Visible Emissions Evaluation

Facility Name	ECC/ Floyd Bennett Field
AVOGADRO Project No.	12-9191
Location (city, state)	Brooklyn, NY
Type of Facility	national park
Control Equipment / Emission Source	Air curtain burner
Date of Observation	12/28/12
Start Time	8:23
Stop Time	09:12
Distance from observer (ft)	100'
Direction from observer	200
Stack height (fr. observer's elev.) (ft)	NA
Stack Diameter (in)	NA
Description of plume:	
continuous? fugitive? intermittent?	cont
color	gray
water drops present? (Y/N)	N
attached steam plume? (Y/N)	N
detached steam plume? (Y/N)	N
secondary plume? (Y/N)	N
point where opacity read	top of burner
target?	
describe background to plume	
unique features of plume or stack	no stack, constantly changing plume
Weather:	
ambient temperature (F)	35
relative humidity	
wind direction	NW
wind speed	15-20 mph
barometric pressure	
rain? fog? snow? haze?	no
Glasses worn:	
corrective? (Y/N)	N
sunglasses? (Y/N)	N

Observer's name	William Reamy
Observer certification date	10/10/12
Certifying agency	White Plains Enter.
Observer affiliation	Stack Hawk Env

Run Number(s) and Description: 1

sec	0	15	30	45
min	Run	Time:		
8:23	15	40	50	40
2	40	60	15	10
3	20	30	15	30
4	20	20	25	20
5	30	25	40	20
6	20	35	40	20
6-minute Average:		28.3		
Source Conditions:				
Sun Angle (degrees):		20		
	Run	Time:		
8:31	25	20	30	40
2	30	40	30	50
3	20	30	30	20
4	15	20	30	10
5	15	30	40	40
6	15	20	15	30
6-minute Average:		26.9		
Source Conditions:				
Sun Angle (degrees):		20		
	Run	Time:		
8:35	15	20	30	10
2	15	20	25	5
3	10	10	10	15
4	25	20	20	15
5	15	25	20	10
6	15	10	20	20
6-minute Average:		16.7		
Source Conditions:				
Sun Angle (degrees):		20		
	Run	Time:		
8:41	40	50	40	40
2	70	70	70	60
3	50	50	40	35
4	30	25	40	40
5	30	25	35	40
6	20	25	30	20
6-minute Average:		41.9		
Source Conditions:				
Sun Angle (degrees):		20		

sec	0	15	30	45
min	Run	Time:		
8:51	30	50	25	35
8:52	30	20	40	50
3	40	35	35	30
4	30	35	35	25
5	20	20	10	20
6	20	25	35	35
6-minute Average:		31.25 kvm		
Source Conditions:				
Sun Angle (degrees):		10		
	Run	Time:		
8:59	40	30	30	35
2	35	35	30	20
3	15	20	25	10
4	15	15	20	20
5	20	25	15	10
6	10	40	30	25
6-minute Average:		23.75 kvm		
Source Conditions:				
Sun Angle (degrees):		10		
	Run	Time:		
9:01	5	20	20	20
2	25	25	15	30
3	20	15	20	25
4	20	20	20	10
5	15	15	15	20
6	10	25	20	5
6-minute Average:		18.125 kvm		
Source Conditions:				
Sun Angle (degrees):		10		
	Run	Time:		
9:11	10	15	15	15
2	25	60	35	40
3	50	30	40	40
4	40	50	40	40
5	45	60	40	60
6	40	25	15	15
6-minute Average:		35.2 kvm		
Source Conditions:				
Sun Angle (degrees):		10		

Range of opacity readings:

low _____ high _____

Number of readings above _____ % were _____

W H Reamy

Observer's Signature

Visible Emissions Evaluation

Facility Name
AVOGADRO Project No.
Location (city, state)
Type of Facility
Control Equipment / Emission Source

Date of Observation 12/28/12
Start Time 0912
Stop Time 1000

Distance from observer (ft)
Direction from observer
Stack height (fr. observer's elev.) (ft)
Stack Diameter (in)

Description of plume:
- continuous? fugitive? intermittent?
- color
- water drops present? (Y/N)
- attached steam plume? (Y/N)
- detached steam plume? (Y/N)
- secondary plume? (Y/N)
- point where opacity read
- target?
- describe background to plume
- unique features of plume or stack

Weather:
- ambient temperature (F)
- relative humidity
- wind direction
- wind speed
- barometric pressure
- rain? fog? snow? haze?

Glasses worn:
- corrective? (Y/N)
- sunglasses? (Y/N)

Observer's name	William Reamy
Observer certification date	
Certifying agency	
Observer affiliation	

Run Number(s) and Description: 2

sec	0	15	30	45
min	Run	Time:		
09:12	1 20	15	30	50
	2 30	30	25	10
	3 20	25	20	25
	4 20	25	25	25
	5 30	25	20	20
	6 20	25	30	30
6-minute Average: 24.8 %VM				
Source Conditions:				
Sun Angle (degrees): 10				
	Run	Time:		
09:18	1 40	35	35	35
	2 30	30	35	30
	3 35	35	30	35
	4 30	35	35	35
	5 35	25	30	35
	6 40	35	30	35
6-minute Average: 33.5 %VM				
Source Conditions:				
Sun Angle (degrees): 10				
	Run	Time:		
09:24	1 30	25	30	25
	2 25	20	25	30
	3 25	30	25	40
	4 30	40	30	25
	5 30	35	35	40
	6 35	35	35	20
6-minute Average: 30 %VM				
Source Conditions:				
Sun Angle (degrees): 10				
	Run	Time:		
09:30	1 30	35	25	30
	2 20	35	20	20
	3 25	25	25	25
	4 20	15	15	20
	5 20	20	15	10
	6 10	15	15	20
6-minute Average: 21.25 %VM				
Source Conditions:				
Sun Angle (degrees): 10				

sec	0	15	30	45
min	Run	Time:		
09:36	1 25	25	20	15
	2 25	20	30	35
	3 25	25	25	20
	4 15	25	20	20
	5 20	25	30	20
	6 25	25	25	20
6-minute Average: 23.3 %VM				
Source Conditions:				
Sun Angle (degrees): 10				
	Run	Time:		
09:42	1 20	20	15	20
	2 25	25	20	20
	3 15	25	20	15
	4 15	20	20	20
	5 15	15	20	15
	6 35	30	35	35
6-minute Average: 21.5 %VM				
Source Conditions:				
Sun Angle (degrees): 10				
	Run	Time:		
09:48	1 30	30	35	30
	2 30	25	20	25
	3 20	25	25	35
	4 25	20	15	20
	5 15	20	20	20
	6 25	20	20	20
6-minute Average: 24.6 %VM				
Source Conditions:				
Sun Angle (degrees): 0				
	Run	Time:		
09:54	1 15	20	15	25
	2 10	10	20	15
	3 10	20	20	15
	4 15	20	15	20
	5 15	20	20	20
	6 25	15	15	15
6-minute Average: 17.1 %VM				
Source Conditions:				
Sun Angle (degrees): 0				

Range of opacity readings:
low _____ high _____

Number of readings above _____ % were _____

WM Reamy
Observer's Signature

Visible Emissions Evaluation

Run Number(s) and Description: 3

Facility Name	
AVOGADRO Project No.	
Location (city, state)	
Type of Facility	
Control Equipment / Emission Source	
Date of Observation	12/28/12
Start Time	1000
Stop Time	1018
Distance from observer (ft)	
Direction from observer	
Stack height (fr. observer's elev.) (ft)	
Stack Diameter (in)	
Description of plume:	
continuous? fugitive? intermittent?	
color	
water drops present? (Y/N)	
attached steam plume? (Y/N)	
detached steam plume? (Y/N)	
secondary plume? (Y/N)	
point where opacity read	
target?	
describe background to plume	
unique features of plume or stack	
Weather:	
ambient temperature (F)	
relative humidity	
wind direction	
wind speed	
barometric pressure	
rain? fog? snow? haze?	
Glasses worn:	
corrective? (Y/N)	
sunglasses? (Y/N)	

Observer's name	William Reamy
Observer certification date	
Certifying agency	
Observer affiliation	

sec	0	15	30	45
min	Run	Time:		
1000 1	15	20	15	15
2	10	10	15	25
3	20	20	15	20
4	20	15	20	15
5	10	10	10	15
6	10	15	15	15
6-minute Average:		15.4 mm		
Source Conditions:				
Sun Angle (degrees):		0		

	Run	Time:		
1006 1	10	10	15	10
2	10	10	15	15
3	15	10	10	10
4	10	15	10	15
5	10	10	15	10
6	10	15	10	15
6-minute Average:		11.9		
Source Conditions:				
Sun Angle (degrees):		0		

	Run	Time:		
1012 1	15	10	10	10
2	5	10	10	5
3	5	10	5	10
4	10	10	10	10
5	10	5	10	10
6	10	5	10	5
6-minute Average:		8.8		
Source Conditions:				
Sun Angle (degrees):		0		

	Run	Time:		
1018 1	10	10		
2				
3				
4				
5				
6				
6-minute Average:				
Source Conditions:				
Sun Angle (degrees):		0		

sec	0	15	30	45
min	Run	Time:		
1024 1				
2				
3				
4				
5				
6				
6-minute Average:				
Source Conditions:				
Sun Angle (degrees):				

	Run	Time:		
1030 1				
2				
3				
4				
5				
6				
6-minute Average:				
Source Conditions:				
Sun Angle (degrees):				

	Run	Time:		
1				
2				
3				
4				
5				
6				
6-minute Average:				
Source Conditions:				
Sun Angle (degrees):				

	Run	Time:		
1				
2				
3				
4				
5				
6				
6-minute Average:				
Source Conditions:				
Sun Angle (degrees):				

Range of opacity readings:

low _____ high _____

Number of readings above _____ % were _____

Wil Reamy

Observer's Signature

12/28/2012 (Friday)
Night Runs 1-8

Visible Emissions Evaluation

Facility Name	ECC
AVOGADRO Project No.	12-9191
Location (city, state)	Brooklyn, NY
Type of Facility	Em. Ops
Control Equipment / Emission Source	Firebox
Date of Observation	12/28/2012
Start Time	(18:54) 6:54pm
Stop Time	
Distance from observer (ft)	~100ft
Direction from observer	
Stack height (fr. observer's elev.) (ft)	~10 ft
Stack Diameter (in)	
Description of plume:	
continuous? fugitive? intermittent?	Continuous
color	White
water drops present? (Y/N)	N
attached steam plume? (Y/N)	N
detached steam plume? (Y/N)	N
secondary plume? (Y/N)	—
point where opacity read	3-4 lengths
target?	night sky
describe background to plume	"
unique features of plume or stack	
Weather:	
ambient temperature (F)	34°
relative humidity	61%
wind direction	NNW
wind speed	9mph
barometric pressure	30.07 in
rain? fog? snow? haze?	Clear
Glasses worn:	
corrective? (Y/N)	Y
sunglasses? (Y/N)	N

Observer's name	Joshua Wagner
Observer certification date	
Certifying agency	PSU-LV EWhitlow
Observer affiliation	Avogadro Env.

Run Number(s) and Description

sec	0	15	30	45
min	Run 1 Time: 6:54pm			
1	5	5	10	10
2	5	10	5	5
3	5	10	5	10
4	5	10	5	10
5	5	10	5	10
6	5	10	10	5
6-minute Average: 7.3				
Source Conditions:				
Sun Angle (degrees): n/a				

	Run 2 Time: 7:22pm			
1	10	10	10	10
2	5	10	10	10
3	10	5	10	10
4	10	5	10	10
5	10	10	10	10
6	10	10	10	10
6-minute Average: 9.4				
Source Conditions:				
Sun Angle (degrees): n/a				

	Run 3 Time: 19:54			
1	5	5	5	5
2	10	5	10	10
3	5	5	5	10
4	5	10	10	5
5	5	10	5	10
6	5	5	5	5
6-minute Average: 6.7				
Source Conditions:				
Sun Angle (degrees): n/a				

	Run 4 Time: 20:23			
1	10	10	15	10
2	20	5	5	10
3	10	10	10	10
4	10	10	15	5
5	5	5	10	10
6	10	5	10	5
6-minute Average: 9.4				
Source Conditions:				
Sun Angle (degrees): n/a				

sec	0	15	30	45
min	Run 5 Time: 20:51			
1	5	5	5	5
2	5	10	5	5
3	5	5	5	5
4	5	5	5	10
5	10	5	5	5
6	10	5	5	5
6-minute Average: 5.8				
Source Conditions:				
Sun Angle (degrees): n/a				

	Run 6 Time: 21:16			
1	5	5	0	5
2	5	5	5	5
3	5	5	5	5
4	5	5	5	5
5	5	5	5	5
6	5	5	10	5
6-minute Average: 5				
Source Conditions:				
Sun Angle (degrees): n/a				

	Run 7 Time: 21:42			
1	5	5	5	5
2	5	5	5	5
3	5	5	5	5
4	5	5	5	5
5	5	5	5	5
6	5	5	5	5
6-minute Average: 5				
Source Conditions:				
Sun Angle (degrees): n/a				

	Run 8 Time: 22:08			
1	10	10	10	10
2	10	15	10	10
3	5	5	5	5
4	5	5	5	5
5	0	5	5	5
6	5	5	5	5
6-minute Average: 6.7				
Source Conditions:				
Sun Angle (degrees): n/a				

Range of opacity readings:
low 0 high 20

Number of readings above _____ % were _____

Observer's Signature

12/28/2012 Night Runs 9-12

Visible Emissions Evaluation

Run Number(s) and Description

Facility Name	ECC
AVOGADRO Project No.	12-9191
Location (city, state)	Brooklyn, NY
Type of Facility	Emp Ops
Control Equipment / Emission Source	Firebox
Date of Observation	12/28/2012
Start Time	2234
Stop Time	
Distance from observer (ft)	~100 ft
Direction from observer	N
Stack height (fr. observer's elev.) (ft)	~10 ft
Stack Diameter (in)	
Description of plume:	
continuous? fugitive? intermittent?	Cont
color	White
water drops present? (Y/N)	N
attached steam plume? (Y/N)	N
detached steam plume? (Y/N)	N
secondary plume? (Y/N)	N
point where opacity read	1-4 st. lengths
target?	night sky
describe background to plume	"
unique features of plume or stack	
Weather:	@2230
ambient temperature (F)	31°
relative humidity	69%
wind direction	N
wind speed	6mph
barometric pressure	30.07in
rain? fog? snow? haze?	clear
Glasses worn:	
corrective? (Y/N)	Y
sunglasses? (Y/N)	N

Observer's name	Joshua Wagner
Observer certification date	
Certifying agency	PSU & Whitlow
Observer affiliation	Avogadro Env.

sec	0	15	30	45
min	**Run 9 Time: 2234**			
1	10	15	10	10
2	10	10	10	10
3	10	10	10	10
4	10	10	10	10
5	10	10	5	10
6	10	10	10	10
6-minute Average:	10			
Source Conditions:				
Sun Angle (degrees):	—			

sec	0	15	30	45
min	**Run Time:**			
1				
2				
3				
4				
5				
6				
6-minute Average:				
Source Conditions:				
Sun Angle (degrees):				

Run 10 Time: 2300				
1	10	10	5	10
2	10	10	10	10
3	10	15	10	10
4	10	10	10	10
5	5	10	15	10
6	10	10	10	10
6-minute Average:	10			
Source Conditions:				
Sun Angle (degrees):	—			

Run Time:				
1				
2				
3				
4				
5				
6				
6-minute Average:				
Source Conditions:				
Sun Angle (degrees):				

Run 11 Time: 2326				
1	10	10	10	10
2	5	10	5	10
3	5	5	10	10
4	5	5	10	5
5	5	10	5	5
6	5	5	5	5
6-minute Average:	7.1			
Source Conditions:				
Sun Angle (degrees):	—			

Run Time:				
1				
2				
3				
4				
5				
6				
6-minute Average:				
Source Conditions:				
Sun Angle (degrees):				

Run 12 Time: 2352				
1	5	5	5	10
2	5	5	10	5
3	5	5	5	5
4	5	5	5	5
5	10	5	5	5
6	5	5	5	5
6-minute Average:	5.6			
Source Conditions:				
Sun Angle (degrees):	—			

Run Time:				
1				
2				
3				
4				
5				
6				
6-minute Average:				
Source Conditions:				
Sun Angle (degrees):				

Range of opacity readings: low 5 high 15

Number of readings above _____ % were _____

Observer's Signature