

**Blue Ridge Landfill
2200 F.M. 521, Fresno (Fort Bend County), TX 77545
Municipal Solid Waste Permit No. 1505A
MSW Complaint Investigation
Conducted on May 9, 2018**

List of Attachments

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Water Section's Odor Survey Map and Logs

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Survey Map and Logs

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Water Section's Odor Survey Map and Logs

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(CCEDS Investigation No. 1484886) Odor Logs

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Event

Attachment 8: Exit Interview Form

ATTACHMENT 1



Legend

- Facilities
- Complaint Locations

Complaint Location Map

May 15-17, 2018

ATTACHMENT 2

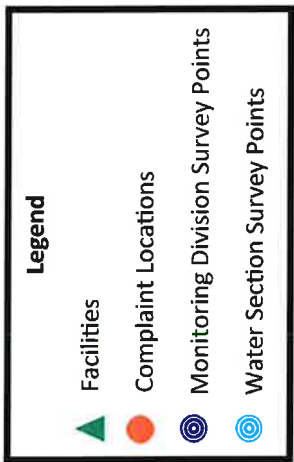
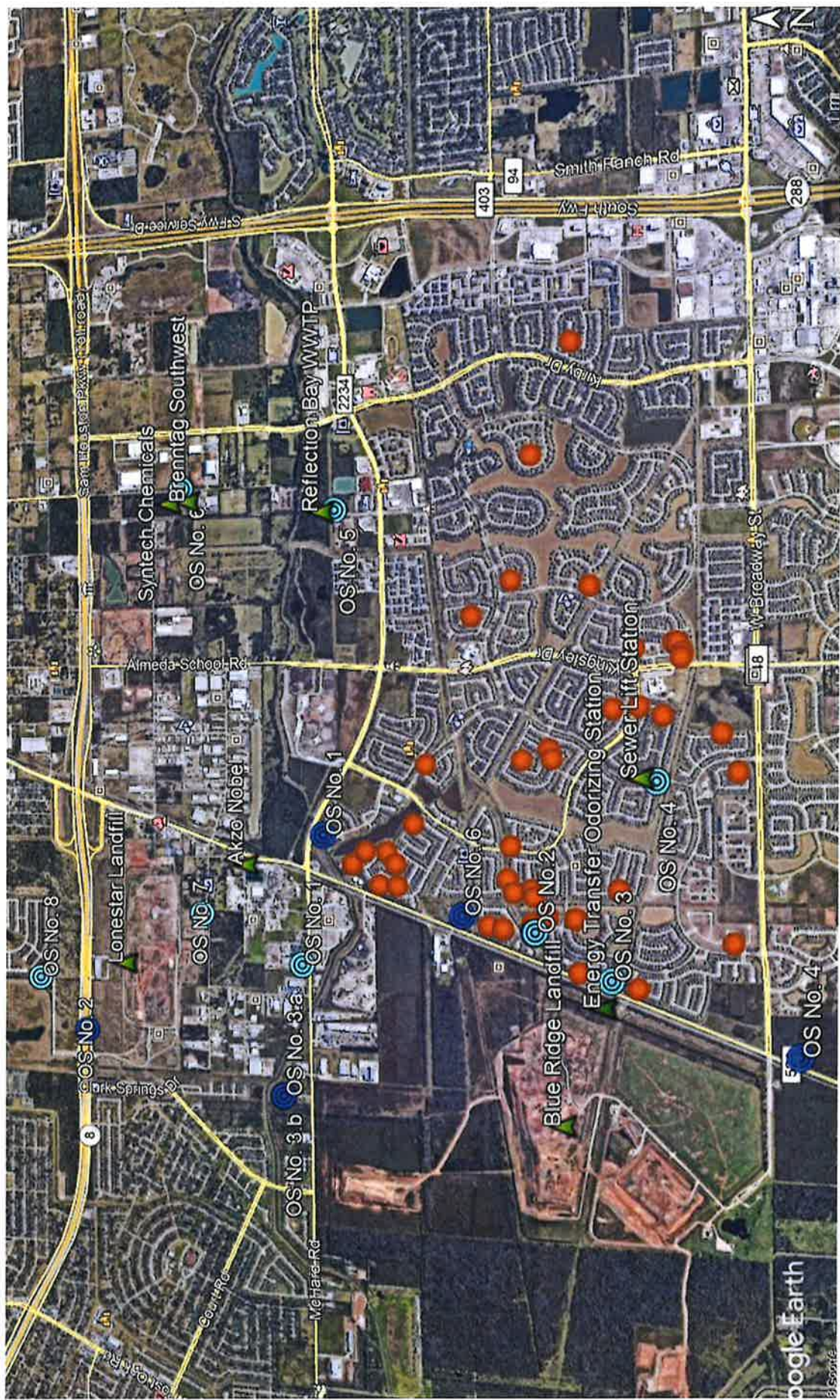
Nuisance Odor - Potential Witness List

Complainant Name	Will Testify	Will Give Affid
Amy Cuellar	True	True
C Miller	True	True
Carolyn S Kane	True	True
Cheryl Smith	True	True
Christopher Fletcher	True	True
Daniel Mendoza	True	True
Edward Mears	True	True
Jason Cross	True	True
Jeremy Simpson	True	True
John Hittinger	True	True
Julie Ward	True	True
Mark Spilman	True	True
Michael Kane	True	True
Rosa Saade	True	True
Sharon K. Smith	True	True
Steven Boyd Wilkerson	True	True

"Will Testify" indicates resident is willing to testify in a contested case enforcement hearing.

"Will Give Affid" means that resident is willing to provide a sworn affidavit regarding their experience with nuisance odors during the period of the investigation.

ATTACHMENT 3



TCEQ Monitoring Division Staff and Water Section

May 15, 2018 Odor Surveys

[Questions or Comments >>](#)[TCEQ Home](#)[Air Quality Maps](#)[Data Reports](#)[AutoGC](#)[Water Data](#)[Site Info](#)

Manvel Croix Park C84 Data by Site by Date (all parameters)

Use this form to retrieve hourly data collected at Manvel Croix Park C84. Although this is the most current data, it is not considered official until it has been certified by the technical staff. This information is updated hourly.

This web page provides the most current hourly averaged data available. Our convention for time-tagging data is the beginning of each hour. For example, values shown for the noon hour are based on measurements taken from noon to 1:00 p.m. The noon average will not be calculated until after 1:00 p.m. The noon average will then be available on our external server from 1:15 p.m. to 1:30 p.m. This results in an apparent one-hour time lag in the data. We also present our data in Local Standard Time for each measuring site. For most of Texas this is Central Standard Time. During Daylight Savings, this introduces another apparent one-hour time lag in the data.

Use the controls below to select a different date or time format. Click on the Generate Report button once you have made your selections.

Click on the Plot Data button once the tabular report has been generated to open a separate window containing data plots.

CAMS 84 Manvel Croix Park C84 [Select a different site](#)

Month: Day: Year: Time Format:

May 15 2018 24 Hour [Generate Report](#) [Plot Data](#)

☒ Green underline for validated data

The table below contains hourly averages for all the pollutants and meteorological conditions measured at Manvel Croix Park C84 for **Tuesday, May 15, 2018**. All times shown are in CST.

Parameter Measured	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700
Nitric Oxide	-0.2	-0.2	-0.2	0.7	6.4	5.3	10.8	3.2	0.3	-0.1	-0.2	-0.3	-0.3	PMA	PMA	-0.2	-0.3	-0.3
Nitrogen Dioxide	3.0	2.7	2.8	9.8	19.0	16.5	13.4	9.6	5.6	3.1	1.5	1.7	1.6	PMA	PMA	1.6	1.2	1.7
Oxides of Nitrogen	2.7	2.4	2.6	10.4	25.3	21.7	24.0	12.7	5.9	3.0	1.3	1.3	1.3	PMA	PMA	1.3	0.9	1.4
Ozone	9	8	8	5	0	1	3	21	35	45	47	52	55	PMA	PMA	CAL	CAL	52
Wind Speed	1.1	0.9	1.1	1.4	1.8	1.2	1.2	2.7	2.8	4.1	4.3	4.1	5.6	6.3	7.0	10.1	10.9	8.8
Resultant Wind Speed	0.6	0.6	0.5	1.2	1.6	0.7	0.6	1.8	2.1	3.6	3.4	2.6	4.3	5.3	6.4	9.5	10.5	8.5
Resultant Wind Direction	219	251	278	80	119	171	32	149	230	257	263	231	169	170	146	161	165	170
Maximum Wind Gust	1.9	1.9	2.4	2.4	2.7	2.6	2.9	6.2	7.4	9.6	8.9	8.9	12.7	14.6	14.5	21.6	19.6	15.5
Std. Dev. Wind Direction	54	43	58	35	28	50	57	47	40	27	36	50	40	32	25	19	16	14
Outdoor Temperature	69.9	69.5	69.2	68.8	68.2	66.6	68.0	73.8	77.3	79.9	81.0	84.3	86.5	88.3	88.6	89.2	88.3	86.5
Parameter Measured	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700
Maximum values for each parameter are bold within the table. Minimum values are bold italic .																		
R - Data from this instrument meets EPA quality assurance criteria for regulatory purposes.																		

PLEASE NOTE: This data has not been verified by the TCEQ and may change. This is the most current data, but it is not official until it has been certified by our technical staff. Data is collected from TCEQ ambient monitoring sites and may include data collected by other outside agencies. This data is updated hourly. All times shown are in local standard time unless otherwise indicated.

Following EPA reporting guidelines, negative values may be displayed in our hourly criteria air quality data, down to the negative of the EPA listed Method Detection Limit (MDL) for the particular instrument that made the measurements. The reported concentrations can be negative due to zero drift in the electronic instrument output, data logger channel, or calibration adjustments to the data. Prior to 1/1/2013, slightly negative values were automatically set to zero.

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Last Modified Tuesday, 30 Jan 2018

Supplemental Investigator's Odor Intensity Time Log

Investigator: Nathan Hoppens
Date of Investigation: 15 May 2018

Location: 29.58038 -95.42913
Start Time: 04:13

Minutes	Odor Intensity VL, L, M, S, VS
1 min	VL
2	M
3	M
4	L
5	L
6	VL
7	VL
8	VL
9	VL
10	L
11	L
12	L
13	L
14	L
15	L
16	L
17	VL
18	L
19	VL
20	M
21	
22	
23	
24	
25	
26	
27	
28	
29	
30	

Minutes	Odor Intensity VL, L, M, S, VS
31 min	
32	
33	
34	
35	
36	
37	
38	
39	
40	
41	
42	
43	
44	
45	
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59	
60	

Odor Description: Garbage Odors

Offensiveness: Highly _____ Offensive X Unpleasant _____ Not Unpleasant _____

Weighted Average Intensity: 1.8

	VS	S	M	L	VL	No Odor
1 Min			3	310	7	0
10 Min				NCH		
1 Hour				5/17		

Supplemental Investigator's Odor Intensity Time Log

Investigator: Tom Randolph
Date of Investigation: 5/15/18

Location: EB Beltway Access Rd ~100yds E of Antioch Dr,
Start Time: 0550
29°35'45.796"N -95°26'37.599"W

Minutes	Odor Intensity VL, L, M, S, VS
1 min	M
2	M
3	L
4	L
5	M
6	L
7	L
8	L
9	L
10	L
11	L
12	M
13	L
14	L
15	VL
16	
17	
18	
19	
20	
21	
22	
23	
24	
25	
26	
27	
28	
29	
30	

Minutes	Odor Intensity VL, L, M, S, VS
31 min	
32	
33	
34	
35	
36	
37	
38	
39	
40	
41	
42	
43	
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Odor Description: WET GARBAGE

Offensiveness: Highly _____ Offensive ☒ Unpleasant _____ Not Unpleasant _____

Weighted Average Intensity: 2 Light

	VS	S	M	L	VL	No Odor
1 Min			4x3=12	10x2=20	1x1=1	
10 Min						
1 Hour						

Supplemental Investigator's Odor Intensity Time Log

Investigator: Peyton Pearce
Date of Investigation: 15 May 2018

Location: 29.58279 -95.44749
Start Time: 06:25

Minutes	Odor Intensity VL, L, M, S, VS
1 min	VL
2	VL
3	VL
4	VL
5	Ø
6	Ø
7	VL
8	M
9	VL
10	Ø
11	VL
12	Ø
13	Ø
14	Ø
15	Ø
16	VL
17	Ø
18	Ø
19	VL
20	Ø
21	
22	
23	
24	
25	
26	
27	
28	
29	
30	

Minutes	Odor Intensity VL, L, M, S, VS
31 min	
32	
33	
34	
35	
36	
37	
38	
39	
40	
41	
42	
43	
44	
45	
46	
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57	
58	
59	
60	

Odor Description: garbage odor

Offensiveness: Highly _____ Offensive ☒ Unpleasant _____ Not Unpleasant _____

Weighted Average Intensity: 0.5

	VS	S	M	L	VL	No Odor
1 Min	0	0	1	0	9	10
10 Min						
1 Hour						

Supplemental Investigator's Odor Intensity Time Log

Investigator: Peyton Pearce
Date of Investigation: 5/15/2018

Location: 29.58280 -95.44749
Start Time: 08:38

Minutes	Odor Intensity VL, L, M, S, VS
1 min	VS
2	S
3	L
4	VL
5	Ø
6	Ø
7	Ø
8	Ø
9	Ø
10	Ø
11	Ø
12	Ø
13	Ø
14	Ø
15	VL
16	VL
17	Ø
18	Ø
19	Ø
20	VL
21	
22	
23	
24	
25	
26	
27	
28	
29	
30	

Minutes	Odor Intensity VL, L, M, S, VS
31 min	
32	
33	
34	
35	
36	
37	
38	
39	
40	
41	
42	
43	
44	
45	
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56	
57	
58	
59	
60	

Odor Description: Garbage Odors

Offensiveness: Highly _____ Offensive X Unpleasant _____ Not Unpleasant _____

Weighted Average Intensity: 0.75

	VS	S	M	L	VL	No Odor
1 Min	1	1	Ø	1	4	Ø
10 Min						
1 Hour						

Supplemental Investigator's Odor Intensity Time Log

Investigator: Manuel Gonzalez
 Date of Investigation: 5/15/19

Location: Andover Wood Archery (GPS 29.552462, 95.42501)
 Start Time: 08:40 Court

Minutes	Odor Intensity VL, L, M, S, VS
1 min	No Odor TUA-1.0311M
2	No Odor -1.0211M
3	No Odor -0.0411M
4	No Odor -0.1111M
5	No Odor TUA-0.211M
6	No Odor
7	No Odor
8	No Odor
9	No Odor
10	No Odor TUA--0.4
11	No Odor
12	No Odor -TUA-0.0
13	No Odor
14	No Odor
15	No Odor -TUA-1.2
16	No Odor -TUA-1.32
17	No Odor -TUA-2.4
18	
19	
20	
21	
22	
23	
24	
25	
26	
27	
28	
29	
30	

Minutes	Odor Intensity VL, L, M, S, VS
31 min	
32	
33	
34	
35	
36	
37	
38	
39	
40	
41	
42	
43	
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59	
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Odor Description: No Odor

Offensiveness: Highly _____ Offensive _____ Unpleasant _____ Not Unpleasant ☒

Weighted Average Intensity: 0.0

	VS	S	M	L	VL	No Odor
1 Min						☒
10 Min						
1 Hour						

Supplemental Investigator's Odor Intensity Time Log

Investigator: Manuel Gonzalez
Date of Investigation: 5/15/18

Location: End of Morgan Bay (wrt
Start Time: 10:35

(GPS-
29.567417,
-95.435310)

Minutes	Odor Intensity VL, L, M, S, VS
1 min	TL M - TUA: 10.76
2	M
3	L
4	L
5	M TUA: 7.64
6	L
7	M
8	S
9	S
10	L
11	No Odor - TUA: 0.89
12	No Odor
13	No Odor
14	L TUA: 8.11
15	L
16	No Odor
17	No Odor TUA: 1.63
18	L
19	L
20	L
21	L TUA: 7.11
22	L
23	No Odor
24	No Odor
25	L
26	L
27	M
28	M TUA: 9.94
29	L
30	No Odor

Minutes	Odor Intensity VL, L, M, S, VS
31 min	M
32	M
33	S
34	S TUA: 11.51
35	S
36	M TUA: 12.61
37	L
38	L TUA: 6.44
39	VL
40	No Odor
41	VL
42	VL
43	VL TUA: 4.21
44	VL
45	VL
46	
47	
48	
49	
50	
51	
52	
53	
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56	
57	
58	
59	
60	

Odor Description: Moldy, Rancid, Olive, Garbage

Offensiveness: Highly ☐ Offensive ☒ Unpleasant ☒ Not Unpleasant ☐

Weighted Average Intensity: 1.89

	VS	S	M	L	VL	No Odor
1 Min		5	9	16	6	9
10 Min						
1 Hour						

Supplemental Investigator's Odor Intensity Time Log

Investigator: N. Happens
Date of Investigation: 5/15/18

Location: Jupiter Springs 29.57170
Start Time: 10:48 -95.43435

Minutes	Odor Intensity VL, L, M, S, VS
1 min	VS
2	VS
3	S
4	M
5	S
6	M
7	VS
8	S
9	S
10	S
11	L
12	
13	
14	
15	
16	
17	
18	
19	
20	
21	
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23	
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25	
26	
27	
28	
29	
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Minutes	Odor Intensity VL, L, M, S, VS
31 min	
32	
33	
34	
35	
36	
37	
38	
39	
40	
41	
42	
43	
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Odor Description: Sour Rotten Garbage Odor

Offensiveness: Highly _____ Offensive X Unpleasant _____ Not Unpleasant _____

Weighted Average Intensity: 3.909

	VS	S	M	L	VL	No Odor
1 Min	3	5	2	1		
10 Min						
1 Hour						

1

Supplemental Investigator's Odor Intensity Time Log

Investigator: Kim Rhodes

Location: On 2234 at Tray Construction entrance

Date of Investigation: 5/15/18

Start Time: 4:25am

Minutes	Odor Intensity VL, L, M, S, VS
1 min	L
2	VL
3	VL
4	VL
5	VL
6	VL
7	None
8	VL
9	VL
10	None
11	VL
12	None
13	L
14	VL
15	VL
16	L
17	
18	
19	
20	
21	
22	
23	
24	
25	
26	
27	
28	
29	
30	

Minutes	Odor Intensity VL, L, M, S, VS
31 min	
32	
33	
34	
35	
36	
37	
38	
39	
40	
41	
42	
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59	
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Odor Description: Leachate

Offensiveness: Highly ☒ Offensive ☒ Unpleasant ☐ Not Unpleasant ☐

Weighted Average Intensity: 1

	VS	S	M	L	VL	No Odor
1 Min				3x 2	10x 1	
10 Min					✓	
1 Hour						

2

Supplemental Investigator's Odor Intensity Time Log

Investigator: Kim Rhodes

Location: Morgan Bay Ct.

Date of Investigation: 5/15/18

Start Time: 4:51 am

Minutes	Odor Intensity VL, L, M, S, VS
1 min	None
2	None
3	None
4	None
5	None
6	None
7	None
8	None
9	None
10	None
11	None
12	None
13	None
14	None
15	None
16	
17	
18	
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27	
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Minutes	Odor Intensity VL, L, M, S, VS
31 min	
32	
33	
34	
35	
36	
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42	
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Odor Description: _____

Offensiveness: Highly _____ Offensive _____ Unpleasant _____ Not Unpleasant _____

Weighted Average Intensity:

	VS	S	M	L	VL	No Odor
1 Min						
10 Min						✓
1 Hour						

3

Merapitan
Station

Supplemental Investigator's Odor Intensity Time Log

Investigator: Kim Rhodes

Location: Mountain Sage Ct. + Math Sage Dr.

Date of Investigation: 5/15/18

Start Time: 5:11am

Minutes	Odor Intensity VL, L, M, S, VS
1 min	None
2	None
3	None
4	None
5	None
6	None
7	None
8	None
9	None
10	None
11	None
12	None
13	None
14	None
15	None
16	
17	
18	
19	
20	
21	
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23	
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26	
27	
28	
29	
30	

Minutes	Odor Intensity VL, L, M, S, VS
31 min	
32	
33	
34	
35	
36	
37	
38	
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41	
42	
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59	
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Odor Description: _____

Offensiveness: Highly _____ Offensive _____ Unpleasant _____ Not Unpleasant _____

Weighted Average Intensity:

	VS	S	M	L	VL	No Odor
1 Min						
10 Min						10
1 Hour						

No odor.

1. Characterize the odor to determine which Offensiveness table to use (Not Unpleasant to Highly Offensive)
2. Assess the Intensity of odor (Very Light to Very Strong), for variable intensities use Supplemental Investigator's Odor Intensity Time Log.
3. Determine the total Duration of the odor(s) (1 minute to 24 hours)
4. Evaluate the Frequency of odor occurrence (Single Occurrence to Daily)
5. Identify the block on the chart that corresponds to the information from Steps 1-4 and determine if a nuisance condition exists.

1. Characterize the odor to determine which Offensiveness table to use (Not Unpleasant to Highly Offensive)
2. Assess the Intensity of odor (Very Light to Very Strong), for variable intensities use Supplemental Investigator's Odor Intensity Time Log.
3. Determine the total Duration of the odor(s) (1 minute to 24 hours)
4. Evaluate the Frequency of odor occurrence (Single Occurrence to Daily)
5. Identify the block on the chart that corresponds to the information from Steps 1-4 and determine if a nuisance condition exists.

[illegible]

4

Supplemental Investigator's Odor Intensity Time Log

Investigator: Kim Rhodes

Location: Lift station (Biscayne Bay)

Date of Investigation: 5/15/18

Start Time: 5:13am

Minutes	Odor Intensity VL, L, M, S, VS
1 min	None
2	None
3	None
4	None
5	None
6	None
7	None
8	None
9	None
10	None
11	None
12	None
13	None
14	None
15	None
16	
17	
18	
19	
20	
21	
22	
23	
24	
25	
26	
27	
28	
29	
30	

Minutes	Odor Intensity VL, L, M, S, VS
31 min	
32	
33	
34	
35	
36	
37	
38	
39	
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41	
42	
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58	
59	
60	

Odor Description: _____

Offensiveness: Highly _____ Offensive _____ Unpleasant _____ Not Unpleasant _____

Weighted Average Intensity:

	VS	S	M	L	VL	No Odor
1 Min						
10 Min						10
1 Hour						

Wind: 0 mph

No odor.

Investigator FIDO Log

1. Characterize the odor to determine which Offensiveness table to use (Not Unpleasant to Highly Offensive)
2. Assess the Intensity of odor (Very Light to Very Strong), for variable intensities use Supplemental Investigator's Odor Intensity Time Log.
3. Determine the total Duration of the odor(s) (1 minute to 24 hours)
4. Evaluate the Frequency of odor occurrence (Single Occurrence to Daily)
5. Identify the block on the chart that corresponds to the information from Steps 1-4 and determine if a nuisance condition exists.

[illegible]

5

Supplemental Investigator's Odor Intensity Time Log

Investigator: Kim Rhodes

Location: Reflection Bay WWTP

Date of Investigation: 5/15/18

Start Time: 5:56am

Minutes	Odor Intensity VL, L, M, S, VS
1 min	None
2	None
3	None
4	None
5	None
6	None
7	None
8	None
9	None
10	None
11	None
12	None
13	None
14	None
15	None
16	
17	
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19	
20	
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23	
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25	
26	
27	
28	
29	
30	

Minutes	Odor Intensity VL, L, M, S, VS
31 min	
32	
33	
34	
35	
36	
37	
38	
39	
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42	
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Odor Description: _____

Offensiveness: Highly _____ Offensive _____ Unpleasant _____ Not Unpleasant _____

Weighted Average Intensity:

	VS	S	M	L	VL	No Odor
1 Min						
10 Min						10
1 Hour						

Wind: 0 MPH

No odor.

Investigator FIDO Log

1. Characterize the odor to determine which Offensiveness table to use (Not Unpleasant to Highly Offensive)
2. Assess the Intensity of odor (Very Light to Very Strong), for variable intensities use Supplemental Investigator's Odor Intensity Time Log.
3. Determine the total Duration of the odor(s) (1 minute to 24 hours)
4. Evaluate the Frequency of odor occurrence (Single Occurrence to Daily)
5. Identify the block on the chart that corresponds to the information from Steps 1-4 and determine if a nuisance condition exists.

[illegible]

6

Supplemental Investigator's Odor Intensity Time Log

Investigator: Kim Rhodes

Location: Brenntag/Syntech - Hooper Rd.

Date of Investigation: 5/15/18

Start Time: 6:35am

Minutes	Odor Intensity VL, L, M, S, VS
1 min	None
2	None
3	None
4	None
5	None
6	None
7	None
8	M
9	None
10	None
11	L
12	L
13	None
14	None
15	L
16	L
17	L
18	None
19	None
20	None
21	
22	
23	
24	
25	
26	
27	
28	
29	
30	

Minutes	Odor Intensity VL, L, M, S, VS
31 min	
32	
33	
34	
35	
36	
37	
38	
39	
40	
41	
42	
43	
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58	
59	
60	

Odor Description: Chemicals, similar to calibration odors, maybe paint/paint thinner

Offensiveness: Highly _____ Offensive _____ Unpleasant ✓ Not Unpleasant _____

Weighted Average Intensity: .4

	VS	S	M	L	VL	No Odor
1 Min			1x3	5x1		
10 Min					✓	
1 Hour						

Supplemental Investigator's Odor Intensity Time Log

Investigator: Kim Rhodes

Location: Akzo Nobel - Blue Bonnet Dr.

Date of Investigation: 5/15/18

Start Time: 7:10am

Minutes	Odor Intensity VL, L, M, S, VS
1 min	L
2	VL
3	VL
4	VL
5	None
6	VL
7	VL
8	VL
9	VL
10	VL
11	VL
12	VL
13	VL
14	None
15	VL
16	VL
17	VL
18	
19	
20	
21	
22	
23	
24	
25	
26	
27	
28	
29	
30	

Minutes	Odor Intensity VL, L, M, S, VS
31 min	
32	
33	
34	
35	
36	
37	
38	
39	
40	
41	
42	
43	
44	
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58	
59	
60	

Odor Description: Sickly sweet chemical smell close to cilantro

Offensiveness: Highly _____ Offensive _____ Unpleasant _____ Not Unpleasant ✓

Weighted Average Intensity:

	VS	S	M	L	VL	No Odor
1 Min				1x2	14x1	
10 Min					✓	
1 Hour						

8

Supplemental Investigator's Odor Intensity Time Log

Investigator: Kim Rhodes

Location: Miramichi Ct.

Date of Investigation: 5/15/18

Start Time: 7:45am

Minutes	Odor Intensity VL, L, M, S, VS
1 min	None
2	None
3	None
4	None
5	VL
6	VL
7	VL
8	VL
9	VL
10	VL
11	VL
12	VL
13	VL
14	VL
15	VL
16	None
17	
18	
19	
20	
21	
22	
23	
24	
25	
26	
27	
28	
29	
30	

Minutes	Odor Intensity VL, L, M, S, VS
31 min	
32	
33	
34	
35	
36	
37	
38	
39	
40	
41	
42	
43	
44	
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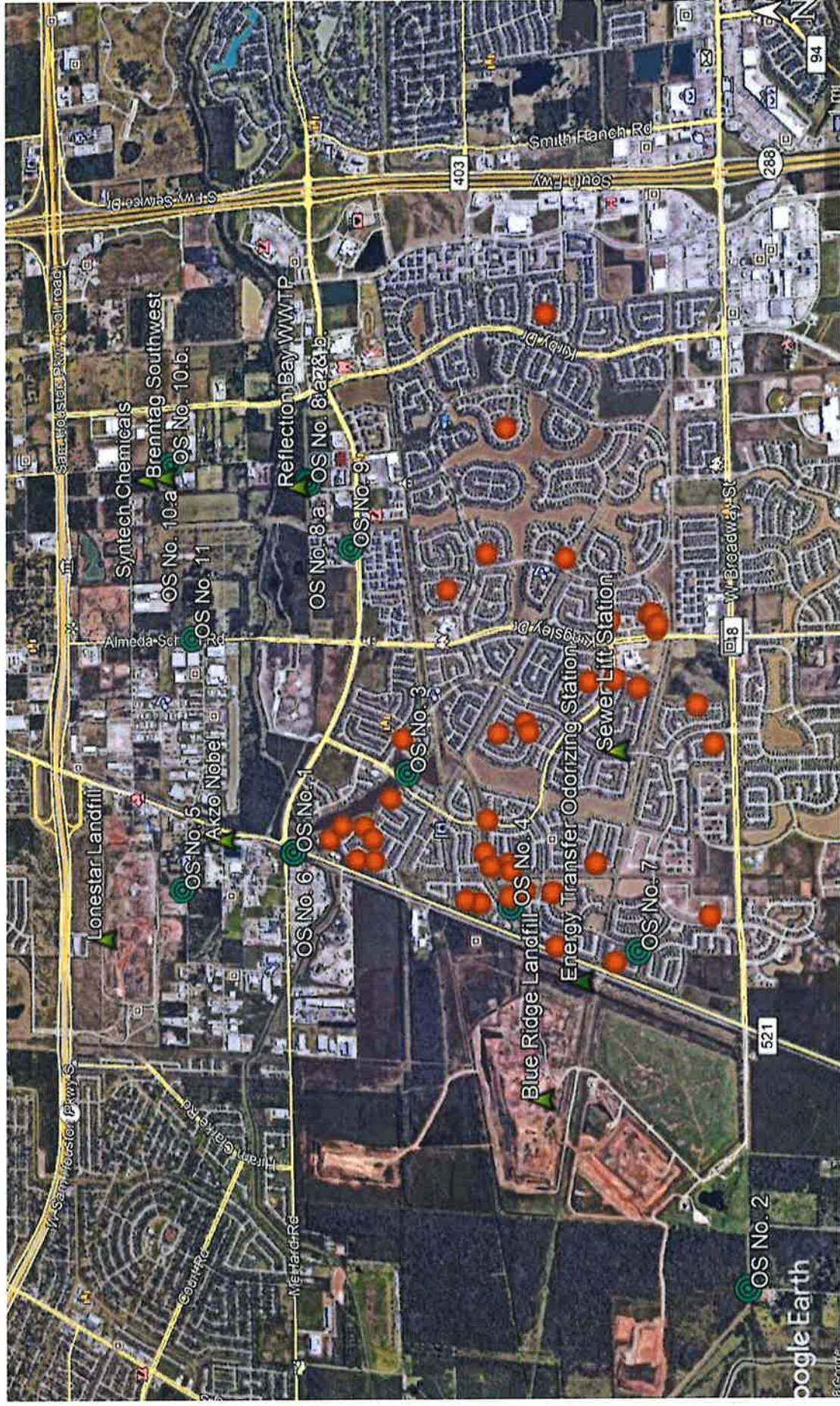
Odor Description: Similar to cilantro chemical smell from Akzo Nobel

Offensiveness: Highly _____ Offensive _____ Unpleasant _____ Not Unpleasant ✓

Weighted Average Intensity:

	VS	S	M	L	VL	No Odor
1 Min						
10 Min					✓	
1 Hour						

ATTACHMENT 4



Legend

Facilities

Complaint Locations

Monitoring Division Survey Points

TCEQ Monitoring Division Staff

May 16, 2018 Odor Surveys

Air Quality Maps

Data Reports

AutoGC

Water Data

Site Info

Manvel Croix Park C84 Data by Site by Date (all parameters)

Use this form to retrieve hourly data collected at Manvel Croix Park C84. Although this is the most current data, it is not considered official until it has been certified by the technical staff. This information is updated hourly.

This web page provides the most current hourly averaged data available. Our convention for time-tagging data is the beginning of each hour. For example, values shown for the noon hour are based on measurements taken from noon to 1:00 p.m. The noon average will not be calculated until after 1:00 p.m. The noon average will then be available on our external server from 1:15 p.m. to 1:30 p.m. This results in an apparent one-hour time lag in the data. We also present our data in Local Standard Time for each measuring site. For most of Texas this is Central Standard Time. During Daylight Savings, this introduces another apparent one-hour time lag in the data.

Use the controls below to select a different date or time format. Click on the Generate Report button once you have made your selections.

Click on the Plot Data button once the tabular report has been generated to open a separate window containing data plots.

CAMS 84 Manvel Croix Park C84 [Select a different site](#)

Month: Day: Year: Time Format:

May 16 2018 12 Hour (AM/PM) [Generate Report](#) [Plot Data](#)

☒ Green underline for validated data

The table below contains hourly averages for all the pollutants and meteorological conditions measured at Manvel Croix Park C84 for **Wednesday, May 16, 2018**. All times shown are in CST.

Parameter Measured	Morning												Afternoon							
	Mid	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	Noon	1:00	2:00	3:00	4:00	5:00	6:00	
<u>Nitric Oxide</u>	0.2	0.1	0.1	0.1	0.1	0.7	1.4	1.3	0.8	1.5	0.6	0.3	0.1	0.1	0.2	0.1	0.0	0.1	0.1	
<u>Nitrogen Dioxide</u>	0.9	0.8	1.6	1.8	2.1	5.0	5.3	5.9	3.6	6.6	4.3	2.8	1.2	1.0	1.2	1.3	1.1	0.9	1.6	
<u>Oxides of Nitrogen</u>	1.0	0.9	1.6	1.9	2.2	5.6	6.7	7.1	4.3	8.0	4.9	3.1	1.3	1.2	1.3	1.4	1.1	1.0	1.6	
<u>Ozone</u>	24	22	19	14	13	6	12	26	35	37	50	53	51	53	57	59	55	52	47	
<u>Wind Speed</u>	3.4	2.6	1.9	1.6	1.3	1.1	2.8	5.3	5.5	7.5	6.6	5.8	7.1	7.7	7.3	6.5	5.1	7.4	6.9	
<u>Resultant Wind Speed</u>	3.3	2.4	1.1	1.3	0.2	0.5	2.7	5.0	4.9	7.1	5.9	4.6	6.3	7.0	6.6	5.7	4.6	7.1	6.7	
<u>Resultant Wind Direction</u>	210	232	280	292	172	304	301	279	254	276	263	253	215	204	208	215	217	199	196	
<u>Maximum Wind Gust</u>	7.0	5.5	4.8	5.1	3.3	2.1	8.4	9.3	11.9	13.3	13.9	15.4	15.8	15.9	15.9	15.1	12.9	13.7	13.4	
<u>Std. Dev. Wind Direction</u>	14	20	51	38	73	58	16	20	27	20	25	37	28	25	26	28	25	18	12	
<u>Outdoor Temperature</u>	71.0	70.0	69.8	69.5	69.2	68.3	69.6	73.8	78.1	80.4	82.7	85.0	87.3	89.2	90.5	91.1	91.7	90.6	87.1	
Parameter Measured	Mid	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	Noon	1:00	2:00	3:00	4:00	5:00	6:00	
	Morning												Afternoon							
	Maximum values for each parameter are bold within the table. Minimum values are bold italic .																			
	R - Data from this instrument meets EPA quality assurance criteria for regulatory purposes.																			

PLEASE NOTE: This data has not been verified by the TCEQ and may change. This is the most current data, but it is not official until it has been certified by our technical staff. Data is collected from TCEQ ambient monitoring sites and

may include data collected by other outside agencies. This data is updated hourly. All times shown are in local standard time unless otherwise indicated.

Following EPA reporting guidelines, negative values may be displayed in our hourly criteria air quality data, down to the negative of the EPA listed Method Detection Limit (MDL) for the particular instrument that made the measurements. The reported concentrations can be negative due to zero drift in the electronic instrument output, data logger channel, or calibration adjustments to the data. Prior to 1/1/2013, slightly negative values were automatically set to zero.

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Last Modified Tuesday, 30 Jan 2018

Supplemental Investigator's Odor Intensity Time Log

Investigator: Payton Pearce
Date of Investigation: 10 May 2018

Location: 29.58080, -95.43207
Start Time: 01:17

Minutes	Odor Intensity VL, L, M, S, VS
1 min	VS
2	S
3	M
4	S
5	S
6	M
7	M
8	M
9	L
10	L
11	L
12	M
13	M
14	M
15	M
16	S
17	S
18	VS
19	VS
20	VS
21	M
22	S
23	M
24	M
25	M
26	VS
27	S
28	L
29	L
30	L

Minutes	Odor Intensity VL, L, M, S, VS
31 min	L
32	L
33	L
34	VL
35	VL
36	VL
37	VL
38	
39	
40	
41	
42	
43	
44	
45	
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55	
56	
57	
58	
59	
60	

Odor Description: Sour, garbage, sweet + rotten

Offensiveness: Highly _____ Offensive ☒ Unpleasant _____ Not Unpleasant _____

Weighted Average Intensity: 3.0

	VS	S	M	L	VL	No Odor
1 Min	5	7	12	9	4	0
10 Min						
1 Hour						

Supplemental Investigator's Odor Intensity Time Log

Investigator: Tom Randolph
Date of Investigation: 5/16/18

Location: upwind - Nant Rd - ~0.5 mi N of Evansville
Start Time: 0117 St

Minutes	Odor Intensity VL, L, M, S, VS
1 min	NO
2	NO
3	VL
4	NO
5	NO
6	NO
7	NO
8	NO
9	VL
10	VL
11	VL
12	NO
13	NO
14	VL
15	VL
16	NO
17	NO
18	NO
19	VL
20	VL
21	NO
22	NO
23	NO
24	VL
25	VL
26	NO
27	NO
28	NO
29	NO
30	NO

Minutes	Odor Intensity VL, L, M, S, VS
31 min	NO
32	NO
33	VL
34	VL
35	NO
36	VL
37	NO
38	NO
39	NO
40	NO
41	VL
42	NO
43	NO
44	NO
45	VL
46	
47	
48	
49	
50	
51	
52	
53	
54	
55	
56	
57	
58	
59	
60	

Odor Description: None - upwind of Blue Ridge * VL odors were of honeysuckle

Offensiveness: Highly _____ Offensive _____ Unpleasant _____ Not Unpleasant * X

Weighted Average Intensity: 0

	VS	S	M	L	VL	No Odor
1 Min					15X1=15	30X0=0
10 Min						
1 Hour						

GPS (295731)
-95.42648

Supplemental Investigator's Odor Intensity Time Log

Investigator: Manuel Gonzalez
Date of Investigation: 5-16-18

Location: Diamond Bay Water Park
Start Time: 0240

Minutes	Odor Intensity VL, L, M, S, VS
1 min	M Methane
2	M ~ 30 min
3	L
4	L
5	VL Methane
6	VL 16 min
7	No Odor
8	No Odor
9	L
10	No Odor
11	No Odor
12	No Odor
13	L
14	No Odor
15	L
16	
17	
18	
19	
20	
21	
22	
23	
24	
25	
26	
27	
28	
29	
30	

Minutes	Odor Intensity VL, L, M, S, VS
31 min	
32	
33	
34	
35	
36	
37	
38	
39	
40	
41	
42	
43	
44	
45	
46	
47	
48	
49	
50	
51	
52	
53	
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55	
56	
57	
58	
59	
60	

Odor Description: _____

Offensiveness: Highly _____ Offensive ☒ Unpleasant _____ Not Unpleasant _____

Weighted Average Intensity: 1.2

	VS	S	M	L	VL	No Odor
1 Min			2	5	2	6
10 Min						
1 Hour						

Supplemental Investigator's Odor Intensity Time Log

Investigator: Peyton Pearce

Location: 29.56743 - 95.43529

Date of Investigation: 16 May 2018

Start Time: 03:07

Minutes	Odor Intensity VL, L, M, S, VS
1 min	VS 100ppm CH ₄
2	VS "
3	L
4	L
5	L
6	VL
7	VL
8	Ø
9	Ø
10	Ø
11	Ø
12	Ø
13	Ø
14	Ø
15	Ø
16	Ø
17	Ø
18	Ø
19	Ø
20	Ø
21	
22	
23	
24	
25	
26	
27	
28	
29	
30	

Minutes	Odor Intensity VL, L, M, S, VS
31 min	
32	
33	
34	
35	
36	
37	
38	
39	
40	
41	
42	
43	
44	
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56	
57	
58	
59	
60	

Odor Description: garbage, sweet

Offensiveness: Highly _____ Offensive ☒ Unpleasant _____ Not Unpleasant _____

Weighted Average Intensity: 0.9

	VS	S	M	L	VL	No Odor
1 Min	2	0	0	3	2	13
10 Min						
1 Hour						

G-15 (29,58817),
-95,484969)

Supplemental Investigator's Odor Intensity Time Log

Investigator: Marvel Gonzalez Location: Bluebonnet Dr ~ 0.3 mi W of Felt Dr
Date of Investigation: 5-16-18 Start Time: 0453

Minutes	Odor Intensity VL, L, M, S, VS
1 min	No Odor
2	No Odor TUA:
3	No Odor -0.24
4	No Odor
5	No Odor
6	No Odor
7	No Odor TUA:
8	No Odor -0.82
9	No Odor
10	No Odor
11	No Odor TUA:
12	No Odor -0.01
13	No Odor
14	No Odor
15	No Odor
16	
17	
18	
19	
20	
21	
22	
23	
24	
25	
26	
27	
28	
29	
30	

Minutes	Odor Intensity VL, L, M, S, VS
31 min	
32	
33	
34	
35	
36	
37	
38	
39	
40	
41	
42	
43	
44	
45	
46	
47	
48	
49	
50	
51	
52	
53	
54	
55	
56	
57	
58	
59	
60	

Odor Description: _____

Offensiveness: Highly _____ Offensive _____ Unpleasant _____ Not Unpleasant _____

Weighted Average Intensity: 0.0

	VS	S	M	L	VL	No Odor
1 Min						X
10 Min						
1 Hour						

Supplemental Investigator's Odor Intensity Time Log

Investigator: N. Hoppens

Location: 29.58080, -95.43211

Date of Investigation: 5/16/18

Start Time: 4:53

Downwind of Akzo Nobel

Minutes	Odor Intensity VL, L, M, S, VS
1 min	NO ODOR
2	NO ODOR
3	NO ODOR
4	VL
5	VL
6	VL
7	NO ODOR
8	VL
9	NO ODOR
10	NO ODOR
11	NO ODOR
12	VL
13	NO ODOR
14	NO ODOR
15	NO ODOR
16	
17	
18	
19	
20	
21	
22	
23	
24	
25	
26	
27	
28	
29	
30	

Minutes	Odor Intensity VL, L, M, S, VS
31 min	
32	
33	
34	
35	
36	
37	
38	
39	
40	
41	
42	
43	
44	
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58	
59	
60	

Odor Description: Sweet chemical odor - Baseline City concentration

Offensiveness: Highly _____ Offensive _____ Unpleasant X Not Unpleasant _____

Weighted Average Intensity: 0.33

	VS	S	M	L	VL	No Odor
1 Min					5	10
10 Min						
1 Hour						

Supplemental Investigator's Odor Intensity Time Log

Investigator: Tom Randolph
Date of Investigation: 5/16/18

Location: ARCADIAN Shorest Field Hollow
Start Time: 0507
29° 33' 36.730"N 95° 26' 16.428"W

Minutes	Odor Intensity VL, L, M, S, VS
1 min	S
2	M
3	M
4	L
5	L
6	VL
7	L
8	M
9	L
10	L
11	VL
12	L
13	L
14	VL
15	NO
16	
17	
18	
19	
20	
21	
22	
23	
24	
25	
26	
27	
28	
29	
30	

Minutes	Odor Intensity VL, L, M, S, VS
31 min	
32	
33	
34	
35	
36	
37	
38	
39	
40	
41	
42	
43	
44	
45	
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58	
59	
60	

Odor Description: landfill odors - GARBAGE

Offensiveness: Highly _____ Offensive _____ Unpleasant _____ Not Unpleasant _____

Weighted Average Intensity: 2

	VS	S	M	L	VL	No Odor
1 Min		1 x 4 = 4	3 x 3 = 9	7 x 2 = 14	3 x 1 = 3	1 x 0 = 0
10 Min						
1 Hour						

Supplemental Investigator's Odor Intensity Time Log

Investigator: Tom Randolph
Date of Investigation: 5/16/18

Location: Reflection Bay - 0.2m N of Shadow Creek Pkwy
Start Time: 0830
29° 34' 48.101" N - 85° 24' 22.717" W
Reflection Bay WWTP

Minutes	Odor Intensity VL, L, M, S, VS
1 min	VS
2	S
3	S
4	M
5	S
6	M
7	S
8	M
9	M
10	L
11	L
12	M
13	L
14	L
15	NO
16	NO
17	VL
18	VL
19	L
20	M
21	M
22	S
23	M
24	S
25	VL
26	L
27	L
28	VL
29	NO
30	NO

Minutes	Odor Intensity VL, L, M, S, VS
31 min	
32	
33	
34	
35	
36	
37	
38	
39	
40	
41	
42	
43	
44	
45	
46	
47	
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57	
58	
59	
60	

Odor Description: Sewage - Raw Sewage / H₂S

Offensiveness: Highly X Offensive _____ Unpleasant _____ Not Unpleasant _____

Weighted Average Intensity: 2.5

	VS	S	M	L	VL	No Odor
1 Min	1x5=5	6x4=24	8x3=24	7x2=14	4x1=4	4x0=0
10 Min						
1 Hour						

Supplemental Investigator's Odor Intensity Time Log

Investigator: Peyton Pearce

Location: 29.579906, -95.406442

Date of Investigation: 16 May 2018

Start Time: 09:34

Downwind of water treatment, multiple peaks of 30ppb H₂S, 5min avg of Spb

Minutes	Odor Intensity VL, L, M, S, VS
1 min	Ø
2	Ø
3	VS
4	VS
5	VS
6	VS
7	VL
8	Ø
9	Ø
10	Ø
11	Ø
12	Ø
13	VS
14	Ø
15	VS
16	Ø
17	S
18	M
19	S
20	S
21	M
22	L
23	M
24	S
25	L
26	Ø
27	Ø
28	VS
29	VS
30	Ø

Minutes	Odor Intensity VL, L, M, S, VS
31 min	VS
32	VS
33	VS
34	VL
35	Ø
36	Ø
37	Ø
38	
39	
40	
41	
42	
43	
44	
45	
46	
47	
48	
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50	
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60	

Odor Description: sulfur-type smell, extremely variable

Offensiveness: Highly ☒ Offensive ☐ Unpleasant ☐ Not Unpleasant ☐

Weighted Average Intensity: 2.32

	VS	S	M	L	VL	No Odor
1 Min	11	4	3	2	2	15
10 Min						
1 Hour						

G/S (29.579865, -95.410044)

Supplemental Investigator's Odor Intensity Time Log

Investigator: Manuel Gonzalez
 Date of Investigation: 5-16-18

Location: The Columns at Shadow Creek Ranch
 Start Time: 0934

Minutes	Odor Intensity VL, L, M, S, VS
1 min	No Odor *
2	No Odor TUA
3	No Odor -0.92/m
4	No Odor
5	No Odor
6	No Odor
7	No Odor
8	No Odor TUA
9	No Odor -1.62/m
10	No Odor
11	No Odor
12	No Odor
13	No Odor
14	No Odor
15	No Odor
16	No Odor
17	No Odor
18	No Odor TUA
19	No Odor 0.82/m
20	No Odor
21	No Odor
22	No Odor
23	No Odor
24	No Odor
25	No Odor
26	No Odor TUA
27	No Odor 0.73/m
28	No Odor
29	No Odor
30	No Odor

Minutes	Odor Intensity VL, L, M, S, VS
31 min	
32	
33	
34	
35	
36	
37	
38	
39	
40	
41	
42	
43	
44	
45	
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47	
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57	
58	
59	
60	

Odor Description: _____

Offensiveness: Highly _____ Offensive _____ Unpleasant _____ Not Unpleasant _____

Weighted Average Intensity: 0.0

	VS	S	M	L	VL	No Odor
1 Min						X
10 Min						
1 Hour						

* H₂S spectrometer gathering data during odor log
 < 1 ppb for duration of survey

Supplemental Investigator's Odor Intensity Time Log

Investigator: Peyton Pearce

Location: 29.58971 -95.40473

Date of Investigation: 16 May 2018

Start Time: 10:45

Downwind of Syntech

Minutes	Odor Intensity VL, L, M, S, VS
1 min	Ø
2	L
3	L
4	M
5	VL
6	L
7	M
8	M
9	S
10	S
11	M
12	S
13	M
14	M
15	M
16	
17	
18	
19	
20	
21	
22	
23	
24	
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27	
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29	
30	

Minutes	Odor Intensity VL, L, M, S, VS
31 min	
32	
33	
34	
35	
36	
37	
38	
39	
40	
41	
42	
43	
44	
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56	
57	
58	
59	
60	

Odor Description: Amines, sweet, almost like fresh cut wood but sweeter

Offensiveness: Highly _____ Offensive X Unpleasant _____ Not Unpleasant _____

Weighted Average Intensity: 2.66

	VS	S	M	L	VL	No Odor
1 Min		3	7	3	1	1
10 Min						
1 Hour						

Supplemental Investigator's Odor Intensity Time Log

Investigator: N. Hoppens

Location: 29.58894-95.40469

Date of Investigation: 5/16/18

Start Time: 11:07

Downwind of Brenntag

Minutes	Odor Intensity VL, L, M, S, VS
1 min	NO ODOR
2	NO ODOR
3	NO ODOR
4	NO ODOR
5	NO ODOR
6	NO ODOR
7	NO ODOR
8	NO ODOR
9	NO ODOR
10	NO ODOR
11	NO ODOR
12	NO ODOR
13	NO ODOR
14	NO ODOR
15	NO ODOR
16	
17	
18	
19	
20	
21	
22	
23	
24	
25	
26	
27	
28	
29	
30	

Minutes	Odor Intensity VL, L, M, S, VS
31 min	
32	
33	
34	
35	
36	
37	
38	
39	
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41	
42	
43	
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58	
59	
60	

Odor Description: N/A No H₂S or CH₄ detected

Offensiveness: Highly _____ Offensive _____ Unpleasant _____ Not Unpleasant X

Weighted Average Intensity: 0.0

	VS	S	M	L	VL	No Odor
1 Min						X
10 Min						
1 Hour						

Supplemental Investigator's Odor Intensity Time Log

Investigator: Tom Randolph

Location: Alameda School Rd ~ 0.3m S of Riley Rd.

Date of Investigation: 5/16/18

Start Time: 1045

Upwind of Syntech & Brenntag 29°35'14.727"N - 85°25'01.571"W

Minutes	Odor Intensity VL, L, M, S, VS
1 min	ND
2	ND
3	ND
4	ND
5	ND
6	ND
7	ND
8	ND
9	ND
10	ND
11	ND ND
12	ND
13	ND
14	ND
15	ND Syntech
16	ND
17	ND
18	ND
19	ND
20	ND
21	ND Brenntag
22	ND
23	ND
24	ND
25	ND
26	ND
27	ND
28	ND
29	ND
30	ND

Minutes	Odor Intensity VL, L, M, S, VS
31 min	ND
32	ND
33	ND
34	ND
35	ND
36	ND
37	ND Brenntag
38	
39	
40	
41	
42	
43	
44	
45	
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56	
57	
58	
59	
60	

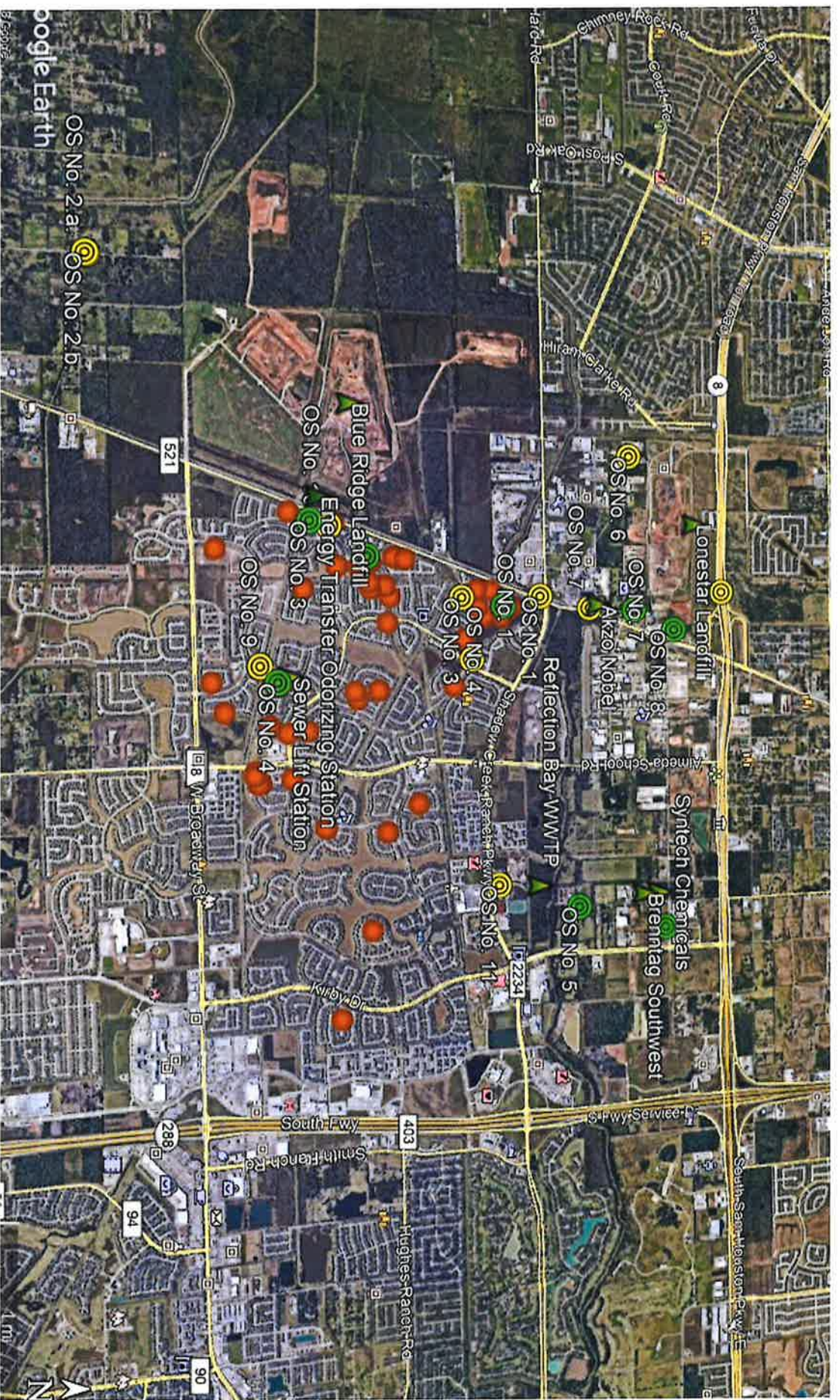
Odor Description: NO ODORS - upwind of Syntech & Brenntag

Offensiveness: Highly _____ Offensive _____ Unpleasant _____ Not Unpleasant _____

Weighted Average Intensity: 0

	VS	S	M	L	VL	No Odor
1 Min						3740
10 Min						
1 Hour						

ATTACHMENT 5



TCEQ Monitoring Division Staff and Water Section May 17, 2018 Odor Surveys

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Manvel Croix Park C84 Data by Site by Date (all parameters)

Use this form to retrieve hourly data collected at Manvel Croix Park C84. Although this is the most current data, it is not considered official until it has been certified by the technical staff. This information is updated hourly.

This web page provides the most current hourly averaged data available. Our convention for time-tagging data is the beginning of each hour. For example, values shown for the noon hour are based on measurements taken from noon to 1:00 p.m. The noon average will not be calculated until after 1:00 p.m. The noon average will then be available on our external server from 1:15 p.m. to 1:30 p.m. This results in an apparent one-hour time lag in the data. We also present our data in Local Standard Time for each measuring site. For most of Texas this is Central Standard Time. During Daylight Savings, this introduces another apparent one-hour time lag in the data.

Use the controls below to select a different date or time format. Click on the Generate Report button once you have made your selections.

Click on the Plot Data button once the tabular report has been generated to open a separate window containing data plots.

CAMS 84 Manvel Croix Park C84 [Select a different site](#)

Month: May Day: 17 Year: 2018 Time Format: 12 Hour (AM/PM)

[Generate Report](#) [Plot Data](#)

☒ Green underline for validated data

The table below contains hourly averages for all the pollutants and meteorological conditions measured at Manvel Croix Park C84 for **Thursday, May 17, 2018**. All times shown are in CST.

Parameter Measured	Morning												Afternoon							
	Mid	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	Noon	1:00	2:00	3:00	4:00	5:00	6:00	7:00
Nitric Oxide	<u>0.0</u>	0.1	-0.0	0.0	0.1	0.3	<u>4.2</u>	0.9	0.2	0.2	0.2	0.2	0.3	0.1	0.2	0.2	0.0	0.1	0.0	0.1
Nitrogen Dioxide	1.9	1.4	1.6	1.9	2.9	4.8	<u>7.5</u>	3.7	1.7	1.3	2.0	2.9	2.5	1.7	1.1	1.0	0.9	1.1	1.2	1.1
Oxides of Nitrogen	2.0	1.4	1.5	1.8	3.0	5.1	<u>11.6</u>	4.5	1.8	1.5	2.2	3.0	2.7	1.7	1.3	1.1	0.9	1.2	1.2	1.1
Ozone	22	20	18	17	16	12	<u>8</u>	22	32	42	49	56	<u>61</u>	56	53	51	52	57	49	41
Wind Speed	2.4	3.1	3.1	2.9	2.5	<u>1.2</u>	1.5	3.8	6.8	7.1	6.5	5.0	5.2	5.0	4.8	5.4	4.8	5.0	6.7	<u>9.1</u>
Resultant Wind Speed	2.3	3.0	3.1	2.8	2.4	<u>1.0</u>	1.2	3.4	6.2	6.4	5.7	3.6	2.5	3.2	3.2	4.4	4.2	4.7	6.5	<u>8.1</u>
Resultant Wind Direction	231	206	198	201	214	198	201	223	<u>256</u>	248	256	235	254	219	231	203	208	205	204	<u>19</u>
Maximum Wind Gust	4.8	5.1	5.8	5.3	4.4	<u>3.0</u>	3.8	8.5	15.8	15.5	13.2	10.9	<u>20.6</u>	11.6	10.9	12.7	10.3	10.9	18.1	17.1
Std. Dev. Wind Direction	19	15	<u>9</u>	13	14	26	37	25	23	24	27	43	<u>58</u>	48	47	35	29	18	15	13
Outdoor Temperature	70.1	69.6	69.3	69.5	69.3	<u>68.9</u>	70.6	75.7	79.9	82.9	85.7	87.6	89.1	91.2	92.3	93.2	<u>93.3</u>	92.4	89.0	83.1
Parameter Measured	Morning												Afternoon							
	Mid	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	Noon	1:00	2:00	3:00	4:00	5:00	6:00	7:00
Maximum values for each parameter are <u>bold</u> within the table. Minimum values are <i>bold italic</i> .																				
^R - Data from this instrument meets EPA quality assurance criteria for regulatory purposes.																				

PLEASE NOTE: This data has not been verified by the TCEQ and may change. This is the most current data, but it is not official until it has been certified by our technical staff. Data is collected from TCEQ ambient monitoring sites and may include data collected by other outside agencies. This data is updated hourly. All times shown are in local standard time unless otherwise indicated.

Following EPA reporting guidelines, negative values may be displayed in our hourly criteria air quality data, down to the negative of the EPA listed Method Detection Limit (MDL) for the particular instrument that made the measurements. The reported concentrations can be negative due to zero drift in the electronic instrument output, data logger channel, or calibration adjustments to the data. Prior to 1/1/2013, slightly negative values were automatically set to zero.

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Last Modified Tuesday, 30 Jan 2018

Supplemental Investigator's Odor Intensity Time Log

Investigator: Peyton Pearce
Date of Investigation: 17 May 2018

Location: 29.5808 -95.43204
Start Time: 00:03

Minutes	Odor Intensity VL, L, M, S, VS
1 min	M
2	M
3	M
4	L
5	VL
6	VL
7	VL
8	VL
9	L
10	L
11	L
12	VL
13	Ø
14	Ø
15	Ø
16	Ø
17	Ø
18	VL
19	VL
20	VL
21	Ø
22	Ø
23	VL
24	Ø
25	Ø
26	VL
27	Ø
28	Ø
29	Ø
30	Ø

Minutes	Odor Intensity VL, L, M, S, VS
31 min	
32	
33	
34	
35	
36	
37	
38	
39	
40	
41	
42	
43	
44	
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56	
57	
58	
59	
60	

Odor Description: rotten, sweet, garbage smell

Offensiveness: Highly _____ Offensive ☒ Unpleasant _____ Not Unpleasant _____

Weighted Average Intensity: 0.9

	VS	S	M	L	VL	No Odor
1 Min			3	4	10	13
10 Min						
1 Hour						

Supplemental Investigator's Odor Intensity Time Log

Investigator: Manuel Gonzalez
Date of Investigation: 5-17-18

Location: Nail Road ~ 0.3 mile North of Evergreen St.
Start Time: 0005

Minutes	Odor Intensity VL, L, M, S, VS
1 min	No Odor TUA: 3.21 ppm
2	No Odor
3	No Odor
4	No Odor
5	No Odor
6	No Odor
7	No Odor TUA: 3.02 ppm
8	No Odor
9	No Odor
10	No Odor
11	No Odor
12	No Odor
13	No Odor TUA: 1.16 ppm
14	No Odor
15	No Odor
16	No Odor
17	No Odor
18	No Odor
19	No Odor
20	No Odor TUA: 1.85 ppm
21	No Odor
22	No Odor
23	No Odor
24	No Odor
25	No Odor
26	No Odor
27	No Odor
28	No Odor TUA: 0.11 ppm
29	No Odor
30	No Odor

Minutes	Odor Intensity VL, L, M, S, VS
31 min	
32	
33	
34	
35	
36	
37	
38	
39	
40	
41	
42	
43	
44	
45	
46	
47	
48	
49	
50	
51	
52	
53	
54	
55	
56	
57	
58	
59	
60	

Odor Description: No Odor

Offensiveness: Highly _____ Offensive _____ Unpleasant _____ Not Unpleasant ☒

Weighted Average Intensity: 0.0

	VS	S	M	L	VL	No Odor
1 Min						X
10 Min						
1 Hour						

10-10-60 1000AM

Supplemental Investigator's Odor Intensity Time Log

Investigator: Manuel Gonzalez

Location: Near R3 ~ 0.3 mile North of Evergreen

Date of Investigation: 5-17-16

Start Time: 0049

Minutes	Odor Intensity VL, L, M, S, VS
1 min	No Odor *
2	No Odor
3	No Odor TVA: 0.81
4	No Odor 11m
5	No Odor
6	No Odor
7	No Odor
8	No Odor
9	No Odor
10	No Odor
11	No Odor
12	No Odor TVA: 0.36
13	No Odor 11m
14	No Odor
15	No Odor
16	No Odor
17	No Odor TVA: 1.22
18	No Odor 10m
19	No Odor
20	No Odor
21	No Odor
22	No Odor
23	No Odor TVA: 1.41
24	No Odor 11m
25	No Odor
26	No Odor
27	No Odor
28	No Odor
29	No Odor
30	No Odor TVA: 0.64

Minutes	Odor Intensity VL, L, M, S, VS
31 min	No Odor
32	No Odor
33	No Odor
34	No Odor
35	No Odor
36	No Odor
37	No Odor TVA: 0.23
38	No Odor 11m
39	No Odor
40	No Odor
41	
42	
43	
44	
45	
46	
47	
48	
49	
50	
51	
52	
53	
54	
55	
56	
57	
58	
59	
60	

Odor Description: No Odor

Offensiveness: Highly _____ Offensive _____ Unpleasant _____ Not Unpleasant _____

Weighted Average Intensity: 0.0

	VS	S	M	L	VL	No Odor
1 Min						X
10 Min						
1 Hour						

* H2S spectrometer used to measure H2S. H2S measurement < 1ppb for duration of odor log.

Supplemental Investigator's Odor Intensity Time Log

Investigator: Peyton Pearce
 Date of Investigation: 17 May 2018
Downwind Blue Ridge, Residential

Location: 29.57452 -95.43118
 Start Time: +2:00:48
PP 17 May 2018

Minutes	Odor Intensity VL, L, M, S, VS
1 min	VS
2	S
3	S
4	M
5	S
6	M
7	S
8	S
9	M
10	M
11	M
12	L
13	M
14	L
15	L
16	L
17	L
18	M
19	L
20	M
21	M
22	M
23	M
24	L
25	L
26	VS M PP 17 May 2018
27	L
28	L
29	M
30	L

Minutes	Odor Intensity VL, L, M, S, VS
31 min	M
32	M
33	M
34	L
35	L
36	L
37	L
38	L
39	
40	
41	
42	
43	
44	
45	
46	
47	
48	
49	
50	
51	
52	
53	
54	
55	
56	
57	
58	
59	
60	

Odor Description: garbage odor

Offensiveness: Highly _____ Offensive ☒ Unpleasant _____ Not Unpleasant _____

Weighted Average Intensity: 2.76

	VS	S	M	L	VL	No Odor
1 Min	1	5	16	16	0	0
10 Min						
1 Hour						

Supplemental Investigator's Odor Intensity Time Log

Investigator: Tom Randolph
Date of Investigation: 5/17/18

Location: Trinity Bay & Biscayne Bay
Start Time: 0145
29.57537N -95.42647

Minutes	Odor Intensity VL, L, M, S, VS
1 min	S
2	S
3	M
4	L
5	M
6	L
7	M
8	S
9	M
10	L
11	L
12	M
13	M
14	S
15	S
16	M
17	M
18	S
19	M
20	M
21	S
22	M
23	M
24	M
25	L
26	M
27	M
28	S
29	S
30	L

Minutes	Odor Intensity VL, L, M, S, VS
31 min	
32	
33	
34	
35	
36	
37	
38	
39	
40	
41	
42	
43	
44	
45	
46	
47	
48	
49	
50	
51	
52	
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54	
55	
56	
57	
58	
59	
60	

Odor Description: Landfill odors - Garbage

Offensiveness: Highly _____ Offensive X Unpleasant _____ Not Unpleasant _____

Weighted Average Intensity: 3

	VS	S	M	L	VL	No Odor
1 Min		9 x 4 = 36	15 x 3 = 45	6 x 2 = 12		
10 Min						
1 Hour						

Supplemental Investigator's Odor Intensity Time Log

Investigator: Peyton Pearce
Date of Investigation: 17 May 2018

Location: 29.59612 -95.43272
Start Time: 02:13

Downwind of Lone Star

Minutes	Odor Intensity VL, L, M, S, VS
1 min	Ø
2	Ø
3	Ø
4	Ø
5	VL
6	Ø
7	Ø
8	VL
9	M
10	Ø
11	Ø
12	Ø
13	VL
14	VL
15	VL
16	VL
17	Ø
18	Ø
19	Ø
20	Ø
21	VL
22	L
23	M
24	M
25	L
26	L
27	L
28	L
29	VL
30	VL

Minutes	Odor Intensity VL, L, M, S, VS
31 min	
32	
33	
34	
35	
36	
37	
38	
39	
40	
41	
42	
43	
44	
45	
46	
47	
48	
49	
50	
51	
52	
53	
54	
55	
56	
57	
58	
59	
60	

Odor Description: trash popcorn

Offensiveness: Highly _____ Offensive ☒ Unpleasant _____ Not Unpleasant _____

Weighted Average Intensity: 0.933

	VS	S	M	L	VL	No Odor
1 Min			3	5	9	13
10 Min						
1 Hour						

GPS (29.548065,
-95.449625)

Supplemental Investigator's Odor Intensity Time Log

Investigator: Manuel Gonzalez Location: Bluebonnet Road ~ 0.2 mile west of
Date of Investigation: 5-17-18 Start Time: 0214 west of

Minutes	Odor Intensity VL, L, M, S, VS	Minutes	Odor Intensity VL, L, M, S, VS
1 min	No odor TWA: 1.67	31 min	
2	No odor 11 ^{am}	32	
3	No odor	33	
4	No odor	34	
5	No odor TWA: 2.21	35	
6	No odor 11 ^{am}	36	
7	No odor	37	
8	No odor	38	
9	No odor TWA: 3.15	39	
10	No odor 11 ^{am}	40	
11	No odor	41	
12	No odor	42	
13	No odor TWA: 1.00	43	
14	No odor	44	
15	No odor	45	
16	No odor TWA: 1.14	46	
17	No odor 11 ^{am}	47	
18	No odor	48	
19	No odor	49	
20	No odor TWA: 0.84	50	
21	No odor 11 ^{am}	51	
22	No odor	52	
23	No odor	53	
24	No odor	54	
25	No odor	55	
26	No odor TWA: 1.11	56	
27	No odor 11 ^{am}	57	
28	No odor	58	
29	No odor	59	
30	No odor TWA: 0.64	60	

Odor Description: No odor

Offensiveness: Highly _____ Offensive _____ Unpleasant _____ Not Unpleasant _____

Weighted Average Intensity: 0.0

	VS	S	M	L	VL	No Odor
1 Min						X
10 Min						
1 Hour						

Supplemental Investigator's Odor Intensity Time Log

Investigator: Tom Randoopl
 Date of Investigation: 5/17/18

Location: FM 521 - ~ 0.2 m S Bluebonnet
 Start Time: 0235
29° 35' 05.459" N - 95° 25' 51.925" W AKS Nobel

Minutes	Odor Intensity VL, L, M, S, VS
1 min	M
2	S
3	M
4	M
5	S
6	L
7	L
8	VL
9	VL
10	NO
11	VL
12	M
13	L
14	M
15	M
16	L
17	L
18	VL
19	NO
20	NO
21	
22	
23	
24	
25	
26	
27	
28	
29	
30	

Minutes	Odor Intensity VL, L, M, S, VS
31 min	
32	
33	
34	
35	
36	
37	
38	
39	
40	
41	
42	
43	
44	
45	
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56	
57	
58	
59	
60	

Odor Description: organic - "dirty socks"

Offensiveness: Highly _____ Offensive X Unpleasant _____ Not Unpleasant _____

Weighted Average Intensity: 2

	VS	S	M	L	VL	No Odor
1 Min		2x4=8	6x3=18	5x2=10	4x1=4	3x0=0
10 Min						
1 Hour						

Supplemental Investigator's Odor Intensity Time Log

Investigator: Rylynn Pearce

Location: 29.5608 -95.4244

Date of Investigation: 17 May 2018

Start Time: 03:05

Downwind up lift station

Minutes	Odor Intensity VL, L, M, S, VS
1 min	Ø
2	Ø
3	Ø
4	Ø
5	Ø
6	Ø
7	Ø
8	Ø
9	VL
10	VL
11	VL
12	Ø
13	L
14	L
15	VL
16	
17	
18	
19	
20	
21	
22	
23	
24	
25	
26	
27	
28	
29	
30	

Minutes	Odor Intensity VL, L, M, S, VS
31 min	
32	
33	
34	
35	
36	
37	
38	
39	
40	
41	
42	
43	
44	
45	
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54	
55	
56	
57	
58	
59	
60	

Odor Description: part-a-potty type smell

Offensiveness: Highly _____ Offensive X Unpleasant _____ Not Unpleasant _____

Weighted Average Intensity: 0.533

	VS	S	M	L	VL	No Odor
1 Min				2	4	9
10 Min						
1 Hour						

CPS (29.559870,
-95.425711)
cf Forest
Creek
Lane

Supplemental Investigator's Odor Intensity Time Log

Investigator: Manuel Gonzalez
Date of Investigation: 5-17-16

Location: Moore + Lake Lane ~ 0.8 mile East
Start Time: 03:05

Minutes	Odor Intensity VL, L, M, S, VS
1 min	No odor TVA 4.41
2	No odor
3	No odor
4	No odor
5	No odor
6	No odor TVA 4.31
7	No odor
8	No odor
9	No odor
10	No odor
11	No odor
12	No odor TVA 5.95
13	No odor
14	No odor
15	No odor
16	No odor
17	No odor
18	No odor TVA 1.71
19	No odor
20	No odor
21	No odor TVA 0.87
22	No odor
23	No odor
24	No odor
25	No odor
26	No odor
27	No odor TVA 1.06
28	No odor
29	No odor
30	No odor

Minutes	Odor Intensity VL, L, M, S, VS
31 min	
32	
33	
34	
35	
36	
37	
38	
39	
40	
41	
42	
43	
44	
45	
46	
47	
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49	
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51	
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55	
56	
57	
58	
59	
60	

Odor Description: No odor

Offensiveness: Highly _____ Offensive _____ Unpleasant _____ Not Unpleasant _____

Weighted Average Intensity: 0.0

	VS	S	M	L	VL	No Odor
1 Min						X
10 Min						
1 Hour						

68-(29.56414
-95.43764)

Supplemental Investigator's Odor Intensity Time Log

Investigator: Manuel Gonzalez
Date of Investigation: _____

Location: Intersect, Long Lake & Mountain
Start Time: 0320 590 Dr

Minutes	Odor Intensity VL, L, M, S, VS
1 min	VS TVA-89/11/14
2	VS
3	VS
4	VS
5	VS
6	S
7	VS TVA-10/11/14
8	S
9	S
10	VS
11	M
12	M
13	L
14	L
15	L
16	VL
17	No Odor
18	
19	
20	
21	
22	
23	
24	
25	
26	
27	
28	
29	
30	

Minutes	Odor Intensity VL, L, M, S, VS
31 min	
32	
33	
34	
35	
36	
37	
38	
39	
40	
41	
42	
43	
44	
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56	
57	
58	
59	
60	

Odor Description: Garbage, Fecal

Offensiveness: Highly _____ Offensive ✓ Unpleasant _____ Not Unpleasant _____

Weighted Average Intensity: 3.53

	VS	S	M	L	VL	No Odor
1 Min	7	3	2	3	1	1
10 Min						
1 Hour						

Supplemental Investigator's Odor Intensity Time Log

Investigator: Tom Randolph

Location: Reflection Bay - 0.2m N of Shadow Oak

Date of Investigation: 10/12/18 5/17/18

Start Time: 1045
29°34'48.10"N 95°24'22.71"W Reflection Bay

Minutes	Odor Intensity VL, L, M, S, VS
1 min	M
2	S
3	M
4	L
5	VL
6	L
7	M
8	M
9	S
10	L
11	L
12	VL
13	VL
14	NO
15	VL
16	
17	
18	
19	
20	
21	
22	
23	
24	
25	
26	
27	
28	
29	
30	

Minutes	Odor Intensity VL, L, M, S, VS
31 min	
32	
33	
34	
35	
36	
37	
38	
39	
40	
41	
42	
43	
44	
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58	
59	
60	

Odor Description: 5/17/18 SEWAGE - RAW SEWAGE / H₂S

Offensiveness: Highly X Offensive _____ Unpleasant _____ Not Unpleasant _____

Weighted Average Intensity: 2

	VS	S	M	L	VL	No Odor
1 Min		2x4=8	4x3=12	4x2=8	4x1=4	1x0=0
10 Min						
1 Hour						

Supplemental Investigator's Odor Intensity Time Log

Investigator: Kim Rhodes
Date of Investigation: 5/17/18

Location: Colman Bend Ln. + Sunset Springs Dr.
Start Time: 4:25am

Minutes	Odor Intensity VL, L, M, S, VS
1 min	L
2	VL
3	L
4	L
5	None
6	VL
7	VL
8	L
9	None
10	L
11	None
12	None
13	None
14	None
15	None
16	None
17	None
18	None
19	None
20	None
21	
22	
23	
24	
25	
26	
27	
28	
29	
30	

Minutes	Odor Intensity VL, L, M, S, VS
31 min	
32	
33	
34	
35	
36	
37	
38	
39	
40	
41	
42	
43	
44	
45	
46	
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49	
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55	
56	
57	
58	
59	
60	

Odor Description: Garbage

Offensiveness: Highly _____ Offensive ✓ Unpleasant _____ Not Unpleasant _____

Weighted Average Intensity:

	VS	S	M	L	(VL)	No Odor
1 Min				5x2	3x1	
10 Min					✓	
1 Hour						

1. Characterize the odor to determine which Offensiveness table to use (Not Unpleasant to Highly Offensive)
2. Assess the Intensity of odor (Very Light to Very Strong), for variable intensities use Supplemental Investigator's Odor Intensity Time Log.
3. Determine the total Duration of the odor(s) (1 minute to 24 hours)
4. Evaluate the Frequency of odor occurrence (Single Occurrence to Daily)
5. Identify the block on the chart that corresponds to the information from Steps 1-4 and determine if a nuisance condition exists.

1. Characterize the odor to determine which Offensiveness table to use (Not Unpleasant to Highly Offensive)
2. Assess the Intensity of odor (Very Light to Very Strong), for variable intensities use Supplemental Investigator's Odor Intensity Time Log.
3. Determine the total Duration of the odor(s) (1 minute to 24 hours)
4. Evaluate the Frequency of odor occurrence (Single Occurrence to Daily)
5. Identify the block on the chart that corresponds to the information from Steps 1-4 and determine if a nuisance condition exists.

[illegible]

2

Supplemental Investigator's Odor Intensity Time Log

Investigator: Kim Rhodes
Date of Investigation: 5/17/18

Location: Morgan Bay Ct.
Start Time: 4:55am
Left 5:39am

Minutes	Odor Intensity VL, L, M, S, VS
1 min	None
2	None
3	None
4	None
5	None
6	None
7	None
8	None
9	None
10	None
11	None
12	None
13	None
14	None
15	None
16	
17	
18	
19	
20	
21	
22	
23	
24	
25	
26	
27	
28	
29	
30	

Minutes	Odor Intensity VL, L, M, S, VS
31 min	
32	
33	
34	
35	
36	
37	
38	
39	
40	
41	
42	
43	
44	
45	
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53	
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55	
56	
57	
58	
59	
60	

Odor Description: _____

Offensiveness: Highly _____ Offensive _____ Unpleasant _____ Not Unpleasant _____

Weighted Average Intensity:

	VS	S	M	L	VL	No Odor
1 Min						
10 Min						✓
1 Hour						

No odor.

Investigator FIDO Log

- ### Investigator FIDO Log
1. Characterize the odor to determine which Offensiveness table to use (Not Unpleasant to Highly Offensive)
 2. Assess the Intensity of odor (Very Light to Very Strong), for variable intensities use Supplemental Investigator's Odor Intensity Time Log.
 3. Determine the total Duration of the odor(s) (1 minute to 24 hours)
 4. Evaluate the Frequency of odor occurrence (Single Occurrence to Daily)
 5. Identify the block on the chart that corresponds to the information from Steps 1-4 and determine if a nuisance condition exists.

[illegible]



Mercanton
Station

Supplemental Investigator's Odor Intensity Time Log

Investigator: Kim Rhodes
Date of Investigation: 5/17/18

Location: Mountain Sage Dr. + Mountain Sage Ct.
Start Time: 5:45am
Arrived 5:41

Minutes	Odor Intensity VL, L, M, S, VS
1 min	<u>None</u>
2	<u>None</u>
3	<u>None</u>
4	<u>None</u>
5	<u>None</u>
6	<u>None</u>
7	<u>None</u>
8	<u>None</u>
9	<u>None</u>
10	<u>None</u>
11	<u>None</u>
12	<u>None</u>
13	<u>None</u>
14	<u>None</u>
15	<u>None</u>
16	
17	
18	
19	
20	
21	
22	
23	
24	
25	
26	
27	
28	
29	
30	

Minutes	Odor Intensity VL, L, M, S, VS
31 min	
32	
33	
34	
35	
36	
37	
38	
39	
40	
41	
42	
43	
44	
45	
46	
47	
48	
49	
50	
51	
52	
53	
54	
55	
56	
57	
58	
59	
60	

Odor Description: _____

Offensiveness: Highly _____ Offensive _____ Unpleasant _____ Not Unpleasant _____

Weighted Average Intensity:

	VS	S	M	L	VL	No Odor
1 Min						
10 Min						✓
1 Hour						

No odor.

Investigator FIDO Log

1. Characterize the odor to determine which Offensiveness table to use (Not Unpleasant to Highly Offensive)
2. Assess the Intensity of odor (Very Light to Very Strong), for variable intensities use Supplemental Investigator's Odor Intensity Time Log.
3. Determine the total Duration of the odor(s) (1 minute to 24 hours)
4. Evaluate the Frequency of odor occurrence (Single Occurrence to Daily)
5. Identify the block on the chart that corresponds to the information from Steps 1-4 and determine if a nuisance condition exists.

[illegible]

4

Supplemental Investigator's Odor Intensity Time Log

Investigator: Kim Rhodes
Date of Investigation: 5/17/18

Location: Shallow Falls Ln. + Golden Creek Ln.
Start Time: 6:10am

Minutes	Odor Intensity VL, L, M, S, VS
1 min	L
2	L
3	L
4	VL
5	VL
6	L
7	L
8	None
9	VL
10	VL
11	L
12	VL
13	VL
14	L
15	L
16	L
17	None
18	L
19	None
20	M
21	None
22	L
23	None
24	None
25	VL
26	VL
27	M
28	None
29	None
30	None

Minutes	Odor Intensity VL, L, M, S, VS
31 min	None
32	None
33	None
34	None
35	None
36	None
37	None
38	None
39	L
40	VL
41	None
42	VL
43	None
44	None
45	VL
46	None
47	None
48	None
49	None
50	None
51	VL
52	VL
53	None
54	None
55	VL
56	VL
57	None
58	None
59	None
60	None

Odor Description: Raw sewage

Offensiveness: Highly ☒ Offensive ☒ Unpleasant _____ Not Unpleasant _____

Weighted Average Intensity:

	VS	S	M	L	VL	No Odor
1 Min			2x3	12x2	15x1	
10 Min				✓		
1 Hour					✓	

Investigator FIDO Log

1. Characterize the odor to determine which Offensiveness table to use (Not Unpleasant to Highly Offensive)
2. Assess the Intensity of odor (Very Light to Very Strong), for variable intensities use Supplemental Investigator's Odor Intensity Time Log.
3. Determine the total Duration of the odor(s) (1 minute to 24 hours)
4. Evaluate the Frequency of odor occurrence (Single Occurrence to Daily)
5. Identify the block on the chart that corresponds to the information from Steps 1-4 and determine if a nuisance condition exists.

[illegible]

(5)

WHTP

Supplemental Investigator's Odor Intensity Time Log

Investigator: Kim Rhodes
 Date of Investigation: 5/17/18

Location: ~~Reflection Bay Dr~~ Hesper & Fruge
 Start Time: ~~8:00am~~ 8:20am
 Arrive: 8:20am

Minutes	Odor Intensity VL, L, M, S, VS
1 min	None
2	None
3	None
4	None
5	None
6	None
7	None
8	None
9	None
10	None
11	None
12	None
13	None
14	None
15	None
16	
17	
18	
19	
20	
21	
22	
23	
24	
25	
26	
27	
28	
29	
30	

Minutes	Odor Intensity VL, L, M, S, VS
31 min	
32	
33	
34	
35	
36	
37	
38	
39	
40	
41	
42	
43	
44	
45	
46	
47	
48	
49	
50	
51	
52	
53	
54	
55	
56	
57	
58	
59	
60	

Odor Description: _____

Offensiveness: Highly _____ Offensive _____ Unpleasant _____ Not Unpleasant _____

Weighted Average Intensity:

	VS	S	M	L	VL	No Odor
1 Min						
10 Min						✓
1 Hour						

No odor.

Investigator FIDO Log

1. Characterize the odor to determine which Offensiveness table to use (Not Unpleasant to Highly Offensive)
2. Assess the Intensity of odor (Very Light to Very Strong), for variable intensities use Supplemental Investigator's Odor Intensity Time Log.
3. Determine the total Duration of the odor(s) (1 minute to 24 hours)
4. Evaluate the Frequency of odor occurrence (Single Occurrence to Daily)
5. Identify the block on the chart that corresponds to the information from Steps 1-4 and determine if a nuisance condition exists.

[illegible]

6

Supplemental Investigator's Odor Intensity Time Log

Investigator: Kim Rhodes
Date of Investigation: 5/17/18

Location: N Spectrum Blvd. in front of
Start Time: 8:40 am

CSI Cardkov
Systems
Inc.

Minutes	Odor Intensity VL, L, M, S, VS
1 min	L
2	VL
3	VL
4	L
5	VL
6	VL
7	None
8	VL
9	None
10	None
11	None
12	None
13	None
14	None
15	None
16	
17	
18	
19	
20	
21	
22	
23	
24	
25	
26	
27	
28	
29	
30	

Minutes	Odor Intensity VL, L, M, S, VS
31 min	
32	
33	
34	
35	
36	
37	
38	
39	
40	
41	
42	
43	
44	
45	
46	
47	
48	
49	
50	
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55	
56	
57	
58	
59	
60	

Odor Description: Paint-like chemical smell

Offensiveness: Highly _____ Offensive _____ Unpleasant ☒ Not Unpleasant _____

Weighted Average Intensity:

	VS	S	M	L	(VL)	No Odor
1 Min				2x2	5x1	
10 Min					✓	
1 Hour						

- ### Investigator FIDO Log
1. Characterize the odor to determine which Offensiveness table to use (Not Unpleasant to Highly Offensive)
 2. Assess the Intensity of odor (Very Light to Very Strong), for variable intensities use Supplemental Investigator's Odor Intensity Time Log
 3. Determine the total Duration of the odor(s) (1 minute to 24 hours)
 4. Evaluate the Frequency of odor occurrence (Single Occurrence to Daily)
 5. Identify the block on the chart that corresponds to the information from Steps 1-4 and determine if a nuisance condition exists.

[illegible]

7

Supplemental Investigator's Odor Intensity Time Log

Investigator: Kim Rhodes
Date of Investigation: 5/17/18

Location: Feld Dr., North of Bluebonnet
Start Time: 9:05am

Minutes	Odor Intensity VL, L, M, S, VS
1 min	VL
2	None
3	None
4	None
5	None
6	VL
7	None
8	VL
9	None
10	None
11	None
12	None
13	None
14	None
15	None
16	
17	
18	
19	
20	
21	
22	
23	
24	
25	
26	
27	
28	
29	
30	

Minutes	Odor Intensity VL, L, M, S, VS
31 min	
32	
33	
34	
35	
36	
37	
38	
39	
40	
41	
42	
43	
44	
45	
46	
47	
48	
49	
50	
51	
52	
53	
54	
55	
56	
57	
58	
59	
60	

Odor Description: Cilantro-type chemical smell

Offensiveness: Highly _____ Offensive _____ Unpleasant _____ Not Unpleasant ✓

Weighted Average Intensity:

	VS	S	M	L	VL	No Odor
1 Min						
10 Min					✓	
1 Hour						

- ### Investigator FIDO Log
1. Characterize the odor to determine which Offensiveness table to use (Not Unpleasant to Highly Offensive)
 2. Assess the Intensity of odor (Very Light to Very Strong), for variable intensities use Supplemental Investigator's Odor Intensity Time Log
 3. Determine the total Duration of the odor(s) (1 minute to 24 hours)
 4. Evaluate the Frequency of odor occurrence (Single Occurrence to Daily)
 5. Identify the block on the chart that corresponds to the information from Steps 1-4 and determine if a nuisance condition exists.

[illegible]

8

LoneStar

Supplemental Investigator's Odor Intensity Time Log

Investigator: Kim Rhodes

Location: Just N of Houston Humane Society

Date of Investigation: 5/17/18

Start Time: 9:30am

Minutes	Odor Intensity VL, L, M, S, VS
1 min	None
2	None
3	None
4	None
5	None
6	None
7	None
8	None
9	None
10	None
11	None
12	None
13	None
14	None
15	None
16	
17	
18	
19	
20	
21	
22	
23	
24	
25	
26	
27	
28	
29	
30	

Minutes	Odor Intensity VL, L, M, S, VS
31 min	
32	
33	
34	
35	
36	
37	
38	
39	
40	
41	
42	
43	
44	
45	
46	
47	
48	
49	
50	
51	
52	
53	
54	
55	
56	
57	
58	
59	
60	

Odor Description: _____

Offensiveness: Highly _____ Offensive _____ Unpleasant _____ Not Unpleasant _____

Weighted Average Intensity:

	VS	S	M	L	VL	No Odor
1 Min						
10 Min						✓
1 Hour						

NO odor.

Investigator FIDO Log

1. Characterize the odor to determine which Offensiveness table to use (Not Unpleasant to Highly Offensive)
 2. Assess the Intensity of odor (Very Light to Very Strong), for variable intensities use Supplemental Investigator's Odor Intensity Time Log.
 3. Determine the total Duration of the odor(s) (1 minute to 24 hours)
 4. Evaluate the Frequency of odor occurrence (Single Occurrence to Daily)
 5. Identify the block on the chart that corresponds to the information from Steps 1-4 and determine if a nuisance condition exists.

[illegible]

• weekly odor

ATTACHMENT 6

Supplemental Investigator's Odor Intensity Time Log

Investigator: Nathan Hoppens

Location: Lake Hollow Dr.

Date of Investigation: 4-25-18

Start Time: 0403

Minutes	Odor Intensity VL, L, M, S, VS
1 min	
2	
3	L
4	L
5	L 0.001 ppm
6	L
7	L
8	L
9	VL
10	VL
11	VL
12	VL
13	NO ODOR
14	VL
15	NO ODOR
16	NO ODOR
17	NO ODOR
18	VL
19	VL
20	VL
21	L
22	VL
23	
24	
25	
26	
27	
28	
29	
30	

Minutes	Odor Intensity VL, L, M, S, VS
31 min	
32	
33	
34	
35	
36	
37	
38	
39	
40	
41	
42	
43	
44	
45	
46	
47	
48	
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53	
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55	
56	
57	
58	
59	
60	

Odor Description: Sweet Landfill Garbage Waste

Offensiveness: Highly _____ Offensive ☒ Unpleasant ☒ Not Unpleasant _____

Weighted Average Intensity: 1.15

	VS	S	M	L	VL	No Odor
1 Min				7	9	4
10 Min						
1 Hour						

Supplemental Investigator's Odor Intensity Time Log

Investigator: Nathan Hoppens
Date of Investigation: 4/25/18

Location: Mountain Sage Dr.
Start Time: 0527

Minutes	Odor Intensity VL, L, M, S, VS
1 min	L 0.003
2	VL 0.001
3	VL
4	L 0.004
5	VL 0.004
6	VL 0.005
7	VL 0.006
8	L 0.006
9	VL 0.006
10	L 0.007
11	L 0.008
12	L 0.008
13	VL 0.006
14	VL 0.004
15	VL 0.004
16	VL 0.003
17	No odor 0.002
18	No odor 0.002
19	No odor 0.002
20	No odor 0.002
21	No odor 0.001
22	
23	
24	
25	
26	
27	
28	L
29	
30	

Minutes	Odor Intensity VL, L, M, S, VS
31 min	
32	
33	
34	
35	
36	
37	
38	
39	
40	
41	
42	
43	
44	
45	
46	
47	
48	
49	
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55	
56	
57	
58	
59	
60	

Odor Description: Garbage Waste - All #s are ppm #RS by Jerome
Offensiveness: Highly _____ Offensive X Unpleasant _____ Not Unpleasant _____

Weighted Average Intensity: 1.05

	VS	S	M	L	VL	No Odor
1 Min				612	101	5
10 Min						
1 Hour						

Supplemental Investigator's Odor Intensity Time Log

Investigator: Nathan Hopkins
Date of Investigation: 8/25/18
NCP 4/25/18

Location: RR Access Rd & 521, 0.4 mi. N. of FM2234
Start Time: 10:00

Minutes	Odor Intensity VL, L, M, S, VS
1 min	NO ODOR
2	NO ODOR
3	NO ODOR
4	NO ODOR
5	NO ODOR
6	NO ODOR
7	NO ODOR
8	NO ODOR
9	NO ODOR
10	NO ODOR
11	NO ODOR
12	NO ODOR
13	NO ODOR
14	NO ODOR
15	VL
16	
17	
18	
19	
20	
21	
22	
23	
24	
25	
26	
27	
28	
29	
30	

Minutes	Odor Intensity VL, L, M, S, VS
31 min	
32	
33	
34	
35	
36	
37	
38	
39	
40	
41	
42	
43	
44	
45	
46	
47	
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55	
56	
57	
58	
59	
60	

Odor Description: None

Offensiveness: Highly _____ Offensive _____ Unpleasant _____ Not Unpleasant X

Weighted Average Intensity: 0.066

	VS	S	M	L	VL	No Odor
1 Min						
10 Min					1	X 14
1 Hour						

Supplemental Investigator's Odor Intensity Time Log

Investigator: Nathan Hoppens

Location: Hooper Rd 0.25 mi S. of Riley

Date of Investigation: 4/26/18

Start Time: 10:30

Minutes	Odor Intensity VL, L, M, S, VS
1 min	L
2	L
3	L
4	L
5	VL
6	VL
7	VL
8	VL
9	VL
10	VL
11	VL
12	VL
13	L
14	VL
15	VL
16	
17	
18	
19	
20	
21	
22	
23	
24	
25	
26	
27	
28	
29	
30	

Minutes	Odor Intensity VL, L, M, S, VS
31 min	
32	
33	
34	
35	
36	
37	
38	
39	
40	
41	
42	
43	
44	
45	
46	
47	
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53	
54	
55	
56	
57	
58	
59	
60	

Odor Description: Fishy Amine

Offensiveness: Highly _____ Offensive X Unpleasant _____ Not Unpleasant _____

Weighted Average Intensity: 1.333

	VS	S	M	L	VL	No Odor
1 Min				5	10	
10 Min						
1 Hour						

Supplemental Investigator's Odor Intensity Time Log

Investigator: Nathan Hoppens
 Date of Investigation: 4/23/18

Location: Golden Creek Ln.
 Start Time: 11:45

Minutes	Odor Intensity VL, L, M, S, VS
1 min	NO ODOR
2	NO ODOR
3	NO ODOR
4	NO ODOR
5	NO ODOR
6	NO ODOR
7	NO ODOR 0.001
8	NO ODOR
9	NO ODOR
10	NO ODOR 0.001
11	NO ODOR 0.001
12	NO ODOR 0.001
13	NO ODOR 0.002
14	NO ODOR 0.002
15	NO ODOR 0.001
16	
17	
18	
19	
20	
21	
22	
23	
24	
25	
26	
27	
28	
29	
30	

Minutes	Odor Intensity VL, L, M, S, VS
31 min	
32	
33	
34	
35	
36	
37	
38	
39	
40	
41	
42	
43	
44	
45	
46	
47	
48	
49	
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51	
52	
53	
54	
55	
56	
57	
58	
59	
60	

Odor Description: NO ODORS #1's are Jerome TRS Readings @ ppm

Offensiveness: Highly _____ Offensive _____ Unpleasant _____ Not Unpleasant _____

Weighted Average Intensity: 0

	VS	S	M	L	VL	No Odor
1 Min						15
10 Min						
1 Hour						

Supplemental Investigator's Odor Intensity Time Log

Investigator: Nathan Hoppens Location: 29.56798 -95.43629 Lost Bridge Ln.
 Date of Investigation: 4/25/18 Start Time: 20:23 Cul-de-Sac

Minutes	Odor Intensity VL, L, M, S, VS
1 min	VL
2	VL
3	VL
4	VL
5	VL
6	VL
7	L
8	L
9	L
10	L
11	L
12	L
13	L
14	L
15	L
16	VL
17	VL
18	L
19	VL
20	VL
21	VL
22	
23	
24	
25	
26	
27	
28	
29	
30	

Minutes	Odor Intensity VL, L, M, S, VS
31 min	
32	
33	
34	
35	
36	
37	
38	
39	
40	
41	
42	
43	
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56	
57	
58	
59	
60	

Odor Description: Garbage Waste

Offensiveness: Highly _____ Offensive X Unpleasant _____ Not Unpleasant _____

Weighted Average Intensity: 1.48

	VS	S	M	L	VL	No Odor
1 Min				10	11	
10 Min						
1 Hour						

Supplemental Investigator's Odor Intensity Time Log

Investigator: Manuel Gonzalez

Location: Intersection of Rocky Isle Dr + Longlake Dr

Date of Investigation: 4/25/18

Start Time: 9:18

21:18

Minutes	Odor Intensity VL, L, M, S, VS
1 min	S
2	S
3	M
4	M
5	S
6	M
7	S
8	M
9	S
10	S
11	M
12	M
13	L
14	L
15	L
16	L
17	L
18	L
19	L
20	No odor
21	L
22	L
23	L
24	L
25	L
26	L
27	M
28	M
29	M
30	S

Minutes	Odor Intensity VL, L, M, S, VS
31 min	S
32	M
33	L
34	L
35	L
36	L
37	No odor
38	L
39	L
40	No odor
41	L
42	VL
43	No odor
44	No odor
45	VL
46	No odor
47	No odor
48	No odor
49	No odor
50	No odor
51	L
52	VL
53	L
54	M
55	M
56	M
57	M
58	M
59	M
60	M

Wind Shift
variable
winds
9-10 mph

Odor Description: Garbage, Fecal

Offensiveness: Highly Offensive ☒ Unpleasant Not Unpleasant

Weighted Average Intensity: 2.17

	VS	S	M	<u>L</u>	VL	No Odor
1 Min		8x4	17x3	22x1	3x1	10
10 Min		32	51	44	3	
1 Hour						

Supplemental Investigator's Odor Intensity Time Log

Investigator: Nathan Huggins
Date of Investigation: 4/25/18

Location: Banks Run Dr.
Start Time: 2:35

Minutes	Odor Intensity VL, L, M, S, VS
1 min	No odor
2	" "
3	" "
4	" "
5	" "
6	" "
7	" "
8	" "
9	" "
10	" " 0.003
11	" " 0.005
12	" " 0.003
13	" " 0.004
14	" " 0.004
15	" " 0.001
16	
17	
18	
19	
20	
21	
22	
23	
24	
25	
26	
27	
28	
29	
30	

Minutes	Odor Intensity VL, L, M, S, VS
31 min	
32	
33	
34	
35	
36	
37	
38	
39	
40	
41	
42	
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55	
56	
57	
58	
59	
60	

Odor Description: NO odor #s denote TRS concentrations in ppm

Offensiveness: Highly _____ Offensive _____ Unpleasant _____ Not Unpleasant 0

Weighted Average Intensity: 0

	VS	S	M	L	VL	No Odor
1 Min						15
10 Min						
1 Hour						

Supplemental Investigator's Odor Intensity Time Log

Investigator: Reyna Loomore
Date of Investigation: May 9, 2018

Location: FW 2234 4200 block
Start Time: 0420 hrs

Minutes	Odor Intensity VL, L, M, S, VS
1 min	M
2	L
3	L
4	No odor
5	No odor
6	VL
7	VL
8	L
9	L
10	M
11	L
12	M
13	M
14	S
15	L
16	VL
17	S
18	M
19	L
20	L
21	VL
22	No odor
23	No odor
24	No odor
25	No odor
26	No odor
27	No odor
28	No odor
29	No odor
30	No odor

Minutes	Odor Intensity VL, L, M, S, VS
31 min	
32	
33	
34	
35	
36	
37	
38	
39	
40	
41	
42	
43	
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57	
58	
59	
60	

Odor Description: Leachate smell

Offensiveness: Highly ☒ Offensive _____ Unpleasant _____ Not Unpleasant _____

Weighted Average Intensity: 1.4

	VS	S	M	L	(VL)	No Odor
1 Min						
10 Min		2x4=8	5x3=15	8x2=16	4x1=4	
1 Hour						

Supplemental Investigator's Odor Intensity Time Log

Investigator: Reyna Loosmore
Date of Investigation: May 9, 2018

Location: 2753 Biscayne Bay Dr
Start Time: 0535 hrs

Minutes	Odor Intensity VL, L, M, S, VS
1 min	No odor
2	No odor
3	No odor
4	No odor
5	No odor
6	No odor
7	No odor
8	No odor
9	No odor
10	No odor
11	No odor
12	No odor
13	No odor
14	No odor
15	No odor
16	
17	
18	
19	
20	
21	
22	
23	
24	
25	
26	
27	
28	
29	
30	

Minutes	Odor Intensity VL, L, M, S, VS
31 min	
32	
33	
34	
35	
36	
37	
38	
39	
40	
41	
42	
43	
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55	
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57	
58	
59	
60	

Odor Description: _____

Offensiveness: Highly _____ Offensive _____ Unpleasant _____ Not Unpleasant _____

Weighted Average Intensity:

	VS	S	M	L	VL	No Odor
1 Min						
10 Min						
1 Hour						

Supplemental Investigator's Odor Intensity Time Log

Investigator: Ritina Loosmore
Date of Investigation: May 9, 2018

Location: Bluebonnet Drive 3800 block
Start Time: 0605 hrs AK-20

Minutes	Odor Intensity VL, L, M, S, VS
1 min	M
2	M
3	M
4	VL
5	L
6	L
7	VL
8	No odor
9	L
10	L
11	L
12	VL
13	L
14	M
15	M
16	
17	
18	
19	
20	
21	
22	
23	
24	
25	
26	
27	
28	
29	
30	

Minutes	Odor Intensity VL, L, M, S, VS
31 min	
32	
33	
34	
35	
36	
37	
38	
39	
40	
41	
42	
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58	
59	
60	

Odor Description: Sweet amine

Offensiveness: Highly _____ Offensive _____ Unpleasant _____ Not Unpleasant ☒

Weighted Average Intensity: 2

	VS	S	M	L	VL	No Odor
1 Min			5x3=15	6x2=12	3x1=3	
10 Min						
1 Hour						

Supplemental Investigator's Odor Intensity Time Log

Investigator: Reynold Loosmore
 Date of Investigation: May 9, 2018

Location: Miramichi Court 4000 block
 Start Time: 0635 hrs

Minutes	Odor Intensity VL, L, M, S, VS
1 min	No odor
2	No odor
3	No odor
4	No odor
5	No odor
6	No odor
7	No odor
8	No odor
9	No odor
10	No odor
11	No odor
12	No odor
13	No odor
14	No odor
15	No odor
16	
17	
18	
19	
20	
21	
22	
23	
24	
25	
26	
27	
28	
29	
30	

Minutes	Odor Intensity VL, L, M, S, VS
31 min	
32	
33	
34	
35	
36	
37	
38	
39	
40	
41	
42	
43	
44	
45	
46	
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55	
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57	
58	
59	
60	

Odor Description: _____

Offensiveness: Highly _____ Offensive _____ Unpleasant _____ Not Unpleasant _____

Weighted Average Intensity:

	VS	S	M	L	VL	No Odor
1 Min						
10 Min						
1 Hour						

Supplemental Investigator's Odor Intensity Time Log

Investigator: Keying Loamore

Location: W. Riley Road 200 back

Date of Investigation: May 9, 2018

Start Time: 0715 hrs

Minutes	Odor Intensity VL, L, M, S, VS
1 min	No odor
2	No odor
3	No odor
4	No odor
5	No odor
6	No odor
7	No odor
8	No odor
9	No odor
10	No odor
11	No odor
12	No odor
13	No odor
14	No odor
15	No odor
16	
17	
18	
19	
20	
21	
22	
23	
24	
25	
26	
27	
28	
29	
30	

Minutes	Odor Intensity VL, L, M, S, VS
31 min	
32	
33	
34	
35	
36	
37	
38	
39	
40	
41	
42	
43	
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58	
59	
60	

Odor Description: _____

Offensiveness: Highly _____ Offensive _____ Unpleasant _____ Not Unpleasant _____

Weighted Average Intensity:

	VS	S	M	L	VL	No Odor
1 Min						
10 Min						
1 Hour						

Supplemental Investigator's Odor Intensity Time Log

Investigator: Beyn Loosmore
Date of Investigation: May 9, 2018

Location: Reflection Bay WTP 1800 block
Start Time: 0740 hrs

Minutes	Odor Intensity VL, L, M, S, VS
1 min	L
2	SM
3	No odor
4	No odor
5	No odor
6	No odor
7	No odor
8	No odor
9	No odor
10	No odor
11	No odor
12	No odor
13	No odor
14	No odor
15	No odor
16	
17	
18	
19	
20	
21	
22	
23	
24	
25	
26	
27	
28	
29	
30	

Minutes	Odor Intensity VL, L, M, S, VS
31 min	
32	
33	
34	
35	
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37	
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42	
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59	
60	

Odor Description: Sewer

Offensiveness: Highly ☒ Offensive _____ Unpleasant _____ Not Unpleasant _____

Weighted Average Intensity: 0.33

	VS	S	M	L	VL	No Odor
1 Min			1x3=3	1x2=2		
10 Min						
1 Hour						

ATTACHMENT 7

Reyna Loosmore

From: Jason Ybarra
Sent: Friday, June 15, 2018 11:46 AM
To: Alma Jefferson; Ly Pham; Reyna Loosmore
Subject: FW: Pearland Memo May 14-18
Attachments: PL-1805 Odor Investigation Document - Final.pdf; FIDO Site List PL-1805.pdf; Currently_Open_Complaints.pdf

From: Tom Randolph
Sent: Friday, June 15, 2018 9:39 AM
To: Joseph Doby <joe.doby@tceq.texas.gov>
Cc: Nicole Bealle <Nicole.Bealle@tceq.texas.gov>; Jason Ybarra <Jason.Ybarra@tceq.texas.gov>; Andy Goodridge <Andy.Goodridge@tceq.texas.gov>; Julie Eldredge <Julie.Eldredge@Tceq.Texas.Gov>; Brandy Brooks <brandy.brooks@tceq.texas.gov>; Richard Chism <Richard.Chism@tceq.texas.gov>; Nathan Hoppens <Nathan.Hoppens@Tceq.Texas.Gov>
Subject: RE: Pearland Memo May 14-18

Attached is the final memo, the FIDO survey list, and open complaints map at the time of monitoring.

Please let us know if you have questions or comments.

Thanks all,

Tom Randolph – Team Leader
Strategic Monitoring Support Team
Monitoring Division
Texas Commission on Environmental Quality
Phone: 512.239.1218
Email: tom.randolph@tceq.texas.gov



From: Joseph Doby
Sent: Friday, June 15, 2018 9:32 AM
To: Tom Randolph <tom.randolph@tceq.texas.gov>
Cc: Nicole Bealle <Nicole.Bealle@tceq.texas.gov>
Subject: RE: Pearland Memo May 14-18

Tom,

You can send the information to me, Nicole Bealle, Jason Ybarra, and Andy Goodridge, thanks.

Joe Doby

Air Section Manager
TCEQ Region 12 – Houston
Ph: 713-422-8943
Fax: 713-767-3520

From: Tom Randolph
Sent: Friday, June 15, 2018 9:28 AM
To: Joseph Doby <joe.doby@tceq.texas.gov>
Cc: Nicole Bealle <Nicole.Bealle@tceq.texas.gov>
Subject: Pearland Memo May 14-18

Joe,

I left a voicemail but thought I'd email in case you were out. We've completed our review of the data and associated memo and are ready to send it to you guys. Who do I send it to? Do you want to distribute or is there a list of people you want on the email?

I copied Nicole in case you are out.

Thanks and have a great weekend,

Tom Randolph – Team Leader
Strategic Monitoring Support Team, MC-165
Phone: 512.239.1218
Email: tom.randolph@tceq.texas.gov



Legend

- ◆ Open Complaints During Collection
- Outline of Facilities

Region 12 Pearlland Monitoring Project All Open Complaints at Time of Collection May 15 - 17, 2018



Texas Commission on
Environmental Quality
Monitoring Division
Strategic Sampling
Work Group
P.O. Box 13087
Austin, TX 78711-3087
Source: DODDs
Map Data: Esri
System: 2004 (1m) JGA
Created On: 5/28/18
Revised On: 6/13/18
Revised By: AL

Monitoring Division Summary of May 14-18, 2018, Pearland Sampling Event

OBJECTIVE:

The purpose of this sampling event was to assist Region 12 environmental investigators in determining the source of the odors in the Shadow Creek Ranch neighborhood in Pearland, Texas.

SAMPLING STRATEGY:

1. Conduct sampling during times that are consistent with the times documented complaints occurred. Most complaints from the Shadow Creek Ranch area over the last three years were documented as occurring between 8:00 p.m. and 8:00 a.m. as shown in Figure 1. Refer to the map of open complaints, Attachment A, for a visual representation of the investigation area. In addition, use wind direction to correlate odors observed in the neighborhood and documented in frequency, intensity, duration, and offensiveness (FIDO) surveys with the possible origins by conducting simultaneous downwind/upwind FIDO surveys around area facilities.

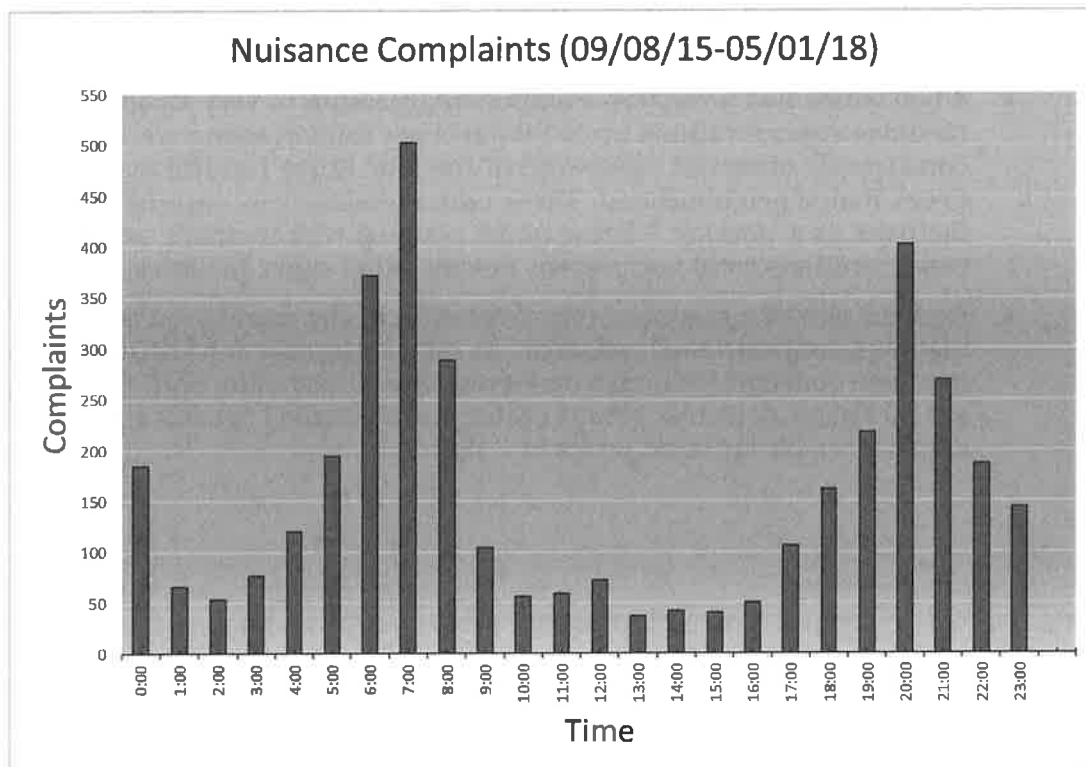


Figure 1: Number of odor complaints as reported throughout the day

2. Identify measurable "markers" related to instrument measurements and odor characterizations from FIDO surveys. Methane comprises a large portion of landfill gas and, while odorless, is a marker for the presence of other odorous compounds within the landfill gas make-up, including hydrogen sulfide (H_2S). Utilizing the ratio of methane to H_2S concentrations, establish a marker to distinguish between odor plumes from Blue Ridge Landfill and Lone Star Disposal and Recycling Facility (Lone Star Disposal).
3. Characterize odors for area facilities using instrumentation and FIDO surveys.

RESULTS AND CONCLUSIONS:

1. FIDO surveys were conducted in the Shadow Creek Ranch neighborhood, when odors warranted, at various times and locations between midnight and 10 a.m. on the mornings of May 15-17, 2018. In addition, specific downwind/upwind FIDO surveys and instrument measurements were conducted at each facility throughout the week. See Attachment B for a complete list of FIDO surveys conducted. Locations varied depending on wind direction at the time of the surveys but were generally in the western half of the neighborhood along Farm-to-Market (FM) 521 between Broadway and McHard Road.
 - Odorous conditions were observed in the Shadow Creek Ranch neighborhood the week of May 14-18, 2018, when winds were calm to light with a westerly component.
2. FIDO surveys were documented in coordination with measurements from the Picarro methane and H₂S analyzer to determine if either of these measurable compounds could be used as “markers” for odorous conditions. While there was no quantitative correlation between methane concentration and H₂S concentration as postulated, the methane concentration and odor intensity exhibited a qualitative correlation that can be used as a marker.
 - When winds had a westerly component, medium to very strong odors and methane concentrations up to 60 parts per million (ppm) were consistently observed downwind of the Blue Ridge Landfill in the Shadow Creek Ranch neighborhood. These odors qualitatively correlated to methane as a “marker.” These odors coupled with methane at these concentrations were not present downwind of other facilities.
 - Figure 2 shows a graphical representation of the correlation between methane concentration and odor. As odors decrease for FIDO Log 9, the methane concentration also decreases at a similar rate, until the odors are no longer detected. Minutes later, the methane concentration approaches background levels of 2 ppm.

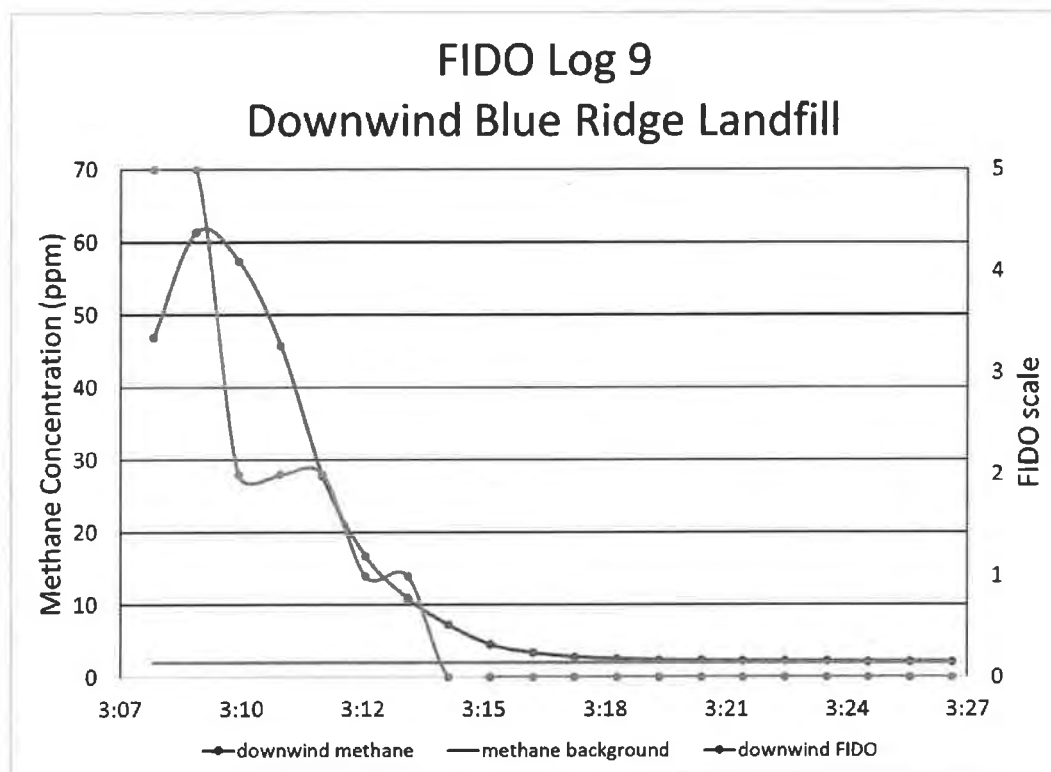


Figure 2: May 16, 2018—Comparison of downwind methane concentration measured with coinciding odor survey data. Wind speed averaged 3 mph out of the west-northwest direction.

- A correlation between H_2S and odors was not observed as no measurable (above method detection limits) H_2S was detected in the Shadow Creek Ranch neighborhood.
 - Blue Ridge Landfill and Lone Star Disposal were the only facilities in the area with measurable methane concentrations above background levels. The two landfills differed in ratio of methane to H_2S content making the two distinguishable from one another.
 - No concentrations were collected in the Shadow Creek Ranch neighborhood with the methane to H_2S ratio marker that would denote Lone Star Disposal as a contributor to odors observed.
3. Each potential source was assessed concurrently upwind and downwind to determine its odor profile. Each of the area facilities had its own distinct odor characteristics and differed from each other, except for Brenntag at which no odors were ever detected. Blue Ridge Landfill and Lone Star Disposal both have garbage odors, but odor characteristics are distinct between the two facilities due in part to the difference in H_2S content. Area facilities, excluding Blue Ridge, produce notable odors that are not consistent in character with odors observed in the Shadow Creek Ranch neighborhood. The odor characteristics in Shadow Creek Ranch neighborhood were consistent with the odors from Blue Ridge Landfill and were accompanied with the signature methane measurements associated with the landfill gases.

- **Shadow Creek Ranch**

Odors observed in the Shadow Creek Ranch neighborhood were described as moldy, soured garbage and were consistently observed with calm to light winds with a westerly component.

- **Blue Ridge Land Fill**

Odor descriptions of Blue Ridge Landfill were moldy, soured garbage odors consistent with those odors detected in the Shadow Creek Ranch neighborhood. These odors were detected, regardless of wind direction, when downwind of Blue Ridge Landfill.

- **Lone Star Disposal and Recycling Facility**

The light rancid popcorn garbage odors, observed northeast of the landfill were not intense enough to be compared to odors observed in the Shadow Creek Ranch neighborhood. Although methane was measured consistently above background levels (Figure 3) during the downwind FIDO surveys, concentrations were generally lower than those measured around Blue Ridge Landfill, making it difficult to correlate the light smell with minimal methane concentrations. H₂S concentrations were below the odor threshold of 7 parts per billion (ppb) and were difficult to correlate with the FIDO scale, indicating H₂S was not the likely cause of the observed odors.

Odors observed by investigators downwind of Lone Star Disposal were consistently lower in intensity, based on FIDO surveys, and higher in H₂S concentration than those documented downwind of the Blue Ridge Landfill. Figure 3 denotes a comparison of downwind methane and H₂S levels at Blue Ridge Landfill and Lone Star Disposal, showing the two facilities are distinguishable from one another based on methane and H₂S ratios.

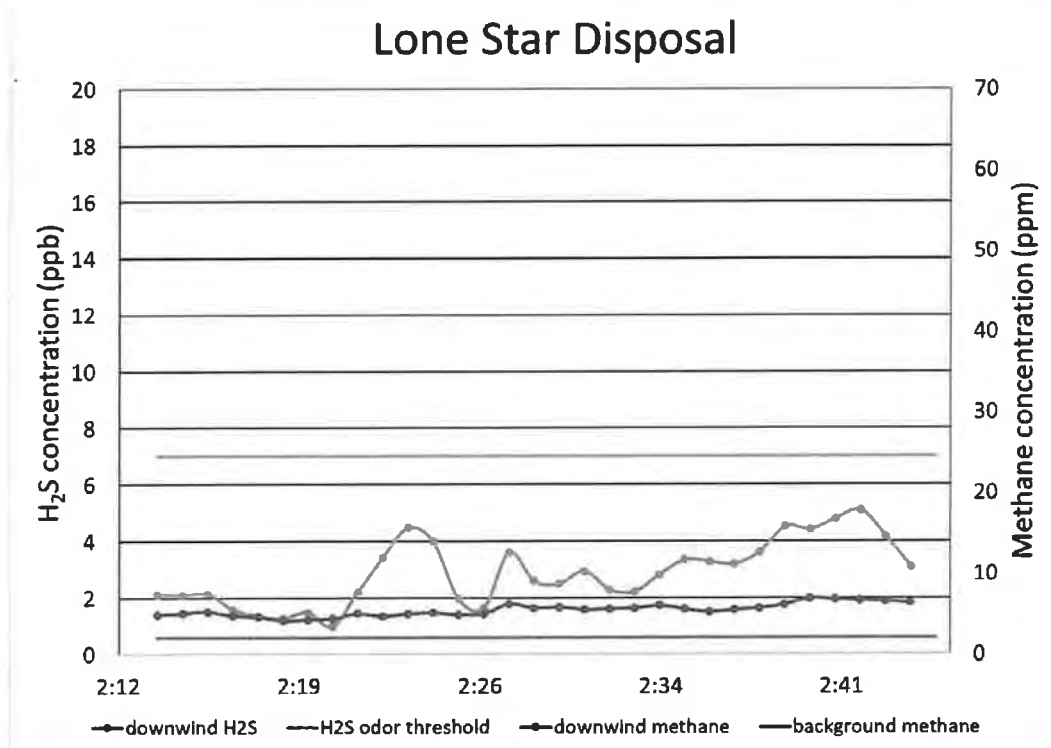
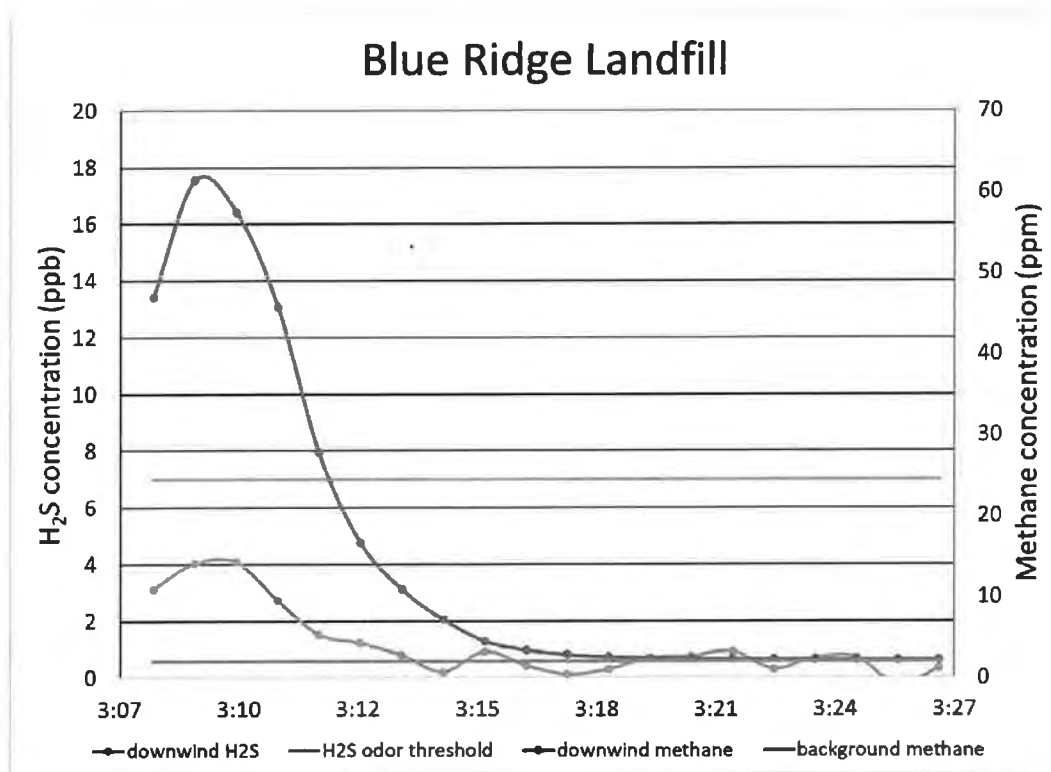


Figure 3: Lone Star Disposal showed only slightly elevated concentrations of methane in association with 3-5 ppb H₂S, whereas Blue Ridge Landfill produced similar H₂S concentrations when methane levels were 6 times as high at 60 ppm.

- **Syntech Chemicals Inc.**

No methane or H₂S concentrations were measured above the background level for methane or the odor threshold for H₂S at Syntech Chemicals Inc. indicating this is not a source of the odorous methane cloud. Fishy amine odors were observed downwind of Syntech and were not consistent with odors observed in the Shadow Creek Ranch neighborhood.

- **Brenntag Southwest Chemical Wholesaler**

No odor profile was characterized downwind of Brenntag Southwest Chemical Wholesaler. No concentrations above the background level for methane or the odor threshold for H₂S were recorded. No odors were detected by FIDO upwind or downwind of Brenntag. Including the 2016 monitoring data and two recent monitoring trips, no odors have been documented around Brenntag.

- **City of Pearland Wastewater Treatment Plant**

Odors around this facility were described as raw sewage and sulfur. These odors were different than those observed in the Shadow Creek Ranch neighborhood. Measurements indicate near-background methane concentrations with no correlation between odor and concentration. Part per billion levels of H₂S were measured near this facility; however, these concentrations were below the regulatory limit of 80 ppb for this compound and not likely to contribute to the moldy, soured garbage odors observed at Shadow Creek Ranch neighborhood.

- **Akzo Nobel Surface Chemistry Plant**

Minimal odors described as a sweet chemical smell were not consistent with the odors observed in the Shadow Creek Ranch neighborhood. The near-background levels of methane indicate this facility is not a methane source. No concentrations above the background level for methane or the odor threshold for H₂S were recorded.

- **Shadow Creek Lift Station**

Light odors observed in FIDO surveys near the lift station were described as a chemical, "port-a-potty" smell and were not consistent with the odors observed in other areas of the Shadow Creek Ranch neighborhood. Near-background methane concentrations near the lift station were recorded. No concentrations above the background level for methane or the odor threshold for H₂S were recorded.

NEXT STEPS:

- Most complaints do not include specific odor characterizations that could be used to help identify the source(s). Since local sources have distinct odor characterizations, a complaint reporting system that provides a selection of odor descriptions would provide more useful information to allow for source identification.
- Because of the similarity in odor characterization between observations downwind of the Blue Ridge Landfill and Lone Star Disposal, a meteorological assessment

should be used to determine how often complainant odors can be attributed to each facility.

- A closely coordinated monitoring effort should be scheduled to coincide with the next Surface Emissions Monitoring investigation at the Blue Ridge Landfill to assess plume movement and dilution over distance from leaking monitoring wells.
- Monitoring should also focus on downwind assessment of Blue Ridge Landfill between midnight and 4:00 a.m. during daily face opening activities to determine potential contributions to odor complaints.

**FIDO Log Site List
Region 12 Pearland Monitoring Project
Pearland, Texas
May 14 - 18, 2018**

FIDO Site	Location	Date	Time
1	Downwind of Blue Ridge Landfill	5/15/2018	4:13-4:33
2	Downwind of Lone Star Disposal and Recycling Facility	5/15/2018	5:50-6:05
3	Downwind of Blue Ridge Landfill	5/15/2018	6:25-6:45
4	Upwind/Downwind of Blue Ridge Landfill	5/15/2018	8:38-8:58
5	Downwind of Blue Ridge Landfill	5/15/2018	10:33-11:18
6	Downwind of Blue Ridge Landfill	5/15/2018	10:48-10:59
7	Upwind/Downwind of Blue Ridge Landfill	5/16/2018	1:17-2:02
8	Downwind of Blue Ridge Landfill	5/16/2018	2:40-2:55
9	Downwind of Blue Ridge Landfill	5/16/2018	3:07-3:27
10	Downwind of Blue Ridge Landfill	5/16/2018	3:20-3:39
11	Upwind/Downwind of Akzo Nobel	5/16/2018	4:53-5:08
12	Downwind of Blue Ridge Landfill	5/16/2018	5:07-5:22
13	Downwind of City of Pearland Wastewater Treatment Plant	5/16/2018	8:30-9:01
14	Upwind/Downwind of City of Pearland Wastewater Treatment Plant	5/16/2018	9:34-10:12
15	Upwind/Downwind of Brenntag and Syntech	5/16/2018	10:45-11:22
16	Upwind/Downwind of Blue Ridge Landfill	5/16/2018	0:03-0:36
17	Upwind/Downwind of Blue Ridge Landfill	5/17/2018	0:48-1:30
18	Downwind of Blue Ridge Landfill	5/17/2018	1:45-2:16
19	Upwind/Downwind of Lone Star Disposal and Recycling Facility	5/17/2018	2:13-2:45
20	Downwind of Blue Ridge Landfill	5/17/2018	2:35-2:56
21	Upwind/Downwind Shadow Creek neighborhood lift station	5/17/2018	3:05-3:36
22	Downwind of City of Pearland Wastewater Treatment Plant	5/17/2018	10:45-11:00

ATTACHMENT 8

Reyna Loosmore

From: Reyna Loosmore
Sent: Wednesday, October 10, 2018 2:39 PM
To: Stengl, Burgess [REDACTED]
Cc: Alma Jefferson
Subject: Complaint Investigation Exit Interview Form
Attachments: Exit Interview Form.pdf

Importance: High

Tracking:

Recipient

Stengl, Burgess [REDACTED]

Alma Jefferson

Delivery

Delivered: 10/10/2018 2:39 PM

Good Afternoon Mr. Stengl

Attached please find the Exit Interview Form relating to the Compliant Investigation that began on May 9, 2018 at Blue Ridge Landfill. Please reply to this email, with the attachment, to indicate your receipt.

If there are any questions about the information contained in the form contact me as soon as possible.

Reyna L. Loosmore

Environmental Investigator
Industrial and Hazardous Waste
Texas Commission on Environmental Quality
Region 12, Houston Office
Phone 713-767-3706

TCEQ EXIT INTERVIEW FORM: Potential Violations and/or Records Requested					
Regulated Entity/Site Name	Blue Ridge Landfill (BRL)		TCEQ Add. ID No. RN No (optional)	RN 102610102	
Investigation Type	MSW	Contact Made In-House (Y/N)	Y	Purpose of Investigation	
Regulated Entity Contact	Burgess Stengl		Telephone No.	713-676-7669	Date Contacted 05/09/18
Title	Environmental Manager		E-mail:		Date E-mailed: 10/10/18

NOTICE: The information provided in this form is intended to provide clarity to issues that have arisen during the investigation process between the TCEQ and the regulated entity named above and *does not represent final TCEQ findings related to violations*. Any potential or alleged violations discovered after the date of this form will be communicated by telephone to the regulated entity representative prior to the issuance of a notice of violation or enforcement. Conclusions drawn from this investigation, including additional violations or potential violations discovered (if any) during the course of this investigation, will be documented in a final investigation report.

Issue			For Records Request, identify the necessary records, the company contact and date due to the agency. For Alleged and Potential Violation issues, include the rule in question with the clearly described potential problem. Other type of issues: fully describe.
No.	Type ¹	Rule Citation (if known)	Description of Issue
1	AV	30 Texas Administrative Code (TAC) Chapter 101.4	Failure to prevent a nuisance condition.

¹Issue Type Can Be One or More of: AV (Alleged Violation), PV (Potential Violation), O (Other), or RR (Records Request)

Did the TCEQ document the regulated entity named above operating without proper authorization?	☐ Yes x ☒ No
Did the investigator advise the regulated entity representative that continued operation is not authorized?	☐ Yes x ☒ No

Document Acknowledgment. Signature on this document establishes only that the regulated entity (company) representative received a copy of this document and associated continuation pages on the date noted. If contact was made by telephone, document will be faxed to regulated entity; therefore, signature not required.		
	/ Reyna L. Loosmore	10/10/18
Investigator Name (Signed & Printed)	Regulated Entity Representative Name (Signed & Printed)	Date

If you have questions about any information on this form, please contact your local TCEQ Regional Office. Individuals are entitled to request and review their personal information that the agency gathers on its forms. They may also have any errors in their information corrected. To review such information, call 512/239-3282.