



Generation

Gert Sibande District Municipality
Corner of Joubert & Oosthuise Streets
Ermelo
2350

Attention:
Mr D Hlanyane

AND

Directorate: Air Quality Management Services
The Director:
Mr Vumile Senene
Department of Environmental Affairs
Private Bag X447
PRETORIA
0001
Tel: (012) 310 3263
Fax: (012) 320 0488

Date: 2024/02/05

Enquiries: Nomasono Nsibande

☎ +27 17 779 8995
☎ +27 86 507 5108

Enquiries: Thabo Montja

☎ +27 17 779 8834

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GROOTVLEI POWER STATION

Atmospheric Emission License GPS/0015/2015/F02



BOILER ENGINEERING MANAGER

2024/02/05

DATE



ENGINEERING MANAGER

05/02/2024

DATE



ENVIRONMENTAL MANAGER

05/02/2024

DATE

GROOTVLEI POWER STATION MONTHLY EMISSIONS REPORT

Atmospheric Emission License GPS/0015/2015/F02



1 RAW MATERIALS AND PRODUCTS

Raw Materials and Products	Raw Material Type	Units	Maximum Permitted Consumption Rate	Consumption Rate Jan-2024
	Coal	Tons	650 000	71 361.0
Fuel Oil	Tons	20 000	1392.18	
Production Rates	Product / By-Product Name	Units	Maximum Production Capacity Permitted	Indicative Production Rate Jan-2024
	Energy	GWh	833.28	108.51
	Ash	Tons	300 000	17 990
	RE PM	kg/MWh	not specified	0.02

Note: Maximum energy production is calculated as: $(190\text{MW} \times 4 \text{ Units} + 180\text{MW} \times 2 \text{ Units}) \times 24\text{hrs} \times \text{Days in month} / 1000 = \text{GWh}$.

2 ENERGY SOURCE CHARACTERISTICS

Coal Characteristic	Units	Stipulated Range	Monthly Average Content
CV Content	MJ/kg	18-24	20.15
Sulphur Content	%	0.6 to < 1.2	0.63
Ash Content	%	27 to < 32	25.21

3 EMISSION LIMITS (mg/Nm³)

Associated Unit/Stack	PM	SO ₂	NO
North	100	3500	1100
South	50	3500	1100

4 ABATEMENT TECHNOLOGY (%)

Associated Unit/Stack	Technology Type	Efficiency
Unit 1	Fabric Filter Plant (FFP)	99.961%
Unit 2	Fabric Filter Plant (FFP)	99.992%
Unit 3	Fabric Filter Plant (FFP)	Unit Off-line
Unit 4	Fabric Filter Plant (FFP)	Unit Off-line
Unit 5	Fabric Filter Plant (FFP)	Unit Off-line
Unit 6	Fabric Filter Plant (FFP)	Unit Off-line

Note: Abatement plant does not have bypass mode operation, hence plant 100% Utilised.

5 MONITOR RELIABILITY (%)

Associated Unit/Stack	PM	SO ₂	NO	O ₂
North	100.0	0.0	0.0	0.0
South				

Note: NO_x emissions is measured as NO in PPM. Final NO_x value is expressed as total NO₂

6 EMISSION PERFORMANCE

Table 6.1: Monthly tonnages for the month of January-2024

Associated Unit/Stack	PM (tons)	SO ₂ (tons)	NO _x (tons)
Unit 1	1.04	154.9	62.7
Unit 2	1.67	668.3	254.7
Unit 3	0.00	0.0	0.0
Unit 4	0.00	0.0	0.0
Unit 5	0.00	0.0	0.0
Unit 6	0.00	0.0	0.0
SUM	2.71	823.2	317.4

Table 6.2: Operating days in compliance to PM AEL Limit - January 2024

Associated Unit/Stack	Normal	Grace	Section 30	Total Exceedance	Average PM (mg/Nm ³)
North	23	0	0	0	4.0
South	0	0	0	0	
SUM	23	0	0	0	

Table 6.3: Operating days in compliance to SO₂ AEL Limit - January 2024





Associated Unit/Stack	Normal	Grace	Section 30	Total Exceedance	Average SO ₂ (mg/Nm ³)
North	26	0	0	0	1 405.9
South	0	0	0	0	
SUM	26	0	0	0	

Table 6.4: Operating days in compliance to NO_x AEL Limit - January 2024

Associated Unit/Stack	Normal	Grace	Section 30	Total Exceedance	Average NO _x (mg/Nm ³)
North	26	0	0	0	526.7
South	0	0	0	0	
SUM	26	0	0	0	

Note: NO_x emissions is measured as NO in PPM. Final NO_x value is expressed as total NO₂

Table 6.5: Legend Description

Condition	Colour	Description
Normal		Emissions below Emission Limit Value (ELV)
Grace		Emissions above the ELV during grace period
Section 30		Emissions above ELV during a NEMA S30 incident
Contravention		

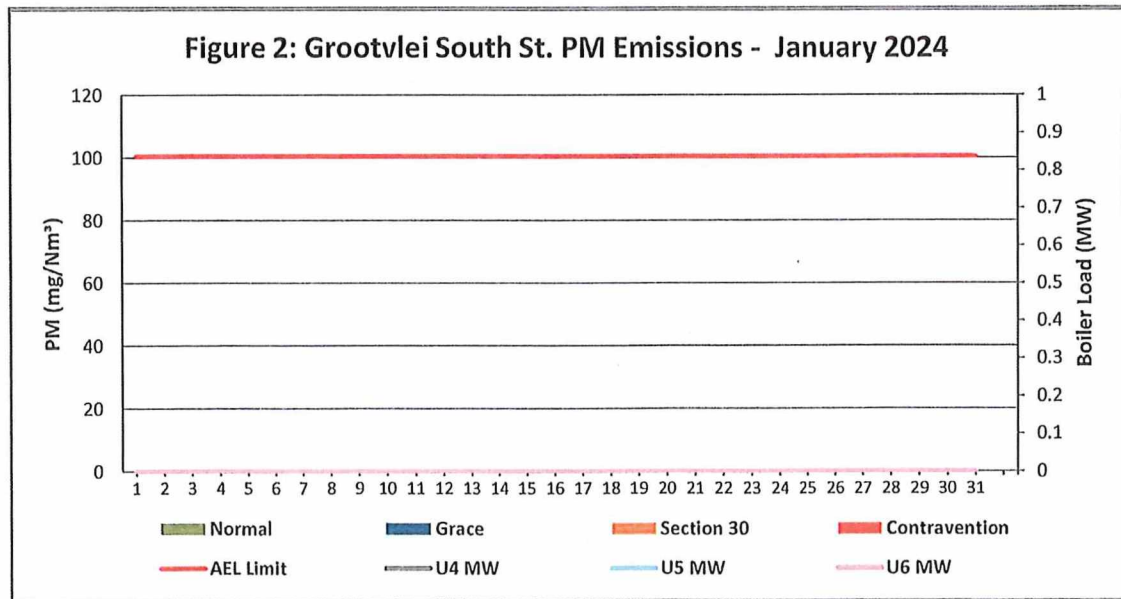
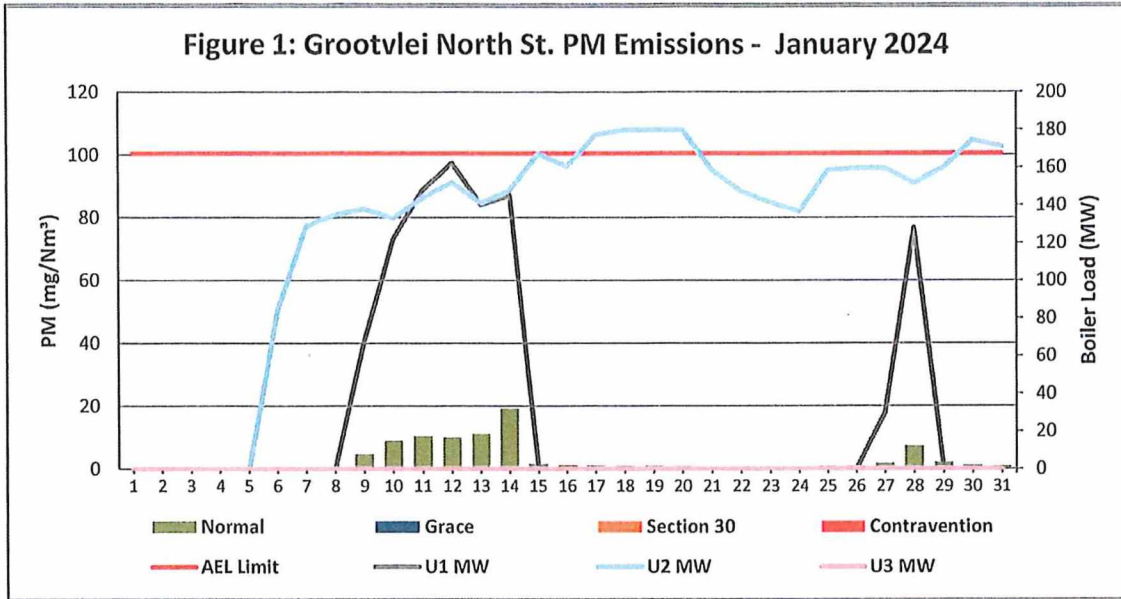


Figure 3: Grootvlei North St. SO₂ Emissions - January 2024

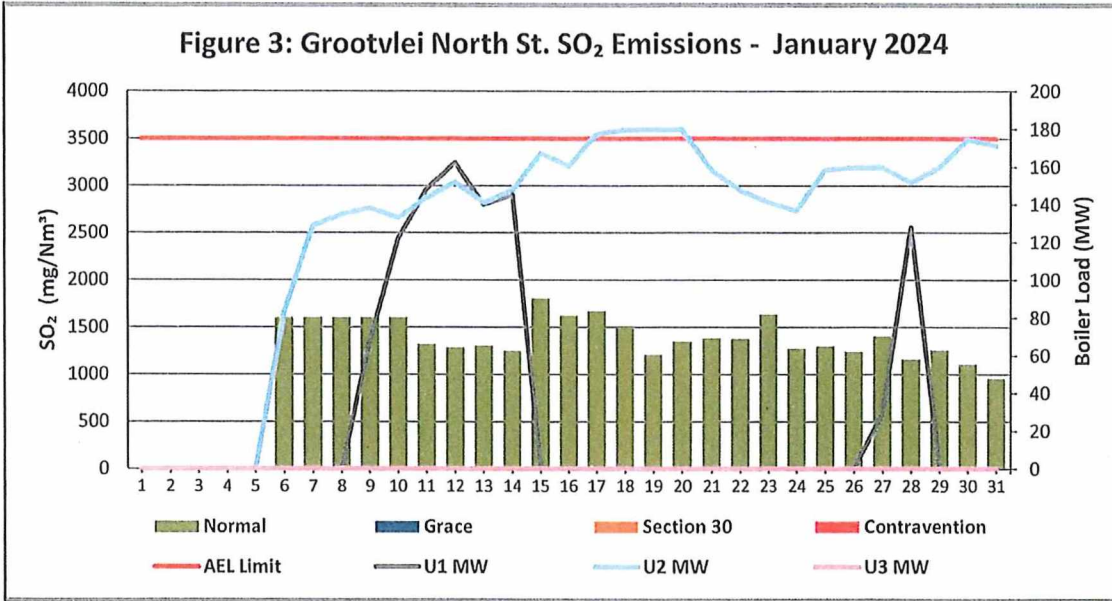
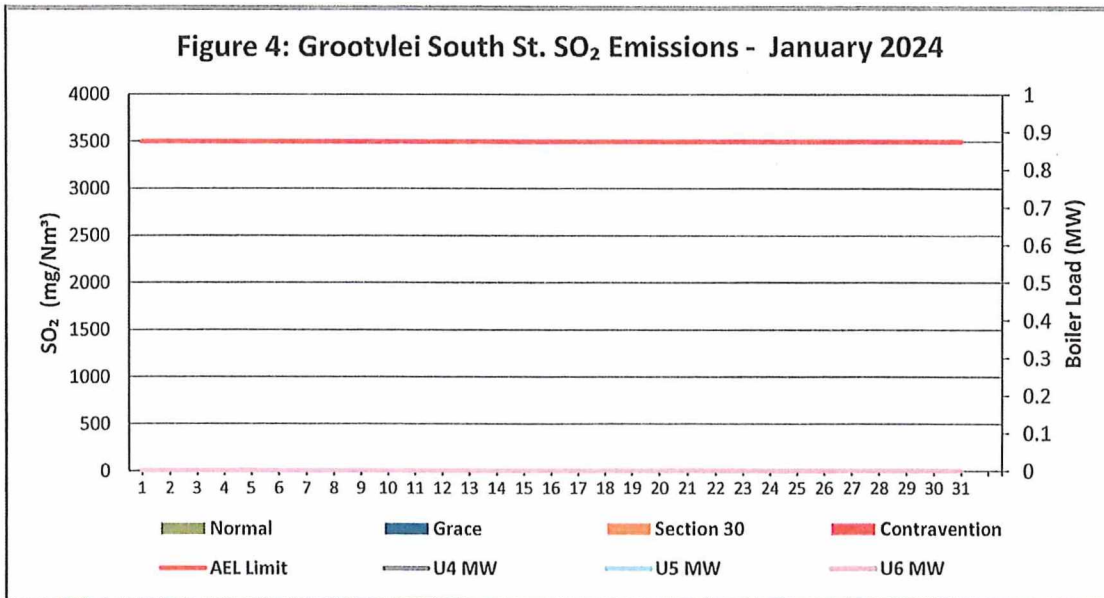
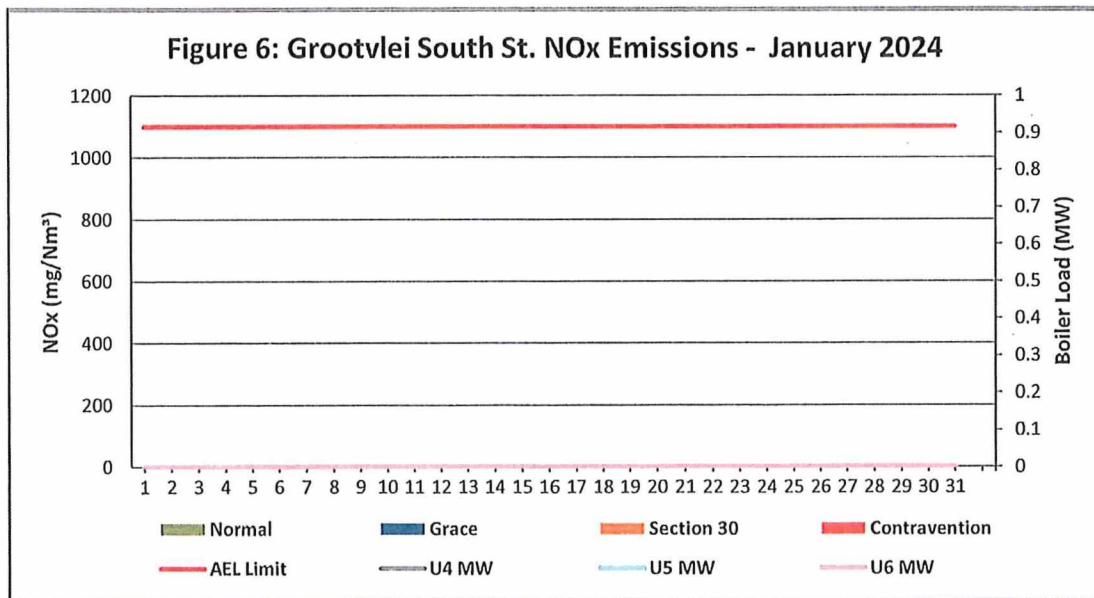
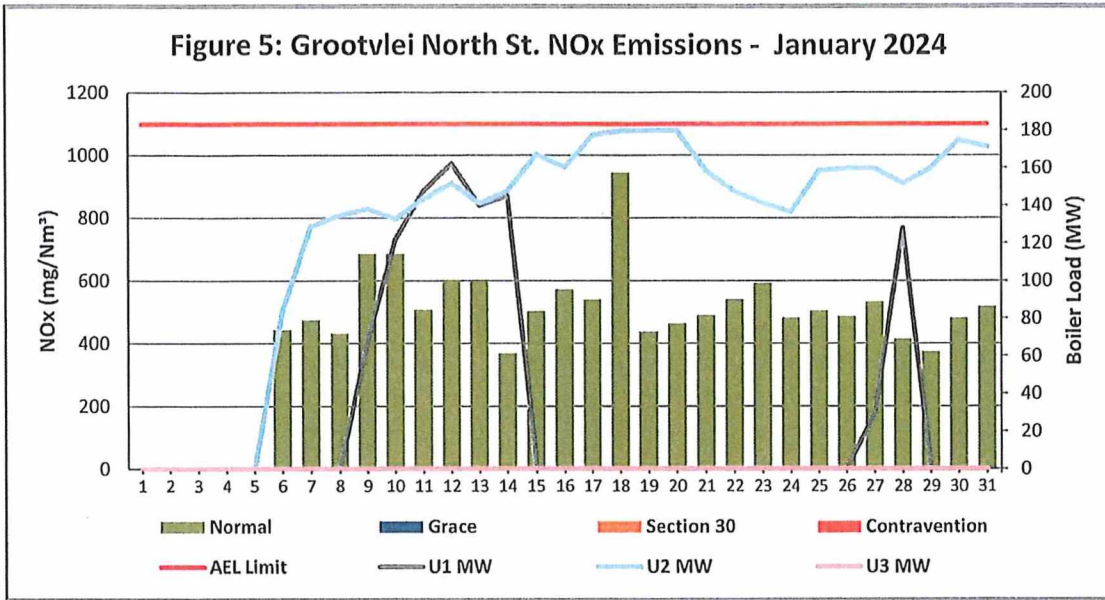


Figure 4: Grootvlei South St. SO₂ Emissions - January 2024





7 SHUT DOWN AND LIGHT UP INFORMATION

Table 7.1. PM Start-up information for the month of January-2024

North Stack	Event 1		Event 2		Event 3		Event 4	
Unit No.	Unit 2		Unit 1		Unit 1		Unit 1	
Breaker Open (BO)	<i>BO previously</i>	<i>BO previously</i>	<i>BO previously</i>	<i>BO previously</i>	<i>11:25 pm</i>	<i>2024/01/14</i>	<i>11:05 pm</i>	<i>2024/01/28</i>
Draught Group (DG) Shut Down (SD)	<i>n/a</i>	<i>n/a</i>	<i>n/a</i>	<i>n/a</i>	<i>7:45 am</i>	<i>2024/01/16</i>	<i>DG did not trip or SD</i>	<i>DG did not trip or SD</i>
BO to DG SD (duration)	<i>n/a</i>	<i>DD:HH:MM</i>	<i>n/a</i>	<i>DD:HH:MM</i>	<i>01:08:20</i>	<i>DD:HH:MM</i>	<i>n/a</i>	<i>DD:HH:MM</i>
Fires in time	<i>12:10 pm</i>	<i>2024/01/05</i>	<i>2:35 pm</i>	<i>2024/01/07</i>	<i>1:10 am</i>	<i>2024/01/27</i>		
Synch. to Grid (or BC)	<i>4:05 am</i>	<i>2024/01/08</i>	<i>5:50 am</i>	<i>2024/01/09</i>	<i>10:25 pm</i>	<i>2024/01/27</i>		
Fires in to BC (duration)	<i>02:15:55</i>	<i>DD:HH:MM</i>	<i>01:15:15</i>	<i>DD:HH:MM</i>	<i>00:21:15</i>	<i>DD:HH:MM</i>		<i>DD:HH:MM</i>
Emissions below limit from BC (end date)	<i>not > limit</i>	<i>not > limit</i>	<i>not > limit</i>	<i>not > limit</i>	<i>not > limit</i>	<i>not > limit</i>		
Emissions below limit from BC (duration)	<i>n/a</i>	<i>DD:HH:MM</i>	<i>n/a</i>	<i>DD:HH:MM</i>	<i>n/a</i>	<i>DD:HH:MM</i>		<i>DD:HH:MM</i>

North Stack ...Cont.	Event 5		Event 6		Event 7		Event 8	
Unit No.	<i>no event</i>		<i>no event</i>		<i>no event</i>		<i>no event</i>	
Breaker Open (BO)								
Draught Group (DG) Shut Down (SD)								
BO to DG SD (duration)		<i>DD:HH:MM</i>		<i>DD:HH:MM</i>		<i>DD:HH:MM</i>		<i>DD:HH:MM</i>
Fires in time								
Synch. to Grid (or BC)								
Fires in to BC (duration)		<i>DD:HH:MM</i>		<i>DD:HH:MM</i>		<i>DD:HH:MM</i>		<i>DD:HH:MM</i>
Emissions below limit from BC (end date)								
Emissions below limit from BC (duration)		<i>DD:HH:MM</i>		<i>DD:HH:MM</i>		<i>DD:HH:MM</i>		<i>DD:HH:MM</i>

South Stack	<i>Event 1</i>		<i>Event 2</i>		<i>Event 3</i>		<i>Event 4</i>	
Unit No.	<i>no event</i>		<i>no event</i>		<i>no event</i>		<i>no event</i>	
Breaker Open (BO)								
Draught Group (DG) Shut Down (SD)								
BO to DG SD (duration)		DD:HH:MM		DD:HH:MM		DD:HH:MM		DD:HH:MM
Fires in time								
Synch. to Grid (or BC)								
Fires in to BC (duration)		DD:HH:MM		DD:HH:MM		DD:HH:MM		DD:HH:MM
Emissions below limit from BC (end date)								
Emissions below limit from BC (duration)		DD:HH:MM		DD:HH:MM		DD:HH:MM		DD:HH:MM

South Stack ...Cont.	<i>Event 5</i>		<i>Event 6</i>		<i>Event 7</i>		<i>Event 8</i>	
Unit No.	<i>no event</i>		<i>no event</i>		<i>no event</i>		<i>no event</i>	
Breaker Open (BO)								
Draught Group (DG) Shut Down (SD)								
BO to DG SD (duration)		DD:HH:MM		DD:HH:MM		DD:HH:MM		DD:HH:MM
Fires in time								
Synch. to Grid (or BC)								
Fires in to BC (duration)		DD:HH:MM		DD:HH:MM		DD:HH:MM		DD:HH:MM
Emissions below limit from BC (end date)								
Emissions below limit from BC (duration)		DD:HH:MM		DD:HH:MM		DD:HH:MM		DD:HH:MM

7.2: Point Source emissions released during start-up (fires-in) and Shut-down (SD) for the month of January-2024 in mg/Nm³

[Include reference to once off test showing typical emissions rates during fires in and SD]



ADDENDUM TO MONTHLY EMISSIONS REPORT

8 EMERGENCY GENERATION

Emergency Generation *[This is only required for stations that are requested to report on this information]*

Table 8. Emergency Generation per unit for the month of January-2024

	Unit 1	Unit 2	Unit 3	Unit 4	Unit 5	Unit 6
Emergency Generation hours declared by national Control						
Emergency Hours declared including hours after stand down						
Hours over the Limit during Emergency Generation						

9 COMPLAINTS REGISTER

Table 9. Complaints for the month of January-2024

Source Code / Name	Root Cause Analysis	Calculation of Impacts / emissions associated with the incident	Dispersion modeling of pollutants where applicable	Measures implemented to prevent reoccurrence	Date measure will be implemented
<i>(Insert name of affected person/source)</i>	<i>(Insert root cause for incident)</i>	<i>(Insert emissions associated with incident)</i>	<i>(Insert dispersion model information where applicable)</i>	<i>(Insert mitigation measures taken)</i>	<i>(Insert date of implementation of mitigation method)</i>

10 S30 INCIDENT OR LEGAL CONTRAVENTION REGISTER

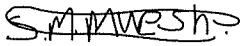
To be completed in the case of a S30 incident or a legal contravention:

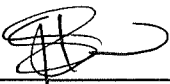
Unit no	Incident Start Date	Incident End Date	Incident Cause	Remedial action	Date S30 initial notification sent	Date S30 investigation report sent	Date DEA Acknowledg-ment	Date DEA Acceptable	Comments / Reference No.

11 General

South Stack off. Surrogate values are employed for gaseous reporting data while we await the availability of two units.


Environmental Department 2024/02/05
Date


Boiler Engineering 2024/02/05
Date


General Manager 2024/02/09
Date

Compiled by: Boiler Engineering Department

FFP System Engineer

For: Department of Environmental Affairs and Tourism Chief Air Pollution Control Officer

Copies: Eskom Environmental Management

D Herbst
K Langerman

Group Technology Engineering

R Rampiar
E. Patel

Grootvlie Power Station:

Engineering Manager
Operating Manager
Maintenance Manager
Unit Production Manager
Boiler Engineering Manager
System Engineer
Environmental Officer
Performance and Test
Production Manager

