shealyrg@dhec.sc.gov
Subject: Re: Able Risk Messaging Discussion

Here is the link to the DHEC web page for the Able Contracting Fire. https://www.scdhec.gov/environment/ongoing-projects-updates/able-contracting-fire/able-contracting-fire-updates You will find the Environmental Smoke Fact Sheets under Community Resources.

We have not received any messages for the 1-800 line as of this morning, but it has only been up since yesterday.

Web page statistics as of yesterday are in the attached Excel Spreadsheet. We will continue to monitor these stats.

The Word document attached is how we will describe the EPA data tables once the EPA page is up and running. We will include a link to your URL from this message on our web page. We will also link to the ATSDR Tox FAQ on Acrolein.

Look forward to our conversation at 11:00.

Fran W. Marshall, J.D., M.S.P.H., CIH(r)

Director of Applied Science and Community Engagement

SC DHEC Environmental Affairs

Office: 803.898.9956

From: Jenkins, Brandi
Sent: Tuesday, August 13, 2019 9:50 AM
To: Jenkins, Brandi <Jenkins.Brandi@epa.gov>; Reece, Myra <reecemc@dhec.sc.gov>; Marshall, Frances (Fran) <marshaf2@dhec.sc.gov>; Huyser, Matthew <huyser.matthew@epa.gov>; Walker, Mary <walker.mary@epa.gov>; Frederick, Tim <Frederick.Tim@epa.gov>; Adams, Glenn <Adams.Glenn@epa.gov>; Wise, Allison <Wise.Allison@epa.gov>
Subject: Able Risk Messaging Discussion
When: Tuesday, August 13, 2019 11:00 AM-12:00 PM.
Where: 202-991-0477;(b)(6) Personal

*** Caution. This is an EXTERNAL email. DO NOT open attachments or click links from unknown senders or unexpected email. ***

Discussion on messaging related to the data and communicating to the public.

Armstrong, Kathy

From: Huyser, Matthew
Sent: Tuesday, August 13, 2019 4:12 PM
To: Stewart, R. Gary; Crooks, Carol; Steven Hodskins; Chandler & Angela Lloyd; john.kinsey@envirosmart.us; bryon@envirosmart.us; Frank Edwards
Cc: Scott Reynolds; Huss, Eric; Redd, Courtney; Josiah Williams; Marshall, Frances (Fran); Tolliver, Ronald
Subject: FW: Spot Forecast

NWS forecast for tonight at tomorrow forwarded below.

Inversion begins at 9PM tonight and lifts at 9AM tomorrow
Surface winds from S all night and shifting into SW in the morning.

Based on Tuesday AM observations, there could be morning smoke in commercial area at corner of Short Cut Road and Argent Blvd as well as the Hearthstone community.

Chance of thunderstorms early afternoon tomorrow.

Matthew J. Huyser, PE - On-Scene Coordinator
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epaosc.org

From: National Weather Service <chs.skywarn@noaa.gov>
Sent: Tuesday, August 13, 2019 3:57 PM
Subject: Spot Forecast

```
FNUS72 KCHS 131957
FWSCHS

Spot Forecast for Able Contracting Fire...USEPA R4
National Weather Service Charleston SC
357 PM EDT Tue Aug 13 2019

Forecast is based on forecast start time of 1700 EDT on August 13.
If conditions become unrepresentative, contact the National Weather
Service.

.DISCUSSION...
High pressure over the region today will give way to an inland
surface trough tonight. A cold front is expected to move into the
area late Wednesday, then linger into Friday before slowly moving
offshore.

Fog potential for tonight: Low

.TONIGHT...
```

Sky/weather.....Partly cloudy.
Chance of pcpn.....10 percent.
Min temperature.....Around 77.
Max humidity.....97 percent.
Max apparent temp...107.
Surface winds.....South winds 6 to 9 mph early in the evening becoming light.
Pcpn amount.....0.00 inches.
Inversion Begin.....9 PM.

TIME (EDT)	5PM	6PM	7PM	8PM	9PM	10P	11P	MID	1AM	2AM	3AM	4AM	5AM
Sky (%).....	35	34	33	31	28	26	23	29	38	45	48	47	46
Weather type....													
Tstm cov.....													
Chc of pcpn (%).	10	10	10	10	10	10	10	10	10	10	10	10	10
Temp.....	95	93	90	86	83	83	82	81	80	79	78	79	78
RH.....	53	56	64	72	80	82	85	88	91	94	97	91	94
Aparnt tmp (F)..	107	105	102	96	91	92	90	88	87	79	78	79	78
Surface wnd dir.	S	S	S	S	S	S	S	S	S	S	S	S	S
Surface wnd spd.	9	8	7	6	4	4	4	4	4	4	4	4	4
Surface wnd gst.	12	10	10										
Mix hgt (kft)...	4.0	3.0	2.1	0.7	0.7	0.7	0.7	0.7	0.7	0.6	0.6	0.6	0.6
Transp wind dir.	S	S	S	S	S	S	S	S	S	S	S	S	S
Transp wind spd.	8	10	10	10	6	6	6	4	4	4	4	4	4

.WEDNESDAY...

Sky/weather.....Mostly sunny. Slight chance of showers and thunderstorms early in the afternoon. Chance of showers and thunderstorms early in the afternoon.
Chance of pcpn.....40 percent.
Max temperature.....Around 96.
Min humidity.....54 percent.
Max apparent temp...109.
Surface winds.....Light winds becoming south 6 to 8 mph in the late morning and afternoon.
Mixing Height.....Max 5000 ft AGL.
Transport Winds.....Light winds becoming southwest 10 to 14 mph in the late morning and afternoon.
Pcpn amount.....0.20 inches.
Inversion End.....9 AM.

TIME (EDT)	6 AM	8 AM	10 AM	NOON	2 PM	4 PM
Sky (%).....	44	36	42	48	54	61
Weather type....	NONE	NONE	NONE	RNSHWR	RNSHWR	RNSHWR
Tstm cov.....				S CHC	CHANCE	CHANCE
Chc of pcpn (%).	10	10	10	20	30	40
Temp.....	77	79	86	92	95	94
RH.....	97	94	75	60	54	56
Aparnt tmp (F)..	77	79	97	105	109	107
Surface wind....	SW 4	SW 4	SW 6	SW 7	SW 7	S 7
Surface wnd gst.				8	10	10
Mix hgt (ft)....	600	600	2200	3700	5000	5000
Transport wind..	SW 4	SW 4	SW 10	SW 10	SW 10	SW 14

.WEDNESDAY NIGHT...

Sky/weather.....Mostly cloudy. Chance of showers and thunderstorms.
Chance of pcpn.....50 percent.

Min temperature.....Around 78.
Max humidity.....94 percent.
Max apparent temp...105.
Surface winds.....South winds 6 to 8 mph in the evening becoming light.
Pcpn amount.....0.25 inches.
Inversion Begin.....9 PM.

TIME (EDT)	6 PM	9 PM	MIDNGT	3 AM
Sky (%).....	67	72	73	74
Weather type....	RNSHWR	RNSHWR	RNSHWR	RNSHWR
Tstm cov.....	CHANCE	CHANCE	CHANCE	CHANCE
Chc of pcpn (%).	40	50	40	40
Temp.....	91	83	81	79
RH.....	64	82	88	94
Aparnt tmp (F)..	105	92	88	79
Surface wind....	S 8G10	S 7G10	SW 4	SW 3G4
Mix hgt (ft)....	3400	900	900	800
Transport wind..	S 10	S 6	SW 4	SW 4

.THURSDAY...

Sky/weather.....Mostly cloudy. Chance of showers and thunderstorms early in the morning, then showers and thunderstorms likely.
Chance of pcpn.....60 percent.
Max temperature.....Around 91.
Min humidity.....64 percent.
Max apparent temp...102.
Surface winds.....Light winds becoming south around 6 mph in the afternoon.
Mixing Height.....Max 3600 ft AGL.
Transport Winds.....Light winds becoming southwest around 8 mph in the late morning and afternoon.
Pcpn amount.....0.35 inches.
Inversion End.....9 AM.

TIME (EDT)	6 AM	10 AM	2 PM
Sky (%).....	78	81	80
Weather type....	RNSHWR	RNSHWR	RNSHWR
Tstm cov.....	CHANCE	LIKELY	LIKELY
Chc of pcpn (%).	50	60	60
Temp.....	78	84	90
RH.....	94	77	64
Aparnt tmp (F)..	78	93	102
Surface wind....	SW 4	SW 4	S 6
Mix hgt (ft)....	700	2100	3600
Transport wind..	SW 4	W 8	SW 8

.FORECAST DAYS 3 THROUGH 7...
.FRIDAY...
Showers and thunderstorms likely. Lows in the mid 70s. Highs in the lower 90s. Light winds.
.SATURDAY...
Mostly cloudy. Showers and thunderstorms likely. Lows in the mid 70s. Highs around 90. Light winds.
.SUNDAY...
Mostly cloudy. Chance of showers and thunderstorms. Lows in the mid 70s. Highs in the lower 90s. Light winds.
.MONDAY...
Mostly cloudy. Chance of showers and thunderstorms. Lows in the mid 70s. Highs in the upper 80s.

.TUESDAY...
Mostly cloudy. Chance of showers and thunderstorms. Lows in the mid 70s. Highs around 90.

$$
Forecaster...Stroz
Requested by...Matthew Huyser
Type of request...HAZMAT
.TAG 1913754.0/CHS
.DELDT 08/13/19
.EMAIL huyser.matthew@epa.gov

Armstrong, Kathy

From: Huyser, Matthew
Sent: Tuesday, August 13, 2019 3:58 PM
To: Moore, Tony
Subject: Able - discussion on school protocols

Tony,

FYI: I spoke with Myra Reece and Keith Frost at DHEC about the benefit of sampling at the elementary school or at a downwind location the same distance as the elementary school. They're confident that the real-time particulate monitors and wind forecasts are a sufficient protective measure for the school officials to make decisions on whether to delay school arrival or keep children inside during recess. Smoke conditions during the daytime have been good, especially since DHEC's contractors began working on Sunday evening, so recess is unlikely to be canceled. School delays are likely or at least possible if there is a west or southwest wind and the school has already delayed teacher arrivals on Monday – so they've already exercised doing so.

Matthew J. Huyser, PE - On-Scene Coordinator
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epaosc.org

Armstrong, Kathy

From: Huyser, Matthew
Sent: Tuesday, August 13, 2019 2:08 PM
To: Jenkins, Brandi; Pinkney, James; Tolliver, Ronald
Subject: FW: Able - EPA update 8/13 1400hrs

Ron, Below is the 2pm update that we discussed yesterday for me to send to Gary with DHEC who is serving as the DHEC IC.

Matthew J. Huyser, PE - On-Scene Coordinator
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epaosc.org

From: Huyser, Matthew
Sent: Tuesday, August 13, 2019 2:04 PM
To: Stewart, R. Gary <stewarrg@dhec.sc.gov>; Carol Kemker <Kemker.Carol@epa.gov>
Subject: Able - EPA update 8/13 1400hrs

EPA continues to monitor air quality and particulates throughout the day. Overnight observations documented low to no smoke until midnight with increasing smoke after 1AM and smoke observed as far south as Sun City by 2:46AM. Peak concentrations in Sun City were measured at 162 ug/m3 with an average of 32 ug/m3 which is classified as Moderate for air quality index. Concentrations on all stations were reduced after the temperature inversion lifted at 9AM. Low VOC detections were recorded on the West and Southeast corners of the pile overnight with a peak CO detection of 7ppm. Three additional particulate monitors are being deployed today which will bring the total particulate monitors to 9 (3 DHEC and 6 EPA); the additional units will allow for broader monitoring coverage around populated areas.

EPA is actively making preparations to assume responsibility from Jasper County for relocation for residents who have ben evacuated. That transition will occur at the end of the week.

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epaosc.org

Armstrong, Kathy

From: Huyser, Matthew
Sent: Tuesday, August 13, 2019 2:04 PM
To: Stewart, R. Gary; Kemker, Carol
Subject: Able - EPA update 8/13 1400hrs

EPA continues to monitor air quality and particulates throughout the day. Overnight observations documented low to no smoke until midnight with increasing smoke after 1AM and smoke observed as far south as Sun City by 2:46AM. Peak concentrations in Sun City were measured at 162 ug/m3 with an average of 32 ug/m3 which is classified as **Moderate** for air quality index. Concentrations on all stations were reduced after the temperature inversion lifted at 9AM. Low VOC detections were recorded on the West and Southeast corners of the pile overnight with a peak CO detection of 7ppm. Three additional particulate monitors are being deployed today which will bring the total particulate monitors to 9 (3 DHEC and 6 EPA); the additional units will allow for broader monitoring coverage around populated areas.

EPA is actively making preparations to assume responsibility from Jasper County for relocation for residents who have ben evacuated. That transition will occur at the end of the week.

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epaosc.org

Armstrong, Kathy

From: Huyser, Matthew
Sent: Tuesday, August 13, 2019 1:41 PM
To: Marshall, Frances (Fran)
Cc: Tolliver, Ronald; Lisa Wagner; Carrasco, Sandra; Stewart, R. Gary; Crooks, Carol
Subject: FW: Able Fire health issue

I received this email from a resident. I think it would be best for DHEC to reach out to the resident in response. Is someone able to do that?

Matthew J. Huyser, PE - On-Scene Coordinator
U.S. Environmental Protection Agency, Region 4 | 61 Forsyth St SW | Atlanta, Georgia | 30303
Emergency Response Removal and Prevention Branch (ERRPB)
office: **404-562-8934** | cell: **678-427-8829** | fax: **404-562-8699**
epaosc.org

From: (b)(6) Personal Privacy
Sent: Tuesday, August 13, 2019 11:33 AM
To: Huyser, Matthew <Huyser.Matthew@epa.gov>
Subject: Fwd: Able Fire health issue

Good Morning Matthew,

I tried to e-mail DHEC (as you can see below) and it was returned as undeliverable because I'm not registered with them. This is the e-mail address listed on their web site concerning the Able Fire concerns. Can you forward it to them? They need to make the e-mail address available to receive e-mails from the public or take it off of their page.

Thank you for your assistance.

-----Original Message-----
From: (b)(6) Personal Privacy
To: ablefire <ablefire@dhec.sc.gov>
Sent: Tue, Aug 13, 2019 11:19 am
Subject: Able Fire health issue

Good Morning,

I have refrained from contacting you with the hope that the problem would be resolved however since it has not I am reaching out to you. I work less than a mile from the site and have been experiencing issues that seem to be getting worse. I have a headache everyday by the end of the work day. My throat tickles constantly and I have intermittent coughing spells and nausea. My eyes water and I feel ill when the time comes to go home. The issues go away when I'm home for the weekend to Hilton Head. I work 8-5 Monday-Friday and cannot take time off work until this gets taken care of.

When is the issue going to be resolved?

I have an appointment to see my doctor because I'm worried this could be causing a long term health issue and to see if there is anything to do for relief until the situation is resolved.

Please advise.

Thank you,

Renay Farr
(b)(6) Personal Privacy

Armstrong, Kathy

From: Huyser, Matthew
Sent: Tuesday, August 13, 2019 9:09 AM
To: Frederick, Tim
Subject: Re: Able - Summary Report NIGHT 8/12-8/13

There are a lot of issues
I'm more that a little pissed off at tetra tech right now

Matthew J. Huyser, PE - On-Scene Coordinator
U.S. Environmental Protection Agency, Region 4 | 61 Forsyth St SW | Atlanta, Georgia | 30303
Emergency Response Removal and Prevention Branch (ERRPB)
office: **404-562-8934** | cell: **678-427-8829** | fax:**404-562-8699**
epaosc.org

On Aug 13, 2019, at 9:03 AM, Frederick, Tim <Frederick.Tim@epa.gov> wrote:

> Matt –
>
> Why is the Brooke Mill TWA so high above the 1 hour and continuous PM 2.5 readings? Looks off.
>
> Tim
>
> **From:** Huyser, Matthew
> **Sent:** Tuesday, August 13, 2019 8:54 AM
> **To:** Scott Reynolds <reynolds@dhec.sc.gov>; Frost, Keith <frostrk@dhec.sc.gov>; thompsrb@dhec.sc.gov; shealyrg@dhec.sc.gov; Marshall, Frances (Fran) <marshaf2@dhec.sc.gov>; reecemc@dhec.sc.gov; Marcus, Mike <MARCUSJM@dhec.sc.gov>; Porter, Henry <porterhj@dhec.sc.gov>; Keisler, Van <keislecv@dhec.sc.gov>; Blalock, Juli <blalocje@dhec.sc.gov>; Taylor, Monica N. <TAYLORMN@dhec.sc.gov>; Dickman, Jacquelyn S. <DICKMAJS@dhec.sc.gov>; Timmerman, Kelsey A. <timmerka@dhec.sc.gov>; Threatt, Richard <threatrl@dhec.sc.gov>; Boyce, Lawra <boycelc@dhec.sc.gov>; Boswell, Wendy <BOSWELWM@dhec.sc.gov>; Stewart, R. Gary <stewarrg@dhec.sc.gov>; Crooks, Carol <Crookscl@DHEC.SC.GOV>
> **Cc:** Frederick, Tim <Frederick.Tim@epa.gov>; Tolliver, Ronald <Tolliver.Ronald@epa.gov>; Jenkins, Brandi <Jenkins.Brandi@epa.gov>; Pinkney, James <Pinkney.James@epa.gov>
> **Subject:** RE: Able - Summary Report NIGHT 8/12-8/13
>
> Graphs for summary report

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Subject: Able - Summary Report NIGHT 8/12-8/13

Correction, the Subject line of this email should say Summary Report NIGHT 8/12-8/13

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Subject: RE: Able - Summary Report NIGHT 8/11-8/12

Attached is the EPA data summary report for Nighttime 8/12 to 8/13/19

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Cc: Frederick, Tim; Tolliver, Ronald; Jenkins, Brandi; Pinkney, James
Subject: RE: Able - Summary Report NIGHT 8/12-8/13
Attachments: Able_START_Data_Viper Summary report_Able Fire Template_AR and DustTrack_ 2019-08-12-NIGHT_Graphs.pdf

Graphs for summary report

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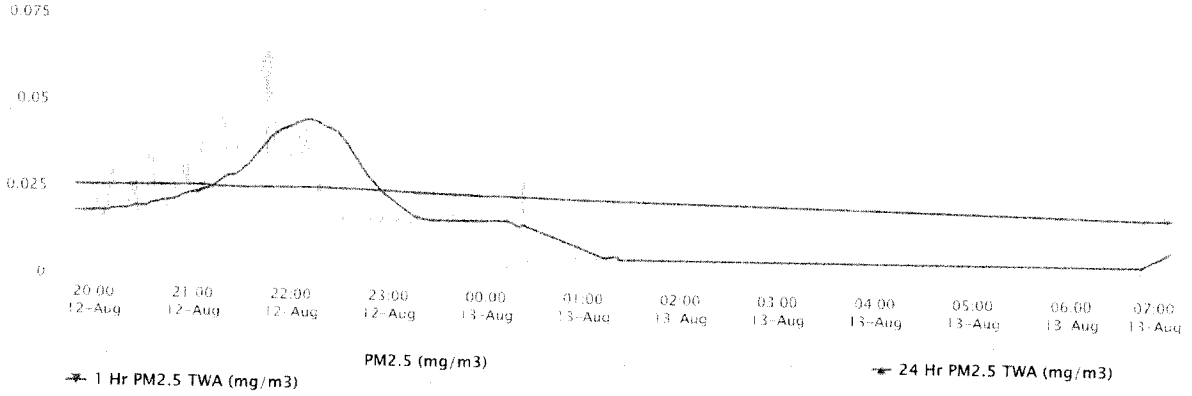
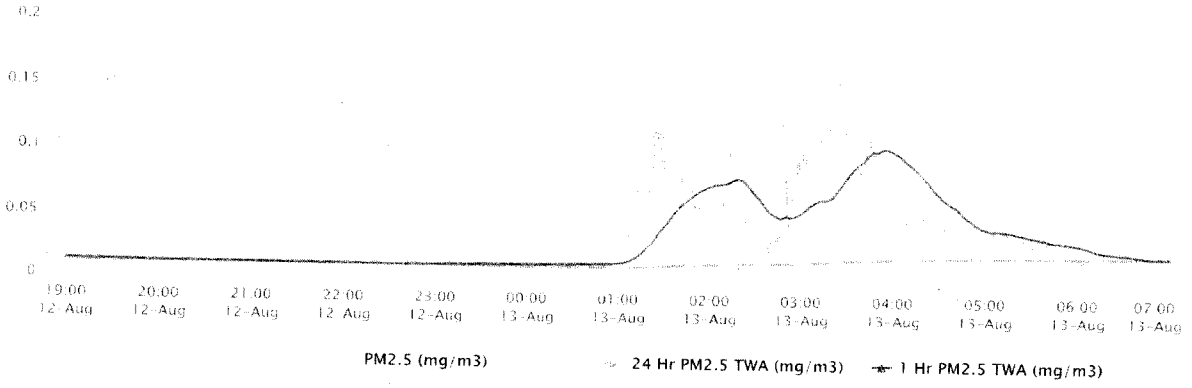
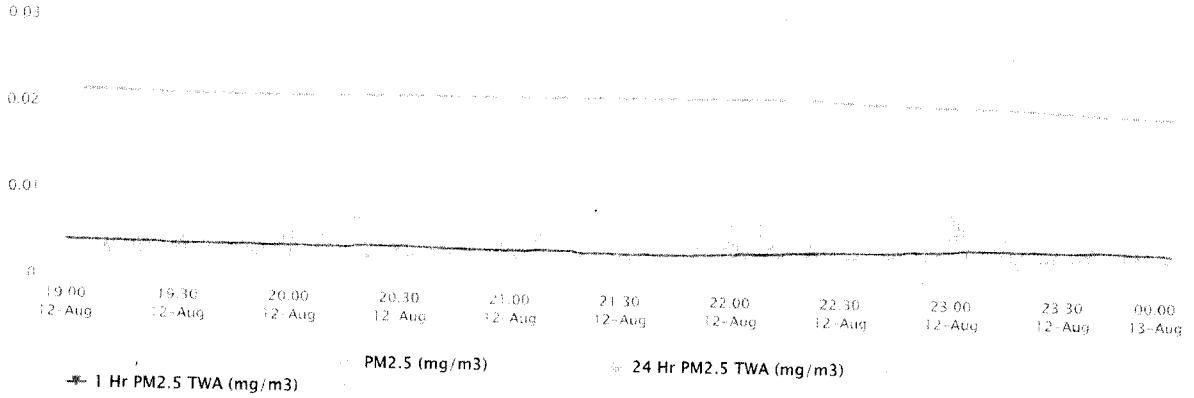
8/12/19 NIGHT Data for DustTrak 1 ($PM_{2.5}$) - Schinger and Hwy 170



8/12/19 NIGHT Data for DustTrak 2 ($PM_{2.5}$) - Sun City



8/12/19 NIGHT Data for DustTrak 3 ($PM_{2.5}$) – Brooke Mill



Armstrong, Kathy

From: Huyser, Matthew
Sent: Tuesday, August 13, 2019 8:40 AM
To: Steven Hodskins; Chandler & Angela Lloyd; john.kinsey@envirosmart.us; bryon@envirosmart.us
Subject: Able - Summary Report NIGHT 8/12-8/13
Attachments: Able_START_Data_Viper Summary report_Able Fire Template_AR and DustTrack_2019-08-12-NIGHT.pdf

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Air Monitoring Summary Tables

The table below summarize monitoring data collected on using EPA's Viper wireless remote monitoring system.

Project Name:

From: **8/12/19 19:00** ***To:*** ***8/13/19 6:58***

SE Corner of Able Contracting

Instrument	Analyte	Period Average Exceedances	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level (PEL/TLV/60 min AEGL)
AreaRAE 1	VOC	No	754	48	0 - 510 ppb	5.5 ppb	1,000 ppb
	CO	No	754	0	0 - 0 ppm	0 ppm	83 ppm
	H_2S	No	754	0	0 - 0 ppm	0 ppm	0.5 ppm
	O_2	No	754	754	20.9 - 20.9%	20.9%	<19.5 or >23%
	LEL	No	754	0	0 - 0%	0%	10%

Bowie Mill Apartments

Instrument	Analyte	Period Average Exceedances	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level (PEL/TLV/60 min AEGL)
DustTrak 1	PM-2.5	Moderate	2,026	2,026	3 - 67 µg/m³	14.1 µg/m³	See SOG #: T106

On Site, Immediately West of Pile

Instrument	Analyte	Period Average Exceedances	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level (PEL/TLV/60 min AEGL)
AreaRAE 2	VOC	No	751	151	0 - 640 ppb	43.9 ppb	1,000 ppb
	CO	No	751	66	0 - 7 ppm	0.3 ppm	83 ppm
	H_2S	No	751	0	0 - 0 ppm	0 ppm	0.5 ppm
	O_2	No	751	751	20.6 - 20.7%	20.6%	<19.5 or >23%
	LEL	No	751	0	0 - 0 %	0%	10%

EPA Mobile Command Post

Instrument	Analyte	Period Average Exceedances	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level (PEL/TLV/60 min AEGL)
DustTrak 2	PM-2.5	Good	961	961	2 - 9 µg/m³	3.6 µg/m³	See SOG #: T106

Able Contracting Warehouse, Northeast of Pile

Instrument	Analyte	Period Average Exceedances	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level (PEL/TLV/60 min AEGL)
AreaRAE 3	VOC	No	752	0	0 - 0 ppb	0 ppb	1,000 ppb
	CO	No	752	0	0 - 0 ppm	0 ppm	83 ppm
	H_2S	No	752	0	0 - 0 ppm	0 ppm	0.5 ppm
	O_2	No	752	752	20.9 - 20.9%	20.9%	<19.5 or >23%
	LEL	No	752	0	0 - 0%	0%	10%

Sun City

Instrument	Analyte	Period Average Exceedances	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level (PEL/TLV/60 min AEGL)
DustTrak 3	PM-2.5	Moderate	2,267	2,267	9 - 162 µg/m³	32.3 µg/m³	See SOG #: T106

Palmetto Exterminators

Instrument	Analyte	Period Average Exceedances	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level (PEL/TLV/60 min AEGL)
AreaRAE 4	VOC	No	747	1	0 - 2 ppb	0 ppb	1,000 ppb
	CO	No	747	0	0 - 0 ppm	0 ppm	83 ppm
	H_2S	No	747	0	0 - 0 ppm	0 ppm	0.5 ppm
	O_2	No	747	747	20.9 - 21.4%	21%	<19.5 or >23%
	LEL	No	747	0	0 - 0%	0%	10%

Notes:

- % Percent
- < Less than
- > Greater than
- AEGL Acute Exposure Guideline levels for airborne chemicals
- CO Carbon monoxide
- H_2S Hydrogen Sulfide
- LEL Lower Explosive Level
- min Minute
- O_2 Oxygen
- PEL Permissible exposure limit
- ppb Parts per billion
- ppm Parts per million
- PM Particulate matter
- SOG Standard Operating Guidelines
- TLV Threshold limit value
- µg/m³ Micrograms per cubic meter
- VOC Volatile organic compoud

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<Pinkney.James@epa.gov>
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Smoke was observed at ground level yesterday evening to the east in Brooke Mill and Abberly Chase Apartments. This was anticipated with generic wind forecasting so Dusttrak 1 was relocated to Brooke Mill apartments at approximately 7pm.
Visible smoke on the morning of 8/12 was traveling South towards Palmetto Exterminators and Sun City

No noteworthy VOC or CO readings

Average PM2.5 readings at Brooke Mill, Sun City, and Command Post (east side) were near 30 ug/m3 which is Moderate for the 24-hour average. Notice in the trendline persistent peaks of over 100 ug/m3 at Brooke Mill in at around 9pm and over 100 ug/m3 in Sun City at 1am.

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From: **8/12/19 19:00** ***To:*** ***8/13/19 6:58***

SE Corner of Able Contracting

Instrument	Analyte	Period Average Exceedances	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level (PEL/TLV/60 min AEGL)
AreaRAE 1	VOC	No	754	48	0 - 510 ppb	5.5 ppb	1,000 ppb
	CO	No	754	0	0 - 0 ppm	0 ppm	83 ppm
	H_2S	No	754	0	0 - 0 ppm	0 ppm	0.5 ppm
	O_2	No	754	754	20.9 - 20.9%	20.9%	<19.5 or >23%
	LEL	No	754	0	0 - 0%	0%	10%

Brooks Mill Apartments

Instrument	Analyte	Period Average Exceedances	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level (PEL/TLV/60 min AEGL)
DustTrak 1	PM-2.5	Moderate	2,026	2,026	3 - 67 µg/m³	14.1 µg/m³	See SOG #: T106

On Site, Immediately West of Pile

Instrument	Analyte	Period Average Exceedances	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level (PEL/TLV/60 min AEGL)
AreaRAE 2	VOC	No	751	151	0 - 640 ppb	43.9 ppb	1,000 ppb
	CO	No	751	66	0 - 7 ppm	0.3 ppm	83 ppm
	H_2S	No	751	0	0 - 0 ppm	0 ppm	0.5 ppm
	O_2	No	751	751	20.6 - 20.7%	20.6%	<19.5 or >23%
	LEL	No	751	0	0 - 0 %	0%	10%

EPA Mobile Command Post

Instrument	Analyte	Period Average Exceedances	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level (PEL/TLV/60 min AEGL)
DustTrak 2	PM-2.5	Good	961	961	2 - 9 µg/m³	3.6 µg/m³	See SOG #: T106

Able Contracting Workshop, Northeast of Pile

Instrument	Analyte	Period Average Exceedances	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level (PEL/TLV/60 min AEGL)
AreaRAE 3	VOC	No	752	0	0 - 0 ppb	0 ppb	1,000 ppb
	CO	No	752	0	0 - 0 ppm	0 ppm	83 ppm
	H_2S	No	752	0	0 - 0 ppm	0 ppm	0.5 ppm
	O_2	No	752	752	20.9 - 20.9%	20.9%	<19.5 or >23%
	LEL	No	752	0	0 - 0%	0%	10%

Sun City

Instrument	Analyte	Period Average Exceedances	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level (PEL/TLV/60 min AEGL)
DustTrak 3	PM-2.5	Moderate	2,267	2,267	9 - 162 µg/m³	32.3 µg/m³	See SOG #: T106

Palmetto Exterminators

Instrument	Analyte	Period Average Exceedances	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level (PEL/TLV/60 min AEGL)
AreaRAE 4	VOC	No	747	1	0 - 2 ppb	0 ppb	1,000 ppb
	CO	No	747	0	0 - 0 ppm	0 ppm	83 ppm
	H_2S	No	747	0	0 - 0 ppm	0 ppm	0.5 ppm
	O_2	No	747	747	20.9 - 21.4%	21%	<19.5 or >23%
	LEL	No	747	0	0 - 0%	0%	10%

Notes:

- % Percent
- < Less than
- > Greater than
- AEGL Acute Exposure Guideline levels for airborne chemicals
- CO Carbon monoxide
- H_2S Hydrogen Sulfide
- LEL Lower Explosive Level
- min Minute
- O_2 Oxygen
- PEL Permissible exposure limit
- ppb Parts per billion
- ppm Parts per million
- PM Particulate matter
- SOG Standard Operating Guidelines
- TLV Threshold limit value
- µg/m³ Micrograms per cubic meter
- VOC Volatile organic compoud

Armstrong, Kathy

From: Huyser, Matthew
Sent: Tuesday, August 13, 2019 7:33 AM
To: Chandler & Angela Lloyd
Subject: Able Fire Response IAP 20190813
Attachments: Able_IAP_20190813.pdf

See attached Incident Action Plan for operational period 8/13/2019 0700 to 8/14/2019 0700

Matthew J. Huyser, PE - On-Scene Coordinator
U.S. Environmental Protection Agency, Region 4 | 61 Forsyth St SW | Atlanta, Georgia | 30303
Emergency Response Removal and Prevention Branch (ERRPB)
office: **404-562-8934** | cell: **678-427-8829** | fax: **404-562-8699**
epaosc.org

1. Incident Name:	2. Operational Period: (Date / Time)	INCIDENT OBJECTIVES ICS 202 - EPA
ABLE CONTRACTING FIRE	From: 8/13/2019 0700 To: 8/14/2019 0700	

3. Incident Objective(s):

1) Extinguish fire and ensure it does not re-ignite
2) Ensure Health and safety of responders on-site
3) Maintain air quality monitoring and inform on-site personnel of adverse conditions
4) Establish and execute an outreach plan to notify community of response activities and air quality conditions

4. Operational Period Command Emphasis. (Priorities, Key Discussions/Directions):

Maintain communication between response partners ~~to~~ on activities, expectations, and progress.
Begin aggressive firefighting operations with heavy equipment

5. General Situation Awareness (Safety bullets, Weather, etc...):

1) Wind direction, modify work zone to be upwind when possible. Heat stress awareness
2) Equipment checklist documented before work starts. PPE check completed as well (SCBA).
3) Spotter for power lines provided by Santee Cooper
4) Traffic control for trucks, media, workers.
5) Weather conditions; Temp, 93°F, apparent 108°F, 0% rain, inversion end 0900, surface wind NE in AM, SE in PM.
6) Communication w/ truck drivers + equipment operators while loading/moving.

☒ Approved Site Safety Plan Located at: ~~[illegible]~~ ENSAFE ~~RESPONSE~~ TRAILER

6. Prepared By: (PSC)

Name: | Signature: | (Date / Time)

7. Approved By (Incident Commander(s)):

Name: [illegible] | Signature: [illegible] | 8/12/2019 (Date / Time)

3. Branch:	4. Division/Group/Staging:
FIRE BRANCH	

5. Operations Personnel:

ICS Position	Name	Affiliation	Contact # (s)
Operations Section Chief:	CAROL CROOKS	DHEC	803-315-0035
Branch Director:	STEVEN HODSKINS	ENSAFE	706-455-7556
Division/Group Supervisor/STAM:			

6. Resources Assigned: "X" indicates 204a attachment with additional instructions

Strike Team/Task Force/ Resource Identifier	Leader	Contact Info. #	# of Persons	Reporting Info/Notes/Remarks	
Safety FIRE TEAM	John Kinsey	843-491-0376	5		☐
ENVIRO ~~TEAM~~ / EQUIP OPS TEAM	Bryan Snow	843-609-6681	4		☐
					☐
Safety	John Kinsey	843-491-0376	2		☐
					☐
					☐

7. Work Assignments:

Safety Fire Team: Handling all water spraying operations, hydrants, pumper trucks. Conduct/oversee fire suppression activities.

Envir/Equip Ops: use heavy equipment to move material from stockpiles. Spread material on ground & load onto trucks for offsite disposal.

Safety: General oversight of work activities of Fire Safety Team and Enviro/Equip Ops health and safety issues. Documentation of H&S issues, equipment checks, use of SCBAs. Conduct daily H&S meetings. Conduct onsite air monitoring for worker safety.

8. Special Instructions:

9. Communications (radio and/or phone contact numbers needed for this assignment):

Name/Function	Radio: Freq./System/Channel	Phone	Cell/Pager
Fire Safety and Enviro/Equip Ops Team	1		

Emergency Communications:

10. Prepared by: (RESL) (Date / Time)	11. Reviewed by: (PSC) (Date / Time)	12. Reviewed by: (OPS) (Date / Time)
	8/12/2019	

ASSIGNMENT LIST 8/12/2019 **ICS 204 – EPA** *(Rev 05/18)*

1. Incident Name:	2. Operational Period: (Date / Time)	ASSIGNMENT LIST ICS 204 - EPA
ABLE CONTRACTING FIRE	From: 8/13/2019 0700 To: 8/14/2019 0700	
3. Branch: AIR MONITORING ~~AIR BRANCH~~ BRANCH	4. Division/Group/Staging:	

5. Operations Personnel:

ICS Position	Name	Affiliation	Contact # (s)
Operations Section Chief:	CAROL CROOKS	DHEC	803-315-0035
Branch Director:	MATTHEW HUYSER	EPA	678 4278829
Division/Group Supervisor/STAM:			

6. Resources Assigned: "X" indicates 204a attachment with additional instructions

Strike Team/Task Force/ Resource Identifier	Leader	Contact Info. #	# of Persons	Reporting Info/Notes/Remarks	
EPA AIR TEAM	ERIC HUSS	610 348 6959	4	NIGHT JOSIAH WILLIAMS 404-542-6530	☐
DHEC AIR TEAM	KEITH FROST	803-405-1529			☐
					☐
					☐
					☐
					☐

7. Work Assignments:

Maintain air monitor remote data collection.
Report alarm events to EPA and DHEC IC immediately
VOC ≥ 10ppm, CO ≥ 25 ppm, PM2.5 ≥ 0.25 mg/m³
Download data @ 0700 and 1900, provide data summary report in 1 hour from download

8. Special Instructions:

Document and record ~~[illegible]~~ visible smoke events to ground. Notify IC of observations and distance. Provide smoke status for 0700 ops Brief

9. Communications (radio and/or phone contact numbers needed for this assignment):

Name/Function	Radio: Freq./System/Channel	Phone	Cell/Pager
EPA 1	Mutual Aid Ch 8 24		

Emergency Communications: 911

10. Prepared by: (RESL) (Date / Time)	11. Reviewed by: (PSC) (Date / Time)	12. Reviewed by: (OPS) (Date / Time)
	8/12/2019	

8/12/2019

3. Communication Contact List:

NAME	POSITION	PHONE NUMBER	AGENCY / AFFLIATION	EMAIL ADDRESS
Gary Stewart	DHEC IC	[illegible]	DHEC	[illegible]
Carol Crooks	Ops Section Chief	803-215-0035	DHEC	crooksc1@dhec.sc.gov
Steven Hodskins	Branch Director	706-455-7550	Ensafe	shodskins@ensafe.com
John Kinsey	Fire Safety Team Leader	843-491-0376	Envirosmart	john.kinsey@enviro.us
~~Envir/Equip Ops~~				
Bryan Snow	Enviro/ Equip Ops Team	843-609-6681	Envirosmart	bryan@envirosmart.us
Keith Frost	DHEC Air Team	803-465-1529	DHEC	frostrk@dhec.sc.gov
Fran Marshall	Situation Team Leader	803-898-9556	DHEC	marshaf2@dhec.sc.gov

4. Prepared by: (Date / Time)

Name/Position: Signature: [signature] 8/2/2019

INCIDENT COMMUNICATIONS PLAN [signature] 8/12/2019 **ICS 205A - EPA** *(Rev 05/18)*

1. Incident Name:	2. Operational Period: (Date / Time)	INCIDENT COMMUNICATIONS PLAN ICS 205A - EPA
ABLE CONTRACTING FIRE	From: 8/13/2019 0700 To: 8/14/2019 0700	

3. Communication Contact List:

NAME	POSITION	PHONE NUMBER	AGENCY / AFFLIATION	EMAIL ADDRESS
MATTHEW HUYSER	EPA IC	678 427 8829	EPA	huyser.matthew@epa.gov
Courtney S. Redd	EPA AIR TEAM LEAD	678-6563481	START	courtney.redd@tetratech.com
ERIC Huss	EPA AIR TEAM	610-348-6959	START	eric.huss@tetratech.com
OTIS HALSEY	EPA STAGING	678 241.8856	Basha SERVICES	ohalsey@bashaservices.com
JOSIAH WILLIAMS	EPA AIR TEAM	404-542-6530	START	josiah.williams@tetratech.com
COREY PEASLEE	EPA AIR TEAM	443-977-7698	START	Corey.peaslee@tetratech.ca

4. Prepared by:

Name/Position: Signature: 8/12/2019 (Date / Time)

RAS 8/12/2019

ICS 207 Organizational Chart

Incident Name:	ABLE CONTRACTING FIRE
Operational Period:	8/13/2019 0700 - 8/14 0700
Prepared by:	
Date:	8/12/2019
Time:	MAH 8/12/2019 RDS 8/12/2019

UNIFIED ~~Incident~~ Commander
GARY STEWART, DHEC
MATTHEW HUYSER, EPA

JOHN SO KINSEY, ENVIROSMART

Safety Officer	
Liaison Officer	
Information Officer	

RON TOLLIVER, EPA
SANDRA CARRASCO, DHEC
LISA WAGNER, JASPER CO

Operations Section
OPS: CAROL CROOKS, DHEC
DOPS:

- Staging Area
- FIRE — Branch Director: STEVEN HODSKINS, ENSAFE
  - FIRE TEAM — ~~Division Supervisor~~ JOHN KINSEY, ENSAFE
  - ~~Division Supervisor~~
  - ENVIRO TEAM — ~~Division Supervisor~~ BRIAN SNOW, ENSAFE
  - Division Supervisor
  - EQUIPMENT OPS TEAM — ~~Division Supervisor~~ BRIAN SNOW, ENSAFE
- AIR — Branch Director: ~~ERIC HUSS, START~~ MATTHEW HUYSER, EPA
  - Group Supervisor
  - EPA AIR TEAM — ~~Group Supervisor~~ ERIC HUSS, START
  - DHEC AIR TEAM — ~~Group Supervisor~~ KEITH FROST, DHEC
  - Group Supervisor
  - Group Supervisor

Planning Section * ?
PSC:
DPSC:

- Resources Unit
- Situation Unit * Fran Marshall (DHEC)
- Demobilization Unit
- Documentation Unit
- Environmental Unit
- Technical Specialists
  - TIM FREDERICKS, EPA TOXICOLOGIST
  - SUE CASTEEL, ATSDR
  - SCOTT REYNOLDS, DHEC AR DIVISION

Logistics Section
LSC:
DLSC:

- Service Branch
  - Communication Unit Leader
  - Medical Unit Leader
  - Food Unit Leader
- Support Branch
  - Facilities Unit Leader
  - Supply Unit Leader
  - Ground Support Unit Leader

FS
DI

1. Incident Name:	2. Operational Period: (Date / Time)	DAILY MEETING/ CONFERENCE CALL SCHEDULE ICS 230 - EPA
ABLE CONTRACTING FIRE	From: 8/13/2019 0700 To: 8/14/2019 0700	

3. Meeting Schedule (Commonly-held meetings are included) :

Date/ Time	Meeting Name	Purpose	Attendees	Location
8/13 0700	OPERATIONS BRIEFING	Present Objectives Situation and Weather Work Assignments Safety Briefing	IC, OPS, Branch Directors, Team Leaders	ENSAFE Command Post
8/13 0800	OBJECTIVES MEETING	Review/Set objectives Identify critical tasks and command emphasis	DHEC IC, EPA IC, and Information Officers	EPA Command Post
8/13 Before 1200	TACTICS MEETING	Can objectives be acheived? What new tactics needed? What new resources needed? When done? Who responsible?	Operations Section Cheif Fire Branch Dir Air Monitoring Branch Dir	ENSAFE Command Post
8/13 Shift End	PLANNING MEETING	Situation update Results of tactics meeting Changes in work assignments	IC, OPS, Branch Directors	~~ENSAFE~~, ~~EPA~~ Command Post
8/14 0700	OPERATIONS BRIEFING	Present Objectives Situation and Weather Work Assignments Safety Briefing	IC, OPS, Branch Directors, Team Leaders	ENSAFE Command Post

4. Special and Other Meetings:

8/13 1400	SITUATION UPDATE DUE	Provide situation update for web posting	IC DHEC and IC EPA	send to Information Officers
8/13 0800	NIGHT Data Summary Report	Provide data summary report for distribution	Air Monitoring Team Leader	send to IC EPA
8/13 2000	DAY Data Summary Report	Provide data summary report for distributoin	Air Monitoring Team Leader	send to IC EPA

5. Prepared by: (PSC) (Date / Time)

Name: Signature: 8/12/2019

From: National Weather Service <chs.skywarn@noaa.gov>
Sent: Monday, August 12, 2019 9:01 AM
Subject: Spot Forecast

FNUS72 KCHS 121300
FWSCHS

Spot Forecast for Able Contracting Fire...USEPA R4
National Weather Service Charleston SC
900 AM EDT Mon Aug 12 2019

Forecast is based on forecast start time of 0900 EDT on August 12.
If conditions become unrepresentative, contact the National Weather Service.

.DISCUSSION...
A stationary front over southeast Georgia will dissipate through tonight. Drier high pressure will briefly build from the north on Tuesday, before a cold front drops into the area late Wednesday and lingers into this weekend.

Fog potential for tonight: Low.

.REST OF TODAY...

Sky/weather.....Mostly sunny. Slight chance of showers and thunderstorms early in the afternoon.
Chance of pcpn.....20 percent.
Max temperature.....Around 92.
Min humidity.....62 percent.
Max apparent temp...106.
Surface winds.....Light winds becoming east 7 to 9 mph in the afternoon.
Mixing Height.....Max 4200 ft AGL.
Transport Winds.....East 6 to 10 mph.
Pcpn amount.....0.00 inches.
Inversion End.....0900.

TIME (EDT)	9AM	10A	11A	12P	1PM	2PM	3PM	4PM	5PM
Sky (%).....	38	42	45	47	49	49	48	46	43
Weather type....						RW	RW	RW	RW
Tstm cov.....						SCH	SCH	SCH	SCH
Chc of pcpn (%).	10	10	10	10	10	20	20	20	20
Temp.....	83	85	87	89	91	91	91	91	91
RH.....	82	77	72	68	62	62	62	62	62
Aparnt tmp (F)..	92	96	99	102	103	103	103	103	103
Surface wnd dir.	NE	NE	NE	E	E	E	E	E	E
Surface wnd spd.	4	4	4	7	7	8	9	9	9
Surface wnd gst.	6	6	6	12	12	14	14	14	14
Mix hgt (kft)...	1.7	2.2	2.8	3.2	3.7	4.2	4.1	4.1	3.5
Transp wind dir.	E	E	E	E	E	E	E	E	E
Transp wind spd.	6	6	6	8	8	8	10	10	10

.TONIGHT...

Sky/weather.....Partly cloudy.
Chance of pcpn.....10 percent.
Min temperature.....Around 75.
Max humidity.....100 percent.
Max apparent temp...102.
Surface winds.....Southeast winds 6 to 9 mph early in the evening becoming light.
Pcpn amount.....0.00 inches.
Inversion Begin.....2100.

TIME (EDT)	6 PM	8 PM	10 PM	MIDNGT	2 AM	4 AM
Sky (%).....	41	38	43	48	49	45
Weather type....	NONE	NONE	NONE	NONE	NONE	NONE
Tstm cov.....						
Chc of pcpn (%).	10	10	0	0	10	10
Temp.....	90	85	82	79	78	77
RH.....	64	75	85	94	97	97
Aparnt tmp (F)..	102	94	90	79	78	77
Surface wind....	E 9	SE 6	E 3	E 1	NE 0	N 0
Surface wnd gst.	14	8	6	4	2	2
Mix hgt (ft)....	2900	1800	2100	2500	2800	3200
Transport wind..	SE 10	SE 10	SE 8	SE 6	SE 6	SE 4

.TUESDAY...

Sky/weather.....Mostly sunny.
Chance of pcpn.....10 percent.
Max temperature.....Around 93.
Min humidity.....56 percent.
Max apparent temp...108.
Surface winds.....Light winds becoming southeast 6 to 8 mph in the afternoon.
Mixing Height.....Max 4900 ft AGL.
Transport Winds.....Light winds becoming southeast around 8 mph late in the afternoon.
Pcpn amount.....0.00 inches.
Inversion End.....0900.

TIME (EDT)	6 AM	9 AM	NOON	3 PM
Sky (%).....	43	42	41	41
Weather type....	NONE	NONE	NONE	NONE
Tstm cov.....				
Chc of pcpn (%).	0	0	10	10
Temp.....	76	82	90	93
RH.....	100	82	64	56
Aparnt tmp (F)..	76	89	102	105
Surface wind....	N 0G2	NE 1G2	SE 4	SE 8G10
Mix hgt (ft)....	3500	4100	4600	4800
Transport wind..	E 2	E 2	SE 4	SE 8

.FORECAST DAYS 3 THROUGH 7...
.WEDNESDAY...
Partly cloudy. Chance of showers and thunderstorms. Lows in the upper 70s. Highs in the mid 90s. South winds around 5 mph.
.THURSDAY...
Mostly cloudy with showers and thunderstorms likely. Lows in the upper 70s. Highs around 90. Southwest winds around 6 mph.
.FRIDAY...
Showers and thunderstorms likely. Lows in the mid 70s. Highs in the upper 80s. Light winds.
.SATURDAY...
Showers and thunderstorms likely. Lows in the mid 70s. Highs in

$$
Forecaster...33
Requested by...Matthew Huyser
Type of request...HAZMAT
.TAG 1913692.0/CHS
.DELDT 08/12/19
.EMAIL huyser.matthew@epa.gov

Armstrong, Kathy

From:	Huyser, Matthew
Sent:	Tuesday, August 13, 2019 1:26 AM
To:	Frost, Keith; shealyrg@dhec.sc.gov; Marshall, Frances (Fran); reecemc@dhec.sc.gov; Porter, Henry; Keisler, Van; Threatt, Richard; Stewart, R. Gary; Crooks, Carol
Cc:	Tolliver, Ronald; Jenkins, Brandi; Pinkney, James; Steven Hodskins; john.kinsey@envirosmart.us; bryon@envirosmart.us
Subject:	Able Fire Response IAP 20190813
Attachments:	Able_IAP_20190813.pdf

See attached IAP for operational period 8/13/2019 0700 to 8/14/2019 0700

Matthew J. Huyser, PE - On-Scene Coordinator
U.S. Environmental Protection Agency, Region 4 | 61 Forsyth St SW | Atlanta, Georgia | 30303
Emergency Response Removal and Prevention Branch (ERRPB)
office: **404-562-8934** | cell: **678-427-8829** | fax: **404-562-8699**
epaosc.org

1. Incident Name:	2. Operational Period: (Date / Time)	ASSIGNMENT LIST ICS 204 - EPA
ABLE CONTRACTING FIRE	From: 8/13/2019 0730 To: 8/14/2019 0700	

3. Branch:	4. Division/Group/Staging:
AIR MONITORING ~~AIR BRANCH~~ BRANCH	

5. Operations Personnel:

ICS Position	Name	Affiliation	Contact # (s)
Operations Section Chief:	CAROL CROOKS	DHEC	803-315-0035
Branch Director:	MATTHEW HUYSER	EPA	678 4278829
Division/Group Supervisor/STAM:			

6. Resources Assigned: "X" indicates 204a attachment with additional instructions

Strike Team/Task Force/ Resource Identifier	Leader	Contact Info. #	# of Persons	Reporting Info/Notes/Remarks	
EPA AIR TEAM	ERIC HUSS	610 348 6959	4	NIGHT JOSIAH WILLIAMS 404-542-6530	☐
DHEC AIR TEAM	KEITH FROST	803-405-1529			☐
					☐
					☐
					☐
					☐

7. Work Assignments:

Maintain air monitor remote data collection.
Report alarm events to EPA and DHEC IC immediately
VOC ≥ 10ppm, CO ≥ 25 ppm, PM2.5 ≥ 0.25 mg/m³
Download data @ 0700 and 1900, provide data summary report in 1 hour from download

8. Special Instructions:

Document and record ~~too smoke~~ visible smoke events to ground. Notify IC of observations and distance. Provide smoke status for 0700 ops Brief

9. Communications (radio and/or phone contact numbers needed for this assignment):

Name/Function	Radio: Freq./System/Channel	Phone	Cell/Pager
EPA 1	Mutual Aid Ch 8 24		

Emergency Communications: 911

10. Prepared by: (RESL) (Date / Time)	11. Reviewed by: (PSC) (Date / Time)	12. Reviewed by: (OPS) (Date / Time)
	8/12/2019	
	8/12/2019	

1. Incident Name:	2. Operational Period: (Date / Time)	INCIDENT COMMUNICATIONS PLAN ICS 205A - EPA
ABLE CONTRACTING FIRE	From: 8/13/2019 0700 To: 8/14/2019 0700	

3. Communication Contact List:

NAME	POSITION	PHONE NUMBER	AGENCY / AFFLIATION	EMAIL ADDRESS
MATTHEW HUYSER	EPA IC	678 427 8829	EPA	HUYSER.MATTHEW@EPA.GOV
Courtney S. Redd	EPA AIR TEAM LEAD	678-6563481	START	courtney.redd@tetratech.com
ERIC HUSS	EPA AIR TEAM	610-348-6959	START	eric.huss@tetratech.com
OTIS HALSEY	EPA STAGING	678 241.8856	Basha SERVICES	ohalsey@bashaservices.com
JOSIAH WILLIAMS	EPA AIR TEAM	404-542-6530	START	josiah.williams@tetratech.com
CORY PEASLEE	EPA AIR TEAM	443-977-7698	START	Corey.peaslee@tetratech.ca

4. Prepared by:	(Date / Time)
Name/Position:	Signature: 8/12/2019

8/12/2019

1. Incident Name:	2. Operational Period: (Date / Time)	INCIDENT OBJECTIVES ICS 202 - EPA
ABLE CONTRACTING FIRE	From: 8/13/2019 0700 To: 8/14/2019 0700	

3. Incident Objective(s):

1) Extinguish fire and ensure it does not re-ignite
2) Ensure Health and safety of responders on-site
3) Maintain air quality monitoring and inform on-site personnel of adverse conditions
4) Establish and execute an outreach plan to notify community of response activities and air quality conditions

4. Operational Period Command Emphasis. (Priorities, Key Discussions/Directions):

Maintain communication between response partners ~~to~~ on activities, expectations, and progress.
Begin aggressive firefighting operations with heavy equipment

5. General Situation Awareness (Safety bullets, Weather, etc...):

1) Wind direction, modify work zone to be upwind when possible. Heat stress awareness
2) Equipment checklist documented before work starts. PPE check completed as well (SCBA).
3) Spotter for power lines provided by Santee Cooper
4) Traffic control for trucks, media, workers.
5) Weather conditions; Temp. 93°F, apparent 108°F, 0% rain, inversion end 0900, surface wind NE in AM, SE in PM.
6) Communication w/ truck drivers + equipment operators while loading/moving.

☒ Approved Site Safety Plan Located at: ~~[illegible]~~ ENSAFE ~~RESPONSE~~ TRAILER

6. Prepared By: (PSC)		(Date / Time)
Name:	Signature:	

7. Approved By (Incident Commander(s)):		(Date / Time)
Name: [illegible]	Signature: [illegible]	8/12/2019

From: National Weather Service <chs.skywarn@noaa.gov>
Sent: Monday, August 12, 2019 9:01 AM
Subject: Spot Forecast

FNUS72 KCHS 121300
FWSCHS

Spot Forecast for Able Contracting Fire...USEPA R4
National Weather Service Charleston SC
900 AM EDT Mon Aug 12 2019

Forecast is based on forecast start time of 0900 EDT on August 12.
If conditions become unrepresentative, contact the National Weather
Service.

.DISCUSSION...
A stationary front over southeast Georgia will dissipate through
tonight. Drier high pressure will briefly build from the north on
Tuesday, before a cold front drops into the area late Wednesday
and lingers into this weekend.

Fog potential for tonight: Low.

.REST OF TODAY...

Sky/weather.....Mostly sunny. Slight chance of showers and
thunderstorms early in the afternoon.
Chance of pcpn.....20 percent.
Max temperature.....Around 92.
Min humidity.....62 percent.
Max apparent temp...106.
Surface winds.....Light winds becoming east 7 to 9 mph in the
afternoon.
Mixing Height.....Max 4200 ft AGL.
Transport Winds.....East 6 to 10 mph.
Pcpn amount.....0.00 inches.
Inversion End.....0900.

TIME (EDT)	9AM	10A	11A	12P	1PM	2PM	3PM	4PM	5PM
Sky (%).....	38	42	45	47	49	49	48	46	43
Weather type....						RW	RW	RW	RW
Tstm cov.....						SCH	SCH	SCH	SCH
Chc of pcpn (%).	10	10	10	10	10	20	20	20	20
Temp.....	83	85	87	89	91	91	91	91	91
RH.....	82	77	72	68	62	62	62	62	62
Aparnt tmp (F)..	92	96	99	102	103	103	103	103	103
Surface wnd dir.	NE	NE	NE	E	E	E	E	E	E
Surface wnd spd.	4	4	4	7	7	8	9	9	9
Surface wnd gst.	6	6	6	12	12	14	14	14	14
Mix hgt (kft)...	1.7	2.2	2.8	3.2	3.7	4.2	4.1	4.1	3.5
Transp wind dir.	E	E	E	E	E	E	E	E	E
Transp wind spd.	6	6	6	8	8	8	10	10	10

.TONIGHT...

	To:	

3. Communication Contact List:

NAME	POSITION	PHONE NUMBER	AGENCY / AFFLIATION	EMAIL ADDRESS
Gary Stewart	DHEC IC	[illegible]	DHEC	[illegible]
Carol Crooks	Ops Section Chief	803-[illegible]-0055	DHEC	[illegible]@dhec.sc.gov
Steven Hodskins	Branch Director	706-455-7556	Ensafe	shodskins@ensafe.com
John Kinsey	Fire Safety Team Leader	843-491-0376	Enviro Smart	john.kinsey@enviro.us
~~Envir/Equip Ops~~				
Bryon Snow	Enviro/ Equip Ops Team	843-609-0051	Enviro Smart	bryon@enviro smart.us
Keith Frost	DHEC Air Team	803-465-1529	DHEC	frostrk@dhec.sc.gov
Fran Marshall	Situation Team Leader	803-898-9556	DHEC	marshaf2@dhec.sc.gov

4. Prepared by: (Date / Time)

Name/Position: Signature: [signature] 8/2/2019

INCIDENT COMMUNICATIONS PLAN [signature] 8/12/2019 **ICS 205A - EPA** *(Rev 05/18)*

ICS 207 Organizational Chart

Incident Name:	ABLE CONTRACTING FIRE
Operational Period:	8/13/2019 0700 - 8/14 0700
Prepared by:	
Date:	8/12/2019
Time:	

MAA 8/12/2019 RDS 8/12/2019

~~UNIFIED Incident~~ Commander
CARY STEWART, DHEC
MATTHEW HUISER, EPA

JOHN SO KINSEY, EPA ENVIROSMART

Safety Officer
Liaison Officer
Information Officer

RON TOLLIVER, EPA
SANDRA CARRASCO, DHEC
LISA WAGNER, WATER CO

Operations Section
OPS: CAROL CROOKS, DHEC
DOPS:

Staging Area

FIRE
Branch Director
STEVEN HODSKINS
ENSAFE

AIR
Branch Director
~~ERIC HUSS, START~~
MATTHEW HUISER
EPA

FIRE TEAM
~~Division Supervisor~~
JOHN KINSEY
ENSAFE

~~Division Supervisor~~

ENVIRO TEAM
~~Division Supervisor~~
BRIAN SNOW
ENSAFE

Division Supervisor

EQUIPMENT OPS TEAM
~~Division Supervisor~~
BRIAN SNOW,
ENSAFE

~~Group Supervisor~~

EPA AIR TEAM
~~Group Supervisor~~
ERIC HUSS, START

DHEC AIR TEAM
~~Group Supervisor~~
KEITH FROST, DHEC

Group Supervisor

Group Supervisor

Planning Section
PSC:
DPSC:

Resources Unit

Situation Unit
Frank Marshall (DHEC)

Demobilization Unit

Documentation Unit

Environmental Unit

Technical Specialists
TIM FREDERICK, EPA TOXICOLOGIST
SUE CASTEEL, ATSDR
SCOTT REYNOLDS, DHEC AIR DIVISION

Logistics Section
LSC:
DLSC:

Service Branch

Communication Unit Leader

Medical Unit Leader

Food Unit Leader

Support Branch

Facilities Unit Leader

Supply Unit Leader

Ground Support Unit Leader

FS
DI

3. Branch:	4. Division/Group/Staging:
FIRE BRANCH	

5. Operations Personnel:

ICS Position	Name	Affiliation	Contact # (s)
Operations Section Chief:	CAROL CROOKS	DHEC	803-315-0035
Branch Director:	STEVEN HODSKINS	ENSAFE	706-795-7556
Division/Group Supervisor/STAM:			

6. Resources Assigned: **"X" indicates 204a attachment with additional instructions**

Strike Team/Task Force/ Resource Identifier	Leader	Contact Info. #	# of Persons	Reporting Info/Notes/Remarks	
Safety FIRE TEAM	John Kinsey	843-991-0376	5		☐
ENVIRO ~~TEAM~~ / EQUIP OPS TEAM	Bryan Snow	843-609-6681	4		☐
					☐
Safety	John Kinsey	843-991-0376	2		☐
					☐
					☐

7. Work Assignments:

Safety Fire Team: Handling all water spraying operations, hydrants, pumper trucks. Conduct/oversee fire suppression activities

Envir/Equip Ops: Use heavy equipment to [illegible] material from stockpiles, spread material on ground & [illegible] onto trucks for offsite disposal.

Safety: General oversight of work activities of Fire Safety Team and Envir/Equip Ops health and safety issues. Documentation of H&S issues, equipment checks, use of SCBAs. Conduct daily H&S meetings. Conduct onsite air monitoring for worker safety.

8. Special Instructions:

9. Communications (radio and/or phone contact numbers needed for this assignment):

Name/Function	Radio: Freq./System/Channel	Phone	Cell/Pager
Fire Safety and Envir/Equip Ops Team	1		

Emergency Communications:

10. Prepared by: (RESL) (Date / Time)	11. Reviewed by: (PSC) (Date / Time)	12. Reviewed by: (OPS) (Date / Time)
	[signature] 8/12/2019	

ASSIGNMENT LIST [signature] 8/12/2019 **ICS 204 – EPA** *(Rev 05/18)*

Armstrong, Kathy

From: Huyser, Matthew
Sent: Wednesday, August 14, 2019 11:29 PM
To: Jenkins, Brandi; Pinkney, James; Tolliver, Ronald
Cc: Wise, Allison; McCullough, Rachel
Subject: RE: Able - Summary Report DAY 8/14/2019
Attachments: Able_Viper Summary report_20190814DAY_withdiscussionpage.pdf

The summary reports will all be loaded to the documents section of the Site response.epa.gov page.
From there they can be loaded to the EPA.gov/superfund page
I have a description of each report in the body of my emails that describes observations and anomalies with the summary report. That language could be added as an additional page to the pdf summary report. The attached document is an example of what it would look like. Those could be finished by the end of the day tomorrow and then available for posting.

If this is acceptable then I will do so and begin either posting them to response.epa.gov from which they can be grabbed or sending them to Ron and/or Tina directly

Matthew J. Huyser, PE - On-Scene Coordinator
U.S. Environmental Protection Agency, Region 4 | 61 Forsyth St SW | Atlanta, Georgia | 30303
Emergency Response Removal and Prevention Branch (ERRPB)
office: **404-562-8934** | cell: **678-427-8829** | fax: **404-562-8699**
epaosc.org

From: Jenkins, Brandi <Jenkins.Brandi@epa.gov>
Sent: Wednesday, August 14, 2019 10:59 PM
To: Pinkney, James <Pinkney.James@epa.gov>; Tolliver, Ronald <Tolliver.Ronald@epa.gov>
Cc: Huyser, Matthew <Huyser.Matthew@epa.gov>; Wise, Allison <Wise.Allison@epa.gov>; McCullough, Rachel <McCullough.Rachel@epa.gov>
Subject: FW: Able - Summary Report DAY 8/14/2019

We need to have this data posted tomorrow along with the other data from the past couple of days. The summary Matt included below is a good summary but should be tweaked a little for posting.

James – can you work on tweaking the message first thing in the morning? I'd like to make sure we lead with a summary of the additional PM monitors we added. This information was in this morning's emails from Matt.

Thanks,
Brandi

From: Huyser, Matthew <Huyser.Matthew@epa.gov>
Sent: Wednesday, August 14, 2019 10:49 PM
To: Scott Reynolds <reynolds@dhec.sc.gov>; Frost, Keith <frostrk@dhec.sc.gov>; thompsrb@dhec.sc.gov; shealyrg@dhec.sc.gov; Marshall, Frances (Fran) <marshaf2@dhec.sc.gov>; reecemc@dhec.sc.gov; Marcus, Mike <MARCUSJM@dhec.sc.gov>; Porter, Henry <porterhj@dhec.sc.gov>; Keisler, Van <keislecv@dhec.sc.gov>; Blalock, Juli

<blalocje@dhec.sc.gov>; Taylor, Monica N. <TAYLORMN@dhec.sc.gov>; Dickman, Jacquelyn S. <DICKMAJS@dhec.sc.gov>; Timmerman, Kelsey A. <timmerka@dhec.sc.gov>; Threatt, Richard <threatrl@dhec.sc.gov>; Boyce, Lawra <boycelc@dhec.sc.gov>; Boswell, Wendy <BOSWELWM@dhec.sc.gov>; Stewart, R. Gary <stewarrg@dhec.sc.gov>; Crooks, Carol <Crookscl@DHEC.SC.GOV>; Frank Edwards <fedwards@jaspercountysc.gov>
Cc: Frederick, Tim <Frederick.Tim@epa.gov>; Tolliver, Ronald <Tolliver.Ronald@epa.gov>; Jenkins, Brandi <Jenkins.Brandi@epa.gov>; Pinkney, James <Pinkney.James@epa.gov>
Subject: Able - Summary Report DAY 8/14/2019

Attached is the EPA data summary report for Daytime on 8/13 – 8/14/2019

Thunderstorms and rain throughout the afternoon led to some increased particulate measurement readings. Smoke conditions at the Site increased near ground surface as rain persisted and cloud cover prevented plumes from rising verticaly.

All EBAMs and Sun City, Brooke Mill, and the EPA MCP recorded peak concentrations of 150-200 ug/m3 at the same time intense rainfall was observed. Sun City lost data connection due to damaged electronic equipment. A peak of 287 ug/m3 at short cut road appears unrelated to any smoke plume. Average concentraitons for all locations range from 18.9 to 27 ug/m3 which would be classified as Moderate air quality for PM2.5.

Peak VOCs occurred on the west site with 0.95 ppm. Peaks for CO occurred in the West site at 23 ppm and the northeast side at 16 ppm. The areaRAE at Palmetto Exterminators was upwind of the Site all day and shoed no detections for VOCs or CO

Matthew J. Huyser, PE - On-Scene Coordinator
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epaosc.org

Air Monitoring Summary Tables

The table below summarize monitoring data collected on using EPA's Viper wireless remote monitoring system.

Project Name:

From: **8/14/19 7:00** ***To:*** ***8/14/19 18:58***

SE Corner of Able Contracting

Instrument	Analyte	Period Average Exceedances	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level (PEL/TLV/60 min AEGL)
AreaRAE 1	VOC	No	723	14	0 - 272 ppb	2 ppb	1,000 ppb
	CO	No	723	14	0 - 5 ppm	0.1 ppm	83 ppm
	H_2S	No	723	0	0 - 0 ppm	0 ppm	0.5 ppm
	O_2	No	723	723	20.9 - 20.9%	20.9%	<19.5 or >23%
	LEL	No	723	0	0 - 0%	0%	10%

Peacock Collision

Instrument	Analyte	Period Average Exceedances	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level (PEL/TLV/60 min AEGL)
DustTrak 1	PM-2.5	Moderate	2,164	2,164	11 - 54 µg/m³	23.9 µg/m³	See SOG #: T106

On Site, Immediately West of Pile

Instrument	Analyte	Period Average Exceedances	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level (PEL/TLV/60 min AEGL)
AreaRAE 2	VOC	No	713	13	0 - 948 ppb	4.3 ppb	1,000 ppb
	CO	No	713	60	0 - 23 ppm	0.4 ppm	83 ppm
	H_2S	No	713	0	0 - 0 ppm	0 ppm	0.5 ppm
	O_2	No	713	713	20.4 - 20.9%	20.6%	<19.5 or >23%
	LEL	No	713	0	0 - 0 %	0%	10%

Short Cut Road

Instrument	Analyte	Period Average Exceedances	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level (PEL/TLV/60 min AEGL)
DustTrak 2	PM-2.5	Moderate	2,026	1,842	0 - 287 µg/m³	18.5 µg/m³	See SOG #: T106

Able Contracting Workshop, Northeast of Pile

Instrument	Analyte	Period Average Exceedances	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level (PEL/TLV/60 min AEGL)
AreaRAE 3	VOC	No	717	2	0 - 176 ppb	0.3 ppb	1,000 ppb
	CO	No	717	4	0 - 16 ppm	0 ppm	83 ppm
	H_2S	No	717	0	0 - 0 ppm	0 ppm	0.5 ppm
	O_2	No	717	717	20.5 - 20.9%	20.8%	<19.5 or >23%
	LEL	No	717	0	0 - 0%	0%	10%

Grace Costal Church

Instrument	Analyte	Period Average Exceedances	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level (PEL/TLV/60 min AEGL)
DustTrak 3	PM-2.5	Moderate	545	545	10 - 83 µg/m³	23.3 µg/m³	See SOG #: T106

Palmetto Exterminators

Instrument	Analyte	Period Average Exceedances	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level (PEL/TLV/60 min AEGL)
AreaRAE 4	VOC	No	681	0	0 - 0 ppb	0 ppb	1,000 ppb
	CO	No	681	0	0 - 0 ppm	0 ppm	83 ppm
	H_2S	No	681	0	0 - 0 ppm	0 ppm	0.5 ppm
	O_2	No	681	681	19.4 - 21.4%	20.5%	<19.5 or >23%
	LEL	No	681	0	0 - 0%	0%	10%

Sun City

Instrument	Analyte	Period Average Exceedances	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level (PEL/TLV/60 min AEGL)
EBAM 1	PM-2.5	Moderate	591	414	0 - 192 µg/m³	19.1 µg/m³	See SOG #: T106

Brooke Mill Apartments

Instrument	Analyte	Period Average Exceedances	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level (PEL/TLV/60 min AEGL)
EBAM 2	PM-2.5	Moderate	737	538	0 - 146 µg/m³	20.6 µg/m³	See SOG #: T106

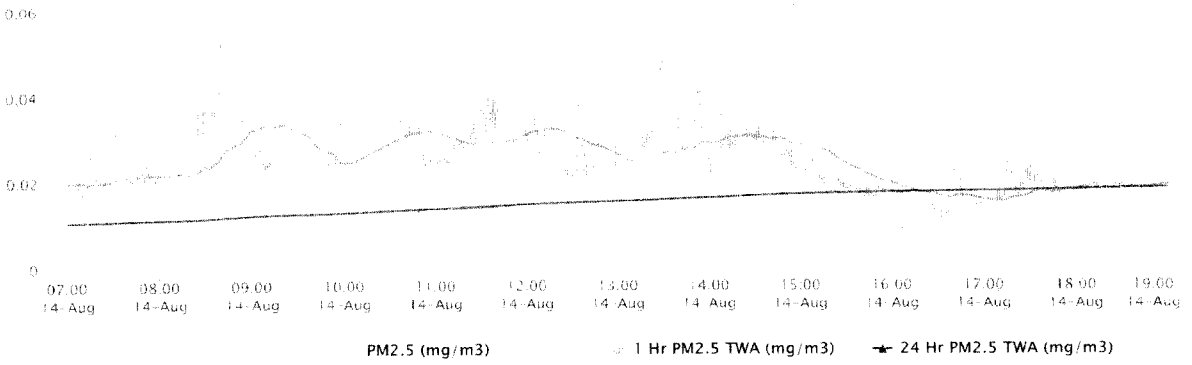
EPA Mobile Command Post

Instrument	Analyte	Period Average Exceedances	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level (PEL/TLV/60 min AEGL)
EBAM 3	PM-2.5	Moderate	521	373	0 - 200 µg/m³	27 µg/m³	See SOG #: T106

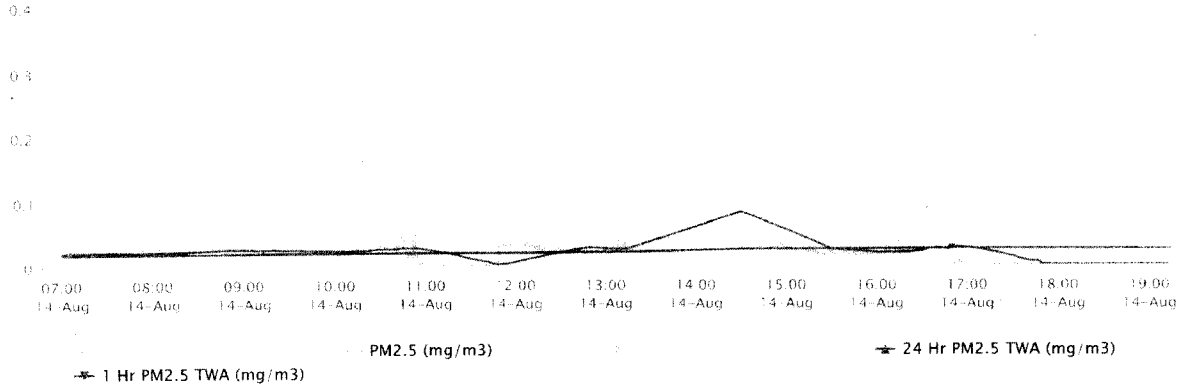
Notes:

%	Percent
<	Less than
>	Greater than
AEGL	Acute Exposure Guideline levels for airborne chemicals
CO	Carbon monoxide
H_2S	Hydrogen Sulfide
LEL	Lower Explosive Level
min	Minute
O_2	Oxygen
PEL	Permissible exposure limit
ppb	Parts per billion
ppm	Parts per million
PM	Particulate matter
SOG	Standard Operating Guidelines
TLV	Threshold limit value
µg/m³	Micrograms per cubic meter
VOC	Volatile organic compoud

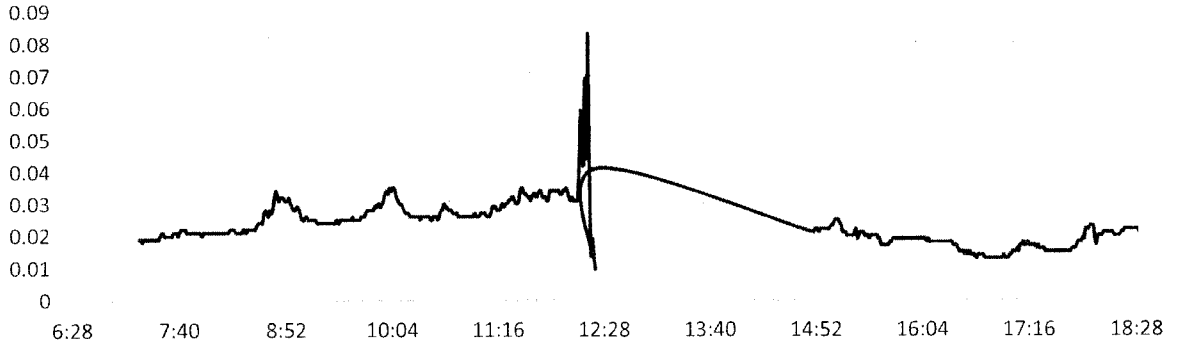
8/14/19 DAY Data for DustTrak 1 ($PM_{2.5}$) - Peacock Collision



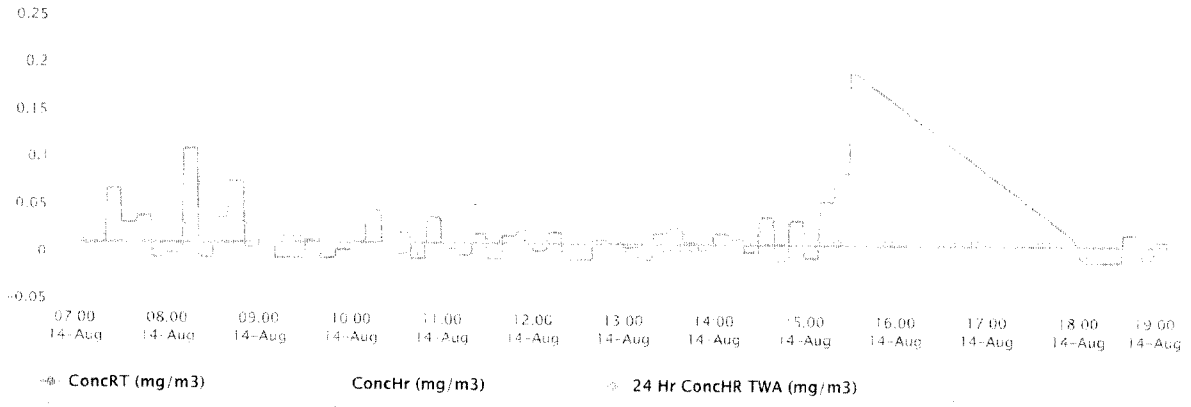
8/14/19 DAY Data for DustTrak 2 ($PM_{2.5}$) – Short Cut Road



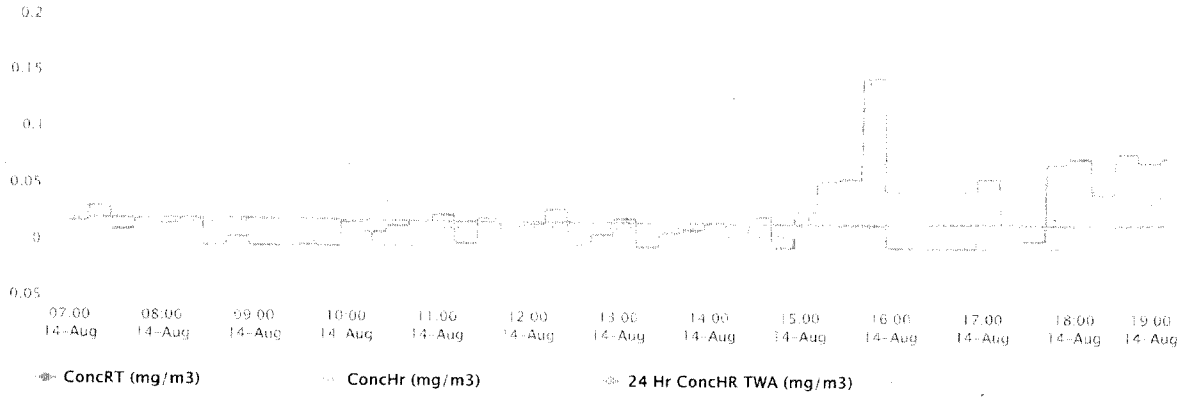
8/14/19 DAY Data for DustTrak 3 ($PM_{2.5}$) – Grace Costal Church



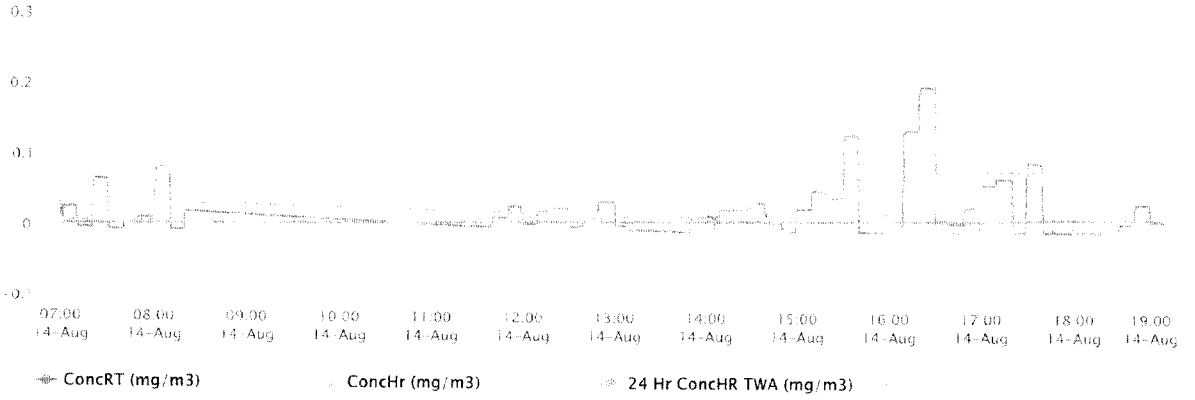
8/14/19 DAY Data for EBAM 1 (ConcRT) – Sun City



8/14/19 DAY Data for EBAM 2 (ConcRT) – Brooke Mill Apartments



8/14/19 DAY Data for EBAM 3 (ConcRT) – EPA Mobile Command Post



Able Contracting Fire

EPA Air Monitoring Summary Report
8/14/2019 0700 to 8/14/2019 1900

Attachment: Discussion of Results

Thunderstorms and rain throughout the afternoon led to some increased particulate measurement readings. Smoke conditions at the Site increased near ground surface as rain persisted and cloud cover prevented plumes from rising vertically.

All EBAMs and Sun City, Brooke Mill, and the EPA MCP recorded peak concentrations of 150-200 ug/m3 at the same time intense rainfall was observed. Sun City lost data connection due to damaged electronic equipment. A peak of 287 ug/m3 at short cut road appears unrelated to any smoke plume. Average concentrations for all locations range from 18.9 to 27 ug/m3 which would be classified as Moderate air quality for PM2.5.

Peak VOCs occurred on the west site with 0.95 ppm. Peaks for CO occurred in the West site at 23 ppm and the northeast side at 16 ppm. The AreaRAEpro at Palmetto Exterminators was upwind of the Site all day and showed no detections for VOCs or CO

Threshold Values and Air Quality Index Categories for PM2.5

Level of Health Concern	Particulate Matter ≤2.5 microns measured in µg/m3		Interpretation
	1 hour average	24 hour average	
Good	0.0-40.0	0.0-12.0	Air quality is considered satisfactory, and air pollution poses little or no risk
Moderate	40.1-80.0	12.1-35.4	Air quality is acceptable; however, for some pollutants there may be a moderate health concern for a very small number of people who are unusually sensitive to air pollution.
Unhealthy for Sensitive groups	80.1-175.0	35.5-55.4	Members of sensitive groups may experience health effects. The general public is not likely to be affected.
Unhealthy	175.1-300.0	55.5-150.4	Everyone may begin to experience health effects; members of sensitive groups may experience more serious health effects.
Very Unhealthy	300.1-500.0	150.5-250.4	Health warnings of emergency conditions. The entire population is more likely to be affected.
Hazardous	>500.0	>250.5	Health alert: everyone may experience more serious health effects

- Threshold values taken from original EPA AQI online calculator found at http://airnow.gov/index.cfm?action=resources.aqi_conc_calc for PM2.5 (24 hour) and Idaho Department of Environmental Quality AQI for PM2.5 (1 hour) taken from http://app.airsis.com/usfs/aqi.asp.
- Recommendations are from the EPA Air Now web site.
- People who are unusually sensitive to air pollution are a subset of Sensitive Individuals. Unusually sensitive to air pollution can be defined as the very young, the elderly, pregnant women, and the immunocompromised.
- Sensitive individuals defined as people with lung disease, older adults and children who are at a greater risk from exposure to ozone; and persons with heart and lung disease, older adults and children who are at greater risk from the presence of particles in the air.

Armstrong, Kathy

From: Huyser, Matthew
Sent: Wednesday, August 14, 2019 11:04 PM
To: Harper, Greg
Subject: Able - ERNS 8/14/2019

EPA deployed additional equipment for air monitoring of particulate monitoring in populated areas. EPA equipment includes 6 particulate monitors to augment the 3 monitors deployed by DHEC. Four chemical monitors remain deployed around the perimeter of the pile. Hydrogen Cyanide (HCN) sensors were installed in the chemical monitors which will replace the Hydrogen Sulfide (H2S). No H2S detections have been recorded thus far. Overnight, a southern wind pushed smoke northward, primarily from NE section of pile. The water curtain installed at the southeast corner was effective at reducing smoke emissions. Minimal smoke was observed at night, but at 1:30AM from the northeast corner then intensified until visible flames were observed at 6AM. Air monitoring teams notified the Fire Branch Director of the flames and an early deployment was executed. DHEC's contractors continued aggressive firefighting and material disposal operations. Activities include excavating, spreading, and dousing stockpiles material from the southwest corner of the site. As of 1420 hours, 36 loads of material were transported offsite for disposal. Spraying continues on isolated smoke chimneys. Lightning activity ceased operations by late in the afternoon. Overnight water curtain is being applied to accessible active smoke plumes.

Matthew J. Huyser, PE - On-Scene Coordinator
U.S. Environmental Protection Agency, Region 4 | 61 Forsyth St SW | Atlanta, Georgia | 30303
Emergency Response Removal and Prevention Branch (ERRPB)
office: **404-562-8934** | cell: **678-427-8829** | fax: **404-562-8699**
epaosc.org

Armstrong, Kathy

From: Huyser, Matthew
Sent: Wednesday, August 14, 2019 10:56 PM
To: Rick Hollingsworth
Subject: Able - DOT recommended options for hauling
Attachments: attachment 1.xlsx; ATT00001.htm

Rick,

DOT has recommended the attache list of disadvantaged businesses optional services for hauling that may be worth considering if they help to reduce costs.

Matthew J. Huyser, PE - On-Scene Coordinator
U.S. Environmental Protection Agency, Region 4 | 61 Forsyth St SW | Atlanta, Georgia | 30303
Emergency Response Removal and Prevention Branch (ERRPB)
office: **404-562-8934** | cell: **678-427-8829** | fax: **404-562-8699**
epaosc.org

From: Reece, Myra <reecemc@dhec.sc.gov>
Sent: Wednesday, August 14, 2019 10:46 PM
To: Huyser, Matthew <Huyser.Matthew@epa.gov>; Porter, Henry <porterhj@dhec.sc.gov>
Subject: Fwd: Responses to questions

List of disadvantaged businesses.....thinking DOT may offer something but waiting to hear back for sure.

Sent from my iPad

Begin forwarded message:

> **From:** "Leaphart, Andy" <LeaphartAT@scdot.org>
> **Date:** August 14, 2019 at 10:39:23 PM EDT
> **To:** "Reece, Myra" <reecemc@dhec.sc.gov>
> **Subject: Re: Responses to questions**
>
> *** Caution. This is an EXTERNAL email. DO NOT open attachments or click links from unknown senders or unexpected email. ***

	A	B	C
1	**Company Name**	**POC Name**	**Mail Address**
2	Jenkins Hauling Company, LLC	Patrick J. Jenkins	96 Matthews Drive # 25 Hilton Head, SC 29926
3	Lotty Trucking, LLC	Miguel Ramos	Post Office Box 1667 Bluffton, SC 29910
4	Martika Trucking, Inc.	Alberto Manzanares	105 Spring Meadow Drive Bluffton, SC 29910
5	Miller Trucking of Hilton Head, LLC	Dannie Miller	Post Office Box 21537 Hilton Head Island, SC 29925
6	G & J Trucking, LLC	Edith Smith	77 Caesar Place Hilton Head Island, SC 29926

	D	E	F	G
1	**Phone**	**Fax**	**Email**	**Web**
2	(843) 247-7759	1(843) 715-8216	jenkinsway@gmail.com	
3	(843) 304-4572	1(843) 645-4285	Lottytruckingllc@gmail.com	
4	(843) 247-7874	1(843) 706-7376	albertom1221@yahoo.com	
5	(843) 298-5099			
6	(843) 227-4197		gjtruckingllc@gmail.com	

	H	I
1	**Date Certified**	**Area of Work**
2	9/8/2016	Local hauling (1) of asphalt, dirt, rocks, and sand
3	7/14/2014	Hauling (10) (dirt, gravel, asphalt, sand), land clearing, and grubbing
4	7/26/2017	Local hauling (9) of dirt, asphalt, and rocks
5	12/31/2010	Hauling (1)
6	9/26/2016	Hauling (5) of asphalt, dirt, construction materials, aggregates, fill dirt, and top soil

	J	K	L
1	**NAICS**	**Sub**	**Consultant**
2	484110	Yes	No
3	238910, 484220	Yes	No
4	484220	Yes	No
5	484110, 484121, 484220	Yes	No
6	484220	Yes	No

Armstrong, Kathy

From: Huyser, Matthew
Sent: Wednesday, August 14, 2019 10:51 PM
To: Steven Hodskins; Chandler & Angela Lloyd; john.kinsey@envirosmart.us; bryon@envirosmart.us
Subject: Able - Summary Report NIGHT 8/14-8/15/2019
Attachments: Viper Summary report_Able Fire_AR and DustTrack-20190814-DAY.pdf

Attached is the EPA data summary report for Daytime on 8/13 – 8/14/2019

Thunderstorms and rain throughout the afternoon led to some increased particulate measurement readings. Smoke conditions at the Site increased near ground surface as rain persisted and cloud cover prevented plumes from rising verticaly.

All EBAMs and Sun City, Brooke Mill, and the EPA MCP recorded peak concentrations of 150-200 ug/m3 at the same time intense rainfall was observed. Sun City lost data connection due to damaged electronic equipment. A peak of 287 ug/m3 at short cut road appears unrelated to any smoke plume. Average concentraitons for all locations range from 18.9 to 27 ug/m3 which would be classified as Moderate air quality for PM2.5.

Peak VOCs occurred on the west site with 0.95 ppm. Peaks for CO occurred in the West site at 23 ppm and the northeast side at 16 ppm. The areaRAE at Palmetto Exterminators was upwind of the Site all day and shoed no detections for VOCs or CO

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From: Huyser, Matthew
Sent: Wednesday, August 14, 2019 10:31 AM
To: Steven Hodskins <shodskins@ensafe.com>; Chandler & Angela Lloyd <ablecontracting29936@gmail.com>; john.kinsey@envirosmart.us; bryon@envirosmart.us
Subject: Able - Summary Report NIGHT 8/13-8/14/2019

Attached is the EPA data summary report for Nighttime on 8/13-8/14/2019

Southern wind pushed smoke northward, primarily from NE section of pile. Particulates at Short Cut Road were highest with peak at 310 ug/m3 and average of 31 ug/m3

Monitors in eastern locations at Peacock collision were lower with average at 12.3 ug/m3 and Grace Coastal to the SE at 12.3 ug/m3. To the south, Sun City hourly average remained below 25 ug/m3. To the West, Brooke Mill Apartments hourly average was generally below 20 ug/m3 with increases to below 30 ug/m3 by 5AM.

VOCs around the pile were slightly increased from the previous day but remained below 0.5 ppm on the southeast and west sides. A peak of 21 ppm CO was measured on the west side of the pile.

New equipment has been deployed. EPA is running 3 DustTraks and 3 EBAMS for particulate monitoring in populated areas with 4 AreaRAEpros for chemical monitoring around the perimeter of the pile. The EBAM data do not appear in the first page of this summary report because it is being reconfigured to accommodate those instruments but the trendlines appear in the attached pages. One DustTrak at Grace Coastal Church is being manually downloaded because of communications issues and data is being reconfigured for efficient display.

SMOKE OBSERVATIONS LAST NIGHT
8/13/19 21:40 Minimal smoke coming off of the pile, going NE and not visible shortly thereafter
8/13/19 22:35 No change, smoke still dissipating to NE at same rate, area around workshop is hazy
8/14/19 01:30 Smoke rate is slightly greater, still bearing NE. No odor or visible haze in surrounding areas. Workshop still hazy and most of the smoke looks like it is being generated in the NE. Water curtain on SW is helping
8/14/19 02:12 Smoke not dissipating and carrying further NE. Noticeable odor at intersection of Argent and Short Cut Rd.
8/14/19 03:30 No change.
8/14/19 05:00 Small fire developing on the NE pile.
8/14/19 06:15 NE fire is intensifying and growing slowly. START notified Ensafe, team will be onsite at 06:45 and will have his fire suppression crew address active fire. Smoke is still headed NE. Odor and minor haze at Short Cut Rd.

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From: Huyser, Matthew
Sent: Wednesday, August 14, 2019 6:35 AM
To: Steven Hodskins <shodskins@ensafe.com>; Chandler & Angela Lloyd <ablecontracting29936@gmail.com>; john.kinsey@envirosmart.us; bryon@envirosmart.us
Subject: Able - Summary Report DAY 8/13/2019

Apologies, this summary report info was ready by 8pm last night and I was working on getting new instrumentation set up so it sat in my DRAFTS folder of my email without getting sent.

Attached is the EPA data summary report for Daytime on 8/13/19

New equipment is being deployed and significant communication issues were encountered during the day resulting in data loss on some instruments.

High peaks of 1030 ug/m3 were recorded at Brooke Mill Apartments but an investigation of the area recorded no smoke, obstruction, or other jusitification for the peak. The Insturment recorded appropriate data throughout the day – average for the day was just over 30 ug/m3

Average for Sun City was 31 ug/m3 with a peak of 163 ug/m3 in the morning hours which is consistent with the wind and visual smoke observations in the morning hours.

A high detection of 2.3 ppm VOC was recorded on the northeast corner of the pile with a high CO reading of 6 ppm.

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From: Huyser, Matthew
Sent: Tuesday, August 13, 2019 8:37 AM
To: 'Reynolds, Scott' <REYNOLDS@dhec.sc.gov>; 'Frost, Keith' <frostrk@dhec.sc.gov>; thompsrb@dhec.sc.gov; shealyrg@dhec.sc.gov; 'Marshall, Frances (Fran)' <marshaf2@dhec.sc.gov>; reecemc@dhec.sc.gov; 'Marcus, Mike' <MARCUSJM@dhec.sc.gov>; 'Porter, Henry' <porterhj@dhec.sc.gov>; 'Keisler, Van' <keislecv@dhec.sc.gov>; 'Blalock, Juli' <blalocje@dhec.sc.gov>; 'Taylor, Monica N.' <TAYLORMN@dhec.sc.gov>; 'Dickman, Jacquelyn S.' <DICKMAJS@dhec.sc.gov>; 'Timmerman, Kelsey A.' <timmerka@dhec.sc.gov>; 'Threatt, Richard' <threatrl@dhec.sc.gov>; Boyce, Lawra <boycelc@dhec.sc.gov>; 'Boswell, Wendy' <BOSWELWM@dhec.sc.gov>; Stewart, R. Gary <stewarrg@dhec.sc.gov>; 'Crooks, Carol' <Crookscl@DHEC.SC.GOV>
Cc: Frederick, Tim <Frederick.Tim@epa.gov>; Ronald Tolliver (Tolliver.Ronald@epa.gov) <Tolliver.Ronald@epa.gov>; Brandi Jenkins (Jenkins.Brandi@epa.gov) <Jenkins.Brandi@epa.gov>; James Pinkney (Pinkney.James@epa.gov) <Pinkney.James@epa.gov>
Subject: RE: Able - Summary Report NIGHT 8/11-8/12

Attached is the EPA data summary report for Nighttime 8/12 to 8/13/19

Peak PM2.5 concentrations in Sun City of 162 ug/m3 with an average of 32 ug/m3
Lower PM2.5 readings to the West of 9 ug/m3 and West of 67 ug/m3 with an average of 14 ug/m3

No VOC readings to the Northeast side of pile but peak VOCs of 0.6 ppm and 0.5 ppm to the West and SE corner, respectively. Detections of CO peaked at 7 ppm.

8/12/19 21:15 Debris pile not visibly smoking, slight odor
8/12/19 23:45 Minimal smoke from pile, going east and not visible shortly after coming from pile
8/13/19 01:25 Smoke picking up substantially, headed SW; industrial park has thick smoke, Sun City has odor and sleight haze.
8/13/19 02:05 No odor or visible smoke on highways. Still headed S and SW. The industrial park has thick smoke. Sun City has more odor and haze.
8/13/19 02:46 Smoke in Sun City
8/13/19 03:17 Pile is smoking heavily. Still headed to the S and SW.
8/13/19 05:00 Heavy smoke, mainly headed S
8/13/19 06:20 Heavy smoke, mainly headed S. Industrial park has smoke like dense fog. Sun City still has smoke.

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From: Huyser, Matthew
Sent: Monday, August 12, 2019 9:09 AM
To: Reynolds, Scott <REYNOLDS@dhec.sc.gov>; Frost, Keith <frostrk@dhec.sc.gov>; thompsrb@dhec.sc.gov; shealyrg@dhec.sc.gov; Marshall, Frances (Fran) <marshaf2@dhec.sc.gov>; reecemc@dhec.sc.gov; Marcus, Mike <MARCUSJM@dhec.sc.gov>; Porter, Henry <porterhj@dhec.sc.gov>; Keisler, Van <keislecv@dhec.sc.gov>; Blalock, Juli <blalocje@dhec.sc.gov>; Taylor, Monica N. <TAYLORMN@dhec.sc.gov>; Dickman, Jacquelyn S. <DICKMAJS@dhec.sc.gov>; Timmerman, Kelsey A. <timmerka@dhec.sc.gov>; Threatt, Richard <threatrl@dhec.sc.gov>; Boyce, Lawra <boycelc@dhec.sc.gov>; Boswell, Wendy <BOSWELWM@dhec.sc.gov>
Cc: Frederick, Tim <Frederick.Tim@epa.gov>; Ronald Tolliver (Tolliver.Ronald@epa.gov) <Tolliver.Ronald@epa.gov>; Brandi Jenkins (Jenkins.Brandi@epa.gov) <Jenkins.Brandi@epa.gov>; James Pinkney (Pinkney.James@epa.gov) <Pinkney.James@epa.gov>
Subject: Able - Summary Report NIGHT 8/11-8/12

Attached is the EPA data summary report for Nightime 8/11 to 8/12/19

Smoke was observed at ground level yesterday evening to the east in Brooke Mill and Abberly Chase Apartments. This was anticipated with generic wind forecasting so Dusttrak 1 was relocated to Brooke Mill apartments at approximately 7pm.
Visible smoke on the morning of 8/12 was traveling South towards Palmetto Exterminators and Sun City

No noteworthy VOC or CO readings

Average PM2.5 readings at Brooke Mill, Sun City, and Command Post (east side) were near 30 ug/m3 which is Moderate for the 24-hour average. Notice in the trendline persistent peaks of over 100 ug/m3 at Brooke Mill in at around 9pm and over 100 ug/m3 in Sun City at 1am.

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Air Monitoring Summary Tables

The table below summarize monitoring data collected on using EPA's Viper wireless remote monitoring system.

Project Name:

From: **8/14/19 7:00** ***To:*** ***8/14/19 18:58***

SE Corner of Able Contracting

Instrument	Analyte	Period Average Exceedances	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level (PEL/TLV/60 min AEGL)
AreaRAE 1	VOC	No	723	14	0 - 272 ppb	2 ppb	1,000 ppb
	CO	No	723	14	0 - 5 ppm	0.1 ppm	83 ppm
	H_2S	No	723	0	0 - 0 ppm	0 ppm	0.5 ppm
	O_2	No	723	723	20.9 - 20.9%	20.9%	<19.5 or >23%
	LEL	No	723	0	0 - 0%	0%	10%

Peacock Collision

Instrument	Analyte	Period Average Exceedances	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level (PEL/TLV/60 min AEGL)
DustTrak 1	PM-2.5	Moderate	2,164	2,164	11 - 54 µg/m³	23.9 µg/m³	See SOG #: T106

On Site, Immediately West of Pile

Instrument	Analyte	Period Average Exceedances	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level (PEL/TLV/60 min AEGL)
AreaRAE 2	VOC	No	713	13	0 - 948 ppb	4.3 ppb	1,000 ppb
	CO	No	713	60	0 - 23 ppm	0.4 ppm	83 ppm
	H_2S	No	713	0	0 - 0 ppm	0 ppm	0.5 ppm
	O_2	No	713	713	20.4 - 20.9%	20.6%	<19.5 or >23%
	LEL	No	713	0	0 - 0 %	0%	10%

Short Cut Road

Instrument	Analyte	Period Average Exceedances	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level (PEL/TLV/60 min AEGL)
DustTrak 2	PM-2.5	Moderate	2,026	1,842	0 - 287 µg/m³	18.5 µg/m³	See SOG #: T106

Able Contracting Workshop, Northeast of Pile

Instrument	Analyte	Period Average Exceedances	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level (PEL/TLV/60 min AEGL)
AreaRAE 3	VOC	No	717	2	0 - 176 ppb	0.3 ppb	1,000 ppb
	CO	No	717	4	0 - 16 ppm	0 ppm	83 ppm
	H_2S	No	717	0	0 - 0 ppm	0 ppm	0.5 ppm
	O_2	No	717	717	20.5 - 20.9%	20.8%	<19.5 or >23%
	LEL	No	717	0	0 - 0%	0%	10%

Grace Costal Church

Instrument	Analyte	Period Average Exceedances	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level (PEL/TLV/60 min AEGL)
DustTrak 3	PM-2.5	Moderate	545	545	10 - 83 µg/m³	23.3 µg/m³	See SOG #: T106

Palmetto Exterminators

Instrument	Analyte	Period Average Exceedances	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level (PEL/TLV/60 min AEGL)
AreaRAE 4	VOC	No	681	0	0 - 0 ppb	0 ppb	1,000 ppb
	CO	No	681	0	0 - 0 ppm	0 ppm	83 ppm
	H_2S	No	681	0	0 - 0 ppm	0 ppm	0.5 ppm
	O_2	No	681	681	19.4 - 21.4%	20.5%	<19.5 or >23%
	LEL	No	681	0	0 - 0%	0%	10%

San City

Instrument	Analyte	Period Average Exceedances	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level (PEL/TLV/60 min AEGL)
EBAM 1	PM-2.5	Moderate	591	414	0 - 192 µg/m³	19.1 µg/m³	See SOG #: T106

Brooke Mill Apartments

Instrument	Analyte	Period Average Exceedances	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level (PEL/TLV/60 min AEGL)
EBAM 2	PM-2.5	Moderate	737	538	0 - 146 µg/m³	20.6 µg/m³	See SOG #: T106

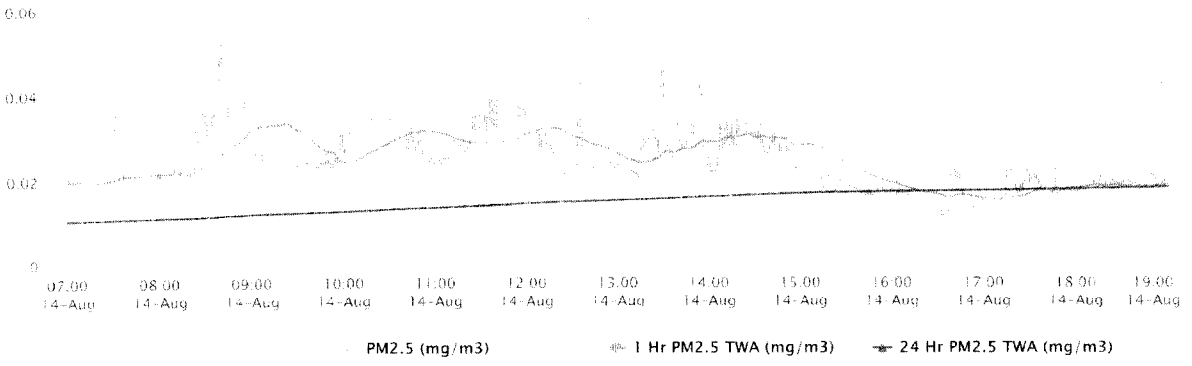
EPA Mobile Command Post

Instrument	Analyte	Period Average Exceedances	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level (PEL/TLV/60 min AEGL)
EBAM 3	PM-2.5	Moderate	521	373	0 - 200 µg/m³	27 µg/m³	See SOG #: T106

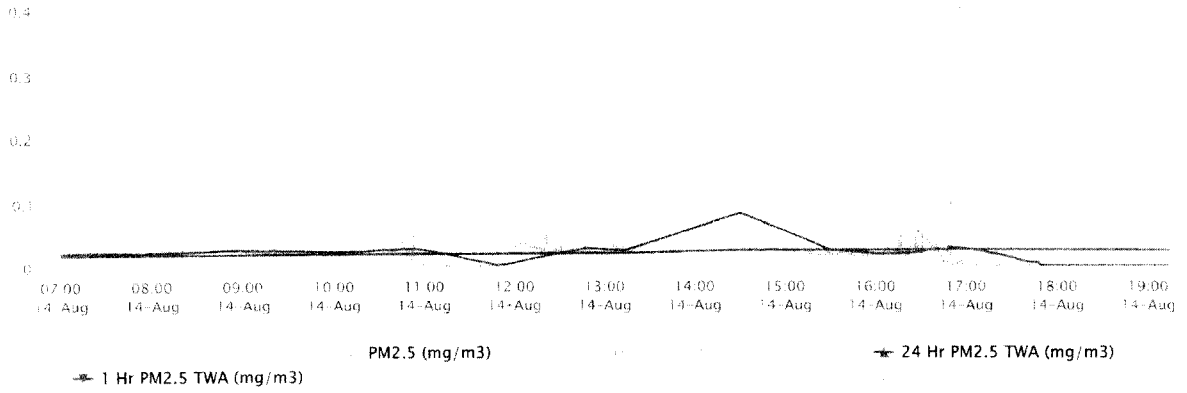
Notes:

%	Percent
<	Less than
>	Greater than
AEGL	Acute Exposure Guideline levels for airborne chemicals
CO	Carbon monoxide
H_2S	Hydrogen Sulfide
LEL	Lower Explosive Level
min	Minute
O_2	Oxygen
PEL	Permissible exposure limit
ppb	Parts per billion
ppm	Parts per million
PM	Particulate matter
SOG	Standard Operating Guidelines
TLV	Threshold limit value
µg/m³	Micrograms per cubic meter
VOC	Volatile organic compoud

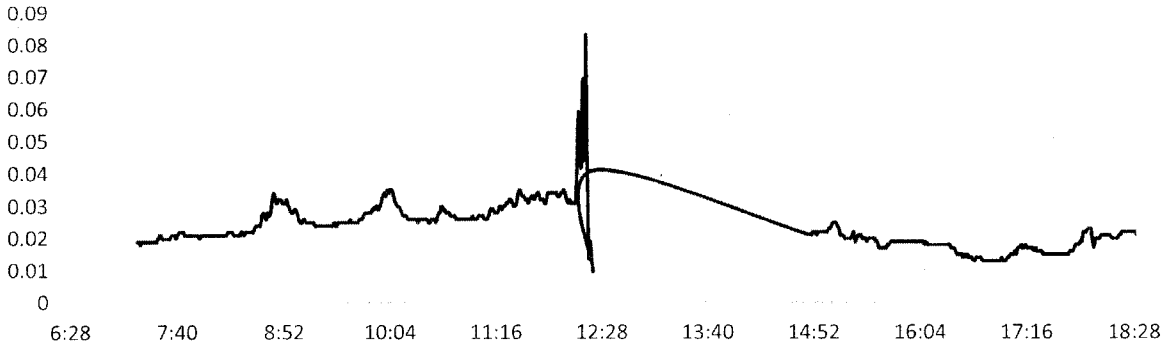
8/14/19 DAY Data for DustTrak 1 ($PM_{2.5}$) - Peacock Collision



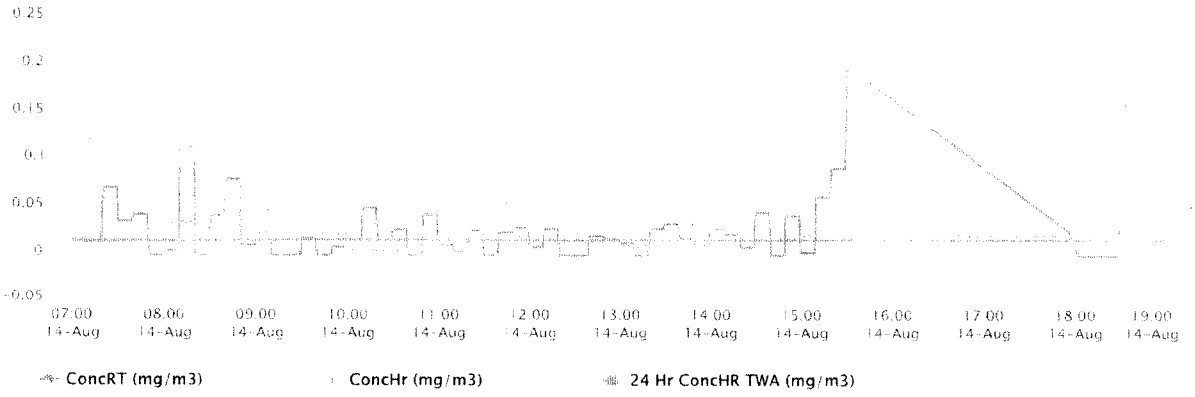
8/14/19 DAY Data for DustTrak 2 ($PM_{2.5}$) – Short Cut Road



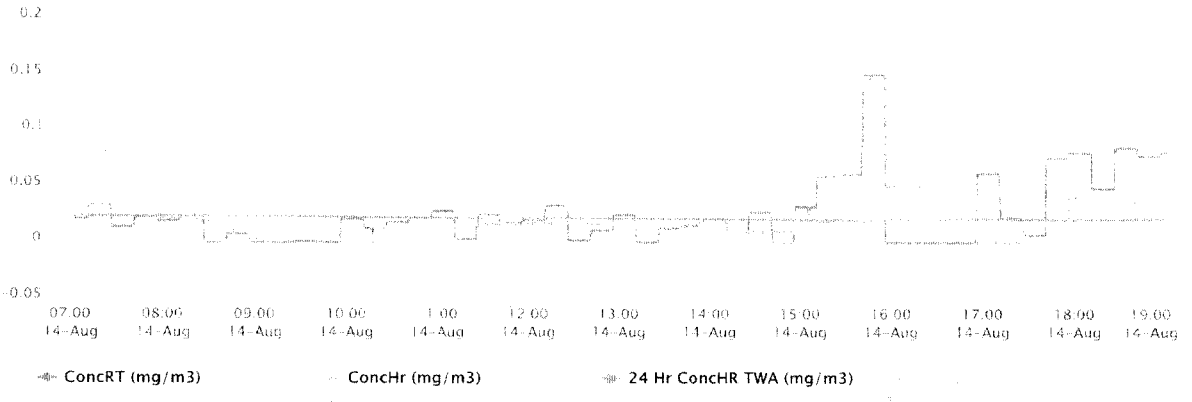
8/14/19 DAY Data for DustTrak 3 ($PM_{2.5}$) – Grace Costal Church



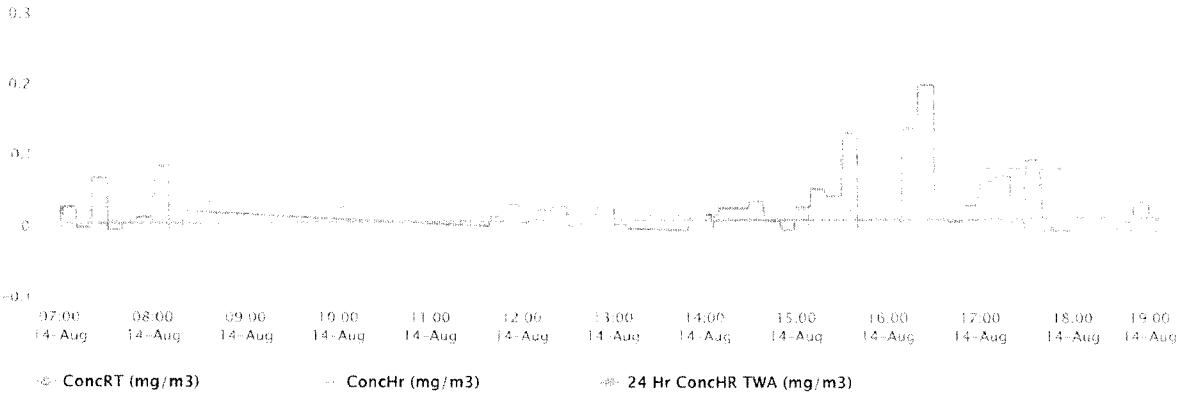
8/14/19 DAY Data for EBAM 1 (ConcRT) – Sun City



8/14/19 DAY Data for EBAM 2 (ConcRT) – Brooke Mill Apartments



8/14/19 DAY Data for EBAM 3 (ConcRT) – EPA Mobile Command Post



Threshold Values and Air Quality Index Categories for PM2.5

Level of Health Concern	Particulate Matter ≤2.5 microns measured in µg/m3		Interpretation
	1 hour average	24 hour average	
Good	0.0-40.0	0.0-12.0	Air quality is considered satisfactory, and air pollution poses little or no risk
Moderate	**40.1-80.0**	**12.1-35.4**	**Air quality is acceptable; however, for some pollutants there may be a moderate health concern for a very small number of people who are unusually sensitive to air pollution.**
Unhealthy for Sensitive groups	**80.1-175.0**	**35.5-55.4**	**Members of sensitive groups may experience health effects. The general public is not likely to be affected.**
Unhealthy	175.1-300.0	55.5-150.4	Everyone may begin to experience health effects; members of sensitive groups may experience more serious health effects.
Very Unhealthy	300.1-500.0	150.5-250.4	Health warnings of emergency conditions. The entire population is more likely to be affected.
Hazardous	>500.0	>250.5	Health alert: everyone may experience more serious health effects

- Threshold values taken from original EPA AQI online calculator found at http://airnow.gov/index.cfm?action=resources.aqi_conc_calc for PM2.5 (24 hour) and Idaho Department of Environmental Quality AQI for PM2.5 (1 hour) taken from http://app.airsis.com/usfs/aqi.asp.
- Recommendations are from the EPA Air Now web site.
- People who are unusually sensitive to air pollution are a subset of Sensitive Individuals. Unusually sensitive to air pollution can be defined as the very young, the elderly, pregnant women, and the immunocompromised.
- Sensitive individuals defined as people with lung disease, older adults and children who are at a greater risk from exposure to ozone; and persons with heart and lung disease, older adults and children who are at greater risk from the presence of particles in the air.

Armstrong, Kathy

From: Huyser, Matthew
Sent: Wednesday, August 14, 2019 4:52 PM
To: Pinkney, James; Jenkins, Brandi; Tolliver, Ronald
Cc: Wise, Allison
Subject: RE: DRAFT Data Messaging Able Contracting

The island packet called me and asked where the sampling results are.

These should have been posted several days ago.
They're not on our website and they're not on DHEC's website.

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From: Huyser, Matthew
Sent: Tuesday, August 13, 2019 8:48 AM
To: Pinkney, James <Pinkney.James@epa.gov>; Jenkins, Brandi <Jenkins.Brandi@epa.gov>; Tolliver, Ronald <Tolliver.Ronald@epa.gov>
Cc: Wise, Allison <Wise.Allison@epa.gov>
Subject: RE: DRAFT Data Messaging Able Contracting

From what I can tell the sampling data aren't posted to the DHEC webpage and we don't have a webpage ready
There was expectations last week that EPA was going to release sampling data and in my interviews with press Sunday and Monday I stated that I expected it to be posted at least by Monday afternoon.

Honestly, I was ready to post it on Friday.

I have a perfectly good webpage at response.epa.gov/ablecontractingfire which is sufficient for posting data if I'm allowed to make the webpage public
It used to be possible for me to make that webpage public on my own but now I need PAD approval to do so and that change doesn't seem to be serving me well right now

Failure to post this data is not reflecting well on us as an agency. EPA has good standing in the community at the moment - but it will turn on a dime if we fail to deliver or give the slightest appearance that we are withholding something.

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From: Huyser, Matthew
Sent: Monday, August 12, 2019 5:49 PM
To: Pinkney, James <Pinkney.James@epa.gov>; Jenkins, Brandi <Jenkins.Brandi@epa.gov>; Tolliver, Ronald <Tolliver.Ronald@epa.gov>
Cc: Wise, Allison <Wise.Allison@epa.gov>
Subject: RE: DRAFT Data Messaging Able Contracting

Site Location

The Able Contracting facility is located on Schinger Avenue in Ridgeland, South Carolina. The facility reportedly receives construction and demolition debris which is shredded as recyclable materials are removed. The Site is estimated at 8.25 acres in size and contains approximately 4 acres of stockpiled material that has accumulated over time. The Site is located in a mixed-use area consisting of commercial and residential properties to the south and east of the facility.

Background

The current fire at the stopiled material began in early July 2019. Able Contracting and local fire departments have worked to extinguish the fire. On July 23, a large water supply pump used by the facility for firefighting was damaged lightning. Smoke from the smoldering fire continued to increase over the next several days.

Cleanup Activities

The EPA was requested by South Carolina Department Health and Environmental Conservation (SC DHEC) to conduct air monitoring and sampling to determine if any hazardous substances were being discharged from the smoldering fire. The EPA and Superfund Technical Assessment and Response Team (START) contractors deployed to the Site on July 25. Air monitoring stations were deployed in the initial response and operated for approximately 84 hours. Water quality monitoring and samples were also collected in ditches and a nearby pond.

Ambient air sampling was conducted on July 27 and 28 as close to the smoke plume as feasible and downwind of the closest residential property – air samples were collected over a period of 8 hours and then sent to a laboratory for analytical analysis. Samples were anlyzed for volatile organic compounds, semivolatile organic compounds, formaldehyde, phosgene, metals, and asbestos. Air sampling was conducted again on on August 2 and 3 to confirm the presence of hazardous substances measured in the previous round of sampling.

Jasper County evacuated residents closest to the fire and is providing alternative housing arrangements. The EPA remobilized to the Site and began 24hr air monitoring on August 9. SC DHEC mobilized a response contractor who began water application on August 11 and aggressive firefighting operations with heavy equipment on August 12. The EPA continues to provide air monitoring support to the fire response operations led by SC DHEC and is assisting with community outreach and engagement.

Health and Environment

DHEC and EPA air sensors measure for small particulate matter in air (2.5 micron diameter and smaller) which are consistent with the size of particles in smoke. The presence of smoke at ground level is increased in early morning and evening hours. Most measurements have found that conditions in populated areas that have not been evacuated are good or moderate condition for air quality. During the presence of smoke, people who are sensitive to respiratory irritation such as those with asthma, heart or lung disease, older adults, children and teenagers should remain indoors. DHEC and EPA have been visiting surrounding community members and providing information about smoke and response activities.

One chemical compound, acrolein, was found in air samples collected in smoke near the Site at a concentration above the EPA's Removal Management Level. The Removal Management Level serves as a guideline for EPA emergency response. Acrolein is found in cigarette smoke as well as in car exhaust. It is not unexpected to find it in smoke from this fire. Short term exposure to acrolein or to smoke may cause eyes to water and burning of the nose and throat. These effects usually disappear after exposure stops. Acrolein is not known to cause cancer in humans. The precautions found on the DHEC Environmental Smoke Fact Sheet are also effective for acrolein.

Results of EPA's sampling of the on-site well did not find any chemicals above the Drinking Water Maximum Contaminant Levels (MCLs) established by the Safe Drinking Water Act. Results from water sampling conducted in the ditch as well as in the nearby pond did find elevated concentrations of metals and semi-volatile organic compounds when compared with DHEC and EPA ecological guidance levels for surface water. There is no known human exposure pathway to the ditch or pond water. These issues will be investigated further during the course of the response.

Site Documents and Data

Please post the sample results and the brief description that we came up with
I'm willing to post the daily air monitoring summary reports as well. I can provide all of those

Photos

There are images that can be used at the response.epa.gov webpage
response.epa.gov/ablecontractingfire

Story Map

Has this been reviewed? Where do we stand with the review?

Additional Links

Provide link to DHEC webpage and ToxFAQs for Acrolein

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From: Pinkney, James <Pinkney.James@epa.gov>
Sent: Monday, August 12, 2019 5:15 PM
To: Huyser, Matthew <Huyser.Matthew@epa.gov>; Jenkins, Brandi <Jenkins.Brandi@epa.gov>; Tolliver, Ronald <Tolliver.Ronald@epa.gov>
Cc: Wise, Allison <Wise.Allison@epa.gov>
Subject: RE: DRAFT Data Messaging Able Contracting

All,

We need to populate the below fields

Website Information

Site Contacts
Federal On-Scene Coordinator
Matthew Huyser

Community Involvement Coordinator
Ronald Tolliver
Public Affairs Specialist
James Pinkney

Site Location

Background

Cleanup Activities

Health and Environment

Site Documents and Data

Photos

Story Map

Additional Links

From: Huyser, Matthew <Huyser.Matthew@epa.gov>
Sent: Monday, August 12, 2019 4:53 PM
To: Jenkins, Brandi <Jenkins.Brandi@epa.gov>; Pinkney, James <Pinkney.James@epa.gov>; Tolliver, Ronald <Tolliver.Ronald@epa.gov>
Cc: Wise, Allison <Wise.Allison@epa.gov>
Subject: RE: DRAFT Data Messaging Able Contracting

I think it would be appropriate to link the ToxFAQs anywhere the data is posted.

Matthew J. Huyser, PE - On-Scene Coordinator
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epaosc.org

From: Jenkins, Brandi <Jenkins.Brandi@epa.gov>
Sent: Monday, August 12, 2019 11:51 AM
To: Pinkney, James <Pinkney.James@epa.gov>; Tolliver, Ronald <Tolliver.Ronald@epa.gov>
Cc: Huyser, Matthew <Huyser.Matthew@epa.gov>; Wise, Allison <Wise.Allison@epa.gov>
Subject: FW: DRAFT Data Messaging Able Contracting

For our website? Or since it'll be on DHEC's website, us having their link on our page should suffice.

Brandi

From: Marshall, Frances (Fran) <marshaf2@dhec.sc.gov>
Sent: Monday, August 12, 2019 11:10 AM

To: Jenkins, Brandi <Jenkins.Brandi@epa.gov>; Huyser, Matthew <Huyser.Matthew@epa.gov>
Cc: reecemc@dhec.sc.gov; shealyrg@dhec.sc.gov; Scott Reynolds <reynolds@dhec.sc.gov>; Boyce, Lawra <boycelc@dhec.sc.gov>; Porter, Henry <porterhj@dhec.sc.gov>
Subject: Re: DRAFT Data Messaging Able Contracting

We would also include a link to the ATSDR Tox FAQ sheet for acrolein

https://www.atsdr.cdc.gov/toxfaqs/tfacts124.pdf

Fran W. Marshall, J.D., M.S.P.H., CIH(r)

Director of Applied Science and Community Engagement

SC DHEC Environmental Affairs

Office: 803.898.9956

From: Marshall, Frances (Fran)
Sent: Monday, August 12, 2019 11:00:53 AM
To: Jenkins, Brandi <Jenkins.Brandi@epa.gov>; Huyser, Matthew <huyser.matthew@epa.gov>
Cc: Reece, Myra <reecemc@dhec.sc.gov>; Shealy, Renee <shealyrg@dhec.sc.gov>; Reynolds, Scott <REYNOLDS@dhec.sc.gov>; Boyce, Lawra <boycelc@dhec.sc.gov>; Porter, Henry <porterhj@dhec.sc.gov>
Subject: DRAFT Data Messaging Able Contracting

Brandi, I am attaching for your information the DHEC Environmental Smoke Fact Sheet, the map that indicates nearby residential receptors, an example of the AQI document that we have been updating daily as well as a draft of proposed messaging to be posted with the EPA data tables.

We welcome input from you and your team. Thanks much for your assistance with this effort.

Glad to discuss further,

Fran

Fran W. Marshall, J.D., M.S.P.H., CIH(r)

Director of Applied Science and Community Engagement

SC DHEC Environmental Affairs

Office: 803.898.9956

From: Marshall, Frances (Fran)
Sent: Friday, August 9, 2019 10:50 AM
To: frederick.tim@epa.gov <frederick.tim@epa.gov>
Cc: Reece, Myra <reecemc@dhec.sc.gov>; Shealy, Renee <shealyrg@dhec.sc.gov>; adams.glenn@epa.gov <adams.glenn@epa.gov>
Subject: Fw: Map and today's update

Tim, it was a pleasure to speak with you this morning. For your information I am attaching the english version of our Environmental Smoke Fact Sheet as well as the latest AQI calculations and the map overlay with significant receptors on it.

We are hoping to get a web page on this site launched this morning. I will send you the URL once it is up.

Please do not hesitate to contact me if you have any questions. My work cell is 803.422.1805, my personal cell is (b)(6) Personal Privacy

We look forward to working together with EPA to mitigate the exposure of our citizens to smoke from this fire.

Best Regards,

Fran

Fran W. Marshall, J.D., M.S.P.H., CIH(r)

Director of Applied Science and Community Engagement

SC DHEC Environmental Affairs

Office: 803.898.9956

From: Reynolds, Scott <REYNOLDS@dhec.sc.gov>
Sent: Friday, August 9, 2019 10:34 AM
To: Marshall, Frances (Fran) <marshaf2@dhec.sc.gov>
Subject: Map and today's update

Armstrong, Kathy

From: Huyser, Matthew
Sent: Wednesday, August 14, 2019 3:24 PM
To: Otis Halsey; Corey CB. Brown; Harper, Greg
Subject: Able - DT battery replacement

When Mark comes to replace Otis please bring along a DT battery to replace one battery that has broken. Also, EPAERT85 isn't working (only runs on wifi, not on cell) so please send a replacement gateway. We've asked ERT for gateways but two of the ones they sent to us are broken too and they've run out of VIPER supplies due to the number of responses.

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epaosc.org

Armstrong, Kathy

From: Huyser, Matthew
Sent: Wednesday, August 14, 2019 2:52 PM
To: Scott Reynolds
Subject: RE: LOW PRIORITY question on the last summary

Ah.

I believe it's local DST so the readings should correspond with the time on the computer clock. It used to all be GMT but they've fixed that for us.

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From: Reynolds, Scott <REYNOLDS@dhec.sc.gov>
Sent: Wednesday, August 14, 2019 2:32 PM
To: Huyser, Matthew <Huyser.Matthew@epa.gov>
Subject: Re: LOW PRIORITY question on the last summary

Eastern Standard Time and Daylight Savings Time -

Rule at the lab was "There is no Time but Standard Time "

Clocks I control stay standard - probably 'cause I'm to lazy to change 2(!) times a year.

But our Able sensors are DST

much to my dismay

From: Huyser, Matthew <Huyser.Matthew@epa.gov>
Sent: Wednesday, August 14, 2019 2:17:19 PM
To: Reynolds, Scott <REYNOLDS@dhec.sc.gov>
Subject: RE: LOW PRIORITY question on the last summary

*** Caution. This is an EXTERNAL email. DO NOT open attachments or click links from unknown senders or unexpected email. ***

Smoke was headed towards short cut road, the lack of variability in the data means that it was some type of failure possibly due to a stuck reading. The smoke was headed that direction anyway but it's fair to say that this is an error.

Sorry but I'm not sure what EST and DST mean and I'm going to be embarrassed when you tell me

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epaosc.org

From: Reynolds, Scott <REYNOLDS@dhec.sc.gov>
Sent: Wednesday, August 14, 2019 1:51 PM
To: Huyser, Matthew <Huyser.Matthew@epa.gov>
Subject: LOW PRIORITY question on the last summary

Short Cut Road-DustTrak2 ~0420 to 0505 this AM(14th) -Is the steady at 180 a failure/max concentration? That period appears to drive the average..

and one other.

Using EST or DST?

Armstrong, Kathy

From: Huyser, Matthew
Sent: Wednesday, August 14, 2019 2:48 PM
To: Stewart, R. Gary; Kemker, Carol
Subject: Able - EPA update 8/14 1400hrs

EPA deployed additional equipment for air monitoring of particulate monitoring in populated areas. EPA equipment includes 6 particulate monitors to augment the 3 monitors deployed by DHEC. Four chemical monitors remain deployed around the perimeter of the pile. Hydrogen Cyanide (HCN) sensors were installed in the chemical monitors which will replace the Hydrogen Sulfide (H2S). No H2S detections have been recorded thus far.

During the day on 8/13, average particulates at Brooke Mill Apartments was just over 30 ug/m3; average for Sun City was 31 ug/m3 with a peak of 163 ug/m3 in the morning hours which is consistent with the wind and visual smoke observations in the morning. A peak detection of 2.3 ppm VOC was recorded on the northeast corner of the pile with a high CO reading of 6 ppm.

Overnight, a southern wind pushed smoke northward, primarily from NE section of pile. The water curtain installed at the southeast corner was effective and reducing smoke emissions. Minimal smoke was observed at night, but at 1:30AM from the northeast corner then intensified until visible flames were observed at 6AM. Air monitoring teams notified the Fire Branch Director of the flames and an early deployment was executed. Particulates at Short Cut Road were highest with a brief peak at 310 ug/m3 but much lower average of 31 ug/m3. Monitors in eastern locations at Peacock collision were lower with average at 12.3 ug/m3 and Grace Coastal Church to the SE at 12.3 ug/m3. To the south, Sun City hourly average remained below 25 ug/m3. To the West, Brooke Mill Apartments hourly average was generally below 20 ug/m3 with increases to below 30 ug/m3 by 5AM. VOCs around the pile were slightly increased from the previous day but remained below 0.5 ppm on the southeast and west sides. A peak of 21 ppm CO was measured on the west side of the pile.

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epaosc.org

From: Huyser, Matthew
Sent: Tuesday, August 13, 2019 2:04 PM
To: Stewart, R. Gary <stewarrg@dhec.sc.gov>; Carol Kemker <Kemker.Carol@epa.gov>
Subject: Able - EPA update 8/13 1400hrs

EPA continues to monitor air quality and particulates throughout the day. Overnight observations documented low to no smoke until midnight with increasing smoke after 1AM and smoke observed as far south as Sun City by 2:46AM. Peak concentrations in Sun City were measured at 162 ug/m3 with an average of 32 ug/m3 which is classified as Moderate for air quality index. Concentrations on all stations were reduced after the temperature inversion lifted at 9AM. Low VOC detections were recorded on the West and Southeast corners of the pile overnight with a peak CO detection of 7ppm. Three additional particulate monitors are being deployed today which will bring the total particulate monitors to 9 (3 DHEC and 6 EPA); the additional units will allow for broader monitoring coverage around populated areas.

EPA is actively making preparations to assume responsibility from Jasper County for relocation for residents who have ben evacuated. That transition will occur at the end of the week.

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Armstrong, Kathy

From: Huyser, Matthew
Sent: Wednesday, August 14, 2019 2:20 PM
To: Hammond, Richard
Cc: Tolliver, Ronald
Subject: RE: DRAFT Data Messaging Able Contracting

Go ahead and post it. IMO it's okay to post even if we don't have any reports posted yet. If possible it would be good to provide the link to the DHEC version

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From: Hammond, Richard <Hammond.Richard@epa.gov>
Sent: Wednesday, August 14, 2019 1:45 PM
To: Huyser, Matthew <Huyser.Matthew@epa.gov>
Cc: Tolliver, Ronald <Tolliver.Ronald@epa.gov>
Subject: RE: DRAFT Data Messaging Able Contracting

I just talked to Ron, but I'll send this anyway – Ron was of the opinion we should go ahead and post both chart and pics, so I'll go that route pending any comments you might have, Matt.

Matt, I got a good copy of the chart and it's ready to go. Two points

- Think I should hold until we get the docs posted?
- While I'm in there, I'll add those pics from the Response.gov site

Thanks!

From: Huyser, Matthew <Huyser.Matthew@epa.gov>
Sent: Wednesday, August 14, 2019 1:24 PM
To: Hammond, Richard <Hammond.Richard@epa.gov>; Jenkins, Brandi <Jenkins.Brandi@epa.gov>; Pinkney, James <Pinkney.James@epa.gov>; Wise, Allison <Wise.Allison@epa.gov>; Myers, Bryan <Myers.Bryan@epa.gov>
Cc: Tolliver, Ronald <Tolliver.Ronald@epa.gov>; McCullough, Rachel <McCullough.Rachel@epa.gov>
Subject: RE: DRAFT Data Messaging Able Contracting

The DHEC AQI graphic is better but does not include the threshold values
https://www.scdhec.gov/environment/ongoing-projects-updates/able-contracting-fire/able-contracting-fire-community-resources

Attached is a word document of the table from which a jpeg or pdf can be generated

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From: Hammond, Richard <Hammond.Richard@epa.gov>
Sent: Wednesday, August 14, 2019 1:14 PM
To: Jenkins, Brandi <Jenkins.Brandi@epa.gov>; Pinkney, James <Pinkney.James@epa.gov>; Wise, Allison <Wise.Allison@epa.gov>; Myers, Bryan <Myers.Bryan@epa.gov>
Cc: Tolliver, Ronald <Tolliver.Ronald@epa.gov>; Huyser, Matthew <Huyser.Matthew@epa.gov>; McCullough, Rachel <McCullough.Rachel@epa.gov>
Subject: RE: DRAFT Data Messaging Able Contracting

Greetings all,

Couple of questions

1. Do you have a better graphic of the legend? Maybe send it to me as a jpg.
2. Until we actually get the daily posting going, I'd suggest we take off the last two sentences.

I'm going to race ahead and post the paragraph up to the last two sentences and wait for feedback.

Thanks!

From: Jenkins, Brandi <Jenkins.Brandi@epa.gov>
Sent: Tuesday, August 13, 2019 4:27 PM
To: Pinkney, James <Pinkney.James@epa.gov>; Wise, Allison <Wise.Allison@epa.gov>; Myers, Bryan <Myers.Bryan@epa.gov>
Cc: Tolliver, Ronald <Tolliver.Ronald@epa.gov>; Huyser, Matthew <Huyser.Matthew@epa.gov>; Hammond, Richard <Hammond.Richard@epa.gov>; McCullough, Rachel <McCullough.Rachel@epa.gov>
Subject: RE: DRAFT Data Messaging Able Contracting

James/Ron,

Can we get the following statement uploaded to our website along with the data?

Thanks -Brandi

EPA and SC DHEC are coordinating on air and water sampling near the Able Contracting facility. Air sampling has included a suite of chemicals, as well as formaldehyde and asbestos to determine their presence in the smoke. Results from samples sent to a laboratory indicate the presence of acrolein, a compound that is a strong irritant and may cause watering of the eyes and burning of the nose, in the area nearest fire. Due to the highly variable nature of the

smoke plume coming from the fire, EPA is currently relying on real time measurements for particulates, volatile organic compounds, and carbon monoxide to monitor potential exposure. Real time measurements show that particulate and gas concentrations are highest near the fire. The gases measured do not appear to be elevated in areas further away from the fire, but particulates concentrations can be elevated periodically further away from the fire, depending on the current fire status, wind direction, firefighting efforts, etc. Daily summaries of EPA air monitoring data will be posted (https://www.epa.gov/superfund/able-contracting-fire). The table below can be used to interpret this data and to understand the risks that various levels of particulate matter (PM2.5) may pose.

Level of Health Concern	Particulate Matter Below 2.5 microns, measured in µg/m3		Interpretation
	1 hour average	24 hour average	
Good	[illegible]	[illegible]	[illegible]
Moderate	[illegible]	[illegible]	Air quality is acceptable; however, for some pollutants there may be a moderate health concern for a very small number of people who are unusually sensitive to air pollution.
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]

[illegible]

SC DHEC posts daily messages regarding air quality forecasts and, in particular, how individuals can take precautions.

Results from EPA's water sampling of the Able Contracting on-site well, did not identify any compounds in violation of drinking water standards.

From: Pinkney, James <Pinkney.James@epa.gov>
Sent: Tuesday, August 13, 2019 2:17 PM
To: Wise, Allison <Wise.Allison@epa.gov>; Jenkins, Brandi <Jenkins.Brandi@epa.gov>; Myers, Bryan <Myers.Bryan@epa.gov>
Subject: FW: DRAFT Data Messaging Able Contracting

All,

Matt asked do we have the all clear to post and share the attached documents to the website? It has been reviewed.

James

From: Huyser, Matthew <Huyser.Matthew@epa.gov>
Sent: Tuesday, August 13, 2019 1:43 PM
To: Pinkney, James <Pinkney.James@epa.gov>
Subject: FW: DRAFT Data Messaging Able Contracting

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From: Huyser, Matthew
Sent: Monday, August 12, 2019 1:40 PM
To: Jenkins, Brandi <Jenkins.Brandi@epa.gov>; Pinkney, James <Pinkney.James@epa.gov>; Tolliver, Ronald <Tolliver.Ronald@epa.gov>
Cc: Wise, Allison <Wise.Allison@epa.gov>
Subject: RE: DRAFT Data Messaging Able Contracting

See my attached recommended changes.

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Cc: Huyser, Matthew <Huyser.Matthew@epa.gov>; Wise, Allison <Wise.Allison@epa.gov>
Subject: FW: DRAFT Data Messaging Able Contracting

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Sent: Monday, August 12, 2019 12:23 PM
To: Jenkins, Brandi <Jenkins.Brandi@epa.gov>; Huyser, Matthew <Huyser.Matthew@epa.gov>
Cc: reecemc@dhec.sc.gov; shealyrg@dhec.sc.gov; Scott Reynolds <reynolds@dhec.sc.gov>; Boyce, Lawra <boycelc@dhec.sc.gov>; Porter, Henry <porterhj@dhec.sc.gov>
Subject: Re: DRAFT Data Messaging Able Contracting

Sorry all, fixed a couple of errors in our draft. Look forward to hearing your thoughts.

Fran

Fran W. Marshall, J.D., M.S.P.H., CIH(r)

Director of Applied Science and Community Engagement

SC DHEC Environmental Affairs

Office: 803.898.9956

From: Marshall, Frances (Fran) <marshaf2@dhec.sc.gov>
Sent: Monday, August 12, 2019 11:10:18 AM
To: Jenkins, Brandi <Jenkins.Brandi@epa.gov>; Huyser, Matthew <huyser.matthew@epa.gov>
Cc: Reece, Myra <reecemc@dhec.sc.gov>; Shealy, Renee <shealyrg@dhec.sc.gov>; Reynolds, Scott <REYNOLDS@dhec.sc.gov>; Boyce, Lawra <boycelc@dhec.sc.gov>; Porter, Henry <porterhj@dhec.sc.gov>
Subject: Re: DRAFT Data Messaging Able Contracting

We would also include a link to the ATSDR Tox FAQ sheet for acrolein

https://www.atsdr.cdc.gov/toxfaqs/tfacts124.pdf

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Subject: DRAFT Data Messaging Able Contracting

Brandi, I am attaching for your information the DHEC Environmental Smoke Fact Sheet, the map that indicates nearby residential receptors, an example of the AQI document that we have been updating daily as well as a draft of proposed messaging to be posted with the EPA data tables.

We welcome input from you and your team. Thanks much for your assistance with this effort.

Glad to discuss further,

Fran

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To: frederick.tim@epa.gov <frederick.tim@epa.gov>
Cc: Reece, Myra <reecemc@dhec.sc.gov>; Shealy, Renee <shealyrg@dhec.sc.gov>; adams.glenn@epa.gov <adams.glenn@epa.gov>
Subject: Fw: Map and today's update

Tim, it was a pleasure to speak with you this morning. For your information I am attaching the english version of our Environmental Smoke Fact Sheet as well as the latest AQI calculations and the map overlay with significant receptors on it.

We are hoping to get a web page on this site launched this morning. I will send you the URL once it is up.

Please do not hesitate to contact me if you have any questions. My work cell is 803.422.1805, my personal cell is (b)(6) Personal Privacy

We look forward to working together with EPA to mitigate the exposure of our citizens to smoke from this fire.

Best Regards,

Fran

Fran W. Marshall, J.D., M.S.P.H., CIH(r)

Director of Applied Science and Community Engagement

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From: Reynolds, Scott <REYNOLDS@dhec.sc.gov>
Sent: Friday, August 9, 2019 10:34 AM
To: Marshall, Frances (Fran) <marshaf2@dhec.sc.gov>
Subject: Map and today's update

Armstrong, Kathy

From: Huyser, Matthew
Sent: Wednesday, August 14, 2019 1:14 PM
To: Steven Hodskins; Chandler & Angela Lloyd; john.kinsey@envirosmart.us; bryon@envirosmart.us
Subject: RE: Able - Summary Report NIGHT 8/13-8/14/2019
Attachments: Viper Summary report_Able Fire Template_AR and DustTrack-20190813-Night-Rev1.pdf

Attached is a revised summary report for NIGHT 8/13-8/14/2019

It includes on the front page the EBAM units that have been deployed.

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From: Huyser, Matthew
Sent: Wednesday, August 14, 2019 10:31 AM
To: Steven Hodskins <shodskins@ensafe.com>; Chandler & Angela Lloyd <ablecontracting29936@gmail.com>; john.kinsey@envirosmart.us; bryon@envirosmart.us
Subject: Able - Summary Report NIGHT 8/13-8/14/2019

Attached is the EPA data summary report for Nighttime on 8/13-8/14/2019

Southern wind pushed smoke northward, primarily from NE section of pile. Particulates at Short Cut Road were highest with peak at 310 ug/m3 and average of 31 ug/m3

Monitors in eastern locations at Peacock collision were lower with average at 12.3 ug/m3 and Grace Coastal to the SE at 12.3 ug/m3. To the south, Sun City hourly average remained below 25 ug/m3. To the West, Brooke Mill Apartments hourly average was generally below 20 ug/m3 with increases to below 30 ug/m3 by 5AM.

VOCs around the pile were slightly increased from the previous day but remained below 0.5 ppm on the southeast and west sides. A peak of 21 ppm CO was measured on the west side of the pile.

New equipment has been deployed. EPA is running 3 DustTraks and 3 EBAMS for particulate monitoring in populated areas with 4 AreaRAEpros for chemical monitoring around the perimeter of the pile. The EBAM data do not appear in the first page of this summary report because it is being reconfigured to accommodate those instruments but the trendlines appear in the attached pages. One DustTrak at Grace Coastal Church is being manually downloaded because of communications issues and data is being reconfigured for efficient display.

SMOKE OBSERVATIONS LAST NIGHT
8/13/19 21:40 Minimal smoke coming off of the pile, going NE and not visible shortly thereafter
8/13/19 22:35 No change, smoke still dissipating to NE at same rate, area around workshop is hazy

8/14/19 01:30 Smoke rate is slightly greater, still bearing NE. No odor or visible haze in surrounding areas. Workshop still hazy and most of the smoke looks like it is being generated in the NE. Water curtain on SW is helping
8/14/19 02:12 Smoke not dissipating and carrying further NE. Noticeable odor at intersection of Argent and Short Cut Rd.
8/14/19 03:30 No change.
8/14/19 05:00 Small fire developing on the NE pile.
8/14/19 06:15 NE fire is intensifying and growing slowly. START notified Ensafe, team will be onsite at 06:45 and will have his fire suppression crew address active fire. Smoke is still headed NE. Odor and minor haze at Short Cut Rd.

Matthew J. Huyser, PE - On-Scene Coordinator
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From: Huyser, Matthew
Sent: Wednesday, August 14, 2019 6:35 AM
To: Steven Hodskins <shodskins@ensafe.com>; Chandler & Angela Lloyd <ablecontracting29936@gmail.com>; john.kinsey@envirosmart.us; bryon@envirosmart.us
Subject: Able - Summary Report DAY 8/13/2019

Apologies, this summary report info was ready by 8pm last night and I was working on getting new instrumentation set up so it sat in my DRAFTS folder of my email without getting sent.

Attached is the EPA data summary report for Daytime on 8/13/19

New equipment is being deployed and significant communication issues were encountered during the day resulting in data loss on some instruments.

High peaks of 1030 ug/m3 were recorded at Brooke Mill Apartments but an investigation of the area recorded no smoke, obstruction, or other jusitification for the peak. The Insturment recorded appropriate data throughout the day – average for the day was just over 30 ug/m3

Average for Sun City was 31 ug/m3 with a peak of 163 ug/m3 in the morning hours which is consistent with the wind and visual smoke observations in the morning hours.

A high detection of 2.3 ppm VOC was recorded on the northeast corner of the pile with a high CO reading of 6 ppm.

Matthew J. Huyser, PE - On-Scene Coordinator
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From: Huyser, Matthew
Sent: Tuesday, August 13, 2019 8:37 AM
To: 'Reynolds, Scott' <REYNOLDS@dhec.sc.gov>; 'Frost, Keith' <frostrk@dhec.sc.gov>; thompsrb@dhec.sc.gov; shealyrg@dhec.sc.gov; 'Marshall, Frances (Fran)' <marshaf2@dhec.sc.gov>; reecemc@dhec.sc.gov; 'Marcus, Mike' <MARCUSJM@dhec.sc.gov>; 'Porter, Henry' <porterhj@dhec.sc.gov>; 'Keisler, Van' <keislecv@dhec.sc.gov>; 'Blalock, Juli' <blalocje@dhec.sc.gov>; 'Taylor, Monica N.' <TAYLORMN@dhec.sc.gov>; 'Dickman, Jacquelyn S.' <DICKMAJS@dhec.sc.gov>; 'Timmerman, Kelsey A.' <timmerka@dhec.sc.gov>; 'Threatt, Richard' <threatrl@dhec.sc.gov>; Boyce, Lawra <boycelc@dhec.sc.gov>; 'Boswell, Wendy' <BOSWELWM@dhec.sc.gov>; Stewart, R. Gary <stewarrg@dhec.sc.gov>; 'Crooks, Carol' <Crookscl@DHEC.SC.GOV>
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Subject: RE: Able - Summary Report NIGHT 8/11-8/12

Attached is the EPA data summary report for Nighttime 8/12 to 8/13/19

Peak PM2.5 concentrations in Sun City of 162 ug/m3 with an average of 32 ug/m3
Lower PM2.5 readings to the West of 9 ug/m3 and West of 67 ug/m3 with an average of 14 ug/m3

No VOC readings to the Northeast side of pile but peak VOCs of 0.6 ppm and 0.5 ppm to the West and SE corner, respectively. Detections of CO peaked at 7 ppm.

8/12/19 21:15 Debris pile not visibly smoking, slight odor
8/12/19 23:45 Minimal smoke from pile, going east and not visible shortly after coming from pile
8/13/19 01:25 Smoke picking up substantially, headed SW; industrial park has thick smoke, Sun City has odor and sleight haze.
8/13/19 02:05 No odor or visible smoke on highways. Still headed S and SW. The industrial park has thick smoke. Sun City has more odor and haze.
8/13/19 02:46 Smoke in Sun City
8/13/19 03:17 Pile is smoking heavily. Still headed to the S and SW.
8/13/19 05:00 Heavy smoke, mainly headed S
8/13/19 06:20 Heavy smoke, mainly headed S. Industrial park has smoke like dense fog. Sun City still has smoke.

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To: Reynolds, Scott <REYNOLDS@dhec.sc.gov>; Frost, Keith <frostrk@dhec.sc.gov>; thompsrb@dhec.sc.gov; shealyrg@dhec.sc.gov; Marshall, Frances (Fran) <marshaf2@dhec.sc.gov>; reecemc@dhec.sc.gov; Marcus, Mike <MARCUSJM@dhec.sc.gov>; Porter, Henry <porterhj@dhec.sc.gov>; Keisler, Van <keislecv@dhec.sc.gov>; Blalock, Juli <blalocje@dhec.sc.gov>; Taylor, Monica N. <TAYLORMN@dhec.sc.gov>; Dickman, Jacquelyn S. <DICKMAJS@dhec.sc.gov>; Timmerman, Kelsey A. <timmerka@dhec.sc.gov>; Threatt, Richard <threatrl@dhec.sc.gov>; Boyce, Lawra <boycelc@dhec.sc.gov>; Boswell, Wendy <BOSWELWM@dhec.sc.gov>
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Subject: Able - Summary Report NIGHT 8/11-8/12

Attached is the EPA data summary report for Nightime 8/11 to 8/12/19

Smoke was observed at ground level yesterday evening to the east in Brooke Mill and Abberly Chase Apartments. This was anticipated with generic wind forecasting so Dusttrak 1 was relocated to Brooke Mill apartments at approximately 7pm.
Visible smoke on the morning of 8/12 was traveling South towards Palmetto Exterminators and Sun City

No noteworthy VOC or CO readings

Average PM2.5 readings at Brooke Mill, Sun City, and Command Post (east side) were near 30 ug/m3 which is Moderate for the 24-hour average. Notice in the trendline persistent peaks of over 100 ug/m3 at Brooke Mill in at around 9pm and over 100 ug/m3 in Sun City at 1am.

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Air Monitoring Summary Tables

The table below summarize monitoring data collected on using EPA's Viper wireless remote monitoring system.

Project Name:

From: **8/13/19 19:00** ***To:*** ***8/14/19 6:58***

SE Corner of Able Contracting

Instrument	Analyte	Period Average Exceedances	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level (PEL/TLV/60 min AEGL)
AreaRAE 1	VOC	No	733	13	0 - 206 ppb	1.1 ppb	1,000 ppb
	CO	No	733	0	0 - 0 ppm	0 ppm	83 ppm
	H_2S	No	733	0	0 - 0 ppm	0 ppm	0.5 ppm
	O_2	No	733	733	20.9 - 20.9%	20.9%	<19.5 or >23%
	LEL	No	733	0	0 - 0%	0%	10%

Peacock Collision

Instrument	Analyte	Period Average Exceedances	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level (PEL/TLV/60 min AEGL)
DustTrak 1	PM-2.5	Moderate	1,966	1,966	8 - 43 µg/m³	12.3 µg/m³	See SOG #: T106

On Site, Immediately West of Pile

Instrument	Analyte	Period Average Exceedances	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level (PEL/TLV/60 min AEGL)
AreaRAE 2	VOC	No	699	27	0 - 452 ppb	5.6 ppb	1,000 ppb
	CO	No	699	23	0 - 21 ppm	0.2 ppm	83 ppm
	H_2S	No	699	0	0 - 0 ppm	0 ppm	0.5 ppm
	O_2	No	699	699	20.6 - 20.7%	20.6%	<19.5 or >23%
	LEL	No	699	0	0 - 0 %	0%	10%

Short Cut Road

Instrument	Analyte	Period Average Exceedances	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level (PEL/TLV/60 min AEGL)
DustTrak 2	PM-2.5	Moderate	1,609	1,540	0 - 310 µg/m³	31.3 µg/m³	See SOG #: T106

Able Contracting Workshop, Northeast of Pile

Instrument	Analyte	Period Average Exceedances	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level (PEL/TLV/60 min AEGL)
AreaRAE 3	VOC	No	722	17	0 - 464 ppb	4.8 ppb	1,000 ppb
	CO	No	722	15	0 - 5 ppm	0.1 ppm	83 ppm
	H_2S	No	722	0	0 - 0 ppm	0 ppm	0.5 ppm
	O_2	No	722	722	20.9 - 20.9%	20.9%	<19.5 or >23%
	LEL	No	722	0	0 - 0%	0%	10%

Grace Costal Church

Instrument	Analyte	Period Average Exceedances	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level (PEL/TLV/60 min AEGL)
DustTrak 3	PM-2.5	Moderate	444	441	0 - 19 µg/m³	13.7 µg/m³	See SOG #: T106

Palmetto Exterminators

Instrument	Analyte	Period Average Exceedances	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level (PEL/TLV/60 min AEGL)
AreaRAE 4	VOC	No	725	0	0 - 0 ppb	0 ppb	1,000 ppb
	CO	No	725	0	0 - 0 ppm	0 ppm	83 ppm
	H_2S	No	725	0	0 - 0 ppm	0 ppm	0.5 ppm
	O_2	No	725	725	20.9 - 21.5%	21%	<19.5 or >23%
	LEL	No	725	0	0 - 0%	0%	10%

Sun City

Instrument	Analyte	Period Average Exceedances	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level (PEL/TLV/60 min AEGL)
EBAM 1	PM-2.5	Good	405	270	0 - 50 µg/m³	11.9 µg/m³	See SOG #: T106

Brooke Mill Apartments

Instrument	Analyte	Period Average Exceedances	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level (PEL/TLV/60 min AEGL)
EBAM 2	PM-2.5	Moderate	517	516	0 - 36 µg/m³	19.4 µg/m³	See SOG #: T106

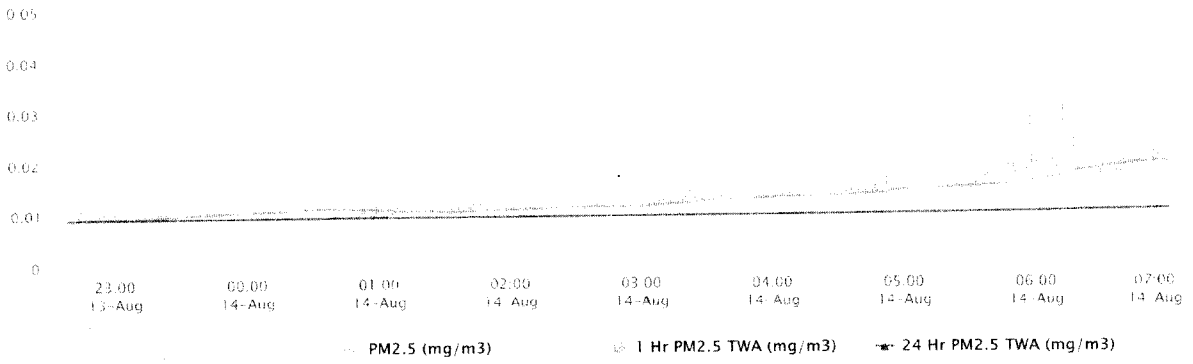
EPA Mobile Command Post

Instrument	Analyte	Period Average Exceedances	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level (PEL/TLV/60 min AEGL)
EBAM 3	PM-2.5	Moderate	502	364	0 - 59 µg/m³	14.6 µg/m³	See SOG #: T106

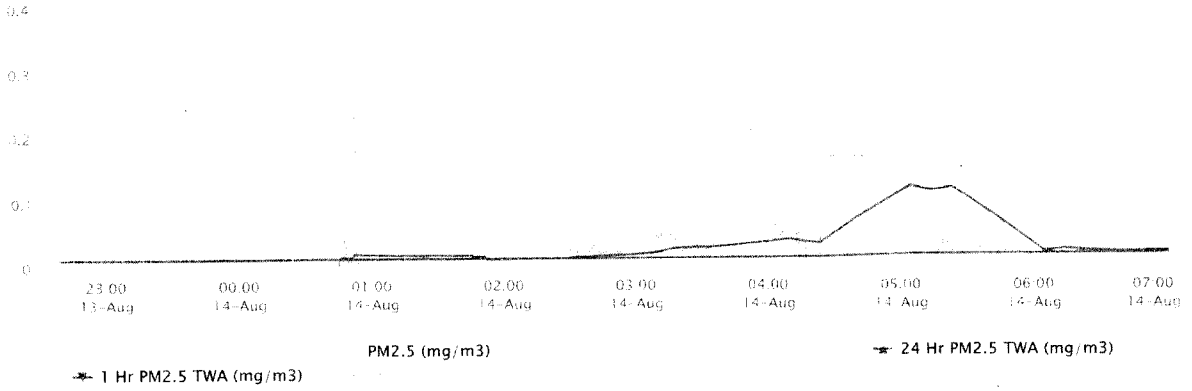
Notes:

%	Percent
<	Less than
>	Greater than
AEGL	Acute Exposure Guideline levels for airborne chemicals
CO	Carbon monoxide
H_2S	Hydrogen Sulfide
LEL	Lower Explosive Level
min	Minute
O_2	Oxygen
PEL	Permissible exposure limit
ppb	Parts per billion
ppm	Parts per million
PM	Particulate matter
SOG	Standard Operating Guidelines
TLV	Threshold limit value
µg/m³	Micrograms per cubic meter
VOC	Volatile organic compoud

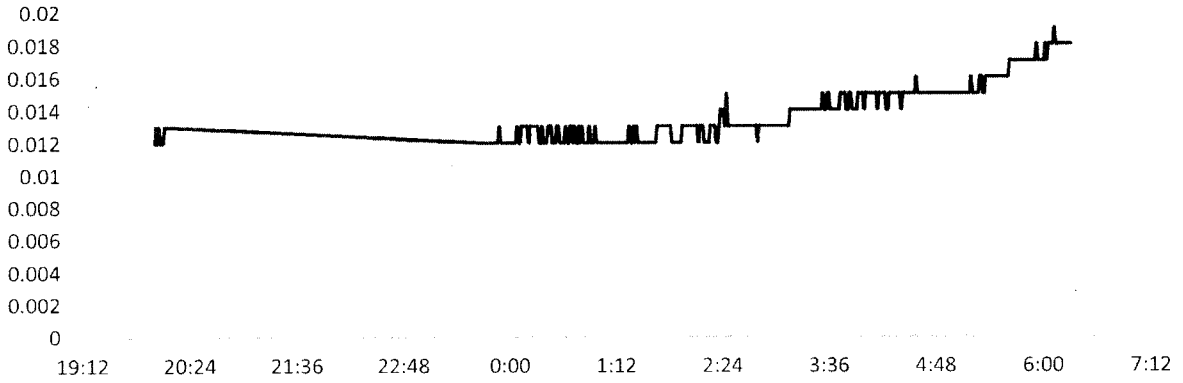
8/13/19 NIGHT Data for DustTrak 1 ($PM_{2.5}$) - Peacock Collision



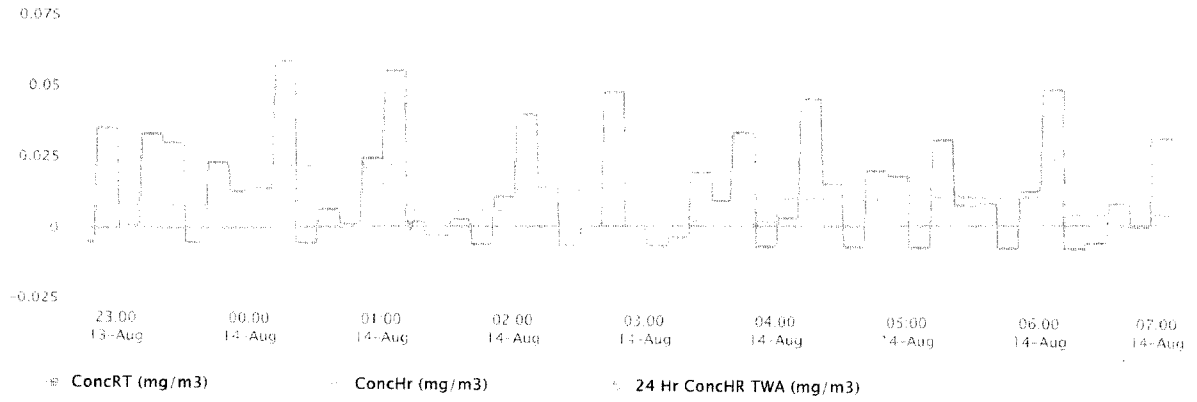
8/13/19 NIGHT Data for DustTrak 2 ($PM_{2.5}$) – Short Cut Road



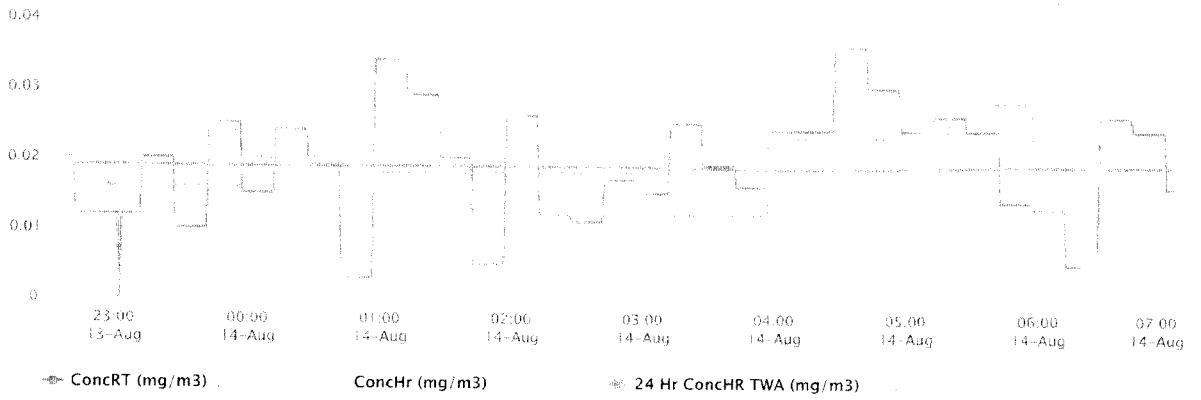
8/13/19 NIGHT Data for DustTrak 3 ($PM_{2.5}$) – Grace Costal Church



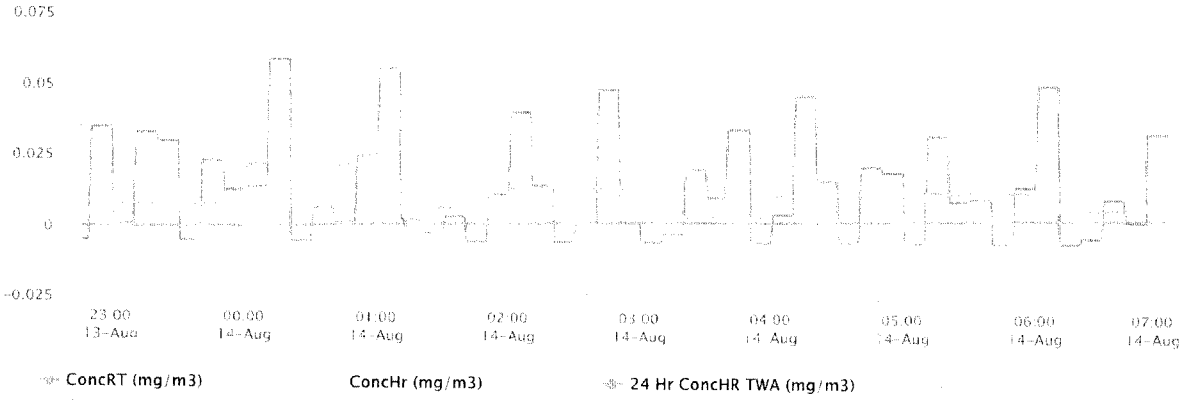
8/13/19 NIGHT Data for EBAM 1 (ConcRT) – Sun City



8/13/19 NIGHT Data for EBAM 2 (ConcRT) – Brooke Mill Apartments



8/13/19 NIGHT Data for EBAM 3 (ConcRT) – EPA Mobile Command Post



Armstrong, Kathy

From:	Huyser, Matthew
Sent:	Wednesday, August 14, 2019 1:13 PM
To:	Scott Reynolds; Frost, Keith; thompsrb@dhec.sc.gov; shealyrg@dhec.sc.gov; Marshall, Frances (Fran); reecemc@dhec.sc.gov; Marcus, Mike; Porter, Henry; Keisler, Van; Blalock, Juli; Taylor, Monica N.; Dickman, Jacquelyn S.; Timmerman, Kelsey A.; Threatt, Richard; Boyce, Lawra; Boswell, Wendy; Stewart, R. Gary; Crooks, Carol; Frank Edwards
Cc:	Frederick, Tim; Tolliver, Ronald; Jenkins, Brandi; Pinkney, James
Subject:	RE: Able – Summary Report NIGHT 8/13-8/14/2019
Attachments:	Viper Summary report_Able Fire Template_AR and DustTrack-20190813-Night-Rev1.pdf

Attached is a revised summary report for NIGHT 8/13-8/14/2019

This includes the summary of the EBAM units that have been deployed.

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From: Huyser, Matthew
Sent: Wednesday, August 14, 2019 10:32 AM
To: Reynolds, Scott <REYNOLDS@dhec.sc.gov>; Frost, Keith <frostrk@dhec.sc.gov>; thompsrb@dhec.sc.gov; shealyrg@dhec.sc.gov; Marshall, Frances (Fran) <marshaf2@dhec.sc.gov>; reecemc@dhec.sc.gov; Marcus, Mike <MARCUSJM@dhec.sc.gov>; Porter, Henry <porterhj@dhec.sc.gov>; Keisler, Van <keislecv@dhec.sc.gov>; Blalock, Juli <blalocje@dhec.sc.gov>; Taylor, Monica N. <TAYLORMN@dhec.sc.gov>; Dickman, Jacquelyn S. <DICKMAJS@dhec.sc.gov>; Timmerman, Kelsey A. <timmerka@dhec.sc.gov>; Threatt, Richard <threatrl@dhec.sc.gov>; Boyce, Lawra <boycelc@dhec.sc.gov>; Boswell, Wendy <BOSWELWM@dhec.sc.gov>; Stewart, R. Gary <stewarrg@dhec.sc.gov>; Crooks, Carol <Crookscl@DHEC.SC.GOV>; Frank Edwards <fedwards@jaspercountysc.gov>
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Subject: Able – Summary Report NIGHT 8/13-8/14/2019

Correction, the subject line for the email should have read: Able – Summary Report NIGHT 8/13-8/14/2019

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Sent: Wednesday, August 14, 2019 10:29 AM

To: Reynolds, Scott <REYNOLDS@dhec.sc.gov>; Frost, Keith <frostrk@dhec.sc.gov>; thompsrb@dhec.sc.gov; shealyrg@dhec.sc.gov; Marshall, Frances (Fran) <marshaf2@dhec.sc.gov>; reecemc@dhec.sc.gov; Marcus, Mike <MARCUSJM@dhec.sc.gov>; Porter, Henry <porterhj@dhec.sc.gov>; Keisler, Van <keislecv@dhec.sc.gov>; Blalock, Juli <blalocje@dhec.sc.gov>; Taylor, Monica N. <TAYLORMN@dhec.sc.gov>; Dickman, Jacquelyn S. <DICKMAJS@dhec.sc.gov>; Timmerman, Kelsey A. <timmerka@dhec.sc.gov>; Threatt, Richard <threatrl@dhec.sc.gov>; Boyce, Lawra <boycelc@dhec.sc.gov>; Boswell, Wendy <BOSWELWM@dhec.sc.gov>; Stewart, R. Gary <stewarrg@dhec.sc.gov>; Crooks, Carol <Crookscl@DHEC.SC.GOV>; Frank Edwards <fedwards@jaspercountysc.gov>
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Subject: RE: Able - Summary Report DAY 8/13/2019

Attached is the EPA data summary report for Nighttime on 8/13-8/14/2019

Southern wind pushed smoke northward, primarily from NE section of pile. Particulates at Short Cut Road were highest with peak at 310 ug/m3 and average of 31 ug/m3

Monitors in eastern locations at Peacock collision were lower with average at 12.3 ug/m3 and Grace Coastal to the SE at 12.3 ug/m3. To the south, Sun City hourly average remained below 25 ug/m3. To the West, Brooke Mill Apartments hourly average was generally below 20 ug/m3 with increases to below 30 ug/m3 by 5AM.

VOCs around the pile were slightly increased from the previous day but remained below 0.5 ppm on the southeast and west sides. A peak of 21 ppm CO was measured on the west side of the pile.

New equipment has been deployed. EPA is running 3 DustTraks and 3 EBAMS for particulate monitoring in populated areas with 4 AreaRAEpros for chemical monitoring around the perimeter of the pile. The EBAM data do not appear in the first page of this summary report because it is being reconfigured to accommodate those instruments but the trendlines appear in the attached pages. One DustTrak at Grace Coastal Church is being manually downloaded because of communications issues and data is being reconfigured for efficient display.

SMOKE OBSERVATIONS LAST NIGHT
8/13/19 21:40 Minimal smoke coming off of the pile, going NE and not visible shortly thereafter
8/13/19 22:35 No change, smoke still dissipating to NE at same rate, area around workshop is hazy
8/14/19 01:30 Smoke rate is slightly greater, still bearing NE. No odor or visible haze in surrounding areas. Workshop still hazy and most of the smoke looks like it is being generated in the NE. Water curtain on SW is helping
8/14/19 02:12 Smoke not dissipating and carrying further NE. Noticeable odor at intersection of Argent and Short Cut Rd.
8/14/19 03:30 No change.
8/14/19 05:00 Small fire developing on the NE pile.
8/14/19 06:15 NE fire is intensifying and growing slowly. START notified Ensafe, team will be onsite at 06:45 and will have his fire suppression crew address active fire. Smoke is still headed NE. Odor and minor haze at Short Cut Rd.

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From: Huyser, Matthew
Sent: Wednesday, August 14, 2019 2:42 AM
To: Reynolds, Scott <REYNOLDS@dhec.sc.gov>; Frost, Keith <frostrk@dhec.sc.gov>; thompsrb@dhec.sc.gov; shealyrg@dhec.sc.gov; Marshall, Frances (Fran) <marshaf2@dhec.sc.gov>; reecemc@dhec.sc.gov; Marcus, Mike <MARCUSJM@dhec.sc.gov>; Porter, Henry <porterhj@dhec.sc.gov>; Keisler, Van <keislecv@dhec.sc.gov>; Blalock, Juli <blalocje@dhec.sc.gov>; Taylor, Monica N. <TAYLORMN@dhec.sc.gov>; Dickman, Jacquelyn S. <DICKMAJS@dhec.sc.gov>; Timmerman, Kelsey A. <timmerka@dhec.sc.gov>; Threatt, Richard <threatrl@dhec.sc.gov>; Boyce, Lawra <boycelc@dhec.sc.gov>; Boswell, Wendy <BOSWELWM@dhec.sc.gov>; Stewart, R. Gary <stewarrg@dhec.sc.gov>; Crooks, Carol <Crookscl@DHEC.SC.GOV>; Frank Edwards <fedwards@jaspercountysc.gov>
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Subject: Able - Summary Report DAY 8/13/2019

Attached is the EPA data summary report for Daytime on 8/13/19

New equipment is being deployed and significant communication issues were encountered during the day resulting in data loss on some instruments.

High peaks of 1030 ug/m3 were recorded at Brooke Mill Apartments but an investigation of the area recorded no smoke, obstruction, or other jusitification for the peak. The Insturment recorded appropriate data throughout the day – average for the day was just over 30 ug/m3

Average for Sun City was 31 ug/m3 with a peak of 163 ug/m3 in the morning hours which is consistent with the wind and visual smoke observations in the morning hours.

A high detection of 2.3 ppm VOC was recorded on the northeast corner of the pile with a high CO reading of 6 ppm.

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Subject: RE: Able - Summary Report NIGHT 8/11-8/12

Attached is the EPA data summary report for Nighttime 8/12 to 8/13/19

Peak PM2.5 concentrations in Sun City of 162 ug/m3 with an average of 32 ug/m3
Lower PM2.5 readings to the West of 9 ug/m3 and West of 67 ug/m3 with an average of 14 ug/m3

No VOC readings to the Northeast side of pile but peak VOCs of 0.6 ppm and 0.5 ppm to the West and SE corner, respectively. Detections of CO peaked at 7 ppm.

8/12/19 21:15 Debris pile not visibly smoking, slight odor
8/12/19 23:45 Minimal smoke from pile, going east and not visible shortly after coming from pile
8/13/19 01:25 Smoke picking up substantially, headed SW; industrial park has thick smoke, Sun City has odor and sleight haze.
8/13/19 02:05 No odor or visible smoke on highways. Still headed S and SW. The industrial park has thick smoke. Sun City has more odor and haze.
8/13/19 02:46 Smoke in Sun City
8/13/19 03:17 Pile is smoking heavily. Still headed to the S and SW.
8/13/19 05:00 Heavy smoke, mainly headed S
8/13/19 06:20 Heavy smoke, mainly headed S. Industrial park has smoke like dense fog. Sun City still has smoke.

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From: Huyser, Matthew
Sent: Monday, August 12, 2019 9:09 AM
To: Reynolds, Scott <REYNOLDS@dhec.sc.gov>; Frost, Keith <frostrk@dhec.sc.gov>; thompsrb@dhec.sc.gov; shealyrg@dhec.sc.gov; Marshall, Frances (Fran) <marshaf2@dhec.sc.gov>; reecemc@dhec.sc.gov; Marcus, Mike <MARCUSJM@dhec.sc.gov>; Porter, Henry <porterhj@dhec.sc.gov>; Keisler, Van <keislecv@dhec.sc.gov>; Blalock, Juli <blalocje@dhec.sc.gov>; Taylor, Monica N. <TAYLORMN@dhec.sc.gov>; Dickman, Jacquelyn S. <DICKMAJS@dhec.sc.gov>; Timmerman, Kelsey A. <timmerka@dhec.sc.gov>; Threatt, Richard <threatrl@dhec.sc.gov>; Boyce, Lawra <boycelc@dhec.sc.gov>; Boswell, Wendy <BOSWELWM@dhec.sc.gov>
Cc: Frederick, Tim <Frederick.Tim@epa.gov>; Ronald Tolliver (Tolliver.Ronald@epa.gov) <Tolliver.Ronald@epa.gov>; Brandi Jenkins (Jenkins.Brandi@epa.gov) <Jenkins.Brandi@epa.gov>; James Pinkney (Pinkney.James@epa.gov) <Pinkney.James@epa.gov>
Subject: Able - Summary Report NIGHT 8/11-8/12

Attached is the EPA data summary report for Nightime 8/11 to 8/12/19

Smoke was observed at ground level yesterday evening to the east in Brooke Mill and Abberly Chase Apartments. This was anticipated with generic wind forecasting so Dusttrak 1 was relocated to Brooke Mill apartments at approximately 7pm.
Visible smoke on the morning of 8/12 was traveling South towards Palmetto Exterminators and Sun City

No noteworthy VOC or CO readings

Average PM2.5 readings at Brooke Mill, Sun City, and Command Post (east side) were near 30 ug/m3 which is Moderate for the 24-hour average. Notice in the trendline persistent peaks of over 100 ug/m3 at Brooke Mill in at around 9pm and over 100 ug/m3 in Sun City at 1am.

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Air Monitoring Summary Tables

The table below summarize monitoring data collected on using EPA's Viper wireless remote monitoring system.

Project Name:

From: **8/13/19 19:00** ***To:*** ***8/14/19 6:58***

SE Corner of Able Contracting

Instrument	Analyte	Period Average Exceedances	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level (PEL/TLV/60 min AEGL)
AreaRAE 1	VOC	No	733	13	0 - 206 ppb	1.1 ppb	1,000 ppb
	CO	No	733	0	0 - 0 ppm	0 ppm	83 ppm
	H_2S	No	733	0	0 - 0 ppm	0 ppm	0.5 ppm
	O_2	No	733	733	20.9 - 20.9%	20.9%	<19.5 or >23%
	LEL	No	733	0	0 - 0%	0%	10%

Pleasant Collection

Instrument	Analyte	Period Average Exceedances	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level (PEL/TLV/60 min AEGL)
DustTrak 1	PM-2.5	Moderate	1,966	1,966	8 - 43 μg/m³	12.3 μg/m³	See SOG #: T106

On Site, Immediately West of Pile

Instrument	Analyte	Period Average Exceedances	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level (PEL/TLV/60 min AEGL)
AreaRAE 2	VOC	No	699	27	0 - 452 ppb	5.6 ppb	1,000 ppb
	CO	No	699	23	0 - 21 ppm	0.2 ppm	83 ppm
	H_2S	No	699	0	0 - 0 ppm	0 ppm	0.5 ppm
	O_2	No	699	699	20.6 - 20.7%	20.6%	<19.5 or >23%
	LEL	No	699	0	0 - 0 %	0%	10%

Short Cut Road

Instrument	Analyte	Period Average Exceedances	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level (PEL/TLV/60 min AEGL)
DustTrak 2	PM-2.5	Moderate	1,609	1,540	0 - 310 μg/m³	31.3 μg/m³	See SOG #: T106

Able Contracting Workshop, Northeast of Pile

Instrument	Analyte	Period Average Exceedances	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level (PEL/TLV/60 min AEGL)
AreaRAE 3	VOC	No	722	17	0 - 464 ppb	4.8 ppb	1,000 ppb
	CO	No	722	15	0 - 5 ppm	0.1 ppm	83 ppm
	H_2S	No	722	0	0 - 0 ppm	0 ppm	0.5 ppm
	O_2	No	722	722	20.9 - 20.9%	20.9%	<19.5 or >23%
	LEL	No	722	0	0 - 0%	0%	10%

Grace Costal Church

Instrument	Analyte	Period Average Exceedances	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level (PEL/TLV/60 min AEGL)
DustTrak 3	PM-2.5	Moderate	444	441	0 - 19 μg/m³	13.7 μg/m³	See SOG #: T106

Palmetto Exterminators

Instrument	Analyte	Period Average Exceedances	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level (PEL/TLV/60 min AEGL)
AreaRAE 4	VOC	No	725	0	0 - 0 ppb	0 ppb	1,000 ppb
	CO	No	725	0	0 - 0 ppm	0 ppm	83 ppm
	H_2S	No	725	0	0 - 0 ppm	0 ppm	0.5 ppm
	O_2	No	725	725	20.9 - 21.5%	21%	<19.5 or >23%
	LEL	No	725	0	0 - 0%	0%	10%

Sun City

Instrument	Analyte	Period Average Exceedances	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level (PEL/TLV/60 min AEGL)
EBAM 1	PM-2.5	Good	405	270	0 - 50 μg/m³	11.9 μg/m³	See SOG #: T106

Brooke Mill Apartments

Instrument	Analyte	Period Average Exceedances	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level (PEL/TLV/60 min AEGL)
EBAM 2	PM-2.5	Moderate	517	516	0 - 36 μg/m³	19.4 μg/m³	See SOG #: T106

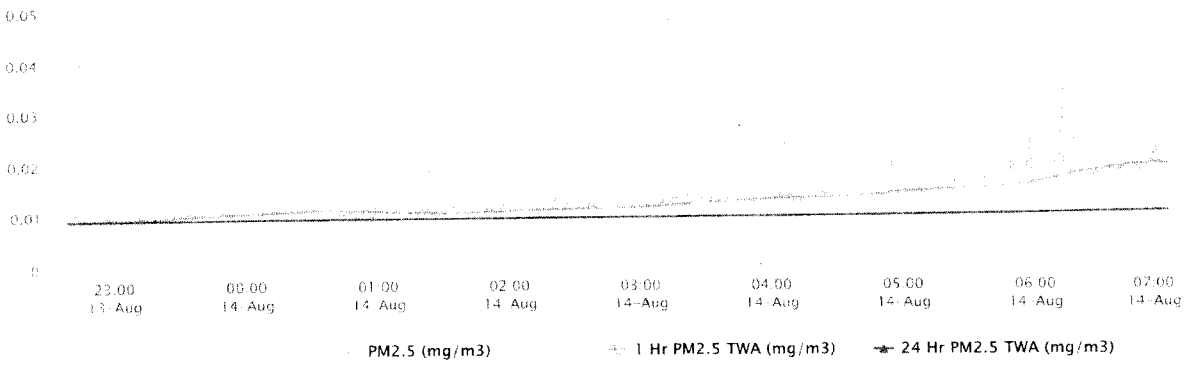
EPA Mobile Command Post

Instrument	Analyte	Period Average Exceedances	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level (PEL/TLV/60 min AEGL)
EBAM 3	PM-2.5	Moderate	502	364	0 - 59 μg/m³	14.6 μg/m³	See SOG #: T106

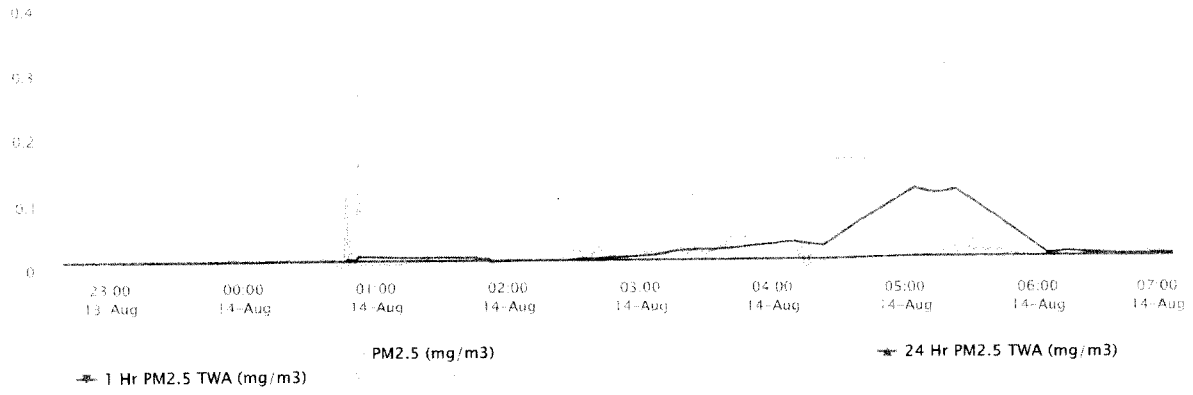
Notes:

%	Percent
<	Less than
>	Greater than
AEGL	Acute Exposure Guideline levels for airborne chemicals
CO	Carbon monoxide
H_2S	Hydrogen Sulfide
LEL	Lower Explosive Level
min	Minute
O_2	Oxygen
PEL	Permissible exposure limit
ppb	Parts per billion
ppm	Parts per million
PM	Particulate matter
SOG	Standard Operating Guidelines
TLV	Threshold limit value
μg/m³	Micrograms per cubic meter
VOC	Volatile organic compoud

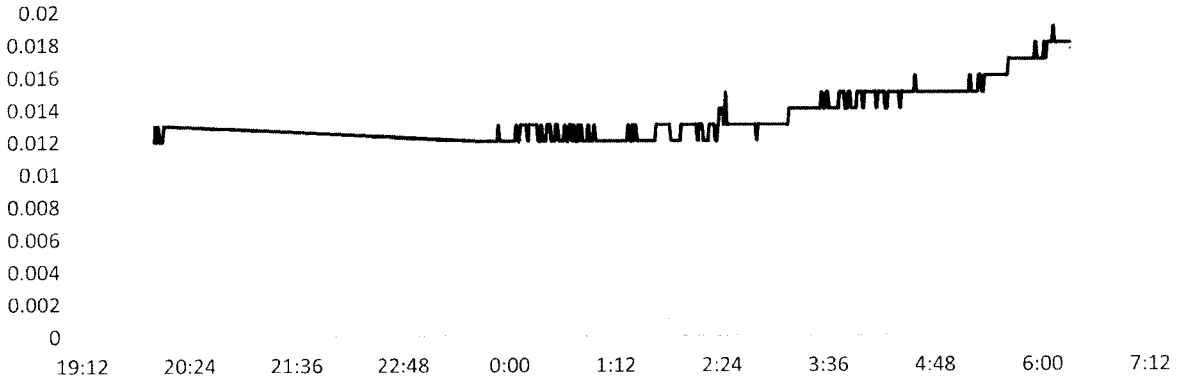
8/13/19 NIGHT Data for DustTrak 1 ($PM_{2.5}$) - Peacock Collision



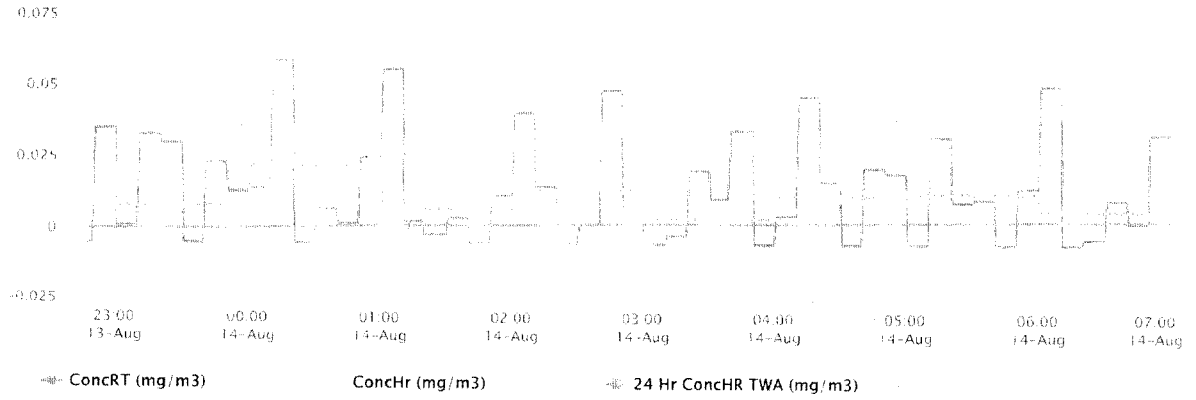
8/13/19 NIGHT Data for DustTrak 2 ($PM_{2.5}$) – Short Cut Road



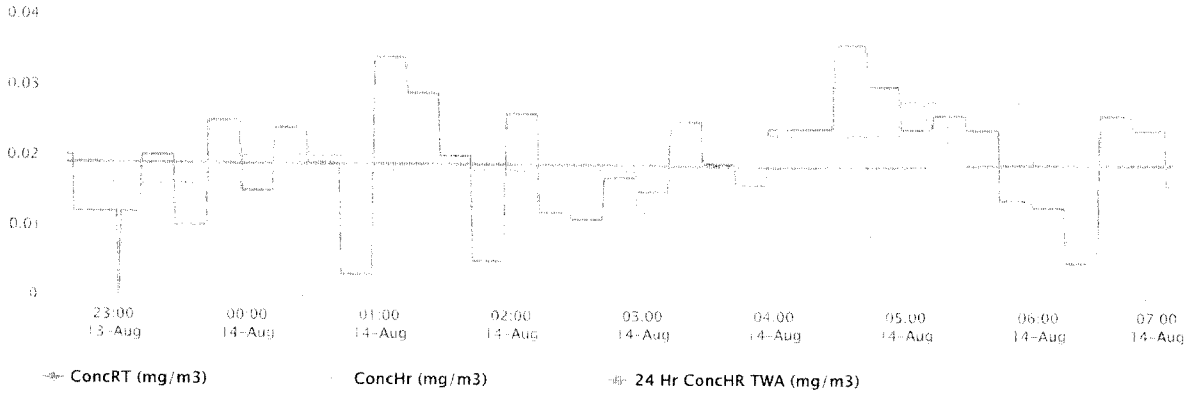
8/13/19 NIGHT Data for DustTrak 3 ($PM_{2.5}$) – Grace Costal Church



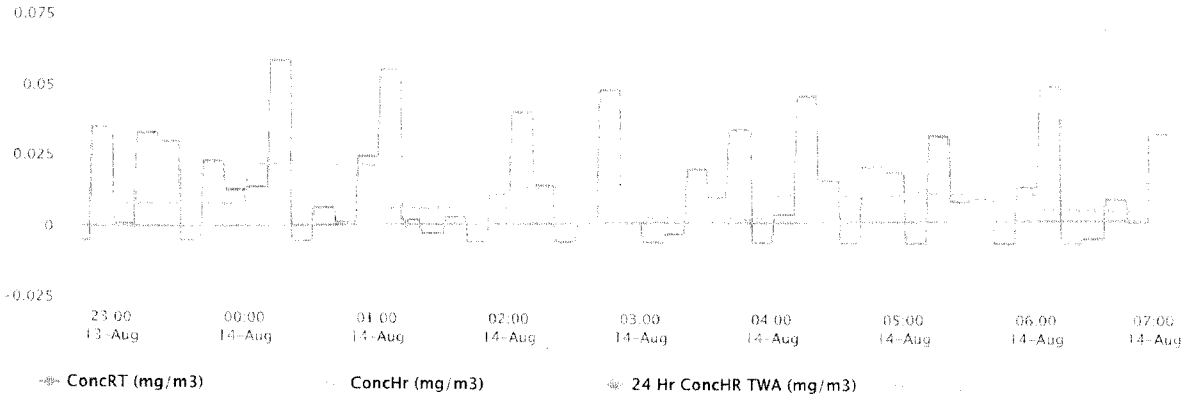
8/13/19 NIGHT Data for EBAM 1 (ConcRT) – Sun City



8/13/19 NIGHT Data for EBAM 2 (ConcRT) – Brooke Mill Apartments



8/13/19 NIGHT Data for EBAM 3 (ConcRT) – EPA Mobile Command Post



Armstrong, Kathy

From: Huyser, Matthew
Sent: Wednesday, August 14, 2019 12:55 PM
To: Pinkney, James
Cc: Tolliver, Ronald; Stewart, R. Gary; Crooks, Carol
Subject: RE: ACTION: The Island Packet Inquiry

The first response should really come from DHEC. I've copied Gary and Carol on this reply. Here's the way I would phrase it:

There is no risk of ongoing combustion of debris in the Hickory Hill landfill due to wastes from the Able Contracting Site. Waste is extinguished before being loaded to trucks for transport and off-site disposal. Well-managed landfills include frequent soil covers which provide an barrier against oxygen intrusion and prevents subsurface combustion.

The second response depends on whether the data has been posted to the EPA or DHEC webpage(s). I haven't seen it yet and would like for it to be posted.

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From: Pinkney, James <Pinkney.James@epa.gov>
Sent: Wednesday, August 14, 2019 12:46 PM
To: Huyser, Matthew <Huyser.Matthew@epa.gov>
Cc: Tolliver, Ronald <Tolliver.Ronald@epa.gov>
Subject: ACTION: The Island Packet Inquiry

The Island Packet (SC) (Kacen Bayless) [Received 8/14] – OPEN – the reporter requested the following information:

- I understand that the debris pile at Able Contracting is being pulled apart and shipped off to Hickory Hill landfill in Ridgeland. Will this address the root cause of the fire if it's self-combusting? What about the potential toxins that could be in the pile of debris? What's stopping it from igniting at the landfill?
- I understand that the air, water and groundwater tests have been completed for the site. Where can I access these findings?

James Pinkney
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U.S. Environmental Protection Agency, Region 4
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https://www.epa.gov/aboutepa/about-epa-region-4-southeast
Follow Region 4 on Twitter: www.twitter.com/EPASoutheast
And Facebook: www.facebook.com/eparegion4

Armstrong, Kathy

From: Huyser, Matthew
Sent: Wednesday, August 14, 2019 8:31 AM
To: Scott Reynolds
Cc: Marshall, Frances (Fran); Stewart, R. Gary; Crooks, Carol
Subject: RE: DustTrack data availability question

I had hoped to have my story map approved by Sunday which was going to be my method of sharing data.
At the very least they are willing to post the summary reports to an epa webpage – but some have errors, I couldn't distribute them so there will be two or three holes in the list
I don't know when that story map will be live. Today if we're lucky.

It will be the end of the week before the programmers have a meter app that can incorporate the DHEC particulate monitors into a single database.

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From: Reynolds, Scott <REYNOLDS@dhec.sc.gov>
Sent: Wednesday, August 14, 2019 8:24 AM
To: Huyser, Matthew <Huyser.Matthew@epa.gov>
Cc: Marshall, Frances (Fran) <marshaf2@dhec.sc.gov>; Stewart, R. Gary <stewarrg@dhec.sc.gov>; Crooks, Carol <Crookscl@DHEC.SC.GOV>
Subject: Re: DustTrack data availability question

Planning any public availability (have to ask) or dataportal

From: Huyser, Matthew <Huyser.Matthew@epa.gov>
Sent: Wednesday, August 14, 2019 8:21:56 AM
To: Reynolds, Scott <REYNOLDS@dhec.sc.gov>
Cc: Marshall, Frances (Fran) <marshaf2@dhec.sc.gov>; Stewart, R. Gary <stewarrg@dhec.sc.gov>; Crooks, Carol <Crookscl@DHEC.SC.GOV>
Subject: RE: DustTrack data availability question

*** Caution. This is an EXTERNAL email. DO NOT open attachments or click links from unknown senders or unexpected email. ***

We replaced that DustTrak with an EBAM because it has shore power. The EBAM was installed on Monday but it wasn't fully functional until Tuesday evening. The DustTrak was taken out of Brooke Mill because we can run that on battery power someplace else.

We now have 6 units operational and will no longer be moving stations into an expected plume. The stations are now in a fixed position.

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From: Reynolds, Scott <REYNOLDS@dhec.sc.gov>
Sent: Wednesday, August 14, 2019 8:12 AM
To: Huyser, Matthew <Huyser.Matthew@epa.gov>
Cc: Marshall, Frances (Fran) <marshaf2@dhec.sc.gov>; Stewart, R. Gary <stewarrg@dhec.sc.gov>; Crooks, Carol <Crookscl@DHEC.SC.GOV>
Subject: DustTrack data availability question

We've had a contact from a resident at Brook Mill re: monitor data. (below)

I know you have moved the DustTrak(s)

So two questions :

Do you expect to continue to move several of the DustTraks to 'catch' expected plumes?

Are there 'fixed' sites for which EPA will be making data available in near real time to the public?

From: bradaltmansc (b)(6) Personal Privacy
Sent: Tuesday, August 13, 2019 10:07 PM
To: Able Fire <ablefire@dhec.sc.gov>
Subject: Data from the air sensors

*** Caution. This is an EXTERNAL email. DO NOT open attachments or click links from unknown senders or unexpected email. ***

Hello I am a resident of brookmiill apartments we are about a quarter mile from the able fire and I was wondering how to view the data from the air sensor that is here at brookmill when I click on the link to view the air sensor data the only one that shows is the one at okatie elementary

school and that sensor is a mile from the able fire thank you look forward to hearing from you at your earliest convenience

Sent from my Verizon, Samsung Galaxy smartphone

Armstrong, Kathy

From: Huyser, Matthew
Sent: Wednesday, September 11, 2019 9:24 AM
To: Hammond, Richard
Cc: Wise, Katie
Subject: RE: storymap - just a question so far

Yes. Katie Wise is with Tetra Tech (katie.wise@tetratech.com).
We've already made our story map public and have linked it on the response page (https://response.epa.gov/site/site_profile.aspx?site_id=14357)
Donnie Williams has taken care of making sure the publication confirmations have been completed. Geoservices can publish a product for public viewing using a request service but that service isn't available to contractors. So for emergency responses, our contractors can make things public ad we take care of the confirmations afterward.

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From: Hammond, Richard <Hammond.Richard@epa.gov>
Sent: Thursday, August 15, 2019 2:26 PM
To: Huyser, Matthew <Huyser.Matthew@epa.gov>
Subject: RE: storymap - just a question so far

Howdy Matt,

Is that Katie Wise/Tetra Tech? I'm talking to her about Westside Lead right now so I can get her to pass along the sharing I need to get it routing.

I had a link for it, but can't find it. I'm having to learn GPlatform at the same time, so I probably have it, just don't know how to locate it.

Thanks !

From: Huyser, Matthew <Huyser.Matthew@epa.gov>
Sent: Thursday, August 15, 2019 2:23 PM
To: Hammond, Richard <Hammond.Richard@epa.gov>; Pinkney, James <Pinkney.James@epa.gov>; Tolliver, Ronald <Tolliver.Ronald@epa.gov>
Subject: RE: storymap - just a question so far

The story map can be published for public availability. It would just be linked through the webpage. My START contractor has already created it. I just need approval to make it public and for someone to post the link once we do

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From: Hammond, Richard <Hammond.Richard@epa.gov>
Sent: Thursday, August 15, 2019 2:11 PM
To: Huyser, Matthew <Huyser.Matthew@epa.gov>; Pinkney, James <Pinkney.James@epa.gov>; Tolliver, Ronald <Tolliver.Ronald@epa.gov>
Subject: storymap - just a question so far

Hi all,

We've made some good progress on posting GeoPlatform stuff and it carries from one app to another. I have searched my emails everywhere and can't find the link to the Storymap for Able.

If any of you have that handy, I could use it.

This still may take a bit of time because there's quite a few steps, but at least I'm heading in the right direction. And more importantly, I've got a good contact now.

Thanks!

Thanks!
Richard Hammond
Office hours
7am – 3:30pm
Office: 404.562.8535
Mobile: 404.670.8063

Armstrong, Kathy

From: Huyser, Matthew
Sent: Thursday, August 22, 2019 11:25 AM
To: Eoc, Epahq
Subject: Able Contracting Fire - immediate consultation requested

Per our phone call, I'm looking for someone who can review some product information and to see if they find any "red flags"
We are looking at using this product on an active fire – review is requested immediately
It does not have to be a full review, report, or approval; all we need is someone to look at it and see if there's anything that stands out as potentially problematic.

The product is a firefighting agent. The company says there is no PFOA/PFOS in the product but we want to be sure there's no issue from the agency side

Novacool UEF
http://novacoolfire.com/
http://novacoolfire.com/wp-content/uploads/2016/06/Baums_UEF_Description-2.pdf
http://novacoolfire.com/wp-content/uploads/2016/07/EPA_0001.pdf
http://novacoolfire.com/wp-content/uploads/2016/06/Aquatic_Toxicity_UEF.pdf
http://novacoolfire.com/wp-content/uploads/2016/06/UEF_BOD_COD.pdf
http://novacoolfire.com/wp-content/uploads/2016/06/Novacool_UEFrev19.MSD_.pdf

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Armstrong, Kathy

From: Huyser, Matthew
Sent: Wednesday, August 21, 2019 8:03 AM
To: Swanson, Courtney
Subject: FW: Able - firefighting wetting agent

The POC who called me about this was Gary Broberg (garybroberg@roadrunner.com; 440-223-0791)

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From: Huyser, Matthew
Sent: Tuesday, August 20, 2019 4:46 PM
To: Russell, Chris <Russell.Chris@epa.gov>
Cc: Tanner, Terry <Tanner.Terry@epa.gov>; john.kinsey@envirosmart.us; bryan@envirosmart.us; Rick Hollingsworth <cmcrickh@aol.com>; Swanson, Courtney <Swanson.Courtney@epa.gov>
Subject: Able - firefighting wetting agent

Chris,

I was forwarded a call from the region from a firefighting consultant in Ohio who recommends that we look into using a wetting agent to reduce emissions and absorb heat along with ultra high pressure water systems to reduce water. The agent recommended was Novacool.

We should find a way to review this product or similar considering whether to test using a wetting agent in one corner of the Site as we approach other sections.

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Armstrong, Kathy

From: Huyser, Matthew
Sent: Wednesday, August 21, 2019 7:51 AM
To: Crooks, Carol; Cole, Robert; Morrison, Karen; williajc@dhec.sc.gov; Tim Kadar; Stewart, R. Gary
Cc: Tanner, Terry; Patel, Subash
Subject: RE: Able Contracting Sampling Map and Work Plan

Carol, thanks.

FYI, we just visited with JS Construction and observed that there is a confluence with another ditch that joins from another source and this point may be an excellent location for sampling. Chris Russell and Terry Tanner can help with locating that when your team arrives.

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From: Crooks, Carol <Crookscl@DHEC.SC.GOV>
Sent: Tuesday, August 20, 2019 10:49 AM
To: Huyser, Matthew <Huyser.Matthew@epa.gov>; Cole, Robert <colerb@dhec.sc.gov>; Morrison, Karen <morrisks@dhec.sc.gov>; williajc@dhec.sc.gov; Tim Kadar <kadartj@dhec.sc.gov>; Stewart, R. Gary <stewarrg@dhec.sc.gov>
Subject: Able Contracting Sampling Map and Work Plan

Both are attached. Please let me know if any changes are necessary.

Carol

Carol L. Crooks

Project Manager

State Remediation Section

Bureau of Land and Waste Management

S.C. Dept. of Health & Environmental Control
Office: (803) 898-0810
Connect: www.scdhec.gov Facebook Twitter

Armstrong, Kathy

From: Huyser, Matthew
Sent: Tuesday, August 20, 2019 12:03 PM
To: Pinkney, James
Subject: Able - water reuse

We transported approximately 300 tons of waste offsite for disposal on 8/17 and an additional 600 tons on 8/19. Disposal today on 8/20 is likely to meet or exceed the 600 ton number from Monday.

There are two 20k-gal water tanks on site which are being used to receive and store recovered firefighting water which is being reused for firefighting operations at the Site.

SC DHEC is working with EPA on the design and implementation of a water monitoring and sampling plan that will be executed in the coming days.

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Armstrong, Kathy

From: Huyser, Matthew
Sent: Tuesday, August 20, 2019 4:19 PM
To: Huyser, Matthew
Subject: Able - Summary Report NIGHT 8/19-8/20/2019
Attachments: Able_Viper Summary Report_081919NIGHT.pdf

Attached is the air monitoring summary report for NIGHT 8/19-8/20/2019

Particulate readings at the EPA MCP and Sun City reported moderate air quality with average readings of 12.2 ug/m3 and 13.6 ug/m3 respectively which are slightly above the 12.0 ug/m3 threshold for the "good" AQI category. Particulates at Grace Coastal Church reported moderate air quality at an average of 14.4 ug/m3 and a peak of over 120 ug/m3 which occurred as part of a sharp increase of PM2.5 beginning at approximately 6AM. Increases in PM2.5 of similar slopes were also observed at this time at Short Cut Road and Peacock Collision.

Particulates at all other stations reported good air quality (≤12 ug/m3) for the period.

HCN averages inside the Site fence line did not exceed 0.5 ppm for the period. VOCs, H2S, and CO averages were also low.

No detections were reported outside the Site fence line at Forrest Concrete of HCN, VOC, H2S, CO or LEL.

AreaRAE Pros were down for approximately 1 hour from midnight to 1AM.

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From: Huyser, Matthew
Sent: Tuesday, August 20, 2019 12:13 AM
To: Huyser, Matthew <Huyser.Matthew@epa.gov>
Subject: Able - Summary Report DAY 8/19/2019

Attached is the air monitoring summary report for DAY 8/19/2019

Particulate readings at the EPA MCP and Sun City reported moderate air quality with an average of 15.6 ug/m3 and 13 ug/m3 which are slightly above the 12.0 ug/m3 threshold for "good" category. Particulates at all other stations reported good air quality (≤12 ug/m3) for the period.

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No detections of VOC, CO, LEL, or H2S were made outside the fence line in front of Forrest Concrete. A single record of HCN at 0.1 ppm was reported in one measurement while the remaining 4,236 measurements during the operational period reported 0 ppm.

High detections of VOC, CO, H2S, LEL, and HCN were observed at AreaRAE 3 at the NE corner of the pile near the Able Contracting Workshop during this period. A series of high readings were recorded across the same time frame between the hours of 10 and 11. The instrument is located near the Able Contracting workshop which remains in operation and at which several activities were ongoing throughout the day including maintenance of equipment, operation of a farm tractor, and loading of equipment to a trailer and highway tractor. The meter is located at the corner of the building on a concrete pad onto which vehicles may be parked. The detections of all related chemical sensors during the same period are consistent with measurements from the exhaust of an idling diesel engine.

The HCN peak of 38.4 ppm is actually consistent the diesel exhaust scenario. H2S is a common component of diesel exhaust fumes, and the Honewell AreaRAE Pro HCN sensor has a natively high cross-sensitivity to H2S. According to RAE TN-114, conditions of H2S at 15 ppm would register a reading of 90 ppm on the AreaRAE Pro HCN sensor - a six-fold increase of the true H2S value. Cross-sensitivities to sensors are common but RAE TN-114 makes a special note of this issue with the HCN sensor, stating: "Due to a very high cross-sensitivity to H2S, this sensor is unsuitable for use in atmospheres that contain H2S". The H2S peak of 7.6 ppm on AreaRAE 3 during this period multiplied by the cross-sensitivity factor of six is equal to 45.6 which is within a reasonable range of +/-20% from the HCN peak of 38.4 ppm.

An isolated VOC reading of 14 ppm was measured at 12:30 at the NE corner of the pile (near the workshop) while an isolated VOC reading of 10 ppm was measured at 9:02 at the SW corner of the pile. These records were single readings with no associated rise and fall to the data trendline to suggest that there was an exposure threshold exceedance or risk.

Matthew J. Huyser, PE - On-Scene Coordinator
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Emergency Response Removal and Prevention Branch (ERRPB)
office: **404-562-8934** | cell: **678-427-8829** | fax: **404-562-8699**
epaosc.org

From: Huyser, Matthew <Huyser.Matthew@epa.gov>
Sent: Monday, August 19, 2019 5:30 PM
To: Huyser, Matthew <Huyser.Matthew@epa.gov>
Subject: Able - Summary Report NIGHT 8/18/2019

Attached is the air monitoring summary report for NIGHT 8/18-8/19/2019

Particulates at the MCP monitor reported moderate air quality with an average of 13 ug/m3 which is only slightly above the 12.0 ug/m3 threshold for a "good" category. Particulates at all other stations reported good air quality (≤12 ug/m3) for the period with no peaks exceeding 57 ug/m3.

HCN measurments inside the fence line averaged below 0.5 ppm for the period with no measurments above 1.6 ppm. VOC measurements remained below 300 ppb with averages below 4 ppb. A CO peak of 22 ppm was measured at the NW corner of the pile with a period average of 1.12 ppm.

No detections of HCN, VOC, CO, LEL, or H2S were made outside the fenceline in front of Forrest Concrete.

OVERNIGHT SMOKE REPORT:
20:30 Minimal smoke coming from south side of pile. Mainly from the center chimney. Headed NE
22:00 Minimal smoke headed east
23:30 No change
01:00 No change

02:00 No change
03:20 Minimal smoke headed northeast. Faint odors on Pearlstine Dr. and Shortcut Rd.
04:40 No change
06:00 Faint odor on the northern section of Argent Rd. by Shortcut Rd.

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Particulate meter at the command post reported a moderate air quality at 13.1 ug/m3 which is slightly over the 12.1 threshold for that category. All other stations reported good air quality with low peaks during the period.

HCN meters inside the fenceline measured averages below 0.5 ppm. A Peak of 10.1 ppm was measured at the SW corner of the pile but there was no persistent measurement of HCN in any area. VOC averages remained low below 5 ppb. A peak of 4 ppm was measured at the NW corner of the pile. CO averages remained below 1 ppm with a peak of 61 ppm at the SW corner of the pile and 18 pm at the NW corner of the pile.

Chemical sensors outside the fence line at Forrest Concrete remained at zero throughout the period.

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From: Huyser, Matthew
Sent: Sunday, August 18, 2019 4:15 PM
Subject: Able - Summary Report NIGHT 8/17-8/18/2019

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Particulates were reported as good air quality for all six stations with no maximum peaks above 70 ug/m3

HCN readings at all perimeter chemical monitors at the Site remained below average of 0.21 ppm with a maximum peak of 0.7 ppm.

VOC readings inside the fenceline remained low with averages below 1.5 ppb with a maximum of 228 ppb at the NE side of the pile. CO was only detected on the NE corner of the pile with a peak of 9 ppm and an average of 0.01 ppm

HCN and other chemical monitoring sensors outside the fenceline at Forrest Concrete remained at 0 ppm for the entire operational period.

OVERNIGHT SMOKE REPORT:
21:20 Minimal smoke coming from chimneys on top of pile. Headed north. Odor on Argent between Calhoun Rd. and SCAG Power Equipment store.
22:30 No change.
23:30 Minimal smoke headed east.
00:50 Troubleshooting the PRG to Viper connection at the workshop by the smartgateway. Strong odors but no haze. Smoke headed east still. Wasn't able to check the perimeter areas during this round.
01:30 Schinger has a slight haze and odor from the pile up to approximately 1/3 of the way to the highway
02:40 Smoke rate has increased a little since the last round. It is still heading east. Schinger haze and odor has not changed. Feint odor at peacock collision.
03:45 Smoke seems to be going into the atmosphere. Can't tell which direction it's going in. Schinger and peacock have both cleared up.
05:00 Smoke coming from chimneys all along the southside of the pile. Smoke is still headed east. Haze is only around the workshop and driveway. Feint odor at the end of Pearlstine Dr.

Note: No smoke coming from the northeast end at any point all night. The rate of the smoke has also been consistent, only gradual increase

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Air Monitoring Summary Tables

The table below summarize monitoring data collected on using EPA's Viper wireless remote monitoring system.

Project Name: **Able Contracting Fire Site**

From: **8/19/19 19:00** ***To:*** **8/20/19 7:00**

On Site, Southwest Corner of Pile

Instrument	Analyte	Action Level Exceedances	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level (PEL/TLV/60 min AEGL)
AreaRAE 1	VOC	No	6,861	327	0 - 444 ppb	3.25 ppb	1,000 ppb
	CO	No	6,861	130	0 - 5 ppm	0.06 ppm	83 ppm
	H_2S	No	6,861	0	0 - 0 ppm	0 ppm	0.5 ppm
	O_2	No	6,861	6,861	20.9 - 20.9 %	20.9 %	<19.5 or >23%
	LEL	No	6,861	0	0 - 0 %	0 %	10%
	HCN	No	6,861	6,861	0.1 - 1.4 ppm	0.47 ppm	7.1 ppm

Peacock Collision

Instrument	Analyte	Air Quality Index	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level (PEL/TLV/60 min AEGL)
DustTrak 1	PM-2.5	Good	692	692	4 - 20 µg/m³	5.9 ug/m3	See SOG #: T106

On Site, Northwest Corner of Pile

Instrument	Analyte	Action Level Exceedances	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level (PEL/TLV/60 min AEGL)
AreaRAE 2	VOC	No	6,617	5	0 - 73 ppb	0.02 ppb	1,000 ppb
	CO	No	6,617	570	0 - 17 ppm	0.42 ppm	83 ppm
	H_2S	Yes	6,617	16	0 - 0.6 ppm	0.001 ppm	0.5 ppm
	O_2	No	6,617	6,617	20.9 - 20.9 %	20.9 %	<19.5 or >23%
	LEL	No	6,617	0	0 - 0 %	0 %	10%
	HCN	No	6,617	6,517	0 - 2.7 ppm	0.42 ppm	7.1 ppm

Short Cut Road

Instrument	Analyte	Air Quality Index	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level (PEL/TLV/60 min AEGL)
DustTrak 2	PM-2.5	Good	617	617	2 - 22 µg/m³	5.7 ug/m3	See SOG #: T106

Able Contracting Workshop, Northeast of Pile

Instrument	Analyte	Action Level Exceedances	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level (PEL/TLV/60 min AEGL)
AreaRAE 3	VOC	No	6,695	5	0 - 7 ppb	0 ppb	1,000 ppb
	CO	No	6,695	0	0 - 0 ppm	0 ppm	83 ppm
	H_2S	No	6,695	0	0 - 0 ppm	0 ppm	0.5 ppm
	O_2	No	6,695	6,695	20.9 - 21.2 %	21 %	<19.5 or >23%
	LEL	No	6,695	308	0 - 2 %	0.1 %	10%
	HCN	No	6,695	2,713	0 - 0.3 ppm	0.04 ppm	7.1 ppm

Grace Costal Church

Instrument	Analyte	Air Quality Index	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level (PEL/TLV/60 min AEGL)
DustTrak 3	PM-2.5	Moderate	694	694	6 - 122 µg/m³	14.4 ug/m3	See SOG #: T106

Forrest Concrete

Instrument	Analyte	Action Level Exceedances	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level (PEL/TLV/60 min AEGL)
AreaRAE 4	VOC	No	6,654	0	0 - 0 ppb	0 ppb	1,000 ppb
	CO	No	6,654	0	0 - 0 ppm	0 ppm	83 ppm
	H_2S	No	6,654	0	0 - 0 ppm	0 ppm	0.5 ppm
	O_2	No	6,654	6,654	20 - 20.5 %	20.1 %	<19.5 or >23%
	LEL	No	6,654	0	0 - 0 %	0 %	10%
	HCN	No	6,654	0	0 - 0 ppm	0 ppm	7.1 ppm

Sun City

Instrument	Analyte	Air Quality Index	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level (PEL/TLV/60 min AEGL)
EBAM 1	PM-2.5	Moderate	746	237	0 - 60 ug/m3	13.6 ug/m3	See SOG #: T106

Brooks Mill Apartments

Instrument	Analyte	Air Quality Index	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level (PEL/TLV/60 min AEGL)
EBAM 2	PM-2.5	Good	751	550	0 - 45 ug/m3	11.9 ug/m3	See SOG #: T106

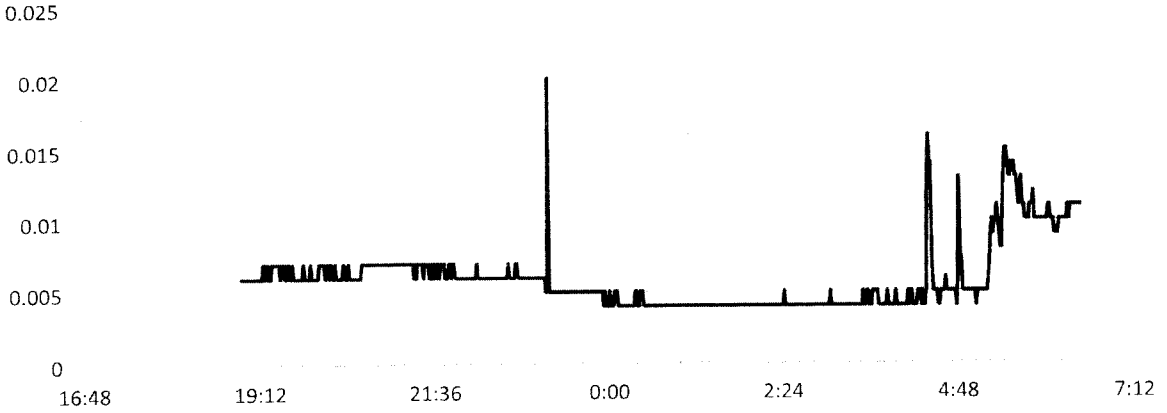
EPA Mobile Command Post

Instrument	Analyte	Air Quality Index	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level (PEL/TLV/60 min AEGL)
EBAM 3	PM-2.5	Moderate	738	178	0 - 54 ug/m3	12.2 ug/m3	See SOG #: T106

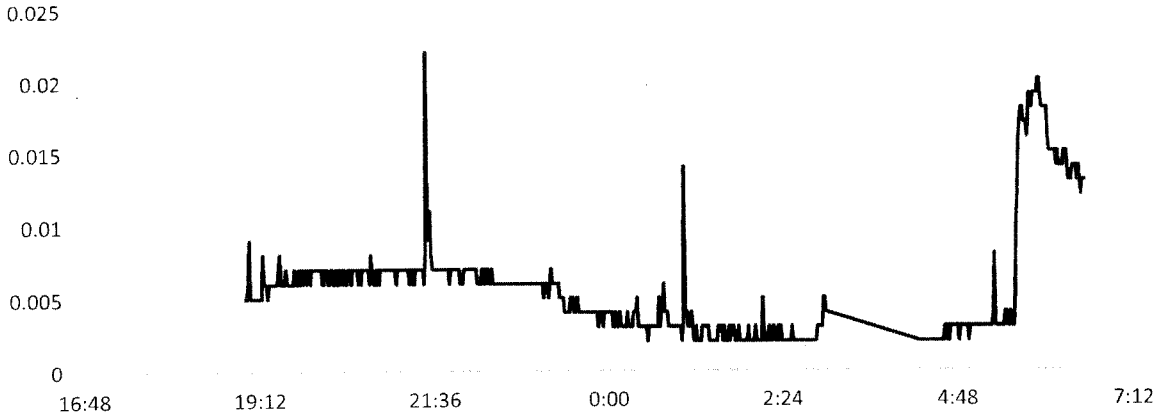
Notes:

- % Percent
- < Less than
- > Greater than
- AEGL Acute Exposure Guideline Levels for Airborne Chemicals
- CO Carbon monoxide
- H_2S Hydrogen Sulfide
- HCN Hydrogen Cyanide
- LEL Lower Explosive Level
- min Minute
- O_2 Oxygen
- PEL Permissible exposure limit
- ppb Parts per billion
- ppm Parts per million
- PM Particulate matter
- SOG Standard Operating Guidelines
- TLV Threshold limit value
- µg/m³ Micrograms per cubic meter
- VOC Volatile organic compoud

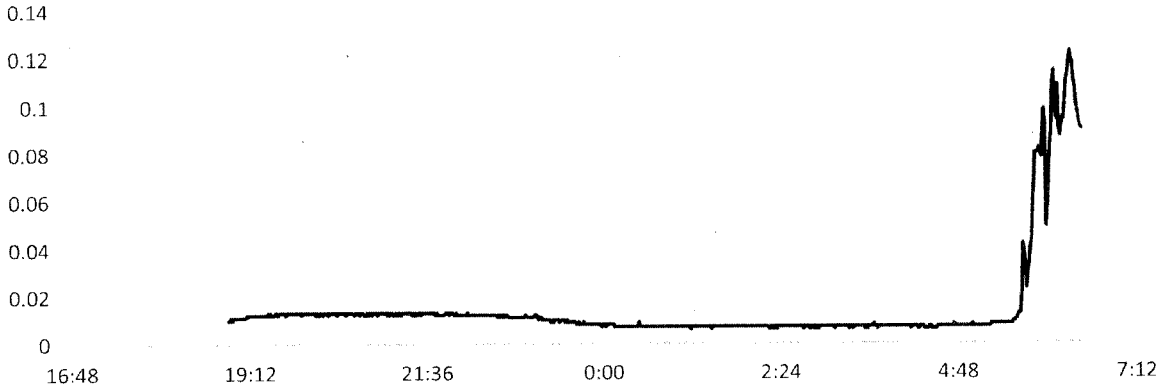
8/19/19 NIGHT Data for DustTrak 1 ($PM_{2.5}$) - Peacock Collision



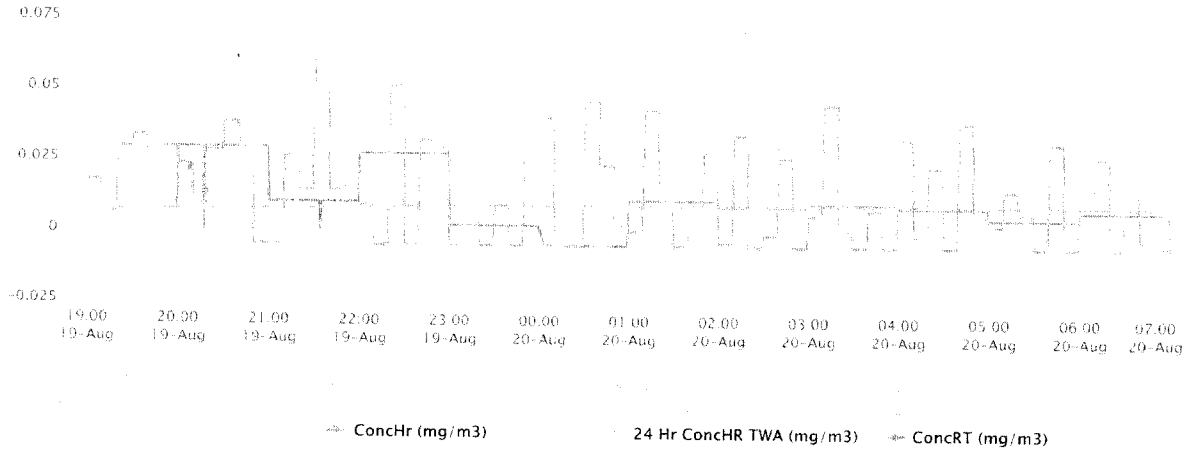
8/19/19 NIGHT Data for DustTrak 2 ($PM_{2.5}$) – Short Cut Road



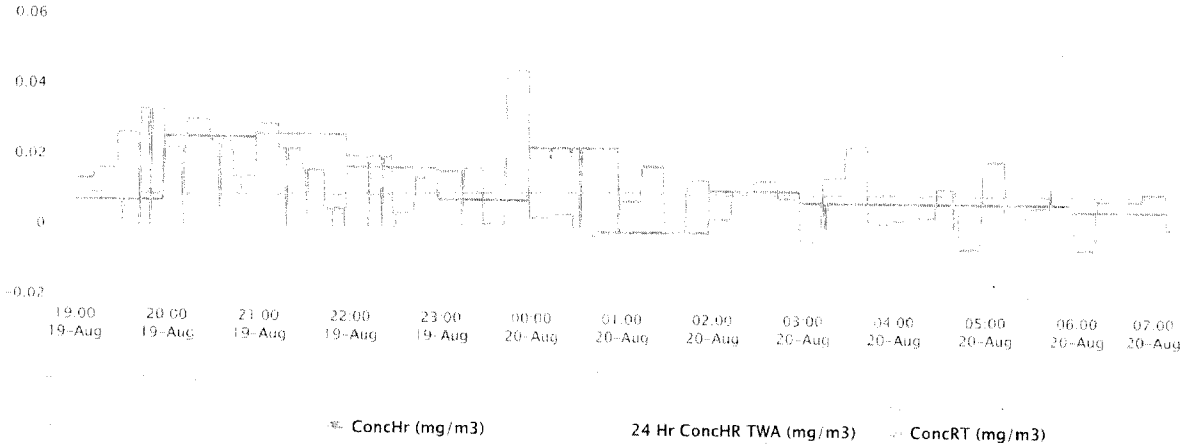
8/19/19 NIGHT Data for DustTrak 3 ($PM_{2.5}$) – Grace Costal Church



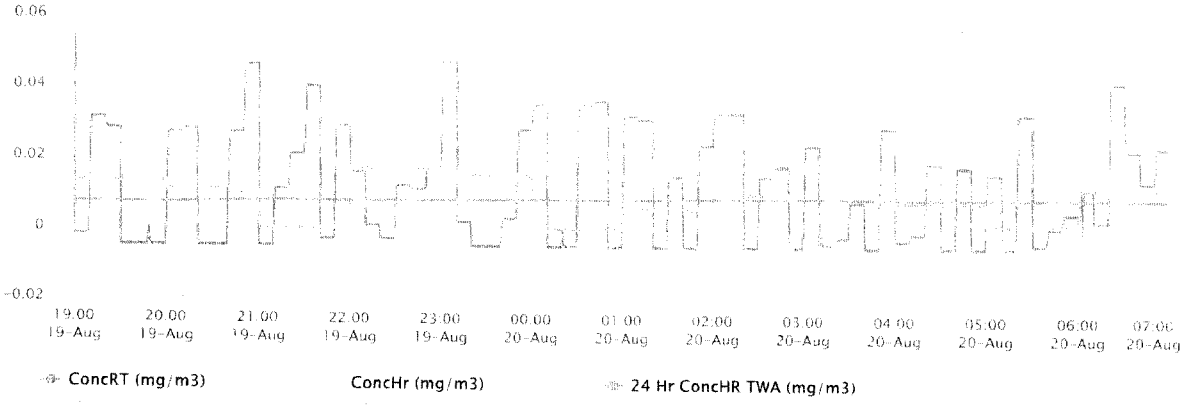
8/19/19 NIGHT Data for EBAM 1 (ConcRT) – Sun City



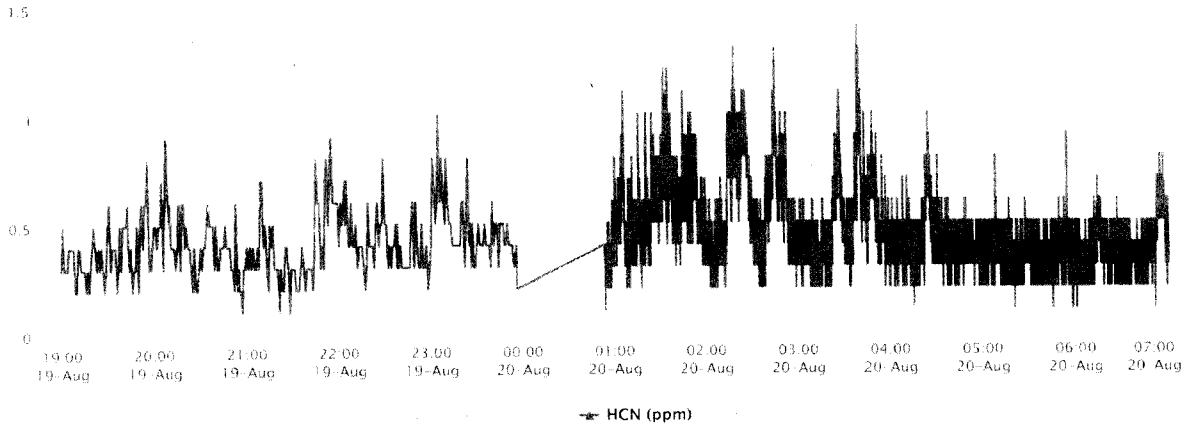
8/19/19 NIGHT Data for EBAM 2 (ConcRT) – Brooke Mill Apartments



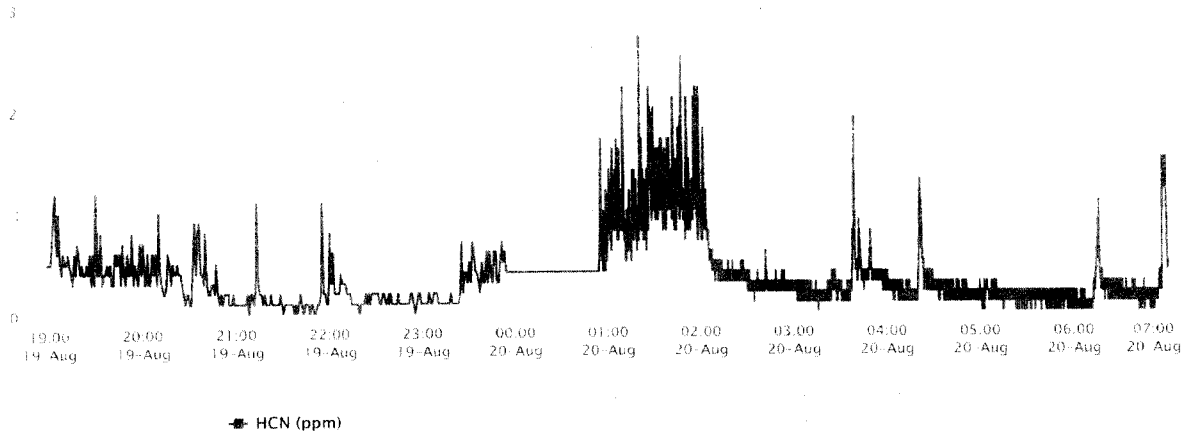
8/19/19 NIGHT Data for EBAM 3 (ConcRT) – EPA Mobile Command Post



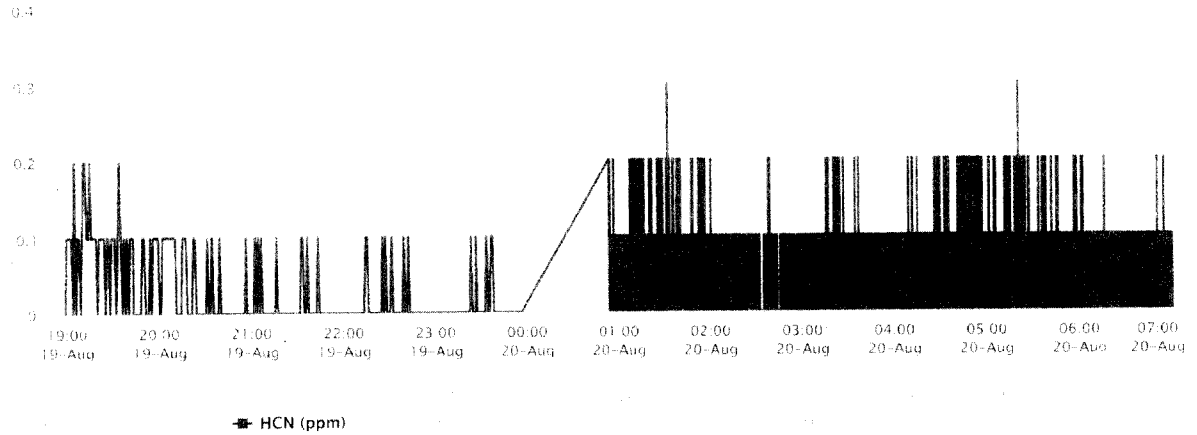
8/19/19 NIGHT Data for AREARAE PRO 1 (HCn) – Southwest of Pile



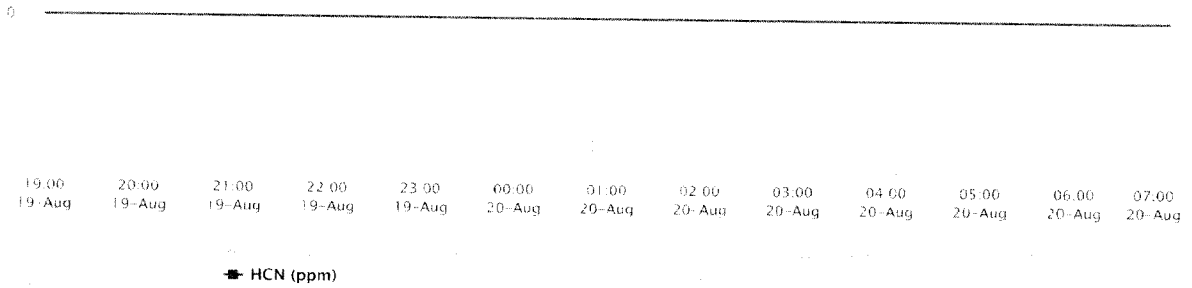
8/19/19 NIGHT Data for AREARAE PRO 2 (HCn) – Northwest of Pile



8/19/19 NIGHT Data for AREARAE PRO 3 (HCn) – Northeast of Pile



8/19/19 NIGHT Data for AREARAE PRO 4 (HCn) – Forrest Concrete



Threshold Values and Air Quality Index Categories for PM2.5

Level of Health Concern	Particulate Matter ≤2.5 microns measured in µg/m3		Interpretation
	1 hour average	24 hour average	
Good	0.0-40.0	0.0-12.0	Air quality is considered satisfactory, and air pollution poses little or no risk
Moderate	40.1-80.0	12.1-35.4	Air quality is acceptable; however, for some pollutants there may be a moderate health concern for a very small number of people who are unusually sensitive to air pollution.
Unhealthy for Sensitive groups	80.1-175.0	35.5-55.4	Members of sensitive groups may experience health effects. The general public is not likely to be affected.
Unhealthy	175.1-300.0	55.5-150.4	Everyone may begin to experience health effects; members of sensitive groups may experience more serious health effects.
Very Unhealthy	300.1-500.0	150.5-250.4	Health warnings of emergency conditions. The entire population is more likely to be affected.
Hazardous	>500.0	>250.5	Health alert: everyone may experience more serious health effects

- Threshold values taken from original EPA AQI online calculator found at http://airnow.gov/index.cfm?action=resources.aqi_conc_calc for PM2.5 (24 hour) and Idaho Department of Environmental Quality AQI for PM2.5 (1 hour) taken from http://app.airsis.com/usfs/aqi.asp.
- Recommendations are from the EPA Air Now web site.
- People who are unusually sensitive to air pollution are a subset of Sensitive Individuals. Unusually sensitive to air pollution can be defined as the very young, the elderly, pregnant women, and the immunocompromised.
- Sensitive individuals defined as people with lung disease, older adults and children who are at a greater risk from exposure to ozone; and persons with heart and lung disease, older adults and children who are at greater risk from the presence of particles in the air.

Armstrong, Kathy

From: Huyser, Matthew
Sent: Tuesday, August 20, 2019 12:13 AM
To: Huyser, Matthew
Subject: Able - Summary Report DAY 8/19/2019
Attachments: Able_Viper Summary Report_081919DAY.pdf

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05:00 Smoke coming from chimneys all along the southside of the pile. Smoke is still headed east. Haze is only around the workshop and driveway. Feint odor at the end of Pearlstine Dr.

Note: No smoke coming from the northeast end at any point all night. The rate of the smoke has also been consistent, only gradual increase

Matthew J. Huyser, PE - On-Scene Coordinator
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Air Monitoring Summary Tables

The table below summarize monitoring data collected on using EPA's Viper wireless remote monitoring system.

Project Name: **Able Contracting Fire Site**

From: **8/19/19 7:00** ***To:*** ***8/19/19 19:00***

On Site, Southwest Corner of Pile

Instrument	Analyte	Action Level Exceedances	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level (PEL/TLV/60 min AEGL)
AreaRAE 1	VOC	Yes	4,617	117	0 - 10213 ppb	28.08 ppb	1,000 ppb
	CO	No	4,617	0	0 - 0 ppm	0 ppm	83 ppm
	H_2S	No	4,617	0	0 - 0 ppm	0 ppm	0.5 ppm
	O_2	No	4,617	4,617	20.9 - 20.9 %	20.9 %	<19.5 or >23%
	LEL	No	4,617	0	0 - 0 %	0 %	10%
	HCN	No	4,617	4,612	0 - 0.8 ppm	0.33 ppm	7.1 ppm

Pleasure Collision

Instrument	Analyte	Air Quality Index	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level (PEL/TLV/60 min AEGL)
DustTrak 1	PM-2.5	Good	133	132	0 - 16 µg/m³	6.6 ug/m3	See SOG #: T106

On Site, Northwest Corner of Pile

Instrument	Analyte	Action Level Exceedances	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level (PEL/TLV/60 min AEGL)
AreaRAE 2	VOC	No	4,213	7	0 - 645 ppb	0.37 ppb	1,000 ppb
	CO	No	4,213	181	0 - 8 ppm	0.14 ppm	83 ppm
	H_2S	No	4,213	0	0 - 0 ppm	0 ppm	0.5 ppm
	O_2	No	4,213	4,213	20.9 - 20.9 %	20.9 %	<19.5 or >23%
	LEL	No	4,213	0	0 - 0 %	0 %	10%
	HCN	No	4,213	2,703	0 - 1.4 ppm	0.17 ppm	7.1 ppm

Short Cut Road

Instrument	Analyte	Air Quality Index	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level (PEL/TLV/60 min AEGL)
DustTrak 2	PM-2.5	Good	480	480	4 - 58 µg/m³	9.3 ug/m3	See SOG #: T106

Able Contracting Workshop, Northeast of Pile

Instrument	Analyte	Action Level Exceedances	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level (PEL/TLV/60 min AEGL)
AreaRAE 3	VOC	Yes	4,332	485	0 - 14223 ppb	48.96 ppb	1,000 ppb
	CO	Yes	4,332	535	0 - 500 ppm	8.42 ppm	83 ppm
	H_2S	Yes	4,332	376	0 - 7.6 ppm	0.132 ppm	0.5 ppm
	O_2	No	4,332	4,332	20.9 - 21.3 %	21.1 %	<19.5 or >23%
	LEL	No	4,332	1,647	0 - 5 %	0.8 %	10%
	HCN	Yes	4,332	3,934	0 - 38.4 ppm	1.06 ppm	7.1 ppm

Grace Costal Church

Instrument	Analyte	Air Quality Index	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level (PEL/TLV/60 min AEGL)
DustTrak 3	PM-2.5	Good	753	753	7 - 76 µg/m³	10.8 ug/m3	See SOG #: T106

Forrest Concrete

Instrument	Analyte	Action Level Exceedances	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level (PEL/TLV/60 min AEGL)
AreaRAE 4	VOC	No	4,237	0	0 - 0 ppb	0 ppb	1,000 ppb
	CO	No	4,237	0	0 - 0 ppm	0 ppm	83 ppm
	H_2S	No	4,237	0	0 - 0 ppm	0 ppm	0.5 ppm
	O_2	No	4,237	4,237	20.1 - 20.9 %	20.4 %	<19.5 or >23%
	LEL	No	4,237	0	0 - 0 %	0 %	10%
	HCN	No	4,237	1	0 - 0.1 ppm	0 ppm	7.1 ppm

Sun City

Instrument	Analyte	Air Quality Index	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level (PEL/TLV/60 min AEGL)
EBAM 1	PM-2.5	Moderate	710	391	0 - 76 ug/m3	13 ug/m3	See SOG #: T106

Brooke Mill Apartments

Instrument	Analyte	Air Quality Index	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level (PEL/TLV/60 min AEGL)
EBAM 2	PM-2.5	Good	566	226	0 - 34 ug/m3	9.6 ug/m3	See SOG #: T106

EPA Mobile Command Post

Instrument	Analyte	Air Quality Index	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level (PEL/TLV/60 min AEGL)
EBAM 3	PM-2.5	Moderate	583	267	0 - 109 ug/m3	15.6 ug/m3	See SOG #: T106

Notes:

- % Percent
- < Less than
- > Greater than
- AEGL Acute Exposure Guideline Levels for Airborne Chemicals
- CO Carbon monoxide
- H_2S Hydrogen Sulfide
- HCN Hydrogen Cyanide
- LEL Lower Explosive Level
- min Minute
- O_2 Oxygen
- PEL Permissible exposure limit
- ppb Parts per billion
- ppm Parts per million
- PM Particulate matter
- SOG Standard Operating Guidelines
- TLV Threshold limit value
- µg/m³ Micrograms per cubic meter
- VOC Volatile organic compoud

Able Contracting Fire

EPA Air Monitoring Summary Report
8/19/2019 0700 to 8/19/2019 1900

Attachment: Discussion of Results

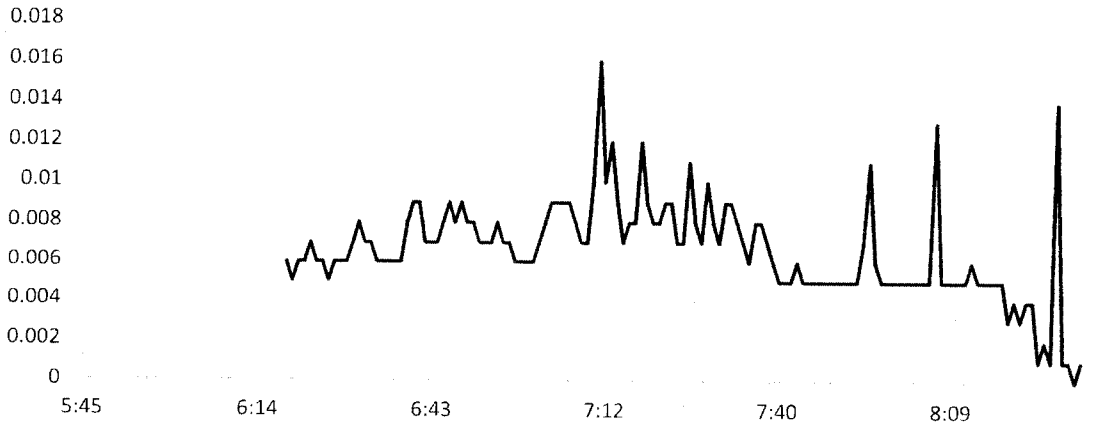
High detections of VOC, CO, H2S, LEL, and HCN were observed at AreaRAE 3 at the NE corner of the pile near the Able Contracting Workshop during this period. A series of high readings were recorded across the same time frame between the hours of 10 and 11.

The instrument is located near the Able Contracting workshop which remains in operation and at which several activities were ongoing throughout the day including maintenance of equipment, operation of a tractor, and loading of equipment to a trailer. The meter is located at the corner of the building on a concrete pad onto which vehicles may be parked. The detections of all related chemical sensors during the same period are consistent with measurements from the exhaust of an idling diesel engine.

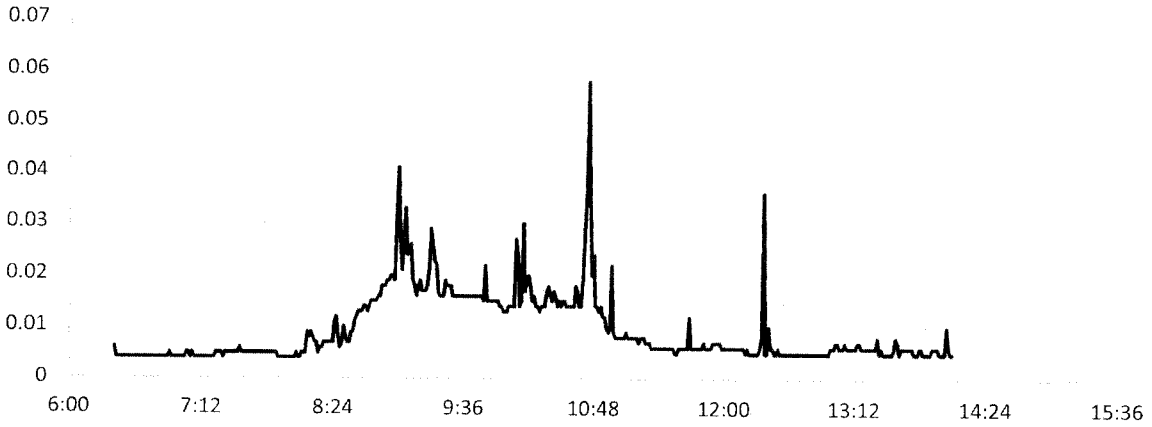
The HCN peak of 38.4 ppm is actually consistent the diesel exhaust scenario. H2S is a common component of diesel exhaust fumes, and the Honewell AreaRAE Pro HCN sensor has a natively high cross-sensitivity to H2S. According to RAE TN-114, conditions of H2S at 15 ppm would register a reading of 90 ppm on the AreaRAE Pro HCN sensor - a six-fold increase of the true H2S value. Cross-sensitivities to sensors are common but RAE TN-114 makes a special note of this issue with the HCN sensor, stating: "Due to a very high cross-sensitivity to H2S, this sensor is unsuitable for use in atmospheres that contain H2S". The H2S peak of 7.6 ppm on AreaRAE 3 during this period multiplied by the cross-sensitivity factor of six is equal to 45.6 which is within a reasonable range of +/-20% from the HCN peak of 38.4 ppm.

An isolated VOC reading of 14 ppm was measured at 12:30 at the NE corner of the pile (near the workshop) while an isolated VOC reading of 10 ppm was measured at 9:02 at the SW corner of the pile. These records were single readings with no associated rise and fall to the data trendline to suggest that there was an exposure threshold exceedance or risk.

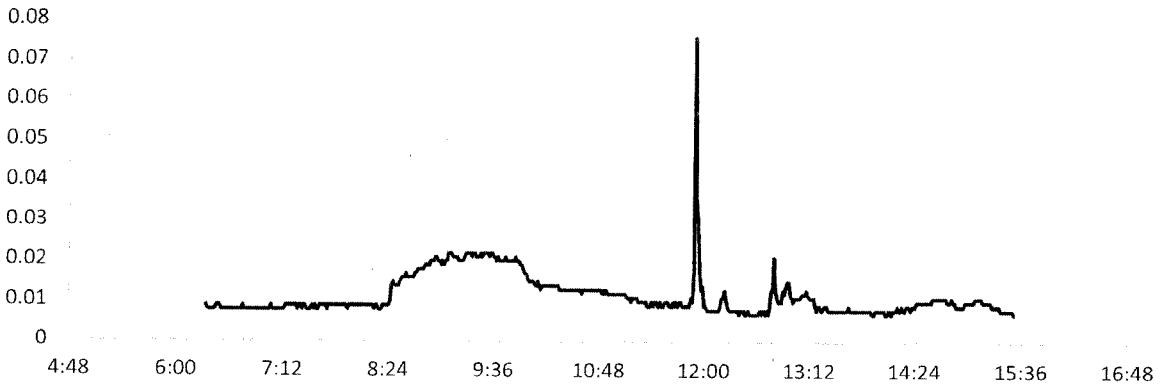
8/19/19 DAY Data for DustTrak 1 ($PM_{2.5}$) - Peacock Collision



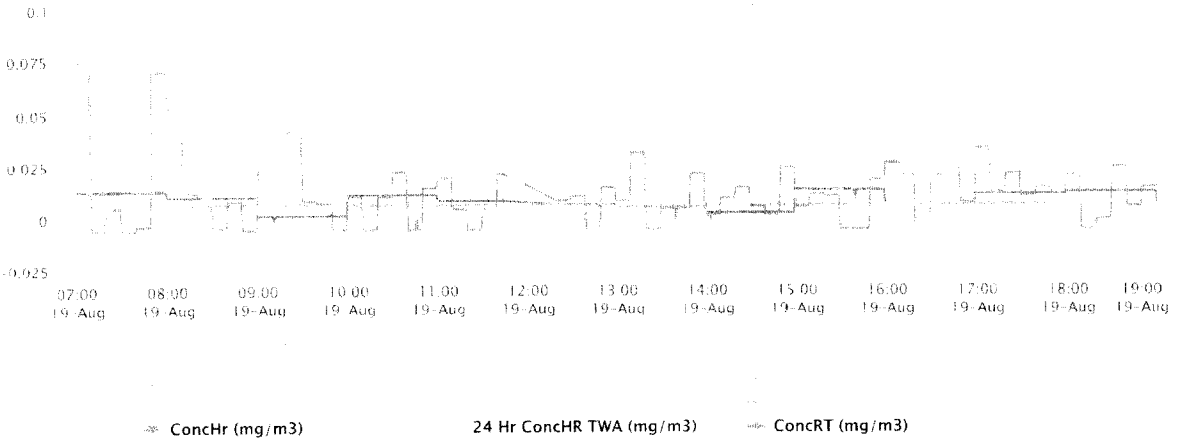
8/19/19 DAY Data for DustTrak 2 ($PM_{2.5}$) – Short Cut Road



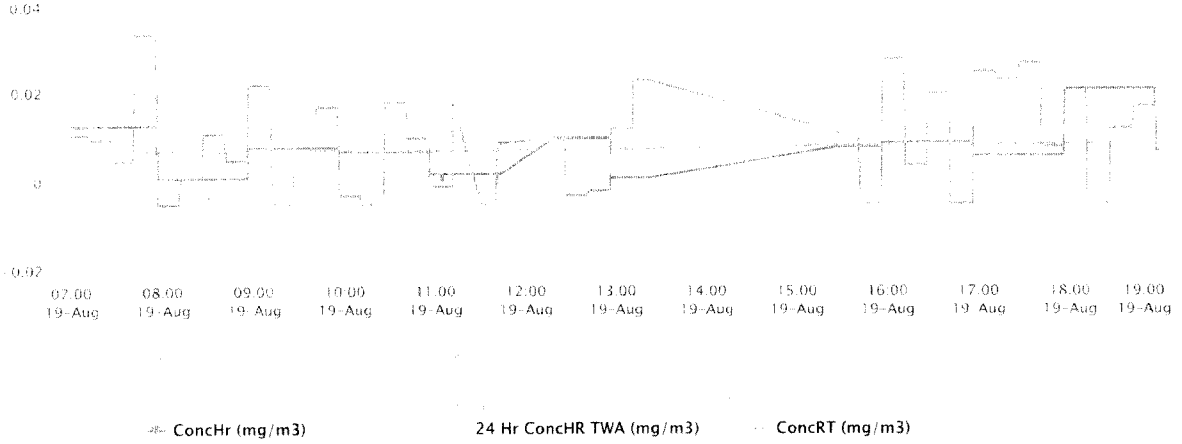
8/19/19 DAY Data for DustTrak 3 ($PM_{2.5}$) – Grace Costal Church



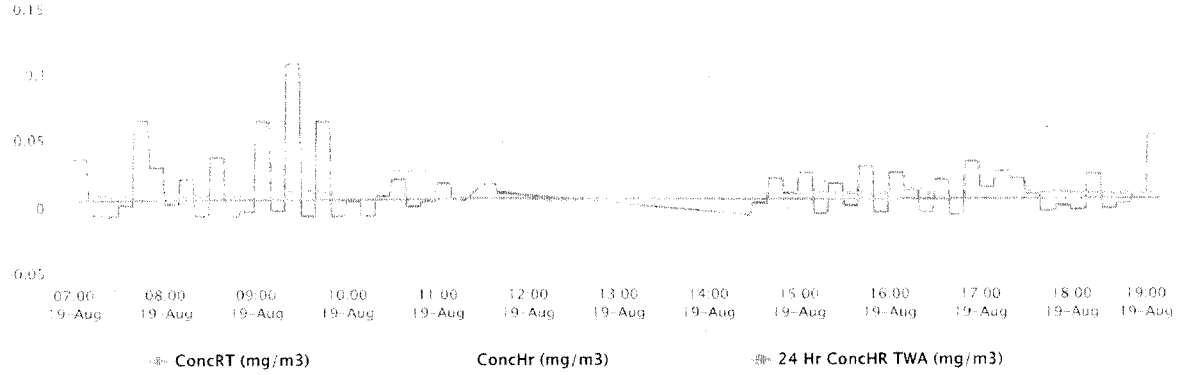
8/19/19 DAY Data for EBAM 1 (ConcRT) – Sun City



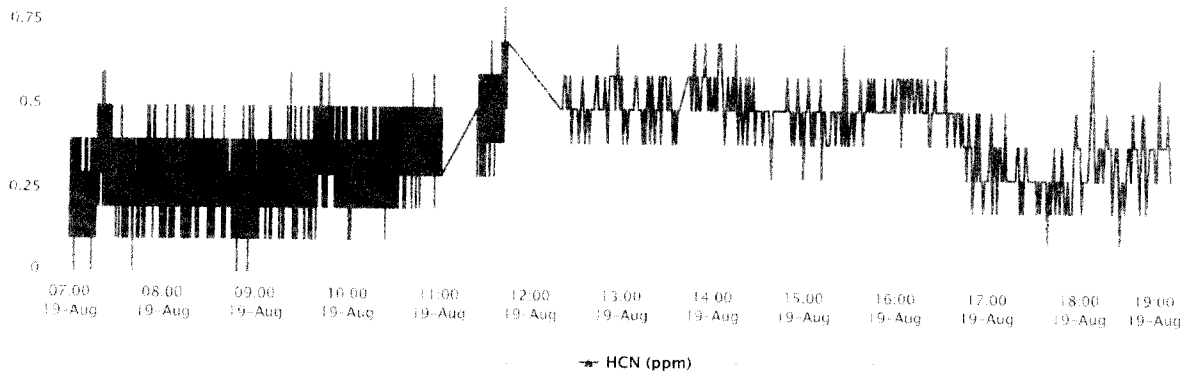
8/19/19 DAY Data for EBAM 2 (ConcRT) – Brooke Mill Apartments



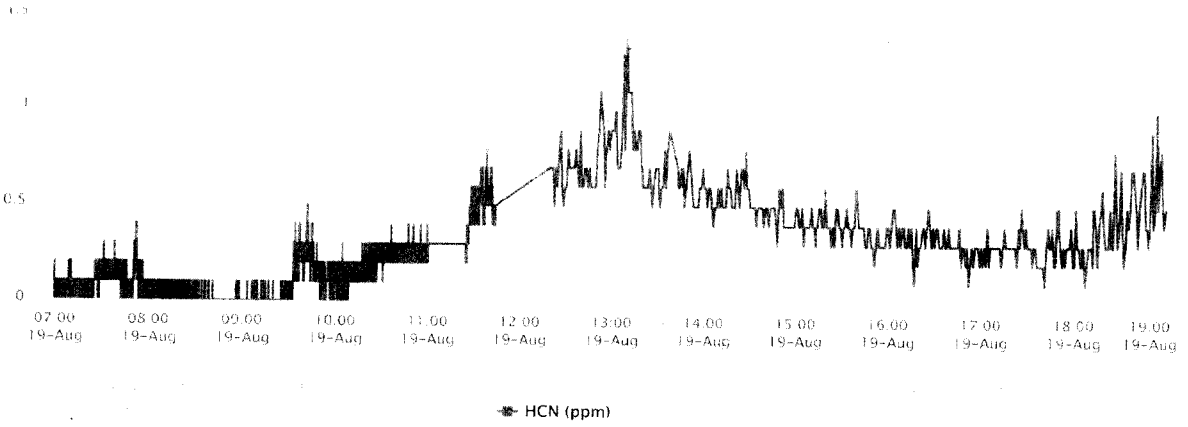
8/19/19 DAY Data for EBAM 3 (ConcRT) – EPA Mobile Command Post



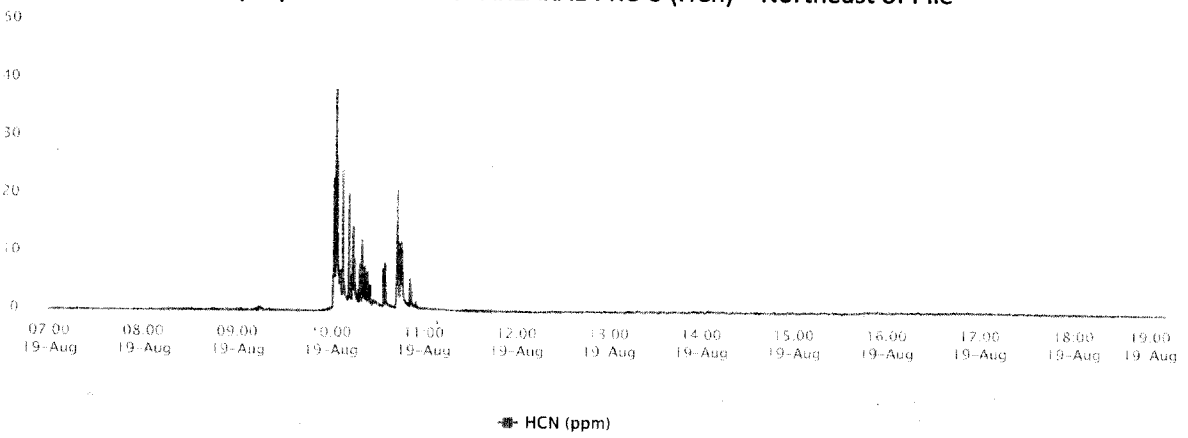
8/19/19 DAY Data for AREARAE PRO 1 (HCn) – Southwest of Pile



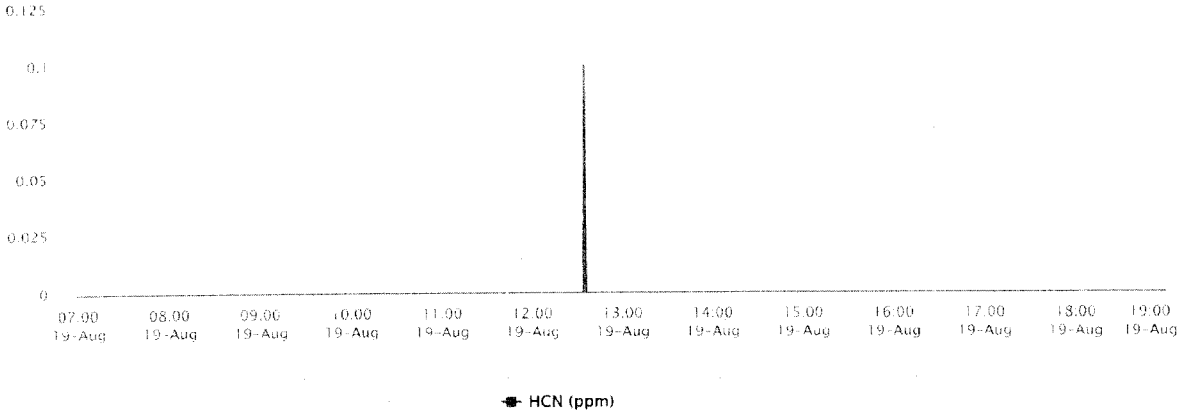
8/19/19 DAY Data for AREARAE PRO 2 (HCn) – Northwest of Pile



8/19/19 DAY Data for AREARAE PRO 3 (HCn) – Northeast of Pile



8/19/19 DAY Data for AREARAE PRO 4 (HCn) – Forrest Concrete



Threshold Values and Air Quality Index Categories for PM2.5

Level of Health Concern	Particulate Matter ≤2.5 microns measured in µg/m3		Interpretation
	1 hour average	24 hour average	
Good	0.0-40.0	0.0-12.0	Air quality is considered satisfactory, and air pollution poses little or no risk
Moderate	40.1-80.0	12.1-35.4	Air quality is acceptable; however, for some pollutants there may be a moderate health concern for a very small number of people who are unusually sensitive to air pollution.
Unhealthy for Sensitive groups	80.1-175.0	35.5-55.4	Members of sensitive groups may experience health effects. The general public is not likely to be affected.
Unhealthy	175.1-300.0	55.5-150.4	Everyone may begin to experience health effects; members of sensitive groups may experience more serious health effects.
Very Unhealthy	300.1-500.0	150.5-250.4	Health warnings of emergency conditions. The entire population is more likely to be affected.
Hazardous	>500.0	>250.5	Health alert: everyone may experience more serious health effects

- Threshold values taken from original EPA AQI online calculator found at http://airnow.gov/index.cfm?action=resources.aqi_conc_calc for PM2.5 (24 hour) and Idaho Department of Environmental Quality AQI for PM2.5 (1 hour) taken from http://app.airsis.com/usfs/aqi.asp.
- Recommendations are from the EPA Air Now web site.
- People who are unusually sensitive to air pollution are a subset of Sensitive Individuals. Unusually sensitive to air pollution can be defined as the very young, the elderly, pregnant women, and the immunocompromised.
- Sensitive individuals defined as people with lung disease, older adults and children who are at a greater risk from exposure to ozone; and persons with heart and lung disease, older adults and children who are at greater risk from the presence of particles in the air.

Armstrong, Kathy

From: Huyser, Matthew
Sent: Monday, August 19, 2019 11:28 PM
To: Russell, Chris
Subject: RE: Access

I'm gonna need your help with that one.
I'm for it - it's what I wanted in the first place.
When he wanted to make that restriction I kept at it several times.

Matthew J. Huyser, PE - On-Scene Coordinator U.S. Environmental Protection Agency, Region 4 | 61 Forsyth St SW | Atlanta, Georgia | 30303 Emergency Response Removal and Prevention Branch (ERRPB)
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-----Original Message-----
From: Russell, Chris <Russell.Chris@epa.gov>
Sent: Monday, August 19, 2019 8:51 PM
To: Huyser, Matthew <Huyser.Matthew@epa.gov>
Subject: Access

Hey Matt:

As discussed earlier today, we are in a position where we have made so much progress that we need to be thinking about having unrestricted access to the property, especially on the Able Contracting Office/Shop side. I don't know where we are on such access, but if we could get that knocked out soon that would be awesome.

Respectfully,

Chris Russell
Federal On Scene Coordinator
US EPA Region 4/Florida Outpost
Ph. (850) 274-1575
Email: Russell.Chris@epa.gov

Armstrong, Kathy

From: Huyser, Matthew
Sent: Monday, August 19, 2019 9:20 PM
To: Miller, Angela; Tolliver, Ronald; Jenkins, Brandi; Pinkney, James
Subject: Able - request to make response.epa.gov profile page ONLY public

response.epa.gov/AbleFire

check profile page for release-ability

All content in the documents, photos, polreps, links sections are marked "private" and would NOT be released or accessible if the page was marked public

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Armstrong, Kathy

From: Huyser, Matthew
Sent: Monday, August 19, 2019 5:30 PM
To: Huyser, Matthew
Subject: Able - Summary Report NIGHT 8/18/2019
Attachments: Able_Viper Summary Report_081819NIGHT.pdf

Attached is the air monitoring summary report for NIGHT 8/18-8/19/2019

Particulates at the MCP monitor reported moderate air quality with an average of 13 ug/m3 which is only slightly above the 12.0 ug/m3 threshold for a "good" category. Particulates at all other stations reported good air quality (≤12 ug/m3) for the period with no peaks exceeding 57 ug/m3.

HCN measurments inside the fence line averaged below 0.5 ppm for the period with no measurments above 1.6 ppm. VOC measurements remained below 300 ppb with averages below 4 ppb. A CO peak of 22 ppm was measured at the NW corner of the pile with a period average of 1.12 ppm.

No detections of HCN, VOC, CO, LEL, or H2S were made outside the fenceline in front of Forrest Concrete.

OVERNIGHT SMOKE REPORT:
20:30 Minimal smoke coming from south side of pile. Mainly from the center chimney. Headed NE
22:00 Minimal smoke headed east
23:30 No change
01:00 No change
02:00 No change
03:20 Minimal smoke headed northeast. Faint odors on Pearlstine Dr. and Shortcut Rd.
04:40 No change
06:00 Faint odor on the northern section of Argent Rd. by Shortcut Rd.

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Emergency Response Removal and Prevention Branch (ERRPB)
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epaosc.org

From: Huyser, Matthew
Sent: Monday, August 19, 2019 6:29 AM
To: Huyser, Matthew <Huyser.Matthew@epa.gov>
Subject: Able - Summary Report DAY 8/18/2019

Attached is the air monitoring summary report for DAY 8/18/2019

Particulate meter at the command post reported a moderate air quality at 13.1 ug/m3 which is slightly over the 12.1 threshold for that category. All other stations reported good air quality with low peaks during the period.

HCN meters inside the fenceline measured averages below 0.5 ppm. A Peak of 10.1 ppm was measured at the SW corner of the pile but there was no persistent measurement of HCN in any area. VOC averages remained low below 5 ppb. A

peak of 4 ppm was measured at the NW corner of the pile. CO averages remained below 1 ppm with a peak of 61 ppm at the SW corner of the pile and 18 pm at the NW corner of the pile.

Chemical sensors outside the fence line at Forrest Concrete remained at zero throughout the period.

Matthew J. Huyser, PE - On-Scene Coordinator
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epaosc.org

From: Huyser, Matthew
Sent: Sunday, August 18, 2019 4:15 PM
Subject: Able - Summary Report NIGHT 8/17-8/18/2019

Attached is the air monitoring summary report for NIGHT 8/17-8/18/2019

Particulates were reported as good air quality for all six stations with no maximum peaks above 70 ug/m3

HCN readings at all perimeter chemical monitors at the Site remained below average of 0.21 ppm with a maximum peak of 0.7 ppm.

VOC readings inside the fenceline remained low with averages below 1.5 ppb with a maximum of 228 ppb at the NE side of the pile. CO was only detected on the NE corner of the pile with a peak of 9 ppm and an average of 0.01 ppm

HCN and other chemical monitoring sensors outside the fenceline at Forrest Concrete remained at 0 ppm for the entire operational period.

OVERNIGHT SMOKE REPORT:
21:20 Minimal smoke coming from chimneys on top of pile. Headed north. Odor on Argent between Calhoun Rd. and SCAG Power Equipment store.
22:30 No change.
23:30 Minimal smoke headed east.
00:50 Troubleshooting the PRG to Viper connection at the workshop by the smartgateway. Strong odors but no haze. Smoke headed east still. Wasn't able to check the perimeter areas during this round.
01:30 Schinger has a slight haze and odor from the pile up to approximately 1/3 of the way to the highway
02:40 Smoke rate has increased a little since the last round. It is still heading east. Schinger haze and odor has not changed. Feint odor at peacock collision.
03:45 Smoke seems to be going into the atmosphere. Can't tell which direction it's going in. Schinger and peacock have both cleared up.
05:00 Smoke coming from chimneys all along the southside of the pile. Smoke is still headed east. Haze is only around the workshop and driveway. Feint odor at the end of Pearlstine Dr.

Note: No smoke coming from the northeast end at any point all night. The rate of the smoke has also been consistent, only gradual increase

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Air Monitoring Summary Tables

The table below summarize monitoring data collected on using EPA's Viper wireless remote monitoring system.

Project Name: **Able Contracting Fire Site**

From: **8/18/19 19:00** ***To:*** ***8/19/19 7:00***

On Site, Southwest Corner of Pile

Instrument	Analyte	Action Level Exceedances	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level (PEL/TLV/60 min AEGL)
AreaRAE 1	VOC	No	13,060	569	0 - 272 ppb	2.35 ppb	1,000 ppb
	CO	No	13,060	266	0 - 6 ppm	0.07 ppm	83 ppm
	H_2S	No	13,060	0	0 - 0 ppm	0 ppm	0.5 ppm
	O_2	No	13,060	13,060	20.9 - 20.9 %	20.9 %	<19.5 or >23%
	LEL	No	13,060	0	0 - 0 %	0 %	10%
	HCN	No	13,060	13,055	0 - 1.4 ppm	0.39 ppm	7.1 ppm

Pancake Collection

Instrument	Analyte	Air Quality Index	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level (PEL/TLV/60 min AEGL)
DustTrak 1	PM-2.5	Good	681	681	3 - 13 µg/m³	4.2 ug/m3	See SOG #: T106

On Site, Northwest Corner of Pile

Instrument	Analyte	Action Level Exceedances	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level (PEL/TLV/60 min AEGL)
AreaRAE 2	VOC	No	12,794	4	0 - 152 ppb	0.02 ppb	1,000 ppb
	CO	No	12,794	2,800	0 - 22 ppm	1.12 ppm	83 ppm
	H_2S	No	12,794	0	0 - 0 ppm	0 ppm	0.5 ppm
	O_2	No	12,794	12,794	20.9 - 20.9 %	20.9 %	<19.5 or >23%
	LEL	No	12,794	0	0 - 0 %	0 %	10%
	HCN	No	12,794	10,538	0 - 1.6 ppm	0.25 ppm	7.1 ppm

Short Cut Road

Instrument	Analyte	Air Quality Index	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level (PEL/TLV/60 min AEGL)
DustTrak 2	PM-2.5	Good	615	606	0 - 28 µg/m³	4.8 ug/m3	See SOG #: T106

Able Contracting Workshop, Northeast of Pile

Instrument	Analyte	Action Level Exceedances	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level (PEL/TLV/60 min AEGL)
AreaRAE 3	VOC	No	12,871	1,251	0 - 156 ppb	3.27 ppb	1,000 ppb
	CO	No	12,871	0	0 - 0 ppm	0 ppm	83 ppm
	H_2S	No	12,871	0	0 - 0 ppm	0 ppm	0.5 ppm
	O_2	No	12,871	12,871	21.1 - 21.3 %	21.1 %	<19.5 or >23%
	LEL	No	12,871	0	0 - 0 %	0 %	10%
	HCN	No	12,871	11,266	0 - 0.8 ppm	0.16 ppm	7.1 ppm

Grace Costal Church

Instrument	Analyte	Air Quality Index	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level (PEL/TLV/60 min AEGL)
DustTrak 3	PM-2.5	Good	681	681	4 - 19 µg/m³	5.8 ug/m3	See SOG #: T106

Forrest Concrete

Instrument	Analyte	Action Level Exceedances	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level (PEL/TLV/60 min AEGL)
AreaRAE 4	VOC	No	12,813	0	0 - 0 ppb	0 ppb	1,000 ppb
	CO	No	12,813	0	0 - 0 ppm	0 ppm	83 ppm
	H_2S	No	12,813	0	0 - 0 ppm	0 ppm	0.5 ppm
	O_2	No	12,813	12,813	20.1 - 20.9 %	20.2 %	<19.5 or >23%
	LEL	No	12,813	0	0 - 0 %	0 %	10%
	HCN	No	12,813	0	0 - 0 ppm	0 ppm	7.1 ppm

Sun City

Instrument	Analyte	Air Quality Index	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level (PEL/TLV/60 min AEGL)
EBAM 1	PM-2.5	Good	748	264	0 - 57 ug/m3	10.1 ug/m3	See SOG #: T106

Brooke Mill Apartments

Instrument	Analyte	Air Quality Index	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level (PEL/TLV/60 min AEGL)
EBAM 2	PM-2.5	Good	751	484	0 - 35 ug/m3	10 ug/m3	See SOG #: T106

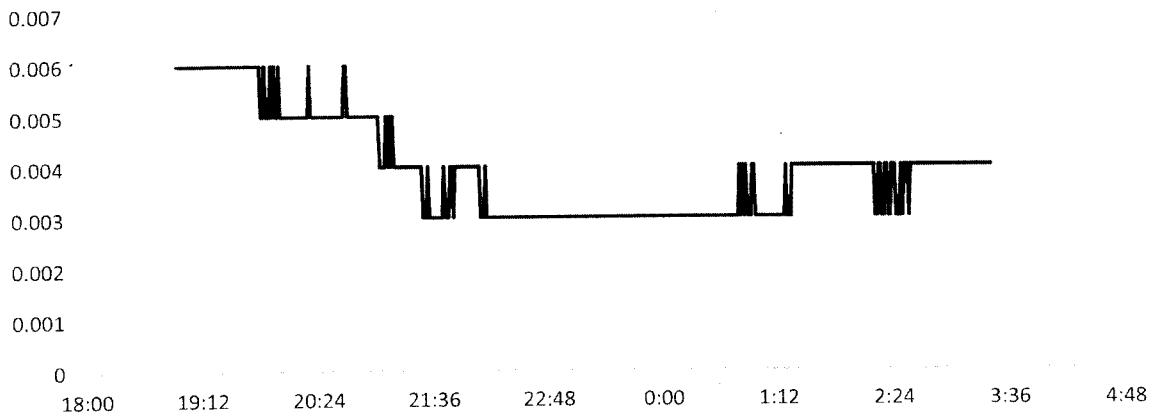
EPA Mobile Command Post

Instrument	Analyte	Air Quality Index	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level (PEL/TLV/60 min AEGL)
EBAM 3	PM-2.5	Moderate	737	126	0 - 82 ug/m3	13 ug/m3	See SOG #: T106

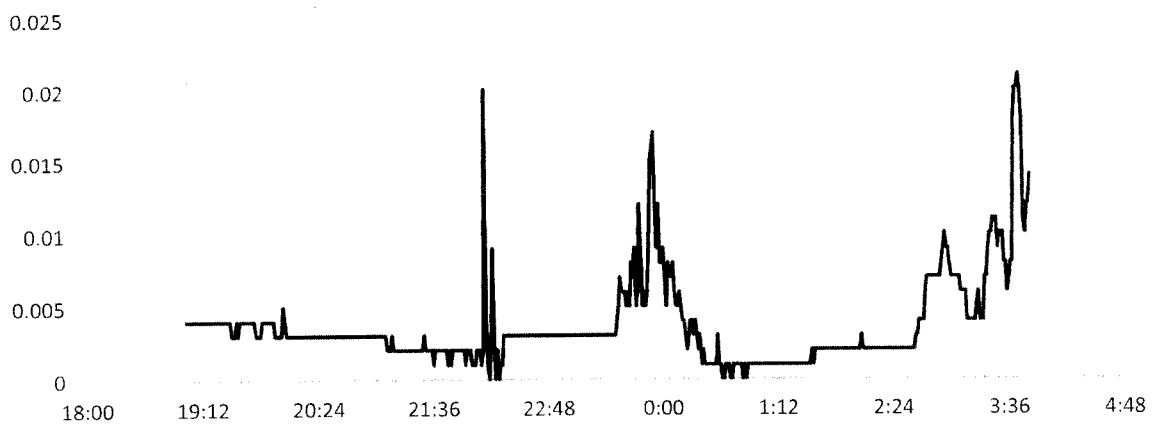
Notes:

- % Percent
- < Less than
- > Greater than
- AEGL Acute Exposure Guideline Levels for Airborne Chemicals
- CO Carbon monoxide
- H_2S Hydrogen Sulfide
- HCN Hydrogen Cyanide
- LEL Lower Explosive Level
- min Minute
- O_2 Oxygen
- PEL Permissible exposure limit
- ppb Parts per billion
- ppm Parts per million
- PM Particulate matter
- SOG Standard Operating Guidelines
- TLV Threshold limit value
- µg/m³ Micrograms per cubic meter
- VOC Volatile organic compoud

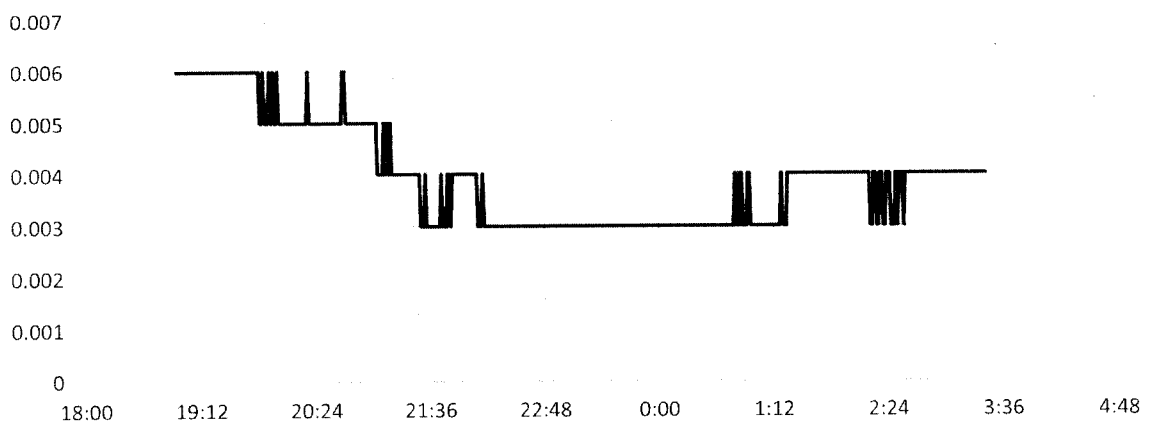
8/18/19 NIGHT Data for DustTrak 1 ($PM_{2.5}$) - Sun



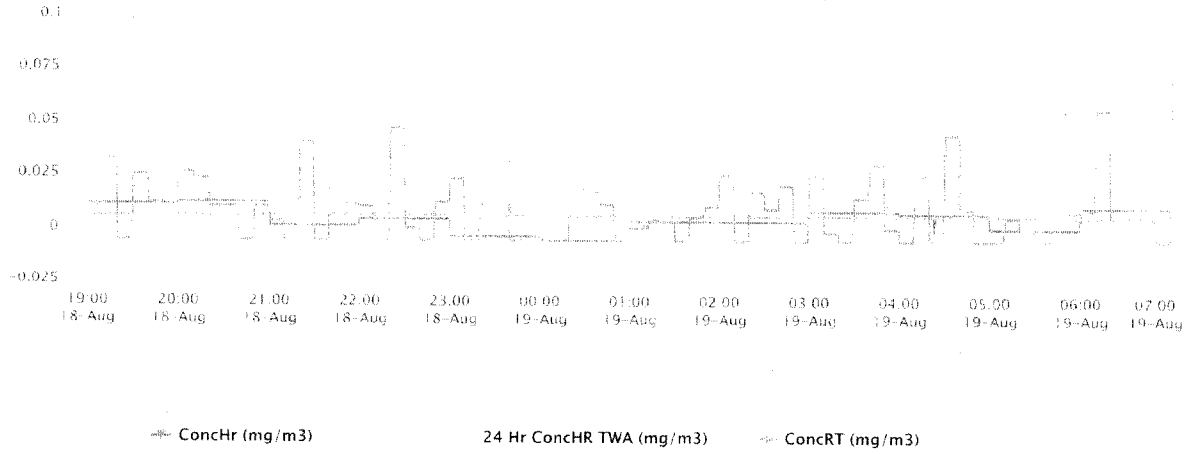
8/18/19 NIGHT Data for DustTrak 2 ($PM_{2.5}$) - Short Cut



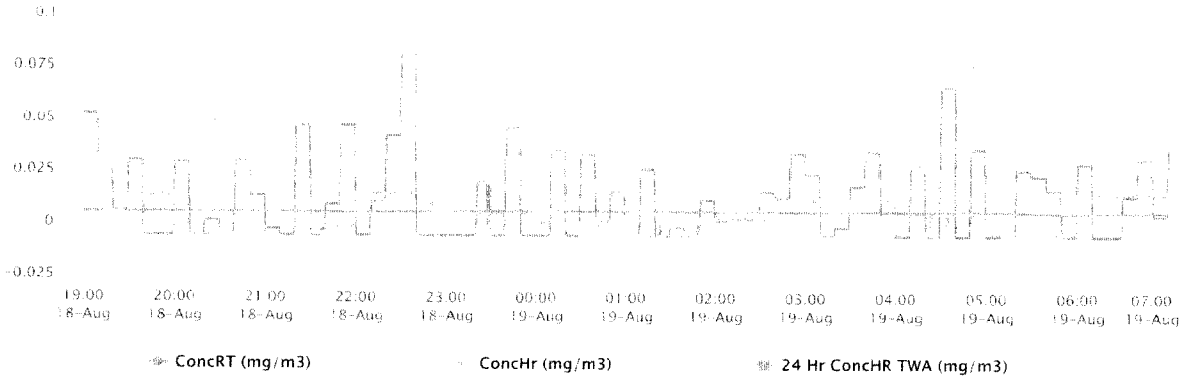
8/18/19 NIGHT Data for DustTrak 1 ($PM_{2.5}$) - Sun



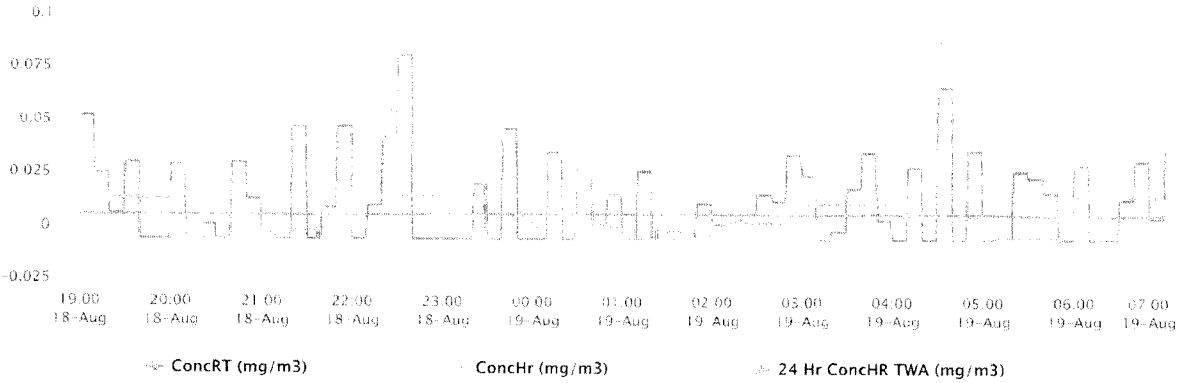
8/18/19 NIGHT Data for EBAM 1 (ConcRT) – Sun City



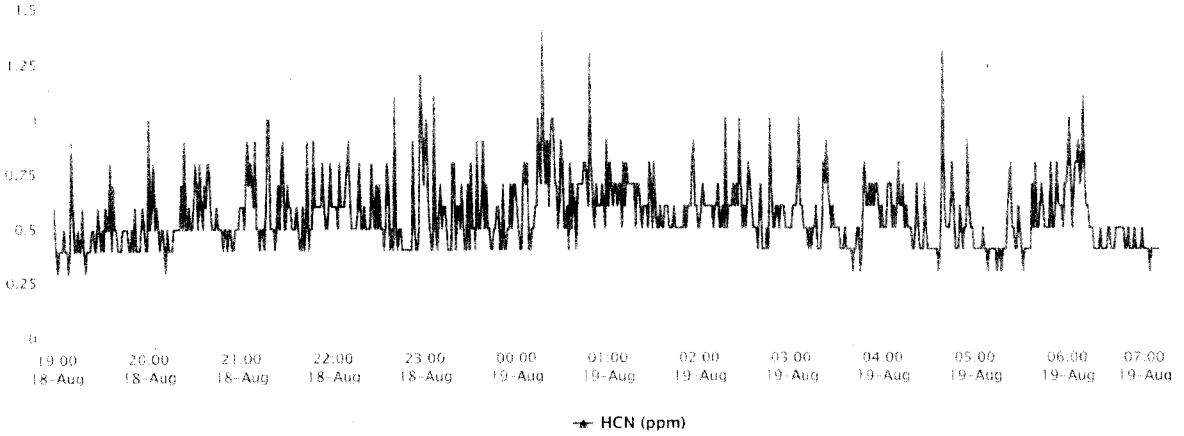
8/18/19 NIGHT Data for EBAM 2 (ConcRT) – Brooke Mill Apartments



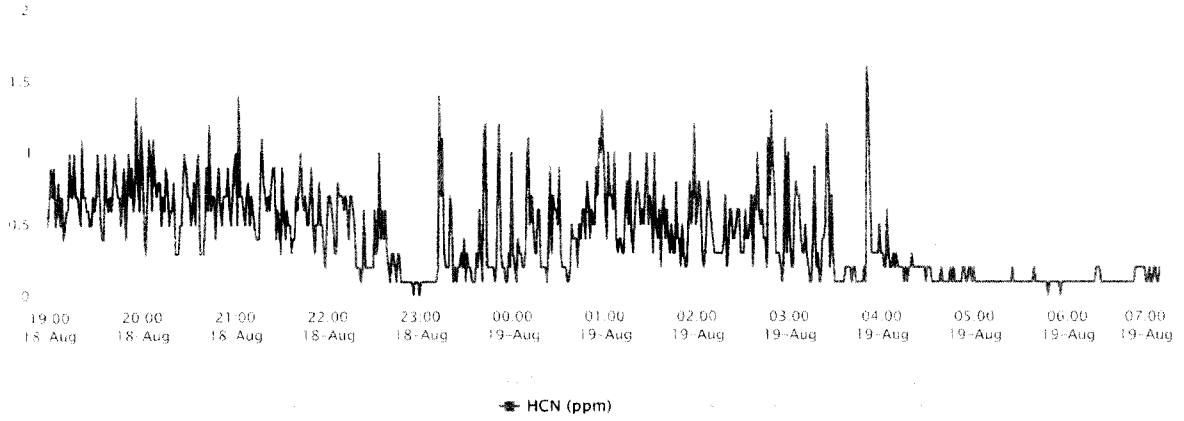
8/18/19 NIGHT Data for EBAM 3 (ConcRT) – EPA Mobile Command Post



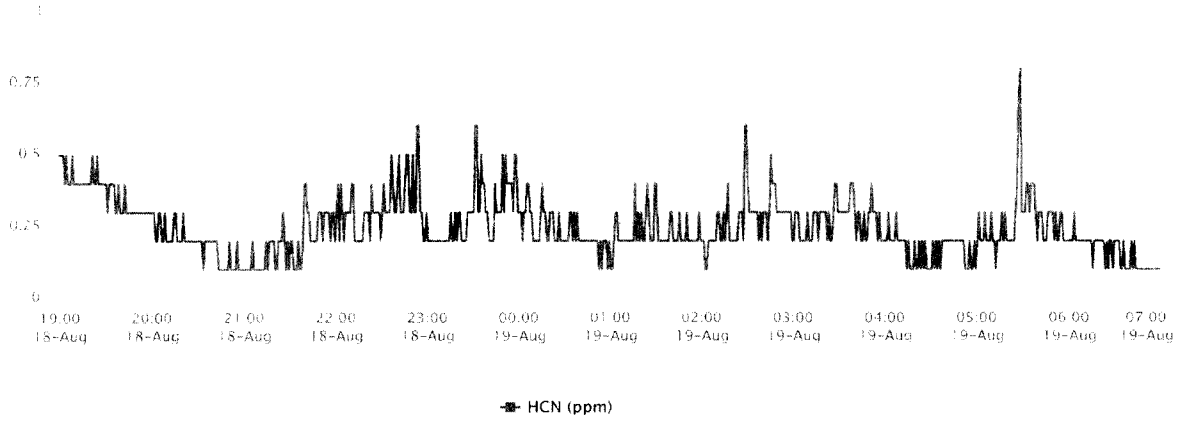
8/18/19 NIGHT Data for AREARAE PRO 1 (HCn) – Southwest of Pile



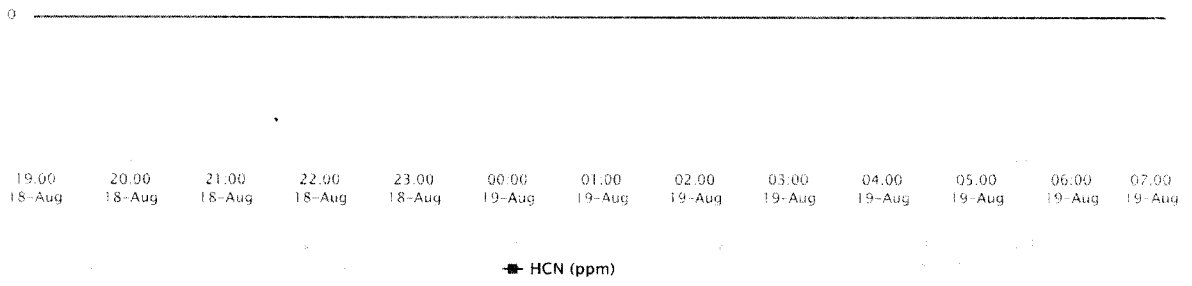
8/18/19 NIGHT Data for AREARAE PRO 2 (HCn) – Northwest of Pile



8/18/19 NIGHT Data for AREARAE PRO 3 (HCn) – Northeast of Pile



8/18/19 NIGHT Data for AREARAE PRO 4 (HCn) – Forrest Concrete



Threshold Values and Air Quality Index Categories for PM2.5

Level of Health Concern	Particulate Matter ≤2.5 microns measured in µg/m3		Interpretation
	1 hour average	24 hour average	
Good	0.0-40.0	0.0-12.0	Air quality is considered satisfactory, and air pollution poses little or no risk
Moderate	**40.1-80.0**	**12.1-35.4**	**Air quality is acceptable; however, for some pollutants there may be a moderate health concern for a very small number of people who are unusually sensitive to air pollution.**
Unhealthy for Sensitive groups	**80.1-175.0**	**35.5-55.4**	**Members of sensitive groups may experience health effects. The general public is not likely to be affected.**
Unhealthy	175.1-300.0	55.5-150.4	Everyone may begin to experience health effects; members of sensitive groups may experience more serious health effects.
Very Unhealthy	300.1-500.0	150.5-250.4	Health warnings of emergency conditions. The entire population is more likely to be affected.
Hazardous	>500.0	>250.5	Health alert: everyone may experience more serious health effects

- Threshold values taken from original EPA AQI online calculator found at http://airnow.gov/index.cfm?action=resources.aqi_conc_calc for PM2.5 (24 hour) and Idaho Department of Environmental Quality AQI for PM2.5 (1 hour) taken from http://app.airsis.com/usfs/aqi.asp.
- Recommendations are from the EPA Air Now web site.
- People who are unusually sensitive to air pollution are a subset of Sensitive Individuals. Unusually sensitive to air pollution can be defined as the very young, the elderly, pregnant women, and the immunocompromised.
- Sensitive individuals defined as people with lung disease, older adults and children who are at a greater risk from exposure to ozone; and persons with heart and lung disease, older adults and children who are at greater risk from the presence of particles in the air.

Armstrong, Kathy

From: Huyser, Matthew
Sent: Monday, August 19, 2019 10:08 AM
To: cookdl@dhec.sc.gov
Cc: Crookscl@dhec.sc.gov; leepd@dhec.sc.gov; Stewart, R. Gary; Patel, Subash
Subject: Fwd: Able - Water Monitoring and Sampling Plan

Since it will be a team in the field can we get a list of work assignments/tasks and number of team members for a 204? Thanks!

Subash Patel is the PSC and will help finalize that document.

Matthew J. Huyser, PE - On-Scene Coordinator
U.S. Environmental Protection Agency, Region 4 | 61 Forsyth St SW | Atlanta, Georgia | 30303
Emergency Response Removal and Prevention Branch (ERRPB)
office: **404-562-8934** | cell: **678-427-8829** | fax:**404-562-8699**
epaosc.org

Begin forwarded message:

> **From:** "Stewart, R. Gary" <stewarrg@dhec.sc.gov>
> **Date:** August 19, 2019 at 8:25:43 AM EDT
> **To:** "Huyser, Matthew" <huyser.matthew@epa.gov>
> **Cc:** "Crooks, Carol" <Crookscl@DHEC.SC.GOV>
> **Subject: Able - Water Monitoring and Sampling Plan**
>
> Matt,
>
> We are working on plans for sampling. Carol Crooks will be DHEC's Team Leader for this activity. Her contact info is: 803-315-0035, crookscl@dhec.sc.gov.
>
> We are working with our PA/SA sampling team to coordinate sampling activities under their EPA-approved QAAP. Currently looking at VOCs, SVOCs, inorganics, pesticide/pcbs, and reporting TICs. We will follow up with you as soon as we have more details and the timeframe for mobilization. Please let us know if you have any special requests. Thanks.
>
> Gary
>
> R. Gary Stewart, P.E.
>
> Manager
>
> State Remediation Section
> Bureau of Land and Waste Management
> S.C. Dept. of Health & Environmental Control
> Office: (803) 898-0778

Connect: www.scdhec.gov Facebook Twitter

Armstrong, Kathy

From: Huyser, Matthew
Sent: Monday, August 19, 2019 9:26 AM
To: Williams, Donnie
Cc: Jenkins, Brandi; Pinkney, James; Tolliver, Ronald; Miller, Angela; Wise, Katie; bill.spiking@tetratech.com; Wise, Allison; Rao, Ravishankar
Subject: Re: Able - story map approval

Yes it has been approved for publishing. Brandi can attest to that. We need to have ownership of the story map and the associated maps inside it moved from Katie to Bills account so that it can be made public from there. Otherwise if you can make these public directly from Katie's account that would be simpler.

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epaosc.org

On Aug 19, 2019, at 9:23 AM, Williams, Donnie <Williams.Donnie@epa.gov> wrote:

> Good morning all,
>
> I am back in the office and wanted to follow up. Matt, did you get the Storymap approved or (ownership changed) and published?
>
> Thanks,
> Donnie
>
> **From:** Huyser, Matthew <Huyser.Matthew@epa.gov>
> **Sent:** Saturday, August 17, 2019 5:43 PM
> **To:** Jenkins, Brandi <Jenkins.Brandi@epa.gov>; Pinkney, James <Pinkney.James@epa.gov>; Tolliver, Ronald <Tolliver.Ronald@epa.gov>; Miller, Angela <Miller.Angela@epa.gov>
> **Cc:** Wise, Katie <katie.wise@tetratech.com>; bill.spiking@tetratech.com; Wise, Allison <Wise.Allison@epa.gov>; Rao, Ravishankar <Rao.Ravi@epa.gov>; Williams, Donnie <Williams.Donnie@epa.gov>
> **Subject:** RE: Able - story map approval
>
> I spoke with Donnie and I think we have a solution.
> Ravi OR EPA geoservices can change the owner of the material to from Katie to Bill Spiking. Bill has the capability to make the story map public but not the authority to do so without approval.
> For an emergency response, we do not need to go through the full process of compliance review and office of outreach and external engagement. Rather, we simply need the Region 4 PAD to review and approve release of the product.
>
> Does this seem acceptable?

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epaosc.org

From: Jenkins, Brandi <Jenkins.Brandi@epa.gov>
Sent: Saturday, August 17, 2019 2:23 PM
To: Huyser, Matthew <Huyser.Matthew@epa.gov>; Pinkney, James <Pinkney.James@epa.gov>; Tolliver, Ronald <Tolliver.Ronald@epa.gov>; Miller, Angela <Miller.Angela@epa.gov>
Cc: Wise, Katie <katie.wise@tetratech.com>; bill.spiking@tetratech.com; Wise, Allison <Wise.Allison@epa.gov>
Subject: RE: Able - story map approval

Thanks Matt. The story map is currently at EPA Geo services for final compliance review. It has also been shared with the region 4 GIS platform administrator. I hope to hear something very soon. At that point, the Office of Outreach and External Engagement will send an email with final approval that meets all the below certifications.

Thanks,
Brandi

From: Huyser, Matthew <Huyser.Matthew@epa.gov>
Sent: Saturday, August 17, 2019 1:43 PM
To: Pinkney, James <Pinkney.James@epa.gov>; Jenkins, Brandi <Jenkins.Brandi@epa.gov>; Tolliver, Ronald <Tolliver.Ronald@epa.gov>; Miller, Angela <Miller.Angela@epa.gov>
Cc: Wise, Katie <katie.wise@tetratech.com>; bill.spiking@tetratech.com
Subject: Able - story map approval

James and Brandi,

Tetra Tech is capable of making the story map publicly available. As part of this process, certain certifications need to be made which are our responsibility to ensure so that the responsibility for certification is not placed on our START contractor. The required certifications are listed below. I have reviewed the story map and concur that these requirements have been met. Please reply to katie.wise@tetratech.com and bill.spiking@tetratech.com to with approval that the story map has been reviewed by the PAD and approved for release.

1. The content does not contain any sensitive data or data that is otherwise inappropriate for sharing with the public. *As a reminder, sensitive data is: "any information, the loss, misuse, or unauthorized accesss to or modification of which could adversely affect the national interest or the conduct of federal programs, or the privacy to which individuals are entitled under section 552a of title 5, U.S.C. (Privacy Act), but which has not been specifically authorized under criteria established by an Executive Order or an Act of Congress to be kept in the interest of national defense or foreign"*
2. This item has been through the appropriate product review process as outlined in the epa.gov/product-review
3. Metadata on the item details page is complete and consistent with the GeoPlatform metadata best practices guide.
4. The item is consistent with established best practices for look and feel

5. The item meets all appropriate EPA privacy act policy requirements
6. Once the item has been made public any subsequent edits to the content item will be consistent with the guidance in this list

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Armstrong, Kathy

From: Huyser, Matthew
Sent: Sunday, August 18, 2019 8:03 PM
To: Wise, Katie
Cc: bill.spiking@tetratech.com
Subject: RE: Able - Story Map changes

Requested changes to the dashboard map (everything already looks fantastic BTW, I'm just trying to make things easy for public messaging)

1. Adjust the labels for the sensors so that they include units
    - LEL (%)
    - VOC (ppb)
    - H2S (ppm)
    - CO (ppm)
    - EBAM ConcHr should be: **PM2.5 µg/m3 hour**
    - EBAM ConcRT should be: **PM2.5 µg/m3**
    - EBAM 24Hr concHR TWA should be: **PM2.5 µg/m3 24hr**
    - DustTrak PM2.5 should be: **PM2.5 µg/m3**
    - DustTrak PM2.5 TWA should be: **PM2.5 µg/m3 average**
    - DustTrak 1Hr PM2.5 TWA should be: PM2.5 µg/m3 hour
    - DustTrak 2min PM2.5 TWA can be excluded
    - DustTrak 24Hr PM2.5 TWA should be: **PM2.5 µg/m3 24hr**

2. The box with the red text is a good place for all inscructions
    - A map of the air monitoring station location is on the right
    - Graphs of the last 24 hours of data are on the lower right
    - Turn a color line on or off by clicking on the circle at the bottom
    - Each reading is listed on the left
    - Click on a reading at left to vew details below

3. If VOCs in the AreaRAE can be in a separate graph, that would be fantastic. The VOCs use a unit of ppb and everything else uses ppm or %. This is the lowest priority of the list.

Matthew J. Huyser, PE - On-Scene Coordinator
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epaosc.org

From: Huyser, Matthew
Sent: Sunday, August 18, 2019 7:43 PM
To: Wise, Katie <katie.wise@tetratech.com>
Cc: Spiking, Bill <bill.spiking@tetratech.com>
Subject: Able - Story Map changes

1. Replace the main photo at the top with the attached photo: Able_StoryMapPhoto_Headline.jpg

2. I would like to standardize the size of the photos and reduce the number of the photos to make the page more compact. Eliminate the following photos and their taglines:
    - Photo 1 , Smoke plume from burning pile; May 29, 2019 (Photo from SC DHEC)
    - Photo 3, Visible flames at night; May 29, 2019 (Photo from SC DHEC)
    - Photo 7, Using a water hose to extinguish smoke emanating from the southeast corner of the facility. Smoke can be seen migrating off site from the southwest section of the facility; August 3, 2019 (US EPA)
    - Photo 10, Air monitoring and sampling station near residence located southeast of the facility; August 3, 2019 (US EPA)
    - Photo 11, Air monitoring and sampling station near residence located southeast of the facility; August 3, 2019 (US EPA)

3. Relocate the button for the DHEC fact sheet so that it is above the photo of the DHEC monitor.

4. Add a new button link to the following address with the text "Click Here for DHEC Real-Time Data" https://gis.dhec.sc.gov/gisportal/apps/webappviewer/index.html?id=bb0e3f6ee88443c49b970ca0ebb2f846

5. Replace the AQI table and its tagline(s) with the attached png (Able_Community_AQIcategories.png). Make sure it's the same width as the other items.

6. Edit the last paragraph

    - Current: *EPA will be conducting air and water monitoring. This map displays monitoring locations that have been collected by EPA.*
    - New: EPA has conducted air and water sampling. This map displays locations of samples that have been collected by EPA

7. The second map showing the air monitor locations is currently showing the "Able Contracting Fire Air Monitoring Locations" map with the "ACF Air Monitoring Locations" layer. This map is out of date. Replace it with attached photo Able_StoryMapPhoto_Meters.png and the following tag *"EPA remote monitors for airborne particulates in the community (left) and chemical constituents near the Site (right); August 10, 2019 (Photo from EPA)"*

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Armstrong, Kathy

From: Huyser, Matthew
Sent: Sunday, August 18, 2019 7:43 PM
To: Wise, Katie
Cc: bill.spiking@tetratech.com
Subject: Able - Story Map changes
Attachments: Able_Community_AQIcategories.png; Able_StoryMapPhoto_Headline.jpg; Able_StoryMapPhoto_Meters.png

1. Replace the main photo at the top with the attached photo: Able_StoryMapPhoto_Headline.jpg

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Threshold Values and Air Quality Index Categories for PM2.5

Level of Health Concern	Particulates ≤2.5 microns measured in µg/m3		Interpretation
	1 hour average	24 hour average	
Good	0.0-40.0	0.0-12.0	Air quality is considered satisfactory, and air pollution poses little or no risk
Moderate	40.1-80.0	12.1-35.4	Air quality is acceptable; however, for some pollutants there may be a moderate health concern for a very small number of people who are unusually sensitive to air pollution.
Unhealthy for Sensitive groups	80.1-175.0	35.5-55.4	Members of sensitive groups may experience health effects. The general public is not likely to be affected.
Unhealthy	175.1-300.0	55.5-150.4	Everyone may begin to experience health effects; members of sensitive groups may experience more serious health effects.
Very Unhealthy	300.1-500.0	150.5-250.4	Health warnings of emergency conditions. The entire population is more likely to be affected.
Hazardous	>500.0	>250.5	Health alert: everyone may experience more serious health effects

- Threshold values taken from original EPA AQI online calculator found at http://airnow.gov/index.cfm?action=resources.aqi_conc_calc for PM2.5 (24 hour) and Idaho Department of Environmental Quality AQI for PM2.5 (1 hour) taken from http://app.airsis.com/usfs/aqi.asp
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- Sensitive individuals defined as people with lung disease, older adults and children who are at a greater risk from exposure to ozone; and persons with heart and lung disease, older adults and children who are at greater risk from the presence of particles in the air

EPA
DHEC
EPA

Armstrong, Kathy

From: Huyser, Matthew
Sent: Sunday, August 18, 2019 3:51 PM
To: stanled@dhec.sc.gov; leepd@dhec.sc.gov
Subject: Able contracting Fire - Water Monitoring and Sampling

As part of our incident objectives for the Able Contracting Fire Site, Unified Command will be including "*Develop a water monitoring and sampling plan to measure potential impacts to surface water and groundwater resources*". This objective will be part of the next operational period encompassing Monday to Tuesday.

UC anticipates that this objective can mature in the following operational period (encompassing Wed-Fri) as "***Execute** a water monitoring and sampling plan to measure potential impacts to surface water and groundwater resources*". The complexity and/or scope of this activity will mean that this objective remains in the incident objectives for the duration of the response.

UC will be looking to SC DHEC to provide the expertise and resources to execute this objective and remain in contact with the UC and the incident management team about field activities and environmental sampling/monitoring results.

As part of this execution, the UC requests a simple and/or brief walkthrough and status report of perimeter surface water conditions at the Site and a list of downstream resources at risk.

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epaosc.org

Armstrong, Kathy

From: Huyser, Matthew
Sent: Sunday, August 18, 2019 3:27 PM
To: stanled@dhec.gov; leepd@dhec.sc.gov
Subject: Able contracting Fire - Water Monitoring and Sampling

As part of our incident objectives for the Able Contracting Fire Site, Unified Command will be including *"Develop a water monitoring and sampling plan to measure potential impacts to surface water and groundwater resources"*. This objective will be part of the next operational period encompassing Monday to Tuesday.

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epaosc.org

Armstrong, Kathy

From: Frank Edwards <fedwards@jaspercountysc.gov>
Sent: Monday, August 19, 2019 3:33 PM
To: Tolliver, Ronald; Huyser, Matthew
Subject: Public Meeting

I understand that a decision has been made on the public meeting tomorrow night. Can one of you provide me with details so we can get it communicated. Thanks

Matt,
I want to confirm that you will still be coming tonight to the Council Meeting?

Thanks

Armstrong, Kathy

From: Frank Edwards <fedwards@jaspercountysc.gov>
Sent: Friday, August 09, 2019 4:04 PM
To: shealyrg@dhec.sc.gov; David Tedder; reecemc@dhec.sc.gov; Andrew Fulghum; Russell Wells; Lisa Wagner; Huyser, Matthew
Subject: RE: info for residents
Attachments: DHEC.Resident Flyer.August-9-2019.docx

Here are my comments. Otherwise I am good with it.

From: Shealy, Renee [mailto:shealyrg@dhec.sc.gov]
Sent: Friday, August 9, 2019 4:01 PM
To: David Tedder; Frank Edwards; Reece, Myra; Andrew Fulghum; Russell Wells; Lisa Wagner; Huyser, Matthew
Subject: info for residents

Attached please find the update info for the Schinger Ave residents. If you need help with the translation, please let us know.

dhec

Healthy People. Healthy Communities

Schinger Avenue Residents
August 9, 2019

We would like to provide you with information on the Able Contracting, Inc. (Able) fire situation.

On Sunday, August 11 from 6:00 p.m. – 7:30 pm, the members of Grace Coastal Church located at 15 Williams Drive, Okatie, SC 29909, will provide dinner for the residents of Schinger Ave. who have been impacted by the Able fire.

DHEC and the EPA will be there to answer questions you may have about the fire response.

EPA has extended your hotel reservation for checkout on Saturday, August 24th, and will re-evaluate the need to extend the hotel on a weekly basis.

The fire suppression contractor has been secured and is moving equipment to the site to begin work early next week.

If you should have any other concerns or questions, please call SC DHEC at 843-846-1030.

Armstrong, Kathy

From: Frost, Keith <frostrk@dhec.sc.gov>
Sent: Friday, September 13, 2019 10:25 AM
To: Scott Reynolds
Cc: thompsrb@dhec.sc.gov; reecemc@dhec.sc.gov; Marshall, Frances (Fran); Marcus, Mike; Porter, Henry; Keisler, Van; Blalock, Juli; Taylor, Monica N.; Dickman, Jacquelyn S.; Timmerman, Kelsey A.; Threatt, Richard; Boswell, Wendy; Stewart, R. Gary; Quina III, Gregory; Boyce, Lawra; Crooks, Carol; shealyrg@dhec.sc.gov; Glass, John; McAvoy, Bryan P.; Swanson, Courtney; Spurlin, Steve; Tanner, Terry; Byrd, Terrence; Pinkney, James; Frederick, Tim; Huyser, Matthew; Tolliver, Ronald; Jenkins, Brandi
Subject: Re: Able PM

Yes. Kelsey is heading out there to check. It is most likely been unplugged for lawn maintenance. Will know something shortly.

R. Keith Frost, Assistant Chief
Bureau of Air Quality
SC DHEC

(803) 898-4115 office
(803) 465-1529 cell

Sent from my iPhone

On Sep 13, 2019, at 10:10 AM, Reynolds, Scott <REYNOLDS@dhec.sc.gov> wrote:

Yesterday's 24 hour averages (Sep 12 Midnight to midnight)

Schinger	PM2.5	19 ug/M3 (Moderate)
Okatie Elementary	PM2.5	5 ug/M3 (Good)
Sun City	PM2.5	No Data

Significant late night/early morning smoke at Schinger site only - peak concentrations we haven't seen for a while. Highest concentrations after midnight , so not included in yesterday's average. Sun City sensor is off line. (Suspect it has been unplugged) .
<image.png>

From: Reynolds, Scott <REYNOLDS@dhec.sc.gov>
Sent: Thursday, September 12, 2019 9:30 AM
To: Frost, Keith <frostrk@dhec.sc.gov>; Thompson, Rhonda <thompsrb@dhec.sc.gov>; Reece, Myra <reecemc@dhec.sc.gov>; Marshall, Frances (Fran) <marshaf2@dhec.sc.gov>; Marcus, Mike <MARCUSJM@dhec.sc.gov>; Porter, Henry <porterhj@dhec.sc.gov>; Keisler, Van <keislecv@dhec.sc.gov>; Blalock, Juli <blalocje@dhec.sc.gov>; Taylor, Monica N. <TAYLORMN@dhec.sc.gov>; Dickman, Jacquelyn S. <DICKMAJS@dhec.sc.gov>; Timmerman, Kelsey A. <timmerka@dhec.sc.gov>; Threatt, Richard <threatrl@dhec.sc.gov>; Boswell, Wendy <BOSWELWM@dhec.sc.gov>; Stewart, R. Gary <stewarrg@dhec.sc.gov>; Quina III, Gregory <quinags@dhec.sc.gov>; Boyce, Lawra <boycelc@dhec.sc.gov>; Crooks, Carol <Crookscl@DHEC.SC.GOV>; Shealy, Renee <shealyrg@dhec.sc.gov>; Glass, John <glassjp@dhec.sc.gov>;

McAvoy, Bryan P. <mcavoybp@dhec.sc.gov>
Cc: Swanson.Courtney@epa.gov <Swanson.Courtney@epa.gov>; Spurlin.Steve@epa.gov <Spurlin.Steve@epa.gov>; Tanner.Terry@epa.gov <Tanner.Terry@epa.gov>; Byrd, Terrence <byrd.terrence@epa.gov>; Pinkney, James <Pinkney.James@epa.gov>; frederick.tim@epa.gov <frederick.tim@epa.gov>; Huyser, Matthew <huyser.matthew@epa.gov>; Tolliver, Ronald <Tolliver.Ronald@epa.gov>; Jenkins, Brandi <Jenkins.Brandi@epa.gov>
Subject: Re: Able PM

Yesterday's 24 hour averages (Sep 11 Midnight to midnight)

Schinger PM2.5 17 ug/M3 (Moderate)
Okatie Elementary PM2.5 7 ug/M3 (Good)
Sun City PM2.5 9 ug/M3 (Good)

Late night/early morning smoke at Schinger site only - but peak concentrations only ~20% of what it was last time we saw this pattern.

<image.png>

From: Reynolds, Scott <REYNOLDS@dhec.sc.gov>
Sent: Wednesday, September 11, 2019 10:00 AM
To: Frost, Keith <frostrk@dhec.sc.gov>; Thompson, Rhonda <thompsrb@dhec.sc.gov>; Reece, Myra <reecemc@dhec.sc.gov>; Marshall, Frances (Fran) <marshaf2@dhec.sc.gov>; Marcus, Mike <MARCUSJM@dhec.sc.gov>; Porter, Henry <porterhj@dhec.sc.gov>; Keisler, Van <keislecv@dhec.sc.gov>; Blalock, Juli <blalocje@dhec.sc.gov>; Taylor, Monica N. <TAYLORMN@dhec.sc.gov>; Dickman, Jacquelyn S. <DICKMAJS@dhec.sc.gov>; Timmerman, Kelsey A. <timmerka@dhec.sc.gov>; Threatt, Richard <threatrl@dhec.sc.gov>; Boswell, Wendy <BOSWELWM@dhec.sc.gov>; Stewart, R. Gary <stewarrg@dhec.sc.gov>; Quina III, Gregory <quinags@dhec.sc.gov>; Boyce, Lawra <boycelc@dhec.sc.gov>; Crooks, Carol <Crookscl@DHEC.SC.GOV>; Shealy, Renee <shealyrg@dhec.sc.gov>; Glass, John <glassjp@dhec.sc.gov>; McAvoy, Bryan P. <mcavoybp@dhec.sc.gov>
Cc: Swanson.Courtney@epa.gov <Swanson.Courtney@epa.gov>; Spurlin.Steve@epa.gov <Spurlin.Steve@epa.gov>; Tanner.Terry@epa.gov <Tanner.Terry@epa.gov>; Byrd, Terrence <byrd.terrence@epa.gov>; Pinkney, James <Pinkney.James@epa.gov>; frederick.tim@epa.gov <frederick.tim@epa.gov>; Huyser, Matthew <huyser.matthew@epa.gov>; Tolliver, Ronald <Tolliver.Ronald@epa.gov>; Jenkins, Brandi <Jenkins.Brandi@epa.gov>
Subject: Re: Able PM

Numbers and a graph..
Yesterday's 24 hour averages (Sep 10 Midnight to midnight)

Schinger PM2.5 13 ug/M3 (Moderate)
Okatie Elementary PM2.5 8 ug/M3 (Good)
Sun City PM2.5 11 ug/M3 (Good)

Activity at the site appears to have stirred it up a bit overnight. The satellite imagery still indicated light smoke over the SE US yesterday which is likely contributing a little to the concentrations at all sensors but that is not unusual.

<image.png>

From: Reynolds, Scott <REYNOLDS@dhec.sc.gov>
Sent: Monday, September 9, 2019 12:55 PM
To: Frost, Keith <frostrk@dhec.sc.gov>; Thompson, Rhonda <thompsrb@dhec.sc.gov>; Reece, Myra <reecemc@dhec.sc.gov>; Marshall, Frances (Fran) <marshaf2@dhec.sc.gov>; Marcus, Mike <MARCUSJM@dhec.sc.gov>; Porter, Henry <porterhj@dhec.sc.gov>; Keisler, Van <keislecv@dhec.sc.gov>; Blalock, Juli <blalocje@dhec.sc.gov>; Taylor, Monica N. <TAYLORMN@dhec.sc.gov>; Dickman, Jacquelyn S. <DICKMAJS@dhec.sc.gov>; Timmerman, Kelsey A. <timmerka@dhec.sc.gov>; Threatt, Richard <threatrl@dhec.sc.gov>; Boswell, Wendy <BOSWELWM@dhec.sc.gov>; Stewart, R. Gary <stewarrg@dhec.sc.gov>; Quina III, Gregory <quinags@dhec.sc.gov>; Boyce, Lawra <boycelc@dhec.sc.gov>; Crooks, Carol <Crookscl@DHEC.SC.GOV>; Shealy, Renee <shealyrg@dhec.sc.gov>; Glass, John <glassjp@dhec.sc.gov>; McAvoy, Bryan P. <mcavoybp@dhec.sc.gov>
Cc: Swanson.Courtney@epa.gov <Swanson.Courtney@epa.gov>; Spurlin.Steve@epa.gov <Spurlin.Steve@epa.gov>; Tanner.Terry@epa.gov <Tanner.Terry@epa.gov>; Byrd, Terrence <byrd.terrence@epa.gov>; Pinkney, James <Pinkney.James@epa.gov>; frederick.tim@epa.gov <frederick.tim@epa.gov>; Huyser, Matthew <huyser.matthew@epa.gov>; Tolliver, Ronald <Tolliver.Ronald@epa.gov>; Jenkins, Brandi <Jenkins.Brandi@epa.gov>
Subject: Re: Able PM

No numbers
No Graphs
BUT
If you need a fix,
the sensors were reinstalled midday Sunday(9/8) at Schinger and Okatie Elementary. The sensor at the Palmetto Exterminators site has been discontinued and installed in Sun CIty.
The DHEC Web App has been updated to show the current locations and data.
Unless there is a change from current conditions, there will not be a daily email . Data and and graphs will still be updated and available on the OneDrive.
If you want to be SURE you're off the list, just let me know.

From: Reynolds, Scott <REYNOLDS@dhec.sc.gov>
Sent: Sunday, September 1, 2019 8:08 AM
To: Frost, Keith <frostrk@dhec.sc.gov>; Thompson, Rhonda <thompsrb@dhec.sc.gov>; Reece, Myra <reecemc@dhec.sc.gov>; Marshall, Frances (Fran) <marshaf2@dhec.sc.gov>; Marcus, Mike <MARCUSJM@dhec.sc.gov>; Porter, Henry <porterhj@dhec.sc.gov>; Keisler, Van <keislecv@dhec.sc.gov>; Blalock, Juli <blalocje@dhec.sc.gov>; Taylor, Monica N. <TAYLORMN@dhec.sc.gov>; Dickman, Jacquelyn S. <DICKMAJS@dhec.sc.gov>; Timmerman, Kelsey A. <timmerka@dhec.sc.gov>; Threatt, Richard <threatrl@dhec.sc.gov>; Boswell, Wendy <BOSWELWM@dhec.sc.gov>; Stewart, R. Gary <stewarrg@dhec.sc.gov>; Quina III, Gregory <quinags@dhec.sc.gov>; Boyce, Lawra <boycelc@dhec.sc.gov>; Crooks, Carol <Crookscl@DHEC.SC.GOV>; Shealy, Renee <shealyrg@dhec.sc.gov>; Glass, John <glassjp@dhec.sc.gov>; McAvoy, Bryan P. <mcavoybp@dhec.sc.gov>

Cc: Swanson.Courtney@epa.gov <Swanson.Courtney@epa.gov>; Spurlin.Steve@epa.gov <Spurlin.Steve@epa.gov>; Tanner.Terry@epa.gov <Tanner.Terry@epa.gov>; Byrd, Terrence <byrd.terrence@epa.gov>; Pinkney, James <Pinkney.James@epa.gov>; frederick.tim@epa.gov <frederick.tim@epa.gov>; Huyser, Matthew <huyser.matthew@epa.gov>; Tolliver, Ronald <Tolliver.Ronald@epa.gov>; Jenkins, Brandi <Jenkins.Brandi@epa.gov>
Subject: Re: Able PM

Yesterday's 24 hour averages (Aug 30 Midnight to midnight)
Palmetto Exterminators **PM10** 3 ug/M3 (Good)
Schinger 2.5 4 ug/M3 (Good)
Okatie Elementary PM2.5 3 ug/M3 (Good)

Monitors are being removed today in preparation for Dorian, but going out with lowest 3 site total since we started (lowest 24 hr average at 2 of the 3 sites).
'Clean' bonus graph below.

<pastedImage.png>

<pastedImage.png>

From: Reynolds, Scott <REYNOLDS@dhec.sc.gov>
Sent: Saturday, August 31, 2019 8:21:27 AM
To: Frost, Keith <frostrk@dhec.sc.gov>; Thompson, Rhonda <thompsrb@dhec.sc.gov>; Reece, Myra <reecemc@dhec.sc.gov>; Marshall, Frances (Fran) <marshaf2@dhec.sc.gov>; Marcus, Mike <MARCUSJM@dhec.sc.gov>; Porter, Henry <porterhj@dhec.sc.gov>; Keisler, Van <keislecv@dhec.sc.gov>; Blalock, Juli <blalocje@dhec.sc.gov>; Taylor, Monica N. <TAYLORMN@dhec.sc.gov>; Dickman, Jacquelyn S. <DICKMAJS@dhec.sc.gov>; Timmerman, Kelsey A. <timmerka@dhec.sc.gov>; Threatt, Richard <threatrl@dhec.sc.gov>; Boswell, Wendy <BOSWELWM@dhec.sc.gov>; Stewart, R. Gary <stewarrg@dhec.sc.gov>; Quina III, Gregory <quinags@dhec.sc.gov>; Boyce, Lawra <boycelc@dhec.sc.gov>; Crooks, Carol <Crookscl@DHEC.SC.GOV>; Shealy, Renee <shealyrg@dhec.sc.gov>; Glass, John <glassjp@dhec.sc.gov>; McAvoy, Bryan P. <mcavoybp@dhec.sc.gov>
Cc: Swanson.Courtney@epa.gov <Swanson.Courtney@epa.gov>; Spurlin.Steve@epa.gov <Spurlin.Steve@epa.gov>; Tanner.Terry@epa.gov <Tanner.Terry@epa.gov>; Byrd, Terrence <byrd.terrence@epa.gov>; Pinkney, James <Pinkney.James@epa.gov>; frederick.tim@epa.gov <frederick.tim@epa.gov>; Huyser, Matthew <huyser.matthew@epa.gov>; Tolliver, Ronald <Tolliver.Ronald@epa.gov>; Jenkins, Brandi <Jenkins.Brandi@epa.gov>
Subject: Re: Able PM

Yesterday's 24 hour averages (Aug 30 Midnight to midnight)
Palmetto Exterminators **PM10** Data not available(but operating and in GOOD range)
Schinger 2.5 6 ug/M3 (Good)
Okatie Elementary PM2.5 4 ug/M3 (Good)

Boring in a good way
Not so good - Dorian's track forecast shift (below)

<pastedImage.png>
8 AM Graphic
<pastedImage.png>

From: Reynolds, Scott <REYNOLDS@dhec.sc.gov>
Sent: Friday, August 30, 2019 9:17:18 AM
To: Frost, Keith <frostrk@dhec.sc.gov>; Thompson, Rhonda <thompsrb@dhec.sc.gov>; Reece, Myra <reecemc@dhec.sc.gov>; Marshall, Frances (Fran) <marshaf2@dhec.sc.gov>; Marcus, Mike <MARCUSJM@dhec.sc.gov>; Porter, Henry <porterhj@dhec.sc.gov>; Keisler, Van <keislecv@dhec.sc.gov>; Blalock, Juli <blalocje@dhec.sc.gov>; Taylor, Monica N. <TAYLORMN@dhec.sc.gov>; Dickman, Jacquelyn S. <DICKMAJS@dhec.sc.gov>; Timmerman, Kelsey A. <timmerka@dhec.sc.gov>; Threatt, Richard <threatrl@dhec.sc.gov>; Boswell, Wendy <BOSWELWM@dhec.sc.gov>; Stewart, R. Gary <stewarrg@dhec.sc.gov>; Quina III, Gregory <quinags@dhec.sc.gov>; Boyce, Lawra <boycelc@dhec.sc.gov>; Crooks, Carol <Crookscl@DHEC.SC.GOV>; Shealy, Renee <shealyrg@dhec.sc.gov>; Glass, John <glassjp@dhec.sc.gov>; McAvoy, Bryan P. <mcavoybp@dhec.sc.gov>
Cc: Swanson.Courtney@epa.gov <Swanson.Courtney@epa.gov>; Spurlin.Steve@epa.gov <Spurlin.Steve@epa.gov>; Tanner.Terry@epa.gov <Tanner.Terry@epa.gov>; Byrd, Terrence <byrd.terrence@epa.gov>; Pinkney, James <Pinkney.James@epa.gov>; frederick.tim@epa.gov <frederick.tim@epa.gov>; Huyser, Matthew <huyser.matthew@epa.gov>; Tolliver, Ronald <Tolliver.Ronald@epa.gov>; Jenkins, Brandi <Jenkins.Brandi@epa.gov>
Subject: Re: Able PM

Yesterday's 24 hour averages (Aug 28 Midnight to midnight)
Palmetto Exterminators **PM10** Data not available
Schinger 2.5 7 ug/M3 (Good)
Okatie Elementary PM2.5 5 ug/M3 (Good)

<pastedImage.png>

<pastedImage.png>

From: Reynolds, Scott <REYNOLDS@dhec.sc.gov>
Sent: Thursday, August 29, 2019 9:07:23 AM
To: Frost, Keith <frostrk@dhec.sc.gov>; Thompson, Rhonda <thompsrb@dhec.sc.gov>; Reece, Myra <reecemc@dhec.sc.gov>; Marshall, Frances (Fran) <marshaf2@dhec.sc.gov>; Marcus, Mike <MARCUSJM@dhec.sc.gov>; Porter, Henry <porterhj@dhec.sc.gov>; Keisler, Van <keislecv@dhec.sc.gov>; Blalock, Juli <blalocje@dhec.sc.gov>; Taylor, Monica N. <TAYLORMN@dhec.sc.gov>; Dickman, Jacquelyn S. <DICKMAJS@dhec.sc.gov>; Timmerman, Kelsey A. <timmerka@dhec.sc.gov>; Threatt, Richard <threatrl@dhec.sc.gov>; Boswell, Wendy <BOSWELWM@dhec.sc.gov>; Stewart, R. Gary <stewarrg@dhec.sc.gov>; Quina III, Gregory <quinags@dhec.sc.gov>; Boyce, Lawra <boycelc@dhec.sc.gov>; Crooks, Carol <Crookscl@DHEC.SC.GOV>; Shealy, Renee <shealyrg@dhec.sc.gov>; Glass, John <glassjp@dhec.sc.gov>; McAvoy, Bryan P. <mcavoybp@dhec.sc.gov>
Cc: Swanson.Courtney@epa.gov <Swanson.Courtney@epa.gov>; Spurlin.Steve@epa.gov <Spurlin.Steve@epa.gov>; Tanner.Terry@epa.gov <Tanner.Terry@epa.gov>; Byrd, Terrence <byrd.terrence@epa.gov>; Pinkney, James <Pinkney.James@epa.gov>; frederick.tim@epa.gov <frederick.tim@epa.gov>; Huyser, Matthew <huyser.matthew@epa.gov>; Tolliver, Ronald <Tolliver.Ronald@epa.gov>; Jenkins, Brandi <Jenkins.Brandi@epa.gov>
Subject: Re: Able PM

Yesterday's 24 hour averages (Aug 28 Midnight to midnight)
Palmetto Exterminators **PM10** 6 ug/M3 (Good)
Schinger 2.5 6 ug/M3 (Good)
Okatie Elementary PM2.5 5 ug/M3 (Good)

.. and a bonus chart of the last few days below

<pastedImage.png>
The overnight 'bump' appears to be regional also being evidenced in the Charleston data
<pastedImage.png>

From: Reynolds, Scott <REYNOLDS@dhec.sc.gov>
Sent: Wednesday, August 28, 2019 8:35:17 AM
To: Frost, Keith <frostrk@dhec.sc.gov>; Thompson, Rhonda <thompsrb@dhec.sc.gov>; Reece, Myra <reecemc@dhec.sc.gov>; Marshall, Frances (Fran) <marshaf2@dhec.sc.gov>; Marcus, Mike <MARCUSJM@dhec.sc.gov>; Porter, Henry <porterhj@dhec.sc.gov>; Keisler, Van <keislecv@dhec.sc.gov>; Blalock, Juli <blalocje@dhec.sc.gov>; Taylor, Monica N. <TAYLORMN@dhec.sc.gov>; Dickman, Jacquelyn S. <DICKMAJS@dhec.sc.gov>; Timmerman, Kelsey A. <timmerka@dhec.sc.gov>; Threatt, Richard <threatrl@dhec.sc.gov>; Boswell, Wendy <BOSWELWM@dhec.sc.gov>; Stewart, R. Gary <stewarrg@dhec.sc.gov>; Quina III, Gregory <quinags@dhec.sc.gov>; Boyce, Lawra <boycelc@dhec.sc.gov>; Crooks, Carol <Crookscl@DHEC.SC.GOV>; Shealy, Renee <shealyrg@dhec.sc.gov>; Glass, John <glassjp@dhec.sc.gov>; McAvoy, Bryan P. <mcavoybp@dhec.sc.gov>
Cc: Swanson.Courtney@epa.gov <Swanson.Courtney@epa.gov>; Spurlin.Steve@epa.gov <Spurlin.Steve@epa.gov>; Tanner.Terry@epa.gov <Tanner.Terry@epa.gov>; Byrd, Terrence <byrd.terrence@epa.gov>; Pinkney, James <Pinkney.James@epa.gov>; frederick.tim@epa.gov <frederick.tim@epa.gov>; Huyser, Matthew <huyser.matthew@epa.gov>; Tolliver, Ronald <Tolliver.Ronald@epa.gov>; Jenkins, Brandi <Jenkins.Brandi@epa.gov>
Subject: Re: Able PM

Yesterday's 24 hour averages (Aug 27 Midnight to midnight)
Palmetto Exterminators **PM10** 8 ug/M3 (Good)
Schinger 2.5 7 ug/M3 (Good)
Okatie Elementary PM2.5 3 ug/M3 (Good)

Third day no double digits...

<pastedImage.png>

From: Reynolds, Scott <REYNOLDS@dhec.sc.gov>
Sent: Tuesday, August 27, 2019 8:23 AM
To: Frost, Keith <frostrk@dhec.sc.gov>; Thompson, Rhonda <thompsrb@dhec.sc.gov>; Reece, Myra

<reecemc@dhec.sc.gov>; Marshall, Frances (Fran) <marshaf2@dhec.sc.gov>; Marcus, Mike <MARCUSJM@dhec.sc.gov>; Porter, Henry <porterhj@dhec.sc.gov>; Keisler, Van <keislecv@dhec.sc.gov>; Blalock, Juli <blalocje@dhec.sc.gov>; Taylor, Monica N. <TAYLORMN@dhec.sc.gov>; Dickman, Jacquelyn S. <DICKMAJS@dhec.sc.gov>; Timmerman, Kelsey A. <timmerka@dhec.sc.gov>; Threatt, Richard <threatrl@dhec.sc.gov>; Boswell, Wendy <BOSWELWM@dhec.sc.gov>; Stewart, R. Gary <stewarrg@dhec.sc.gov>; Quina III, Gregory <quinags@dhec.sc.gov>; Boyce, Lawra <boycelc@dhec.sc.gov>; Crooks, Carol <Crookscl@DHEC.SC.GOV>; Shealy, Renee <shealyrg@dhec.sc.gov>; Glass, John <glassjp@dhec.sc.gov>; McAvoy, Bryan P. <mcavoybp@dhec.sc.gov>
Cc: Swanson.Courtney@epa.gov <Swanson.Courtney@epa.gov>; Russell.Chris@epa.gov <Russell.Chris@epa.gov>; Spurlin.Steve@epa.gov <Spurlin.Steve@epa.gov>; Tanner.Terry@epa.gov <Tanner.Terry@epa.gov>; Byrd, Terrence <byrd.terrence@epa.gov>; Pinkney, James <Pinkney.James@epa.gov>; frederick.tim@epa.gov <frederick.tim@epa.gov>; Huyser, Matthew <huyser.matthew@epa.gov>; Tolliver, Ronald <Tolliver.Ronald@epa.gov>; Jenkins, Brandi <Jenkins.Brandi@epa.gov>
Subject: Re: Able PM

Yesterday's 24 hour averages (Aug 26 Midnight to midnight)
Palmetto Exterminators **PM10** 6 ug/M3 (Good)
Schinger 2.5 7 ug/M3 (Good)
Okatie Elementary PM2.5 4 ug/M3 (Good)

<pastedImage.png>

From: Reynolds, Scott <REYNOLDS@dhec.sc.gov>
Sent: Monday, August 26, 2019 8:49:28 AM
To: Frost, Keith <frostrk@dhec.sc.gov>; Thompson, Rhonda <thompsrb@dhec.sc.gov>; Reece, Myra <reecemc@dhec.sc.gov>; Marshall, Frances (Fran) <marshaf2@dhec.sc.gov>; Marcus, Mike <MARCUSJM@dhec.sc.gov>; Porter, Henry <porterhj@dhec.sc.gov>; Keisler, Van <keislecv@dhec.sc.gov>; Blalock, Juli <blalocje@dhec.sc.gov>; Taylor, Monica N. <TAYLORMN@dhec.sc.gov>; Dickman, Jacquelyn S. <DICKMAJS@dhec.sc.gov>; Timmerman, Kelsey A. <timmerka@dhec.sc.gov>; Threatt, Richard <threatrl@dhec.sc.gov>; Boswell, Wendy <BOSWELWM@dhec.sc.gov>; Stewart, R. Gary <stewarrg@dhec.sc.gov>; Quina III, Gregory <quinags@dhec.sc.gov>; Boyce, Lawra <boycelc@dhec.sc.gov>; Crooks, Carol <Crookscl@DHEC.SC.GOV>; Shealy, Renee <shealyrg@dhec.sc.gov>; Glass, John <glassjp@dhec.sc.gov>; McAvoy, Bryan P. <mcavoybp@dhec.sc.gov>
Cc: Swanson.Courtney@epa.gov <Swanson.Courtney@epa.gov>; Russell.Chris@epa.gov <Russell.Chris@epa.gov>; Spurlin.Steve@epa.gov <Spurlin.Steve@epa.gov>; Tanner.Terry@epa.gov <Tanner.Terry@epa.gov>; Byrd, Terrence <byrd.terrence@epa.gov>; Pinkney, James <Pinkney.James@epa.gov>; frederick.tim@epa.gov <frederick.tim@epa.gov>; Huyser, Matthew <huyser.matthew@epa.gov>; Tolliver, Ronald <Tolliver.Ronald@epa.gov>; Jenkins, Brandi <Jenkins.Brandi@epa.gov>
Subject: Re: Able PM

Yesterday's 24 hour averages (Aug 25 Midnight to midnight)
Palmetto Exterminators **PM10** 6 ug/M3 (Good)

Schinger 2.5 5 ug/M3 (Good)
Okatie Elementary PM2.5 4 ug/M3 (Good)

Winds still indicated steady from generally N since yesterday -as steady in direction as we've seen-towards Sun City

<pastedImage.png>

From: Reynolds, Scott <REYNOLDS@dhec.sc.gov>
Sent: Sunday, August 25, 2019 8:09:46 AM
To: Frost, Keith <frostrk@dhec.sc.gov>; Thompson, Rhonda <thompsrb@dhec.sc.gov>; Reece, Myra <reecemc@dhec.sc.gov>; Marshall, Frances (Fran) <marshaf2@dhec.sc.gov>; Marcus, Mike <MARCUSJM@dhec.sc.gov>; Porter, Henry <porterhj@dhec.sc.gov>; Keisler, Van <keislecv@dhec.sc.gov>; Blalock, Juli <blalocje@dhec.sc.gov>; Taylor, Monica N. <TAYLORMN@dhec.sc.gov>; Dickman, Jacquelyn S. <DICKMAJS@dhec.sc.gov>; Timmerman, Kelsey A. <timmerka@dhec.sc.gov>; Threatt, Richard <threatrl@dhec.sc.gov>; Boswell, Wendy <BOSWELWM@dhec.sc.gov>; Stewart, R. Gary <stewarrg@dhec.sc.gov>; Quina III, Gregory <quinags@dhec.sc.gov>; Boyce, Lawra <boycelc@dhec.sc.gov>; Crooks, Carol <Crookscl@DHEC.SC.GOV>; Shealy, Renee <shealyrg@dhec.sc.gov>; Glass, John <glassjp@dhec.sc.gov>; McAvoy, Bryan P. <mcavoybp@dhec.sc.gov>
Cc: Swanson.Courtney@epa.gov <Swanson.Courtney@epa.gov>; Russell.Chris@epa.gov <Russell.Chris@epa.gov>; Spurlin.Steve@epa.gov <Spurlin.Steve@epa.gov>; Tanner.Terry@epa.gov <Tanner.Terry@epa.gov>; Byrd, Terrence <byrd.terrence@epa.gov>; Pinkney, James <Pinkney.James@epa.gov>; frederick.tim@epa.gov <frederick.tim@epa.gov>; Huyser, Matthew <huyser.matthew@epa.gov>; Tolliver, Ronald <Tolliver.Ronald@epa.gov>; Jenkins, Brandi <Jenkins.Brandi@epa.gov>
Subject: Re: Able PM

Yesterday's 24 hour averages (Aug 24 Midnight to midnight)
Palmetto Exterminators **PM10** 47 ug/M3 (Unhealthy for Sensitive groups)
Schinger 2.5 23 ug/M3 (Moderate)
Okatie Elementary PM2.5 2 ug/M3 (Good)

Winds indicated pretty steady from NNE to NE since midnight -towards Sun City

<pastedImage.png>

From: Reynolds, Scott <REYNOLDS@dhec.sc.gov>
Sent: Saturday, August 24, 2019 7:46 AM
To: Frost, Keith <frostrk@dhec.sc.gov>; Thompson, Rhonda <thompsrb@dhec.sc.gov>; Reece, Myra <reecemc@dhec.sc.gov>; Marshall, Frances (Fran) <marshaf2@dhec.sc.gov>; Marcus, Mike <MARCUSJM@dhec.sc.gov>; Porter, Henry <porterhj@dhec.sc.gov>; Keisler, Van <keislecv@dhec.sc.gov>; Blalock, Juli <blalocje@dhec.sc.gov>; Taylor, Monica N. <TAYLORMN@dhec.sc.gov>; Dickman, Jacquelyn S. <DICKMAJS@dhec.sc.gov>; Timmerman, Kelsey A. <timmerka@dhec.sc.gov>; Threatt, Richard <threatrl@dhec.sc.gov>; Boswell, Wendy

<BOSWELWM@dhec.sc.gov>; Huyser, Matthew <huyser.matthew@epa.gov>; Stewart, R. Gary <stewarrg@dhec.sc.gov>; Quina III, Gregory <quinags@dhec.sc.gov>; Boyce, Lawra <boycelc@dhec.sc.gov>; frederick.tim@epa.gov <frederick.tim@epa.gov>; Crooks, Carol <Crookscl@DHEC.SC.GOV>; Shealy, Renee <shealyrg@dhec.sc.gov>; Tolliver, Ronald <Tolliver.Ronald@epa.gov>; Jenkins, Brandi <Jenkins.Brandi@epa.gov>; Glass, John <glassjp@dhec.sc.gov>; McAvoy, Bryan P. <mcavoybp@dhec.sc.gov>; Pinkney, James <Pinkney.James@epa.gov>
Subject: Re: Able PM

Yesterday's 24 hour averages (Aug 23 Midnight to midnight)
Palmetto Exterminators **PM10** 36 ug/M3 (Unhealthy for Sensitive groups)
Schinger 2.5 34 ug/M3 (Moderate)
Okatie Elementary PM2.5 3 ug/M3 (Good)

Almost had to increase scale for Palmetto Exterminators (592 spike at 11:30PM)

<pastedImage.png>

From: Reynolds, Scott <REYNOLDS@dhec.sc.gov>
Sent: Friday, August 23, 2019 8:32:48 AM
To: Frost, Keith <frostrk@dhec.sc.gov>; Thompson, Rhonda <thompsrb@dhec.sc.gov>; Reece, Myra <reecemc@dhec.sc.gov>; Marshall, Frances (Fran) <marshaf2@dhec.sc.gov>; Marcus, Mike <MARCUSJM@dhec.sc.gov>; Porter, Henry <porterhj@dhec.sc.gov>; Keisler, Van <keislecv@dhec.sc.gov>; Blalock, Juli <blalocje@dhec.sc.gov>; Taylor, Monica N. <TAYLORMN@dhec.sc.gov>; Dickman, Jacquelyn S. <DICKMAJS@dhec.sc.gov>; Timmerman, Kelsey A. <timmerka@dhec.sc.gov>; Threatt, Richard <threatrl@dhec.sc.gov>; Boswell, Wendy <BOSWELWM@dhec.sc.gov>; Huyser, Matthew <huyser.matthew@epa.gov>; Stewart, R. Gary <stewarrg@dhec.sc.gov>; Quina III, Gregory <quinags@dhec.sc.gov>; Boyce, Lawra <boycelc@dhec.sc.gov>; frederick.tim@epa.gov <frederick.tim@epa.gov>; Crooks, Carol <Crookscl@DHEC.SC.GOV>; Shealy, Renee <shealyrg@dhec.sc.gov>; Tolliver, Ronald <Tolliver.Ronald@epa.gov>; Jenkins, Brandi <Jenkins.Brandi@epa.gov>; Glass, John <glassjp@dhec.sc.gov>; McAvoy, Bryan P. <mcavoybp@dhec.sc.gov>; Pinkney, James <Pinkney.James@epa.gov>
Subject: Re: Able PM

Yesterday's 24 hour averages (Aug 22 Midnight to midnight)
Palmetto Exterminators **PM10** 5 ug/M3 (Good)
Schinger 2.5 15 ug/M3 (Moderate)
Okatie Elementary PM2.5 3 ug/M3 (Good)

<pastedImage.png>

From: Reynolds, Scott <REYNOLDS@dhec.sc.gov>
Sent: Thursday, August 22, 2019 8:26:11 AM
To: Frost, Keith <frostrk@dhec.sc.gov>; Thompson, Rhonda <thompsrb@dhec.sc.gov>; Reece, Myra <reecemc@dhec.sc.gov>; Marshall, Frances (Fran) <marshaf2@dhec.sc.gov>; Marcus, Mike <MARCUSJM@dhec.sc.gov>; Porter, Henry <porterhj@dhec.sc.gov>; Keisler, Van <keislecv@dhec.sc.gov>; Blalock, Juli <blalocje@dhec.sc.gov>; Taylor, Monica N.

<TAYLORMN@dhec.sc.gov>; Dickman, Jacquelyn S. <DICKMAJS@dhec.sc.gov>; Timmerman, Kelsey A. <timmerka@dhec.sc.gov>; Threatt, Richard <threatrl@dhec.sc.gov>; Boswell, Wendy <BOSWELWM@dhec.sc.gov>; Huyser, Matthew <huyser.matthew@epa.gov>; Stewart, R. Gary <stewarrg@dhec.sc.gov>; Quina III, Gregory <quinags@dhec.sc.gov>; Boyce, Lawra <boycelc@dhec.sc.gov>; frederick.tim@epa.gov <frederick.tim@epa.gov>; Crooks, Carol <Crookscl@DHEC.SC.GOV>; Shealy, Renee <shealyrg@dhec.sc.gov>; Tolliver, Ronald <Tolliver.Ronald@epa.gov>; Jenkins, Brandi <Jenkins.Brandi@epa.gov>; Glass, John <glassjp@dhec.sc.gov>; McAvoy, Bryan P. <mcavoybp@dhec.sc.gov>; Pinkney, James <Pinkney.James@epa.gov>
Subject: Re: Able PM

Yesterday's 24 hour averages (Aug 21 Midnight to midnight)
Palmetto Exterminators **PM10** 5 ug/M3 (Good)
Schinger 2.5 51 ug/M3 (Unhealthy for Sensitive Groups)
Okatie Elementary PM2.5 4 ug/M3 (Good)

<pastedImage.png>

From: Reynolds, Scott <REYNOLDS@dhec.sc.gov>
Sent: Wednesday, August 21, 2019 8:27:26 AM
To: Frost, Keith <frostrk@dhec.sc.gov>; Thompson, Rhonda <thompsrb@dhec.sc.gov>; Reece, Myra <reecemc@dhec.sc.gov>; Marshall, Frances (Fran) <marshaf2@dhec.sc.gov>; Marcus, Mike <MARCUSJM@dhec.sc.gov>; Porter, Henry <porterhj@dhec.sc.gov>; Keisler, Van <keislecv@dhec.sc.gov>; Blalock, Juli <blalocje@dhec.sc.gov>; Taylor, Monica N. <TAYLORMN@dhec.sc.gov>; Dickman, Jacquelyn S. <DICKMAJS@dhec.sc.gov>; Timmerman, Kelsey A. <timmerka@dhec.sc.gov>; Threatt, Richard <threatrl@dhec.sc.gov>; Boswell, Wendy <BOSWELWM@dhec.sc.gov>; Huyser, Matthew <huyser.matthew@epa.gov>; Stewart, R. Gary <stewarrg@dhec.sc.gov>; Quina III, Gregory <quinags@dhec.sc.gov>; Boyce, Lawra <boycelc@dhec.sc.gov>; frederick.tim@epa.gov <frederick.tim@epa.gov>; Crooks, Carol <Crookscl@DHEC.SC.GOV>; Shealy, Renee <shealyrg@dhec.sc.gov>; Tolliver, Ronald <Tolliver.Ronald@epa.gov>; Jenkins, Brandi <Jenkins.Brandi@epa.gov>; Glass, John <glassjp@dhec.sc.gov>; McAvoy, Bryan P. <mcavoybp@dhec.sc.gov>; Pinkney, James <Pinkney.James@epa.gov>
Subject: Re: Able PM

Yesterday's 24 hour averages (Aug 19 Midnight to midnight)
Palmetto Exterminators **PM10** 9 ug/M3 (Good)
Schinger 2.5 13 ug/M3 (Moderate)
Okatie Elementary PM2.5 7 ug/M3 (Good)

20th s numbers about the same as 19th - but Schinger has been getting impacted since midnight, so not yet time to relax.

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From: Reynolds, Scott <REYNOLDS@dhec.sc.gov>
Sent: Tuesday, August 20, 2019 8:40 AM
To: Frost, Keith <frostrk@dhec.sc.gov>; Thompson, Rhonda <thompsrb@dhec.sc.gov>; Reece, Myra <reecemc@dhec.sc.gov>; Marshall, Frances (Fran) <marshaf2@dhec.sc.gov>; Marcus, Mike <MARCUSJM@dhec.sc.gov>; Porter, Henry <porterhj@dhec.sc.gov>; Keisler, Van <keislecv@dhec.sc.gov>; Blalock, Juli <blalocje@dhec.sc.gov>; Taylor, Monica N. <TAYLORMN@dhec.sc.gov>; Dickman, Jacquelyn S. <DICKMAJS@dhec.sc.gov>; Timmerman, Kelsey A. <timmerka@dhec.sc.gov>; Threatt, Richard <threatrl@dhec.sc.gov>; Boswell, Wendy <BOSWELWM@dhec.sc.gov>; Huyser, Matthew <huyser.matthew@epa.gov>; Stewart, R. Gary <stewarrg@dhec.sc.gov>; Quina III, Gregory <quinags@dhec.sc.gov>; Boyce, Lawra <boycelc@dhec.sc.gov>; frederick.tim@epa.gov <frederick.tim@epa.gov>; Crooks, Carol <Crookscl@DHEC.SC.GOV>; Shealy, Renee <shealyrg@dhec.sc.gov>; Tolliver, Ronald <Tolliver.Ronald@epa.gov>; Jenkins, Brandi <Jenkins.Brandi@epa.gov>; Glass, John <glassjp@dhec.sc.gov>; McAvoy, Bryan P. <mcavoybp@dhec.sc.gov>; Pinkney, James <Pinkney.James@epa.gov>
Subject: Re: Able PM

Yesterday's 24 hour averages (Aug 19 Midnight to midnight)
Palmetto Exterminators **PM10** 9 ug/M3 (Good)
Schinger 2.5 17 ug/M3 (Moderate)
Okatie Elementary PM2.5 7 ug/M3 (Good)

.. with a 'bonus' graph with the high concentrations of 8/13 rolled off, vertical scale reduced, and a bit more detail visible in the good to moderate data we've seen lately. Here and at the monitors- pay attention to the vertical scale...

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From: Reynolds, Scott <REYNOLDS@dhec.sc.gov>
Sent: Monday, August 19, 2019 8:30:25 AM
To: Frost, Keith <frostrk@dhec.sc.gov>; Thompson, Rhonda <thompsrb@dhec.sc.gov>; Reece, Myra <reecemc@dhec.sc.gov>; Marshall, Frances (Fran) <marshaf2@dhec.sc.gov>; Marcus, Mike <MARCUSJM@dhec.sc.gov>; Porter, Henry <porterhj@dhec.sc.gov>; Keisler, Van <keislecv@dhec.sc.gov>; Blalock, Juli <blalocje@dhec.sc.gov>; Taylor, Monica N. <TAYLORMN@dhec.sc.gov>; Dickman, Jacquelyn S. <DICKMAJS@dhec.sc.gov>; Timmerman, Kelsey A. <timmerka@dhec.sc.gov>; Threatt, Richard <threatrl@dhec.sc.gov>; Boswell, Wendy <BOSWELWM@dhec.sc.gov>; Huyser, Matthew <huyser.matthew@epa.gov>; Stewart, R. Gary <stewarrg@dhec.sc.gov>; Quina III, Gregory <quinags@dhec.sc.gov>; Boyce, Lawra <boycelc@dhec.sc.gov>; frederick.tim@epa.gov <frederick.tim@epa.gov>; Crooks, Carol <Crookscl@DHEC.SC.GOV>; Shealy, Renee <shealyrg@dhec.sc.gov>; Tolliver, Ronald <Tolliver.Ronald@epa.gov>; Jenkins, Brandi <Jenkins.Brandi@epa.gov>; Glass, John <glassjp@dhec.sc.gov>; McAvoy, Bryan P. <mcavoybp@dhec.sc.gov>; Pinkney, James <Pinkney.James@epa.gov>
Subject: Re: Able PM

Yesterday's 24 hour averages (Aug 18 Midnight to midnight)

Palmetto Exterminators **PM10** 4 ug/M3 (Good)
Schinger 2.5 23 ug/M3 (Moderate)
Okatie Elementary PM2.5 4 ug/M3 (Good)

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From: Reynolds, Scott <REYNOLDS@dhec.sc.gov>
Sent: Sunday, August 18, 2019 8:03:42 AM
To: Frost, Keith <frostrk@dhec.sc.gov>; Thompson, Rhonda <thompsrb@dhec.sc.gov>; Reece, Myra <reecemc@dhec.sc.gov>; Marshall, Frances (Fran) <marshaf2@dhec.sc.gov>; Marcus, Mike <MARCUSJM@dhec.sc.gov>; Porter, Henry <porterhj@dhec.sc.gov>; Keisler, Van <keislecv@dhec.sc.gov>; Blalock, Juli <blalocje@dhec.sc.gov>; Taylor, Monica N. <TAYLORMN@dhec.sc.gov>; Dickman, Jacquelyn S. <DICKMAJS@dhec.sc.gov>; Timmerman, Kelsey A. <timmerka@dhec.sc.gov>; Threatt, Richard <threatrl@dhec.sc.gov>; Boswell, Wendy <BOSWELWM@dhec.sc.gov>; Huyser, Matthew <huyser.matthew@epa.gov>; Stewart, R. Gary <stewarrg@dhec.sc.gov>; Quina III, Gregory <quinags@dhec.sc.gov>; Boyce, Lawra <boycelc@dhec.sc.gov>; frederick.tim@epa.gov <frederick.tim@epa.gov>; Crooks, Carol <Crookscl@DHEC.SC.GOV>; Shealy, Renee <shealyrg@dhec.sc.gov>; Tolliver, Ronald <Tolliver.Ronald@epa.gov>; Jenkins, Brandi <Jenkins.Brandi@epa.gov>; Glass, John <glassjp@dhec.sc.gov>; McAvoy, Bryan P. <mcavoybp@dhec.sc.gov>; Pinkney, James <Pinkney.James@epa.gov>
Subject: Re: Able PM

Yesterday's 24 hour averages (Aug 17 Midnight to midnight)
Palmetto Exterminators **PM10** 6 ug/M3 (Good)
Schinger 2.5 51 ug/M3 (Unhealthy for Sensitive Groups)
Okatie Elementary PM2.5 4 ug/M3 (Good)

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From: Reynolds, Scott <REYNOLDS@dhec.sc.gov>
Sent: Saturday, August 17, 2019 8:00:18 AM
To: Frost, Keith <frostrk@dhec.sc.gov>; Thompson, Rhonda <thompsrb@dhec.sc.gov>; Reece, Myra <reecemc@dhec.sc.gov>; Marshall, Frances (Fran) <marshaf2@dhec.sc.gov>; Marcus, Mike <MARCUSJM@dhec.sc.gov>; Porter, Henry <porterhj@dhec.sc.gov>; Keisler, Van <keislecv@dhec.sc.gov>; Blalock, Juli <blalocje@dhec.sc.gov>; Taylor, Monica N. <TAYLORMN@dhec.sc.gov>; Dickman, Jacquelyn S. <DICKMAJS@dhec.sc.gov>; Timmerman, Kelsey A. <timmerka@dhec.sc.gov>; Threatt, Richard <threatrl@dhec.sc.gov>; Boswell, Wendy <BOSWELWM@dhec.sc.gov>; Huyser, Matthew <huyser.matthew@epa.gov>; Stewart, R. Gary <stewarrg@dhec.sc.gov>; Quina III, Gregory <quinags@dhec.sc.gov>; Boyce, Lawra <boycelc@dhec.sc.gov>; frederick.tim@epa.gov <frederick.tim@epa.gov>; Crooks, Carol <Crookscl@DHEC.SC.GOV>; Shealy, Renee <shealyrg@dhec.sc.gov>; Tolliver, Ronald <Tolliver.Ronald@epa.gov>; Jenkins, Brandi <Jenkins.Brandi@epa.gov>; Pinckney, Jennifer M. <pincknjm@dhec.sc.gov>; Glass, John <glassjp@dhec.sc.gov>; McAvoy, Bryan P.

<mcavoybp@dhec.sc.gov>
Subject: Re: Able PM

Like yesterday- with the volume turned down a bit.
A good trend. .

Yesterday's 24 hour averages (Aug 16 Midnight to midnight)
Palmetto Exterminators **PM10** 4 ug/M3 (Good)
Schinger 2.5 49 ug/M3 (Unhealthy for Sensitive Groups)
Okatie Elementary PM2.5 3 ug/M3 (Good)

As a a bonus , the Movie of the Week (literally) has been posted under 'Timelapse'. 8/8-17
The hd versions best viewed after downloading.

<pastedImage.png>

From: Reynolds, Scott <REYNOLDS@dhec.sc.gov>
Sent: Friday, August 16, 2019 8:11:50 AM
To: Frost, Keith <frostrk@dhec.sc.gov>; Thompson, Rhonda <thompsrb@dhec.sc.gov>; Reece, Myra <reecemc@dhec.sc.gov>; Marshall, Frances (Fran) <marshaf2@dhec.sc.gov>; Marcus, Mike <MARCUSJM@dhec.sc.gov>; Porter, Henry <porterhj@dhec.sc.gov>; Keisler, Van <keislecv@dhec.sc.gov>; Blalock, Juli <blalocje@dhec.sc.gov>; Taylor, Monica N. <TAYLORMN@dhec.sc.gov>; Dickman, Jacquelyn S. <DICKMAJS@dhec.sc.gov>; Timmerman, Kelsey A. <timmerka@dhec.sc.gov>; Threatt, Richard <threatrl@dhec.sc.gov>; Boswell, Wendy <BOSWELWM@dhec.sc.gov>; Huyser, Matthew <huyser.matthew@epa.gov>; Stewart, R. Gary <stewarrg@dhec.sc.gov>; Quina III, Gregory <quinags@dhec.sc.gov>; Boyce, Lawra <boycelc@dhec.sc.gov>; frederick.tim@epa.gov <frederick.tim@epa.gov>; Crooks, Carol <Crookscl@DHEC.SC.GOV>; Shealy, Renee <shealyrg@dhec.sc.gov>; Tolliver, Ronald <Tolliver.Ronald@epa.gov>; Jenkins, Brandi <Jenkins.Brandi@epa.gov>; Pinckney, Jennifer M. <pincknjm@dhec.sc.gov>; Glass, John <glassjp@dhec.sc.gov>; McAvoy, Bryan P. <mcavoybp@dhec.sc.gov>
Subject: Re: Able PM

The concentration and the Category at Palmetto Exterminators is based on a PM10 sensor that has been shown to be well correlated with the PM2.5 measurements at that location .

Yesterday's 24 hour averages (Aug 15 Midnight to midnight)
Palmetto Exterminators **PM10** 9 ug/M3 (Good)
Schinger 2.5 51 ug/M3 (Unhealthy for Sensitive Groups)
Okatie Elementary PM2.5 6 ug/M3 (Good)

<pastedImage.png>

From: Reynolds, Scott <REYNOLDS@dhec.sc.gov>
Sent: Thursday, August 15, 2019 8:19:45 AM
To: Frost, Keith <frostrk@dhec.sc.gov>; Thompson, Rhonda <thompsrb@dhec.sc.gov>; Reece, Myra <reecemc@dhec.sc.gov>; Marshall, Frances (Fran) <marshaf2@dhec.sc.gov>; Marcus, Mike <MARCUSJM@dhec.sc.gov>; Porter, Henry <porterhj@dhec.sc.gov>; Keisler, Van <keislecv@dhec.sc.gov>; Blalock, Juli <blalocje@dhec.sc.gov>; Taylor, Monica N. <TAYLORMN@dhec.sc.gov>; Dickman, Jacquelyn S. <DICKMAJS@dhec.sc.gov>; Timmerman, Kelsey A. <timmerka@dhec.sc.gov>; Threatt, Richard <threatrl@dhec.sc.gov>; Boswell, Wendy <BOSWELWM@dhec.sc.gov>; Huyser, Matthew <huyser.matthew@epa.gov>; Stewart, R. Gary <stewarrg@dhec.sc.gov>; Quina III, Gregory <quinags@dhec.sc.gov>; Boyce, Lawra <boycelc@dhec.sc.gov>; frederick.tim@epa.gov <frederick.tim@epa.gov>; Crooks, Carol <Crookscl@DHEC.SC.GOV>; Shealy, Renee <shealyrg@dhec.sc.gov>; Tolliver, Ronald <Tolliver.Ronald@epa.gov>; Jenkins, Brandi <Jenkins.Brandi@epa.gov>; Pinckney, Jennifer M. <pincknjm@dhec.sc.gov>; Glass, John <glassjp@dhec.sc.gov>; McAvoy, Bryan P. <mcavoybp@dhec.sc.gov>
Subject: Re: Able PM

The concentration and the Category at Palmetto Exterminators is based on a PM10 sensor that has been shown to be well correlated with the PM2.5 measurements at that location . The PE sensor did not report the last two expected readings . May need to be checked if that continues.

Yesterday's 24 hour averages (Aug 13 Midnight to midnight)
Palmetto Exterminators **PM10** 11 ug/M3 (Good)
Schinger 2.5 42 ug/M3 (Unhealthy for Sensitive Groups)
Okatie Elementary PM2.5 9 ug/M3 (Good)

<pastedImage.png>

From: Reynolds, Scott <REYNOLDS@dhec.sc.gov>
Sent: Wednesday, August 14, 2019 7:58:26 AM
To: Frost, Keith <frostrk@dhec.sc.gov>; Thompson, Rhonda <thompsrb@dhec.sc.gov>; Reece, Myra <reecemc@dhec.sc.gov>; Marshall, Frances (Fran) <marshaf2@dhec.sc.gov>; Marcus, Mike <MARCUSJM@dhec.sc.gov>; Porter, Henry <porterhj@dhec.sc.gov>; Keisler, Van <keislecv@dhec.sc.gov>; Blalock, Juli <blalocje@dhec.sc.gov>; Taylor, Monica N. <TAYLORMN@dhec.sc.gov>; Dickman, Jacquelyn S. <DICKMAJS@dhec.sc.gov>; Timmerman, Kelsey A. <timmerka@dhec.sc.gov>; Threatt, Richard <threatrl@dhec.sc.gov>; Boswell, Wendy <BOSWELWM@dhec.sc.gov>; Huyser, Matthew <huyser.matthew@epa.gov>; Stewart, R. Gary <stewarrg@dhec.sc.gov>; Quina III, Gregory <quinags@dhec.sc.gov>; Boyce, Lawra <boycelc@dhec.sc.gov>; frederick.tim@epa.gov <frederick.tim@epa.gov>; Crooks, Carol <Crookscl@DHEC.SC.GOV>; Shealy, Renee <shealyrg@dhec.sc.gov>; Tolliver, Ronald <Tolliver.Ronald@epa.gov>; Jenkins, Brandi <Jenkins.Brandi@epa.gov>; Pinckney, Jennifer M. <pincknjm@dhec.sc.gov>
Subject: Re: Able PM

First 24Hr PM2.5 at Okatie elementary

The concentration and the Category at Palmetto Exterminators will be based on a PM10 sensor that has been shown to be well correlated with the PM2.5 measurements at that location

Yesterday's 24 hour averages (Aug 13 Midnight to midnight)
Palmetto Exterminators **PM10** 48 ug/M3 (Unhealthy for Sensitive Groups)
Schinger 2.5 86 ug/M3 (Unhealthy)
Okatie Elementary PM2.5 8 ug/M3 (Good)

<pastedImage.png>

From: Reynolds, Scott <REYNOLDS@dhec.sc.gov>
Sent: Tuesday, August 13, 2019 9:02:50 AM
To: Frost, Keith <frostrk@dhec.sc.gov>; Thompson, Rhonda <thompsrb@dhec.sc.gov>; Reece, Myra <reecemc@dhec.sc.gov>; Marshall, Frances (Fran) <marshaf2@dhec.sc.gov>; Marcus, Mike <MARCUSJM@dhec.sc.gov>; Porter, Henry <porterhj@dhec.sc.gov>; Keisler, Van <keislecv@dhec.sc.gov>; Blalock, Juli <blalocje@dhec.sc.gov>; Taylor, Monica N. <TAYLORMN@dhec.sc.gov>; Dickman, Jacquelyn S. <DICKMAJS@dhec.sc.gov>; Timmerman, Kelsey A. <timmerka@dhec.sc.gov>; Threatt, Richard <threatrl@dhec.sc.gov>; Boswell, Wendy <BOSWELWM@dhec.sc.gov>; Huyser, Matthew <huyser.matthew@epa.gov>; Stewart, R. Gary <stewarrg@dhec.sc.gov>; Quina III, Gregory <quinags@dhec.sc.gov>; Boyce, Lawra <boycelc@dhec.sc.gov>; frederick.tim@epa.gov <frederick.tim@epa.gov>; Crooks, Carol <Crookscl@DHEC.SC.GOV>; Shealy, Renee <shealyrg@dhec.sc.gov>; Tolliver, Ronald <Tolliver.Ronald@epa.gov>; Jenkins, Brandi <Jenkins.Brandi@epa.gov>; Pinckney, Jennifer M. <pincknjm@dhec.sc.gov>
Subject: Re: Able PM

Some changes in the DHEC sensors since yesterday

PM2.5 has been added at Okatie elementary - added to the chart , but we do not yet have 24 hours of data for the average, but it has been the 'Good' range so far.
The concentration and the Category at Palmetto Exterminators will be based on a PM10 sensor that has been shown to be well correlated with the PM2.5 measurements at that location

Yesterday's 24 hour averages (Aug 12 Midnight to midnight)
Palmetto Exterminators **PM10** 17 ug/M3 (Good)
Schinger 2.5 14 ug/M3 (Moderate)
Okatie Elementary PM2.5 Tomorrow..

<pastedImage.png>

From: Reynolds, Scott <REYNOLDS@dhec.sc.gov>
Sent: Monday, August 12, 2019 9:07:24 AM
To: Frost, Keith <frostrk@dhec.sc.gov>; Thompson, Rhonda <thompsrb@dhec.sc.gov>; Reece, Myra <reecemc@dhec.sc.gov>; Marshall, Frances (Fran) <marshaf2@dhec.sc.gov>; Marcus, Mike

<MARCUSJM@dhec.sc.gov>; Porter, Henry <porterhj@dhec.sc.gov>; Keisler, Van <keislecv@dhec.sc.gov>; Blalock, Juli <blalocje@dhec.sc.gov>; Taylor, Monica N. <TAYLORMN@dhec.sc.gov>; Dickman, Jacquelyn S. <DICKMAJS@dhec.sc.gov>; Timmerman, Kelsey A. <timmerka@dhec.sc.gov>; Threatt, Richard <threatrl@dhec.sc.gov>; Boswell, Wendy <BOSWELWM@dhec.sc.gov>; Huyser, Matthew <huyser.matthew@epa.gov>; Stewart, R. Gary <stewarrg@dhec.sc.gov>; Quina III, Gregory <quinags@dhec.sc.gov>; Boyce, Lawra <boycelc@dhec.sc.gov>; frederick.tim@epa.gov <frederick.tim@epa.gov>; Crooks, Carol <Crookscl@DHEC.SC.GOV>; Shealy, Renee <shealyrg@dhec.sc.gov>; Tolliver, Ronald <Tolliver.Ronald@epa.gov>; Jenkins, Brandi <Jenkins.Brandi@epa.gov>; Pinckney, Jennifer M. <pincknjm@dhec.sc.gov>
Subject: Able PM

Yesterday's 24 hour averages (Aug 11 Midnight to midnight)

Palmetto Exterminators	28 ug/M3	(Moderate)
Schinger	140 ug/M3	(Unhealthy)

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Armstrong, Kathy

From: Frost, Keith <frostrk@dhec.sc.gov>
Sent: Monday, September 09, 2019 1:27 PM
To: Scott Reynolds
Cc: thompsrb@dhec.sc.gov; reecemc@dhec.sc.gov; Marshall, Frances (Fran); Marcus, Mike; Porter, Henry; Keisler, Van; Blalock, Juli; Taylor, Monica N.; Dickman, Jacquelyn S.; Timmerman, Kelsey A.; Threatt, Richard; Boswell, Wendy; Stewart, R. Gary; Quina III, Gregory; Boyce, Lawra; Crooks, Carol; shealyrg@dhec.sc.gov; Glass, John; McAvoy, Bryan P.; Swanson, Courtney; Spurlin, Steve; Tanner, Terry; Byrd, Terrence; Pinkney, James; Frederick, Tim; Huyser, Matthew; Tolliver, Ronald; Jenkins, Brandi
Subject: Re: Able PM

One correction, the sensor from Palmetto Exterminators was relocated to the mobile home park and the one that was there, was relocated to Sun City. The dashboard will show you the location of the monitor you are viewing.

R. Keith Frost, Assistant Chief
Bureau of Air Quality
SC DHEC

(803) 898-4115 office
(803) 465-1529 cell

Sent from my iPhone

On Sep 9, 2019, at 12:55 PM, Reynolds, Scott <REYNOLDS@dhec.sc.gov> wrote:

> No numbers
> No Graphs
> **BUT**
> If you need a fix,
> the sensors were reinstalled midday Sunday(9/8) at Schinger and Okatie Elementary. The sensor at the Palmetto Exterminators site has been discontinued and installed in Sun CIty.
> The DHEC Web App has been updated to show the current locations and data.
> Unless there is a change from current conditions, there will not be a daily email . Data and and graphs will still be updated and available on the OneDrive.
> If you want to be SURE you're off the list, just let me know.
>
> ---
>
> **From:** Reynolds, Scott <REYNOLDS@dhec.sc.gov>
> **Sent:** Sunday, September 1, 2019 8:08 AM
> **To:** Frost, Keith <frostrk@dhec.sc.gov>; Thompson, Rhonda <thompsrb@dhec.sc.gov>; Reece, Myra <reecemc@dhec.sc.gov>; Marshall, Frances (Fran) <marshaf2@dhec.sc.gov>; Marcus, Mike <MARCUSJM@dhec.sc.gov>; Porter, Henry <porterhj@dhec.sc.gov>; Keisler, Van <keislecv@dhec.sc.gov>; Blalock, Juli <blalocje@dhec.sc.gov>; Taylor, Monica N. <TAYLORMN@dhec.sc.gov>; Dickman, Jacquelyn S. <DICKMAJS@dhec.sc.gov>; Timmerman, Kelsey A. <timmerka@dhec.sc.gov>; Threatt, Richard <threatrl@dhec.sc.gov>; Boswell, Wendy <BOSWELWM@dhec.sc.gov>; Stewart, R. Gary <stewarrg@dhec.sc.gov>; Quina III, Gregory <quinags@dhec.sc.gov>; Boyce, Lawra <boycelc@dhec.sc.gov>; Crooks, Carol <Crookscl@DHEC.SC.GOV>; Shealy, Renee <shealyrg@dhec.sc.gov>; Glass, John <glassjp@dhec.sc.gov>; McAvoy, Bryan P. <mcavoybp@dhec.sc.gov>

Cc: Swanson.Courtney@epa.gov <Swanson.Courtney@epa.gov>; Spurlin.Steve@epa.gov <Spurlin.Steve@epa.gov>; Tanner.Terry@epa.gov <Tanner.Terry@epa.gov>; Byrd, Terrence <byrd.terrence@epa.gov>; Pinkney, James <Pinkney.James@epa.gov>; frederick.tim@epa.gov <frederick.tim@epa.gov>; Huyser, Matthew <huyser.matthew@epa.gov>; Tolliver, Ronald <Tolliver.Ronald@epa.gov>; Jenkins, Brandi <Jenkins.Brandi@epa.gov>
Subject: Re: Able PM

Yesterday's 24 hour averages (Aug 30 Midnight to midnight)
Palmetto Exterminators **PM10** 3 ug/M3 (Good)
Schinger 2.5 4 ug/M3 (Good)
Okatie Elementary PM2.5 3 ug/M3 (Good)

Monitors are being removed today in preparation for Dorian, but going out with lowest 3 site total since we started (lowest 24 hr average at 2 of the 3 sites).
'Clean' bonus graph below.

<pastedImage.png>

<pastedImage.png>

From: Reynolds, Scott <REYNOLDS@dhec.sc.gov>
Sent: Saturday, August 31, 2019 8:21:27 AM
To: Frost, Keith <frostrk@dhec.sc.gov>; Thompson, Rhonda <thompsrb@dhec.sc.gov>; Reece, Myra <reecemc@dhec.sc.gov>; Marshall, Frances (Fran) <marshaf2@dhec.sc.gov>; Marcus, Mike <MARCUSJM@dhec.sc.gov>; Porter, Henry <porterhj@dhec.sc.gov>; Keisler, Van <keislecv@dhec.sc.gov>; Blalock, Juli <blalocje@dhec.sc.gov>; Taylor, Monica N. <TAYLORMN@dhec.sc.gov>; Dickman, Jacquelyn S. <DICKMAJS@dhec.sc.gov>; Timmerman, Kelsey A. <timmerka@dhec.sc.gov>; Threatt, Richard <threatrl@dhec.sc.gov>; Boswell, Wendy <BOSWELWM@dhec.sc.gov>; Stewart, R. Gary <stewarrg@dhec.sc.gov>; Quina III, Gregory <quinags@dhec.sc.gov>; Boyce, Lawra <boycelc@dhec.sc.gov>; Crooks, Carol <Crookscl@DHEC.SC.GOV>; Shealy, Renee <shealyrg@dhec.sc.gov>; Glass, John <glassjp@dhec.sc.gov>; McAvoy, Bryan P. <mcavoybp@dhec.sc.gov>
Cc: Swanson.Courtney@epa.gov <Swanson.Courtney@epa.gov>; Spurlin.Steve@epa.gov <Spurlin.Steve@epa.gov>; Tanner.Terry@epa.gov <Tanner.Terry@epa.gov>; Byrd, Terrence <byrd.terrence@epa.gov>; Pinkney, James <Pinkney.James@epa.gov>; frederick.tim@epa.gov <frederick.tim@epa.gov>; Huyser, Matthew <huyser.matthew@epa.gov>; Tolliver, Ronald <Tolliver.Ronald@epa.gov>; Jenkins, Brandi <Jenkins.Brandi@epa.gov>
Subject: Re: Able PM

Yesterday's 24 hour averages (Aug 30 Midnight to midnight)
Palmetto Exterminators **PM10** Data not available(but operating and in GOOD range)
Schinger 2.5 6 ug/M3 (Good)
Okatie Elementary PM2.5 4 ug/M3 (Good)

Boring in a good way
Not so good - Dorian's track forecast shift (below)

<pastedImage.png>
8 AM Graphic
<pastedImage.png>

From: Reynolds, Scott <REYNOLDS@dhec.sc.gov>
Sent: Friday, August 30, 2019 9:17:18 AM
To: Frost, Keith <frostrk@dhec.sc.gov>; Thompson, Rhonda <thompsrb@dhec.sc.gov>; Reece, Myra <reecemc@dhec.sc.gov>; Marshall, Frances (Fran) <marshaf2@dhec.sc.gov>; Marcus, Mike <MARCUSJM@dhec.sc.gov>; Porter, Henry <porterhj@dhec.sc.gov>; Keisler, Van <keislecv@dhec.sc.gov>; Blalock, Juli <blalocje@dhec.sc.gov>; Taylor, Monica N. <TAYLORMN@dhec.sc.gov>; Dickman, Jacquelyn S. <DICKMAJS@dhec.sc.gov>; Timmerman, Kelsey A. <timmerka@dhec.sc.gov>; Threatt, Richard <threatrl@dhec.sc.gov>; Boswell, Wendy <BOSWELWM@dhec.sc.gov>; Stewart, R. Gary <stewarrg@dhec.sc.gov>; Quina III, Gregory <quinags@dhec.sc.gov>; Boyce, Lawra <boycelc@dhec.sc.gov>; Crooks, Carol <Crookscl@DHEC.SC.GOV>; Shealy, Renee <shealyrg@dhec.sc.gov>; Glass, John <glassjp@dhec.sc.gov>; McAvoy, Bryan P. <mcavoybp@dhec.sc.gov>
Cc: Swanson.Courtney@epa.gov <Swanson.Courtney@epa.gov>; Spurlin.Steve@epa.gov <Spurlin.Steve@epa.gov>; Tanner.Terry@epa.gov <Tanner.Terry@epa.gov>; Byrd, Terrence <byrd.terrence@epa.gov>; Pinkney, James <Pinkney.James@epa.gov>; frederick.tim@epa.gov <frederick.tim@epa.gov>; Huyser, Matthew <huyser.matthew@epa.gov>; Tolliver, Ronald <Tolliver.Ronald@epa.gov>; Jenkins, Brandi <Jenkins.Brandi@epa.gov>
Subject: Re: Able PM

Yesterday's 24 hour averages (Aug 28 Midnight to midnight)
Palmetto Exterminators **PM10** Data not available
Schinger 2.5 7 ug/M3 (Good)
Okatie Elementary PM2.5 5 ug/M3 (Good)

<pastedImage.png>

<pastedImage.png>

From: Reynolds, Scott <REYNOLDS@dhec.sc.gov>
Sent: Thursday, August 29, 2019 9:07:23 AM
To: Frost, Keith <frostrk@dhec.sc.gov>; Thompson, Rhonda <thompsrb@dhec.sc.gov>; Reece, Myra <reecemc@dhec.sc.gov>; Marshall, Frances (Fran) <marshaf2@dhec.sc.gov>; Marcus, Mike <MARCUSJM@dhec.sc.gov>; Porter, Henry <porterhj@dhec.sc.gov>; Keisler, Van <keislecv@dhec.sc.gov>; Blalock, Juli <blalocje@dhec.sc.gov>; Taylor, Monica N. <TAYLORMN@dhec.sc.gov>; Dickman, Jacquelyn S. <DICKMAJS@dhec.sc.gov>; Timmerman, Kelsey A. <timmerka@dhec.sc.gov>; Threatt, Richard <threatrl@dhec.sc.gov>; Boswell, Wendy <BOSWELWM@dhec.sc.gov>; Stewart, R. Gary <stewarrg@dhec.sc.gov>; Quina III, Gregory <quinags@dhec.sc.gov>; Boyce, Lawra <boycelc@dhec.sc.gov>; Crooks, Carol <Crookscl@DHEC.SC.GOV>; Shealy, Renee <shealyrg@dhec.sc.gov>; Glass, John <glassjp@dhec.sc.gov>; McAvoy, Bryan P. <mcavoybp@dhec.sc.gov>
Cc: Swanson.Courtney@epa.gov <Swanson.Courtney@epa.gov>; Spurlin.Steve@epa.gov <Spurlin.Steve@epa.gov>; Tanner.Terry@epa.gov <Tanner.Terry@epa.gov>; Byrd, Terrence <byrd.terrence@epa.gov>; Pinkney, James <Pinkney.James@epa.gov>; frederick.tim@epa.gov <frederick.tim@epa.gov>; Huyser, Matthew <huyser.matthew@epa.gov>; Tolliver, Ronald <Tolliver.Ronald@epa.gov>; Jenkins, Brandi <Jenkins.Brandi@epa.gov>
Subject: Re: Able PM

Yesterday's 24 hour averages (Aug 28 Midnight to midnight)
Palmetto Exterminators **PM10** 6 ug/M3 (Good)
Schinger 2.5 6 ug/M3 (Good)
Okatie Elementary PM2.5 5 ug/M3 (Good)

.. and a bonus chart of the last few days below

<pastedImage.png>
The overnight 'bump' appears to be regional also being evidenced in the Charleston data
<pastedImage.png>

From: Reynolds, Scott <REYNOLDS@dhec.sc.gov>
Sent: Wednesday, August 28, 2019 8:35:17 AM
To: Frost, Keith <frostrk@dhec.sc.gov>; Thompson, Rhonda <thompsrb@dhec.sc.gov>; Reece, Myra <reecemc@dhec.sc.gov>; Marshall, Frances (Fran) <marshaf2@dhec.sc.gov>; Marcus, Mike <MARCUSJM@dhec.sc.gov>; Porter, Henry <porterhj@dhec.sc.gov>; Keisler, Van <keislecv@dhec.sc.gov>; Blalock, Juli <blalocje@dhec.sc.gov>; Taylor, Monica N. <TAYLORMN@dhec.sc.gov>; Dickman, Jacquelyn S. <DICKMAJS@dhec.sc.gov>; Timmerman, Kelsey A. <timmerka@dhec.sc.gov>; Threatt, Richard <threatrl@dhec.sc.gov>; Boswell, Wendy <BOSWELWM@dhec.sc.gov>; Stewart, R. Gary <stewarrg@dhec.sc.gov>; Quina III, Gregory <quinags@dhec.sc.gov>; Boyce, Lawra <boycelc@dhec.sc.gov>; Crooks, Carol <Crookscl@DHEC.SC.GOV>; Shealy, Renee <shealyrg@dhec.sc.gov>; Glass, John <glassjp@dhec.sc.gov>; McAvoy, Bryan P. <mcavoybp@dhec.sc.gov>
Cc: Swanson.Courtney@epa.gov <Swanson.Courtney@epa.gov>; Spurlin.Steve@epa.gov <Spurlin.Steve@epa.gov>; Tanner.Terry@epa.gov <Tanner.Terry@epa.gov>; Byrd, Terrence <byrd.terrence@epa.gov>; Pinkney, James <Pinkney.James@epa.gov>; frederick.tim@epa.gov <frederick.tim@epa.gov>; Huyser, Matthew <huyser.matthew@epa.gov>; Tolliver, Ronald <Tolliver.Ronald@epa.gov>; Jenkins, Brandi <Jenkins.Brandi@epa.gov>
Subject: Re: Able PM

Yesterday's 24 hour averages (Aug 27 Midnight to midnight)
Palmetto Exterminators **PM10** 8 ug/M3 (Good)
Schinger 2.5 7 ug/M3 (Good)
Okatie Elementary PM2.5 3 ug/M3 (Good)

Third day no double digits...

<pastedImage.png>

From: Reynolds, Scott <REYNOLDS@dhec.sc.gov>
Sent: Tuesday, August 27, 2019 8:23 AM
To: Frost, Keith <frostrk@dhec.sc.gov>; Thompson, Rhonda <thompsrb@dhec.sc.gov>; Reece, Myra

<reecemc@dhec.sc.gov>; Marshall, Frances (Fran) <marshaf2@dhec.sc.gov>; Marcus, Mike <MARCUSJM@dhec.sc.gov>; Porter, Henry <porterhj@dhec.sc.gov>; Keisler, Van <keislecv@dhec.sc.gov>; Blalock, Juli <blalocje@dhec.sc.gov>; Taylor, Monica N. <TAYLORMN@dhec.sc.gov>; Dickman, Jacquelyn S. <DICKMAJS@dhec.sc.gov>; Timmerman, Kelsey A. <timmerka@dhec.sc.gov>; Threatt, Richard <threatrl@dhec.sc.gov>; Boswell, Wendy <BOSWELWM@dhec.sc.gov>; Stewart, R. Gary <stewarrg@dhec.sc.gov>; Quina III, Gregory <quinags@dhec.sc.gov>; Boyce, Lawra <boycelc@dhec.sc.gov>; Crooks, Carol <Crookscl@DHEC.SC.GOV>; Shealy, Renee <shealyrg@dhec.sc.gov>; Glass, John <glassjp@dhec.sc.gov>; McAvoy, Bryan P. <mcavoybp@dhec.sc.gov>
Cc: Swanson.Courtney@epa.gov <Swanson.Courtney@epa.gov>; Russell.Chris@epa.gov <Russell.Chris@epa.gov>; Spurlin.Steve@epa.gov <Spurlin.Steve@epa.gov>; Tanner.Terry@epa.gov <Tanner.Terry@epa.gov>; Byrd, Terrence <byrd.terrence@epa.gov>; Pinkney, James <Pinkney.James@epa.gov>; frederick.tim@epa.gov <frederick.tim@epa.gov>; Huyser, Matthew <huyser.matthew@epa.gov>; Tolliver, Ronald <Tolliver.Ronald@epa.gov>; Jenkins, Brandi <Jenkins.Brandi@epa.gov>
Subject: Re: Able PM

Yesterday's 24 hour averages (Aug 26 Midnight to midnight)
Palmetto Exterminators **PM10** 6 ug/M3 (Good)
Schinger 2.5 7 ug/M3 (Good)
Okatie Elementary PM2.5 4 ug/M3 (Good)

<pastedImage.png>

From: Reynolds, Scott <REYNOLDS@dhec.sc.gov>
Sent: Monday, August 26, 2019 8:49:28 AM
To: Frost, Keith <frostrk@dhec.sc.gov>; Thompson, Rhonda <thompsrb@dhec.sc.gov>; Reece, Myra <reecemc@dhec.sc.gov>; Marshall, Frances (Fran) <marshaf2@dhec.sc.gov>; Marcus, Mike <MARCUSJM@dhec.sc.gov>; Porter, Henry <porterhj@dhec.sc.gov>; Keisler, Van <keislecv@dhec.sc.gov>; Blalock, Juli <blalocje@dhec.sc.gov>; Taylor, Monica N. <TAYLORMN@dhec.sc.gov>; Dickman, Jacquelyn S. <DICKMAJS@dhec.sc.gov>; Timmerman, Kelsey A. <timmerka@dhec.sc.gov>; Threatt, Richard <threatrl@dhec.sc.gov>; Boswell, Wendy <BOSWELWM@dhec.sc.gov>; Stewart, R. Gary <stewarrg@dhec.sc.gov>; Quina III, Gregory <quinags@dhec.sc.gov>; Boyce, Lawra <boycelc@dhec.sc.gov>; Crooks, Carol <Crookscl@DHEC.SC.GOV>; Shealy, Renee <shealyrg@dhec.sc.gov>; Glass, John <glassjp@dhec.sc.gov>; McAvoy, Bryan P. <mcavoybp@dhec.sc.gov>
Cc: Swanson.Courtney@epa.gov <Swanson.Courtney@epa.gov>; Russell.Chris@epa.gov <Russell.Chris@epa.gov>; Spurlin.Steve@epa.gov <Spurlin.Steve@epa.gov>; Tanner.Terry@epa.gov <Tanner.Terry@epa.gov>; Byrd, Terrence <byrd.terrence@epa.gov>; Pinkney, James <Pinkney.James@epa.gov>; frederick.tim@epa.gov <frederick.tim@epa.gov>; Huyser, Matthew <huyser.matthew@epa.gov>; Tolliver, Ronald <Tolliver.Ronald@epa.gov>; Jenkins, Brandi <Jenkins.Brandi@epa.gov>
Subject: Re: Able PM

Yesterday's 24 hour averages (Aug 25 Midnight to midnight)
Palmetto Exterminators **PM10** 6 ug/M3 (Good)

Schinger 2.5 5 ug/M3 (Good)
Okatie Elementary PM2.5 4 ug/M3 (Good)

Winds still indicated steady from generally N since yesterday -as steady in direction as we've seen-towards Sun City

<pastedImage.png>

From: Reynolds, Scott <REYNOLDS@dhec.sc.gov>
Sent: Sunday, August 25, 2019 8:09:46 AM
To: Frost, Keith <frostrk@dhec.sc.gov>; Thompson, Rhonda <thompsrb@dhec.sc.gov>; Reece, Myra <reecemc@dhec.sc.gov>; Marshall, Frances (Fran) <marshaf2@dhec.sc.gov>; Marcus, Mike <MARCUSJM@dhec.sc.gov>; Porter, Henry <porterhj@dhec.sc.gov>; Keisler, Van <keislecv@dhec.sc.gov>; Blalock, Juli <blalocje@dhec.sc.gov>; Taylor, Monica N. <TAYLORMN@dhec.sc.gov>; Dickman, Jacquelyn S. <DICKMAJS@dhec.sc.gov>; Timmerman, Kelsey A. <timmerka@dhec.sc.gov>; Threatt, Richard <threatrl@dhec.sc.gov>; Boswell, Wendy <BOSWELWM@dhec.sc.gov>; Stewart, R. Gary <stewarrg@dhec.sc.gov>; Quina III, Gregory <quinags@dhec.sc.gov>; Boyce, Lawra <boycelc@dhec.sc.gov>; Crooks, Carol <Crookscl@DHEC.SC.GOV>; Shealy, Renee <shealyrg@dhec.sc.gov>; Glass, John <glassjp@dhec.sc.gov>; McAvoy, Bryan P. <mcavoybp@dhec.sc.gov>
Cc: Swanson.Courtney@epa.gov <Swanson.Courtney@epa.gov>; Russell.Chris@epa.gov <Russell.Chris@epa.gov>; Spurlin.Steve@epa.gov <Spurlin.Steve@epa.gov>; Tanner.Terry@epa.gov <Tanner.Terry@epa.gov>; Byrd, Terrence <byrd.terrence@epa.gov>; Pinkney, James <Pinkney.James@epa.gov>; frederick.tim@epa.gov <frederick.tim@epa.gov>; Huyser, Matthew <huyser.matthew@epa.gov>; Tolliver, Ronald <Tolliver.Ronald@epa.gov>; Jenkins, Brandi <Jenkins.Brandi@epa.gov>
Subject: Re: Able PM

Yesterday's 24 hour averages (Aug 24 Midnight to midnight)
Palmetto Exterminators **PM10** 47 ug/M3 (Unhealthy for Sensitive groups)
Schinger 2.5 23 ug/M3 (Moderate)
Okatie Elementary PM2.5 2 ug/M3 (Good)

Winds indicated pretty steady from NNE to NE since midnight -towards Sun City

<pastedImage.png>

From: Reynolds, Scott <REYNOLDS@dhec.sc.gov>
Sent: Saturday, August 24, 2019 7:46 AM
To: Frost, Keith <frostrk@dhec.sc.gov>; Thompson, Rhonda <thompsrb@dhec.sc.gov>; Reece, Myra <reecemc@dhec.sc.gov>; Marshall, Frances (Fran) <marshaf2@dhec.sc.gov>; Marcus, Mike <MARCUSJM@dhec.sc.gov>; Porter, Henry <porterhj@dhec.sc.gov>; Keisler, Van <keislecv@dhec.sc.gov>; Blalock, Juli <blalocje@dhec.sc.gov>; Taylor, Monica N. <TAYLORMN@dhec.sc.gov>; Dickman, Jacquelyn S. <DICKMAJS@dhec.sc.gov>; Timmerman, Kelsey A. <timmerka@dhec.sc.gov>; Threatt, Richard <threatrl@dhec.sc.gov>; Boswell, Wendy

<BOSWELWM@dhec.sc.gov>; Huyser, Matthew <huyser.matthew@epa.gov>; Stewart, R. Gary <stewarrg@dhec.sc.gov>; Quina III, Gregory <quinags@dhec.sc.gov>; Boyce, Lawra <boycelc@dhec.sc.gov>; frederick.tim@epa.gov <frederick.tim@epa.gov>; Crooks, Carol <Crookscl@DHEC.SC.GOV>; Shealy, Renee <shealyrg@dhec.sc.gov>; Tolliver, Ronald <Tolliver.Ronald@epa.gov>; Jenkins, Brandi <Jenkins.Brandi@epa.gov>; Glass, John <glassjp@dhec.sc.gov>; McAvoy, Bryan P. <mcavoybp@dhec.sc.gov>; Pinkney, James <Pinkney.James@epa.gov>
Subject: Re: Able PM

Yesterday's 24 hour averages (Aug 23 Midnight to midnight)
Palmetto Exterminators **PM10** 36 ug/M3 (Unhealthy for Sensitive groups)
Schinger 2.5 34 ug/M3 (Moderate)
Okatie Elementary PM2.5 3 ug/M3 (Good)

Almost had to increase scale for Palmetto Exterminators (592 spike at 11:30PM)

<pastedImage.png>

From: Reynolds, Scott <REYNOLDS@dhec.sc.gov>
Sent: Friday, August 23, 2019 8:32:48 AM
To: Frost, Keith <frostrk@dhec.sc.gov>; Thompson, Rhonda <thompsrb@dhec.sc.gov>; Reece, Myra <reecemc@dhec.sc.gov>; Marshall, Frances (Fran) <marshaf2@dhec.sc.gov>; Marcus, Mike <MARCUSJM@dhec.sc.gov>; Porter, Henry <porterhj@dhec.sc.gov>; Keisler, Van <keislecv@dhec.sc.gov>; Blalock, Juli <blalocje@dhec.sc.gov>; Taylor, Monica N. <TAYLORMN@dhec.sc.gov>; Dickman, Jacquelyn S. <DICKMAJS@dhec.sc.gov>; Timmerman, Kelsey A. <timmerka@dhec.sc.gov>; Threatt, Richard <threatrl@dhec.sc.gov>; Boswell, Wendy <BOSWELWM@dhec.sc.gov>; Huyser, Matthew <huyser.matthew@epa.gov>; Stewart, R. Gary <stewarrg@dhec.sc.gov>; Quina III, Gregory <quinags@dhec.sc.gov>; Boyce, Lawra <boycelc@dhec.sc.gov>; frederick.tim@epa.gov <frederick.tim@epa.gov>; Crooks, Carol <Crookscl@DHEC.SC.GOV>; Shealy, Renee <shealyrg@dhec.sc.gov>; Tolliver, Ronald <Tolliver.Ronald@epa.gov>; Jenkins, Brandi <Jenkins.Brandi@epa.gov>; Glass, John <glassjp@dhec.sc.gov>; McAvoy, Bryan P. <mcavoybp@dhec.sc.gov>; Pinkney, James <Pinkney.James@epa.gov>
Subject: Re: Able PM

Yesterday's 24 hour averages (Aug 22 Midnight to midnight)
Palmetto Exterminators **PM10** 5 ug/M3 (Good)
Schinger 2.5 15 ug/M3 (Moderate)
Okatie Elementary PM2.5 3 ug/M3 (Good)

<pastedImage.png>

From: Reynolds, Scott <REYNOLDS@dhec.sc.gov>
Sent: Thursday, August 22, 2019 8:26:11 AM
To: Frost, Keith <frostrk@dhec.sc.gov>; Thompson, Rhonda <thompsrb@dhec.sc.gov>; Reece, Myra <reecemc@dhec.sc.gov>; Marshall, Frances (Fran) <marshaf2@dhec.sc.gov>; Marcus, Mike <MARCUSJM@dhec.sc.gov>; Porter, Henry <porterhj@dhec.sc.gov>; Keisler, Van <keislecv@dhec.sc.gov>; Blalock, Juli <blalocje@dhec.sc.gov>; Taylor, Monica N.

<TAYLORMN@dhec.sc.gov>; Dickman, Jacquelyn S. <DICKMAJS@dhec.sc.gov>; Timmerman, Kelsey A. <timmerka@dhec.sc.gov>; Threatt, Richard <threatrl@dhec.sc.gov>; Boswell, Wendy <BOSWELWM@dhec.sc.gov>; Huyser, Matthew <huyser.matthew@epa.gov>; Stewart, R. Gary <stewarrg@dhec.sc.gov>; Quina III, Gregory <quinags@dhec.sc.gov>; Boyce, Lawra <boycelc@dhec.sc.gov>; frederick.tim@epa.gov <frederick.tim@epa.gov>; Crooks, Carol <Crookscl@DHEC.SC.GOV>; Shealy, Renee <shealyrg@dhec.sc.gov>; Tolliver, Ronald <Tolliver.Ronald@epa.gov>; Jenkins, Brandi <Jenkins.Brandi@epa.gov>; Glass, John <glassjp@dhec.sc.gov>; McAvoy, Bryan P. <mcavoybp@dhec.sc.gov>; Pinkney, James <Pinkney.James@epa.gov>
Subject: Re: Able PM

Yesterday's 24 hour averages (Aug 21 Midnight to midnight)
Palmetto Exterminators **PM10** 5 ug/M3 (Good)
Schinger 2.5 51 ug/M3 (Unhealthy for Sensitive Groups)
Okatie Elementary PM2.5 4 ug/M3 (Good)

<pastedImage.png>

From: Reynolds, Scott <REYNOLDS@dhec.sc.gov>
Sent: Wednesday, August 21, 2019 8:27:26 AM
To: Frost, Keith <frostrk@dhec.sc.gov>; Thompson, Rhonda <thompsrb@dhec.sc.gov>; Reece, Myra <reecemc@dhec.sc.gov>; Marshall, Frances (Fran) <marshaf2@dhec.sc.gov>; Marcus, Mike <MARCUSJM@dhec.sc.gov>; Porter, Henry <porterhj@dhec.sc.gov>; Keisler, Van <keislecv@dhec.sc.gov>; Blalock, Juli <blalocje@dhec.sc.gov>; Taylor, Monica N. <TAYLORMN@dhec.sc.gov>; Dickman, Jacquelyn S. <DICKMAJS@dhec.sc.gov>; Timmerman, Kelsey A. <timmerka@dhec.sc.gov>; Threatt, Richard <threatrl@dhec.sc.gov>; Boswell, Wendy <BOSWELWM@dhec.sc.gov>; Huyser, Matthew <huyser.matthew@epa.gov>; Stewart, R. Gary <stewarrg@dhec.sc.gov>; Quina III, Gregory <quinags@dhec.sc.gov>; Boyce, Lawra <boycelc@dhec.sc.gov>; frederick.tim@epa.gov <frederick.tim@epa.gov>; Crooks, Carol <Crookscl@DHEC.SC.GOV>; Shealy, Renee <shealyrg@dhec.sc.gov>; Tolliver, Ronald <Tolliver.Ronald@epa.gov>; Jenkins, Brandi <Jenkins.Brandi@epa.gov>; Glass, John <glassjp@dhec.sc.gov>; McAvoy, Bryan P. <mcavoybp@dhec.sc.gov>; Pinkney, James <Pinkney.James@epa.gov>
Subject: Re: Able PM

Yesterday's 24 hour averages (Aug 19 Midnight to midnight)
Palmetto Exterminators **PM10** 9 ug/M3 (Good)
Schinger 2.5 13 ug/M3 (Moderate)
Okatie Elementary PM2.5 7 ug/M3 (Good)

20th s numbers about the same as 19th - but Schinger has been getting impacted since midnight, so not yet time to relax.

<pastedImage.png>

From: Reynolds, Scott <REYNOLDS@dhec.sc.gov>
Sent: Tuesday, August 20, 2019 8:40 AM
To: Frost, Keith <frostrk@dhec.sc.gov>; Thompson, Rhonda <thompsrb@dhec.sc.gov>; Reece, Myra <reecemc@dhec.sc.gov>; Marshall, Frances (Fran) <marshaf2@dhec.sc.gov>; Marcus, Mike <MARCUSJM@dhec.sc.gov>; Porter, Henry <porterhj@dhec.sc.gov>; Keisler, Van <keislecv@dhec.sc.gov>; Blalock, Juli <blalocje@dhec.sc.gov>; Taylor, Monica N. <TAYLORMN@dhec.sc.gov>; Dickman, Jacquelyn S. <DICKMAJS@dhec.sc.gov>; Timmerman, Kelsey A. <timmerka@dhec.sc.gov>; Threatt, Richard <threatrl@dhec.sc.gov>; Boswell, Wendy <BOSWELWM@dhec.sc.gov>; Huyser, Matthew <huyser.matthew@epa.gov>; Stewart, R. Gary <stewarrg@dhec.sc.gov>; Quina III, Gregory <quinags@dhec.sc.gov>; Boyce, Lawra <boycelc@dhec.sc.gov>; frederick.tim@epa.gov <frederick.tim@epa.gov>; Crooks, Carol <Crookscl@DHEC.SC.GOV>; Shealy, Renee <shealyrg@dhec.sc.gov>; Tolliver, Ronald <Tolliver.Ronald@epa.gov>; Jenkins, Brandi <Jenkins.Brandi@epa.gov>; Glass, John <glassjp@dhec.sc.gov>; McAvoy, Bryan P. <mcavoybp@dhec.sc.gov>; Pinkney, James <Pinkney.James@epa.gov>
Subject: Re: Able PM

Yesterday's 24 hour averages (Aug 19 Midnight to midnight)
Palmetto Exterminators **PM10** 9 ug/M3 (Good)
Schinger 2.5 17 ug/M3 (Moderate)
Okatie Elementary PM2.5 7 ug/M3 (Good)

.. with a 'bonus' graph with the high concentrations of 8/13 rolled off, vertical scale reduced, and a bit more detail visible in the good to moderate data we've seen lately. Here and at the monitors- pay attention to the vertical scale...

<pastedImage.png>

<pastedImage.png>

From: Reynolds, Scott <REYNOLDS@dhec.sc.gov>
Sent: Monday, August 19, 2019 8:30:25 AM
To: Frost, Keith <frostrk@dhec.sc.gov>; Thompson, Rhonda <thompsrb@dhec.sc.gov>; Reece, Myra <reecemc@dhec.sc.gov>; Marshall, Frances (Fran) <marshaf2@dhec.sc.gov>; Marcus, Mike <MARCUSJM@dhec.sc.gov>; Porter, Henry <porterhj@dhec.sc.gov>; Keisler, Van <keislecv@dhec.sc.gov>; Blalock, Juli <blalocje@dhec.sc.gov>; Taylor, Monica N. <TAYLORMN@dhec.sc.gov>; Dickman, Jacquelyn S. <DICKMAJS@dhec.sc.gov>; Timmerman, Kelsey A. <timmerka@dhec.sc.gov>; Threatt, Richard <threatrl@dhec.sc.gov>; Boswell, Wendy <BOSWELWM@dhec.sc.gov>; Huyser, Matthew <huyser.matthew@epa.gov>; Stewart, R. Gary <stewarrg@dhec.sc.gov>; Quina III, Gregory <quinags@dhec.sc.gov>; Boyce, Lawra <boycelc@dhec.sc.gov>; frederick.tim@epa.gov <frederick.tim@epa.gov>; Crooks, Carol <Crookscl@DHEC.SC.GOV>; Shealy, Renee <shealyrg@dhec.sc.gov>; Tolliver, Ronald <Tolliver.Ronald@epa.gov>; Jenkins, Brandi <Jenkins.Brandi@epa.gov>; Glass, John <glassjp@dhec.sc.gov>; McAvoy, Bryan P. <mcavoybp@dhec.sc.gov>; Pinkney, James <Pinkney.James@epa.gov>
Subject: Re: Able PM

Yesterday's 24 hour averages (Aug 18 Midnight to midnight)

Palmetto Exterminators **PM10** 4 ug/M3 (Good)
Schinger 2.5 23 ug/M3 (Moderate)
Okatie Elementary PM2.5 4 ug/M3 (Good)

<pastedImage.png>

From: Reynolds, Scott <REYNOLDS@dhec.sc.gov>
Sent: Sunday, August 18, 2019 8:03:42 AM
To: Frost, Keith <frostrk@dhec.sc.gov>; Thompson, Rhonda <thompsrb@dhec.sc.gov>; Reece, Myra <reecemc@dhec.sc.gov>; Marshall, Frances (Fran) <marshaf2@dhec.sc.gov>; Marcus, Mike <MARCUSJM@dhec.sc.gov>; Porter, Henry <porterhj@dhec.sc.gov>; Keisler, Van <keislecv@dhec.sc.gov>; Blalock, Juli <blalocje@dhec.sc.gov>; Taylor, Monica N. <TAYLORMN@dhec.sc.gov>; Dickman, Jacquelyn S. <DICKMAJS@dhec.sc.gov>; Timmerman, Kelsey A. <timmerka@dhec.sc.gov>; Threatt, Richard <threatrl@dhec.sc.gov>; Boswell, Wendy <BOSWELWM@dhec.sc.gov>; Huyser, Matthew <huyser.matthew@epa.gov>; Stewart, R. Gary <stewarrg@dhec.sc.gov>; Quina III, Gregory <quinags@dhec.sc.gov>; Boyce, Lawra <boycelc@dhec.sc.gov>; frederick.tim@epa.gov <frederick.tim@epa.gov>; Crooks, Carol <Crookscl@DHEC.SC.GOV>; Shealy, Renee <shealyrg@dhec.sc.gov>; Tolliver, Ronald <Tolliver.Ronald@epa.gov>; Jenkins, Brandi <Jenkins.Brandi@epa.gov>; Glass, John <glassjp@dhec.sc.gov>; McAvoy, Bryan P. <mcavoybp@dhec.sc.gov>; Pinkney, James <Pinkney.James@epa.gov>
Subject: Re: Able PM

Yesterday's 24 hour averages (Aug 17 Midnight to midnight)
Palmetto Exterminators **PM10** 6 ug/M3 (Good)
Schinger 2.5 51 ug/M3 (Unhealthy for Sensitive Groups)
Okatie Elementary PM2.5 4 ug/M3 (Good)

<pastedImage.png>

From: Reynolds, Scott <REYNOLDS@dhec.sc.gov>
Sent: Saturday, August 17, 2019 8:00:18 AM
To: Frost, Keith <frostrk@dhec.sc.gov>; Thompson, Rhonda <thompsrb@dhec.sc.gov>; Reece, Myra <reecemc@dhec.sc.gov>; Marshall, Frances (Fran) <marshaf2@dhec.sc.gov>; Marcus, Mike <MARCUSJM@dhec.sc.gov>; Porter, Henry <porterhj@dhec.sc.gov>; Keisler, Van <keislecv@dhec.sc.gov>; Blalock, Juli <blalocje@dhec.sc.gov>; Taylor, Monica N. <TAYLORMN@dhec.sc.gov>; Dickman, Jacquelyn S. <DICKMAJS@dhec.sc.gov>; Timmerman, Kelsey A. <timmerka@dhec.sc.gov>; Threatt, Richard <threatrl@dhec.sc.gov>; Boswell, Wendy <BOSWELWM@dhec.sc.gov>; Huyser, Matthew <huyser.matthew@epa.gov>; Stewart, R. Gary <stewarrg@dhec.sc.gov>; Quina III, Gregory <quinags@dhec.sc.gov>; Boyce, Lawra <boycelc@dhec.sc.gov>; frederick.tim@epa.gov <frederick.tim@epa.gov>; Crooks, Carol <Crookscl@DHEC.SC.GOV>; Shealy, Renee <shealyrg@dhec.sc.gov>; Tolliver, Ronald <Tolliver.Ronald@epa.gov>; Jenkins, Brandi <Jenkins.Brandi@epa.gov>; Pinckney, Jennifer M. <pincknjm@dhec.sc.gov>; Glass, John <glassjp@dhec.sc.gov>; McAvoy, Bryan P.

<mcavoybp@dhec.sc.gov>
Subject: Re: Able PM

Like yesterday- with the volume turned down a bit.
A good trend. .

Yesterday's 24 hour averages (Aug 16 Midnight to midnight)
Palmetto Exterminators **PM10** 4 ug/M3 (Good)
Schinger 2.5 49 ug/M3 (Unhealthy for Sensitive Groups)
Okatie Elementary PM2.5 3 ug/M3 (Good)

As a a bonus , the Movie of the Week (literally) has been posted under 'Timelapse'. 8/8-17
The hd versions best viewed after downloading.

<pastedImage.png>

From: Reynolds, Scott <REYNOLDS@dhec.sc.gov>
Sent: Friday, August 16, 2019 8:11:50 AM
To: Frost, Keith <frostrk@dhec.sc.gov>; Thompson, Rhonda <thompsrb@dhec.sc.gov>; Reece, Myra <reecemc@dhec.sc.gov>; Marshall, Frances (Fran) <marshaf2@dhec.sc.gov>; Marcus, Mike <MARCUSJM@dhec.sc.gov>; Porter, Henry <porterhj@dhec.sc.gov>; Keisler, Van <keislecv@dhec.sc.gov>; Blalock, Juli <blalocje@dhec.sc.gov>; Taylor, Monica N. <TAYLORMN@dhec.sc.gov>; Dickman, Jacquelyn S. <DICKMAJS@dhec.sc.gov>; Timmerman, Kelsey A. <timmerka@dhec.sc.gov>; Threatt, Richard <threatrl@dhec.sc.gov>; Boswell, Wendy <BOSWELWM@dhec.sc.gov>; Huyser, Matthew <huyser.matthew@epa.gov>; Stewart, R. Gary <stewarrg@dhec.sc.gov>; Quina III, Gregory <quinags@dhec.sc.gov>; Boyce, Lawra <boycelc@dhec.sc.gov>; frederick.tim@epa.gov <frederick.tim@epa.gov>; Crooks, Carol <Crookscl@DHEC.SC.GOV>; Shealy, Renee <shealyrg@dhec.sc.gov>; Tolliver, Ronald <Tolliver.Ronald@epa.gov>; Jenkins, Brandi <Jenkins.Brandi@epa.gov>; Pinckney, Jennifer M. <pincknjm@dhec.sc.gov>; Glass, John <glassjp@dhec.sc.gov>; McAvoy, Bryan P. <mcavoybp@dhec.sc.gov>
Subject: Re: Able PM

The concentration and the Category at Palmetto Exterminators is based on a PM10 sensor that has been shown to be well correlated with the PM2.5 measurements at that location .

Yesterday's 24 hour averages (Aug 15 Midnight to midnight)
Palmetto Exterminators **PM10** 9 ug/M3 (Good)
Schinger 2.5 51 ug/M3 (Unhealthy for Sensitive Groups)
Okatie Elementary PM2.5 6 ug/M3 (Good)

<pastedImage.png>

From: Reynolds, Scott <REYNOLDS@dhec.sc.gov>
Sent: Thursday, August 15, 2019 8:19:45 AM
To: Frost, Keith <frostrk@dhec.sc.gov>; Thompson, Rhonda <thompsrb@dhec.sc.gov>; Reece, Myra <reecemc@dhec.sc.gov>; Marshall, Frances (Fran) <marshaf2@dhec.sc.gov>; Marcus, Mike <MARCUSJM@dhec.sc.gov>; Porter, Henry <porterhj@dhec.sc.gov>; Keisler, Van <keislecv@dhec.sc.gov>; Blalock, Juli <blalocje@dhec.sc.gov>; Taylor, Monica N. <TAYLORMN@dhec.sc.gov>; Dickman, Jacquelyn S. <DICKMAJS@dhec.sc.gov>; Timmerman, Kelsey A. <timmerka@dhec.sc.gov>; Threatt, Richard <threatrl@dhec.sc.gov>; Boswell, Wendy <BOSWELWM@dhec.sc.gov>; Huyser, Matthew <huyser.matthew@epa.gov>; Stewart, R. Gary <stewarrg@dhec.sc.gov>; Quina III, Gregory <quinags@dhec.sc.gov>; Boyce, Lawra <boycelc@dhec.sc.gov>; frederick.tim@epa.gov <frederick.tim@epa.gov>; Crooks, Carol <Crookscl@DHEC.SC.GOV>; Shealy, Renee <shealyrg@dhec.sc.gov>; Tolliver, Ronald <Tolliver.Ronald@epa.gov>; Jenkins, Brandi <Jenkins.Brandi@epa.gov>; Pinckney, Jennifer M. <pincknjm@dhec.sc.gov>; Glass, John <glassjp@dhec.sc.gov>; McAvoy, Bryan P. <mcavoybp@dhec.sc.gov>
Subject: Re: Able PM

The concentration and the Category at Palmetto Exterminators is based on a PM10 sensor that has been shown to be well correlated with the PM2.5 measurements at that location . The PE sensor did not report the last two expected readings . May need to be checked if that continues.

Yesterday's 24 hour averages (Aug 13 Midnight to midnight)
Palmetto Exterminators **PM10** 11 ug/M3 (Good)
Schinger 2.5 42 ug/M3 (Unhealthy for Sensitive Groups)
Okatie Elementary PM2.5 9 ug/M3 (Good)

<pastedImage.png>

From: Reynolds, Scott <REYNOLDS@dhec.sc.gov>
Sent: Wednesday, August 14, 2019 7:58:26 AM
To: Frost, Keith <frostrk@dhec.sc.gov>; Thompson, Rhonda <thompsrb@dhec.sc.gov>; Reece, Myra <reecemc@dhec.sc.gov>; Marshall, Frances (Fran) <marshaf2@dhec.sc.gov>; Marcus, Mike <MARCUSJM@dhec.sc.gov>; Porter, Henry <porterhj@dhec.sc.gov>; Keisler, Van <keislecv@dhec.sc.gov>; Blalock, Juli <blalocje@dhec.sc.gov>; Taylor, Monica N. <TAYLORMN@dhec.sc.gov>; Dickman, Jacquelyn S. <DICKMAJS@dhec.sc.gov>; Timmerman, Kelsey A. <timmerka@dhec.sc.gov>; Threatt, Richard <threatrl@dhec.sc.gov>; Boswell, Wendy <BOSWELWM@dhec.sc.gov>; Huyser, Matthew <huyser.matthew@epa.gov>; Stewart, R. Gary <stewarrg@dhec.sc.gov>; Quina III, Gregory <quinags@dhec.sc.gov>; Boyce, Lawra <boycelc@dhec.sc.gov>; frederick.tim@epa.gov <frederick.tim@epa.gov>; Crooks, Carol <Crookscl@DHEC.SC.GOV>; Shealy, Renee <shealyrg@dhec.sc.gov>; Tolliver, Ronald <Tolliver.Ronald@epa.gov>; Jenkins, Brandi <Jenkins.Brandi@epa.gov>; Pinckney, Jennifer M. <pincknjm@dhec.sc.gov>
Subject: Re: Able PM

First 24Hr PM2.5 at Okatie elementary

The concentration and the Category at Palmetto Exterminators will be based on a PM10 sensor that has been shown to be well correlated with the PM2.5 measurements at that location

Yesterday's 24 hour averages (Aug 13 Midnight to midnight)
Palmetto Exterminators **PM10** 48 ug/M3 (Unhealthy for Sensitive Groups)
Schinger 2.5 86 ug/M3 (Unhealthy)
Okatie Elementary PM2.5 8 ug/M3 (Good)

<pastedImage.png>

From: Reynolds, Scott <REYNOLDS@dhec.sc.gov>
Sent: Tuesday, August 13, 2019 9:02:50 AM
To: Frost, Keith <frostrk@dhec.sc.gov>; Thompson, Rhonda <thompsrb@dhec.sc.gov>; Reece, Myra <reecemc@dhec.sc.gov>; Marshall, Frances (Fran) <marshaf2@dhec.sc.gov>; Marcus, Mike <MARCUSJM@dhec.sc.gov>; Porter, Henry <porterhj@dhec.sc.gov>; Keisler, Van <keislecv@dhec.sc.gov>; Blalock, Juli <blalocje@dhec.sc.gov>; Taylor, Monica N. <TAYLORMN@dhec.sc.gov>; Dickman, Jacquelyn S. <DICKMAJS@dhec.sc.gov>; Timmerman, Kelsey A. <timmerka@dhec.sc.gov>; Threatt, Richard <threatrl@dhec.sc.gov>; Boswell, Wendy <BOSWELWM@dhec.sc.gov>; Huyser, Matthew <huyser.matthew@epa.gov>; Stewart, R. Gary <stewarrg@dhec.sc.gov>; Quina III, Gregory <quinags@dhec.sc.gov>; Boyce, Lawra <boycelc@dhec.sc.gov>; frederick.tim@epa.gov <frederick.tim@epa.gov>; Crooks, Carol <Crookscl@DHEC.SC.GOV>; Shealy, Renee <shealyrg@dhec.sc.gov>; Tolliver, Ronald <Tolliver.Ronald@epa.gov>; Jenkins, Brandi <Jenkins.Brandi@epa.gov>; Pinckney, Jennifer M. <pincknjm@dhec.sc.gov>
Subject: Re: Able PM

Some changes in the DHEC sensors since yesterday

PM2.5 has been added at Okatie elementary - added to the chart , but we do not yet have 24 hours of data for the average, but it has been the 'Good' range so far.
The concentration and the Category at Palmetto Exterminators will be based on a PM10 sensor that has been shown to be well correlated with the PM2.5 measurements at that location

Yesterday's 24 hour averages (Aug 12 Midnight to midnight)
Palmetto Exterminators **PM10** 17 ug/M3 (Good)
Schinger 2.5 14 ug/M3 (Moderate)
Okatie Elementary PM2.5 Tomorrow..

<pastedImage.png>

From: Reynolds, Scott <REYNOLDS@dhec.sc.gov>
Sent: Monday, August 12, 2019 9:07:24 AM
To: Frost, Keith <frostrk@dhec.sc.gov>; Thompson, Rhonda <thompsrb@dhec.sc.gov>; Reece, Myra <reecemc@dhec.sc.gov>; Marshall, Frances (Fran) <marshaf2@dhec.sc.gov>; Marcus, Mike

<MARCUSJM@dhec.sc.gov>; Porter, Henry <porterhj@dhec.sc.gov>; Keisler, Van <keislecv@dhec.sc.gov>; Blalock, Juli <blalocje@dhec.sc.gov>; Taylor, Monica N. <TAYLORMN@dhec.sc.gov>; Dickman, Jacquelyn S. <DICKMAJS@dhec.sc.gov>; Timmerman, Kelsey A. <timmerka@dhec.sc.gov>; Threatt, Richard <threatrl@dhec.sc.gov>; Boswell, Wendy <BOSWELWM@dhec.sc.gov>; Huyser, Matthew <huyser.matthew@epa.gov>; Stewart, R. Gary <stewarrg@dhec.sc.gov>; Quina III, Gregory <quinags@dhec.sc.gov>; Boyce, Lawra <boycelc@dhec.sc.gov>; frederick.tim@epa.gov <frederick.tim@epa.gov>; Crooks, Carol <Crookscl@DHEC.SC.GOV>; Shealy, Renee <shealyrg@dhec.sc.gov>; Tolliver, Ronald <Tolliver.Ronald@epa.gov>; Jenkins, Brandi <Jenkins.Brandi@epa.gov>; Pinckney, Jennifer M. <pincknjm@dhec.sc.gov>
Subject: Able PM

Yesterday's 24 hour averages (Aug 11 Midnight to midnight)

Palmetto Exterminators	28 ug/M3 (Moderate)
Schinger	140 ug/M3 (Unhealthy)

<pastedImage.png>

Armstrong, Kathy

From: Frost, Keith <frostrk@dhec.sc.gov>
Sent: Wednesday, August 14, 2019 10:33 AM
To: Huyser, Matthew
Subject: Fwd: Urgent! Able fire briefing EPA, DHEC, Jasper Co

R. Keith Frost, Assistant Chief
Bureau of Air Quality
SC DHEC

(803) 898-4115 office
(803) 465-1529 cell

Sent from my iPhone

Begin forwarded message:

> **From:** "Shealy, Renee" <shealyrg@dhec.sc.gov>
> **Date:** August 14, 2019 at 10:31:27 AM EDT
> **To:** "Reece, Myra" <reecemc@dhec.sc.gov>, "Frost, Keith" <frostrk@dhec.sc.gov>, "Marcus, Mike" <MARCUSJM@dhec.sc.gov>, "Porter, Henry" <porterhj@dhec.sc.gov>, "Stewart, R. Gary" <stewarrg@dhec.sc.gov>, "Boyce, Lawra" <boycelc@dhec.sc.gov>, "Yon, Katherine" <yonk@dhec.sc.gov>, "Marshall, Frances (Fran)" <marshaf2@dhec.sc.gov>, David Tedder <dtedder@jaspercountysc.gov>, "afulghum@jaspercountysc.gov" <afulghum@jaspercountysc.gov>, Frank Edwards <fedwards@jaspercountysc.gov>, Lisa Wagner <lwagner@jaspercountysc.gov>, "Boswell, Wendy" <BOSWELWM@dhec.sc.gov>, "Threatt, Richard" <threatrl@dhec.sc.gov>, "Thompson, Rhonda" <thompsrb@dhec.sc.gov>
> **Subject: Urgent! Able fire briefing EPA, DHEC, Jasper Co**
>
> Correction to number:
>
> 1-800-753-1965
>
> (b)(6) Personal Privacy

From: Reece, Myra
Sent: Tuesday, August 13, 2019 4:45 PM
To: Reece, Myra <reecemc@dhec.sc.gov>; Frost, Keith <frostrk@dhec.sc.gov>; Shealy, Renee <shealyrg@dhec.sc.gov>; Marcus, Mike <MARCUSJM@dhec.sc.gov>; Porter, Henry <porterhj@dhec.sc.gov>; Stewart, R. Gary <stewarrg@dhec.sc.gov>; Boyce, Lawra <boycelc@dhec.sc.gov>; Yon, Katherine <yonk@dhec.sc.gov>; Marshall, Frances (Fran) <marshaf2@dhec.sc.gov>; David Tedder <dtedder@jaspercountysc.gov>; afulghum@jaspercountysc.gov <afulghum@jaspercountysc.gov>; Frank Edwards <fedwards@jaspercountysc.gov>; Lisa Wagner <lwagner@jaspercountysc.gov>; Boswell, Wendy <BOSWELWM@dhec.sc.gov>; Threatt, Richard <threatrl@dhec.sc.gov>; Thompson, Rhonda

<thompsrb@dhec.sc.gov>
Subject: Able fire briefing EPA, DHEC, Jasper Co
When: Wednesday, August 14, 2019 10:30-11:30.
Where: EA Affairs conference room 3256

Conference phone # 1-800-753-3964

access code (b)(6) Personal Privacy [redacted]

Armstrong, Kathy

From: Frost, Keith <frostrk@dhec.sc.gov>
Sent: Saturday, August 10, 2019 11:11 AM
To: reecemc@dhec.sc.gov
Cc: Scott Reynolds; thompsrb@dhec.sc.gov; shealyrg@dhec.sc.gov; Marshall, Frances (Fran); Marcus, Mike; Porter, Henry; Keisler, Van; Blalock, Juli; Taylor, Monica N.; Dickman, Jacquelyn S.; Timmerman, Kelsey A.; Threatt, Richard; Boyce, Lawra; Boswell, Wendy; Frederick, Tim; Huyser, Matthew
Subject: Re: Able PM

Great question. I am curious if we have data near the front of the business park and 170 showing elevated levels?

R. Keith Frost, Assistant Chief
Bureau of Air Quality
SC DHEC

(803) 898-4115 office
(803) 465-1529 cell

Sent from my iPhone

On Aug 10, 2019, at 11:04 AM, Reece, Myra <reecemc@dhec.sc.gov> wrote:

> Matt, were ur monitors on line last night , this am?
>
> Sent from my iPhone
>
> On Aug 10, 2019, at 11:03 AM, Reynolds, Scott <REYNOLDS@dhec.sc.gov> wrote:
>
> > Schlinger is the closest -directly east at the homes
> >
> > ---
> >
> > **From:** Reece, Myra <reecemc@dhec.sc.gov>
> > **Sent:** Saturday, August 10, 2019 11:01:55 AM
> > **To:** Reynolds, Scott <REYNOLDS@dhec.sc.gov>
> > **Cc:** Frost, Keith <frostrk@dhec.sc.gov>; Thompson, Rhonda <thompsrb@dhec.sc.gov>; Shealy, Renee <shealyrg@dhec.sc.gov>; Marshall, Frances (Fran) <marshaf2@dhec.sc.gov>; Marcus, Mike <MARCUSJM@dhec.sc.gov>; Porter, Henry <porterhj@dhec.sc.gov>; Keisler, Van <keislecv@dhec.sc.gov>; Blalock, Juli <blalocje@dhec.sc.gov>; Taylor, Monica N. <TAYLORMN@dhec.sc.gov>; Dickman, Jacquelyn S. <DICKMAJS@dhec.sc.gov>; Timmerman, Kelsey A. <timmerka@dhec.sc.gov>; Threatt, Richard <threatrl@dhec.sc.gov>; Boyce, Lawra <boycelc@dhec.sc.gov>; Boswell, Wendy <BOSWELWM@dhec.sc.gov>; frederick.tim@epa.gov <frederick.tim@epa.gov>; Huyser, Matthew <huyser.matthew@epa.gov>
> > **Subject:** Re: Able PM
> >
> > Which monitor and how close to pile ?
> >
> > Sent from my iPhone

On Aug 10, 2019, at 11:00 AM, Reynolds, Scott <REYNOLDS@dhec.sc.gov> wrote:

Sorry Fighting with 2 many computers..
Correct value for Schinger below and correct PDF

Yesterday's 24 hour averages (Aug 9 Midnight to midnight)

Palmetto Exterminators 12 ug/M3 (Moderate)

Schinger **250** ug/M3 (Very Unhealthy)

Very high concentrations yesterday pushed the Schinger site to the cusp of Hazardous. PE at cusp of Moderate..High concentrations there (Schinger) again this morning

<pastedImage.png>

From: Reynolds, Scott <REYNOLDS@dhec.sc.gov>
Sent: Saturday, August 10, 2019 10:42:04 AM
To: Frost, Keith <frostrk@dhec.sc.gov>; Thompson, Rhonda <thompsrb@dhec.sc.gov>; Shealy, Renee <shealyrg@dhec.sc.gov>; Marshall, Frances (Fran) <marshaf2@dhec.sc.gov>; Reece, Myra <reecemc@dhec.sc.gov>; Marcus, Mike <MARCUSJM@dhec.sc.gov>; Porter, Henry <porterhj@dhec.sc.gov>; Keisler, Van <keislecv@dhec.sc.gov>; Blalock, Juli <blalocje@dhec.sc.gov>; Taylor, Monica N. <TAYLORMN@dhec.sc.gov>; Dickman, Jacquelyn S. <DICKMAJS@dhec.sc.gov>; Timmerman, Kelsey A. <timmerka@dhec.sc.gov>; Threatt, Richard <threatrl@dhec.sc.gov>; Boyce, Lawra <boycelc@dhec.sc.gov>; Boswell, Wendy <BOSWELWM@dhec.sc.gov>
Cc: frederick.tim@epa.gov <frederick.tim@epa.gov>; Huyser, Matthew <huyser.matthew@epa.gov>
Subject: Able PM

Yesterday's 24 hour averages (Aug 9 Midnight to midnight)

Palmetto Exterminators 12 ug/M3 (Moderate)

Schinger 150 ug/M3 (Very Unhealthy)

Very high concentrations yesterday pushed the Schinger site to the cusp of Hazardous. PE at cusp of Moderate..High concentrations there (Schinger) again this morning

<pastedImage.png>

<081019 Able AQI category (1).pdf>

Armstrong, Kathy

From: Frost, Keith <frostrk@dhec.sc.gov>
Sent: Friday, August 09, 2019 11:38 PM
To: Huyser, Matthew
Cc: Stewart, R. Gary; Porter, Henry; Crooks, Carol; reecemc@dhec.sc.gov
Subject: Re: EPA Air monitoring

Thank you. That sounds perfect. We will be down Monday to install the monitor at the school

R. Keith Frost, Assistant Chief
Bureau of Air Quality
SC DHEC

(803) 898-4115 office
(803) 465-1529 cell

Sent from my iPhone

> On Aug 9, 2019, at 11:30 PM, Huyser, Matthew <Huyser.Matthew@epa.gov> wrote:
>
> *** Caution. This is an EXTERNAL email. DO NOT open attachments or
> click links from unknown senders or unexpected email. ***
>
> We've placed a particulate monitor at the command post to catch particulates drifting with the prevailing westerly wind. We've also placed one on the north property near the undeveloped area and a third one in Sun City. In the morning, that particulate monitor on the north side will be relocated to the apartment complexes to the northwest of the Site which are approximately 1/3 of a mile from the facility. I've requested 4 more particulate units - EBAMS - which can be deployed to other population centers further downrange.
>
> The AreaRAEs are placed immediately adjacent to the Site on three sides and a fourth is co-located with the DHEC particulate monitor to the SSE of the facility.
>
> Carol - can you send a list of the businesses that you visited on Friday? I'll try to expand a bit by visiting more places on Saturday.
>
>
>
> Matthew J. Huyser, PE - On-Scene Coordinator U.S. Environmental
> Protection Agency, Region 4 | 61 Forsyth St SW | Atlanta, Georgia |
> 30303 Emergency Response Removal and Prevention Branch (ERRPB)
> office: 404-562-8934 | cell: 678-427-8829 | fax: 404-562-8699
> epaosc.org
>
> -----Original Message-----
> From: Frost, Keith <frostrk@dhec.sc.gov>
> Sent: Friday, August 9, 2019 5:52 PM

> To: Stewart, R. Gary <stewarrg@dhec.sc.gov>; Huyser, Matthew
> <Huyser.Matthew@epa.gov>
> Cc: Porter, Henry <porterhj@dhec.sc.gov>; Crooks, Carol
> <Crookscl@DHEC.SC.GOV>
> Subject: Re: EPA Air monitoring
>
> Matt, the only suggestion I would have is to place one in the commercial area near where your trailer is parked. This will give some indication of how quickly the smoke and particulate is dissipating and the impact on the customers and businesses at the front. I will be back down Monday morning and we can discuss more then if you wish.
>
> R. Keith Frost, Assistant Chief
> Bureau of Air Quality
> SC DHEC
>
> (803) 898-4115 office
> (803) 465-1529 cell
>
> Sent from my iPhone
>
>> On Aug 9, 2019, at 5:43 PM, Stewart, R. Gary <stewarrg@dhec.sc.gov> wrote:
>>
>> Keith,
>> Fyi...EPA is setting up various pieces of air monitoring equipment. Any particular input on EPA's locations? If so, please let Matt Huyser know and copy me and Carol. Thanks.
>> Gary

Armstrong, Kathy

From: Frost, Keith <frostrk@dhec.sc.gov>
Sent: Friday, August 09, 2019 5:52 PM
To: Stewart, R. Gary; Huyser, Matthew
Cc: Porter, Henry; Crooks, Carol
Subject: Re: EPA Air monitoring

Matt, the only suggestion I would have is to place one in the commercial area near where your trailer is parked. This will give some indication of how quickly the smoke and particulate is dissipating and the impact on the customers and businesses at the front. I will be back down Monday morning and we can discuss more then if you wish.

R. Keith Frost, Assistant Chief
Bureau of Air Quality
SC DHEC

(803) 898-4115 office
(803) 465-1529 cell

Sent from my iPhone

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>
> Keith,
> Fyi...EPA is setting up various pieces of air monitoring equipment. Any particular input on EPA's locations? If so, please let Matt Huyser know and copy me and Carol. Thanks.
> Gary

Armstrong, Kathy

From: Frost, Keith <frostrk@dhec.sc.gov>
Sent: Friday, August 09, 2019 5:52 PM
To: Stewart, R. Gary; Huyser, Matthew
Cc: Porter, Henry; Crooks, Carol
Subject: Re: EPA Air monitoring

Matt, the only suggestion I would have is to place one in the commercial area near where your trailer is parked. This will give some indication of how quickly the smoke and particulate is dissipating and the impact on the customers and businesses at the front. I will be back down Monday morning and we can discuss more then if you wish.

R. Keith Frost, Assistant Chief
Bureau of Air Quality
SC DHEC

(803) 898-4115 office
(803) 465-1529 cell

Sent from my iPhone

> On Aug 9, 2019, at 5:43 PM, Stewart, R. Gary <stewarrg@dhec.sc.gov> wrote:
>
> Keith,
> Fyi...EPA is setting up various pieces of air monitoring equipment. Any particular input on EPA's locations? If so, please let Matt Huyser know and copy me and Carol. Thanks.
> Gary

Armstrong, Kathy

From: Frost, Keith <frostrk@dhec.sc.gov>
Sent: Friday, August 09, 2019 2:55 PM
To: Scott Reynolds
Cc: thompsrb@dhec.sc.gov; shealyrg@dhec.sc.gov; Marshall, Frances (Fran); reecemc@dhec.sc.gov; Marcus, Mike; Porter, Henry; Keisler, Van; Blalock, Juli; Taylor, Monica N.; Dickman, Jacquelyn S.; Timmerman, Kelsey A.; Threatt, Richard; Boyce, Lawra; Boswell, Wendy; Huyser, Matthew
Subject: Re: Able PM

There appeared to be a glitch this morning. We are actually moving this monitor to the mobile home park and taking the other to the school. We will have that done Monday.

R. Keith Frost, Assistant Chief
Bureau of Air Quality
SC DHEC

(803) 898-4115 office
(803) 465-1529 cell

Sent from my iPhone

On Aug 9, 2019, at 11:23 AM, Reynolds, Scott <REYNOLDS@dhec.sc.gov> wrote:

> The Palmetto Exterminator PM2.5 appears to be operating now - which is good since that's the one that has been provided as the public link.
> - **Note:** when that monitor is moved to the School (planned for Monday) it will likely be reporting area background concentrations (assuming no or minimal impact at that distance)
>
> ---
>
> **From:** Reynolds, Scott <REYNOLDS@dhec.sc.gov>
> **Sent:** Friday, August 9, 2019 9:26:21 AM
> **To:** Thompson, Rhonda <thompsrb@dhec.sc.gov>
> **Cc:** Frost, Keith <frostrk@dhec.sc.gov>; Shealy, Renee <shealyrg@dhec.sc.gov>; Marshall, Frances (Fran) <marshaf2@dhec.sc.gov>; Reece, Myra <reecemc@dhec.sc.gov>; Marcus, Mike <MARCUSJM@dhec.sc.gov>; Porter, Henry <porterhj@dhec.sc.gov>; Keisler, Van <keislecv@dhec.sc.gov>; Blalock, Juli <blalocje@dhec.sc.gov>; Taylor, Monica N. <TAYLORMN@dhec.sc.gov>; Dickman, Jacquelyn S. <DICKMAJS@dhec.sc.gov>; Timmerman, Kelsey A. <timmerka@dhec.sc.gov>; Threatt, Richard <threatrl@dhec.sc.gov>; Boyce, Lawra <boycelc@dhec.sc.gov>; Boswell, Wendy <BOSWELWM@dhec.sc.gov>; Garrard, Jordan <Garrard.Jordan@epa.gov>
> **Subject:** Re: Able PM
>
> Yesterday's 24 hour averages (Aug 8 Midnight to midnight)
> Palmetto Exterminators 14 ug/M3 (Moderate)
> Schinger 82 ug/M3 (Unhealthy)
>
> It appears the Palmetto exterminators PM2.5 stopped transmitting data at~6:30AM this morning. PM10 is still.sending data.

<pastedImage.png>

From: Reynolds, Scott <REYNOLDS@dhec.sc.gov>
Sent: Thursday, August 8, 2019 9:18:09 AM
To: Thompson, Rhonda <thompsrb@dhec.sc.gov>
Cc: Frost, Keith <frostrk@dhec.sc.gov>; Shealy, Renee <shealyrg@dhec.sc.gov>; Marshall, Frances (Fran) <marshaf2@dhec.sc.gov>; Reece, Myra <reecemc@dhec.sc.gov>; Marcus, Mike <MARCUSJM@dhec.sc.gov>; Porter, Henry <porterhj@dhec.sc.gov>; Keisler, Van <keislecv@dhec.sc.gov>; Blalock, Juli <blalocje@dhec.sc.gov>; Taylor, Monica N. <TAYLORMN@dhec.sc.gov>; Dickman, Jacquelyn S. <DICKMAJS@dhec.sc.gov>; Timmerman, Kelsey A. <timmerka@dhec.sc.gov>; Threatt, Richard <threatrl@dhec.sc.gov>; Boyce, Lawra <boycelc@dhec.sc.gov>; Boswell, Wendy <BOSWELWM@dhec.sc.gov>; Garrard, Jordan <Garrard.Jordan@epa.gov>
Subject: Re: Able PM

Yesterday's 24 hour averages (Aug 7 Midnight to midnight)
Palmetto Exterminators 6 ug/M3 (Good)
Schinger 55 ug/M3 (Unhealthy for Sensitive Groups)- but right on the cusp of being classified 'Unhealthy'

A PM10 was deployed to Palmetto Exterminators yesterday to see if it could serve as a surrogate after the planned move of the PM2.5 to Okatie Elementary next week.

<pastedImage.png>

From: Reynolds, Scott <REYNOLDS@dhec.sc.gov>
Sent: Wednesday, August 7, 2019 9:41:43 AM
To: Thompson, Rhonda <thompsrb@dhec.sc.gov>
Cc: Frost, Keith <frostrk@dhec.sc.gov>; Shealy, Renee <shealyrg@dhec.sc.gov>; Marshall, Frances (Fran) <marshaf2@dhec.sc.gov>; Reece, Myra <reecemc@dhec.sc.gov>; Marcus, Mike <MARCUSJM@dhec.sc.gov>; Porter, Henry <porterhj@dhec.sc.gov>; Keisler, Van <keislecv@dhec.sc.gov>; Blalock, Juli <blalocje@dhec.sc.gov>; Taylor, Monica N. <TAYLORMN@dhec.sc.gov>; Dickman, Jacquelyn S. <DICKMAJS@dhec.sc.gov>; Timmerman, Kelsey A. <timmerka@dhec.sc.gov>; Threatt, Richard <threatrl@dhec.sc.gov>; Boyce, Lawra <boycelc@dhec.sc.gov>; Boswell, Wendy <BOSWELWM@dhec.sc.gov>; Garrard, Jordan <Garrard.Jordan@epa.gov>
Subject: Re: Able PM

Forgot the graph.
Everybody likes graphs
Right?

<pastedImage.png>

From: Reynolds, Scott <REYNOLDS@dhec.sc.gov>
Sent: Wednesday, August 7, 2019 9:11:36 AM
To: Thompson, Rhonda <thompsrb@dhec.sc.gov>
Cc: Frost, Keith <frostrk@dhec.sc.gov>; Shealy, Renee <shealyrg@dhec.sc.gov>; Marshall, Frances (Fran)

<marshaf2@dhec.sc.gov>; Reece, Myra <reecemc@dhec.sc.gov>; Marcus, Mike <MARCUSJM@dhec.sc.gov>; Porter, Henry <porterhj@dhec.sc.gov>; Keisler, Van <keislecv@dhec.sc.gov>; Blalock, Juli <blalocje@dhec.sc.gov>; Taylor, Monica N. <TAYLORMN@dhec.sc.gov>; Dickman, Jacquelyn S. <DICKMAJS@dhec.sc.gov>; Timmerman, Kelsey A. <timmerka@dhec.sc.gov>; Threatt, Richard <threatrl@dhec.sc.gov>; Boyce, Lawra <boycelc@dhec.sc.gov>; Boswell, Wendy <BOSWELWM@dhec.sc.gov>; Garrard, Jordan <Garrard.Jordan@epa.gov>
Subject: Re: Able PM

Yesterday's 24 hour averages (Aug 6 Midnight to midnight)
Palmetto Exterminators 10ug/M3 (Good)
Schinger 46ug/M3 (Unhealthy for Sensitive Groups)

The community has been downwind and current ~8 hour average is ~68 (in the unhealthy range), likely to moderate as the day goes on, but still indicating higher concentrations at night. Winds are predicted to be from the west during extended periods Thursday through late Saturday

---

From: Reynolds, Scott <REYNOLDS@dhec.sc.gov>
Sent: Tuesday, August 6, 2019 9:17:31 AM
To: Thompson, Rhonda <thompsrb@dhec.sc.gov>
Cc: Frost, Keith <frostrk@dhec.sc.gov>; Shealy, Renee <shealyrg@dhec.sc.gov>; Marshall, Frances (Fran) <marshaf2@dhec.sc.gov>; Reece, Myra <reecemc@dhec.sc.gov>; Marcus, Mike <MARCUSJM@dhec.sc.gov>; Porter, Henry <porterhj@dhec.sc.gov>; Keisler, Van <keislecv@dhec.sc.gov>; Blalock, Juli <blalocje@dhec.sc.gov>; Taylor, Monica N. <TAYLORMN@dhec.sc.gov>; Dickman, Jacquelyn S. <DICKMAJS@dhec.sc.gov>; Timmerman, Kelsey A. <timmerka@dhec.sc.gov>; Threatt, Richard <threatrl@dhec.sc.gov>; Boyce, Lawra <boycelc@dhec.sc.gov>; Boswell, Wendy <BOSWELWM@dhec.sc.gov>; Garrard, Jordan <Garrard.Jordan@epa.gov>
Subject: Re: Able PM

Yesterday's 24 hour averages (Aug 5 Midnight to midnight)
Palmetto Exterminators 15ug/M3 (Moderate)
Schinger 44ug/M3 (Unhealthy for Sensitive Groups)

The community has been(and continues to be) downwind and has seen elevated concentrations throughout the day - even during rain events . No break in impact during the day..

<pastedImage.png>

From: Reynolds, Scott <REYNOLDS@dhec.sc.gov>
Sent: Monday, August 5, 2019 9:20:38 AM
To: Thompson, Rhonda <thompsrb@dhec.sc.gov>
Cc: Frost, Keith <frostrk@dhec.sc.gov>; Shealy, Renee <shealyrg@dhec.sc.gov>; Marshall, Frances (Fran) <marshaf2@dhec.sc.gov>; Reece, Myra <reecemc@dhec.sc.gov>; Marcus, Mike <MARCUSJM@dhec.sc.gov>; Porter, Henry <porterhj@dhec.sc.gov>; Keisler, Van <keislecv@dhec.sc.gov>; Blalock, Juli <blalocje@dhec.sc.gov>; Taylor, Monica N. <TAYLORMN@dhec.sc.gov>; Dickman, Jacquelyn S. <DICKMAJS@dhec.sc.gov>; Timmerman, Kelsey A.

<timmerka@dhec.sc.gov>; Threatt, Richard <threatrl@dhec.sc.gov>; Boyce, Lawra <boycelc@dhec.sc.gov>; Boswell, Wendy <BOSWELWM@dhec.sc.gov>; Garrard, Jordan <Garrard.Jordan@epa.gov>
Subject: Re: Able PM

Yesterday's 24 hour averages (Aug 4 Midnight to midnight)
Palmetto Exterminators 16ug/M3 (Moderate)
Schinger 16ug/M3 (Moderate)

<pastedImage.png>

From: Reynolds, Scott <REYNOLDS@dhec.sc.gov>
Sent: Sunday, August 4, 2019 11:02:07 AM
To: Thompson, Rhonda <thompsrb@dhec.sc.gov>
Cc: Frost, Keith <frostrk@dhec.sc.gov>; Shealy, Renee <shealyrg@dhec.sc.gov>; Marshall, Frances (Fran) <marshaf2@dhec.sc.gov>; Reece, Myra <reecemc@dhec.sc.gov>; Marcus, Mike <MARCUSJM@dhec.sc.gov>; Porter, Henry <porterhj@dhec.sc.gov>; Keisler, Van <keislecv@dhec.sc.gov>; Blalock, Juli <blalocje@dhec.sc.gov>; Taylor, Monica N. <TAYLORMN@dhec.sc.gov>; Dickman, Jacquelyn S. <DICKMAJS@dhec.sc.gov>; Timmerman, Kelsey A. <timmerka@dhec.sc.gov>; Threatt, Richard <threatrl@dhec.sc.gov>; Boyce, Lawra <boycelc@dhec.sc.gov>; Boswell, Wendy <BOSWELWM@dhec.sc.gov>; Garrard, Jordan <Garrard.Jordan@epa.gov>
Subject: Re: Able PM

When there aren't folks on site , rain events may be inferred from the ambient temperature dips . I'd guess short rain events at ~2 and 5pm yesterday.
in particular, at both locations at the same time.
<pastedImage.png><pastedImage.png>

From: Thompson, Rhonda <thompsrb@dhec.sc.gov>
Sent: Sunday, August 4, 2019 9:56:35 AM
To: Reynolds, Scott <REYNOLDS@dhec.sc.gov>
Cc: Frost, Keith <frostrk@dhec.sc.gov>; Shealy, Renee <shealyrg@dhec.sc.gov>; Marshall, Frances (Fran) <marshaf2@dhec.sc.gov>; Reece, Myra <reecemc@dhec.sc.gov>; Marcus, Mike <MARCUSJM@dhec.sc.gov>; Porter, Henry <porterhj@dhec.sc.gov>; Keisler, Van <keislecv@dhec.sc.gov>; Blalock, Juli <blalocje@dhec.sc.gov>; Taylor, Monica N. <TAYLORMN@dhec.sc.gov>; Dickman, Jacquelyn S. <DICKMAJS@dhec.sc.gov>; Timmerman, Kelsey A. <timmerka@dhec.sc.gov>; Threatt, Richard <threatrl@dhec.sc.gov>; Boyce, Lawra <boycelc@dhec.sc.gov>; Boswell, Wendy <BOSWELWM@dhec.sc.gov>; Garrard, Jordan <Garrard.Jordan@epa.gov>
Subject: Re: Able PM

Did they get rain?

Sent from my iPad

Rhonda B. Thompson, P.E.
Chief, Bureau of Air Quality
South Carolina Department of Health & Environmental Control

thompsrb@dhec.sc.gov
(803)898-4391

On Aug 4, 2019, at 8:55 AM, Reynolds, Scott <REYNOLDS@dhec.sc.gov> wrote:

Yesterday's 24 hour averages (Aug 3 Midnight to midnight)
Palmetto Exterminators 7ug/M3 (Good)
Schinger 8ug/M3 (Good)
Wind still predicted to shift back to from the west(towards community) early Monday

<pastedImage.png>
<pastedImage.png>

From: Reynolds, Scott <REYNOLDS@dhec.sc.gov>
Sent: Saturday, August 3, 2019 8:31:36 AM
To: Thompson, Rhonda <thompsrb@dhec.sc.gov>; Frost, Keith <frostrk@dhec.sc.gov>; Shealy, Renee <shealyrg@dhec.sc.gov>; Marshall, Frances (Fran) <marshaf2@dhec.sc.gov>; Reece, Myra <reecemc@dhec.sc.gov>; Marcus, Mike <MARCUSJM@dhec.sc.gov>; Porter, Henry <porterhj@dhec.sc.gov>; Keisler, Van <keislecv@dhec.sc.gov>; Blalock, Juli <blalocje@dhec.sc.gov>; Taylor, Monica N. <TAYLORMN@dhec.sc.gov>; Dickman, Jacquelyn S. <DICKMAJS@dhec.sc.gov>; Timmerman, Kelsey A. <timmerka@dhec.sc.gov>; Threatt, Richard <threatrl@dhec.sc.gov>; Boyce, Lawra <boycelc@dhec.sc.gov>; Boswell, Wendy <BOSWELWM@dhec.sc.gov>
Cc: Timmerman, Kelsey A. <timmerka@dhec.sc.gov>; Threatt, Richard <threatrl@dhec.sc.gov>; Garrard, Jordan <Garrard.Jordan@epa.gov>
Subject: Able PM

Yesterday's 24 hour averages (Aug 1 Midnight to midnight)
Palmetto Exterminators 29ug/M3 (Moderate)
Schinger* 17ug/M3 (Moderate)
*Since Noon yesterday the Schinger monitor concentrations have been uncannily low and consistent. 'Tho it's been generally upwind and there's been precip, if someone can put eyes on it to confirm it the particulate inlet appears OK, I'd feel better..

<pastedImage.png>

Armstrong, Kathy

From: Garrard, Jordan
Sent: Wednesday, September 18, 2019 7:48 AM
To: Saskowski, Ronald
Cc: Huyser, Matthew
Subject: Re: Able Contracting POLREP #2

Changed to private

Jordan Garrard
On Scene Coordinator
EPA Region 4
Garrard.jordan@epa.gov
678-644-8648

On Sep 18, 2019, at 7:11 AM, Saskowski, Ronald <Saskowski.Ronald@epa.gov> wrote:

Has it been changed? I'm logged in but still do not see it.

Thanks,

Ron Saskowski
Task Order Manager
Arctic Slope Mission Services (ASMS)
Contracted to EPA
404-562-8944
Saskowski.Ronald@epa.gov

From: Garrard, Jordan <Garrard.Jordan@epa.gov>
Sent: Monday, September 16, 2019 5:03 PM
To: Huyser, Matthew <Huyser.Matthew@epa.gov>
Cc: Saskowski, Ronald <Saskowski.Ronald@epa.gov>
Subject: Re: Able Contracting POLREP #2

I'll change to private.

Jordan Garrard
On Scene Coordinator
EPA Region 4
Garrard.jordan@epa.gov
678-644-8648

On Sep 16, 2019, at 4:21 PM, Huyser, Matthew <Huyser.Matthew@epa.gov> wrote:

It's marked as exclusive. Jordan Garrard wrote POLREP #2

Matthew J. Huyser, PE - On-Scene Coordinator
U.S. Environmental Protection Agency, Region 4 | 61 Forsyth St SW | Atlanta, Georgia | 30303
Emergency Response Removal and Prevention Branch (ERRPB)
office: **404-562-8934** | cell: **678-427-8829** | fax: **404-562-8699**
epaosc.org

From: Saskowski, Ronald <Saskowski.Ronald@epa.gov>
Sent: Monday, September 16, 2019 3:38 PM
To: Huyser, Matthew <Huyser.Matthew@epa.gov>
Subject: Able Contracting POLREP #2

Hi Matthew,

Was a POLREP #2 ever done? I don't see it on the OSC website.

Thanks,

Ron Saskowski
Task Order Manager
Arctic Slope Mission Services (ASMS)
Contracted to EPA
404-562-8944
Saskowski.Ronald@epa.gov

Armstrong, Kathy

From: Garrard, Jordan
Sent: Friday, August 09, 2019 4:12 PM
To: (b)(6) Personal Privacy
Cc: Huyser, Matthew
Subject: Water data
Attachments: Able Contracting Fire SW Pond Validated Table.pdf

Mr. Stever

Attached is the water sampling data collected from your pond. Over all the water looks descent, it does have some exceedances of some metals with arsenic and cadmium being the most significant, but no SVOCs or VOCs above SCDECH or EPA standards. You can reach out to SCDECH storm water or water enforcement to speak to someone more knowledgeable of surface water criteria. EPA OSC Matt Huyser will be taking over the project, since I am leaving for a preplanned vacation. I have copied him on this email. If you need to speak to Matt his phone number is 678-427-8829. Matt may need to place additional samplers or air monitoring stations on your property. When we receive finalized air data, we will forward to you. Thank you for your help and cooperation.

Jordan Garrard
On-Scene Coordinator
EPA Region 4
Emergency Response and Removal Branch
Work: 404-562-8642
Cell: 678-644-8648

SURFACE WATER RESULTS SUMMARY TABLE
DETECTIONS ONLY
ABLE CONTRACTING FIRE

Parameter	MCL/RSL[1]	DHEC (max/cont) /EPA (chr/acute)[2]	ACF-SW-POND
	Groundwate	Surface Water	
Metals (µg/L)			
Aluminum	*2,000*	*87/750*	251
Antimony	6	*190/900*	32.3
Arsenic	10	340/150	493
Barium	2,000	*220/2,000*	133
Cadmium	5	0.53/0.10	3.6
Calcium	NL	*116,000/NL*	725,000
Chromium	100	580/28	148
Copper	1,300	3.8/2.9	20.2
Iron	*1,400*	*1,000/NL*	300
Lead	15	14/0.54	5.0 U
Magnesium	NL	*82,000/NL*	48,900
Manganese	*48*	*93/1,680*	526
Nickel	*40*	150/16	30.5
Potassium	NL	*53,000/NL*	75,300
Sodium	NL	*680,000/NL*	248,000
Vanadium	NL	*27/79*	22.7
Zinc	*600*	37/37	24.4
Volatile Organic Compounds (µg/L)			
1,2-Dichloroethane	5	*2,000/8,200*	0.55 J
2-Butanone (MEK)	*1,200*	*22,000/200,000*	43.2 J+
2-Hexanone	*10*	*99/1,800*	5.0 U
4-Methyl-2-pentanone (MIBK)	*630*	*170/2,200*	5.0 U
Acetone	*1,800*	*1,700/15,000*	269 J+
Benzene	5	*160/700*	21.4
Chloromethane	*19*	NL	1.8
Ethylbenzene	700	*61/550*	6.0
m&p-Xylene	*400*	*27/240*	1.8 J
Naphthalene	*40*	*21/170*	2.3
o-Xylene	*400*	*27/240*	1.1
Toluene	1,000	*62/560*	10.5
Xylene (Total)	10,000	*27/240*	1.1
Semivolatile Organic Compounds (µg/L)			
2,4-Dimethylphenol	*40*	*15/140*	6.0 J
2-Methylphenol(o-Cresol)	*100*	*67/600*	11.1
3&4-Methylphenol(m&p Cresol)	*200*	*62/560*	7.9 J
Phenol	*580*	*160/4,700*	9.8 UJ

Notes:

1 Drinking water values are compared to EPA MCLs. When an MCL is not listed, the EPA RSL is

2 Surface water values are compared to DHEC Freshwater Aquatic Life levels. When DHEC levels are not listed, EPA Surface Water Screening Values are used

SHAD Reported value exceeds the comparison criteria

Acute Acute exposure

Chr Chronic exposure

Cont Continuous exposure

J The analyte was positively identified; the associated value is the approximate concentration of the analyte in the sample.

J+ The analyte was positively identified; the associated value is the approximate concentration of the analyte in the sample, biased high.

J- The analyte was positively identified; the associated value is the approximate concentration of the analyte in the sample, biased low.

Max Maximum exposure level

MCL Maximum contaminant level

NL Not listed

RSL Regional Screening Level; Tapwater TR=1E-06, THQ=0.1

U The analyte was analyzed for, but was not detected at or above the associated value (reporting limit).

UJ The analyte was analyzed for, but was not detected at or above the associated value (reporting limit), which is estimated.

µg/L micrograms per liter

SURFACE WATER RESULTS SUMMARY TABLE
DETECTIONS ONLY
ABLE CONTRACTING FIRE

Parameter	MCL/RSL[1]	ACF-GW-472R		DHEC (max/cont) / EPA (chr/acute)[2]	ACF-SW-DITCH	ACF-SW-POND
	Groundwater			Surface Water		
Metals (µg/L)						
Aluminum	*2,000*	100 U		*87/750*	527	251
Antimony	6	5.0 U		*190/900*	61.0	32.3
Arsenic	10	10.0 U		340/150	554	493
Barium	2,000	5.7		*220/2,000*	175	133
Cadmium	5	1.0 U		0.53/0.10	4.3	3.6
Calcium	NL	27,200		*116,000/NL*	904,000	725,000
Chromium	100	5.0 U		580/28	191	148
Copper	1,300	27.6		3.8/2.9	38.1	20.2
Iron	*1,400*	50.0 U		*1,000/NL*	1,070	300
Lead	15	5.0 U		14/0.54	3.0 J	5.0 U
Magnesium	NL	9,370		*82,000/NL*	83,100	48,900
Manganese	*48*	21.8		*93/1,680*	820	526
Nickel	*40*	2.6 J		150/16	43.2	30.5
Potassium	NL	2,760 J		*53,000/NL*	112,000	75,300
Sodium	NL	10,600		*680,000/NL*	430,000	248,000
Vanadium	NL	5.0 U		*27/79*	36.4	22.7
Zinc	*600*	130		37/37	72.7	24.4
Volatile Organic Compounds (µg/L)						
1,2-Dichloroethane	5	1.0 U		*2,000/8,200*	0.83 J	0.55 J
2-Butanone (MEK)	*1,200*	5.0 U		*22,000/200,000*	71.6	43.2 J+
2-Hexanone	*10*	5.0 U		*99/1,800*	3.5 J	5.0 U
4-Methyl-2-pentanone (MIBK)	*630*	5.0 U		*170/2,200*	9.4 J	5.0 U
Acetone	*1,800*	25.0 U		*1,700/15,000*	325	269 J+
Benzene	5	1.0 U		*160/700*	29.7	21.4
Chloromethane	*19*	0.69 J		NL	2.0 U	1.8
Ethylbenzene	700	1.0 U		*61/550*	6.2	6.0
m&p-Xylene	*400*	2.0 U		*27/240*	2.4 J	1.8 J
Naphthalene	*40*	1.0 U		*21/170*	3.9	2.3
o-Xylene	*400*	1.0 U		*27/240*	1.6 J	1.1
Toluene	1,000	1.0 U		*62/560*	14.5	10.5
Xylene (Total)	10,000	1.0 U		*27/240*	2.0 U	1.1
Semivolatile Organic Compounds (µg/L)						
2,4-Dimethylphenol	*40*	100 U		*15/140*	108 J-	6.0 J
2-Methylphenol(o-Cresol)	*100*	100 U		*67/600*	137 J-	11.1
3&4-Methylphenol(m&p Cresol)	*200*	100 U		*62/560*	82.9 J-	7.9 J
Phenol	*580*	100 UJ		*160/4,700*	67.8 J-	9.8 UJ

Notes:

1 Drinking water values are compared to EPA MCLs. When an MCL is not listed, the EPA RSL is used

2 Surface water values are compared to DHEC Freshwater Aquatic Life levels. When DHEC levels are not listed, EPA Surface Water Screening Values are used

SHAD Reported value exceeds the comparison criteria

Acute Acute exposure

Chr Chronic exposure

Cont Continuous exposure

J The analyte was positively identified; the associated value is the approximate concentration of the analyte in the sample.

J+ The analyte was positively identified; the associated value is the approximate concentration of the analyte in the sample, biased high.

J- The analyte was positively identified; the associated value is the approximate concentration of the analyte in the sample, biased low.

Max Maximum exposure level

MCL Maximum contaminant level

NL Not listed

RSL Regional Screening Level; Tapwater TR=1E-06, THQ=0.1

U The analyte was analyzed for, but was not detected at or above the associated value (reporting limit).

SURFACE WATER RESULTS SUMMARY TABLE
DETECTIONS ONLY
ABLE CONTRACTING FIRE

UJ	The analyte was analyzed for, but was not detected at or above the associated value (reporting limit), which is estimated.
µg/L	micrograms per liter

Air Monitoring Summary Tables

The table below summarize monitoring data collected on using EPA's Viper wireless remote monitoring system.

Project Name: **Able Contracting Fire**

From: **7/25/19 19:51** ***To:*** ***7/26/19 7:00***

Station 155

Instrument	Analyte	Period Average Exceedances	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level (PEL/TLV/60 min AEGL)
AreaRAE 1	VOC	No	7,362	5,396	0 - 30,618 ppb	49.5 ppb	1,000 ppb
	CO	No	7,362	662	0 - 36 ppm	0.5 ppm	83 ppm
	H_2S	No	7,362	0	0 - 0 ppm	0 ppm	0.5 ppm
	O_2	No	7,362	7,362	20.9 - 20.9%	20.9%	<19.5 or >23%
	LEL	No	7,362	0	0 - 0%	0%	10%
DustTrak 1	PM-2.5	Moderate	11,564	11,564	2 - 652 µg/m³	13.8 µg/m³	See SOG #: T106

Station 156

Instrument	Analyte	Period Average Exceedances	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level (PEL/TLV/60 min AEGL)
AreaRAE 2	VOC	No	6,209	315	0 - 1,349 ppb	7.4 ppb	1,000 ppb
	CO	No	6,209	2,943	0 - 41 ppm	5.1 ppm	83 ppm
	H_2S	No	6,209	202	0 - 2.3 ppm	0 ppm	0.5 ppm
	O_2	No	6,209	6,209	20.9 - 20.9%	20.9%	<19.5 or >23%
	LEL	No	6,209	0	0 - 0 %	0%	10%
DustTrak 2	PM-2.5	Moderate	14,670	14,670	9 - 438 µg/m³	33.8 µg/m³	See SOG #: T106

Station 157

Instrument	Analyte	Period Average Exceedances	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level (PEL/TLV/60 min AEGL)
AreaRAE 3	VOC	No	6,741	0	0 - 0 ppb	0 ppb	1,000 ppb
	CO	No	6,741	0	0 - 0 ppm	0 ppm	83 ppm
	H_2S	No	6,741	0	0 - 0 ppm	0 ppm	0.5 ppm
	O_2	No	6,741	6,741	20.9 - 20.9%	20.9%	<19.5 or >23%
	LEL	No	6,741	0	0 - 0%	0%	10%
DustTrak 3	PM-2.5	Moderate	8,281	8,281	11 - 216 µg/m³	23.3 µg/m³	See SOG #: T106

Command Post

Instrument	Analyte	Period Average Exceedances	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level (PEL/TLV/60 min AEGL)
AreaRAE 4	VOC	No	6,476	15	0 - 698 ppb	0.4 ppb	1,000 ppb
	CO	No	6,476	26	0 - 10 ppm	0 ppm	83 ppm
	H_2S	No	6,476	0	0 - 0 ppm	0 ppm	0.5 ppm
	O_2	No	6,476	6,476	20.9 - 20.9%	20.9%	<19.5 or >23%
	LEL	No	6,476	0	0 - 0%	0%	10%

Notes:

- % Percent
- < Less than
- > Greater than
- AEGL Acute Exposure Guideline levels for airborne chemicals
- CO Carbon monoxide
- H_2S Hydrogen Sulfide
- LEL Lower Explosive Level
- min Minute
- O_2 Oxygen
- PEL Permissible exposure limit
- ppb Parts per billion
- ppm Parts per million
- PM Particulate matter
- SOG Standard Operating Guidelines
- TLV Threshold limit value
- µg/m³ Micrograms per cubic meter
- VOC Volatile organic compoud

Air Monitoring Summary Tables

The table below summarize monitoring data collected on using EPA's Viper wireless remote monitoring system.

Project Name: ABLE CONTRACTING FIRE

From: **8/2/19 20:59** ***To:*** ***8/3/19 8:59***

Location 1 (Southeast Corner; Residential Property Line)							
Instrument	**Analyte**	**Period Average Exceedances**	**Number of Readings**	**Number of Detections**	**Concentration Range**	**Period Average**	**Action Level (PEL / RML / 60 min AEGL)**
SPM Flex 1	Phosgene (COCl2)	0	2192	0	0 - 0 ppb	0 ppb	100 ppb / 0.23ppb / 40 ppb

Location 2 (West Side of Pile)							
Instrument	**Analyte**	**Period Average Exceedances**	**Number of Readings**	**Number of Detections**	**Concentration Range**	**Period Average**	**Action Level (PEL / RML / 60 min AEGL)**
SPM Flex 2	Phosgene (COCl2)	0	1337	0	0 - 0 ppb	0 ppb	100 ppb / 0.23ppb / 40 ppb

Location 3 (Upwind; North)							
Instrument	**Analyte**	**Period Average Exceedances**	**Number of Readings**	**Number of Detections**	**Concentration Range**	**Period Average**	**Action Level (PEL / RML / 60 min AEGL)**
SPM Flex 3	Phosgene (COCl2)	0	1844	0	0 - 0 ppb	0 ppb	100 ppb / 0.23ppb / 40 ppb

Notes:

- AEGL Acute Exposure Guideline levels for airborne chemicals (8 hour exposure)
- min Minute
- PEL Permissible exposure limit
- ppb Parts per billion
- RML Removal Management Level
- TLV Threshold limit value

Air Monitoring Summary Tables

The table below summarize monitoring data collected on using EPA's Viper wireless remote monitoring system.

Project Name: ABLE CONTRACTING FIRE

From: **8/3/19** **0:00** ***To:*** ***8/4/19*** ***6:59***

Location 1 (Southeast Corner; Residential Property Line)							
Instrument	**Analyte**	**Period Average Exceedances**	**Number of Readings**	**Number of Detections**	**Concentration Range**	**Period Average**	**Action Level (PEL / RML / 60 min AEGL)**
SPM Flex 1	Phosgene (COCl2)	3	4337	3	0 - 6 ppb	0 ppb	100 ppb / 0.23ppb / 40 ppb

Location 2 (West Side of Pile)							
Instrument	**Analyte**	**Period Average Exceedances**	**Number of Readings**	**Number of Detections**	**Concentration Range**	**Period Average**	**Action Level (PEL / RML / 60 min AEGL)**
SPM Flex 2	Phosgene (COCl2)	0	3267	0	0 - 0 ppb	0 ppb	100 ppb / 0.23ppb / 40 ppb

Location 3 (Upwind; North)							
Instrument	**Analyte**	**Period Average Exceedances**	**Number of Readings**	**Number of Detections**	**Concentration Range**	**Period Average**	**Action Level (PEL / RML / 60 min AEGL)**
SPM Flex 3	Phosgene (COCl2)	5	4319	5	0 - 22 ppb	0 ppb	100 ppb / 0.23ppb / 40 ppb

Notes:

AEGL	Acute Exposure Guideline levels for airborne chemicals (8 hour exposure)
min	Minute
PEL	Permissible exposure limit
ppb	Parts per billion
RML	Removal Management Level
TLV	Threshold limit value

Mobile Air Monitoring Summary Tables

Project Name:

From: **8/3/19 12:10** ***To:*** ***8/4/19 7:12***

Location 1

Instrument	Analyte	Period Average Exceedances	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level (PEL/60 min AEGL)
MultiRAE Pro	VOC	0	12	0	0 - 0 ppm	0 ppm	1 ppm
	CO	1	12	1	0 - 3 ppm	0.25 ppm	83 ppm

Location 2

Instrument	Analyte	Period Average Exceedances	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level (PEL/60 min AEGL)
MultiRAE Pro	VOC	0	12	0	0 - 0 ppm	0 ppm	1 ppm
	CO	1	12	1	0 - 3 ppm	0.25 ppm	83 ppm

Location 3

Instrument	Analyte	Period Average Exceedances	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level (PEL/60 min AEGL)
MultiRAE Pro	VOC	2	12	2	0 - 210 ppm	20.8 ppm	1 ppm
	CO	0	12	0	0 - 0 ppm	0 ppm	83 ppm

Location 4

Instrument	Analyte	Period Average Exceedances	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level (PEL/60 min AEGL)
MultiRAE Pro	VOC	0	12	1	0 - 10 ppm	0.83 ppm	1 ppm
	CO	0	12	0	0 - 0 ppm	0 ppm	83 ppm

Location 5

Instrument	Analyte	Period Average Exceedances	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level (PEL/60 min AEGL)
MultiRAE Pro	VOC	0	12	0	0 - 0 ppm	0 ppm	1 ppm
	CO	0	12	0	0 - 0 ppm	0 ppm	83 ppm

Location 6

Instrument	Analyte	Period Average Exceedances	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level (PEL/60 min AEGL)
MultiRAE Pro	VOC	0	12	0	0 - 0 ppm	0 ppm	1 ppm
	CO	0	12	0	0 - 0 ppm	0 ppm	83 ppm

Location 7

Instrument	Analyte	Period Average Exceedances	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level (PEL/60 min AEGL)
MultiRAE Pro	VOC	0	12	0	0 - 0 ppm	0 ppm	1 ppm
	CO	0	12	0	0 - 0 ppm	0 ppm	83 ppm

Location 8

Instrument	Analyte	Period Average Exceedances	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level (PEL/60 min AEGL)
MultiRAE Pro	VOC	0	12	0	0 - 0 ppm	0 ppm	1 ppm
	CO	0	12	0	0 - 0 ppm	0 ppm	83 ppm

Notes:

AEGL Acute Exposure Guideline levels for airborne chemicals
CO Carbon monoxide
min Minute
PEL Permissible exposure limit
ppm Parter per million
VOC Volatile organic compoud

Air Monitoring Summary Tables

The table below summarize monitoring data collected on using EPA's Viper wireless remote monitoring system.

Project Name: Able Contracting Fire

From: **7/27/19** **0700 hours** ***To:*** ***7/28/19*** ***0700 hours***

Location 1						
Instrument	**Analyte**	**Period Average Exceedances**	**Number of Readings**	**Number of Detections**	**Concentration Range**	**Period A**
AreaRAE 1	VOC	No	11,334	6,623	0 - 2535 ppb	86.3
	CO	No	11,334	455	0 - 11 ppm	0.2
	H_2S	No	11,334	0	0 - 0 ppm	0 p
	O_2	No	11,334	11,334	20.9 - 20.9%	20.
	LEL	No	11,334	0	0 - 0%	0
DustTrak 1	PM-2.5	Good	41,230	39,154	0 - 498 µg/m³	8.5 µ

Location 2						
Instrument	**Analyte**	**Period Average Exceedances**	**Number of Readings**	**Number of Detections**	**Concentration Range**	**Period A**
AreaRAE 2	VOC	No	11,166	45	0 - 718 ppb	6.1
	CO	No	11,166	135	0 - 7 ppm	0 p
	H_2S	No	11,166	4	0 - 0.6 ppm	0 p
	O_2	No	11,166	11,166	20.9 - 20.9%	20.
	LEL	No	11,166	0	0 - 0 %	0
DustTrak 2	PM-2.5	Very Unhealthy	48,763	48,763	8 - 6550 µg/m³	202.6

Location 3						
Instrument	**Analyte**	**Period Average Exceedances**	**Number of Readings**	**Number of Detections**	**Concentration Range**	**Period A**
AreaRAE 3	VOC	No	11,528	7,621	0 - 3538 ppb	70.6
	CO	No	11,528	31	0 - 7 ppm	0 p
	H_2S	No	11,528	0	0 - 0 ppm	0 p
	O_2	No	11,528	11,528	20.9 - 20.9%	20
	LEL	No	11,528	0	0 - 0%	0
DustTrak 3	PM-2.5	Unhealthy	42,191	42,191	16 - 7890 µg/m³	88.4

min	Minute
O_2	Oxygen
PEL	Permissible exposure limit
ppm	Parter per million
PM	Particulate matter
SOG	Standard Operating Guidelines
TLV	Threshold limit value
$\mu g/m^3$	Micrograms per cubic meter
VOC	Volatile organic compoud

Air Monitoring Summary Tables

The table below summarize monitoring data collected on using EPA's Viper wireless remote monitoring system.

Project Name: Able Contracting Fire

From: **7/27/19** **0700 hours** ***To:*** ***7/28/19*** ***0700 hours***

Location 1						
Instrument	**Analyte**	**Period Average Exceedances**	**Number of Readings**	**Number of Detections**	**Concentration Range**	**Period A**
AreaRAE 1	VOC	No	11,334	6,623	0 - 2535 ppb	86.3
	CO	No	11,334	455	0 - 11 ppm	0.2 p
	H_2S	No	11,334	0	0 - 0 ppm	0 p
	O_2	No	11,334	11,334	20.9 - 20.9%	20.
	LEL	No	11,334	0	0 - 0%	0
DustTrak 1	PM-2.5	Good	41,230	39,154	0 - 498 µg/m³	8.5 µ

Location 2						
Instrument	**Analyte**	**Period Average Exceedances**	**Number of Readings**	**Number of Detections**	**Concentration Range**	**Period A**
AreaRAE 2	VOC	No	11,166	45	0 - 718 ppb	6.1
	CO	No	11,166	135	0 - 7 ppm	0 p
	H_2S	No	11,166	4	0 - 0.6 ppm	0 p
	O_2	No	11,166	11,166	20.9 - 20.9%	20.
	LEL	No	11,166	0	0 - 0 %	0
DustTrak 2	PM-2.5	Very Unhealthy	48,763	48,763	8 - 6550 µg/m³	202.6

Location 3						
Instrument	**Analyte**	**Period Average Exceedances**	**Number of Readings**	**Number of Detections**	**Concentration Range**	**Period**
AreaRAE 3	VOC	No	11,528	7,621	0 - 3538 ppb	70.6
	CO	No	11,528	31	0 - 7 ppm	0 p
	H_2S	No	11,528	0	0 - 0 ppm	0 p
	O_2	No	11,528	11,528	20.9 - 20.9%	20
	LEL	No	11,528	0	0 - 0%	0
DustTrak 3	PM-2.5	Unhealthy	42,191	42,191	16 - 7890 µg/m³	88.4

min	Minute
O_2	Oxygen
PEL	Permissible exposure limit
ppm	Parter per million
PM	Particulate matter
SOG	Standard Operating Guidelines
TLV	Threshold limit value
$\mu g/m^3$	Micrograms per cubic meter
VOC	Volatile organic compoud

Air Monitoring Summary Tables

The table below summarize monitoring data collected on using EPA's Viper wireless remote monitoring system.

Project Name: **Able Contracting Fire**

From: **7/25/19 19:51** ***To:*** ***7/26/19 7:00***

Station 155

Instrument	Analyte	Period Average Exceedances	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level (PEL/TLV/60 min AEGL)
AreaRAE 1	VOC	No	7,362	5,396	0 - 30,618 ppb	49.5 ppb	1,000 ppb
	CO	No	7,362	662	0 - 36 ppm	0.5 ppm	83 ppm
	H_2S	No	7,362	0	0 - 0 ppm	0 ppm	0.5 ppm
	O_2	No	7,362	7,362	20.9 - 20.9%	20.9%	<19.5 or >23%
	LEL	No	7,362	0	0 - 0%	0%	10%
DustTrak 1	PM-2.5	Moderate	11,564	11,564	2 - 652 µg/m³	13.8 µg/m³	See SOG #: T106

Station 156

Instrument	Analyte	Period Average Exceedances	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level (PEL/TLV/60 min AEGL)
AreaRAE 2	VOC	No	6,209	315	0 - 1,349 ppb	7.4 ppb	1,000 ppb
	CO	No	6,209	2,943	0 - 41 ppm	5.1 ppm	83 ppm
	H_2S	No	6,209	202	0 - 2.3 ppm	0 ppm	0.5 ppm
	O_2	No	6,209	6,209	20.9 - 20.9%	20.9%	<19.5 or >23%
	LEL	No	6,209	0	0 - 0 %	0%	10%
DustTrak 2	PM-2.5	Moderate	14,670	14,670	9 - 438 µg/m³	33.8 µg/m³	See SOG #: T106

Station 157

Instrument	Analyte	Period Average Exceedances	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level (PEL/TLV/60 min AEGL)
AreaRAE 3	VOC	No	6,741	0	0 - 0 ppb	0 ppb	1,000 ppb
	CO	No	6,741	0	0 - 0 ppm	0 ppm	83 ppm
	H_2S	No	6,741	0	0 - 0 ppm	0 ppm	0.5 ppm
	O_2	No	6,741	6,741	20.9 - 20.9%	20.9%	<19.5 or >23%
	LEL	No	6,741	0	0 - 0%	0%	10%
DustTrak 3	PM-2.5	Moderate	8,281	8,281	11 - 216 µg/m³	23.3 µg/m³	See SOG #: T106

Command Post

Instrument	Analyte	Period Average Exceedances	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level (PEL/TLV/60 min AEGL)
AreaRAE 4	VOC	No	6,476	15	0 - 698 ppb	0.4 ppb	1,000 ppb
	CO	No	6,476	26	0 - 10 ppm	0 ppm	83 ppm
	H_2S	No	6,476	0	0 - 0 ppm	0 ppm	0.5 ppm
	O_2	No	6,476	6,476	20.9 - 20.9%	20.9%	<19.5 or >23%
	LEL	No	6,476	0	0 - 0%	0%	10%

Notes:

%	Percent
<	Less than
>	Greater than
AEGL	Acute Exposure Guideline levels for airborne chemicals
CO	Carbon monoxide
H_2S	Hydrogen Sulfide
LEL	Lower Explosive Level
min	Minute
O_2	Oxygen
PEL	Permissible exposure limit
ppb	Parts per billion
ppm	Parts per million
PM	Particulate matter
SOG	Standard Operating Guidelines
TLV	Threshold limit value
µg/m³	Micrograms per cubic meter
VOC	Volatile organic compoud

Air Monitoring Summary Tables

The table below summarize monitoring data collected on using EPA's Viper wireless remote monitoring system.

Project Name: Able Contracting Fire

From: **7/26/19 7:00** ***To:*** ***7/26/19 18:59***

Location 1

Instrument	Analyte	Period Average Exceedances	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level (PEL/TLV/60 min AEGL)
AreaRAE 1	VOC	No	7,598	109	0 - 6,319 ppb	7 ppb	1,000 ppb
	CO	No	7,598	529	0 - 19 ppm	0.3 ppm	83 ppm
	H_2S	No	7,598	0	0 - 0 ppm	0 ppm	0.5 ppm
	O_2	No	7,598	7,598	20.9 - 20.9%	20.9%	<19.5 or >23%
	LEL	No	7,598	0	0 - 0%	0%	10%
DustTrak 1	PM-2.5	Good	25,313	25,310	0 - 220 µg/m³	6.3 µg/m³	See SOG #: T106

Location 2

Instrument	Analyte	Period Average Exceedances	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level (PEL/TLV/60 min AEGL)
AreaRAE 2	VOC	No	7,795	111	0 - 5,277 ppb	2.4 ppb	1,000 ppb
	CO	No	7,795	148	0 - 13 ppm	0.1 ppm	83 ppm
	H_2S	No	7,795	0	0 - 0 ppm	0 ppm	0.5 ppm
	O_2	No	7,795	7,795	20.9 - 20.9%	20.9%	<19.5 or >23%
	LEL	No	7,795	0	0 - 0 %	0%	10%
DustTrak 2	PM-2.5	Unhealthy	44,965	44,965	1 - 1260 µg/m³	84.2 µg/m³	See SOG #: T106

Location 3

Instrument	Analyte	Period Average Exceedances	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level (PEL/TLV/60 min AEGL)
AreaRAE 3	VOC	No	8,496	4,210	0 - 20,802 ppb	45.9 ppb	1,000 ppb
	CO	No	8,496	0	0 - 0 ppm	0 ppm	83 ppm
	H_2S	No	8,496	0	0 - 0 ppm	0 ppm	0.5 ppm
	O_2	No	8,496	8,496	20.9 - 20.9%	20.9%	<19.5 or >23%
	LEL	No	8,496	0	0 - 0%	0%	10%
DustTrak 3	PM-2.5	Unhealthy for Sensative Groups	38,022	38,022	14 - 1390 µg/m³	52 µg/m³	See SOG #: T106

Location 4

Instrument	Analyte	Period Average Exceedances	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level (PEL/TLV/60 min AEGL)
AreaRAE 4	VOC	No	7,855	88	0 - 21,572 ppb	4.7 ppb	1,000 ppb
	CO	No	7,855	607	0 - 24 ppm	0.5 ppm	83 ppm
	H_2S	No	7,855	17	0 - 1 ppm	0 ppm	0.5 ppm
	O_2	No	7,855	7,855	20.9 - 20.9%	20.9%	<19.5 or >23%
	LEL	No	7,855	0	0 - 0%	0%	10%

Notes:

- % Percent
- < Less than
- > Greater than
- AEGL Acute Exposure Guideline levels for airborne chemicals
- CO Carbon monoxide
- H_2S Hydrogen Sulfide
- LEL Lower Explosive Level
- min Minute
- O_2 Oxygen
- PEL Permissible exposure limit
- ppb Parts per billion
- ppm Parts per million
- PM Particulate matter
- SOG Standard Operating Guidelines
- TLV Threshold limit value
- µg/m³ Micrograms per cubic meter
- VOC Volatile organic compoud

Air Monitoring Summary Tables

The table below summarize monitoring data collected on using EPA's Viper wireless remote monitoring system.

Project Name: Able Contracting Fire

From: **7/26/19** **1900 hours** ***To:*** ***7/27/19*** ***0700 hours***

Location 1

Instrument	Analyte	Period Average Exceedances	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level (PEL/TLV/60 min AEGL)
AreaRAE 1	VOC	No	6,934	4,053	0 - 881 ppb	27.8 ppb	1 ppm
	CO	No	6,934	268	0 - 11 ppm	0.2 ppm	83 ppm
	H_2S	No	6,934	0	0 - 0 ppm	0 ppm	0.5 ppm
	O_2	No	6,934	6,934	20.9 - 20.9%	20.9%	<19.5 or >23%
	LEL	No	6,934	0	0 - 0%	0%	10%
DustTrak 1	PM-2.5	Good	36,181	36,175	0 - 417 µg/m³	7.6 µg/m³	See SOG #: T106

Location 2

Instrument	Analyte	Period Average Exceedances	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level (PEL/TLV/60 min AEGL)
AreaRAE 2	VOC	No	7,164	1,248	0 - 1513 ppb	24.8 ppb	1 ppm
	CO	No	7,164	426	0 - 16 ppm	0.2 ppm	83 ppm
	H_2S	No	7,164	13	0 - 1 ppm	0 ppm	0.5 ppm
	O_2	No	7,164	7,164	20.9 - 20.9%	20.9%	<19.5 or >23%
	LEL	No	7,164	0	0 - 0 %	0%	10%
DustTrak 2	PM-2.5	Very Unhealthy	44,566	44,566	10 - 10400 µg/m³	167.8 µg/m³	See SOG #: T106

Location 3

Instrument	Analyte	Period Average Exceedances	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level (PEL/TLV/60 min AEGL)
AreaRAE 3	VOC	No	7,952	7,952	0 - 920 ppb	31.9 ppb	1 ppm
	CO	No	7,952	0	0 - 0 ppm	0 ppm	83 ppm
	H_2S	No	7,952	0	0 - 0 ppm	0 ppm	0.5 ppm
	O_2	No	7,952	7,952	20.9 - 21.1%	20.9%	<19.5 or >23%
	LEL	No	7,952	0	0 - 0%	0%	10%
DustTrak 3	PM-2.5	Unhealthy	39,505	39,505	16 - 2430 µg/m³	57.8 µg/m³	See SOG #: T106

Location 4

Instrument	Analyte	Period Average Exceedances	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level (PEL/TLV/60 min AEGL)
AreaRAE 4	VOC	No	7,372	219	0 - 112984 ppb	29.2 ppb	1 ppm
	CO	No	7,372	59	0 - 23 ppm	0.1 ppm	83 ppm
	H_2S	No	7,372	0	0 - 0 ppm	0 ppm	0.5 ppm
	O_2	No	7,372	7,372	20.9 - 20.9%	20.9%	<19.5 or >23%
	LEL	No	7,372	0	0 - 0%	0%	10%

Notes:

- % Percent
- < Less than
- > Greater than
- AEGL Acute Exposure Guideline levels for airborne chemicals
- CO Carbon monoxide
- H_2S Hydrogen Sulfide
- LEL Lower Explosive Level

min	Minute
O_2	Oxygen
PEL	Permissible exposure limit
ppm	Parter per million
PM	Particulate matter
SOG	Standard Operating Guidelines
TLV	Threshold limit value
$\mu g/m^3$	Micrograms per cubic meter
VOC	Volatile organic compoud

Air Monitoring Summary Tables

The table below summarize monitoring data collected on using EPA's Viper wireless remote monitoring system.

Project Name: Able Contracting Fire

From: **7/28/19** **0700 hours** ***To:*** ***7/29/19*** ***0200 hours***

Location 1

Instrument	Analyte	Period Average Exceedances	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level (PEL/TLV/60 min AEGL)
AreaRAE 1	VOC	No	2,452	1,406	0 - 3,302 ppb	77.7 ppb	1,000 ppb
	CO	No	2,452	26	0 - 6 ppm	0 ppm	83 ppm
	H_2S	No	2,452	0	0 - 0 ppm	0 ppm	0.5 ppm
	O_2	No	2,452	2,452	20.9 - 20.9%	20.9%	<19.5 or >23%
	LEL	No	2,452	0	0 - 0%	0%	10%
DustTrak 1	PM-2.5	Good	6,341	6,332	0 - 351 µg/m³	8.6 µg/m³	See SOG #: T106

Location 2

Instrument	Analyte	Period Average Exceedances	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level (PEL/TLV/60 min AEGL)
AreaRAE 2	VOC	No	2,432	1	0 - 119 ppb	0 ppb	1,000 ppb
	CO	No	2,432	3	0 - 4 ppm	0 ppm	83 ppm
	H_2S	No	2,432	1	0 - 0.4 ppm	0 ppm	0.5 ppm
	O_2	No	2,432	2,432	20.9 - 20.9%	20.9%	<19.5 or >23%
	LEL	No	2,432	0	0 - 0 %	0%	10%
DustTrak 2	PM-2.5	Unhealthy for Sensitive Groups	7,267	7,267	11 - 363 µg/m³	40.6 µg/m³	See SOG #: T106

Location 3

Instrument	Analyte	Period Average Exceedances	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level (PEL/TLV/60 min AEGL)
AreaRAE 3	VOC	No	2,449	1,096	0 - 3,200 ppb	36 ppb	1,000 ppb
	CO	No	2,449	0	0 - 0 ppm	0 ppm	83 ppm
	H_2S	No	2,449	0	0 - 0 ppm	0 ppm	0.5 ppm
	O_2	No	2,449	2,449	20.9 - 20.9%	20.9%	<19.5 or >23%
	LEL	No	2,449	0	0 - 0%	0%	10%
DustTrak 3	PM-2.5	Unhealthy	4,708	4,708	19 - 1060 µg/m³	101.6 µg/m³	See SOG #: T106

Location 4

Instrument	Analyte	Period Average Exceedances	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level (PEL/TLV/60 min AEGL)
AreaRAE 4	VOC	No	2,434	404	0 - 36,051 ppb	27.5 ppb	1,000 ppb
	CO	No	2,434	95	0 - 19 ppm	0.2 ppm	83 ppm
	H_2S	No	2,434	0	0 - 0 ppm	0 ppm	0.5 ppm
	O_2	No	2,434	2,434	20.9 - 21.3%	20.9%	<19.5 or >23%
	LEL	No	2,434	0	0 - 0%	0%	10%

Notes:

- % Percent
- < Less than
- > Greater than
- AEGL Acute Exposure Guideline levels for airborne chemicals
- CO Carbon monoxide
- H_2S Hydrogen Sulfide
- LEL Lower Explosive Level
- min Minute
- O_2 Oxygen
- PEL Permissible exposure limit
- ppm Parts per million
- ppm Parts per million
- PM Particulate matter
- SOG Standard Operating Guidelines
- TLV Threshold limit value
- µg/m³ Micrograms per cubic meter
- VOC Volatile organic compoud

Armstrong, Kathy

From: Garrard, Jordan
Sent: Friday, August 09, 2019 9:44 AM
To: Scott Reynolds
Cc: Huyser, Matthew
Subject: RE: Able PM

Scott, please include Matt Huyser on the distribution list. He is responding to the facility now, since I am going on vacation.

Thanks

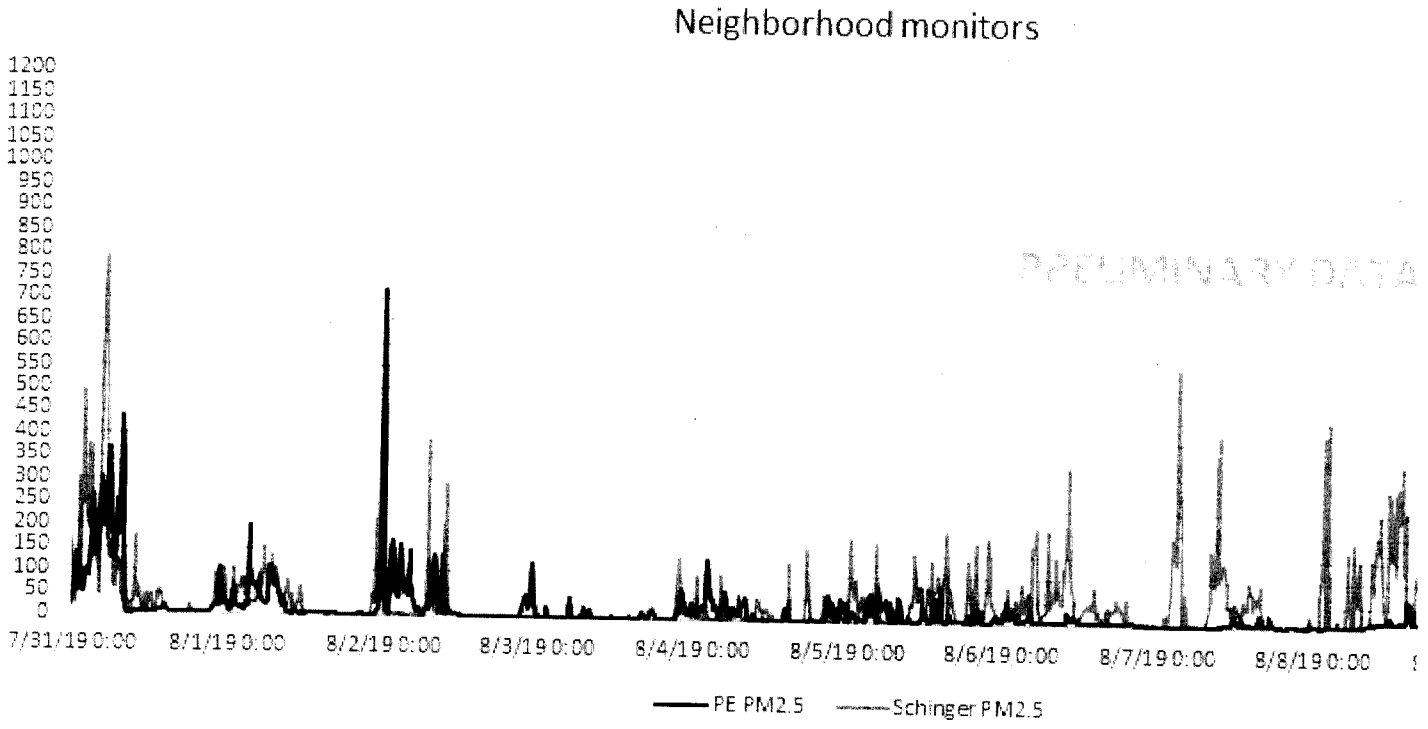
Jordan Garrard
On-Scene Coordinator
EPA Region 4
Emergency Response and Removal Branch
Work: 404-562-8642
Cell: 678-644-8648

From: Reynolds, Scott <REYNOLDS@dhec.sc.gov>
Sent: Friday, August 9, 2019 9:26 AM
To: thompsrb@dhec.sc.gov
Cc: Frost, Keith <frostrk@dhec.sc.gov>; shealyrg@dhec.sc.gov; Marshall, Frances (Fran) <marshaf2@dhec.sc.gov>; reecemc@dhec.sc.gov; Marcus, Mike <MARCUSJM@dhec.sc.gov>; Porter, Henry <porterhj@dhec.sc.gov>; Keisler, Van <keislecv@dhec.sc.gov>; Blalock, Juli <blalocje@dhec.sc.gov>; Taylor, Monica N. <TAYLORMN@dhec.sc.gov>; Dickman, Jacquelyn S. <DICKMAJS@dhec.sc.gov>; Timmerman, Kelsey A. <timmerka@dhec.sc.gov>; Threatt, Richard <threatrl@dhec.sc.gov>; Boyce, Lawra <boycelc@dhec.sc.gov>; Boswell, Wendy <BOSWELWM@dhec.sc.gov>; Garrard, Jordan <Garrard.Jordan@epa.gov>
Subject: Re: Able PM

Yesterday's 24 hour averages (Aug 8 Midnight to midnight)

Palmetto Exterminators	14 ug/M3 (Moderate)
Schinger	82 ug/M3 (Unhealthy)

It appears the Palmetto exterminators PM2.5 stopped transmitting data at~6:30AM this morning. PM10 is still.sending data.



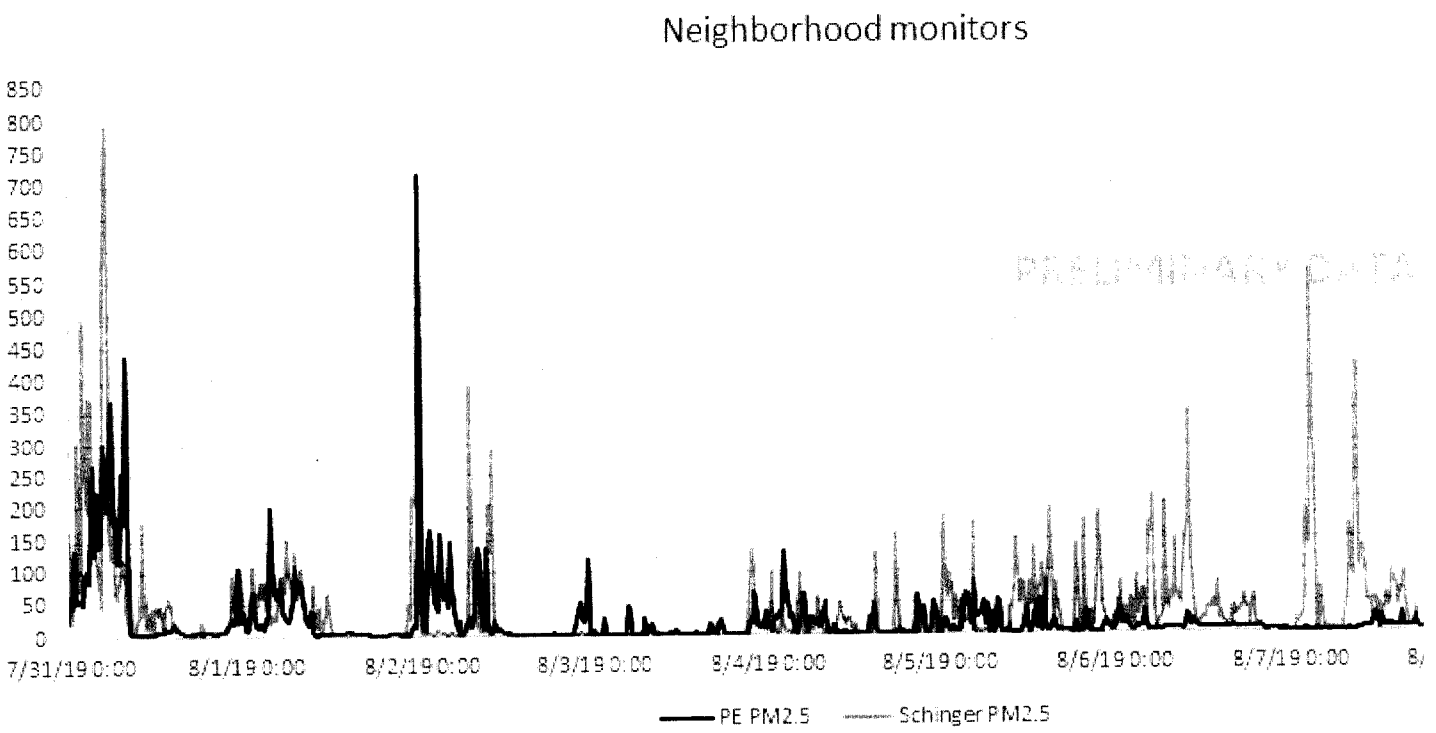
From: Reynolds, Scott <REYNOLDS@dhec.sc.gov>
Sent: Thursday, August 8, 2019 9:18:09 AM
To: Thompson, Rhonda <thompsrb@dhec.sc.gov>
Cc: Frost, Keith <frostrk@dhec.sc.gov>; Shealy, Renee <shealyrg@dhec.sc.gov>; Marshall, Frances (Fran) <marshaf2@dhec.sc.gov>; Reece, Myra <reecemc@dhec.sc.gov>; Marcus, Mike <MARCUSJM@dhec.sc.gov>; Porter, Henry <porterhj@dhec.sc.gov>; Keisler, Van <keislecv@dhec.sc.gov>; Blalock, Juli <blalocje@dhec.sc.gov>; Taylor, Monica N. <TAYLORMN@dhec.sc.gov>; Dickman, Jacquelyn S. <DICKMAJS@dhec.sc.gov>; Timmerman, Kelsey A. <timmerka@dhec.sc.gov>; Threatt, Richard <threatrl@dhec.sc.gov>; Boyce, Lawra <boycelc@dhec.sc.gov>; Boswell, Wendy <BOSWELWM@dhec.sc.gov>; Garrard, Jordan <Garrard.Jordan@epa.gov>
Subject: Re: Able PM

Yesterday's 24 hour averages (Aug 7 Midnight to midnight)

Palmetto Exterminators 6 ug/M3 (Good)

Schinger 55 ug/M3 (Unhealthy for Sensitive Groups)- but right on the cusp of being classified 'Unhealthy'

A PM10 was deployed to Palmetto Exterminators yesterday to see if it could serve as a surrogate after the planned move of the PM2.5 to Okatie Elementary next week.

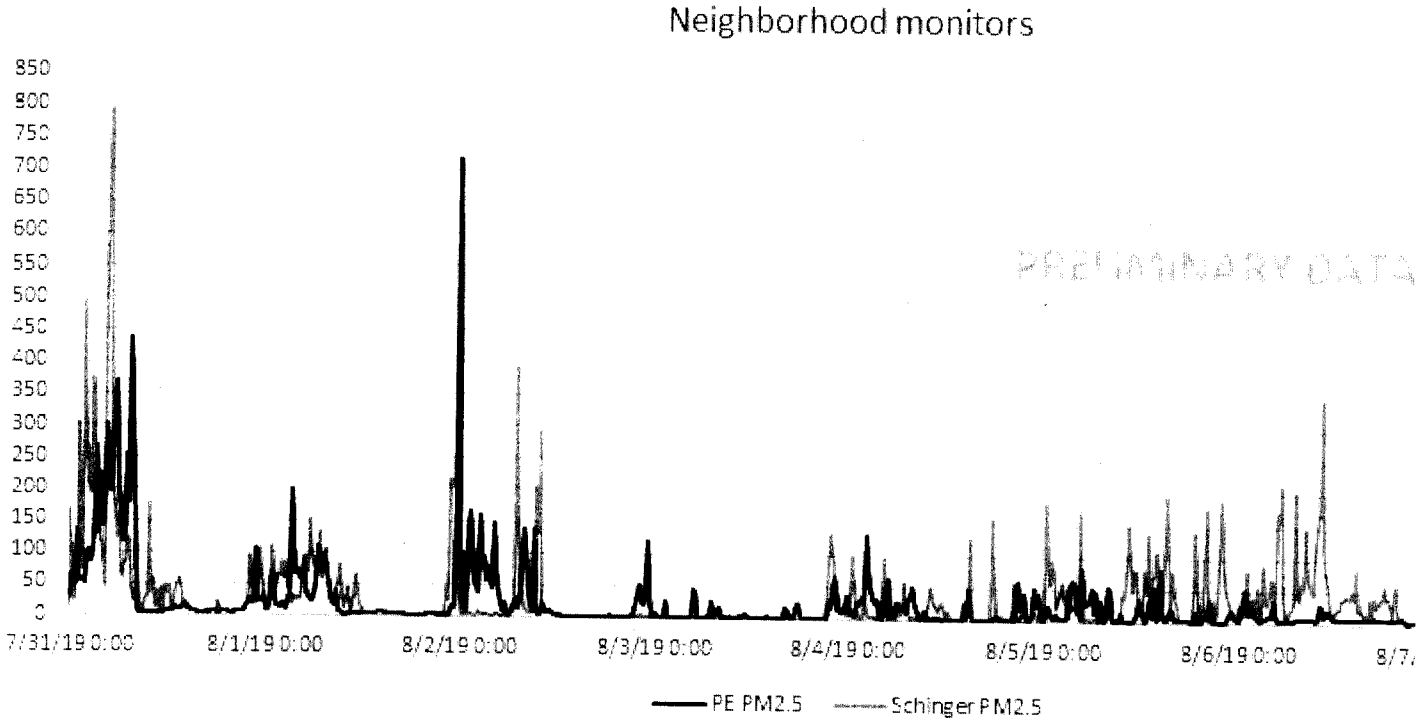


From: Reynolds, Scott <REYNOLDS@dhec.sc.gov>
Sent: Wednesday, August 7, 2019 9:41:43 AM
To: Thompson, Rhonda <thompsrb@dhec.sc.gov>
Cc: Frost, Keith <frostrk@dhec.sc.gov>; Shealy, Renee <shealyrg@dhec.sc.gov>; Marshall, Frances (Fran) <marshaf2@dhec.sc.gov>; Reece, Myra <reecemc@dhec.sc.gov>; Marcus, Mike <MARCUSJM@dhec.sc.gov>; Porter, Henry <porterhj@dhec.sc.gov>; Keisler, Van <keislecv@dhec.sc.gov>; Blalock, Juli <blalocje@dhec.sc.gov>; Taylor, Monica N. <TAYLORMN@dhec.sc.gov>; Dickman, Jacquelyn S. <DICKMAJS@dhec.sc.gov>; Timmerman, Kelsey A. <timmerka@dhec.sc.gov>; Threatt, Richard <threatrl@dhec.sc.gov>; Boyce, Lawra <boycelc@dhec.sc.gov>; Boswell, Wendy <BOSWELWM@dhec.sc.gov>; Garrard, Jordan <Garrard.Jordan@epa.gov>
Subject: Re: Able PM

Forgot the graph.

Everybody likes graphs

Right?



From: Reynolds, Scott <REYNOLDS@dhec.sc.gov>
Sent: Wednesday, August 7, 2019 9:11:36 AM
To: Thompson, Rhonda <thompsrb@dhec.sc.gov>
Cc: Frost, Keith <frostrk@dhec.sc.gov>; Shealy, Renee <shealyrg@dhec.sc.gov>; Marshall, Frances (Fran) <marshaf2@dhec.sc.gov>; Reece, Myra <reecemc@dhec.sc.gov>; Marcus, Mike <MARCUSJM@dhec.sc.gov>; Porter, Henry <porterhj@dhec.sc.gov>; Keisler, Van <keislecv@dhec.sc.gov>; Blalock, Juli <blalocje@dhec.sc.gov>; Taylor, Monica N. <TAYLORMN@dhec.sc.gov>; Dickman, Jacquelyn S. <DICKMAJS@dhec.sc.gov>; Timmerman, Kelsey A. <timmerka@dhec.sc.gov>; Threatt, Richard <threatrl@dhec.sc.gov>; Boyce, Lawra <boycelc@dhec.sc.gov>; Boswell, Wendy <BOSWELWM@dhec.sc.gov>; Garrard, Jordan <Garrard.Jordan@epa.gov>
Subject: Re: Able PM

Yesterday's 24 hour averages (Aug 6 Midnight to midnight)

Palmetto Exterminators 10ug/M3 (Good)

Schinger 46ug/M3 (Unhealthy for Sensitive Groups)

The community has been downwind and current ~8 hour average is ~68 (in the unhealthy range), likely to moderate as the day goes on, but still indicating higher concentrations at night. Winds are predicted to be from the west during extended periods Thursday through late Saturday

---

From: Reynolds, Scott <REYNOLDS@dhec.sc.gov>
Sent: Tuesday, August 6, 2019 9:17:31 AM
To: Thompson, Rhonda <thompsrb@dhec.sc.gov>
Cc: Frost, Keith <frostrk@dhec.sc.gov>; Shealy, Renee <shealyrg@dhec.sc.gov>; Marshall, Frances (Fran)

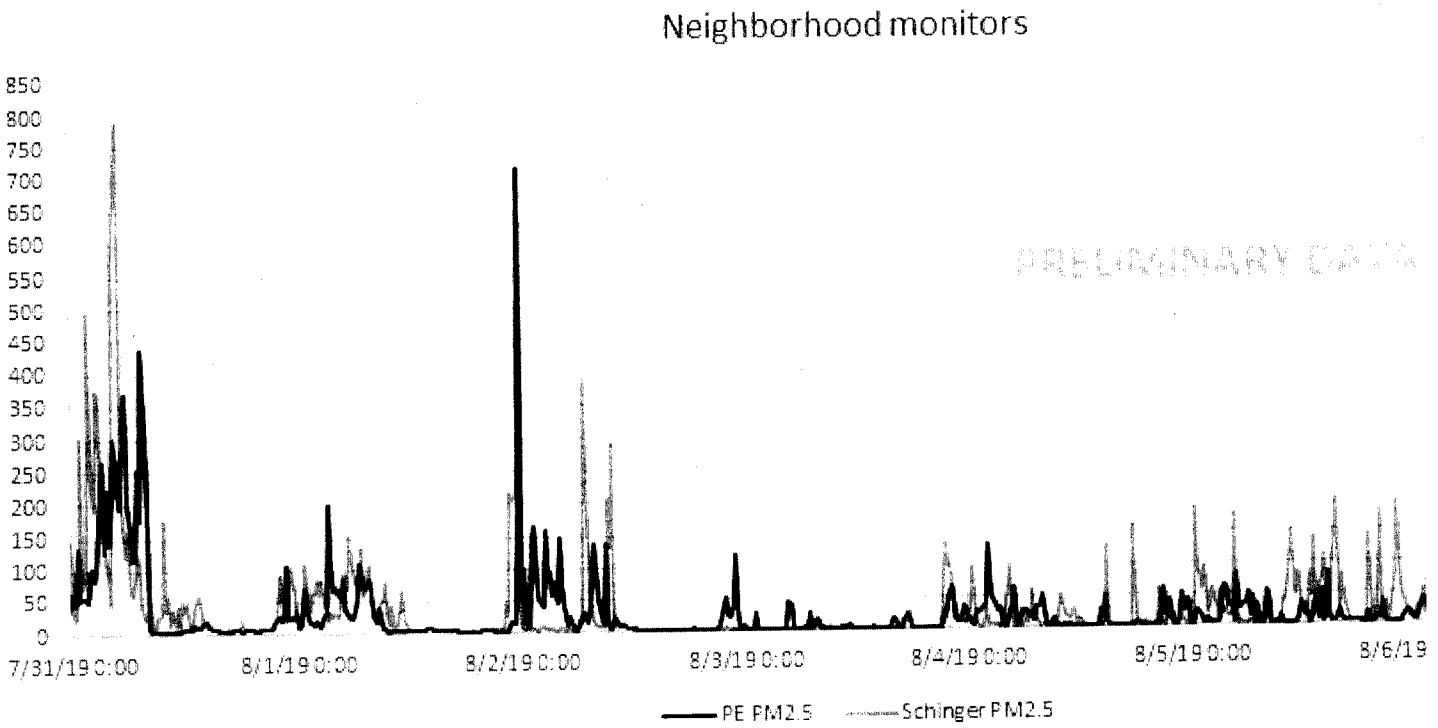
<marshaf2@dhec.sc.gov>; Reece, Myra <reecemc@dhec.sc.gov>; Marcus, Mike <MARCUSJM@dhec.sc.gov>; Porter, Henry <porterhj@dhec.sc.gov>; Keisler, Van <keislecv@dhec.sc.gov>; Blalock, Juli <blalocje@dhec.sc.gov>; Taylor, Monica N. <TAYLORMN@dhec.sc.gov>; Dickman, Jacquelyn S. <DICKMAJS@dhec.sc.gov>; Timmerman, Kelsey A. <timmerka@dhec.sc.gov>; Threatt, Richard <threatrl@dhec.sc.gov>; Boyce, Lawra <boycelc@dhec.sc.gov>; Boswell, Wendy <BOSWELWM@dhec.sc.gov>; Garrard, Jordan <Garrard.Jordan@epa.gov>
Subject: Re: Able PM

Yesterday's 24 hour averages (Aug 5 Midnight to midnight)

Palmetto Exterminators 15ug/M3 (Moderate)

Schinger 44ug/M3 (Unhealthy for Sensitive Groups)

The community has been(and continues to be) downwind and has seen elevated concentrations throughout the day - even during rain events . No break in impact during the day..



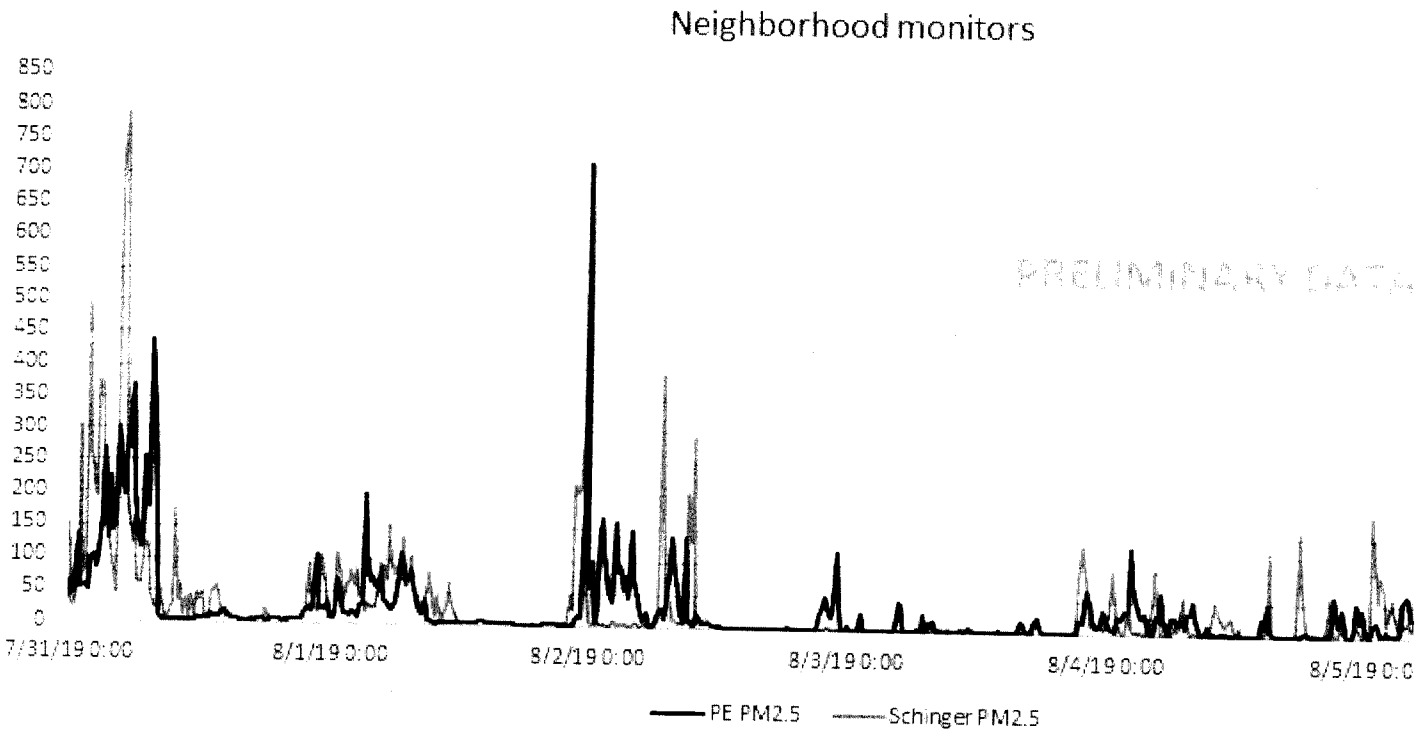
From: Reynolds, Scott <REYNOLDS@dhec.sc.gov>
Sent: Monday, August 5, 2019 9:20:38 AM
To: Thompson, Rhonda <thompsrb@dhec.sc.gov>
Cc: Frost, Keith <frostrk@dhec.sc.gov>; Shealy, Renee <shealyrg@dhec.sc.gov>; Marshall, Frances (Fran)

<marshaf2@dhec.sc.gov>; Reece, Myra <reecemc@dhec.sc.gov>; Marcus, Mike <MARCUSJM@dhec.sc.gov>; Porter, Henry <porterhj@dhec.sc.gov>; Keisler, Van <keislecv@dhec.sc.gov>; Blalock, Juli <blalocje@dhec.sc.gov>; Taylor, Monica N. <TAYLORMN@dhec.sc.gov>; Dickman, Jacquelyn S. <DICKMAJS@dhec.sc.gov>; Timmerman, Kelsey A. <timmerka@dhec.sc.gov>; Threatt, Richard <threatrl@dhec.sc.gov>; Boyce, Lawra <boycelc@dhec.sc.gov>; Boswell, Wendy <BOSWELWM@dhec.sc.gov>; Garrard, Jordan <Garrard.Jordan@epa.gov>
Subject: Re: Able PM

Yesterday's 24 hour averages (Aug 4 Midnight to midnight)

Palmetto Exterminators 16ug/M3 (Moderate)

Schinger 16ug/M3 (Moderate)



From: Reynolds, Scott <REYNOLDS@dhec.sc.gov>
Sent: Sunday, August 4, 2019 11:02:07 AM
To: Thompson, Rhonda <thompsrb@dhec.sc.gov>
Cc: Frost, Keith <frostrk@dhec.sc.gov>; Shealy, Renee <shealyrg@dhec.sc.gov>; Marshall, Frances (Fran) <marshaf2@dhec.sc.gov>; Reece, Myra <reecemc@dhec.sc.gov>; Marcus, Mike <MARCUSJM@dhec.sc.gov>; Porter, Henry <porterhj@dhec.sc.gov>; Keisler, Van <keislecv@dhec.sc.gov>; Blalock, Juli <blalocje@dhec.sc.gov>; Taylor, Monica N. <TAYLORMN@dhec.sc.gov>; Dickman, Jacquelyn S. <DICKMAJS@dhec.sc.gov>; Timmerman, Kelsey A. <timmerka@dhec.sc.gov>; Threatt, Richard <threatrl@dhec.sc.gov>; Boyce, Lawra <boycelc@dhec.sc.gov>; Boswell,

Wendy <BOSWELWM@dhec.sc.gov>; Garrard, Jordan <Garrard.Jordan@epa.gov>
Subject: Re: Able PM

When there aren't folks on site , rain events may be inferred from the ambient temperature dips . I'd guess short rain events at ~2 and 5pm yesterday.

in particular, at both locations at the same time.

From: Thompson, Rhonda <thompsrb@dhec.sc.gov>
Sent: Sunday, August 4, 2019 9:56:35 AM
To: Reynolds, Scott <REYNOLDS@dhec.sc.gov>
Cc: Frost, Keith <frostrk@dhec.sc.gov>; Shealy, Renee <shealyrg@dhec.sc.gov>; Marshall, Frances (Fran) <marshaf2@dhec.sc.gov>; Reece, Myra <reecemc@dhec.sc.gov>; Marcus, Mike <MARCUSJM@dhec.sc.gov>; Porter, Henry <porterhj@dhec.sc.gov>; Keisler, Van <keislecv@dhec.sc.gov>; Blalock, Juli <blalocje@dhec.sc.gov>; Taylor, Monica N. <TAYLORMN@dhec.sc.gov>; Dickman, Jacquelyn S. <DICKMAJS@dhec.sc.gov>; Timmerman, Kelsey A. <timmerka@dhec.sc.gov>; Threatt, Richard <threatrl@dhec.sc.gov>; Boyce, Lawra <boycelc@dhec.sc.gov>; Boswell, Wendy <BOSWELWM@dhec.sc.gov>; Garrard, Jordan <Garrard.Jordan@epa.gov>
Subject: Re: Able PM

Did they get rain?

Sent from my iPad

Rhonda B. Thompson, P.E.
Chief, Bureau of Air Quality
South Carolina Department of Health & Environmental Control
thompsrb@dhec.sc.gov
(803)898-4391

On Aug 4, 2019, at 8:55 AM, Reynolds, Scott <REYNOLDS@dhec.sc.gov> wrote:

Yesterday's 24 hour averages (Aug 3 Midnight to midnight)

Palmetto Exterminators 7ug/M3 (Good)

Schinger 8ug/M3 (Good)

Wind still predicted to shift back to from the west(towards community) early Monday

<pastedImage.png>

<pastedImage.png>

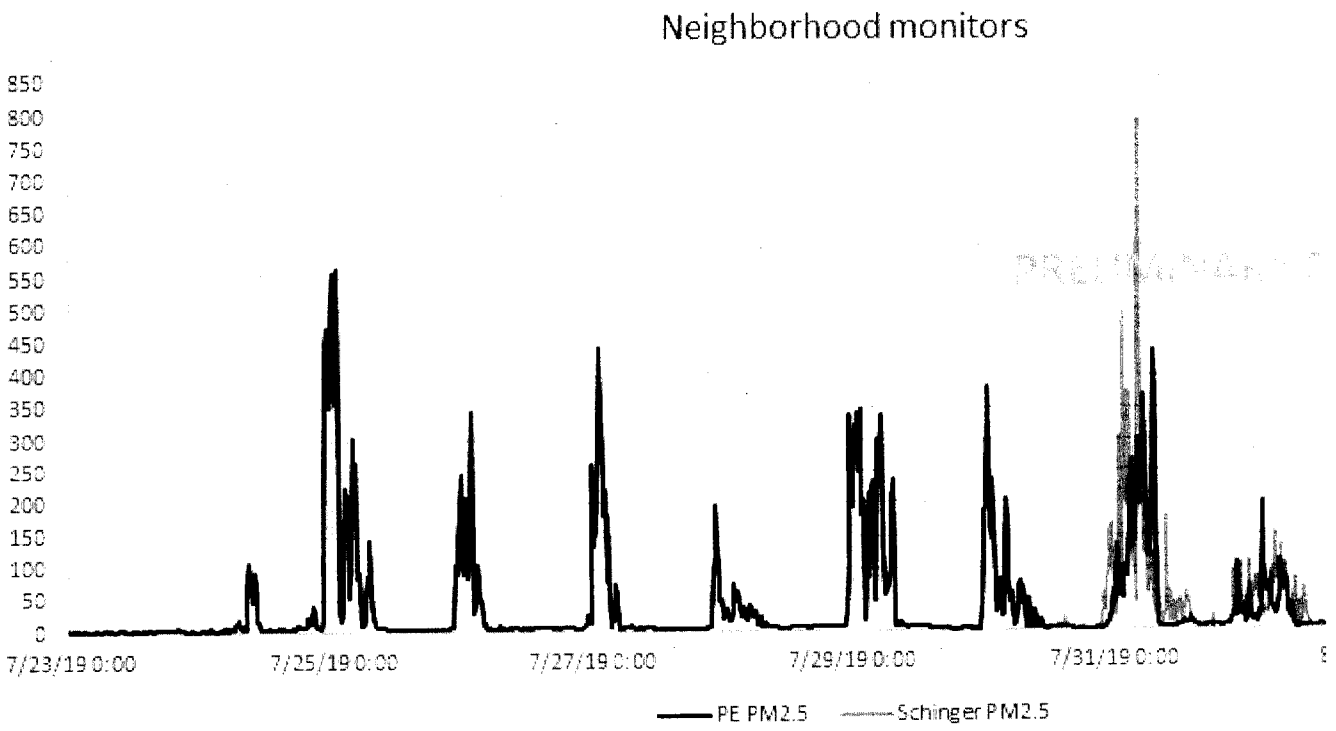
From: Reynolds, Scott <REYNOLDS@dhec.sc.gov>
Sent: Saturday, August 3, 2019 8:31:36 AM
To: Thompson, Rhonda <thompsrb@dhec.sc.gov>; Frost, Keith <frostrk@dhec.sc.gov>; Shealy, Renee <shealyrg@dhec.sc.gov>; Marshall, Frances (Fran) <marshaf2@dhec.sc.gov>; Reece, Myra <reecemc@dhec.sc.gov>; Marcus, Mike <MARCUSJM@dhec.sc.gov>; Porter, Henry <porterhj@dhec.sc.gov>; Keisler, Van <keislecv@dhec.sc.gov>; Blalock, Juli <blalocje@dhec.sc.gov>; Taylor, Monica N. <TAYLORMN@dhec.sc.gov>; Dickman, Jacquelyn S. <DICKMAJS@dhec.sc.gov>; Timmerman, Kelsey A. <timmerka@dhec.sc.gov>; Threatt, Richard <threatrl@dhec.sc.gov>; Boyce, Lawra <boycelc@dhec.sc.gov>; Boswell, Wendy <BOSWELWM@dhec.sc.gov>
Cc: Timmerman, Kelsey A. <timmerka@dhec.sc.gov>; Threatt, Richard <threatrl@dhec.sc.gov>; Garrard, Jordan <Garrard.Jordan@epa.gov>
Subject: Able PM

Yesterday's 24 hour averages (Aug 1 Midnight to midnight)

Palmetto Exterminators 29ug/M3 (Moderate)

Schinger* 17ug/M3 (Moderate)

*Since Noon yesterday the Schinger monitor concentrations have been uncannily low and consistent. 'Tho it's been generally upwind and there's been precip, if someone can put eyes on it to confirm it the particulate inlet appears OK, I'd feel better..


Neighborhood monitors
850
800
750
700
650
600
550
500
450
400
350
300
250
200
150
100
50
0
7/23/19 0:00
7/25/19 0:00
7/27/19 0:00
7/29/19 0:00
7/31/19 0:00
PE PM2.5
Schinger PM2.5

Armstrong, Kathy

From: Garrard, Jordan
Sent: Friday, August 09, 2019 7:50 AM
To: Huyser, Matthew
Subject: RE: Able - AQI sheet

Yes we gave them the fire SOG with the AQI table.

From: Huyser, Matthew <Huyser.Matthew@epa.gov>
Sent: Friday, August 9, 2019 7:48 AM
To: Garrard, Jordan <Garrard.Jordan@epa.gov>
Cc: John Snyder <john.snyder@tetratech.com>
Subject: Able - AQI sheet

Jordan,

On the phone yesterday DHEC mentioned receiving the Idaho AQI numbers. Did you provide the Kevin Eichinger SOG T106 with the AQI number table or the actual Idaho AQI sheet? I can't find the Idaho AQI sheet anywhere and the link is broken now.

Matthew J. Huyser, PE - On-Scene Coordinator
U.S. Environmental Protection Agency, Region 4 | 61 Forsyth St SW | Atlanta, Georgia | 30303
Emergency Response Removal and Prevention Branch (ERRPB)
office: **404-562-8934** | cell: **678-427-8829** | fax: **404-562-8699**
epaosc.org

Armstrong, Kathy

From: Garrard, Jordan
Sent: Thursday, August 08, 2019 6:23 PM
To: Pinkney, James; Huyser, Matthew
Subject: Able Contracting Fire

James,
OSC Huyser is mobilizing back to Able Contracting facility. He will be conducting additional air monitoring and potential sampling. We are still waiting for validated air data. We have received validated water sampling data. The SCDECH will be looking to us to release the data since we collected it, it asked if we could coordinate any releases with them. I have spoken to our START contractor to get a timeline on when to expect validated data. I know the island packet has been inquiring about the data. The island packet reporter was at a SCDECH meeting today when the site was mentioned. It was said SCDECH was expecting the data today or tomorrow. I have spoken with the reporter earlier in the week and told him we wouldn't release any preliminary or invalidated data.

Jordan Garrard
On Scene Coordinator
EPA Region 4
Garrard.jordan@epa.gov
678-644-8648

Armstrong, Kathy

From: Garrard, Jordan
Sent: Thursday, August 08, 2019 4:16 PM
To: Huyser, Matthew
Subject: ATSDR

I have been referring all medical or symptom questions to Sue Casteel with ATSDR. They do not have the air sample data yet, but have all the particulate air monitoring data and have been speaking to residents about pm2.5

Jordan

Armstrong, Kathy

From: Garrard, Jordan
Sent: Thursday, August 08, 2019 2:55 PM
To: reecemc@dhec.sc.gov; Tisha L. Williams; Frank Edwards; Lisa Wagner; chris.collins2@redcross.org; haley.lawson@redcross.org; David Tedder; afulghum@jaspercountysc.gov; Porter, Henry; Frost, Keith; thompsrb@dhec.sc.gov; Keisler, Van; Blalock, Juli; dickmaj@dhec.sc.gov; John Snyder; Clay Graves; Russell Wells; eturner@emd.sc.gov; Threatt, Richard
Cc: Marshall, Frances (Fran); Marcus, Mike; Scaturo, David M.; Boyce, Lawra; Ellenberg, Kristy E.; Scott Reynolds; shealyrg@dhec.sc.gov; Huyser, Matthew
Subject: RE: Able Construction Work Group - Conference Call 10 am Friday

Matt Huyser's cell 678-427-8829 , huyser.matthew@epa.gov

From: Garrard, Jordan
Sent: Tuesday, August 6, 2019 9:24 AM
To: Reece, Myra <reecemc@dhec.sc.gov>; Tisha L. Williams <tlwilliams@jaspercountysc.gov>; Frank Edwards <fedwards@jaspercountysc.gov>; Lisa Wagner <lwagner@jaspercountysc.gov>; chris.collins2@redcross.org; haley.lawson@redcross.org; David Tedder <dtedder@jaspercountysc.gov>; afulghum@jaspercountysc.gov; Porter, Henry <porterhj@dhec.sc.gov>; Frost, Keith <frostrk@dhec.sc.gov>; thompsrb@dhec.sc.gov; Keisler, Van <keislecv@dhec.sc.gov>; Blalock, Juli <blalocje@dhec.sc.gov>; dickmaj@dhec.sc.gov; John Snyder <john.snyder@tetratech.com>; Clay Graves <cgraves@jaspercountysc.gov>; Russell Wells <rwells@jaspercountysc.gov>; eturner@emd.sc.gov; Threatt, Richard <threatrl@dhec.sc.gov>
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Subject: RE: Able Construction Work Group - Conference Call 10 am Friday

Just wanted to give everyone an update on timeline of analytical results. After speaking with the lab, we should receive preliminary phosgene data this evening or tomorrow am. VOC data will not be ready until sometime on Thursday. I still recommend have a conference call on Friday morning to discuss results.

Thanks

Jordan Garrard
On-Scene Coordinator
EPA Region 4
Emergency Response and Removal Branch
Work: 404-562-8642
Cell: 678-644-8648

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Subject: Able Construction Work Group - Conference Call 10 am Friday

Hi Team! Just a reminder of our 10 am conference call tomorrow morning.....conference line/code highlighted in yellow at the end of the notes below.....talk soon!

DHEC staff: gathering in the SARR conference room

Myra C. Reece

Director of Environmental Affairs
S.C. Dept. of Health & Environmental Control
Office: (803) 898-4102
Mobile: (803) 667-1113
Connect: www.scdhec.gov Facebook Twitter

From: Tisha L. Williams <tlwilliams@jaspercountysc.gov>
Sent: Tuesday, July 30, 2019 10:44 AM
To: Frank Edwards <fedwards@jaspercountysc.gov>; Lisa Wagner <lwagner@jaspercountysc.gov>; chris.collins2@redcross.org <chris.collins2@redcross.org>; haley.lawson@redcross.org <haley.lawson@redcross.org>; David Tedder <dtedder@jaspercountysc.gov>; afulghum@jaspercountysc.gov <afulghum@jaspercountysc.gov>; Reece, Myra <reecemc@dhec.sc.gov>; Porter, Henry <porterhj@dhec.sc.gov>; Frost, Keith <frostrk@dhec.sc.gov>; Thompson, Rhonda <thompsrb@dhec.sc.gov>; Keisler, Van <keislecv@dhec.sc.gov>; Blalock, Juli <blalocje@dhec.sc.gov>; dickmaj@dhec.sc.gov <dickmaj@dhec.sc.gov>; garrard.jordan@epa.gov <garrard.jordan@epa.gov>; john.snyder@tetratech.com <john.snyder@tetratech.com>; Clay Graves <cgraves@jaspercountysc.gov>; Russell Wells <rwells@jaspercountysc.gov>; eturner@emd.sc.gov <eturner@emd.sc.gov>; Threatt, Richard <threatrl@dhec.sc.gov>
Subject: Notes From July 29, 2019 Able Construction Work Group - Conference Call

*** Caution. This is an EXTERNAL email. DO NOT open attachments or click links from unknown senders or unexpected email. ***

All:

In follow up to our telephone conversation this afternoon with the working group, we note the following as our action plan supplementing that of Friday, July 26th:

As background information, DHEC has graphed the data received over the weekend, and is expecting peaks in particulates after midnight. As a result of apparently not having continuous water going to the site, the average levels have increased over time, which raises concerns about health risks. The receipt of more detailed analysis from EPA testing later this week will be helpful in formulating an updated action plan.

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- **DHEC reports that the Owner says he was working on a proposal to extinguish the fire and clean up the site.**

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- **We shared the Media contacts with EPA and DHEC being James Pinckney (EPA) 404-695-5503, and DHEC** media@dhec.sc.gov **or 803-898-7769.**

- **We have Coordinated another Conference Call for Friday August 2, 2019 at 10:00am**

Conference Call Dial-in **(605) 313-5380**
Enter the access code: (b)(6) Personal Privacy

Thank you,

Tisha L. Williams

Administrative Assistant
(843) 717-3690

Jasper County Administrator's Office
Mr. Andrew P. Fulghum
358 Third Avenue
Ridgeland, South Carolina 29936

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TDD 843-726-7519
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Armstrong, Kathy

From: Garrard, Jordan
Sent: Thursday, August 08, 2019 2:24 PM
To: Huyser, Matthew
Subject: FW: Able Construction Work Group - Conference Call 10 am Friday

This is the mailing list to include SCDECH and Jasper County.

From: Garrard, Jordan
Sent: Tuesday, August 6, 2019 9:24 AM
To: Reece, Myra <reecemc@dhec.sc.gov>; Tisha L. Williams <tlwilliams@jaspercountysc.gov>; Frank Edwards <fedwards@jaspercountysc.gov>; Lisa Wagner <lwagner@jaspercountysc.gov>; chris.collins2@redcross.org; haley.lawson@redcross.org; David Tedder <dtedder@jaspercountysc.gov>; afulghum@jaspercountysc.gov; Porter, Henry <porterhj@dhec.sc.gov>; Frost, Keith <frostrk@dhec.sc.gov>; thompsrb@dhec.sc.gov; Keisler, Van <keislecv@dhec.sc.gov>; Blalock, Juli <blalocje@dhec.sc.gov>; dickmaj@dhec.sc.gov; John Snyder <john.snyder@tetratech.com>; Clay Graves <cgraves@jaspercountysc.gov>; Russell Wells <rwells@jaspercountysc.gov>; eturner@emd.sc.gov; Threatt, Richard <threatrl@dhec.sc.gov>
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Administrative Assistant
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Jasper County Administrator's Office
Mr. Andrew P. Fulghum
358 Third Avenue
Ridgeland, South Carolina 29936

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Armstrong, Kathy

From: Garrard, Jordan
Sent: Thursday, August 08, 2019 2:22 PM
To: Huyser, Matthew; Franco, Benjamin
Subject: Able Contracting

Current ceiling for START TDD is $90,000. I don't know if it would all fall under Removal Action or Assessment, I don't know how management would classify the sampling that was completed. I have also drafted 2 polreps, which are awaiting mgmt approval.

Jordan

Armstrong, Kathy

From: Garrard, Jordan
Sent: Thursday, August 08, 2019 2:15 PM
To: Huyser, Matthew; Franco, Benjamin
Subject: Able Contracting Fire POCs

Site Attorney – Wilda Cobb

Owner (PRP) – Chandler Lloyd
Able Contracting, 472 Schinger Ave, Ridgeland, SC 29936
843-379-2344 – Office
843-384-2519 – Cell
Ablecontracting29936@gmail.com

Facility Manager – Norm Lamarche – 843-379-2344

Jay Stever (adjacent property owner, pond owner) – [redacted] (b)(6) Personal Privacy

Russell Wells – Deputy Fire Chief Jasper County, 843-263-1316, rwells@jaspercountysc.gov

Jared Stromer – Business Owner, Stromer plumbing (south of facility) – 843-368-8632, nstromer@gmail.com

Scott Reynolds – SCDECH (Air monitoring), 803-898-3305, reynolds@dhec.sc.gov

Keith Frost – Assistant Chief, Bureau of Air Quality, 803-465-1529, keith.frost@dhec.sc.gov

Myra Reece, SCDECH Director of Environmental Affairs, 803-667-1113, reecemc@dhec.sc.gov

Armstrong, Kathy

From: Garrard, Jordan
Sent: Thursday, August 08, 2019 1:39 PM
To: Huyser, Matthew
Subject: Able Contracting

FYI, Wilda is the site attorney, im a typing up a contact list for you.

Jordan

Armstrong, Kathy

From: Garrard, Jordan
Sent: Thursday, August 08, 2019 1:36 PM
To: Huyser, Matthew
Subject: FW: Data summary
Attachments: Draft_Summary Tables Able Contracting_round 2 added.pdf

From: Snyder, John <John.Snyder@tetratech.com>
Sent: Thursday, August 8, 2019 11:32 AM
To: Garrard, Jordan <Garrard.Jordan@epa.gov>
Subject: Data summary

John Snyder, PG, PE | Environmental Engineer
Mobile **+1 (770) 402-9013** | john.snyder@tetratech.com

Tetra Tech | Complex World, Clear Solutions™ | **Tetra Tech** EMI
Raleigh, NC (Cary) | tetratech.com

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TETRA TECH

ABLE CONTRACTING FIRE
AIR SAMPLES
Summary of Detections
DATA HAS NOT BEEN QC'd - NOT FOR PUBLIC DISTRIBUTION

	EPA RMLs	BACKGROUND ACF-AS-BKGD-072819	STATION 1 (SE Corner) ACF-AS-RES-AM-072719	STATION 2 (SW Corner) ACF-AS-SMOKE-AM-072719	STATION 1 (SE Corner) ACF-AS-RES-PM-072719	STATION 2 (SW Corner) ACF-AS-SMOKE-PM-072719	STATION 1 (SE Corner) ACF-AS-RES-AM-072819	STATION 2 (SW Corner) ACF-AS-SMOKE-AM-072819	STATION 1 (SE Corner) ACF-AS-RES-PM-072819	STATION 2 (SW Corner) ACF-AS-SMOKE-PM-072819
		Sample Volume	*Sample Volume*	*Sample Volume*	*Sample Volume*	*Sample Volume*	*Sample Volume*	*Sample Volume*	*Sample Volume*	*Sample Volume*
		946.3 Liters	*767 Liters*	*898.6 Liters*	*965.3 Liters*	*913.3 Liters*	-	-	-	-
		None detected	None detected	None detected	None detected	None detected	*Not sampled*	*Not sampled*	*Not sampled*	*Not sampled*
		537.10 Liters	-	-	-	-	*473.90 Liters*	*603.90 Liters*	*542.50 Liters*	*550.50 Liters*
	0.94	[illegible]	*Not sampled*	*Not sampled*	*Not sampled*	*Not sampled*	[illegible]	[illegible]	[illegible]	[illegible]
		516.20 Liters	*410.60 Liters*	*411.80 Liters*	*541.50 Liters*	*549.50 Liters*	-	-	-	-
	22	**4.88**	**1.70**	**2.50**	**3.04**	**6.09**	*Not sampled*	*Not sampled*	*Not sampled*	*Not sampled*
		776.6 Liters	*672.6 Liters*	*657.5 Liters*	*744.8 Liters*	*784.6 Liters*	-	-	-	-
	16	**0.55**	**0.77**	**0.52**	**0.5**	**0.48**	*Not sampled*	*Not sampled*	*Not sampled*	*Not sampled*
	1.6	**0.11**	**0.13**	**0.25**	**0.13**	**0.11**				
	Not Listed	**52.7**	**0.54**	**55.1**	**48**	**41.3**				
	Not Listed	**0.73**	**0.89**	**0.9**	**1.1**	**0.75**				
	Not Listed	**0.93**	**1.3**	**0.87**	**0.81**	**0.86**				
	Not Listed	**9.6**	**11.2**	**11.5**	**10.4**	**8.5**				
	Not Listed	**12.7**	**15.8**	**16.5**	**14.7**	**12**				
unds (µg/m³)		-	-	-	-	-	-	-	-	-
	97,000	**12**	**8.66**	**7.51**	**10.5**	**16.1**	*Not sampled*	*Not sampled*	*Not sampled*	*Not sampled*
	190	**1.85**	**2.17**	**0.892**	**0.99**	**1.63**				
	0.063	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]				
	4.1	0.159 U	0.159 U	0.158 U	0.163 U	0.202 U				
	36	**2.52**	**6.46**	**3.4**	**2.5**	**15.1**				
	16	0.275 U	0.276 U	0.274 U	0.282 U	0.277 U				
	6.3	**0.749**	**1.06**	**0.689**	**0.769**	**2.21**				
	2,200	**0.214**	**0.514**	**0.279**	**0.444**	**0.405**				
	47	**0.481**	**0.482**	**0.478**	**0.496**	**0.466**				
	160	0.339 U	0.34 U	0.338 U	0.348 U	0.342 U				
	31,000	0.19 U	0.191 U	0.19 U	0.195 U	**0.276**				
	280	**1.23**	**4.76**	**2.95**	**1.23**	**11.6**				
	3,100	**0.999**	**0.262**	0.25 U	**0.803**	0.253 U				
	56	**0.321**	**0.294**	0.26 U	0.267 U	**0.374**				
	Not Listed	**16.7**	**4.28**	**2.33**	**9.26**	**2.56**				
	220	0.259 U	0.261 U	0.259 U	0.266 U	0.262 U				
	110	**2.07**	**3.36**	**1.12**	**0.768**	**5.86**				
	Not Listed	**0.913**	0.355 U	0.354 U	0.363 U	0.357 U				
	Not Listed	**1.18**	**1.38**	**1.33**	**1.4**	**1.28**				
	Not Listed	**2.33**	**2.4**	**2.38**	**2.41**	**2.36**				
	Not Listed	**0.554**	**0.66**	**0.547**	**0.605**	**0.577**				
	1,300	**2.26**	**0.769**	**0.365**	**0.891**	**1**				
	2,200	**4.05**	**1.55**	**0.647**	**2.37**	**1.43**				
	630	**0.404**	**0.468**	**0.434**	**0.949**	**0.478**				
	Not Listed	0.357 U	**0.838**	**0.421**	0.366 U	**1.06**				
tanone)	16,000	**1.02**	**0.847**	**0.805**	**0.612**	**1.57**				
	9,400	0.302 U	**0.373**	0.302 U	0.31 U	0.305 U				
	2,200	0.304 U	0.305 U	0.303 U	0.312 U	**0.857**				
	1,100	0.264 U	0.265 U	0.264 U	**0.312**	0.267 U				
	1,900	**0.691**	**0.871**	**0.674**	**0.999**	**0.651**				
	8.3	**0.336**	0.39 U	0.388 U	0.398 U	**0.537**				
	Not Listed	**0.99**	**0.353**	0.334 U	0.343 U	**0.562**				
	3,100	**0.629**	0.359 U	0.357 U	0.367 U	0.361 U				
	9,400	**2.91**	**7.88**	**3.99**	**2.96**	**14.2**				
	3,100	**0.348**	**1.71**	**2.13**	**0.446**	**8.66**				
	1,100	0.489 U	0.491 U	0.489 U	**0.736**	0.494 U				
	6,300	0.213 U	**0.472**	**0.373**	0.218 U	**0.796**				
	16,000	**9.82**	**6.48**	**2.62**	**5.08**	7.6				
	190	**3.23**	**0.784**	**0.318**	**0.817**	**0.414**				
	190	**0.898**	0.354 U	0.352 U	0.362 U	0.356 U				
	Not Listed	**2.12**	**0.684**	0.342 U	**0.487**	0.346 U				
	310	**6.86**	**2.37**	**0.941**	**2.51**	**1.66**				
	310	**2.75**	**0.95**	**0.362**	**0.916**	**0.759**				
spounds (µg/m³)		*439.4 Liters*	*486.2 Liters*	*562.5 Liters*	*421.4 Liters*	*438.3 Liters*	-	-	-	-
pounds		None detected	None detected	None detected	None detected	None detected	*Not sampled*	*Not sampled*	*Not sampled*	*Not sampled*

Notes:

ACF	Able Contracting Fire
EPA	Environmental Protection Agency
J	The identification of the analyte is acceptable; the reported value is an estimate
µg/m³	Micrograms per cubic meter
NA	Not Analysed
ND	Not Detected
RMLs	Removal Management Levels; Residential Ambient Air, April 2019. (Lower value of carcinogenic/noncarcinogenic listed; TR=1E-04/THQ=3.0)
U	The analyte was not detected at or above the reporting limit
UJ	The analyte was
BOLD	Bolded values
BOLD	Shaded and **bolded** values exceed the April 2019 Residential RMLs

ABLE CONTRACTING FIRE
AIR SAMPLES
Summary of Detections
DATA HAS NOT BEEN QC'd - NOT FOR PUBLIC DISTRIBUTION

RMLs	STATION 1 (SE Corner) ACF-AS-RES-24HRVOC	STATION 2 (West Side) ACF-AS-SMOKE-24HRVOC	STATION 3 (Upwind) ACF-AS-UPWIND-24HRVOC	STATION 1 (SE Corner) ACF-AS-RES-NIGHT	STATION 2 (West Side) ACF-AS-SMOKE-NIGHT	STATION 3 (Upwind) ACF-AS-UPWIND-NIGHT	STATION 1 (SE Corner) ACF-AS-RES-DAY	STATION 2 (West Side) ACF-AS-SMOKE-DAY	STATION 3 (Upwind) ACF-AS-UPWIND-DAY
	Sample Volume	*Sample Volume*	*Sample Volume*	*Sample Volume*	*Sample Volume*	*Sample Volume*	*Sample Volume*	*Sample Volume*	*Sample Volume*
	-	-	-	-	-	-	-	-	-
	Not sampled	*Not sampled*	*Not sampled*	*Not sampled*	*Not sampled*	*Not sampled*	*Not sampled*	*Not sampled*	*Not sampled*
)94	*Not sampled*	*Not sampled*	*Not sampled*	*623.80 Liters*	*556.80 Liters*	*520.80 Liters*	*535.20 Liters*	*542.40 Liters*	*544.80 Liters*
	-	-	-	**0.652 J**		**0.501 J**	**0.277 J**		
22	*Not sampled*	*Not sampled*	*Not sampled*	-	-	-	-	-	-
	-	-	-	*Not sampled*	*Not sampled*	*Not sampled*	*Not sampled*	*Not sampled*	*Not sampled*
16				-	-	-	-	-	-
1.6									
Listed									
Listed	*Not sampled*	*Not sampled*	*Not sampled*	*Not sampled*	*Not sampled*	*Not sampled*	*Not sampled*	*Not sampled*	*Not sampled*
Listed									
Listed									
Listed									
	-	-	-	-	-	-	-	-	-
7,000	**6.87**	**14.7**	**5.46**						
190	**1.17**	**3.64**	**0.893**						
.063									
4.1	1.53 U	**0.946**	0.155 U						
36	**2.00**	**26.2**	0.223 U						
16	0.26 U	**0.46**	0.268 U						
6.3	**0.195**	**2.35**	0.151						
,200	**0.448**	**0.736**	**0.262**						
47	**0.523**	**0.497**	**0.491**						
160	0.326 U	**0.748**	0.331 U						
1,000	0.183 U	**0.268**	0.186 U						
280	**3.53**	**13.8**	**2.09**						
,100	0.241 U	**0.319**	0.244 U						
56	0.251 U	**0.584**	0.254 U						
Listed	**2.62**	**3.26**	**1.21**						
220	**0.719**	0.251 U	0.253 U						
110	**1.33**	**8.00**	0.298 U						
Listed	0.341 U	0.342 U	0.346 U						
Listed	**1.42**	**1.41**	**1.39**						
Listed	**2.44**	**2.43**	**2.37**						
Listed	**0.591**	**0.613**	**0.584**						
,300	**0.478**	**1.51**	0.288 U						
,200	**0.849**	**1.71**	**0.28**						
630	**0.432**	**0.41**	**0.305**						
Listed	**0.466**	**1.92**	**0.355**						
5,000	**0.657**	**0.338**	**0.42**						
,400	0.286 U	0.292 U	0.295 U						
,200	0.292 U	**1.4**	0.297 U						
,100	0.254 U	**0.355**	0.258 U						
,900	**0.625**	**0.66**	**0.551**						
8.3	0.373 U	**1.02**	0.379 U						
Listed	0.322 U	**0.957**	0.327 U						
,100	0.344 U	**0.453**	0.349 U						
,400	**2.98**	**21.5**	**0.633**						
,100	**0.842**	**21.2**	0.29 U						
,100	0.471 U	0.473 U	0.478 U						
,300	**0.222**	**1.32**	0.208 U						
5,000	**2.26**	**11.8**	**0.657**						
190	0.336 U	**0.534**	0.341 U						
190	0.339 U	**0.535**	0.344 U						
Listed	**0.332 J**	0.331 U	0.334 U						
310	**0.673**	**2.07**	0.307 U						
310	**0.284**	**0.98**	0.303 U						
	-	-	-	-	-	-	-	-	-
	Not sampled	*Not sampled*	*Not sampled*	*Not sampled*	*Not sampled*	*Not sampled*	*Not sampled*	*Not sampled*	*Not sampled*

Notes:

ACF	Able Contracting Fire
EPA	Environmental Protection Agency
J	The identification of the analyte is acceptable; the reported value is an estimate
µg/m³	Micrograms per cubic meter
NA	Not Analysed
ND	Not Detected
RMLs	Removal Management Levels; Residential Ambient Air, April 2019. (Lower value of carcinogenic/noncarcinogenic listed; TR=1E-04/THQ=3.0)
U	The analyte was not detected at or above the reporting limit
UJ	The analyte was
BOLD	Bolded values
BOLD	Shaded and **bolded** values exceed the April 2019 Residential RMLs

From: Snyder, John <John.Snyder@tetratech.com>
Sent on: Friday, August 30, 2019 7:18:27 PM
To: Spurlin, Steve <Spurlin.Steve@epa.gov>
CC: Frederick, Tim <Frederick.Tim@epa.gov>; Adams, Glenn <Adams.Glenn@epa.gov>
Subject: Complete UNVALIDATED analytical results from last week
Attachments: Draft_Summary Tables Able Contracting_0822&0823 Air Samples_UNVALIDATED.pdf (105.6 KB)

No real surprises here. HCN was non-detect, but at well above the RML. Industrial RMLs have been added. Tim pointed out that many of the chemicals that were displayed as having "not listed" RMLs actually had them. This has been reviewed and corrected (thanks, Tim...no additional exceedances noted).

Sorry for the microscopic print, but after staring at the RML pdfs for a while I'm happy to exact a little revenge on the risk assessment community 😉

Cheers,

John Snyder, PG, PE | Environmental Engineer
Mobile **+1 (770) 402-9013** | john.snyder@tetratech.com

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TETRA TECH

ABLE CONTRACTING FIRE
AIR SAMPLE RESULTS FOR AUGUST 22-23, 2019

			352 Schinger Avenue	Forrest Concrete	Able Contracting Office	Able Contracting Shop
			ACF-AS-RES-1-24HR-082119	ACF-AS-RES-2-24HR-082119	ACF-AS-PAM1-082119	ACF-AS-PAM2-082119
Date			8/21/2019 - 8/22/19	8/21/2019 - 8/22/19	8/21/2019 - 8/22/19	8/21/2019 - 8/22/19
Analyte	EPA Residential RMLs	EPA Worker RMLs				
Hydrogen cyanide (µg/m³)						
Hydrogen cyanide	2.5	11	3,960 U	4,400 U	4,059 U	3,960 U
Hydrogen Sulfide (µg/m³)						
Hydrogen sulfide	6.3	26	219.8 U	239.4 U	218.4 U	225.4 U
Volatile Organic Compounds (µg/m³)						
Propylene	9,400	39,000	**3.12**	**1.16**	**6.92**	**7.39**
Freon 12 (CCl2F2)	310	1,300	**2.19**	**2.18**	**2.15**	**2.14**
Freon 114 (C2Cl2F4)	Not Listed	Not Listed	0.564 U	0.614 U	0.558 U	0.578 U
Chloromethane	280	1,200	**4.44**	**2.01**	**9.08**	**8.29**
Chloroethene (Vinyl chloride)	17	280	0.207 U	0.225 U	0.205 U	0.212 U
1,3-Butadiene	6.2	26	**0.180**	0.19 U	**0.479**	**0.549**
Bromomethane	16	66	0.310 U	0.337 U	0.306 U	0.317 U
Chloroethane	31,000	130,000	0.214 U	0.233 U	0.212 U	0.220 U
Bromoethene (Vinyl bromide)	8.8	38	0.352 U	0.382 U	0.348 U	0.360 U
Freon 11 (CCl3F)	Not Listed	Not Listed	**1.14**	**1.19**	**1.18**	**1.15**
Ethanol	Not Listed	Not Listed	**4.05**	**5.29**	**6.15**	**5.87**
Acrolein	0.063	0.26	**0.492**	**0.498**	**0.666**	**0.648**
Freon 113 (C2Cl3F3)	16,000	66,000	**0.587 J**	**0.646 J**	**0.595 J**	**0.588 J**
1,1-Dichloroethene	630	2,600	0.320 U	0.348 U	0.317 U	0.328 U
Acetone	97,000	410,000	**6.97**	**8.16**	**14.4**	**9.27**
Carbon disulfide	2,200	9,200	**0.287**	0.274 U	**0.511**	**0.342**
Isopropyl alcohol	630	2,600	**1.780**	**1.01**	**0.72**	**0.602**
Allyl chloride (3-chloropropene)	3.1	13	0.254 U	0.276 U	0.251 U	0.260 U
Acetonitrile	190	790	**0.78**	**1.1**	**1.89**	**1.19**
Methylene chloride	1900	7,900	0.709 U	0.771 U	**0.901**	0.726 U
trans-1,2-Dichloroethene	Not Listed	Not Listed	0.326 U	0.354 U	0.322 U	0.334 U
Methyl tert-butyl ether	1,100	4,700	0.298 U	0.324 U	0.295 U	0.305 U
Acrylonitrile	4.1	18	0.179 U	0.194 U	0.177 U	0.183 U
Hexane	2,200	920	**0.932**	**0.684**	**1.4**	**1.2**
1,1-Dichloroethane	180	770	0.321 U	0.350 U	0.318 U	0.329 U
Vinyl acetate	630	2,600	0.289 U	0.314 U	0.286 U	0.296 U
cis-1,2-Dichloroethene	Not Listed	Not Listed	0.322 U	0.350 U	0.319 U	0.330 U
Methyl ethyl ketone (2-Butanone)	16,000	66,000	**0.770**	**0.72**	**1.23**	**1.26**
Ethyl acetate	220	920	**5.720**	**3.740**	**0.295**	0.300 U
Chloroform	12	53	0.398 U	0.433 U	0.394 U	0.408 U
Tetrahydrofuran	6,300	26,000	**0.300**	0.261 U	**0.474**	**0.489**
1,1,1-Trichloroethane	16,000	66,000	0.438 U	0.476 U	0.433 U	0.448 U
Cyclohexane	19,000	79,000	0.282 U	0.307 U	**0.257 J**	0.289 U
Carbon tetrachloride	47	200	**0.485 J**	**0.536 J**	**0.499 J**	**0.475 J**
Benzene	36	160	**2.66**	**0.851**	**6.820**	**7.210**
2,2,4-trimethylpentane	Not Listed	Not Listed	0.386 U	0.420 U	**0.435**	0.365 J
1,2-Dichloroethane	11	47	0.334 U	0.363 U	0.330 U	0.342 U
Heptane	1,300	5,300	**0.716**	**0.406**	**0.977**	**1.010**
Trichloroethene	6.3	26	0.435 U	0.473 U	0.431 U	0.445 U
1,2-Dichloropropane	13	53	0.381 U	0.414 U	0.377 U	0.390 U
Methyl methacrylate	2,200	9,200	0.342 U	0.372 U	0.339 U	0.351 U
1,4-Dioxane	56	250	0.294 U	0.319 U	**0.280 J**	**0.293 J**
Bromodichloromethane	7.6	33	0.537 U	0.583 U	0.531 U	0.549 U
cis-1,3-Dichloropropene	Not Listed	Not Listed	0.360 U	0.39 U	0.36 U	0.37 U
Methyl isobutyl ketone	9,400	39,000	0.341 U	**0.486**	0.337 U	0.349 U
Toluene	16,000	66,000	**2.50**	**2.24**	**4.33**	**4.41**
trans-1,3-Dichloropropene	Not Listed	Not Listed	0.372 U	0.404 U	0.368 U	0.381 U
1,1,2-Trichloroethane	18	2.6	0.441 U	0.479 U	0.436 U	0.451 U
Tetrachloroethene	130	530	0.552 U	0.600 U	0.546 U	**1.62**
2-Hexanone (Methyl butyl ketone)	94	390	**0.317 J**	0.365 U	0.332 U	**0.755**
Dibromochloromethane	Not Listed	Not Listed	0.678 U	0.737 U	0.671 U	0.694 U
1,2-Dibromoethane	0.47	2.0	0.628 U	0.682 U	0.621 U	0.643 U
Chlorobenzene	160	660	0.382 U	0.415 U	0.378 U	0.391 U
Ethylbenzene	110	490	**1.46**	**0.499**	**3.11**	**3.17**
1,1,1,2-Tetrachloroethane	38	170	0.554 U	0.602 U	0.548 U	0.567 U
m-/p-Xylenes	31	1,300	**1.020**	**1.04**	**1.26**	**1.65**
o-Xylene	31	1,300	**0.465**	**0.426**	**0.661**	**0.731**
Styrene	3,100	13,000	**1.270**	0.364 U	**3.31**	**3.41**
Bromoform	260	1,100	0.837 U	0.910 U	0.828 U	0.857 U
1,1,2,2-Tetrachloroethane	4.8	21	0.554 U	0.602 U	0.548 U	0.567 U
4-Ethyltoluene	Not Listed	Not Listed	0.399 U	0.434 U	0.395 U	0.409 U
2-Chlorotoluene	Not Listed	Not Listed	0.420 U	0.457 U	0.416 U	0.43 U
1,3,5-Trimethylbenzene	190	790	0.398 U	0.432 U	0.393 U	0.407 U
1,2,4-Trimethylbenzene	190	790	**0.443**	**0.481**	**0.5**	**0.531**
1,3-Dichlorobenzene	Not Listed	Not Listed	0.489 U	0.532 U	0.484 U	0.501 U
1,4-Dichlorobenzene	Not Listed	110	0.486 U	0.529 U	0.481 U	0.498 U
Benzyl chloride	3.1	13	0.417 U	0.453 U	0.412 U	0.427 U
1,2-Dichlorobenzene	630	2,600	0.494 U	0.537 U	0.489 U	0.506 U
1,2,4-Trichlorobenzene	6.3	26	0.607 U	0.660 U	0.601 U	0.622 U
Hexachlorobutadiene	13	56	0.862 U	0.937 U	0.853 U	0.882 U
Naphthalene	8.3	36	**0.409 J**	**0.585**	**0.584**	**0.591**
1-Bromopropane	310	1,300	0.401 U	0.436 U	0.397 U	0.41 U
1-Octene	Not Listed	Not Listed	0.362 U	0.394 U	0.358 U	0.371 U
n-Octane	Not Listed	Not Listed	0.378 U	0.41 U	**0.409**	**0.425**
Isopropylbenzene	1,300	5,300	**0.617**	0.438 U	**1.06**	**1.05**
n-Propylbenzene	3,100	13,000	0.403 U	0.438 U	0.399 U	0.413 U

Notes:

ACF	Able Contracting Fire
EPA	Environmental Protection Agency
J	The identification of the analyte is acceptable; the reported value is an estimate
µg/m³	Micrograms per cubic meter
NA	Not Analysed
ND	Not Detected
RMLs	Removal Management Levels; Residential/Worker Ambient Air, April 2019. (Lower value of carcinogenic/noncarcinogenic listed; TR=1E-04/THQ=3.0)
U	The analyte was not detected at or above the reporting limit
BOLD	Bolded values
GRADE	Shaded values indicate an RML exceedance

ABLE CONTRACTING FIRE
AIR SAMPLE RESULTS FOR AUGUST 22-23, 2019

			353 Schinger Avenue	Forrest Concrete	NW Side of Pile	NE Corner of Site	Komatsu Cab	Doosan Cab
			ACF-AS-RES-1-24HR-082219	ACF-AS-RES-2-24HR-082219	ACF-AS-PAM1-082219	ACF-AS-PAM2-082219	ACF-AS-CAB1-DAY-082219	ACF-AS-CAB2-DAY-082219
Date			8/22/2019 - 8/23/19	8/22/2019 - 8/23/19	8/22/2019 - 8/23/19	8/22/2019 - 8/23/19	8/22/2019 - 8/23/19	8/22/2019 - 8/23/19
Analyte	EPA Residential RMLs	EPA Worker RMLs						
Hydrogen cyanide (µg/m³)								
Hydrogen cyanide	2.5	11	2,497 U	2,475 U	2,475 U	2,607 U	4,455 U	3,828 U
Hydrogen Sulfide (µg/m³)								
Hydrogen sulfide	6.3	26	219.8 U	215.6 U	218.4 U	228.2 U	390.6 U	337.4 U
Volatile Organic Compounds (µg/m³)								
Propylene	9,400	39,000	**4.97**	**7.41**	**19.8**	**11.2**	**8.67**	**16.3**
Freon 12 (CCl2F2)	310	1,300	**2.18**	**2.19**	**2.22**	**2.13**	**2.25**	**2.2**
Freon 114 (C2Cl2F4)	Not Listed	Not Listed	0.563 U	0.553 U	0.558 U	0.585 U	1.000 U	0.862 U
Chloromethane	280	1,200	**5.20**	**7.35**	**21.3**	**11.4**	**5.59**	**21.2**
Chloroethene (Vinyl chloride)	17	280	0.207 U	0.203 U	0.205 U	0.215 U	0.368 U	0.317 U
1,3-Butadiene	6.2	26	**0.322**	**0.591**	**1.760**	**0.980**	**1.580**	**1.720**
Bromomethane	16	66	0.309 U	0.304 U	0.306 U	0.321 U	0.549 U	0.473 U
Chloroethane	31,000	130,000	0.214 U	0.21 U	**0.329**	**0.214 J**	0.380 U	**0.399**
Bromoethene (Vinyl bromide)	8.8	38	0.351 U	0.345 U	0.347 U	0.365 U	0.624 U	0.537 U
Freon 11 (CCl3F)	Not Listed	Not Listed	**1.14**	**1.16**	**1.18**	**1.14**	**1.33**	**1.46**
Ethanol	Not Listed	Not Listed	**2.87**	**5.51**	**3.6**	**3.84**	**174**	**103**
Acrolein	0.063	0.26	**0.386**	**0.476**	**1.34**	**0.726**	**2.94**	**1.87**
Freon 113 (C2Cl3F3)	16,000	66,000	**0.592 J**	**0.602 J**	**0.618**	**0.596 J**	1.09 U	0.94 U
1,1-Dichloroethene	630	2,600	0.319 U	0.314 U	0.316 U	0.332 U	0.568 U	0.489 U
Acetone	97,000	410,000	**6.37**	**10.6**	**12.1**	**8.91**	**207**	**54**
Carbon disulfide	2,200	9,200	**0.228 J**	**0.407**	**0.59**	**0.438**	**1.39**	**1.01**
Isopropyl alcohol	630	2,600	**1.220**	**0.65**	**1.1**	**1.54**	**15.8**	**4.6**
Allyl chloride (3-chloropropene)	3.1	13	0.253 U	0.249 U	0.251 U	0.263 U	0.450 U	0.388 U
Acetonitrile	190	790	**0.56**	**1.06**	**1.65**	**1.11**	**6.88**	**2.09**
Methylene chloride	1900	7,900	0.708 U	**0.723**	0.701 U	0.736 U	1.26 U	1.08 U
trans-1,2-Dichloroethene	Not Listed	Not Listed	0.325 U	0.319 U	0.322 U	0.338 U	0.578 U	0.498 U
Methyl tert-butyl ether	1,100	4,700	0.297 U	0.292 U	0.294 U	0.309 U	0.528 U	0.455 U
Acrylonitrile	4.1	18	0.178 U	0.175 U	**0.295**	0.186 U	**0.356**	**0.518**
Hexane	2,200	920	**1.270**	**3.03**	**2.22**	**1.43**	**1.92**	**2.09**
1,1-Dichloroethane	180	770	0.321 U	0.315 U	0.318 U	0.333 U	0.570 U	0.491 U
Vinyl acetate	630	2,600	0.288 U	0.283 U	0.285 U	0.300 U	**0.459 J**	0.441 U
cis-1,2-Dichloroethene	Not Listed	Not Listed	0.321 U	0.316 U	0.318 U	0.334 U	0.571 U	0.492 U
Methyl ethyl ketone (2-Butanone)	16,000	66,000	**0.570**	**0.868**	**2.05**	**1.16**	**12.1**	**4.12**
Ethyl acetate	220	920	0.292 U	**0.261 J**	0.289 U	**0.650**	**35.500**	**19.300**
Chloroform	12	53	0.397 U	0.390 U	0.393 U	0.413 U	0.706 U	0.608 U
Tetrahydrofuran	6,300	26,000	**0.339**	**0.488**	**1.160**	**0.664**	**16.400**	**8.940**
1,1,1-Trichloroethane	16,000	66,000	0.437 U	0.429 U	0.433 U	0.454 U	0.776 U	0.669 U
Cyclohexane	19,000	79,000	**0.514**	**0.97**	**0.262 J**	**0.317**	**0.730**	**0.415 J**
Carbon tetrachloride	47	200	**0.488 J**	**0.556**	**0.492 J**	**0.509 J**	0.91 U	0.785 U
Benzene	36	160	**3.46**	**5.73**	**14.900**	**9.340**	**4.990**	**12.000**
2,2,4-trimethylpentane	Not Listed	Not Listed	**0.505**	**1.830**	**0.550**	**0.371 J**	0.685 U	0.590 U
1,2-Dichloroethane	11	47	0.333 U	0.327 U	0.330 U	0.346 U	0.592 U	0.510 U
Heptane	1,300	5,300	**1.000**	**1.38**	**1.650**	**1.080**	**2.260**	**2.110**
Trichloroethene	6.3	26	0.434 U	0.426 U	0.430 U	0.451 U	0.772 U	0.665 U
1,2-Dichloropropane	13	53	0.380 U	0.373 U	0.376 U	0.395 U	0.675 U	0.582 U
Methyl methacrylate	2,200	9,200	0.342 U	0.336 U	**0.484**	0.355 U	0.607 U	**1.650**
1,4-Dioxane	56	250	0.293 U	0.288 U	**0.422**	**0.459**	**0.838**	**0.648**
Bromodichloromethane	7.6	33	0.535 U	0.526 U	0.530 U	0.557 U	0.951 U	0.820 U
cis-1,3-Dichloropropene	Not Listed	Not Listed	0.359 U	0.35 U	0.36 U	0.37 U	0.64 U	0.55 U
Methyl isobutyl ketone	9,400	39,000	0.340 U	0.334 U	**0.373**	0.353 U	**9.500**	**7.070**
Toluene	16,000	66,000	**3.35**	**5.88**	**8.4**	**5.66**	**13.1**	**11.8**
trans-1,3-Dichloropropene	Not Listed	Not Listed	0.371 U	0.364 U	0.367 U	0.386 U	0.659 U	0.568 U
1,1,2-Trichloroethane	18	2.6	0.440 U	0.432 U	0.436 U	0.457 U	0.782 U	0.674 U
Tetrachloroethene	130	530	0.550 U	0.541 U	0.545 U	0.572 U	0.979 U	0.843 U
2-Hexanone (Methyl butyl ketone)	94	390	0.335 U	0.329 U	**0.339**	0.348 U	**1.31**	**0.518**
Dibromochloromethane	Not Listed	Not Listed	0.676 U	0.665 U	0.67 U	0.703 U	1.2 U	1.04 U
1,2-Dibromoethane	0.47	2.0	0.626 U	0.615 U	0.62 U	0.651 U	1.11 U	0.959 U
Chlorobenzene	160	660	0.381 U	0.374 U	0.377 U	0.396 U	0.677 U	0.584 U
Ethylbenzene	110	490	**1.56**	**2.42**	**5.94**	**3.78**	**7.7**	**7.65**
1,1,1,2-Tetrachloroethane	38	170	0.552 U	0.543 U	0.547 U	0.574 U	0.982 U	0.846 U
m-/p-Xylenes	31	1,300	**1.440**	**2.11**	**2.3**	**1.75**	**16.4**	**5.38**
o-Xylene	31	1,300	**0.574**	**0.871**	**1.1**	**0.848**	**7.31**	**2.64**
Styrene	3,100	13,000	**1.850**	**3.05**	**8.39**	**4.77**	**5.69**	**7.43**
Bromoform	260	1,100	0.835 U	0.820 U	0.827 U	0.868 U	1.48 U	1.28 U
1,1,2,2-Tetrachloroethane	4.8	21	0.552 U	0.543 U	0.547 U	0.574 U	0.982 U	0.846 U
4-Ethyltoluene	Not Listed	Not Listed	0.398 U	0.391 U	0.394 U	0.414 U	2.8	**0.743**
2-Chlorotoluene	Not Listed	Not Listed	0.419 U	0.412 U	0.415 U	0.436 U	0.746 U	0.643 U
1,3,5-Trimethylbenzene	190	790	0.397 U	**0.345 J**	**0.559**	**0.376 J**	3.65	**1.16**
1,2,4-Trimethylbenzene	190	790	**0.483**	**0.642**	**0.756**	**0.484**	**13.7**	**3.11**
1,3-Dichlorobenzene	Not Listed	Not Listed	0.488 U	0.479 U	0.483 U	0.507 U	0.868 U	0.748 U
1,4-Dichlorobenzene	Not Listed	110	0.485 U	0.477 U	0.48 U	0.504 U	0.862 U	0.743 U
Benzyl chloride	3.1	13	0.416 U	0.408 U	0.412 U	0.432 U	0.739 U	0.637 U
1,2-Dichlorobenzene	630	2,600	0.493 U	0.484 U	0.488 U	0.512 U	0.876 U	0.755 U
1,2,4-Trichlorobenzene	6.3	26	0.606 U	0.595 U	0.6 U	0.63 U	1.08 U	0.928 U
Hexachlorobutadiene	13	56	0.860 U	0.845 U	0.851 U	0.894 U	1.53 U	1.32 U
Naphthalene	8.3	36	0.436 U	0.429 U	**0.933**	0.454 U	**3.62**	**2.01**
1-Bromopropane	310	1,300	0.400 U	0.393 U	0.396 U	0.416 U	0.711 U	0.612 U
1-Octene	Not Listed	Not Listed	0.361 U	0.355 U	0.358 U	0.376 U	0.642 U	0.553 U
n-Octane	Not Listed	Not Listed	0.377 U	**0.434**	**0.803**	**0.478**	**1.3**	**1.2**
Isopropylbenzene	1,300	5,300	**0.939**	**1.06**	**1.91**	**1.45**	**1.85**	**2.21**
n-Propylbenzene	3,100	13,000	0.402 U	0.395 U	**0.406**	0.418 U	**1.88**	**0.746**

Notes:

ACF	Able Contracting Fire
EPA	Environmental Protection Agency
J	The identification of the analyte is acceptable; the reported value is an estimate
µg/m³	Micrograms per cubic meter
NA	Not Analysed
ND	Not Detected
RMLs	Removal Management Levels; Residential/Worker Ambient Air, April 2019. (Lower value of carcinogenic/noncarcinogenic listed; TR=1E-04/THQ=3.0)
U	The analyte was not detected at or above the reporting limit
BOLD	Bolded values
SHADE	Shaded values indicate an RML exceedance

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From: Frank Edwards <fedwards@jaspercountysc.gov>
Sent on: Friday, August 30, 2019 5:13:29 PM
To: Spurlin, Steve <Spurlin.Steve@epa.gov>
Subject: County Order
Attachments: Local Emergency Declaration - Able Recycling Center.pdf (45.38 KB)

Steve,
Here is what Jasper County did.

Declaration of Local Emergency

Whereas, I in my capacity as County Council Chairman, and pursuant to the authority granted pursuant to Article III of the Jasper County Code of Ordinances, and the adopted Jasper County Emergency Operation Plan and its Letter of Promulgation, have determined that a local emergency exists in the area described below, based upon the following:

1)SC DHEC has declared an imminent and substantial danger to human health and the environment in its Emergency Order dated 5:12pm August 1, 2019 regarding the unhealthy environmental situation arising from the continuing fire at Able Recycling Center on Schinger Avenue, (a copy of the Order attached);

2) EPA and DHEC have determined from sampling the air quality that an "Unhealthy" level of particulate concentrations continue to exist;

3) the situation as exist constitutes an ongoing danger to the health, safety and welfare of these residents living in close proximity to the site, especially members of vulnerable populations such as pregnant women, children and those suffering from pulmonary conditions.

Having determine the emergency exists it is ordered that

1) All Residents living along Schinger Avenue between 352 and 472 Schinger Avenue voluntarily evacuate and seek alternative housing for at least the next seven days until 8a.m. Friday August 9th);

2) Residents are further advised that Jasper County has made arrangements for temporary housing, and to that end, efforts are being made to contact each residence individually.

3) This Declaration shall remain in effect until such time as SC DHEC determines the Air Quality at this area no longer poses a public health danger to these residents or County Council declares the Emergence no longer exists.

And it is so Ordered.

JASPER COUNTY SEAL SOUTH CAROLINA

S/ D Thomas Johnson, Jr.

D. Thomas Johnson Jr., Chairman

Jasper County Council

DATE: August 2, 2019 TIME: 3:20 p.m.

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From: Snyder, John <John.Snyder@tetratech.com>
Sent on: Friday, August 30, 2019 4:48:24 PM
To: Byrd, Terrence <Byrd.Terrence@epa.gov>; Spurlin, Steve <Spurlin.Steve@epa.gov>
Subject: FW: Able Contracting Fire: Data Summary Report 08/29/19 24hour (Thursday)
Attachments: Able_Viper Summary Tables_082919_24HR.pdf (1.02 MB)

resend

From: Snyder, John
Sent: Friday, August 30, 2019 9:15 AM
To: Byrd, Terrence <Byrd.Terrence@epa.gov>; Steve Spurlin (Spurlin.Steve@epamail.epa.gov) <Spurlin.Steve@epamail.epa.gov>
Cc: 'huyser.matthew@epa.gov' <huyser.matthew@epa.gov>; Jones, Chris <chris.jones@tetratech.com>; Reed, David <David.Reed@tetratech.com>; Huss, Eric <Eric.Huss@tetratech.com>
Subject: Able Contracting Fire: Data Summary Report 08/29/19 24hour (Thursday)

Steve and Terrence,
Attached is the air monitoring data summary for the previous reporting period (0700 082919 to 0700 083019).

Please note that this will be the final data report that includes Short Cut Road DustTrak (DustTrak 2) data. This morning that unit was relocated to the power line easement behind the business park, approximately 0.25 miles due south from the Site.

John Snyder, PG, PE | Environmental Engineer
Mobile **+1 (770) 402-9013** | john.snyder@tetratech.com

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Raleigh, NC (Cary) | tetratech.com

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TETRA TECH

Air Monitoring Summary Tables

The table below summarize monitoring data collected on using EPA's Viper wireless remote monitoring system.

Project Name: **Able Contracting Fire Site**

From: ***8/29/19 7:00*** ***To:*** ***8/30/19 7:00***

On Site, Southeast Corner of Pile

Instrument	Analyte	Action Level Exceedance	Period Average Exceedance	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level (PEL/TLV/60 min AEGL)
AreaRAE 1	VOC	No	No	1,419	4	0 - 273 ppb	0.47 ppb	1,000 ppb
	CO	No	No	1,419	7	0 - 7 ppm	0.02 ppm	83 ppm
	H_2S	Yes	No	1,419	54	0 - 1.3 ppm	0.02 ppm	0.5 ppm
	O_2	No	No	1,419	1,419	20.9 - 20.9 %	20.9 %	<19.5 or >23%
	LEL	No	No	1,419	0	0 - 0 %	0 %	10%
	HCN	Yes	No	1,419	1,285	0 - 7.5 ppm	1.21 ppm	7.1 ppm

Peacock Collision

Instrument	Analyte	Air Quality Index	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level (PEL/TLV/60 min AEGL)
DustTrak 1	PM-2.5	Good	1,434	1,434	3 - 86 μg/m³	7.4 μg/m³	See SOG #: T106

On Site, Northwest Corner of Pile

Instrument	Analyte	Action Level Exceedance	Period Average Exceedance	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level (PEL/TLV/60 min AEGL)
AreaRAE 2	VOC	Yes	No	1,458	1,020	0 - 1618 ppb	195.66 ppb	1,000 ppb
	CO	No	No	1,458	36	0 - 11 ppm	0.1 ppm	83 ppm
	H_2S	No	No	1,458	0	0 - 0 ppm	0 ppm	0.5 ppm
	O_2	No	No	1,458	1,458	20.9 - 20.9 %	20.9 %	<19.5 or >23%
	LEL	No	No	1,458	0	0 - 0 %	0 %	10%
	HCN	No	No	1,458	12	0 - 1 ppm	0 ppm	7.1 ppm

Short Cut Road

Instrument	Analyte	Air Quality Index	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level (PEL/TLV/60 min AEGL)
DustTrak 2	PM-2.5	Good	1,430	1,430	7 - 121 μg/m³	11.2 μg/m³	See SOG #: T106

Able Contracting Workshop, Northeast of Pile

Instrument	Analyte	Action Level Exceedance	Period Average Exceedance	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level (PEL/TLV/60 min AEGL)
AreaRAE 3	VOC	No	No	1,430	1,102	0 - 473 ppb	197.65 ppb	1,000 ppb
	CO	No	No	1,430	0	0 - 0 ppm	0 ppm	83 ppm
	H_2S	Yes	No	1,430	1	0 - 0.7 ppm	0 ppm	0.5 ppm
	O_2	No	No	1,430	1,430	20.9 - 20.9 %	20.9 %	<19.5 or >23%
	LEL	No	No	1,430	0	0 - 0 %	0 %	10%
	HCN	No	No	1,430	318	0 - 1.2 ppm	0.08 ppm	7.1 ppm

Grace Coastal Church

Instrument	Analyte	Air Quality Index	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level (PEL/TLV/60 min AEGL)
DustTrak 3	PM-2.5	Good	1,420	1,420	6 - 31 μg/m³	10.2 μg/m³	See SOG #: T106

Forrest Concrete

Instrument	Analyte	Action Level Exceedance	Period Average Exceedance	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level (PEL/TLV/60 min AEGL)
AreaRAE 4	VOC	No	No	1,442	660	0 - 264 ppb	75.77 ppb	1,000 ppb
	CO	No	No	1,442	0	0 - 0 ppm	0 ppm	83 ppm
	H_2S	No	No	1,442	0	0 - 0 ppm	0 ppm	0.5 ppm
	O_2	No	No	1,442	1,442	20.5 - 21.4 %	20.8 %	<19.5 or >23%
	LEL	No	No	1,442	0	0 - 0 %	0 %	10%
	HCN	No	No	1,442	340	0 - 1.2 ppm	0.09 ppm	7.1 ppm

Sun City

Instrument	Analyte	Air Quality Index	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level (PEL/TLV/60 min AEGL)
EBAM 1	PM-2.5	Good	1,230	354	0 - 76 μg/m³	10.8 μg/m³	See SOG #: T106

Brooke Mill Apartments

Instrument	Analyte	Air Quality Index	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level (PEL/TLV/60 min AEGL)
EBAM 2	PM-2.5	Good	1,486	859	0 - 50 μg/m³	11.7 μg/m³	See SOG #: T106

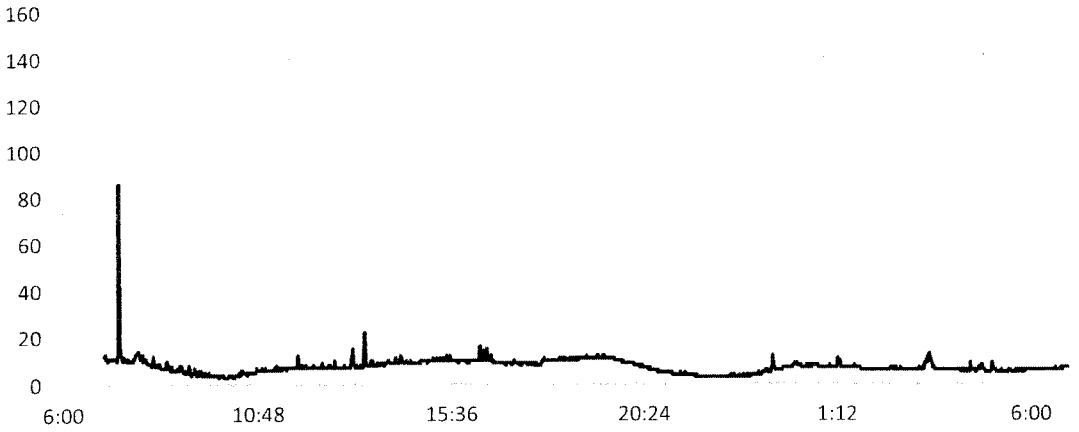
EPA Mobile Command Post

Instrument	Analyte	Air Quality Index	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level (PEL/TLV/60 min AEGL)
EBAM 3	PM-2.5	Good	1,151	367	0 - 125 μg/m³	11.8 μg/m³	See SOG #: T106

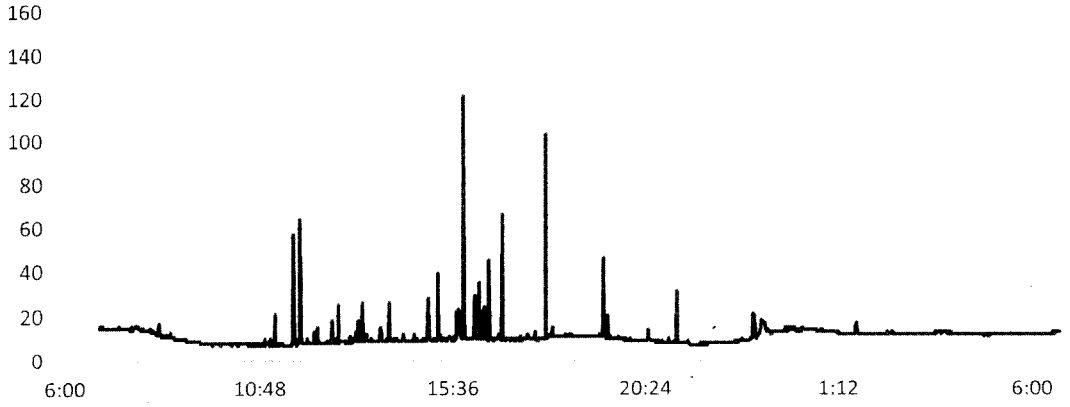
Notes:

%	Percent
<	Less than
>	Greater than
AEGL	Acute Exposure Guideline Levels for Airborne Chemicals
CO	Carbon monoxide
H_2S	Hydrogen Sulfide
HCN	Hydrogen Cyanide
LEL	Lower Explosive Level
min	Minute
O_2	Oxygen
PEL	Permisslble exposure limit
ppb	Parts per billion
ppm	Parts per million
PM	Particulate matter
SOG	Standard Operating Guidelines
TLV	Threshold limit value
μg/m³	Micrograms per cubic meter
VOC	Volatile organic compoud

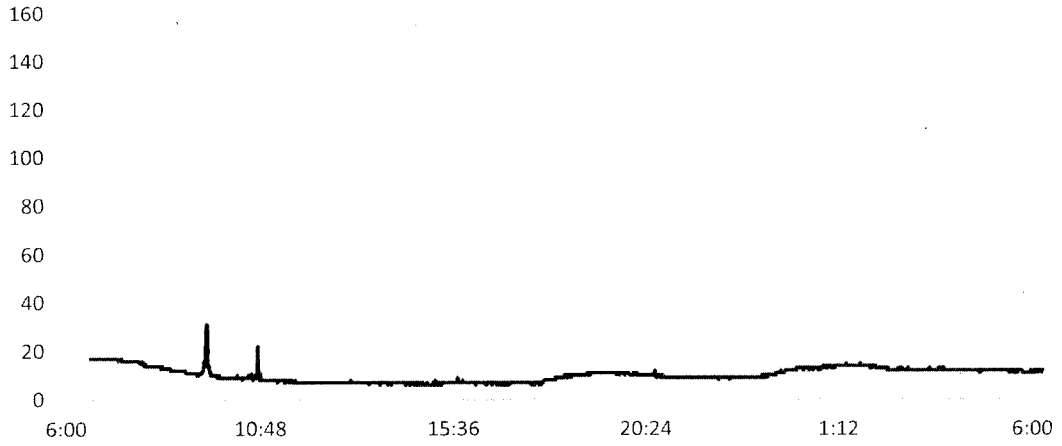
8/29/19 24-hour Data for DustTrak 1 ($PM_{2.5}$) - Peacock Collision



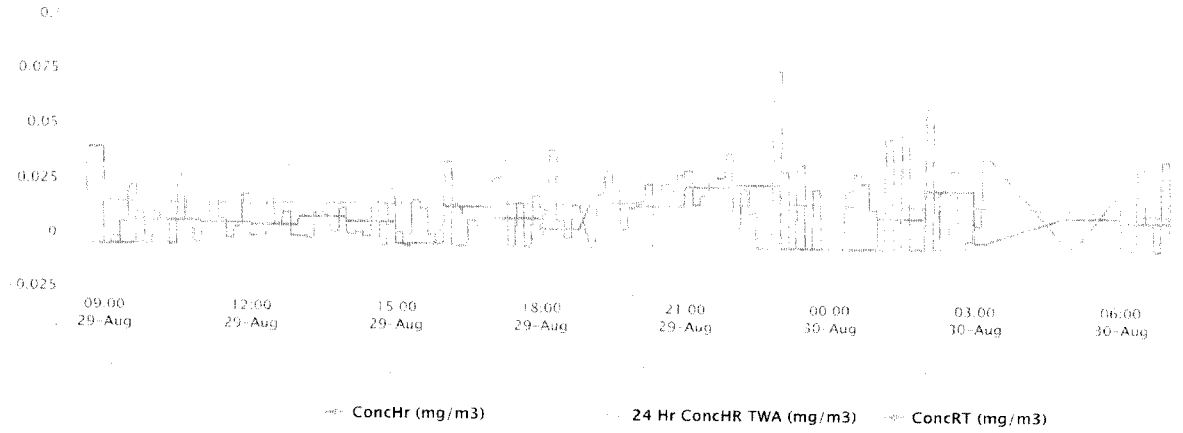
8/29/19 24-hour Data for DustTrak 2 ($PM_{2.5}$) – Short Cut Road



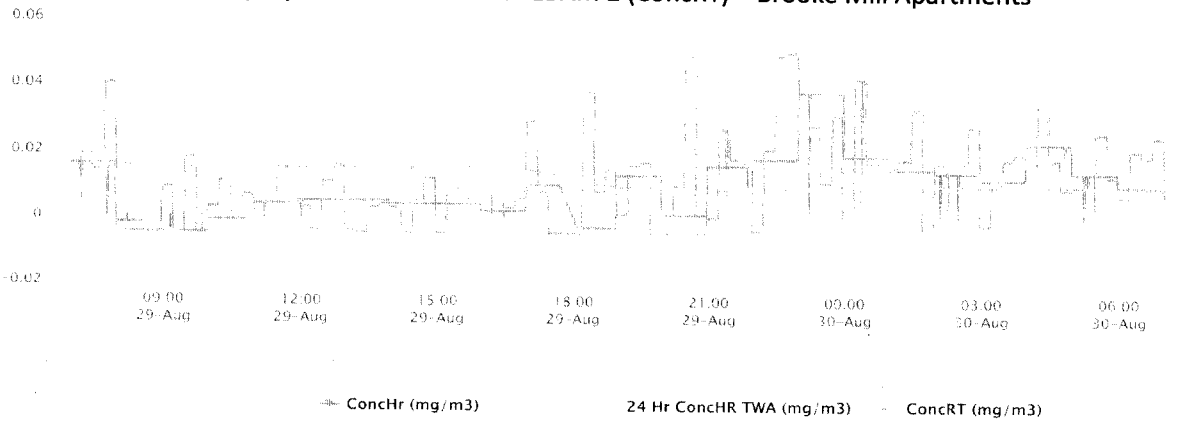
8/29/19 24-hour Data for DustTrak 3 ($PM_{2.5}$ in $\mu g/m^3$) – Grace Coastal Church



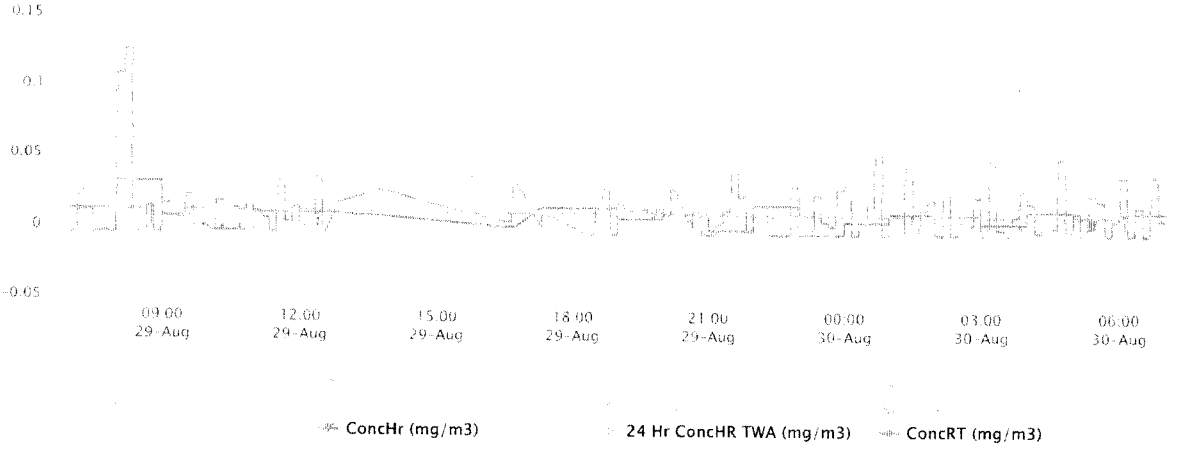
8/29/19 24-hour Data for EBAM 1 (ConcRT) – Sun City



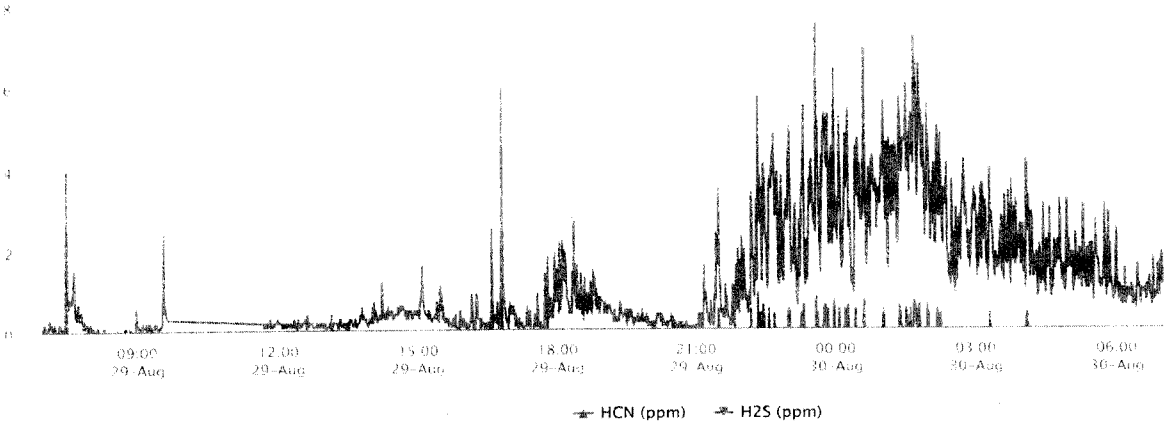
8/29/19 24-hour Data for EBAM 2 (ConcRT) – Brooke Mill Apartments



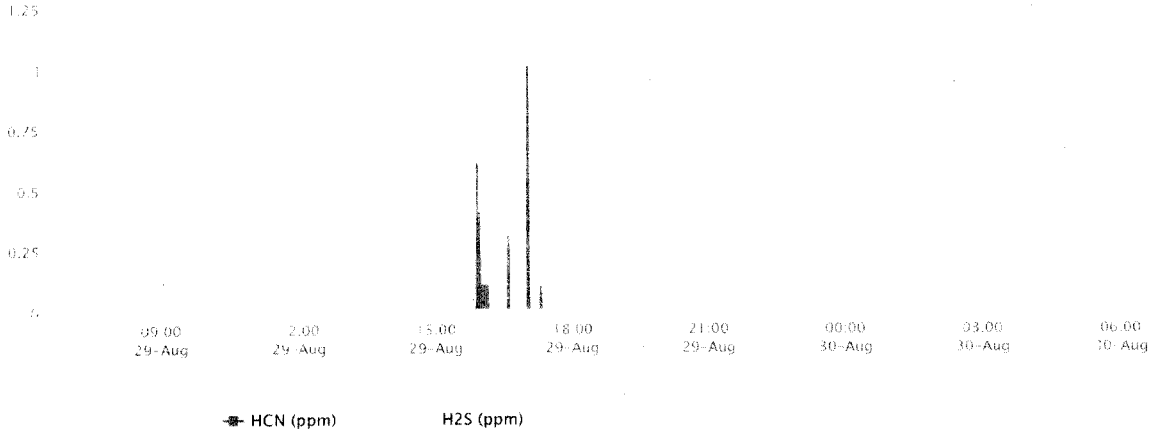
8/29/19 24-hour Data for EBAM 3 (ConcRT) – EPA Mobile Command Post



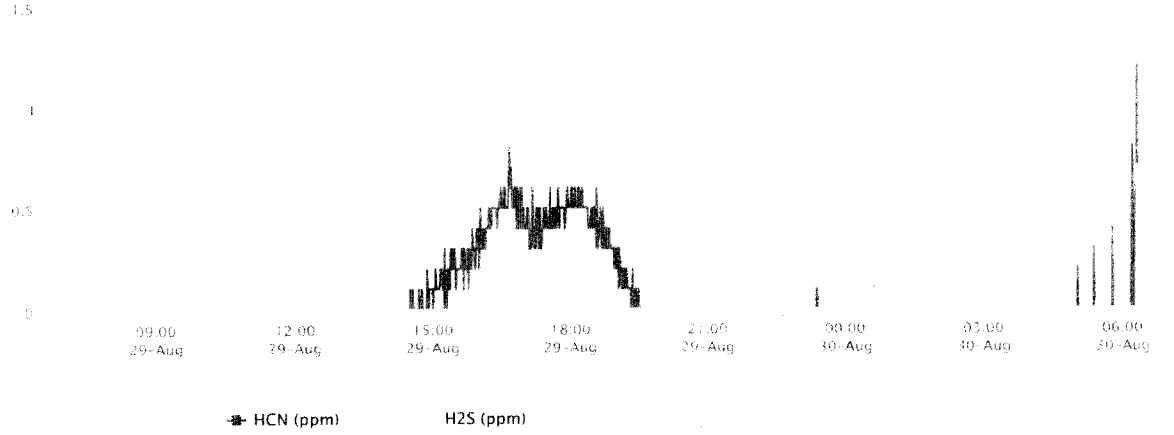
8/29/19 24-hour Data for AREARAE PRO 1 (HCn) – Southwest of Pile



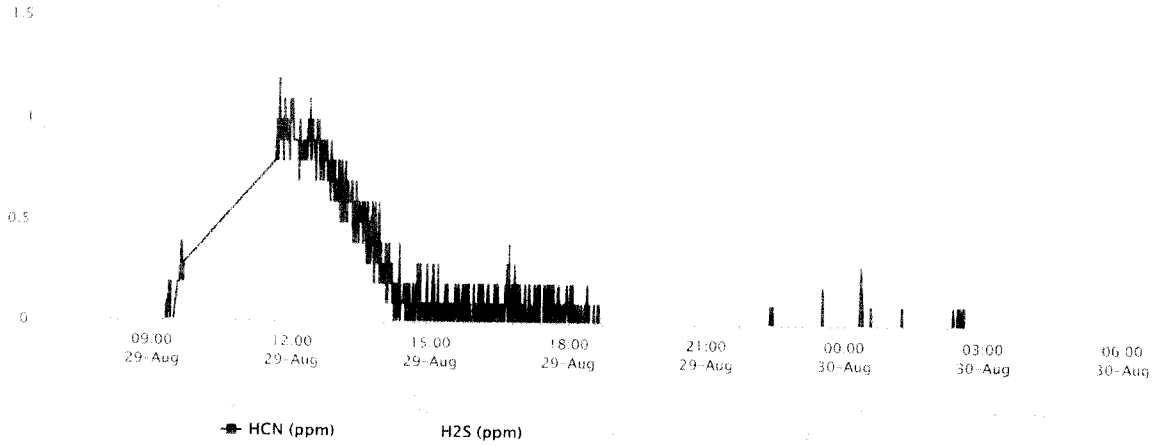
8/29/19 24-hour Data for AREARAE PRO 2 (HCn) – Northwest of Pile



8/29/19 24-hour Data for AREARAE PRO 3 (HCn) – Northeast of Pile



8/29/19 24-hour Data for AREARAE PRO 4 (HCn) – Forrest Concrete



Threshold Values and Air Quality Index Categories for PM2.5

Level of Health Concern	Particulate Matter ≤2.5 microns measured in µg/m3		Interpretation
	1 hour average	24 hour average	
Good	0.0-40.0	0.0-12.0	Air quality is considered satisfactory, and air pollution poses little or no risk
Moderate	**40.1-80.0**	**12.1-35.4**	**Air quality is acceptable; however, for some pollutants there may be a moderate health concern for a very small number of people who are unusually sensitive to air pollution.**
Unhealthy for Sensitive groups	80.1-175.0	35.5-55.4	Members of sensitive groups may experience health effects. The general public is not likely to be affected.
Unhealthy	175.1-300.0	55.5-150.4	Everyone may begin to experience health effects; members of sensitive groups may experience more serious health effects.
Very Unhealthy	300.1-500.0	150.5-250.4	Health warnings of emergency conditions. The entire population is more likely to be affected.
Hazardous	>500.0	>250.5	Health alert: everyone may experience more serious health effects

- Threshold values taken from original EPA AQI online calculator found at http://airnow.gov/index.cfm?action=resources.aqi_conc_calc for PM2.5 (24 hour) and Idaho Department of Environmental Quality AQI for PM2.5 (1 hour) taken from http://app.airsis.com/usfs/aqi.asp.
- Recommendations are from the EPA Air Now web site.
- People who are unusually sensitive to air pollution are a subset of Sensitive Individuals. Unusually sensitive to air pollution can be defined as the very young, the elderly, pregnant women, and the immunocompromised.
- Sensitive individuals defined as people with lung disease, older adults and children who are at a greater risk from exposure to ozone; and persons with heart and lung disease, older adults and children who are at greater risk from the presence of particles in the air.

Armstrong, Kathy

From: Spurlin, Steve
Sent: Tuesday, September 03, 2019 6:26 PM
To: Tanner, Terry; Adams, Glenn
Cc: Miller, Angela
Subject: Able

Terry, the Water Bureau Chief is Mike Marcus 803-898-4210. He visited site Sunday to look at stormwater controls. He was good with what was in place. He said well data would be back at end of week. Mentioned fecal coliform as likely problem. That's not our issue, but relevant to re occupancy. I told him we were trying to get residents back as no air issues. He said we should coordinate cloroxing of well with owner at move in. So please follow up on that.

You need to talk to Glenn and Tim/SS about messaging for our exit. Glenn is aware of situation and is aware of need to possibly provide narrative for acrylin, h2S, HCN. Don't ignore this as it's part of exit.

I've talked to Angela about potential messaging to public about how "mulch"/organic based piles put of steam. I would consider that part of the future exit narrative.

Steve Spurlin
Federal On-Scene Coordinator
U S EPA, Region 4
Ed Jones Federal Bldg, B-13
109 S. Highland Ave
Jackson, TN 38301
Spurlin.Steve@epa.gov
731 394-8996

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From: Spurlin, Steve <Spurlin.Steve@epa.gov> on behalf of Spurlin, Steve
Sent on: Sunday, September 1, 2019 12:09:32 PM
To: Tanner, Terry <Tanner.Terry@epa.gov>
Subject: Able Baker Charlie

Thoughts from John Handy:

Decide if you need Strike Team. Mr. Tindel said as much advance time you can give them the better
Decide what other support you may need (ie. START to type updates, sample, etc..)
START needs a ceiling increase asap.
1st round of "clearance" summas deployed 8/31. Discussion has been to do 2 rounds, but I'd talk to Glenn
Reconcile DHEC's emergency order and local emergency order. Ie. DHECs has language requiring certain things. If we close up shop, where does DHECs order stand? Copies of both in plastic file box
Glenn/SS is aware that they are going to have to generate an explanation for the acrylin, H2S and HCN detection issues. We are pulling 3 background location summas to hopefully supply clarity to situation. Turns out acylin likely exists in background above the RML and H2S and HCN detection levels are above RML. Glenn said we'd never do another site w/ acrylin as a "driver"
When you return, we will be out of office and you will be ruling w/ iron fist from in middle area of job trailer
Residents remain relocated. We added Jose ?, so there's 11. I'll have Angela/Ron revise list
DHEC collected well samples Thursday and indicated results back in a week. I'd stay abreast of status as Franklin said to keep residents relocated until well data back.
OPS signed lots of manifests and gave to CMC. Blank manifests in box in job trailer
Think about shrinking air monitoring footprint
Assuming re-mobe, CMC plans to bring another dozer and trackhoe and demobe long reach.
We got rid of vac truck. Plan is to use pump to move water to fracs and then call vac truck when needed to load to sewer

Good working with you

Steve Spurlin
Federal On-Scene Coordinator
U S EPA, Region 4
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109 S. Highland Ave
Jackson, TN 38301
Spurlin.Steve@epa.gov
731 394-8996

From: Reed, David <David.Reed@tetratech.com>
Sent on: Sunday, September 1, 2019 1:33:33 PM
To: Byrd, Terrence <Byrd.Terrence@epa.gov>; Spurlin, Steve <Spurlin.Steve@epa.gov>; Huyser, Matthew <Huyser.Matthew@epa.gov>; chris.jones@tetratech.com; John Snyder <john.snyder@tetratech.com>; Huss, Eric <Eric.Huss@tetratech.com>
Subject: Able Contracting Fire: Data Summary 08/31/19 24hrs (Saturday)
Attachments: Able_Viper Summary Tables_083119_24Hrs.pdf (915.95 KB)

Steve and Terrence,
Attached is the air monitoring data summary for the previous reporting period (0700 083119 to 0700 090119).

The DustTrak's located at Grace Church and the Right of Way South both experienced a glitch last night. They both locked up and the data was not stored on the instrument. I'm going to reach out to the manufacturer and point out what I believe is a problem with their software.

David Reed | Environmental Chemist
Direct **+1 (678) 775-3092** | Mobile **+1 (803) 238-5485** | david.reed@tetratech.com

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tetratech.com

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TETRA TECH

Air Monitoring Summary Tables

The table below summarize monitoring data collected on using EPA's Viper wireless remote monitoring system.

Project Name: **Able Contracting Fire Site**

From: ***8/31/19 7:00*** ***To:*** ***9/1/19 7:00***

On Site, Southwest Corner of Pile

Instrument	Analyte	Momentary Action Level Exceedance	Period Average Exceedance	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level (PEL/TLV/60 min AEGL)
AreaRAE 1	VOC	No	No	1,516	8	0 - 531 ppb	0.72 ppb	1,000 ppb
	CO	No	No	1,516	0	0 - 0 ppm	0 ppm	83 ppm
	H_2S	No	No	1,516	0	0 - 0 ppm	0 ppm	0.5 ppm
	O_2	No	No	1,516	1,516	20.9 - 20.9 %	20.9 %	<19.5 or >23%
	LEL	No	No	1,516	892	0 - 3 %	1.2 %	10%
	HCN	No	No	1,516	60	0 - 0.9 ppm	0.01 ppm	7.1 ppm

Peacock Collision

Instrument	Analyte	Air Quality Index	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level (PEL/TLV/60 min AEGL)
DustTrak 1	PM-2.5	Good	1,467	1,467	0 - 8 µg/m³	0.8 µg/m³	See SOG #: T106

On Site, Northwest Corner of Pile

Instrument	Analyte	Momentary Action Level Exceedance	Period Average Exceedance	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level (PEL/TLV/60 min AEGL)
AreaRAE 2	VOC	No	No	1,563	1	0 - 8 ppb	0.01 ppb	1,000 ppb
	CO	No	No	1,563	19	0 - 6 ppm	0.04 ppm	83 ppm
	H_2S	No	No	1,563	0	0 - 0 ppm	0 ppm	0.5 ppm
	O_2	No	No	1,563	1,563	20.9 - 20.9 %	20.9 %	<19.5 or >23%
	LEL	No	No	1,563	0	0 - 0 %	0 %	10%
	HCN	No	No	1,563	106	0 - 0.4 ppm	0.01 ppm	7.1 ppm

Power Line Right of Way - South

Instrument	Analyte	Air Quality Index	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level (PEL/TLV/60 min AEGL)
DustTrak 2	PM-2.5	Good	1	1	0 - 0 µg/m³	0 µg/m³	See SOG #: T106

Able Contracting Workshop, Northeast of Pile

Instrument	Analyte	Momentary Action Level Exceedance	Period Average Exceedance	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level (PEL/TLV/60 min AEGL)
AreaRAE 3	VOC	No	No	1,540	0	0 - 0 ppb	0 ppb	1,000 ppb
	CO	No	No	1,540	0	0 - 0 ppm	0 ppm	83 ppm
	H_2S	No	No	1,540	0	0 - 0 ppm	0 ppm	0.5 ppm
	O_2	No	No	1,540	1,540	20.9 - 20.9 %	20.9 %	<19.5 or >23%
	LEL	#N/A	No	#N/A	#N/A	#N/A	#N/A	10%
	HCN	No	No	1,540	0	0 - 0 ppm	0 ppm	7.1 ppm

Grace Coastal Church

Instrument	Analyte	Air Quality Index	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level (PEL/TLV/60 min AEGL)
DustTrak 3	PM-2.5	Good	1	1	0 - 0 µg/m³	0 µg/m³	See SOG #: T106

Forrest Concrete

Instrument	Analyte	Momentary Action Level Exceedance	Period Average Exceedance	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level (PEL/TLV/60 min AEGL)
AreaRAE 4	VOC	No	No	1,558	0	0 - 0 ppb	0 ppb	1,000 ppb
	CO	No	No	1,558	0	0 - 0 ppm	0 ppm	83 ppm
	H_2S	No	No	1,558	0	0 - 0 ppm	0 ppm	0.5 ppm
	O_2	No	No	1,558	1,558	20 - 20.5 %	20.2 %	<19.5 or >23%
	LEL	No	No	1,558	0	0 - 0 %	0 %	10%
	HCN	No	No	1,558	1	0 - 0.1 ppm	0 ppm	7.1 ppm

Sun City

Instrument	Analyte	Air Quality Index	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level (PEL/TLV/60 min AEGL)
EBAM 1	PM-2.5	Good	767	209	0 - 63 µg/m³	8.7 µg/m³	See SOG #: T106

Brooke Mill Apartments

Instrument	Analyte	Air Quality Index	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level (PEL/TLV/60 min AEGL)
EBAM 2	PM-2.5	Good	1,429	354	0 - 112 µg/m³	7.8 µg/m³	See SOG #: T106

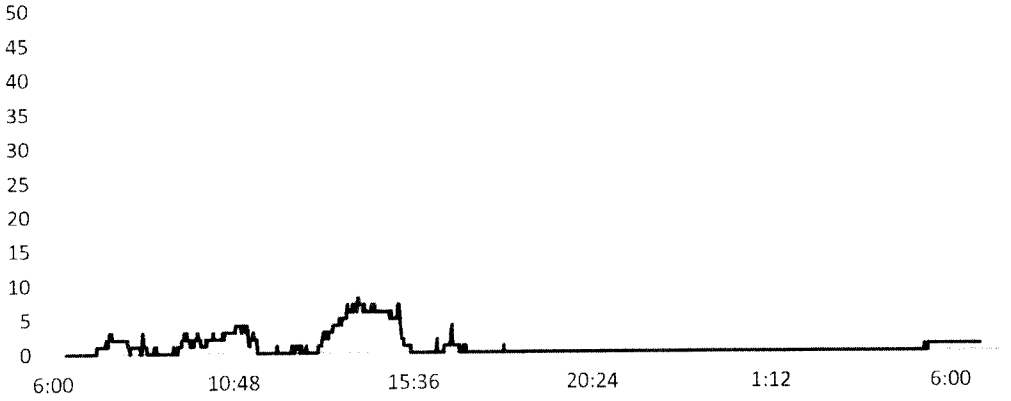
EPA Mobile Command Post

Instrument	Analyte	Air Quality Index	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level (PEL/TLV/60 min AEGL)
EBAM 3	PM-2.5	Good	1,024	226	0 - 102 µg/m³	11.6 µg/m³	See SOG #: T106

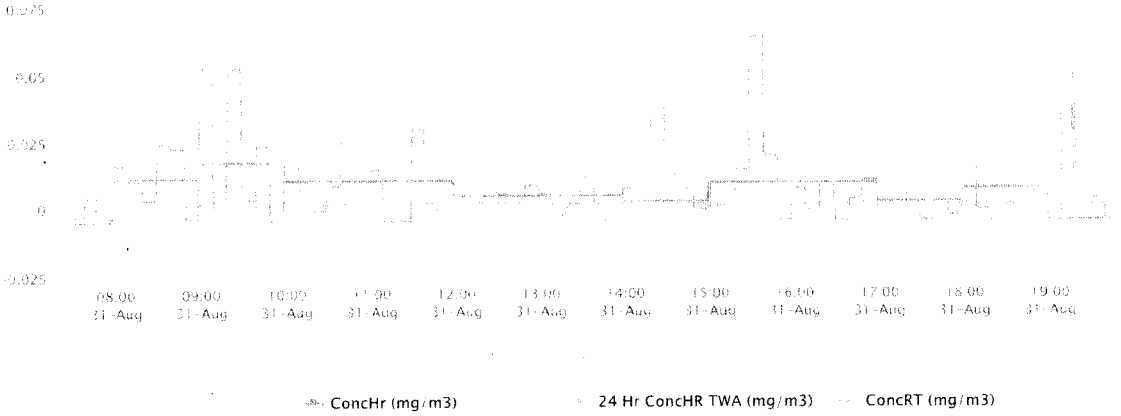
Notes:

- % Percent
- < Less than
- > Greater than
- AEGL Acute Exposure Guideline Levels for Airborne Chemicals
- CO Carbon monoxide
- H_2S Hydrogen Sulfide
- HCN Hydrogen Cyanide
- LEL Lower Explosive Level
- min Minute
- O_2 Oxygen
- PEL Permissible exposure limit
- ppb Parts per billion
- ppm Parts per million
- PM Particulate matter
- SOG Standard Operating Guidelines
- TLV Threshold limit value
- µg/m³ Micrograms per cubic meter
- VOC Volatile organic compoud

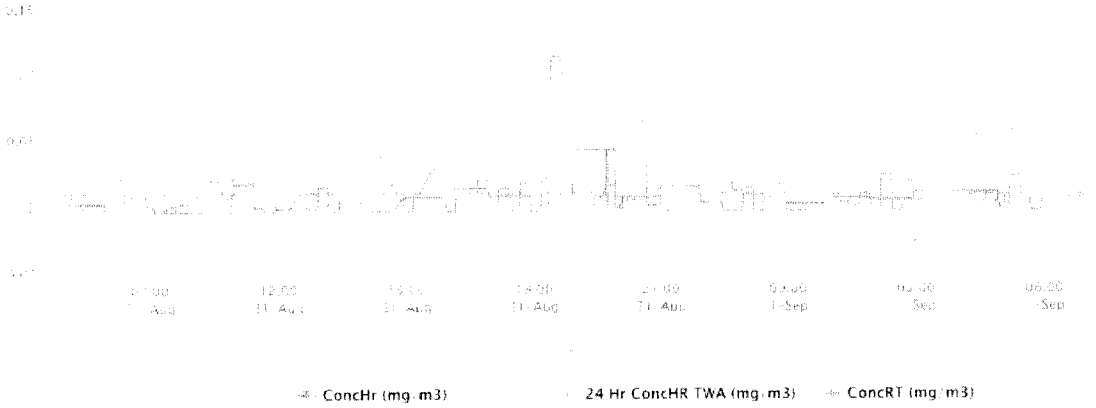
8/31/19 24-hour Data for DustTrak 1 ($PM_{2.5}$) - Peacock Collision



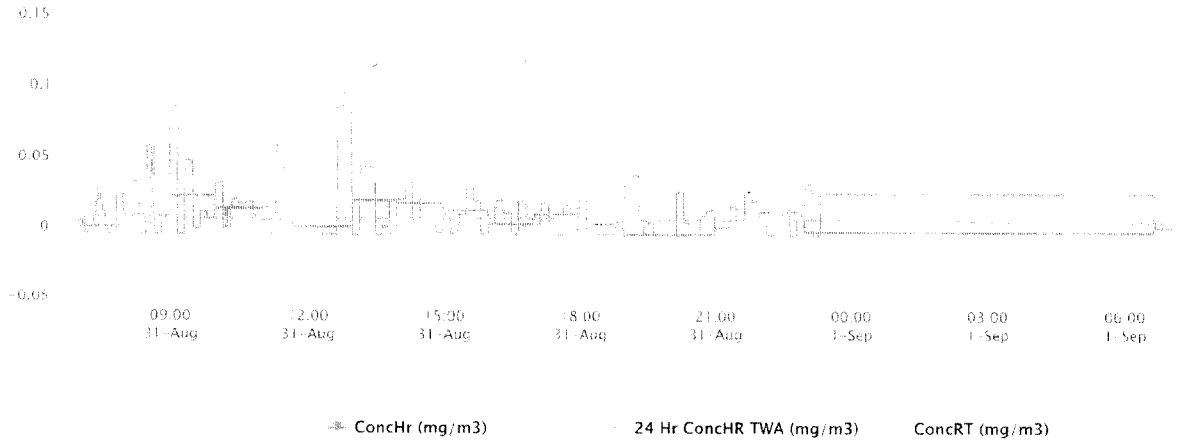
8/31/19 24-hour Data for EBAM 1 (ConcRT) – Sun City



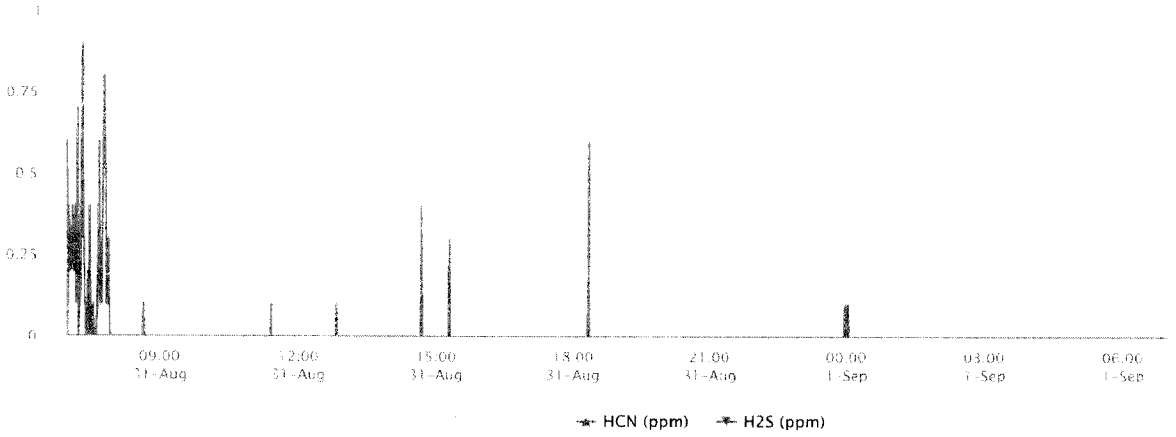
8/31/19 24-hour Data for EBAM 2 (ConcRT) – Brooke Mill Apartments



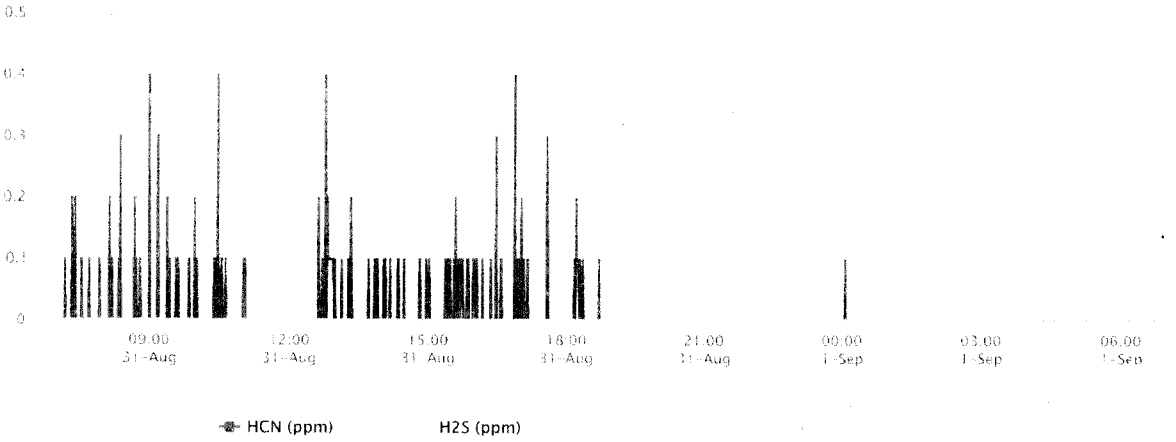
8/31/19 24-hour Data for EBAM 3 (ConcRT) – EPA Mobile Command Post



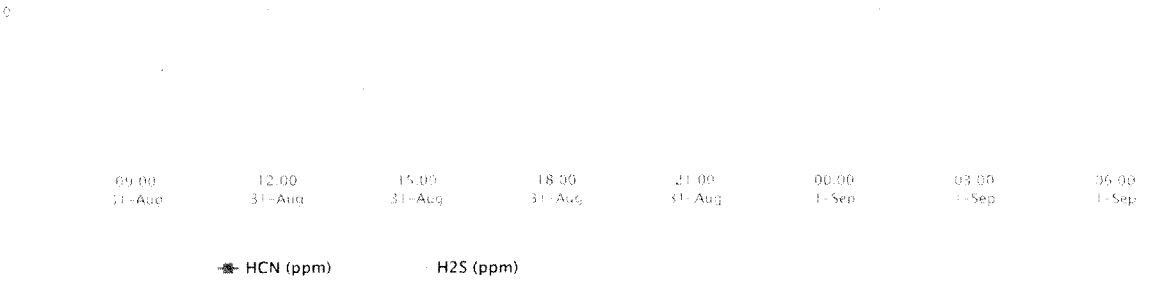
8/31/19 24-hour Data for AREARAE PRO 1 (HCn) – Southwest of Pile



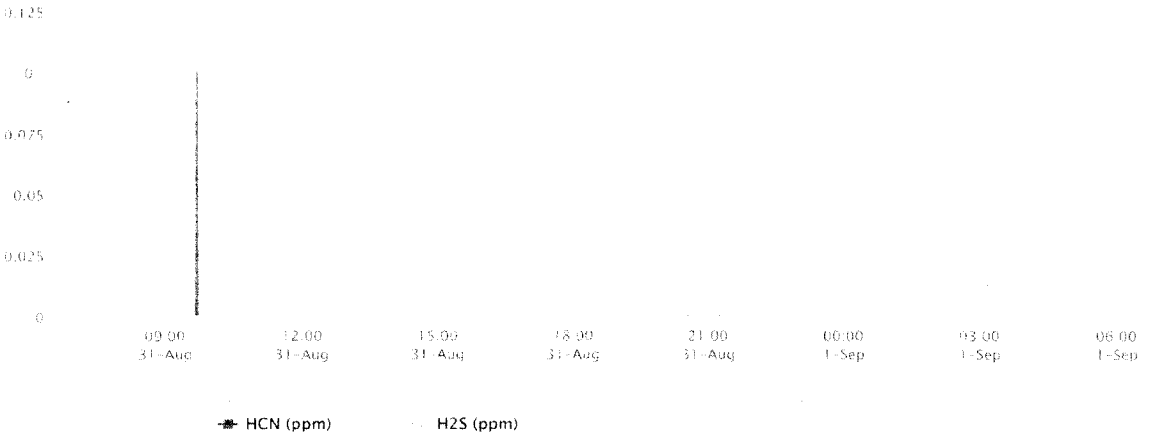
8/31/19 24-hour Data for AREARAE PRO 2 (HCn) – Northwest of Pile



8/31/19 24-hour Data for AREARAE PRO 3 (HCn) – Northeast of Pile



8/31/19 24-hour Data for AREARAE PRO 4 (HCn) – Forrest Concrete



Threshold Values and Air Quality Index Categories for PM2.5

Level of Health Concern	Particulate Matter ≤2.5 microns measured in µg/m3		Interpretation
	1 hour average	24 hour average	
Good	0.0-40.0	0.0-12.0	Air quality is considered satisfactory, and air pollution poses little or no risk
Moderate	40.1-80.0	12.1-35.4	Air quality is acceptable; however, for some pollutants there may be a moderate health concern for a very small number of people who are unusually sensitive to air pollution.
Unhealthy for Sensitive groups	80.1-175.0	35.5-55.4	Members of sensitive groups may experience health effects. The general public is not likely to be affected.
Unhealthy	175.1-300.0	55.5-150.4	Everyone may begin to experience health effects; members of sensitive groups may experience more serious health effects.
Very Unhealthy	300.1-500.0	150.5-250.4	Health warnings of emergency conditions. The entire population is more likely to be affected.
Hazardous	>500.0	>250.5	Health alert: everyone may experience more serious health effects

- Threshold values taken from original EPA AQI online calculator found at http://airnow.gov/index.cfm?action=resources.aqi_conc_calc for PM2.5 (24 hour) and Idaho Department of Environmental Quality AQI for PM2.5 (1 hour) taken from http://app.airsis.com/usfs/aqi.asp.
- Recommendations are from the EPA Air Now web site.
- People who are unusually sensitive to air pollution are a subset of Sensitive Individuals. Unusually sensitive to air pollution can be defined as the very young, the elderly, pregnant women, and the immunocompromised.
- Sensitive individuals defined as people with lung disease, older adults and children who are at a greater risk from exposure to ozone; and persons with heart and lung disease, older adults and children who are at greater risk from the presence of particles in the air.

From: Jones, Chris <chris.jones@tetratech.com>
Sent on: Friday, August 30, 2019 8:06:04 PM
To: Garrard, Jordan <Garrard.Jordan@epa.gov>
CC: Andrew Johnson <andy.johnson@tetratech.com>; Reed, Angel <Angel.Reed@tetratech.com>; Valentino, Renee <Renee.Valentino@tetratech.com>; Hill, Stacy <Hill.Stacy@epa.gov>; Spurlin, Steve <Spurlin.Steve@epa.gov>; Huyser, Matthew <Huyser.Matthew@epa.gov>; Tanner, Terry <Tanner.Terry@epa.gov>; John Snyder <john.snyder@tetratech.com>; Jones, Katrina <Jones.Katrina@epa.gov>
Subject: Able Contracting Fire_TDD No. TT-01-128_75% Notice

Dear Mr. Garrard,

To meet the requirements of the Superfund Technical Assessment and Response Team (START) IV Contract No. EP-S4-14-03, Tetra Tech is writing to notify you that we have reached 75 percent of the approved funding for the Able Contracting Fire, Technical Direction Document No. TT-01-128.

As of August 30, 2019, the project budget status is as follows:

Current TDD Ceiling	$250,000.00
Funding Expended Through 8/30/2019	$201,000.00
Funding Remaining Through 8/30/2019	**$49,000.00**
Daily Burn Rate (2 field Staff and limited office support)	**$3,800.00**

Additional funds may be needed to complete the remaining task, which include continued field support for up to 3-weeks, additional air sampling (up to 18 samples at $2,000 per sample for VOCs, H_2S, and HCN), preparation of the response report, data validation and management, and project management and RCMS cost tracking activities. Feel free to contact me if you have any questions regarding funding status.

Chris Jones | Readiness Coordinator
Direct **(678) 775-3081** | Main **(678) 775-3080** | Cell **(404) 395-5220** | chris.jones@tetratech.com

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Think Green: Reduce, Reuse, Recycle

From: Spurlin, Steve <Spurlin.Steve@epa.gov> on behalf of Spurlin, Steve
Sent on: Thursday, August 29, 2019 10:02:02 PM
To: chris.jones@tetratech.com
Subject: Able costs

John threw you under bus. Need best costs to date, burn rate, remaining ceiling, number of days it would carry you? Thanks.

Doesn't have to be exact.

Sent from my iPhone

Share Copy link Download Delete Copy to Version history Previous 7 of 61

From: Byrd, Terrence <Byrd.Terrence@epa.gov> on behalf of Byrd, Terrence
Sent on: Wednesday, August 28, 2019 6:38:17 PM
To: reecemc@dhec.sc.gov; Spurlin, Steve <Spurlin.Steve@epa.gov>
CC: Porter, Henry <porterhj@dhec.sc.gov>; Swanson, Courtney <Swanson.Courtney@epa.gov>; shealyrg@dhec.sc.gov; Marshall, Frances (Fran) <marshaf2@dhec.sc.gov>
Subject: Able Fire Ops 8/28/19

Myra,

Fifty-one loads of debris have been shipped off-site to the local Waste Management facility. This represents approximately 510 tons of debris removed from the site today. It's anticipated that approximately 60-70 loads will be shipped off site by close of business today.

Strategies to reduce the amount of fire-mitigation water traveling off-site continue to be implemented. Due to the increased efficiency of water use to mitigate the fire, water utilized on-site continues to decrease. Furthermore, fire-mitigation water generated on site continues to be shipped directly to a sanitary sewage system via vacuum trucks.

Air monitoring data continues to show that no off-site exceedances of action levels relative to chemicals of concern are occurring. Furthermore, particulate monitoring shows levels in the good to moderate range. Continuous air-monitoring of workers operating directly on top of and around the debris pile have shown no exceedances of action levels relative to chemicals of concern.

Minimal smoke was noted at the beginning of the operational period (0700 EST) and smoke decreased through the day as crews continued to segregate debris and apply water as needed.

Terrence Byrd
Federal On-Scene Coordinator
US EPA R4
404-229-9511 (cell)
byrd.terrence@epa.gov

From: Byrd, Terrence <Byrd.Terrence@epa.gov>
Sent: Wednesday, August 28, 2019 2:36 PM
To: reecemc@dhec.sc.gov <reecemc@dhec.sc.gov>; Spurlin, Steve <Spurlin.Steve@epa.gov>
Cc: Porter, Henry <porterhj@dhec.sc.gov>; Swanson, Courtney <Swanson.Courtney@epa.gov>; shealyrg@dhec.sc.gov <shealyrg@dhec.sc.gov>; Marshall, Frances (Fran) <marshaf2@dhec.sc.gov>
Subject: Re: Able Fire Ops 8/27/19

Myra,

Fifty-one loads of debris have been shipped off-site to the local Waste Management facility. This

From: Byrd, Terrence <Byrd.Terrence@epa.gov> on behalf of Byrd, Terrence
Sent on: Thursday, August 29, 2019 7:07:58 PM
To: reecemc@dhec.sc.gov; Spurlin, Steve <Spurlin.Steve@epa.gov>
CC: Porter, Henry <porterhj@dhec.sc.gov>; Swanson, Courtney <Swanson.Courtney@epa.gov>; shealyrg@dhec.sc.gov; Marshall, Frances (Fran) <marshaf2@dhec.sc.gov>
Subject: Able Fire Ops 8/29/19

Myra,

As of 3pm today, 70 loads of debris have been shipped off-site to the local Waste Management facility. This represents approximately 400 tons of debris removed from the site today. It's anticipated that approximately 85 loads will be shipped off site by close of business today.

Strategies to reduce the amount of fire-mitigation water traveling off-site continue to be implemented. Due to the increased efficiency of water use to mitigate the fire, water utilized on-site continues to decrease. Furthermore, fire-mitigation water generated on site continues to be shipped directly to a sanitary sewage system via vacuum trucks.

Air monitoring data continues to show that no off-site exceedances of action levels relative to chemicals of concern are occurring. Furthermore, particulate monitoring shows levels in the good to moderate range. Continuous air-monitoring of workers operating directly on top of and around the debris pile have shown no exceedances of action levels relative to chemicals of concern.

Minimal smoke was noted at the beginning of the operational period (0700 EST) and smoke decreased through the day as crews continued to segregate debris and apply water as needed.

Terrence Byrd
Federal On-Scene Coordinator
US EPA R4
404-229-9511 (cell)
byrd.terrence@epa.gov

From: Byrd, Terrence <Byrd.Terrence@epa.gov> on behalf of Byrd, Terrence
Sent on: Friday, August 30, 2019 7:21:01 PM
To: reecemc@dhec.sc.gov; Spurlin, Steve <Spurlin.Steve@epa.gov>
CC: Porter, Henry <porterhj@dhec.sc.gov>; Swanson, Courtney <Swanson.Courtney@epa.gov>; shealyrg@dhec.sc.gov; Marshall, Frances (Fran) <marshaf2@dhec.sc.gov>; Andrews, David <Andrews.David@epa.gov>
Subject: Able Fire Ops 8/30/19

Myra,

As of 3pm today, 40 loads of debris have been shipped off-site to the local Waste Management facility. This represents approximately 280 tons of debris removed from the site today. The lighter average loads are due to not having to load wet material.

Strategies to reduce the amount of water traveling off-site continue to be implemented. Total water utilized on-site continues to decrease. Furthermore, fire-mitigation water generated on site continues to be shipped directly to a sanitary sewage system via vacuum trucks.

Air monitoring data continues to show that no off-site exceedances of action levels relative to chemicals of concern are occurring. Also, particulate monitoring shows levels in the good range. Continuous air-monitoring of workers operating directly on top of and around the debris pile have shown no exceedances of action levels relative to chemicals of concern.

No smoke was noted at the beginning of the operational period (0700 EST). Steam from the pile decreased through the day as crews continued to segregate debris and apply water as needed.

Terrence Byrd
Federal On-Scene Coordinator
US EPA R4
404-229-9511 (cell)
byrd.terrence@epa.gov

From: Miller, Angela <Miller.Angela@epa.gov> on behalf of Miller, Angela
Sent on: Friday, August 30, 2019 1:18:30 AM
To: Spurlin, Steve <Spurlin.Steve@epa.gov>; Tolliver, Ronald <Tolliver.Ronald@epa.gov>
CC: Miller, Angela <Miller.Angela@epa.gov>
Subject: Able Fire residents contact and water source list
Attachments: Able Fire Schinger Avenue Residents - EPA revised contact List.docx (15.16 KB)

I revised the original list that SC DHEC provided to fit EPA's needs. I also renumbered the households so that it would not be so confusing with personnel changes. As we determine their water source, we can edit the list. Jose reached out to all, but only spoke with one and he did not know the well number or it's location.

All the best,
Angela R. Miller
US EPA, Community Involvement Coordinator
Office of the Regional Administrator
61 Forsyth Street, SW
Atlanta, GA 30303
Office: (404) 562-8561
Cell: (678) 575-8132
Email: miller.angela@epa.gov

Schinger Avenue Residents (10 households)
contact information and drinking water source

1. **405C Schinger Ave. - WELL 4 -** (b)(6) Personal Privacy
   (b)(6) Personal Privacy

2. **405B Schinger Ave. - WELL 4 -** (b)(6) Personal Privacy
   (b)(6) Personal Privacy sonal Privacy

3. **405 A Schinger Ave - WELL 4 -** (b)(6) Personal Privacy
   (b)(6) Personal Privacy sonal Privacy

4. **452B Schinger Ave. -** (b)(6) Personal Privacy
   (b)(6) Personal Privacy
   (b)(6) Personal Privacy

5. **452A Schinger Ave. -** (b)(6) Personal Privacy
   (b)(6) Personal Privacy

6. **394 Schinger Ave.- WELL 2 -** (b)(6) Personal Privacy
   (b)(6) Personal Privacy

7. **mobile home behind 394 Schinger Ave.- WELL 2 -** (b)(6) Personal Privacy
   (b)(6) Personal Privacy

8. **382 Schinger Avenue - Well # not known -** (b)(6) Personal Privacy
   (b)(6) Personal Privacy 6)

9. **352 Schinger Ave. - WELL 3 -** (b)(6) Personal Privacy
   (b)(6) Personal Privacy

10. **64 Mackinlay Way -** (b)(6) Personal Privacy

From: Miller, Angela <Miller.Angela@epa.gov> on behalf of Miller, Angela
Sent on: Thursday, August 29, 2019 5:35:54 PM
To: Jenkins, Brandi <Jenkins.Brandi@epa.gov>
CC: Spurlin, Steve <Spurlin.Steve@epa.gov>; Tolliver, Ronald <Tolliver.Ronald@epa.gov>; Adams, Glenn <Adams.Glenn@epa.gov>; Miller, Angela <Miller.Angela@epa.gov>; McCullough, Rachel <McCullough.Rachel@epa.gov>
Subject: Able Fire response community update 82919
Attachments: Able response msg 82919.docx (24.99 KB)

Attached is a final draft version of an update that we could post to the web and distribute to the community using the email list. IC Steve Spurlin has reviewed and his changes have been implemented. I believe if we can get this final and posted today, we could get ahead with our messaging before the media and the congressional visit today.

All the best,
Angela R. Miller
US EPA, Community Involvement Coordinator
Office of the Regional Administrator
61 Forsyth Street, SW
Atlanta, GA 30303
Office: (404) 562-8561
Cell: (678) 575-8132
Email: miller.angela@epa.gov

Able Contracting Fire – EPA response community update 8/29/19

EPA continues operations to meet the objective of protecting human health and the environment by working to extinguish the fire and reduce the risk of reignition. SC DHEC and EPA maintain a broad network of air monitoring equipment on-site and in surrounding neighborhoods. This network generates tens of thousands of data points each day which provide responders with the real time data necessary to make informed decisions based on current conditions. Air quality has improved and remains good.

EPA has utilized aggressive measures to stabilize the stockpile and reduce the risk of reignition. A concrete pumper truck was used to directly apply water to the hot spots helping to minimize water application. Five thousand tons of fire debris has been removed from the stockpile and transported off-site allowing for effective debris management and minimizing the height of the pile. Response actions have allowed us to reduce the quantity of water applied to the stockpile. Site conditions have allowed reduction of water application, but water containment and disposal activities remain in place.

If you know of someone who would like to be added to our email distribution list, please have them contact me, and if you wish to be taken off the list, please let me know that as well.

As always, please do not hesitate to contact me at 877-718-3752 or email Tolliver.ronald@epa.gov.

- For more information on the contaminates, please visit www.atsdr.cdc.gov/toxfaqs
- Perimeter air monitoring results are available for public review at www.epa.gov/superfund/able-contracting-fire
- Real time particulate monitoring data is available at www.scdhec.gov/able-contracting-fire

From: Spurlin, Steve <Spurlin.Steve@epa.gov> on behalf of Spurlin, Steve
Sent on: Thursday, August 29, 2019 11:18:32 AM
To: Webster, James <Webster.James@epa.gov>; Moore, Tony <moore.tony@epa.gov>; Jenkins, Brandi <Jenkins.Brandi@epa.gov>
Subject: Able pile this am
Attachments: IMG_0438.JPG (89.14 KB), ATT00001.txt (23 Bytes)

From: Spurlin, Steve <Spurlin.Steve@epa.gov> on behalf of Spurlin, Steve
Sent on: Thursday, September 5, 2019 1:01:29 PM
To: Jones, Katrina <Jones.Katrina@epa.gov>; chris.jones@tetratech.com
Subject: Able

Have you heard anything from Terry Tanner on increase for START for ABLE support? I know we were getting close due to sample costs.

Steve Spurlin
Federal On-Scene Coordinator
U S EPA, Region 4
Ed Jones Federal Bldg, B-13
109 S. Highland Ave
Jackson, TN 38301
Spurlin.Steve@epa.gov
731 394-8996

From: Spurlin, Steve <Spurlin.Steve@epa.gov> on behalf of Spurlin, Steve
Sent on: Saturday, August 31, 2019 1:20:10 PM
To: Hill, Franklin <Hill.Franklin@epa.gov>; Webster, James <Webster.James@epa.gov>; Moore, Tony <moore.tony@epa.gov>; Byrd, Terrence <Byrd.Terrence@epa.gov>; Andrews, David <Andrews.David@epa.gov>
Subject: Able-Good view of daily OPS courtesy of DHEC 1 of 3
Attachments: movie trim 1.mp4 (50.34 MB)

Steve Spurlin
Federal On-Scene Coordinator
U S EPA, Region 4
Ed Jones Federal Bldg, B-13
109 S. Highland Ave
Jackson, TN 38301
Spurlin.Steve@epa.gov
731 394-8996

From: Spurlin, Steve <Spurlin.Steve@epa.gov> on behalf of Spurlin, Steve
Sent on: Saturday, August 31, 2019 3:16:59 PM
To: Hill, Franklin <Hill.Franklin@epa.gov>; Webster, James <Webster.James@epa.gov>; Moore, Tony <moore.tony@epa.gov>
CC: Tanner, Terry <Tanner.Terry@epa.gov>; Andrews, David <Andrews.David@epa.gov>; Byrd, Terrence <Byrd.Terrence@epa.gov>
Subject: Able--Upcoming storm-site safety
Attachments: DORIAN #28A-2.pdf (191.8 KB), DORIAN #28A.pdf (248.83 KB)

Hello,

Due to the shift in storm towards our area, I've decided it would be prudent to button things up and demobilize personnel. We are already getting storms/lightening in area and it will only get worse. We would be unable to work next week from both a safety point and rain turning the work area into a mess. We will start necessary actions to secure equipment. I anticipate personnel demobilizing starting Sunday with Monday being last day for remaining personnel to demobe.

We will pull our air monitoring equipment as it's ineffective during rain events and could be damaged during storms. The MCP is leaving today. The equipment will remain.

We will contact local FD and let them know our plans. Who do we want to contact at DHEC?

Steve Spurlin
Federal On-Scene Coordinator
U S EPA, Region 4
Ed Jones Federal Bldg, B-13
109 S. Highland Ave
Jackson, TN 38301
Spurlin.Steve@epa.gov
731 394-8996

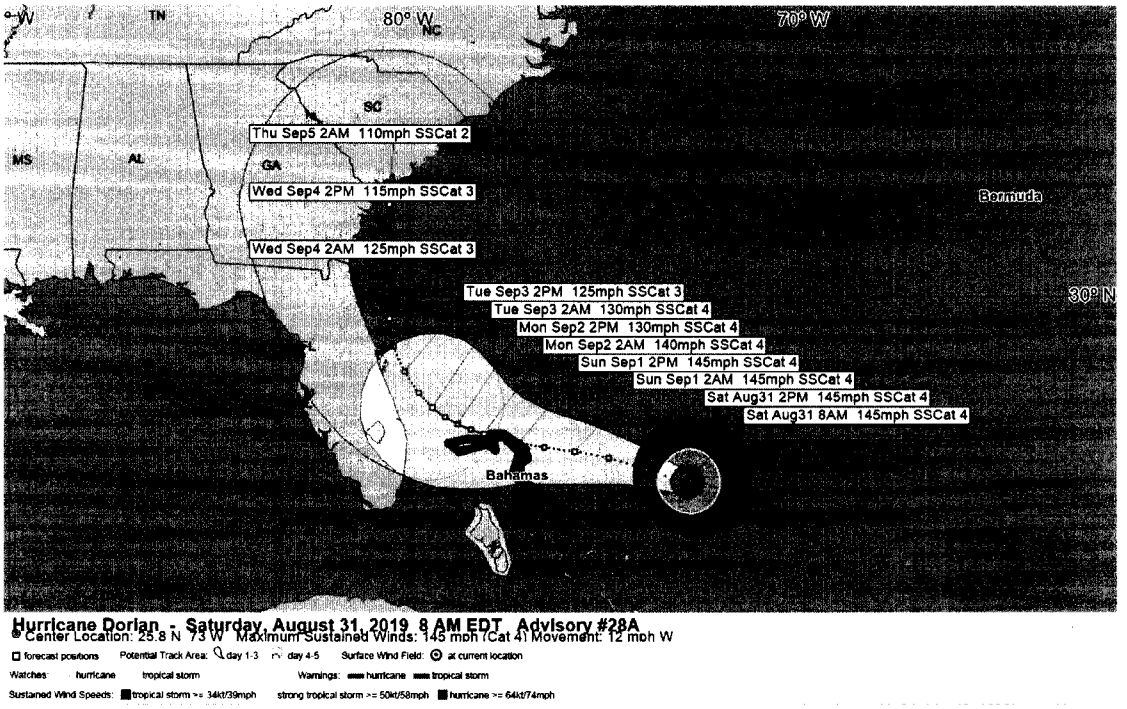
Storm Summary for Hurricane Dorian

Saturday, August 31, 2019 at 8 AM EDT

(Output from Hurrevac, based on National Hurricane Center Forecast Advisory #28A)

Dorian is currently a Category 4 major hurricane on the Saffir-Simpson Hurricane Wind Scale, with maximum sustained winds of 145 mph (125 kts), moving west at 12 mph. The estimated minimum central pressure is 944 mb. Hurricane-force winds extend outward up to 30 miles (45 km) from the storm center. Tropical storm-force winds extend outward up to 105 miles (165 km) from the storm center.

Certain coastal locations are under Hurricane Warning and Hurricane Watch. The geographic extents of these watches and warnings are detailed in the advisory text at the end of this report.



Hurricane Dorian - Saturday, August 31, 2019 8 AM EDT Advisory #28A

Center Location: 25.8 N 73 W Maximum Sustained Winds: 145 mph (Cat 4) Movement: 12 mph W

forecast positions Potential Track Area: day 1-3 day 4-5 Surface Wind Field: at current location

Watches: hurricane tropical storm Warnings: hurricane tropical storm

Sustained Wind Speeds: tropical storm >= 34kt/39mph strong tropical storm >= 50kt/58mph hurricane >= 64kt/74mph

Wind Analysis for Able Contracting

(Based upon Hurricane DORIAN Advisory #28A)

Wind Probabilities

BEAUFORT MCAS, the closest reporting location, has within the 5-day forecast period of this advisory, a 9% chance of hurricane-force (64kt/74mph or greater) winds, a 23% chance of at least strong tropical storm-force (50kt/58mph) winds, and a 49% chance of at least tropical storm-force (34kt/39mph) winds.

Peak Wind*

No tropical storm winds are predicted for Able Contracting during the next 72 hours.

Wind Arrival and Duration*

No tropical storm winds are predicted for Able Contracting during the next 72 hours.

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000
WTNT35 KNHC 311135
TCPAT5
BULLETIN
Hurricane Dorian Intermediate Advisory Number 28A
NWS National Hurricane Center Miami FL AL052019
800 AM EDT Sat Aug 31 2019

...NOAA HURRICANE HUNTER RECONNAISSANCE PLANE FINDS DORIAN STRONGER AND MOVING WESTWARD...

SUMMARY OF 800 AM EDT...1200 UTC...INFORMATION

LOCATION...25.8N 73.0W
ABOUT 445 MI...715 KM E OF WEST PALM BEACH FLORIDA
ABOUT 280 MI...450 KM E OF THE NORTHWESTERN BAHAMAS
MAXIMUM SUSTAINED WINDS...145 MPH...230 KM/H
PRESENT MOVEMENT...W OR 280 DEGREES AT 12 MPH...19 KM/H
MINIMUM CENTRAL PRESSURE...944 MB...27.88 INCHES

WATCHES AND WARNINGS

CHANGES WITH THIS ADVISORY:
None.

SUMMARY OF WATCHES AND WARNINGS IN EFFECT:
A Hurricane Warning is in effect for...
* Northwestern Bahamas excluding Andros Island
A Hurricane Watch is in effect for...
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A Hurricane Warning means that hurricane conditions are expected somewhere within the warning area. A warning is typically issued 36 hours before the anticipated first occurrence of tropical-storm-force winds, conditions that make outside preparations difficult or dangerous. Preparations to protect life and property should be rushed to completion.

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Interests in southern and central Florida should continue to monitor the progress of Dorian. Watches may be required for portions of the east coast of Florida later today.

For storm information specific to your area, please monitor products issued by your national meteorological service.

DISCUSSION AND OUTLOOK

At 800 AM EDT (1200 UTC), the distinct eye of Hurricane Dorian was located near latitude 25.8 North, longitude 73.0 West. Dorian is now moving toward the west near 12 mph (19 km/h). A slower westward motion should continue into early next week. On this track, the core of Dorian should move over the Atlantic well north of the southeastern and central Bahamas today, be near or over the northwestern Bahamas on Sunday, and be near the Florida east coast late Monday.

Data from a NOAA Hurricane Hunter plane indicate that the maximum sustained winds have increased to near 145 mph (225 km/h) with higher gusts. Dorian is a category 4 hurricane on the Saffir-Simpson Hurricane Wind Scale. While some fluctuations in intensity are possible, but Dorian is expected to remain a powerful hurricane during the next few days.

Hurricane-force winds extend outward up to 30 miles (45 km) from the center and tropical-storm-force winds extend outward up to 105 miles (165 km).

The latest minimum central pressure just reported by a NOAA Hurricane Hunter aircraft was 944 mb (27.88 inches).

HAZARDS AFFECTING LAND

WIND: Hurricane conditions are expected in the hurricane warning area across the northwestern Bahamas by Sunday, with tropical storm winds beginning tonight.

STORM SURGE: A life-threatening storm surge will raise water levels by as much as 10 to 15 feet above normal tide levels in areas of onshore winds in the northwestern Bahamas. Near the coast, the surge will be accompanied by large and destructive waves.

RAINFALL: Dorian is expected to produce the following rainfall accumulations this weekend into the middle of next week:
Northwestern Bahamas...10 to 15 inches, isolated 25 inches.
Coastal sections of the southeast United States...6 to 12 inches, isolated 18 inches.
Central Bahamas...2 to 4 inches, isolated 6 inches.
This rainfall may cause life-threatening flash floods.

SURF: Swells will begin affect the east-facing shores of the Bahamas, the Florida east coast, and the southeastern United States coast during the next few days. These swells are likely to cause life-threatening surf and rip current conditions. Please consult products from your local weather office.

NEXT ADVISORY

Next complete advisory at 1100 AM EDT.

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Forecaster Avila

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WTNT45 KNHC 310848
TCDAT5
Hurricane Dorian Discussion Number 28
NWS National Hurricane Center Miami FL AL052019
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Key Messages:

1. A prolonged period of life-threatening storm surge and devastating hurricane-force winds are likely in portions of the northwestern Bahamas, particularly on the Abaco Islands and Grand Bahama Island. A hurricane warning is in effect for these areas, and residents should listen to advice given by local emergency officials and have their hurricane preparations completed today.
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3. The risk of strong winds and life-threatening storm surge is increasing along the coasts of Georgia and South Carolina during the middle of next week. Residents in those areas should continue to monitor the progress of Dorian.
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48H	02/0600Z	26.9N	78.1W	120 KT	140 MPH
72H	03/0600Z	27.5N	79.4W	115 KT	130 MPH
96H	04/0600Z	29.5N	80.5W	110 KT	125 MPH
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Forecaster Beven

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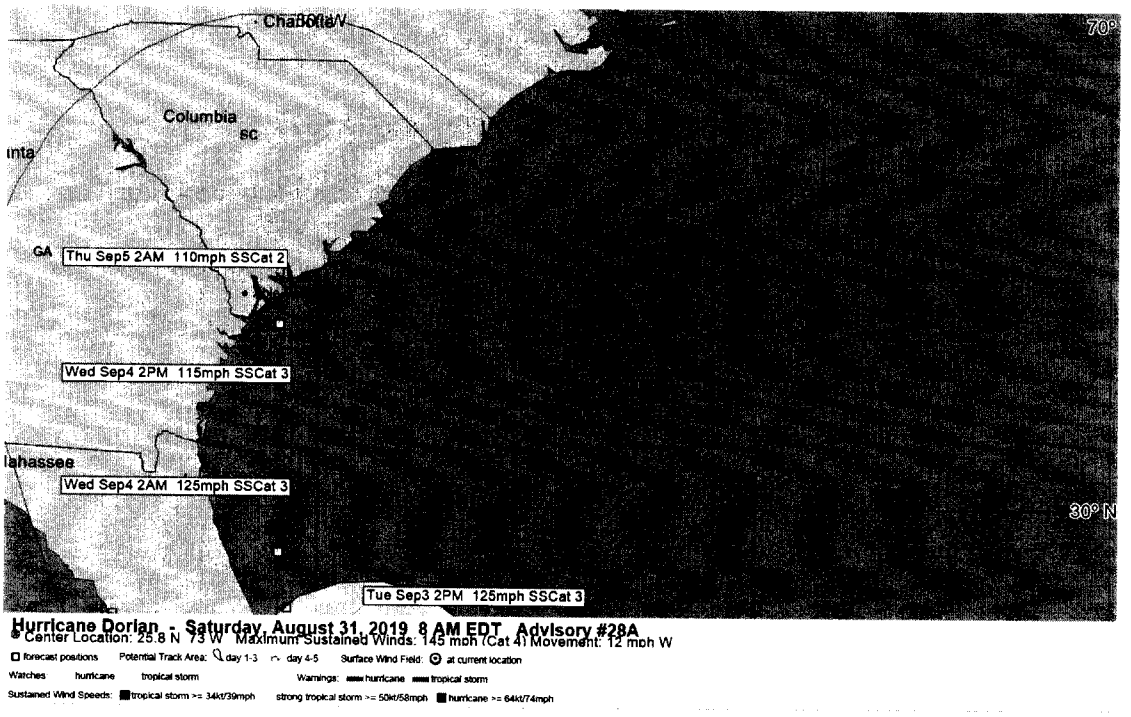

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Forecaster Beven

From: Snyder, John <John.Snyder@tetratech.com>
Sent on: Friday, August 30, 2019 9:45:28 PM
To: Adams, Glenn <Adams.Glenn@epa.gov>; Spurlin, Steve <Spurlin.Steve@epa.gov>; Frederick, Tim <Frederick.Tim@epa.gov>
CC: chris.jones@tetratech.com
Subject: Air Sampling Plan: Revision 1
Attachments: Able Contracting Fire ER DRAFT Revision 1.pdf (670.45 KB)

Gentlemen,
Attached is the revised air sampling plan. This just builds on the plan submitted earlier. See Section 3.4 and the appendix for information of interest.

John Snyder, PG, PE | Environmental Engineer
Mobile **+1 (770) 402-9013** | john.snyder@tetratech.com

Tetra Tech | Complex World, Clear Solutions™ | **Tetra Tech** EMI
Raleigh, NC (Cary) | tetratech.com

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TETRA TECH

TETRA TECH

August 30, 2019

OSC Steve Spurlin
On-Scene Coordinator
U.S. Environmental Protection Agency, Region 4

Subject: **Draft Air Monitoring and Sampling Plan, Revision 1**
Able Contracting Fire ER
EPA Contract No. EP-S5-13-01
Technical Direction Document No. TT-01-128

Dear OSC Spurlin:

Tetra Tech, Inc. (Tetra Tech) is submitting this draft air monitoring and sampling plan (revision 1) for the Able Contracting Fire Emergency Response (ER) for your review and approval. This plan summarizes stationary and mobile air monitoring and sampling to be conducted during the Able Contracting Fire ER.

If you have any questions regarding this plan, please contact John Snyder at (770) 402-9013 or via e-mail at john.snyder@tetratech.com.

Respectfully,

John Snyder
Tetra Tech

DRAFT AIR MONITORING AND SAMPLING PLAN, REVISION 1
ABLE CONTRACTING FIRE ER
RIDGELAND, JASPER COUNTY, SOUTH CAROLINA

Prepared for

U.S. Environmental Protection Agency
Emergency Response Branch
Region 4

Submitted by

Tetra Tech, Inc.
Superfund Technical Assessment and Response Team Region 4
1955 Evergreen Blvd., Building 200, Suite 300
Duluth, GA 30096

EPA Contract No. EP-S4-14-03

TDD-01-128

August 30, 2019

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- 3.2 STATIONARY AIR MONITORING 2
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- **3.3.2** ASBESTOS AIR SAMPLING 3
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Appendix

A Figures

1.0 INTRODUCTION

The U.S. Environmental Protection Agency (EPA) has tasked Tetra Tech. Inc. (Tetra Tech), under the Superfund Technical Assessment and Response Team (START) Contract TDD-01-128 to perform stationary air monitoring and sampling during an emergency response at the Able Contracting Fire Emergency Response (ER) site (the site) in Ridgeland, Jasper County, South Carolina.

2.0 SITE BACKGROUND

The Able Contracting facility is located on Schinger Avenue in Ridgeland, South Carolina. The facility received construction and demolition debris which was shredded as recyclable materials were removed. The Site contains approximately 4 acres of stockpiled material.

The current fire of the stockpiled material began in early July 2019. Able Contracting and local fire departments have worked to extinguish the fire. On July 23, a large water supply pump used by the facility for firefighting was damaged by lightning. Smoke from the smoldering fire continued to increase over the next several days.

The EPA was requested by South Carolina Department Health and Environmental Control (SC DHEC) to conduct air monitoring and sampling to determine if any hazardous substances were being discharged from the smoldering fire. The EPA and Tetra Tech deployed to the Site on July 25. During the initial response activities, Tetra Tech conducted water quality monitoring and collected surface water samples from ditches and a nearby pond.

Ambient air sampling was conducted on July 27th and 28th as close to the smoke plume as possible and downwind of the closest residential property. Samples were analyzed for volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), formaldehyde, phosgene, metals, and asbestos. Tetra Tech returned to the site on August 2nd and 3rd to conduct additional air sampling to confirm the presence of hazardous substances measured in the previous round of sampling.

On August 9, EPA and Tetra Tech remobilized to the Site and began 24-hour air monitoring. SC DHEC mobilized a response contractor who began water application on August 11 and aggressive firefighting operations with heavy equipment on August 12. The EPA assumed the lead for relocation of residents and aggressive firefighting operations on August 16.

3.0 PROPOSED SAMPLING ACTIVITIES

This section discusses proposed monitoring and sampling activities that will be conducted during the response.

3.1 METEOROLOGICAL MONITORING

Meteorological data for Ridegeland, South Carolina will be obtained from NOAA and recorded using EPA's VIPER Survey Controller software. The data obtained and documented will include:

- Temperature (°F)
- Relative humidity
- Wind direction
- Wind speed
- Current weather conditions (such as sunny or precipitation)

3.2 STATIONARY AIR MONITORING

Tetra Tech and EPA determined stationary air monitoring locations by field conditions such as weather, work activity by other contractors, and direction from EPA. Remote air monitoring instruments were deployed for particulates and chemical constituents. Stationary air monitoring was conducted using AreaRAE Pro monitors and Single Point Monitors (SPM) Flex gas detectors from July 26 through July 28 and August 2 through August 4, 2019. The AreaRAE Pros were outfitted with sensors for measuring oxygen (O_2), lower exposure limit (LEL), hydrogen sulfide (H_2S), volatile organic compounds (VOCs), carbon monoxide (CO), and gamma radiation. The tapes used in the SPM Flexes were monitoring for phosgene.

On August 9, 2019, EPA began stationary air monitoring using AreaRAE Pros, DustTrak aerosol monitors, and E-BAM Portable Environmental Beta-Attenuation Mass Monitors during removal activities. Tetra Tech START stationed four AreaRAE Pros at fixed locations northeast, northwest, and southwest of the pile and near Forrest Concrete southeast of the pile. The AreaRAEs were outfitted with sensors for measuring O_2, LEL, hydrogen cyanide (HCN), H_2S, VOCs, CO, and gamma radiation. The DustTrak monitors measure atmospheric particulate matter with diameters of 2.5 micrometers (µm) (PM2.5), 10 µm (PM10), and total particulate matter (Total PM). The DustTraks are located at the following locations: Grace Coastal Church at 15 Williams Drive; Peacock Collision at 1667 Okatie Highway: and, 240 Short Cut Road. The E-BAMs measure for PM2.5 and are collocated with meteorological stations. The E-BAMs are located at the following locations: the Mobile Command Post (MCP) at 65 Schinger Avenue; the northeastern section of Sun City Neighborhood off Parkway Lane;

and, Brooke Mill Apartments community swimming pool at 46 Seagrass Lane. SC DHEC conducted particulate air monitoring and weather monitoring using the Network Particulate Monitor (NPM) 2 at three locations in the area. Observations will be noted in the field logbook in accordance with Tetra Tech SOP No.24-2.

3.3 WEEK OF 8/19/19 AIR SAMPLING

3.3.1 CHEMICAL AIR SAMPLING

Air sampling will be conducted over a two-day period during the week of August 19th using SUMMA cannisters to collect VOCs, HCN and H_2S. Air sampling will be conducted at the following fixed locations: at the Forrest Concrete location described above and at 352 Schinger Avenue. Air sampling will also be conducted during this time at a locations determined by field conditions such as weather, work activity by other contractors, and direction from EPA. Analytical results will be compared to EPA Region 4 Removal Management Levels (RML) for residential air and used to determine if evacuated residents can return to their homes.

Air sampling for a broad range of compounds will be conducted in accordance with EPA Air Method TO-15, "*Determination of Volatile Organic Compounds (VOCs) in Air Collected in SUMMA Canisters and Analyzed by Gas Chromatography/Mass Spectrometry (GC/MS)*". Air samples will be collected in 6-liter (L), stainless steel SUMMA canisters utilizing a 24-hour regulator to collect each sample at a flow rate of approximately 3.8 milliliters per minute (mL/min.). Prior to sampling, each SUMMA canister will be leak tested by conducting a shut-in test to ensure no leaks in any of the connections between the SUMMA canister and regulator. Once deployed, the SUMMA canisters will be set to collect samples over a 24-hour period. Samples are generally run for slightly less than 24 hours to prevent complete depletion of the vacuum in the SUMMA canister. At the beginning and ending of each sample collection period, the time, date, and vacuum pressure are recorded so that volume and sampling rate could be determined for each sample.

In addition to the VOC analysis, SUMMA canister samples will be used to obtain HCN (by Fourier Transfer Infrared [FTIR] spectroscopy) and H_2S (by Method 15) concentrations.

3.3.2 ASBESTOS AIR SAMPLING

Tetra Tech will conduct air sampling at locations around the perimeter of the landfill during removal activities as directed by EPA. EPA and Tetra Tech personnel will select perimeter air sampling locations based on the prevailing wind direction for the sampling period. Results will be used to determine the

presence or absence of airborne fiber concentrations that have the potential to migrate from the site during removal activities, as well as to implement appropriate safety controls. EPA established the site action level to be 0.01 f/cc in accordance with the air asbestos action level for baseline industrial exposure in accordance with OSWER Directive #9200.0-68, *Framework for Investigating Asbestos-Contaminated Superfund Sites*. Air sampling will be conducted using collocated high-volume air sampling pumps and low-volume air sampling pumps fitted with 25 millimeter (mm), 0.8 micrometer (μm) mixed cellulose ester (MCE) filter cassettes that will be analyzed by phase contrast microscopy (PCM). Perimeter air samples will be collected approximately 4 to 5 feet above the ground surface to represent exposures in the breathing zone during removal activities. Filter cassettes will be placed in a downward approximate 45-degree angle position with the inlet caps of the filter cassettes removed (open-faced) during sampling. Daily perimeter air samples for high-volume air sampling pumps will be collected at a flow rate of approximately 10 liters per minute (L/min) or at a flow rate resulting in collection of at least 3,850 liters per minute (L/min) and for low-volume air sampling pumps at a flow rate of 2.5 L/min or at a flow rate resulting in collection of at least 1,200 L/min of air during a 12-hour work shift. The flow rate of the fully assembled air sampling trains will be calibrated and recorded before samples are collected using a Mesa Labs Defender 510 Drycal rotameter or similar device. Once the sampling pumps have been adjusted to the desired flow rate, the initial flow rates recorded will be the average of 10 continuous flow readings. The inlet caps of both the low and high flow rate air filter cassettes will be removed (such that they are open-faced) during sampling. The post-sampling period flow rate (also measured using a Mesa Labs Defender 510 Drycal rotameter or similar device), however, typically will be measured while the air sampling train is still collecting air at its sampling location, just before the sampling period ends. This near-end-of-sampling flow rate measurement will be used in place of measuring the literal post-sampling flow rate. It is important to use the filter cassette for collecting the actual sample while the flow rate is measured before and after samples are collected; this procedure is especially important for the after-sample collection flow rate measurement because loading of dust and other materials during sampling may have altered the flow rate throughout the collection period. Without adjusting the flow rate of the sampling pump, the post-sampling flow rate will be recorded as the average of 10 continuous flow readings.

Perimeter air samples will be analyzed in accordance with the guidelines established in 29 CFR 1926.1101, Appendix A and Appendix B, by a Tetra Tech-procured, American Industrial Hygiene Association- (AIHA) accredited laboratory using National Institute of Occupational Safety and Health (NIOSH) Method 7400, Asbestos and Other Fibers by PCM. The laboratory analytical protocol for analyzing the collocated high flow rate and low flow rate air sample sets are as follows: (1) first attempt

to analyze the high flow rate (high volume) air sample using NIOSH 7400, and, if that sample is overloaded, then (2) proceed to analyze the low flow rate (low volume) air sample by NIOSH 7400. If both the high volume and the low volume air samples in a given collocated set are overloaded, then the laboratory will contact Tetra Tech START for additional instruction for analytical methods.

The results of samples will be used to evaluate the effectiveness of engineering and safety controls in preventing the off-site migration of airborne fiber concentrations during removal activities and provide EPA with information necessary to initiate corrective actions as appropriate. Perimeter air samples that yield PCM results greater than the site established action level of 0.01 f/cc for industrial areas will result in the suspension of removal activities until additional engineering controls are implemented to reduce asbestos fiber levels.

3.4 WEEK OF 9/2/19 AIR SAMPLING

3.4.1 CHEMICAL AIR SAMPLING

Two additional rounds of air sampling will be conducted during the week of 9/2/19. Sampling will be conducted in accordance with the same protocol laid out in Section 3.3.1 using 6-Liter Summa canisters and analyzed for VOCs exclusively.

Proposed locations include (see Figures 1 and 2 in Appendix A):

- 1 commercial location
  - Southern property line at Forrest Concrete
- 3 residential locations
  - 402 Schinger Avenue (plus duplicate sample)
  - 352 Schinger Avenue
  - Sun City development (collocated with EBAM 1)
- 3 background locations
  - Bluffton Township Fire Department Station 34, 25 William Pope Drive
  - Riverbend residential development
  - Hearthstone Lake residential development

3.5 SAMPLE AND ANALYTICAL METHODS SUMMARY

TABLE 1 summarizes the total number of samples, including necessary QA/QC, for each sample medium and analysis. **TABLE 2** provides a list of analytical methods that will be used by the laboratory, including the types of containers, preservation requirements, and hold times.

TABLE 1: SAMPLE SUMMARY

Analytical Parameter	Matrix	Number of Samples	Number of Field Duplicates	Number of MS/MSDs	Field/Trip Blanks
TO-15	Air	TBD	1 duplicate every 20 samples	Not Applicable	Not Applicable
Method 15	Air	TBD	1 duplicate every 20 samples	Not Applicable	Not Applicable
FTIR	Air	TBD	1 duplicate every 20 samples	Not Applicable	Not Applicable
NIOSH 7400	Air	TBD	1 duplicate every 20 samples	Not Applicable	1 per day of PCM air sampling

Notes:

MS/MSD = Matrix spike/matrix spike duplicate
TBD = To Be Determined

TABLE 2: ANALYTICAL METHODS

Matrix	Parameter	Analytical Method	Volumes and Containers	Preservation	Holding Time[1]
Air	VOC	TO-15	6-Liter Summa Canisters with 24 Hour regulators	None	30 Days
Air	HCN	FTIR	6-Liter Summa Canisters with 24 Hour regulators	None	30 Days
Air	H2S	Method 15	6-Liter Summa Canisters with 24 Hour regulators	None	30 Days
Air	Asbestos	NIOSH 7400	Volume: 10.0 liters per minute. Cassette filters: 25 millimeter (mm), 0.8 micrometer (µm) mixed cellulose ester (MCE)	None	N/A

Notes:
1 = Holding time is measured from the time of sample collection to the time of sample extraction and analysis
± = Plus or minus
L = Liters

3.6 TENTATIVE SAMPLE ACTIVITIES DATES

Initial sampling was conducted during the week of August 19th. The second round of sampling will be conducted during the week of September 2nd.

4.0 SAMPLE HANDLING

Sampling locations will be noted in the site logbook in accordance with procedures outlined in SESDPROC-010-R5, Logbooks, dated May 5, 2013. The samples collected will be labeled, packaged, and shipped in accordance with procedures outlined in SESDPROC-209-R3, Packaging, Marking, Labeling, and Shipping of Environmental and Waste Samples, dated February 4, 2015.

5.0 QUALITY ASSURANCE AND QUALITY CONTROL PROCEDURES

This section describes the QA/QC procedures for the removal activities at the site. Specifically, this section addresses field QC procedures, data evaluation, and data management.

5.1 FIELD QUALITY CONTROL

QC samples will be collected to evaluate field sampling methods, and overall reproducibility of laboratory analytical results. Specifically, QC samples will be collected at the following frequencies:

- Field duplicate samples: one per 20 investigative samples

Each field duplicate sample will be collected for every 20 field samples from location next to the initial sample location. Field duplicate samples will be processed, stored, packaged, and analyzed according to the same methods applied to the investigative samples.

Tetra Tech will validate the laboratory results, in accordance with EPA National Functional Guidelines for Inorganic Superfund Methods Data Review and Organic Superfund Methods Data Review. Corrective actions may include resampling, reassessment of the laboratory's methods, and/or the addition of data qualifiers to the laboratory results.

5.2 DATA EVALUATION AND MANAGEMENT

Tetra Tech will use direct-reading instruments connected to EPAs wireless telemetry system, Viper, along with data logging capability for air monitoring equipment. Data will be downloaded from the instruments and evaluated daily.

Air monitoring instruments used to collect data at the site will log data internally, checked to ensure that data logging is enabled, and that sufficient memory space remains on the instrument at the start of each run and after battery changeouts. Tetra Tech personnel will also check to ensure that the date and time are correct at the start of each run. Tetra Tech personnel will download all data logs related to the site at the

conclusion of the response or when the memory on any instrument is approaching capacity, whichever comes first. Data logs may also be downloaded from any instrument at the request of the EPA at any time during the response. EPA's VIPER Survey Controller software, which provides telemetry to view data remotely in real-time and logs data in a secure location managed by EPA Environmental Response Team (ERT).

Depending on the analytical results for air samples collected, EPA, in conjunction with EPAs Scientific Support Team, the Agency for Toxic Substances and Disease Registry (ATSDR), and SC DHEC will determine if further sampling is necessary.

APPENDIX A

FIGURES

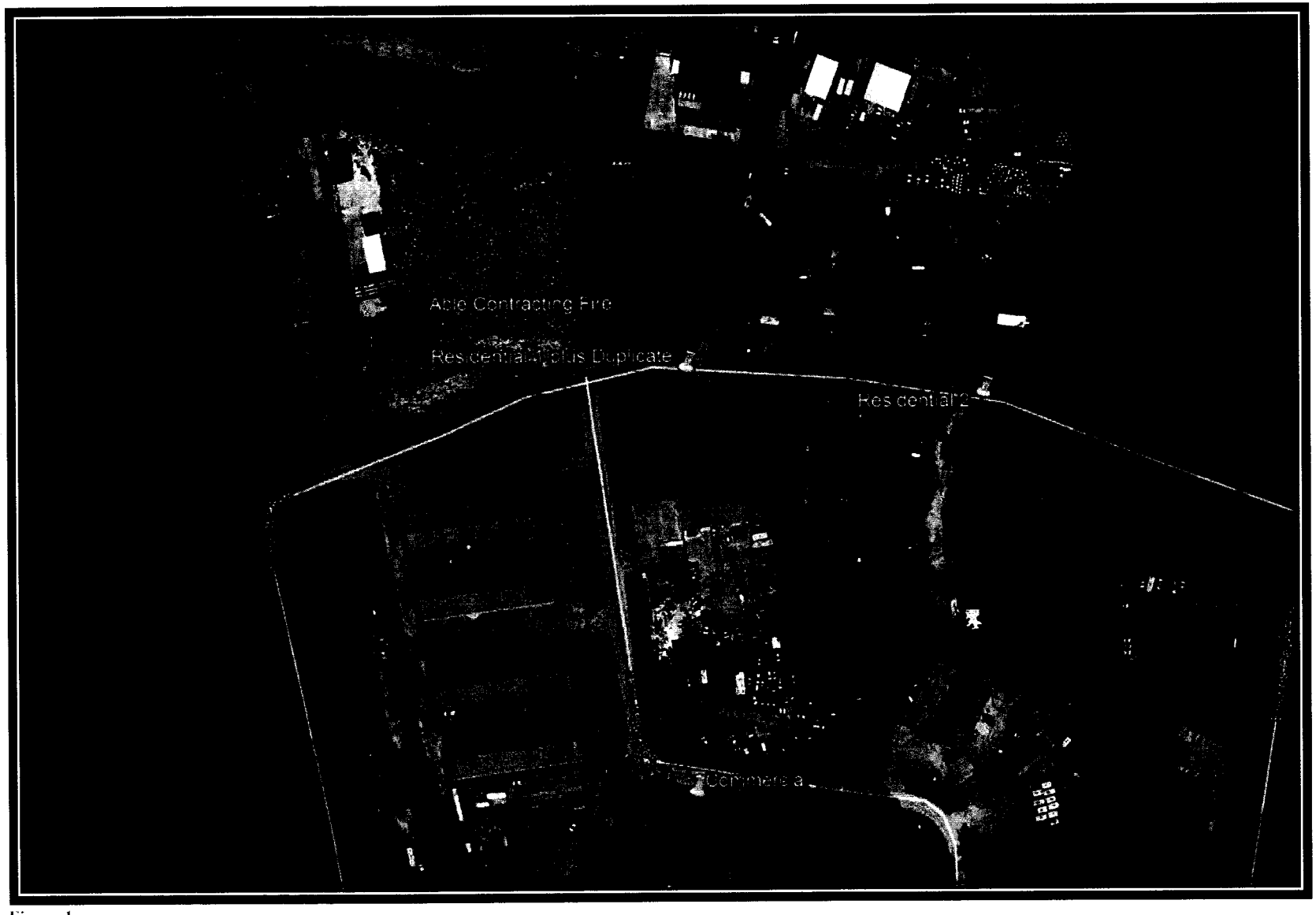
Able Contracting Fire
Residential 1 plus Duplicate
Residential 2
Commercial

Figure 1

Background 3
Able Contracting Fire
Residential 2
Residential 1 plus Duplicate
Commercial
170
Sun City
Background 2
278
Background 1

Figure 2

Subject: Call on residential sampling at Able Contracting Fire
Location: 404-562-9924 pin 629924 (Glenn's office for those in office)

Start: Thursday, August 29, 2019 7:00:00 PM
End: Thursday, August 29, 2019 8:00:00 PM

Organizer: Adams, Glenn <Adams.Glenn@epa.gov> on behalf of Adams, Glenn
Mandatory participants: Spurlin, Steve <Spurlin.Steve@epa.gov>; Huyser, Matthew <Huyser.Matthew@epa.gov>; Frederick, Tim <Frederick.Tim@epa.gov>; chris.jones@tetratech.com

Steve, please forward to anyone you want included. I added Chris and Matt b/c of there history on the site. We have 6 phone lines with this number.

Conf line 404-562-9924 pin (b)(6) Personal Privacy

From: Stewart, R. Gary <stewarrg@dhec.sc.gov>
Sent on: Wednesday, August 28, 2019 8:16:34 PM
To: reecemc@dhec.sc.gov; Porter, Henry <porterhj@dhec.sc.gov>; shealyrg@dhec.sc.gov; Marshall, Frances (Fran) <marshaf2@dhec.sc.gov>; Marcus, Mike <MARCUSJM@dhec.sc.gov>; Shawn Clarke <CLARKESM@dhec.sc.gov>; Cole, Robert <colerb@dhec.sc.gov>; Spurlin, Steve <Spurlin.Steve@epa.gov>
Subject: Fw: Able Contracting Site Prelim Report for Lot UH21084
Attachments: UH21084.pdf (4.07 MB), UH21084.xls (153.02 KB)

Everyone,

Please see attached **preliminary** lab results from the runoff/ditch samples collected last week.

Gary

R. Gary Stewart, P.E.
Manager
State Remediation Section
Bureau of Land and Waste Management
S.C. Dept. of Health & Environmental Control
Office: (803) 898-0778

Connect: www.scdhec.gov Facebook Twitter

From: Kelly Nance <knance@shealylab.com>
Sent: Wednesday, August 28, 2019 9:51:13 AM
To: Crooks, Carol <Crookscl@DHEC.SC.GOV>
Cc: dwarren@ensafe.com <dwarren@ensafe.com>; Steven Hodskins (shodskins@ensafe.com) <shodskins@ensafe.com>
Subject: Able Contracting Site Prelim Report for Lot UH21084

*** Caution. This is an EXTERNAL email. DO NOT open attachments or click links from unknown senders or unexpected email. ***
Some more results were uploaded, so I wanted to send an updated prelim report. I also sent an Excel spreadsheet of results.

Shealy Environmental Services, Inc. will be closed on Monday, September 2, in observance of Labor Day. We will be open for business as usual on Tuesday.

We wish you and your family a safe and happy holiday!

SHEALY ENVIRONMENTAL SERVICES, INC.

Report of Analysis

EnSafe
5724 Summer Trees Drive
Memphis, TN 38134
Attention: Dave Warren

Project Name: **Able Contracting Site**

Lot Number: **UH21084**
Date Completed: **Preliminary**

Project Manager: **Kelly M. Nance**

ANAB ACCREDITED
DOD ELAP

This report shall not be reproduced, except in its entirety, without the written approval of Shealy Environmental Services, Inc.

The following non-paginated documents are considered part of this report: Chain of Custody Record and Sample Receipt Checklist.

Case Narrative
EnSafe
Lot Number: UH21084

This Report of Analysis contains the analytical result(s) for the sample(s) listed on the Sample Summary following this Case Narrative. The sample receiving date is documented in the header information associated with each sample.

All results listed in this report relate only to the samples that are contained within this report.

Sample receipt, sample analysis, and data review have been performed in accordance with the most current approved NELAC standards, the Shealy Environmental Services, Inc. ("Shealy") Quality Assurance Management Plan (QAMP), standard operating procedures (SOPs), and Shealy policies. Any exceptions to the NELAC standards, the QAMP, SOPs or policies are qualified on the results page or discussed below.

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W" qualifier

If you have any questions regarding this report please contact the Shealy Project Manager listed on the cover page.

SHEALY ENVIRONMENTAL SERVICES, INC.

Sample Summary
EnSafe
Lot Number: UH21084

Sample Number	Sample ID	Matrix	Date Sampled	Date Received
001	AC 05	Aqueous	08/21/2019 1129	08/21/2019
002	AC 06	Aqueous	08/21/2019 1145	08/21/2019
003	AC 07	Aqueous	08/21/2019 1210	08/21/2019
004	AC-01	Aqueous	08/21/2019 1240	08/21/2019
005	AC 02	Aqueous	08/21/2019 1305	08/21/2019
006	AC 02-S	Solid	08/21/2019 1310	08/21/2019
007	AC 03	Aqueous	08/21/2019 1345	08/21/2019
008	AC 03-S	Solid	08/21/2019 1350	08/21/2019
009	AC 04	Aqueous	08/21/2019 1415	08/21/2019
010	AC 08 TB	Aqueous	08/21/2019 1510	08/21/2019
011	AC 09 TB	Aqueous	08/21/2019 1515	08/21/2019
012	AC 07 A	Aqueous	08/22/2019 1525	08/22/2019
013	AC 10 TB	Aqueous	08/22/2019 1530	08/22/2019

(13 samples)

Detection Summary
EnSafe
Lot Number: UH21084

Sample	Sample ID	Matrix	Parameter	Method	Result	Q	Units	Page
001	AC 05	Aqueous	Acetone	8260B	38	J	ug/L	12
001	AC 05	Aqueous	Benzene	8260B	2.0	J	ug/L	12
001	AC 05	Aqueous	Carbon disulfide	8260B	3.1	J	ug/L	12
001	AC 05	Aqueous	Methylene chloride	8260B	3.0	J	ug/L	12
001	AC 05	Aqueous	Aluminum	6020B	150		ug/L	19
001	AC 05	Aqueous	Antimony	6020B	25		ug/L	19
001	AC 05	Aqueous	Arsenic	6020B	340		ug/L	19
001	AC 05	Aqueous	Barium	6020B	83		ug/L	19
001	AC 05	Aqueous	Calcium	6020B	540000		ug/L	19
001	AC 05	Aqueous	Chromium	6020B	100		ug/L	19
001	AC 05	Aqueous	Cobalt	6020B	2.3	J	ug/L	19
001	AC 05	Aqueous	Copper	6020B	19		ug/L	19
001	AC 05	Aqueous	Iron	6020B	2700		ug/L	19
001	AC 05	Aqueous	Lead	6020B	0.97	J	ug/L	19
001	AC 05	Aqueous	Magnesium	6020B	41000		ug/L	19
001	AC 05	Aqueous	Manganese	6020B	200		ug/L	19
001	AC 05	Aqueous	Nickel	6020B	25		ug/L	19
001	AC 05	Aqueous	Potassium	6020B	54000		ug/L	19
001	AC 05	Aqueous	Selenium	6020B	3.2	J	ug/L	19
001	AC 05	Aqueous	Sodium	6020B	220000		ug/L	19
001	AC 05	Aqueous	Vanadium	6020B	14		ug/L	19
001	AC 05	Aqueous	Zinc	6020B	44	B	ug/L	19
002	AC 06	Aqueous	Acetone	8260B	29	J	ug/L	22
002	AC 06	Aqueous	Carbon disulfide	8260B	2.1	J	ug/L	22
002	AC 06	Aqueous	Aluminum	6020B	150		ug/L	29
002	AC 06	Aqueous	Antimony	6020B	23		ug/L	29
002	AC 06	Aqueous	Arsenic	6020B	340		ug/L	29
002	AC 06	Aqueous	Barium	6020B	79		ug/L	29
002	AC 06	Aqueous	Calcium	6020B	500000		ug/L	29
002	AC 06	Aqueous	Chromium	6020B	100		ug/L	29
002	AC 06	Aqueous	Cobalt	6020B	2.1	J	ug/L	29
002	AC 06	Aqueous	Copper	6020B	12		ug/L	29
002	AC 06	Aqueous	Iron	6020B	2500		ug/L	29
002	AC 06	Aqueous	Lead	6020B	0.58	J	ug/L	29
002	AC 06	Aqueous	Magnesium	6020B	42000		ug/L	29
002	AC 06	Aqueous	Manganese	6020B	160		ug/L	29
002	AC 06	Aqueous	Nickel	6020B	24		ug/L	29
002	AC 06	Aqueous	Potassium	6020B	55000		ug/L	29
002	AC 06	Aqueous	Selenium	6020B	4.0	J	ug/L	29
002	AC 06	Aqueous	Sodium	6020B	200000		ug/L	29
002	AC 06	Aqueous	Vanadium	6020B	13		ug/L	29
002	AC 06	Aqueous	Zinc	6020B	34	B	ug/L	29
003	AC 07	Aqueous	Aluminum	6020B	280		ug/L	36
003	AC 07	Aqueous	Antimony	6020B	38		ug/L	36
003	AC 07	Aqueous	Arsenic	6020B	410		ug/L	36

Shealy Environmental Services, Inc.
106 Vantage Point Drive West Columbia, SC 29172 (803) 791-9700 Fax (803) 791-9111 www.shealylab.com

Detection Summary (Continued)

Lot Number: UH21084

Sample	Sample ID	Matrix	Parameter	Method	Result	Q	Units	Page
003	AC 07	Aqueous	Barium	6020B	170		ug/L	36
003	AC 07	Aqueous	Cadmium	6020B	0.20	J	ug/L	36
003	AC 07	Aqueous	Calcium	6020B	790000		ug/L	36
003	AC 07	Aqueous	Chromium	6020B	190		ug/L	36
003	AC 07	Aqueous	Cobalt	6020B	3.1	J	ug/L	36
003	AC 07	Aqueous	Copper	6020B	84		ug/L	36
003	AC 07	Aqueous	Iron	6020B	4900		ug/L	36
003	AC 07	Aqueous	Lead	6020B	3.8		ug/L	36
003	AC 07	Aqueous	Magnesium	6020B	55000		ug/L	36
003	AC 07	Aqueous	Manganese	6020B	720		ug/L	36
003	AC 07	Aqueous	Mercury	7470A	0.00016	J	mg/L	36
003	AC 07	Aqueous	Nickel	6020B	33		ug/L	36
003	AC 07	Aqueous	Potassium	6020B	81000		ug/L	36
003	AC 07	Aqueous	Selenium	6020B	5.9		ug/L	36
003	AC 07	Aqueous	Sodium	6020B	310000		ug/L	36
003	AC 07	Aqueous	Vanadium	6020B	29		ug/L	36
003	AC 07	Aqueous	Zinc	6020B	160	B	ug/L	36
004	AC-01	Aqueous	Methanethiol	8260B	45		ug/L	38
004	AC-01	Aqueous	Dimethyl sulfide	8260B	83		ug/L	38
004	AC-01	Aqueous	Furan, tetrahydro-	8260B	15		ug/L	38
004	AC-01	Aqueous	Bicyclo[2.2.1]heptan-2-	8260B	10		ug/L	38
004	AC-01	Aqueous	Acetone	8260B	210		ug/L	39
004	AC-01	Aqueous	Benzene	8260B	17		ug/L	39
004	AC-01	Aqueous	2-Butanone (MEK)	8260B	46	J	ug/L	39
004	AC-01	Aqueous	Carbon disulfide	8260B	9.9		ug/L	39
004	AC-01	Aqueous	Ethylbenzene	8260B	3.9	J	ug/L	39
004	AC-01	Aqueous	Methyl acetate	8260B	3.3	J	ug/L	39
004	AC-01	Aqueous	Toluene	8260B	9.6		ug/L	39
004	AC-01	Aqueous	m+p - Xylenes	8260B	2.6	J	ug/L	40
004	AC-01	Aqueous	Aluminum	6020B	1300		ug/L	46
004	AC-01	Aqueous	Antimony	6020B	27		ug/L	46
004	AC-01	Aqueous	Arsenic	6020B	300		ug/L	46
004	AC-01	Aqueous	Barium	6020B	140		ug/L	46
004	AC-01	Aqueous	Cadmium	6020B	0.21	J	ug/L	46
004	AC-01	Aqueous	Calcium	6020B	950000		ug/L	46
004	AC-01	Aqueous	Chromium	6020B	110		ug/L	46
004	AC-01	Aqueous	Cobalt	6020B	2.8	J	ug/L	46
004	AC-01	Aqueous	Copper	6020B	69		ug/L	46
004	AC-01	Aqueous	Iron	6020B	5600		ug/L	46
004	AC-01	Aqueous	Lead	6020B	8.4		ug/L	46
004	AC-01	Aqueous	Magnesium	6020B	41000		ug/L	46
004	AC-01	Aqueous	Manganese	6020B	700		ug/L	46
004	AC-01	Aqueous	Mercury	7470A	0.00016	J	mg/L	46
004	AC-01	Aqueous	Nickel	6020B	25		ug/L	46
004	AC-01	Aqueous	Potassium	6020B	62000		ug/L	46
004	AC-01	Aqueous	Selenium	6020B	4.3	J	ug/L	46
004	AC-01	Aqueous	Sodium	6020B	250000		ug/L	46
004	AC-01	Aqueous	Vanadium	6020B	26		ug/L	46

Detection Summary (Continued)

Lot Number: UH21084

Sample	Sample ID	Matrix	Parameter	Method	Result	Q	Units	Page
004	AC-01	Aqueous	Zinc	6020B	170	B	ug/L	46
005	AC 02	Aqueous	Urea	8260B	58		ug/L	48
005	AC 02	Aqueous	Unknown	8260B	160		ug/L	48
005	AC 02	Aqueous	Methanethiol	8260B	210		ug/L	48
005	AC 02	Aqueous	Dimethyl sulfide	8260B	320		ug/L	48
005	AC 02	Aqueous	Unknown	8260B	42		ug/L	48
005	AC 02	Aqueous	Furan, tetrahydro-	8260B	59		ug/L	48
005	AC 02	Aqueous	Bicyclo[2.2.1]heptan-2-	8260B	10		ug/L	48
005	AC 02	Aqueous	Acetone	8260B	280		ug/L	49
005	AC 02	Aqueous	Benzene	8260B	48		ug/L	49
005	AC 02	Aqueous	2-Butanone (MEK)	8260B	60		ug/L	49
005	AC 02	Aqueous	Ethylbenzene	8260B	9.9		ug/L	49
005	AC 02	Aqueous	Toluene	8260B	23		ug/L	49
005	AC 02	Aqueous	m+p - Xylenes	8260B	3.7	J	ug/L	50
005	AC 02	Aqueous	o - Xylenes	8260B	2.7	J	ug/L	50
005	AC 02	Aqueous	Aluminum	6020B	200		ug/L	56
005	AC 02	Aqueous	Antimony	6020B	19		ug/L	56
005	AC 02	Aqueous	Arsenic	6020B	260		ug/L	56
005	AC 02	Aqueous	Barium	6020B	130		ug/L	56
005	AC 02	Aqueous	Calcium	6020B	860000		ug/L	56
005	AC 02	Aqueous	Chromium	6020B	120		ug/L	56
005	AC 02	Aqueous	Cobalt	6020B	2.5	J	ug/L	56
005	AC 02	Aqueous	Copper	6020B	31		ug/L	56
005	AC 02	Aqueous	Iron	6020B	4300		ug/L	56
005	AC 02	Aqueous	Lead	6020B	1.2		ug/L	56
005	AC 02	Aqueous	Magnesium	6020B	46000		ug/L	56
005	AC 02	Aqueous	Manganese	6020B	830		ug/L	56
005	AC 02	Aqueous	Nickel	6020B	22		ug/L	56
005	AC 02	Aqueous	Potassium	6020B	67000		ug/L	56
005	AC 02	Aqueous	Selenium	6020B	4.5	J	ug/L	56
005	AC 02	Aqueous	Sodium	6020B	240000		ug/L	56
005	AC 02	Aqueous	Vanadium	6020B	21		ug/L	56
005	AC 02	Aqueous	Zinc	6020B	56	B	ug/L	56
006	AC 02-S	Solid	Pentane	8260B	4.5		ug/kg	58
006	AC 02-S	Solid	Cyclotrisiloxane,	8260B	5.4		ug/kg	58
006	AC 02-S	Solid	Cyclotetrasiloxane,	8260B	8.1		ug/kg	58
006	AC 02-S	Solid	Heptane, 2,2,4,6,6-	8260B	4.7		ug/kg	58
006	AC 02-S	Solid	Unknown	8260B	4.4		ug/kg	58
006	AC 02-S	Solid	Unknown	8260B	6.9		ug/kg	58
006	AC 02-S	Solid	Bicyclo[2.2.1]heptan-2-	8260B	4.5		ug/kg	58
006	AC 02-S	Solid	Acetone	8260B	550		ug/kg	59
006	AC 02-S	Solid	Benzene	8260B	95		ug/kg	59
006	AC 02-S	Solid	2-Butanone (MEK)	8260B	62		ug/kg	59
006	AC 02-S	Solid	Carbon disulfide	8260B	3.4	J	ug/kg	59
006	AC 02-S	Solid	Ethylbenzene	8260B	77		ug/kg	59
006	AC 02-S	Solid	Isopropylbenzene	8260B	5.9	J	ug/kg	59
006	AC 02-S	Solid	Toluene	8260B	39		ug/kg	59
006	AC 02-S	Solid	Xylenes (total)	8260B	39		ug/kg	60

Detection Summary (Continued)

Lot Number: UH21084

Sample	Sample ID	Matrix	Parameter	Method	Result	Q	Units	Page
006	AC 02-S	Solid	Aluminum	6020B	10000		mg/kg	66
006	AC 02-S	Solid	Antimony	6020B	0.53	BJ	mg/kg	66
006	AC 02-S	Solid	Arsenic	6020B	9.5		mg/kg	66
006	AC 02-S	Solid	Barium	6020B	56		mg/kg	66
006	AC 02-S	Solid	Beryllium	6020B	0.10	J	mg/kg	66
006	AC 02-S	Solid	Cadmium	6020B	0.20		mg/kg	66
006	AC 02-S	Solid	Calcium	6020B	19000		mg/kg	66
006	AC 02-S	Solid	Chromium	6020B	20		mg/kg	66
006	AC 02-S	Solid	Cobalt	6020B	3.4		mg/kg	66
006	AC 02-S	Solid	Copper	6020B	31		mg/kg	66
006	AC 02-S	Solid	Iron	6020B	14000		mg/kg	66
006	AC 02-S	Solid	Lead	6020B	24		mg/kg	66
006	AC 02-S	Solid	Magnesium	6020B	2500		mg/kg	66
006	AC 02-S	Solid	Manganese	6020B	150		mg/kg	66
006	AC 02-S	Solid	Nickel	6020B	9.9		mg/kg	66
006	AC 02-S	Solid	Potassium	6020B	1100	B	mg/kg	66
006	AC 02-S	Solid	Sodium	6020B	270		mg/kg	66
006	AC 02-S	Solid	Thallium	6020B	0.12	J	mg/kg	66
006	AC 02-S	Solid	Vanadium	6020B	46		mg/kg	66
006	AC 02-S	Solid	Zinc	6020B	150		mg/kg	66
007	AC 03	Aqueous	Acetone	8260B	82	J	ug/L	69
007	AC 03	Aqueous	Benzene	8260B	9.9		ug/L	69
007	AC 03	Aqueous	2-Butanone (MEK)	8260B	17	J	ug/L	69
007	AC 03	Aqueous	Ethylbenzene	8260B	4.2	J	ug/L	69
007	AC 03	Aqueous	Toluene	8260B	6.2		ug/L	69
007	AC 03	Aqueous	Aluminum	6020B	550		ug/L	76
007	AC 03	Aqueous	Antimony	6020B	26		ug/L	76
007	AC 03	Aqueous	Arsenic	6020B	130		ug/L	76
007	AC 03	Aqueous	Barium	6020B	77		ug/L	76
007	AC 03	Aqueous	Cadmium	6020B	0.15	J	ug/L	76
007	AC 03	Aqueous	Calcium	6020B	720000		ug/L	76
007	AC 03	Aqueous	Chromium	6020B	60		ug/L	76
007	AC 03	Aqueous	Cobalt	6020B	2.1	J	ug/L	76
007	AC 03	Aqueous	Copper	6020B	42		ug/L	76
007	AC 03	Aqueous	Iron	6020B	4200		ug/L	76
007	AC 03	Aqueous	Lead	6020B	2.6		ug/L	76
007	AC 03	Aqueous	Magnesium	6020B	25000		ug/L	76
007	AC 03	Aqueous	Manganese	6020B	520		ug/L	76
007	AC 03	Aqueous	Nickel	6020B	15		ug/L	76
007	AC 03	Aqueous	Potassium	6020B	30000		ug/L	76
007	AC 03	Aqueous	Selenium	6020B	2.6	J	ug/L	76
007	AC 03	Aqueous	Sodium	6020B	110000		ug/L	76
007	AC 03	Aqueous	Vanadium	6020B	12		ug/L	76
007	AC 03	Aqueous	Zinc	6020B	110	B	ug/L	76
008	AC 03-S	Solid	Acetone	8260B	370		ug/kg	79
008	AC 03-S	Solid	Benzene	8260B	18		ug/kg	79
008	AC 03-S	Solid	2-Butanone (MEK)	8260B	15	J	ug/kg	79
008	AC 03-S	Solid	Aluminum	6020B	18000		mg/kg	86

Detection Summary (Continued)

Lot Number: UH21084

Sample	Sample ID	Matrix	Parameter	Method	Result	Q	Units	Page
008	AC 03-S	Solid	Arsenic	6020B	0.86		mg/kg	86
008	AC 03-S	Solid	Barium	6020B	76		mg/kg	86
008	AC 03-S	Solid	Beryllium	6020B	0.21		mg/kg	86
008	AC 03-S	Solid	Calcium	6020B	2000		mg/kg	86
008	AC 03-S	Solid	Chromium	6020B	20		mg/kg	86
008	AC 03-S	Solid	Cobalt	6020B	0.86	J	mg/kg	86
008	AC 03-S	Solid	Copper	6020B	1.3		mg/kg	86
008	AC 03-S	Solid	Iron	6020B	7900		mg/kg	86
008	AC 03-S	Solid	Lead	6020B	13		mg/kg	86
008	AC 03-S	Solid	Magnesium	6020B	700		mg/kg	86
008	AC 03-S	Solid	Manganese	6020B	22		mg/kg	86
008	AC 03-S	Solid	Nickel	6020B	2.6		mg/kg	86
008	AC 03-S	Solid	Potassium	6020B	270	B	mg/kg	86
008	AC 03-S	Solid	Selenium	6020B	0.63	J	mg/kg	86
008	AC 03-S	Solid	Silver	6020B	0.059	J	mg/kg	86
008	AC 03-S	Solid	Sodium	6020B	270		mg/kg	86
008	AC 03-S	Solid	Thallium	6020B	0.15		mg/kg	86
008	AC 03-S	Solid	Vanadium	6020B	26		mg/kg	86
008	AC 03-S	Solid	Zinc	6020B	8.5		mg/kg	86
009	AC 04	Aqueous	Methanethiol	8260B	33		ug/L	88
009	AC 04	Aqueous	Acetone	8260B	87	J	ug/L	89
009	AC 04	Aqueous	Benzene	8260B	7.8		ug/L	89
009	AC 04	Aqueous	2-Butanone (MEK)	8260B	15	J	ug/L	89
009	AC 04	Aqueous	Carbon disulfide	8260B	6.0		ug/L	89
009	AC 04	Aqueous	Ethylbenzene	8260B	3.1	J	ug/L	89
009	AC 04	Aqueous	Toluene	8260B	5.2		ug/L	89
009	AC 04	Aqueous	Aluminum	6020B	210		ug/L	96
009	AC 04	Aqueous	Antimony	6020B	26		ug/L	96
009	AC 04	Aqueous	Arsenic	6020B	180		ug/L	96
009	AC 04	Aqueous	Barium	6020B	97		ug/L	96
009	AC 04	Aqueous	Calcium	6020B	730000		ug/L	96
009	AC 04	Aqueous	Chromium	6020B	55		ug/L	96
009	AC 04	Aqueous	Cobalt	6020B	2.0	J	ug/L	96
009	AC 04	Aqueous	Copper	6020B	34		ug/L	96
009	AC 04	Aqueous	Iron	6020B	3700		ug/L	96
009	AC 04	Aqueous	Lead	6020B	2.0		ug/L	96
009	AC 04	Aqueous	Magnesium	6020B	32000		ug/L	96
009	AC 04	Aqueous	Manganese	6020B	610		ug/L	96
009	AC 04	Aqueous	Mercury	7470A	0.00011	J	mg/L	96
009	AC 04	Aqueous	Nickel	6020B	17		ug/L	96
009	AC 04	Aqueous	Potassium	6020B	43000		ug/L	96
009	AC 04	Aqueous	Selenium	6020B	3.3	J	ug/L	96
009	AC 04	Aqueous	Sodium	6020B	140000		ug/L	96
009	AC 04	Aqueous	Vanadium	6020B	16		ug/L	96
009	AC 04	Aqueous	Zinc	6020B	89	B	ug/L	96
012	AC 07 A	Aqueous	Acetone	8260B	160		ug/L	102
012	AC 07 A	Aqueous	Benzene	8260B	15		ug/L	102
012	AC 07 A	Aqueous	2-Butanone (MEK)	8260B	32	J	ug/L	102

Detection Summary (Continued)

Lot Number: UH21084

Sample	Sample ID	Matrix	Parameter	Method	Result	Q	Units	Page
012	AC 07 A	Aqueous	Carbon disulfide	8260B	6.1		ug/L	102
012	AC 07 A	Aqueous	Toluene	8260B	3.7	J	ug/L	102

(239 detections)

Inorganic non-metals

Client: **EnSafe**
Description: **AC 05**
Date Sampled: **08/21/2019 1129**
Date Received: **08/21/2019**

Laboratory ID: **UH21084-001**
Matrix: **Aqueous**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	9012B	(Cyanide - To) 9012B	1	08/23/2019 1857	KFE	08/22/2019 1900	26810

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Cyanide - Total	57-12-5	9012B	ND		20	5.0	ug/L	1

LOQ = Limit of Quantitation
ND = Not detected at or above the DL
H = Out of holding time
B = Detected in the method blank
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E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
DL = Detection Limit
J = Estimated result < LOQ and ≥ DL

Shealy Environmental Services, Inc.
106 Vantage Point Drive West Columbia, SC 29172 (803) 791-9700 Fax (803) 791-9111 www.shealylab.com

Library Search

Client: **EnSafe**
Description: **AC 05**
Date Sampled: **08/21/2019 1129**
Date Received: **08/21/2019**

Laboratory ID: **UH21084-001**
Matrix: **Aqueous**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260B	1				26933

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
None Detected		**8260B**					**ug/L**	**1**

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E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
DL = Detection Limit
J = Estimated result < LOQ and ≥ DL

Volatile Organic Compounds by GC/MS

Client: **EnSafe**
Description: **AC 05**
Date Sampled: **08/21/2019 1129**
Date Received: **08/21/2019**

Laboratory ID: **UH21084-001**
Matrix: **Aqueous**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260B	5	08/24/2019 0209	JTH		26929
2	5030B	8260B	5	08/27/2019 0102	ALR1		27097

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acetone	**67-64-1**	**8260B**	**38**	**J**	**100**	**25**	**ug/L**	**1**
Benzene	**71-43-2**	**8260B**	**2.0**	**J**	**5.0**	**2.0**	**ug/L**	**1**
Bromochloromethane	74-97-5	8260B	ND		5.0	2.0	ug/L	1
Bromodichloromethane	75-27-4	8260B	ND		5.0	2.0	ug/L	1
Bromoform	75-25-2	8260B	ND		5.0	2.0	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260B	ND		10	2.0	ug/L	1
2-Butanone (MEK)	78-93-3	8260B	ND		50	10	ug/L	1
Carbon disulfide	**75-15-0**	**8260B**	**3.1**	**J**	**5.0**	**2.0**	**ug/L**	**2**
Carbon tetrachloride	56-23-5	8260B	ND		5.0	2.0	ug/L	1
Chlorobenzene	108-90-7	8260B	ND		5.0	2.0	ug/L	1
Chloroethane	75-00-3	8260B	ND		10	2.0	ug/L	1
Chloroform	67-66-3	8260B	ND		5.0	2.0	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260B	ND		5.0	2.5	ug/L	1
Cyclohexane	110-82-7	8260B	ND		5.0	2.0	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260B	ND		5.0	2.0	ug/L	1
Dibromochloromethane	124-48-1	8260B	ND		5.0	2.0	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260B	ND		5.0	2.0	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260B	ND		5.0	2.0	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260B	ND		5.0	2.0	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260B	ND		5.0	2.0	ug/L	1
Dichlorodifluoromethane	75-71-8	8260B	ND		10	3.0	ug/L	1
1,1-Dichloroethane	75-34-3	8260B	ND		5.0	2.0	ug/L	1
1,2-Dichloroethane	107-06-2	8260B	ND		5.0	2.0	ug/L	1
1,1-Dichloroethene	75-35-4	8260B	ND		5.0	2.0	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260B	ND		5.0	2.0	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260B	ND		5.0	2.0	ug/L	1
1,2-Dichloropropane	78-87-5	8260B	ND		5.0	2.0	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260B	ND		5.0	2.0	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260B	ND		5.0	2.0	ug/L	1
Ethylbenzene	100-41-4	8260B	ND		5.0	2.0	ug/L	1
2-Hexanone	591-78-6	8260B	ND		50	10	ug/L	1
Isopropylbenzene	98-82-8	8260B	ND		5.0	2.0	ug/L	1
Methyl acetate	79-20-9	8260B	ND		5.0	2.0	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260B	ND		5.0	2.0	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260B	ND		50	10	ug/L	1
Methylcyclohexane	108-87-2	8260B	ND		25	2.0	ug/L	1
Methylene chloride	**75-09-2**	**8260B**	**3.0**	**J**	**5.0**	**2.0**	**ug/L**	**1**
Styrene	100-42-5	8260B	ND		5.0	2.1	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260B	ND		5.0	2.0	ug/L	1
Tetrachloroethene	127-18-4	8260B	ND		5.0	2.0	ug/L	1
Toluene	108-88-3	8260B	ND		5.0	2.0	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260B	ND		5.0	2.1	ug/L	1
1,2,3-Trichlorobenzene	87-61-6	8260B	ND		5.0	2.0	ug/L	1

LOQ = Limit of Quantitation
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N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
DL = Detection Limit
J = Estimated result < LOQ and ≥ DL

Volatile Organic Compounds by GC/MS

Client: **EnSafe**
Description: **AC 05**
Date Sampled: **08/21/2019 1129**
Date Received: **08/21/2019**

Laboratory ID: **UH21084-001**
Matrix: **Aqueous**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260B	5	08/24/2019 0209	JTH		26929
2	5030B	8260B	5	08/27/2019 0102	ALR1		27097

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
1,2,4-Trichlorobenzene	120-82-1	8260B	ND		5.0	2.0	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260B	ND		5.0	2.0	ug/L	1
1,1,2-Trichloroethane	79-00-5	8260B	ND		5.0	2.0	ug/L	1
Trichloroethene	79-01-6	8260B	ND		5.0	2.0	ug/L	1
Trichlorofluoromethane	75-69-4	8260B	ND		5.0	2.0	ug/L	1
Vinyl chloride	75-01-4	8260B	ND		5.0	2.0	ug/L	1
m+p - Xylenes	179601-23-1	8260B	ND		5.0	2.0	ug/L	1
o - Xylenes	95-47-6	8260B	ND		5.0	2.0	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits	Q	Run 2 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		101	70-130		99	70-130
Bromofluorobenzene		94	70-130		100	70-130
Toluene-d8		100	70-130		103	70-130

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W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
DL = Detection Limit
J = Estimated result < LOQ and ≥ DL

Semivolatile Organic Compounds by GC/MS

Client: **EnSafe**
Description: **AC 05**
Date Sampled: **08/21/2019 1129**
Date Received: **08/21/2019**

Laboratory ID: **UH21084-001**
Matrix: **Aqueous**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3520C	8270D	1			08/25/2019 1649	26966

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acenaphthene	83-32-9	8270D	Pending		0.16	0.040	ug/L	1
Acenaphthylene	208-96-8	8270D	Pending		0.16	0.040	ug/L	1
Acetophenone	98-86-2	8270D	Pending		0.80	0.23	ug/L	1
Anthracene	120-12-7	8270D	Pending		0.16	0.040	ug/L	1
Atrazine	1912-24-9	8270D	Pending		0.80	0.20	ug/L	1
Benzaldehyde	100-52-7	8270D	Pending		4.0	0.27	ug/L	1
Benzo(a)anthracene	56-55-3	8270D	Pending		0.16	0.040	ug/L	1
Benzo(a)pyrene	50-32-8	8270D	Pending		0.16	0.040	ug/L	1
Benzo(b)fluoranthene	205-99-2	8270D	Pending		0.16	0.040	ug/L	1
Benzo(g,h,i)perylene	191-24-2	8270D	Pending		0.16	0.040	ug/L	1
Benzo(k)fluoranthene	207-08-9	8270D	Pending		0.16	0.040	ug/L	1
1,1'-Biphenyl	92-52-4	8270D	Pending		0.80	0.21	ug/L	1
4-Bromophenyl phenyl ether	101-55-3	8270D	Pending		0.80	0.15	ug/L	1
Butyl benzyl phthalate	85-68-7	8270D	Pending		4.0	0.21	ug/L	1
Caprolactam	105-60-2	8270D	Pending		4.0	0.71	ug/L	1
Carbazole	86-74-8	8270D	Pending		0.80	0.040	ug/L	1
bis (2-Chloro-1-methylethyl) ether	108-60-1	8270D	Pending		0.80	0.17	ug/L	1
4-Chloro-3-methyl phenol	59-50-7	8270D	Pending		0.80	0.26	ug/L	1
4-Chloroaniline	106-47-8	8270D	Pending		0.80	0.13	ug/L	1
bis(2-Chloroethoxy)methane	111-91-1	8270D	Pending		0.80	0.060	ug/L	1
bis(2-Chloroethyl)ether	111-44-4	8270D	Pending		0.80	0.16	ug/L	1
2-Chloronaphthalene	91-58-7	8270D	Pending		0.80	0.15	ug/L	1
2-Chlorophenol	95-57-8	8270D	Pending		0.80	0.15	ug/L	1
4-Chlorophenyl phenyl ether	7005-72-3	8270D	Pending		0.80	0.16	ug/L	1
Chrysene	218-01-9	8270D	Pending		0.16	0.040	ug/L	1
Dibenzo(a,h)anthracene	53-70-3	8270D	Pending		0.16	0.040	ug/L	1
Dibenzofuran	132-64-9	8270D	Pending		0.80	0.16	ug/L	1
3,3'-Dichlorobenzidine	91-94-1	8270D	Pending		4.0	0.81	ug/L	1
2,4-Dichlorophenol	120-83-2	8270D	Pending		0.80	0.19	ug/L	1
Diethylphthalate	84-66-2	8270D	Pending		4.0	0.19	ug/L	1
Dimethyl phthalate	131-11-3	8270D	Pending		4.0	0.18	ug/L	1
2,4-Dimethylphenol	105-67-9	8270D	Pending		0.80	0.15	ug/L	1
Di-n-butyl phthalate	84-74-2	8270D	Pending		4.0	0.42	ug/L	1
4,6-Dinitro-2-methylphenol	534-52-1	8270D	Pending		4.0	0.89	ug/L	1
2,4-Dinitrophenol	51-28-5	8270D	Pending		4.0	1.3	ug/L	1
2,4-Dinitrotoluene	121-14-2	8270D	Pending		1.6	0.36	ug/L	1
2,6-Dinitrotoluene	606-20-2	8270D	Pending		1.6	0.34	ug/L	1
Di-n-octylphthalate	117-84-0	8270D	Pending		4.0	0.48	ug/L	1
bis(2-Ethylhexyl)phthalate	117-81-7	8270D	Pending		4.0	0.38	ug/L	1
Fluoranthene	206-44-0	8270D	Pending		0.16	0.040	ug/L	1
Fluorene	86-73-7	8270D	Pending		0.16	0.040	ug/L	1
Hexachlorobenzene	118-74-1	8270D	Pending		0.80	0.15	ug/L	1
Hexachlorobutadiene	87-68-3	8270D	Pending		0.80	0.17	ug/L	1
Hexachlorocyclopentadiene	77-47-4	8270D	Pending		4.0	1.1	ug/L	1

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E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
DL = Detection Limit
J = Estimated result < LOQ and ≥ DL

Semivolatile Organic Compounds by GC/MS

Client: **EnSafe**
Description: **AC 05**
Date Sampled: **08/21/2019 1129**
Date Received: **08/21/2019**

Laboratory ID: **UH21084-001**
Matrix: **Aqueous**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3520C	8270D	1			08/25/2019 1649	26966

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Hexachloroethane	67-72-1	8270D	Pending		0.80	0.17	ug/L	1
Indeno(1,2,3-c,d)pyrene	193-39-5	8270D	Pending		0.16	0.040	ug/L	1
Isophorone	78-59-1	8270D	Pending		0.80	0.22	ug/L	1
2-Methylnaphthalene	91-57-6	8270D	Pending		0.16	0.040	ug/L	1
2-Methylphenol	95-48-7	8270D	Pending		0.80	0.21	ug/L	1
3+4-Methylphenol	106-44-5	8270D	Pending		1.6	0.46	ug/L	1
Naphthalene	91-20-3	8270D	Pending		0.16	0.040	ug/L	1
2-Nitroaniline	88-74-4	8270D	Pending		1.6	0.66	ug/L	1
3-Nitroaniline	99-09-2	8270D	Pending		1.6	0.15	ug/L	1
4-Nitroaniline	100-01-6	8270D	Pending		1.6	1.3	ug/L	1
Nitrobenzene	98-95-3	8270D	Pending		0.80	0.17	ug/L	1
2-Nitrophenol	88-75-5	8270D	Pending		1.6	0.44	ug/L	1
4-Nitrophenol	100-02-7	8270D	Pending		4.0	2.1	ug/L	1
N-Nitrosodi-n-propylamine	621-64-7	8270D	Pending		0.80	0.28	ug/L	1
N-Nitrosodiphenylamine (Diphenylamine)	86-30-6	8270D	Pending		0.80	0.50	ug/L	1
Pentachlorophenol	87-86-5	8270D	Pending		4.0	1.3	ug/L	1
Phenanthrene	85-01-8	8270D	Pending		0.16	0.040	ug/L	1
Phenol	108-95-2	8270D	Pending		0.80	0.19	ug/L	1
Pyrene	129-00-0	8270D	Pending		0.16	0.040	ug/L	1
2,4,5-Trichlorophenol	95-95-4	8270D	Pending		0.80	0.19	ug/L	1
2,4,6-Trichlorophenol	88-06-2	8270D	Pending		0.80	0.22	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
2-Fluorobiphenyl		Pending	130
2-Fluorophenol		Pending	130
Nitrobenzene-d5		Pending	130
Phenol-d5		Pending	130
Terphenyl-d14		Pending	150
2,4,6-Tribromophenol		Pending	140

LOQ = Limit of Quantitation
ND = Not detected at or above the DL
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
DL = Detection Limit
J = Estimated result < LOQ and ≥ DL

Library Search

Client: **EnSafe**
Description: **AC 05**
Date Sampled: **08/21/2019 1129**
Date Received: **08/21/2019**

Laboratory ID: **UH21084-001**
Matrix: **Aqueous**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3520C	8270D	1				

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
TIC 1		8270D	Pending				ug/L	1
TIC 10		8270D	Pending				ug/L	1
TIC 11		8270D	Pending				ug/L	1
TIC 12		8270D	Pending				ug/L	1
TIC 13		8270D	Pending				ug/L	1
TIC 14		8270D	Pending				ug/L	1
TIC 15		8270D	Pending				ug/L	1
TIC 16		8270D	Pending				ug/L	1
TIC 17		8270D	Pending				ug/L	1
TIC 18		8270D	Pending				ug/L	1
TIC 19		8270D	Pending				ug/L	1
TIC 2		8270D	Pending				ug/L	1
TIC 20		8270D	Pending				ug/L	1
TIC 3		8270D	Pending				ug/L	1
TIC 4		8270D	Pending				ug/L	1
TIC 5		8270D	Pending				ug/L	1
TIC 6		8270D	Pending				ug/L	1
TIC 7		8270D	Pending				ug/L	1
TIC 8		8270D	Pending				ug/L	1
TIC 9		8270D	Pending				ug/L	1

LOQ = Limit of Quantitation
ND = Not detected at or above the DL
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
DL = Detection Limit
J = Estimated result < LOQ and ≥ DL

PCBs by GC

Client: **EnSafe**
Description: **AC 05**
Date Sampled: **08/21/2019 1129**
Date Received: **08/21/2019**

Laboratory ID: **UH21084-001**
Matrix: **Aqueous**

Run	Prep Method	Cleanup	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3520C	3660B/3665A	8082A	1	08/27/2019 1123	CHG	08/25/2019 1649	26969

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Aroclor 1016	12674-11-2	8082A	ND		0.40	0.15	ug/L	1
Aroclor 1221	11104-28-2	8082A	ND		0.40	0.25	ug/L	1
Aroclor 1232	11141-16-5	8082A	ND		0.40	0.15	ug/L	1
Aroclor 1242	53469-21-9	8082A	ND		0.40	0.15	ug/L	1
Aroclor 1248	12672-29-6	8082A	ND		0.40	0.15	ug/L	1
Aroclor 1254	11097-69-1	8082A	ND		0.40	0.15	ug/L	1
Aroclor 1260	11096-82-5	8082A	ND		0.40	0.15	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Decachlorobiphenyl	N	8.5	10-133
Tetrachloro-m-xylene		59	31-122

LOQ = Limit of Quantitation
ND = Not detected at or above the DL
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
DL = Detection Limit
J = Estimated result < LOQ and ≥ DL

Organochlorine Pesticides by GC

Client: **EnSafe**
Description: **AC 05**
Date Sampled: **08/21/2019 1129**
Date Received: **08/21/2019**

Laboratory ID: **UH21084-001**
Matrix: **Aqueous**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3520C	8081B	1			08/25/2019 1649	26968

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Aldrin	309-00-2	8081B	Pending		0.040	0.020	ug/L	1
gamma-BHC (Lindane)	58-89-9	8081B	Pending		0.040	0.017	ug/L	1
alpha-BHC	319-84-6	8081B	Pending		0.040	0.015	ug/L	1
beta-BHC	319-85-7	8081B	Pending		0.040	0.015	ug/L	1
delta-BHC	319-86-8	8081B	Pending		0.040	0.015	ug/L	1
cis-Chlordane	5103-71-9	8081B	Pending		0.040	0.015	ug/L	1
trans-Chlordane	5103-74-2	8081B	Pending		0.040	0.015	ug/L	1
4,4'-DDD	72-54-8	8081B	Pending		0.040	0.015	ug/L	1
4,4'-DDE	72-55-9	8081B	Pending		0.040	0.020	ug/L	1
4,4'-DDT	50-29-3	8081B	Pending		0.040	0.020	ug/L	1
Dieldrin	60-57-1	8081B	Pending		0.040	0.015	ug/L	1
Endosulfan I	959-98-8	8081B	Pending		0.040	0.015	ug/L	1
Endosulfan II	33213-65-9	8081B	Pending		0.040	0.015	ug/L	1
Endosulfan sulfate	1031-07-8	8081B	Pending		0.040	0.015	ug/L	1
Endrin	72-20-8	8081B	Pending		0.040	0.015	ug/L	1
Endrin aldehyde	7421-93-4	8081B	Pending		0.040	0.015	ug/L	1
Endrin ketone	53494-70-5	8081B	Pending		0.040	0.015	ug/L	1
Heptachlor	76-44-8	8081B	Pending		0.040	0.021	ug/L	1
Heptachlor epoxide	1024-57-3	8081B	Pending		0.040	0.016	ug/L	1
Methoxychlor	72-43-5	8081B	Pending		0.16	0.021	ug/L	1
Toxaphene	8001-35-2	8081B	Pending		0.40	0.30	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Decachlorobiphenyl		Pending	120
Tetrachloro-m-xylene		Pending	120

LOQ = Limit of Quantitation
ND = Not detected at or above the DL
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
DL = Detection Limit
J = Estimated result < LOQ and ≥ DL

ICP-MS

Client: **EnSafe**
Description: **AC 05**
Date Sampled: **08/21/2019 1129**
Date Received: **08/21/2019**

Laboratory ID: **UH21084-001**
Matrix: **Aqueous**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		7470A	1	08/24/2019 0828	KSH2	08/23/2019 1250	26841
1	3005A	6020B	1	08/23/2019 1210	BNW	08/22/2019 1920	26746
2	3005A	6020B	10	08/23/2019 1327	BNW	08/22/2019 1920	26746

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Aluminum	**7429-90-5**	**6020B**	**150**		**40**	**10**	**ug/L**	**1**
Antimony	**7440-36-0**	**6020B**	**25**		**2.0**	**0.50**	**ug/L**	**1**
Arsenic	**7440-38-2**	**6020B**	**340**		**2.0**	**1.3**	**ug/L**	**1**
Barium	**7440-39-3**	**6020B**	**83**		**5.0**	**1.3**	**ug/L**	**1**
Beryllium	7440-41-7	6020B	ND		0.40	0.15	ug/L	1
Cadmium	7440-43-9	6020B	ND		0.50	0.13	ug/L	1
Calcium	**7440-70-2**	**6020B**	**540000**		**4000**	**1000**	**ug/L**	**2**
Chromium	**7440-47-3**	**6020B**	**100**		**5.0**	**1.3**	**ug/L**	**1**
Cobalt	**7440-48-4**	**6020B**	**2.3**	**J**	**5.0**	**1.3**	**ug/L**	**1**
Copper	**7440-50-8**	**6020B**	**19**		**5.0**	**1.3**	**ug/L**	**1**
Iron	**7439-89-6**	**6020B**	**2700**		**50**	**13**	**ug/L**	**1**
Lead	**7439-92-1**	**6020B**	**0.97**	**J**	**1.0**	**0.25**	**ug/L**	**1**
Magnesium	**7439-95-4**	**6020B**	**41000**		**400**	**50**	**ug/L**	**1**
Manganese	**7439-96-5**	**6020B**	**200**		**5.0**	**1.3**	**ug/L**	**1**
Mercury	7439-97-6	7470A	ND		0.00020	0.000091	mg/L	1
Nickel	**7440-02-0**	**6020B**	**25**		**5.0**	**1.3**	**ug/L**	**1**
Potassium	**7440-09-7**	**6020B**	**54000**		**400**	**100**	**ug/L**	**1**
Selenium	**7782-49-2**	**6020B**	**3.2**	**J**	**5.0**	**1.3**	**ug/L**	**1**
Silver	7440-22-4	6020B	ND		1.0	0.25	ug/L	1
Sodium	**7440-23-5**	**6020B**	**220000**		**4000**	**1500**	**ug/L**	**2**
Thallium	7440-28-0	6020B	ND		0.50	0.15	ug/L	1
Vanadium	**7440-62-2**	**6020B**	**14**		**5.0**	**2.5**	**ug/L**	**1**
Zinc	**7440-66-6**	**6020B**	**44**	**B**	**10**	**2.5**	**ug/L**	**1**

LOQ = Limit of Quantitation
ND = Not detected at or above the DL
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
DL = Detection Limit
J = Estimated result < LOQ and ≥ DL

Inorganic non-metals

Client: **EnSafe**
Description: **AC 06**
Date Sampled: **08/21/2019 1145**
Date Received: **08/21/2019**

Laboratory ID: **UH21084-002**
Matrix: **Aqueous**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	9012B	(Cyanide - To) 9012B	1	08/23/2019 1859	KFE	08/22/2019 1900	26810

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Cyanide - Total	57-12-5	9012B	ND		20	5.0	ug/L	1

LOQ = Limit of Quantitation
ND = Not detected at or above the DL
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
DL = Detection Limit
J = Estimated result < LOQ and ≥ DL

Library Search

Client: **EnSafe**
Description: **AC 06**
Date Sampled: **08/21/2019 1145**
Date Received: **08/21/2019**

Laboratory ID: **UH21084-002**
Matrix: **Aqueous**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260B	1				26933

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
None Detected		**8260B**					**ug/L**	**1**

LOQ = Limit of Quantitation
ND = Not detected at or above the DL
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
DL = Detection Limit
J = Estimated result < LOQ and ≥ DL

Volatile Organic Compounds by GC/MS

Client: **EnSafe**
Description: **AC 06**
Date Sampled: **08/21/2019 1145**
Date Received: **08/21/2019**

Laboratory ID: **UH21084-002**
Matrix: **Aqueous**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260B	5	08/24/2019 0232	JTH		26929
2	5030B	8260B	5	08/27/2019 0126	ALR1		27097

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acetone	**67-64-1**	**8260B**	**29**	**J**	**100**	**25**	**ug/L**	**1**
Benzene	71-43-2	8260B	ND		5.0	2.0	ug/L	1
Bromochloromethane	74-97-5	8260B	ND		5.0	2.0	ug/L	1
Bromodichloromethane	75-27-4	8260B	ND		5.0	2.0	ug/L	1
Bromoform	75-25-2	8260B	ND		5.0	2.0	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260B	ND		10	2.0	ug/L	1
2-Butanone (MEK)	78-93-3	8260B	ND		50	10	ug/L	1
Carbon disulfide	**75-15-0**	**8260B**	**2.1**	**J**	**5.0**	**2.0**	**ug/L**	**2**
Carbon tetrachloride	56-23-5	8260B	ND		5.0	2.0	ug/L	1
Chlorobenzene	108-90-7	8260B	ND		5.0	2.0	ug/L	1
Chloroethane	75-00-3	8260B	ND		10	2.0	ug/L	1
Chloroform	67-66-3	8260B	ND		5.0	2.0	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260B	ND		5.0	2.5	ug/L	1
Cyclohexane	110-82-7	8260B	ND		5.0	2.0	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260B	ND		5.0	2.0	ug/L	1
Dibromochloromethane	124-48-1	8260B	ND		5.0	2.0	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260B	ND		5.0	2.0	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260B	ND		5.0	2.0	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260B	ND		5.0	2.0	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260B	ND		5.0	2.0	ug/L	1
Dichlorodifluoromethane	75-71-8	8260B	ND		10	3.0	ug/L	1
1,1-Dichloroethane	75-34-3	8260B	ND		5.0	2.0	ug/L	1
1,2-Dichloroethane	107-06-2	8260B	ND		5.0	2.0	ug/L	1
1,1-Dichloroethene	75-35-4	8260B	ND		5.0	2.0	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260B	ND		5.0	2.0	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260B	ND		5.0	2.0	ug/L	1
1,2-Dichloropropane	78-87-5	8260B	ND		5.0	2.0	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260B	ND		5.0	2.0	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260B	ND		5.0	2.0	ug/L	1
Ethylbenzene	100-41-4	8260B	ND		5.0	2.0	ug/L	1
2-Hexanone	591-78-6	8260B	ND		50	10	ug/L	1
Isopropylbenzene	98-82-8	8260B	ND		5.0	2.0	ug/L	1
Methyl acetate	79-20-9	8260B	ND		5.0	2.0	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260B	ND		5.0	2.0	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260B	ND		50	10	ug/L	1
Methylcyclohexane	108-87-2	8260B	ND		25	2.0	ug/L	1
Methylene chloride	75-09-2	8260B	ND		5.0	2.0	ug/L	1
Styrene	100-42-5	8260B	ND		5.0	2.1	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260B	ND		5.0	2.0	ug/L	1
Tetrachloroethene	127-18-4	8260B	ND		5.0	2.0	ug/L	1
Toluene	108-88-3	8260B	ND		5.0	2.0	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260B	ND		5.0	2.1	ug/L	1
1,2,3-Trichlorobenzene	87-61-6	8260B	ND		5.0	2.0	ug/L	1

LOQ = Limit of Quantitation
ND = Not detected at or above the DL
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
DL = Detection Limit
J = Estimated result < LOQ and ≥ DL

Volatile Organic Compounds by GC/MS

Client: **EnSafe**
Description: **AC 06**
Date Sampled: **08/21/2019 1145**
Date Received: **08/21/2019**

Laboratory ID: **UH21084-002**
Matrix: **Aqueous**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260B	5	08/24/2019 0232	JTH		26929
2	5030B	8260B	5	08/27/2019 0126	ALR1		27097

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
1,2,4-Trichlorobenzene	120-82-1	8260B	ND		5.0	2.0	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260B	ND		5.0	2.0	ug/L	1
1,1,2-Trichloroethane	79-00-5	8260B	ND		5.0	2.0	ug/L	1
Trichloroethene	79-01-6	8260B	ND		5.0	2.0	ug/L	1
Trichlorofluoromethane	75-69-4	8260B	ND		5.0	2.0	ug/L	1
Vinyl chloride	75-01-4	8260B	ND		5.0	2.0	ug/L	1
m+p - Xylenes	179601-23-1	8260B	ND		5.0	2.0	ug/L	1
o - Xylenes	95-47-6	8260B	ND		5.0	2.0	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits	Q	Run 2 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		98	70-130		101	70-130
Bromofluorobenzene		96	70-130		101	70-130
Toluene-d8		99	70-130		105	70-130

LOQ = Limit of Quantitation
ND = Not detected at or above the DL
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
DL = Detection Limit
J = Estimated result < LOQ and ≥ DL

Semivolatile Organic Compounds by GC/MS

Client: **EnSafe**
Description: **AC 06**
Date Sampled: **08/21/2019 1145**
Date Received: **08/21/2019**

Laboratory ID: **UH21084-002**
Matrix: **Aqueous**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3520C	8270D	1			08/25/2019 1649	26966

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acenaphthene	83-32-9	8270D	Pending		0.16	0.040	ug/L	1
Acenaphthylene	208-96-8	8270D	Pending		0.16	0.040	ug/L	1
Acetophenone	98-86-2	8270D	Pending		0.80	0.23	ug/L	1
Anthracene	120-12-7	8270D	Pending		0.16	0.040	ug/L	1
Atrazine	1912-24-9	8270D	Pending		0.80	0.20	ug/L	1
Benzaldehyde	100-52-7	8270D	Pending		4.0	0.27	ug/L	1
Benzo(a)anthracene	56-55-3	8270D	Pending		0.16	0.040	ug/L	1
Benzo(a)pyrene	50-32-8	8270D	Pending		0.16	0.040	ug/L	1
Benzo(b)fluoranthene	205-99-2	8270D	Pending		0.16	0.040	ug/L	1
Benzo(g,h,i)perylene	191-24-2	8270D	Pending		0.16	0.040	ug/L	1
Benzo(k)fluoranthene	207-08-9	8270D	Pending		0.16	0.040	ug/L	1
1,1'-Biphenyl	92-52-4	8270D	Pending		0.80	0.21	ug/L	1
4-Bromophenyl phenyl ether	101-55-3	8270D	Pending		0.80	0.15	ug/L	1
Butyl benzyl phthalate	85-68-7	8270D	Pending		4.0	0.21	ug/L	1
Caprolactam	105-60-2	8270D	Pending		4.0	0.71	ug/L	1
Carbazole	86-74-8	8270D	Pending		0.80	0.040	ug/L	1
bis (2-Chloro-1-methylethyl) ether	108-60-1	8270D	Pending		0.80	0.17	ug/L	1
4-Chloro-3-methyl phenol	59-50-7	8270D	Pending		0.80	0.26	ug/L	1
4-Chloroaniline	106-47-8	8270D	Pending		0.80	0.13	ug/L	1
bis(2-Chloroethoxy)methane	111-91-1	8270D	Pending		0.80	0.060	ug/L	1
bis(2-Chloroethyl)ether	111-44-4	8270D	Pending		0.80	0.16	ug/L	1
2-Chloronaphthalene	91-58-7	8270D	Pending		0.80	0.15	ug/L	1
2-Chlorophenol	95-57-8	8270D	Pending		0.80	0.15	ug/L	1
4-Chlorophenyl phenyl ether	7005-72-3	8270D	Pending		0.80	0.16	ug/L	1
Chrysene	218-01-9	8270D	Pending		0.16	0.040	ug/L	1
Dibenzo(a,h)anthracene	53-70-3	8270D	Pending		0.16	0.040	ug/L	1
Dibenzofuran	132-64-9	8270D	Pending		0.80	0.16	ug/L	1
3,3'-Dichlorobenzidine	91-94-1	8270D	Pending		4.0	0.81	ug/L	1
2,4-Dichlorophenol	120-83-2	8270D	Pending		0.80	0.19	ug/L	1
Diethylphthalate	84-66-2	8270D	Pending		4.0	0.19	ug/L	1
Dimethyl phthalate	131-11-3	8270D	Pending		4.0	0.18	ug/L	1
2,4-Dimethylphenol	105-67-9	8270D	Pending		0.80	0.15	ug/L	1
Di-n-butyl phthalate	84-74-2	8270D	Pending		4.0	0.42	ug/L	1
4,6-Dinitro-2-methylphenol	534-52-1	8270D	Pending		4.0	0.89	ug/L	1
2,4-Dinitrophenol	51-28-5	8270D	Pending		4.0	1.3	ug/L	1
2,4-Dinitrotoluene	121-14-2	8270D	Pending		1.6	0.36	ug/L	1
2,6-Dinitrotoluene	606-20-2	8270D	Pending		1.6	0.34	ug/L	1
Di-n-octylphthalate	117-84-0	8270D	Pending		4.0	0.48	ug/L	1
bis(2-Ethylhexyl)phthalate	117-81-7	8270D	Pending		4.0	0.38	ug/L	1
Fluoranthene	206-44-0	8270D	Pending		0.16	0.040	ug/L	1
Fluorene	86-73-7	8270D	Pending		0.16	0.040	ug/L	1
Hexachlorobenzene	118-74-1	8270D	Pending		0.80	0.15	ug/L	1
Hexachlorobutadiene	87-68-3	8270D	Pending		0.80	0.17	ug/L	1
Hexachlorocyclopentadiene	77-47-4	8270D	Pending		4.0	1.1	ug/L	1

LOQ = Limit of Quantitation
ND = Not detected at or above the DL
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
DL = Detection Limit
J = Estimated result < LOQ and ≥ DL

Semivolatile Organic Compounds by GC/MS

Client: **EnSafe**
Description: **AC 06**
Date Sampled: **08/21/2019 1145**
Date Received: **08/21/2019**

Laboratory ID: **UH21084-002**
Matrix: **Aqueous**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3520C	8270D	1			08/25/2019 1649	26966

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Hexachloroethane	67-72-1	8270D	Pending		0.80	0.17	ug/L	1
Indeno(1,2,3-c,d)pyrene	193-39-5	8270D	Pending		0.16	0.040	ug/L	1
Isophorone	78-59-1	8270D	Pending		0.80	0.22	ug/L	1
2-Methylnaphthalene	91-57-6	8270D	Pending		0.16	0.040	ug/L	1
2-Methylphenol	95-48-7	8270D	Pending		0.80	0.21	ug/L	1
3+4-Methylphenol	106-44-5	8270D	Pending		1.6	0.46	ug/L	1
Naphthalene	91-20-3	8270D	Pending		0.16	0.040	ug/L	1
2-Nitroaniline	88-74-4	8270D	Pending		1.6	0.66	ug/L	1
3-Nitroaniline	99-09-2	8270D	Pending		1.6	0.15	ug/L	1
4-Nitroaniline	100-01-6	8270D	Pending		1.6	1.3	ug/L	1
Nitrobenzene	98-95-3	8270D	Pending		0.80	0.17	ug/L	1
2-Nitrophenol	88-75-5	8270D	Pending		1.6	0.44	ug/L	1
4-Nitrophenol	100-02-7	8270D	Pending		4.0	2.1	ug/L	1
N-Nitrosodi-n-propylamine	621-64-7	8270D	Pending		0.80	0.28	ug/L	1
N-Nitrosodiphenylamine (Diphenylamine)	86-30-6	8270D	Pending		0.80	0.50	ug/L	1
Pentachlorophenol	87-86-5	8270D	Pending		4.0	1.3	ug/L	1
Phenanthrene	85-01-8	8270D	Pending		0.16	0.040	ug/L	1
Phenol	108-95-2	8270D	Pending		0.80	0.19	ug/L	1
Pyrene	129-00-0	8270D	Pending		0.16	0.040	ug/L	1
2,4,5-Trichlorophenol	95-95-4	8270D	Pending		0.80	0.19	ug/L	1
2,4,6-Trichlorophenol	88-06-2	8270D	Pending		0.80	0.22	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
2-Fluorobiphenyl		Pending	130
2-Fluorophenol		Pending	130
Nitrobenzene-d5		Pending	130
Phenol-d5		Pending	130
Terphenyl-d14		Pending	150
2,4,6-Tribromophenol		Pending	140

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P = The RPD between two GC columns exceeds 40%
DL = Detection Limit
J = Estimated result < LOQ and ≥ DL

Library Search

Client: **EnSafe**
Description: **AC 06**
Date Sampled: **08/21/2019 1145**
Date Received: **08/21/2019**

Laboratory ID: **UH21084-002**
Matrix: **Aqueous**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3520C	8270D	1				

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
TIC 1		8270D	Pending				ug/L	1
TIC 10		8270D	Pending				ug/L	1
TIC 11		8270D	Pending				ug/L	1
TIC 12		8270D	Pending				ug/L	1
TIC 13		8270D	Pending				ug/L	1
TIC 14		8270D	Pending				ug/L	1
TIC 15		8270D	Pending				ug/L	1
TIC 16		8270D	Pending				ug/L	1
TIC 17		8270D	Pending				ug/L	1
TIC 18		8270D	Pending				ug/L	1
TIC 19		8270D	Pending				ug/L	1
TIC 2		8270D	Pending				ug/L	1
TIC 20		8270D	Pending				ug/L	1
TIC 3		8270D	Pending				ug/L	1
TIC 4		8270D	Pending				ug/L	1
TIC 5		8270D	Pending				ug/L	1
TIC 6		8270D	Pending				ug/L	1
TIC 7		8270D	Pending				ug/L	1
TIC 8		8270D	Pending				ug/L	1
TIC 9		8270D	Pending				ug/L	1

LOQ = Limit of Quantitation
ND = Not detected at or above the DL
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N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
DL = Detection Limit
J = Estimated result < LOQ and ≥ DL

PCBs by GC

Client: **EnSafe**
Description: **AC 06**
Date Sampled: **08/21/2019 1145**
Date Received: **08/21/2019**

Laboratory ID: **UH21084-002**
Matrix: **Aqueous**

Run	Prep Method	Cleanup	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3520C	3660B/3665A	8082A	1	08/27/2019 1136	CHG	08/25/2019 1649	26969

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Aroclor 1016	12674-11-2	8082A	ND		0.40	0.15	ug/L	1
Aroclor 1221	11104-28-2	8082A	ND		0.40	0.25	ug/L	1
Aroclor 1232	11141-16-5	8082A	ND		0.40	0.15	ug/L	1
Aroclor 1242	53469-21-9	8082A	ND		0.40	0.15	ug/L	1
Aroclor 1248	12672-29-6	8082A	ND		0.40	0.15	ug/L	1
Aroclor 1254	11097-69-1	8082A	ND		0.40	0.15	ug/L	1
Aroclor 1260	11096-82-5	8082A	ND		0.40	0.15	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Decachlorobiphenyl	N	9.1	10-133
Tetrachloro-m-xylene		65	31-122

LOQ = Limit of Quantitation
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B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
DL = Detection Limit
J = Estimated result < LOQ and ≥ DL

Organochlorine Pesticides by GC

Client: **EnSafe**
Description: **AC 06**
Date Sampled: **08/21/2019 1145**
Date Received: **08/21/2019**

Laboratory ID: **UH21084-002**
Matrix: **Aqueous**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3520C	8081B	1			08/25/2019 1649	26968

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Aldrin	309-00-2	8081B	Pending		0.040	0.020	ug/L	1
gamma-BHC (Lindane)	58-89-9	8081B	Pending		0.040	0.017	ug/L	1
alpha-BHC	319-84-6	8081B	Pending		0.040	0.015	ug/L	1
beta-BHC	319-85-7	8081B	Pending		0.040	0.015	ug/L	1
delta-BHC	319-86-8	8081B	Pending		0.040	0.015	ug/L	1
cis-Chlordane	5103-71-9	8081B	Pending		0.040	0.015	ug/L	1
trans-Chlordane	5103-74-2	8081B	Pending		0.040	0.015	ug/L	1
4,4'-DDD	72-54-8	8081B	Pending		0.040	0.015	ug/L	1
4,4'-DDE	72-55-9	8081B	Pending		0.040	0.020	ug/L	1
4,4'-DDT	50-29-3	8081B	Pending		0.040	0.020	ug/L	1
Dieldrin	60-57-1	8081B	Pending		0.040	0.015	ug/L	1
Endosulfan I	959-98-8	8081B	Pending		0.040	0.015	ug/L	1
Endosulfan II	33213-65-9	8081B	Pending		0.040	0.015	ug/L	1
Endosulfan sulfate	1031-07-8	8081B	Pending		0.040	0.015	ug/L	1
Endrin	72-20-8	8081B	Pending		0.040	0.015	ug/L	1
Endrin aldehyde	7421-93-4	8081B	Pending		0.040	0.015	ug/L	1
Endrin ketone	53494-70-5	8081B	Pending		0.040	0.015	ug/L	1
Heptachlor	76-44-8	8081B	Pending		0.040	0.021	ug/L	1
Heptachlor epoxide	1024-57-3	8081B	Pending		0.040	0.016	ug/L	1
Methoxychlor	72-43-5	8081B	Pending		0.16	0.021	ug/L	1
Toxaphene	8001-35-2	8081B	Pending		0.40	0.30	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Decachlorobiphenyl		Pending	120
Tetrachloro-m-xylene		Pending	120

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E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
DL = Detection Limit
J = Estimated result < LOQ and ≥ DL

ICP-MS

Client: **EnSafe**
Description: **AC 06**
Date Sampled: **08/21/2019 1145**
Date Received: **08/21/2019**

Laboratory ID: **UH21084-002**
Matrix: **Aqueous**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		7470A	1	08/24/2019 0831	KSH2	08/23/2019 1250	26841
1	3005A	6020B	1	08/23/2019 1216	BNW	08/22/2019 1920	26746
2	3005A	6020B	10	08/23/2019 1333	BNW	08/22/2019 1920	26746

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Aluminum	**7429-90-5**	**6020B**	**150**		**40**	**10**	**ug/L**	**1**
Antimony	**7440-36-0**	**6020B**	**23**		**2.0**	**0.50**	**ug/L**	**1**
Arsenic	**7440-38-2**	**6020B**	**340**		**2.0**	**1.3**	**ug/L**	**1**
Barium	**7440-39-3**	**6020B**	**79**		**5.0**	**1.3**	**ug/L**	**1**
Beryllium	7440-41-7	6020B	ND		0.40	0.15	ug/L	1
Cadmium	7440-43-9	6020B	ND		0.50	0.13	ug/L	1
Calcium	**7440-70-2**	**6020B**	**500000**		**4000**	**1000**	**ug/L**	**2**
Chromium	**7440-47-3**	**6020B**	**100**		**5.0**	**1.3**	**ug/L**	**1**
Cobalt	**7440-48-4**	**6020B**	**2.1**	**J**	**5.0**	**1.3**	**ug/L**	**1**
Copper	**7440-50-8**	**6020B**	**12**		**5.0**	**1.3**	**ug/L**	**1**
Iron	**7439-89-6**	**6020B**	**2500**		**50**	**13**	**ug/L**	**1**
Lead	**7439-92-1**	**6020B**	**0.58**	**J**	**1.0**	**0.25**	**ug/L**	**1**
Magnesium	**7439-95-4**	**6020B**	**42000**		**400**	**50**	**ug/L**	**1**
Manganese	**7439-96-5**	**6020B**	**160**		**5.0**	**1.3**	**ug/L**	**1**
Mercury	7439-97-6	7470A	ND		0.00020	0.000091	mg/L	1
Nickel	**7440-02-0**	**6020B**	**24**		**5.0**	**1.3**	**ug/L**	**1**
Potassium	**7440-09-7**	**6020B**	**55000**		**400**	**100**	**ug/L**	**1**
Selenium	**7782-49-2**	**6020B**	**4.0**	**J**	**5.0**	**1.3**	**ug/L**	**1**
Silver	7440-22-4	6020B	ND		1.0	0.25	ug/L	1
Sodium	**7440-23-5**	**6020B**	**200000**		**4000**	**1500**	**ug/L**	**2**
Thallium	7440-28-0	6020B	ND		0.50	0.15	ug/L	1
Vanadium	**7440-62-2**	**6020B**	**13**		**5.0**	**2.5**	**ug/L**	**1**
Zinc	**7440-66-6**	**6020B**	**34**	**B**	**10**	**2.5**	**ug/L**	**1**

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W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
DL = Detection Limit
J = Estimated result < LOQ and ≥ DL

Inorganic non-metals

Client: **EnSafe**
Description: **AC 07**
Date Sampled: **08/21/2019 1210**
Date Received: **08/21/2019**

Laboratory ID: **UH21084-003**
Matrix: **Aqueous**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	9012B	(Cyanide - To) 9012B	1	08/23/2019 1900	KFE	08/22/2019 1900	26810

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Cyanide - Total	57-12-5	9012B	ND		20	5.0	ug/L	1

LOQ = Limit of Quantitation
ND = Not detected at or above the DL
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N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
DL = Detection Limit
J = Estimated result < LOQ and ≥ DL

Semivolatile Organic Compounds by GC/MS

Client: **EnSafe**
Description: **AC 07**
Date Sampled: **08/21/2019 1210**
Date Received: **08/21/2019**

Laboratory ID: **UH21084-003**
Matrix: **Aqueous**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3520C	8270D	1			08/25/2019 1649	26966

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acenaphthene	83-32-9	8270D	Pending		0.16	0.040	ug/L	1
Acenaphthylene	208-96-8	8270D	Pending		0.16	0.040	ug/L	1
Acetophenone	98-86-2	8270D	Pending		0.80	0.23	ug/L	1
Anthracene	120-12-7	8270D	Pending		0.16	0.040	ug/L	1
Atrazine	1912-24-9	8270D	Pending		0.80	0.20	ug/L	1
Benzaldehyde	100-52-7	8270D	Pending		4.0	0.27	ug/L	1
Benzo(a)anthracene	56-55-3	8270D	Pending		0.16	0.040	ug/L	1
Benzo(a)pyrene	50-32-8	8270D	Pending		0.16	0.040	ug/L	1
Benzo(b)fluoranthene	205-99-2	8270D	Pending		0.16	0.040	ug/L	1
Benzo(g,h,i)perylene	191-24-2	8270D	Pending		0.16	0.040	ug/L	1
Benzo(k)fluoranthene	207-08-9	8270D	Pending		0.16	0.040	ug/L	1
1,1'-Biphenyl	92-52-4	8270D	Pending		0.80	0.21	ug/L	1
4-Bromophenyl phenyl ether	101-55-3	8270D	Pending		0.80	0.15	ug/L	1
Butyl benzyl phthalate	85-68-7	8270D	Pending		4.0	0.21	ug/L	1
Caprolactam	105-60-2	8270D	Pending		4.0	0.71	ug/L	1
Carbazole	86-74-8	8270D	Pending		0.80	0.040	ug/L	1
bis (2-Chloro-1-methylethyl) ether	108-60-1	8270D	Pending		0.80	0.17	ug/L	1
4-Chloro-3-methyl phenol	59-50-7	8270D	Pending		0.80	0.26	ug/L	1
4-Chloroaniline	106-47-8	8270D	Pending		0.80	0.13	ug/L	1
bis(2-Chloroethoxy)methane	111-91-1	8270D	Pending		0.80	0.060	ug/L	1
bis(2-Chloroethyl)ether	111-44-4	8270D	Pending		0.80	0.16	ug/L	1
2-Chloronaphthalene	91-58-7	8270D	Pending		0.80	0.15	ug/L	1
2-Chlorophenol	95-57-8	8270D	Pending		0.80	0.15	ug/L	1
4-Chlorophenyl phenyl ether	7005-72-3	8270D	Pending		0.80	0.16	ug/L	1
Chrysene	218-01-9	8270D	Pending		0.16	0.040	ug/L	1
Dibenzo(a,h)anthracene	53-70-3	8270D	Pending		0.16	0.040	ug/L	1
Dibenzofuran	132-64-9	8270D	Pending		0.80	0.16	ug/L	1
3,3'-Dichlorobenzidine	91-94-1	8270D	Pending		4.0	0.81	ug/L	1
2,4-Dichlorophenol	120-83-2	8270D	Pending		0.80	0.19	ug/L	1
Diethylphthalate	84-66-2	8270D	Pending		4.0	0.19	ug/L	1
Dimethyl phthalate	131-11-3	8270D	Pending		4.0	0.18	ug/L	1
2,4-Dimethylphenol	105-67-9	8270D	Pending		0.80	0.15	ug/L	1
Di-n-butyl phthalate	84-74-2	8270D	Pending		4.0	0.42	ug/L	1
4,6-Dinitro-2-methylphenol	534-52-1	8270D	Pending		4.0	0.89	ug/L	1
2,4-Dinitrophenol	51-28-5	8270D	Pending		4.0	1.3	ug/L	1
2,4-Dinitrotoluene	121-14-2	8270D	Pending		1.6	0.36	ug/L	1
2,6-Dinitrotoluene	606-20-2	8270D	Pending		1.6	0.34	ug/L	1
Di-n-octylphthalate	117-84-0	8270D	Pending		4.0	0.48	ug/L	1
bis(2-Ethylhexyl)phthalate	117-81-7	8270D	Pending		4.0	0.38	ug/L	1
Fluoranthene	206-44-0	8270D	Pending		0.16	0.040	ug/L	1
Fluorene	86-73-7	8270D	Pending		0.16	0.040	ug/L	1
Hexachlorobenzene	118-74-1	8270D	Pending		0.80	0.15	ug/L	1
Hexachlorobutadiene	87-68-3	8270D	Pending		0.80	0.17	ug/L	1
Hexachlorocyclopentadiene	77-47-4	8270D	Pending		4.0	1.1	ug/L	1

LOQ = Limit of Quantitation
ND = Not detected at or above the DL
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
DL = Detection Limit
J = Estimated result < LOQ and ≥ DL

Semivolatile Organic Compounds by GC/MS

Client: **EnSafe**
Description: **AC 07**
Date Sampled: **08/21/2019 1210**
Date Received: **08/21/2019**

Laboratory ID: **UH21084-003**
Matrix: **Aqueous**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3520C	8270D	1			08/25/2019 1649	26966

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Hexachloroethane	67-72-1	8270D	Pending		0.80	0.17	ug/L	1
Indeno(1,2,3-c,d)pyrene	193-39-5	8270D	Pending		0.16	0.040	ug/L	1
Isophorone	78-59-1	8270D	Pending		0.80	0.22	ug/L	1
2-Methylnaphthalene	91-57-6	8270D	Pending		0.16	0.040	ug/L	1
2-Methylphenol	95-48-7	8270D	Pending		0.80	0.21	ug/L	1
3+4-Methylphenol	106-44-5	8270D	Pending		1.6	0.46	ug/L	1
Naphthalene	91-20-3	8270D	Pending		0.16	0.040	ug/L	1
2-Nitroaniline	88-74-4	8270D	Pending		1.6	0.66	ug/L	1
3-Nitroaniline	99-09-2	8270D	Pending		1.6	0.15	ug/L	1
4-Nitroaniline	100-01-6	8270D	Pending		1.6	1.3	ug/L	1
Nitrobenzene	98-95-3	8270D	Pending		0.80	0.17	ug/L	1
2-Nitrophenol	88-75-5	8270D	Pending		1.6	0.44	ug/L	1
4-Nitrophenol	100-02-7	8270D	Pending		4.0	2.1	ug/L	1
N-Nitrosodi-n-propylamine	621-64-7	8270D	Pending		0.80	0.28	ug/L	1
N-Nitrosodiphenylamine (Diphenylamine)	86-30-6	8270D	Pending		0.80	0.50	ug/L	1
Pentachlorophenol	87-86-5	8270D	Pending		4.0	1.3	ug/L	1
Phenanthrene	85-01-8	8270D	Pending		0.16	0.040	ug/L	1
Phenol	108-95-2	8270D	Pending		0.80	0.19	ug/L	1
Pyrene	129-00-0	8270D	Pending		0.16	0.040	ug/L	1
2,4,5-Trichlorophenol	95-95-4	8270D	Pending		0.80	0.19	ug/L	1
2,4,6-Trichlorophenol	88-06-2	8270D	Pending		0.80	0.22	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
2-Fluorobiphenyl		Pending	130
2-Fluorophenol		Pending	130
Nitrobenzene-d5		Pending	130
Phenol-d5		Pending	130
Terphenyl-d14		Pending	150
2,4,6-Tribromophenol		Pending	140

LOQ = Limit of Quantitation
ND = Not detected at or above the DL
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
DL = Detection Limit
J = Estimated result < LOQ and ≥ DL

Library Search

Client: **EnSafe**
Description: **AC 07**
Date Sampled: **08/21/2019 1210**
Date Received: **08/21/2019**

Laboratory ID: **UH21084-003**
Matrix: **Aqueous**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3520C	8270D	1				

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
TIC 1		8270D	Pending				ug/L	1
TIC 10		8270D	Pending				ug/L	1
TIC 11		8270D	Pending				ug/L	1
TIC 12		8270D	Pending				ug/L	1
TIC 13		8270D	Pending				ug/L	1
TIC 14		8270D	Pending				ug/L	1
TIC 15		8270D	Pending				ug/L	1
TIC 16		8270D	Pending				ug/L	1
TIC 17		8270D	Pending				ug/L	1
TIC 18		8270D	Pending				ug/L	1
TIC 19		8270D	Pending				ug/L	1
TIC 2		8270D	Pending				ug/L	1
TIC 20		8270D	Pending				ug/L	1
TIC 3		8270D	Pending				ug/L	1
TIC 4		8270D	Pending				ug/L	1
TIC 5		8270D	Pending				ug/L	1
TIC 6		8270D	Pending				ug/L	1
TIC 7		8270D	Pending				ug/L	1
TIC 8		8270D	Pending				ug/L	1
TIC 9		8270D	Pending				ug/L	1

LOQ = Limit of Quantitation
ND = Not detected at or above the DL
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
DL = Detection Limit
J = Estimated result < LOQ and ≥ DL

PCBs by GC

Client: **EnSafe**
Description: **AC 07**
Date Sampled: **08/21/2019 1210**
Date Received: **08/21/2019**

Laboratory ID: **UH21084-003**
Matrix: **Aqueous**

Run	Prep Method	Cleanup	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3520C	3660B/3665A	8082A	1			08/25/2019 1649	26969

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Aroclor 1016	12674-11-2	8082A	Pending		0.40	0.15	ug/L	1
Aroclor 1221	11104-28-2	8082A	Pending		0.40	0.25	ug/L	1
Aroclor 1232	11141-16-5	8082A	Pending		0.40	0.15	ug/L	1
Aroclor 1242	53469-21-9	8082A	Pending		0.40	0.15	ug/L	1
Aroclor 1248	12672-29-6	8082A	Pending		0.40	0.15	ug/L	1
Aroclor 1254	11097-69-1	8082A	Pending		0.40	0.15	ug/L	1
Aroclor 1260	11096-82-5	8082A	Pending		0.40	0.15	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Decachlorobiphenyl		Pending	130
Tetrachloro-m-xylene		Pending	120

LOQ = Limit of Quantitation
ND = Not detected at or above the DL
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
DL = Detection Limit
J = Estimated result < LOQ and ≥ DL

Organochlorine Pesticides by GC

Client: **EnSafe**
Description: **AC 07**
Date Sampled: **08/21/2019 1210**
Date Received: **08/21/2019**

Laboratory ID: **UH21084-003**
Matrix: **Aqueous**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3520C	8081B	1			08/25/2019 1649	26968

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Aldrin	309-00-2	8081B	Pending		0.040	0.020	ug/L	1
gamma-BHC (Lindane)	58-89-9	8081B	Pending		0.040	0.017	ug/L	1
alpha-BHC	319-84-6	8081B	Pending		0.040	0.015	ug/L	1
beta-BHC	319-85-7	8081B	Pending		0.040	0.015	ug/L	1
delta-BHC	319-86-8	8081B	Pending		0.040	0.015	ug/L	1
cis-Chlordane	5103-71-9	8081B	Pending		0.040	0.015	ug/L	1
trans-Chlordane	5103-74-2	8081B	Pending		0.040	0.015	ug/L	1
4,4'-DDD	72-54-8	8081B	Pending		0.040	0.015	ug/L	1
4,4'-DDE	72-55-9	8081B	Pending		0.040	0.020	ug/L	1
4,4'-DDT	50-29-3	8081B	Pending		0.040	0.020	ug/L	1
Dieldrin	60-57-1	8081B	Pending		0.040	0.015	ug/L	1
Endosulfan I	959-98-8	8081B	Pending		0.040	0.015	ug/L	1
Endosulfan II	33213-65-9	8081B	Pending		0.040	0.015	ug/L	1
Endosulfan sulfate	1031-07-8	8081B	Pending		0.040	0.015	ug/L	1
Endrin	72-20-8	8081B	Pending		0.040	0.015	ug/L	1
Endrin aldehyde	7421-93-4	8081B	Pending		0.040	0.015	ug/L	1
Endrin ketone	53494-70-5	8081B	Pending		0.040	0.015	ug/L	1
Heptachlor	76-44-8	8081B	Pending		0.040	0.021	ug/L	1
Heptachlor epoxide	1024-57-3	8081B	Pending		0.040	0.016	ug/L	1
Methoxychlor	72-43-5	8081B	Pending		0.16	0.021	ug/L	1
Toxaphene	8001-35-2	8081B	Pending		0.40	0.30	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Decachlorobiphenyl		Pending	120
Tetrachloro-m-xylene		Pending	120

LOQ = Limit of Quantitation
ND = Not detected at or above the DL
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
DL = Detection Limit
J = Estimated result < LOQ and ≥ DL

ICP-MS

Client: **EnSafe**
Description: **AC 07**
Date Sampled: **08/21/2019 1210**
Date Received: **08/21/2019**

Laboratory ID: **UH21084-003**
Matrix: **Aqueous**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		7470A	1	08/24/2019 0833	KSH2	08/23/2019 1250	26841
1	3005A	6020B	1	08/23/2019 1222	BNW	08/22/2019 1920	26746
2	3005A	6020B	10	08/23/2019 1351	BNW	08/22/2019 1920	26746

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Aluminum	**7429-90-5**	**6020B**	**280**		**40**	**10**	**ug/L**	**1**
Antimony	**7440-36-0**	**6020B**	**38**		**2.0**	**0.50**	**ug/L**	**1**
Arsenic	**7440-38-2**	**6020B**	**410**		**2.0**	**1.3**	**ug/L**	**1**
Barium	**7440-39-3**	**6020B**	**170**		**5.0**	**1.3**	**ug/L**	**1**
Beryllium	7440-41-7	6020B	ND		0.40	0.15	ug/L	1
Cadmium	**7440-43-9**	**6020B**	**0.20**	**J**	**0.50**	**0.13**	**ug/L**	**1**
Calcium	**7440-70-2**	**6020B**	**790000**		**4000**	**1000**	**ug/L**	**2**
Chromium	**7440-47-3**	**6020B**	**190**		**5.0**	**1.3**	**ug/L**	**1**
Cobalt	**7440-48-4**	**6020B**	**3.1**	**J**	**5.0**	**1.3**	**ug/L**	**1**
Copper	**7440-50-8**	**6020B**	**84**		**5.0**	**1.3**	**ug/L**	**1**
Iron	**7439-89-6**	**6020B**	**4900**		**50**	**13**	**ug/L**	**1**
Lead	**7439-92-1**	**6020B**	**3.8**		**1.0**	**0.25**	**ug/L**	**1**
Magnesium	**7439-95-4**	**6020B**	**55000**		**400**	**50**	**ug/L**	**1**
Manganese	**7439-96-5**	**6020B**	**720**		**5.0**	**1.3**	**ug/L**	**1**
Mercury	**7439-97-6**	**7470A**	**0.00016**	**J**	**0.00020**	**0.000091**	**mg/L**	**1**
Nickel	**7440-02-0**	**6020B**	**33**		**5.0**	**1.3**	**ug/L**	**1**
Potassium	**7440-09-7**	**6020B**	**81000**		**400**	**100**	**ug/L**	**1**
Selenium	**7782-49-2**	**6020B**	**5.9**		**5.0**	**1.3**	**ug/L**	**1**
Silver	7440-22-4	6020B	ND		1.0	0.25	ug/L	1
Sodium	**7440-23-5**	**6020B**	**310000**		**4000**	**1500**	**ug/L**	**2**
Thallium	7440-28-0	6020B	ND		0.50	0.15	ug/L	1
Vanadium	**7440-62-2**	**6020B**	**29**		**5.0**	**2.5**	**ug/L**	**1**
Zinc	**7440-66-6**	**6020B**	**160**	**B**	**10**	**2.5**	**ug/L**	**1**

LOQ = Limit of Quantitation
ND = Not detected at or above the DL
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
DL = Detection Limit
J = Estimated result < LOQ and ≥ DL

Inorganic non-metals

Client: **EnSafe**
Description: **AC-01**
Date Sampled: **08/21/2019 1240**
Date Received: **08/21/2019**

Laboratory ID: **UH21084-004**
Matrix: **Aqueous**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	9012B	(Cyanide - To) 9012B	1	08/23/2019 1901	KFE	08/22/2019 1900	26810

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Cyanide - Total	57-12-5	9012B	ND		20	5.0	ug/L	1

LOQ = Limit of Quantitation
ND = Not detected at or above the DL
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
DL = Detection Limit
J = Estimated result < LOQ and ≥ DL

Library Search

Client: **EnSafe**
Description: **AC-01**
Date Sampled: **08/21/2019 1240**
Date Received: **08/21/2019**

Laboratory ID: **UH21084-004**
Matrix: **Aqueous**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260B	5	08/24/2019 0449	JTH		26933

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Methanethiol		**8260B**	**45**				**ug/L**	**1**
Dimethyl sulfide		**8260B**	**83**				**ug/L**	**1**
Furan, tetrahydro-		**8260B**	**15**				**ug/L**	**1**
Bicyclo[2.2.1]heptan-2-one, 1,3,3-trimet		**8260B**	**10**				**ug/L**	**1**

LOQ = Limit of Quantitation
ND = Not detected at or above the DL
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
DL = Detection Limit
J = Estimated result < LOQ and ≥ DL

Volatile Organic Compounds by GC/MS

Client: **EnSafe**
Description: **AC-01**
Date Sampled: **08/21/2019 1240**
Date Received: **08/21/2019**

Laboratory ID: **UH21084-004**
Matrix: **Aqueous**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260B	5	08/24/2019 0449	JTH		26929
2	5030B	8260B	5	08/27/2019 0802	ALR1		27097

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acetone	**67-64-1**	**8260B**	**210**		**100**	**25**	**ug/L**	**1**
Benzene	**71-43-2**	**8260B**	**17**		**5.0**	**2.0**	**ug/L**	**1**
Bromochloromethane	74-97-5	8260B	ND		5.0	2.0	ug/L	1
Bromodichloromethane	75-27-4	8260B	ND		5.0	2.0	ug/L	1
Bromoform	75-25-2	8260B	ND		5.0	2.0	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260B	ND		10	2.0	ug/L	1
2-Butanone (MEK)	**78-93-3**	**8260B**	**46**	**J**	**50**	**10**	**ug/L**	**1**
Carbon disulfide	**75-15-0**	**8260B**	**9.9**		**5.0**	**2.0**	**ug/L**	**2**
Carbon tetrachloride	56-23-5	8260B	ND		5.0	2.0	ug/L	1
Chlorobenzene	108-90-7	8260B	ND		5.0	2.0	ug/L	1
Chloroethane	75-00-3	8260B	ND		10	2.0	ug/L	1
Chloroform	67-66-3	8260B	ND		5.0	2.0	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260B	ND		5.0	2.5	ug/L	1
Cyclohexane	110-82-7	8260B	ND		5.0	2.0	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260B	ND		5.0	2.0	ug/L	1
Dibromochloromethane	124-48-1	8260B	ND		5.0	2.0	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260B	ND		5.0	2.0	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260B	ND		5.0	2.0	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260B	ND		5.0	2.0	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260B	ND		5.0	2.0	ug/L	1
Dichlorodifluoromethane	75-71-8	8260B	ND		10	3.0	ug/L	1
1,1-Dichloroethane	75-34-3	8260B	ND		5.0	2.0	ug/L	1
1,2-Dichloroethane	107-06-2	8260B	ND		5.0	2.0	ug/L	1
1,1-Dichloroethene	75-35-4	8260B	ND		5.0	2.0	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260B	ND		5.0	2.0	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260B	ND		5.0	2.0	ug/L	1
1,2-Dichloropropane	78-87-5	8260B	ND		5.0	2.0	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260B	ND		5.0	2.0	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260B	ND		5.0	2.0	ug/L	1
Ethylbenzene	**100-41-4**	**8260B**	**3.9**	**J**	**5.0**	**2.0**	**ug/L**	**1**
2-Hexanone	591-78-6	8260B	ND		50	10	ug/L	1
Isopropylbenzene	98-82-8	8260B	ND		5.0	2.0	ug/L	1
Methyl acetate	**79-20-9**	**8260B**	**3.3**	**J**	**5.0**	**2.0**	**ug/L**	**1**
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260B	ND		5.0	2.0	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260B	ND		50	10	ug/L	1
Methylcyclohexane	108-87-2	8260B	ND		25	2.0	ug/L	1
Methylene chloride	75-09-2	8260B	ND		5.0	2.0	ug/L	1
Styrene	100-42-5	8260B	ND		5.0	2.1	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260B	ND		5.0	2.0	ug/L	1
Tetrachloroethene	127-18-4	8260B	ND		5.0	2.0	ug/L	1
Toluene	**108-88-3**	**8260B**	**9.6**		**5.0**	**2.0**	**ug/L**	**1**
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260B	ND		5.0	2.1	ug/L	1
1,2,3-Trichlorobenzene	87-61-6	8260B	ND		5.0	2.0	ug/L	1

LOQ = Limit of Quantitation
ND = Not detected at or above the DL
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
DL = Detection Limit
J = Estimated result < LOQ and ≥ DL

Volatile Organic Compounds by GC/MS

Client: **EnSafe**
Description: **AC-01**
Date Sampled: **08/21/2019 1240**
Date Received: **08/21/2019**

Laboratory ID: **UH21084-004**
Matrix: **Aqueous**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260B	5	08/24/2019 0449	JTH		26929
2	5030B	8260B	5	08/27/2019 0802	ALR1		27097

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
1,2,4-Trichlorobenzene	120-82-1	8260B	ND		5.0	2.0	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260B	ND		5.0	2.0	ug/L	1
1,1,2-Trichloroethane	79-00-5	8260B	ND		5.0	2.0	ug/L	1
Trichloroethene	79-01-6	8260B	ND		5.0	2.0	ug/L	1
Trichlorofluoromethane	75-69-4	8260B	ND		5.0	2.0	ug/L	1
Vinyl chloride	75-01-4	8260B	ND		5.0	2.0	ug/L	1
m+p - Xylenes	**179601-23-1**	**8260B**	**2.6**	**J**	**5.0**	**2.0**	**ug/L**	**1**
o - Xylenes	95-47-6	8260B	ND		5.0	2.0	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits	Q	Run 2 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		103	70-130		92	70-130
Bromofluorobenzene		95	70-130		101	70-130
Toluene-d8		98	70-130		102	70-130

LOQ = Limit of Quantitation
ND = Not detected at or above the DL
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
DL = Detection Limit
J = Estimated result < LOQ and ≥ DL

Semivolatile Organic Compounds by GC/MS

Client: **EnSafe**
Description: **AC-01**
Date Sampled: **08/21/2019 1240**
Date Received: **08/21/2019**

Laboratory ID: **UH21084-004**
Matrix: **Aqueous**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3520C	8270D	1			08/25/2019 1649	26966

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acenaphthene	83-32-9	8270D	Pending		0.16	0.040	ug/L	1
Acenaphthylene	208-96-8	8270D	Pending		0.16	0.040	ug/L	1
Acetophenone	98-86-2	8270D	Pending		0.80	0.23	ug/L	1
Anthracene	120-12-7	8270D	Pending		0.16	0.040	ug/L	1
Atrazine	1912-24-9	8270D	Pending		0.80	0.20	ug/L	1
Benzaldehyde	100-52-7	8270D	Pending		4.0	0.27	ug/L	1
Benzo(a)anthracene	56-55-3	8270D	Pending		0.16	0.040	ug/L	1
Benzo(a)pyrene	50-32-8	8270D	Pending		0.16	0.040	ug/L	1
Benzo(b)fluoranthene	205-99-2	8270D	Pending		0.16	0.040	ug/L	1
Benzo(g,h,i)perylene	191-24-2	8270D	Pending		0.16	0.040	ug/L	1
Benzo(k)fluoranthene	207-08-9	8270D	Pending		0.16	0.040	ug/L	1
1,1'-Biphenyl	92-52-4	8270D	Pending		0.80	0.21	ug/L	1
4-Bromophenyl phenyl ether	101-55-3	8270D	Pending		0.80	0.15	ug/L	1
Butyl benzyl phthalate	85-68-7	8270D	Pending		4.0	0.21	ug/L	1
Caprolactam	105-60-2	8270D	Pending		4.0	0.71	ug/L	1
Carbazole	86-74-8	8270D	Pending		0.80	0.040	ug/L	1
bis (2-Chloro-1-methylethyl) ether	108-60-1	8270D	Pending		0.80	0.17	ug/L	1
4-Chloro-3-methyl phenol	59-50-7	8270D	Pending		0.80	0.26	ug/L	1
4-Chloroaniline	106-47-8	8270D	Pending		0.80	0.13	ug/L	1
bis(2-Chloroethoxy)methane	111-91-1	8270D	Pending		0.80	0.060	ug/L	1
bis(2-Chloroethyl)ether	111-44-4	8270D	Pending		0.80	0.16	ug/L	1
2-Chloronaphthalene	91-58-7	8270D	Pending		0.80	0.15	ug/L	1
2-Chlorophenol	95-57-8	8270D	Pending		0.80	0.15	ug/L	1
4-Chlorophenyl phenyl ether	7005-72-3	8270D	Pending		0.80	0.16	ug/L	1
Chrysene	218-01-9	8270D	Pending		0.16	0.040	ug/L	1
Dibenzo(a,h)anthracene	53-70-3	8270D	Pending		0.16	0.040	ug/L	1
Dibenzofuran	132-64-9	8270D	Pending		0.80	0.16	ug/L	1
3,3'-Dichlorobenzidine	91-94-1	8270D	Pending		4.0	0.81	ug/L	1
2,4-Dichlorophenol	120-83-2	8270D	Pending		0.80	0.19	ug/L	1
Diethylphthalate	84-66-2	8270D	Pending		4.0	0.19	ug/L	1
Dimethyl phthalate	131-11-3	8270D	Pending		4.0	0.18	ug/L	1
2,4-Dimethylphenol	105-67-9	8270D	Pending		0.80	0.15	ug/L	1
Di-n-butyl phthalate	84-74-2	8270D	Pending		4.0	0.42	ug/L	1
4,6-Dinitro-2-methylphenol	534-52-1	8270D	Pending		4.0	0.89	ug/L	1
2,4-Dinitrophenol	51-28-5	8270D	Pending		4.0	1.3	ug/L	1
2,4-Dinitrotoluene	121-14-2	8270D	Pending		1.6	0.36	ug/L	1
2,6-Dinitrotoluene	606-20-2	8270D	Pending		1.6	0.34	ug/L	1
Di-n-octylphthalate	117-84-0	8270D	Pending		4.0	0.48	ug/L	1
bis(2-Ethylhexyl)phthalate	117-81-7	8270D	Pending		4.0	0.38	ug/L	1
Fluoranthene	206-44-0	8270D	Pending		0.16	0.040	ug/L	1
Fluorene	86-73-7	8270D	Pending		0.16	0.040	ug/L	1
Hexachlorobenzene	118-74-1	8270D	Pending		0.80	0.15	ug/L	1
Hexachlorobutadiene	87-68-3	8270D	Pending		0.80	0.17	ug/L	1
Hexachlorocyclopentadiene	77-47-4	8270D	Pending		4.0	1.1	ug/L	1

LOQ = Limit of Quantitation
ND = Not detected at or above the DL
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B = Detected in the method blank
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W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
DL = Detection Limit
J = Estimated result < LOQ and ≥ DL

Semivolatile Organic Compounds by GC/MS

Client: **EnSafe**
Description: **AC-01**
Date Sampled: **08/21/2019 1240**
Date Received: **08/21/2019**

Laboratory ID: **UH21084-004**
Matrix: **Aqueous**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3520C	8270D	1			08/25/2019 1649	26966

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Hexachloroethane	67-72-1	8270D	Pending		0.80	0.17	ug/L	1
Indeno(1,2,3-c,d)pyrene	193-39-5	8270D	Pending		0.16	0.040	ug/L	1
Isophorone	78-59-1	8270D	Pending		0.80	0.22	ug/L	1
2-Methylnaphthalene	91-57-6	8270D	Pending		0.16	0.040	ug/L	1
2-Methylphenol	95-48-7	8270D	Pending		0.80	0.21	ug/L	1
3+4-Methylphenol	106-44-5	8270D	Pending		1.6	0.46	ug/L	1
Naphthalene	91-20-3	8270D	Pending		0.16	0.040	ug/L	1
2-Nitroaniline	88-74-4	8270D	Pending		1.6	0.66	ug/L	1
3-Nitroaniline	99-09-2	8270D	Pending		1.6	0.15	ug/L	1
4-Nitroaniline	100-01-6	8270D	Pending		1.6	1.3	ug/L	1
Nitrobenzene	98-95-3	8270D	Pending		0.80	0.17	ug/L	1
2-Nitrophenol	88-75-5	8270D	Pending		1.6	0.44	ug/L	1
4-Nitrophenol	100-02-7	8270D	Pending		4.0	2.1	ug/L	1
N-Nitrosodi-n-propylamine	621-64-7	8270D	Pending		0.80	0.28	ug/L	1
N-Nitrosodiphenylamine (Diphenylamine)	86-30-6	8270D	Pending		0.80	0.50	ug/L	1
Pentachlorophenol	87-86-5	8270D	Pending		4.0	1.3	ug/L	1
Phenanthrene	85-01-8	8270D	Pending		0.16	0.040	ug/L	1
Phenol	108-95-2	8270D	Pending		0.80	0.19	ug/L	1
Pyrene	129-00-0	8270D	Pending		0.16	0.040	ug/L	1
2,4,5-Trichlorophenol	95-95-4	8270D	Pending		0.80	0.19	ug/L	1
2,4,6-Trichlorophenol	88-06-2	8270D	Pending		0.80	0.22	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
2-Fluorobiphenyl		Pending	130
2-Fluorophenol		Pending	130
Nitrobenzene-d5		Pending	130
Phenol-d5		Pending	130
Terphenyl-d14		Pending	150
2,4,6-Tribromophenol		Pending	140

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P = The RPD between two GC columns exceeds 40%
DL = Detection Limit
J = Estimated result < LOQ and ≥ DL

Library Search

Client: **EnSafe**
Description: **AC-01**
Date Sampled: **08/21/2019 1240**
Date Received: **08/21/2019**

Laboratory ID: **UH21084-004**
Matrix: **Aqueous**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3520C	8270D	1				

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
TIC 1		8270D	Pending				ug/L	1
TIC 10		8270D	Pending				ug/L	1
TIC 11		8270D	Pending				ug/L	1
TIC 12		8270D	Pending				ug/L	1
TIC 13		8270D	Pending				ug/L	1
TIC 14		8270D	Pending				ug/L	1
TIC 15		8270D	Pending				ug/L	1
TIC 16		8270D	Pending				ug/L	1
TIC 17		8270D	Pending				ug/L	1
TIC 18		8270D	Pending				ug/L	1
TIC 19		8270D	Pending				ug/L	1
TIC 2		8270D	Pending				ug/L	1
TIC 20		8270D	Pending				ug/L	1
TIC 3		8270D	Pending				ug/L	1
TIC 4		8270D	Pending				ug/L	1
TIC 5		8270D	Pending				ug/L	1
TIC 6		8270D	Pending				ug/L	1
TIC 7		8270D	Pending				ug/L	1
TIC 8		8270D	Pending				ug/L	1
TIC 9		8270D	Pending				ug/L	1

LOQ = Limit of Quantitation
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N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
DL = Detection Limit
J = Estimated result < LOQ and ≥ DL

PCBs by GC

Client: **EnSafe**
Description: **AC-01**
Date Sampled: **08/21/2019 1240**
Date Received: **08/21/2019**

Laboratory ID: **UH21084-004**
Matrix: **Aqueous**

Run	Prep Method	Cleanup	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3520C	3660B/3665A	8082A	1			08/25/2019 1649	26969

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Aroclor 1016	12674-11-2	8082A	Pending		0.40	0.15	ug/L	1
Aroclor 1221	11104-28-2	8082A	Pending		0.40	0.25	ug/L	1
Aroclor 1232	11141-16-5	8082A	Pending		0.40	0.15	ug/L	1
Aroclor 1242	53469-21-9	8082A	Pending		0.40	0.15	ug/L	1
Aroclor 1248	12672-29-6	8082A	Pending		0.40	0.15	ug/L	1
Aroclor 1254	11097-69-1	8082A	Pending		0.40	0.15	ug/L	1
Aroclor 1260	11096-82-5	8082A	Pending		0.40	0.15	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Decachlorobiphenyl		Pending	130
Tetrachloro-m-xylene		Pending	120

LOQ = Limit of Quantitation
ND = Not detected at or above the DL
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N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
DL = Detection Limit
J = Estimated result < LOQ and ≥ DL

Organochlorine Pesticides by GC

Client: **EnSafe**
Description: **AC-01**
Date Sampled: **08/21/2019 1240**
Date Received: **08/21/2019**

Laboratory ID: **UH21084-004**
Matrix: **Aqueous**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3520C	8081B	1			08/25/2019 1649	26968

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Aldrin	309-00-2	8081B	Pending		0.040	0.020	ug/L	1
gamma-BHC (Lindane)	58-89-9	8081B	Pending		0.040	0.017	ug/L	1
alpha-BHC	319-84-6	8081B	Pending		0.040	0.015	ug/L	1
beta-BHC	319-85-7	8081B	Pending		0.040	0.015	ug/L	1
delta-BHC	319-86-8	8081B	Pending		0.040	0.015	ug/L	1
cis-Chlordane	5103-71-9	8081B	Pending		0.040	0.015	ug/L	1
trans-Chlordane	5103-74-2	8081B	Pending		0.040	0.015	ug/L	1
4,4'-DDD	72-54-8	8081B	Pending		0.040	0.015	ug/L	1
4,4'-DDE	72-55-9	8081B	Pending		0.040	0.020	ug/L	1
4,4'-DDT	50-29-3	8081B	Pending		0.040	0.020	ug/L	1
Dieldrin	60-57-1	8081B	Pending		0.040	0.015	ug/L	1
Endosulfan I	959-98-8	8081B	Pending		0.040	0.015	ug/L	1
Endosulfan II	33213-65-9	8081B	Pending		0.040	0.015	ug/L	1
Endosulfan sulfate	1031-07-8	8081B	Pending		0.040	0.015	ug/L	1
Endrin	72-20-8	8081B	Pending		0.040	0.015	ug/L	1
Endrin aldehyde	7421-93-4	8081B	Pending		0.040	0.015	ug/L	1
Endrin ketone	53494-70-5	8081B	Pending		0.040	0.015	ug/L	1
Heptachlor	76-44-8	8081B	Pending		0.040	0.021	ug/L	1
Heptachlor epoxide	1024-57-3	8081B	Pending		0.040	0.016	ug/L	1
Methoxychlor	72-43-5	8081B	Pending		0.16	0.021	ug/L	1
Toxaphene	8001-35-2	8081B	Pending		0.40	0.30	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Decachlorobiphenyl		Pending	120
Tetrachloro-m-xylene		Pending	120

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E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
DL = Detection Limit
J = Estimated result < LOQ and ≥ DL

ICP-MS

Client: **EnSafe**
Description: **AC-01**
Date Sampled: **08/21/2019 1240**
Date Received: **08/21/2019**

Laboratory ID: **UH21084-004**
Matrix: **Aqueous**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		7470A	1	08/24/2019 0836	KSH2	08/23/2019 1250	26841
1	3005A	6020B	1	08/23/2019 1257	BNW	08/22/2019 1920	26746
2	3005A	6020B	10	08/23/2019 1414	BNW	08/22/2019 1920	26746

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Aluminum	**7429-90-5**	**6020B**	**1300**		**40**	**10**	**ug/L**	**1**
Antimony	**7440-36-0**	**6020B**	**27**		**2.0**	**0.50**	**ug/L**	**1**
Arsenic	**7440-38-2**	**6020B**	**300**		**2.0**	**1.3**	**ug/L**	**1**
Barium	**7440-39-3**	**6020B**	**140**		**5.0**	**1.3**	**ug/L**	**1**
Beryllium	7440-41-7	6020B	ND		0.40	0.15	ug/L	1
Cadmium	**7440-43-9**	**6020B**	**0.21**	**J**	**0.50**	**0.13**	**ug/L**	**1**
Calcium	**7440-70-2**	**6020B**	**950000**		**4000**	**1000**	**ug/L**	**2**
Chromium	**7440-47-3**	**6020B**	**110**		**5.0**	**1.3**	**ug/L**	**1**
Cobalt	**7440-48-4**	**6020B**	**2.8**	**J**	**5.0**	**1.3**	**ug/L**	**1**
Copper	**7440-50-8**	**6020B**	**69**		**5.0**	**1.3**	**ug/L**	**1**
Iron	**7439-89-6**	**6020B**	**5600**		**50**	**13**	**ug/L**	**1**
Lead	**7439-92-1**	**6020B**	**8.4**		**1.0**	**0.25**	**ug/L**	**1**
Magnesium	**7439-95-4**	**6020B**	**41000**		**400**	**50**	**ug/L**	**1**
Manganese	**7439-96-5**	**6020B**	**700**		**5.0**	**1.3**	**ug/L**	**1**
Mercury	**7439-97-6**	**7470A**	**0.00016**	**J**	**0.00020**	**0.000091**	**mg/L**	**1**
Nickel	**7440-02-0**	**6020B**	**25**		**5.0**	**1.3**	**ug/L**	**1**
Potassium	**7440-09-7**	**6020B**	**62000**		**400**	**100**	**ug/L**	**1**
Selenium	**7782-49-2**	**6020B**	**4.3**	**J**	**5.0**	**1.3**	**ug/L**	**1**
Silver	7440-22-4	6020B	ND		1.0	0.25	ug/L	1
Sodium	**7440-23-5**	**6020B**	**250000**		**4000**	**1500**	**ug/L**	**2**
Thallium	7440-28-0	6020B	ND		0.50	0.15	ug/L	1
Vanadium	**7440-62-2**	**6020B**	**26**		**5.0**	**2.5**	**ug/L**	**1**
Zinc	**7440-66-6**	**6020B**	**170**	**B**	**10**	**2.5**	**ug/L**	**1**

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Shealy Environmental Services, Inc.
106 Vantage Point Drive West Columbia, SC 29172 (803) 791-9700 Fax (803) 791-9111 www.shealylab.com

Inorganic non-metals

Client: **EnSafe**
Description: **AC 02**
Date Sampled: **08/21/2019 1305**
Date Received: **08/21/2019**

Laboratory ID: **UH21084-005**
Matrix: **Aqueous**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	9012B	(Cyanide - To) 9012B	1	08/23/2019 1904	KFE	08/22/2019 1900	26810

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Cyanide - Total	57-12-5	9012B	ND		20	5.0	ug/L	1

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E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
DL = Detection Limit
J = Estimated result < LOQ and ≥ DL

Library Search

Client: **EnSafe**
Description: **AC 02**
Date Sampled: **08/21/2019 1305**
Date Received: **08/21/2019**

Laboratory ID: **UH21084-005**
Matrix: **Aqueous**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260B	5	08/24/2019 0255	JTH		26933

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Urea		8260B	58				ug/L	1
Unknown		8260B	160				ug/L	1
Methanethiol		8260B	210				ug/L	1
Dimethyl sulfide		8260B	320				ug/L	1
Unknown		8260B	42				ug/L	1
Furan, tetrahydro-		8260B	59				ug/L	1
Bicyclo[2.2.1]heptan-2-one, 1,3,3-trimet		8260B	10				ug/L	1

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E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
DL = Detection Limit
J = Estimated result < LOQ and ≥ DL

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106 Vantage Point Drive West Columbia, SC 29172 (803) 791-9700 Fax (803) 791-9111 www.shealylab.com

Volatile Organic Compounds by GC/MS

Client: **EnSafe**
Description: **AC 02**
Date Sampled: **08/21/2019 1305**
Date Received: **08/21/2019**

Laboratory ID: **UH21084-005**
Matrix: **Aqueous**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260B	5	08/24/2019 0255	JTH		26929
2	5030B	8260B	1				27153

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acetone	**67-64-1**	**8260B**	**280**		**100**	**25**	**ug/L**	**1**
Benzene	**71-43-2**	**8260B**	**48**		**5.0**	**2.0**	**ug/L**	**1**
Bromochloromethane	74-97-5	8260B	ND		5.0	2.0	ug/L	1
Bromodichloromethane	75-27-4	8260B	ND		5.0	2.0	ug/L	1
Bromoform	75-25-2	8260B	ND		5.0	2.0	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260B	ND		10	2.0	ug/L	1
2-Butanone (MEK)	**78-93-3**	**8260B**	**60**		**50**	**10**	**ug/L**	**1**
Carbon disulfide	75-15-0	8260B	Pending		5.0	2.0	ug/L	2
Carbon tetrachloride	56-23-5	8260B	ND		5.0	2.0	ug/L	1
Chlorobenzene	108-90-7	8260B	ND		5.0	2.0	ug/L	1
Chloroethane	75-00-3	8260B	ND		10	2.0	ug/L	1
Chloroform	67-66-3	8260B	ND		5.0	2.0	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260B	ND		5.0	2.5	ug/L	1
Cyclohexane	110-82-7	8260B	ND		5.0	2.0	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260B	ND		5.0	2.0	ug/L	1
Dibromochloromethane	124-48-1	8260B	ND		5.0	2.0	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260B	ND		5.0	2.0	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260B	ND		5.0	2.0	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260B	ND		5.0	2.0	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260B	ND		5.0	2.0	ug/L	1
Dichlorodifluoromethane	75-71-8	8260B	ND		10	3.0	ug/L	1
1,1-Dichloroethane	75-34-3	8260B	ND		5.0	2.0	ug/L	1
1,2-Dichloroethane	107-06-2	8260B	ND		5.0	2.0	ug/L	1
1,1-Dichloroethene	75-35-4	8260B	ND		5.0	2.0	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260B	ND		5.0	2.0	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260B	ND		5.0	2.0	ug/L	1
1,2-Dichloropropane	78-87-5	8260B	ND		5.0	2.0	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260B	ND		5.0	2.0	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260B	ND		5.0	2.0	ug/L	1
Ethylbenzene	**100-41-4**	**8260B**	**9.9**		**5.0**	**2.0**	**ug/L**	**1**
2-Hexanone	591-78-6	8260B	ND		50	10	ug/L	1
Isopropylbenzene	98-82-8	8260B	ND		5.0	2.0	ug/L	1
Methyl acetate	79-20-9	8260B	ND		5.0	2.0	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260B	ND		5.0	2.0	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260B	ND		50	10	ug/L	1
Methylcyclohexane	108-87-2	8260B	ND		25	2.0	ug/L	1
Methylene chloride	75-09-2	8260B	ND		5.0	2.0	ug/L	1
Styrene	100-42-5	8260B	ND		5.0	2.1	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260B	ND		5.0	2.0	ug/L	1
Tetrachloroethene	127-18-4	8260B	ND		5.0	2.0	ug/L	1
Toluene	**108-88-3**	**8260B**	**23**		**5.0**	**2.0**	**ug/L**	**1**
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260B	ND		5.0	2.1	ug/L	1
1,2,3-Trichlorobenzene	87-61-6	8260B	ND		5.0	2.0	ug/L	1

LOQ = Limit of Quantitation
ND = Not detected at or above the DL
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
DL = Detection Limit
J = Estimated result < LOQ and ≥ DL

Volatile Organic Compounds by GC/MS

Client: **EnSafe**
Description: **AC 02**
Date Sampled: **08/21/2019 1305**
Date Received: **08/21/2019**

Laboratory ID: **UH21084-005**
Matrix: **Aqueous**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260B	5	08/24/2019 0255	JTH		26929
2	5030B	8260B	1				27153

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
1,2,4-Trichlorobenzene	120-82-1	8260B	ND		5.0	2.0	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260B	ND		5.0	2.0	ug/L	1
1,1,2-Trichloroethane	79-00-5	8260B	ND		5.0	2.0	ug/L	1
Trichloroethene	79-01-6	8260B	ND		5.0	2.0	ug/L	1
Trichlorofluoromethane	75-69-4	8260B	ND		5.0	2.0	ug/L	1
Vinyl chloride	75-01-4	8260B	ND		5.0	2.0	ug/L	1
m+p - Xylenes	**179601-23-1**	**8260B**	**3.7**	**J**	**5.0**	**2.0**	**ug/L**	**1**
o - Xylenes	**95-47-6**	**8260B**	**2.7**	**J**	**5.0**	**2.0**	**ug/L**	**1**

Surrogate	Q	Run 1 % Recovery	Acceptance Limits	Q	Run 2 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		102	70-130		Pending	70-130
Bromofluorobenzene		99	70-130		Pending	70-130
Toluene-d8		102	70-130		Pending	70-130

LOQ = Limit of Quantitation
ND = Not detected at or above the DL
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
DL = Detection Limit
J = Estimated result < LOQ and ≥ DL

Semivolatile Organic Compounds by GC/MS

Client: **EnSafe**
Description: **AC 02**
Date Sampled: **08/21/2019 1305**
Date Received: **08/21/2019**

Laboratory ID: **UH21084-005**
Matrix: **Aqueous**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3520C	8270D	1			08/25/2019 1649	26966

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acenaphthene	83-32-9	8270D	Pending		0.16	0.040	ug/L	1
Acenaphthylene	208-96-8	8270D	Pending		0.16	0.040	ug/L	1
Acetophenone	98-86-2	8270D	Pending		0.80	0.23	ug/L	1
Anthracene	120-12-7	8270D	Pending		0.16	0.040	ug/L	1
Atrazine	1912-24-9	8270D	Pending		0.80	0.20	ug/L	1
Benzaldehyde	100-52-7	8270D	Pending		4.0	0.27	ug/L	1
Benzo(a)anthracene	56-55-3	8270D	Pending		0.16	0.040	ug/L	1
Benzo(a)pyrene	50-32-8	8270D	Pending		0.16	0.040	ug/L	1
Benzo(b)fluoranthene	205-99-2	8270D	Pending		0.16	0.040	ug/L	1
Benzo(g,h,i)perylene	191-24-2	8270D	Pending		0.16	0.040	ug/L	1
Benzo(k)fluoranthene	207-08-9	8270D	Pending		0.16	0.040	ug/L	1
1,1'-Biphenyl	92-52-4	8270D	Pending		0.80	0.21	ug/L	1
4-Bromophenyl phenyl ether	101-55-3	8270D	Pending		0.80	0.15	ug/L	1
Butyl benzyl phthalate	85-68-7	8270D	Pending		4.0	0.21	ug/L	1
Caprolactam	105-60-2	8270D	Pending		4.0	0.71	ug/L	1
Carbazole	86-74-8	8270D	Pending		0.80	0.040	ug/L	1
bis (2-Chloro-1-methylethyl) ether	108-60-1	8270D	Pending		0.80	0.17	ug/L	1
4-Chloro-3-methyl phenol	59-50-7	8270D	Pending		0.80	0.26	ug/L	1
4-Chloroaniline	106-47-8	8270D	Pending		0.80	0.13	ug/L	1
bis(2-Chloroethoxy)methane	111-91-1	8270D	Pending		0.80	0.060	ug/L	1
bis(2-Chloroethyl)ether	111-44-4	8270D	Pending		0.80	0.16	ug/L	1
2-Chloronaphthalene	91-58-7	8270D	Pending		0.80	0.15	ug/L	1
2-Chlorophenol	95-57-8	8270D	Pending		0.80	0.15	ug/L	1
4-Chlorophenyl phenyl ether	7005-72-3	8270D	Pending		0.80	0.16	ug/L	1
Chrysene	218-01-9	8270D	Pending		0.16	0.040	ug/L	1
Dibenzo(a,h)anthracene	53-70-3	8270D	Pending		0.16	0.040	ug/L	1
Dibenzofuran	132-64-9	8270D	Pending		0.80	0.16	ug/L	1
3,3'-Dichlorobenzidine	91-94-1	8270D	Pending		4.0	0.81	ug/L	1
2,4-Dichlorophenol	120-83-2	8270D	Pending		0.80	0.19	ug/L	1
Diethylphthalate	84-66-2	8270D	Pending		4.0	0.19	ug/L	1
Dimethyl phthalate	131-11-3	8270D	Pending		4.0	0.18	ug/L	1
2,4-Dimethylphenol	105-67-9	8270D	Pending		0.80	0.15	ug/L	1
Di-n-butyl phthalate	84-74-2	8270D	Pending		4.0	0.42	ug/L	1
4,6-Dinitro-2-methylphenol	534-52-1	8270D	Pending		4.0	0.89	ug/L	1
2,4-Dinitrophenol	51-28-5	8270D	Pending		4.0	1.3	ug/L	1
2,4-Dinitrotoluene	121-14-2	8270D	Pending		1.6	0.36	ug/L	1
2,6-Dinitrotoluene	606-20-2	8270D	Pending		1.6	0.34	ug/L	1
Di-n-octylphthalate	117-84-0	8270D	Pending		4.0	0.48	ug/L	1
bis(2-Ethylhexyl)phthalate	117-81-7	8270D	Pending		4.0	0.38	ug/L	1
Fluoranthene	206-44-0	8270D	Pending		0.16	0.040	ug/L	1
Fluorene	86-73-7	8270D	Pending		0.16	0.040	ug/L	1
Hexachlorobenzene	118-74-1	8270D	Pending		0.80	0.15	ug/L	1
Hexachlorobutadiene	87-68-3	8270D	Pending		0.80	0.17	ug/L	1
Hexachlorocyclopentadiene	77-47-4	8270D	Pending		4.0	1.1	ug/L	1

LOQ = Limit of Quantitation
ND = Not detected at or above the DL
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
DL = Detection Limit
J = Estimated result < LOQ and ≥ DL

Semivolatile Organic Compounds by GC/MS

Client: **EnSafe**
Description: **AC 02**
Date Sampled: **08/21/2019 1305**
Date Received: **08/21/2019**

Laboratory ID: **UH21084-005**
Matrix: **Aqueous**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3520C	8270D	1			08/25/2019 1649	26966

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Hexachloroethane	67-72-1	8270D	Pending		0.80	0.17	ug/L	1
Indeno(1,2,3-c,d)pyrene	193-39-5	8270D	Pending		0.16	0.040	ug/L	1
Isophorone	78-59-1	8270D	Pending		0.80	0.22	ug/L	1
2-Methylnaphthalene	91-57-6	8270D	Pending		0.16	0.040	ug/L	1
2-Methylphenol	95-48-7	8270D	Pending		0.80	0.21	ug/L	1
3+4-Methylphenol	106-44-5	8270D	Pending		1.6	0.46	ug/L	1
Naphthalene	91-20-3	8270D	Pending		0.16	0.040	ug/L	1
2-Nitroaniline	88-74-4	8270D	Pending		1.6	0.66	ug/L	1
3-Nitroaniline	99-09-2	8270D	Pending		1.6	0.15	ug/L	1
4-Nitroaniline	100-01-6	8270D	Pending		1.6	1.3	ug/L	1
Nitrobenzene	98-95-3	8270D	Pending		0.80	0.17	ug/L	1
2-Nitrophenol	88-75-5	8270D	Pending		1.6	0.44	ug/L	1
4-Nitrophenol	100-02-7	8270D	Pending		4.0	2.1	ug/L	1
N-Nitrosodi-n-propylamine	621-64-7	8270D	Pending		0.80	0.28	ug/L	1
N-Nitrosodiphenylamine (Diphenylamine)	86-30-6	8270D	Pending		0.80	0.50	ug/L	1
Pentachlorophenol	87-86-5	8270D	Pending		4.0	1.3	ug/L	1
Phenanthrene	85-01-8	8270D	Pending		0.16	0.040	ug/L	1
Phenol	108-95-2	8270D	Pending		0.80	0.19	ug/L	1
Pyrene	129-00-0	8270D	Pending		0.16	0.040	ug/L	1
2,4,5-Trichlorophenol	95-95-4	8270D	Pending		0.80	0.19	ug/L	1
2,4,6-Trichlorophenol	88-06-2	8270D	Pending		0.80	0.22	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
2-Fluorobiphenyl		Pending	130
2-Fluorophenol		Pending	130
Nitrobenzene-d5		Pending	130
Phenol-d5		Pending	130
Terphenyl-d14		Pending	150
2,4,6-Tribromophenol		Pending	140

LOQ = Limit of Quantitation
ND = Not detected at or above the DL
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
DL = Detection Limit
J = Estimated result < LOQ and ≥ DL

Library Search

Client: **EnSafe**
Description: **AC 02**
Date Sampled: **08/21/2019 1305**
Date Received: **08/21/2019**

Laboratory ID: **UH21084-005**
Matrix: **Aqueous**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3520C	8270D	1				

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
TIC 1		8270D	Pending				ug/L	1
TIC 10		8270D	Pending				ug/L	1
TIC 11		8270D	Pending				ug/L	1
TIC 12		8270D	Pending				ug/L	1
TIC 13		8270D	Pending				ug/L	1
TIC 14		8270D	Pending				ug/L	1
TIC 15		8270D	Pending				ug/L	1
TIC 16		8270D	Pending				ug/L	1
TIC 17		8270D	Pending				ug/L	1
TIC 18		8270D	Pending				ug/L	1
TIC 19		8270D	Pending				ug/L	1
TIC 2		8270D	Pending				ug/L	1
TIC 20		8270D	Pending				ug/L	1
TIC 3		8270D	Pending				ug/L	1
TIC 4		8270D	Pending				ug/L	1
TIC 5		8270D	Pending				ug/L	1
TIC 6		8270D	Pending				ug/L	1
TIC 7		8270D	Pending				ug/L	1
TIC 8		8270D	Pending				ug/L	1
TIC 9		8270D	Pending				ug/L	1

LOQ = Limit of Quantitation
ND = Not detected at or above the DL
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
DL = Detection Limit
J = Estimated result < LOQ and ≥ DL

PCBs by GC

Client: **EnSafe**
Description: **AC 02**
Date Sampled: **08/21/2019 1305**
Date Received: **08/21/2019**

Laboratory ID: **UH21084-005**
Matrix: **Aqueous**

Run	Prep Method	Cleanup	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3520C	3660B/3665A	8082A	1			08/25/2019 1649	26969

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Aroclor 1016	12674-11-2	8082A	Pending		0.40	0.15	ug/L	1
Aroclor 1221	11104-28-2	8082A	Pending		0.40	0.25	ug/L	1
Aroclor 1232	11141-16-5	8082A	Pending		0.40	0.15	ug/L	1
Aroclor 1242	53469-21-9	8082A	Pending		0.40	0.15	ug/L	1
Aroclor 1248	12672-29-6	8082A	Pending		0.40	0.15	ug/L	1
Aroclor 1254	11097-69-1	8082A	Pending		0.40	0.15	ug/L	1
Aroclor 1260	11096-82-5	8082A	Pending		0.40	0.15	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Decachlorobiphenyl		Pending	130
Tetrachloro-m-xylene		Pending	120

LOQ = Limit of Quantitation
ND = Not detected at or above the DL
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
DL = Detection Limit
J = Estimated result < LOQ and ≥ DL

Organochlorine Pesticides by GC

Client: **EnSafe**
Description: **AC 02**
Date Sampled: **08/21/2019 1305**
Date Received: **08/21/2019**

Laboratory ID: **UH21084-005**
Matrix: **Aqueous**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3520C	8081B	1			08/25/2019 1649	26968

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Aldrin	309-00-2	8081B	Pending		0.040	0.020	ug/L	1
gamma-BHC (Lindane)	58-89-9	8081B	Pending		0.040	0.017	ug/L	1
alpha-BHC	319-84-6	8081B	Pending		0.040	0.015	ug/L	1
beta-BHC	319-85-7	8081B	Pending		0.040	0.015	ug/L	1
delta-BHC	319-86-8	8081B	Pending		0.040	0.015	ug/L	1
cis-Chlordane	5103-71-9	8081B	Pending		0.040	0.015	ug/L	1
trans-Chlordane	5103-74-2	8081B	Pending		0.040	0.015	ug/L	1
4,4'-DDD	72-54-8	8081B	Pending		0.040	0.015	ug/L	1
4,4'-DDE	72-55-9	8081B	Pending		0.040	0.020	ug/L	1
4,4'-DDT	50-29-3	8081B	Pending		0.040	0.020	ug/L	1
Dieldrin	60-57-1	8081B	Pending		0.040	0.015	ug/L	1
Endosulfan I	959-98-8	8081B	Pending		0.040	0.015	ug/L	1
Endosulfan II	33213-65-9	8081B	Pending		0.040	0.015	ug/L	1
Endosulfan sulfate	1031-07-8	8081B	Pending		0.040	0.015	ug/L	1
Endrin	72-20-8	8081B	Pending		0.040	0.015	ug/L	1
Endrin aldehyde	7421-93-4	8081B	Pending		0.040	0.015	ug/L	1
Endrin ketone	53494-70-5	8081B	Pending		0.040	0.015	ug/L	1
Heptachlor	76-44-8	8081B	Pending		0.040	0.021	ug/L	1
Heptachlor epoxide	1024-57-3	8081B	Pending		0.040	0.016	ug/L	1
Methoxychlor	72-43-5	8081B	Pending		0.16	0.021	ug/L	1
Toxaphene	8001-35-2	8081B	Pending		0.40	0.30	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Decachlorobiphenyl		Pending	120
Tetrachloro-m-xylene		Pending	120

LOQ = Limit of Quantitation
ND = Not detected at or above the DL
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
DL = Detection Limit
J = Estimated result < LOQ and ≥ DL

ICP-MS

Client: **EnSafe**
Description: **AC 02**
Date Sampled: **08/21/2019 1305**
Date Received: **08/21/2019**

Laboratory ID: **UH21084-005**
Matrix: **Aqueous**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		7470A	1	08/24/2019 0844	KSH2	08/23/2019 1250	26841
1	3005A	6020B	1	08/23/2019 1239	BNW	08/22/2019 1920	26746
2	3005A	6020B	10	08/23/2019 1356	BNW	08/22/2019 1920	26746

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Aluminum	**7429-90-5**	**6020B**	**200**		**40**	**10**	**ug/L**	**1**
Antimony	**7440-36-0**	**6020B**	**19**		**2.0**	**0.50**	**ug/L**	**1**
Arsenic	**7440-38-2**	**6020B**	**260**		**2.0**	**1.3**	**ug/L**	**1**
Barium	**7440-39-3**	**6020B**	**130**		**5.0**	**1.3**	**ug/L**	**1**
Beryllium	7440-41-7	6020B	ND		0.40	0.15	ug/L	1
Cadmium	7440-43-9	6020B	ND		0.50	0.13	ug/L	1
Calcium	**7440-70-2**	**6020B**	**860000**		**4000**	**1000**	**ug/L**	**2**
Chromium	**7440-47-3**	**6020B**	**120**		**5.0**	**1.3**	**ug/L**	**1**
Cobalt	**7440-48-4**	**6020B**	**2.5**	**J**	**5.0**	**1.3**	**ug/L**	**1**
Copper	**7440-50-8**	**6020B**	**31**		**5.0**	**1.3**	**ug/L**	**1**
Iron	**7439-89-6**	**6020B**	**4300**		**50**	**13**	**ug/L**	**1**
Lead	**7439-92-1**	**6020B**	**1.2**		**1.0**	**0.25**	**ug/L**	**1**
Magnesium	**7439-95-4**	**6020B**	**46000**		**400**	**50**	**ug/L**	**1**
Manganese	**7439-96-5**	**6020B**	**830**		**5.0**	**1.3**	**ug/L**	**1**
Mercury	7439-97-6	7470A	ND		0.00020	0.000091	mg/L	1
Nickel	**7440-02-0**	**6020B**	**22**		**5.0**	**1.3**	**ug/L**	**1**
Potassium	**7440-09-7**	**6020B**	**67000**		**400**	**100**	**ug/L**	**1**
Selenium	**7782-49-2**	**6020B**	**4.5**	**J**	**5.0**	**1.3**	**ug/L**	**1**
Silver	7440-22-4	6020B	ND		1.0	0.25	ug/L	1
Sodium	**7440-23-5**	**6020B**	**240000**		**4000**	**1500**	**ug/L**	**2**
Thallium	7440-28-0	6020B	ND		0.50	0.15	ug/L	1
Vanadium	**7440-62-2**	**6020B**	**21**		**5.0**	**2.5**	**ug/L**	**1**
Zinc	**7440-66-6**	**6020B**	**56**	**B**	**10**	**2.5**	**ug/L**	**1**

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Inorganic non-metals

Client: **EnSafe**
Description: **AC 02-S**
Date Sampled: **08/21/2019 1310**
Date Received: **08/21/2019**

Laboratory ID: **UH21084-006**
Matrix: **Solid**
% Solids: **53.8** **08/21/2019 2356**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	9012B	(Cyanide - To) 9012B	1				26924

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Cyanide - Total	57-12-5	9012B	Pending		0.50	0.20	mg/kg	1

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Library Search

Client: **EnSafe**
Description: **AC 02-S**
Date Sampled: **08/21/2019 1310**
Date Received: **08/21/2019**

Laboratory ID: **UH21084-006**
Matrix: **Solid**
% Solids: **53.8** **08/21/2019 2356**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5035	8260B	1	08/22/2019 1642	JM1		26806

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Pentane		8260B	4.5				ug/kg	1
Cyclotrisiloxane, hexamethyl-		8260B	5.4				ug/kg	1
Cyclotetrasiloxane, octamethyl-		8260B	8.1				ug/kg	1
Heptane, 2,2,4,6,6-pentamethyl-		8260B	4.7				ug/kg	1
Unknown		8260B	4.4				ug/kg	1
Unknown		8260B	6.9				ug/kg	1
Bicyclo[2.2.1]heptan-2-one, 1,3,3-trimet		8260B	4.5				ug/kg	1

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Volatile Organic Compounds by GC/MS

Client: **EnSafe**
Description: **AC 02-S**
Date Sampled: **08/21/2019 1310**
Date Received: **08/21/2019**

Laboratory ID: **UH21084-006**
Matrix: **Solid**
% Solids: **53.8** **08/21/2019 2356**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch	Sample Wt.(g)
1	5035	8260B	1	08/22/2019 1642	ALR1		26716	5.63

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acetone	**67-64-1**	**8260B**	**550**		**33**	**13**	**ug/kg**	**1**
Benzene	**71-43-2**	**8260B**	**95**		**8.3**	**3.3**	**ug/kg**	**1**
Bromodichloromethane	75-27-4	8260B	ND		8.3	3.3	ug/kg	1
Bromoform	75-25-2	8260B	ND		8.3	3.3	ug/kg	1
Bromomethane (Methyl bromide)	74-83-9	8260B	ND		8.3	5.0	ug/kg	1
2-Butanone (MEK)	**78-93-3**	**8260B**	**62**		**33**	**6.6**	**ug/kg**	**1**
Carbon disulfide	**75-15-0**	**8260B**	**3.4**	**J**	**8.3**	**3.3**	**ug/kg**	**1**
Carbon tetrachloride	56-23-5	8260B	ND		8.3	3.3	ug/kg	1
Chlorobenzene	108-90-7	8260B	ND		8.3	3.3	ug/kg	1
Chloroethane	75-00-3	8260B	ND		8.3	3.3	ug/kg	1
Chloroform	67-66-3	8260B	ND		8.3	3.3	ug/kg	1
Chloromethane (Methyl chloride)	74-87-3	8260B	ND		8.3	5.0	ug/kg	1
Cyclohexane	110-82-7	8260B	ND		8.3	3.3	ug/kg	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260B	ND		8.3	3.3	ug/kg	1
Dibromochloromethane	124-48-1	8260B	ND		8.3	3.3	ug/kg	1
1,2-Dibromoethane (EDB)	106-93-4	8260B	ND		8.3	3.3	ug/kg	1
1,2-Dichlorobenzene	95-50-1	8260B	ND		8.3	3.3	ug/kg	1
1,3-Dichlorobenzene	541-73-1	8260B	ND		8.3	3.3	ug/kg	1
1,4-Dichlorobenzene	106-46-7	8260B	ND		8.3	3.3	ug/kg	1
Dichlorodifluoromethane	75-71-8	8260B	ND		8.3	5.0	ug/kg	1
1,1-Dichloroethane	75-34-3	8260B	ND		8.3	3.3	ug/kg	1
1,2-Dichloroethane	107-06-2	8260B	ND		8.3	3.3	ug/kg	1
1,1-Dichloroethene	75-35-4	8260B	ND		8.3	3.3	ug/kg	1
cis-1,2-Dichloroethene	156-59-2	8260B	ND		8.3	3.3	ug/kg	1
trans-1,2-Dichloroethene	156-60-5	8260B	ND		8.3	3.3	ug/kg	1
1,2-Dichloropropane	78-87-5	8260B	ND		8.3	3.3	ug/kg	1
cis-1,3-Dichloropropene	10061-01-5	8260B	ND		8.3	3.3	ug/kg	1
trans-1,3-Dichloropropene	10061-02-6	8260B	ND		8.3	3.3	ug/kg	1
Ethylbenzene	**100-41-4**	**8260B**	**77**		**8.3**	**3.3**	**ug/kg**	**1**
2-Hexanone	591-78-6	8260B	ND		17	6.6	ug/kg	1
Isopropylbenzene	**98-82-8**	**8260B**	**5.9**	**J**	**8.3**	**3.3**	**ug/kg**	**1**
Methyl acetate	79-20-9	8260B	ND		8.3	3.3	ug/kg	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260B	ND		8.3	3.3	ug/kg	1
4-Methyl-2-pentanone	108-10-1	8260B	ND		17	6.6	ug/kg	1
Methylcyclohexane	108-87-2	8260B	ND		8.3	3.3	ug/kg	1
Methylene chloride	75-09-2	8260B	ND		8.3	3.3	ug/kg	1
Styrene	100-42-5	8260B	ND		8.3	3.3	ug/kg	1
1,1,2,2-Tetrachloroethane	79-34-5	8260B	ND		8.3	3.3	ug/kg	1
Tetrachloroethene	127-18-4	8260B	ND		8.3	3.3	ug/kg	1
Toluene	**108-88-3**	**8260B**	**39**		**8.3**	**3.3**	**ug/kg**	**1**
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260B	ND		8.3	3.3	ug/kg	1
1,2,4-Trichlorobenzene	120-82-1	8260B	ND		8.3	3.3	ug/kg	1
1,1,1-Trichloroethane	71-55-6	8260B	ND		8.3	3.3	ug/kg	1
1,1,2-Trichloroethane	79-00-5	8260B	ND		8.3	3.3	ug/kg	1

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Shealy Environmental Services, Inc.
106 Vantage Point Drive West Columbia, SC 29172 (803) 791-9700 Fax (803) 791-9111 www.shealylab.com

Volatile Organic Compounds by GC/MS

Client: **EnSafe**
Description: **AC 02-S**
Date Sampled: **08/21/2019 1310**
Date Received: **08/21/2019**

Laboratory ID: **UH21084-006**
Matrix: **Solid**
% Solids: **53.8** **08/21/2019 2356**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch	Sample Wt.(g)
1	5035	8260B	1	08/22/2019 1642	ALR1		26716	5.63

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Trichloroethene	79-01-6	8260B	ND		8.3	3.3	ug/kg	1
Trichlorofluoromethane	75-69-4	8260B	ND		8.3	3.3	ug/kg	1
Vinyl chloride	75-01-4	8260B	ND		8.3	5.0	ug/kg	1
Xylenes (total)	**1330-20-7**	**8260B**	**39**		**17**	**6.6**	**ug/kg**	**1**

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		107	53-142
Bromofluorobenzene		82	47-138
Toluene-d8	N	143	68-124

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Library Search

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Laboratory ID: **UH21084-006**
Matrix: **Solid**
% Solids: **53.8** **08/21/2019 2356**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3546	8270D	1				

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
TIC 1		8270D	Pending				ug/kg	1
TIC 10		8270D	Pending				ug/kg	1
TIC 11		8270D	Pending				ug/kg	1
TIC 12		8270D	Pending				ug/kg	1
TIC 13		8270D	Pending				ug/kg	1
TIC 14		8270D	Pending				ug/kg	1
TIC 15		8270D	Pending				ug/kg	1
TIC 16		8270D	Pending				ug/kg	1
TIC 17		8270D	Pending				ug/kg	1
TIC 18		8270D	Pending				ug/kg	1
TIC 19		8270D	Pending				ug/kg	1
TIC 2		8270D	Pending				ug/kg	1
TIC 20		8270D	Pending				ug/kg	1
TIC 3		8270D	Pending				ug/kg	1
TIC 4		8270D	Pending				ug/kg	1
TIC 5		8270D	Pending				ug/kg	1
TIC 6		8270D	Pending				ug/kg	1
TIC 7		8270D	Pending				ug/kg	1
TIC 8		8270D	Pending				ug/kg	1
TIC 9		8270D	Pending				ug/kg	1

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Semivolatile Organic Compounds by GC/MS

Client: **EnSafe**
Description: **AC 02-S**
Date Sampled: **08/21/2019 1310**
Date Received: **08/21/2019**

Laboratory ID: **UH21084-006**
Matrix: **Solid**
% Solids: **53.8** **08/21/2019 2356**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3546	8270D	1			08/23/2019 1309	26872

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acenaphthene	83-32-9	8270D	Pending		2.7	0.83	ug/kg	1
Acenaphthylene	208-96-8	8270D	Pending		2.7	0.95	ug/kg	1
Acetophenone	98-86-2	8270D	Pending		13	5.0	ug/kg	1
Anthracene	120-12-7	8270D	Pending		2.7	0.51	ug/kg	1
Atrazine	1912-24-9	8270D	Pending		13	5.0	ug/kg	1
Benzaldehyde	100-52-7	8270D	Pending		13	5.0	ug/kg	1
Benzo(a)anthracene	56-55-3	8270D	Pending		2.7	0.59	ug/kg	1
Benzo(a)pyrene	50-32-8	8270D	Pending		2.7	0.66	ug/kg	1
Benzo(b)fluoranthene	205-99-2	8270D	Pending		2.7	0.50	ug/kg	1
Benzo(g,h,i)perylene	191-24-2	8270D	Pending		2.7	0.65	ug/kg	1
Benzo(k)fluoranthene	207-08-9	8270D	Pending		2.7	0.48	ug/kg	1
1,1'-Biphenyl	92-52-4	8270D	Pending		13	5.0	ug/kg	1
4-Bromophenyl phenyl ether	101-55-3	8270D	Pending		13	5.0	ug/kg	1
Butyl benzyl phthalate	85-68-7	8270D	Pending		13	5.0	ug/kg	1
Caprolactam	105-60-2	8270D	Pending		13	5.0	ug/kg	1
Carbazole	86-74-8	8270D	Pending		13	5.0	ug/kg	1
bis (2-Chloro-1-methylethyl) ether	108-60-1	8270D	Pending		13	5.0	ug/kg	1
4-Chloro-3-methyl phenol	59-50-7	8270D	Pending		13	5.0	ug/kg	1
4-Chloroaniline	106-47-8	8270D	Pending		13	5.0	ug/kg	1
bis(2-Chloroethoxy)methane	111-91-1	8270D	Pending		13	5.0	ug/kg	1
bis(2-Chloroethyl)ether	111-44-4	8270D	Pending		13	5.0	ug/kg	1
2-Chloronaphthalene	91-58-7	8270D	Pending		13	5.0	ug/kg	1
2-Chlorophenol	95-57-8	8270D	Pending		13	5.0	ug/kg	1
4-Chlorophenyl phenyl ether	7005-72-3	8270D	Pending		13	5.0	ug/kg	1
Chrysene	218-01-9	8270D	Pending		2.7	0.45	ug/kg	1
Dibenzo(a,h)anthracene	53-70-3	8270D	Pending		2.7	0.51	ug/kg	1
Dibenzofuran	132-64-9	8270D	Pending		13	5.0	ug/kg	1
3,3'-Dichlorobenzidine	91-94-1	8270D	Pending		13	5.0	ug/kg	1
2,4-Dichlorophenol	120-83-2	8270D	Pending		13	5.0	ug/kg	1
Diethylphthalate	84-66-2	8270D	Pending		13	5.0	ug/kg	1
Dimethyl phthalate	131-11-3	8270D	Pending		13	7.4	ug/kg	1
2,4-Dimethylphenol	105-67-9	8270D	Pending		13	5.0	ug/kg	1
Di-n-butyl phthalate	84-74-2	8270D	Pending		13	5.0	ug/kg	1
4,6-Dinitro-2-methylphenol	534-52-1	8270D	Pending		67	25	ug/kg	1
2,4-Dinitrophenol	51-28-5	8270D	Pending		67	25	ug/kg	1
2,4-Dinitrotoluene	121-14-2	8270D	Pending		27	10	ug/kg	1
2,6-Dinitrotoluene	606-20-2	8270D	Pending		27	10	ug/kg	1
Di-n-octylphthalate	117-84-0	8270D	Pending		13	5.0	ug/kg	1
bis(2-Ethylhexyl)phthalate	117-81-7	8270D	Pending		67	25	ug/kg	1
Fluoranthene	206-44-0	8270D	Pending		2.7	0.42	ug/kg	1
Fluorene	86-73-7	8270D	Pending		2.7	0.57	ug/kg	1
Hexachlorobenzene	118-74-1	8270D	Pending		13	5.0	ug/kg	1
Hexachlorobutadiene	87-68-3	8270D	Pending		13	5.0	ug/kg	1
Hexachlorocyclopentadiene	77-47-4	8270D	Pending		67	25	ug/kg	1

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Semivolatile Organic Compounds by GC/MS

Client: **EnSafe**
Description: **AC 02-S**
Date Sampled: **08/21/2019 1310**
Date Received: **08/21/2019**

Laboratory ID: **UH21084-006**
Matrix: **Solid**
% Solids: **53.8** **08/21/2019 2356**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3546	8270D	1			08/23/2019 1309	26872

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Hexachloroethane	67-72-1	8270D	Pending		13	5.0	ug/kg	1
Indeno(1,2,3-c,d)pyrene	193-39-5	8270D	Pending		2.7	1.0	ug/kg	1
Isophorone	78-59-1	8270D	Pending		13	5.0	ug/kg	1
2-Methylnaphthalene	91-57-6	8270D	Pending		2.7	0.99	ug/kg	1
2-Methylphenol	95-48-7	8270D	Pending		13	5.0	ug/kg	1
3+4-Methylphenol	106-44-5	8270D	Pending		27	10	ug/kg	1
Naphthalene	91-20-3	8270D	Pending		2.7	0.97	ug/kg	1
2-Nitroaniline	88-74-4	8270D	Pending		27	10	ug/kg	1
3-Nitroaniline	99-09-2	8270D	Pending		27	10	ug/kg	1
4-Nitroaniline	100-01-6	8270D	Pending		27	10	ug/kg	1
Nitrobenzene	98-95-3	8270D	Pending		13	5.0	ug/kg	1
2-Nitrophenol	88-75-5	8270D	Pending		27	10	ug/kg	1
4-Nitrophenol	100-02-7	8270D	Pending		67	25	ug/kg	1
N-Nitrosodi-n-propylamine	621-64-7	8270D	Pending		13	5.0	ug/kg	1
N-Nitrosodiphenylamine (Diphenylamine)	86-30-6	8270D	Pending		13	5.0	ug/kg	1
Pentachlorophenol	87-86-5	8270D	Pending		67	25	ug/kg	1
Phenanthrene	85-01-8	8270D	Pending		2.7	0.72	ug/kg	1
Phenol	108-95-2	8270D	Pending		13	5.0	ug/kg	1
Pyrene	129-00-0	8270D	Pending		2.7	0.50	ug/kg	1
2,4,5-Trichlorophenol	95-95-4	8270D	Pending		13	5.0	ug/kg	1
2,4,6-Trichlorophenol	88-06-2	8270D	Pending		13	5.0	ug/kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
2-Fluorobiphenyl		Pending	100
2-Fluorophenol		Pending	120
Nitrobenzene-d5		Pending	110
Phenol-d5		Pending	120
Terphenyl-d14		Pending	120
2,4,6-Tribromophenol		Pending	120

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PCBs by GC

Client: **EnSafe**
Description: **AC 02-S**
Date Sampled: **08/21/2019 1310**
Date Received: **08/21/2019**

Laboratory ID: **UH21084-006**
Matrix: **Solid**
% Solids: **53.8** **08/21/2019 2356**

Run	Prep Method	Cleanup	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3546	3660B/3665A	8082A	10	08/23/2019 1226	CHG	08/22/2019 2132	26812

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Aroclor 1016	12674-11-2	8082A	ND		180	48	ug/kg	1
Aroclor 1221	11104-28-2	8082A	ND		180	41	ug/kg	1
Aroclor 1232	11141-16-5	8082A	ND		180	37	ug/kg	1
Aroclor 1242	53469-21-9	8082A	ND		180	27	ug/kg	1
Aroclor 1248	12672-29-6	8082A	ND		180	72	ug/kg	1
Aroclor 1254	11097-69-1	8082A	ND		180	44	ug/kg	1
Aroclor 1260	11096-82-5	8082A	ND		180	43	ug/kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Decachlorobiphenyl	N	143	41-132
Tetrachloro-m-xylene	N	114	35-106

LOQ = Limit of Quantitation
ND = Not detected at or above the DL
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
DL = Detection Limit
J = Estimated result < LOQ and ≥ DL

Organochlorine Pesticides by GC

Client: **EnSafe**
Description: **AC 02-S**
Date Sampled: **08/21/2019 1310**
Date Received: **08/21/2019**

Laboratory ID: **UH21084-006**
Matrix: **Solid**
% Solids: **53.8** **08/21/2019 2356**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3546	8081B	500	08/27/2019 0338	DAL1	08/22/2019 2132	26813

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Aldrin	309-00-2	8081B	ND		880	110	ug/kg	1
gamma-BHC (Lindane)	58-89-9	8081B	ND		880	180	ug/kg	1
alpha-BHC	319-84-6	8081B	ND		880	110	ug/kg	1
beta-BHC	319-85-7	8081B	ND		880	230	ug/kg	1
delta-BHC	319-86-8	8081B	ND		880	180	ug/kg	1
Chlordane	57-74-9	8081B	ND		1800	810	ug/kg	1
cis-Chlordane	5103-71-9	8081B	ND		880	190	ug/kg	1
trans-Chlordane	5103-74-2	8081B	ND		880	120	ug/kg	1
4,4'-DDD	72-54-8	8081B	ND		880	160	ug/kg	1
4,4'-DDE	72-55-9	8081B	ND		880	120	ug/kg	1
4,4'-DDT	50-29-3	8081B	ND		880	130	ug/kg	1
Dieldrin	60-57-1	8081B	ND		880	120	ug/kg	1
Endosulfan I	959-98-8	8081B	ND		880	170	ug/kg	1
Endosulfan II	33213-65-9	8081B	ND		880	230	ug/kg	1
Endosulfan sulfate	1031-07-8	8081B	ND		880	180	ug/kg	1
Endrin	72-20-8	8081B	ND		880	200	ug/kg	1
Endrin aldehyde	7421-93-4	8081B	ND		880	120	ug/kg	1
Endrin ketone	53494-70-5	8081B	ND		880	140	ug/kg	1
Heptachlor	76-44-8	8081B	ND		880	120	ug/kg	1
Heptachlor epoxide	1024-57-3	8081B	ND		880	140	ug/kg	1
Methoxychlor	72-43-5	8081B	ND		3500	170	ug/kg	1
Toxaphene	8001-35-2	8081B	ND		8800	3100	ug/kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Decachlorobiphenyl	N	0.00	57-110
Tetrachloro-m-xylene	N	0.00	39-116

LOQ = Limit of Quantitation
ND = Not detected at or above the DL
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
DL = Detection Limit
J = Estimated result < LOQ and ≥ DL

ICP-MS

Client: **EnSafe**
Description: **AC 02-S**
Date Sampled: **08/21/2019 1310**
Date Received: **08/21/2019**

Laboratory ID: **UH21084-006**
Matrix: **Solid**
% Solids: **53.8** **08/21/2019 2356**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3050B	6020B	1	08/26/2019 2228	BNW	08/26/2019 1012	26960
1	7471B	7471B	1	08/23/2019 1101	KSH2	08/22/2019 1502	26730

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Aluminum	**7429-90-5**	**6020B**	**10000**		**15**	**3.8**	**mg/kg**	**1**
Antimony	**7440-36-0**	**6020B**	**0.53**	**BJ**	**0.76**	**0.30**	**mg/kg**	**1**
Arsenic	**7440-38-2**	**6020B**	**9.5**		**0.76**	**0.30**	**mg/kg**	**1**
Barium	**7440-39-3**	**6020B**	**56**		**1.9**	**0.47**	**mg/kg**	**1**
Beryllium	**7440-41-7**	**6020B**	**0.10**	**J**	**0.15**	**0.051**	**mg/kg**	**1**
Cadmium	**7440-43-9**	**6020B**	**0.20**		**0.20**	**0.038**	**mg/kg**	**1**
Calcium	**7440-70-2**	**6020B**	**19000**		**150**	**45**	**mg/kg**	**1**
Chromium	**7440-47-3**	**6020B**	**20**		**1.9**	**0.84**	**mg/kg**	**1**
Cobalt	**7440-48-4**	**6020B**	**3.4**		**1.9**	**0.45**	**mg/kg**	**1**
Copper	**7440-50-8**	**6020B**	**31**		**1.9**	**0.49**	**mg/kg**	**1**
Iron	**7439-89-6**	**6020B**	**14000**		**20**	**3.8**	**mg/kg**	**1**
Lead	**7439-92-1**	**6020B**	**24**		**0.38**	**0.10**	**mg/kg**	**1**
Magnesium	**7439-95-4**	**6020B**	**2500**		**150**	**38**	**mg/kg**	**1**
Manganese	**7439-96-5**	**6020B**	**150**		**1.9**	**0.55**	**mg/kg**	**1**
Mercury	7439-97-6	7471B	ND		0.15	0.036	mg/kg	1
Nickel	**7440-02-0**	**6020B**	**9.9**		**1.9**	**0.45**	**mg/kg**	**1**
Potassium	**7440-09-7**	**6020B**	**1100**	**B**	**150**	**38**	**mg/kg**	**1**
Selenium	7782-49-2	6020B	ND		1.9	0.71	mg/kg	1
Silver	7440-22-4	6020B	ND		0.38	0.091	mg/kg	1
Sodium	**7440-23-5**	**6020B**	**270**		**150**	**55**	**mg/kg**	**1**
Thallium	**7440-28-0**	**6020B**	**0.12**	**J**	**0.19**	**0.045**	**mg/kg**	**1**
Vanadium	**7440-62-2**	**6020B**	**46**		**1.9**	**0.38**	**mg/kg**	**1**
Zinc	**7440-66-6**	**6020B**	**150**		**3.8**	**0.76**	**mg/kg**	**1**

LOQ = Limit of Quantitation
ND = Not detected at or above the DL
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
DL = Detection Limit
J = Estimated result < LOQ and ≥ DL

Inorganic non-metals

Client: **EnSafe**
Description: **AC 03**
Date Sampled: **08/21/2019 1345**
Date Received: **08/21/2019**

Laboratory ID: **UH21084-007**
Matrix: **Aqueous**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	9012B	(Cyanide - To) 9012B	1	08/23/2019 1906	KFE	08/22/2019 1900	26810

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Cyanide - Total	57-12-5	9012B	ND		20	5.0	ug/L	1

LOQ = Limit of Quantitation
ND = Not detected at or above the DL
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
DL = Detection Limit
J = Estimated result < LOQ and ≥ DL

Library Search

Client: **EnSafe**
Description: **AC 03**
Date Sampled: **08/21/2019 1345**
Date Received: **08/21/2019**

Laboratory ID: **UH21084-007**
Matrix: **Aqueous**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260B	1				26933

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
None Detected		**8260B**					**ug/L**	**1**

LOQ = Limit of Quantitation
ND = Not detected at or above the DL
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
DL = Detection Limit
J = Estimated result < LOQ and ≥ DL

Volatile Organic Compounds by GC/MS

Client: **EnSafe**
Description: **AC 03**
Date Sampled: **08/21/2019 1345**
Date Received: **08/21/2019**

Laboratory ID: **UH21084-007**
Matrix: **Aqueous**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260B	5	08/24/2019 0318	JTH		26929
2	5030B	8260B	1				27153

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acetone	**67-64-1**	**8260B**	**82**	**J**	**100**	**25**	**ug/L**	**1**
Benzene	**71-43-2**	**8260B**	**9.9**		**5.0**	**2.0**	**ug/L**	**1**
Bromochloromethane	74-97-5	8260B	ND		5.0	2.0	ug/L	1
Bromodichloromethane	75-27-4	8260B	ND		5.0	2.0	ug/L	1
Bromoform	75-25-2	8260B	ND		5.0	2.0	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260B	ND		10	2.0	ug/L	1
2-Butanone (MEK)	**78-93-3**	**8260B**	**17**	**J**	**50**	**10**	**ug/L**	**1**
Carbon disulfide	75-15-0	8260B	Pending		5.0	2.0	ug/L	2
Carbon tetrachloride	56-23-5	8260B	ND		5.0	2.0	ug/L	1
Chlorobenzene	108-90-7	8260B	ND		5.0	2.0	ug/L	1
Chloroethane	75-00-3	8260B	ND		10	2.0	ug/L	1
Chloroform	67-66-3	8260B	ND		5.0	2.0	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260B	ND		5.0	2.5	ug/L	1
Cyclohexane	110-82-7	8260B	ND		5.0	2.0	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260B	ND		5.0	2.0	ug/L	1
Dibromochloromethane	124-48-1	8260B	ND		5.0	2.0	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260B	ND		5.0	2.0	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260B	ND		5.0	2.0	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260B	ND		5.0	2.0	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260B	ND		5.0	2.0	ug/L	1
Dichlorodifluoromethane	75-71-8	8260B	ND		10	3.0	ug/L	1
1,1-Dichloroethane	75-34-3	8260B	ND		5.0	2.0	ug/L	1
1,2-Dichloroethane	107-06-2	8260B	ND		5.0	2.0	ug/L	1
1,1-Dichloroethene	75-35-4	8260B	ND		5.0	2.0	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260B	ND		5.0	2.0	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260B	ND		5.0	2.0	ug/L	1
1,2-Dichloropropane	78-87-5	8260B	ND		5.0	2.0	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260B	ND		5.0	2.0	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260B	ND		5.0	2.0	ug/L	1
Ethylbenzene	**100-41-4**	**8260B**	**4.2**	**J**	**5.0**	**2.0**	**ug/L**	**1**
2-Hexanone	591-78-6	8260B	ND		50	10	ug/L	1
Isopropylbenzene	98-82-8	8260B	ND		5.0	2.0	ug/L	1
Methyl acetate	79-20-9	8260B	ND		5.0	2.0	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260B	ND		5.0	2.0	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260B	ND		50	10	ug/L	1
Methylcyclohexane	108-87-2	8260B	ND		25	2.0	ug/L	1
Methylene chloride	75-09-2	8260B	ND		5.0	2.0	ug/L	1
Styrene	100-42-5	8260B	ND		5.0	2.1	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260B	ND		5.0	2.0	ug/L	1
Tetrachloroethene	127-18-4	8260B	ND		5.0	2.0	ug/L	1
Toluene	**108-88-3**	**8260B**	**6.2**		**5.0**	**2.0**	**ug/L**	**1**
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260B	ND		5.0	2.1	ug/L	1
1,2,3-Trichlorobenzene	87-61-6	8260B	ND		5.0	2.0	ug/L	1

LOQ = Limit of Quantitation
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E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
DL = Detection Limit
J = Estimated result < LOQ and ≥ DL

Shealy Environmental Services, Inc.
106 Vantage Point Drive West Columbia, SC 29172 (803) 791-9700 Fax (803) 791-9111 www.shealylab.com

Volatile Organic Compounds by GC/MS

Client: **EnSafe**
Description: **AC 03**
Date Sampled: **08/21/2019 1345**
Date Received: **08/21/2019**

Laboratory ID: **UH21084-007**
Matrix: **Aqueous**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260B	5	08/24/2019 0318	JTH		26929
2	5030B	8260B	1				27153

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
1,2,4-Trichlorobenzene	120-82-1	8260B	ND		5.0	2.0	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260B	ND		5.0	2.0	ug/L	1
1,1,2-Trichloroethane	79-00-5	8260B	ND		5.0	2.0	ug/L	1
Trichloroethene	79-01-6	8260B	ND		5.0	2.0	ug/L	1
Trichlorofluoromethane	75-69-4	8260B	ND		5.0	2.0	ug/L	1
Vinyl chloride	75-01-4	8260B	ND		5.0	2.0	ug/L	1
m+p - Xylenes	179601-23-1	8260B	ND		5.0	2.0	ug/L	1
o - Xylenes	95-47-6	8260B	ND		5.0	2.0	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits	Q	Run 2 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		100	70-130		Pending	70-130
Bromofluorobenzene		94	70-130		Pending	70-130
Toluene-d8		98	70-130		Pending	70-130

LOQ = Limit of Quantitation
ND = Not detected at or above the DL
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
DL = Detection Limit
J = Estimated result < LOQ and ≥ DL

Semivolatile Organic Compounds by GC/MS

Client: **EnSafe**
Description: **AC 03**
Date Sampled: **08/21/2019 1345**
Date Received: **08/21/2019**

Laboratory ID: **UH21084-007**
Matrix: **Aqueous**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3520C	8270D	1			08/25/2019 1649	26966

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acenaphthene	83-32-9	8270D	Pending		0.16	0.040	ug/L	1
Acenaphthylene	208-96-8	8270D	Pending		0.16	0.040	ug/L	1
Acetophenone	98-86-2	8270D	Pending		0.80	0.23	ug/L	1
Anthracene	120-12-7	8270D	Pending		0.16	0.040	ug/L	1
Atrazine	1912-24-9	8270D	Pending		0.80	0.20	ug/L	1
Benzaldehyde	100-52-7	8270D	Pending		4.0	0.27	ug/L	1
Benzo(a)anthracene	56-55-3	8270D	Pending		0.16	0.040	ug/L	1
Benzo(a)pyrene	50-32-8	8270D	Pending		0.16	0.040	ug/L	1
Benzo(b)fluoranthene	205-99-2	8270D	Pending		0.16	0.040	ug/L	1
Benzo(g,h,i)perylene	191-24-2	8270D	Pending		0.16	0.040	ug/L	1
Benzo(k)fluoranthene	207-08-9	8270D	Pending		0.16	0.040	ug/L	1
1,1'-Biphenyl	92-52-4	8270D	Pending		0.80	0.21	ug/L	1
4-Bromophenyl phenyl ether	101-55-3	8270D	Pending		0.80	0.15	ug/L	1
Butyl benzyl phthalate	85-68-7	8270D	Pending		4.0	0.21	ug/L	1
Caprolactam	105-60-2	8270D	Pending		4.0	0.71	ug/L	1
Carbazole	86-74-8	8270D	Pending		0.80	0.040	ug/L	1
bis (2-Chloro-1-methylethyl) ether	108-60-1	8270D	Pending		0.80	0.17	ug/L	1
4-Chloro-3-methyl phenol	59-50-7	8270D	Pending		0.80	0.26	ug/L	1
4-Chloroaniline	106-47-8	8270D	Pending		0.80	0.13	ug/L	1
bis(2-Chloroethoxy)methane	111-91-1	8270D	Pending		0.80	0.060	ug/L	1
bis(2-Chloroethyl)ether	111-44-4	8270D	Pending		0.80	0.16	ug/L	1
2-Chloronaphthalene	91-58-7	8270D	Pending		0.80	0.15	ug/L	1
2-Chlorophenol	95-57-8	8270D	Pending		0.80	0.15	ug/L	1
4-Chlorophenyl phenyl ether	7005-72-3	8270D	Pending		0.80	0.16	ug/L	1
Chrysene	218-01-9	8270D	Pending		0.16	0.040	ug/L	1
Dibenzo(a,h)anthracene	53-70-3	8270D	Pending		0.16	0.040	ug/L	1
Dibenzofuran	132-64-9	8270D	Pending		0.80	0.16	ug/L	1
3,3'-Dichlorobenzidine	91-94-1	8270D	Pending		4.0	0.81	ug/L	1
2,4-Dichlorophenol	120-83-2	8270D	Pending		0.80	0.19	ug/L	1
Diethylphthalate	84-66-2	8270D	Pending		4.0	0.19	ug/L	1
Dimethyl phthalate	131-11-3	8270D	Pending		4.0	0.18	ug/L	1
2,4-Dimethylphenol	105-67-9	8270D	Pending		0.80	0.15	ug/L	1
Di-n-butyl phthalate	84-74-2	8270D	Pending		4.0	0.42	ug/L	1
4,6-Dinitro-2-methylphenol	534-52-1	8270D	Pending		4.0	0.89	ug/L	1
2,4-Dinitrophenol	51-28-5	8270D	Pending		4.0	1.3	ug/L	1
2,4-Dinitrotoluene	121-14-2	8270D	Pending		1.6	0.36	ug/L	1
2,6-Dinitrotoluene	606-20-2	8270D	Pending		1.6	0.34	ug/L	1
Di-n-octylphthalate	117-84-0	8270D	Pending		4.0	0.48	ug/L	1
bis(2-Ethylhexyl)phthalate	117-81-7	8270D	Pending		4.0	0.38	ug/L	1
Fluoranthene	206-44-0	8270D	Pending		0.16	0.040	ug/L	1
Fluorene	86-73-7	8270D	Pending		0.16	0.040	ug/L	1
Hexachlorobenzene	118-74-1	8270D	Pending		0.80	0.15	ug/L	1
Hexachlorobutadiene	87-68-3	8270D	Pending		0.80	0.17	ug/L	1
Hexachlorocyclopentadiene	77-47-4	8270D	Pending		4.0	1.1	ug/L	1

LOQ = Limit of Quantitation
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E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
DL = Detection Limit
J = Estimated result < LOQ and ≥ DL

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Semivolatile Organic Compounds by GC/MS

Client: **EnSafe**
Description: **AC 03**
Date Sampled: **08/21/2019 1345**
Date Received: **08/21/2019**

Laboratory ID: **UH21084-007**
Matrix: **Aqueous**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3520C	8270D	1			08/25/2019 1649	26966

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Hexachloroethane	67-72-1	8270D	Pending		0.80	0.17	ug/L	1
Indeno(1,2,3-c,d)pyrene	193-39-5	8270D	Pending		0.16	0.040	ug/L	1
Isophorone	78-59-1	8270D	Pending		0.80	0.22	ug/L	1
2-Methylnaphthalene	91-57-6	8270D	Pending		0.16	0.040	ug/L	1
2-Methylphenol	95-48-7	8270D	Pending		0.80	0.21	ug/L	1
3+4-Methylphenol	106-44-5	8270D	Pending		1.6	0.46	ug/L	1
Naphthalene	91-20-3	8270D	Pending		0.16	0.040	ug/L	1
2-Nitroaniline	88-74-4	8270D	Pending		1.6	0.66	ug/L	1
3-Nitroaniline	99-09-2	8270D	Pending		1.6	0.15	ug/L	1
4-Nitroaniline	100-01-6	8270D	Pending		1.6	1.3	ug/L	1
Nitrobenzene	98-95-3	8270D	Pending		0.80	0.17	ug/L	1
2-Nitrophenol	88-75-5	8270D	Pending		1.6	0.44	ug/L	1
4-Nitrophenol	100-02-7	8270D	Pending		4.0	2.1	ug/L	1
N-Nitrosodi-n-propylamine	621-64-7	8270D	Pending		0.80	0.28	ug/L	1
N-Nitrosodiphenylamine (Diphenylamine)	86-30-6	8270D	Pending		0.80	0.50	ug/L	1
Pentachlorophenol	87-86-5	8270D	Pending		4.0	1.3	ug/L	1
Phenanthrene	85-01-8	8270D	Pending		0.16	0.040	ug/L	1
Phenol	108-95-2	8270D	Pending		0.80	0.19	ug/L	1
Pyrene	129-00-0	8270D	Pending		0.16	0.040	ug/L	1
2,4,5-Trichlorophenol	95-95-4	8270D	Pending		0.80	0.19	ug/L	1
2,4,6-Trichlorophenol	88-06-2	8270D	Pending		0.80	0.22	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
2-Fluorobiphenyl		Pending	130
2-Fluorophenol		Pending	130
Nitrobenzene-d5		Pending	130
Phenol-d5		Pending	130
Terphenyl-d14		Pending	150
2,4,6-Tribromophenol		Pending	140

LOQ = Limit of Quantitation
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E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
DL = Detection Limit
J = Estimated result < LOQ and ≥ DL

Library Search

Client: **EnSafe**
Description: **AC 03**
Date Sampled: **08/21/2019 1345**
Date Received: **08/21/2019**

Laboratory ID: **UH21084-007**
Matrix: **Aqueous**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3520C	8270D	1				

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
TIC 1		8270D	Pending				ug/L	1
TIC 10		8270D	Pending				ug/L	1
TIC 11		8270D	Pending				ug/L	1
TIC 12		8270D	Pending				ug/L	1
TIC 13		8270D	Pending				ug/L	1
TIC 14		8270D	Pending				ug/L	1
TIC 15		8270D	Pending				ug/L	1
TIC 16		8270D	Pending				ug/L	1
TIC 17		8270D	Pending				ug/L	1
TIC 18		8270D	Pending				ug/L	1
TIC 19		8270D	Pending				ug/L	1
TIC 2		8270D	Pending				ug/L	1
TIC 20		8270D	Pending				ug/L	1
TIC 3		8270D	Pending				ug/L	1
TIC 4		8270D	Pending				ug/L	1
TIC 5		8270D	Pending				ug/L	1
TIC 6		8270D	Pending				ug/L	1
TIC 7		8270D	Pending				ug/L	1
TIC 8		8270D	Pending				ug/L	1
TIC 9		8270D	Pending				ug/L	1

LOQ = Limit of Quantitation
ND = Not detected at or above the DL
H = Out of holding time
B = Detected in the method blank
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W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
DL = Detection Limit
J = Estimated result < LOQ and ≥ DL

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PCBs by GC

Client: **EnSafe**
Description: **AC 03**
Date Sampled: **08/21/2019 1345**
Date Received: **08/21/2019**

Laboratory ID: **UH21084-007**
Matrix: **Aqueous**

Run	Prep Method	Cleanup	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3520C	3660B/3665A	8082A	1			08/25/2019 1649	26969

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Aroclor 1016	12674-11-2	8082A	Pending		0.40	0.15	ug/L	1
Aroclor 1221	11104-28-2	8082A	Pending		0.40	0.25	ug/L	1
Aroclor 1232	11141-16-5	8082A	Pending		0.40	0.15	ug/L	1
Aroclor 1242	53469-21-9	8082A	Pending		0.40	0.15	ug/L	1
Aroclor 1248	12672-29-6	8082A	Pending		0.40	0.15	ug/L	1
Aroclor 1254	11097-69-1	8082A	Pending		0.40	0.15	ug/L	1
Aroclor 1260	11096-82-5	8082A	Pending		0.40	0.15	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Decachlorobiphenyl		Pending	130
Tetrachloro-m-xylene		Pending	120

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P = The RPD between two GC columns exceeds 40%
DL = Detection Limit
J = Estimated result < LOQ and ≥ DL

Organochlorine Pesticides by GC

Client: **EnSafe**
Description: **AC 03**
Date Sampled: **08/21/2019 1345**
Date Received: **08/21/2019**

Laboratory ID: **UH21084-007**
Matrix: **Aqueous**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3520C	8081B	1			08/25/2019 1649	26968

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Aldrin	309-00-2	8081B	Pending		0.040	0.020	ug/L	1
gamma-BHC (Lindane)	58-89-9	8081B	Pending		0.040	0.017	ug/L	1
alpha-BHC	319-84-6	8081B	Pending		0.040	0.015	ug/L	1
beta-BHC	319-85-7	8081B	Pending		0.040	0.015	ug/L	1
delta-BHC	319-86-8	8081B	Pending		0.040	0.015	ug/L	1
cis-Chlordane	5103-71-9	8081B	Pending		0.040	0.015	ug/L	1
trans-Chlordane	5103-74-2	8081B	Pending		0.040	0.015	ug/L	1
4,4'-DDD	72-54-8	8081B	Pending		0.040	0.015	ug/L	1
4,4'-DDE	72-55-9	8081B	Pending		0.040	0.020	ug/L	1
4,4'-DDT	50-29-3	8081B	Pending		0.040	0.020	ug/L	1
Dieldrin	60-57-1	8081B	Pending		0.040	0.015	ug/L	1
Endosulfan I	959-98-8	8081B	Pending		0.040	0.015	ug/L	1
Endosulfan II	33213-65-9	8081B	Pending		0.040	0.015	ug/L	1
Endosulfan sulfate	1031-07-8	8081B	Pending		0.040	0.015	ug/L	1
Endrin	72-20-8	8081B	Pending		0.040	0.015	ug/L	1
Endrin aldehyde	7421-93-4	8081B	Pending		0.040	0.015	ug/L	1
Endrin ketone	53494-70-5	8081B	Pending		0.040	0.015	ug/L	1
Heptachlor	76-44-8	8081B	Pending		0.040	0.021	ug/L	1
Heptachlor epoxide	1024-57-3	8081B	Pending		0.040	0.016	ug/L	1
Methoxychlor	72-43-5	8081B	Pending		0.16	0.021	ug/L	1
Toxaphene	8001-35-2	8081B	Pending		0.40	0.30	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Decachlorobiphenyl		Pending	120
Tetrachloro-m-xylene		Pending	120

LOQ = Limit of Quantitation
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ICP-MS

Client: **EnSafe**
Description: **AC 03**
Date Sampled: **08/21/2019 1345**
Date Received: **08/21/2019**

Laboratory ID: **UH21084-007**
Matrix: **Aqueous**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		7470A	1	08/24/2019 0851	KSH2	08/23/2019 1250	26841
1	3005A	6020B	1	08/23/2019 1245	BNW	08/22/2019 1920	26746
2	3005A	6020B	10	08/23/2019 1402	BNW	08/22/2019 1920	26746

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Aluminum	**7429-90-5**	**6020B**	**550**		**40**	**10**	**ug/L**	**1**
Antimony	**7440-36-0**	**6020B**	**26**		**2.0**	**0.50**	**ug/L**	**1**
Arsenic	**7440-38-2**	**6020B**	**130**		**2.0**	**1.3**	**ug/L**	**1**
Barium	**7440-39-3**	**6020B**	**77**		**5.0**	**1.3**	**ug/L**	**1**
Beryllium	7440-41-7	6020B	ND		0.40	0.15	ug/L	1
Cadmium	**7440-43-9**	**6020B**	**0.15**	**J**	**0.50**	**0.13**	**ug/L**	**1**
Calcium	**7440-70-2**	**6020B**	**720000**		**4000**	**1000**	**ug/L**	**2**
Chromium	**7440-47-3**	**6020B**	**60**		**5.0**	**1.3**	**ug/L**	**1**
Cobalt	**7440-48-4**	**6020B**	**2.1**	**J**	**5.0**	**1.3**	**ug/L**	**1**
Copper	**7440-50-8**	**6020B**	**42**		**5.0**	**1.3**	**ug/L**	**1**
Iron	**7439-89-6**	**6020B**	**4200**		**50**	**13**	**ug/L**	**1**
Lead	**7439-92-1**	**6020B**	**2.6**		**1.0**	**0.25**	**ug/L**	**1**
Magnesium	**7439-95-4**	**6020B**	**25000**		**400**	**50**	**ug/L**	**1**
Manganese	**7439-96-5**	**6020B**	**520**		**5.0**	**1.3**	**ug/L**	**1**
Mercury	7439-97-6	7470A	ND		0.00020	0.000091	mg/L	1
Nickel	**7440-02-0**	**6020B**	**15**		**5.0**	**1.3**	**ug/L**	**1**
Potassium	**7440-09-7**	**6020B**	**30000**		**400**	**100**	**ug/L**	**1**
Selenium	**7782-49-2**	**6020B**	**2.6**	**J**	**5.0**	**1.3**	**ug/L**	**1**
Silver	7440-22-4	6020B	ND		1.0	0.25	ug/L	1
Sodium	**7440-23-5**	**6020B**	**110000**		**400**	**150**	**ug/L**	**1**
Thallium	7440-28-0	6020B	ND		0.50	0.15	ug/L	1
Vanadium	**7440-62-2**	**6020B**	**12**		**5.0**	**2.5**	**ug/L**	**1**
Zinc	**7440-66-6**	**6020B**	**110**	**B**	**10**	**2.5**	**ug/L**	**1**

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J = Estimated result < LOQ and ≥ DL

Inorganic non-metals

Client: **EnSafe**
Description: **AC 03-S**
Date Sampled: **08/21/2019 1350**
Date Received: **08/21/2019**

Laboratory ID: **UH21084-008**
Matrix: **Solid**
% Solids: **75.3** **08/21/2019 2356**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	9012B	(Cyanide - To) 9012B	1				26924

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Cyanide - Total	57-12-5	9012B	Pending		0.50	0.20	mg/kg	1

LOQ = Limit of Quantitation
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Library Search

Client: **EnSafe**
Description: **AC 03-S**
Date Sampled: **08/21/2019 1350**
Date Received: **08/21/2019**

Laboratory ID: **UH21084-008**
Matrix: **Solid**
% Solids: **75.3** **08/21/2019 2356**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5035	8260B	1				26806

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
None Detected		**8260B**					**ug/kg**	**1**

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P = The RPD between two GC columns exceeds 40%
DL = Detection Limit
J = Estimated result < LOQ and ≥ DL

Volatile Organic Compounds by GC/MS

Client: **EnSafe**
Description: **AC 03-S**
Date Sampled: **08/21/2019 1350**
Date Received: **08/21/2019**

Laboratory ID: **UH21084-008**
Matrix: **Solid**
% Solids: **75.3** **08/21/2019 2356**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch	Sample Wt.(g)
1	5035	8260B	1	08/22/2019 1704	ALR1		26716	5.39

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acetone	**67-64-1**	**8260B**	**370**		**25**	**9.9**	**ug/kg**	**1**
Benzene	**71-43-2**	**8260B**	**18**		**6.2**	**2.5**	**ug/kg**	**1**
Bromodichloromethane	75-27-4	8260B	ND		6.2	2.5	ug/kg	1
Bromoform	75-25-2	8260B	ND		6.2	2.5	ug/kg	1
Bromomethane (Methyl bromide)	74-83-9	8260B	ND		6.2	3.7	ug/kg	1
2-Butanone (MEK)	**78-93-3**	**8260B**	**15**	**J**	**25**	**4.9**	**ug/kg**	**1**
Carbon disulfide	75-15-0	8260B	ND		6.2	2.5	ug/kg	1
Carbon tetrachloride	56-23-5	8260B	ND		6.2	2.5	ug/kg	1
Chlorobenzene	108-90-7	8260B	ND		6.2	2.5	ug/kg	1
Chloroethane	75-00-3	8260B	ND		6.2	2.5	ug/kg	1
Chloroform	67-66-3	8260B	ND		6.2	2.5	ug/kg	1
Chloromethane (Methyl chloride)	74-87-3	8260B	ND		6.2	3.7	ug/kg	1
Cyclohexane	110-82-7	8260B	ND		6.2	2.5	ug/kg	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260B	ND		6.2	2.5	ug/kg	1
Dibromochloromethane	124-48-1	8260B	ND		6.2	2.5	ug/kg	1
1,2-Dibromoethane (EDB)	106-93-4	8260B	ND		6.2	2.5	ug/kg	1
1,2-Dichlorobenzene	95-50-1	8260B	ND		6.2	2.5	ug/kg	1
1,3-Dichlorobenzene	541-73-1	8260B	ND		6.2	2.5	ug/kg	1
1,4-Dichlorobenzene	106-46-7	8260B	ND		6.2	2.5	ug/kg	1
Dichlorodifluoromethane	75-71-8	8260B	ND		6.2	3.7	ug/kg	1
1,1-Dichloroethane	75-34-3	8260B	ND		6.2	2.5	ug/kg	1
1,2-Dichloroethane	107-06-2	8260B	ND		6.2	2.5	ug/kg	1
1,1-Dichloroethene	75-35-4	8260B	ND		6.2	2.5	ug/kg	1
cis-1,2-Dichloroethene	156-59-2	8260B	ND		6.2	2.5	ug/kg	1
trans-1,2-Dichloroethene	156-60-5	8260B	ND		6.2	2.5	ug/kg	1
1,2-Dichloropropane	78-87-5	8260B	ND		6.2	2.5	ug/kg	1
cis-1,3-Dichloropropene	10061-01-5	8260B	ND		6.2	2.5	ug/kg	1
trans-1,3-Dichloropropene	10061-02-6	8260B	ND		6.2	2.5	ug/kg	1
Ethylbenzene	100-41-4	8260B	ND		6.2	2.5	ug/kg	1
2-Hexanone	591-78-6	8260B	ND		12	4.9	ug/kg	1
Isopropylbenzene	98-82-8	8260B	ND		6.2	2.5	ug/kg	1
Methyl acetate	79-20-9	8260B	ND		6.2	2.5	ug/kg	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260B	ND		6.2	2.5	ug/kg	1
4-Methyl-2-pentanone	108-10-1	8260B	ND		12	4.9	ug/kg	1
Methylcyclohexane	108-87-2	8260B	ND		6.2	2.5	ug/kg	1
Methylene chloride	75-09-2	8260B	ND		6.2	2.5	ug/kg	1
Styrene	100-42-5	8260B	ND		6.2	2.5	ug/kg	1
1,1,2,2-Tetrachloroethane	79-34-5	8260B	ND		6.2	2.5	ug/kg	1
Tetrachloroethene	127-18-4	8260B	ND		6.2	2.5	ug/kg	1
Toluene	108-88-3	8260B	ND		6.2	2.5	ug/kg	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260B	ND		6.2	2.5	ug/kg	1
1,2,4-Trichlorobenzene	120-82-1	8260B	ND		6.2	2.5	ug/kg	1
1,1,1-Trichloroethane	71-55-6	8260B	ND		6.2	2.5	ug/kg	1
1,1,2-Trichloroethane	79-00-5	8260B	ND		6.2	2.5	ug/kg	1

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J = Estimated result < LOQ and ≥ DL

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Volatile Organic Compounds by GC/MS

Client: **EnSafe**
Description: **AC 03-S**
Date Sampled: **08/21/2019 1350**
Date Received: **08/21/2019**

Laboratory ID: **UH21084-008**
Matrix: **Solid**
% Solids: **75.3** **08/21/2019 2356**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch	Sample Wt.(g)
1	5035	8260B	1	08/22/2019 1704	ALR1		26716	5.39

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Trichloroethene	79-01-6	8260B	ND		6.2	2.5	ug/kg	1
Trichlorofluoromethane	75-69-4	8260B	ND		6.2	2.5	ug/kg	1
Vinyl chloride	75-01-4	8260B	ND		6.2	3.7	ug/kg	1
Xylenes (total)	1330-20-7	8260B	ND		12	4.9	ug/kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		110	53-142
Bromofluorobenzene		93	47-138
Toluene-d8		122	68-124

LOQ = Limit of Quantitation
ND = Not detected at or above the DL
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
DL = Detection Limit
J = Estimated result < LOQ and ≥ DL

Library Search

Client: **EnSafe**
Description: **AC 03-S**
Date Sampled: **08/21/2019 1350**
Date Received: **08/21/2019**

Laboratory ID: **UH21084-008**
Matrix: **Solid**
% Solids: **75.3** **08/21/2019 2356**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3546	8270D	1				

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
TIC 1		8270D	Pending				ug/kg	1
TIC 10		8270D	Pending				ug/kg	1
TIC 11		8270D	Pending				ug/kg	1
TIC 12		8270D	Pending				ug/kg	1
TIC 13		8270D	Pending				ug/kg	1
TIC 14		8270D	Pending				ug/kg	1
TIC 15		8270D	Pending				ug/kg	1
TIC 16		8270D	Pending				ug/kg	1
TIC 17		8270D	Pending				ug/kg	1
TIC 18		8270D	Pending				ug/kg	1
TIC 19		8270D	Pending				ug/kg	1
TIC 2		8270D	Pending				ug/kg	1
TIC 20		8270D	Pending				ug/kg	1
TIC 3		8270D	Pending				ug/kg	1
TIC 4		8270D	Pending				ug/kg	1
TIC 5		8270D	Pending				ug/kg	1
TIC 6		8270D	Pending				ug/kg	1
TIC 7		8270D	Pending				ug/kg	1
TIC 8		8270D	Pending				ug/kg	1
TIC 9		8270D	Pending				ug/kg	1

LOQ = Limit of Quantitation
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Semivolatile Organic Compounds by GC/MS

Client: **EnSafe**
Description: **AC 03-S**
Date Sampled: **08/21/2019 1350**
Date Received: **08/21/2019**

Laboratory ID: **UH21084-008**
Matrix: **Solid**
% Solids: **75.3** **08/21/2019 2356**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3546	8270D	1			08/23/2019 1309	26872

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acenaphthene	83-32-9	8270D	Pending		2.7	0.83	ug/kg	1
Acenaphthylene	208-96-8	8270D	Pending		2.7	0.95	ug/kg	1
Acetophenone	98-86-2	8270D	Pending		13	5.0	ug/kg	1
Anthracene	120-12-7	8270D	Pending		2.7	0.51	ug/kg	1
Atrazine	1912-24-9	8270D	Pending		13	5.0	ug/kg	1
Benzaldehyde	100-52-7	8270D	Pending		13	5.0	ug/kg	1
Benzo(a)anthracene	56-55-3	8270D	Pending		2.7	0.59	ug/kg	1
Benzo(a)pyrene	50-32-8	8270D	Pending		2.7	0.66	ug/kg	1
Benzo(b)fluoranthene	205-99-2	8270D	Pending		2.7	0.50	ug/kg	1
Benzo(g,h,i)perylene	191-24-2	8270D	Pending		2.7	0.65	ug/kg	1
Benzo(k)fluoranthene	207-08-9	8270D	Pending		2.7	0.48	ug/kg	1
1,1'-Biphenyl	92-52-4	8270D	Pending		13	5.0	ug/kg	1
4-Bromophenyl phenyl ether	101-55-3	8270D	Pending		13	5.0	ug/kg	1
Butyl benzyl phthalate	85-68-7	8270D	Pending		13	5.0	ug/kg	1
Caprolactam	105-60-2	8270D	Pending		13	5.0	ug/kg	1
Carbazole	86-74-8	8270D	Pending		13	5.0	ug/kg	1
bis (2-Chloro-1-methylethyl) ether	108-60-1	8270D	Pending		13	5.0	ug/kg	1
4-Chloro-3-methyl phenol	59-50-7	8270D	Pending		13	5.0	ug/kg	1
4-Chloroaniline	106-47-8	8270D	Pending		13	5.0	ug/kg	1
bis(2-Chloroethoxy)methane	111-91-1	8270D	Pending		13	5.0	ug/kg	1
bis(2-Chloroethyl)ether	111-44-4	8270D	Pending		13	5.0	ug/kg	1
2-Chloronaphthalene	91-58-7	8270D	Pending		13	5.0	ug/kg	1
2-Chlorophenol	95-57-8	8270D	Pending		13	5.0	ug/kg	1
4-Chlorophenyl phenyl ether	7005-72-3	8270D	Pending		13	5.0	ug/kg	1
Chrysene	218-01-9	8270D	Pending		2.7	0.45	ug/kg	1
Dibenzo(a,h)anthracene	53-70-3	8270D	Pending		2.7	0.51	ug/kg	1
Dibenzofuran	132-64-9	8270D	Pending		13	5.0	ug/kg	1
3,3'-Dichlorobenzidine	91-94-1	8270D	Pending		13	5.0	ug/kg	1
2,4-Dichlorophenol	120-83-2	8270D	Pending		13	5.0	ug/kg	1
Diethylphthalate	84-66-2	8270D	Pending		13	5.0	ug/kg	1
Dimethyl phthalate	131-11-3	8270D	Pending		13	7.4	ug/kg	1
2,4-Dimethylphenol	105-67-9	8270D	Pending		13	5.0	ug/kg	1
Di-n-butyl phthalate	84-74-2	8270D	Pending		13	5.0	ug/kg	1
4,6-Dinitro-2-methylphenol	534-52-1	8270D	Pending		67	25	ug/kg	1
2,4-Dinitrophenol	51-28-5	8270D	Pending		67	25	ug/kg	1
2,4-Dinitrotoluene	121-14-2	8270D	Pending		27	10	ug/kg	1
2,6-Dinitrotoluene	606-20-2	8270D	Pending		27	10	ug/kg	1
Di-n-octylphthalate	117-84-0	8270D	Pending		13	5.0	ug/kg	1
bis(2-Ethylhexyl)phthalate	117-81-7	8270D	Pending		67	25	ug/kg	1
Fluoranthene	206-44-0	8270D	Pending		2.7	0.42	ug/kg	1
Fluorene	86-73-7	8270D	Pending		2.7	0.57	ug/kg	1
Hexachlorobenzene	118-74-1	8270D	Pending		13	5.0	ug/kg	1
Hexachlorobutadiene	87-68-3	8270D	Pending		13	5.0	ug/kg	1
Hexachlorocyclopentadiene	77-47-4	8270D	Pending		67	25	ug/kg	1

LOQ = Limit of Quantitation
ND = Not detected at or above the DL
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
DL = Detection Limit
J = Estimated result < LOQ and ≥ DL

Semivolatile Organic Compounds by GC/MS

Client: **EnSafe**
Description: **AC 03-S**
Date Sampled: **08/21/2019 1350**
Date Received: **08/21/2019**

Laboratory ID: **UH21084-008**
Matrix: **Solid**
% Solids: **75.3** **08/21/2019 2356**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3546	8270D	1			08/23/2019 1309	26872

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Hexachloroethane	67-72-1	8270D	Pending		13	5.0	ug/kg	1
Indeno(1,2,3-c,d)pyrene	193-39-5	8270D	Pending		2.7	1.0	ug/kg	1
Isophorone	78-59-1	8270D	Pending		13	5.0	ug/kg	1
2-Methylnaphthalene	91-57-6	8270D	Pending		2.7	0.99	ug/kg	1
2-Methylphenol	95-48-7	8270D	Pending		13	5.0	ug/kg	1
3+4-Methylphenol	106-44-5	8270D	Pending		27	10	ug/kg	1
Naphthalene	91-20-3	8270D	Pending		2.7	0.97	ug/kg	1
2-Nitroaniline	88-74-4	8270D	Pending		27	10	ug/kg	1
3-Nitroaniline	99-09-2	8270D	Pending		27	10	ug/kg	1
4-Nitroaniline	100-01-6	8270D	Pending		27	10	ug/kg	1
Nitrobenzene	98-95-3	8270D	Pending		13	5.0	ug/kg	1
2-Nitrophenol	88-75-5	8270D	Pending		27	10	ug/kg	1
4-Nitrophenol	100-02-7	8270D	Pending		67	25	ug/kg	1
N-Nitrosodi-n-propylamine	621-64-7	8270D	Pending		13	5.0	ug/kg	1
N-Nitrosodiphenylamine (Diphenylamine)	86-30-6	8270D	Pending		13	5.0	ug/kg	1
Pentachlorophenol	87-86-5	8270D	Pending		67	25	ug/kg	1
Phenanthrene	85-01-8	8270D	Pending		2.7	0.72	ug/kg	1
Phenol	108-95-2	8270D	Pending		13	5.0	ug/kg	1
Pyrene	129-00-0	8270D	Pending		2.7	0.50	ug/kg	1
2,4,5-Trichlorophenol	95-95-4	8270D	Pending		13	5.0	ug/kg	1
2,4,6-Trichlorophenol	88-06-2	8270D	Pending		13	5.0	ug/kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
2-Fluorobiphenyl		Pending	100
2-Fluorophenol		Pending	120
Nitrobenzene-d5		Pending	110
Phenol-d5		Pending	120
Terphenyl-d14		Pending	120
2,4,6-Tribromophenol		Pending	120

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P = The RPD between two GC columns exceeds 40%
DL = Detection Limit
J = Estimated result < LOQ and ≥ DL

Shealy Environmental Services, Inc.
106 Vantage Point Drive West Columbia, SC 29172 (803) 791-9700 Fax (803) 791-9111 www.shealylab.com

PCBs by GC

Client: **EnSafe**
Description: **AC 03-S**
Date Sampled: **08/21/2019 1350**
Date Received: **08/21/2019**

Laboratory ID: **UH21084-008**
Matrix: **Solid**
% Solids: **75.3** **08/21/2019 2356**

Run	Prep Method	Cleanup	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3546	3660B/3665A	8082A	10	08/23/2019 1306	CHG	08/22/2019 2132	26812

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Aroclor 1016	12674-11-2	8082A	ND		130	35	ug/kg	1
Aroclor 1221	11104-28-2	8082A	ND		130	29	ug/kg	1
Aroclor 1232	11141-16-5	8082A	ND		130	27	ug/kg	1
Aroclor 1242	53469-21-9	8082A	ND		130	20	ug/kg	1
Aroclor 1248	12672-29-6	8082A	ND		130	52	ug/kg	1
Aroclor 1254	11097-69-1	8082A	ND		130	32	ug/kg	1
Aroclor 1260	11096-82-5	8082A	ND		130	31	ug/kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Decachlorobiphenyl		104	41-132
Tetrachloro-m-xylene	N	114	35-106

LOQ = Limit of Quantitation
ND = Not detected at or above the DL
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W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
DL = Detection Limit
J = Estimated result < LOQ and ≥ DL

Organochlorine Pesticides by GC

Client: **EnSafe**
Description: **AC 03-S**
Date Sampled: **08/21/2019 1350**
Date Received: **08/21/2019**

Laboratory ID: **UH21084-008**
Matrix: **Solid**
% Solids: **75.3** **08/21/2019 2356**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3546	8081B	100	08/27/2019 0423	DAL1	08/22/2019 2132	26813

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Aldrin	309-00-2	8081B	ND		130	16	ug/kg	1
gamma-BHC (Lindane)	58-89-9	8081B	ND		130	25	ug/kg	1
alpha-BHC	319-84-6	8081B	ND		130	15	ug/kg	1
beta-BHC	319-85-7	8081B	ND		130	33	ug/kg	1
delta-BHC	319-86-8	8081B	ND		130	27	ug/kg	1
Chlordane	57-74-9	8081B	ND		250	120	ug/kg	1
cis-Chlordane	5103-71-9	8081B	ND		130	28	ug/kg	1
trans-Chlordane	5103-74-2	8081B	ND		130	18	ug/kg	1
4,4'-DDD	72-54-8	8081B	ND		130	23	ug/kg	1
4,4'-DDE	72-55-9	8081B	ND		130	18	ug/kg	1
4,4'-DDT	50-29-3	8081B	ND		130	19	ug/kg	1
Dieldrin	60-57-1	8081B	ND		130	18	ug/kg	1
Endosulfan I	959-98-8	8081B	ND		130	24	ug/kg	1
Endosulfan II	33213-65-9	8081B	ND		130	33	ug/kg	1
Endosulfan sulfate	1031-07-8	8081B	ND		130	27	ug/kg	1
Endrin	72-20-8	8081B	ND		130	29	ug/kg	1
Endrin aldehyde	7421-93-4	8081B	ND		130	18	ug/kg	1
Endrin ketone	53494-70-5	8081B	ND		130	20	ug/kg	1
Heptachlor	76-44-8	8081B	ND		130	18	ug/kg	1
Heptachlor epoxide	1024-57-3	8081B	ND		130	20	ug/kg	1
Methoxychlor	72-43-5	8081B	ND		510	24	ug/kg	1
Toxaphene	8001-35-2	8081B	ND		1300	450	ug/kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Decachlorobiphenyl	N	135	57-110
Tetrachloro-m-xylene		116	39-116

LOQ = Limit of Quantitation
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W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
DL = Detection Limit
J = Estimated result < LOQ and ≥ DL

ICP-MS

Client: **EnSafe**
Description: **AC 03-S**
Date Sampled: **08/21/2019 1350**
Date Received: **08/21/2019**

Laboratory ID: **UH21084-008**
Matrix: **Solid**
% Solids: **75.3** **08/21/2019 2356**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3050B	6020B	1	08/26/2019 2222	BNW	08/26/2019 1012	26960
1	7471B	7471B	1	08/23/2019 1104	KSH2	08/22/2019 1502	26730

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Aluminum	**7429-90-5**	**6020B**	**18000**		**9.7**	**2.4**	**mg/kg**	**1**
Antimony	7440-36-0	6020B	ND		0.48	0.19	mg/kg	1
Arsenic	**7440-38-2**	**6020B**	**0.86**		**0.48**	**0.19**	**mg/kg**	**1**
Barium	**7440-39-3**	**6020B**	**76**		**1.2**	**0.30**	**mg/kg**	**1**
Beryllium	**7440-41-7**	**6020B**	**0.21**		**0.097**	**0.033**	**mg/kg**	**1**
Cadmium	7440-43-9	6020B	ND		0.13	0.024	mg/kg	1
Calcium	**7440-70-2**	**6020B**	**2000**		**97**	**29**	**mg/kg**	**1**
Chromium	**7440-47-3**	**6020B**	**20**		**1.2**	**0.54**	**mg/kg**	**1**
Cobalt	**7440-48-4**	**6020B**	**0.86**	**J**	**1.2**	**0.29**	**mg/kg**	**1**
Copper	**7440-50-8**	**6020B**	**1.3**		**1.2**	**0.32**	**mg/kg**	**1**
Iron	**7439-89-6**	**6020B**	**7900**		**13**	**2.4**	**mg/kg**	**1**
Lead	**7439-92-1**	**6020B**	**13**		**0.24**	**0.066**	**mg/kg**	**1**
Magnesium	**7439-95-4**	**6020B**	**700**		**97**	**24**	**mg/kg**	**1**
Manganese	**7439-96-5**	**6020B**	**22**		**1.2**	**0.35**	**mg/kg**	**1**
Mercury	7439-97-6	7471B	ND		0.10	0.025	mg/kg	1
Nickel	**7440-02-0**	**6020B**	**2.6**		**1.2**	**0.29**	**mg/kg**	**1**
Potassium	**7440-09-7**	**6020B**	**270**	**B**	**97**	**24**	**mg/kg**	**1**
Selenium	**7782-49-2**	**6020B**	**0.63**	**J**	**1.2**	**0.46**	**mg/kg**	**1**
Silver	**7440-22-4**	**6020B**	**0.059**	**J**	**0.24**	**0.058**	**mg/kg**	**1**
Sodium	**7440-23-5**	**6020B**	**270**		**97**	**35**	**mg/kg**	**1**
Thallium	**7440-28-0**	**6020B**	**0.15**		**0.12**	**0.029**	**mg/kg**	**1**
Vanadium	**7440-62-2**	**6020B**	**26**		**1.2**	**0.24**	**mg/kg**	**1**
Zinc	**7440-66-6**	**6020B**	**8.5**		**2.4**	**0.48**	**mg/kg**	**1**

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DL = Detection Limit
J = Estimated result < LOQ and ≥ DL

Inorganic non-metals

Client: **EnSafe**
Description: **AC 04**
Date Sampled: **08/21/2019 1415**
Date Received: **08/21/2019**

Laboratory ID: **UH21084-009**
Matrix: **Aqueous**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	9012B	(Cyanide - To) 9012B	1	08/24/2019 1411	KFE	08/22/2019 1900	26810

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Cyanide - Total	57-12-5	9012B	ND		20	5.0	ug/L	1

LOQ = Limit of Quantitation
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E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
DL = Detection Limit
J = Estimated result < LOQ and ≥ DL

Library Search

Client: **EnSafe**
Description: **AC 04**
Date Sampled: **08/21/2019 1415**
Date Received: **08/21/2019**

Laboratory ID: **UH21084-009**
Matrix: **Aqueous**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260B	5	08/24/2019 0340	JTH		26933

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Methanethiol		**8260B**	**33**				**ug/L**	**1**

LOQ = Limit of Quantitation
ND = Not detected at or above the DL
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E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
DL = Detection Limit
J = Estimated result < LOQ and ≥ DL

Volatile Organic Compounds by GC/MS

Client: **EnSafe**
Description: **AC 04**
Date Sampled: **08/21/2019 1415**
Date Received: **08/21/2019**

Laboratory ID: **UH21084-009**
Matrix: **Aqueous**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260B	5	08/24/2019 0340	JTH		26929
2	5030B	8260B	5	08/27/2019 0600	JTH		27101

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acetone	**67-64-1**	**8260B**	**87**	**J**	**100**	**25**	**ug/L**	**1**
Benzene	**71-43-2**	**8260B**	**7.8**		**5.0**	**2.0**	**ug/L**	**1**
Bromochloromethane	74-97-5	8260B	ND		5.0	2.0	ug/L	1
Bromodichloromethane	75-27-4	8260B	ND		5.0	2.0	ug/L	1
Bromoform	75-25-2	8260B	ND		5.0	2.0	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260B	ND		10	2.0	ug/L	1
2-Butanone (MEK)	**78-93-3**	**8260B**	**15**	**J**	**50**	**10**	**ug/L**	**1**
Carbon disulfide	**75-15-0**	**8260B**	**6.0**		**5.0**	**2.0**	**ug/L**	**2**
Carbon tetrachloride	56-23-5	8260B	ND		5.0	2.0	ug/L	1
Chlorobenzene	108-90-7	8260B	ND		5.0	2.0	ug/L	1
Chloroethane	75-00-3	8260B	ND		10	2.0	ug/L	1
Chloroform	67-66-3	8260B	ND		5.0	2.0	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260B	ND		5.0	2.5	ug/L	1
Cyclohexane	110-82-7	8260B	ND		5.0	2.0	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260B	ND		5.0	2.0	ug/L	1
Dibromochloromethane	124-48-1	8260B	ND		5.0	2.0	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260B	ND		5.0	2.0	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260B	ND		5.0	2.0	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260B	ND		5.0	2.0	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260B	ND		5.0	2.0	ug/L	1
Dichlorodifluoromethane	75-71-8	8260B	ND		10	3.0	ug/L	1
1,1-Dichloroethane	75-34-3	8260B	ND		5.0	2.0	ug/L	1
1,2-Dichloroethane	107-06-2	8260B	ND		5.0	2.0	ug/L	1
1,1-Dichloroethene	75-35-4	8260B	ND		5.0	2.0	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260B	ND		5.0	2.0	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260B	ND		5.0	2.0	ug/L	1
1,2-Dichloropropane	78-87-5	8260B	ND		5.0	2.0	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260B	ND		5.0	2.0	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260B	ND		5.0	2.0	ug/L	1
Ethylbenzene	**100-41-4**	**8260B**	**3.1**	**J**	**5.0**	**2.0**	**ug/L**	**1**
2-Hexanone	591-78-6	8260B	ND		50	10	ug/L	1
Isopropylbenzene	98-82-8	8260B	ND		5.0	2.0	ug/L	1
Methyl acetate	79-20-9	8260B	ND		5.0	2.0	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260B	ND		5.0	2.0	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260B	ND		50	10	ug/L	1
Methylcyclohexane	108-87-2	8260B	ND		25	2.0	ug/L	1
Methylene chloride	75-09-2	8260B	ND		5.0	2.0	ug/L	1
Styrene	100-42-5	8260B	ND		5.0	2.1	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260B	ND		5.0	2.0	ug/L	1
Tetrachloroethene	127-18-4	8260B	ND		5.0	2.0	ug/L	1
Toluene	**108-88-3**	**8260B**	**5.2**		**5.0**	**2.0**	**ug/L**	**1**
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260B	ND		5.0	2.1	ug/L	1
1,2,3-Trichlorobenzene	87-61-6	8260B	ND		5.0	2.0	ug/L	1

LOQ = Limit of Quantitation
ND = Not detected at or above the DL
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
DL = Detection Limit
J = Estimated result < LOQ and ≥ DL

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Volatile Organic Compounds by GC/MS

Client: **EnSafe**
Description: **AC 04**
Date Sampled: **08/21/2019 1415**
Date Received: **08/21/2019**

Laboratory ID: **UH21084-009**
Matrix: **Aqueous**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260B	5	08/24/2019 0340	JTH		26929
2	5030B	8260B	5	08/27/2019 0600	JTH		27101

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
1,2,4-Trichlorobenzene	120-82-1	8260B	ND		5.0	2.0	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260B	ND		5.0	2.0	ug/L	1
1,1,2-Trichloroethane	79-00-5	8260B	ND		5.0	2.0	ug/L	1
Trichloroethene	79-01-6	8260B	ND		5.0	2.0	ug/L	1
Trichlorofluoromethane	75-69-4	8260B	ND		5.0	2.0	ug/L	1
Vinyl chloride	75-01-4	8260B	ND		5.0	2.0	ug/L	1
m+p - Xylenes	179601-23-1	8260B	ND		5.0	2.0	ug/L	1
o - Xylenes	95-47-6	8260B	ND		5.0	2.0	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits	Q	Run 2 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		101	70-130		102	70-130
Bromofluorobenzene		101	70-130		99	70-130
Toluene-d8		102	70-130		96	70-130

LOQ = Limit of Quantitation
ND = Not detected at or above the DL
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
DL = Detection Limit
J = Estimated result < LOQ and ≥ DL

Semivolatile Organic Compounds by GC/MS

Client: **EnSafe**
Description: **AC 04**
Date Sampled: **08/21/2019 1415**
Date Received: **08/21/2019**

Laboratory ID: **UH21084-009**
Matrix: **Aqueous**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3520C	8270D	1			08/25/2019 1649	26966

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acenaphthene	83-32-9	8270D	Pending		0.16	0.040	ug/L	1
Acenaphthylene	208-96-8	8270D	Pending		0.16	0.040	ug/L	1
Acetophenone	98-86-2	8270D	Pending		0.80	0.23	ug/L	1
Anthracene	120-12-7	8270D	Pending		0.16	0.040	ug/L	1
Atrazine	1912-24-9	8270D	Pending		0.80	0.20	ug/L	1
Benzaldehyde	100-52-7	8270D	Pending		4.0	0.27	ug/L	1
Benzo(a)anthracene	56-55-3	8270D	Pending		0.16	0.040	ug/L	1
Benzo(a)pyrene	50-32-8	8270D	Pending		0.16	0.040	ug/L	1
Benzo(b)fluoranthene	205-99-2	8270D	Pending		0.16	0.040	ug/L	1
Benzo(g,h,i)perylene	191-24-2	8270D	Pending		0.16	0.040	ug/L	1
Benzo(k)fluoranthene	207-08-9	8270D	Pending		0.16	0.040	ug/L	1
1,1'-Biphenyl	92-52-4	8270D	Pending		0.80	0.21	ug/L	1
4-Bromophenyl phenyl ether	101-55-3	8270D	Pending		0.80	0.15	ug/L	1
Butyl benzyl phthalate	85-68-7	8270D	Pending		4.0	0.21	ug/L	1
Caprolactam	105-60-2	8270D	Pending		4.0	0.71	ug/L	1
Carbazole	86-74-8	8270D	Pending		0.80	0.040	ug/L	1
bis (2-Chloro-1-methylethyl) ether	108-60-1	8270D	Pending		0.80	0.17	ug/L	1
4-Chloro-3-methyl phenol	59-50-7	8270D	Pending		0.80	0.26	ug/L	1
4-Chloroaniline	106-47-8	8270D	Pending		0.80	0.13	ug/L	1
bis(2-Chloroethoxy)methane	111-91-1	8270D	Pending		0.80	0.060	ug/L	1
bis(2-Chloroethyl)ether	111-44-4	8270D	Pending		0.80	0.16	ug/L	1
2-Chloronaphthalene	91-58-7	8270D	Pending		0.80	0.15	ug/L	1
2-Chlorophenol	95-57-8	8270D	Pending		0.80	0.15	ug/L	1
4-Chlorophenyl phenyl ether	7005-72-3	8270D	Pending		0.80	0.16	ug/L	1
Chrysene	218-01-9	8270D	Pending		0.16	0.040	ug/L	1
Dibenzo(a,h)anthracene	53-70-3	8270D	Pending		0.16	0.040	ug/L	1
Dibenzofuran	132-64-9	8270D	Pending		0.80	0.16	ug/L	1
3,3'-Dichlorobenzidine	91-94-1	8270D	Pending		4.0	0.81	ug/L	1
2,4-Dichlorophenol	120-83-2	8270D	Pending		0.80	0.19	ug/L	1
Diethylphthalate	84-66-2	8270D	Pending		4.0	0.19	ug/L	1
Dimethyl phthalate	131-11-3	8270D	Pending		4.0	0.18	ug/L	1
2,4-Dimethylphenol	105-67-9	8270D	Pending		0.80	0.15	ug/L	1
Di-n-butyl phthalate	84-74-2	8270D	Pending		4.0	0.42	ug/L	1
4,6-Dinitro-2-methylphenol	534-52-1	8270D	Pending		4.0	0.89	ug/L	1
2,4-Dinitrophenol	51-28-5	8270D	Pending		4.0	1.3	ug/L	1
2,4-Dinitrotoluene	121-14-2	8270D	Pending		1.6	0.36	ug/L	1
2,6-Dinitrotoluene	606-20-2	8270D	Pending		1.6	0.34	ug/L	1
Di-n-octylphthalate	117-84-0	8270D	Pending		4.0	0.48	ug/L	1
bis(2-Ethylhexyl)phthalate	117-81-7	8270D	Pending		4.0	0.38	ug/L	1
Fluoranthene	206-44-0	8270D	Pending		0.16	0.040	ug/L	1
Fluorene	86-73-7	8270D	Pending		0.16	0.040	ug/L	1
Hexachlorobenzene	118-74-1	8270D	Pending		0.80	0.15	ug/L	1
Hexachlorobutadiene	87-68-3	8270D	Pending		0.80	0.17	ug/L	1
Hexachlorocyclopentadiene	77-47-4	8270D	Pending		4.0	1.1	ug/L	1

LOQ = Limit of Quantitation
ND = Not detected at or above the DL
H = Out of holding time
B = Detected in the method blank
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W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
DL = Detection Limit
J = Estimated result < LOQ and ≥ DL

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Semivolatile Organic Compounds by GC/MS

Client: **EnSafe**
Description: **AC 04**
Date Sampled: **08/21/2019 1415**
Date Received: **08/21/2019**

Laboratory ID: **UH21084-009**
Matrix: **Aqueous**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3520C	8270D	1			08/25/2019 1649	26966

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Hexachloroethane	67-72-1	8270D	Pending		0.80	0.17	ug/L	1
Indeno(1,2,3-c,d)pyrene	193-39-5	8270D	Pending		0.16	0.040	ug/L	1
Isophorone	78-59-1	8270D	Pending		0.80	0.22	ug/L	1
2-Methylnaphthalene	91-57-6	8270D	Pending		0.16	0.040	ug/L	1
2-Methylphenol	95-48-7	8270D	Pending		0.80	0.21	ug/L	1
3+4-Methylphenol	106-44-5	8270D	Pending		1.6	0.46	ug/L	1
Naphthalene	91-20-3	8270D	Pending		0.16	0.040	ug/L	1
2-Nitroaniline	88-74-4	8270D	Pending		1.6	0.66	ug/L	1
3-Nitroaniline	99-09-2	8270D	Pending		1.6	0.15	ug/L	1
4-Nitroaniline	100-01-6	8270D	Pending		1.6	1.3	ug/L	1
Nitrobenzene	98-95-3	8270D	Pending		0.80	0.17	ug/L	1
2-Nitrophenol	88-75-5	8270D	Pending		1.6	0.44	ug/L	1
4-Nitrophenol	100-02-7	8270D	Pending		4.0	2.1	ug/L	1
N-Nitrosodi-n-propylamine	621-64-7	8270D	Pending		0.80	0.28	ug/L	1
N-Nitrosodiphenylamine (Diphenylamine)	86-30-6	8270D	Pending		0.80	0.50	ug/L	1
Pentachlorophenol	87-86-5	8270D	Pending		4.0	1.3	ug/L	1
Phenanthrene	85-01-8	8270D	Pending		0.16	0.040	ug/L	1
Phenol	108-95-2	8270D	Pending		0.80	0.19	ug/L	1
Pyrene	129-00-0	8270D	Pending		0.16	0.040	ug/L	1
2,4,5-Trichlorophenol	95-95-4	8270D	Pending		0.80	0.19	ug/L	1
2,4,6-Trichlorophenol	88-06-2	8270D	Pending		0.80	0.22	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
2-Fluorobiphenyl		Pending	130
2-Fluorophenol		Pending	130
Nitrobenzene-d5		Pending	130
Phenol-d5		Pending	130
Terphenyl-d14		Pending	150
2,4,6-Tribromophenol		Pending	140

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E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
DL = Detection Limit
J = Estimated result < LOQ and ≥ DL

Library Search

Client: **EnSafe**
Description: **AC 04**
Date Sampled: **08/21/2019 1415**
Date Received: **08/21/2019**

Laboratory ID: **UH21084-009**
Matrix: **Aqueous**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3520C	8270D	1				

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
TIC 1		8270D	Pending				ug/L	1
TIC 10		8270D	Pending				ug/L	1
TIC 11		8270D	Pending				ug/L	1
TIC 12		8270D	Pending				ug/L	1
TIC 13		8270D	Pending				ug/L	1
TIC 14		8270D	Pending				ug/L	1
TIC 15		8270D	Pending				ug/L	1
TIC 16		8270D	Pending				ug/L	1
TIC 17		8270D	Pending				ug/L	1
TIC 18		8270D	Pending				ug/L	1
TIC 19		8270D	Pending				ug/L	1
TIC 2		8270D	Pending				ug/L	1
TIC 20		8270D	Pending				ug/L	1
TIC 3		8270D	Pending				ug/L	1
TIC 4		8270D	Pending				ug/L	1
TIC 5		8270D	Pending				ug/L	1
TIC 6		8270D	Pending				ug/L	1
TIC 7		8270D	Pending				ug/L	1
TIC 8		8270D	Pending				ug/L	1
TIC 9		8270D	Pending				ug/L	1

LOQ = Limit of Quantitation
ND = Not detected at or above the DL
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
DL = Detection Limit
J = Estimated result < LOQ and ≥ DL

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PCBs by GC

Client: **EnSafe**
Description: **AC 04**
Date Sampled: **08/21/2019 1415**
Date Received: **08/21/2019**

Laboratory ID: **UH21084-009**
Matrix: **Aqueous**

Run	Prep Method	Cleanup	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3520C	3660B/3665A	8082A	1			08/25/2019 1649	26969

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Aroclor 1016	12674-11-2	8082A	Pending		0.40	0.15	ug/L	1
Aroclor 1221	11104-28-2	8082A	Pending		0.40	0.25	ug/L	1
Aroclor 1232	11141-16-5	8082A	Pending		0.40	0.15	ug/L	1
Aroclor 1242	53469-21-9	8082A	Pending		0.40	0.15	ug/L	1
Aroclor 1248	12672-29-6	8082A	Pending		0.40	0.15	ug/L	1
Aroclor 1254	11097-69-1	8082A	Pending		0.40	0.15	ug/L	1
Aroclor 1260	11096-82-5	8082A	Pending		0.40	0.15	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Decachlorobiphenyl		Pending	130
Tetrachloro-m-xylene		Pending	120

LOQ = Limit of Quantitation
ND = Not detected at or above the DL
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
DL = Detection Limit
J = Estimated result < LOQ and ≥ DL

Organochlorine Pesticides by GC

Client: **EnSafe**
Description: **AC 04**
Date Sampled: **08/21/2019 1415**
Date Received: **08/21/2019**

Laboratory ID: **UH21084-009**
Matrix: **Aqueous**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3520C	8081B	1			08/25/2019 1649	26968

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Aldrin	309-00-2	8081B	Pending		0.040	0.020	ug/L	1
gamma-BHC (Lindane)	58-89-9	8081B	Pending		0.040	0.017	ug/L	1
alpha-BHC	319-84-6	8081B	Pending		0.040	0.015	ug/L	1
beta-BHC	319-85-7	8081B	Pending		0.040	0.015	ug/L	1
delta-BHC	319-86-8	8081B	Pending		0.040	0.015	ug/L	1
cis-Chlordane	5103-71-9	8081B	Pending		0.040	0.015	ug/L	1
trans-Chlordane	5103-74-2	8081B	Pending		0.040	0.015	ug/L	1
4,4'-DDD	72-54-8	8081B	Pending		0.040	0.015	ug/L	1
4,4'-DDE	72-55-9	8081B	Pending		0.040	0.020	ug/L	1
4,4'-DDT	50-29-3	8081B	Pending		0.040	0.020	ug/L	1
Dieldrin	60-57-1	8081B	Pending		0.040	0.015	ug/L	1
Endosulfan I	959-98-8	8081B	Pending		0.040	0.015	ug/L	1
Endosulfan II	33213-65-9	8081B	Pending		0.040	0.015	ug/L	1
Endosulfan sulfate	1031-07-8	8081B	Pending		0.040	0.015	ug/L	1
Endrin	72-20-8	8081B	Pending		0.040	0.015	ug/L	1
Endrin aldehyde	7421-93-4	8081B	Pending		0.040	0.015	ug/L	1
Endrin ketone	53494-70-5	8081B	Pending		0.040	0.015	ug/L	1
Heptachlor	76-44-8	8081B	Pending		0.040	0.021	ug/L	1
Heptachlor epoxide	1024-57-3	8081B	Pending		0.040	0.016	ug/L	1
Methoxychlor	72-43-5	8081B	Pending		0.16	0.021	ug/L	1
Toxaphene	8001-35-2	8081B	Pending		0.40	0.30	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Decachlorobiphenyl		Pending	120
Tetrachloro-m-xylene		Pending	120

LOQ = Limit of Quantitation
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W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
DL = Detection Limit
J = Estimated result < LOQ and ≥ DL

ICP-MS

Client: **EnSafe**
Description: **AC 04**
Date Sampled: **08/21/2019 1415**
Date Received: **08/21/2019**

Laboratory ID: **UH21084-009**
Matrix: **Aqueous**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		7470A	1	08/24/2019 0854	KSH2	08/23/2019 1250	26841
1	3005A	6020B	1	08/23/2019 1251	BNW	08/22/2019 1920	26746
2	3005A	6020B	10	08/23/2019 1408	BNW	08/22/2019 1920	26746

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Aluminum	**7429-90-5**	**6020B**	**210**		**40**	**10**	**ug/L**	**1**
Antimony	**7440-36-0**	**6020B**	**26**		**2.0**	**0.50**	**ug/L**	**1**
Arsenic	**7440-38-2**	**6020B**	**180**		**2.0**	**1.3**	**ug/L**	**1**
Barium	**7440-39-3**	**6020B**	**97**		**5.0**	**1.3**	**ug/L**	**1**
Beryllium	7440-41-7	6020B	ND		0.40	0.15	ug/L	1
Cadmium	7440-43-9	6020B	ND		0.50	0.13	ug/L	1
Calcium	**7440-70-2**	**6020B**	**730000**		**4000**	**1000**	**ug/L**	**2**
Chromium	**7440-47-3**	**6020B**	**55**		**5.0**	**1.3**	**ug/L**	**1**
Cobalt	**7440-48-4**	**6020B**	**2.0**	**J**	**5.0**	**1.3**	**ug/L**	**1**
Copper	**7440-50-8**	**6020B**	**34**		**5.0**	**1.3**	**ug/L**	**1**
Iron	**7439-89-6**	**6020B**	**3700**		**50**	**13**	**ug/L**	**1**
Lead	**7439-92-1**	**6020B**	**2.0**		**1.0**	**0.25**	**ug/L**	**1**
Magnesium	**7439-95-4**	**6020B**	**32000**		**400**	**50**	**ug/L**	**1**
Manganese	**7439-96-5**	**6020B**	**610**		**5.0**	**1.3**	**ug/L**	**1**
Mercury	**7439-97-6**	**7470A**	**0.00011**	**J**	**0.00020**	**0.000091**	**mg/L**	**1**
Nickel	**7440-02-0**	**6020B**	**17**		**5.0**	**1.3**	**ug/L**	**1**
Potassium	**7440-09-7**	**6020B**	**43000**		**400**	**100**	**ug/L**	**1**
Selenium	**7782-49-2**	**6020B**	**3.3**	**J**	**5.0**	**1.3**	**ug/L**	**1**
Silver	7440-22-4	6020B	ND		1.0	0.25	ug/L	1
Sodium	**7440-23-5**	**6020B**	**140000**		**4000**	**1500**	**ug/L**	**2**
Thallium	7440-28-0	6020B	ND		0.50	0.15	ug/L	1
Vanadium	**7440-62-2**	**6020B**	**16**		**5.0**	**2.5**	**ug/L**	**1**
Zinc	**7440-66-6**	**6020B**	**89**	**B**	**10**	**2.5**	**ug/L**	**1**

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E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
DL = Detection Limit
J = Estimated result < LOQ and ≥ DL

Volatile Organic Compounds by GC/MS

Client: **EnSafe**
Description: **AC 08 TB**
Date Sampled: **08/21/2019 1510**
Date Received: **08/21/2019**

Laboratory ID: **UH21084-010**
Matrix: **Aqueous**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260B	1	08/23/2019 2153	JTH		26929
2	5030B	8260B	1	08/27/2019 0514	JTH		27101

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acetone	67-64-1	8260B	ND		20	5.0	ug/L	1
Benzene	71-43-2	8260B	ND		1.0	0.40	ug/L	1
Bromochloromethane	74-97-5	8260B	ND		1.0	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260B	ND		1.0	0.40	ug/L	1
Bromoform	75-25-2	8260B	ND		1.0	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260B	ND		2.0	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260B	ND		10	2.0	ug/L	1
Carbon disulfide	75-15-0	8260B	ND		1.0	0.40	ug/L	2
Carbon tetrachloride	56-23-5	8260B	ND		1.0	0.40	ug/L	1
Chlorobenzene	108-90-7	8260B	ND		1.0	0.40	ug/L	1
Chloroethane	75-00-3	8260B	ND		2.0	0.40	ug/L	1
Chloroform	67-66-3	8260B	ND		1.0	0.40	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260B	ND		1.0	0.50	ug/L	1
Cyclohexane	110-82-7	8260B	ND		1.0	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260B	ND		1.0	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260B	ND		1.0	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260B	ND		1.0	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260B	ND		1.0	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260B	ND		1.0	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260B	ND		1.0	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260B	ND		2.0	0.60	ug/L	1
1,1-Dichloroethane	75-34-3	8260B	ND		1.0	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260B	ND		1.0	0.40	ug/L	1
1,1-Dichloroethene	75-35-4	8260B	ND		1.0	0.40	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260B	ND		1.0	0.40	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260B	ND		1.0	0.40	ug/L	1
1,2-Dichloropropane	78-87-5	8260B	ND		1.0	0.40	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260B	ND		1.0	0.40	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260B	ND		1.0	0.40	ug/L	1
Ethylbenzene	100-41-4	8260B	ND		1.0	0.40	ug/L	1
2-Hexanone	591-78-6	8260B	ND		10	2.0	ug/L	1
Isopropylbenzene	98-82-8	8260B	ND		1.0	0.40	ug/L	1
Methyl acetate	79-20-9	8260B	ND		1.0	0.40	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260B	ND		1.0	0.40	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260B	ND		10	2.0	ug/L	1
Methylcyclohexane	108-87-2	8260B	ND		5.0	0.40	ug/L	1
Methylene chloride	75-09-2	8260B	ND		1.0	0.40	ug/L	1
Styrene	100-42-5	8260B	ND		1.0	0.41	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260B	ND		1.0	0.40	ug/L	1
Tetrachloroethene	127-18-4	8260B	ND		1.0	0.40	ug/L	1
Toluene	108-88-3	8260B	ND		1.0	0.40	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260B	ND		1.0	0.42	ug/L	1
1,2,3-Trichlorobenzene	87-61-6	8260B	ND		1.0	0.40	ug/L	1

LOQ = Limit of Quantitation
ND = Not detected at or above the DL
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
DL = Detection Limit
J = Estimated result < LOQ and ≥ DL

Volatile Organic Compounds by GC/MS

Client: **EnSafe**
Description: **AC 08 TB**
Date Sampled: **08/21/2019 1510**
Date Received: **08/21/2019**

Laboratory ID: **UH21084-010**
Matrix: **Aqueous**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260B	1	08/23/2019 2153	JTH		26929
2	5030B	8260B	1	08/27/2019 0514	JTH		27101

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
1,2,4-Trichlorobenzene	120-82-1	8260B	ND		1.0	0.40	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260B	ND		1.0	0.40	ug/L	1
1,1,2-Trichloroethane	79-00-5	8260B	ND		1.0	0.40	ug/L	1
Trichloroethene	79-01-6	8260B	ND		1.0	0.40	ug/L	1
Trichlorofluoromethane	75-69-4	8260B	ND		1.0	0.40	ug/L	1
Vinyl chloride	75-01-4	8260B	ND		1.0	0.40	ug/L	1
m+p - Xylenes	179601-23-1	8260B	ND		1.0	0.40	ug/L	1
o - Xylenes	95-47-6	8260B	ND		1.0	0.40	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits	Q	Run 2 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		96	70-130		100	70-130
Bromofluorobenzene		91	70-130		96	70-130
Toluene-d8		101	70-130		99	70-130

LOQ = Limit of Quantitation
ND = Not detected at or above the DL
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
DL = Detection Limit
J = Estimated result < LOQ and ≥ DL

Volatile Organic Compounds by GC/MS

Client: **EnSafe**
Laboratory ID: **UH21084-011**
Description: **AC 09 TB**
Matrix: **Aqueous**
Date Sampled: **08/21/2019 1515**
Date Received: **08/21/2019**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260B	1	08/23/2019 2216	JTH		26929
2	5030B	8260B	1	08/27/2019 0537	JTH		27101

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acetone	67-64-1	8260B	ND		20	5.0	ug/L	1
Benzene	71-43-2	8260B	ND		1.0	0.40	ug/L	1
Bromochloromethane	74-97-5	8260B	ND		1.0	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260B	ND		1.0	0.40	ug/L	1
Bromoform	75-25-2	8260B	ND		1.0	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260B	ND		2.0	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260B	ND		10	2.0	ug/L	1
Carbon disulfide	75-15-0	8260B	ND		1.0	0.40	ug/L	2
Carbon tetrachloride	56-23-5	8260B	ND		1.0	0.40	ug/L	1
Chlorobenzene	108-90-7	8260B	ND		1.0	0.40	ug/L	1
Chloroethane	75-00-3	8260B	ND		2.0	0.40	ug/L	1
Chloroform	67-66-3	8260B	ND		1.0	0.40	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260B	ND		1.0	0.50	ug/L	1
Cyclohexane	110-82-7	8260B	ND		1.0	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260B	ND		1.0	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260B	ND		1.0	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260B	ND		1.0	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260B	ND		1.0	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260B	ND		1.0	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260B	ND		1.0	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260B	ND		2.0	0.60	ug/L	1
1,1-Dichloroethane	75-34-3	8260B	ND		1.0	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260B	ND		1.0	0.40	ug/L	1
1,1-Dichloroethene	75-35-4	8260B	ND		1.0	0.40	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260B	ND		1.0	0.40	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260B	ND		1.0	0.40	ug/L	1
1,2-Dichloropropane	78-87-5	8260B	ND		1.0	0.40	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260B	ND		1.0	0.40	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260B	ND		1.0	0.40	ug/L	1
Ethylbenzene	100-41-4	8260B	ND		1.0	0.40	ug/L	1
2-Hexanone	591-78-6	8260B	ND		10	2.0	ug/L	1
Isopropylbenzene	98-82-8	8260B	ND		1.0	0.40	ug/L	1
Methyl acetate	79-20-9	8260B	ND		1.0	0.40	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260B	ND		1.0	0.40	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260B	ND		10	2.0	ug/L	1
Methylcyclohexane	108-87-2	8260B	ND		5.0	0.40	ug/L	1
Methylene chloride	75-09-2	8260B	ND		1.0	0.40	ug/L	1
Styrene	100-42-5	8260B	ND		1.0	0.41	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260B	ND		1.0	0.40	ug/L	1
Tetrachloroethene	127-18-4	8260B	ND		1.0	0.40	ug/L	1
Toluene	108-88-3	8260B	ND		1.0	0.40	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260B	ND		1.0	0.42	ug/L	1
1,2,3-Trichlorobenzene	87-61-6	8260B	ND		1.0	0.40	ug/L	1

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
H = Out of holding time
W = Reported on wet weight basis

Volatile Organic Compounds by GC/MS

Client: **EnSafe**
Description: **AC 09 TB**
Date Sampled: **08/21/2019 1515**
Date Received: **08/21/2019**

Laboratory ID: **UH21084-011**
Matrix: **Aqueous**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260B	1	08/23/2019 2216	JTH		26929
2	5030B	8260B	1	08/27/2019 0537	JTH		27101

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
1,2,4-Trichlorobenzene	120-82-1	8260B	ND		1.0	0.40	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260B	ND		1.0	0.40	ug/L	1
1,1,2-Trichloroethane	79-00-5	8260B	ND		1.0	0.40	ug/L	1
Trichloroethene	79-01-6	8260B	ND		1.0	0.40	ug/L	1
Trichlorofluoromethane	75-69-4	8260B	ND		1.0	0.40	ug/L	1
Vinyl chloride	75-01-4	8260B	ND		1.0	0.40	ug/L	1
m+p - Xylenes	179601-23-1	8260B	ND		1.0	0.40	ug/L	1
o - Xylenes	95-47-6	8260B	ND		1.0	0.40	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits	Q	Run 2 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		98	70-130		100	70-130
Bromofluorobenzene		103	70-130		98	70-130
Toluene-d8		103	70-130		96	70-130

LOQ = Limit of Quantitation
ND = Not detected at or above the DL
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
DL = Detection Limit
J = Estimated result < LOQ and ≥ DL

Library Search

Client: **EnSafe**
Description: **AC 07 A**
Date Sampled: **08/22/2019 1525**
Date Received: **08/22/2019**

Laboratory ID: **UH21084-012**
Matrix: **Aqueous**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260B	1				26933

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
None Detected		**8260B**					**ug/L**	**1**

LOQ = Limit of Quantitation
ND = Not detected at or above the DL
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
DL = Detection Limit
J = Estimated result < LOQ and ≥ DL

Volatile Organic Compounds by GC/MS

Client: **EnSafe**
Description: **AC 07 A**
Date Sampled: **08/22/2019 1525**
Date Received: **08/22/2019**

Laboratory ID: **UH21084-012**
Matrix: **Aqueous**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260B	5	08/24/2019 0403	JTH		26929
2	5030B	8260B	5	08/27/2019 0623	JTH		27101

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acetone	**67-64-1**	**8260B**	**160**		**100**	**25**	**ug/L**	**1**
Benzene	**71-43-2**	**8260B**	**15**		**5.0**	**2.0**	**ug/L**	**1**
Bromochloromethane	74-97-5	8260B	ND		5.0	2.0	ug/L	1
Bromodichloromethane	75-27-4	8260B	ND		5.0	2.0	ug/L	1
Bromoform	75-25-2	8260B	ND		5.0	2.0	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260B	ND		10	2.0	ug/L	1
2-Butanone (MEK)	**78-93-3**	**8260B**	**32**	**J**	**50**	**10**	**ug/L**	**1**
Carbon disulfide	**75-15-0**	**8260B**	**6.1**		**5.0**	**2.0**	**ug/L**	**2**
Carbon tetrachloride	56-23-5	8260B	ND		5.0	2.0	ug/L	1
Chlorobenzene	108-90-7	8260B	ND		5.0	2.0	ug/L	1
Chloroethane	75-00-3	8260B	ND		10	2.0	ug/L	1
Chloroform	67-66-3	8260B	ND		5.0	2.0	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260B	ND		5.0	2.5	ug/L	1
Cyclohexane	110-82-7	8260B	ND		5.0	2.0	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260B	ND		5.0	2.0	ug/L	1
Dibromochloromethane	124-48-1	8260B	ND		5.0	2.0	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260B	ND		5.0	2.0	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260B	ND		5.0	2.0	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260B	ND		5.0	2.0	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260B	ND		5.0	2.0	ug/L	1
Dichlorodifluoromethane	75-71-8	8260B	ND		10	3.0	ug/L	1
1,1-Dichloroethane	75-34-3	8260B	ND		5.0	2.0	ug/L	1
1,2-Dichloroethane	107-06-2	8260B	ND		5.0	2.0	ug/L	1
1,1-Dichloroethene	75-35-4	8260B	ND		5.0	2.0	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260B	ND		5.0	2.0	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260B	ND		5.0	2.0	ug/L	1
1,2-Dichloropropane	78-87-5	8260B	ND		5.0	2.0	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260B	ND		5.0	2.0	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260B	ND		5.0	2.0	ug/L	1
Ethylbenzene	100-41-4	8260B	ND		5.0	2.0	ug/L	1
2-Hexanone	591-78-6	8260B	ND		50	10	ug/L	1
Isopropylbenzene	98-82-8	8260B	ND		5.0	2.0	ug/L	1
Methyl acetate	79-20-9	8260B	ND		5.0	2.0	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260B	ND		5.0	2.0	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260B	ND		50	10	ug/L	1
Methylcyclohexane	108-87-2	8260B	ND		25	2.0	ug/L	1
Methylene chloride	75-09-2	8260B	ND		5.0	2.0	ug/L	1
Styrene	100-42-5	8260B	ND		5.0	2.1	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260B	ND		5.0	2.0	ug/L	1
Tetrachloroethene	127-18-4	8260B	ND		5.0	2.0	ug/L	1
Toluene	**108-88-3**	**8260B**	**3.7**	**J**	**5.0**	**2.0**	**ug/L**	**1**
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260B	ND		5.0	2.1	ug/L	1
1,2,3-Trichlorobenzene	87-61-6	8260B	ND		5.0	2.0	ug/L	1

LOQ = Limit of Quantitation
ND = Not detected at or above the DL
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
DL = Detection Limit
J = Estimated result < LOQ and ≥ DL

Volatile Organic Compounds by GC/MS

Client: **EnSafe**
Description: **AC 07 A**
Date Sampled: **08/22/2019 1525**
Date Received: **08/22/2019**

Laboratory ID: **UH21084-012**
Matrix: **Aqueous**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260B	5	08/24/2019 0403	JTH		26929
2	5030B	8260B	5	08/27/2019 0623	JTH		27101

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
1,2,4-Trichlorobenzene	120-82-1	8260B	ND		5.0	2.0	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260B	ND		5.0	2.0	ug/L	1
1,1,2-Trichloroethane	79-00-5	8260B	ND		5.0	2.0	ug/L	1
Trichloroethene	79-01-6	8260B	ND		5.0	2.0	ug/L	1
Trichlorofluoromethane	75-69-4	8260B	ND		5.0	2.0	ug/L	1
Vinyl chloride	75-01-4	8260B	ND		5.0	2.0	ug/L	1
m+p - Xylenes	179601-23-1	8260B	ND		5.0	2.0	ug/L	1
o - Xylenes	95-47-6	8260B	ND		5.0	2.0	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits	Q	Run 2 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		101	70-130		101	70-130
Bromofluorobenzene		92	70-130		97	70-130
Toluene-d8		96	70-130		99	70-130

LOQ = Limit of Quantitation
ND = Not detected at or above the DL
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
DL = Detection Limit
J = Estimated result < LOQ and ≥ DL

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106 Vantage Point Drive West Columbia, SC 29172 (803) 791-9700 Fax (803) 791-9111 www.shealylab.com

Volatile Organic Compounds by GC/MS

Client: **EnSafe**
Description: **AC 10 TB**
Date Sampled: **08/22/2019 1530**
Date Received: **08/22/2019**

Laboratory ID: **UH21084-013**
Matrix: **Aqueous**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260B	1	08/23/2019 2239	JTH		26929

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acetone	67-64-1	8260B	ND		20	5.0	ug/L	1
Benzene	71-43-2	8260B	ND		1.0	0.40	ug/L	1
Bromochloromethane	74-97-5	8260B	ND		1.0	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260B	ND		1.0	0.40	ug/L	1
Bromoform	75-25-2	8260B	ND		1.0	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260B	ND		2.0	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260B	ND		10	2.0	ug/L	1
Carbon disulfide	75-15-0	8260B	ND		1.0	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260B	ND		1.0	0.40	ug/L	1
Chlorobenzene	108-90-7	8260B	ND		1.0	0.40	ug/L	1
Chloroethane	75-00-3	8260B	ND		2.0	0.40	ug/L	1
Chloroform	67-66-3	8260B	ND		1.0	0.40	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260B	ND		1.0	0.50	ug/L	1
Cyclohexane	110-82-7	8260B	ND		1.0	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260B	ND		1.0	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260B	ND		1.0	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260B	ND		1.0	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260B	ND		1.0	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260B	ND		1.0	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260B	ND		1.0	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260B	ND		2.0	0.60	ug/L	1
1,1-Dichloroethane	75-34-3	8260B	ND		1.0	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260B	ND		1.0	0.40	ug/L	1
1,1-Dichloroethene	75-35-4	8260B	ND		1.0	0.40	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260B	ND		1.0	0.40	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260B	ND		1.0	0.40	ug/L	1
1,2-Dichloropropane	78-87-5	8260B	ND		1.0	0.40	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260B	ND		1.0	0.40	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260B	ND		1.0	0.40	ug/L	1
Ethylbenzene	100-41-4	8260B	ND		1.0	0.40	ug/L	1
2-Hexanone	591-78-6	8260B	ND		10	2.0	ug/L	1
Isopropylbenzene	98-82-8	8260B	ND		1.0	0.40	ug/L	1
Methyl acetate	79-20-9	8260B	ND		1.0	0.40	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260B	ND		1.0	0.40	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260B	ND		10	2.0	ug/L	1
Methylcyclohexane	108-87-2	8260B	ND		5.0	0.40	ug/L	1
Methylene chloride	75-09-2	8260B	ND		1.0	0.40	ug/L	1
Styrene	100-42-5	8260B	ND		1.0	0.41	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260B	ND		1.0	0.40	ug/L	1
Tetrachloroethene	127-18-4	8260B	ND		1.0	0.40	ug/L	1
Toluene	108-88-3	8260B	ND		1.0	0.40	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260B	ND		1.0	0.42	ug/L	1
1,2,3-Trichlorobenzene	87-61-6	8260B	ND		1.0	0.40	ug/L	1
1,2,4-Trichlorobenzene	120-82-1	8260B	ND		1.0	0.40	ug/L	1

LOQ = Limit of Quantitation
ND = Not detected at or above the DL
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
DL = Detection Limit
J = Estimated result < LOQ and ≥ DL

Volatile Organic Compounds by GC/MS

Client: **EnSafe**
Description: **AC 10 TB**
Date Sampled: **08/22/2019 1530**
Date Received: **08/22/2019**

Laboratory ID: **UH21084-013**
Matrix: **Aqueous**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260B	1	08/23/2019 2239	JTH		26929

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
1,1,1-Trichloroethane	71-55-6	8260B	ND		1.0	0.40	ug/L	1
1,1,2-Trichloroethane	79-00-5	8260B	ND		1.0	0.40	ug/L	1
Trichloroethene	79-01-6	8260B	ND		1.0	0.40	ug/L	1
Trichlorofluoromethane	75-69-4	8260B	ND		1.0	0.40	ug/L	1
Vinyl chloride	75-01-4	8260B	ND		1.0	0.40	ug/L	1
m+p - Xylenes	179601-23-1	8260B	ND		1.0	0.40	ug/L	1
o - Xylenes	95-47-6	8260B	ND		1.0	0.40	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		97	70-130
Bromofluorobenzene		92	70-130
Toluene-d8		99	70-130

LOQ = Limit of Quantitation
ND = Not detected at or above the DL
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
DL = Detection Limit
J = Estimated result < LOQ and ≥ DL

Chain of Custody
and
Miscellaneous Documents

SHEALY **Chain of Custody Record**

SHEALY ENVIRONMENTAL SERVICES, INC.
106 Vantage Point Drive • West Columbia, SC 29172
Telephone No. 803-791-9700 Fax No. 803-791-9111
www.shealylab.com

Number 098259

Client: Ensafe / DHEC
Address: 2600 Bull ST
City: Columbia State: SC Zip Code: 29201
Project Name: ABLE Contracting
Project No.:
P.O. No.:
Report to Contact: Carol Crooks
Sampler's Signature: X
Printed Name: Jason Williams
Telephone No. / E-mail: 803 898 0810 crooksc@dhec.sc.gov
Quote No.: 22364
Analysis (Attach list if more space is needed)
Page 1 of 2

UH21084

Sample ID / Description (Containers for each sample may be combined on one line.)	Date	Time	Composite/Grab	Matrix: Aqueous	Solid	Other (Specify)	No of Containers by Preservative Type: Unpres.	HCl	NaOH	VOC	SVOC	Pest/PCB	Cyanide	TAC Metals	TAC Metal/CN	Remarks / Cooler I.D.
AC05	8/21/19	11:29	G	X			4	3	1	X	X	X	X	X		
AC06	"	1145	G	X			4	1	3	1	X	X	X	X		
AC07	"	1210	G	X			4	1	3	1	X	X	X	X		
AC-01	"	1240	G	X			8	1	6	1	X	X	X	X		
AC02	"	1305	G	X			4	1	3	1	X	X	X	X		
AC02-S	"	1310	G		X		11				X	X	X		X	
AC03	"	1345	G	X			4	1	3	1	X	X	X	X		
AC03-S	"	1350	G		X		6				X	X	X		X	
AC04	"	1450	G	X			4	1	3	1	X	X	X	X		
AC08 FB		1510	G	X					3		X					

Turn Around Time Required (Prior lab approval required for expedited TAT.): ☐ Standard ☑ Rush (Specify)

Sample Disposal: ☐ Return to Client ☑ Disposal by Lab

Possible Hazard Identification: ☑ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison ☐ Unknown

QC Requirements (Specify): Duplicate AC01-water AC02S-soil

Relinquished by	Date	Time	Received by	Date	Time
1. Jason Williams	8/21/19	1845	1. SHEALY		
2. [signature]			2.		
3.			3.		
4.			4. Laboratory received by [signature]	8/21/19	1845

Note: All samples are retained for four weeks from receipt unless other arrangements are made.

LAB USE ONLY
Received on Ice (Circle): Yes No Ice Pack
Receipt Temp. 1.9, 01.8

DISTRIBUTION: WHITE & YELLOW-Return to laboratory with Sample(s); PINK-Field/Client Copy

Document Number: F-AD-133 Effective Date: 09-01-2014

SHEALY

Chain of Custody Record

SHEALY ENVIRONMENTAL SERVICES, INC.
106 Vantage Point Drive • West Columbia, SC 29172
Telephone No. 803-791-9700 Fax No. 803-791-9111
www.shealylab.com

Number 098260

Client: ENSAFE / DHEC
Address: 2600 Bull ST
City: Columbia | State: SC | Zip Code: 29201
Project Name: ABLE Contracting
Project No.:
P.O. No.:

Report to Contact: Carol Crooks
Sampler's Signature: X
Printed Name: Jason Williams

Telephone No. / E-mail: 803 8980815 Crooks CC@ dHEC.sc.gov
Analysis (Attach list if more space is needed)
Quote No.: 22364
Page 2 of 2

UH21084
KMN2

Sample ID / Description (Containers for each sample may be combined on one line.)	Date	Time	Grab or Composite	Matrix: Aqueous	Matrix: Solid	Matrix: Non-aqueous	No. of Containers or Preservative Type: Unpres.	HNO3	HNO3	HCl	NaOH	5035 Kit	VOC	Remarks / Cooler I.D.
AC 09 TB	8-21-19	1515	G	X						3			X	

Turn Around Time Required (Prior lab approval required for expedited TAT.) ☐ Standard ☑ Rush (Specify)
Sample Disposal ☐ Return to Client ☑ Disposal by Lab
Possible Hazard Identification ☑ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison ☐ Unknown
QC Requirements (Specify) Replicate AC01 water AC02S-soil

	Date	Time		Date	Time
1. Relinquished by: Jason Williams	8/21/19	1845	1. Received by		
2. Relinquished by			2. Received by		
3. Relinquished by			3. Received by		
4. Relinquished by			4. Laboratory received by	8/21/19	1845

Note: All samples are retained for four weeks from receipt unless other arrangements are made.

LAB USE ONLY
Received on ice (Circle) Yes No Ice Pack Receipt Temp. 1.9 / 1.8 °C

DISTRIBUTION: WHITE & YELLOW-Return to laboratory with Sample(s); PINK-Field/Client Copy

Document Number: F-AD-133 Effective Date: 08-01-2014

Shealy Environmental Services, Inc.
Document Number: MD00.8C-14

Effective Date: 8/2/2018

Sample Receipt Checklist (SRC)

Client: EnSafe Cooler Inspected by/date: BMG / 08/21/19 Lot #: UH21084

Means of receipt: ☑ SESI ☐ Client ☐ UPS ☐ FedEx ☐ Other.

☐ Yes	☑ No		1. Were custody seals present on the cooler?
☐ Yes	☐ No	☑ NA	2. If custody seals were present, were they intact and unbroken?

pH Strip ID: 19-1033 Chlorine Strip ID: 19-1058 Tested by: BMG

Original temperature upon receipt / Derived (Corrected) temperature upon receipt %Solid Snap-Cup ID: 19-1020

1.9 / 1.9 °C 1.8 / 1.8 °C NA / NA °C NA / NA °C

Method: ☑ Temperature Blank ☐ Against Bottles IR Gun ID: 5 IR Gun Correction Factor: 0 °C

Method of coolant: ☑ Wet Ice ☐ Ice Packs ☐ Dry Ice ☐ None

☐ Yes	☐ No	☑ NA	3. If temperature of any cooler exceeded 6.0°C, was Project Manager Notified? PM was Notified by: phone / email / face to face (circle one).
☐ Yes	☐ No	☑ NA	4. Is the commercial courier's packing slip attached to this form?
☑ Yes	☐ No		5. Were proper custody procedures (relinquished/received) followed?
☑ Yes	☐ No		6. Were sample IDs listed on the COC?
☐ Yes	☑ No		7. Were sample IDs listed on all sample containers?
☑ Yes	☐ No		8. Was collection date & time listed on the COC?
☐ Yes	☑ No		9. Was collection date & time listed on all sample containers?
☐ Yes	☑ No		10. Did all container label information (ID, date, time) agree with the COC?
☑ Yes	☐ No		11. Were tests to be performed listed on the COC?
☑ Yes	☐ No		12. Did all samples arrive in the proper containers for each test and/or in good condition (unbroken, lids on, etc.)?
☑ Yes	☐ No		13. Was adequate sample volume available?
☑ Yes	☐ No		14. Were all samples received within ½ the holding time or 48 hours, whichever comes first?
☑ Yes	☐ No		15. Were any samples containers missing/excess (circle one) samples Not listed on COC?
☑ Yes	☐ No	☐ NA	16. For VOA and RSK-175 samples, were bubbles present >"pea-size" (¼" or 6mm in diameter) in any of the VOA vials?
☑ Yes	☐ No	☐ NA	17. Were all DRO/metals/nutrient samples received at a pH of < 2?
☑ Yes	☐ No	☐ NA	18. Were all cyanide samples received at a pH > 12 and sulfide samples received at a pH > 9?
☑ Yes	☐ No	☐ NA	19. Were all applicable NH_3/TKN/cyanide/phenol/625 (< 0.5mg/L) samples free of residual chlorine?
☐ Yes	☐ No	☑ NA	20. Were client remarks/requests (i.e. requested dilutions, MS/MSD designations, etc…) correctly transcribed from the COC into the comment section in LIMS?
☐ Yes	☑ No		21. Was the quote number listed on the container label? If yes, Quote # NA

Sample Preservation (Must be completed for any sample(s) incorrectly preserved or with headspace.)

Sample(s) NA were received incorrectly preserved and were adjusted accordingly in sample receiving with NA mL of circle one: H_2SO_4, HNO_3, HCl, NaOH using SR # NA.
Time of preservation NA. If more than one preservative is needed, please note in the comments below.

Sample(s) -002(AC06),-004(AC01),-005(AC02),-007(AC03) were received with bubbles >6 mm in diameter.

Samples(s) NA were received with TRC > 0.5 mg/L (If #19 is *no*) and were adjusted accordingly in sample receiving with sodium thiosulfate ($Na_2S_2O_3$) with Shealy ID: NA

SR barcode labels applied by: BMG/JSH Date: 08/21/19

Comments: Missing: HCL vials for -003(AC07)
-006(AC02-S) : no ID/date/time on 2 of 4 DI w/ SB; -007(AC03); no ID/date/time for 1 of 3 vials,
-009(AC04): containers collection time says 1415

Shealy Environmental Services, Inc.
106 Vantage Point Drive West Columbia, SC 29172 (803) 791-9700 Fax (803) 791-9111 www.shealylab.com

SHEALY ENVIRONMENTAL SERVICES, INC.

Chain of Custody Record

106 Vantage Point Drive • West Columbia, SC 29172
Telephone No. 803-791-9700 Fax No. 803-791-9111
www.shealylab.com

Number 098429

Client: Ensafe / DHEC
Address: 2600 Bull St
City: Columbia | State: SC | Zip Code: 29201
Project Name: Able Contracting
Project No.:
P.O. No.:
Report to Contact: Carol Cooks
Sampler's Signature: X
Printed Name: Jason C Williams
Telephone No. / E-mail: 803 888-0510 CcooksCL@dhec.sc.gov
Quote No.: 22364
Analysis (Attach list if more space is needed): VOC
Page 1 of 1
UH21084
KMN2

Sample ID / Description (Containers for each sample may be combined on one line.)	Date	Time	Grab (G) / Composite (C)	Matrix: Aqueous	Solid	Non-Aqueous	No. of Containers by Preservative Type: Unpres.	H2SO4	HNO3	HCl	NaOH	5035 Kit	VOC	Remarks / Cooler I.D.
AC 07A	22 Aug	1525	G	X					X	3			X	
AC 10TB	22 Aug	1530	G	X						2			X	

Turn Around Time Required (Prior lab approval required for expedited TAT.): ☐ Standard ☐ Rush (Specify)
Sample Disposal: ☐ Return to Client ☐ Disposal by Lab
Possible Hazard Identification: ☑ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison ☐ Unknown
QC Requirements (Specify): AC 10 T.P BLANK

1. Relinquished by: Jason C Williams	Date: 22 Aug	Time: 1300	1. Received by:	Date:	Time:
2. Relinquished by:	Date:	Time:	2. Received by:	Date:	Time:
3. Relinquished by:	Date:	Time:	3. Received by:	Date:	Time:
4. Relinquished by:	Date:	Time:	4. Laboratory received by:	Date: 8/22/19	Time: 1800

Note: All samples are retained for four weeks from receipt unless other arrangements are made.

LAB USE ONLY
Received on Ice (Circle): Yes No Ice Pack Receipt Temp. 5.5 °C TB

DISTRIBUTION: WHITE & YELLOW-Return to laboratory with Sample(s); PINK-Field/Client Copy

Document Number: F-AD-133 Effective Date: 08-01-2014

Shealy Environmental Services, Inc
Document Number: ME00180C-14

Effective Date: 8/2/2018

Sample Receipt Checklist (SRC)

Client: Ensafe/DHEC Cooler Inspected by/date: JSH / 08/22/19 Lot #: UH22049 [illegible]

Means of receipt: ☐ SESI ☑ Client ☐ UPS ☐ FedEx ☐ Other:

☐ Yes	☑ No		1. Were custody seals present on the cooler?
☐ Yes	☐ No	☑ NA	2. If custody seals were present, were they intact and unbroken?

pH Strip ID: NA Chlorine Strip ID: NA Tested by: NA

Original temperature upon receipt / Derived (Corrected) temperature upon receipt %Solid Snap-Cup ID: NA

5.5 / 5.5 °C NA / NA °C NA / NA °C NA / NA °C

Method: ☑ Temperature Blank ☐ Against Bottles IR Gun ID: 6 IR Gun Correction Factor: 0 °C

Method of coolant: ☑ Wet Ice ☐ Ice Packs ☐ Dry Ice ☐ None

☐ Yes	☐ No	☑ NA	3. If temperature of any cooler exceeded 6.0°C, was Project Manager Notified? PM was Notified by: phone / email / face-to-face (circle one).
☐ Yes	☐ No	☑ NA	4. Is the commercial courier's packing slip attached to this form?
☑ Yes	☐ No		5. Were proper custody procedures (relinquished/received) followed?
☑ Yes	☐ No		6. Were sample IDs listed on the COC?
☑ Yes	☐ No		7. Were sample IDs listed on all sample containers?
☑ Yes	☐ No		8. Was collection date & time listed on the COC?
☑ Yes	☐ No		9. Was collection date & time listed on all sample containers?
☑ Yes	☐ No		10. Did all container label information (ID, date, time) agree with the COC?
☑ Yes	☐ No		11. Were tests to be performed listed on the COC?
☑ Yes	☐ No		12. Did all samples arrive in the proper containers for each test and/or in good condition (unbroken, lids on, etc.)?
☑ Yes	☐ No		13. Was adequate sample volume available?
☐ Yes	☑ No		14. Were all samples received within ½ the holding time or 48 hours, whichever comes first?
☐ Yes	☑ No		15. Were any samples containers missing/excess (circle one) samples Not listed on COC?
☑ Yes	☐ No	☐ NA	16. For VOA and RSK-175 samples, were bubbles present >"pea-size" (¼"or 6mm in diameter) in any of the VOA vials?
☐ Yes	☐ No	☑ NA	17. Were all DRO/metals/nutrient samples received at a pH of < 2?
☐ Yes	☐ No	☑ NA	18. Were all cyanide samples received at a pH > 12 and sulfide samples received at a pH > 9?
☐ Yes	☐ No	☑ NA	19. Were all applicable NH_3/TKN/cyanide/phenol/625 (< 0.5mg/L) samples free of residual chlorine?
☐ Yes	☐ No	☑ NA	20. Were client remarks/requests (i.e. requested dilutions, MS/MSD designations, etc…) correctly transcribed from the COC into the comment section in LIMS?
☐ Yes	☑ No		21. Was the quote number listed on the container label? If yes, Quote # NA

Sample Preservation (Must be completed for any sample(s) incorrectly preserved or with headspace.)

Sample(s) NA were received incorrectly preserved and were adjusted accordingly in sample receiving with NA mL of circle one: H2SO4, HNO3, HCl, NaOH using SR # NA.
Time of preservation NA. If more than one preservative is needed, please note in the comments below.

Sample(s) AC 07A were received with bubbles >6 mm in diameter.

Samples(s) NA were received with TRC > 0.5 mg/L (If #19 is *no*) and were adjusted accordingly in sample receiving with sodium thiosulfate ($Na_2S_2O_3$) with Shealy ID: NA.

SR barcode labels applied by: BMG Date: 08/22/19

Comments: