Mississippi Department of Natural Resources
Bureau of Pollution Control
Visible Emissions Evaluation Record

Plant Name: HERCULES, INC.
Address: P.O. BOX 1937
City: HATTIESBURG
Emission Point: north stack
Date: 6TH DECEMBER 1984
Is emission point operation normal ? YES

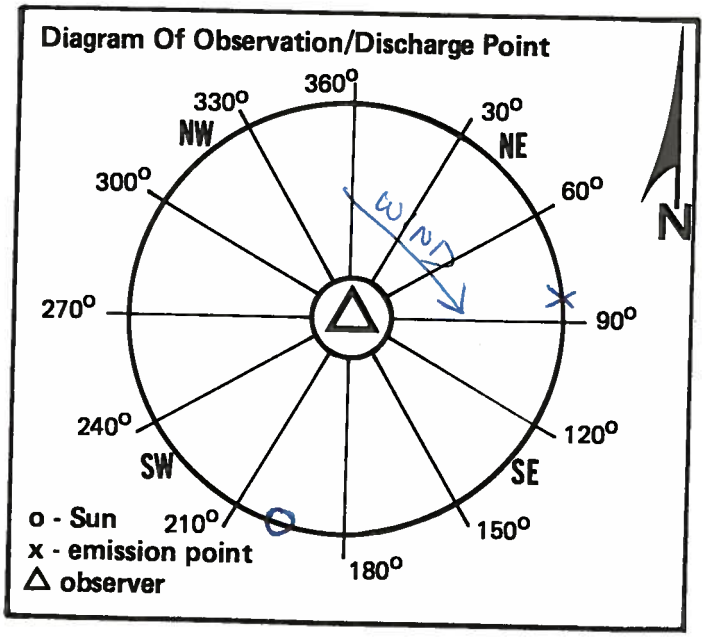
V. E. Observer: HEID, MAWEL
Certification Expiration: 4/85

Set No.	Time		Opacity	
	Start	End	Sum	Average
1	1:20	1:26	505	21
2	1:26	1:32	550	23
3	1:32	1:38	420	18

Overall Average: 21%

	Initial	Final
Distance to discharge	600'	
Direction to discharge	E	
Height of observation point	0'	
Height of discharge	200'	
Plume color	WHITE	
Plume background	SKY	
Water vapor in plume ?	NO	
Wind direction (from)	NW	
Wind speed	10-15 MPH	
Ambient temperature	50°	
Discharge temperature		
Sky conditions	CLEAR	

Diagram Of Observation/Discharge Point



Min.	Seconds 0	15	30	45
0	15	15	25	25
1	25	25	20	20
2	20	20	20	20
3	20	20	20	20
4	20	20	20	20
5	20	25	25	25
0	30	25	25	20
1	25	25	20	25
2	25	25	25	25
3	20	20	15	20
4	20	25	20	25
5	20	25	20	25
0	20	20	20	20
1	15	20	15	20
2	15	20	20	20
3	15	15	15	15
4	15	15	15	15
5	15	15	15	20

Remarks:

DATA CODED

Received By:

Mississippi Department of Natural Resources
Bureau of Pollution Control
Visible Emissions Evaluation Record

Plant Name: HERCULES, INC
Address: P.O. BOX 1937
City: HATTIESBURG
Emission Point: SOUTH STACK
Date: 6TH DECEMBER 1984
Is emission point operation normal ? YES

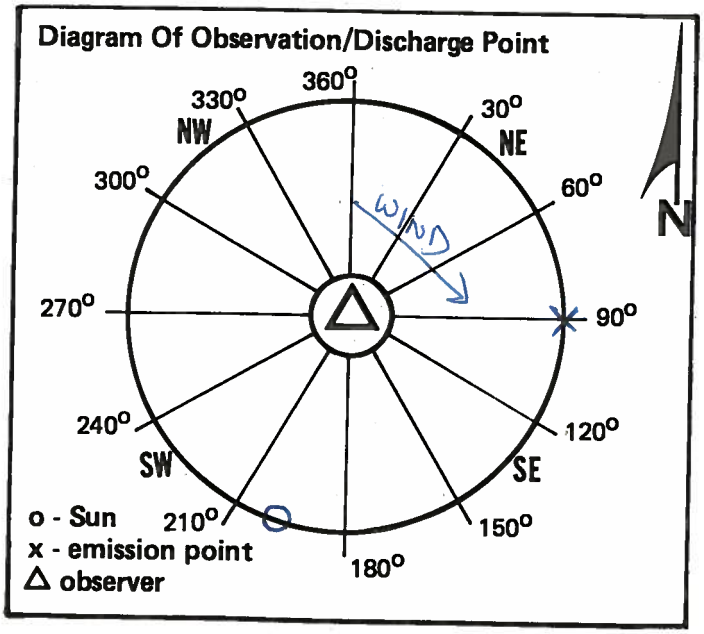
V. E. Observer: HEIDI MOWERY
Certification Expiration: 4/85

Set No.	Time		Opacity	
	Start	End	Sum	Average
1	1:20	1:26	275	12
2	1:26	1:32	280	12
3	1:32	1:38	235	10

Overall Average: 11%

	Initial	Final
Distance to discharge	600'	
Direction to discharge	E	
Height of observation point	0'	
Height of discharge	200'	
Plume color	WHITE	
Plume background	SKY	
Water vapor in plume ?	NO	
Wind direction (from)	NW	
Wind speed	10-15 MPH	
Ambient temperature	50°	
Discharge temperature		
Sky conditions	CLEAR	

Diagram Of Observation/Discharge Point



Min.	Seconds 0	15	30	45
0	10	10	15	15
1	15	10	10	10
2	15	10	10	10
3	10	10	10	15
4	10	15	10	10
5	10	10	15	10
0	10	10	10	10
1	10	10	10	10
2	10	15	15	15
3	10	10	10	10
4	10	15	15	15
5	15	10	10	15
0	10	15	10	10
1	10	10	10	10
2	10	10	10	10
3	10	10	10	10
4	10	10	10	10
5	10	5	3	10

Remarks: ~~DATA CODED~~

Received By:

Mississippi Department of Natural Resources
Bureau of Pollution Control
Visible Emissions Evaluation Record

Plant Name: HERCULES, INC.
Address: P.O. Box 1937
City: HATTIESBURG
Emission Point: South Stack
Date: 21st November 1984
Is emission point operation normal ? YES

V. E. Observer: HEIDI MOWERY
Certification Expiration: 4/85

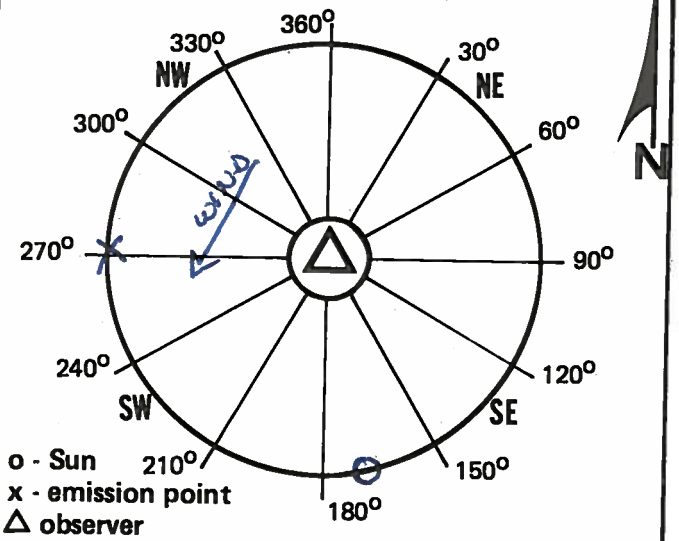
Set No.	Time		Opacity	
	Start	End	Sum	Average
1	11:10	11:16	380	16
2	11:16	11:22	375	16
3	11:22	11:28	360	15

Overall Average: 16%

	Initial	Final
Distance to discharge	600'	
Direction to discharge	W	
Height of observation point	0'	
Height of discharge	200'	
Plume color	YELLOW-GREY	
Plume background	SKY	
Water vapor in plume ?	NO	
Wind direction (from)	NE	
Wind speed	10 MPH	
Ambient temperature	55°	
Discharge temperature	—	
Sky conditions	P. CLOUDY	

Min.	Seconds 0	15	30	45
0	15	20	15	15
1	15	15	15	15
2	15	15	20	15
3	15	15	15	15
4	15	15	15	20
5	15	15	15	20
0	15	15	20	20
1	20	15	15	15
2	15	15	15	15
3	15	15	15	15
4	15	15	15	15
5	15	15	15	15
0	15	15	15	15
1	15	15	15	15
2	10	15	15	15
3	15	15	15	15
4	15	15	15	15
5	15	20	15	15

Diagram Of Observation/Discharge Point



Remarks:

Received By:

Mississippi Department of Natural Resources
Bureau of Pollution Control
Visible Emissions Evaluation Record

Plant Name: HERCULES, INC.
Address: P.O. Box 1937
City: HATTIESBURG
Emission Point: north stack
Date: 21st NOVEMBER 1984
Is emission point operation normal ? YES

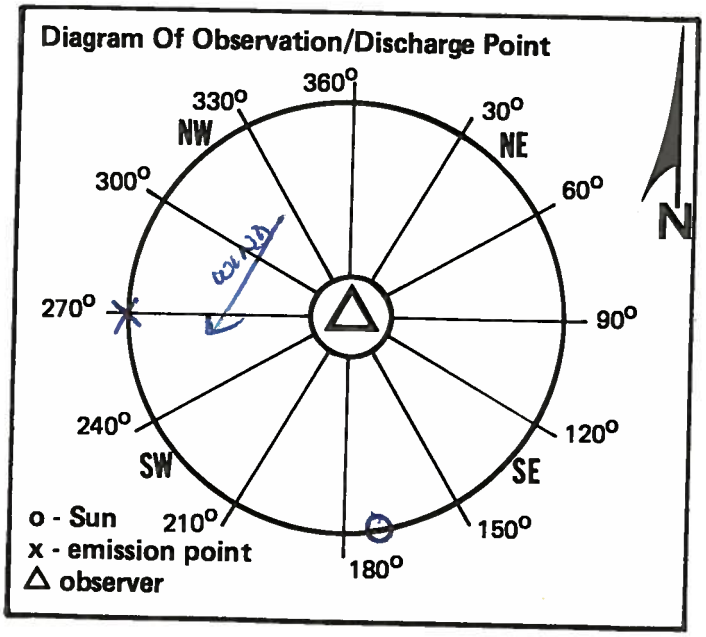
V. E. Observer: HEIDI MOWREY
Certification Expiration: 4/85

Set No.	Time		Opacity	
	Start	End	Sum	Average
1	11:10	11:16	285	12
2	11:16	11:22	365	15
3	11:22	11:28	305	13

Overall Average: 13%

	Initial	Final
Distance to discharge	600'	
Direction to discharge	W	
Height of observation point	0	
Height of discharge	200'	
Plume color	YELLOW-GREY	
Plume background	SKY	
Water vapor in plume ?	NO	
Wind direction (from)	NE	
Wind speed	10 MPH	
Ambient temperature	55°	
Discharge temperature	—	
Sky conditions	P. CLOUDY	

Diagram Of Observation/Discharge Point



Min.	Seconds 0	15	30	45
0	10	15	10	10
1	10	10	10	10
2	10	10	10	15
3	15	10	15	15
4	15	15	15	10
5	10	15	10	10
0	15	10	10	10
1	10	10	10	10
2	15	15	10	15
3	15	20	20	20
4	20	15	15	15
5	20	20	25	20
0	20	20	15	15
1	15	15	15	15
2	10	15	10	10
3	10	10	10	10
4	10	10	10	15
5	15	10	10	10

Remarks:

DATA CODED

Received By:

Mississippi Department of Natural Resources
Bureau of Pollution Control
Visible Emissions Evaluation Record

Plant Name: HERCULES, INC.

Address: P.O. Box 1937 / W. 7TH AVE

City: HATTIESBURG

Emission Point: NORTH STACK

Date: 10TH OCTOBER 1984

Is emission point operation normal ? YES

V. E. Observer: HEIDI MOWERY

Certification Expiration: 10/84

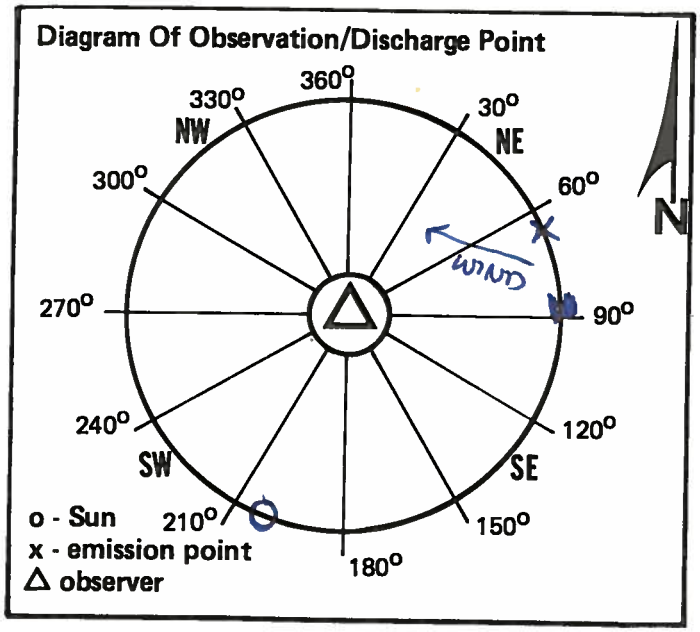
Set No.	Time		Opacity	
	Start	End	Sum	Average
1	1:19	1:25	240	10
2	1:25	1:31	235	10
3	1:31	1:37	225	9

Overall Average: 10%

	Initial	Final
Distance to discharge	600'	
Direction to discharge	ENE	
Height of observation point	0'	
Height of discharge	200'	
Plume color	GREY	
Plume background	SKY	
Water vapor in plume ?	NO	
Wind direction (from)	ESE	
Wind speed	2MPH	
Ambient temperature	75°	
Discharge temperature	—	
Sky conditions	CLOUDY W/ SHOWERS	

Min.	Seconds 0	15	30	45
0	15	10	10	10
1	10	10	10	10
2	10	10	10	10
3	10	10	10	10
4	10	10	10	10
5	10	10	10	5
0	10	10	10	10
1	10	10	10	5
2	10	10	10	10
3	10	10	10	10
4	10	10	10	10
5	10	10	10	10
0	10	10	10	10
1	10	5	10	5
2	10	10	10	10
3	10	10	10	5
4	10	10	10	10
5	10	10	10	10

Diagram Of Observation/Discharge Point



Remarks:

Received By: L. C. Falls

Mississippi Department of Natural Resources
Bureau of Pollution Control
Visible Emissions Evaluation Record

Plant Name: HERCULES, INC.

Address: P.O. BOX 1937

City: HATTIESBURG

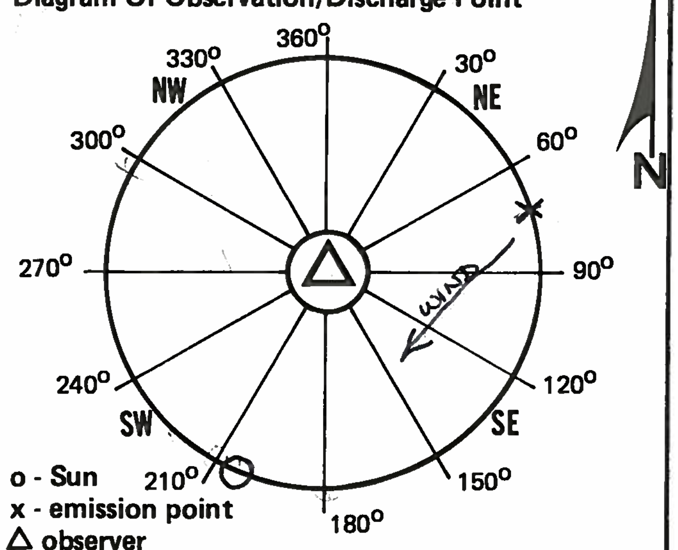
Emission Point: NORTH STACK

Date: 16TH AUGUST 1984

Is emission point operation normal ? YES

	Initial	Final
Distance to discharge	700'	
Direction to discharge	ENE	
Height of observation point	0'	
Height of discharge	200'	
Plume color	GREY	
Plume background	SKY	
Water vapor in plume ?	NO	
Wind direction (from)	NE	
Wind speed	2-4 MPH	
Ambient temperature	90°	
Discharge temperature	—	
Sky conditions	P. CLOUDY	

Diagram Of Observation/Discharge Point



V. E. Observer: HEIDI MOWERY

Certification Expiration: 10/84

Set No.	Time		Opacity	
	Start	End	Sum	Average
1	2:46	2:52	145	6
2	2:52	2:58	120	5
3	2:58	3:04	120	5

Overall Average: 5%

Min.	Seconds 0	15	30	45
0	5	5	5	5
1	5	5	5	5
2	5	5	10	5
3	5	10	5	5
4	10	5	10	5
5	5	5	10	5
0	5	5	5	5
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
0	5	5	5	5
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

Remarks:

Received By: F. C. Rott

Mississippi Department of Natural Resources
Bureau of Pollution Control
Visible Emissions Evaluation Record

Plant Name: Hercules, Inc.

Address: P.O. Box 1937 / W. 7th Ave.

City: Hattiesburg

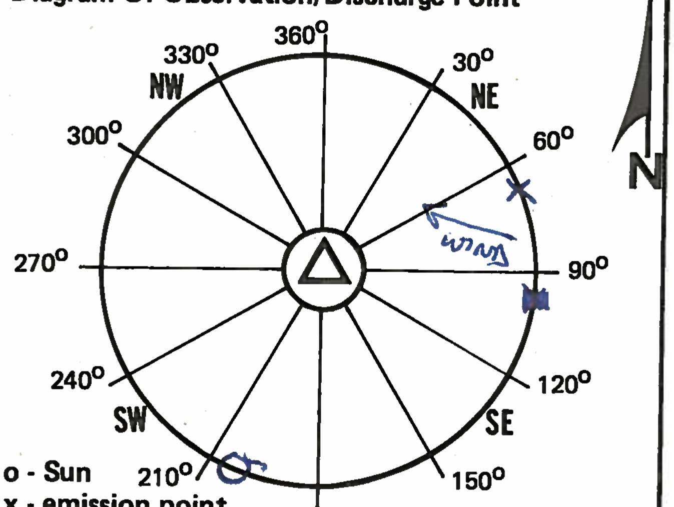
Emission Point: South Stack

Date: 10th October 1984

Is emission point operation normal ? Yes

	Initial	Final
Distance to discharge	600'	
Direction to discharge	ENE	
Height of observation point	0'	
Height of discharge	200'	
Plume color	Grey	
Plume background	Sky	
Water vapor in plume ?	No	
Wind direction (from)	ESE	
Wind speed	2 MPH	
Ambient temperature	75°	
Discharge temperature	—	
Sky conditions	Cloudy w/ showers	

Diagram Of Observation/Discharge Point



o - Sun
x - emission point
△ observer

V. E. Observer: Heidi Mowbry

Certification Expiration: 10/84

Set No.	Time Start	Time End	Opacity Sum	Opacity Average
1	1:19	1:25	260	11
2	1:25	1:31	245	10
3	1:31	1:37	245	10

Overall Average: 10%

Min.	Seconds 0	15	30	45
0	10	10	10	10
1	10	10	10	10
2	10	10	15	15
3	15	15	10	10
4	10	10	10	10
5	10	10	10	10
0	10	10	10	10
1	10	10	10	10
2	10	10	10	10
3	10	15	10	10
4	10	10	10	10
5	10	10	10	10
0	15	10	10	10
1	10	10	10	10
2	10	10	10	10
3	10	10	10	10
4	10	10	10	10
5	10	10	10	10

Remarks:

Received By: P. C. Fo[illegible]

sissippi Department of Natural Resour
Bureau of Pollution Control
Visible Emissions Evaluation Record

Plant Name: Hercules, Inc
Address: P.O. Box 1937
City: Hattiesburg
Emission Point: South stack
Date: 7 Sept 84
Is emission point operation normal ? yes

V. E. Observer: Mfast
Certification Expiration: 10/84

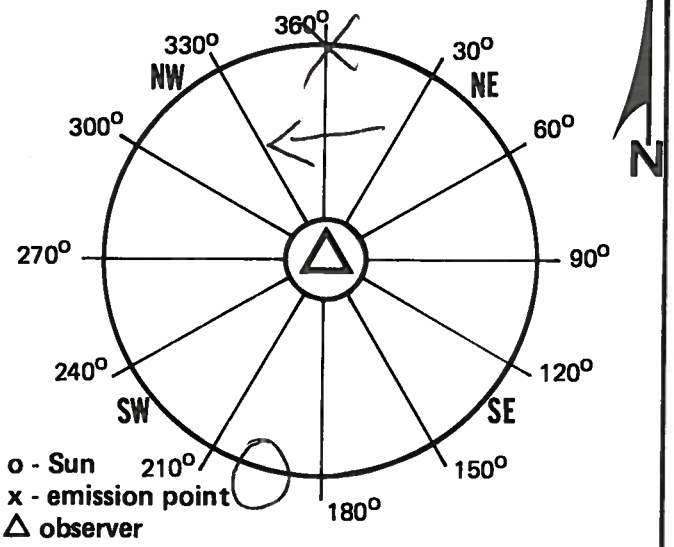
Set No.	Time		Opacity	
	Start	End	Sum	Average
1	1:15	1:21	485	20.2
2	1:21	1:27	365	15.2
3	1:27	1:33	375	15.6

Overall Average: 17.0%

	Initial	Final
Distance to discharge	500'	
Direction to discharge	N	
Height of observation point	0	
Height of discharge	200'	
Plume color	grey	
Plume background	Sky	
Water vapor in plume ?	no	
Wind direction (from)	E	
Wind speed	light	
Ambient temperature	86°	
Discharge temperature	—	
Sky conditions	clear	

Min.	Seconds 0	15	30	45
0	10	15	20	15
1	20	20	25	25
2	25	20	25	20
3	25	20	20	20
4	20	25	20	20
5	20	15	20	20
0	15	15	15	10
1	15	15	15	10
2	10	10	15	15
3	20	25	20	20
4	10	15	10	15
5	15	15	20	20
0	25	20	20	20
1	20	20	25	25
2	25	20	15	15
3	10	10	10	10
4	10	10	10	10
5	10	10	10	15

Diagram Of Observation/Discharge Point



Remarks: Both boilers are operating.

Received By: L. C. Toth

sissippi Department of Natural Resour
Bureau of Pollution Control
Visible Emissions Evaluation Record

Plant Name: Hercules, Inc
Address: P.O. Box 1937
City: Hattiesburg
Emission Point: north stack
Date: 7 Sept 84
Is emission point operation normal ? yes

V. E. Observer: MHast
Certification Expiration: 10/84

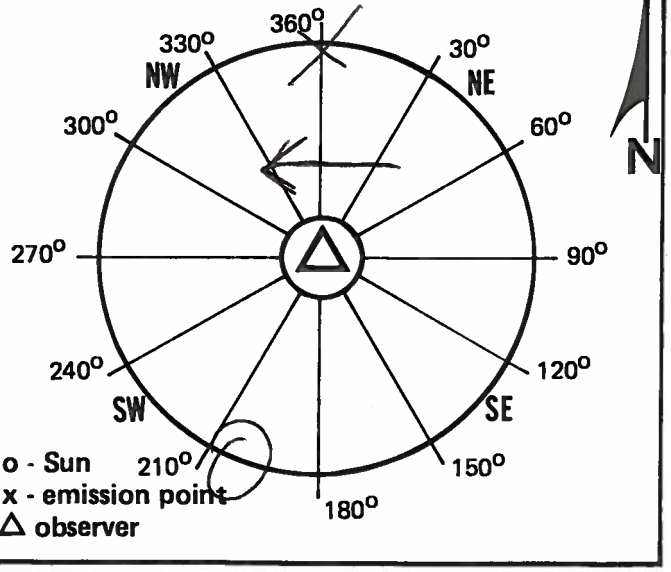
Set No.	Time		Opacity	
	Start	End	Sum	Average
1	1:15	1:21	305	12.7
2	1:21	1:27	215	8.9
3	1:27	1:33	225	9.4

Overall Average: 10.3%

	Initial	Final
Distance to discharge	500'	
Direction to discharge	N	
Height of observation point	0	
Height of discharge	200'	
Plume color	grey	
Plume background	sky	
Water vapor in plume ?	no	
Wind direction (from)	E	
Wind speed	light	
Ambient temperature	80°	
Discharge temperature	—	
Sky conditions	clear	

	Seconds			
Min.	0	15	30	45
0	5	5	10	10
1	10	10	15	20
2	20	10	15	15
3	20	10	15	15
4	20	20	10	10
5	10	10	10	10
0	10	10	10	10
1	10	5	10	5
2	5	5	5	5
3	10	15	10	10
4	5	10	10	10
5	10	10	10	15
0	10	10	15	20
1	15	10	10	15
2	10	10	10	10
3	10	10	10	5
4	5	5	10	5
5	5	5	5	5

Diagram Of Observation/Discharge Point



Remarks: Boiler #4 is still down for repairs.

Received By: L. Todd

ssissippi Department of Natural Resour
Bureau of Pollution Control
Visible Emissions Evaluation Record

Plant Name: HERCULES, INC
Address: P.O. BOX 1937
City: HATTIESBURG
Emission Point: SOUTH STACK
Date: 16TH AUGUST 1984
Is emission point operation normal ? YES

V. E. Observer: HEIDI MOWERY
Certification Expiration: 10/84

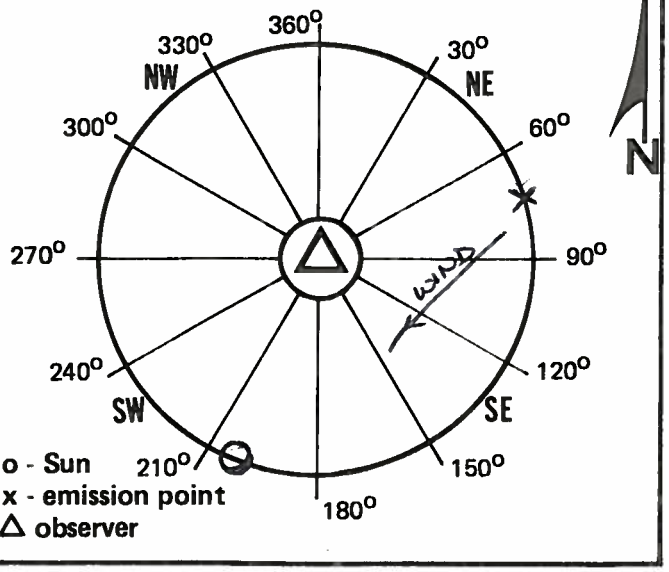
	Initial	Final
Distance to discharge	700'	
Direction to discharge	ENE	
Height of observation point	0'	
Height of discharge	200'	
Plume color	GREY	
Plume background	SKY	
Water vapor in plume ?	NO	
Wind direction (from)	NE	
Wind speed	2-4 MPH	
Ambient temperature	90°	
Discharge temperature	—	
Sky conditions	P. CLOUDY	

Set No.	Time		Opacity	
	Start	End	Sum	Average
1	2:46	2:52	225	9
2	2:52	2:58	150	6
3	2:58	3:04	145	6

Overall Average: 7%

	Seconds			
Min.	0	15	30	45
0	5	5	5	35
1	20	15	10	5
2	5	5	5	15
3	10	15	5	10
4	10	5	5	5
5	5	10	10	5
0	5	5	5	5
1	5	5	5	5
2	5	5	5	5
3	5	10	10	10
4	10	10	5	10
5	5	5	5	5
0	5	5	5	5
1	5	5	5	5
2	5	10	5	5
3	5	10	5	5
4	5	5	5	5
5	5	10	10	10

Diagram Of Observation/Discharge Point



Remarks:

Received By:

sissippi Department of Natural Resour
Bureau of Pollution Control
Visible Emissions Evaluation Record

Plant Name: HERCULES, INC.
Address: P.O. BOX 1937
City: HATTIESBURG
Emission Point: SOUTH STACK
Date: 25TH APRIL 1984
Is emission point operation normal ? YES

V. E. Observer: HEIDI MOWERY
Certification Expiration: 10/84

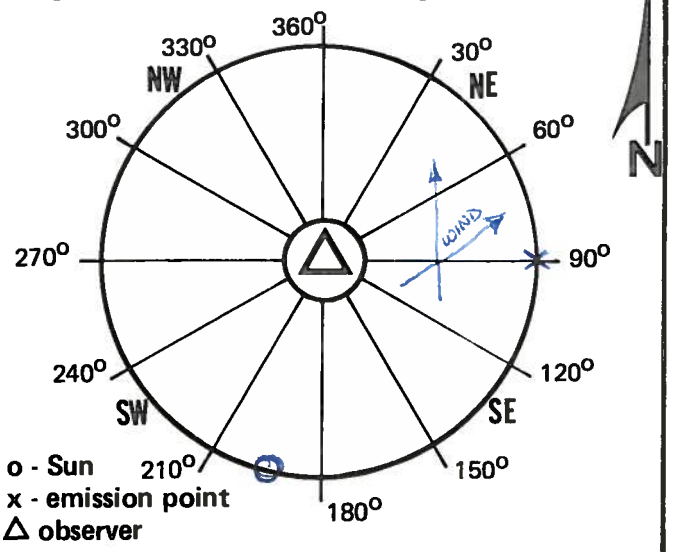
Set No.	Time		Opacity	
	Start	End	Sum	Average
1	1:00	1:06	390	16
2	1:06	1:12	370	15
3	1:12	1:18	250	10

Overall Average: 14%

	Initial	Final
Distance to discharge	600'	
Direction to discharge	E	
Height of observation point	0'	
Height of discharge	200'	
Plume color	GREY-WHITE	
Plume background	SKY	
Water vapor in plume ?	NO	
Wind direction (from)	S-SW	
Wind speed	5-10MPH	
Ambient temperature	80°	
Discharge temperature	—	
Sky conditions	CLEAR	

Min.	Seconds 0	15	30	45
0	10	10	10	10
1	15	20	25	25
2	25	25	25	20
3	15	15	20	15
4	15	10	10	15
5	10	15	15	15
0	15	15	10	15
1	15	10	10	10
2	10	10	10	10
3	10	10	10	10
4	25	25	30	30
5	30	20	15	15
0	10	10	10	10
1	10	10	10	10
2	10	10	10	10
3	10	10	10	15
4	15	10	10	10
5	10	10	10	10

Diagram Of Observation/Discharge Point



Remarks: odors were strong downwind immediately prior to V.E.E.

Received By:

sissippi Department of Natural Resour
Bureau of Pollution Control
Visible Emissions Evaluation Record

Plant Name: HERCULES, INC.

Address: P.O. BOX 1937

City: HATTIESBURG

Emission Point: NORTH STACK

Date: 25TH APRIL 1984

Is emission point operation normal ? YES

V. E. Observer: HEIDI NOWERY

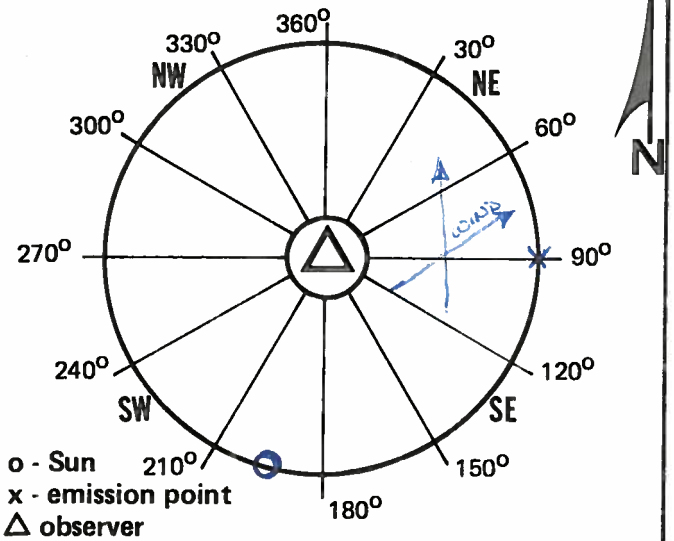
Certification Expiration: 10/84

Set No.	Time		Opacity	
	Start	End	Sum	Average
1	1:00	1:06	365	15
2	1:06	1:12	430	18
3	1:12	1:18	445	19

Overall Average: 17%

	Initial	Final
Distance to discharge	600'	
Direction to discharge	E	
Height of observation point	0'	
Height of discharge	200'	
Plume color	GREY-WHITE	
Plume background	SKY	
Water vapor in plume ?	NO	
Wind direction (from)	S-SW	
Wind speed	5-10MPH	
Ambient temperature	80°	
Discharge temperature	—	
Sky conditions	CLEAR	

Diagram Of Observation/Discharge Point



Min.	Seconds 0	15	30	45
0	15	15	20	20
1	15	20	15	15
2	15	15	15	15
3	10	10	10	15
4	15	15	15	15
5	15	15	20	15
0	15	15	25	20
1	20	15	15	20
2	15	20	20	20
3	20	20	20	20
4	15	20	15	20
5	15	15	15	15
0	15	15	20	15
1	15	15	15	20
2	25	20	20	15
3	20	25	25	20
4	20	20	20	20
5	15	15	15	20

Remarks: odors were strong downwind immediately prior to V.E.E.

DATA CODED

Received By: C Jordan

ssissippi Department of Natural Resou
Bureau of Pollution Control
Visible Emissions Evaluation Record

Plant Name: HERCULES, INC.
Address: P.O. BOX 1937
City: HATTIESBURG
Emission Point: NORTH STACK
Date: 17TH JULY 1984
Is emission point operation normal ? YES

V. E. Observer: HEIDI NOWERY
Certification Expiration: 10/84

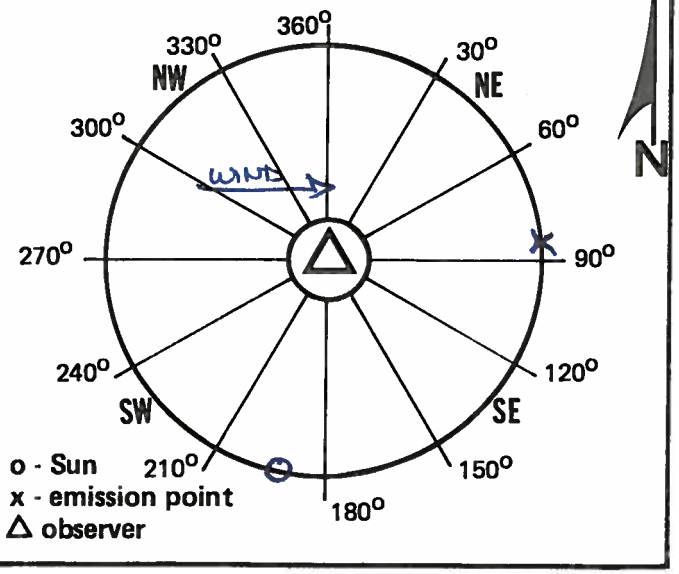
Set No.	Time		Opacity	
	Start	End	Sum	Average
1	1:36	1:42	250	10
2	1:42	1:48	180	7
3	1:48	1:54	155	7

Overall Average: 8%

	Initial	Final
Distance to discharge	600'	
Direction to discharge	E	
Height of observation point	0'	
Height of discharge	200'	
Plume color	GREY	
Plume background	SKY	
Water vapor in plume ?	NO	
Wind direction (from)	W	
Wind speed	0-5MPH	
Ambient temperature	90°	
Discharge temperature	—	
Sky conditions	CLEAR - P. CLOUDY	

Min.	Seconds 0	15	30	45
0	5	10	10	10
1	15	10	10	10
2	15	15	10	10
3	10	10	10	10
4	10	10	10	10
5	10	10	10	10
0	10	10	10	10
1	10	10	10	10
2	10	10	10	5
3	10	5	5	5
4	5	5	5	5
5	5	5	5	5
0	5	5	10	5
1	5	5	5	5
2	5	5	5	5
3	5	5	5	5
4	5	5	10	10
5	10	10	10	10

Diagram Of Observation/Discharge Point



Remarks:

Received By: P. C. Tebb

...ssissippi Department of Natural Resour...
Bureau of Pollution Control
Visible Emissions Evaluation Record

Plant Name: Hercules, Inc.

Address: P.O. Box 1937

City: Hattiesburg

Emission Point: South Stack

Date: 17th July 1984

Is emission point operation normal ? Yes

V. E. Observer: Heidi Mowery

Certification Expiration: 10/84

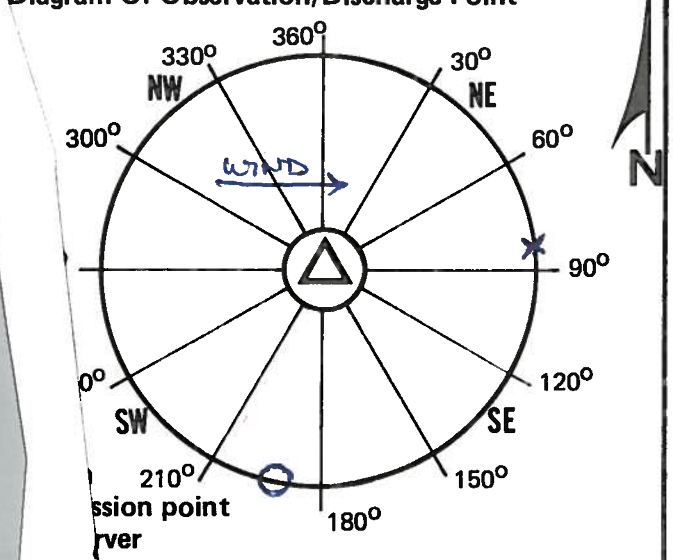
Set No.	Time Start	Time End	Opacity Sum	Opacity Average
1	1:36	1:42	200	8
2	1:42	1:48	130	5
3	1:48	1:54	155	7

Overall Average: 7%

	Initial	Final
Distance to discharge	600'	
Direction to discharge	E	
Height of observation point	0'	
Height of discharge	200'	
Plume color	Grey	
Plume background	Sky	
Water vapor in plume ?	No	
Wind direction (from)	W	
Wind speed	0-5 MPH	
Ambient temperature	90°	
Discharge temperature	—	
Sky conditions	Clear — P. Cloudy	

Min.	Seconds 0	15	30	45
0	5	5	10	10
1	10	10	5	5
2	10	10	10	5
3	5	10	10	10
4	10	10	10	10
5	10	10	5	5
0	10	5	5	5
1	5	5	5	5
2	5	10	5	5
3	5	5	5	5
4	5	5	5	5
5	5	5	5	5
0	5	5	5	5
1	5	5	5	5
2	5	5	5	5
3	5	10	5	5
4	5	5	10	10
5	10	10	10	10

Diagram Of Observation/Discharge Point



Remarks:

DATA CODED

Received By: [signature]

Mississippi Department of Natural Resources
Bureau of Pollution Control
Visible Emissions Evaluation Record

Plant Name: HERCULES, INC.
Address: P.O. BOX 1937
City: HATTIESBURG
Emission Point: NORTH STACK
Date: 8TH JUNE 1984
Is emission point operation normal ? YES

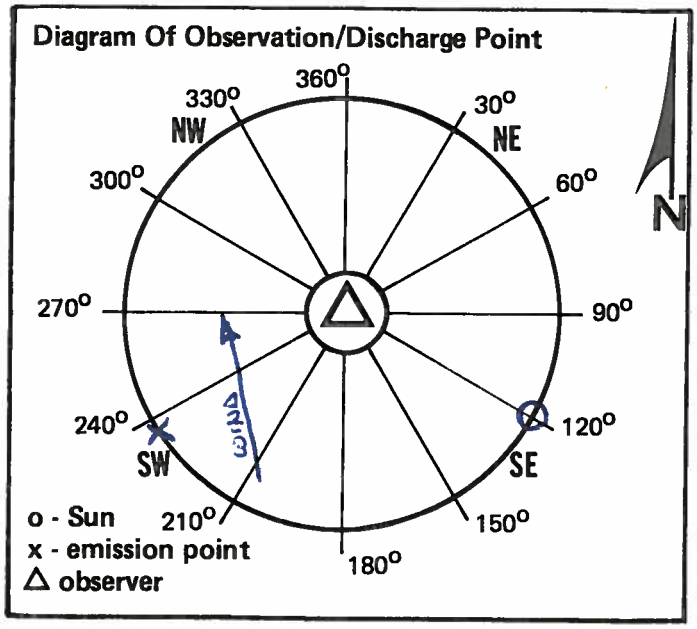
V. E. Observer: HEIDI MOWERY
Certification Expiration: 10/84

Set No.	Time		Opacity	
	Start	End	Sum	Average
1	11:24	11:30	290	12
2	11:30	11:36	380	16
3	11:36	11:42	505	21

Overall Average: 16%

	Initial	Final
Distance to discharge	600'	
Direction to discharge	SW	
Height of observation point	0'	
Height of discharge	200'	
Plume color	WHITE-GREY	
Plume background	SKY	
Water vapor in plume ?	NO	
Wind direction (from)	SSE	
Wind speed	0-5MPH	
Ambient temperature	88°	
Discharge temperature	—	
Sky conditions	SUNNY W/ CLOUDS	

Diagram Of Observation/Discharge Point



Min.	Seconds 0	15	30	45
0	10	10	10	10
1	10	15	10	15
2	10	10	15	15
3	15	10	10	10
4	15	15	15	15
5	15	10	10	10
0	10	10	10	10
1	15	15	15	15
2	15	15	20	20
3	15	15	15	20
4	20	20	20	15
5	15	15	20	20
0	15	15	15	20
1	20	20	20 *	20
2	20	25	25	25
3	25	25	20	20
4	20	25	25	20
5	20	25	20	20

Remarks:
*: an uncharacteristic emission of a greenish tint was observed from this point on during VEE.

Received By: C Jordan

sissippi Department of Natural Resou
Bureau of Pollution Control
Visible Emissions Evaluation Record

Plant Name: HERCULES, INC.

Address: P.O. BOX 1937

City: HATTIESBURG

Emission Point: SOUTH STACK

Date: 8TH JUNE 1984

Is emission point operation normal ? YES

V. E. Observer: HEIDI MOWERY

Certification Expiration: 10/84

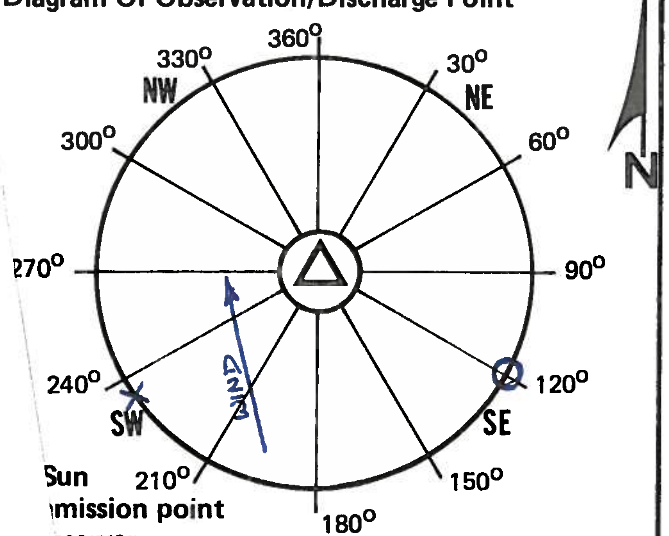
Set No.	Time Start	Time End	Opacity Sum	Opacity Average
1	11:24	11:30	240	10
2	11:30	11:36	240	10
3	11:36	11:42	240	10

Overall Average: 10%

	Initial	Final
Distance to discharge	600'	
Direction to discharge	SW	
Height of observation point	0'	
Height of discharge	200'	
Plume color	WHITE-GREY	
Plume background	SKY	
Water vapor in plume ?	NO	
Wind direction (from)	SSE	
Wind speed	0-5 MPH	
Ambient temperature	88°	
Discharge temperature	—	
Sky conditions	SUNNY W/CLOUDS	

Min.	Seconds 0	15	30	45
0	10	10	10	10
1	10	10	10	10
2	10	10	10	10
3	10	10	10	10
4	10	10	10	10
5	10	10	10	10
0	10	10	10	10
1	10	10	10	10
2	10	10	10	10
3	10	10	10	10
4	10	10	10	10
5	10	10	10	10
0	10	10	10	10
1	10	10	10	10
2	10	10	10	10
3	10	10	10	10
4	10	10	10	10
5	10	10	10	10

Diagram Of Observation/Discharge Point



Sun
Emission point
Observer

Remarks:

DATA CODED

Received By: C Jordan

sissippi Department of Natural Resour
Bureau of Pollution Control
Visible Emissions Evaluation Record

Plant Name: HERCULES, INC.

Address: P.O. BOX 1937

City: HATTIESBURG

Emission Point: NORTH STACK

Date: 24TH MAY 1984

Is emission point operation normal ? YES

V. E. Observer: HEIDI MOWERY

Certification Expiration: 10/84

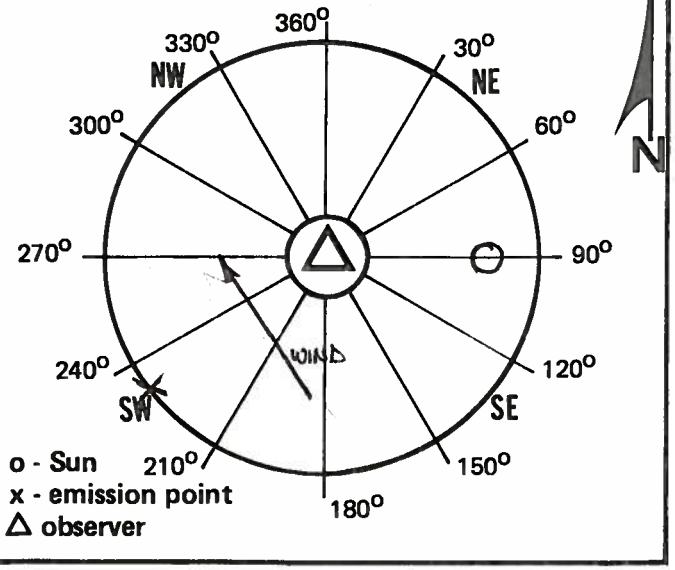
Set No.	Time		Opacity	
	Start	End	Sum	Average
1	10:30	10:36	490	20
2	10:36	10:42	705	32
3	10:42	10:48	485	20

Overall Average: 24%

	Initial	Final
Distance to discharge	6000'	
Direction to discharge	SW	
Height of observation point	0'	
Height of discharge	200'	
Plume color	[redacted]-WHITE	
Plume background	SKY	
Water vapor in plume ?	NO	
Wind direction (from)	[redacted]SE	
Wind speed	0-5MPH	
Ambient temperature	85°	
Discharge temperature	—	
Sky conditions	CLEAR	

Min.	Seconds 0	15	30	45
0	15	15	15	15
1	15	20	20	20
2	25	25	25	30
3	25	25	20	20
4	20	15	15	15
5	20	25	25	25
0	25	35	35	35
1	35	35	30	35
2	40	45	40	35
3	35	30	35	30
4	25	30	30	35
5	30	25	25	20
0	20	25	20	15
1	15	20	15	15
2	15	15	15	15
3	15	25	20	20
4	20	20	25	25
5	30	30	25	25

Diagram Of Observation/Discharge Point



Remarks: north stack emissions increased after V.E.E. was completed, up to about 50%-60% within 12 minutes.

DATA CODED

Received By: L. C. Falk

Mississippi Department of Natural Resources
Bureau of Pollution Control
Visible Emissions Evaluation Record

Plant Name: HERCULES, INC.

Address: P.O. BOX 1937

City: HATTIESBURG

Emission Point: SOUTH STACK

Date: 24TH MAY 1984

Is emission point operation normal ? YES

V. E. Observer: HEIDI MOWERY

Certification Expiration: 10/84

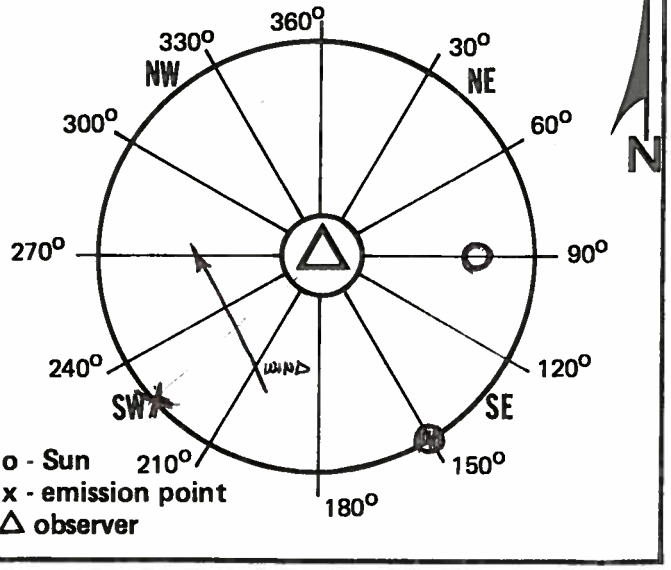
	Initial	Final
Distance to discharge	600'	
Direction to discharge	SW	
Height of observation point	0'	
Height of discharge	200'	
Plume color	GREY	
Plume background	SKY	
Water vapor in plume ?	NO	
Wind direction (from)	ESE	
Wind speed	0-5MPH	
Ambient temperature	85°	
Discharge temperature	—	
Sky conditions	CLEAR	

Set No.	Time		Opacity	
	Start	End	Sum	Average
1	10:30	10:36	120	5
2	10:36	10:42	120	5
3	10:42	10:48	260	11

Overall Average: 7%

	Seconds			
Min.	0	15	30	45
0	5	5	5	5
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
0	5	5	5	5
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
0	10	5	5	10
1	10	10	10	10
2	10	10	10	10
3	10	10	10	10
4	10	10	15	15
5	15	15	15	15

Diagram Of Observation/Discharge Point



Remarks:

South stack emissions continued to increase immediately after completion of V.E.E. for about 5 min., up to 25%.

Received By: P. C. Tabb

NAME: HERCULES ADDRESS:

EMS NO. 1/1/0-0/8/0/0-0/0/0/0/1 PLANT TYPE:

MAJOR ☒ MINOR ( )

		Source/ Reference
Emission Point Description	Combination Boilers #1 & #2	
Emission Point No.	009	
Emission Data:	SOUTH STACK	TOTAL FOR BOTH BOILERS
Stack Height:	200 ft	FROM 5/9/84 & 5/22/84
Exit Gas Temperature:	389 °F	STACK TESTS
Exit Diameter:	10 ft	
Exit Velocity:	32.4 ft/sec	
Volumetric Flowrate:	152,554 ACFM	

Emission Rates:		lb/hr	tons/yr	Date	
Current Allowable	PM	109	476.1	1984	Stack test
	SO_2	See Attached			
	NO_x				
	CO				
	HC				
	OTHER				
Current Actual	PM	49.4	215.8	1984	Stack test
	SO_2	See Attached			
	NO_x				
	CO				
	HC				
	OTHER				

Applicable Baseline Emission Rate		Act.	All.	Act.	All.		
	PM						
	SO_2						
	NO_x						
	CO						
	HC						
	OTHER						

UTM ZONE: 16 AQCR: 005

UTM NORTH: 3469.2 LATITUDE :

UTM EAST: 280.6 LONGITUDE:

OPERATING SCHEDULE: 24 Hours/Day 7 Days/Week 52 Weeks/Year Hours/Year

PSD Review Subject: NSPS: NESHAPS:

SCC CODE: SIC CODE:

COMMENTS: NEDS
ID = 02

NAME: Hercules, Inc

ADDRESS:

EMS NO. 110-018010-010101

PLANT TYPE:

MAJOR X MINOR ( )

		Source/ Reference
Emission Point Description	Combination Boilers #3 & #4	
Emission Point No.	010	
Emission Data:	North Stack	TOTAL FOR BOTH BOILERS FROM 5/8-9/84 STACK TESTS
Stack Height:	225 ft	
Exit Gas Temperature:	360 °F	
Exit Diameter:	10 ft	
Exit Velocity:	33.5 ft/sec	
Volumetric Flowrate:	157,691 ACFM	

Emission Rates:		lb/hr	tons/yr	Date	
Current Allowable	PM	122.5 See Attached	535.1	1984	Stack Test
	SO_2				
	NO_x				
	CO				
	HC				
	OTHER				
Current Actual	PM	55.6 See Attached	242.9	1984	Stack Test
	SO_2				
	NO_x				
	CO				
	HC				
	OTHER				

Applicable Baseline Emission Rate		Act.	All.	Act.	All.
	PM				
	SO_2				
	NO_x				
	CO				
	HC				
	OTHER				

AQCR:

UTM ZONE:

LATITUDE :

UTM NORTH:

LONGITUDE:

UTM EAST:

OPERATING SCHEDULE: Hours/Day Days/Week Weeks/Year Hours/Year

PSD Review Subject: NSPS: NESHAPS:

SIC CODE:

SCC CODE:

COMMENTS: NEDS ID = 03

HERCULES

110-0800-00001

Woodwaste Boilers (Emission Points 009 & 010)
Rating 276×10^6 Btu/hr

SO_2 Emissions (PER UNIT)

Allowable - 4.8 #/10^6 Btu ⇒ 1324.8 #/hr

Actual - For 1982 (using woodwaste)

$1.5 \#SO_2/ton \times 4.8 Ton/hr = 7.2 \#SO_2/hr$

$= 31.54 TPY$

If used 100% fuel oil, SO_2 would be:

Fuel Oil Characteristics - 2.05%S, 18,444 Btu/lb, 8 #/ga

MAX RATE OF USAGE IS 2150 gal/hr

$$\therefore 2150 \frac{gal}{hr} \left| \frac{8 \# oil}{gal} \right| \frac{.0205 \#S}{\# oil} \left| \frac{2 \#SO_2}{\#S} \right| = 705.2 \frac{\#SO_2}{hr}$$

and

$$\frac{.0205 \#S}{\# oil} \left| \frac{2 \#SO_2}{\#S} \right| \frac{1 \# oil}{18,444 Btu} = \frac{2.22 \#SO_2}{10^6 Btu}$$

ssissippi Department of Natural Resour
Bureau of Pollution Control
Visible Emissions Evaluation Record

Plant Name: HERCULES, INC
Address: P.O. BOX 1937
City: HATTIESBURG
Emission Point: NORTH STACK
Date: 12 JANUARY 1984
Is emission point operation normal ? YES

V. E. Observer: HEIDI MOWERY
Certification Expiration: 4/84

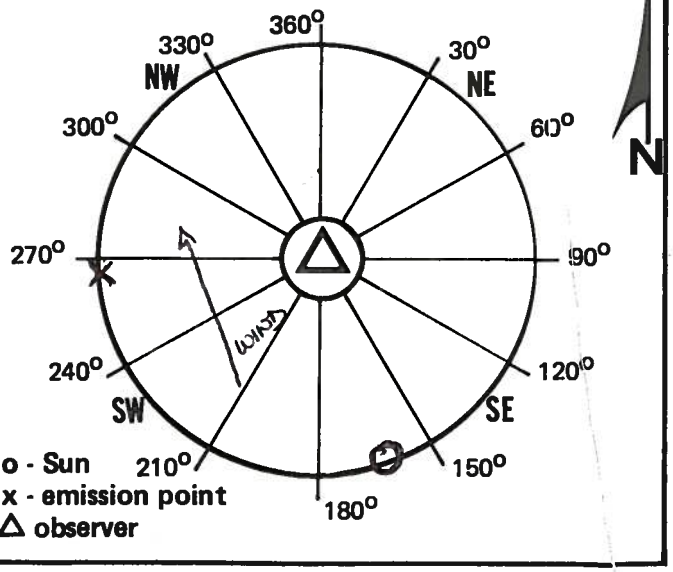
Set No.	Time		Opacity	
	Start	End	Sum	Average
1	10:56	11:02	1135	45
2	11:02	11:08	690	28
3	11:08	11:14	825	33

Overall Average: 35%

	Initial	Final
Distance to discharge	600'	
Direction to discharge	W	
Height of observation point	0'	
Height of discharge	200'	
Plume color	GREY	
Plume background	SKY	
Water vapor in plume ?	NO	
Wind direction (from)	SSE	
Wind speed	0-5 MPH	
Ambient temperature	55°	
Discharge temperature	—	
Sky conditions	SCATTERED CLOUDS	

	Seconds			
Min.	0	15	30	45
0	50	40	95	75
1	60	50	50	60
2	60	50	75	75
3	50	35	35	35
4	30	30	35	35
5	30	30	25	25
0	25	25	25	25
1	25	25	30	35
2	35	30	35	30
3	30	30	30	30
4	30	35	30	25
5	30	25	25	25
0	20	20	20	30
1	25	65	50	35
2	35	50	55	50
3	40	25	25	25
4	30	30	25	35
5	25	25	55	30

Diagram Of Observation/Discharge Point



Remarks:

DATA CODED

Received By: L. Falk

ssissippi Department of Natural Resour
Bureau of Pollution Control
Visible Emissions Evaluation Record

Plant Name: HERCULES, INC.
Address: P.O. BOX 1937
City: HATTIESBURG
Emission Point: SOUTH STACK
Date: 12 JANUARY 1984
Is emission point operation normal ? YES

V. E. Observer: HEIDI MOWERY
Certification Expiration: 4/84

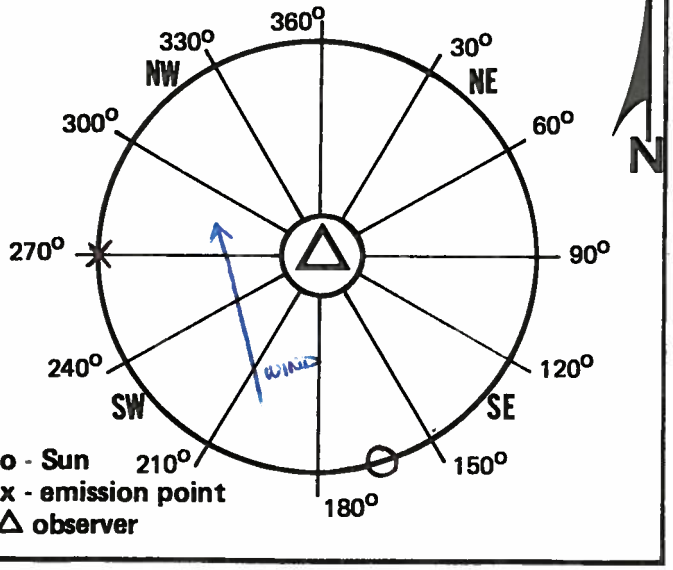
Set No.	Time		Opacity	
	Start	End	Sum	Average
1	10:56	11:02	450	18
2	11:02	11:08	615	25
3	11:08	11:14	385	15

Overall Average: 19%

	Initial	Final
Distance to discharge	600'	
Direction to discharge	W	
Height of observation point	0'	
Height of discharge	200'	
Plume color	GREY	
Plume background	SKY	
Water vapor in plume ?	NO	
Wind direction (from)	SSE	
Wind speed	05MPH	
Ambient temperature	55°	
Discharge temperature	—	
Sky conditions	SCATTERED CLOUDS	

Min.	Seconds 0	15	30	45
0	10	10	15	15
1	10	15	15	15
2	15	15	20	15
3	15	15	20	25
4	25	30	20	20
5	20	25	35	30
0	30	30	25	25
1	25	25	25	30
2	30	35	30	25
3	25	25	25	30
4	25	20	25	20
5	25	15	25	20
0	15	15	15	20
1	20	20	20	20
2	15	15	15	15
3	15	15	15	15
4	15	15	15	15
5	15	15	15	15

Diagram Of Observation/Discharge Point



Remarks:

DATA CODED

Received By:

Mississippi Department of Natural Resources
Bureau of Pollution Control
Visible Emissions Evaluation Record

Plant Name: HERCULES, INC.
Address: P.O. BOX 1937
City: HATTIESBURG
Emission Point: BOILERS #1 & #2 / SOUTH STACK
Date: 22 FEBRUARY 1984
Is emission point operation normal ? YES

V. E. Observer: HEIDI NOWERY
Certification Expiration: 4/84

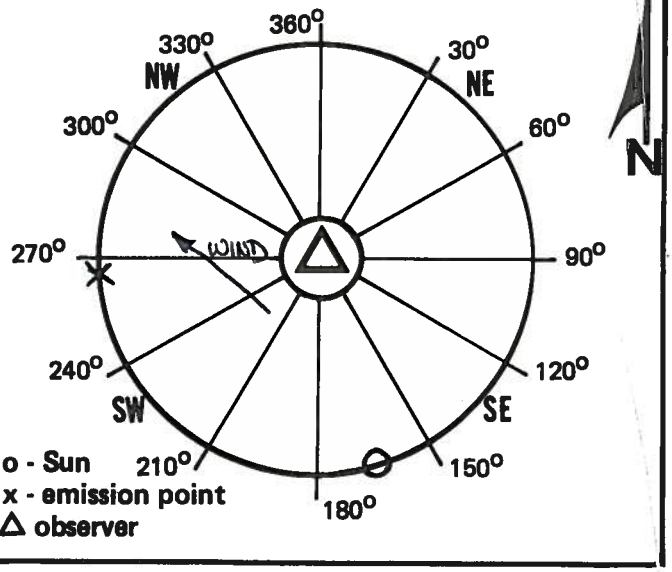
	Initial	Final
Distance to discharge	600'	
Direction to discharge	W	
Height of observation point	0'	
Height of discharge	200'	
Plume color	GREY	
Plume background	SKY	
Water vapor in plume ?	NO	
Wind direction (from)		
Wind speed	0-2 MPH	
Ambient temperature	65°	
Discharge temperature	—	
Sky conditions	CLEAR	

Set No.	Time		Opacity	
	Start	End	Sum	Average
1	10:52	10:58	120	5
2	10:58	11:04	130	5
3	11:04	11:10	120	5

Overall Average: 5%

Min.	Seconds 0	15	30	45
0	5	5	5	5
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
0	10	10	5	5
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
0	5	5	5	5
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

Diagram Of Observation/Discharge Point



Remarks: BOILERS #1 AND #2 WERE SHUT DOWN AS OF THE NIGHT SHIFT; SOME TRACES OF SMOKE WERE STILL EVIDENT AT TIME OF V.E.

DATA CODED

Received By: P. C. Falls

Mississippi Department of Natural Resources
Bureau of Pollution Control
Visible Emissions Evaluation Record

Plant Name: HERCULES, INC
Address: P.O. BOX 1937
City: HATTIESBURG
Emission Point: BOILERS #3 #4 / NORTH STACK
Date: 22 FEBRUARY 1984
Is emission point operation normal ? YES

V. E. Observer: HEIDI MOWERY
Certification Expiration: 4/84

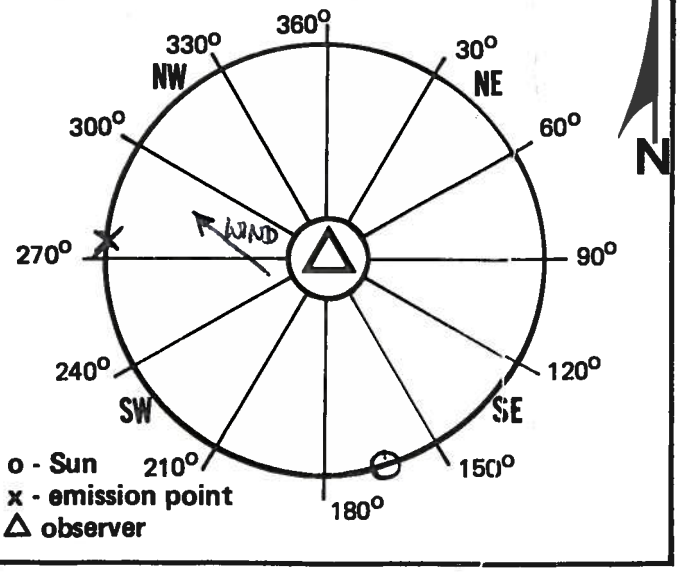
	Initial	Final
Distance to discharge	600'	
Direction to discharge	W	
Height of observation point	0'	
Height of discharge	200'	
Plume color	GREY	
Plume background	SKY	
Water vapor in plume ?	NO	
Wind direction (from)	SE	
Wind speed	0-2MPH	
Ambient temperature	65°	
Discharge temperature	—	
Sky conditions	CLEAR	

Set No.	Time		Opacity	
	Start	End	Sum	Average
1	10:52	10:58	405	17
2	10:58	11:04	280	12
3	11:04	11:10	290	12

Overall Average: 14%

Min.	Seconds 0	15	30	45
0	10	10	15	15
1	15	10	10	10
2	10	15	30	40
3	60	15	25	30
4	20	10	10	10
5	10	10	10	5
0	10	15	10	20
1	10	10	10	15
2	15	10	15	10
3	10	10	5	10
4	10	10	10	10
5	10	15	15	15
0	10	10	10	10
1	10	10	5	10
2	10	10	10	10
3	10	10	15	15
4	20	25	15	15
5	15	15	10	10

Diagram Of Observation/Discharge Point



Remarks:

Received By: L. C. Folk

Mississippi Department of Natural Resources
Bureau of Pollution Control
Visible Emissions Evaluation Record

Plant Name: HERCULES, INC.
Address: P.O. BOX 1937
City: HATTIESBURG
Emission Point: NORTH STACK
Date: 8 MARCH 1984
Is emission point operation normal ? YES

V. E. Observer: HEIDI NOWERY
Certification Expiration: 4/84

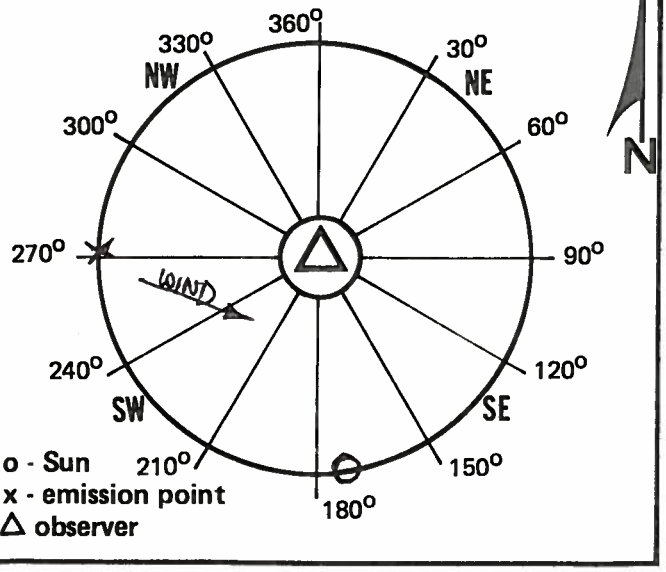
	Initial	Final
Distance to discharge	600'	
Direction to discharge	W	
Height of observation point	0'	
Height of discharge	200'	
Plume color	GREY/BLACK	
Plume background	SKY	
Water vapor in plume ?	NO	
Wind direction (from)	WNW	
Wind speed	5-10 MPH	
Ambient temperature	65°	
Discharge temperature	—	
Sky conditions	CLEAR	

Set No.	Time		Opacity	
	Start	End	Sum	Average
1	11:25	11:31	1005	42
2	11:31	11:37	870	36
3	11:37	11:43	940	39

Overall Average: 39%

Min.	Seconds 0	15	30	45
0	50	40	40	35
1	45	30	35	25
2	50	30	15	15
3	55	55	45	20
4	15	15	10	100
5	90	80	50	15
0	20	20	15	15
1	25	40	30	25
2	30	40	30	25
3	25	50	45	30
4	25	25	25	35
5	35	60	100	100
0	40	15	30	60
1	85	100	60	25
2	10	10	15	20
3	40	30	15	10
4	10	25	100	100
5	100	20	10	10

Diagram Of Observation/Discharge Point



Remarks: THE INTERMITTANT EXCURSIONS CONTINUED IN THE FOLLOWING HOUR.

Received By: L. Tabb

Mississippi Department of Natural Resources
Bureau of Pollution Control
Visible Emissions Evaluation Record

Plant Name: Hercules, Inc.
Address: P.O. Box 1937
City: Hattiesburg
Emission Point: South Stack
Date: 8 March 1984
Is emission point operation normal ? Yes

V. E. Observer: Heidi Mowery
Certification Expiration: 4/84

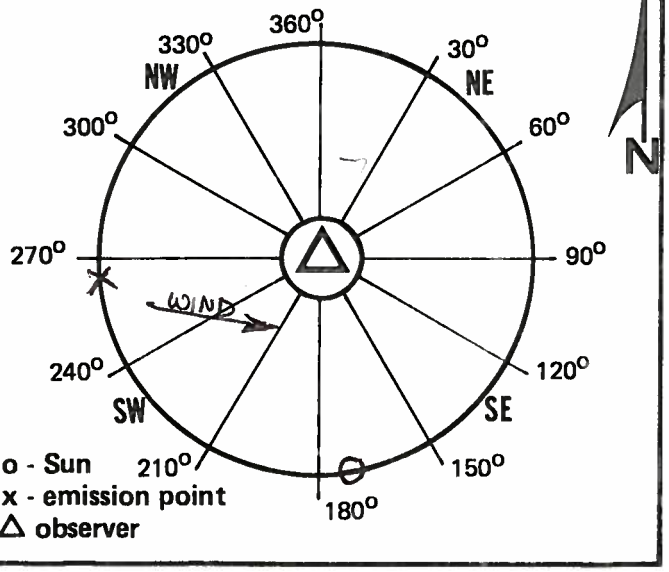
	Initial	Final
Distance to discharge	600'	
Direction to discharge	W	
Height of observation point	0'	
Height of discharge	200'	
Plume color	Grey	
Plume background	Sky	
Water vapor in plume ?	No	
Wind direction (from)	WNW	
Wind speed	5-10 MPH	
Ambient temperature	65°	
Discharge temperature	—	
Sky conditions	Clear	

Set No.	Time		Opacity	
	Start	End	Sum	Average
1	11:25	11:31	125	5
2	11:31	11:37	145	6
3	11:37	11:43	120	5

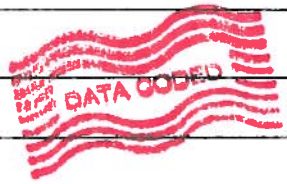
Overall Average: 5%

	Seconds			
Min.	0	15	30	45
0	5	5	5	5
1	5	5	5	5
2	5	10	5	5
3	5	5	5	5
4	5	5	5	5
5	5	5	5	5
0	5	5	5	5
1	10	10	5	10
2	10	5	5	5
3	5	5	5	5
4	5	10	5	5
5	5	5	5	5
0	5	5	5	5
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

Diagram Of Observation/Discharge Point



Remarks: Only 1 boiler operating on this stack.



Received By: L. Todd

sissippi Department of Natural Resou
Bureau of Pollution Control
Visible Emissions Evaluation Record

Plant Name: HERCULES, INC.
Address: P.O. Box 1937
City: HATTIESBURG
Emission Point: South boiler stack
Date: 9th DECEMBER 1983
Is emission point operation normal ? yes

V. E. Observer: HEIDI MOWERY
Certification Expiration: 4/84

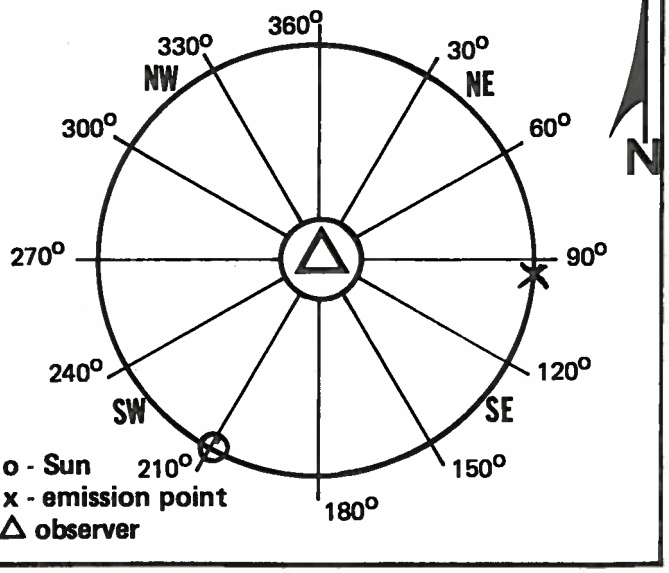
Set No.	Time		Opacity	
	Start	End	Sum	Average
1	1:47	1:53	640	26.67
2	1:53	1:59	785	32.71
3	1:59	2:05	710	29.58

Overall Average: 29.65%

	Initial	Final
Distance to discharge	600'	
Direction to discharge	E	
Height of observation point	0'	
Height of discharge	200'	
Plume color	grey	
Plume background	sky	
Water vapor in plume ?	NO	
Wind direction (from)	S	
Wind speed	0-5 MPH	
Ambient temperature	70°	
Discharge temperature	—	
Sky conditions	clear	

Min.	Seconds 0	15	30	45
0	30	25	25	35
1	30	30	25	25
2	25	25	25	25
3	25	25	25	25
4	25	25	20	20
5	30	25	35	35
0	30	20	35	40
1	35	35	35	35
2	30	30	30	30
3	25	30	30	35
4	30	40	40	35
5	35	35	30	35
0	30	25	35	35
1	25	25	25	25
2	25	30	25	25
3	30	30	30	40
4	40	30	30	35
5	30	25	25	35

Diagram Of Observation/Discharge Point



Remarks:
total fuel load for all 4 boilers (both stacks) was 170,000 LB/HR, 20% higher than optimum max. load.

Received By: B B Holder

sissippi Department of Natural Resour
Bureau of Pollution Control
Visible Emissions Evaluation Record

Plant Name: HERCULES, INC.
Address: P.O. Box 1937
City: HATTIESBURG
Emission Point: north boiler stack
Date: 9th DECEMBER 1983
Is emission point operation normal ? yes

V. E. Observer: HEIDI MOWERY
Certification Expiration: 4/84

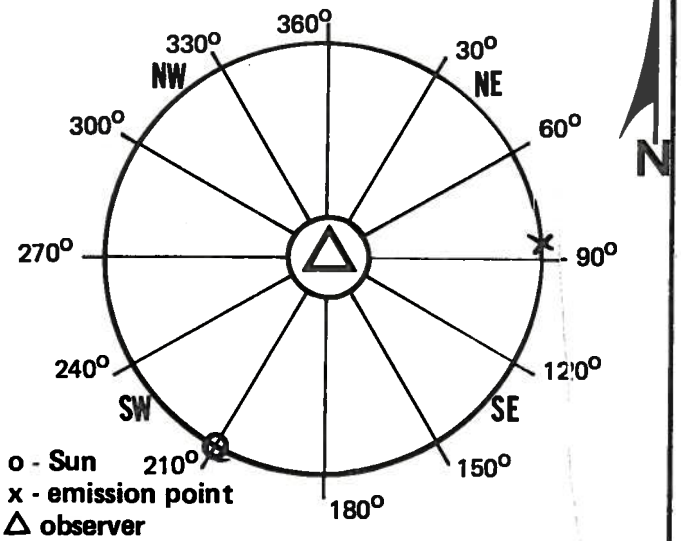
Set No.	Time		Opacity	
	Start	End	Sum	Average
1	1:47	1:53	750	31.25
2	1:53	1:59	835	34.79
3	1:59	2:05	810	33.75

Overall Average: 33.26 %

	Initial	Final
Distance to discharge	600'	
Direction to discharge	E	
Height of observation point	0'	
Height of discharge	200'	
Plume color	grey / brown-grey	
Plume background	sky	
Water vapor in plume ?	NO	
Wind direction (from)	S	
Wind speed	0-5 MPH	
Ambient temperature	70°	
Discharge temperature	—	
Sky conditions	clear	

	Seconds			
Min.	0	15	30	45
0	20	25	20	35
1	35	25	30	25
2	25	30	40	25
3	35	30	35	25
4	45	50	35	25
5	30	20	25	60
0	40	50	30	35
1	25	20	35	45
2	60	60	50	45
3	50	30	35	40
4	30	30	25	35
5	20	15	15	15
0	35	25	35	25
1	20	15	15	15
2	10	50	50	25
3	35	35	45	55
4	50	30	40	35
5	35	45	40	45

Diagram Of Observation/Discharge Point



Remarks: total fuel load for all 4 boilers (both stacks) was 170,000 LB/HR, 20% higher than optimum max. load.

Received By: B B Golden

sissippi Department of Natural Resour
Bureau of Pollution Control
Visible Emissions Evaluation Record

Plant Name: HERCULES, INC.
Address: P.O. BOX 1937
City: HATTIESBURG
Emission Point: north stack
Date: 9th november 1983
Is emission point operation normal ? yes

V. E. Observer: HEIDI MOWBRY
Certification Expiration: 4/84

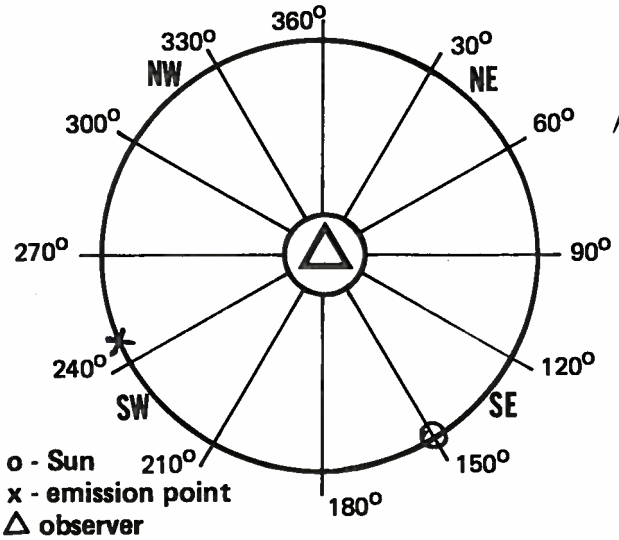
Set No.	Time		Opacity	
	Start	End	Sum	Average
1	11:26	11:32	260	10.8
2	11:32	11:38	310	12.9
3	11:38	11:44	245	10.2

Overall Average: 11.3%

	Initial	Final
Distance to discharge	600'	
Direction to discharge	SW	
Height of observation point	0'	
Height of discharge	200'	
Plume color	grey- ~~white~~	
Plume background	sky	
Water vapor in plume ?	NO	
Wind direction (from)	~~SE~~	
Wind speed	light	
Ambient temperature	70°	
Discharge temperature	—	
Sky conditions	cloudy	

Min.	Seconds 0	15	30	45
0	10	15	15	10
1	10	10	10	15
2	10	10	10	10
3	10	10	10	15
4	10	10	10	10
5	10	10	10	10
0	10	10	10	15
1	15	10	10	5
2	10	15	10	10
3	10	10	10	10
4	15	15	15	25
5	25	20	15	10
0	10	15	10	10
1	10	10	10	10
2	10	10	10	5
3	15	15	10	10
4	10	10	10	5
5	10	10	10	10

Diagram Of Observation/Discharge Point



Remarks:

Received By:

sissippi Department of Natural Resour
Bureau of Pollution Control
Visible Emissions Evaluation Record

Plant Name: Hercules, Inc.
Address: P.O. Box 1937
City: Hattiesburg
Emission Point: South Stack
Date: 9th november 1983
Is emission point operation normal ? yes

V. E. Observer: Heidi Mowery
Certification Expiration: 4/84

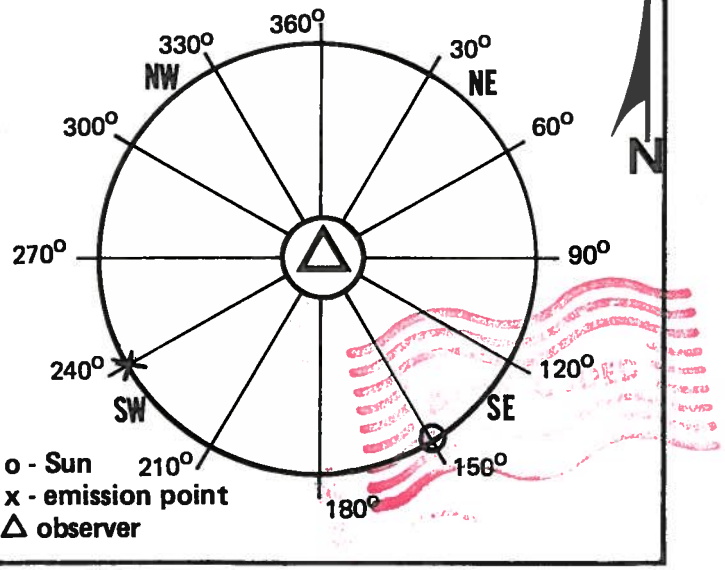
Set No.	Time		Opacity	
	Start	End	Sum	Average
1	11:26	11:32	1380	57.5
2	11:32	11:38	680	28.3
3	11:38	11:44	160	6.7

Overall Average: 30.8%

	Initial	Final
Distance to discharge	600'	
Direction to discharge	SW	
Height of observation point	60'	
Height of discharge	200'	
Plume color	grey-white	
Plume background	sky	
Water vapor in plume ?	No	
Wind direction (from)	E	
Wind speed	light	
Ambient temperature	70°	
Discharge temperature	—	
Sky conditions	cloudy	

Min.	Seconds 0	15	30	45
0	75	75	65	70
1	60	50	55	65
2	65	45	45	50
3	50	60	65	60
4	60	60	65	55
5	50	50	50	35
0	35	40	40	50
1	40	55	55	50
2	55	50	60	50
3	25	5	5	5
4	10	10	5	10
5	10	5	5	5
0	10	5	5	5
1	10	5	5	10
2	5	5	10	5
3	10	5	10	5
4	5	5	10	5
5	10	5	5	5

Diagram Of Observation/Discharge Point



Remarks: stack opacity ranging between 50%-75% approx. 15 min. prior to V.E.E #1.

opacity continued to be low 15min. after VEE #3.

Received By: B B Holden

sissippi Department of Natural Resou
Bureau of Pollution Control
Visible Emissions Evaluation Record

Plant Name: HERCULES, INC.
Address: P.O. Box 1937
City: HATTIESBURG
Emission Point: north and south stacks
Date: 7th November 1983
Is emission point operation normal ? _____

V. E. Observer: HEIDI MOWERY
Certification Expiration: 4/84

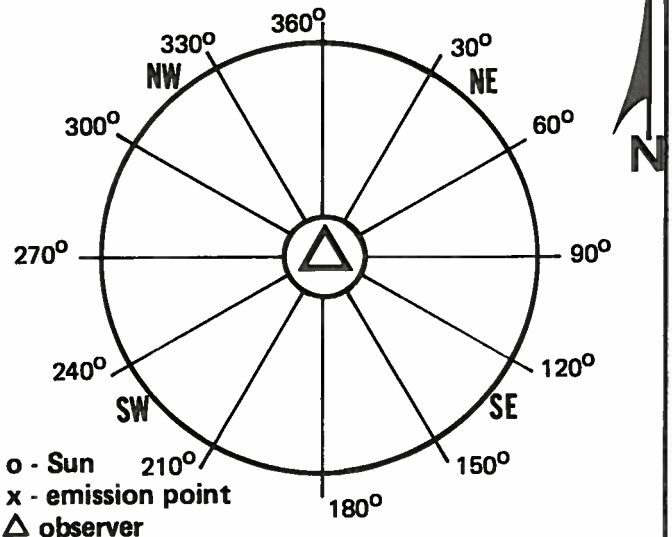
Set No.	Time		Opacity	
	Start	End	Sum	Average

Overall Average: stack opacities both 5% 10%

	Initial	Final
Distance to discharge		
Direction to discharge		
Height of observation point		
Height of discharge		
Plume color		
Plume background		
Water vapor in plume ?		
Wind direction (from)		
Wind speed		
Ambient temperature		
Discharge temperature		
Sky conditions		

Min.	Seconds 0	15	30	45
0				
1				
2				
3				
4				
5				
0				
1				
2				
3				
4				
5				
0				
1				
2				
3				
4				
5				

Diagram Of Observation/Discharge Point



Remarks: _____

Received By: B. B. Golden

Mississippi Department of Natural Resources
Bureau of Pollution Control
Visible Emissions Evaluation Record

Plant Name: Hercules, Inc.
Address: P.O. Box 1937
City: Hattiesburg
Emission Point: South stack
Date: 5th october 1983
Is emission point operation normal ? yes

V. E. Observer: Heidi Mowery
Certification Expiration: 10/83

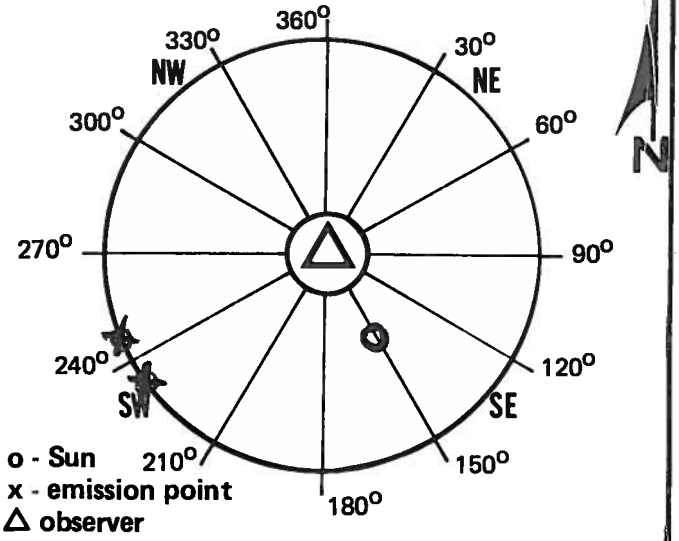
Set No.	Time		Opacity	
	Start	End	Sum	Average
1	11:22	11:28	2075	82.3
2	11:28	11:34	1375	57.3
3	11:34	11:40	625	26.0

Overall Average: 55.2%

	Initial	Final
Distance to discharge	625'	
Direction to discharge	SW	
Height of observation point	0'	
Height of discharge	200'	
Plume color	grey/black	
Plume background	sky	
Water vapor in plume ?	NO	
Wind direction (from)	NW	
Wind speed	light-moderate	
Ambient temperature	85°	
Discharge temperature	—	
Sky conditions	cloudy	

Min.	Seconds 0	15	30	45
0	75	70	70	60
1	80	60	65	80
2	80	90	85	100
3	100	100	100	100
4	95	90	85	90
5	100	100	100	100
0	85	90	85	75
1	75	80	75	65
2	75	95	50	50
3	50	45	40	40
4	45	45	35	35
5	35	40	35	30
0	25	25	30	30
1	25	25	30	30
2	30	25	30	25
3	25	20	25	25
4	20	25	30	25
5	25	25	25	25

Diagram Of Observation/Discharge Point



Remarks: odors were very strong in the vicinity of the plant.

Received By: B. B. Wallace

sissippi Department of Natural Resour
Bureau of Pollution Control
Visible Emissions Evaluation Record

Plant Name: Hercules, Inc.
Address: P.O. Box 1937
City: Hattiesburg
Emission Point: north stack
Date: 5th october 1983
Is emission point operation normal ? yes

V. E. Observer: Heidi Mowery
Certification Expiration: 10/83

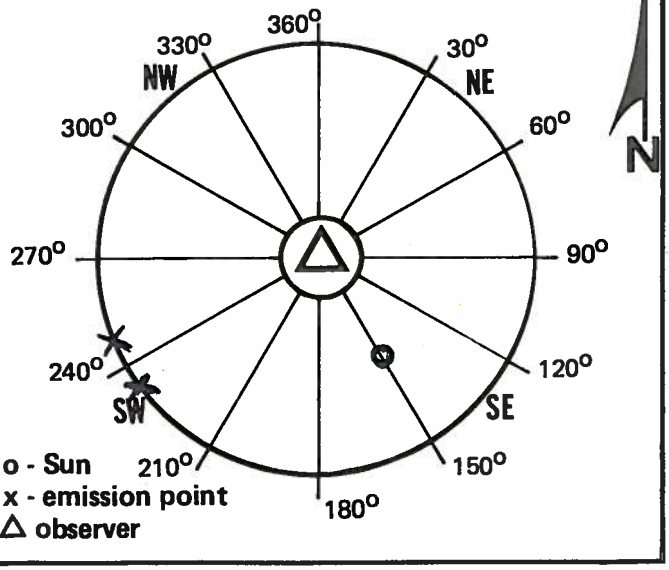
	Initial	Final
Distance to discharge	625'	
Direction to discharge	SW	
Height of observation point	0'	
Height of discharge	200'	
Plume color	grey	
Plume background	sky	
Water vapor in plume ?	NO	
Wind direction (from)	NW	
Wind speed	light-moderate	
Ambient temperature	85°	
Discharge temperature	—	
Sky conditions	cloudy	

Set No.	Time Start	Time End	Opacity Sum	Opacity Average
1	11:22	11:28	160	6.7
2	11:28	11:34	120	5.0
3	11:34	11:40	130	5.4

Overall Average: 5.4%

Min.	Seconds 0	15	30	45
0	10	10	10	10
1	5	5	10	10
2	10	10	5	5
3	5	5	5	5
4	5	5	5	5
5	5	5	5	5
0	5	5	5	5
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
0	5	5	5	5
1	5	5	5	5
2	5	5	5	5
3	5	5	5	5
4	5	5	5	5
5	5	10	10	5

Diagram Of Observation/Discharge Point



Remarks:

Received By: B. B. Holden

sissippi Department of Natural Resou
Bureau of Pollution Control
Visible Emissions Evaluation Record

Plant Name: Hercules, Inc.
Address: P.O. Box 1937
City: Hattiesburg
Emission Point: South Stack
Date: 9/15/83
Is emission point operation normal ? yes

V. E. Observer: Heidi Mowery
Certification Expiration: 10/83

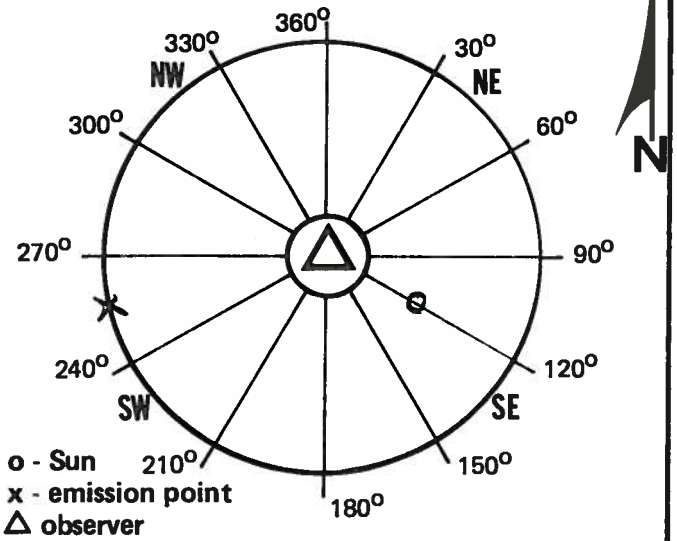
Set No.	Time		Opacity	
	Start	End	Sum	Average
4	11:34	11:40	1875	78.13
5	11:40	11:46	915	38.13
6	11:46	11:52	1115	46.46

Overall Average: 54.24 %

	Initial	Final
Distance to discharge	600'	
Direction to discharge	WSW	
Height of observation point	0'	
Height of discharge	200'	
Plume color	grey/brown/black	
Plume background	sky	
Water vapor in plume ?	no	
Wind direction (from)	SW	
Wind speed	light	
Ambient temperature	90°	
Discharge temperature	—	
Sky conditions	clear	

Min.	Seconds 0	15	30	45
0	75	80	80	80
1	50	65	100	100
2	90	100	85	80
3	75	75	90	75
4	75	90	85	85
5	85	85	65	35
0	45	40	25	45
1	40	25	35	35
2	30	35	30	30
3	40	40	40	60
4	75	60	20	20
5	15	10	10	10
0	15	40	50	50
1	70	100	100	70
2	25	40	40	60
3	50	55	65	30
4	25	25	30	30
5	35	35	25	50

Diagram Of Observation/Discharge Point



Remarks:

Received By: Charles Jordan /ps

sissippi Department of Natural Resou
Bureau of Pollution Control
Visible Emissions Evaluation Record

Plant Name: Hercules, Inc.
Address: P.O. Box 1937
City: Hattiesburg, MS
Emission Point: South Stack
Date: 9/15/83
Is emission point operation normal ? yes

V. E. Observer: Heidi Mowery
Certification Expiration: 10/83

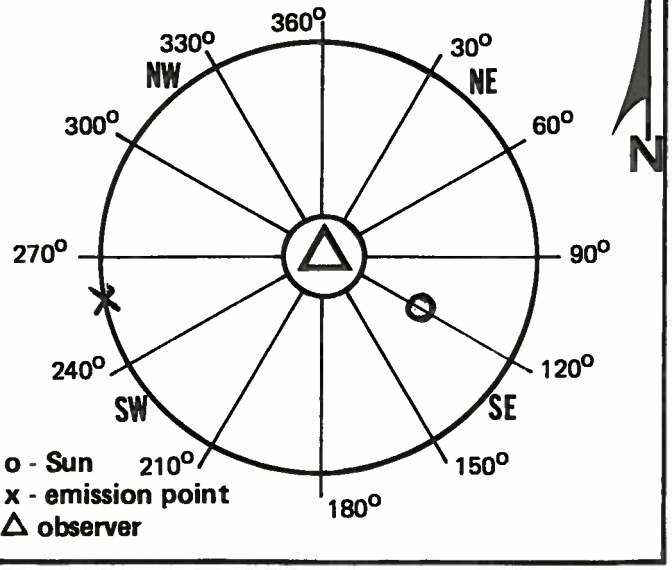
Set No.	Time		Opacity	
	Start	End	Sum	Average
1	11:10	11:16	465	19.38
2	11:16	11:22	710	29.58
3	11:22	11:28	1375	57.29

Overall Average: 35.42%

	Initial	Final
Distance to discharge	600'	
Direction to discharge	WSW	
Height of observation point	0'	
Height of discharge	200'	
Plume color	grey/brown	
Plume background	sky	
Water vapor in plume ?	no	
Wind direction (from)	SW	
Wind speed	light	
Ambient temperature	90°	
Discharge temperature	—	
Sky conditions	clear	

Min.	Seconds 0	15	30	45
0	15	20	50	45
1	35	25	30	25
2	20	15	15	20
3	20	15	15	15
4	10	5	10	10
5	20	10	10	10
0	15	10	10	15
1	10	10	35	30
2	55	45	25	15
3	45	20	50	35
4	35	35	20	20
5	20	30	55	70
0	60	60	55	60
1	50	60	85	85
2	85	75	80	75
3	70	55	50	40
4	50	30	35	55
5	60	35	25	40

Diagram Of Observation/Discharge Point



Remarks: South stack continued to have high emissions (- %) for approx. min. immediately after V.E.E. was conducted.

Received By: Charles Jordan/ps

ssissippi Department of Natural Resou
Bureau of Pollution Control
Visible Emissions Evaluation Record

Plant Name: Hercules, Inc.
Address: P.O. Box 1937
City: Hattiesburg
Emission Point: north stack
Date: 9/15/83
Is emission point operation normal ? yes

V. E. Observer: Heide Mowery
Certification Expiration: 10/83

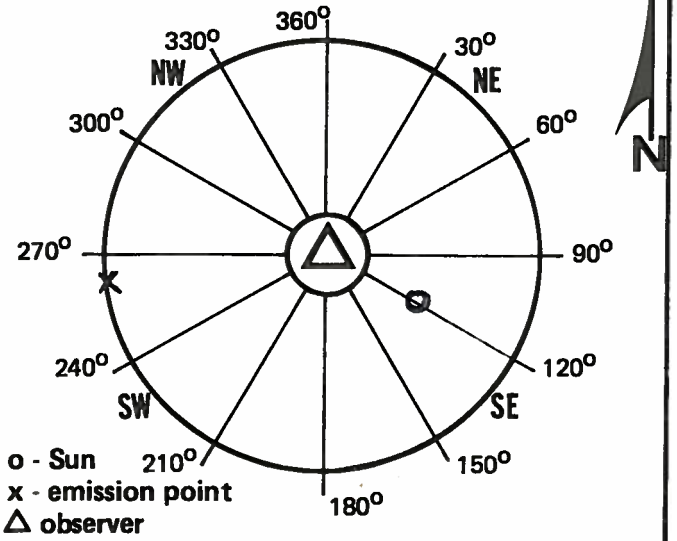
Set No.	Time		Opacity	
	Start	End	Sum	Average
4	11:34	11:40	445	18.54
5	11:40	11:46	1070	44.58
6	11:46	11:52	2075	86.42

Overall Average: 46.51 %

	Initial	Final
Distance to discharge	600'	
Direction to discharge	WSW	
Height of observation point	0'	
Height of discharge	200'	
Plume color	grey/grey-brown/white-brown	
Plume background	sky	
Water vapor in plume ?	no	
Wind direction (from)	SW	
Wind speed	light	
Ambient temperature	90°	
Discharge temperature	—	
Sky conditions	clear	

Min.	Seconds 0	15	30	45
0	10	10	15	10
1	10	10	15	10
2	10	20	15	10
3	15	10	25	25
4	25	25	20	25
5	25	25	25	55
0	45	20	40	55
1	40	30	50	50
2	50	35	20	50
3	30	40	55	30
4	25	25	60	60
5	75	55	65	60
0	90	90	75	70
1	70	70	70	70
2	85	65	75	75
3	85	85	100	100
4	100	100	100	100
5	100	100	100	100

Diagram Of Observation/Discharge Point



Remarks: north stack continued at 100% opacity for over 5 min. after V.E.E. #6.

Received By: Charles Jordan /ps

sissippi Department of Natural Resour
Bureau of Pollution Control
Visible Emissions Evaluation Record

Plant Name: Hercules, Inc.
Address: P.O. Box 1937
City: Hattiesburg
Emission Point: north stack
Date: 9/15/83
Is emission point operation normal ? yes

V. E. Observer: Heidi Mowery
Certification Expiration: 10/83

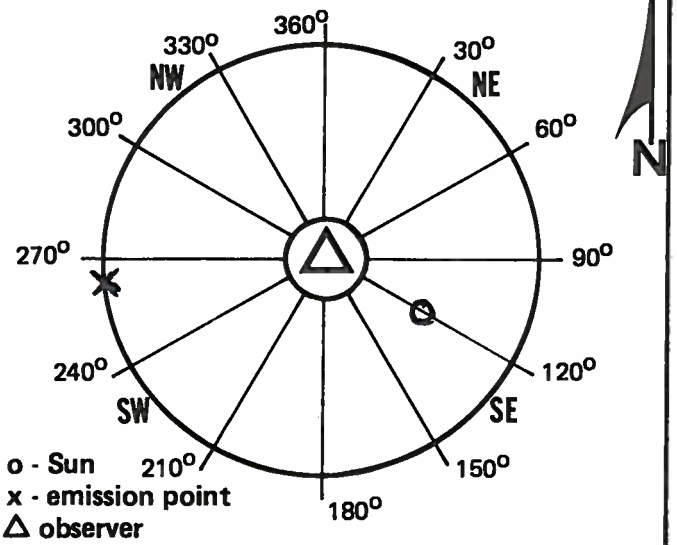
Set No.	Time		Opacity	
	Start	End	Sum	Average
1	11:10	11:16	425	17.71
2	11:16	11:22	435	18.13
3	11:22	11:28	555	23.0

Overall Average: 19.61%

	Initial	Final
Distance to discharge	600'	
Direction to discharge	WSW	
Height of observation point	0'	
Height of discharge	200'	
Plume color	grey/brown	
Plume background	sky	
Water vapor in plume ?	no	
Wind direction (from)	SW	
Wind speed	light	
Ambient temperature	90°	
Discharge temperature	—	
Sky conditions	clear	

	Seconds			
Min.	0	15	30	45
0	10	15	15	15
1	10	10	20	10
2	10	5	10	10
3	25	15	15	15
4	20	20	15	15
5	25	45	35	40
0	30	30	25	30
1	20	20	20	15
2	15	15	15	15
3	20	15	10	15
4	15	15	15	15
5	15	15	15	20
0	15	20	20	20
1	20	25	25	25
2	25	25	25	25
3	25	20	20	20
4	20	40	30	25
5	25	15	15	30

Diagram Of Observation/Discharge Point



Remarks:

Received By: Charles Jordan /ps

sissippi Department of Natural Resour
Bureau of Pollution Control
Visible Emissions Evaluation Record

Plant Name: HERCULES, INC.
Address: P.O. Box 1937
City: HATTIESBURG
Emission Point: north and south stacks
Date: 15 august 1983
Is emission point operation normal ? yes

V. E. Observer: HEIDI MOWERY
Certification Expiration: 10/83

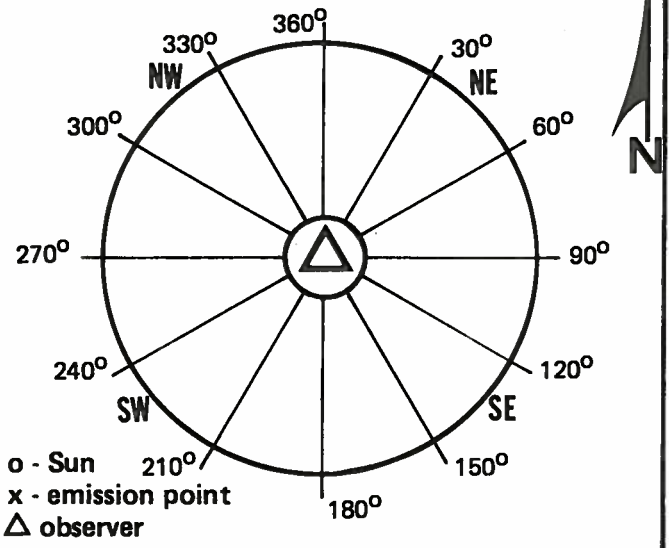
Set No.	Time		Opacity	
	Start	End	Sum	Average

Overall Average: 5-10% for 15 minutes

	Initial	Final
Distance to discharge		
Direction to discharge		
Height of observation point		
Height of discharge		
Plume color		
Plume background		
Water vapor in plume ?		
Wind direction (from)		
Wind speed		
Ambient temperature		
Discharge temperature		
Sky conditions		

Min.	Seconds 0	15	30	45
0				
1				
2				
3				
4				
5				
0				
1				
2				
3				
4				
5				
0				
1				
2				
3				
4				
5				

Diagram Of Observation/Discharge Point



Remarks:

Received By:

State of Mississippi
Air Pollution Control
PERMIT

TO OPERATE AIR EMISSIONS EQUIPMENT

THIS CERTIFIES THAT

Hercules
West 7th Street
Hattiesburg, Mississippi

has been granted permission to operate air emissions equipment in accordance with emission limitations, monitoring requirements and other conditions set forth herein. This permit is issued in accordance with the provisions of the Mississippi Air and Water Pollution Control Law (Section 49-17-1 et seq., Mississippi Code of 1972), and the regulations and standards adopted and promulgated thereunder.

Issued this 23rd day of August, 19 83

MISSISSIPPI POLLUTION CONTROL PERMIT BOARD

DIRECTOR, BUREAU OF POLLUTION CONTROL
MISSISSIPPI DEPARTMENT OF NATURAL RESOURCES

Expires 1st day of October, 19 86.

Permit No. 0800-00001

PART I
GENERAL CONDITIONS

1. All emissions authorized herein shall be consistent with the terms and conditions of this permit. The discharge of any air pollutant identified in this permit more frequently than or at a level in excess of that authorized shall constitute a violation of the permit. Any anticipated facility expansions or modifications which will result in new, different, or increased emission of air pollutants must be reported by submission of a new application.

2. The permittee shall at all times maintain in good working order and operate as efficiently as possible all air pollution control facilities or systems installed or used by the permittee to achieve compliance with the terms and conditions of this permit.

3. Solids removed in the course of control of air emissions shall be disposed of in a manner such as to prevent the solids from becoming windborne and to prevent the materials from entering state waters.

4. Any diversion from or bypass of collection and control facilities is prohibited except (i) where unavoidable to prevent loss of life or severe property damage or (ii) when approved by the Mississippi Department of Natural Resources Bureau of Pollution Control Permit Board.

5. Whenever any emergency, accidental or excessive discharge of air contaminants occurs, the office of the Mississippi Department of Natural Resources Bureau of Pollution Control shall be notified immediately of all information concerning cause of the discharge, point of discharge, volume and characteristics, and whether discharge is continuing or stopped.

6. Should the Executive Director of the Mississippi Department of Natural Resources declare an Air Pollution Emergency Episode, the permittee will be required to operate in accordance with the permittee's previously approved Emissions Reduction Schedule.

7. The permittee shall allow the Mississippi Department of Natural Resources Bureau of Pollution Control and the Mississippi Department of Natural Resources Bureau of Pollution Control Permit Board and/or their authorized representatives, upon the presentation of credentials:

   a. To enter upon the permittee's premises where an air emission source is located or in which any records are required to be kept under the terms and conditions of this permit; and

   b. At reasonable times to have access to and copy any records required to be kept under the terms and conditions of this permit; to inspect any monitoring equipment or monitoring method required in this permit; and to sample any air emission.

8. After notice and opportunity for a hearing, this permit may be modified, suspended, or revoked in whole or in part during its term for cause including, but not limited to:
   a. Violation of any terms or conditions of this permit;
   b. Obtaining this permit by misrepresentation or failure to disclose fully all relevant facts; or
   c. A change in any condition that required either a temporary or permanent reduction or elimination of authorized air emissions.

9. For renewal of this permit the applicant shall make application not less than one-hundred eighty (180) days prior to the expiration date of the permit substantiated with current emissions data, test results or reports or other data as deemed necessary by the Mississippi Department of Natural Resources Bureau of Pollution Control Permit Board.

10. Except for data determined to be confidential under the Mississippi Air and Water Pollution Control Law, all reports prepared in accordance with the terms of this permit shall be available for public inspection at the offices of the Mississippi Department of Natural Resources Bureau of Pollution Control.

11. The issuance of this permit does not convey any property rights in either real or personal property, or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of Federal, State or local laws or regulations.

12. Nothing herein contained shall be construed as releasing the permittee from any liability for damage to persons or property by reason of the installation, maintenance, or operation of the air cleaning facility, or from compliance with the applicable statutes of the State, or with local laws, regulations, or ordinances.

13. This permit is non-transferable.

14. This permit is for air pollution control purposes only.

PART II
EMISSION LIMITATIONS AND MONITORING REQUIREMENTS

During the period beginning August 23, 1983, and lasting until September 1, 1986, the permittee is authorized to operate air emissions equipment and emit air contaminants from the mill room, extractor house, refinery, still house, and pexite plant, Emission Point 001.

Such air emissions equipment shall be operated as efficiently as possible to provide the maximum reduction of air contaminants.

PART II
EMISSION LIMITATIONS AND MONITORING REQUIREMENTS

During the period beginning August 23, 1983, and lasting until September 1, 1986, the permittee is authorized to operate air emissions equipment and emit air contaminants from the Herchlor Plant, Emission Point 002.

Such air emissions equipment shall be operated as efficiently as possible to provide the maximum reduction of air contaminants.

PART II
EMISSION LIMITATIONS AND MONITORING REQUIREMENTS

During the period beginning August 23, 1983, and lasting until September 1, 1986, the permittee is authorized to operate air emissions equipment and emit air contaminants from the Delnav Plant, Emission Point 005.

Such air emissions equipment shall be operated as efficiently as possible to provide the maximum reduction of air contaminants.

PART II
EMISSION LIMITATIONS AND MONITORING REQUIREMENTS

During the period beginning August 23, 1983, and lasting until September 1, 1986, the permittee is authorized to operate air emissions equipment and emit air contaminants from the Poly-Pale Plant, Emission Point 006.

Such air emissions equipment shall be operated as efficiently as possible to provide the maximum reduction of air contaminants.