From:	Kalve, Erica
To:	Soo, Kit, Env. Health; "Steven Greenwood"
Cc:	Tan, Angeline; Roe, Dilan, Env. Health
Subject:	RE: Proposed Indoor Air Sampling Locations - RO0411
Date:	Friday, May 26, 2017 11:35:20 AM
Attachments:	DRAFT - IA Sample Locations Bldg 300.pdf Tables_Aspire Sampling Results 052617.pdf

Hi Kit,

We have received the results and the data continue to confirm that the interim measure with the HVAC is working. I have a copy of the draft report and am in the process of reviewing it and it should be ready for submittal by the end of next week. Attached is a table with all of the results from the recent sample events for reference and Figure 1 with the sample locations. For your information, we conducted four sample events as follows:

- March 12, 2017 was conducted when school was not in session, outdoor air roof samples were not collected.
- April 3, 2017 was conducted when school was not in session.
- April 8, 2017 was conducted with the HVAC on for Building 300 to confirm that the HVAC system was effectively mitigating elevated concentrations of benzene detected in the woman's bathroom.
- April 18, 2017 was conducted when school was in session, the HVAC system was on as an interim action for Building 300 and will remain on until an alternative mitigation measure is implemented.

The last sample event conducted on April 18, 2017, is the only one that is representative of normal building conditions during occupancy so to make it easier to review, we highlighted those results in yellow – the other events were conducted during weekend or holiday days when school was not in session and the school was generally vacant.

We are in the process of analyzing the data. I need to coordinate with Steven regarding the path forward but expect that we could send a follow up email with our proposed plan and confirm that you agree prior to submittal of the report.

Please let us know if you have any questions or comments you would like to schedule a call to discuss.

Best regards,
Erica
Erica Kalve, PG | Principal Geologist | erica.kalve@arcadis.com
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Please note new Direct Dial Office Number: 415 915 8052

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-----Original Message-----
From: Soo, Kit, Env. Health [mailto:Kit.Soo@acgov.org]
Sent: Wednesday, May 24, 2017 8:53 AM
To: Kalve, Erica <Erica.Kalve@arcadis.com>; 'Steven Greenwood'
<Steven.Greenwood@aspirepublicschools.org>
Cc: Tan, Angeline <Angeline.Tan@arcadis.com>; Roe, Dilan, Env. Health <Dilan.Roe@acgov.org>
Subject: RE: Proposed Indoor Air Sampling Locations - RO0411

Hi Erica and Steve,

Just checking in on the status of this since I have not heard further from you on this issue. Please let me know when you plan to send an update on the rest of the analytical results for samples collected on March 12, 2017 and the results for the samples collected on April 3, 2017 will was supposed to be reported on April 19, 2017; and the final report for this work so that I can revise the new submittal date.

Thanks,

Kit

_____

From: Soo, Kit, Env. Health
Sent: Friday, April 14, 2017 2:08 PM
To: 'Kalve, Erica'; 'Steven Greenwood'
Cc: Tan, Angeline; Roe, Dilan, Env. Health
Subject: RE: Proposed Indoor Air Sampling Locations - RO0411

Erica,

Thank you for preparing this summary for us. Although it appears that the HVAC is an effective interim measure to mitigate vapor intrusion concerns in Building 300 at this time, ACDEH would like you to continue to keep the HVAC continuously on, and keep the bathrooms in Building 300 OUT OF SERVICE until we have completed the review of the Report that summarizes and present all the details to the sampling events and results. We will review the final report as soon as it is uploaded and submitted to Geotracker and the County FTP site. Please continue to keep us up to date as you receive additional sampling data.

Thanks,

Kit Soo, PG
Senior Hazardous Materials Specialist
Alameda County Department of Environmental Health (ACDEH)
1131 Harbor Bay Pkwy
Alameda, CA 94502
Direct - 510-567-6791
kit.soo@acgov.org

From: Kalve, Erica [mailto:Erica.Kalve@arcadis.com]
Sent: Thursday, April 13, 2017 8:05 AM
To: Soo, Kit, Env. Health <Kit.Soo@acgov.org>; 'Steven Greenwood' <Steven.Greenwood@aspirepublicschools.org>
Cc: Tan, Angeline <Angeline.Tan@arcadis.com>; Roe, Dilan, Env. Health <Dilan.Roe@acgov.org>
Subject: RE: Proposed Indoor Air Sampling Locations - RO0411
Importance: High

Dear Kit,

Attached are the analytical results for samples collected on Saturday, April 8th. These samples were collected with the HVAC on to determine if the HVAC is sufficiently mitigating the elevated concentrations of benzene in the women's bathroom. As you can see, the benzene concentration detected in the women's bathroom was 0.62 µg/m3 and the concentration detected in outdoor air was estimated at 0.24 µg/m3. These results are similar to historical detections of benzene in the bathroom.

In addition to the collection of these two samples, Arcadis conducted a brief interview with the schools facility manager, building walkthrough, and pathway evaluation. A brief summary is provided below:

* Site contact Tony Garver informed me that:
- About one month ago (approximately same timeframe when the last round of samples were collected) the heating system was being serviced in the building; prior to that the heating had not been used.
- The bathrooms are no longer used by students during the school day due to disciplinary reasons.
- The building hosts games about every other weekend, so the bathrooms are not consistently in use.

* The following observations were recorded during the building walkthrough of building 300
- VOCs were not detected using a PPB Rae PID meter to measure ambient air throughout the building.

- There appears to be positive pressure in the women's and men's bathroom compared to the exterior rooms with adjoining doors (i.e., to the shower room and to the gymnasium).
- Based on dust build up, showers are not used in either the women's or men's bathroom.
- The valves on the roof are open but the turbine was not installed.

* The pathway evaluation involved taping over potential pathways with blue painters tape and a plastic drop cloth for one hour before measuring with the PPB Rae. The following readings were recorded:
- Drains in the kitchen at 79 and 86 ppb.
- Pipe penetration below the kitchen sinks at 153 ppb.
- Drain in the girls' room at 220 ppb.
- Drain in the girls' shower room at 98 ppb.
- Conduit penetration un the fire alarm cabinet in the server room at 35 ppb.
- Concrete slab crack in the gymnasium equipment storage room at 141 ppb.

* Depth to water at MW-4 (located outside Building 300) was measured at 3.13 feet below top of casing.

Based on the observed positive pressure in the bathrooms and the analytical results for samples collected in the women's bathroom, it appears that the HVAC is an effective interim measure to mitigate vapor intrusion concerns in Building 300 and it should be acceptable to put the bathrooms back into service. The HVAC system will remain on continuously while we evaluate alternative long-term solutions. We plan to discuss pouring water down all the drains in the building this week and ensuring that p-traps in the drains are fully engaged as this should help mitigate VOCs that are migrating into the building through the drain pipes.

I am out of the office this week but will be back next week and will plan to continue evaluating the information we obtained during the April 8 site walk. We are working with the lab to see if they will be able to send us the rest of the analytical results for samples collected on March 12th early next week, and the results for samples collected on April 3, 2017 will be reported on April 19, 2017. We will keep you informed of the new results as they become available.

Please let us know if you concur with our recommendation to put the bathrooms back in service, or if you have questions or comments you would like to discuss prior to doing so.

Thank you very much for your time.

Sincerely,

Erica

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[cid:image001.png@01D2B51F.93E2BE90]

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From: Soo, Kit, Env. Health [mailto:Kit.Soo@acgov.org]
Sent: Monday, April 10, 2017 3:27 PM
To: 'Steven Greenwood'
<Steven.Greenwood@aspirepublicschools.org<mailto:Steven.Greenwood@aspirepublicschools.org>>
Cc: Tan, Angeline <Angeline.Tan@arcadis.com<mailto:Angeline.Tan@arcadis.com>>; Roe, Dilan, Env. Health <Dilan.Roe@acgov.org<mailto:Dilan.Roe@acgov.org>>; Kalve, Erica
<Erica.Kalve@arcadis.com<mailto:Erica.Kalve@arcadis.com>>
Subject: RE: Proposed Indoor Air Sampling Locations - RO0411

Dear Mr. Greenwood,

This is to let you know that Dilan Roe and I spoke to Erica Kalve from Arcadis this afternoon (April 10, 2017)) to get a more details on the air sample results for the samples collected from Building 300 on March 12, 2017. She provided the details as indicated in her latest email to us dated April 7, 2017. It is our understanding that Benzene was detected at an estimated concentration of 22 micrograms per cubic meter (µg/m3) at sample location IA-02 which is located in the girls bathroom in building 300. These results are not representative of normal operating conditions and historical results indicate that benzene has usually been detected at much lower concentrations during the September 2015 (0.28 µg/m3) and April 2016 (0.54 µg/m3) sampling events, respectively.

Based on the recent elevated detection of benzene at IA-02, we understand that the heating, ventilation, and air-conditioning (HVAC) system at both the girls and boys bathroom has been turned on and the doors to the bathrooms are locked. We would like to reiterate that the HVAC system must be on at all times and that the doors to the bathroom remain lock and inaccessible until this issue with respect to the elevated benzene indoor air concentration is resolved.

Please let me know if you have any questions.

Thank you,

Kit Soo, PG
Senior Hazardous Materials Specialist
Alameda County Department of Environmental Health (ACDEH)
1131 Harbor Bay Pkwy
Alameda, CA 94502
Direct - 510-567-6791
kit.soo@acgov.org<mailto:kit.soo@acgov.org>

From: Soo, Kit, Env. Health
Sent: Monday, April 10, 2017 2:00 PM
To: 'Kalve, Erica' <Erica.Kalve@arcadis.com<mailto:Erica.Kalve@arcadis.com>>; Steven Greenwood <Steven.Greenwood@aspirepublicschools.org<mailto:Steven.Greenwood@aspirepublicschools.org>>
Cc: Tan, Angeline <Angeline.Tan@arcadis.com<mailto:Angeline.Tan@arcadis.com>>; Roe, Dilan, Env. Health <Dilan.Roe@acgov.org<mailto:Dilan.Roe@acgov.org>>
Subject: RE: Proposed Indoor Air Sampling Locations - RO0411

Hi Erica,

Thank you for sending this information and informing us. We would like to discuss this issue including your proposed interim response actions with you on a conference call as soon as possible. Please advise when of the below is good for you:

- April 10, 2017 (Today) – anytime until 5 pm.
- April 11, 2017 (Tuesday) – anytime between 11:30 am and 1:00 pm

I also just left you a message and I believe you will be calling me back in 10 minutes or so, I look forward to speaking with you then.

Thanks, Kit

From: Kalve, Erica [mailto:Erica.Kalve@arcadis.com]
Sent: Friday, April 07, 2017 1:18 AM
To: Soo, Kit, Env. Health <Kit.Soo@acgov.org<mailto:Kit.Soo@acgov.org>>; Steven Greenwood <Steven.Greenwood@aspirepublicschools.org<mailto:Steven.Greenwood@aspirepublicschools.org>>
Cc: Tan, Angeline <Angeline.Tan@arcadis.com<mailto:Angeline.Tan@arcadis.com>>; Roe, Dilan, Env. Health <Dilan.Roe@acgov.org<mailto:Dilan.Roe@acgov.org>>
Subject: RE: Proposed Indoor Air Sampling Locations - RO0411

Dear Kit,

We are sending this email to notify you of the air sample results for samples collected from the subject site on March 12th, 2017. This email also provides a proposed path forward and schedule.

We called and left a message last week to provide an update regarding our sample schedule. We have had an issue trying to coordinate with a contractor that can safely place the outdoor air sample canisters on the roof. At this time, we have conducted two sample events, one was conducted on Sunday, March 12th and the second event was conducted on Friday, April 3rd. Both events were conducted when school was not in session and the indoor air results are representative of conditions when the site is unoccupied. The indoor air event conducted on March 19th was limited in that the sampling team was unable to place canisters on the roof to obtain the necessary background samples that we proposed in the field sampling plan, and that is the reason why an additional sample event was conducted on April 3rd, while school was out on spring break. Note that spring break is out this week and there will be a teacher work day on Monday and school will be back in session next Tuesday.

We received a subset of laboratory results for samples collected on March 12th, and additional laboratory results should be provided later today or tomorrow. A site map showing the approximate sample locations for samples collected during the March 12th sample event is shown on the attached Figure 1 and the results received to date for Building 300 are summarized in the table below.

Sample Location

Sample Date

Benzene

Toluene

Ethyl-benzene

m,p-Xylene

o-Xylene

MTBE

TPHg

Naphthalene

IA-01

3/12/2017

1.2

4.2

0.84

3.0

1.1

0.010 J

180

0.27 J

IA-02

3/12/2017

22 J

4.5

1.0

3.0

1.1

0.010 J

310

0.32 J

IA-03

3/12/2017

1.2

4.2

0.81

3.0

1.1

<0.58

140

0.37 J

IA-04

3/12/2017

1.2

4.3

0.84

3.2

1.2

<0.56

150

0.35 J

IA-05

3/12/2017

1.1

3.8

0.76

2.8

1.0

0.012 J

110

0.32 J

IA-06

3/12/2017

1.1

3.8

0.76

2.7

1.0

<0.60

130

0.32 J

IA-07

3/12/2017

0.96

3.4

1.1

4.2

1.9

0.0094 J

120

0.46 J

IA-08

3/12/2017

0.84

2.1

0.52

1.8

0.66

0.011 J

<65

0.30 J

IA-09

3/12/2017

0.82

4.3

0.65

2.3

1.2

0.024 J

<67

0.31 J

IA-10

3/12/2017

0.86

2.2

0.49

1.7

0.66

0.0088 J

<66

0.29 J

Notes

MTBE = methyl tertiary-butyl ether

TPHg = total petroleum hydrocarbons as gasoline

< = not detected above the method reporting limit

Benzene was detected above the respective criteria in the six indoor air samples analyzed (outdoor air and riser sample results have not been reported yet). Additionally, benzene was detected at an estimated concentration of 22 micrograms per cubic meter (µg/m3) at sample location IA-02 which is located in the girls bathroom to building 300. These results are not representative of normal operating conditions as historical results indicate that benzene has usually been detected at much lower concentrations including 0.28 µg/m3 and 0.54 µg/m3 during the September 2015 and April 2016 sample events, respectively.

We plan to initiate interim response actions to address the elevated concentration of benzene detected in the girls bathroom in building 300. Our proposed path forward is as follows:

* Aspire is going to turn on the HVAC system for building 300 as an interim action to reduce benzene concentrations in the bathroom. The school has been closed all week and the maintenance personnel may not be available to help implement this action until Monday morning.
* Arcadis plans to collect an 8-hour indoor air sample at location IA-02 once the HVAC system is operating to assess air quality in the bathroom following implementation of the interim action. Samples will be submitted to the laboratory on a 24-hour turnaround time. Assuming samples are collected on Monday results would be expected by end of business on Wednesday.
* Arcadis plans to conduct a pathway evaluation in the bathroom during the site visit. If we are able

to identify any meaningful pathways, we will plan to seal the pathways. We can provide additional detail on the pathway sealing approach following the pathway evaluation.
* Aspire will place notification on the door to the bathrooms in Building 300 noting that the bathrooms are out-of-service. They will remain out-of-service until we confirm that benzene concentrations are below levels of concern. Once we confirm that the HVAC is working as an interim measure, Aspire will plan to keep the HVAC operating continuously until other mitigation measures are implemented and effectiveness is demonstrated.

A third sample event is currently scheduled for April 18th to document conditions during normal school hours. We will continue to keep you informed regarding confirmation sample results, pathway sealing activities, and associated activities.

Please let us know if you have any questions or would like to discuss the information provided above. We look forward to hearing from you.

Sincerely,
Erica

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From: Soo, Kit, Env. Health [mailto:Kit.Soo@acgov.org]
Sent: Tuesday, February 21, 2017 8:49 AM
To: Kalve, Erica <Erica.Kalve@arcadis.com<mailto:Erica.Kalve@arcadis.com>>; Steven Greenwood <Steven.Greenwood@aspirepublicschools.org<mailto:Steven.Greenwood@aspirepublicschools.org>>
Cc: Tan, Angeline <Angeline.Tan@arcadis.com<mailto:Angeline.Tan@arcadis.com>>; Roe, Dilan, Env. Health <Dilan.Roe@acgov.org<mailto:Dilan.Roe@acgov.org>>
Subject: RE: Proposed Indoor Air Sampling Locations - RO0411

Dear Erica,

Based on your request below, the schedule for the indoor air sampling for Buildings 200 and 300 has

been extended as requested and sampling must be conducted no later than March 20, 2017.

If you have any questions, please let me know. Thanks, Kit

From: Kalve, Erica [mailto:Erica.Kalve@arcadis.com]
Sent: Friday, February 17, 2017 11:14 AM
To: Soo, Kit, Env. Health <Kit.Soo@acgov.org<mailto:Kit.Soo@acgov.org>>
Cc: Tan, Angeline <Angeline.Tan@arcadis.com<mailto:Angeline.Tan@arcadis.com>>; Steven Greenwood
<Steven.Greenwood@aspirepublicschools.org<mailto:Steven.Greenwood@aspirepublicschools.org>>; Roe, Dilan, Env. Health <Dilan.Roe@acgov.org<mailto:Dilan.Roe@acgov.org>>
Subject: RE: Proposed Indoor Air Sampling Locations - RO0411

Dear Kit,

Thank you for your time on Wednesday afternoon to discuss the issue with limited Summa canisters. As discussed, we contacted several laboratories and found that only one lab is able to provide Summa canisters – but even that was limited to one of the two events that we need to implement. Also, I am not familiar with the lab's performance and after asking around understand that other project teams have had concerns with the quality of the labs data for soil and groundwater samples. As such, we have decided that it is not a good idea to switch labs even though I would gladly do it otherwise.

As discussed, sampling over a normal weekend will provide the data necessary to assess indoor and outdoor air conditions when school is not in session and we do not need to wait for the next holiday weekend. As such, we request your approval for a short extension for the sampling event to be conducted by mid-March. Please let us know if this is okay. The soonest we can obtain the first set of Summas is Feburay 28th and the second set of Summas is scheduled to be delivered on March 3rd. We appreciate your patience regarding this matter and look forward to your input.

Best regards,
Erica

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From: Soo, Kit, Env. Health [mailto:Kit.Soo@acgov.org]
Sent: Friday, February 10, 2017 12:54 PM
To: Kalve, Erica <Erica.Kalve@arcadis.com<mailto:Erica.Kalve@arcadis.com>>
Cc: Tan, Angeline <Angeline.Tan@arcadis.com<mailto:Angeline.Tan@arcadis.com>>; Steven Greenwood
<Steven.Greenwood@aspirepublicschools.org<mailto:Steven.Greenwood@aspirepublicschools.org>>; Roe, Dilan, Env. Health <Dilan.Roe@acgov.org<mailto:Dilan.Roe@acgov.org>>
Subject: RE: Proposed Indoor Air Sampling Locations - RO0411

Dear Mr. Greenwood,

Alameda County Department of Environmental Health (ACDEH) approves of the four proposed locations inside Building 200, as proposed by your consultant Arcades in the email below and the attached Figure 3. Please implement the work, together with the rest of the indoor air sampling proposed for Building 300, in the Building 200 and 300 Indoor Air Monitoring Work Plan for the Former Pacific Electric Motors Site, dated September 28, 2016 as planned. Please also refer to the Alameda County Department of Environmental Health (ACDEH) directive letter dated November 17, 2016.

In addition, we understand from your consultant that you plan to sample during the President's Day Holiday on February 20, 2017, and the day after (February 21,2017). However, we were also notified that the availability of summa canisters from the laboratory is currently a major limiting factor and the work may be delayed if they are not available during the required time. We would like to stress that we would prefer that this work be performed as planned to avoid any delays if possible.

If you have any questions, please let me know.

Thanks,

Kit Soo, PG
Senior Hazardous Materials Specialist
Alameda County Department of Environmental Health (ACDEH)
1131 Harbor Bay Pkwy
Alameda, CA 94502
Direct - 510-567-6791
kit.soo@acgov.org<mailto:kit.soo@acgov.org>

From: Kalve, Erica [mailto:Erica.Kalve@arcadis.com]
Sent: Wednesday, February 08, 2017 11:54 AM
To: Soo, Kit, Env. Health <Kit.Soo@acgov.org<mailto:Kit.Soo@acgov.org>>
Cc: Tan, Angeline <Angeline.Tan@arcadis.com<mailto:Angeline.Tan@arcadis.com>>; Steven

Greenwood
<Steven.Greenwood@aspirepublicschools.org<mailto:Steven.Greenwood@aspirepublicschools.org>>
Subject: Proposed Indoor Air Sampling Locations - RO0411

Hi Kit,

We conducted a site walk at Building 200 to identify potential indoor air locations. During the site walk we observed the following:

* Building 200 does not have a central HVAC system. Each room has its own climate control system.
* There are two pipe penetrations that housed utility (see attached figure) that goes into the 2nd floor.
* All the classrooms are approximately the same size.

Therefore we are proposing to collect the following locations as shown in the attached figure:

* One indoor air sample in the room with the pipe penetration on the 1st floor
* One indoor air sample in the room without the pipe penetration on the 1st floor
* One indoor air sample in one of the bathroom on the 1st floor
* One indoor air sample in the room with the pipe penetration on the 2nd floor

We think that the collection of the proposed indoor air samples are representative of indoor air quality in Building 200.

Please let us know if this proposed sample layout is acceptable. We look forward to hearing from you.

Best regards,
Erica

Erica Kalve, PG | Principal Geologist | erica.kalve@arcadis.com<mailto:erica.kalve@arcadis.com>
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not relate to the official business of Arcadis are neither given nor endorsed by it.

IA-01		
Date	9/14/15	4/8/16
Benzene	**0.27**	**0.53**
Toluene	3.4	2.4
Ethylbenzene	0.45	0.79
m,p-Xylene	1.8	1.6
o-Xylene	0.74	0.60
MTBE	<0.59	<0.61
TPH-GRO	130	<69
Naph (TO-15)	<4.3	**0.13 J**

IA-02		
Date	9/14/15	4/8/16
Benzene	**0.28**	**0.54**
Toluene	3.9	3.0
Ethylbenzene	0.52	0.51
m,p-Xylene	2.1	1.6
o-Xylene	1.0	0.60
MTBE	<0.62	<0.57
TPH-GRO	130	<64
Naph (TO-15)	<4.5	**0.12 J**

IA-03		
Date	9/14/15	4/8/16
Benzene	**0.26 J**	**0.47**
Toluene	4.4	2.1
Ethylbenzene	0.52	0.42
m,p-Xylene	2.2	1.3
o-Xylene	0.95	0.53
MTBE	<0.60	--
TPH-GRO	130	<65
Naph (TO-15)	<4.4	**0.12 J**

IA-04		
Date	9/14/15	4/8/16
Benzene	<0.27	**0.43**
Toluene	3.9	1.6
Ethylbenzene	0.49	0.32
m,p-Xylene	1.9	0.96
o-Xylene	0.87	0.43
MTBE	<0.60	<0.60
TPH-GRO	120	<68
Naph (TO-15)	<4.4	<4.4

OA-3	
Date	9/14/15
Benzene	<0.28
Toluene	0.40
Ethylbenzene	<0.15
m,p-Xylene	<0.30
o-Xylene	<0.15
MTBE	<0.62
TPH-GRO	74
Naph (TO-15)	<4.5

OA-4		
Date	9/14/15	4/8/16
Benzene	<0.28	**0.38**
Toluene	0.39	0.90
Ethylbenzene	<0.15	0.13 J
m,p-Xylene	<0.30	0.27
o-Xylene	<0.15	0.12 J
MTBE	<0.63	<0.57
TPH-GRO	<72	<64
Naph (TO-15)	<4.6	<4.1

IA-05		
Date	9/14/15	4/8/16
Benzene	<0.28	**0.49**
Toluene	2.4	2.3
Ethylbenzene	0.50	0.46
m,p-Xylene	2.1	1.4
o-Xylene	0.77	0.55
MTBE	<0.63	<0.62
TPH-GRO	94	<70
Naph (TO-15)	<4.6	**0.17 J**

IA-06		
Date	9/14/15	4/8/16
Benzene	**0.28**	**0.51**
Toluene	3.6	2.1
Ethylbenzene	0.54	0.43
m,p-Xylene	2.2	1.3
o-Xylene	0.86	0.54
MTBE	<0.59	<0.59
TPH-GRO	130	<67
Naph (TO-15)	<4.3	**0.14 J**

F.R.

Building 300

RESTROOMS

UP

Locations IA-07 through IA-10)

LEGEND:

MW-4	Monitoring Well
NW-2S, 2I, 2D	Nested Monitoring Well
AS-7I	Air Injection Well
ASMW-5D	Air Injection Monitoring Well
SVE-1	SVE or SVE Monitoring Well
SVP-1	Soil Vapor Point Location
IA-01	Indoor Air Sampling Location
OA-3	Outdoor Air Sampling Location
	1 ft x 4 ft Vent

GREY symbols represent abandoned well locations
SVE = Soil Vapor Extraction
MTBE = Methyl Tertiary-Butyl Ether
TPH-GRO = Total Petroleum Hydrocarbons as Gasoline Range Organics
Naph (TO-15) = Naphthalene Sampled Using USEPA Method TO-15
< = Not Detected above the Laboratory Reporting Limit Given
NS = Not Sampled
--- = Not Sampled for Naph (TO-17)
BOLD = Indicates Result above the Screening Level
All Results are in Micrograms per Cubic Meter (µg/m³)

0 20 FEET
(SCALE: 1" = 20')

PROPOSED CHARTER SCHOOL SITE
1009 66TH AVENUE
OAKLAND, CALIFORNIA

INDOOR AND OUTDOOR AIR SAMPLE LOCATIONS AND ANALYTICAL RESULTS

ARCADIS Design & Consultancy for natural and built assets

FIGURE 3

CITY: EMERYVILLE, CA DIV/GROUP: ENVCAD DB: A. REYES, J. HARRIS
C:\Users\jharris\Desktop\ENVCAD\RETURN-TO\EMERYVILLE, CA\EM009155\001700003\DWG\EM009155 C03.dwg LAYOUT: 3 SAVED: 5/9/2016 12:53 PM ACADVER: 19.1S (LMS TECH) PAGESETUP: ---- PLOTSTYLETABLE: ARCADIS.CTB PLOTTED: 5/9/2016 5:03 PM BY: HARRIS, JESSICA

Table 1
Building 200 Outdoor Air, Indoor Air, and Crawl Space Vapor Analytical Results
Former Pacific Electric Motors Facility
1009 66th Avenue, Oakland, California

results reported in micrograms per cubic meter (μg/m3)

Sample ID	Sample Date	Benzene	Toluene	Ethyl-benzene	m,p-Xylene	o-Xylene	MTBE	TPHg	Naphthalene
Indoor Air and Outdoor Air Sample Results									
USEPA Residential RSL for Indoor Air/DTSC Note 3		0.097	310	1.1	100	100	11	630*	0.083
IA-07	3/12/2017	**0.96**	3.4	1.10	4.2	1.9	0.0094 J	120	**0.46 J**
IA-07	4/3/2017	**2**	5.7	**1.20**	4.4	1.6	0.016 J	<67	**0.38 J**
IA-07	4/18/2017	**0.56**	1.9	0.48	1.7	0.82	<0.58	100	**0.22 J**
IA-08	3/12/2017	**0.84**	2.1	0.52	1.8	0.66	0.011 J	<65	**0.30 J**
IA-08	4/3/2017	**1.7**	4.9	1.00	3.5	1.3	0.018 J	<67	**0.33 J**
IA-08	4/18/2017	**0.41 J**	1.1	0.29	0.99	0.43	<1.2	180	**0.22 J**
IA-09	3/12/2017	**0.82**	4.3	0.65	2.3	1.2	0.024 J	<67	**0.31 J**
IA-09	4/3/2017	**0.94**	4.8	0.61	2	1	0.027 J	<65	**0.27 J**
IA-09	4/18/2017	**0.47 J**	2.8	0.32 J	0.98	0.61	<1.9	<220	**0.28 J**
IA-10	3/12/2017	**0.86**	2.2	0.49	1.7	0.66	0.0088 J	<66	**0.29 J**
IA-10	4/3/2017	**1.7**	5	1.00	3.6	1.4	0.020 J	<66	**0.22 J**
IA-10	4/18/2017	**0.43 J**	2.3	0.20 J	0.64	0.33	<1.2	140	**0.16 J**
OA-01	1/17/2015	**0.55**	1.6	0.32	1.0	0.36	<0.53	<60	<3.9
OA-01	1/28/2015	**1.2**	3.7	0.83	2.9	1.1	<0.58	<66	<4.2
OA-01	3/12/2017	**0.6**	2.3	0.48	1.7	0.65	<0.51	120	**0.25 J**
OA-RF1	4/3/2017	**0.88**	2.2	0.51	1.8	0.67	<0.59	<67	<4.3
OA-RF1	4/18/2017	**0.8**	24	0.55	1.9	0.78	0.32 J	**700**	**0.22 J**
OA-RF2	4/3/2017	**0.85**	2.1	0.46	1.6	0.59	<0.63	98	<4.6
OA-RF2	4/18/2017	**0.61**	9.6	0.44	1.6	0.64	0.39 J	570	**0.14 J**
OA-02	1/17/2015	**0.51**	1.2	0.23	0.73	0.28	<0.55	<62	<4.0
OA-02	1/28/2015	**1.2**	3.8	0.85	3	1.1	<0.57	<65	<4.1
OA-02	3/12/2017	**0.75**	1.70	0.43	1.4	0.55	<0.60	100	**0.32 J**
OA-02	4/3/2017	**0.78**	2.00	0.43	1.5	0.54	<0.57	65	**0.21 J**
OA-02	4/18/2017	**0.27**	0.60	0.12 J	0.39	0.19	<0.56	<64	<4.1
OA-03	9/14/2015	<0.28	0.40	0.079 J	<0.30	0.079 J	<0.0075	74	<0.11
OA-03	3/12/2017	NA	NA	NA	NA	NA	NA	NA	NA
OA-04	9/14/2015	<0.28	0.39	0.065 J	<0.30	0.076 J	<0.0071	<72	<0.19
OA-04	3/12/2017	**0.6**	3.30	0.58	2	0.78	<0.49	210	**0.34 J**
OA-04	4/8/2017	**0.24 J**	0.24	0.050 J	0.16 J	0.061 J	<0.63	<72	<4.6
Crawl Space Sample Results									

Table 1
Building 200 Outdoor Air, Indoor Air, and Crawl Space Vapor Analytical Results
Former Pacific Electric Motors Facility
1009 66th Avenue, Oakland, California

results reported in micrograms per cubic meter (μg/m3)

Sample ID	Sample Date	Benzene	Toluene	Ethyl-benzene	m,p-Xylene	o-Xylene	MTBE	TPHg	Naphthalene
CS-1	1/17/2015	**0.73**	5.3	0.89	4.3	0.92	<0.54	190	<3.9
CS-1	1/28/2015	**1.3**	5.9	0.94	3.5	1.4	<0.58	300	<4.2
CS-1	3/12/2017	**0.69**	2.4	0.66	2.1	0.91	0.017 J	450	**0.22 J**
CS-1	4/3/2017	**1.80**	8.7	**2.00**	5.8	2.10	<0.59	**2,200**	<4.3
CS-1	4/18/2017	**0.34**	2.4	0.26	1.2	0.24	0.0095 J	<65	**0.15 J**
CS-2	1/17/2015	**0.70**	5.6	1.0	4.7	1.1	<0.58	230	<4.2
CS-2	1/28/2015	**1.3**	5.1	0.86	3.1	1.1	<0.52	230	<3.8
CS-2	3/12/2017	**0.90**	6.0	**1.40**	4.1	1.50	0.035 J	**1,300**	<3.7
CS-2	4/3/2017	**1.00**	3.3	0.81	2.2	0.88	<0.58	**1,500**	<4.2
CS-2	4/18/2017	**0.4**	2.6	0.3	1.3	0.4	<0.58	<65	**0.13 J**

Notes:
Samples analyzed using USEPA Method TO-15 with selective ion monitoring (SIM)

Bold indicates result above the screening level
DTSC = Department of Toxic Substances Control
MTBE = methyl tertiary-butyl ether
RSL = Regional Screening Level
TPHg = total petroleum hydrocarbons as gasoline
USEPA = United States Environmental Protection Agency

* = based on USEPA RSL for total petroleum hydrocarbons (aliphatic low); direct measurement of TPH (aromatic low) is provided by analysis of benzene, toluene, ethylbenzene, and xylenes (BTEX) compounds.

< = not detected above the reporting limit

References:
California Department of Toxic Substances Control (DTSC). 2015. Human Health Risk Assessment (HHRA) Note Number: 3, DTSC-modified Screening Levels. October.
United States Environmental Protection Agency (USEPA). 2015. Regional Screening Level for Resident Ambient Air Table. June.

Table 2
Building 300 Outdoor Air, Indoor Air, and Riser Pipe Vapor Analytical Results
Former Pacific Electric Motors Facility
1009 66th Avenue, Oakland, California

results reported in micrograms per cubic meter (µg/m3)

Sample ID	Sample Date	Benzene	Toluene	Ethyl-benzene	m,p-Xylene	o-Xylene	MTBE	TPHg	Naphthalene
Indoor Air and Outdoor Air Sample Results									
USEPA Residential RSL for Indoor Air/DTSC Note 3		0.097	310	1.1	100	100	11	630*	0.083
IA-01	9/14/2015	**0.27**	3.4	0.45	1.8	0.74	<0.0070	130	**0.55 J**
IA-01	3/12/2017	**1.2**	4.2	0.84	3.0	1.1	0.010 J	180	**0.27 J**
IA-01	4/3/2017	**1.4**	4.8	0.84	3	1.1	0.011 J	<67	**0.28 J**
IA-01	4/18/2017	**0.47**	1.8	0.25	0.73	0.26	<0.59	<67	**0.16 J**
IA-02	9/14/2015	**0.28**	3.9	0.52	2.1	1.0	<0.0074	130	**0.24 J**
IA-02	3/12/2017	**22 J**	4.5	1.0	3.0	1.1	0.010 J	310	**0.32 J**
IA-02	4/3/2017	**1.4**	4.1	0.82	2.9	1.0	0.018 J	<67	**0.29 J**
IA-02	4/8/2017	**0.62**	3.2	0.74	2.6	0.98	<0.58	<66	**2.1 J**
IA-02	4/18/2017	**0.58**	2	0.22	0.6	0.26	<0.59	<67	<4.3
IA-03	9/14/2015	**0.26 J**	4.4	0.52	2.2	0.95	<0.0072	130	**0.51 J**
IA-03	3/12/2017	**1.2**	4.2	0.81	3.0	1.1	<0.58	140	**0.37 J**
IA-03	4/3/2017	**1.3**	4.5	0.85	3	1.1	0.012 J	<66	**0.37 J**
IA-03	4/18/2017	**0.55**	1.9	0.26	0.83	0.34	<0.58	<66	<4.2
IA-04	9/14/2015	<0.27	3.9	0.49	1.9	0.87	<0.0073	120	**0.23 J**
IA-04	3/12/2017	**1.2**	4.3	0.84	3.2	1.2	<0.56	150	0.35 J
IA-04	4/3/2017	**1.3**	4	0.79	2.9	1	0.0099 J	<66	**0.27 J**
IA-04	4/18/2017	**0.54**	1.5	0.28	0.95	0.33	0.015 J	<68	**0.26 J**
IA-05	9/14/2015	<0.28	2.4	0.50	2.1	0.77	<0.0076	94	<0.11
IA-05	3/12/2017	**1.1**	3.8	0.76	2.8	1.0	0.012 J	110	**0.32 J**
IA-05	4/3/2017	**1.3**	3.5	0.74	2.7	0.99	0.010 J	<66	**0.27 J**
IA-05	4/18/2017	**0.41**	1.1	0.18	0.55	0.26	<0.60	<68	**0.091 J**
IA-06	9/14/2015	**0.28**	3.6	0.54	2.2	0.86	<0.0071	130	**0.33 J**
IA-06	3/12/2017	**1.1**	3.8	0.76	2.7	1.0	<0.60	130	**0.32 J**
IA-06	4/3/2017	**1.3**	3.6	0.77	2.8	1	0.0084 J	<65	**0.40 J**
IA-06	4/18/2017	**0.42**	1.0	0.17	0.57	0.20	<0.58	<66	**0.098 J**
OA-01	1/17/2015	**0.55**	1.6	0.32	1.0	0.36	<0.53	<60	<3.9
OA-01	1/28/2015	**1.2**	3.7	0.83	2.9	1.1	<0.58	<66	<4.2
OA-01	3/12/2017	**0.6**	2.3	0.48	1.7	0.65	<0.51	120	**0.25 J**
OA-RF1	4/3/2017	**0.88**	2.2	0.51	1.8	0.67	<0.59	<67	<4.3
OA-RF1	4/18/2017	**0.8**	24	0.55	1.9	0.78	0.32 J	**700**	**0.22 J**

Table 2
Building 300 Outdoor Air, Indoor Air, and Riser Pipe Vapor Analytical Results
Former Pacific Electric Motors Facility
1009 66th Avenue, Oakland, California

results reported in micrograms per cubic meter (μg/m3)

Sample ID	Sample Date	Benzene	Toluene	Ethyl-benzene	m,p-Xylene	o-Xylene	MTBE	TPHg	Naphthalene
OA-RF2	4/3/2017	**0.85**	2.1	0.46	1.6	0.59	<0.63	98	<4.6
OA-RF2	4/18/2017	**0.61**	9.6	0.44	1.6	0.64	0.39 J	570	**0.14 J**
OA-02	1/17/2015	**0.51**	1.2	0.23	0.73	0.28	<0.55	<62	<4.0
OA-02	1/28/2015	**1.2**	3.8	0.85	3	1.1	<0.57	<65	<4.1
OA-02	3/12/2017	**0.75**	1.70	0.43	1.4	0.55	<0.60	100	**0.32 J**
OA-02	4/3/2017	**0.78**	2.00	0.43	1.5	0.54	<0.57	65	**0.21 J**
OA-02	4/18/2017	**0.27**	0.60	0.12 J	0.39	0.19	<0.56	<64	<4.1
OA-03	9/14/2015	<0.28	0.40	0.079 J	<0.30	0.079 J	<0.0075	74	<0.11
OA-04	9/14/2015	<0.28	0.39	0.065 J	<0.30	0.076 J	<0.0071	<72	<0.19
OA-04	3/12/2017	**0.6**	3.30	0.58	2	0.78	<0.49	210	**0.34 J**
OA-04	4/8/2017	**0.24 J**	0.24	0.050 J	0.16 J	0.061 J	<0.63	<72	<4.6
Riser Pipe Grab Sample Results									
R-1	9/14/2015	**3.0**	5.5	**3.1**	4.8	3.5	1.1	**9,000**	0.58 J
R-1	3/12/2017	**0.22 J**	0.3	0.036 J	0.058 J	0.041 J	1.3	330	**0.23 J**
R-1	4/3/2017	**0.3**	1.8	0.2	0.42	0.17	0.37 J	290	<3.8
R-1	4/18/2017	**0.3**	0.6	0.1	0.4	0.16	0.010 J	<56	**0.18 J**
R-2	9/14/2015	**3.9**	6.2	**5.6**	2.5	4.5	3.0	**13,000**	1.7 J
R-2	3/12/2017	**0.5**	1.2	0.3	0.9	0.34	0.031 J	360	**0.26 J**
R-2	4/3/2017	**0.8**	1.9	0.4	1.3	0.48	<0.57	270	**0.21 J**
R-2	4/18/2017	0.087 J	0.2	0.074 J	0.057 J	0.042 J	0.5	<55	**0.30 J**
R-3	9/14/2015	**5.6**	7.5	**6.1**	4.2	4.0	**13**	**16,000**	1.0 J
R-3	3/12/2017	**0.54**	1.3	0.7	2.5	1.3	0.13 J	**1,300**	**8.3**
R-3	4/3/2017	**0.27**	0.4	0.074 J	0.18 J	0.078 J	**18**	490	<3.6
R-3	4/18/2017	**0.40**	0.2	0.030 J	0.034 J	0.023 J	**27**	410	**0.12 J**

Notes:
Samples analyzed using USEPA Method TO-15 with selective ion monitoring (SIM)

Bold indicates result above the screening level
DTSC = Department of Toxic Substances Control
MTBE = methyl tertiary-butyl ether
RSL = Regional Screening Level
TPHg = total petroleum hydrocarbons as gasoline
USEPA = United States Environmental Protection Agency

Table 2
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results reported in micrograms per cubic meter (μg/m3)

Sample ID	Sample Date	Benzene	Toluene	Ethyl-benzene	m,p-Xylene	o-Xylene	MTBE	TPHg	Naphthalene

* = based on USEPA RSL for total petroleum hydrocarbons (aliphatic low); direct measurement of TPH (aromatic low) is provided by analysis of benzene, toluene, ethylbenzene, and xylenes (BTEX) compounds.

< = not detected above the reporting limit

References:

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United States Environmental Protection Agency (USEPA). 2015. Regional Screening Level for Resident Ambient Air Table. June.