TOC INCOMING LETTER OF TRANSMITTAL

Vendor/Company Name and Address:

Date: 2/2/17

Subcontract Release Number/Purchase Order: 003

Transmittal Number: 005

Project Number:

Project/Contract Title:

GAL610132 - MS Mobile Laboratory

Check the applicable designation:

Hard Copy Submittals:

Electronic Submittals:

Electronic Media Will Come In Password Protected. See SW/P0 for Acceptable Formats

E = Electronic
H = Hard Copy

No Electronic Media Will Come In Password Protected. See SW/P0 for Acceptable Formats

Vendor is Off-Site:

WRPS/Construction & Commissioning Document Control

ATTN: CDC/Mail Stop S7-68/2704HV/B200K

P.O. Box 850/Richland, WA 99352

Vendor is On-Site:

WRPS C&C Document Control/2704HV/B200K/200E

Electronic Transmittal: To establish a File Transfer Protocol (FTP) to send and receive vendor material. WRPS is the ONLY acceptable FTP vendor.

TOC Vendor

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WRPS C&C Document Control/7246/HB/200K/200E

Vendor is Off-Site:

P.O. Box 850/Richland, WA 99352

ATTN: Mission Support Alliance Document Control

Vendor is On-Site:

WRPS/Construction & Commissioning Document Control

Vendor is Off-Site:

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005 Weekly Report 1.1

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Submittal Description

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WEEK 1 REPORT – LOCAL SOURCES AND ASSOCIATED GRAPHS

DECEMBER 9TH, 2016

Summary

Mobile lab operated between 5:30 AM and 3:15 PM. AY-102 retrieval was delayed in the morning hours due to cold overnight temperatures. Weather station data is not available due to a software error. The mobile lab spent approximately four hours monitoring downwind of AP farm (East side) from 10 AM to 2 PM. The weather station software was corrected after hours for the following day lab deployment.

December 9th Local Sources

<table>
<thead>
<tr>
<th>Location</th>
<th>Time</th>
<th>Weather/GPS Data</th>
<th>CO2 (ppm)</th>
<th>Methanol (ppb)</th>
<th>Other Compounds</th>
</tr>
</thead>
<tbody>
<tr>
<td>LS01a, 12/09/16, 6:30 AM</td>
<td>Weather/GPS data unavailable</td>
<td>CO2: 600 ppm (max)</td>
<td>Methanol: 297 ppb (max)</td>
<td>Detected spikes of methanol for a prolonged time while stationary at the AY shift office. The elevated signals persisted until the vehicle was moved some time after 10:00 AM. CO2 dropped to just over 300 ppm and remained steady after around 7:10 AM.</td>
<td>Note: location was determined through field notes, which indicated the vehicle remained stationary in this location for hours.</td>
</tr>
<tr>
<td>LS01b, 12/09/16, 2:56 PM</td>
<td>Weather/GPS data unavailable</td>
<td>CO2: 306 ppm</td>
<td>Acetaldehyde: 5.64 ppb</td>
<td>1-butanol + butenes: 6.48 ppb</td>
<td>1,3-butadiene: 3.93 ppb</td>
</tr>
</tbody>
</table>
December 9th Graphs

LS01a

LS01b
December 9th Maps

200E

Highway
DECEMBER 10TH, 2016

Summary

Mobile lab operated between 5:30 AM and 11:15 AM. AY-102 retrieval was delayed in the morning hours due to cold overnight temperatures. The mobile lab drove the AY, C, AX, A and AP area and spent 90 minutes on the downwind side (East) of AP farm. At 10:00 AM retrieval attempts were cancelled for the day and the mobile lab was released early.

December 10th Local Sources

| LS02a, 12/10/16 | 28 F, 1.01 bar, wind SW 4 mph  
| 9:12 AM | acetaldehyde: 3.73 ppb  
| | 1-butanol + butenes: 1.71 ppb  
| | 1,3-butadiene: 1.44 ppb  
| | benzene: 0.48 ppb  
| | Measured a weak unidentified local event.  
| LS02b, 12/10/16 | 29 F, 1.01 bar, wind N/A  
| 10:56 AM | acetaldehyde: 1.84 ppb  
| | 1-butanol + butenes: 1.97 ppb  
| | benzene: 1.01 ppb  
| | 1,3-butadiene: 1.10 ppb  
| | Measured a local source while on transit back to CBAL. This source could be considered representative of typical traffic-related vapors.  

December 10th Graphs

LS02a

LS02b
December 10th Maps

200E

Town
DECEMBER 12TH, 2016

Summary

Mobile lab operated between 5:00 AM and 5:00 PM. Mobile lab had a flat tire in the morning and arrived on-site at 9:30 AM. Monitoring was focused around AY-102 retrieval locations although it was not clear if waste was being transferred. Observed elevated VOC around the AP farm. Further data processing is needed to speculate on source but it appeared to be generator exhaust.

December 12th Local Sources

<table>
<thead>
<tr>
<th>Source</th>
<th>Date/Time</th>
<th>Temperature</th>
<th>Pressure</th>
<th>Wind</th>
<th>CO2</th>
<th>Methanol</th>
<th>1-butanol + Butenes</th>
<th>Benzene</th>
<th>1,3-butadiene</th>
<th>2,4-dimethylpyridine</th>
</tr>
</thead>
<tbody>
<tr>
<td>LS03a, 12/12/16 6:09 AM</td>
<td>26 F, 1.02 bar, wind NW 7 mph</td>
<td>CO2: 305 ppm</td>
<td>methanol: 11.58 ppb</td>
<td>1-butanol + butenes: 8.60 ppb</td>
<td>benzene: 3.33 ppb</td>
<td>1,3-butadiene: 1.26 ppb</td>
<td>2,4-dimethylpyridine: 0.92 ppb</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>LS03b, 12/12/16 9:19 AM</td>
<td>32 F, 1.02 bar, wind N/A</td>
<td>CO2: 305 ppm</td>
<td>1-butanol + butenes: 47.72 ppb</td>
<td>1,3-butadiene: 5.95 ppb</td>
<td>propanenitrile: 1.36 ppb</td>
<td>butanenitrile: 1.07 ppb</td>
<td>hexanenitrile: 0.98 ppb</td>
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<tr>
<td>LS03c, 12/12/16 12:33 PM</td>
<td>33 F, 1.02 bar, wind S 6 mph</td>
<td>CO2: 305 ppm</td>
<td>methanol: 3.72 ppb</td>
<td>acetaldehyde: 2.52 ppb</td>
<td>1-butanol + butenes: 2.68 ppb</td>
<td>benzene: 1.55 ppb</td>
<td>1,3-butadiene: 1.50 ppb</td>
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</tr>
<tr>
<td>LS03d, 12/12/16 3:14 PM</td>
<td>32 F, 1.02 bar, wind S 4 mph</td>
<td>CO2: 309 ppm</td>
<td>acetaldehyde: 17.51 ppb</td>
<td>1-butanol + butenes: 10.03 ppb</td>
<td>1,3-butadiene: 8.92 ppb</td>
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</table>

A fairly typical gas station vapor event.

This event was observed while stationary at Les Schwab Tire Center. This event was chosen primarily to provide additional contextual data for the Hanford tank vapors.

This event was observed while parked S of 274AW.
MVK + 2,3-dihydrofuran + 2,5-dihydrofuran: 3.31 ppb
2-methylfuran: 1.15 ppb
2,5-dimethylfuran: 0.89 ppb

This event was observed at the N fence line for AP farm. Field notes indicate that this is likely exhaust from the generator on the east side of MCC003., as the operator of the ML tries successfully to lessen the signal by driving around a building corner from the generator. When the operator moves again, the signal reappears for several more minutes.
December 12th Graphs

LS03a

LS03b
December 12th Maps

200E

Town
**DECEMBER 13TH, 2016**

**Summary**

Operated between 5:00 AM and 5:00 PM. AY-102 retrieval likely not occurring based on downgraded vapor control zones. Most of the day spent moving around the AP farm to stay downwind. Observed VOC profiles likely from generators.

**December 13th Local Sources**

<table>
<thead>
<tr>
<th>Location</th>
<th>Date/Time</th>
<th>Temperature</th>
<th>Pressure</th>
<th>Wind Direction</th>
<th>CO2</th>
<th>acetaldehyde</th>
<th>1-butanol + butenes</th>
<th>1,3-butadiene</th>
<th>3-methyl-3-buten-2-one + 2-methyl-2-butenal</th>
<th>butanal</th>
<th>MVK + 2,3-dihydrofuran + 2,5-dihydrofuran</th>
</tr>
</thead>
<tbody>
<tr>
<td>LS04a,</td>
<td>12/13/16 6:04 AM</td>
<td>18 F, 1.03 bar</td>
<td>wind N/A</td>
<td>CO2: 500 ppm</td>
<td>acetaldehyde: 9.57 ppb</td>
<td>1-butanol + butenes: 5.44 ppb</td>
<td>1,3-butadiene: 4.88 ppb</td>
<td>3-methyl-3-buten-2-one + 2-methyl-2-butenal: 1.48 ppb</td>
<td>butanal: 1.00 ppb</td>
<td>MVK + 2,3-dihydrofuran + 2,5-dihydrofuran: 0.86 ppb</td>
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<tr>
<td>LS04d,</td>
<td>12/13/16 4:25 PM</td>
<td>26 F, 1.03 bar</td>
<td>wind N/A</td>
<td>CO2: 484 ppm</td>
<td>acetaldehyde: 14.69 ppb</td>
<td>1-butanol + butenes: 38.42 ppb</td>
<td>benzene: 17.35 ppb</td>
<td>1,3-butadiene: 8.58 ppb</td>
<td>2,4-dimethylpyridine: 3.68 ppb</td>
<td>propanenitrile: 1.19 ppb</td>
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</tr>
<tr>
<td>LS04b,</td>
<td>12/13/16 8:35 AM</td>
<td>26 F, 1.03 bar</td>
<td>wind WNW 3 mph</td>
<td>CO2: 388 ppm</td>
<td>acetaldehyde: 9.38 ppb</td>
<td>1-butanol + butenes: 9.35 ppb</td>
<td>1,3-butadiene: 5.07 ppb</td>
<td>3-methyl-3-buten-2-one + 2-methyl-2-butenal: 0.92 ppb</td>
<td>MVK + 2,3-dihydrofuran + 2,5-dihydrofuran: 1.24 ppb</td>
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</table>

Field notes indicate that this event is likely related to a traffic slowdown at the Wye barricade, indicating that this is almost certainly vehicle exhaust typical of a traffic-heavy commute.

This event was recorded on the commute back to Pasco. It could be considered representative of a typical highway commute.

Field notes indicate that there was a period of heavy traffic in front of the stationary monitoring site throughout this time period. This event is representative of similar spikes that occur from 8:15 to 8:45 AM in the data. Elevated CO2 throughout.
| LS04c, 12/13/16 3:23 PM | 28 F, 1.03 bar, wind N/A  
CO2: 330 ppm  
methanol: 16.98 ppb  
1-butanol + butenes: 6.17 ppb  
benzene: 4.89 ppb  
1,3-butadiene: 2.84 ppb  
acetaldehyde: 2.99 ppb  
2.4-dimethylpyridine: 0.60 ppb  
NMOR: 0.36 ppb |
<table>
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</thead>
<tbody>
<tr>
<td></td>
<td>Observed unknown local source to the SE of AP farm. Elevated CO2 and similar compounds present in earlier hits except the signal for NMOR is more pronounced and breached OEL in this event.</td>
</tr>
</tbody>
</table>
December 13th Graphs

LS04a

[Graph showing concentration over time with various lines indicating different substances and CO2 concentration]

LS04b

[Graph showing concentration over time with various lines indicating different substances and CO2 concentration]
December 13th Maps

Highway

200E