LA-UR-08-05152

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Title:	Semi-Annual Monitoring Report January 1 - June 30, 2008 Air Quality Operating Permit P100M2 Los Alamos National Laboratory
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Intended for:	Compliance Reporting Manager New Mexico Environment Department - Air Quality Bureau 1301 Siler Road, Building B Santa Fe, New Mexico 87507

Los Alamos
NATIONAL LABORATORY
EST.1943

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Form 836 (7/06)

Title V Semi - Annual Monitoring Report for Permit P100M2

Part 1 – Monitoring Activity Reporting Requirements

4.0 REPORTING

Conditions of 4.0 are pursuant to 20.2.70.302.E NMAC.

4.1 Reports of actual emissions from permitted sources in Section 2.0 shall be submitted on a 6 month basis. Reports shall not include emissions from insignificant activities. Emission estimates of criteria pollutants NOx, CO, SO_2, PM and VOCs shall not include fugitive emissions. Emission estimates of HAPs shall include fugitive emissions. The reports shall include a comparison of actual emissions that occurred during the reporting period with the facility-wide allowable emission limits specified in Section 2.10 of this permit.

4.2 Reports of all required monitoring activities shall be submitted on a semiannual basis. All instances of deviation from permit requirements, including emergencies, shall be clearly identified in these reports. The conditions of 4.1 and 4.2 are pursuant to 20.2.70.302.E.1 NMAC.

4.3 The report required by Condition 4.1 shall be submitted within 90 days from the end of the reporting period. The semiannual report required by Condition 4.2 shall be submitted within 45 days from the end of the reporting period. The reporting periods are January 1st to June 30th and July 1st to December 31st. This condition is pursuant to 20.2.70.302.E.1 NMAC.

4.4 The permittee shall submit reports of all deviations (including emergencies) from permit requirements to the Department when they occur. The permittee shall communicate initial notice of the deviation to the Department within twenty-four (24) hours of the start of the first business day following the start of the occurrence via telephone or facsimile. Within ten (10) calendar days of the start of the first business day following the start of the occurrence, written notice using the Excess Emissions Form (attached to this permit) shall be submitted to the Department. This condition is pursuant to 20.2.70.302.E.2. NMAC.

Specific Monitoring Reports:

2.1 Asphalt Production

2.1.4 Emissions Monitoring Requirements

2.1.4.1 Perform monthly six (6) minute opacity readings for each emission point having opacity greater than zero as determined by EPA Method 22.

2.1.4.2 Monitor the differential pressure (inches of water) across the baghouse by the use of a differential pressure gauge, in accordance with condition IV.C.2 of NSR permit number GCP-3-2195G.

2.1.4.3 40 CFR Part 60, Appendix A, Method 9 shall be used to determine compliance with the opacity limitation.

Reporting Requirement

2.1.6 Reports shall be submitted in accordance with conditions 4.1 and 4.2.

4.1 Reports of actual emissions from permitted sources in Section 2.0 shall be submitted on a 6 month basis. Reports shall not include emissions from insignificant activities. Emission estimates of criteria pollutants NOx, CO, SO_2, PM and VOCs shall not include fugitive emissions. Emission estimates of HAPs shall include fugitive emissions. The reports shall include a comparison of actual emissions that occurred during the reporting period with the facility-wide allowable emission limits specified in Section 2.10 of this permit.

4.2 Reports of all required monitoring activities shall be submitted on a semiannual basis. All instances of deviation from permit requirements, including emergencies, shall be clearly identified in these reports. The conditions of 4.1 and 4.2 are pursuant to 20.2.70.302.E.1 NMAC.

Has this reporting requirement been met during this reporting period with a separate report submittal? Answer Yes or No below.

☐ **Yes** **Date report submitted:** **Tracking Number:**

☒ **No** **Provide comments and identify any supporting documentation as an attachment.**

Comments:

2.1.4.1 See **Attachment 1** for monthly opacity reports. Monthly six minute opacity readings are taken using the required EPA Methods.

2.1.4.2 A differential pressure gauge is in place to continuously monitor the differential pressure across the baghouse as required by NSR permit GCP-3-2195G condition IV.C.2. The differential pressure is recorded twice each day during operations. This is consistent with NSR permit GCP-3-2195G condition IV.D.2(e). Records are available on-site for NMED inspection.

2.1.4.3 LANL has certified opacity readers on-site who perform opacity readings using 40 CFR 60, Appendix A, Method 9 to determine compliance with the opacity limitation.

Attachment 1
Asphalt Plant Opacity Reports

Summary Table, Reports Attached

Month	Read Location	Date	Time	Average Opacity	EPA Method
January	Top of Shaker	01/15/08	9:07 am	0	9 [(a)]
February	Top of Shaker	02/12/08	8:46 am	0	9 [(a)]
March	Top of Shaker	03/05/08	8:34 am	0	9 [(a)]
April	Top of Shaker	04/01/08	8:42 am	0	9 [(a)]
May	Top of Shaker	05/13/08	8:40 am	0	9 [(a)]
June	Top of Shaker	06/03/08	12:55 pm	0	9 [(a)]

(a) EPA Method 9 was used. Average opacity for the Asphalt Plant is the sum of the highest consecutive 24 readings divided by 24 (6 minutes of readings). The method is in accordance with 20.2.61 NMAC and conditions 2.1.4.1 and 2.1.4.3 of the Los Alamos National Laboratory (LANL) Operating Permit P100M2.

Los Alamos

LOS ALAMOS NATIONAL LABORATORY (LANL)
VISIBLE EMISSION OBSERVATION FORM (6 MINUTE)

Source Name: LANL Asphalt Plant

Source Location: TA-60 (Sigma Mesa)

Type of Source: Asphalt Plant

Type of Control Equipment: Baghouse

Describe Emission Point (Top of stack, etc.): TOP OF SHAKER STACK

Height Above Ground Level: 45 Feet

Height Relative to Observer: 45 Feet

Distance From Observer: 55 Feet

Direction of Source From Observer: NW

Description of Plume (stack exit only)
☐Lofting ☐Trapping ☐Looping ☐Fanning ☐Coning
☒No Plume Present

Emission Color: NO Emission

Plume Type: ☒No Plume Present ☐Continuous ☐Fugitive ☐Intermittent

Water Droplets Present?
☒NO ☐YES If YES, droplet plume is ☐Attached ☐Detached

At what point in the plume was opacity determined?
2 ft. ABOVE TOP OF STACK

Describe Background (i.e. blue sky, trees, etc.): Blue sky

Background Color: Blue

Sky Conditions: Clear

Wind Speed: 2 to 4 mph

Wind Direction (provide from/to, i.e. from North to South): from NE

Ambient Temperature: 23 °F

Relative Humidity: 49 %

Additional Comments/Information:
All emission points clear

Observation Date: 1-15-08

Start Time: 0907

End Time: 0913

Min \ Sec	0	15	30	45	Comments
1	0	0	0	0	
2	0	0	0	0	
3	0	0	0	0	
4	0	0	0	0	
5	0	0	0	0	
6	0	0	0	0	
7					
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19					
20					

Average 6-Minute Opacity: 0%

Range of Opacity Readings: Min. 0% Max. 0%

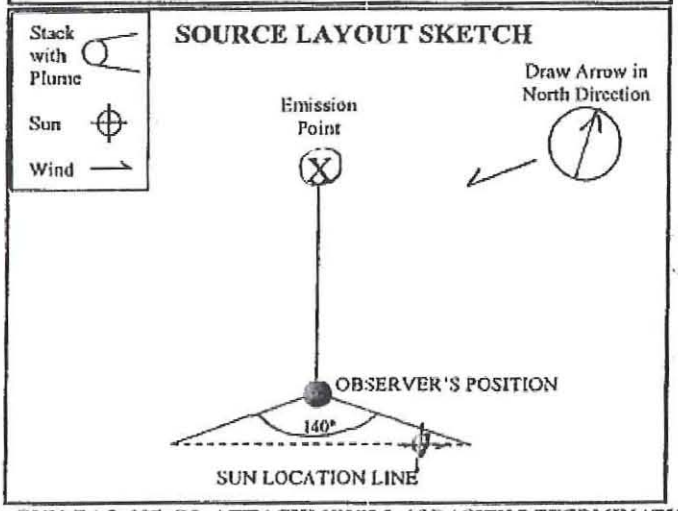
OBSERVER (please print)
Name: Don Stone Title: Engineer

Signature: Don Stone Date: 1-15-08

Observer Organization: KSL

Certified by: EJA Certification Date: 8-29-07

SOURCE LAYOUT SKETCH



ENV-EAQ-307, R3, ATTACHMENT 2 *(OPACITY DETERMINATION AND EXCESS EMISSIONS REPORTING)*

Los Alamos

LOS ALAMOS NATIONAL LABORATORY (LANL)
VISIBLE EMISSION OBSERVATION FORM (6 MINUTE)

Source Name:	LANL Asphalt Plant
Source Location:	TA-60 (Sigma Mesa)
Type of Source	Asphalt Plant
Type of Control Equipment	Baghouse
Describe Emission Point (Top of stack, etc.)	Top of shaker stack
Height Above Ground Level	43 Feet
Height Relative to Observer	45 Feet
Distance From Observer	65 Feet
Direction of Source From Observer	NW

Description of Plume (stack exit only)
☐Lofting ☐Trapping ☐Looping ☐Fanning ☐Coning
☒No Plume Present

Emission Color: No emission
Plume Type: ☒No Plume Present ☐Continuous ☐Fugitive ☐Intermittent

Water Droplets Present?
☐NO ☒YES If YES, droplet plume is ☐Attached ☒Detached

At what point in the plume was opacity determined?
1 ft. above top of stack

Describe Background (i.e. blue sky, trees, etc.)
Blue sky

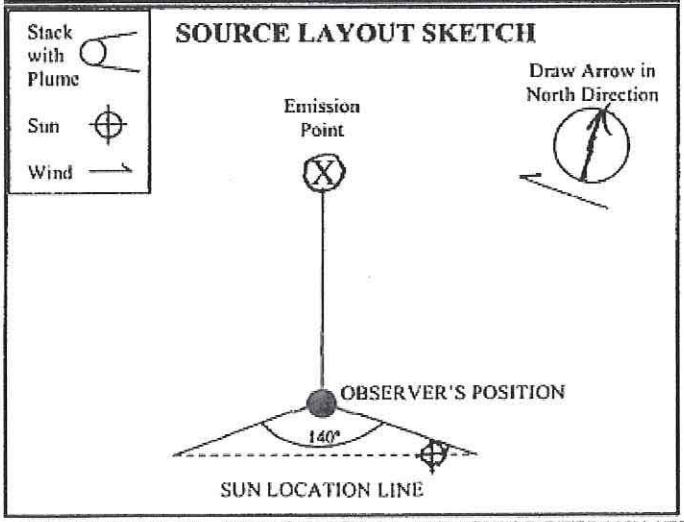
Background Color: Blue
Sky Conditions: clear

Wind Speed: 3-5 mph
Wind Direction (provide from/to, i.e. from North to South): from ESE

Ambient Temperature: 30 °F
Relative Humidity: 62 %

Additional Comments/Information:
All emission points clear

SOURCE LAYOUT SKETCH



Observation Date	Start Time	End Time
2-12-08	0846	0852

Min \ Sec	0	15	30	45	Comments
1	0	0	0	0	
2	0	0	0	0	
3	0	0	0	0	
4	0	0	0	0	
5	0	0	0	0	
6	0	0	0	0	
7					
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17					
18					
19					
20					

Average 6-Minute Opacity: 0%	Range of Opacity Readings: Min. 0% Max. 0%
OBSERVER (please print) Name: Don Stone	Title: Engineer
Signature: Don Stone	Date: 2-12-08
Observer Organization: KSL	
Certified by: ETA	Certification Date: 8-29-07

ENV-EAQ-307, R3, ATTACHMENT 2 (*OPACITY DETERMINATION AND EXCESS EMISSIONS REPORTING*)

Los Alamos

LOS ALAMOS NATIONAL LABORATORY (LANL)
VISIBLE EMISSION OBSERVATION FORM (6 MINUTE)

Source Name: LANL ASPHALT PLANT

Source Location: TA-60 (Sigma Mesa)

Type of Source: Asphalt Plant | Type of Control Equipment: Baghouse

Describe Emission Point (Top of stack, etc.): Top of Shaker Stack

Height Above Ground Level: 45 Feet | Height Relative to Observer: 45 Feet

Distance From Observer: 70 Feet | Direction of Source From Observer: NW

Description of Plume (stack exit only)
☐Lofting ☐Trapping ☐Looping ☐Forming ☐Coning
☒No Plume Present

Emission Color: N/A | Plume Type: ☒No Plume Present ☐Continuous ☐Fugitive ☐Intermittent

Water Droplets Present?
☒NO ☐YES If YES, droplet plume is ☐Attached ☐Detached

At what point in the plume was opacity determined?
2 ft. above top of stack

Describe Background (i.e. blue sky, trees, etc.): Blue Sky

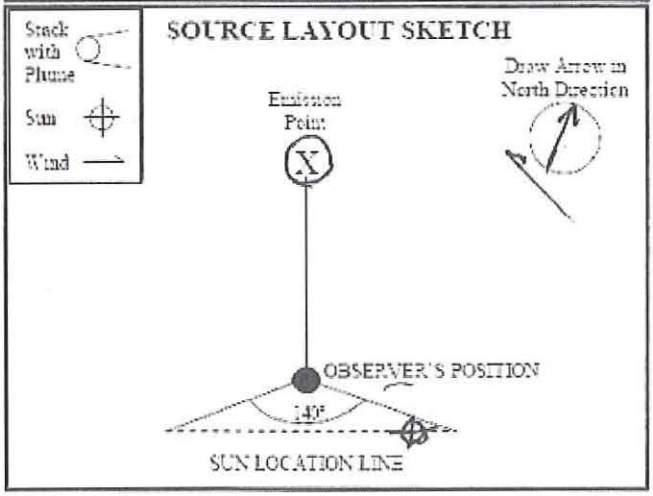
Background Color: Blue | Sky Conditions: Clear

Wind Speed: 3-5 mph | Wind Direction (provide from to, i.e. from North to South): From ESE

Ambient Temperature: 33 °F | Relative Humidity: 39 %

Additional Comments/Information:
All emission points clear

SOURCE LAYOUT SKETCH



Observation Date: 3-5-08 | Start Time: 0834 | End Time: 0839 (40 ~~45~~)

Min \ Sec	0	15	30	45	Comments
1	0	0	0	0	
2	0	0	0	0	
3	0	0	0	0	
4	0	0	0	0	
5	0	0	0	0	
6	0	0	0	0	
7					
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17					
18					
19					
20					

Average 6-Minute Opacity: 0%

Range of Opacity Readings: Min. 0% Max. 0%

OBSERVER (please print)
Name: Don Stone | Title: Engineer
Signature: Don Stone | Date: 3-5-08
Observer Organization: KSL
Certified by: STA | Certification Date: 3-27-08

THIS FORM IS FROM EAQ-307, R4

Los Alamos

LOS ALAMOS NATIONAL LABORATORY (LANL)
VISIBLE EMISSION OBSERVATION FORM (6 MINUTE)

Source Name: LANL ASPHALT PLANT

Source Location: TA-60 (SIGMA MESA)

Type of Source: ASPHALT PLANT

Type of Control Equipment: BAGHOUSE

Describe Emission Point (Type of Stack, etc.): TOP OF SHAKER STACK

Height Above Ground Level: 45 Feet

Height Relative to Observer: 45 Feet

Distance From Observer: 70 Feet

Direction of Source From Observer: NW

Describe Emissions (Stack exit only):
☐Colorless ☐Steaming ☐Looping ☐Fanning ☐Curling
☒No Plume Present

Emission Color: N/A

Plume Type: ☒No Plume Present ☐Continuous ☐Fugitive ☐Intermittent

Water Droplet Present:
☒NO ☐YES WHEN droplet present: ☐Attached ☐Detached

At what point in the plume was opacity determined?
6' ft above top of stack

Describe Background (e.g. blue sky, trees, etc.):
Blue sky

Background Color: Blue

Sky Conditions: Clear

Wind Speed: 5-10 mph

Wind Direction (provide degrees, i.e. from North to South): From S

Ambient Temperature: 40°F

Relative Humidity: 46%

Additional Comments/Information:
All emission points clear

Observation Date	Start Time	End Time
4-1-08	0842	0848

Min \ Sec	0	15	30	45	Comments
1	0	0	0	0	
2	0	0	0	0	
3	0	0	0	0	
4	0	0	0	0	
5	0	0	0	0	
6	0	0	0	0	
7					
8					
9					
10					
11					
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14					
15					
16					
17					
18					
19					
20					

Average 6-Minute Opacity: 0%

Range of Opacity Readings: Min. 0% Max. 0%

OBSERVER (please print)

Name: Don Stone

Title: Engineer

Signature: Don Stone

Date: 4-1-08

Observer Organization: KSL

Certified by: ETA

Certification Date: 02-27-08

SOURCE LAYOUT SKETCH

Stack with Plume

Sun

Wind

Draw Arrow in North Direction

Emission Point

OBSERVER'S POSITION

140°

SUN LOCATION LINE

THIS FORM IS FROM EAQ-307, R4

Los Alamos

LOS ALAMOS NATIONAL LABORATORY (LANL)
VISIBLE EMISSION OBSERVATION FORM (6 MINUTE)

Source Name: LANL ASPHALT PLANT

Source Location: TA-60 (Sigma Mesa)

Type of Source: Asphalt Plant

Type of Control Equipment: Baghouse

Describe Emission Point (Top of stack, etc.): Top of shaker stack

Height Above Ground Level: 45 Feet

Height Relative to Observer: 45 Feet

Distance From Observer: 60 Feet

Direction of Source From Observer: NW

Description of Plume (stack exit only)
☐Looping ☐Fanning ☐Coning
☒No Plume Present

Emission Color: N/A

Plume Type: ☒No Plume Present ☐Continuous ☐Fugitive ☐Intermittent

Water Droplets Present?
☒NO ☐YES If YES, droplet plume is ☐Attached ☐Detached

At what point in the plume was opacity determined?
2' Ft. above top of stack

Describe Background (i.e. blue sky, trees, etc.): Blue sky

Background Color: Blue

Sky Conditions: Scattered clouds

Wind Speed: 4-7 mph

Wind Direction (provide from to, i.e. from North to South): From ~~ESE~~ SSW WSW

Ambient Temperature: 48 °F

Relative Humidity: 33%

Additional Comments Information: ALL EMISSION POINTS CLEAR

Observation Date	Start Time	End Time
5-13-08	0840	0846

Min \ Sec	0	15	30	45	Comments
1	0	0	0	0	
2	0	0	0	0	
3	0	0	0	0	
4	0	0	0	0	
5	0	0	0	0	
6	0	0	0	0	
7					
8					
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10					
11					
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13					
14					
15					
16					
17					
18					
19					
20					

Average 6-Minute Opacity: 0%

Range of Opacity Readings: Min. 0% Max. 0%

OBSERVER (please print)
Name: Don Stone Title: Engineer

Signature: Don Stone Date: 5-13-08

Observer Organization: KSL

Certified by: FTA Certification Date: 2-27-08

SOURCE LAYOUT SKETCH

Stack with Plume
Sun
Wind

Draw Arrow in North Direction

Emission Point

OBSERVER'S POSITION

140°

SUN LOCATION LINE

THIS FORM IS FROM EAQ-307, R4

Los Alamos

LOS ALAMOS NATIONAL LABORATORY (LANL)
VISIBLE EMISSION OBSERVATION FORM (6 MINUTE)

Source Name: LANL Asphalt Plant

Source Location: TA-60 (Sigma Mesa)

Type of Source: Asphalt Plant

Type of Control Equipment: Baghouse

Describe Emission Point (Top of stack, etc.): Top of shaker stack

Height Above Ground Level: 45 Feet

Height Relative to Observer: 45 Feet

Distance From Observer: 60 Feet

Direction of Source From Observer: NW

Description of Plume (check one only):
☐Looping ☐Trapping ☐Lapping ☐Fanning ☐Coning
☒No Plume Present

Emission Color: N/A

Plume Type: ☒No Plume Present ☐Continuous ☐ Fugitive ☐Intermittent

Water Droplets Present:
☒NO ☐YES, YES, droplet plume is ☐Attached ☐Detached

At what point in the plume was opacity determined? 6 ft. above top of stack

Describe Background (i.e. blue sky, trees, etc.): Blue Sky

Background Color: Blue

Sky Conditions: Clear

Wind Speed: 10-15 mph

Wind Direction (provide from to, i.e. from North to South): From W

Ambient Temperature: 73 F

Relative Humidity: 13 %

Additional Comments/Information: All emission points clear

Observation Date: 6-3-08

Start Time: 1255

End Time: 1301

Min \ Sec	0	15	30	45	Comments
1	0	0	0	0	
2	0	0	0	0	
3	0	0	0	0	
4	0	0	0	0	
5	0	0	0	0	
6	0	0	0	0	
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14					
15					
16					
17					
18					
19					
20					

Average 6-Minute Opacity: 0 %

Range of Opacity Readings: Min. 0 % Max. 0 %

OBSERVER (please print)

Name: Don Stone

Title: Engineer

Signature: Don Stone

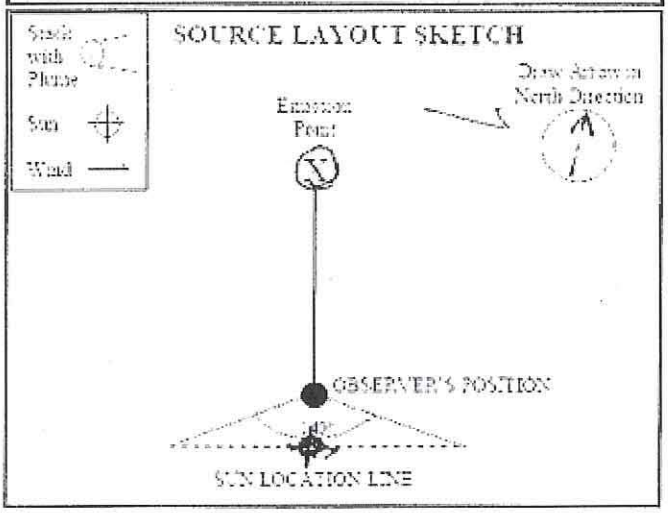
Date: 6-3-08

Observer Organization: KSL

Certified by: ETA

Certification Date: 2-27-08

SOURCE LAYOUT SKETCH



THIS FORM IS FROM EAQ-307, R4

2.2 Beryllium Activities

Source	Monitoring Required
Chemistry and Metallurgy Research Facility TA-3-29	A log shall be maintained during operations which indicates the number of Be samples processed.
Sigma Facility TA-3-66	A log shall be maintained during operations which shows the number of metallographic specimens used in the polishing operation and the weight of Be samples processed in the electroplating/chemical milling, machining, and arc melting/casting operations.
Beryllium Test Facility TA-3-141	Facility exhaust stack will be equipped with a continuous emission monitor used to measure beryllium emissions. Cartridge and HEPA filters will be equipped with differential pressure gauges that measure the differential pressure across the cartridge and HEPA filters while the exhaust fans are in operation.
TA-16-207	Project files shall be maintained of components prepared for testing.
TA-35-87	A log shall be maintained during operations which shows the number of beryllium filters cut.
Target Fabrication Facility TA-35-213	Records of the stack emission test results (see Condition 2 of NSR Permit No. 632) and other data needed to determine total emissions shall be retained at the source and made available for inspection by the Department.
Plutonium Facility TA-55-PF4	The HEPA filtration systems shall be equipped with a differential pressure gauge that measures the differential pressure (inches of water) across the HEPA filters while the exhaust fans are in operation. Control efficiency shall be verified by daily HEPA filter pressure drop tests and annual HEPA filter challenge tests of accessible filters.

Reporting Requirement

Source	Reporting Required
Chemistry and Metallurgy Research Facility TA-3-29	See condition 4.2.
Sigma Facility TA-3-66	See condition 4.2.
Beryllium Test Facility TA-3-141	Anticipated date of initial startup of each new or modified source not less than thirty (30) days prior to the date. Actual date of initial startup of each new or modified source within fifteen (15) days after the startup date. Provide the date when each new or modified emission source reaches the maximum production rate at which it will operate within fifteen (15) days after that date. Notify the Department within 60 days after each calendar quarter of the facility's compliance status with the

	permitted emission rate from the continuous monitoring system. Provide any data generated by activities described in the Quality Assurance Plan (QAP) that will assist the Air Quality Bureau's Enforcement Section in determining the reliability of the methodology used for demonstrating compliance with the permitted emission rate within 45 days of such a request.
TA-16-207	See condition 4.2.
TA-35-87	See condition 4.2.
Target Fabrication Facility TA-35-213	See conditions 4.1 and 4.2.
Plutonium Facility TA-55-PF4	Stack emission test results and facility operating parameters will be made available to Department personnel upon request. Reports may be required to be submitted to the Department if inspections of the source indicate noncompliance with this permit or as a means of determining compliance.

4.1 Reports of actual emissions from permitted sources in Section 2.0 shall be submitted on a 6 month basis. Reports shall not include emissions from insignificant activities. Emission estimates of criteria pollutants NOx, CO, SO_2, PM and VOCs shall not include fugitive emissions. Emission estimates of HAPs shall include fugitive emissions. The reports shall include a comparison of actual emissions that occurred during the reporting period with the facility-wide allowable emission limits specified in Section 2.10 of this permit.

4.2 Reports of all required monitoring activities shall be submitted on a semiannual basis. All instances of deviation from permit requirements, including emergencies, shall be clearly identified in these reports. The conditions of 4.1 and 4.2 are pursuant to 20.2.70.302.E.1 NMAC.

Has this reporting requirement been met during this reporting period with a separate report submittal? Answer Yes or No below.

☒ **Yes** **Date report submitted:** January 22, 2008 & April 28, 2008 **Tracking Number:** SBR20080004

☐ **No** **Provide comments and identify any supporting documentation as an attachment.**

Comments:

Chemistry and Metallurgy Research Facility (TA-3-29) – This beryllium source was removed from Operating Permit P100M1 as requested by LANL. A letter from NMED-AQB amending the permit was dated July 16, 2007. This amendment resulted in the assignment of Operating Permit No. P100M2.

Sigma Facility (TA-3-66) - A log is maintained showing the number of metallographic specimens used in the polishing operation. Logs are maintained showing the weight of Be samples processed in the electroplating/chemical milling, machining, and arc melting/casting operations. Logs are available on-site for NMED inspection.

Beryllium Test Facility (TA-3-141) - The BTF is equipped with a continuous emissions monitor to measure beryllium emissions. The monitoring system is operated in accordance with LANL Quality Assurance Project Plans and emission results are provided to NMED quarterly. Submissions for this period were

provided to NMED in reports dated January 22, 2008 [ENV-EAQ:08-020] and April 28, 2008 [ENV-EAQ:08-105]. Cartridge and HEPA filters are equipped with differential pressure gauges that measure the differential pressure across the cartridge and HEPA filters while the exhaust fans are in operation.

TA-16-207 - Project files are maintained of components prepared for testing. Files are available on-site for NMED inspection.

TA-35-87 - A log is maintained showing the number of beryllium filters cut. The log is available on-site for NMED inspection.

Target Fabrication Facility (TA-35-213) - Records of stack emission test results are maintained on-site and are available for NMED inspection. Stack emission test results are used to determine total emissions from this facility.

Plutonium Facility (TA-55-PF4) - The HEPA filtration systems are equipped with differential pressure gauges that measure the differential pressure across the HEPA filters while the exhaust fans are in operation. Control efficiency is verified by daily HEPA filter pressure drop readings. Readings are recorded in the TA-55 Operations Center. Annual HEPA filter challenge tests of accessible filters are performed. Test results are summarized in **Attachment 2**.

Attachment 2
Beryllium HEPA Filter Tests Results

Summary Table, Reports Attached

Unit	Date	Pass/Fail
TA-55 (H-5-1430) (FF-852)	06/03/2008	Pass
TA-55 (H-5-1440) (FF-853)	06/03/2008	Pass

100 AREA GLOVEBOX EXHAUST IN-PLACE HEPA FILTER TESTING

ATTACHMENT A
100 Area Glovebox Exhaust FF-852 Data Sheet

Date: 06/03/08 (8.4.1) LAS Calibration Expiration Date: 05/01/09 (8.4.3) Diluter Calibration Expiration Date: 04/03/09 (8.4.4) Dilution Ratio: 2.91 (8.4.2)

Step Number	Item	FF-852
9.1.12.2	Background concentration (part./cc)	~~2.510 x10^4~~ 3.119 x10^-3 part. concentration
9.1.12.3	Upstream concentration (part./cc)	2.510 x10^6 part. concentration
9.1.12.4	Challenge aerosol concentration between 2.00 x10^6 and 2.71 x10^6 part./cc	MMT Initials
9.1.12.5	1st stage downstream concentration (part./cc)	6.325 x10^1 part. concentration
9.1.12.6	2nd/3rd stage downstream concentration (part./cc)	3.531 x10^-3 part. concentration
9.1.12.7	1st stage Penetration ≤ 5.0 x10^-4 (efficiency ≥ 99.95%)	2.519 x10^-5
9.1.12.8	2nd/3rd stage Penetration ≤ 2.5 x10^-7 (efficiency ≥ 99.999975%)	5.628 x10^-9
9.1.13.3 9.1.13.4	Ensure all test port ball valves are closed and capped.	MMT Initials / PT Independent Verification

Valve	Required Position	Initials	Independent Verification
HV-852-H	Closed and Locked	MMT	PT
HV-852-G	Closed	MMT	PT
HV-852-F	Closed	MMT	PT
HV-852-D	Closed	MMT	PT
HV-852-C	Closed	MMT	PT
HV-852-B	Closed	MMT	PT
HV-852-A	Closed	MMT	PT
HV-852-AA	Closed	MMT	PT

FOR INFORMATION ONLY

Comments: MMT 6/4/08 Stop and Record ~~2352~~ 2336 step 9.19.6 "up" key inadvertently pressed. Reviewed 2352 9.1.13

Surveillance Personnel: Signature / Date 06/04/08 — OC On-duty Supervisor: Signature / Date 6/6/08

Notify CSE that complete and accepted surveillance is available for review.

System Engineer		6/11/08
	Signature	Date

RECEIVED JUN 26 2008

100 AREA GLOVEBOX EXHAUST IN-PLACE HEPA FILTER TESTING

ATTACHMENT B
100 Area Glovebox Exhaust FF-853 Data Sheet

Date: 06/10/08 (8.4.1) LAS Calibration Expiration Date: 05/30/08 (8.4.3) Diluter Calibration Expiration Date: 04/30/08 (8.4.4) Dilution Ratio: 9 (8.4.2)

Step Number	Item	FF-853
9.2.12.2	Background concentration (part./cc)	3.53 x 10^{-3} part. concentration
9.2.12.3	Upstream concentration (part./cc)	2.470 x 10^{6} part. concentration
9.2.12.4	Challenge aerosol concentration between 2.00 x10^{6} and 2.71 x x10^{6} part./cc)	Initials
9.2.12.5	1st stage downstream concentration (part./cc)	1.30 x 10^{2} part. concentration
9.2.12.6	2nd/3rd stage downstream concentration (part./cc)	1.165 x 10^{-1} part. concentration
9.2.12.7	1st stage Penetration ≤ 5.0 x10^{-4} (efficiency ≥ 99.95%)	4.866 x 10^{-5}
9.2.12.8	2nd/3rd stage Penetration ≤ 2.5 x10^{-7} (efficiency ≥ 99.999975%)	4.514 x 10^{-8}
9.2.13.3 9.2.13.4	Ensure all test port ball valves are closed and capped.	Initials / Independent Verification: PT

Valve	Required Position	Initials	Independent Verification
HV-853-H	Closed and Locked		PT
HV-853-G	Closed		PT
HV-853-F	Closed		PT
HV-853-D	Closed		PT
HV-853-C	Closed		PT
HV-853-B	Closed		PT
HV-853-A	Closed		PT
HV-852-AA	Closed		PT

FOR INFORMATION ONLY

Comments: Step and recover at 2155 Step 9.2.17 HV-853-AA is incorrect should read HV-852-AA recover at 2200 Step 9.2.17

Surveillance Personnel Signature / Date: 06/10/08 — OC On-duty Supervisor Signature / Date: 6/6/08

Notify CSE that complete and accepted surveillance is available for review.

System Engineer		6/11/08
	Signature	Date

RECEIVED JUN 26 2008

2.3 Boilers and Heaters

2.3.4 Emissions Monitoring Requirements

2.3.4.1 Emission units TA-21-357-1, TA-21-357-2, and TA-21-357-3: A volumetric flow meter shall be utilized to measure the total amount of natural gas being used on a monthly basis.

2.3.4.2 Emission units TA-55-6-BHW-1 and TA-55-6-BHW-2: A volumetric flow meter shall be utilized to measure the total amount of natural gas being used on a monthly basis.

2.3.4.3 40 CFR Part 60, Appendix A, Method 9 shall be used to determine compliance with the opacity limitation.

Reporting Requirement

2.3.6 Reports shall be submitted in accordance with conditions 4.1 and 4.2.

4.1 Reports of actual emissions from permitted sources in Section 2.0 shall be submitted on a 6 month basis. Reports shall not include emissions from insignificant activities. Emission estimates of criteria pollutants NOx, CO, SO_2, PM and VOCs shall not include fugitive emissions. Emission estimates of HAPs shall include fugitive emissions. The reports shall include a comparison of actual emissions that occurred during the reporting period with the facility-wide allowable emission limits specified in Section 2.10 of this permit.

4.2 Reports of all required monitoring activities shall be submitted on a semiannual basis. All instances of deviation from permit requirements, including emergencies, shall be clearly identified in these reports. The conditions of 4.1 and 4.2 are pursuant to 20.2.70.302.E.1 NMAC.

Has this reporting requirement been met during this reporting period with a separate report submittal? Answer Yes or No below.

☐ **Yes** **Date report submitted:** **Tracking Number:**

☒ **No** **Provide comments and identify any supporting documentation as an attachment.**

Comments:

2.3.4.1 The TA-21 Steam Plant was officially and permanently shut-down as of September 28, 2007. This information was communicated to NMED in a letter dated October 16, 2007.

2.3.4.2 Volumetric flow meters are utilized to measure the total amount of natural gas being used by units TA-55-6-BHW-1 and TA-55-6-BHW-2 on a monthly basis. Natural gas usage is summarized in **Attachment 3**.

2.3.4.3 LANL uses 40 CFR Part 60, Appendix A, Method 9 to determine compliance with the opacity limitation.

Attachment 3
Boilers and Heaters Natural Gas Usage

2008 Small Boilers Data Entry / Gas Use

		Metered Boilers						
		TA-55 Boiler Gas Use (MSCF)[c]		TA-50-2[d] (MSCF)	Total Gas Use[a]		Non-Metered Gas Use	12-Month Rolling Total for all Small Boilers (MMSCF)[e]
	Month	BHW-1B (B-602)	BHW-2B (B-603)	BS-1	(MSCF)	(MMSCF)	(MMSCF)	
Data Entry	January	3441	2		84,295	84.30	80.85	504.67
	February	2075	8		65,795	65.80	63.71	504.27
	March	1788	2		55,027	55.03	56.24	507.94
	April	1175	951		40,942	40.94	38.82	504.67
	May	528	959		28,334	28.33	26.92	503.64
	June	505	1340	1.2	17,402	17.40	15.56	507.41
	July							
	August							
	September							
	October							
	November							
	December							
	TOTAL	9510	3292	1.2	294,798	294.80	281.99	Permit Limit = 870

2008 Non Metered Boiler Pool Capacity:	305.3	MMBTU/hr[f]
Estimated Gas-Use per MMBtu rating Jan-June:	0.92	MMscf/MMBtu/hr
Estimated Gas-Use per MMBtu rating July-Dec:	0.00	MMscf/MMBtu/hr
Estimated Gas-Use per MMBtu - Annual	0.92	MMscf/MMBtu/hr

Definitions: MMSCF= Million Standard Cubic Feet
MSCF = Thousand Standard Cubic Feet
Metered/Non-metered: Metered boilers are those units that have unit specific volumetric flow meters for the boiler(s) only.

Gas Use Non-Metered[g] (MMSCF)									
AIRS Stack #	015	016	017	018	019	020	021	024	Units[h]
Location:	TA-48-1	TA-48-1	TA-48-1	TA-53-365	TA-53-365	TA-59-1	TA-59-1	TA-16-1484	Lab Wide
ID:	BS-1	BS-2	BS-6	BHW-1	BHW-2	BHW-1	BHW-2	Plant 6	Various
Design Rate[f] (MMBTU/hr)	5.336	5.335	7.140	7.115	7.115	5.335	5.335	12.700	250
Calculated Gas Use-Jan-June	4.929	4.928	6.595	6.571	6.571	4.928	4.928	11.731	230.813
Calculated Gas Use-July-Dec	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Calculated Gas Use-Annual	4.929	4.928	6.595	6.571	6.571	4.928	4.928	11.731	230.813

2.4 Carpenter Shops

2.4.4 Emissions Monitoring

2.4.4.1 The permittee shall maintain logs of the hours the carpenter shops are in operation.

Reporting Requirement

2.4.6 Reports shall be submitted in accordance with conditions 4.1 and 4.2.

4.1 Reports of actual emissions from permitted sources in Section 2.0 shall be submitted on a 6 month basis. Reports shall not include emissions from insignificant activities. Emission estimates of criteria pollutants NOx, CO, SO_2, PM and VOCs shall not include fugitive emissions. Emission estimates of HAPs shall include fugitive emissions. The reports shall include a comparison of actual emissions that occurred during the reporting period with the facility-wide allowable emission limits specified in Section 2.10 of this permit.

4.2 Reports of all required monitoring activities shall be submitted on a semiannual basis. All instances of deviation from permit requirements, including emergencies, shall be clearly identified in these reports. The conditions of 4.1 and 4.2 are pursuant to 20.2.70.302.E.1 NMAC.

Has this reporting requirement been met during this reporting period with a separate report submittal? Answer Yes or No below.

☐ **Yes** **Date report submitted:** **Tracking Number:**

☒ **No** **Provide comments and identify any supporting documentation as an attachment.**

Comments:

2.4.4.1 A log is maintained of the hours of operation for each of the carpenter shops. Hour readings are collected and recorded monthly from hour meters installed on each of the cyclone separators. Hours of operation are provided in **Attachment 4**.

Attachment 4
Carpenter Shop Hours of Operation

2008 TA-3 & TA-15 Carpenter Shops

TA-3	Data Entry	TA-3	Data Entry
	Hours of Operation[1]		Hours of Operation[1]
Month	TA-3	Month	TA-3
January	1.7	July	
February	1.0	August	
March	1.1	September	
April	3.3	October	
May	6.0	November	
June	3.7	December	
6 mo. Total	16.8	6 mo. Total:	0.0

TA-15	Data Entry	TA-15	Data Entry
	Hours of Operation[1]		Hours of Operation[1]
Month	TA-15	Month	TA-15
January	7.6	July	
February	9.8	August	
March	8.3	September	
April	14.4	October	
May	5.2	November	
June	6.4	December	
6 mo. Total	51.7	6 mo. Total:	0.0

Reference
1. Based on information provided monthly by the shop foreman from each shop.

Saws, drills, shaping and sanding equipment shall each not operate in excess of 4368 hours per year.

2.5 Chemical Usage

2.5.4 Emissions Monitoring/Recordkeeping Requirements

2.5.4.1 Maintain records of chemical purchasing through facility-wide chemical tracking system, and use the data to calculate the emissions on a semiannual basis in accordance with Condition 4.1.

Reporting Requirement

2.5.5 Reports shall be submitted in accordance with conditions 4.1 and 4.2.

4.1 Reports of actual emissions from permitted sources in Section 2.0 shall be submitted on a 6 month basis. Reports shall not include emissions from insignificant activities. Emission estimates of criteria pollutants NOx, CO, SO_2, PM and VOCs shall not include fugitive emissions. Emission estimates of HAPs shall include fugitive emissions. The reports shall include a comparison of actual emissions that occurred during the reporting period with the facility-wide allowable emission limits specified in Section 2.10 of this permit.

4.2 Reports of all required monitoring activities shall be submitted on a semiannual basis. All instances of deviation from permit requirements, including emergencies, shall be clearly identified in these reports. The conditions of 4.1 and 4.2 are pursuant to 20.2.70.302.E.1 NMAC.

Has this reporting requirement been met during this reporting period with a separate report submittal? Answer Yes or No below.

☐ **Yes** **Date report submitted:** **Tracking Number:**

☒ **No** **Provide comments and identify any supporting documentation as an attachment.**

Comments:

2.5.4.1 Records of chemical purchases are maintained through LANL's facility wide chemical tracking system (ChemLog). The data is used to calculate emissions which are submitted in the Semi-Annual Emission Report.

2.6 Degreasers

2.6.4 Emissions Monitoring Requirements

2.6.4.1 Record the amount of solvent added to the degreaser and calculate the emissions on a semi-annual basis in accordance with Condition 4.1.

2.6.4.2 Complete checklist for work practice standards.

Reporting Requirement

2.6.6 Reporting

2.6.6.1 Submit notification of initial startup.

2.6.6.2 Submit a compliance report 150 days after initial startup.

2.6.6.3 Reports shall be submitted in accordance with conditions 4.1 and 4.2.

4.1 Reports of actual emissions from permitted sources in Section 2.0 shall be submitted on a 6 month basis. Reports shall not include emissions from insignificant activities. Emission estimates of criteria pollutants NOx, CO, SO_2, PM and VOCs shall not include fugitive emissions. Emission estimates of HAPs shall include fugitive emissions. The reports shall include a comparison of actual emissions that occurred during the reporting period with the facility-wide allowable emission limits specified in Section 2.10 of this permit.

4.2 Reports of all required monitoring activities shall be submitted on a semiannual basis. All instances of deviation from permit requirements, including emergencies, shall be clearly identified in these reports. The conditions of 4.1 and 4.2 are pursuant to 20.2.70.302.E.1 NMAC.

Has this reporting requirement been met during this reporting period with a separate report submittal? Answer Yes or No below.

☐ **Yes** **Date report submitted:** **Tracking Number:**

☒ **No** **Provide comments and identify any supporting documentation as an attachment.**

Comments:

2.6.4.1 Records are maintained of the amount of solvent added to the degreaser. This data is used to calculate emissions on a semi-annual basis. The Semi-Annual Emissions Report, containing the degreaser emissions, will be submitted within 90 days from the end of the reporting period in accordance with condition 4.3 of the operating permit. LANL's "Historical Solvent Usage Data" report for January 1 through June 30, 2008 is provided in **Attachment 5**.

2.6.4.2 The degreaser operations staff completes checklists for work practice standards. The checklists are available on-site for NMED inspection.

Attachment 5
Degreaser Solvent Usage

Historical Solvent Usage Data

The usage information for TA-55-DG-1 degreaser from Jan-01-2008 through Jun-30-2008 is displayed below.

General Degreaser Information

Degreaser	Type	TA Building	Solvent
TA-55-DG-1	Cold Batch	55	Trichloroethylene

Date Measured	Initial Solvent Level (inches)	Volume Added (liters)	Level Added (inches)	Volume Removed (liters)	Level Removed (inches)
Jan-07-2008	6.00	3.44	1.75	0.00	0.00
Feb-21-2008	7.25	0.00	0.00	14.25	7.25
Feb-26-2008	0.00	14.74	7.50	0.00	0.00
Mar-31-2008	7.25	0.00	0.00	0.00	0.00
Apr-09-2008	7.25	1.00	0.50	0.00	0.00
Apr-29-2008	7.25	2.00	1.01	0.00	0.00
Apr-30-2008	7.75	0.00	0.00	14.50	7.37
May-01-2008	0.00	14.50	7.37	0.00	0.00
May-13-2008	7.25	1.00	0.50	0.00	0.00
May-28-2008	7.75	0.00	0.00	0.00	0.00
Jun-05-2008	7.50	0.00	0.00	14.00	7.11
Jun-10-2008	0.00	14.74	7.50	0.00	0.00
Jun-30-2008	7.25	0.50	0.25	0.00	0.00

2.7 Internal Combustion Sources

2.7.4 Emissions Monitoring Requirements

Source	Monitoring Required
Stationary Standby Generators	Track and record hours of operation for stationary standby generators on a semi-annual basis.
TA-33-G-1	Track hourly and 12-month rolling total kWh. Record hours of operation and the time operation begins and ends each day.

2.7.4.1 40 CFR Part 60, Appendix A, Method 9 shall be used to determine compliance with the opacity limitation.

Reporting Requirement

2.7.6 Reports shall be submitted in accordance with conditions 4.1 and 4.2.

4.1 Reports of actual emissions from permitted sources in Section 2.0 shall be submitted on a 6 month basis. Reports shall not include emissions from insignificant activities. Emission estimates of criteria pollutants NOx, CO, SO_2, PM and VOCs shall not include fugitive emissions. Emission estimates of HAPs shall include fugitive emissions. The reports shall include a comparison of actual emissions that occurred during the reporting period with the facility-wide allowable emission limits specified in Section 2.10 of this permit.

4.2 Reports of all required monitoring activities shall be submitted on a semiannual basis. All instances of deviation from permit requirements, including emergencies, shall be clearly identified in these reports. The conditions of 4.1 and 4.2 are pursuant to 20.2.70.302.E.1 NMAC.

Has this reporting requirement been met during this reporting period with a separate report submittal? Answer Yes or No below.

☐ **Yes** **Date report submitted:** **Tracking Number:**

☒ **No** **Provide comments and identify any supporting documentation as an attachment.**

Comments:

2.7.4 (Stationary Standby Generators) - LANL tracks and records generator hours of operation on a semi-annual basis. Stationary generator hours of operation for this reporting period are provided in **Attachment 6**.

2.7.4 (TA-33-G-1) - NSR Air Quality Permit 2195-F-R3 was issued on May 28, 2008. This revision included a change to the kilowatt-hour (kWh) monitoring for the generator. The new condition, 4.a., reads: "The permittee shall record the kilowatt-hours produced by Unit TA-33-G-1 on a daily basis and on a monthly rolling 12-month total basis." A kWh tracking form has been created and will be used for tracking generator start and stop times as well as daily kWh. These daily readings will be used in tracking the 12-month rolling kWh total. These records are available on-site for NMED inspection. This change has also been requested as part of our Operating Permit Renewal Application submitted earlier this year.

2.7.4.1 LANL uses 40 CFR Part 60, Appendix A, Method 9 to determine opacity compliance.

Attachment 6
Internal Combustion Generator Hours of Operation

2008 Generator Hours

								First 6 Month Readings			Second 6 Month Readings		
TA	Bldg	Manufacturer	MODEL	KW	Fuel Type	Previous Reading Date	Previous Reading	6 Month Reading Date	Reading	Hours Run	12 Month Reading Date	Reading	Hours Run
3	40	Onan Sons	1500DVE15R31374B	150	Diesel	Dec-08	6.6	Jun-08	11.8	5.2	Dec-08		
3	223	Onan Sons	45.0EM-15R/10742D	45	Propane	Dec-08	489.5	Jun-08	492.5	3.0	Dec-08		
3	440	Cummins	500FDR5051	260	Diesel	Dec-08	121.8	Jun-08	121.8	0.0	Dec-08		
3	440	Cummins	DFGA-5005210	500	Diesel	Dec-08	81.8	Jun-08	93.8	12.0	Dec-08		
3	1076	Cummins	DGBB-5601289	35	Diesel	Dec-08	129.7	Jun-08	141.2	11.5	Dec-08		
3	1400	Cummins	DFEH-5599616	400	Diesel	Dec-08	33.0	Jun-08	37	4.0	Dec-08		
3	1404	Cummins	DFLC-5554001	1250	Diesel	Dec-08	336.5	Jun-08	368.4	31.9	Dec-08		
3	1498	Caterpillar	SR-4	600	Diesel	Dec-08	326.0	Jun-08	331.0	5.0	Dec-08		
3	2322	Onan Sons	DGDA-5005757	80	Diesel	Dec-08	339.8	Jun-08	352	12.2	Dec-08		
16	980	Cummins	KTA50-G2	1100	Diesel	Dec-08	293.4	Jun-08	305.2	11.8	Dec-08		
16	1374	Onan Sons	60ENA	60	Nat. Gas	Dec-08	1092.9	Jun-08	1115.8	22.9	Dec-08		
18	31	Onan Sons	275DFM/L29907N	275	Diesel	Dec-08	180.8	Jun-08	180.8	0.0	Dec-08		
35	2	Onan Sons	100DGDB	100	Diesel	Dec-08	115.5	Jun-08	115.5	0.0	Dec-08		
35	402	Cummins	DGCB-5674244	60	Diesel	Dec-08	138.4	Jun-08	158.0	19.6	Dec-08		
43	1	Cummins	4BT3.9-GC	50	Diesel	Dec-08	383.9	Jun-08	387.7	3.8	Dec-08		
43	1	Onan Sons	DVE	150	Diesel	Dec-08	620.0	Jun-08	644.4	24.4	Dec-08		
46	335	Onan Sons	300DEFCB	300	Diesel	Dec-08	959.5	Jun-08	995.4	35.9	Dec-08		
48	45	Onan Sons	DFCB-5740130	300	Diesel	Dec-08	53.5	Jun-08	69.5	16.0	Dec-08		
50	37	Cummins	650FDR5059FF	500	Diesel	Dec-08	502.9	Jun-08	502.9	0.0	Dec-08		
50	184	Onan Sons	DGFA-568741	150	Diesel	Dec-08	212.7	Jun-08	238.6	25.9	Dec-08		
50	188	Onan Sons	L940563879	1250	Diesel	Dec-08	149.0	Jun-08	149.0	0.0	Dec-08		
53	1	Onan Sons	60ENA	60	Nat. Gas	Dec-08	1234.1	Jun-08	1261.2	27.1	Dec-08		
53	2	Kato Eng.	Kamag-14	50	Diesel	Dec-08	194.3	Jun-08	194.3	0.0	Dec-08		
53	3N	Onan	15.0JC-18R	15	Propane	Jun-08	345.3	Jun-08	345.3	0.0	Dec-08		
54	412	Olympian	95M-07874-F	500	Diesel	Dec-08	317.9	Jun-08	324.7	6.8	Dec-08		
55	5	Kohler	100RZ71	100	Propane	Dec-08	79.3	Jun-08	93.4	14.1	Dec-08		
55	8	Delco/Detroit	E7014DD	600	Diesel	Dec-08	822.2	Jun-08	831.8	9.6	Dec-08		
55	364	Onan Sons	1250DFLC-4987	1250	Diesel	Dec-08	82.8	Jun-08	101.3	18.5	Dec-08		
55	28	Onan Sons	40DL6T	40	Diesel	Dec-08	66.5	Jul-08	72.4	5.9	Dec-08		
55	47	Onan Sons	1465	200	Diesel	Dec-08	540.0	Jul-08	555.5	15.5	Dec-08		
55	142	Cummins	DFEB-4963414	400	Diesel	Dec-08	105.0	Jul-08	114.8	9.8	Dec-08		
59	1	Allis Chalmers	2554-0703	90	Diesel	Dec-08	750.0	Jul-08	750.0	0.0	Dec-08		
60	yard	Cummins	DFHD-4964979	1000	Diesel	Dec-08	648.4	Jun-08	649.4	1.0	Dec-08		
63	93	Murphy	3166-0084	30	Diesel	Dec-08	716.0	Jul-08	716.0	0.0	Dec-08		
64	1	Onan Sons	250DVG	250	Diesel	Dec-08	166.9	Jul-08	171.8	4.9	Dec-08		
69	33	Cummins	DFLC-5568730	1250	Diesel	Dec-08	71.3	Jul-08	78.6	7.3	Dec-08		
	36 Generators in use								TOTAL	365.6		TOTAL	0.0

N/R = Not Read

First half average hours per unit	10.2	Second half average hours per unit

2.8 Data Disintegrator

2.8.4 Emissions Monitoring

2.8.4.1 The permittee shall maintain a log of the number of boxes of media that are destroyed and calculate the emissions on a semiannual basis in accordance with Condition 4.1. This condition is pursuant to 20.2.70.302.C NMAC.

2.8.4.2 The permittee shall perform regular maintenance and repair on the cyclone and cloth tube filter(s) per manufacturer's recommendations. This condition was brought forward from NSR Permit No. 2195H Condition 1.d.

Reporting Requirement

2.8.6 Report shall be submitted in accordance with conditions 4.1 and 4.2.

4.1 Reports of actual emissions from permitted sources in Section 2.0 shall be submitted on a 6 month basis. Reports shall not include emissions from insignificant activities. Emission estimates of criteria pollutants NOx, CO, SO_2, PM and VOCs shall not include fugitive emissions. Emission estimates of HAPs shall include fugitive emissions. The reports shall include a comparison of actual emissions that occurred during the reporting period with the facility-wide allowable emission limits specified in Section 2.10 of this permit.

4.2 Reports of all required monitoring activities shall be submitted on a semiannual basis. All instances of deviation from permit requirements, including emergencies, shall be clearly identified in these reports. The conditions of 4.1 and 4.2 are pursuant to 20.2.70.302.E.1 NMAC.

Has this reporting requirement been met during this reporting period with a separate report submittal? Answer Yes or No below.

☐ **Yes** **Date report submitted:** **Tracking Number:**

☒ **No** **Provide comments and identify any supporting documentation as an attachment.**

Comments:

2.8.4.1 LANL maintains a log of the number of boxes of media that are shredded and calculates the emissions on a semi-annual basis. The actual number of boxes shredded during this reporting period is included in **Attachment 7**.

2.8.4.2 The Data Disintegrator and associated pollution control devices are maintained under a preventative maintenance contract. LANL maintains documentation of all maintenance and repairs performed on the cyclone and cloth tube filters. This documentation is available on-site for NMED inspection.

Attachment 7
Data Disintegrator Box Throughput

2008 TA-52 Data Disintegrator

Month	Data Entry Boxes[c] Shredded	Month	Data Entry Boxes[c] Shredded
January	876	July	
February	761	August	
March	840	September	
April	657	October	
May	837	November	
June	567	December	
6 mo. Total:	4,538	6 mo. Total:	0

Annual Boxes:	4,538

2.9 Power Plant at Technical Area 3 (TA-3-22)

2.9.4.1 Total fuel oil consumption shall be monitored so that combined fuel oil usage of Units TA-3-22-1, TA-3-22-2 and TA-3-22-3 can be calculated on a rolling 365-day total. This condition was brought forward from NSR Permit No. 2195BM1, Condition 3.a.

2.9.4.2 Natural gas consumption shall be monitored so that combined natural gas usage of Units TA-3-22-1, TA-3-22-2 and TA-3-22-3 can be calculated on a rolling 365-day total. This condition was brought forward from NSR Permit No. 2195BM1, Condition 3.b.

2.9.4.3 Natural gas consumption shall be monitored so that natural gas usage for Unit TA-3-22 CT-1 can be calculated on a rolling 365-day total. This condition was brought forward from NSR Permit No. 2195BM1, Condition 3.f.

2.9.4.4 A certification of total sulfur content of the No. 2 fuel oil used by Units TA-3-22-1, TA-3-22-2 and TA-3-22-3 shall be obtained from the supplier whenever No. 2 fuel oil is delivered to the facility. This condition was brought forward from NSR Permit No. 2195BM1, Condition 3.c.

2.9.4.5 If the certification as specified by Condition 2.9.4.4 is not available at delivery, the permittee shall analyze the No. 2 fuel oil to determine the total sulfur content. The analysis shall be conducted using Department approved methods and standards for determining total sulfur content of No. 2 fuel oil. This condition was brought forward from NSR Permit No. 2195BM1, Condition 3.d.

2.9.4.6 The operating load of Unit TA-3-22 CT-1 specified by Condition 2.9.3.7 shall be monitored and recorded hourly during normal operations of that unit. Periods of startup and shutdown shall not be included in the hourly monitoring but shall be recorded separately. This condition was brought forward from NSR Permit No. 2195BM1, Condition 3.e.

2.9.4.7 Compliance with NOx pound per hour emission limits for Unit TA-3-22 CT-1 shall be determined by multiplying the daily total natural gas firing rate for the unit (expressed in thousands of SCF), as recorded pursuant to Condition 2.9.5.3, by the manufacturer's guaranteed emission rate of 0.1029 pounds NOx per thousand SCF of gas burned (applicable for worst-case conditions of negative 18 degrees Fahrenheit) and divided by the number of hours of operation of the unit during that day as recorded pursuant to Condition 2.9.3.8. Compliance with NOx annual emission limits for Unit TA-3-22 CT-1 shall be determined by multiplying the 365 day total natural gas firing rate for the unit (expressed in thousands of SCF), as recorded pursuant to Condition 2.9.5.3, by the manufacturer's guaranteed emission rate of 0.1029 pounds NOx per thousand SCF of gas burned (applicable for annual average conditions of 47.9 degrees Fahrenheit). This condition was brought forward from NSR Permit No. 2195BM1, Condition 3.g.

2.9.4.8 Compliance with CO pound per hour emission limits for Unit TA-3-22 CT-1 shall be determined by multiplying the daily total natural gas firing rate for the unit (expressed in thousands of SCF), as recorded pursuant to Condition 2.9.5.3, by the manufacturer's guaranteed emission rate of 0.731 pounds CO per thousand SCF of gas burned (applicable for worst-case conditions of negative 18 degrees Fahrenheit), and divided by the number of hours of operation of the unit during that day as recorded pursuant to Condition 2.9.3.8). Compliance with CO annual emission limits for Unit TA-3-22 CT-1 shall be determined by multiplying the 365 day total natural gas firing rate for the unit (expressed in thousands of SCF), as recorded pursuant to Condition 2.9.5.3, by the manufacturer's guaranteed emission rate of 0.0613 pounds CO per thousand SCF of gas burned (applicable for annual average conditions of 47.9 degrees Fahrenheit). This condition was brought forward from NSR Permit No.

2195BM1, Condition 3.h.

2.9.4.9 At least once each calendar quarter the permittee shall use the method specified in Conditions 2.9.4.7 and 2.9.4.8 to determine compliance of Unit TA-3-22 CT-1 with the hourly and annual emission limits specified in this permit. This condition was brought forward from NSR Permit No. 2195BM1, Condition 3.i.

2.9.4.10 Visible emissions from stationary combustion equipment shall not equal or exceed an opacity of 20%. Use of pipeline quality natural gas fuel as defined in Conditions 2.9.3.1 and 2.9.3.4 constitutes compliance with 20.2.61 NMAC unless opacity exceeds 20%. At such time as No. 2 fuel oil as defined in Condition 2.9.3.1 is used, opacity shall be measured in accordance with the procedures at 40 CFR 60, Appendix A, Method 9. Opacity measurements shall continue on a quarterly basis per calendar year for each effected unit until such time as pipeline quality natural gas is used. This condition is pursuant to 20.2.61 NMAC and NSR Permit No. 2195BM1, Condition 2.c.

2.9.4.11 Initial compliance tests are required on Unit TA-3-22 CT-1 for NOx and CO. These tests shall be conducted within sixty (60) days after the unit achieves the maximum normal production. If the maximum normal production rate does not occur within one hundred twenty (120) days of source startup, then the tests must be conducted no later than one hundred eighty (180) days after initial startup of the source. The tests shall be conducted in accordance with EPA Reference Methods 1 through 4, Method 7E for NOx, and Method 10 for CO contained in CFR Title 40, Part 60, Appendix A, and with the requirements of Subpart A, General Provisions, 60.8(f). Alternative test method(s) may be used if the Department approves the change. The permittee shall submit a testing protocol to the Department at least thirty (30) days prior to the test date, and provide notification to the Department at least thirty (30) days prior to the test date. This condition was brought forward from NSR Permit No. 2195BM1, Condition 6.b and General Condition 13.

2.9.4.12 The permittee shall comply with fuel sulfur monitoring requirements at 40 CFR 60.334(h) applicable to Unit TA-3-22 CT-1 by making the required demonstration which shows the fuel combusted in the turbine meets the definition of natural gas at 40 CFR 60.331(u).

The conditions of Section 2.9.4 are pursuant to 20.2.70.302.C NMAC.

Reporting Requirement

2.9.6 Reports shall be submitted in accordance with conditions 4.1 and 4.2.

This condition is pursuant to 20.2.60.302.E NMAC.

4.1 Reports of actual emissions from permitted sources in Section 2.0 shall be submitted on a 6 month basis. Reports shall not include emissions from insignificant activities. Emission estimates of criteria pollutants NOx, CO, SO_2, PM and VOCs shall not include fugitive emissions. Emission estimates of HAPs shall include fugitive emissions. The reports shall include a comparison of actual emissions that occurred during the reporting period with the facility-wide allowable emission limits specified in Section 2.10 of this permit.

4.2 Reports of all required monitoring activities shall be submitted on a semiannual basis. All instances of deviation from permit requirements, including emergencies, shall be clearly identified in these reports. The conditions of 4.1 and 4.2 are pursuant to 20.2.70.302.E.1 NMAC.

Has this reporting requirement been met during this reporting period with a separate report submittal? Answer Yes or No below.

☐ Yes **Date report submitted:** **Tracking Number:**

☒ No **Provide comments and identify any supporting documentation as an attachment.**

Comments:

2.9.4.1 Total fuel oil consumption is monitored on a daily basis. These daily readings are used to calculate a 365-day rolling total. **Attachment 8** contains a summary of monthly fuel oil consumption. Records of daily fuel oil use are available on-site for NMED inspection.

2.9.4.2 A volumetric flow meter is used to measure the total amount of natural gas used on a daily basis. These daily readings are used to calculate a 365-day rolling total. **Attachment 8** contains a summary of monthly natural gas usage. Daily totals are available on-site for NMED inspection.

2.9.4.3 The Combustion Turbine started operation on September 23, 2007. A monthly gas consumption report, containing daily turbine gas use, is generated by the plant operator. This data is used to calculate a rolling 365-day total. See **Attachment 9** for the daily and rolling 365-day totals.

2.9.4.4 No fuel oil was purchased or delivered during this reporting period.

2.9.4.5 No fuel oil was purchased or delivered during this reporting period.

2.9.4.6 A tracking log was created that contains the hours of start-up, normal operation, shut-down, and the hourly operating load during normal operation. The turbine did not achieve "normal" operation during this reporting period. The combustion turbine has run less than 12 hours for this reporting period due to equipment problems. The tracking logs are available on-site for NMED inspection.

2.9.4.7 An emission calculation spreadsheet was created, using the formula in this permit condition, to calculate the NOx pound per hour and ton per year emission rates. This data is compared with the permit emission limits.

2.9.4.8 An emission calculation spreadsheet was created, using the formula in this permit condition, to calculate the CO pound per hour and ton per year emission rates. This data is compared with the permit emission limits.

2.9.4.9 Daily gas use data is entered into the above mentioned spreadsheet on a monthly basis. The spreadsheet uses the required calculation to provide both NOx and CO hourly and annual emissions. The resulting data is used to determine compliance with emission limits.

2.9.4.10 LANL uses 40 CFR Part 60, Appendix A, Method 9 to determine compliance with the opacity limitation. Delivery of pipeline quality natural gas is specified in the transportation contract with the supplier. Opacity measurements performed at the Power Plant are provided in **Attachment 10**.

2.9.4.11 An initial compliance test was performed on the combustion turbine within 60 days following the unit achieving maximum normal production. The unit achieved its maximum normal production rate on September 27, 2007, and the compliance test was performed on October 5, 2007. The test report was provided to NMED on October 22, 2007. The test consisted of the EPA test methods identified in this permit condition.

2.9.4.12 The natural gas used by the combustion turbine meets the definition of natural gas in 60.331(u). The sulfur monitoring requirement is met under 40 CFR 60.334(h)(3)(i), which allows the use of a current and valid transportation contract that specifies the maximum total sulfur content is 20 grains per100 scf or less. The transportation contract specifies a sulfur content not to exceed 2 grains of total sulfur per 100 scf. A copy of the transportation contract is available at the facility.

Attachment 8
Power Plant Natural Gas and Fuel Oil Usage

TA-3 Power Plant Fuel Use Totals 2008 (Data Entry)

	DATA ENTRY							
	TA-3-22 Power Plant[b] Boiler # 1 (Edgemoor Iron Works, 210 MMBTU/hr)		TA-3-22 Power Plant[b] Boiler # 2 (Edgemoor Iron Works, 210 MMBTU/hr)		TA-3-22 Power Plant[b] Boiler # 3 (Union Iron Works, 210 MMBTU/hr)		Monthly Totals	
Month	Natural Gas (MCF)[a]	Fuel Oil (gallons)[a]	Natural Gas (MCF)[a]	Fuel Oil (gallons)[a]	Natural Gas (MCF)[a]	Fuel Oil (gallons)[a]	Natural Gas (MMCF)[a]	Fuel Oil (gallons)[a]
January	6,912	328	63,171	0	1,108	0	71.191	328
February	19,497	493	34,960	0	3,618	0	58.075	493
March	617	603	50,578	0	866	384	52.061	987
April	0	0	37,023	219	4,276	0	41.299	219
May	0	0	23,792	0	7,242	331	31.034	331
June	148	55	11,048	0	9,920	0	21.116	55
July								
August								
September								
October								
November								
December								
Annual Totals:	27,174	1,479	220,572	219	27,030	715	274.776	2413
Jan. - June	27,174	1,479	220,572	219	27,030	715	274.776	2413
July - Dec.	0	0	0	0	0	0	0.000	0

Attachment 9
Daily and Rolling 365-Day Gas Use Totals

2008 Daily Turbine Gas Use (MCF), 365 Day Rolling Total Gas Use, & Hours of Operation

	Jan		Feb		Mar		Apr		May		Jun		Jul		Aug		Sep		Oct		Nov		Dec	
Day	Gas Use	Hours	Gas Use	Hours	Gas Use	Hours	Gas Use	Hours	Gas Use	Hours	Gas Use	Hours	Gas Use	Hours	Gas Use	Hours	Gas Use	Hours	Gas Use	Hours	Gas Use	Hours	Gas Use	Hours
1	0	0	0	0	0	0	0	0	0	0	0	0												
2	0	0	0	0	0	0	0	0	0	0	0	0												
3	0	0	0	0	0	0	0	0	0	0	0	0												
4	0	0	0	0	0	0	0	0	0	0	42	1												
5	0	0	0	0	0	0	0	0	0	0	70	0.75												
6	0	0	0	0	8	0.75	0	0	0	0	0	0												
7	0	0	0	0	5	0.5	0	0	0	0	0	0												
8	0	0	0	0	16	1.1	0	0	0	0	0	0												
9	0	0	0	0	0	0	0	0	0	0	0	0												
10	0	0	0	0	0	0	0	0	0	0	0	0												
11	0	0	0	0	0	0	0	0	0	0	0	0												
12	0	0	0	0	0	0	0	0	0	0	0	0												
13	0	0	0	0	0	0	0	0	0	0	0	0												
14	0	0	0	0	0	0	0	0	5	0.5	0	0												
15	0	0	0	0	0	0	0	0	110	2.5	0	0												
16	0	0	0	0	0	0	0	0	0	0	0	0												
17	0	0	0	0	0	0	0	0	0	0	0	0												
18	0	0	0	0	0	0	0	0	0	0	0	0												
19	0	0	0	0	0	0	0	0	0	0	301	2.3												
20	0	0	0	0	0	0	0	0	0	0	0	0												
21	0	0	0	0	0	0	0	0	0	0	0	0												
22	0	0	0	0	0	0	0	0	0	0	0	0												
23	7	1	0	0	0	0	0	0	0	0	0	0												
24	3	1.5	0	0	0	0	0	0	0	0	0	0												
25	0	0	0	0	0	0	0	0	0	0	0	0												
26	0	0	0	0	0	0	0	0	0	0	0	0												
27	0	0	0	0	0	0	0	0	0	0	0	0												
28	0	0	0	0	0	0	0	0	0	0	0	0												
29	0	0	0	0	0	0	0	0	0	0	0	0												
30	0	0			0	0	0	0	0	0	0	0												
31	0	0			0	0			0	0														
SUM	10	2.5	0	0	29	2.35	0	0	115	3	413	4.05	0	0	0	0	0	0	0	0	0	0	0	0

First Half Gas Use: 567 MCF **Second Half Gas Use:** 0 MCF **Annual Gas Use:** 567 MCF

365 day rolling total: 6875 MCF

6.875 MMSCF

The SCFH value (fuel flow rate) in the cell equation is from the compliance test report (223620 SCFH or 223.6 MSCFH)

Permit Limit (365 day rolling total): 646 MMSCF

Attachment 10
Power Plant Opacity Reports

Summary Table, Reports Attached

Source	Date	Time	Average Opacity [a]
TA-3-22 Power Plant	01-15-08	10:00 am	0.25%
	02-12-08	11:00 am	0%
	03-04-08	11:13 am	0%
	03-04-08	11:47 am	0%
	03-18-08	11:33 am	0%
	03-25-08	09:56 am	0%
	04-15-08	10:20 am	0.75%
	04-15-08	10:42 am	0.875%
	05-14-08	08:44 am	0%
	05-14-08	10:03 am	0%
	05-22-08	10:14am	0%
	June 2008	N/A	[b]

(a) Average opacity for the Power Plant is the sum of the highest consecutive 40 readings divided by 40 (10 minutes of readings). The method is in accordance with EPA Method 9 and 20.2.61 NMAC.

(b) There were no visible emission observations taken in June due to boiler certifications.

Los Alamos

LOS ALAMOS NATIONAL LABORATORY (LANL)
VISIBLE EMISSION OBSERVATION FORM (10 MINUTE)

Source Name: Power Plant at TA-3

Source Location: TA-3-22

Type of Source: Boiler # 1

Type of Control Equipment: No Particulate Control

Describe Emission Point (Top of stack, etc.): Top of Boiler #1 stack

Height Above Ground Level: 150 Feet

Height Relative to Observer: 140 Feet

Distance From Observer: 200 Feet

Direction of Source From Observer: ENE

Description of Plume (stack exit only)
☒Lofting ☐Trapping ☐Looping ☐Fanning ☐Coning
☐No Plume Present

Emission Color: Black

Plume Type ☐No Plume Present ☐Continuous ☐Fugitive ☒Intermittent

Water Droplets Present?
☒NO ☐YES If YES, droplet plume is ☐Attached ☐Detached

At what point in the plume was opacity determined? 2 ft. above top of stack

Describe Background (i.e. blue sky, trees, etc.): Blue sky

Background Color: Blue

Sky Conditions: Clear

Wind Speed: 2-5 mph

Wind Direction (provide from/to, i.e. from North to South): From NE

Ambient Temperature: 25 °F

Relative Humidity: 42 %

Additional Comments/Information: Fuel Oil burn exercise

Observation Date: 1-15-08

Start Time: 1000

End Time: 1010

See Min	0	15	30	45	Comments
1	0	0	0	0	
2	0	0	0	0	
3	0	0	0	0	
4	0	0	5	5	
5	0	0	0	0	
6	0	0	0	0	
7	0	0	0	0	
8	0	0	0	0	
9	0	0	0	0	
10	0	0	0	0	
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					

Average 10-Minute Opacity: 0.25 %

Range of Opacity Readings: Min. 0% Max. 5%

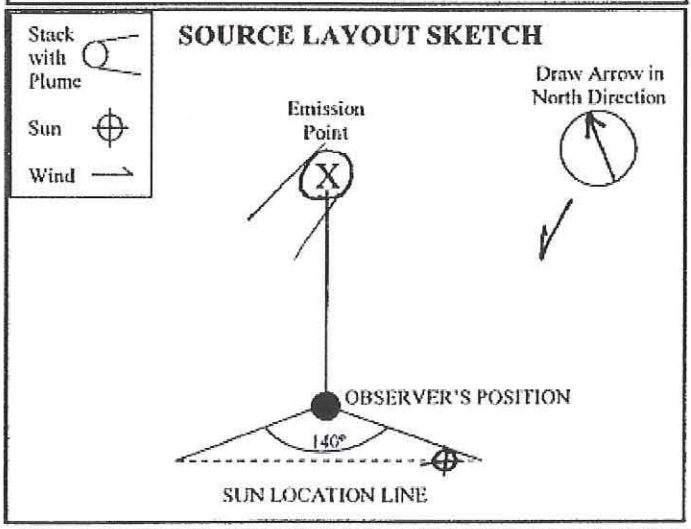
OBSERVER (please print)
Name: Don Stone Title: Engineer

Signature: Don Stone Date: 1-15-08

Observer Organization: KSL

Certified by: ETA Certification Date: 8-29-07

SOURCE LAYOUT SKETCH



ENV-EAQ-307, R3, ATTACHMENT 3 (*OPACITY DETERMINATION AND EXCESS EMISSIONS REPORTING*)

Los Alamos

LOS ALAMOS NATIONAL LABORATORY (LANL)
VISIBLE EMISSION OBSERVATION FORM (10 MINUTE)

Source Name: Power Plant at TA-3

Source Location: TA-3-22

Type of Source: Boiler # 1

Type of Control Equipment: No Particulate Control

Describe Emission Point (Top of stack, etc.): Top of Boiler #1 stack

Height Above Ground Level: 150 Feet

Height Relative to Observer: 140 Feet

Distance From Observer: 70 Yards

Direction of Source From Observer: ~~NW~~ ENE

Description of Plume (stack exit only)
☐Lofting ☐Trapping ☐Looping ☐Fanning ☐Coning
☒No Plume Present

Emission Color: NO emission

Plume Type: ☒No Plume Present ☐Continuous ☐Fugitive ☐Intermittent

Water Droplets Present?
☒NO ☐YES If YES, droplet plume is ☐Attached ☐Detached

At what point in the plume was opacity determined? ≈1ft above top of stack

Describe Background (i.e. blue sky, trees, etc.): Blue sky

Background Color: Blue

Sky Conditions: Clear

Wind Speed: 2-4 mph

Wind Direction (provide from/to, i.e. from North to South): from E

Ambient Temperature: 37 °F

Relative Humidity: 50 %

Additional Comments/Information: Fuel Oil Burn Exercises

Observation Date	Start Time	End Time
2-12-08	1100	1110

Min \ Sec	0	15	30	45	Comments
1	0	0	0	0	
2	0	0	0	0	
3	0	0	0	0	
4	0	0	0	0	
5	0	0	0	0	
6	0	0	0	0	
7	0	0	0	0	
8	0	0	0	0	
9	0	0	0	0	
10	0	0	0	0	
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					

Average 10-Minute Opacity: 0 %

Range of Opacity Readings: Min. 0% Max. 0%

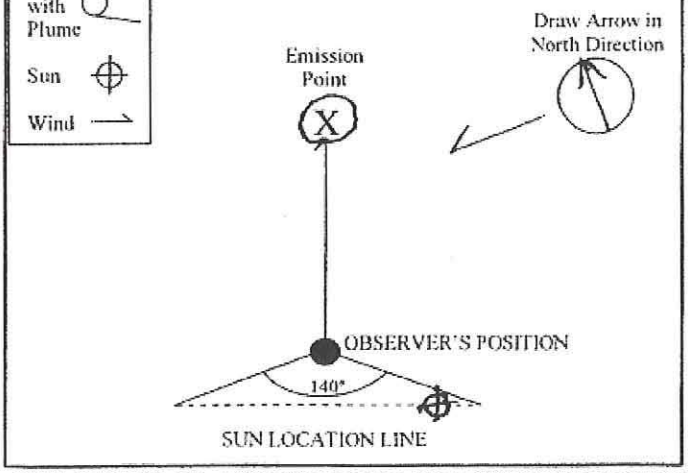
OBSERVER (please print)
Name: Don Stone Title: Engineer

Signature: Don Stone Date: 2-12-08

Observer Organization: KSL

Certified by: ETA Certification Date: 8-29-07

SOURCE LAYOUT SKETCH



ENV-EAQ-307, R3, ATTACHMENT 3 *(OPACITY DETERMINATION AND EXCESS EMISSIONS REPORTING)*

Los Alamos

LOS ALAMOS NATIONAL LABORATORY (LANL)
VISIBLE EMISSION OBSERVATION FORM (10 MINUTE)

Source Name: TA-3-22 Power Plant

Source Location: TA-3-22

Type of Source: Boiler #1

Type of Control Equipment: No Particulate Control

Describe Emission Point (Top of stack, etc.): Top of boiler #1 Stack

Height Above Ground Level: 150 Feet

Height Relative to Observer: 140 Feet

Distance From Observer: 200 Feet

Direction of Source From Observer: ENE

Description of Plume (stack exit only)
☐Lofting ☐Trapping ☐Looping ☐Fanning ☐Coning
☒No Plume Present

Emission Color: N/A

Plume Type ☒No Plume Present
☐Continuous ☐Fugitive ☐Intermittent

Water Droplets Present?
☒NO ☐YES If YES, droplet plume is ☐Attached ☐Detached

At what point in the plume was opacity determined?
2 ft. above top of stack

Describe Background (i.e. blue sky, trees, etc.): Blue sky

Background Color: Blue

Sky Conditions: Clear

Wind Speed: 5-8 mph

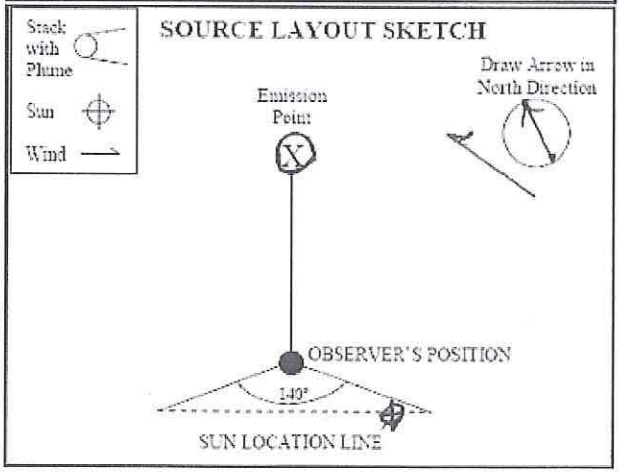
Wind Direction (provide from/to, i.e. from North to South): From SSE

Ambient Temperature: 36 °F

Relative Humidity: 34 %

Additional Comments Information:
Fuel oil burn exercise

SOURCE LAYOUT SKETCH



Observation Date	Start Time	End Time
3-4-08	1113	1123

Min \ Sec	0	15	30	45	Comments
1	0	0	0	0	
2	0	0	0	0	
3	0	0	0	0	
4	0	0	0	0	
5	0	0	0	0	
6	0	0	0	0	
7	0	0	0	0	
8	0	0	0	0	
9	0	0	0	0	
10	0	0	0	0	
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					

Average 10-Minute Opacity: 0 %

Range of Opacity Readings: Min. 0 % Max. 0 %

OBSERVER (please print)

Name: Don Stone

Title: Engineer

Signature: Don Stone

Date: 3-4-08

Observer Organization: KSL

Certified by: ETA

Certification Date: 2-27-08

THIS FORM IS FROM EAQ-307, R4

Los Alamos

LOS ALAMOS NATIONAL LABORATORY (LANL)
VISIBLE EMISSION OBSERVATION FORM (10 MINUTE)

Source Name: TA-3-22 Power Plant

Source Location: TA-3-22

Type of Source: Boiler #1

Type of Control Equipment: No Particulate Control

Describe Emission Point (Top of stack, etc.): Top of boiler #1 stack

Height Above Ground Level: 150 Feet

Height Relative to Observer: 140 Feet

Distance From Observer: 200 Feet

Direction of Source From Observer: ENE

Description of Plume (stack exit only)
☐Lofting ☐Trapping ☐Looping ☐Fanning ☐Coning
☒No Plume Present

Emission Color: N/A

Plume Type ☒No Plume Present ☐Continuous ☐Fugitive ☐Intermittent

Water Droplets Present?
☒NO ☐YES If YES, droplet plume is ☐Attached ☐Detached

At what point in the plume was opacity determined?
At 1 ft. above top of stack

Describe Background (i.e. blue sky, trees, etc.): Blue sky

Background Color: Blue

Sky Conditions: Clear

Wind Speed: 5.8 mph

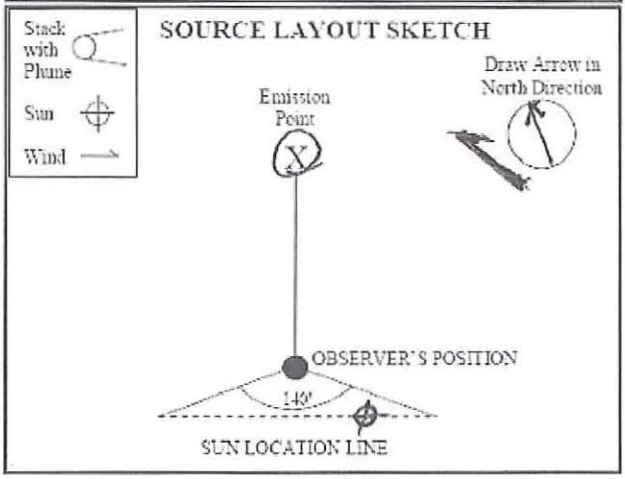
Wind Direction (provide from/to, i.e. from North to South): From SSE

Ambient Temperature: 38 °F

Relative Humidity: 32%

Additional Comments/Information:
Fuel Disposal burn exercise

SOURCE LAYOUT SKETCH



Observation Date	Start Time	End Time
3-4-08	1147	1157

Min \ Sec	0	15	30	45	Comments
1	0	0	0	0	
2	0	0	0	0	
3	0	0	0	0	
4	0	0	0	0	
5	0	0	0	0	
6	0	0	0	0	
7	0	0	0	0	
8	0	0	0	0	
9	0	0	0	0	
10	0	0	0	0	
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					

Average 10-Minute Opacity: 0%

Range of Opacity Readings: Min. 0% Max. 0%

OBSERVER (please print)
Name: Don Stone Title: Engineer

Signature: Don Stone Date: 3-4-08

Observer Organization: KSL

Certified by: ETA Certification Date: 3-27-08

THIS FORM IS FROM EAQ-307, R4

Los Alamos

LOS ALAMOS NATIONAL LABORATORY (LANL)
VISIBLE EMISSION OBSERVATION FORM (10 MINUTE)

Source Name: TA-3-22 Power Plant

Source Location: TA-3-22

Type of Source: Boiler #2

Type of Control Equipment: No Particulate Control

Describe Emission Point (Top of stack, etc.): Top of boiler #2 Stack

Height Above Ground Level: 150 Feet

Height Relative to Observer: 140 Feet

Distance From Observer: 200 Feet

Direction of Source From Observer: ENE

Description of Plume (stack exit only)
☐Lofting ☐Trapping ☐Looping ☐Fanning ☐Coning
☒No Plume Present

Emission Color: N/A

Plume Type ☒No Plume Present ☐Continuous ☐Fugitive ☐Intermittent

Water Droplets Present?
☒NO ☐YES If YES, droplet plume is ☐Attached ☐Detached

At what point in the plume was opacity determined?
☒1ft. above top of stack

Describe Background (i.e. blue sky, trees, etc.): Blue Sky

Background Color: Blue

Sky Conditions: Clear

Wind Speed: 10-15 mph

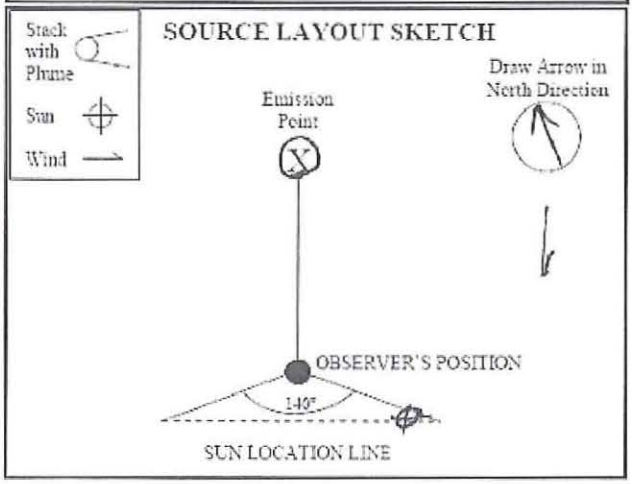
Wind Direction (provide from/to, i.e. from North to South): From NNE

Ambient Temperature: 42 °F

Relative Humidity: 29 %

Additional Comments/Information:
Fuel Oil Burn Exercises

SOURCE LAYOUT SKETCH



Observation Date: 3-18-08 Start Time: 1133 End Time: 1143

Min \ Sec	0	15	30	45	Comments
1	0	0	0	0	
2	0	0	0	0	
3	0	0	0	0	
4	0	0	0	0	
5	0	0	0	0	
6	0	0	0	0	
7	0	0	0	0	
8	0	0	0	0	
9	0	0	0	0	
10	0	0	0	0	
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					

Average 10-Minute Opacity: 0%

Range of Opacity Readings: Min. 0% Max. 0%

OBSERVER (please print)
Name: Don Stone Title: Engineer

Signature: Don Stone Date: 3-18-08

Observer Organization: KSL

Certified by: ETA Certification Date: 2-27-08

THIS FORM IS FROM EAQ-307, R3

Los Alamos

LOS ALAMOS NATIONAL LABORATORY (LANL)
VISIBLE EMISSION OBSERVATION FORM (10 MINUTE)

Source Name: TA-3-22 Power Plant

Source Location: TA-3-22

Type of Source: Boiler #3

Type of Control Equipment: No Particulate Control

Describe Emission Point (Top of stack, etc.): Top of Boiler #3 stack

Height Above Ground Level: 150 Feet

Height Relative to Observer: 160 Feet

Distance From Observer: 250 Feet

Direction of Source From Observer: NW

Description of Plume (stack exit only)
☐Lofting ☐Trapping ☐Looping ☐Fanning ☐Coning
☒No Plume Present

Emission Color: N/A

Plume Type ☒No Plume Present
☐Continuous ☐Fugitive ☐Intermittent

Water Droplets Present?
☒NO ☐YES If YES, droplet plume is ☐Attached ☐Detached

At what point in the plume was opacity determined?
≈ 1ft. above top of stack

Describe Background (i.e. blue sky, trees, etc.): Blue sky

Background Color: Blue

Sky Conditions: clear

Wind Speed: 5.7 mph

Wind Direction (provide from to, i.e. from North to South): From E

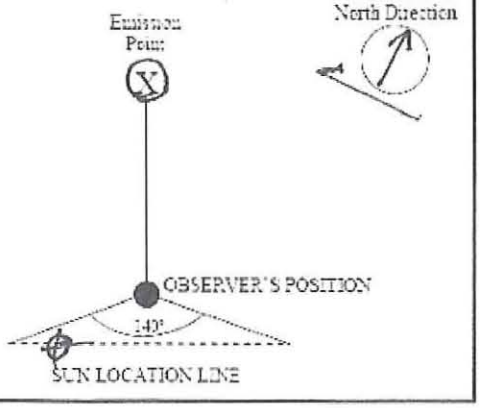
Ambient Temperature: 52 °F

Relative Humidity: 23 %

Additional Comments Information:
Fuel Oil burn exercises

SOURCE LAYOUT SKETCH

Stack with Plume
Sun
Wind



Observation Date: 3-25-08

Start Time: 0956

End Time: 1006

Min \ Sec	0	15	30	45	Comments
1	0	0	0	0	
2	0	0	0	0	
3	0	0	0	0	
4	0	0	0	0	
5	0	0	0	0	
6	0	0	0	0	
7	0	0	0	0	
8	0	0	0	0	
9	0	0	0	0	
10	0	0	0	0	
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					

Average 10-Minute Opacity: 0 %

Range of Opacity Readings: Min. 0 % Max. 0 %

OBSERVER (please print)

Name: Don Stone

Title: Engineer

Signature: Don Stone

Date: 3-25-08

Observer Organization: KSL

Certified by: ETA

Certification Date: 2-27-08

THIS FORM IS FROM EAQ-307, R4

Los Alamos

LOS ALAMOS NATIONAL LABORATORY (LANL)
VISIBLE EMISSION OBSERVATION FORM (10 MINUTE)

Source Name: TA-3-22 Power Plant
Source Location: TA-3-22
Type of Source: Boiler #1
Type of Control Equipment: No Particulate Control
Describe Emission Point (Top of stack, etc.): Top of boiler #1 Stack
Height Above Ground Level: 150 Feet
Height Relative to Observer: 140 Feet
Distance From Observer: 200 Feet
Direction of Source From Observer: ENE
Description of Plume (each visit only): ☒Clothing ☐Trapping ☐Looping ☐Forming ☐Coning ☐No Plume Present
Emission Color: Black
Plume Type: ☐No Plume Present ☐Continuous ☐Fugitive ☒Intermittent
Water Droplet Present: ☒NO ☐YES If YES: droplet plume is: ☐Attached ☐Detached
At what point in the plume was opacity determined? 6 ft above top of stack
Describe Background (i.e. blue sky, trees, etc.): Blue sky
Background Color: Blue
Sky Conditions: Clear
Wind Speed: 15-20 mph
Wind Direction (provide from, i.e. from North to South): From SW
Ambient Temperature: 63 °F
Relative Humidity: 10 %
Additional Comments/Information: Fuel Oil Burn Exercises

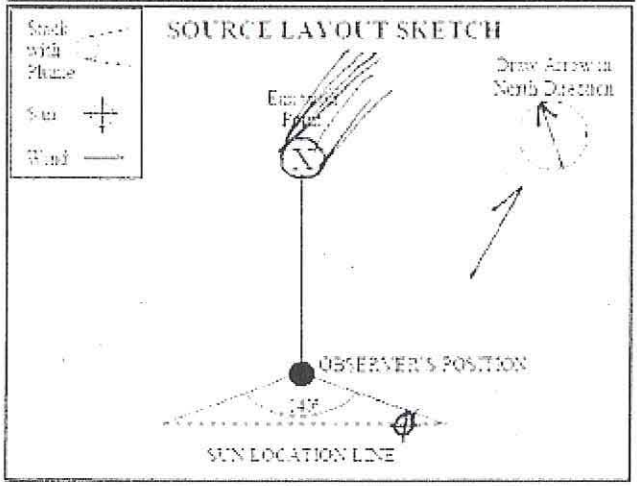
Observation Date	Start Time	End Time
4-15-08	1020	1030

Min \ Sec	0	15	30	45	Comments
1	0	0	0	0	
2	0	0	0	0	
3	0	0	0	0	
4	0	0	0	0	
5	0	0	0	0	
6	0	0	0	0	
7	0	0	0	0	
8	0	0	0	0	
9	0	0	0	0	
10	10	15	5	0	
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					

Average 10-Minute Opacity: 0.75 %
Range of Opacity Readings: Min. 0 % Max. 15 % 05 10

OBSERVER: (please print)
Name: Jon Stone
Title: Engineer
Signature: Jon Stone
Date: 4-15-08
Observer Organization: KSL
Certified by: ETA
Certification Date: 2-27-08

SOURCE LAYOUT SKETCH



THIS FORM IS FROM EAQ-307, R4

Los Alamos

LOS ALAMOS NATIONAL LABORATORY (LANL)
VISIBLE EMISSION OBSERVATION FORM (10 MINUTE)

Source Name: TA-3-22 Power Plant

Source Location: TA-3-22

Type of Source: Boiler #1

Type of Control Equipment: No Particulate Control

Describe Emission Point (Top of stack, etc.): Top of boiler #1 Stack

Height Above Ground Level: 150 Feet

Height Relative to Observer: 140 Feet

Distance From Observer: 200 Feet

Direction of Source From Observer: ENE

Description of Plume (check one only): ☒Looking ☐Looping ☐Leaving ☐Turning ☐Coming ☐No Plume Present

Emission Color: Black

Plume Type: ☐No Plume Present ☐Continuous ☐ Fugitive ☒Intermittent

Water Droplets Present: ☒NO ☐YES If YES, droplet plume is ☐Attached ☐Detached

At what point in the plume was opacity determined? 2-4 ft. above top of stack

Describe Background (i.e. blue sky, trees, etc.): Blue sky

Background Color: Blue

Sky Conditions: Clear

Wind Speed: 15-20 mph

Wind Direction (generally from east, west, north or south): From SW

Ambient Temperature: 64 °F

Relative Humidity: 10 %

Additional Comments/Information: Fuel Oil Burn Exercises

SOURCE LAYOUT SKETCH

Stack with Plume

Sun

Wind

Draw Arrow in North Direction

Emission Point

1

OBSERVER'S POSITION

SUN LOCATION LINE

Observation Date	Start Time	End Time
4-15-08	1042	1052

Min \ Sec	0	15	30	45	Comments
1	5	5	0	0	
2	5	5	5	0	
3	0	5	5	0	
4	0	0	0	0	
5	0	0	0	0	
6	0	0	0	0	
7	0	0	0	0	
8	0	0	0	0	
9	0	0	0	0	
10	0	0	0	0	
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					

Average 10-Minute Opacity: 0.875

Range of Opacity Readings: Min 0% Max 5%

OBSERVER (please print)

Name: Don Stone

Title: Engineer

Signature: Don Stone

Date: 4-15-08

Observer Organization: KSL

Certified by: ETA

Certification Date: 2-27-08

THIS FORM IS FROM EAQ-307, R4

Los Alamos

LOS ALAMOS NATIONAL LABORATORY (LANL)
VISIBLE EMISSION OBSERVATION FORM (10 MINUTE)

Source Name: Power Plant at TA-3

Source Location: TA-3-22

Type of Source: Boiler # 3

Type of Control Equipment: No Particulate Control

Describe Emission Point (Top of stack, etc.): Top of Boiler #3 Stack

Height Above Ground Level: 150 Feet

Height Relative to Observer: 170 Feet

Distance From Observer: 200 Feet

Direction of Source From Observer: NW

Description of Plume (stack exit only)
☐Lofting ☐Trapping ☐Looping ☐Fanning ☐Coning
☒No Plume Present

Emission Color: N/A

Plume Type: ☒No Plume Present ☐Continuous ☐Fugitive ☐Intermittent

Water Droplets Present?
☒NO ☐YES If YES, droplet plume is ☐Attached ☐Detached

At what point in the plume was opacity determined?
≈1ft. above top of stack

Describe Background (i.e. blue sky, trees, etc.): white-gray sky

Background Color: white-gray

Sky Conditions: Cloudy

Wind Speed: 0-4 mph

Wind Direction (provide from to, i.e. from North to South): From ESE

Ambient Temperature: 41 °F

Relative Humidity: 81 %

Additional Comments/Information:
Fuel Oil Burn Exercises

Observation Date: 5-14-08

Start Time: 0844

End Time: 0854

Min \ Sec	0	15	30	45	Comments
1	0	0	0	0	
2	0	0	0	0	
3	0	0	0	0	
4	0	0	0	0	
5	0	0	0	0	
6	0	0	0	0	
7	0	0	0	0	
8	0	0	0	0	
9	0	0	0	0	
10	0	0	0	0	
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					

Average 10-Minute Opacity: 0 %

Range of Opacity Readings: Min. 0 % Max. 0 %

OBSERVER (please print)
Name: Don Stone Title: Engineer

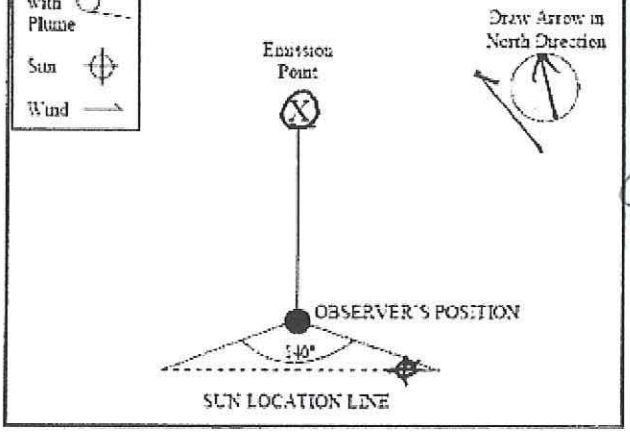
Signature: Don Stone Date: 5-14-08

Observer Organization: KSL

Certified by: ETA Certification Date: 2-27-08

SOURCE LAYOUT SKETCH

Stack with Plume
Sun
Wind



THIS FORM IS FROM EAQ-307, R4

Los Alamos

LOS ALAMOS NATIONAL LABORATORY (LANL)
VISIBLE EMISSION OBSERVATION FORM (10 MINUTE)

Source Name: Power Plant at TA-3

Source Location: TA-3-22

Type of Source: Boiler # 3

Type of Control Equipment: No Particulate Control

Describe Emission Point (Top of stack, etc.): Top of Boiler #3 Stack

Height Above Ground Level: 150 Feet

Height Relative to Observer: 170 Feet

Distance From Observer: 200 Feet

Direction of Source From Observer: NW

Description of Plume (stack exit only)
☐Lofting ☐Trapping ☐Looping ☐Fanning ☐Coning
☒No Plume Present

Emission Color: N/A

Plume Type ☒No Plume Present
☐Continuous ☐Fugitive ☐Intermittent

Water Droplets Present?
☒NO ☐YES If YES, droplet plume is ☐Attached ☐Detached

At what point in the plume was opacity determined?
1ft. above top of stack

Describe Background (i.e. blue sky, trees, etc.): white-gray sky

Background Color: White-gray

Sky Conditions: Cloudy

Wind Speed: 4-6 mph

Wind Direction (provide from to, i.e. from North to South): From ESE

Ambient Temperature: 46 °F

Relative Humidity: 75 %

Additional Comments/Information:
Fuel oil burn operations

Observation Date: 5-14-08

Start Time: 1003

End Time: 1013

Min \ Sec	0	15	30	45	Comments
1	0	0	0	0	
2	0	0	0	0	
3	0	0	0	0	
4	0	0	0	0	
5	0	0	0	0	
6	0	0	0	0	
7	0	0	0	0	
8	0	0	0	0	
9	0	0	0	0	
10	0	0	0	0	
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					

Average 10-Minute Opacity: 0%

Range of Opacity Readings: Min. 0% Max. 0%

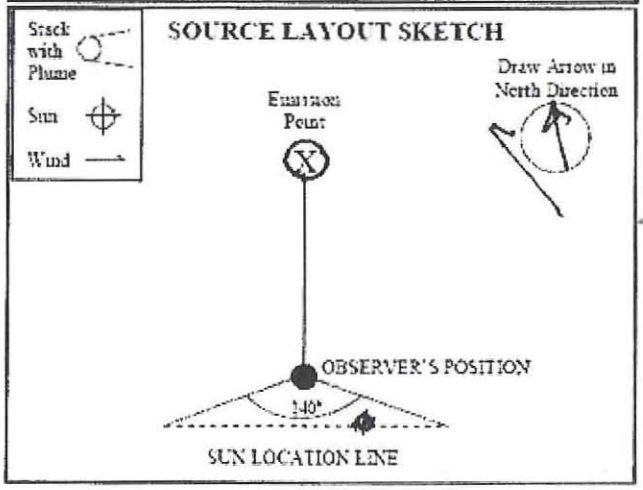
OBSERVER (please print)
Name: Don Stone Title: Engineer

Signature: Don Stone Date: 5-14-08

Observer Organization: KSL

Certified by: ETA Certification Date: 2-27-08

SOURCE LAYOUT SKETCH



THIS FORM IS FROM EAQ-307, R4

Los Alamos

LOS ALAMOS NATIONAL LABORATORY (LANL)
VISIBLE EMISSION OBSERVATION FORM (10 MINUTE)

Source Name: Power Plant at TA-3

Source Location: TA-3-22

Type of Source: Boiler #2

Type of Control Equipment: No Particulate Control

Describe Emission Point (Top of stack, etc.): Top of boiler #2 Stack

Height Above Ground Level: 150 Feet

Height Relative to Observer: 170 Feet

Distance From Observer: 200 Feet

Direction of Source From Observer: NW

Description of Plume (stack exit only)
☐Lofting ☐Trapping ☐Looping ☐Fanning ☐Coning
☒No Plume Present

Emission Color: N/A

Plume Type ☒No Plume Present
☐Continuous ☐Fugitive ☐Intermittent

Water Droplets Present?
☒NO ☐YES If YES, droplet plume is ☐Attached ☐Detached

At what point in the plume was opacity determined? 2 ft. above top of stack

Describe Background (i.e. blue sky, trees, etc.): Gray sky

Background Color: gray

Sky Conditions: Cloudy

Wind Speed: 10-12 mph

Wind Direction (provide from to, i.e. from North to South): From SE

Ambient Temperature: 39 °F

Relative Humidity: 87 %

Additional Comments Information: Fuel oil burn exercises

Observation Date: 5-22-08

Start Time: 1014

End Time: 1024

Min \ Sec	0	15	30	45	Comments
1	0	0	0	0	
2	0	0	0	0	
3	0	0	0	0	
4	0	0	0	0	
5	0	0	0	0	
6	0	0	0	0	
7	0	0	0	0	
8	0	0	0	0	
9	0	0	0	0	
10	0	0	0	0	
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					

Average 10-Minute Opacity: 0%

Range of Opacity Readings: Min. 0% Max. 0%

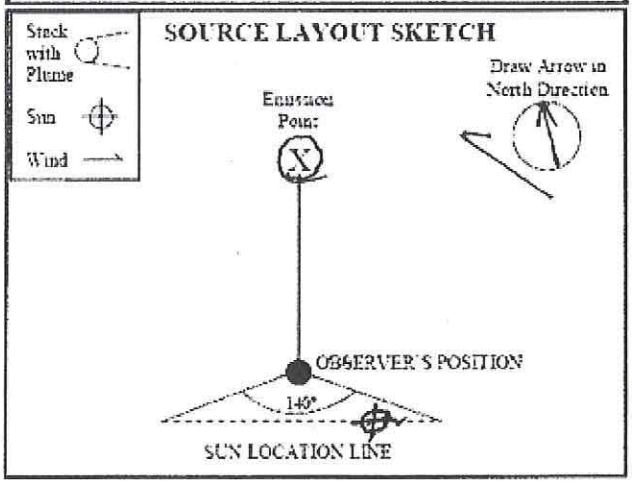
OBSERVER (please print)
Name: Don Stone Title: Engineer

Signature: Don Stone Date: 5-22-08

Observer Organization: KSL

Certified by: ETA Certification Date: 2-27-08

SOURCE LAYOUT SKETCH



THIS FORM IS FROM EAQ-307, R4

Part 2

Deviation Summary Report

1. Were any deviations reported to the Air Quality Bureau during this reporting period? If NO, answer question 2 below. If YES, complete the "Summary of Deviations Previously Reported" table below, then answer question 2.	☐ Yes	☒ No

SUMMARY OF DEVIATIONS PREVIOUSLY REPORTED

Unit # and description	Date deviation reported	Tracking Number

2. Are there any deviations not yet reported? If No, no further information is required on the Deviation Summary Report. If Yes, answer question 3 below and enter the required information in the Deviation Summary Table.	☐ Yes ☒ No
3. Did any of the deviations result in excess emissions? For deviations resulting in excess emissions a completed Excess Emission Form for each deviation must be attached to this report.	☐ Yes ☐ No

Deviation Summary Table for deviations not yet reported.

No.	Applicable Requirement (Include Rule Citation)	Emission Unit ID(s)	Cause of Deviation	Corrective Action Taken
1				
2				
3				
4				

Deviation Summary Table (cont.)

	Deviation Started		Deviation Ended					Did you attach an excess emission form?
No.	Date	Time	Date	Time	Pollutant	Monitoring Method	Amount of Emissions	
1								☐ Yes ☐ No
2								☐ Yes ☐ No
3								☐ Yes ☐ No
4								☐ Yes ☐ No