DOCKETE	DOCKETED				
Docket Number:	99-AFC-03C				
Project Title:	METCALF Energy Center Compliance				
TN #:	206509				
Document Title:	Annual Compliance Report for Metcalf Energy Center 2014				
Description:	COM-7 Annual Compliance Report (ACR) for Metcalf Energy Center (99-AFC-3C) for 2014				
Filer:	Eric Veerkamp				
Organization:	California Energy Commission				
Submitter Role:	Commission Staff				
Submission Date:	11/4/2015 3:48:20 PM				
Docketed Date:	11/4/2015				

1 Blanchard Road Coyote, CA 95013

August 18, 2015

Mr. Eric Veerkamp Compliance Project Manager Systems Assessment & Facility Sitting Division California Energy Commission 1516 Ninth Street, MS-2000 Sacramento, CA 95814

Re: Metcalf Energy Center, LLC. Docket No. 99-AFC-3 COM-7 - Annual Compliance Report for 2014

Dear Mr. Veerkamp:

In accordance with the Conditions of Certification for the Metcalf Energy Center, LLC, this report is intended to fulfill the requirements of the Annual Compliance Report for 2014 in Condition of Certification COM-7.

Enclosed are the documents required by the Conditions of Certification. The documents are provided as appendices, as noted in the Annual Compliance Summary:

- Annual Compliance Summary
- Conditions of Certification Matrix
- Operating Data Summary
- AQ-13: Gas Turbine and HRSG Firing with Natural Gas
- AQ-14: Heat Input Hourly Limit
- AQ-15: Heat Input daily Limit
- AQ-16: Heat Input Annual Limit
- AQ-17: HRSG Duct Burners Firing
- AQ-18: S-1 and S-2 SCR Operation and Maintenance
- AQ-19: S-3 and S-4 SCR Operation and Maintenance
- AQ-20:Gas Turbine Emissions
- AQ-21: Gas Turbine Mass Emissions
- AQ-22: Gas Turbine Start-up
- AQ-24: Gas Turbine and HRSG Total Combined Daily Emissions
- AQ-25: Gas Turbine and HRSG Total Combined 12-Month Emissions
- AQ-26: Annual Toxic Air Contaminants Emissions
- AQ-27: Operation and Maintenance of Continuous Monitors
- AQ-28: Calculation and Recording of Daily Mass Emissions
- AQ-29: Projected Annual Emissions of Formaldehyde, Benzene, Specific PAHs

- AQ-36: Notification of Violations
- AQ-44: Compliance with 40 CFR Part 75
- AQ-56: Cold Start-up Hours
- BIO-2: Designated Biologist Summaries
- HAZ-1: Hazardous Materials List
- LAND-1: Trail Network Connection
- PUBLIC HEALTH-1: Cooling Tower Inspection
- SOIL & WATER-1: Water Use Summary
- TLSN-2: Radio and TV Interference
- TLSN-4: Transmission Right-of-Way
- TRANS-3: Permits or Licenses for Hazardous Material Transport
- VIS-1: Treatment of Project Structures
- VIS-10: Visible Plumes
- WASTE-3: Waste Management Comparison

If you have any additional questions, please feel free to contact Rosemary Silva, EHS Specialist, at 408-361-4954.

Sincerely,

Terry Mahoney General Manager Metcalf Energy Center, LLC.

Enclosures: Via Email

cc: Barbara McBride Calpine Corp. Katherine Piper Calpine Corp

California Energy Commission 2014 Annual Compliance Report Metcalf Energy Center – 99-AFC-3

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METCALF ENERGY CENTER, LLC TRANS-3 HAZARDOUS MATERIAL DELIVERIES

	JANUARY		
VENDOR NAME	CHEMICAL	RECEIVED	QUANTITY UOM
HILL BROTHERS CHEMICAL CO.	AMMONIA	1/2/2014	6700.5 GAL
HILL BROTHERS CHEMICAL CO.	AMMONIA	1/2/2014	6700.5 GAL
UNIVAR		1/3/2014	46960 LBS
UNIVAR	SODIUM HYPOCHLORITE	1/3/2014	4516.2 GAL
HILL BROTHERS CHEMICAL CO.	AMMONIA	1/5/2014	6702.8 GAL
HILL BROTHERS CHEMICAL CO.	AMMONIA CL240	1/9/2014	6700.1 GAL 4400 LBS
CHEMTREAT	FEBRUARY	1/21/2014	4400 LB3
VENDOR NAME	CHEMICAL	RECEIVED	QUANTITY UOM
HILL BROTHERS CHEMICAL CO.	AMMONIA	2/14/2014	6700.4 GAL
ChemTreat	BL152	2/19/2014	1592 LBS
ChemTreat	CL4500	2/20/2014	10130 LBS
Univar	SODIUM HYPOCHLORITE	2/21/2014	4538 GAL
ChemTreat	BL1795	2/21/2014	483 LBS
UNIVAR	SULFURIC ACID	2/24/2014	47720 LBS
	MARCH		
	CHEMICAL	RECEIVED	QUANTITY UOM
HILL BROTHERS CHEMICAL CO. HILL BROTHERS CHEMICAL CO.	AMMONIA	3/2/2014	6700.6 GAL 6701.6 GAL
ChemTreat	AMMONIA RL1245	3/6/2014 3/11/2014	1022 LBS
HILL BROTHERS CHEMICAL CO.	AMMONIA	3/15/2014	6701.7 GAL
GOLDEN GATE PETROLEUM	UNIION TURBINE OIL 32	3/17/2014	385 GAL
GOLDEN GATE PETROLEUM	UNIION TURBINE OIL 32	3/20/2014	2100 GAL
HILL BROTHERS CHEMICAL CO.	AMMONIA	3/22/2014	6702.3 GAL
UNIVAR	SULFURIC ACID	3/24/2014	47260 LBS
Univar	SODIUM HYPOCHLORITE	3/24/2014	4540 GAL
ChemTreat	BL152	3/26/2014	1194 LBS
HILL BROTHERS CHEMICAL CO.	AMMONIA	3/27/2014	6709.7 GAL
	APRIL		
VENDOR NAME	CHEMICAL	RECEIVED	QUANTITY UOM
HILL BROTHERS CHEMICAL CO.	AMMONIA	4/4/2014	6702.6 GAL
HILL BROTHERS CHEMICAL CO.		4/12/2014	6703 GAL
UNIVAR		4/14/2014	46280 LBS
Univar ChemTreat	SODIUM HYPOCHLORITE	4/16/2014	4540 GAL 1194 LBS
HILL BROTHERS CHEMICAL CO.	BL152 AMMONIA	4/16/2014 4/18/2014	6700.2 GAL
HILL BROTHERS CHEMICAL CO.	AMMONIA	4/18/2014	6700.2 GAL
ChemTreat	BL152	4/30/2014	1194 LBS
	MAY	7,50,2014	
VENDOR NAME	CHEMICAL	RECEIVED	QUANTITY UOM
HILL BROTHERS CHEMICAL CO.	AMMONIA	5/8/2014	6700 GAL
	AIVIIVIONIA	0,0,202	
UNIVAR	SULFURIC ACID	5/9/2014	44924 LBS
UNIVAR HILL BROTHERS CHEMICAL CO.			
	SULFURIC ACID	5/9/2014	44924 LBS

Univar	SODIUM HYPOCHLORITE	5/23/2014	4843	GAL	
ChemTreat	CL2875	5/23/2014	994	LBS	
ChemTreat	BL1795	5/23/2014	483	LBS	
ChemTreat	RL1245	5/27/2014	1533	LBS	
HILL BROTHERS CHEMICAL CO.	AMMONIA	5/30/2014	6701.1	GAL	
ChemTreat	BL152	5/30/2014	1194	LBS	
	JUNE				
VENDOR NAME	CHEMICAL	RECEIVED	QUANTITY	UOM	
UNIVAR	SULFURIC ACID	6/3/2014	46720	LBS	
HILL BROTHERS CHEMICAL CO.	AMMONIA	6/5/2014	6701.3	GAL	
ChemTreat	BL152	6/11/2014	1194	LBS	
HILL BROTHERS CHEMICAL CO.	AMMONIA	6/12/2014	6701.5	GAL	
ChemTreat	RL9007	6/12/2014	519	LBS	
Univar	SODIUM HYPOCHLORITE	6/13/2014	3	55 GAL	DRU
Univar	SODIUM HYPOCHLORITE	6/16/2014	4538	GAL	
GOLDEN GATE PETROLEUM	76 FAM, MULTIPURPOSE R&O 220	6/18/2014	55	GAL	
HILL BROTHERS CHEMICAL CO.	AMMONIA	6/24/2014	6700.5	GAL	
UNIVAR	SULFURIC ACID	6/25/2014	48220	LBS	
	JULY				
VENDOR NAME	CHEMICAL	RECEIVED	QUANTITY	UOM	
HILL BROTHERS CHEMICAL CO.	AMMONIA	7/6/2014	6700.1	GAL	
ChemTreat	BL152	7/10/2014	1592	LBS	
ChemTreat	BL1795	7/11/2014	483	LBS	
ChemTreat	RL1245	7/11/2014	1533	LBS	
HILL BROTHERS CHEMICAL CO.	AMMONIA	7/12/2014	6700.2	GAL	
ChemTreat	CL240	7/15/2014	4400	LBS	
Univar	SODIUM HYPOCHLORITE	7/19/2014	4540	GAL	
HILL BROTHERS CHEMICAL CO.	AMMONIA	7/24/2014	6731.1	GAL	
UNIVAR	SULFURIC ACID	7/30/2014	46300	LBS	
ChemTreat	BL152	7/30/2014	1194	LBS	
ChemTreat	CL206	7/31/2014	102	LBS	
	AUGUST				
VENDOR NAME	CHEMICAL	RECEIVED	QUANTITY	UOM	
HILL BROTHERS CHEMICAL CO.	AMMONIA	8/1/2014	6702.4		
HILL BROTHERS CHEMICAL CO.	AMMONIA	8/7/2014	6701.5		
Univar	SODIUM HYPOCHLORITE	8/12/2014	4034		
HILL BROTHERS CHEMICAL CO.	AMMONIA	8/14/2014	6701.1		
ChemTreat	BL152	8/14/2014		LBS	
HILL BROTHERS CHEMICAL CO.	AMMONIA	8/21/2014	6700.7		
UNIVAR	SULFURIC ACID	8/21/2014	47860		
Univar		8/27/2014	4541		
HILL BROTHERS CHEMICAL CO.	AMMONIA	8/28/2014	6703.4		
ChemTreat	RL1245	8/28/2014	1533		
ChemTreat	BL1795	8/29/2014	966	LBS	
	SEPTEMBER		OUANTITY		
		RECEIVED	QUANTITY	UOM	
HILL BROTHERS CHEMICAL CO.	AMMONIA	9/3/2014	6701		
HILL BROTHERS CHEMICAL CO.		9/9/2014	6700.3		
ChemTreat		9/10/2014			
UNIVAR HILL BROTHERS CHEMICAL CO.	SULFURIC ACID AMMONIA	9/12/2014 9/16/2014	47920 6700.4		
TILL DRUITERS CHEIVIICAL CU.		9/10/2014	0700.4	GAL	

HILL BROTHERS CHEMICAL CO.	AMMONIA	9/22/2014	6700.9 G			
Univar	SODIUM HYPOCHLORITE	9/23/2014	4589 G			
HILL BROTHERS CHEMICAL CO.	AMMONIA	9/30/2014	6000.2 G	iAL		
	OCTOBER					
VENDOR NAME	CHEMICAL	RECEIVED		UOM		
IILL BROTHERS CHEMICAL CO.	AMMONIA	10/11/2014	6700 G			
acific Coast Chemicals	SULFURIC ACID	10/13/2014	45260 L			
ChemTreat	BL152	10/15/2014	796 LI			
ChemTreat	BL152	10/15/2014	1194 LI			
IILL BROTHERS CHEMICAL CO.	AMMONIA	10/16/2014	6700 G			
Jnivar	SODIUM HYPOCHLORITE	10/17/2014	4536 G	iAL		
ChemTreat	RL1245	10/20/2014	1533 L	BS		
ILL BROTHERS CHEMICAL CO.	AMMONIA	10/21/2014	6892.9 G	iAL		
ILL BROTHERS CHEMICAL CO.	AMMONIA	10/27/2014	6702.7 G	iAL		
ChemTreat	RL9007	10/27/2014	519 LI	BS		
Pacific Coast Chemicals	SULFURIC ACID	10/30/2014	50380 L	BS		
GOLDEN GATE PETROLEUM	FAMILY, TURBINE OIL 100	10/30/2014	55 G	iAL		
	NOVEMBER					
VENDOR NAME	CHEMICAL	RECEIVED	QUANTITY	UOM		
HILL BROTHERS CHEMICAL CO.	AMMONIA	11/1/2014	6700.2 G	iAL		
Jnivar	SODIUM HYPOCHLORITE	11/6/2014	4538 G	iAL		
ChemTreat	CL206	11/6/2014	51 L	BS		
IILL BROTHERS CHEMICAL CO.	AMMONIA	11/8/2014	6702.1 G	iAL		
ILL BROTHERS CHEMICAL CO.	AMMONIA	11/13/2014	6705.6 G	iAL		
ILL BROTHERS CHEMICAL CO.	AMMONIA	11/18/2014	6717.4 G	iAL		
ChemTreat	BL152	11/18/2014	1194 L	BS		
Jnivar	SODIUM HYPOCHLORITE	11/19/2014	4 5	5 GAL DRI		
ChemTreat	BL152	11/20/2014	398 LI	BS		
Pacific Coast Chemicals	SULFURIC ACID	11/21/2014	45420 L	BS		
HILL BROTHERS CHEMICAL CO.	AMMONIA	11/23/2014	6702.4 G			
	DECEMBER					
	DECEIVIDER					
VENDOR NAME	CHEMICAL	RECEIVED	QUANTITY			
		RECEIVED 12/1/2014	QUANTITY 4387 G	UOM		
Jnivar	CHEMICAL			UOM GAL		
Jnivar ChemTreat	CHEMICAL SODIUM HYPOCHLORITE	12/1/2014 12/1/2014	4387 G	UOM GAL BS		
Jnivar ChemTreat HILL BROTHERS CHEMICAL CO.	CHEMICAL SODIUM HYPOCHLORITE BL152	12/1/2014 12/1/2014 12/2/2014	4387 G 1592 L	UOM GAL BS GAL		
Jnivar ChemTreat HILL BROTHERS CHEMICAL CO. HILL BROTHERS CHEMICAL CO.	CHEMICAL SODIUM HYPOCHLORITE BL152 AMMONIA	12/1/2014 12/1/2014	4387 G 1592 LI 6701.2 G	UOM GAL BS GAL GAL		
Jnivar ChemTreat HLL BROTHERS CHEMICAL CO. HLL BROTHERS CHEMICAL CO. JNIVAR	CHEMICAL SODIUM HYPOCHLORITE BL152 AMMONIA AMMONIA	12/1/2014 12/1/2014 12/2/2014 12/7/2014 12/11/2014	4387 G 1592 LI 6701.2 G 6708.8 G 47580 LI	UOM GAL BS GAL GAL BS		
Jnivar ChemTreat HILL BROTHERS CHEMICAL CO. HILL BROTHERS CHEMICAL CO. JNIVAR HILL BROTHERS CHEMICAL CO.	CHEMICAL SODIUM HYPOCHLORITE BL152 AMMONIA AMMONIA SULFURIC ACID AMMONIA	12/1/2014 12/1/2014 12/2/2014 12/7/2014 12/11/2014 12/12/2014	4387 G 1592 L 6701.2 G 6708.8 G	UOM GAL BS GAL GAL BS GAL		
Jnivar ChemTreat HILL BROTHERS CHEMICAL CO. HILL BROTHERS CHEMICAL CO. JNIVAR HILL BROTHERS CHEMICAL CO.	CHEMICAL SODIUM HYPOCHLORITE BL152 AMMONIA AMMONIA SULFURIC ACID	12/1/2014 12/1/2014 12/2/2014 12/7/2014 12/11/2014 12/12/2014 12/17/2014	4387 G 1592 LI 6701.2 G 6708.8 G 47580 LI 6751.7 G	UOM GAL BS GAL BS GAL GAL		
Jnivar ChemTreat HILL BROTHERS CHEMICAL CO. HILL BROTHERS CHEMICAL CO. JNIVAR HILL BROTHERS CHEMICAL CO. HILL BROTHERS CHEMICAL CO. Jnivar	CHEMICAL SODIUM HYPOCHLORITE BL152 AMMONIA AMMONIA SULFURIC ACID AMMONIA AMMONIA SODIUM HYPOCHLORITE	12/1/2014 12/1/2014 12/2/2014 12/7/2014 12/11/2014 12/12/2014 12/17/2014 12/18/2014	4387 G 1592 LI 6701.2 G 6708.8 G 47580 LI 6751.7 G 6700 G 4539 G	UOM GAL BS GAL GAL GAL GAL		
Jnivar ChemTreat HILL BROTHERS CHEMICAL CO. HILL BROTHERS CHEMICAL CO. JNIVAR HILL BROTHERS CHEMICAL CO. HILL BROTHERS CHEMICAL CO. HILL BROTHERS CHEMICAL CO.	CHEMICAL SODIUM HYPOCHLORITE BL152 AMMONIA AMMONIA SULFURIC ACID AMMONIA AMMONIA SODIUM HYPOCHLORITE AMMONIA	12/1/2014 12/1/2014 12/2/2014 12/7/2014 12/11/2014 12/12/2014 12/17/2014 12/18/2014 12/21/2014	4387 G 1592 L 6701.2 G 6708.8 G 47580 L 6751.7 G 6700 G 4539 G 6700.5 G	UOM GAL BS GAL BS GAL GAL GAL GAL		
Jnivar ChemTreat HILL BROTHERS CHEMICAL CO. HILL BROTHERS CHEMICAL CO. JNIVAR HILL BROTHERS CHEMICAL CO. HILL BROTHERS CHEMICAL CO. HILL BROTHERS CHEMICAL CO.	CHEMICAL SODIUM HYPOCHLORITE BL152 AMMONIA AMMONIA SULFURIC ACID AMMONIA SODIUM HYPOCHLORITE AMMONIA AMMONIA	12/1/2014 12/1/2014 12/2/2014 12/7/2014 12/11/2014 12/12/2014 12/17/2014 12/18/2014 12/21/2014 12/21/2014	4387 G 1592 L 6701.2 G 6708.8 G 47580 L 6751.7 G 6700 G 4539 G 6700.5 G 6700 G	UOM GAL BS GAL GAL GAL GAL GAL GAL		
Univar ChemTreat HILL BROTHERS CHEMICAL CO. HILL BROTHERS CHEMICAL CO. UNIVAR HILL BROTHERS CHEMICAL CO. HILL BROTHERS CHEMICAL CO. HILL BROTHERS CHEMICAL CO. HILL BROTHERS CHEMICAL CO.	CHEMICAL SODIUM HYPOCHLORITE BL152 AMMONIA AMMONIA SULFURIC ACID AMMONIA AMMONIA SODIUM HYPOCHLORITE AMMONIA AMMONIA	12/1/2014 12/1/2014 12/2/2014 12/7/2014 12/11/2014 12/12/2014 12/17/2014 12/18/2014 12/21/2014 12/24/2014 12/24/2014	4387 G 1592 L 6701.2 G 6708.8 G 47580 L 6751.7 G 6700 G 4539 G 6700.5 G 6700 G 6700 G	UOM GAL BS GAL BS GAL GAL GAL GAL GAL		
VENDOR NAME Univar ChemTreat HILL BROTHERS CHEMICAL CO. HILL BROTHERS CHEMICAL CO. UNIVAR HILL BROTHERS CHEMICAL CO. HILL BROTHERS CHEMICAL CO. HILL BROTHERS CHEMICAL CO. HILL BROTHERS CHEMICAL CO. HILL BROTHERS CHEMICAL CO. GOLDEN GATE PETROLEUM	CHEMICAL SODIUM HYPOCHLORITE BL152 AMMONIA AMMONIA SULFURIC ACID AMMONIA SODIUM HYPOCHLORITE AMMONIA AMMONIA	12/1/2014 12/1/2014 12/2/2014 12/7/2014 12/11/2014 12/12/2014 12/17/2014 12/18/2014 12/21/2014 12/21/2014	4387 G 1592 L 6701.2 G 6708.8 G 47580 L 6751.7 G 6700 G 4539 G 6700.5 G 6700 G	UOM GAL BS GAL GAL GAL GAL GAL GAL GAL		

VISUAL RESOURCES-1

METCALF ENERGY CENTER, LLC STATUS REPORT REGARDING THE ARCHITECTURAL DESIGN TREATMENT MAINTENANCE

California Energy Commission Condition of Certification Visual Resources – 1 requires the Metcalf Energy Center to submit in its Annual Compliance Report a status report regarding the treatment maintenance of the project structures. The project structures, which are visible to the public, have been painted with CPM-approved and City of San Jose-approved non-reflective colors with a low-gloss finish.

The Metcalf Energy Center Maintenance Department has procedures to address all aspects for maintaining the power plant efficiently. Issues such as coating or painting are captured by staff's surveillance and utilization of checklists. Once an item is deemed in need of maintenance, Plant Management schedule and prioritizes the maintenance through a work order process. Outside contractors are also utilized at Metcalf Energy Center. Plant Management inspects and signs off on the work once it is fully complete.

A copy of the checklists used to survey the architectural screen as well as the other painted surfaces visible from offsite is attached to this summary.

UNIT: Steam Turbine

	TURBINE / GENERATOR ENCLOSURE	GENERATOR / CONDENSER SOUND WALL
Chalking	1	1
Erosion	1	1
Discoloration	1	1
Fading	1	1
Loss of Gloss	1	1
Mildew Defacement	1	1
Moisture Blushing	1	1
Orange Peel	1	1
Wrinkling	1	1
Chemical Attack	1	1
High Temperature Attack	1	1
Mottling	1	1
Crackling	1	1
Saponification	1	1
Disbanding (peel/blister)	1	1
Crawling (fish eye)	1	1

Comments:

UNIT: Cooling Tower

	SUPERSTRUCTURE
Chalking	1
Erosion/Corrosion	1
Discoloration	1
Fading	1
Loss of Gloss	1
Mildew Defacement	2
Moisture Blushing	1
Orange Peel	1
Wrinkling	1
Chemical Attack	1
High Temperature Attack	1
Mottling	1
Crackling	1
Saponification	1
Disbanding (peel/blister)	1
Crawling (fish eye)	1

Comments:

Slight algae growth on the superstructure (not visible from outside the Plant).

UNIT: HRSG & Gas Turbine 1

	INLET AIR FILTER HOUSE	TURBINE/ GENERATOR	STACK	SCREENING
Chalking	1	1	1	1
Erosion/Corrosion	1	1	1	1
Discoloration	1	1	1	1
Fading	1	1	1	1
Loss of Gloss	1	1	1	1
Mildew Defacement	1	1	1	1
Moisture Blushing	1	1	1	1
Orange Peel	1	1	1	1
Wrinkling	1	1	1	1
Chemical Attack	1	1	1	1
High Temperature Attack	1	1	1	1
Mottling	1	1	1	1
Crackling	1	1	1	1
Saponification	1	1	1	1
Disbanding (peel/blister)	1	1	1	1
Crawling (fish eye)	1	1	1	1

Comments:

UNIT: HRSG & Gas Turbine 2

	INLET AIR FILTER HOUSE	TURBINE/ GENERATOR	STACK	SCREENING
Chalking	1	1	1	1
Erosion/Corrosion	1	1	1	1
Discoloration	1	1	1	1
Fading	1	1	1	1
Loss of Gloss	1	1	1	1
Mildew Defacement	1	1	1	1
Moisture Blushing	1	1	1	1
Orange Peel	1	1	1	1
Wrinkling	1	1	1	1
Chemical Attack	1	1	1	1
High Temperature Attack	1	1	1	1
Mottling	1	1	1	1
Crackling	1	1	1	1
Saponification	1	1	1	1
Disbanding (peel/blister)	1	1	1	1
Crawling (fish eye)	1	1	1	1

Comments:

Rating System: Mark a number from 1 through 5 in the appropriate box to indicate the condition of the coating: 1 = No Problems; 2 = Minor Problems; 3 = Average Problems; 4 = Increased Problems; 5 = Major Problems.

UNIT: Water Tanks

	SERVICE/FIRE WATER	DEMINERALIZED WATER
Chalking	1	1
Erosion/Corrosion	1	1
Discoloration	1	1
Fading	1	1
Loss of Gloss	1	1
Mildew Defacement	1	1
Moisture Blushing	1	1
Orange Peel	1	1
Wrinkling	1	1
Chemical Attack	1	1
High Temperature Attack	1	1
Mottling	1	1
Crackling	1	1
Saponification	1	1
Disbanding (peel/blister)	1	1
Crawling (fish eye)	1	1

Comments:

UNIT: Buildings

	<u> </u>	
	ADMINISTRATION	WAREHOUSE
Chalking	1	1
Erosion/Corrosion	1	1
Discoloration	1	1
Fading	1	1
Loss of Gloss	1	1
Mildew Defacement	1	1
Moisture Blushing	1	1
Orange Peel	1	1
Wrinkling	1	1
Chemical Attack	1	1
High Temperature Attack	1	1
Mottling	1	1
Crackling	1	1
Saponification	1	1
Disbanding (peel/blister)	1	1
Crawling (fish eye)	1	1

Comments:

Appendix 1

Metcalf Energy Center -- 99-AFC-3 2014 Annual Compliance Report

Project Status

The Metcalf Energy Center, LLC (MEC) declared commercial operation (COD) on May 29, 2005. MEC is dispatched into the merchant market by Calpine Energy Services (CES) and participates in the Ancillary Services market with the California ISO.

The Annual Compliance Report has been prepared in accordance with the General Conditions of the Compliance Plan.

1. An updated compliance matrix which shows the status of all conditions of certification (fully satisfied and/or closed conditions do not need to be included in the matrix after they have been reported as closed).

The compliance matrix is included as an attachment. See Appendix 2.

2. A summary of the current project operating status and an explanation of any significant changes to facility operations during the year.

The facility is currently operating in a normal status. There have been no significant changes to facility operations during the reporting year. See Appendix 3

3. Documents required by specific conditions to be submitted along with the Annual Compliance Report. Each of these items must be identified in the transmittal letter, and should be submitted as attachments to the Annual Compliance Report.

The documents required by specific conditions are included in this report as attachments and are identified in the transmittal letter.

- 4. A cumulative listing of all post-certification changes approved by the Energy Commission or cleared by the CPM.
 - Petition to maintain the facility's post-commissioning daily and annual emission limits amendment. Order number 05-0316-03, approved on March 16, 2005.
- 5. An explanation for any submittal deadlines that were missed, accompanied by an estimate of when the information will be provided.

There are currently no outstanding submittals for the 2014 reporting period.

- 6. A listing of filings made to, or permits issued by, other governmental agencies during the year.
 - Annual compliance report submitted to CEC
 - Monthly Plume Abatement Status Reports
 - Annual Permit to Operate BAAQMD
 - Monthly Air Reports
 - Annual Title V Compliance Certification Report submitted to BAAQMD and EPA.

- Annual Hazardous Material Permit City of San Jose
 - Annual Hazardous Materials Business Plan Update and Certification
- Annual Fire Safety Permit City of San Jose
- Annual Business License City of San Jose.
- Annual Storm Water Report to the State Water Resources Control Board
- Annual EIA-923S and EIA-860A to the U.S. Department of Energy
- Quarterly Electronic Data Reporting to the EPA (40 CFR 75)
- Semi-Annual NSPS Report to the EPA
- Semi-Annual Title V Monitoring Reports
- Semi-Annual Waste Water Self-Monitoring Report to the City of San Jose
- Monthly EIA-923M to the U.S. Department of Energy
- All submittals, except as noted above, required under our permits have been made on time to include, for the 2014 reporting year.

7. A projection of project compliance activities scheduled during the next year.

Currently there is no compliance activities scheduled.

8. A listing of the year's additions to the on-site compliance file.

No additions have been made to the on-site compliance files as required by the Decision.

9. An evaluation of the on-site contingency plan for unplanned facility closure, including any suggestions necessary for bringing the plan up to date.

An evaluation to the on-site contingency plan for unexpected facility closure was conducted with no modifications.

In addition, insurance coverage for the site remains current. Currently the site major equipment warranties have expired.

10. A listing of complaints, notices of violation, official warnings, and citations received during the year, a description of the resolution of any resolved complaints, and the status of any unresolved complaints.

There were no complaints, notices of violations, official warnings or citations during the reporting period.

CONDITIONS OF CERTIFICATION SPECIFIC REQUIREMENTS

AQ-13 The Gas Turbines and the Heat Recovery Steam Generators shall be fired exclusively on natural gas.

No violation of this condition occurred for the 2014 reporting year

AQ-14 The combined heat input rate to each power train shall not exceed 2,124 mmBTU per hour, averaged over any rolling 3-hour period.

No violation of this condition occurred for the 2014 reporting year

AQ-15 The combined heat input rate to each power train shall not exceed 49,908 mmBTU per calendar day.

No violation of this condition occurred for the 2014 reporting year.

AQ-16 The combined cumulative heat input rate for the Gas Turbines and HRSGs shall not exceed 35,274,060 mmBTU per year.

No violation of this condition occurred for the 2014 reporting year.

AQ-17 The HRSG duct burners shall not be fired unless its associated gas turbine is in operation.

No violation of this condition occurred for the 2014 reporting year.

AQ-18 S-1 Gas Turbine and S-2 HRSG shall be abated by the properly operated and properly maintained A-1 Selective Catalytic Reduction (SCR) system whenever fuel is combusted at those sources and the A-1 catalyst bed has reached minimum operating temperature.

No violation of this condition occurred for the 2014 reporting year.

AQ-19 S-3 Gas Turbine and S-4 HRSG shall be abated by the properly operated and properly maintained A-2 Selective Catalytic Reduction (SCR) system whenever fuel is combusted at those sources and the A-2 catalyst bed has reached minimum operating temperature.

No violation of this condition occurred for the 2014 reporting year.

- AQ-20 The Gas Turbines and HRSGs shall comply emission requirements (a) through (h) under all operating scenarios, including duct burner firing mode and steam injection power augmentation mode. Requirements (a) through (h) do not apply during a gas turbine start-up or shutdown.
 - On June 1, 2014 the facility exceeded the NH3 Slip 3-Hour rolling average emission limit on Unit 1. Details are in Appendix 9.
 - On August 7, 2014 the facility exceeded the NOx 1-hour rolling average and the NOx lb/mmBTU 1-hour rolling average limits on Unit 2. Details are in Appendix 9.

• On December 30, 2014 exceeded the NH3 Slip 3-Hour rolling average emission limit on Unit 1. Details are in Appendix 9.

AQ-21 The regulated air pollutant mass emission rates from each of the Gas Turbines during a start-up or a shutdown shall not exceed the limits.

- On May 12, 2014 the facility exceeded the CO emissions limit during a startup on Unit 1. Details are in Appendix 9.
- On July 22, 2014 the facility exceeded the CO emissions limit during a start-up on Unit 2. Details are in Appendix 9.
- AQ-22 The Gas Turbines shall not be in start-up mode simultaneously.

No violation of this condition occurred for the 2014 reporting year.

AQ-24 Total combined emissions from the Gas Turbines and HRSGs including emissions generated from the cooling tower and during Gas Turbine start-ups and shutdowns shall not exceed the following limits during any calendar day.

No violation of this condition occurred for the 2014 reporting year.

AQ-25 Combined emissions from the gas turbines and HRSGs, including emissions generated from cooling towers and during gas turbine startups, shutdowns and tuning shall not exceed permit limits during any consecutive twelve (12) month period.

No violation of this condition occurred for the 2014 reporting year.

AQ-26 Maximum projected annual toxic air contaminants emissions from the gas turbines shall not exceed permit limits.

No violation of this condition occurred for the 2014 reporting year.

AQ-27 Properly operated and maintained continuous monitors.

Continuous monitors are properly operated and maintained.

AQ-28 To demonstrate compliance with conditions 20(f), 20(g), 20(h), 21, 24(c') through 24(e), and 25('c) through 25(e) the owner/operator shall calculate and record on a daily basis the POC, PM10, and SO2 mass emissions from each power train.

No violation of this condition occurred for the 2014 reporting year.

AQ-29 Calculate and record on an annual basis the maximum projected annual emissions of formaldehyde, benzene and specific PAHs.

No violation of this condition occurred for the 2014 reporting year.

AQ-36 Notification to the District and CPM of any violations of permit conditions.

No violations occurred during the 2014 reporting year.

AQ-44 Compliance with the continuous emission monitoring requirements of 40 CFR Part 75.

No violation of this condition occurred for the 2014 reporting year. See Appendix 4

AQ-56 Cold Start-up hours shall not exceed 30 hours per calendar year for each turbine.

No violation of this condition occurred for the 2014 reporting year.

BIO-2 The CPM approved Designated Biologist shall submit record summaries in the Annual Compliance Report:

The Designated Biologist currently is not conducting any of the tasks as specified in the condition. He does provide an annual report regarding the preserve.

HAZ-1 Do not use any hazardous materials in reportable quantities not listed in attachment 1 or in greater quantities or strengths than those identified unless approved in advance by Santa Clara County and the CPM.

A hazardous material inventory is included as an attachment and is identified in the table of contents. See Appendix 5.

LAND-1 At such time as a connection to a trail network can be made, install and maintain the portion of planned trail that would cross the site.

No trail updates have been made at this time. MEC is awaiting direction from the City of San Jose for trail construction.

PUBLIC HEALTH-1 Perform a visual inspection of the cooling tower drift eliminators once per calendar year.

The inspection sheet is included as an attachment and is identified in the table of contents. See Appendix 6.

SOIL & WATER-1 Potable water may be used for cooling purposes only in the event that SBWR recycled water service is interrupted.

A record of water consumption has been included and identified in the table of contents. See Appendix 7.

TLSN-2 Identify and correct any complaints of interference w/ radio and TV signals from operation of line and facilities.

No complaints of interference were received during the 2014 reporting year. The COC states that this needs to be included for 5 years. This timeframe has expired.

TLSN-4 Ensure that the transmission line right-of-way is kept free of combustible material.

The transmission right-of-way has been kept free of combustibles by the site's landscaper. The COC states that this needs to be included for 5 years. This timeframe has expired.

TRANS-3 Ensure that all federal and state regulations for the transport of hazardous materials are observed during both construction and operation of the facility.

No permits or licenses have been acquired concerning the transport of hazardous substances.

VIS-1 Treat the project structures, buildings, and tanks visible to the public in a nonreflective color.

The plant's structures, buildings, and tanks have all been treated in accordance with this condition of certification. No treatment maintenance has been necessary.

VIS-10 The power plant shall be designed and operated to minimize visible plume.

The total cooling tower plume hours for 2014 were 3 hours, as noted in the December 2014 Plume Summary Log. A copy of the submitted log is in Appendix 10.

WASTE-3 Document the actual waste management methods used during the year compared to planned management methods.

No violation of this condition occurred. A waste management sheet is included as an attachment and is identified in the table of contents. See Appendix 8.

Appendix 2

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FART OF COMER	RCIAL OPERATION	5/29/2005					
ROUGH YEAR		12/31/2014	1				
Condition No.	Requirements & Task Summary	Action required	Event	Required Submittal Date	Date submitted to CPM	Date approved by CPM	Status/ Comments
AQ-13	GTs (S-1, S-3) and HRSG (S-2, S-4) shall be fired exclusively on natural gas. (BACT for SO2 and PM10)	As part of the semiannual Air Quality Reports, indicate the date, time, and duration of any violation of this condition.	Semiannual Air Quality Reports	Ongoing	Monthly and Semi- Annually		Ongoing
AQ-14	Combined heat input rate of each power train (S-1 & S-2, S-3 & S-4) shall not exceed 2,124 MMBtu/hr (3- hour rolling average) (PSD for NOx)	As part of the Air Quality monthly Reports, include information on the date and time when the hourly fuel consumption exceed this hourly limit.	Monthly Air Quality Reports	Ongoing	Monthly		Ongoing
AQ-15	Combined heat input rate of each power train (S-1 & S-2 and S-3 & S-4) shall not exceed 49,908 MMBtu/day (FSD for PM10)	As part of the Air Quality monthly Reports, include information on the date and time when the hourly fuel consumption exceed this daily	Monthly Air Quality Reports	Ongoing	Monthly		Öngoing
AQ-16	Combined cumulative heat input rate of GTs (S-1, S- 3) and HRSGs(S-2, S-4) shall not exceed 35,274,060 MMBtu/yr. (Offsets)	As part of the Air Quality annual Reports, include information on the date and time when the annual cumutative fuel consumption exceed this annual limit	Monthly Air Quality Reports	Ongoing	Monthly		Ongoing
AQ-17	HRSGs (S-2, S-4) duct burners shall not be fired unless associated GTs (S-1, S-3) are in operation. (BACT for NCx)	As part of the Air Quality Reports, include information on the date, time, and duration of any violation of this permit condition.	Air Quality Reports	Ongoing			Ongoing
AQ-18	GT/HRSG (S-1/S-2) shall be abated by the A-1 SCR system whenever fuel is combusted in these units and the A-1 catalyst bed has reached min. operating temperature.	As part of the Air Quality Reports, provide information on any major problem in the operation of the Oxidizing Catalyst and Selective Catalytic Reduction Systems for the Gas Turbines and HRSG's.	Semi-Annual Air Quality Reports	Ongoing	Semi-Annual		Ongoing
AQ-19	GT/HRSG (S-3/S-4) shall be abated by the A-2 SCR system whenever fuel is combusted in these units and the A-2 catalyst bed has reached min. operating temperature.	As part of the Air Quality Reports, provide info. on any major problem in the operation of the Oxidizing Catalyst and Selective Catalytic Reduction Systems for the Gas Turbines and HRSGs.	Semi-Annual Air Quality Reports	Ongoing	Semi-Annual		Ongoing
AQ-20(a)	Emission requirements: Emission Point P-1 NOx = 19.2 lbs/hr {0.00904 lbs/MMBtu (HHV) of nat. gas fired] ; Emission Point P-2 NOx = 19.2 lbs/hr [0.00904 lbs/MMBtu (HHV) of nat. gas fired] .	As part of the Semi-Annual Air Quality Reports, indicate the date, time, and duration of any violation. Include quantitative info. on the severity of the violation.	Semi-Annual Air Quality Reports	Ongoing	Semi-Annual		Ongoing
AQ-20(b)	NOx Emission concentration = 2.5 ppmvd (corrected to 15% O2), 1-hr average {Emission Point P-1, P-2} (BACT for NOx).	Same as above	Semi-Annual Air Quality Reports	Ongoing	Semi-Annual		Ongoing
AQ-20(c)	CO mass emission = 28.07 lbs/hr (at any 3-hour rotting avg.) (Emission Point P-1, P-2).	Same as above	Semi-Annual Air Quality Reports	Ongoing	Semi-Annual		Ongoing
AQ-20(d)	When the heat input to a CT exceeds 1700 MMBTU/hr (FHV), the CO emission concentration shall not exceed 6.0 ppmvd on dry basis and the CO mass emission rate shall not exceed 0.0132 Ib/MMBTU at any 3-hr rolling average.	Same as above	Semi-Annual Air Quality Reports	Ongoing	Semi-Annual		Ongoing
AQ-20(e)	Ammonia (NH3) emission concentration shall not exceed 5 pprr.vd on dry basis, at any 3-hour rolling avg. Ammonia injection rate to A-1, A-2 to be verified through continuous recording of rate.	Same as above	Semi-Annual Air Quality Reports	Ongoing	Semi-Annual		Ongoing

FART OF COMER	ICIAL OPERATION	5/29/2005					
HROUGH YEAR E		12/31/2014	1				
Condition No. Requirements & Task Summary		Action required	Event	Required Submittal Date	Date submitted to CPM	Date approved by CPM	Status/ Comments
AQ-20(f)	Precursor organic compounds (POC) mass emissions (as CH4) shall not exceed 2.7 lbs/hr or 0.00126 lbs/MMBTU of natural gas fired. (Emission points P-1, P-2).	Same as above	Semi-Annual Air Quality Reports	Ongoing	Semi-Annual		Ongoing
AQ-20(g)	Sulfur dioxide (SO 2) mass emissions at P-1 ,P-2 each shall no! exceed 1.28 pounds per hour or 0 .0006 lb /MM BTU of natural gas fired. (BACT)	Same as above	Semi-Annual Air Quality Reports	Ongoing	Semi-Annual		Ongoing
AQ-20(h)	PM10 mass emission s at P-1 ,P-2 each shall not exceed 9 pounds per hour or 0.00452 lb PM10/MM BTU. Particulate matter (PM10) mass emissions at P- 1 ,P-2 each shall not exceed 12 pounds per hour or 0.00565 lb PM10/MM BTU, when HRSG duct burners are in operation.	Same as above	Semi-Annual Air Quality Reports	Ongoing	Semi-Annual		Ongoing
AQ-20(i)	Testing to confirm the PM10 emissions levels shall occur at least three (3) times per year during each of the first two (2) years of operation. Each year, at least one (1) monitoring test shall occur during winter months.	Same as above	Semi-Annual Air Quality Reports	Ongoing	Semi-Annual		Ongoing
AQ-21	GT (S-1, S-3) Start-up and Shutdown emission rates.	Same as above	Semi-Annual Air Quality Reports	Ongoing	Semi-Annual		Ongoing
AQ-22	Not more than one GT (S-1, S-2) shall be in start-up mode at any one time.	In the monthly compliance report the owner/operator shall indicate any violations of this condition.	Monthly Air Quality Reports	Ongoing	Monthly		Ongoing
AQ-24	Total combined emissions in Ibs/day, from GTs and HRSGs (S-1, S-2, S-3, S-4), including start-up and shutdown.	As part of the Air Quality Reports, indicate the date of any violation of this Condition including quantitative information on the severity of the violation.	Semi-Annual Air Quality Reports	Ongoing	Semi-Annual		Ongoing
AQ-25	Cumulative combined emissions in tons/any consecutive 12-month period, from GTs and HRSGs shall not exceed Nox = 123.4 (offsets), CO=588, POC=28 (offsets), PM10=91.3 (offsets), SO2=10.6 (cumulative increase).	As part of the Air Quality Reports, indicate the date of any violation of this Condition including quantitative information on the severity of the violation.	Air Quality Reports	Ongoing	Monthly/Annual		Ongoing
AQ-26	Maximum projected combined annual toxic air contaminant emissions from GTs and HRSGs (S-1, S-2, S-3, S-4). (a) formaldehyde = 3,796 lbs/yr (b) Benzene = 460 lbs/yr (c) PAHs=22.8 lbs/yr	As part of the annual Air Quality Reports, indicate the date, duration, and severity of any violation including quantitative information on the severity of the violation,	Annual Air Quality Reports	Ongoing	Monthly/Annual		Ongoing
AQ-26	Perform health risk assessment using emission rates per BAAQMD approved procedures and submit risk analysis to District and CPM.	As part of the annual Air Quality Reports, indicate the date of any violation of this Condition including quantitative information on the severity of the violation or submit risk analysis to District and CPM.	Within 60 days of source test date	Ongoing	Monthly/Annual		Ongoing
AQ-27 (a-d)	Demonstrate compliance with conditions 14-17, 20(a d), 21, 22, 24(a), 24(b), 25(a), 25(b) by using continuous monitors during all operating hours for the following parameters.	As part of the annual Air Quality Reports, indicate the date of any violation of this Condition including quantitative information on the severity of the violation.	Annual Air Quality Reports	Ongoing	Monthly/Annual		Ongoing

		METCALF ENERGY CENTER - COMPLIANCE	MATRIX				-
START OF COMER	CIAL OPERATION	5/29/2005					
THROUGH YEAR END OF 2014		12/31/2014					
Condition No.	Requirements & Task Summary	Action required	Event	Required Submittal Date	Date submitted to CPM	Date approved by CPM	Status/ Comments
AQ-27(e-f)	Use parameters in condition 27(a-d) and District approved methods to calculate the following. (a) Heat input rate for S-1 & S-2 combined, and S-3 & S- 4 combined (f) Corrected NOx and CO concentrations and mass emissions at each exhaust point (P-1, P-2)	As part of the annual Air Quality Reports, indicate the date of any violation of this Condition including quantitative information on the severity of the violation.	Annual Air Quality Reports	Ongoing	Monthly/Annual		Ongoing
AQ-27(g-i)	For each source, source grouping, or exhaust point record parameters at least once every 15 minutes and calculate and record for the following. Refer to AQ-27 for further details.	As part of the annual Air Quality Reports, indicate the date of any violation of this Condition including quantitative information on the severity of the violation.	Annual Air Quality Reports	Ongoing	Monthly/Annual		Ongoing
AQ-28(a-b)	25 by calculating and recording on a daily basis POC, PM10, and SO2 mass emissions fine PM10 and SO2 from each power train.	As part of the monthly Air Quality Reports, the owner/operator shall indicate the date of any violation including quantitative information on the severity of the violation.	Monthly Air Quality Reports	Ongoing	Monthly/Annual		Ongoing
AQ-29	Calculate and record on annual basis the max. projected annual emissions of formaldehyde, benzene, Sp&cified Poly-Aromatic Hydrocarbons (PAH's).	As part of the annual Air Quality Reports, indicate the date of any violation of this Condition including quantilative information on the severity of the violation.	Annual Air Quality Reports	Ongoing	Annual		Ongoing
AQ-35	Maintain records and reports on site for a minimum of 5 years.	During site inspection, make all records and reports available to the District, California Air Resources Board, and CEC staffs.	AQ Inspection per AQ-35		Ongoing		Ongoing
AQ-36	Notify District and CPM of any violations of these permit conditions.	Submittal of these notifications as required by this condition is the verification of these permit conditions.	Violation of Permit Conditions		Ongoing		Ongoing
AQ-44	MEC shall comply with the continuous emission monitoring requirements of 40 CFR Part 75			Ongoing	Ongoing		Ongoing
AQ-45		Maintain on site the records of all the guarantees received from its natural gas suppliers indicating that the fuel delivered to MEC complies with the 40 CFR Part 60,Subpart	On-site Compliance Inspections	Ongoing	Monthly		Ongoing
AQ-47a	eliminators once per calendar year and repair or replace any drift eliminators which are broken or missing.	As part of the monthly Air Quality Reports, indicate the date of any violation of this Condition.	Air Quality Reports	Ongoing	Annual		Ongoing
AQ-53	The heat input to the fire pump diesel engine shall not exceed 211 MM BTU totated over any consecutive twelve month period.	As part of the monthly Air Quality Reports, indicate the date of any violation of this Condition including quantitative information on the severity of the violation.	Air Quality Reports	Ongoing	Monthly		Ongoing
AQ-54	The total hours of operation of the emergency generator shall not exceed 200 hours per calendar year, plus an additional 100 hours per calendar year for the purposes of maintenance and testing.	As part of the monthly Air Quality Reports, indicate the date of any violation of this Condition including quantitative information on the severity of the violation.	Air Quality Reports	Ongoing	Annual		Ongoing
AQ-56		Provide dates and durations of any violation of this Condition to the CPM.	Air Quality Reports	Ongoing	Annual		Ongoing

START OF COMER	CIAL OPERATION	5/29/2005					
HROUGH YEAR E		12/31/2014					
Condition No. Requirements & Task Summary		Action required	Event	Required Submittal Date	Date submitted to CPM	Date approved by CPM	Status/ Comments
AQ-57	Record start time, end time, and duration of Gas Turbine Cold Startup and Combustor Tuning Periods.	Make all records available to Agencies during inspection.	Ongoing		Ongoing		Ongoing
BIO-12	Incorporate into closure plan measures that address the local biological resources and incorporate into the BRMIMP.	Address all biological resource-related issues associated with facility closure.	12 months prior to facility closure	Ongoing	12 months Prior to Closure		Ongoing
HAZ-1	Do not use any hazardous material in reportable quantities, not listed in Attachment 1 or in greater quantities or strengths than those identified unless approved in advance by Santa Clara County and the CPM.	the Annual Compliance Report, a list of hazardous materials contained at the facility in	Annual Compliance Report	Ongoing	Annual		Ongoing
LAND-1	At such time as a connection to a trail network can be made, install and maintain the portion of the planned trail that would cross the site.	In the Annual Compliance Reports provide updates on trail developments in the area around the site.	Annual Compliance Report	Ongoing	Annual		Ongoing
NOISE-2	Throughout the construction and operation, document, investigate, evaluate and attempt to resolve all project related noise complaints.	File a copy of the Noise Complaint Resolution Form with City of San Jose and with the CPM documenting the resolution of the complaint.	30 days after receiving a noise complaint	Ongoing	Within 30 Days		Ongoing
PAL-7	Include in the facility closure plan a description regarding facility closure activity's potential to impact pateontological resources.	Include a description of closure activities in the facility closure plan.	12 months prior to facility closure	Öngoing	12 months Prior to Closure		Ongoing
Public Health-1	Perform a visual inspection of the cooling tower drift eliminators once per calendar year. Prior to initial operation of the project, have the cooling tower vendor's field representative inspect the cooling tower drift eliminator and cortify that the installation was performed in a satisfactory manner.	The project owner shall include the results of the annual inspection of the cooling tower drift eliminators and a description of any repairs performed in the next required compliance report.	Annual Compliance Report	Ongoing	Annual		Ongoing
SOIL & WATER-1	Potable water may be used for cooling purposes only in the event that SBWR recycled water service is interrupted	Provide a record of water consumption for the MEC.	Annual Compliance Report	Ongoing	Annual		Ongoing
TRANS-3	Ensure that all federal and state regulations for the transport of hazardous materials are observed.	Copies of all permits and licenses acquired concerning the transport of hazardous substances.	Annual Compliance Report	Ongoing	Annual		Ongoing
VIS-1	Treat the project structures, buildings, and tanks visible to the public in a non-reflective color.	The project owner shall provide a status report regarding treatment maintenance in the Annual Compliance Report.	Annual Compliance Report	Ongoing	Annual		Ongoing
VIS-11	Trail development along the Fisher Creek corridor adjacent to the power plant site.	and Recreation Department for review and comment a specific plan.	Start of construction of the trail between Blanchard Road and railroad tracks	Ongoing	Ongoing		Ongoing
VIS-11	Trail development along the Fisher Creek corridor adjacent to the power plant site.	Submit to the CPM for review and approval a specific plan describing its landscape plan.	Start of construction of the trail between Blanchard Road and railroad tracks	Ongoing	Ongoing		Ongoing
VIS-11	Trail development along the Fisher Creek corridor adjacent to the power plant site.	Submit any required revisions.	Within 30 days of notification by the CPM.	Ongoing	Within 30 days		Ongoing
VIS-11	Trail development along the Fisher Creek corridor adjacent to the power plant site.	Notify the CPM, City of San Jose and County of Santa Clara Parks and Recreation Department that the planting installation is ready for	7 days after completion of planting installation	Ongoing	Within 7 days		Ongoing

TART OF COMER	CIAL OPERATION	5/29/2005					
HROUGH YEAR E	ND OF 2014	12/31/2014					
Condition No.	Requirements & Task Summary	Action required	Event	Required Submittal Date	Date submitted to CPM	Date approved by CPM	Status/ Comments
WASTE-2	management-related enforcement action, notify the		Within 10 days of becoming aware of an impending enforcement action	Ongoing	Within 10 Days		Ongoing
WASTE-3	management plan for all wastes generated during construction and operation of the facility.	In the Annual Compliance Reports, document the actual waste management methods used during the year compared to planned management methods.	Annual Compliance Report	8/1/06	Annual		Ongoing
Compliance matrix	A compliance matrix shall be submitted by along with each annual compliance report.	Submit compliance matrix to CPM	Annual Compliance Report	Ongoing	Annual		Ongoing

Appendix 3

	Metcalf CT1			Metcalf CT	2	Metcalf ST1		
Date	Total Net MWh	Total Primary Fuel Quantity Burned (MMcf GG)	Date	Total Net MWh	Total Primary Fuel Quantity Burned (MMcf GG)	Date	Total Net MWh	Total Primary Fuel Quantity Burned (MMcf GG)
January	47,285	520.8	January	46,570	524.3	January	55,696	-
February	15,306	175.3	February	1,452	22.1	February	9,036	-
March	65,997	744.2	March	73,546	842.6	March	78,919	-
April	58,862	671.6	April	61,357	704.4	April	70,835	-
May	72,607	829.6	May	62,826	723.8	May	80,807	-
June	54,375	627.9	June	45,837	529.2	June	58,282	-
July	68,420	782.9	July	55,447	641.2	July	73,878	-
August	69,621	805.2	August	66,806	780.1	August	81,974	-
September	73,610	849.2	September	65,496	762.2	September	84,798	-
October	75,801	870.3	October	72,128	839.0	October	89,877	-
November	98,512	1,120.7	November	93,957	1,086.3	November	119,106	-
December	111,195	1,252.8	December	111,651	1,278.2	December	137,942	-

Operating Data Summary January 2014 - December 2014

Appendix 4



Re: Metcalf Energy Center (55393) - 1

Dear Certifying Official:

Thank you for submitting your Quarterly Emissions Report using the U. S. EPA's Emissions Collection and Monitoring Plan System (ECMPS) software. This ECMPS Feedback report provides you with a detailed submission receipt, a summary of the evaluations performed on your submission, and guidance on any follow-up actions needed if any errors were found. EPA has also received a copy of this Feedback Report as part of your submission.

SUBMISSION STATUS

The EPA has received your Quarterly Emissions Report for the Facility and Monitoring Location(s) listed in Table 1 below. The Table also provides confirmation of EPA's receipt (Date, Time, etc.) of your submission. Prior to submission ECMPS evaluated your emissions report and assigned an overall "Error Status Level" to it, based on the results (see Table 1). This Feedback Report also contains Table 2, which displays EPA-Accepted Cumulative Values for emissions and other parameters.

Table 1: Submission Receipt and Error Status Level Information

Report Received for Facility ID (ORIS Code):	55393
Facility Name:	Metcalf Energy Center
State:	CA
Monitoring Locations:	1
Submission Type:	EM for 2014 QTR 1
Error Status Level:	No Errors
Submission Date/Time:	04/02/2014 11:35:48 AM
Submitter User ID:	rsilva
Submission ID:	754450
Resubmission Required:	No
EPA Analyst:	Art Diem; (202) 343-9340; diem.art@epa.gov

EXPLANATION OF YOUR ERROR STATUS LEVEL LISTED IN TABLE 1

The EPA has accepted your Emissions data submission. ECMPS detected no errors in your data based on the checks performed. NOTE: The ECMPS submission access window for this Emissions report has been closed. If you need to resubmit this data, please see the DATA RESUBMISSION guidance, below.

OTHER INFORMATION AND BULLETINS FROM EPA

QUESTIONS: Please contact your EPA Analyst listed in Table 1 with any questions regarding this submission and the evaluation results. If you need assistance with correcting problems in the Emissions data for this facility, please send an email to ECMPS Technical Support at: ecmps-support@camdsupport.com.

DATA RESUBMISSION: If you need to resubmit emissions data, including for previous calendar quarters, please complete the ECMPS Data Resubmission Request Form located at: http://ecmps.camdsupport.com/help_resubmit_form.shtml. Please provide detailed documentation of the reasons for the resubmission. Support staff will review your request and notify you via e-mail when the necessary database access window has been granted for your resubmission.

TECHNICAL SUPPORT: please visit the ECMPS Technical Support website at: http://ecmps.camdsupport.com for information about ECMPS software downloads, ECMPS News, Technical Support, documentation, tutorials, FAQs, and more.

ECMPS Data Reporting Instructions: for detailed information about reporting Monitoring Plan, QA/Certification Test, and Emissions data, please see the ECMPS Reporting Instructions on EPA's website at: http://www.epa.gov/airmarkets/business/ecmps/reporting-instructions.html.

If you have any questions regarding this correspondence, please feel free to contact your EPA Analyst listed in Table 1 as soon as possible. Thank you for your attention to this matter.

Table 2: Cumulative Data Summary -- EPA-Accepted Values

Unit/Stack/Pipe ID: 1

	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	Ozone Season	Year-to-Date
Number of Operating Hours	884					884
Operating Time (hrs)	859.33					859.33
SO2 Mass (tons)	0.4					0.4
CO2 Mass (tons)	85,931.3					85,931.3
Heat Input (mmBtu)	1,445,985		-			1,445,985
NOx Emission Rate (lb/mmBtu)	0.014					0.014



April 2, 2014 11:37 AM

Re: Metcalf Energy Center (55393) - 2

Dear Certifying Official:

Thank you for submitting your Quarterly Emissions Report using the U. S. EPA's Emissions Collection and Monitoring Plan System (ECMPS) software. This ECMPS Feedback report provides you with a detailed submission receipt, a summary of the evaluations performed on your submission, and guidance on any follow-up actions needed if any errors were found. EPA has also received a copy of this Feedback Report as part of your submission.

SUBMISSION STATUS

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Table 1: Submission Receipt and Error Status Level Information

Report Received for Facility ID (ORIS Code):	55393
Facility Name:	Metcalf Energy Center
State:	CA
Monitoring Locations:	2
Submission Type:	EM for 2014 QTR 1
Error Status Level:	No Errors
Submission Date/Time:	04/02/2014 11:37:05 AM
Submitter User ID:	rsilva
Submission ID:	754455
Resubmission Required:	No
EPA Analyst:	Art Diem; (202) 343-9340; diem.art@epa.gov

EXPLANATION OF YOUR ERROR STATUS LEVEL LISTED IN TABLE 1

The EPA has accepted your Emissions data submission. ECMPS detected no errors in your data based on the checks performed. NOTE: The ECMPS submission access window for this Emissions report has been closed. If you need to resubmit this data, please see the DATA RESUBMISSION guidance, below.

OTHER INFORMATION AND BULLETINS FROM EPA

QUESTIONS: Please contact your EPA Analyst listed in Table 1 with any questions regarding this submission and the evaluation results. If you need assistance with correcting problems in the Emissions data for this facility, please send an email to ECMPS Technical Support at: ecmps-support@camdsupport.com.

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If you have any questions regarding this correspondence, please feel free to contact your EPA Analyst listed in Table 1 as soon as possible. Thank you for your attention to this matter.

Facility Name: Metcalf Energy Center

Facility ID (ORISPL): 55393 State: CA

ECMPS Feedback

April 2, 2014 11:37 AM

Table 2: Cumulative Data Summary -- EPA-Accepted Values

Unit/Stack/Pipe ID: 2

	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	Ozone Season	Year-to-Date
Number of Operating Hours	851					851
Operating Time (hrs)	825.76					825.76
SO2 Mass (tons)	0.4					0.4
CO2 Mass (tons)	82,866.0					82,866.0
Heat Input (mmBtu)	1,394,396					1,394,396
NOx Emission Rate (lb/mmBtu)	0.010					0.010



July 21, 2014 12:22 PM

Re: Metcalf Energy Center (55393) - 1

Dear Certifying Official:

Thank you for submitting your Quarterly Emissions Report using the U. S. EPA's Emissions Collection and Monitoring Plan System (ECMPS) software. This ECMPS Feedback report provides you with a detailed submission receipt, a summary of the evaluations performed on your submission, and guidance on any follow-up actions needed if any errors were found. EPA has also received a copy of this Feedback Report as part of your submission.

SUBMISSION STATUS

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Table 1: Submission Receipt and Error Status Level Information

Report Received for Facility ID (ORIS Code):	55393	
Facility Name:	Metcalf Energy Center	
State:	CA	
Monitoring Locations:	1	
Submission Type:	EM for 2014 QTR 2	
Error Status Level:	No Errors	
Submission Date/Time:	07/21/2014 12:21:57 PM	
Submitter User ID:	rsilva	
Submission ID:	787463	
Resubmission Required:	No	
EPA Analyst: Carlos Martinez; (202) 343-9747; martinez.carlos@epa.gov		

EXPLANATION OF YOUR ERROR STATUS LEVEL LISTED IN TABLE 1

The EPA has accepted your Emissions data submission. ECMPS detected no errors in your data based on the checks performed. NOTE: The ECMPS submission access window for this Emissions report has been closed. If you need to resubmit this data, please see the DATA RESUBMISSION guidance, below.

OTHER INFORMATION AND BULLETINS FROM EPA

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If you have any questions regarding this correspondence, please feel free to contact your EPA Analyst listed in Table 1 as soon as possible. Thank you for your attention to this matter.

Facility Name: Metcalf Energy Center

Facility ID (ORISPL): 55393 State: CA

ECMPS Feedback

July 21, 2014 12:22 PM

Table 2: Cumulative Data Summary -- EPA-Accepted Values

Unit/Stack/Pipe ID: 1

	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	Ozone Season	Year-to-Date
Number of Operating Hours	884	1,426				2,310
Operating Time (hrs)	859.33	1,339.90	· · · · · · · · · · · · · · · · · · ·			2,199.23
SO2 Mass (tons)	0.4	0.6				1.0
CO2 Mass (tons)	85,931.3	127,833.2				213,764.5
Heat Input (mmBtu)	1,445,985	2,151,028				3,597,013
NOx Emission Rate (lb/mmBtu)	0.014	0.012				0.013



Dear Certifying Official:

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Table 1: Submission Receipt and Error Status Level Information

Report Received for Facility ID (ORIS Code):	55393
Facility Name:	Metcalf Energy Center
State:	CA
Monitoring Locations:	2
Submission Type:	EM for 2014 QTR 2
Error Status Level:	No Errors
Submission Date/Time:	07/21/2014 12:23:38 PM
Submitter User ID:	rsilva
Submission ID:	787496
Resubmission Required:	No
EPA Analyst:	Carlos Martinez; (202) 343-9747; martinez.carlos@epa.gov

EXPLANATION OF YOUR ERROR STATUS LEVEL LISTED IN TABLE 1

The EPA has accepted your Emissions data submission. ECMPS detected no errors in your data based on the checks performed. NOTE: The ECMPS submission access window for this Emissions report has been closed. If you need to resubmit this data, please see the DATA RESUBMISSION guidance, below.

OTHER INFORMATION AND BULLETINS FROM EPA

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Facility ID (ORISPL): 55393 State: CA

ECMPS Feedback

July 21, 2014 12:23 PM

Table 2: Cumulative Data Summary -- EPA-Accepted Values

	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	Ozone Season	Year-to-Date
Number of Operating Hours	851	1,259				2,110
Operating Time (hrs)	825.76	1,194.23				2,019.99
SO2 Mass (tons)	0.4	0.6				1.0
CO2 Mass (tons)	82,866.0	116,333.6				199,199.6
Heat Input (mmBtu)	1,394,396	1,957,547				3,351,943
NOx Emission Rate (lb/mmBtu)	0.010	0.012				0.011



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Table 1: Submission Receipt and Error Status Level Information

Report Received for Facility ID (ORIS Code):	55393
Facility Name:	Metcalf Energy Center
State:	CA
Monitoring Locations:	1
Submission Type:	EM for 2014 QTR 3
Error Status Level:	No Errors
Submission Date/Time:	10/16/2014 11:29:55 AM
Submitter User ID:	rsilva
Submission ID:	806997
Resubmission Required:	No
EPA Analyst:	Carlos R Martinez; (202) 343-9747; martinez.carlos@epa.gov

EXPLANATION OF YOUR ERROR STATUS LEVEL LISTED IN TABLE 1

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Facility ID (ORISPL): 55393 State: CA

ECMPS Feedback

October 16, 2014 11:30 AM

Table 2: Cumulative Data Summary -- EPA-Accepted Values

	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	Ozone Season	Year-to-Date
Number of Operating Hours	884	1,426	1,616			3,926
Operating Time (hrs)	859.33	1,339.90	1,513.08			3,712.31
SO2 Mass (tons)	0.4	0.6	0.7			1.7
CO2 Mass (tons)	85,931.3	127,833.2	145,336.1			359,100.6
Heat Input (mmBtu)	1,445,985	2,151,028	2,445,539			6,042,552
NOx Emission Rate (lb/mmBtu)	0.014	0.012	0.012			0.013



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Table 1: Submission Receipt and Error Status Level Information

Report Received for Facility ID (ORIS Code):	55393
Facility Name:	Metcalf Energy Center
State:	CA
Monitoring Locations:	2
Submission Type:	EM for 2014 QTR 3
Error Status Level:	No Errors
Submission Date/Time:	10/16/2014 11:31:19 AM
Submitter User ID:	rsilva
Submission ID:	807006
Resubmission Required:	No
EPA Analyst:	Carlos R Martinez; (202) 343-9747; martinez.carlos@epa.gov

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Facility ID (ORISPL): 55393 State: CA

ECMPS Feedback

October 16, 2014 11:31 AM

Table 2: Cumulative Data Summary -- EPA-Accepted Values

	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	Ozone Season	Year-to-Date
Number of Operating Hours	851	1,259	1,405			3,515
Operating Time (hrs)	825.76	1,194.23	1,328.49			3,348.48
SO2 Mass (tons)	0.4	0.6	0.7			1.7
CO2 Mass (tons)	82,866.0	116,333.6	130,712.7			329,912.3
Heat Input (mmBtu)	1,394,396	1,957,547	2,199,433			5,551,376
NOx Emission Rate (lb/mmBtu)	0.010	0.012	0.012			0.012



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Table 1: Submission Receipt and Error Status Level Information

Report Received for Facility ID (ORIS Code):	55393
Facility Name:	Metcalf Energy Center
State:	CA
Monitoring Locations:	2
Submission Type:	EM for 2014 QTR 4
Error Status Level:	No Errors
Submission Date/Time:	01/06/2015 3:25:58 PM
Submitter User ID:	rsilva
Submission ID:	823955
Resubmission Required:	No
EPA Analyst:	Carlos R Martinez; (202) 343-9747; martinez.carlos@epa.gov

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Table 2: Cumulative Data Summary -- EPA-Accepted Values

	1st Quarter		3rd Quarter	4th Quarter	Ozone Season	Year-to-Date
Number of Operating Hours	851	1,259	1,405	1,923		5,438
Operating Time (hrs)	825.76	1,194.23	1,328.49	1,905.48		5,253.96
SO2 Mass (tons)	0.4	0.6	0.7	1.0		2.7
CO2 Mass (tons)	82,866.0	116,333.6	130,712.7	192,721.2		522,633.5
Heat Input (mmBtu)	1,394,396	1,957,547	2,199,433	3,242,907		8,794,283
NOx Emission Rate (lb/mmBtu)	0.010	0.012	0.012	0.009		0.011



January 7, 2015 08:09 AM

Re: Metcalf Energy Center (55393) - 1

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State:	CA
Monitoring Locations:	1
Submission Type:	EM for 2014 QTR 4
Error Status Level:	No Errors
Submission Date/Time:	01/07/2015 8:09:52 AM
Submitter User ID:	rsilva
Submission ID:	824192
Resubmission Required:	No
EPA Analyst:	Carlos R Martinez; (202) 343-9747; martinez.carlos@epa.gov

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Facility ID (ORISPL): 55393 State: CA

January 7, 2015 08:09 AM

Table 2: Cumulative Data Summary -- EPA-Accepted Values

	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	Ozone Season	Year-to-Date
Number of Operating Hours	884	1,426	1,616	1,980		5,906
Operating Time (hrs)	859.33	1,339.90	1,513.08	1,965.64		5,677.95
SO2 Mass (tons)	0.4	0.6	0.7	1.0		2.7
CO2 Mass (tons)	85,931.3	127,833.2	145,336.1	195,018.8		554,119.4
Heat Input (mmBtu)	1,445,985	2,151,028	2,445,539	3,281,580		9,324,132
NOx Emission Rate (lb/mmBtu)	0.014	0.012	0.012	0.009		0.011

Appendix 5

		Hazardous Materials And Wastes Inventory Matrix Report								
CERS Business/Org. METCALF ENGERGY CENTER Facility Name METCALF ENERGY CENTER 1 BLANCHARD RD, SAN JOSE 95013		Chemical Location					CERS ID 10097278 Facility ID 43-060-409545 Status Submitted on 2/9/2015 3:4			
DOT Code/Fire Haz. Class	Common Name	Unit	Max. Daily	Quantities Largest Cont.	Avg. Daily	Annual _ Waste Amount	Federal Hazard Categories	· · · · · · · · · · · · · · · · · · ·	Hazardous Component (For mixture only) % Wt	
DOT: 2.2 - Nonflammable Gase Other Health Hazard	SULFUR HEXAFLUORIDE CAS No 2551-62-4 Map: 1 Grid: 4B	Gas (Type	448 Storage Container Other Days on Site: 365	64	448	Waste Code	- Pressure			

	Hazardou	Hazardous Materials And Wastes Inventory Matrix Report							· · ·	
CERS Business/Org. METCALF ENGERGY CENTER Facility Name METCALF ENERGY CENTER 1 BLANCHARD RD, SAN JOSE 95013		Chemical Location Aqueous Ammonia Storage Area					CERS ID 10097278 Facility ID 43-060-409545 Status Submitted on 2/9/2015 3:40			
OT Code/Fire Haz. Class	Common Name	Unit	Max. Daily	Quantities	Avg. Daily	Annual _ Waste Amount	Federal Hazard Categories	Component Name	Hazardous Component (For mixture only) % Wt	EHS CAS No.
OOT: 8 - Corrosives (Liquids and Solids)		Pounds State Si Liquid A Type	27527.7 torage Container Noveground Tank Days on Site: 365	32382	27527.7 Pressue Ambient Temperature Ambient	Waste Code	- Fire - Reactive - Pressure Release - Acute Health - Chronic health	Ammonia	28 %	✓ 7664-41-7

		Hazardo	ous Materials	And Waste	s Inventory	y Matrix	Report			
acility Name METCAL	F ENGERGY CENTER F ENERGY CENTER ARD RD, SAN JOSE 95013			Chemical Loca	ation	RMERS		CERS ID 100972 Facility ID 43-060 Status Submitte	40954	5 /2015 3:40 PM
				Quantities		Annual Waste	Federal Hazard	Hazardous C (For mixtu	omponent	
OOT Code/Fire Haz. Class	Common Name	Unit	Max. Daily	Largest Cont.	Avg. Daily	Amount	Categories	Component Name	% Wt	EHS CAS No.
IOT: 9 - Misc. Hazardous Naterials	HYTRANS 61 CAS No	Gallons State Liquid	s 1956 Storage Container Other	489	1956 Pressue < Ambient	Waste Code	- Fire - Acute Health	OIL, HYDRO LIGHT NAPH DIST 2, 6-DI-T-BUTYL-P-CRESOL (BHT)	99 % 1 %	64742-53-6 128-37-0
	Map: 1 Grid: 5D, 3D, D1, 5E	Type Mixture	Days on Site: 365		Temperature Ambient					
OT: 2.2 - Nonflammable Gase	S NITROGEN, COMPRESSED	Cu. Fee	et 920	230	920		- Pressure			
	CAS No 7727-37-9 Map: 1 Grid: 2D, 3D, 5E, 5D	State Gas Type Pure	Storage Container Cylinder Days on Site: 365		Pressue Temperature	Waste Code	Release			

		Hazardou	s Materials /	And Waste	s Inventory	/ Matrix	Report	n de la companya de l		
acility Name METCALF	ENGERGY CENTER ENERGY CENTER D RD, SAN JOSE 95013			Chemical Loca BALANCE				Facility ID 4	0097278 3-060-40954 ubmitted on 2/9	-
				Quantities		Annual Waste	Federal Hazard		ardous Component For mixture only)	s
OOT Code/Fire Haz. Class	Common Name	Unit	Max. Daily	Largest Cont.	Avg. Daily	Amount	Categories	Component Name	% Wt	EHS CAS No.
DOT: 8 - Corrosives (Liquids and Solids)	LEAD-ACID BATTERY	Gallons	865	14.4	865			LEAD, LEAD COMPONENT	rs 60 %	7439-92-1
	CAS No		orage Container ther		Pressue Ambient	Waste Cod	e	SULFURIC ACID	30 %	√ 7664-93-9
Corrosive	Map: 1 Grid: 2E	Type Pure Da	ays on Site: 365		Temperature Ambient					

	ų V	Hazardous	s Materials /	And Waste	s Inventory	Matrix	Report			
acility Name METCA	LF ENGERGY CENTER LF ENERGY CENTER HARD RD, SAN JOSE 95013			Chemical Loca BOILER FE	tion ED PUMPS			CERS ID Facility I Status	10097278 D 43-060-409545 Submitted on 2/9,	
OOT Code/Fire Haz. Class	Соттол Name	- Unit	Max. Daily	Quantities Largest Cont.	Avg. Daily	Annual Waste Amount	Federal Hazard Categories	Component Name	Hazardous Component (For mixture only) % Wt	S EHS CAS No.
DOT: 9 - Misc. Hazardous Materials	LUBRICATING OIL CAS NO	Gallons State Sto	520 prage Container ther	130	520 Pressue Ambient	Waste Cod	- Fire	component Name	70 WL	ERS (43 NO.
	Map: 1 Grid: 2H, 3H	^{Type} Mixture Da	ays on Site: 365		Temperature Ambient					

	,M A	Hazardo	us Materials /	And Waste	s Inventory	/ Matrix	Report			
acility Name METCALF	ENGERGY CENTER ENERGY CENTER D RD, SAN JOSE 95013			Chemical Loca Boiler Wa	^{ition} ter Chemica	al Treatm	ent Area	Facility ID	10097278 13-060-409545 Submitted on 2/9/	
DOT Code/Fire Haz. Class	Сотпол Name	Unit	Məx. Daily	Quantities Largest Cont.	Avg. Daily	Annual Waste Amount	Federal Hazard Categories	Haz	zardous Component: (For mixture only) % Wt	
DOT: 8 - Corrosives (Liquids and Solids) Corrosive	CHEMTREAT BL-152 CAS No Map: 1 Grid: 2G	Liquid Type	800 Storage Container Tote Bin Days on Site: 365	400	680 Pressue Ambient Temperature Ambient	Waste Code	- Acute Health	AMMONIUM HYDROXID		1336-21-6 141-43-5
DOT: 8 - Corrosives (Liquids and Golids) Corrosive	CHEMTREAT BL1795 CAS No Map: 1 Grid: 2G		400 Storage Container Tote Bin	400	340 Pressue Ambient Temperature Ambient	Waste Code	- Fire - Reactive e - Pressure Release - Acute Health	SODIUM HYDROXIDE TRISODIUM PHOSPHATE		1310-73-2 7601-54-9

		Hazardous	s Materials A	And Waste	s Inventory	Matrix	Report			
acility Name METCALF	ENGERGY CENTER ENERGY CENTER RD RD, SAN JOSE 95013			Chemical Loca	tion	NE #1	-	Facility ID	L0097278 I3-060-40954 Submitted on 2/9	-
		-		Quantities		Annual Waste	Federal Hazard		ardous Component For mixture only)	s
DOT Code/Fire Haz. Class	Common Name	Unit	Max. Daily	Largest Cont.	Avg. Daily	Amount	Categories	Component Name	% Wt	EHS CAS No.
DOT: 8 - Corrosives (Liquids and	LEAD-ACID BATTERY	Gallons	324	2.7	324			LEAD, LEAD COMPONEN	TS 60 %	7439-92-1
iolids)	CAS No		orage Container ther		Pressue Ambient	Waste Cod	e	SULFURIC ACID	30 %	√ 7664-93-9
Corrosive	Map: 1 Grid: 4E	Type Pure Da	ays on Site: 365		Temperature Ambient					

	1 1	Hazardou	s Materials A	And Waste	s Inventory	/ Matrix	Report			
acility Name METCALF	ENGERGY CENTER ENERGY CENTER RD RD, SAN JOSE 95013			Chemical Loca	tion FION TURBI	NE #2		Facility ID	10097278 43-060-40954 Submitted on 2/9	
DOT Code/Fire Haz. Class	Common Name	Unit	Max. Daily	Quantities Largest Cont.	Avg. Daily	Annual Waste	Federal Hazard		lazardous Component (For mixture only)	
DOT: 8 - Corrosives (Liquids and Solids)		Gallons State St	324 orage Container ther	2.7	324 Pressue Ambient	Amount Waste Cod	Categories	Component Name LEAD, LEAD COMPONE SULFURIC ACID	% Wt ENTS 60 % 30 %	EHS CAS No. 7439-92-1 ✓ 7664-93-9
orrosive	Map: 1 Grid: 2E	Type Pure Di	ays on Site: 365		Temperature Ambient					

		A	Hazardou	s Materials /	And Wastes	s Inventory	Matrix	Report			
ERS Business/Org.	METCA	LF ENGERGY CENTER			Chemical Loca	tion			CERS ID	10097278	
acility Name	METCA	LF ENERGY CENTER			Combusti	on Turbin <mark>e</mark> l	ube Oil		Facility R	43-060-40954	5
	1 BLANCH	IARD RD, SAN JOSE 95013							Status	Submitted on 2/9	/2015 3:40 PM
					Quantities		Annual Waste	Federal Hazard		Hazardous Component (For mixture only)	s
OOT Code/Fire Haz. C	lass	Common Name	Unit	Max. Daily	Largest Cont.	Avg. Daily	Amount	Categories	Component Name	% Wt	EHS CAS No.
OOT: 3 - Flammable		76 TURBINE OIL 68	Gallons	7200	3600	7200		- Fire			
Combustible Liquid	S	CAS No		orage Container ther		Pressue Ambient	Waste Code	2			
		Map: 1 Grid: 2E, 4E	Type Mixture D;	ays on Site: 365		Temperature Ambient					

	k ♦	Hazardous	s Materials /	And Waste	s Inventory	Matrix	Report	n de ser		
acility Name METC	ALF ENGERGY CENTER ALF ENERGY CENTER CHARD RD, SAN JOSE 95013			Chemical Loca Connex N	ition ear Storm W	Vater Poi	nd	CERS ID Facility I Status	10097278 D 43-060-40954 Submitted on 2/9,	-
DOT Code/Fire Haz. Class	Common Name	Unit	Max. Daily	Quantities Largest Cont.	Avg. Daily	Annual Waste Amount	Federal Hazard Categories	Component Name	Hazardous Component (For mixture only) % Wt	EHS CAS No.
OOT: 9 - Misc. Hazardous Materials	Sodium Carbonate CAS NJ 497-19-8 Map: 1 Grid: 6K	Solid Ba Type	300 orage Container ag ays on Site: 365	50	300 Pressue Ambient Temperature Ambient	Waste Cod	- Acute Health			

	¥	Hazardo	ous Materials A	And Waste	s Inventory	/ Matrix I	Report			
acility Name ME	TCALF ENGERGY CENTER TCALF ENERGY CENTER ANCHARD RD, SAN JOSE 95013			Chemical Loca	^{ition} D wer Chemi	cal Treatn	nent Area	CERS ID 1009727 Facility ID 43-060-4 Status Submitted	409545	5 /2015 3:40 PM
OT Code/Fire Haz. Class OT: 9 - Misc. Hazardou Aaterials	Common Name CHEIMTREAT CL240 CAS No NA Map: 1 Grid: 5D	Unit Gallons State Liquid Type Mixture	Max. Daily 5 1500 Storage Container Aboveground Tank Days on Site: 365	Quantities Largest Cont. 1500	Avg. Daily 1350 Pressue Ambient Temperature Ambient	Annual Waste Amount Waste Code	Release - Acute Health	Hazardous Co (For mixtur Component Name		S EHS CAS No.
DOT: 9 - Misc. Hazardou Naterials	CHEIMTREAT CL4500 CAS No Map: 1 Grid: 5D	Gallons State Liquid Type Mixture	s 1500 Storage Container Aboveground Tank Days on Site: 365	1500	750 Pressue Ambient Temperature Ambient	Waste Code	- Chronic health - Acute Health			
OT: 8 - Corrosives (Liqu olids) orrosive	uids and SODIUM HYPOCHLORITE 12.5% CAS No Map: 1 Grid: 5D	Gallons State Liquid Type Mixture	5 8000 Storage Container Aboveground Tank Days on Site: 365	8000	6800 Pressue Ambient Temperature Ambient	Waste Code	- Fire - Reactive - Pressure Release - Acute Health - Chronic health	SODIUM HYDROXIDE SODIUM HYPOCHLORITE >12.5%- 15% SODIUM CHLORIDE WATER	1 % 13 %	1310-73-2 7681-52-9 7647-14-5 7732-18-5
OT: 8 - Corrosives (Liqu olids) orrosive, Water Reactiv	CAS No VEHS	Pounds State Liquid Type Pure	42762.8 Storage Container Aboveground Tank Days on Site: 365	85526	42762.8 Pressue Ambient Temperature Ambient	Waste Code	- Reactive - Acute Health	<u></u>		<u></u>

	, N	Hazardous	s Materials A	And Waste	s Inventory	Matrix	Report			
acility Name METCA	LF ENGERGY CENTER LF ENERGY CENTER HARD RD, SAN JOSE 95013			Chemical Loca	tion OL OIL TAN	K		CERS ID Facility I Status	10097278 D 43-060-40954 Submitted on 2/9	_
OOT Code/Fire Haz. Class	Common Name	Unit	Max. Daily	Quantities	Avg. Daily	Annual Waste	Federal Hazard		Hazardous Componen (For mixture only)	
DOT: 3 - Flammable and Combustible Liquids	MOBIL DTE 26 CAS No Map: 1 Grid: 2F, 3F	Gallons State Str Liquid Of Type	Wax, Daily 200 prage Container ther ays on Site: 365	Largest Cont. 100	200 Pressue Ambient Temperature Ambient	Amount Waste Code	Categories - Fire - Acute Health	Component Name	<u>% Wt</u>	EHS CAS No.

	1 1	Hazardous Material	s And Waste	s Inventor	/ Matrix I	Report	B B		
acility Name ME	TCALF ENGERGY CENTER TCALF ENERGY CENTER ANCHARD RD, SAN JOSE 95013		Chemical Loca CYLINDER	ation R GAS STOR/	AGE			10097278 43-060-40954 Submitted on 2/9	
			Quantities		Annual Waste	Federal Hazard		Hazardous Component (For mixture only)	s
OT Code/Fire Haz. Class	Common Name	Unit Max. Daily	Largest Cont.	Avg. Daily	Amount	Categories	Component Name	% Wt	EHS CAS No.
)OT: 2.2 - Nonflammabl)ther	CAS No 7440-37-1	Cu. Feet 672 State Storage Container Gas Cylinder	336	672 Pressue	Waste Code	- Pressure Release			
	Map: 1 Grid: H3	Type Pure Days on Site: 36	5	Temperature					
OOT: 2.2 - Nonflammabl	e Gases CALIBRATION GAS (NITRO) CARBON MONOXIDE) CAS No Map: 1 Grid: 3H	iEN, Cu. Feet 290 State Storage Container Gas Cylinder Type Mixture Days on Site: 36		290 Pressue < Ambient Temperature Ambient	Waste Code	- Fire - Reactive - Pressure Release - Acute Health - Chronic health	NITROGEN OXYGEN CARBON MONOXIDE	83 % 12 % 5 %	7727-37-9 7782-44-7 124-38-9
00T: 2.2 - Nonflammabl	e Gases HELIUM CAS No 7440-59-7 Map: 1 Grid: 3H	Cu. Feet 292 State Storage Container Gas Cylinder Type Pure	292	292 Pressue Temperature	Waste Code	- Fire	<u> </u>		
DOT: 2.2 - Nonflammabl	e Gases NITROGEN CAS No 7727-37-9 Map: 1 Grid: 3H	Cu. Feet 1610 State Storage Container Gas Cylinder Type Pure Days on Site: 36		1610 Pressue < Ambient Temperature Ambient	Waste Code	- Fire	·		
OT: 2.2 - Nonflammabl	e Gases NITROGEN / NITRIC OXIDE CALIBRATION GAS CAS No Map: 1 Grid: 3H	Cu. Feet 1450 State Storage Container Gas Cylinder Type Mixture Days on Site: 36		870 Pressue Ambient Temperature Ambient	Waste Code	- Pressure Release	NITRIC OXIDE NITROGEN	0 % 99 %	✓ 10102-43-9 7727-37-9
OT: 2.2 - Nonflammabl	CALIBRATION GAS	Cu. Feet 435 State Storage Container Gas Cylinder Type		435 Pressue Ambient Temperature	Waste Code	- Pressure Release - Acute Health			
OT. 2.2 Novên	Map: 1 Grid: 3H	Days on Site: 36		Ambient		P1	· · · · ·		
OT: 2.2 - Nonflammabl	e Gases OXYGEN CAS No 7782-44-7 Map: 1 Grid: 3H	Cu. Feet 3653 State Storage Container Gas Cylinder Type Pure Pure Days on Site: 36		3653 Pressue Ambient Temperature Ambient	Waste Code	- Fire - Pressure Release			

			Hazardous	s Materials /	And Waste	s Inventory	/ Matrix	Report			
acility Name	METCALF I	ENGERGY CENTER ENERGY CENTER D RD, SAN JOSE 95013			Chemical Loca DIESEL FIF	tion RE PUMP HC	DUSE		CERS ID Facility II Status	10097278 43-060-40954 Submitted on 2/9	
)OT Code/Fire Haz. Cla	65	Common Name	Unit -	May Daily	Quantities		Annual Waste	Federal Hazard		Hazardous Componen (For mixture only)	
DOT: 8 - Corrosives (I Solids)		LEAD-ACID BATTERY CAS No	Gallons State Sto	Max. Daily 12 prage Container ther	Largest Cont. 6	Avg. Daily 12 Pressue	Amount Waste Code	Categories - Acute Health - Chronic health	Component Name Sulfuric Acid Lead, Lead Componen	% Wt 40 %	EHS CAS No. 7664-93-9 7439-92-1
Corrosive		Map: 1 Grid: 5I	Түре	ays on Site: 365		Ambient Temperature Ambient	792				7433-32-1

								t,				
CERS Business/Org. METCAI	LF ENGERGY CENTER			Chemical Loca	ation			CERS ID 10097278				
Facility Name METCA	LF ENERGY CENTER			Fire Pump	o House			Facility ID 43-0	60-40954	5		
1 BLANCH	ARD RD, SAN JOSE 95013							Status Subr	itted on 2/9)/2015 3:40 PM		
				Quantities		Annual Waste	Federal Hazard		us Componen nixture only)	ts		
OOT Code/Fire Haz. Class	Common Name	Unit	Max. Daily	Largest Cont.	Avg. Daily	Amount	Categories	Component Name	% Wt	EHS CAS No.		
DOT: 3 - Flammable and	DIESEL	Gallons	572	572	550		- Fire	FUELS, DIESEL, NO. 2	100 %	,		
Combustible Liquids	CAS No		Storage Container		Pressue	Waste Code	- Acute Health	GAS OIL, LIGHT	0%	C 4741 44 7		
Combustible Liquid, Class II,	68334-30-5	Liquid	Aboveground Tank		Ambient			HYDRODESULFURIZED MIDDI		64741-44-2		
rritant	Map: 1 Grid: 5I	Түре Mixture	Days on Site: 365		Temperature Ambient	331		DISTILLATE	.E 0%	64742-80-9		

		Hazardous	s Materials	And Waste	s Inventory	Matrix	Report				
acility Name METC/	ALF ENGERGY CENTER ALF ENERGY CENTER HARD RD, SAN JOSE 95013	Chemical Location FUEL GAS COMPRESSORS						CERS ID Facility I Status	10097278 P 43-060-409545 Submitted on 2/9/2015 3:40 P		
				Quantities		Annual Waste	Federal Hazard		Hazardous Componen (For mixture only)	ts	
DOT Code/Fire Haz. Class	Common Name	Unit	Max. Daily	Largest Cont.	Avg. Daily	Amount	Categories	Component Name	% Wt	EHS CAS No.	
DOT: 9 - Misc. Hazardous	LUBRICATING OIL	Gallons	135	45	135		- Fire				
Materials	CAS No		orage Container ther		Pressue Ambient	Waste Cod	e				
	Map: 1 Grid: 5J, 6J	Type Mixture Da	ays on Site: 365		Temperature Ambient						

		Hazardous	Materials	And Waste	s Inventory	/ Matrix	Report					
acility Name METCA	LF ENGERGY CENTER LF ENERGY CENTER HARD RD, SAN JOSE 95013	Chemical Location GSU Transformers						CERS ID 10097278 Facility ID 43-060-409545 Status Submitted on 2/9/2015 3:40				
OOT Code/Fire Haz. Class	Common Name	Unit -	Max. Daily	Quantities Largest Cont.	Avg. Daily	Annual Waste Amount	Federal Hazard Categories	Hazardous ((For mixt Component Name	•	EHS CAS No.		
DOT: 3 - Flammable and Combustible Liquids	HYTRANS 61 CAS No	Gailons State Sto	47883 prage Container ther	18345	47883 Pressue < Ambient	Waste Cod	- Fire - Acute Health	OIL, HYDRO LIGHT NAPH DIST 2, 6-DI-T-BUTYL-P-CRESOL (BHT)	99 %	64742-53-6 128-37-0		
	Map: 1 Grid: 2D, 3D, 4E	Type Mixture Da	ays on Site: 365		Temperature Ambient							

		Hazardo	ous Materials							
acility Name M	AETCALF ENGERGY CENTER AETCALF ENERGY CENTER BLANCHARD RD, SAN JOSE 95013			Chemical Loca Hazardou	ation I S Material S	itorage Ar	ea	CERS ID Facility Status	10097278 D 43-060-409545 Submitted on 2/9/2015 3	:40 PM
OOT Code/Fire Haz. Class	s Common Name	Unit	Max. Daily	Quantities Largest Cont.	Avg. Daily	Annual Waste Amount	Federal Hazard Categories	Component Name	Hazardous Components (For mixture only) % Wt EHS C	
DOT: 4.1 - Flammable i	Solids DEBRIS/RAGS CONTAMINAT WITH PETROLEUM/OIL CAS No Map: 1 Grid: 5G, 5H		storage Container Steel Drum Days on Site: 365	55	25 Pressue Ambient Temperature Ambient	500 Waste Code 352	- Fire			
OOT: 3 - Flammable ar Combustible Liquids Combustible Liquid, Cl	nd USED OIL CAS No NA	Gallons State Liquid Type Waste	storage Container Tote Bin Days on Site: 365	400	200 Pressue Ambient Temperature Ambient	660 Waste Code 221	- Fire - Acute Health			
DOT: 4.1 - Flammable :	Solids USED OIL FILTERS CAS NU Map: 1 Grid: 5G, 5H		storage Container Steel Drum Days on Site: 365	100	25 Pressue Ambient Temperature Ambient	200 Waste Code	- Fire - Reactive - Pressure Release - Acute Health - Chronic health			

	Į.		Hazardo	us Materials /	And Waste	s Inventory	/ Matrix I	Report			
ERS Business/Org. acility Name	METCALF ENGERG METCALF ENERGY 1 BLANCHARD RD, SAN	CENTER			Chemical Loca Lube Oil S				Status	10097278 43-060-40954 Submitted on 2/9	/2015 3:40 PM
					Quantities		Annual Waste	Federal Hazard		lazardous Component (For mixture only)	s
OT Code/Fire Haz. (Unit	Max. Daily	Largest Cont.	Avg. Daily	Amount	Categories	Component Name	% Wt	EHS CAS No.
OT: 3 - Flammabl Combustible Liquid	70100	BINE OIL 68		220 Storage Container Steel Drum	55	220 Pressue Ambient	Waste Code				
	Map: 1	Grid: 5H	Туре	Days on Site: 365		Ambient Temperature Ambient					
OOT: 3 - Flammabl	e and Megafle	ow AW HVI Hydraulic Oil	Gallons	55	55	55		- Fire			
Combustible Liquid	is CAS No			Storage Container Steel Drum		Pressue Ambient	Waste Code				
	Map: 1	Grid: 5H	Туре Mixture	Days on Site: 365		Temperature Ambient					
DOT: 3 - Flammabl	IVIIJULL	LANEOUS LUBE OIL	Gallons	90	5	90		- Fire			
Combustible Liquid	is CAS No			Storage Container Carboy		Pressue Ambient	Waste Code	- Acute Health			
	Map: 1	Grid: 5H	Type Mixture	Days on Site: 365		Temperature Ambient					
OT: 3 - Flammabl	INCOL	DTE 26	Gallons	110	55	110		- Fire	u		
Combustible Liquid	is CAS No			Storage Container Steel Drum		Pressue Ambient	Waste Code	- Acute Health			
	Map: 1	Grid: 5H	Type Pure	Days on Site: 365		Temperature Ambient					
OT: 3 - Flammabl		URPOSE R+O OIL 220	Gallons	165	55	165		- Fire	LUBRICANT BASE OIL	99 %	
Combustible Liquid	is CAS No			Storage Container Steel Drum		Pressue Ambient	Waste Code	- Acute Health	ADDITIVES	1%	
	Map: 1	Grid: SH	_{Type} Mixture	Days on Site: 365		Temperature Ambient					
OT: 3 - Flammabl	neicase	Number 1 VOC	Gallons	55	55	55		- Fire			
ombustible Liquid	is CAS No			Storage Container Steel Drum		Pressue Ambient	Waste Code				
	Map: 1	Grid: 5H	_{Type} Mixture	Days on Site: 365		Temperature Ambient					
OT: 3 - Flammabl		ELLUS OIL	Gallons	110	55	110		- Fire	— · ·		
ombustible Liquic	is CAS No			Storage Container Steel Drum		Pressue Ambient	Waste Code	- Chronic health			
	Map: 1	Grid: 5H	Type Pure	Days on Site: 365		Temperature Ambient					

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))	Hazardou	s Materials	And Waste	s Inventory	y Matrix I	Report		
Facility Name	METCALF ENGERGY CENTER METCALF ENERGY CENTER 1 BLANCHARD RD, SAN JOSE 95013			Chemical Loca Lube Oil S				CERS ID Facility J Status	10097278 D 43-060-409545 Submitted on 2/9/2015 3:40 PM
OT Code/Fire Haz. Cl	ass Common Name	Unit	Max. Daily	Quantities Largest Cont.	Avg. Daily	Annual _ Waste Amount	Federal Hazard Categories	Component Name	Hazardous Components (For mixture only) % Wt EHS CAS No.
DOT: 3 - Flammable Combustible Liquids	and Shell Turbo Oil DR 46	Gallons State S Liquid S Type	55 torage Container iteel Drum Days on Site: 365	55	55 Pressue Ambient Temperature Ambient	Waste Code	- Fire	component wante	78 WL EN3 CAS NO.
DOT: 3 - Flammable Combustible Liquid	TORDOTOLSZ	Gallons State S Liquid S Type	330 torage Container teel Drum Days on Site: 365	55	330 Pressue Ambient Temperature Ambient	Waste Code	- Fire - Acute Health		
DOT: 3 - Flammable Combustible Liquids	Vapiotec Light	Liquid S Type	55 torage Container teel Drum Days on Site: 365	55	55 Pressue Ambient Temperature Ambient	Waste Code	- Fire		

	4	Hazardo	us Materials A	And Waste	s Inventory	/ Matrix I	Report			
acility Name METC	ALF ENGERGY CENTER ALF ENERGY CENTER CHARD RD, SAN JOSE 95013			Chemical Loca MAINTEN	ANCE SHOP				10097278 D 43-060-409545 Submitted on 2/9/	
OT Code/Fire Haz. Class	Соттол Name	Unit	Max. Daily	Quantities	àus Dailu	Annual Waste	Federal Hazard		Hazardous Components (For mixture only)	
IOT: 3 - Flammable and ombustible Liquids lammable Liquid, Class I-B	*MISCELLANEOUS FLAMMABLE LIQUID, CLASS IB CAS NJ	Gallons State	65 Storage Container Can, Glass Bottle or Bottle or Jug	Largest Cont. 1 r Jug, Plastic	Avg. Daily 65 Pressue Ambient Temperature	Amount Waste Code	- Fire	Component Name	% Wt	EHS CAS No.
OT: 2.1 - Flammable Gase Instable (Reactive), Class 2 Iammable Gas	ACTICENE	Cu. Fee State Gas Type	Storage Container Cylinder	185	Ambient 185 Pressue Ambient Temperature Ambient	Waste Code	- Fire - Reactive - Pressure Release			
OT: 2.2 - Nonflammable G	iases ARGON / CARBON DIOXIDE / HELIUM CAS No Map: 1. Grid: 3J	Gas Type	Days on Site: 365 t 215 Storage Container Cylinder Days on Site: 365	215	215 Pressue Ambient Temperature Ambient	Waste Code	- Pressure Release - Acute Health			
0OT: 2.2 - Nonflammable G Other		Cu. Fee State Gas Type Pure	t 336 Storage Container Cylinder Days on Site: 365	336	336 Pressue Ambient Temperature Ambient	Waste Code	- Pressure Release		<u>.</u>	
DOT: 2.2 - Nonflammable G	iases CARBON DIOXIDE CAS No 124-38-9 Map: 1 Grid: 3J			376	376 Pressue Ambient Temperature Ambient	Waste Code	- Pressure Release - Acute Health - Chronic health			
DOT: 2.2 - Nonflammable G Dxidizing, Class 2	CAS No 7782-44-7 Map: 1 Grid: 3J	Cu. Fee State Gas Type Pure		281	281 Pressue Ambient Temperature Ambient	Waste Code	- Fire - Pressure Release			

TCALF ENGERGY CENTER										
			Chemical Loca PROPANE				CERS ID Facility I Status			
	·		Quantities		Annual Waste	Federal Hazard		Hazardous Components (For mixture only)	;	
Common Name	Unit	Max. Daily	Largest Cont.	Avg. Daily	Amount	Categories	Component Name	% Wt	EHS CAS No.	
*MISCELLANEOUS FLAMMABLE	Gallons	55	1	55		- Fire				
LIQUID. CLASS IB	State	Storage Container		Pressue						
	Liquid Type	Can, Plastic Bottle	le or Jug	Ambient Temperature		le				
Map: 1 Grid: 3H	Pure	Days on Site: 365		Ambient						
ases PROPANE	Gallons	60	10	60		- Fire		• • • • •		
I-A CAS No 74-98-6 Map: 1 Grid: 3H	State Gas Type	Storage Container Cylinder		Pressue < Ambient Temperature	Waste Code	Release - Acute Health				
	*MISCELLANEOUS FLAMMABLE LIQUID, CLASS IB I-B CAS No Map: 1 Grid: 3H ases PROPANE I-A CAS No 74-98-6	ANCHARD RD, SAN JOSE 95013 Common Name Unit *MISCELLANEOUS FLAMMABLE Gallons LIQUID, CLASS IB State I-B CAS No Type Map: 1 Grid: 3H Pure ases PROPANE Gallons I-A CAS No State	ANCHARD RD, SAN JOSE 95013 Common Name Unit Max. Daily *MISCELLANEOUS FLAMMABLE Gallons 55 LIQUID, CLASS IB State Storage Container I-B CAS No Type Map: 1 Grid: 3H Pure Days on Site: 365 ases PROPANE Gallons 60 I-A CAS No State Storage Container Type Pure Days on Site: 365 Gallons 60 I-A CAS No State Storage Container Gallons 60 I-A CAS No State Storage Container Gallons 60 I-A Type Gallons F Gallons 60	ANCHARD RD, SAN JOSE 95013 Quantities Common Name Unit Max. Daily Largest Cont. *MISCELLANEOUS FLAMMABLE Gallons 55 1 LIQUID, CLASS IB State Storage Container Liquid I-B CAS No Type Map: 1 Grid: 3H Pure Days on Site: 365 I-A CAS No State Storage Container I-A Type Days on Site: 365 10	ANCHARD RD, SAN JOSE 95013 Common Name Unit Max. Daily Largest Cont. Avg. Daily *MISCELLANEOUS FLAMMABLE Gallons 55 1 55 LIQUID, CLASS IB State Storage Container Pressue I-B CAS No Type Temperature Map: 1 Grid: 3H Pure Days on Site: 365 Ambient ases PROPANE Gallons 60 10 60 I-A CAS No State Storage Container Pressue Map: 1 Grid: 3H Type Temperature Maps: 1 Grid: 3H Type Ambient T4-98-6 Gas Cylinder Ambient Map: 1 Grid: 3H Type Temperature	ANCHARD RD, SAN JOSE 95013 Common Name Unit Max. Daily Largest Cont. Avg. Daily Annual Waste *MISCELLANEOUS FLAMMABLE Gallons 55 1 55 LIQUID, CLASS IB State Storage Container Pressue Ambient I-B CAS No Type Temperature Ambient Map: 1 Grid: 3H Pure Days on Site: 365 10 60 I-A CAS No State Storage Container Pressue Mabient Type Temperature Ambient Mabient Waste Code Type Temperature Ambient Mabient Mabient Type Temperature Ambient Mabient Mabient Type Temperature Ambient Mabient Mabient Type Type Temperature Ambient Mabient Type Temperature Ambient Mabient Mabient Asses PROPANE Gallons 60 10 60 I-A CAS No State Storage Container Pressue Waste Code Map: 1 Grid: 3H Type Temperature Yaste Code	ANCHARD RD, SAN JOSE 95013 Common Name Unit Quantities Annual Waste Federal Hazard Categories *MISCELLANEOUS FLAMMABLE LIQUID, CLASS IB Gallons 55 1 55 - Fire LIQUID, CLASS IB State Storage Container Pressue Ambient Waste Code I-B CAS No Type Temperature Ambient Waste Code Map: 1 Grid: 3H Pure Days on Site: 365 Ambient Waste Code I-A CAS No State Storage Container Pressue Ambient App: 1 Grid: 3H Pure Days on Site: 365 Ambient Pressue I-A CAS No State Storage Container Pressue Pressue I-A Grid: 3H Type Temperature Ambient - Fire	ANCHARD RD, SAN JOSE 95013 ANCHARD RD, SAN JOSE 95013	ANCHARD RD, SAN JOSE 95013 AncharD RD, SAN JOSE 95013 Status Submitted on 2/9/ Annual Quantities Annual Waste Federal Hazard Components Gallons Status Submitted on 2/9/ Waste Federal Hazard Components Gallons Status Submitted on 2/9/ Mappin Display Mappin Display <th c<="" td=""></th>	

	i	Hazardous	Materials	And Waste	s inventory	Matrix	Report						
acility Name METCA	ALF ENGERGY CENTER ALF ENERGY CENTER HARD RD, SAN JOSE 95013		Chemical Location CERS ID 1.0097278 STATION SERVICE TRANSFORMERS Facility ID 43-060-40950 Status Submitted on 2/										
OT Code/Fire Haz. Class	Common Name	- Unit	Max. Daily	Quantities Largest Cont.	Avg. Daily	Annual Waste	Federal Hazard	(For mi	Componer (ture only)				
DOT: 9 - Misc. Hazardous Materials	HYTRANS 61 CAS No	Gallons State Sto	7038 prage Container ther	3519	7038 Pressue < Ambient	Amount Waste Code	Categories - Fire - Acute Health e	Component Name OIL, HYDRO LIGHT NAPH DIST 2, 6-DI-T-BUTYL-P-CRESOL (BH	% Wt 99 % T) 1 %	EHS CAS No. 64742-53-6 128-37-0			
	Map: 1 Grid: 2D, 3D	Type Mixture Da	ays on Site: 365		Temperature Ambient								

			Hazardous	s Materials	And Waste						
ERS Business/Org. acility Name						emical Location EAM TURBINE CONTROL OIL TANK			CERS ID 10097278 Facility ID 43-060-409545 Status Submitted on 2/9/2015		
)OT Code/Fire Haz. C	Nass	Common Name	Unit	Max. Daily	Quantities	Avg. Daily	Annual Waste	Federal Hazard		Hazardous Componen (For mixture only)	
DOT: 9 - Misc. Haza Materials		Sheli Turbo Oil DR 46 CAS No	Gallons State Sta	200 orage Container ther	200	200 Pressue Ambient	Amount Waste Code	Categories - Fire e	Component Name	% Wt	EHS CAS No.
		Map: 1 Grid: 4F	Type Mixture Da	ays on Site: 365		Temperature Ambient					

		Hazardo	ous Materials	And Waste	s Inventory	Matrix	Report			
acility Name 🛛 🕅	IETCALF ENGERGY CENTER IETCALF ENERGY CENTER BLANCHARD RD, SAN JOSE 95013			Chemical Loca Steam Tu	^{tion} r bine Flamm	nable Loci	ker	CERS ID Facility Status	10097278 D 43-060-40954 Submitted on 2/9	-
OOT Code/Fire Haz. Class	s Common Name	Unit	Max. Daily	Quantities Largest Cont.	Avg. Daily	Annual Waste Amount	Federal Hazard Categories	Component Name	Hazardous Component (For mixture only) % Wt	s EHS CAS No.
DOT: 3 - Flammable ar Combustible Liquids Flammable Liquid, Cla	LIQUID, CLASS IB	Gallons State Liquid Type Pure	s 210 Storage Container Can, Glass Bottle o Bottle or Jug Days on Site: 365	1 or Jug, Plastic	210 Pressue Ambient Temperature Ambient	Waste Code				
DOT: 3 - Flammable ar Combustible Liquids Flammable Liquid, Cla Dther Health Hazard, 1	CAS No ss I-B, 8006-61-9	Gallons State Liquid Type Pure	5 70 Storage Container Can Days on Site: 365	5	70 Pressue Ambient Temperature Ambient	Waste Code	- Fire - Chronic health			

)	Hazardou	s Materials /	And Waste	s Inventory	[,] Matrix	Report			
acility Name METCA	ALF ENGERGY CENTER ALF ENERGY CENTER HARD RD, SAN JOSE 95013			Chemical Loca STEAM TU	ition JRBINE PACI	KAGE		Facility ID 4	.0097278 3-060-40954 ubmitted on 2/9	
DOT Code/Fire Haz. Class	Common Name	Unit	Max. Daily	Quantities Largest Cont.	Avg. Daily	Annual Waste Amount	Federal Hazard Categories		ardous Component For mixture only} % Wt	S EHS CAS No.
DOT: 3 - Flammable and Combustible Liquids	REOLUBE TURBOFLUID 46B	Gallons State St	6850 orage Container ther	6650	6850 Pressue Ambient	Waste Code	- Fire - Acute Health	TERT-BUTYLATED TRIPHE PHOSPHATES TRIPHENY' PHOSPHATE		68937406 115-86-6
Other	Map: 1 Grid: 4G	Type Mixture D	ays on Site: 365		Temperature Ambient					

	A.	Hazardou	s Materials /	And Waste	s Inventory	/ Matrix	Report			
acility Name METCAL	F ENGERGY CENTER F ENERGY CENTER ARD RD, SAN JOSE 95013			Chemical Loca SWITCH Y				CERS ID	10097278 43-060-40954 Submitted on 2/9	-
_				Quantities		Annual Waste	Federal Hazard		lazardous Componen (For mixture only)	ts
OOT Code/Fire Haz. Class	Common Name	Ųnit	Max. Daily	Largest Cont.	Avg. Daily	Amount	Categories	Component Name	% Wt	EHS CAS No.
00T: 8 - Corrosives (Liquids an folids)	d FLOODED LEAD-CALCIUM BATTERY		9 torage Container	0.6	9 Pressue			LEAD, LEAD COMPONE		7439-92-1
orrosive	CAS No	Liquid O Type	other		Ambient Temperature	Waste Cod	e	SULFURIC ACID	8 %	✓ 7664-93-9
	Map: 1 Grid: 4B	Pure D	ays on Site: 365		Ambient					

		Hazardo	us Materials /	And Waste	s Inventory	/ Matrix	Report	e frank		
acility Name METCAL	ENGERGY CENTER ENERGY CENTER RD RD, SAN JOSE 95013			Chemical Loca UNIT 1 CE		CERS ID 10097278 Facility ID 43-060-409545 Status Submitted on 2/9/2015 3:40 PN				
OT Code/Fire Haz. Class	Common Name	Unit	Max. Daily	Quantities Largest Cont.	Avg. Daily	Annual _ Waste Amount	Federal Hazard Categories	Component Name	Hazardous Components (For mixture only) % Wt	
OT: 2.2 - Nonflammable Gases	NITROGEN / NITRIC OXIDE CALIBRATION GAS CAS No Map: 1 Grid: 4H	Gas Type	t 870 Storage Container Cylinder Days on Site: 365	145	435 Pressue Ambient Temperature Ambient	Waste Code	- Pressure	NITRIC OXIDE NITROGEN	0 % 99 %	✓ 10102-43-9 7727-37-9
OT: 2.2 - Nonflammable Gases	NITROGEN / OXYGEN CALIBRATION GAS CAS No Map: 1 Grid: 4H	Gas Type	t 435 Storage Container Cylinder Days on Site: 365	145	435 Pressue Ambient Temperature Ambient	Waste Code	- Pressure Release - Acute Health			
OT: 2.2 - Nonflammable Gases	NITROGEN/CARBON MONOXIDE CALIBRATION GAS CAS No Map: 1 Grid: 4H	State Gas Type	t 435 Storage Container Cylinder Days on Site: 365	145	290 Pressue < Ambient Temperature Ambient	Waste Code	 Fire Reactive Pressure Release Acute Health Chronic health 	NITROGEN OXYGEN CARBON MONOXIDE	83 % 12 % 5 %	7727-37-9 7782-44-7 124-38-9

		Hazardou	s Materials /	And Waste	s Inventory	/ Matrix	Report				
acility Name METCALF	ENGERGY CENTER ENERGY CENTER ID RD, SAN JOSE 95013	Chemical Location UNIT 1 NITROGEN STORAGE									
				Quantities		Annual Waste	Federal Hazard		Hazardous Components (For mixture only)		
DOT Code/Fire Haz. Class	Common Name	Unit	Max. Daily	Largest Cont.	Avg. Daily	Amount	Categories	Component Name	% Wt EHS CAS No.		
OOT: 2.2 - Nonflammable Gases	NITROGEN CAS № 7727-37-9 Map: 1 Grid: 3E	Gas Cy Type	600 torage Container ylinder rays on Site: 365	100	600 Pressue < Ambient Temperature Ambient	Waste Code	- Fire - Reactive - Pressure Release - Acute Health - Chronic health				

		Hazardo	ous Materials /	And Waste	s Inventory	Matrix	Report	6 6 4 5 6 4 7 7		
acility Name METCALF	ENGERGY CENTER ENERGY CENTER ID RD, SAN JOSE 95013	Chemical Location UNIT 2 CEMS GASES						CERS ID 10097278 Facility ID 43-060-409545 Status Submitted on 2/9/2015 3:40 P		
OT Code/Fire Haz. Class	Common Name	Unit	Max. Daily	Quantities Largest Cont.	Avg. Daily	Annual Waste Amount	Federal Hazard Categories	Component Name	lazardous Components (For mixture only) % Wt	
OOT: 2.2 - Nonflammable Gases	NITROGEN / NITRIC OXIDE CALIBRATION GAS CAS No Map: 1 Grid: 2H	Gas Type	t 870 Storage Container Cylinder Days on Site: 365	145	870 Pressue Ambient Temperature Ambient	Waste Code	- Pressure Release	NITRIC OXIDE NITROGEN	0 % 99 %	✓ 10102-43-9 7727-37-9
OT: 2.2 - Nonflammable Gases	NITROGEN / OXYGEN CALIBRATION GAS CAS No Map: 1 Grid: 2H	Gas Type	t 435 Storage Container Cylinder Days on Site: 365	145	435 Pressue Ambient Temperature Ambient	Waste Code	- Pressure Release - Acute Health		<u>.</u>	
OT: 2.2 - Nonflammable Gases	NITROGEN/CARBON MONOXIDE CALIBRATION GAS CAS No Map: 1 Grid: 2H	State Gas Type	t 435 Storage Container Cylinder Days on Site: 365	145	290 Pressue < Ambient Temperature Ambient	Waste Code	- Pressure Release - Acute Health	NITROGEN OXYGEN CARBON MONOXIDE	83 % 12 % 5 %	7727-37-9 7782-44-7 124-38-9

		Hazardou	is Materials /	And Waste	s Inventory	/ Matrix	Report		
Facility Name METCALF	ENGERGY CENTER ENERGY CENTER D RD, SAN JOSE 95013	Chemical Location UNIT 2 NITROGEN STORAGE				CERS ID Facility I Status	10097278 D 43-060-409545 Submitted on 2/9/2015 3:40 PM		
DOT Code/Fire Haz. Class	Common Name	Unit	Max. Daily	Quantities Largest Cont.	Avg. Daily	Annual _ Waste Amount	Federal Hazard Categories	Component Name	Hazardous Components (For mixture only) % Wt EHS CAS No.
DOT: 2.2 - Nonflammable Gases	NITROGEN CAS No 7727-37-9 Map: 1 Grid: 2E	Pounds State S Gas C Type	600 itorage Container Cylinder Days on Site: 365	100	600		- Fire - Reactive - Pressure Release - Acute Health - Chronic health	component wante	

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		₩. 	Hazardo	ous Materials A	And Wastes	s Inventory	y Matrix I	Report				
acility Name M	• • • • • • • • • • • • • • • • • • • •				Chemical Loca WATER TR	tion REATMENT	BUILDING		CERS ID 10097278 Facility ID 43-060-409545 Status Submitted on 2/9/2015 3:40 PM			
					Quantities		Annual Waste	Federal Hazard	Hazardous Co (For mixtu	•	s	
OT Code/Fire Haz. Class	Co	mmon Name	Unit	Max. Daily	Largest Cont.	Avg. Daily	Amount	Categories	Component Name	% Wt	EHS CAS No.	
OT: 8 - Corrosives (Liq olids)		HEMTREAT BL-152 IS NO		55 Storage Container Plastic/Non-metali	55	55 Pressue	Waste Code	- Acute Health	AMMONIUM HYDROXIDE	30 % 10 %	1336-21-6 141-43-5	
orrosive	м	ap: 1 Grid: 4J	Liquid _{Type} Mixture	Plasticy Non-metali	c Drum	Ambient Temperature Ambient				10 /0	171-7J-J	
OT: 8 - Corrosives (Liq	quids and C	HEMTREAT CL-206	Gallons	20	5	20		- Acute Health				
olids)	C#	S No		Storage Container Other		Pressue Ambient	Waste Code					
Corrosive	М	ap: 1 Grid: 4J	Type Mixture	Days on Site: 365		Temperature Ambient						
OT: 8 - Corrosives (Lig	uids and C	HEMTREAT CL-2875	Gallons	60	55	60		- Acute Health				
olids)	C#	S No		Storage Container Plastic/Non-metali	Drum Other	Pressue Ambient	Waste Code					
orrosive	м	ap: 1 Grid: 4J	Ťype	Days on Site: 365	, orani, oarer	Temperature Ambient						
OT: 9 - Misc. Hazardo	us C	HEMTREAT P873L	Gallons	250	400	230		- Acute Health	Poly(dimethyldiallylammonium	30 %	26062-79-3	
laterials	CA	S No		Storage Container Aboveground Tank	, Other	Pressue Ambient	Waste Code		chloride)			
	М	ap: 1 Grid: 4J	Type Mixture	Days on Site: 365		Temperature Ambient						
OT: 8 - Corrosives (Lig	uids and C	HEMTREAT RL1245	Gallons	300	400	220		- Acute Health	SODIUM BISULFITE		7631-90-5	
olids)	C#	S No		Storage Container Tank Inside Buildin	g	Pressue Ambient	Waste Code					
Corrosive	М	ap: 1 Grid: 4J	Type Mixture	Days on Site: 365		Temperature Ambient						
OT: 9 - Misc. Hazardo	us Ci	HEMTREAT RL9007	Gallons	330	400	330		- Acute Health	Diethylenetriamine penta	30 %	22042-96-2	
laterials	CA	S No		Storage Container Tank Inside Buildin	g	Pressue Ambient	Waste Code		methylene phosphonic acid			
	М	ap: 1 Grid: 4J	Type Mixture	Days on Site: 365		Temperature Ambient						
OT: 8 - Corrosives (Lig	uids and C	HEMTREAT-BL-1795	Gallons		55	110		- Acute Health	SODIUM PHOSPHATE, TRIBASTIC	5 %	7601-54-9	
olids)	CA	S No		Storage Container Plastic/Non-metali	: Drum	Pressue	Waste Code		SODIUM HYDROXIDE	5 %	1310-73-2	
orrosive	М	ap: 1 Grid: 4J	Type Mixture	Days on Site: 365		Temperature Ambient						

		<u>}</u>	Hazardo	us Materials	And Waste	s Inventory	/ Matrix I	Report			
ERS Business/Org. METCALF ENGERGY CENTER acility Name METCALF ENERGY CENTER 1 BLANCHARD RD, SAN JOSE 95013					Chemical Loca	CERS ID 10097278 Facility ID 43-060-409545 Status Submitted on 2/9/2015 3:40 PM					
					Quantities		Annual _ Waste	Federal Hazard	Hazardous Co (For mixtur	mponent e only)	s
OT Code/Fire Haz. Clas		Common Name	Unit	Max. Daily	Largest Cont.	Avg. Daily	Amount	Categories	Component Name	% Wt	EHS CAS No.
)OT: 9 - Misc. Hazard Aaterials	lous	CONNTECT 6000 CAS No		110 Storage Container Plastic/Non-metali	55 c Drum	110 Pressue	Waste Code	- Acute Health	Ethylene Glycol Monobutyl Ether Ethoxylated Alcohols, C9 - C11	20 % 40 %	111-76-2 68439-46-3
rritant		Map: 1 Grid: 4J	_{Type} Mixture	Days on Site: 365		Temperature					
DOT: 8 - Corrosives (Li Solids)	iquids and	FERROQUEST FQ7101 CAS No		10 Storage Container Carboy	5	10 Pressue Ambient	Waste Code	- Reactive - Acute Health			
		Map: 1 Grid: 4J	^{Type} Mixture	Days on Site: 365		Temperature Ambient					
DOT: 8 - Corrosives (Li Solids)	iquids and	FERROQUEST LP7200 CAS No		5 Storage Container Carboy	5	5 Pressue Ambient	Waste Code	- Reactive - Acute Health			
Corrosive		Map: 1 Grid: 4J	Type Mixture	Days on Site: 365		Temperature Ambient					
OOT: 8 - Corrosives (Li olids)	iquids and.		Gallons State	55 Storage Container	55	55 Pressue		- Acute Health	Sodium Hypochlorite	13 %	7681-52-9
Corrosive		7681-52-9 Map: 1 Grid: 4J	Туре	Plastic/Non-metali Days on Site: 365	c Drum	Ambient Temperature Ambient	Waste Code		SODIUM HYDROXIDE	0 %	1310-73-2
OOT: 8 - Corrosives (Li iolids)	iquids and	SODIUM HYPOCHLORITE 12.5%	Gallons State	300 Storage Container	400	150 Pressue		- Fire - Reactive	SODIUM HYDROXIDE 10-60%	1%	1310-73-2
Corrosive		CAS No Map: 1 Grid: 4J		Tank Inside Buildin	g	Ambient Temperature	Waste Code		SODIUM HYPOCHLORITE >12.5%- 15%	13 %	7681-52-9
		iviap. 1 (1) (1) (4)	••	Days on Site: 365		Ambient		- Acute Health - Chronic health	SODIUM CHLORIDE WATER		7647-14-5 7732-18-5

Appendix 6

Cooling Tower Inspection Checklist

.

Tower Location METCALF	Date Inspected 3/19/15
Owner / Company	Inspected by HENRY AVIS
Company Contact	Inspector
Signature	Signature
Owner's Tower Designation	
Tower Manufacturer MARLEY	Model No. F488A-40-10PPWD Serial No. 223647
Process Served by Tower	_ Operation: Continuous 🛛 Intermittent 🖬 Seasonal 🗆
Design Conditions: m ³ /hr 133.400 GPM HW 89.8 °F	<u>_°C CW 72.1 °F°C WB 59 °F</u> °C
Cell No Number of Fan Cells 10 Tower Type: C	rossflow 🛛 Counterflow 🖄
Date Tower was Installed 2005	

This checklist is intended to be used as a guide only. This checklist may not cover all potential issues and should not be relied upon as a substitute for Authorized Service Provider's professional judgment. Authorized Service Provider should report on all issues. Any issues that are identified for which a space is not otherwise provided in the checklist, should be noted in the Other Component sections or in a supplementary document.

Condition: 1-Good 2-Keep an eye on it 3-Needs immediate attention

	1	2	3	Comments
Structure	r			
Casing Material CORRUGATED	<u></u>			
Structural Material FIBERGLASS	X			
Fan Deck Material FIBERGLASS	X			
Stairway D Material FIBERGLASS	X			
Ladder D Material FIBERGLASS	X			
Handrail 🗅 Material FIBERGLASS	X			
Interior Walkway 📮 Material	X			
Cold Water Basin Material CONCRETE	X			
Silt, Debris Buildup		\mathbf{X}		
Water Distribution System				
Open Basin System	r			
Distribution Basin Material CONCRETE	X			
Inlet Pipe Material CARBON STEEL	X			
Inlet Manifold Material FIBERGLASS	X			<u> </u>
Flow Control Valves BUTTERFLY VALVE Size	X			
Nozzles – Orifice Diameter <u>3"</u> Size				
Silt, Algae, Debris	LXI			
Spray Type System	·····-			
Header Pipe Material ABS	X			Rust on pipes
Branch Pipe Material PVC	X			
Nozzles – Orifice Diameter <u>3"</u> Size	X			Rust on pipes Some pluged cleaned
Up spray 🛛 🛛 Down spray 🖉				(0 -
Heat Transfer System				
Fill – Type and Material <u>PVC</u>	X			
Eliminators – Type and Material <u>PVC</u>	X			
Louvers – Type and Material GALV.				
Biological Fouling	LX			
Use this space to list specific items needing attention:				
ose mis space to hat append items needing attention,				

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Mschanical Equipment Speed Reducer ips: Beit Drive Unit Beit Designation		1	2	3	Comments
Beit Designation	Mechanical Equipment				
Beit Designation	Speed Reducer Type: Belt 🗆 Gear 🙇 Direct Drive 🗆				
Fan Sheave Designation		<u></u>			
Fan Sheave Designation	Belt Designation				
Gesr Drive Unit Marulacturer (MARLEY Model 4000 Rate 15.84/1		-			
Gesr Drive Unit Marulacturer (MARLEY Model 4000 Rate 15.84/1					
Oil Level: Full B Add Immediately Lew, Check Again Soon Oil Condition: Good B Contains Water Contains Studge Oil Type Used 76 TURBINE 220 Seals					
Oil Condition: Good B1 Contains Water Contains Sludge 0 Oil Type Used 76 TURBINE 220 Seals X Xnput SEQ(Lec)L Seals X Xnput SEQ(Lec)L X Backtash X Xnput SEQ(Lec)L X Fan Shaft Endplay X Xnput SEQ(Lec)L X Drive Shaft X Xnput SEQ(Lec)L X Manufacturer ADDAX LRC850.625 Material FIBERGLASS X X Fan Fan Type: Popoller 61 Edges 10 Manufacturer MARLEY Fixed Pitch 1 Adjustable Pitch 1 X Diameter 384" HP7000-10 Number of Blades 10 X X X Blade Assembly Hardware \$IS X X X X Hub Cover Material FIBERGLASS X X X X Vibration Lavel X X X X X Vibration Lavel X X X X X X Vibration Line \$IS Oil Fild and Drain Line \$IS X X X X X X X X X X X	Manufacturer MARLEY Model 4000	Ratio	15.84	/1	
Oil Type Used 76 TURBINE 220 Seals Backlash Fan Shaf Endplay Unusual Noises? No (A) Yes D Action Required Diversity Manufacturer Adjustable Pitch Diversity Fan Tip Creating Blade Material FIBERGLASS Hub Material FBERGHASS Hub Material FIBERGLASS Blade Assembly Hardware S/S Tip Cleatance mm min Market Bild Vioration Level Fan Ophicity Hold Machacturer Manufacturer Manufacturer Manufacturer	Oil Level: Full 🖄 Add Immediately 🔾 Low, Check Again S	Soon C	1		
Seals X Trput Segit Legit Backlash		al 🛛	Cor	ntains	Sludge 🛛
Backlash Fan Shaft Endplay Unusual Noises? No BA Yes Action Required Dive Shaft Manufacturer ADDAXLRC850.625 Material FIBERGLASS Fan Fan Type: Propeller St Blade Material FIBERGLASS Hub Material CARBON STEEL Hub Cover Material FIBERGLASS Blade Material FIBERGLASS Hub Cover Material FIBERGLASS Blade Assembly Hadware S/S Tip Clearance Yorkion Loved Fan Cylinder Height 14' Mechanical Equipment Support GALV. Vibration Line S/S Variation Line S/S Vibration Line S/S Vibration Line S/S Variation Line S/S Variation Line S/S Vibration Line S/S Vibration Line S/S Variation Line S/S Variation Line S/S Vibration Line S/S Variation Line S/S Variat			X		Inaut seal Lean
Fan Shaft Endplay Unusual Noises? No X Yes C Action Required Drive Shaft Manufacturer ADDAX LRC950.625 Material File Fan Fan Type: Propeller SL Black Material File Black Material File Hub Cover MARLEY Fan Cylinder Black Assembly Hardware SKS Hub Cover Material File Fan Cylinder Height 14' Woration Level Fan Cylinder Height 14' Mechanical Equipment Support Oil Evel Sight Glass Vibration Level Side Manufacturer Stock Motor Manufacturer Manufacturer Manufacturer Reparence No Side FL Ampe 31.5 Frame Grease Usech - Type 76 POLYTAC-2 Unusual Noises? No Side Make-up Valve Unusual Noises? No Side Yes C Action Required Unusual Noises? No Side Yes C Action Required <td></td> <td>X</td> <td></td> <td></td> <td></td>		X			
Drive Shaft Manufacturer ADDX LRC850.625 Material FIBERGLASS Fan Fan Type: Propeller & Blower □ Manufacturer MARLEY Fixed Pitch □ Diameter 384" HP7000-10 Number of Blades 10 Blade Material FIBERGLASS X Hub Material CARBON STEEL X Hub Material FIBERGLASS X Blade Assembly Hardware S/S X Blade Assembly Hardware S/S X Tip Clearancemm minmm max X Vibration Level X Fan Cylinder Height 14' X Mechanical Equipment Support GALV. X Oil Fill and Drain Line S/S X Oil Fill and Drain Line S/S X Vibration Linit Switch METRIX-M#5550-121-01 X Motor X Manufacturer TECO WESTINGHOUSE Phase 3 Name Prate Data: kW 250 HP RPM 1780 Phase 3 FL Anps 31.5 Frame 5009 S F 1.15 Special Info. M#AEHG-WT002 Last Lubrication - Date		\mathbf{X}			
Drive Shaft Manufacturer ADDX LRC850.625 Material FIBERGLASS Fan Fan Type: Propeller & Blower □ Manufacturer MARLEY Fixed Pitch □ Diameter 384" HP7000-10 Number of Blades 10 Blade Material FIBERGLASS X Hub Material CARBON STEEL X Hub Material FIBERGLASS X Blade Assembly Hardware S/S X Blade Assembly Hardware S/S X Tip Clearancemm minmm max X Vibration Level X Fan Cylinder Height 14' X Mechanical Equipment Support GALV. X Oil Fill and Drain Line S/S X Oil Fill and Drain Line S/S X Vibration Linit Switch METRIX-M#5550-121-01 X Motor X Manufacturer TECO WESTINGHOUSE Phase 3 Name Prate Data: kW 250 HP RPM 1780 Phase 3 FL Anps 31.5 Frame 5009 S F 1.15 Special Info. M#AEHG-WT002 Last Lubrication - Date	Unusual Noises? No 🖄 Yes 🗆 Action Required		_		
Fan Fan Type: Propoller SL Blower Manufacturer MARLEY Fixed Pitch Adjustable Pitch Diameter 364" HP7000-10 Number of Blades 10 Blade Material FIBERGLASS X X Hub Material CARBON STEEL X X X Hub Cover Material FIBERGLASS X X X Blade Assembly Hardware \$/S X X X X Tip Clearance _mm min _mm max X X X X Fan Cylinder Height 14' X X X X X X Mechanical Equipment Support GALV. X<	Drive Shaft				
Fan Type: Propeller Sd Blower □ Manufacturer MARLEY Fixed Pitch □ Adjustable Pitch □ Diameter 384" HP7000-10 Number of Blades 10 Blade Material FIBERGLASS X X Hub Material CARBON STEEL X X Hub Cover Material FIBERGLASS X X Blade Assembly Hardware S/S X X Tip Clearance mm min mm max X X Vibration Level X X X X Fan Cylinder Height 14' X X X X Wibration Limit Switch METRIX-M#5550-121-01 X Y X X Y Vibration Limit Switch METRIX-M#5550-121-01 X Y. Luck ½ X Y X Y Motor Manufacturer TECO WESTINGHOUSE Name Plate Data: kW 250 HP RPM 1780 Phase 3 Hz 60 Volts 4160 Y FL Amp 31.5 Frame 5009 S F 1.15 Special Into. M#AEHG-WT002 Last Lubrication? No 52 Y 4	Manufacturer ADDAX LRC850.625 Material FIBERGLASS	$\left \times \right $			
Manufacturer MARLEY Fixed Pitch □ Adjustable Pitch □ Diameter 384" HP7000-10 Number of Blades 10 Blade Material FIBERGLASS					
Diameter 384" HP7000-10 Number of Blades 10 Blade Material FIBERGLASS X Hub Material FIBERGLASS X Blade Assembly Hardware \$/S X Tip Clearancemm minmm max X Vibration Level					
Blade Material FIBERGLASS X Hub Material CARBON STEEL X Hub Cover Material FIBERGLASS X Blade Assembly Hardware S/S X Tip Clearancemm minmm max X Vibration Level		Pitch	1		
Hub Material CARBON STEEL Hub Cover Material FIBERGLASS Blade Assembly Hardware S/S Tip Clearancemm minmm max Vibration Level Fan Cylinder Height 14' Mechanical Equipment Support CALV. Oil Fill and Drain Line S/S Oil Level Sight Class Vibration Limit Switch, METRIX-M#5550-121-01 Motor Manufacturer TECO WESTINGHOUSE Name Plate Data: kW 250 HP RPM 1780 FL Amps 31.5 Frame 5009 S F 1.15 Last Lubrication - Date Grease Used - Type 76 POLYTAC-2 Unusual Noises? No 54 Yes D Action Required Unusual Heat Build-up? No 54 Yes D Action Required	Diameter 004 Th Todo to Number of Blades 10		-		
Hub Material CARBON STEEL Hub Cover Material FIBERGLASS Blade Assembly Hardware S/S Tip Clearancemm minmm max Vibration Level Fan Cylinder Height 14' Mechanical Equipment Support GALV. Oil Fill and Drain Line S/S Oil Level Sight Glass Vibration Limit Switch, METRIX-M#5550-121-01 Motor Manufacturer TECO WESTINGHOUSE Name Plate Data: kW 250 HP RPM 1780 FL Amps 31.5 Frame 5009 S F 1.15 Last Lubrication - Date Grease Used - Type 76 POLYTAC-2 Unusual Noises? No 54 Yes D Action Required Unusual Heat Build-up? No 54 Yes D Action Required			<u> </u>		
Hub Mathai Hub Cover Material Hub Cover Material Hub Cover Material Hub Cover Material Blade Assembly Hardware Sile Assembly Hardware Sile Clearance		×			
Blade Assembly Hardware S/S Tip Clearancemm minmm max Vibration Level Fan Cylinder Height 14' Mechanical Equipment Support GALV. Oit Fill and Drain Line S/S Oit Fill and Drain Line S/S Vibration Limit Switch METRIX-M#5550-121-01 Motor Manufacturer TECO WESTINGHOUSE Name Plate Data: kW 250 HP RPM 1780 F L Amps 31.5 Frame 5009 S F 1.15 Special Info. M#AEHG-WT002 Last Lubrication - Date Grease Used - Type Top Pase 1 Action Required Unusual Noises? No SZ Yes 1 Action Required Unusual Heat Build-up? No SZ Yes 1 Action Required Unusual Heat Build-up? No SZ		-			<u> </u>
Tip Clearance mm min mm max Vibration Level Fan Cylinder Height 14' Mechanical Equipment Support GALV. Oil Fill and Drain Line 5/S Oil Level Sight Glass Vibration Limit Switch METRIX-M#5550-121-01 X Motor Manufacturer TECO WESTINGHOUSE Name Plate Data: kW 250 HP RPM 1780 Phase 3 Hz 60 Volts 4160 F L Amps 31.5 Frame Grease Used - Type 76 POLYTAC-2 Unusual Noises? No \$\vec{Y}\$ Yes 0 Action Required Unusual Heat Build-up? No \$\vec{Y}\$ Yes 0 Action Required Make-up Vaive Other Component					· · · · · · · · · · · · · · · · · · ·
Vibration Level Fan Cylinder Height 14' Mechanical Equipment Support Gall V. Oil Fill and Drain Line S/S Oil Level Sight Glass Vibration Limit Switch METRIX-M#5550-121-01 Motor Manufacturer TECO WESTINGHOUSE Name Plate Data: kW 250 HP RPM 1780 Phase 3 Hz 60 Volts 4160 F L Amps 31.5 Frame 5009 S F 1.15 Special Info. M#AEHG-WT002 Unusual Noises? No & Yes I Action Required Unusual Noises? No & Yes I Action Required Unusual Heat Build-up? No & Yes I Action Required Make-up Vaive Other Component	•				
Fan Cylinder Height 14' Mechanical Equipment Support Oil Fill and Drain Line S/S Oil Level Sight Glass Vibration Limit Switch METRIX-M#5550-121-01 Motor Manufacturer TECO WESTINGHOUSE Name Plate Data: kW 250 HP RPM 1780 Phase 31.5 Frame 5009 S F 1.15 Special Info, M#AEHG-WT002 Make-up Vaive Other Component	•				
Mate-up Valve Make-up Valve Mate-up Valve Make-up Valve		l 즟			
Oil Fill and Drain Line S/S Oil Level Sight Glass Vibration Limit Switch METRIX-M#5550-121-01 Motor Manufacturer TECO WESTINGHOUSE Name Plate Data: kW 250 HP RPM 1780 Phase 3 Hz 60 volts 4160 Special Info. WarkEHG-WT002 Lext Lubrication - Date Grease Used - Type 76 POLYTAC-2 Unusual Noises? No 54 Yes Action Required Unusual Heat Build-up? No 54 Yes Action Required Unusual Heat Build-up? No 54 Yes Condense Make-up Vaive Other Component					
Oil Level Sight Glass Vibration Limit Switch METRIX-M#5550-121-01 Motor Manufacturer TECO WESTINGHOUSE Name Plate Data: kW 250 HP RPM 1780 FL Amps 31.5 Frame 5009 S F 1.15 Special Info. M#AEHG-WT002 Volts 4160 Station - Date Grease Used - Type 76 POLYTAC-2 Unusual Noises? No 54 Yes □ Action Required Unusual Heat Build-up? No 54 Yes □ Action Required Unusual Heat Build-up? No 54 Yes □ Action Required Unusual Heat Build-up? No 54 Yes □ Action Required Unusual Heat Build-up? No 54 Yes □ Action Required Unusual Heat Build-up? No 54 Yes □ Action Required Unusual Heat Build-up? No 54 Yes □ Action Required Unusual Heat Build-up? No 54 Yes □ Action Required Unusual Heat Build-up? No 54 Yes □ Action Required Unusual Heat Build-up? No 54 Yes □ Action Required Unusual Heat Build-up? No 54 Yes □ Action Required Unusual Heat Build-up? No 54 Yes □ Action Required Unusual Heat Build-up? No 54 Yes □ Action Required Unusual Heat Build-up? No 54 Yes □ Action Required Unusual Heat Build-up? No 54 Yes □ Action Required Unusual Heat Build-up? No 54 Yes □ Yes □ Action Required Yes □ <p< td=""><td>0/0</td><td></td><td></td><td></td><td></td></p<>	0/0				
Oil Level Sight Glass					
Motor Manufacturer TECO WESTINGHOUSE Name Plate Data: kW 250 HP RPM 1780 Phase 3 Hz 60 Volts 4160 F L Amps 31.5 Frame 5009 S F 1.15 Special Info. M#AEHG-WT002 Last Lubrication - Date		—	X		PI((h
Manufacturer TECO WESTINGHOUSE Name Plate Data: kW 250 HP RPM 1780 Phase 3 Hz 60 Volts 4160 F L Amps 31.5 Frame 5009 S F 1.15 Special Info. M#AEHG-WT002 Last Lubrication - Date			~		fifting Librail
Name Plate Data: kW 250 HP RPM 1780 Phase 3 Hz 60 Volts 4160 F L Amps 31.5 Frame 5009 S F 1.15 Special Info. M#AEHG-WT002 Last Lubrication - Date					
FL Amps 31.5 Frame 5009 S F 1.15 Special Info. M#AEHG-WT002 M#AEHG-WT002 Grease Used Type 76 POLYTAC-2 Unusual Noises? No 76 POLYTAC-2 Unusual Vibration? No 76 Yes Action Required Unusual Heat Build-up? No 76 Yes Action Required Unusual Heat Build-up? No 76 Yes 76 Action Required 76 Action Required 76 POLYTAC-2 97 Yes 98 Action Required 98 Ac			2		60 4460
Last Lubrication Date Grease Used Type 76 POLYTAC-2 Unusual Noises? No 57 Yes Action Required Unusual Vibration? No 52 Yes Action Required Unusual Heat Build-up? No 52 Yes Action Required Unusual Heat Build-up? No 52 Yes Action Required Unusual Heat Build-up? No 52 Yes Action Required Unusual Heat Build-up? No 52 Yes Action Required Unusual Heat Build-up? No 52 Yes Action Required Unusual Heat Build-up? No 52 Yes Action Required Unusual Heat Build-up? No 52 Yes Action Required Unusual Heat Build-up? Yes Action Required Unusual Heat Build-up?		Phas	se <u> </u>		Hz 00 Volts 4160
Grease Used Type 76 POLYTAC-2 Unusual Noises? No 54-Yes Action Required Unusual Vibration? No 54 Yes Action Required Unusual Heat Build-up? No 54 Yes Action Required Make-up Valve Other Component	• • • • • • • • • •		-	Spe	cial Info, M#AEHG-VV1002
Unusual Noises? No 57- Yes Action Required					
Unusual Vibration? No 🖌 Yes 🗆 Action Required Unusual Heat Build-up? No K Yes 🗆 Action Required Make-up Valve Other Component					
Unusual Heat Build-up? No & Yes C Action Required	-				
Make-up Valve Dther Component					
Other Component	Unusual Heat Build-up? No 💐 Yes 🖬 Action Required _				
Other Component	Make-un Valve		Γ.		
			—ŀ		
	Other Component		1	-	

Cooling Tower Inspection Checklist

Tower Location METCALF	Date Inspected 3/20/15
Owner / Company	Inspected by HENRY AVIS
Company Contact	Inspector 14-7 Aris
Signature	Signature
Owner's Tower Designation	
Tower Manufacturer MARLEY	Model No. F488A-40-10PPWD Serial No. 223647
Process Served by Tower	Operation: Continuous 🖄 Intermittent 🗆 Seasonal 🗆
Design Conditions: m ³ /hr 133.400 GPM HW 89.8 °F	C CW <u>72.1 °F</u> ℃ WB <u>59 °F</u> ℃
Cell No Number of Fan Cells 10 Tower Type: Cro.	ssflow 🗅 Counterflow 🛋
Date Tower was Installed 2005	

This checklist is intended to be used as a guide only. This checklist may not cover all potential issues and should not be relied upon as a substitute for Authorized Service Provider's professional judgment. Authorized Service Provider should report on all issues. Any issues that are identified for which a space is not otherwise provided in the checklist, should be noted in the Other Component sections or in a supplementary document.

Condition: 1-Good 2-Keep an eye on it 3-Needs immediate attention

	1	2	3	Comments
Structure				
Casing Material CORRUGATED	\succ			
Structural Material FIBERGLASS	\checkmark			
Fan Deck Material FIBERGLASS	7			
Stairway D Material FIBERGLASS	\star			
Ladder D Material FIBERGLASS	X			
Handrail 🛛 Material FIBERGLASS	1			
Interior Walkway 🛛 Material	*			
Cold Water Basin Material CONCRETE	×			
Silt, Debris Buildup	X			
Water Distribution System				
Open Basin System	·			
Distribution Basin Material CONCRETE	X			
Inlet Pipe Material CARBON STEEL	X			
Inlet Manifold Material FIBERGLASS	X			
Flow Control Valves BUTTERFLY VALVE Size	X			
Nozzles – Orifice Diameter <u>3"</u> Size	X			Week to Replace 3 Broken
Silt, Algae, Debris	$ \times $			
Spray Type System				
Header Pipe Material ABS	\times			
Branch Pipe Material PVC	X			
Nozzles – Orifice Diameter <u>3"</u> Size		\mathbf{X}		Some Locks / Repaired
Up spray 🗋 🛛 Down spray 🗖				·
Heat Transfer System	·			
Fill – Type and Material PVC		\square		Need to Replace A Few
Eliminators – Type and Material <u>PVC</u>				
Louvers - Type and Material GALV.				
Biological Fouling				
Use this space to list specific items needing attention:				

Condition: 1-Good 2-Keep an eye on it 3-Needs Immediate attention

	1 2	3	Comments
Mechanical Equipment	L		· · · · · · · · · · · · · · · · · · ·
Speed Reducer Type: Belt 🛛 Gear 💋 Direct Drive 🗅			
Belt Drive Unit			
Belt Designation			
Fan Sheave Designation		1	
Motor Sheave Designation			
Gear Drive Unit	<u> </u>		
Manufacturer_MARLEY Model_4000	Ratio 15.8	4/1	
Oil Level: Full 🖏 Add Immediately 🖬 Low, Check Again S			
Oil Condition: Good 🔏 Contains Water 🖬 Contains Met		ontains	Sludge
Oil Type Used 76 TURBINE 220			
Seals	\square		Seal Legy Geol bo
Backlash	×	1	
Fan Shaft Endplay	×		
Unusual Noises? No 🕰 Yes 🗔 Action Required	Lib ale	5	apris of Oil
Drive Shaft			
Manufacturer ADDAX LRC850.625 Material FIBERGLASS	X		
Fan			
Manufacturer MARLEY Fixed Pitch 🛛 Adjustable			
Diameter <u>384" HP7000-10</u> Number of Blades <u>10</u>			······
Diameter <u>384" HP7000-10</u> Number of Blades <u>10</u> Blade Material FIBERGLASS			
Blade Material FIBERGLASS Hub Material CARBON STEEL	× ×		
Blade Material FIBERGLASS	x		
Blade Material FIBERGLASS Hub Material CARBON STEEL	<u>у</u> у-		
Blade Material FIBERGLASS Hub Material CARBON STEEL Hub Cover Material FIBERGLASS	× * ×		
Blade Material FIBERGLASS Hub Material CARBON STEEL Hub Cover Material FIBERGLASS Blade Assembly Hardware S/S Tip Clearance mm min Vibration Level mm min	<u>у</u> у-		
Blade Material FIBERGLASS Hub Material CARBON STEEL Hub Cover Material FIBERGLASS Blade Assembly Hardware S/S Tip Clearancemm minmm max Vibration Level Fan Cylinder Height 14'	× * ×		
Blade Material FIBERGLASS Hub Material CARBON STEEL Hub Cover Material FIBERGLASS Blade Assembly Hardware S/S Tip Clearance mm min Vibration Level mm min	× * × ×		
Blade Material FIBERGLASS Hub Material CARBON STEEL Hub Cover Material FIBERGLASS Blade Assembly Hardware S/S Tip Clearancemm minmm max Vibration Level Fan Cylinder Height 14'	× * × ×		
Blade Material FIBERGLASS Hub Material CARBON STEEL Hub Cover Material FIBERGLASS Blade Assembly Hardware S/S Tip Clearance mm min Vibration Level	× * × × × ×		
Blade Material FIBERGLASS Hub Material CARBON STEEL Hub Cover Material FIBERGLASS Blade Assembly Hardware S/S Tip Clearance mm min Vibration Level	×		
Blade Material FIBERGLASS Hub Material CARBON STEEL Hub Cover Material FIBERGLASS Blade Assembly Hardware S/S Tip Clearancemm minmm max Vibration Level Fan Cylinder Height 14' Mechanical Equipment Support GALV. Oil Fill and Drain Line S/S Oil Level Sight Glass	× × × × × × × × ×		
Blade Material FIBERGLASS Hub Material CARBON STEEL Hub Cover Material FIBERGLASS Blade Assembly Hardware S/S Tip Clearancemm minmm max Vibration Level Fan Cylinder Height 14' Mechanical Equipment Support GALV. Oil Fill and Drain Line S/S Oil Level Sight Glass Vibration Limit Switch METRIX-M#5550-121-01	× × × × × × × × ×		
Blade Material FIBERGLASS Hub Material CARBON STEEL Hub Cover Material FIBERGLASS Blade Assembly Hardware S/S Tip Clearancemm minmm max Vibration Level Fan Cylinder Height 14' Mechanical Equipment Support GALV. Oil Fill and Drain Line S/S Oil Level Sight Glass	× × × × × × × × × × × × × ×		
Blade Material FIBERGLASS Hub Material CARBON STEEL Hub Cover Material FIBERGLASS Blade Assembly Hardware S/S Tip Clearancemm minmm max Vibration Level Fan Cylinder Height 14' Mechanical Equipment Support GALV. Oil Fill and Drain Line S/S Oil Level Sight Glass Vibration Limit Switch METRIX-M#5550-121-01 Motor Manufacturer TECO WESTINGHOUSE	メ メ メ メ メ メ 、 、 、 、 、 、 、 、 、 、 、 、 、		
Blade Material FIBERGLASS Hub Material CARBON STEEL Hub Cover Material FIBERGLASS Blade Assembly Hardware S/S Tip Clearancemm minmm max Vibration Level Fan Cylinder Height 14' Mechanical Equipment Support GALV. Oil Fill and Drain Line S/S Oil Level Sight Glass	メ メ メ メ メ メ 、 、 、 、 、 、 、 、 、 、 、 、 、		Hz <u>60</u> Hz <u>60</u> Volts <u>4160</u> cial Info. <u>M#AEHG-WT002</u>
Blade Material FIBERGLASS Hub Material CARBON STEEL Hub Cover Material FIBERGLASS Blade Assembly Hardware S/S Tip Clearancemm minmm max Vibration Level Fan Cylinder Height 14' Mechanical Equipment Support GALV. Oil Fill and Drain Line S/S Oil Level Sight Glass Vibration Limit Switch METRIX-M#5550-121-01 Motor Manufacturer TECO WESTINGHOUSE Name Plate Data: kW 250 HP RPM 1780 F L Amps 31.5 Frame 5009 S F 1.15	メ メ メ メ メ メ 、 、 、 、 、 、 、 、 、 、 、 、 、		
Blade Material FIBERGLASS Hub Material CARBON STEEL Hub Cover Material FIBERGLASS Blade Assembly Hardware S/S Tip Clearancemm minmm max Vibration Level	メ メ メ メ 、 、 、 、 、 、 、 、 、 、 、 、 、	Spe	cial Info. M#AEHG-WT002
Blade Material FIBERGLASS Hub Material CARBON STEEL Hub Cover Material FIBERGLASS Blade Assembly Hardware S/S Blade Assembly Hardware S/S Tip Clearancemm min mm minmm max Vibration Level Fan Cylinder Height 14' Mechanical Equipment Support GALV. Oil Fill and Drain Line S/S Oil Level Sight Glass	メ メ メ メ 、 、 、 、 、 、 、 、 、 、 、 、 、	Spe	cial Info. M#AEHG-WT002
Blade Material FIBERGLASS Hub Material CARBON STEEL Hub Cover Material FIBERGLASS Blade Assembly Hardware S/S Blade Assembly Hardware S/S Tip Clearancemm min mm minmm max Vibration Level Fan Cylinder Height 14' Mechanical Equipment Support GALV. Oil Fill and Drain Line S/S Oil Level Sight Glass	メ デ メ メ メ 、 、 、 、 、 、 、 、 、 、 、 、 、	Spe	cial Info. M#AEHG-WT002
Blade Material FIBERGLASS Hub Material CARBON STEEL Hub Cover Material FIBERGLASS Blade Assembly Hardware S/S Blade Assembly Hardware S/S Tip Clearancemm min mm minmm max Vibration Level	メ デ メ メ メ 、 、 、 、 、 、 、 、 、 、 、 、 、	Spe	cial Info. M#AEHG-WT002
Blade Material FIBERGLASS Hub Material CARBON STEEL Hub Cover Material FIBERGLASS Blade Assembly Hardware S/S Blade Assembly Hardware S/S Tip Clearancemm min mm minmm max Vibration Level	メ デ メ メ メ 、 、 、 、 、 、 、 、 、 、 、 、 、	Spe	cial Info. M#AEHG-WT002

SPX Cooling Technologies UK Ltd • 3 Knightsbridge Park • Wainwright Road • Worcester WR4 9FA • United Kingdom • 44 1905 750 270

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Cooling Tower Inspection Checklist

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Tower Location METCALF	Date Inspected
Owner / Company	inspected by HENRY AVIS
Company Contact	Inspector
Signature	Signature Munter
Owner's Tower Designation	
Tower Manufacturer MARLEY	Model No. <u>F488A-40-10PPWD</u> Serial No. <u>223647</u>
Process Served by Tower	Operation: Continuous 🛱 Intermittent 🗆 Seasonal 🗅
Design Conditions: m ³ /hr <u>133.400 GPM</u> HW <u>89.8 °F</u>	°C CW <u>72.1 °F</u> °C WB <u>59 °F</u> °C
Cell No. <u>3</u> Number of Fan Cells <u>10</u> Tower Type:	Crossflow 🖸 Counterflow 💐
Date Tower was installed 2005	

This checklist is intended to be used as a guide only. This checklist may not cover all potential issues and should not be relied upon as a substitute for Authorized Service Provider's professional judgment. Authorized Service Provider should report on all issues. Any issues that are identified for which a space is not otherwise provided in the checklist, should be noted in the Other Component sections or in a supplementary document.

Condition: 1-Good 2-Keep an eye on it 3-Needs immediate attention

1 2 2

	1	2	3	Comments
Structure				
Casing Material CORRUGATED	X			
Structural Material FIBERGLASS	X			
Fan Deck Material FIBERGLASS	\mathbf{X}			
Stairway 🖸 Material FIBERGLASS	X			
Ladder Q Material FIBERGLASS	\mathbf{X}			
Handrail 🔾 Material FIBERGLASS	×			
Interior Walkway 🛛 Material	\checkmark			
Cold Water Basin Material CONCRETE	1			
Silt, Debris Buildup	ĸ		-	
Water Distribution System				
Open Basin System				
Distribution Basin Material CONCRETE	X			
Inlet Pipe Material CARBON STEEL	X			
Inlet Manifold Material FIBERGLASS	X			
Flow Control Valves BUTTERFLY VALVE Size	X			
Nozzles – Orifice Diameter <u>3"</u> Size	X			
Silt, Algae, Debris]
Spray Type System	ر ا			
Header Pipe Material ABS	<u>ا</u> لج			rust on pipes
Branch Pipe Material PVC				
Nozzles – Orifice Diameter <u>3"</u> Size	X			
Up spray 🗆 🛛 Down spray 🕰				
Heat Transfer System				
Fill – Type and Material <u>PVC</u>	\times			
Eliminators – Type and Material PVC	×			
Louvers – Type and Material GALV.	X			
Biological Fouling				
Use this space to list specific items needing attention:				

Condition: 1-Good 2-Keep an eye on it 3-Needs immediate attention

1

	1	2	3			Comme	nts
echanical Equipment	•••						
Speed Reducer Type: Belt 🗆 Gear 🗆 Direct Drive 🙇							
Beit Drive Unit							
Belt Designation							•
Fan Sheave Designation							
Motor Sheave Designation							
Gear Drive Unit							_
Manufacturer MARLEY Model 4000	Ratio	15.84	/1				
Oil Level: Full 🕰 Add Immediately 🗅 Low, Check Again S	Soon C	ב					
Oil Condition: Good 🕱 Contains Water 🗆 Contains Met	tal 🛛	Con	tains	Sludge 🛛			
Oil Type Used 76 TURBINE 220		~					
Seals	•	×		Hose	Leal		Fixed
Backlash	×_						
Fan Shaft Endplay	\times				-t		
Unusual Noises? No 🕰 Yes 🗅 🛛 Action Required	<u>Ada</u>	<u>1e6</u>		5000	15		
Drive Shaft		, ,					
Manufacturer ADDAX LRC850.625 Material FIBERGLASS							
Fan							
Diameter 384" HP7000-10 Number of Blades 10		~ 7					
Blade Material FIBERGLASS	K	 	;				
Blade Material FIBERGLASS Hub Material CARBON STEEL	X						
Blade Material FIBERGLASS Hub Material CARBON STEEL Hub Cover Material FIBERGLASS	XXX						
Blade Material FIBERGLASS Hub Material CARBON STEEL	ХX						
Blade Material FIBERGLASS Hub Material CARBON STEEL Hub Cover Material FIBERGLASS	XXX						
Blade Material FIBERGLASS Hub Material CARBON STEEL Hub Cover Material FIBERGLASS Blade Assembly Hardware S/S Tip Clearance mm min Vibration Level mm min	ХX			<u>-</u>			
Blade Material FIBERGLASS Hub Material CARBON STEEL Hub Cover Material FIBERGLASS Blade Assembly Hardware S/S Tip Clearance mm min Vibration Level Fan Cylinder Height 14'	XXX						
Blade Material FIBERGLASS Hub Material CARBON STEEL Hub Cover Material FIBERGLASS Blade Assembly Hardware S/S Tip Clearance mm min Vibration Level	XXX						
Blade Material FIBERGLASS Hub Material CARBON STEEL Hub Cover Material FIBERGLASS Blade Assembly Hardware S/S Tip Clearance mm min Vibration Level Fan Cylinder Height 14' Mechanical Equipment Support GALV. Oil Fill and Drain Line S/S	XXX						
Blade Material FIBERGLASS Hub Material CARBON STEEL Hub Cover Material FIBERGLASS Blade Assembly Hardware S/S Tip Clearance mm min Vibration Level	XXXXXXXX						
Blade Material FIBERGLASS Hub Material CARBON STEEL Hub Cover Material FIBERGLASS Blade Assembly Hardware S/S Tip Clearance mm min Vibration Level	XXXXXX						
Blade Material FIBERGLASS Hub Material CARBON STEEL Hub Cover Material FIBERGLASS Blade Assembly Hardware S/S Tip Clearance mm min Vibration Level	XXXXXXXX						
Blade Material FIBERGLASS Hub Material CARBON STEEL Hub Cover Material FIBERGLASS Blade Assembly Hardware S/S Tip Clearance mm min Vibration Level	XXXXXXXXX						
Blade Material FIBERGLASS Hub Material CARBON STEEL Hub Cover Material FIBERGLASS Blade Assembly Hardware S/S Tip Clearancemm minmm max Vibration Level	XX XX XXXXX Pha	se <u>3</u>					Volts 4160
Blade Material FIBERGLASS Hub Material CARBON STEEL Hub Cover Material FIBERGLASS Blade Assembly Hardware S/S Tip Clearance mm min mm min mm max Vibration Level	XX XX XXXXX Pha	se <u>3</u>	Spee		Hz <u>60</u> #AEHG-W		Volts 4160
Blade Material FIBERGLASS Hub Material CARBON STEEL Hub Cover Material FIBERGLASS Blade Assembly Hardware S/S Tip Clearance mm min mm min mm max Vibration Level	XX XX XXXXX Pha		Speed		Hz <u>60</u> #AEHG-W	T002	Volts 4160
Blade Material FIBERGLASS Hub Material CARBON STEEL Hub Cover Material FIBERGLASS Blade Assembly Hardware S/S Tip Clearancemm minmm max Vibration Level	XXXXXXXX Pha	-	Spe	cial Info. <u>M</u> #	¥AEHG-W	T002	
Blade Material FIBERGLASS Hub Material CARBON STEEL Hub Cover Material FIBERGLASS Blade Assembly Hardware S/S Tip Clearance mm min mm min mm max Vibration Level mm min Fan Cylinder Height 14' Mechanical Equipment Support GALV. Oil Fill and Drain Line S/S Oil Level Sight Glass Oil Level Sight Glass Vibration Limit Switch METRIX-M#5550-121-01 Motor Manufacturer Manufacturer TECO WESTINGHOUSE Name Plate Data: kW kW 250 HP RPM 1780 F L Amps 31.5 Frame 5009 S F 1.15 Last Lubrication - Date Grease Used - Type Grease Used - Type 76 POLYTAC-2 Unusual Noises? No *2 Yes Action Required _	XXXXXXX Pha	-	Sper	cial Info. <u>M</u> #	¥AEHG-W	T 002	
Blade Material FIBERGLASS Hub Material CARBON STEEL Hub Cover Material FIBERGLASS Blade Assembly Hardware S/S Tip Clearancemm min mm minmm max Vibration Level	NX XX XXXX Pha	-	Sper	cial Info. <u>M</u> #	¥AEHG-W	T002	
Blade Material FIBERGLASS Hub Material CARBON STEEL Hub Cover Material FIBERGLASS Blade Assembly Hardware S/S Tip Clearancemm min mm minmm max Vibration Level Fan Cylinder Height 14' Mechanical Equipment Support GALV. Oil Fill and Drain Line S/S Oil Level Sight Glass	NX XX XXXX Pha	-	Sper	cial Info. <u>M</u> #	¥AEHG-W	T002	
Blade Material FIBERGLASS Hub Material CARBON STEEL Hub Cover Material FIBERGLASS Blade Assembly Hardware S/S Blade Assembly Hardware S/S Tip Clearancemm min mm minmm max Vibration Level Fan Cylinder Height 14' Mechanical Equipment Support GALV. Oil Fill and Drain Line S/S Oil Level Sight Glass	NX XX XXXX Pha	-	Sper	cial Info. <u>M</u> #	¥AEHG-W	T002	
Blade Material FIBERGLASS Hub Material CARBON STEEL Hub Cover Material FIBERGLASS Blade Assembly Hardware S/S Tip Clearancemm min mm minmm max Vibration Level Fan Cylinder Height 14' Mechanical Equipment Support GALV. Oil Fill and Drain Line S/S Oil Level Sight Glass	NX XX XXXX Pha	-	Sper	cial Info. <u>M</u> #	¥AEHG-W	T002	

Cooling Tower Inspection Checklist

Tower Location METCALF	Date Inspected 3/2 4/15
Owner / Company	Inspected by HENRY AVIS
Company Contact	Inspector
Signature	Signature
Owner's Tower Designation	
Tower Manufacturer MARLEY	Model No. F488A-40-10PPWD Serial No. 223647
Process Served by Tower	Operation: Continuous 🏞 Intermittent 🖬 Seasonal 🛱
Design Conditions: m ³ /hr <u>133.400 GPM</u> HW <u>89.8 °F</u>	°C CW <u>72.1 °F </u> °C WB <u>59 °F </u> °C
Cell No Number of Fan Cells 10 Tower Type:	Crossflow 🖬 Counterflow 🖄
Date Tower was Installed 2005	

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Condition: 1-Good 2-Keep an eye on it 3-Needs Immediate attention

	1	2	3	Comments
Structure				
Casing Material CORRUGATED				. =
Structural Material FIBERGLASS	_ 🗶			
Fan Deck Material FIBERGLASS	<u> </u>			
Stairway D Material FIBERGLASS	_ IX	ļ		
Ladder D Material FIBERGLASS	X			
Handrail 🛛 Material FIBERGLASS	_ 🗶	<u> </u>		
Interior Walkway 📮 Material	<u> </u>			
Cold Water Basin Material CONCRETE	- 🔆			
Silt, Debris Buildup	<u>×</u>			
Water Distribution System				
Open Basin System			·	······
Distribution Basin Material CONCRETE		<u>+-</u>	·	
Inlet Pipe Material CARBON STEEL	-			· ·····
Inlet Manifold Material FIBERGLASS	_ <u> K</u>			
Flow Control Valves BUTTERFLY VALVE Siz	א יי		<u> </u>	
Nozzles – Orifice Diameter <u>3</u> "Siz	• 🔀			
Silt, Algae, Debris	_			
Spray Type System			1	
Header Pipe Material ABS	- 🏳			
Branch Pipe Material <u>PVC</u>	<u> </u>	<u> </u>	ļ	
Nozzles - Orifice Diameter <u>3"</u> Siz	。 (<u>×</u>			Repussed 3 Nozzles
Up spray 🔾 🛛 Down spray 称				
Heat Transfer System			1	
Fill – Type and Material <u>PVC</u>	_ 🙀	<u> X</u> _		Hole in Fill Repais Nozzi
Eliminators – Type and Material PVC	- <u> x</u>	1		
Louvers – Type and Material GALV.	_ <u> </u>	 	<u> </u>	
Biological Fouling	_ L	X		

У

	1	2	3	Comments
Mechanical Equipment				
Speed Reducer Type: Belt 🖬 Gear 💁 Direct Drive 🗖				
Belt Drive Unit				
Belt Designation				
Fan Sheave Designation				
Motor Sheave Designation				
Gear Drive Unit				
Manufacturer MARLEY Model 4000	Ratio_	15.84	/1	
Oil Level: Full 🗅 Add Immediately 🖬 Low, Check Again S	ioon 🛛			
Oil Condition: Good 🕰 Contains Water 🛛 Contains Meta	al 📮	Con	itains	Sludge 🖸
Oil Type Used 76 TURBINE 220				·····
Seals	X			Added 3 guarts
Backlash	Ķ	<u>×</u>		Leak
Fan Shaft Endplay				
· Unusual Noises? No 🎘 Yes 🗅 🛛 Action Required				
Drive Shaft		i		· · · · · · · · · · · · · · · · · · ·
Manufacturer ADDAX LRC850.625 Material FIBERGLASS				
Fan				
Fan Type: Propeller 🎘 Blower 🗆				
Manufacturer MARLEY Fixed Pitch 🗳 Adjustable	Pitch [2		
Diameter 384" HP7000-10 Number of Blades 10		-		
				· · · · · · · · · · · · · · · · · · ·
Blade Material FIBERGLASS	×			
Hub Material CARBON STEEL	×			
Hub Cover Material FIBERGLASS	X			
Blade Assembly Hardware S/S	Ø			
Tip Clearancemm minmm max	X			
Vibration Level	1X1			
Fan Cylinder Height _14'				
Mechanical Equipment Support GALV.				
Oil Fill and Drain Line S/S	X			
Oil Level Sight Glass	×			
Vibration Limit Switch METRIX-M#5550-121-01	X			
Motor				
Manufacturer TECO WESTINGHOUSE				
		ю <u>З</u>		Hz <u>60</u> Volts <u>4160</u>
FLAmps <u>31.5</u> Frame <u>5009</u> SF <u>1.15</u>		-	Spe	cial Info. M#AEHG-WT002
Last Lubrication – Date				
Grease Used - Type _76 POLYTAC-2				
Unusual Noises? No 🐔 Yes 🖬 Action Required				
Unusual Vibration? No 右 Yes 🛛 Action Required				
	r			
Make-up Vaive				<u>-</u>
Other Component				
Other Component				

Cooling Tower Inspection Checklist

Tower Location METCALF	Date inspected 3/24/15
Owner / Company	Inspected by HENRY AVIS
Company Contact	Inspector
Signature	Signature
Owner's Tower Designation	
Tower Manufacturer MARLEY	Model No. F488A-40-10PPWD Serial No. 223647
Process Served by Tower	Operation: Continuous C Intermittent C Seasonal C
Design Conditions: m ³ /hr 133.400 GPM HW 89.8 °F	C CW 72.1 °F °C WB 59 °F °C
Celi No Number of Fan Cells 10 Tower Type: Cro	ssflow Q Counterflow Q
Date Tower was Installed 2005	

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Condition: 1-Good 2-Keep an eye on it 3-Needs Immediate attention

	1 2 3 Comments
Structure	
Casing Material CORRUGATED	X
Structural Material FIBERGLASS	
Fan Deck Material FIBERGLASS	V V
Stairway D Material FIBERGLASS	Ŷ .
Ladder D Material FIBERGLASS	X
Handrail D Material FIBERGLASS	X
Interior Walkway 🔲 Material	X
Cold Water Basin Material CONCRETE	2
Silt, Debris Buildup	X
Water Distribution System	
Open Basin System	
Distribution Basin Material CONCRETE	×
Inlet Pipe Material CARBON STEEL	X
Inlet Manifold Material FIBERGLASS	X
Flow Control Valves BUTTERFLY VALVE Size	×
Nozzles – Orifice Diameter 3"Size	*
Silt, Algae, Debris	Χ
Spray Type System	
Header Pipe Material ABS	×
Branch Pipe Material PVC	X
Nozzles – Orifice Diameter <u>3"</u> Size	X Repaired 3 Nozcleg
Up spray 🖸 🛛 Down spray 🎘	,
Heat Transfer System	
Fill – Type and Material <u>PVC</u>	X Hole in Vill
Eliminators – Type and Material <u>PVC</u>	7
Louvers – Type and Material GALV.	×
Biological Fouling	X
Use this space to list specific items needing attention:	



Condition: 1-Good 2-Keep an eye on It 3-Needs Immediate attention

	1	2 3			Comment	s	
echanical Equipment							
Speed Reducer Type: Belt 🖬 Gear 🖄 Direct Drive 🗆							
Belt Drive Unit							
Belt Designation							
Fan Sheave Designation							
Motor Sheave Designation							
Gear Drive Unit							
Manufacturer MARLEY Model 4000	Ratio _1	15.84/1					
Oil Level: Full C Add Immediately L Low, Check Again S	_			-			
Oil Condition: Good 2 Contains Water C Contains Met Oil Type Used 76 TURBINE 220		Contains	s Sludge (נ			
Seals		X	Lead	6	ALL	0120	\overline{i}
Backlash	X					•••	<u>.</u>
Fan Shaft Endplay							
Tan Shan Endplay Unusual Noises? No 🛛 Yes 🗖 Action Required		I				-	
Drive Shaft				• •			
Manufacturer ADDAX LRC850.625 Material FIBERGLASS	M	<u> </u>			······	·,	
Fan	<u> </u>	!	- I			-	
Manufacturer MARLEY Fixed Pitch Diameter 384" HP7000-10 Number of Blades 10	Pitch)					
EIRED CLASS							
Blade Material FIBERGLASS	<u>X</u>						
Hub Material CARBON STEEL	X X						
Hub Material CARBON STEEL Hub Cover Material FIBERGLASS	X X X V						
Hub Material CARBON STEEL Hub Cover Material FIBERGLASS Blade Assembly Hardware S/S	XXXX			· · · · · · · · · · · · · · · · · · ·			
Hub Material CARBON STEEL Hub Cover Material FIBERGLASS Blade Assembly Hardware S/S Tip Clearance mm min mm max	XXXXX			· · · · · · · · · · · · · · · · · · ·		·····	
Hub Material CARBON STEEL Hub Cover Material FIBERGLASS Blade Assembly Hardware S/S Tip Clearance mm min Vibration Level							
Hub Material CARBON STEEL Hub Cover Material FIBERGLASS Blade Assembly Hardware S/S Tip Clearancemm minmm max Vibration Level Fan Cylinder Height 14'	XX			· · · · · · · · · · · · · · · · · · ·			
Hub Material CARBON STEEL Hub Cover Material FIBERGLASS Blade Assembly Hardware S/S Tip Clearance mm min Vibration Level	XX			· · · · · · · · · · · · · · · · · · ·			
Hub Material CARBON STEEL Hub Cover Material FIBERGLASS Blade Assembly Hardware S/S Tip Clearancemm minmm max Vibration Level Fan Cylinder Height 14' Mechanical Equipment Support GALV. Oil Fill and Drain Line S/S	XXXX						
Hub Material CARBON STEEL Hub Cover Material FIBERGLASS Blade Assembly Hardware S/S Tip Clearance mm min with the minical control of the min	$\frac{1}{2}$						
Hub Material CARBON STEEL Hub Cover Material FIBERGLASS Blade Assembly Hardware S/S Tip Clearancemm minmm max Vibration Level Fan Cylinder Height 14' Mechanical Equipment Support GALV. Oil Fill and Drain Line S/S	XXXX			· · · · · · · · · · · · · · · · · · ·			
Hub Material CARBON STEEL Hub Cover Material FIBERGLASS Blade Assembly Hardware S/S Tip Clearance mm min mm min mm max Vibration Level	$\frac{1}{2}$						
Hub Material CARBON STEEL Hub Cover Material FIBERGLASS Blade Assembly Hardware S/S Tip Clearance mm min Vibration Level	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX						
Hub Material CARBON STEEL Hub Cover Material FIBERGLASS Blade Assembly Hardware S/S Tip Clearance mm min mm min mm max Vibration Level	X X X X X X Phase			Hz <u>60</u> M#AEHG-		Volts <u>4160</u>	
Hub Material CARBON STEEL Hub Cover Material FIBERGLASS Blade Assembly Hardware S/S Tip Clearancemm minmm max Vibration Level Fan Cylinder Height 14' Mechanical Equipment Support GALV. Oil Fill and Drain Line S/S Oil Level Sight Glass Vibration Limit Switch METRIX-M#5550-121-01 Motor Manufacturer TECO WESTINGHOUSE Name Plate Data: kW 250 HP RPM 1780 F L Amps 31.5 Frame 5009 S F 1.15 Last Lubrication – Date	X X X X X X Phase		ecial Info.			Volts 4160	
Hub Material CARBON STEEL Hub Cover Material FIBERGLASS Blade Assembly Hardware S/S Tip Clearancemm minmm max Vibration Level Fan Cylinder Height 14' Mechanical Equipment Support GALV. Oil Fill and Drain Line S/S Oil Level Sight Glass Vibration Limit Switch METRIX-M#5550-121-01 Motor Manufacturer TECO WESTINGHOUSE Name Plate Data: kW 250 HP RPM 1780 F L Amps 31.5 Frame 5009 S F 1.15 Last Lubrication – Date	X X X X X X Phase		ecial Info			Volts <u>4160</u>	
Hub Material CARBON STEEL Hub Cover Material FIBERGLASS Blade Assembly Hardware S/S Tip Clearance mm min Yibration Level mm min Fan Cylinder Height 14' Mechanical Equipment Support GALV. Oil Fill and Drain Line S/S Oil Level Sight Glass	X X X X X Phase	Sp		M#AEHG-			
Hub Material CARBON STEEL Hub Cover Material FIBERGLASS Blade Assembly Hardware S/S Tip Clearance mm min Tip Clearance mm min Fan Cylinder Height 14' Mechanical Equipment Support GALV. Oil Fill and Drain Line S/S Oil Level Sight Glass	X X X X Phase	Sp		M#AEHG-			
Hub Material CARBON STEEL Hub Cover Material FIBERGLASS Blade Assembly Hardware S/S Tip Clearance mm min Tip Clearance mm min Fan Cylinder Height 14' Mechanical Equipment Support GALV. Oil Fill and Drain Line S/S Oil Level Sight Glass	X X X X X Y A X	Sp		M#AEHG-			
Hub Material CARBON STEEL Hub Cover Material FIBERGLASS Blade Assembly Hardware S/S Tip Clearance mm min mm min mm max Vibration Level	X X X X X Y A X	Sp		M#AEHG-			
Hub Material CARBON STEEL Hub Cover Material FIBERGLASS Blade Assembly Hardware S/S Tip Clearance mm min mm min mm max Vibration Level	X X X X X Y A X	Sp		M#AEHG-			

Cooling Tower Inspection Checklist

Tower Location METCALF	Date Inspected 3/25/15
Owner / Company	Inspected by HENRY AVIS
Company Contact	Inspected by HENRY AVIS
Signature	Signature
Owner's Tower Designation	
Tower Manufacturer MARLEY	Model No. F488A-40-10PPWD Serial No. 223647
Process Served by Tower	Operation: Continuous 🕰 Intermittent 🖾 Seasonal 🗆
Design Conditions: m ³ /hr <u>133.400 GPM</u> HW <u>89.8 °F</u>	_°C CW <u>72.1 °F</u> °C WB <u>59 °F</u> °C
Cell No Number of Fan Cells 10 Tower Type: C	Crossflow 🔲 Counterflow 🗖
Date Tower was Installed 2005	

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Condition: 1-Good 2-Keep an eye on it 3-Needs immediate attention

	1	2	3	Comments
Structure				
Casing Material CORRUGATED	X			
Structural Material FIBERGLASS	X			
Fan Deck Material FIBERGLASS	Ĺ			
Stairway D Material FIBERGLASS	<u> </u>			
Ladder D Material FIBERGLASS	X			
Handrail 🔲 Material FIBERGLASS	K			
Interior Walkway 🗆 Material	X			
Cold Water Basin Material CONCRETE	X			
Silt, Debris Buildup	X			
Water Distribution System				
Open Basin System				· · · · · · · · · · · · · · · · · · ·
Distribution Basin Material CONCRETE	X			
Inlet Pipe Material CARBON STEEL				
Inlet Manifold Material FIBERGLASS	$ \lambda $			
Flow Control Valves BUTTERFLY VALVE Size	×			
Nozzles – Orifice Diameter <u>3"</u> Size	1			
Silt, Algae, Debris	X			
Spray Type System			,	
Header Pipe Material ABS	X			Rus+
Branch Pipe Material PVC	X			Neer Bolts Replaced
Nozzles – Orifice Diameter <u>3"</u> Size	X			Nepa: 5 Nozzies
Up spray 🔲 🛛 Down spray 🗖 👘				·
Heat Transfer System	 ;	·		A
Fill – Type and Material PVC		\star		Hole in Sill
Eliminators – Type and Material PVC	X			
Louvers – Type and Material GALV.	X			
Biological Fouling	IX			
Use this space to list specific items needing attention:				

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	1	2	3	Comments	
Mechanical Equipment					
Speed Reducer Type: Belt C Gear 🕰 Direct Drive C					
Belt Drive Unit					
Belt Designation					
Fan Sheave Designation					
Motor Sheave Designation					
Gear Drive Unit					
Manufacturer MARLEY Model 4000	Ratio _	15.84/	'1		
Oil Level: Full 🗆 Add Immediately 🗆 Low, Check Again S	Soon 🗆				
Oil Condition: Good 7 Contains Water Contains Met Oil Type Used 76 TURBINE 220	al 🖸	Con	tains	Sludge 🗖	
Seals	X	Ĩ			
Backlash	X				
Fan Shaft Endplay	X				
Unusual Noises? No 🚈 Yes 🗆 Action Required					
Drive Shaft				······································	
Manufacturer ADDAX LRC850.625 Material FIBERGLASS	X				
Fan					
Fan Type: Propeller Blower Manufacturer MARLEY Fixed Pitch Adjustable Diameter 384" HP7000-10 Number of Blades 10	Pitch (-			
Blade Material FIBERGLASS	×				
Hub Material CARBON STEEL					
Hub Cover Material FIBERGLASS	×				
Blade Assembly Hardware S/S	*				
Tip Clearancemm minmm max					
Vibration Level	×				
Fan Cylinder Height 14'	X				
Mechanical Equipment Support <u>GALV.</u>	$ \mathbf{x} $			· · · · · · · · · · · · · · · · · · ·	
Oil Fill and Drain Line S/S	X				
Oil Level Sight Glass					
Vibration Limit Switch METRIX-M#5550-121-01	\mathbf{X}				
Motor					
Manufacturer TECO WESTINGHOUSE					
Name Plate Data: kW 250 HP RPM 1780		зе <u>З</u>		Hz <u>60</u> Volts <u>4160</u>	
F L Amps 31.5 Frame 5009 S F 1.15		-	Spe	cial InfoM#AEHG-WT002	
Last Lubrication – Date					
Grease Used - Type 76 POLYTAC-2					
Unusual Noises? No 💋 Yes 🖬 Action Required					
Unusual Vibration? No 🖬 Yes 🗆 Action Required					
Unusual Heat Build-up? No 🔑 Yes 🗆 Action Required _					
	 _				
Make-up Valve				· · · · · · · · · · · · · · · · · · ·	
Other Component				······································	
Other Component				<u>1</u>	

Cooling Tower Inspection Checklist

Comments

Tower Location METCALF	Date Inspected 03/25/15							
Owner / Company	Inspected by HENBY AVIS							
Company Contact	Inspected by HENBY AVIS							
Signature	Signature							
Owner's Tower Designation	· · · · · · · · · · · · · · · · · · ·							
Tower Manufacturer MARLEY	Model No. F488A-40-10PPWD Serial No. 223647							
Process Served by Tower	Operation: Continuous 🕰 Intermittent 🛛 Seasonal 🗖							
	°C CW <u>72.1 °F </u> °C WB <u>59 °F</u> °C							
Cell No Number of Fan Cells 10 Tower Type: 0	Crossflow 🗖 Counterflow ⁄ 🔍							
Date Tower was Installed 2005								

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Condition: 1-Good 2-Keep an eye on it 3-Needs immediate attention

1 2 3

Structure	
Casing Material CORRUGATED	
Structural Material FIBERGLASS	
Fan Deck Material FIBERGLASS	
Stairway D Material FIBERGLASS	
Ladder 🗆 Material FIBERGLASS	9
Handrail 🗆 Material FIBERGLASS	У
Interior Walkway 📮 Material	X
Cold Water Basin Material CONCRETE	
Silt, Debris Buildup	
Water Distribution System	
Open Basin System	
Distribution Basin Material CONCRETE	×
Inlet Pipe Material CARBON STEEL	X
Inlet Manifold Material FIBERGLASS	
Flow Control Valves BUTTERFLY VALVE Size	X
Nozzles – Orifice Diameter <u>3"</u> Size	×
Silt, Algae, Debris	
Spray Type System	
Header Pipe Material ABS	
Branch Pipe Material PVC	X
Nozzles – Orifice Diameter <u>3"</u> Size	X Cleanet 5 Nozzles
Up spray 🗅 Down spray 🗆	
Heat Transfer System	
Fill – Type and Material PVC	14
Eliminators – Type and Material PVC	≁
Louvers – Type and Material GALV.	
Biological Fouling	
Use this space to list specific items needing attention:	

7

	1	2	3	Comments
Mechanical Equipment				
Speed Reducer Type: Belt 🛛 Gear 🖄 Direct Drive 🗅				
Belt Drive Unit				
Belt Designation				
Fan Sheave Designation				
Motor Sheave Designation		_		
Gear Drive Unit				
Manufacturer MARLEY Model 4000	Ratio_	15.84	/1	
Oil Level: Full d Add Immediately D Low, Check Again S				
Oil Condition: Good 🖉 Contains Water 🛛 Contains Met			ntains \$	Sludge 🖵
Oil Type Used 76 TURBINE 220	r			
Seals				added 39ts
Backlash	K-			
Fan Shaft Endplay				
Unusual Noises? No 🕰 Yes 🖬 🛛 Action Required				· · · · · · · · · · · · · · · · · · ·
Drive Shaft	г т			
Manufacturer ADDAX LRC850.625 Material FIBERGLASS	X			
Fan				
Fan Type: Propeller 🖄 Blower 🗆				
Manufacturer MARLEY Fixed Pitch C Adjustable	: Pitch 🗶	Į		
Diameter 384" HP7000-10 Number of Blades 10				
	·	—-r		
Blade Material FIBERGLASS	A			
Hub Material CARBON STEEL	X		$ \square$	
Hub Cover Material FIBERGLASS				
Blade Assembly Hardware <u>S/S</u>	X			
Tip Clearancemm minmm max	\square			
Vibration Level	X			
Fan Cylinder Height <u>14'</u>	X			
Mechanical Equipment Support GALV.	X	_		
Oil Fill and Drain Line S/S	1			
Oil Level Sight Glass	싀			
Vibration Limit Switch METRIX-M#5550-121-01				
Motor				
Manufacturer TECO WESTINGHOUSE				
Name Plate Data: kW 250 HP RPM 1780	Phase	3_3_		Hz <u>60</u> Volts <u>4160</u>
FL Amps 31.5 Frame 5009 S F 1.15			Spec	ial Info. M#AEHG-WT002
Last Lubrication - Date				
Grease Used – Type 76 POLYTAC-2				
Unusual Noises? No 🗹 Yes 🖬 Action Required				
Unusual Vibration? No ダ Yes 🗆 Action Required				
Unusual Heat Build-up? No 🙇 Yes 🖬 Action Required				
Make-up Valve				
Dther Component				
Other Component				

Cooling Tower Inspection Checklist

Tower Location METCALF	Date Inspected 3/15/15						
Owner / Company	Inspected						
Company Contact							
Signature	Signature						
Owner's Tower Designation							
Tower Manufacturer MARLEY	Model No. F488A-40-10PPWD Serial No. 223647						
Process Served by Tower	Operation: Continuous 🕾 Intermittent 🗆 Seasonal 🗆						
Design Conditions: m ³ /hr <u>133.400 GPM</u> HW <u>89.8 °F</u> or	CW <u>72.1 °F</u> °C WB <u>59 °F</u> °C						
Call No. 8 Number of Fan Cells 10 Tower Type: Cros	sílow 🛛 Counterflow 🐱						
Date Tower was installed 2005							

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Condition: 1-Good 2-Keep an eye on it 3-Needs immediate attention

	1	2	3	Comments
Structure				
Casing Material CORRUGATED	X			
Structural Material FIBERGLASS	上			
Fan Deck Material FIBERGLASS	X			
Stairway D Material FIBERGLASS	1×			
Ladder D Material FIBERGLASS				
Handrail D Material FIBERGLASS	X			
Interior Walkway 🖸 Material	X			
Cold Water Basin Material CONCRETE	X			
Silt, Debris Buildup	\mathbf{k}			
Water Distribution System				
Open Basin System				
Distribution Basin Material CONCRETE	X			
Inlet Pipe Material CARBON STEEL	$\boldsymbol{\times}$			
Inlet Manifold Material FIBERGLASS				
Flow Control Valves BUTTERFLY VALVE Size	Jer-			
Nozzles – Orifice Diameter 3" Size	X			
Silt, Algae, Debris	$\overline{\mathbf{x}}$			
Spray Type System	<u> </u>			
Header Pipe Material ABS	X			
Branch Pipe Material PVC	1			
Nozzles – Orifice Diameter <u>3"</u> Size	\times			
Up spray 🛯 🛛 Down spray 🕰				
Heat Transfer System	i			
Fill – Type and Material PVC	*			
Eliminators – Type and Material <u>PVC</u>	×			
Louvers – Type and Material GALV.	\mathbf{X}			
Biological Fouling	人			
Use this space to list specific items needing attention:				

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	1	2	3	Comments
Mechanical Equipment	_			
Speed Reducer Type: Belt 🗆 Gear 🎉 Direct Drive 🖬				
Belt Drive Unit				
Belt Designation				
Fan Sheave Designation				
Motor Sheave Designation				
Gear Drive Unit				
Manufacturer MARLEY Model 4000	Ratio_	15.84/	′1	
Oil Level: Full 🌮 Add Immediately 🗅 Low, Check Again	-			
Oil Condition: Good 🕰 Contains Water 🗆 Contains Met			tains	Sludge
Oil Type Used 76 TURBINE 220				
Seals	X			Added Oil 3gil
Backlash	×			
Fan Shaft Endplay	X			
Unusual Noises? No 🗅 Yes 🖬 Action Required				
Drive Shaft		•		
Manufacturer ADDAX LRC850.625 Material FIBERGLASS	X			
Fan				
Fan Type: Propeller 🗆 Blower 🗅				
Manufacturer MARLEY Fixed Pitch 🔾 Adjustable	Pitch D	ב		
Diameter 384" HP7000-10 Number of Blades 10		_		
		-		
Blade Material FIBERGLASS	X		-	
Hub Material CARBON STEEL	$\left \right\rangle$			
Hub Cover Material FIBERGLASS	$\boldsymbol{\times}$			
Blade Assembly Hardware S/S	\prec			
Tip Clearancemm minmm max	X	_		
Vibration Level	$\left X \right $			
Fan Cylinder Height <u>14'</u>	×			
Mechanical Equipment Support GALV.	X			
Oil Fill and Drain Line S/S	×			
Oil Level Sight Glass	X			
Vibration Limit Switch METRIX-M#5550-121-01	X			
Motor				
Manufacturer TECO WESTINGHOUSE				
Name Plate Data: kW 250 HP RPM 1780	Phas	e <u>3</u>		Hz_60Volts_4160
FL Amps 31.5 Frame 5009 SF 1.15		_	Spec	cial Info. M#AEHG-WT002
Last Lubrication – Date				
Grease Used - Type 76 POLYTAC-2				1
Unusual Noises? No 🖉 Yes 🖬 Action Required				
Unusual Heat Build-up? No 🔏 Yes 🗆 Action Required _				
Make-up Valve				
Other Component				
Other Component				

>Marley*

Cooling Tower Inspection Checklist

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Tower Location METCALF	Date Inspected 3/26/15
Owner / Company	Inspected by HENRY AVIS
Company Contact	Inspector
Signature	Signature
Owner's Tower Designation	
Tower Manufacturer MARLEY	Model No. <u>F488A-40-10PPWD</u> Serial No. 223647
Process Served by Tower	_ Operation: Continuous 🕰 Intermittent 🛛 Seasonal 🖵
	<u>°C CW 72.1 °F</u> ℃ WB <u>59 °F</u> °C
Cell No Number of Fan Cella 10 Tower Type: Cr	rossflow 🛛 Counterflow 🕰
Date Tower was Installed 2005	·

This checklist is intended to be used as a guide only. This checklist may not cover all potential issues and should not be relied upon as a substitute for Authorized Service Provider's professional judgment. Authorized Service Provider should report on all issues. Any issues that are identified for which a space is not otherwise provided in the checklist, should be noted in the Other Component sections or in a supplementary document.

Condition: 1-Good 2-Keep an eye on it 3-Needs immediate attention

1 2 3

	1	2	3	Comments
Structure				
Casing Material CORRUGATED	\times			
Structural Material FIBERGLASS	X	-		
Fan Deck Material FIBERGLASS	*			
Stairway D Material FIBERGLASS	X			
Ladder D Material FIBERGLASS				
Handrail 🗅 Material FIBERGLASS	X			
Interior Walkway 🗋 Material	X			•
Cold Water Basin Material CONCRETE	X			
Silt, Debris Buildup	$\left \times \right $			
Water Distribution System				
Open Basin System	·			· · · · · · · · · · · · · · · · · · ·
Distribution Basin Material CONCRETE	\times			
Inlet Pipe Material CARBON STEEL	X	[
Inlet Manifold Material FIBERGLASS	X			
Flow Control Valves BUTTERFLY VALVE Size				
Nozzles – Orifice Diameter 3" Size	X			
Silt, Algae, Debris	\swarrow			
Spray Type System				
Header Pipe Material ABS	X			
Branch Pipe Material <u>PVC</u>	\times			
Nozzles – Orifice Diameter <u>3"</u> Size	\times			cleand and Repaired 4
Up spray 🖬 🛛 Down spray 🔀				Nozcies
Heat Transfer System				
Fill – Type and Material PVC	Ź			<u>&</u>
Eliminators - Type and Material PVC	X		_	
Louvers – Type and Material GALV.	\wedge			
Biological Fouling	$\overline{\mathbf{A}}$			
Use this space to list specific items needing attention:				·

Condition: 1-Good 2-Keep an eye on it 3-Needs immediate attention

9

	1	2	3	Comments	
echanical Equipment					
Speed Reducer Type: Belt 🛛 Gear 🖾 Direct Drive 🗅					
Beit Drive Unit		γ	I		
Belt Designation	-				
Fan Sheave Designation	-				
Motor Sheave Designation	. L	L	L	<u> </u>	
Gear Drive Unit					
Manufacturer MARLEY Model 4000	Ratio	15.84	/1		
Oil Level: Full 🕰 Add Immediately 🗅 🛛 Low, Check Again	n Soon 🗖	1			
Oil Condition: Good 🚈 Contains Water 🗆 Contains M	etal 🛛	Cor	ntains	Sludge 🛛	
Oil Type Used 76 TURBINE 220					
Seals	.	\times			
Backlash	- <u>y</u> X				
Fan Shaft Endplay					
Unusual Noises? No 😺 Yes 🖬 🛛 Action Required					
Drive Shaft					
Manufacturer ADDAX LRC850.625 Material FIBERGLASS	X				
Fan					
Fan Type: Propeller 🔊 – Blower 🖸					
Manufacturer MARLEY Fixed Pitch C Adjustat	le Pitch J	র			
Diameter 384" HP7000-10 Number of Blades 10		-			
Diameter <u>384" HP7000-10</u> Number of Blades <u>10</u>	2				
Diameter <u>384" HP7000-10</u> Number of Blades <u>10</u> Blade Material <u>FIBERGLASS</u>	x 1	-			
Diameter 384" HP7000-10 Number of Blades 10 Blade Material FIBERGLASS Hub Material CARBON STEEL	スング	-			
Diameter <u>384" HP7000-10</u> Number of Blades <u>10</u> Blade Material <u>FIBERGLASS</u> Hub Material <u>CARBON STEEL</u> Hub Cover Material <u>FIBERGLASS</u>	えくへ	-			
Diameter 384" HP7000-10 Number of Blades 10 Blade Material FIBERGLASS Hub Material CARBON STEEL Hub Cover Material FIBERGLASS Blade Assembly Hardware S/S	x 1 6 1 2	-			
Diameter 384" HP7000-10 Number of Blades 10 Blade Material FIBERGLASS Hub Material CARBON STEEL Hub Cover Material FIBERGLASS Blade Assembly Hardware S/S Tip Clearance mm min	x 1 1 1 x x				
Diameter 384" HP7000-10 Number of Blades 10 Blade Material FIBERGLASS Hub Material CARBON STEEL Hub Cover Material FIBERGLASS Blade Assembly Hardware S/S Tip Clearancemm minmm max Vibration Level	ス く く く メ メ メ				
Diameter 384" HP7000-10 Number of Blades 10 Blade Material FIBERGLASS Hub Material CARBON STEEL Hub Cover Material FIBERGLASS Blade Assembly Hardware S/S Tip Clearance mm min Vibration Level	x 1 x x x x x x				
Diameter 384" HP7000-10 Number of Blades 10 Blade Material FIBERGLASS Hub Material CARBON STEEL Hub Cover Material FIBERGLASS Blade Assembly Hardware S/S Tip Clearance mm min Vibration Level	<u> </u>				
Diameter 384" HP7000-10 Number of Blades 10 Blade Material FIBERGLASS Hub Material CARBON STEEL Hub Cover Material FIBERGLASS Blade Assembly Hardware S/S Tip Clearance mm min Yibration Level	えくしん オメイメメ				
Diameter 384" HP7000-10 Number of Blades 10 Blade Material FIBERGLASS Hub Material CARBON STEEL Hub Cover Material FIBERGLASS Blade Assembly Hardware S/S Tip Clearance mm min Vibration Level	$X \times X$				
Diameter 384" HP7000-10 Number of Blades 10 Blade Material FIBERGLASS Hub Material CARBON STEEL Hub Cover Material FIBERGLASS Blade Assembly Hardware S/S Tip Clearance mm min Vibration Level	KVKX **XXXXX				
Diameter 384" HP7000-10 Number of Blades 10 Blade Material FIBERGLASS Hub Material CARBON STEEL Hub Cover Material FIBERGLASS Blade Assembly Hardware S/S Tip Clearance mm min Vibration Level mm min Fan Cylinder Height 14' Mechanical Equipment Support GALV. Oil Fill and Drain Line S/S Oil Level Sight Glass Vibration Limit Switch METRIX-M#5550-121-01 Motor	ス し ふ と え え え え え え え え え え え え え え え え え え				
Diameter 384" HP7000-10 Number of Blades 10 Blade Material FIBERGLASS Hub Material CARBON STEEL Hub Cover Material FIBERGLASS Blade Assembly Hardware S/S Tip Clearance mm min Vibration Level					
Diameter 384" HP7000-10 Number of Blades 10 Blade Material FIBERGLASS Hub Material CARBON STEEL Hub Cover Material FIBERGLASS Blade Assembly Hardware S/S Tip Clearance mm min Vibration Level mm min Fan Cylinder Height 14' Machanical Equipment Support GALV. Oil Fill and Drain Line S/S Oil Level Sight Glass	Phas		Spee	Hz <u>60</u> Volts <u>416</u> cial Info. M#AEHG-WT002	
Diameter 384" HP7000-10 Number of Blades 10 Blade Material FIBERGLASS Hub Material CARBON STEEL Hub Cover Material FIBERGLASS Blade Assembly Hardware S/S Tip Clearance mm min Vibration Level			Spec	Hz <u>60</u> Volts <u>4160</u> cial Info, <u>M#AEHG-WT002</u>	
Diameter 384" HP7000-10 Number of Blades 10 Blade Material FIBERGLASS Hub Material CARBON STEEL Hub Cover Material FIBERGLASS Blade Assembly Hardware S/S Tip Clearance mm min Vibration Level	Phas		Spec	Hz <u>60</u> Volts <u>4160</u> cial Info. <u>M#AEHG-WT002</u>	
Diameter 384" HP7000-10 Number of Blades 10 Blade Material FIBERGLASS Hub Material CARBON STEEL Hub Cover Material FIBERGLASS Blade Assembly Hardware S/S Tip Clearance mm min mm min mm max Vibration Level mm min Fan Cylinder Height 14' Mechanical Equipment Support GALV. Oil Fill and Drain Line S/S Oil Level Sight Glass	Phas 5	_	Spec	cial Info, <u>M#AEHG-WT002</u>	
Diameter 384" HP7000-10 Number of Blades 10 Blade Material FIBERGLASS Hub Material CARBON STEEL Hub Cover Material FIBERGLASS Blade Assembly Hardware S/S Tip Clearance mm min Vibration Level	Phas 5	_	Spec	cial Info. <u>M#AEHG-WT002</u>	
Diameter 384" HP7000-10 Number of Blades 10 Blade Material FIBERGLASS Hub Material CARBON STEEL Hub Cover Material FIBERGLASS Blade Assembly Hardware S/S Tip Clearance mm min Vibration Level	Phas 5	_	Spec	cial Info, <u>M#AEHG-WT002</u>	
Diameter 384" HP7000-10 Number of Blades 10 Blade Material FIBERGLASS Hub Material CARBON STEEL Hub Cover Material FIBERGLASS Blade Assembly Hardware S/S Tip Clearance mm min mm min mm max Vibration Level	Phas 5	_	Spec	cial Info. <u>M#AEHG-WT002</u>	
Diameter 384" HP7000-10 Number of Blades 10 Blade Material FIBERGLASS Hub Material CARBON STEEL Hub Cover Material FIBERGLASS Blade Assembly Hardware S/S Tip Clearance mm min mm min mm max Vibration Level	Phas 5	_	Spec	cial Info, <u>M#AEHG-WT002</u>	
Diameter 384" HP7000-10 Number of Blades 10 Blade Material FIBERGLASS Hub Material CARBON STEEL Hub Cover Material FIBERGLASS Blade Assembly Hardware S/S Tip Clearance mm min Vibration Level	Phas 5	_	Spec	cial Info, <u>M#AEHG-WT002</u>	

SPX Cooling Technologies UK Ltd • 3 Knightsbridge Park • Wainwright Road • Worcester WR4 9FA • United Kingdom • 44 1905 750 270

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Cooling Tower Inspection Checklist

Comments

	Date Inspected 3/2-6/15
Tower Location METCALF	Date Inspected
Owner / Company	Inspected by HENRY AVIS
Company Contact	Inspector Prov
Signature	Signature
Owner's Tower Designation	
Tower Manufacturer MARLEY	Model No. F488A-40-10PPWD Serial No. 223647
Process Served by Tower	Operation: Continuous 🖬 Intermittent 🖬 Seasonal 🛱
Design Conditions: m ³ /hr <u>133.400 GPM</u> HW <u>89.8 °F</u>	°C CW_72.1 °F °C WB_59 °F°C
Ceil No. 10 Number of Fan Celis 10 Tower Type:	Crossilow 🖬 Counterflow 🗳
Date Tower was Installed 2005	

This checklist is intended to be used as a guide only. This checklist may not cover all potential issues and should not be relied upon as a substitute for Authorized Service Provider's professional judgment. Authorized Service Provider should report on all issues. Any issues that are identified for which a space is not otherwise provided in the checklist, should be noted in the Other Component sections or in a supplementary document.

Condition: 1-Good 2-Keep an eye on it 3-Needs immediate attention

1 2 3

Structure	
Casing Material CORRUGATED	
Structural Material FIBERGLASS	
Fan Deck Material FIBERGLASS	
Stairway 🛛 Material FIBERGLASS	× ×
Ladder D Material FIBERGLASS	<u>×</u>
Handrail 🗅 Material FIBERGLASS	2
Interior Walkway 🗆 Material	X
Cold Water Basin Material CONCRETE	
Silt, Debris Buildup	X
Water Distribution System	
Open Basin System	
Distribution Basin Material CONCRETE	
Inlet Pipe Material CARBON STEEL	× Rust
Inlet Manifold Material FIBERGLASS	
Flow Control Valves BUTTERFLY VALVE Size	X
Nozzles – Orifice Diameter <u>3"</u> Size	×
Silt, Algae, Debris	
Spray Type System	
Header Pipe Material ABS	
Branch Pipe Material PVC	
Nozzles – Orifice Diameter <u>3"</u> Size	× Cleaned & NOULES
Up spray 🚨 🛛 Down spray 🗋	
Heat Transfer System	
Fill - Type and Material PVC	×
Eliminators - Type and Material PVC	×
Louvers – Type and Material GALV.	
Biological Fouling	
Use this space to list specific items needing attention:	

0

	1	2	3	Comme	nts
Mechanical Equipment					·
Speed Reducer Type: Belt Gear 62 Direct Drive					
Belt Drive Unit					
Belt Designation					
Fan Sheave Designation			-		
Motor Sheave Designation					
Gear Drive Unit					
Manufacturer MARLEY Model 4000	Ratio ¹	5.84/	1		
Oil Level: Full 🖾 Add Immediately 🖬 Low, Check Again S					
Oil Condition: Good 25 Contains Water D Contains Met Oil Type Used 76 TURBINE 220		Cont	ains	Sludge 🗆	
Seals	1	1	~		
Backlash					·
Fan Shaft Endplay	X				
Unusual Noises? No 🖉 Yes 🗆 Action Required	·				
Drive Shaft					
Manufacturer ADDAX LRC850.625 Material FIBERGLASS	\times				
Fan		-			
Fan Type: Propeller A Blower Manufacturer MARLEY Fixed Pitch Adjustable Diameter 384" HP7000-10 Number of Blades 10	Pitch 🖄	ζ			
				••• •	
Blade Material FIBERGLASS	₩\$				
Hub Material CARBON STEEL Hub Cover Material FIBERGLASS			-		
Blade Assembly Hardware S/S	X				
	X		-		
Tip Clearancemm minmm max	X				
Vibration Level Fan Cylinder Height	X		- [
Mechanical Equipment Support GALV.	X			.	
Oil Level Sight Glass Vibration Limit Switch METRIX-M#5550-121-01					<u> </u>
Motor	<u> </u>				
Manufacturer TECO WESTINGHOUSE					
Name Plate Data: kW 250 HP RPM 1780	Phone	3		Hz <u>60</u>	Volts 4160
FL Amps 31.5 Frame 5009 SF 1.15				siat Info. M#AEHG-WT002	voits
Last Lubrication – Date			oper	aa miy,	
Grease Used - Type 76 POLYTAC-2					
·					
Make-up Valve					
Other Component					
Other Component					

Appendix 7

Metcalf Energy Center

Annual Complian

Annual Compliance Report 2014 Water Usage Summary

Recycled Water					
month consumption (gal)					
January	27,672,260				
February	6,814,280				
March	46,420,132				
April	40,514,672				
May	47,071,640				
June	35,028,840				
July	46,168,804				
August	49,163,048				
September	48,495,084				
October	50,605,192				
November	61,044,280				
December	67,599,752				
Total	526,597,984				

Potable Water month consumption (gal)						
January	4,048,924					
February	2,834,920					
March	7,439,608					
April	7,883,172					
May	10,778,680					
June	11,312,004					
July	8,854,824					
August	10,092,764					
September	9,940,172					
October	7,192,020					
November	7,040,924					
December	6,034,864					
Total	93,452,876					

.

Metcalf Energy Center Annual Compliance Report 2014 Water Usage Summary Condition of Certification S&W-1

Recycled Water

Cooling Tower for Steam Cycle Cooling	526,597,984			
Totai Gallons 2014	526,597,984			
Potable Water				
Condenser Make-Up	33,878,602			
Steam Attemperation	32,042,263			
Inlet Air Cooling	8,691,264			
Domestic	720,680			
RO Reject	14,344,058			
Filter Backwash	2,868,812			
CT Wash Water	462,307			
Plant Wash Down	660,439			
Total Gallons 2014	93,452,876			

Appendix 8

METCALF ENERGY CENTER 2014 ANNUAL COMPLIANCE REPORT WASTE-3

In accordance with **Waste-3**, the Metcalf Energy Facility is required to document actual waste management methods used during the year compared to planned management methods. The facility is currently using the planned waste management methods for all of the waste streams generated within the facility, as listed in the table below.

Waste Stream	Туре	Planned .	Actual		
Non-hazardous	Recyclables	Recycle (Off-site)	Recycle (Off-site)		
Solid Waste	Non-Recyclables	Landfill	Landfill		
Non-hazardous	Sanitary Waste	Sewage Treatment Plant	Sewage Treatment Plant		
Liquid Waste	Process Waste Water	Sewage Treatment Plant	Sewage Treatment Plant		
Hazardous Liquid Waste	Used Oil	Recycle (Off-site)	Recycle (Off-site)		
	Oily Water	Off-site disposal company	Off-site disposal company		
	Corrosive Liquid	Off-site disposal company	Off-site disposal company		
	Used Oil Filters	Recycle (Off-site)	Recycle (Off-site)		
Hazardous Solid Waste	Oily Rags	Off-site disposal company	Off-site disposal company		
vvasie	Universal Waste	Recycle (Off-site)	Recycle (Off-site)		

Appendix 9

submitted



1.

3.

COMPLIANCE & ENFORCEMENT DIVISION

Notification Form

Reportable Compliance Activity (RCA)

See back of form for instructions \rightarrow

FACILITY IS REQUESTING BREAKDOWN RELIEF (Regulation 1-431 and 1-432) *District Use Only* **BREAKDOWN REFERENCE** #:

2. X MONITOR INDICATES EXCESS EMISSION or EXCURSION (Regulation 1-522.7, 1-523.3, 1-542) District Use Only EXCESS or EXCURSION REFERENCE #:

MONITOR IS INOPERATIVE (Regulation 1-522.4, 1-523.2, 1-530) District Use Only INOPERATIVE MONITOR REFERENCE #:

4. PRESSURE IS RELEASED FROM RELIEF DEVICE (PRD) (Regulation 8-28-401) District Use Only PRD REFERENCE #:

SITE INFORMATION AND DESCRIPTION INFORMATION (REQUIRED)											
Company	М	ETCALF EN	ERGY	CENTE	R		Site	Site # B2183			B2183
Address	11	BLANCHAR	D ROA	D, COY	OTE		So	Source # S1			S1
Reported by	R	DSEMARY S	SILVA				Ph	Phone #			408-361-4954
Indicated Excess	26	82.1 LBS O	FCO				Fax	Fax #			408-361-4949
Allowable Limit	25	14 LBS OF	CÔ DU	RING S	TARTU	IP	Ave	Averaging Time			3-HR
Start Time/Date	5/*	12/14 @ 3:0	1AM				Cle	Clear Time			5/12/14 @ 4:17AM
Monitor/device type(s) X	X CEM CEM Parame				metric		►PRD		► Non-monitor	
Monitor description(s)											
Parameter(s) exceed	led or r	not functio	ning d	ue to ii	noper	ation	_				
► NO _x ►						►NH ₃					
► O ₂ ►	H₂O	Opacity ►Lead ►Gauge Press				Pressure		►Flow			
► Hydrocarbon Breakthrough (VOC) ► Temperature ► Wind Speed					_						
Wind Direction	ind Direction ►Steam ►Other (des				ribe)						
Unit(s) of Measurement											
▶ppm ► ►	ppb	►mi	n/hr >	20%			_ ►in	che	s H ₂ O		► mmHg
▶ psig ► ►	рН	Fa ▶⁰Fa	ahrenł	neit		· · ·]]	X ►O	ther	(describe) L	BS	· · · ·

Event Description:

The CEMS indicated that, on 5/12/14, the CO mass emissions during start-up were exceeded by 168.1 lbs. Investigation is underway.

Received	by

District Use Only

Date

METCALF ENERGY CENTER, LLC

1 Blanchard Rd. Coyote, CA 95013

June 11, 2014

Mr. Wayne Kino (wkino@baaqmd.gov) Director, Enforcement and Compliance Division Bay Area Air Quality Management District 939 Ellis Street San Francisco, CA 94109

RE:

Metcalf Energy Center, LLC Permit No. B2183 Major Facility Review Permit (Title V Permit) 30-Day Title V Non-Compliance Report – RCA No. 06P87

Dear Mr. Kino:

In accordance with the Major Facility Review Permit (Title V Permit) for the Metcalf Energy Center (the "Facility"), this letter is intended to satisfy the 30-day follow-up reporting requirement as required by Section I.F of the Title V Permit. The Title V Permit initial 10-day notification for this event was previously submitted to the District on May 14, 2014.

On May 12, 2014 at 02:12, CEMS time, the Facility initiated a hot start on Combustion Turbine #1 (CT-1). CO emissions during the startup were 2682.1 lbs., which exceeded the Title V Permit Condition 21 limit of 2514 lbs/startup by 162.1 lbs (6%).

The startup of CT-1 on May 12, 2014, was initiated after CT-1 and the steam turbine (ST-1) had been shut down for approximately 51 hours. Per the definition of Gas Turbine Cold-Startup period contained in the Title V Permit, a startup at the Facility can only be considered "cold" when the Facility has been shut down for 72 hours. Therefore, this startup was considered a "hot" start, imposing the lower limits allowed for a hot start. The prolonged shut down period, however, resulted in significant cooling of the Steam Turbine. As a result, an extended thermal loading period was necessary to allow the Steam Turbine to heat up within the Original Equipment Manufacturer (OEM) requirements before the CT-1 load could be raised to a level to effectively reduce CO emissions.

Further, the event on May 12, 2014, followed a major outage to perform maintenance required by the OEM. This maintenance led to cooler exhaust, which coupled with the cooling that occurred as a result of the 51-hour down time of the Steam Turbine, led to the exceedance.

In order to avoid this event from occurring again, the Facility has revised the startup procedures to further reduce CO. The Facility has also adjusted the alarm warning set point to give the operator additional time to react in the event that an extended thermal loading period is causing the mass emissions limit to be approached.

If you have any questions or require additional information, please contact Rosemary Silva, EHS Specialist, at 408-361-4954.

Based on information and belief formed after reasonable inquiry, the statements and information in this document are true, accurate and complete.

Sincerely,

Terry Mahoney Authorized Representative and General Manager Metcalf Energy Center, LLC

CC: David Williams, Calpine Barbara McBride, Calpine Katherine Piper, Calpine

Bay Area AirQ <u>u</u> ality
MANAGEMENT District
 DIJIKICI

COMPLIANCE & ENFORCEMENT DIVISION

Notification Form

Reportable Compliance

MANAGEMENT DISTRICT	06Q02		Compliance Activity (RCA)
		See back of form	for instructions \rightarrow
	S REQUESTING BREAKDOWN RE Ily BREAKDOWN REFERENCE #:	LIEF (Regulation 1-431	and 1-432)
	NDICATES EXCESS EMISSION or by EXCESS or EXCURSION REFE		-522.7, 1-523.3, 1-542)
	S INOPERATIVE (Regulation 1-52)	• • •	
	IS RELEASED FROM RELIEF DE Iy PRD REFERENCE #:	VICE (PRD) (Regulatio	n 8-28-401)
SITE INF	ORMATION AND DESCRIPTION I	NFORMATION (REQUIR	(ED)
Company	METCALF ENERGY CENTER	Site #	B2183
Address	1 BLANCHARD ROAD, COYOTE	Source #	\$1
Reported by	ROSEMARY SILVA	Phone #	408-361-4954
Indicated Excess	5.93 ppm NH3	Fax #	408-361-4949
Allowable Limit	5.00 ppm 3-HR ROLLING AVERAGE	Averaging Time	3-HR
Start Time/Date	6/1/2014 05:00AM	Clear Time	6/1/2014 7:00AM
Monitor/device type(s)	►CEM ►GLM X ►P	arametric ►PRD	►Non-monitor
Monitor description(s)	·		
Parameter(s) exceeded	or not functioning due to inoperation	<u> </u>	
► NO _x ► SO	2 ►CO ►CO2	►H ₂ S ►TR	S X ►NH ₃
$\square \triangleright O_2 \square \triangleright H_2 C$		► Gauge Pressure	►Flow
Hydrocarbon Brea		ature ►Wind Spee	d d
► Wind Direction	►Steam	► Other (descr	ibe)
Unit(s) of Measurement		_	
X ▶ppm ▶ppb		▶ inches H ₂ O	►mmHg
▶psig ▶pH	► ⁰ Fahrenheit	► Other (describe)	
Event Description: Indicated excess of NH3 slip of	concentrations due to NOx inlet analyzer sa	ampling system malfunction.	nvestigation

underway; preliminary conclusion that NOx sample system developed a leak, resulting in lower inlet NOx concentration and high slip values. Leak believed to now be corrected.

	District Use Only		
Received by	Date	Time	

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METCALF ENERGY CENTER, LLC

1 Blanchard Rd. Coyote, CA 95013

July 1, 2014

Mr. Wayne Kino (wkino@baaqmd.gov) Director, Enforcement and Compliance Division Bay Area Air Quality Management District 939 Ellis Street San Francisco, CA 94109

Metcalf Energy Center, LLC Permit No. B2183 Major Facility Review Permit (Title V Permit) 30-Day Title V Non-Compliance Report – RCA No. 06Q02

Dear Mr. Kino:

RE:

In accordance with the Major Facility Review Permit (Title V Permit) for the Metcalf Energy Center (the "Facility"), this letter is intended to satisfy the 30-day follow-up reporting requirement as required by Section I.F of the Title V Permit. The Title V Permit initial 10-day notification for this event was previously submitted to the District on June 2, 2014.

On June 1, 2014, the Facility experienced an indicated excess of the NH3 Slip 3-hour rolling average emission limit of 5 ppm on Combustion Turbine *1, as stated in Condition 20e of the Title V Permit. After reviewing operating data such as the ammonia injection rate, stack and inlet NOx concentrations, and unit megawatt load, it was determined that the NH3 slip data reported from 0500 to 0700 hours was not accurate because the inlet NOx data was unrealistically low. Based on comparable runs, the Facility has concluded that the actual 3-hour average was not exceeded.

The following is a summary of the investigation into the incident upon discovery:

- 0554: The operator noticed an unusually low inlet NO_x value with respect to Combustion Turbine ^{#1}.
- 0558: The operator took manual control of the unit's ammonia injection system in an effort to decrease indicated NH₃ Slip values.
- 0654: The Combustion Turbine #1 CEMS was placed in to maintenance mode and a Technician was called in to the site.
- 0736: Combustion Turbine ^{#1} was taken off-line
- 0921: The Maintenance Technician discovered a cracked, plastic elbow in the sample line for the inlet NO_x analyzer. This crack
 allowed ambient air to contaminate the sample line and resulted in a lower than actual inlet NO_x value. The unrealistically low
 inlet NOx concentrations caused the calculated NH3 slip values to be too high and resulted in the indicated excess.
- 1040: The cracked elbow was replaced and the Combustion Turbine [#]1 analyzers passed calibration.
- 1104: Combustion Turbine [#]1 was back on-line.

In order to prevent this event in the future, the Facility will continue its robust maintenance program with respect to the CEMS and will inspect, and if necessary, replace all similar plastic components in both CEMs sample lines.

If you have any questions or require additional information, please contact Rosemary Silva, EHS Specialist, at 408-361-4954.

Based on information and belief formed after reasonable inquiry, the statements and information in this document are true, accurate and complete.

Sincerely,

ALA Terry Mahoney

Authorized Representative and General Manager Metcalf Energy Center, LLC

CC: David Williams, Calpine Barbara McBride, Calpine Katherine Piper, Calpine

METCALF ENERGY CENTER, LLC

1 Blanchard Rd. Coyote, CA 95013

July 102014

Mr. Wayne Kino (wkino@baaqmd.gov) Director, Enforcement and Compliance Division Bay Area Air Quality Management District 939 Ellis Street San Francisco, CA 94109

RE:

Metcalf Energy Center, LLC Permit No. B2183 Major Facility Review Permit (Title V Permit) 30-Day Supplemental -Title V Non-Compliance Report – RCA No. 06Q02

Dear Mr. Kino:

In accordance with the Major Facility Review Permit (Title V Permit) for the Metcalf Energy Center (the "Facility"), on July 1, 2014, the Facility previously submitted the 30-day follow-up report for RCA No. 06Q02, as required by Section I.F of the Title V Permit, . This letter is intended to provide supplemental information for this event.

As reported in the 30-day follow-up report, on June 1, 2014, the Facility experienced an indicated excess of the NH3 Slip 3-hour rolling average emission limit of 5 ppm on Combustion Turbine "1. It was concluded, however, that no actual excess occurred and instead, that the NH3 Slip data reported from 0500 to 0700 hours was not accurate because the inlet NOx data was measuring abnormally low.

Based on comparable operational data, the actual inlet NOx concentration during the applicable time period should have been approximately 27.5 ppm compared to the measured values that ranged from 6.4 ppm to 11.7 ppm. The measured values of 6.4 ppm to 11.7 ppm are inconsistent with the operational experience of the Facility and are not realistic values based on historical data for the megawatt load at which the unit was operating. Based on historical runs at the applicable megawatt load, a more typical average SCR NOx value for Combustion Turbine "1 is 27.5 ppm.

Using data substitution, when a more accurate measurement of 27.5 ppm inlet NOx was used to recalculate the NH3 Slip 3-hour rolling average, the value was 2.38 ppm for the 0500 and 0700 hours, instead of the DAHS calculated value of 5.93 ppm. The attached tables include a summary of the inlet NOx and NH3 slip data recorded and calculated by the DAHS, as well as the substituted inlet NOx data and recalculated NH3 slip values based on the foregoing substitution methodology. The recalculated NH3 slip data, which is more representative of the actual emissions than the data initially reported by the DAHS and that was based on erroneous inlet NOx data, indicates that no actual exceedence of the NH3 slip limit occured.

If you have any questions or require additional information, please contact Rosemary Silva, EHS Specialist, at 408-361-4954.

Based on information and belief formed after reasonable inquiry, the statements and information in this document are true, accurate and complete.

Robert Parker

Vice President Metcalf Energy Center, LLC

CC: David Williams, Calpine Barbara McBride, Calpine Katherine Piper, Calpine

Timestamp	Measured SCR NOx ppm	Substituted/SCR	Measured NH3 ppm @15% O2 1- Hr	Substituted NH3 ppm@15%:02:1= Hr:	Measured NH3 ppm @15% O2 3- Hr Rolling	Substituted INH3ippm @15%@2/3=Hr
6/1/2014 4:00	12.2	<u> </u>	2.6	-	0.00	-
6/1/2014 5:00	7.1	27.5	15.2	4.55	5.93	2.38
6/1/2014 6:00	8.5	27.5	0.0	0.00	5.93	2.38

imestamp		(Turbine - 1) NOx ppm @15% 02 1-	Updated SCR	(Turbine - 1) SCR NOx ppm	(Turbine - 1) NH3 Slip	(Turbine - 1) NH3 ppm @15% O2 1-	(Turbine - 1) 75-	{Turbine - 1} Total	(Turbine - 1)	(Turbine - 1) NH3		دستنا
	Min	Min	NOx ppm	1-Min	Correction Factor 1-Min	Min	02% 1-Min	Heat Input mmBtu/hr 1-Min	Megawatts 1-Min	Flow 1-Min Ib/hr	NHS Inlet	NH3 Slip
1/2014 4:55	8	1.32	-	7,8	0.84	32.53	14,04	1339.5	117.1	287.14		
1/2014 4:56	8	1.19	•	7.6	0.84	32.09	14.05	1339.5	117.4			
1/2014 4:57	8	1.1	-	7.5	0.84	31.59	14.06	1339.5	117.3			5
1/2014 4:58	8	1.04	-	73	0.84	30.8	14.05	1339.5	117.2			
1/2014 4:59	8	1.02	+	7.2	0.84	30,16	14.07	1339.5	117.4			
1/2014 5:00	8	1	27.5	7	0.84	29.64	14.08	1339.5	117.2			• • • •
1/2014 5:01	8	1	27.5	7	0.84	28.31	14.07	1350.8	117.2		46.6	14
1/2014 5:02	8	1.01	27.5	6.9	0.84	26.84	14.05	1384.7	122.8		<u></u>	-13
1/2014 5:03	8	1	27.5	6.8	0.84	25,15	14.05	1382.5	122.3	248.35	42.9	11
1/2014 5:04	8	0.97	27.5	6.8	0.84	25.33	14.05	1390.2	122.3	234.83	418	11
1/2014 5:05	5	1.03	27.5	6.8	0.84	24,46	14.02	1384.7	122.4		40.7	10
1/2014 5:06	8	1.09	27.5	6.8	0.84	23.69	14.04	1384.7	122.5	228.13	39.5	9
1/2014 5:07	3	1.13	27.5		0.84	21.19	14.03	1384.7	122.5	221.73	38.3	8
1/2014 5:08	5	1.19	27.5	5.8	0.84	17.88	14.03	1384.7		201.35	34.8	6
1/2014 5:09	8	1.33	27.5	6.8	0.84	15.99	14.03	1402.K 1382.5	123.5		302	ž
1/2014 5:10	8	1.51	27.5	6.8	0.84	15.99	14.04		123.2		27.4	Ç.
1/2014 5:11	5	1.75	27.5	6.9	0.84	14.39	14.01	1396 1393.8	123.6		25:4	0
1/2014 5:12	8	1.93	27.5	7	0.84	11.46	14.04	1395.8	123,4	132.95	.22.9	. 2
1/2014 5:13	8	2.21	27.5	7.2	0.84	10.92	14.02		123.6		20.6	3
1/2014 5:14	8	2.41	27.5	7.4	0.84	10.92		1430	127	117.76	393	ે કે
1/2014 5:15	ŝ	2.5	27.5	7.5	0.84		14,03	1420.9	126.6		-19.8	3
1/2014 5:16	8	2.76	27.5	7.6	0.84	11.11 11.84	14.01	1423.2	127,4		20.0	3
1/2014 5:17	8	2.83	275	7.7	0.84	12.47	14	1425.5	127	123.55	20.9	2
1/2014 5:18	8	2.9	27.5	7.8	0.84	13.6	14.03	1432.2	127.1	129.52	217	2
1/2014 5:19	8	2.87	27.5	7.8	0.84	14.25	14 14	1420.9	127.5	137.85	233	0
1/2014 5:20	ŝ	2.91	27.5	7.8	0.64	15.36		1459.4	130.7	147.04	24.2	Ō
1/2014 5:21	8	2.74	27.5	7.8	0.84	15.56	14.01 13.99	1466.2	132.4	157.17	25.8	<u>وَ</u>
1/2014 5:22	8	2.69	27.5	7.5	0.45	8.89	13.99	1491.1 1538.6	135.6	166.83	727.0	- <u>1</u>
1/2014 5:23	8	2.55	27.5	7.6	0.45	9.1	13.96	1556.6 1574.8	140.7	175.98	275	j.
1/2014 5:24	8	2.47	27.5	75	0.45	9.29	13.96		145.3	184.69	528.4	
1/2014 5:25	8	2.48	27.5	7.4	0.45	9.4	13.85	1615.5 1667.6	150.3	192.67	29.01	8 A 10
1/2014 5:26	8	2.74		7.4	0.45	9.71	13.83		155.8	199.32	294	11
1/2014 5:27	8	2.88	175 175	7.5	0.45	10.25	13.82	1701.5	159.5	206.56	302	Z
1/2014 5:28	5	2.71	275	7.6	0.45	10.66	13.82	1703.8	159.4	216.37	314	ંટ
1/2014 5:29	8	2.6	77.5	7.6	0.45	11.13	13.81	1699.2	159	225.37	32.81	30
1/2014 5:30	8	2,49	27.5 27.5	7.5	0.45	11.61	13.81	1690.2 1672.1	158.1 155.9	233.56	342	3
1/2014 5:31	8	2.35	275	7.4	0.45	12.03	13.81	1647.2		239.99	3355	ં હો
1/2014 5:32	8	21	275	7.5	0.45	12.15	13.87	1642.7	153.5	244.81	36.6	
1/2014 5:33	8	1.93	27.5	7.4	0.45	12.15	13.87	1642.7	152.7	249.69	373	4
1/2014 5:34	8	1.72	27.5	7,3	0.45	12.78	13.92	1583.8	149.8	252.52	382	4
1/2014 5:35	8	1.49	27.5	7.2	0.94	24.33	13.95	1583.8	145.1 139.6	252.7	Part of the second s	÷ 4
1/2014 5:36	8	1.39	27.5	7	0.84	24.81	13.97	1540.9		251.33	395	9
1/2014 5:37	8	1.34	27.5	6.9	0.84	25.29	13.99	1500.1	135.2	248,6	401	9
1/2014 5:38	8	1.28	27.5	6.8	0.84	25.57	14.01	1454.9	129.9	244.83	40.6	10
1/2014 5:39	8	1.32	27.5	6.6	0.84	25.93	14.01	1411.9	124.7	240.07	40.9	10
1/2014 5:40	8	1.4	27.5	6.6	0.84	25.35	14.04	1373,4	120.2 122.7	235.13	410	્યો
1/2014 5:41	8	1.5	27.5	6.6	0.84	23.8	14.02	1457.1		232.11	40.0	<u>, 10</u>
1/2014 5:42	8	1.41	273	6.6	0.84	22.49	14.02	1518.2	130.5 137.9	229.94	37.9	
1/2014 5:43	8	1.34	27.5	6.6	0.45	11.57	14	1545,4	141.1	228.8	362	- 7
1/2014 5:44	8	1.36	27.5	6.6	0.45	11.4	13.59	1543,4	141.1	225.42	351	્રં
1/2014 5:45	\$	1.38	27.5	6.7	0.45	9.41	14	1545.4	141.7	223.58	342	3
1/2014 5:46	8	1.42	27.5	6.8	0.45	7.8	14.01	1538.6		189.7	295	Ĩ
1/2014 5:47	8	1.65	27.5	6.8	0.45	7.38	13.99	1536.5	140.2 140.4	162.4	-25A	Ó
L/2014 5:48	S	1.94	27.5	6.8	0.45	7.19	13.98	1534.1	140.4 140.3	153.23	24.0	Ū,
L/2014 5:4 9	\$	2.22	27.5	6.9	0,45	7.13	13.98	1534.1		147.9	23.3	, Q
/2014 5:50	\$	2.44	27.5	7	0.45	7.02	13.98	1534.1	140	145.42	22.9	0
/2014 5:51	8	2.65	27.5	7.2	0.45	7.02	13.99	1531.8	140	142.48	224	<u> 1</u>
/2014 5:52	8	2.83	27.5	73	0.45	6.98	13.99	1534.1	140	142.11	224	0

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	15.2	0	
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REGALQUIATE			¥.
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6/1/2014 5:53	8	2.97	27.5	7.4	0.45	6.98	13.99	1538.6	140.6	141.06	221	0.93
6/1/2014 5:54	8	2.97	27.5	-	0.45	-	13.99	1534.1	140.3	140.83	221	
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6/1/2014 5:57	8	2.97	27.5	-	0,84	-	13.99	1534.1	139.7	140.82	777	
6/1/2014 5:58	8	2.97	27.5	-	0.45	•	13.99	1543.1	141.1	140.25	221 221 219 218	- <u>-</u>
6/1/2014 5:59	8	2.97	275	•	0.45	-	13.99	1547.6	141.3	139.69	210	ਰ ਹ
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6/1/2014 5:00	8	2.97	-	-	0.45	-	13.99	1547.6	141.1	139.21	21.7	
6/1/2014 6:01	8	2.97	-		0.45	-	13.99	1545.4	241.3	139,41	21.7.	- <u>1</u> - 1
6/1/2014 6:02	8	2.97	-	•	0.45	-	13.99	1540.9	140.7	140.12	21.9	- <u>-</u> +
6/1/2014 6:03	8	2.97	-	-	0.45	-	13.99	1543.1	141	139.8	100 m	
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6/1/2014 6:05	8	2.97	-	-	0.45	-	13.99	1540.9	140.8	138.52	21.7	
6/1/2014 6:06	8	2.97	•		0.45	-	13.99	1540,9	140.5	139.13	21.7 21.8	
6/1/2014 6:07	8	2.97	-	-	0.45	-	13.99	1536.3	140.1	138.92	21.8	
6/1/2014 6:08	8	2.97	-		0.45	-	13.99	1540.9	140.5	138.34	2116	1
6/1/2014 6:09	8	2.97	-	•	0.45	-	13.99	1543.1	140,4	139.74		-
6/1/2014 6:10	8	2.97	-	•	0.45	-	13.99	1547.6	140.9	139.75	21.8 21.8	
6/1/2014 6:11	8	2.97	•	-	0.45		13.99	1538.6	140.7	139.69	21:8	
6/1/2014 6:12	8	2.97	-		0.45	-	13.99	1538.6	140.4	139.61	21.9 21.9	+
6/1/2014 6:13	4	4.59	•	8.8	0.64	- o	14.01	1513.7	136.1			i
6/1/2014 6:14	4	4.59		8,7	0.84	0	13.99	1463.9		129.78	20.6	0.00
6/1/2014 6:15	4	5.76		8.8	0.84	ő	14	1400.6	130_5	82.78	13.6	0.00
6/1/2014 6:16	4	7.82	-	9.2	0.84	ő	14.03	1325.9	122.7	62.9	10.8	0.00
6/1/2014 6:17	4	9.23	-	10.5	0.84	ő	14.13	1255.8	114	66.83	12.1	0.00
6/1/2014 6:18	4	9.17		11.7	0.84	ő	14.28	1187.9	106.2	90.01	16.9	0.00
6/1/2014 6:19	4	7.84	-	12	0.84	ő	14.5	1126.8	98	131.78	25.6	0.00
6/1/2014 5:20	4	5.78	-	11.1	0.84	ŏ	14.5		90.2	191.82	38.0	0.00
6/1/2014 6:21	4	3.84	-	9.8	0.84	0	15.24	1068 1000.1	82.7	248.17	48.8	0.00
6/1/2014 6:22	4	2.92	-	8,4	0.84	0	15.62		74.8	282.2	55.7	0.00
6/1/2014 6:23	4	2,43	-	7.6	0.84	ŏ	15.97	939	66.8	301.17	59.1	0.00
6/1/2014 6:24	4	2.47		7.8	0.84	0	16.32	885.9	58.3	312.03	60.5	0.00
6/1/2014 6:25	4	3.22	-	6.6	0.84	0	16.52	855.3 305.5	52.6	323.24	60.4	D.00
6/1/2014 6:26	4	4,47		6.A	0.84	ő	16.98		43.5	335.71	62.4	0.00
5/1/2014 5:27	4	6.33		6.5	0.84	-		753.5	34.6	354.48	64.3	0.00
6/1/2014 6:28	4	9.12	-	6.8	0.84	0 0	17.31	708.2	26.2	389.66	68.9	0.00
6/1/2014 6:29	4	13.09	-	7.3	0.84	-	17,68	635.8	15.9	448.72	79.3	0.00
6/1/2014 6:30	4	18.67	-	7.3 7.9		0	18.15	524.9	3.9	164.97	30.1	0.00
6/1/2014 6:31	4	15.47	-	83	0.84	0	18.77	527.2	0.4	0	0.0	0.00
6/1/2014 6:32	4	13.16	-		0.84	0	18.78	538.5	0.3	0	0.0	0.00
6/1/2014 6:33	4	11.56	-	8	0.84	0	18.86	545.3	0.3	0	0.0	0.00
6/1/2014 6:34	4	10.39		7.5 7	0.84	0	18.95	552.1	0.4	0	0.0	0.00
6/1/2014 6:35	4	8.37 <13>	-	/ 6.6 <13>	0.54	0	19.02	540,8	0.4	0	0.0	0.00
-1 41 6 4 5 4 4 14 M	-	0.01 1200	-	0.0 <15>		0	19.02	172.1	0	0	0.0	0.00
					0.000	- UU						<u> </u>

Faxe :42as

COMPLIANCE & ENFORCEMENT DIVISION

Notification Form

AIRQUALITY MANAGEMENT DISTRICT	COMPLIAN		NT DIVISION	Reportable Compliance Activity (RCA)
			See back of form	for instructions \rightarrow
		BREAKDOWN RELIËF I REFERENCE #:	(Regulation 1-431	and 1-432)
		ESS EMISSION or EXC CURSION REFERENC		-522.7, 1-523.3, 1-542}
		(Regulation 1-522.4, 1- MONITOR REFERENCE	•	
	IS RELEASED F ly PRD REFERE	ROM RELIEF DEVICE	(PRD) (Regulatio	n 8-28-401)
SITE INF	ORMATION AND	DESCRIPTION INFOR	MATION (REQUIR	RED)
Company	METCALF ENERG		Site #	B2183
Address	1 BLANCHARD RO	DAD, COYOTE	Source #	S2
Reported by	ROSEMARY SILV	Ą	Phone #	408-361-4954
Indicated Excess	2653 lbs. during St	art-up	Fax #	408-361-4949
Allowable Limit	2514 lbs. per Start-	-up	Averaging Time	3-HR
Start Time/Date	11:50 7/22/2014		Clear Time	12:43 7/22/2014
Monitor/device type(s)	► CEM	►GLM X ►Parame	etric P RD	► Non-monitor
Monitor description(s)	<u> </u>			
Parameter(s) exceeded ►NO _x ►SO ₂ ►O ₂ ►H ₂ C ►Hydrocarbon Brea ►Wind Direction	2 X ►CO		H₂S □ ►TRS Gauge Pressure ► Wind Spee ► Other (desor	Flow ⊨
Unit(s) of Measurement ▶ppm ▶ppb ▶psig ▶pH	► min/hr ► ⁰ Fahre		▶inches H ₂ O ▶Other (describe) Ib	os ─── ►mmHg
Event Description:				

BAY AREA

During an attempted start-up on Unit 2, we realized that we were unlikely to be able to complete the startup and maintain compliance with the CO mass emissions limit. Therefore, prior to reaching the CO start-up emission limit, a unit shutdown was commenced. Once the shutdown command was initiated, it took the unit 12 minutes before fuel flow ceased. During this run, the unit never reached normal operations and transitioned straight from startup mode to shutdown mode.

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	District Use Only	
Received by	Date	Time

1 Blanchard Rd. Coyote, CA 95013

August 8, 2014

Mr. Wayne Kino (wkino@baaqmd.gov) Director, Enforcement and Compliance Division Bay Area Air Quality Management District 939 Ellis Street San Francisco, CA 94109

RE: Metcalf Energy Center, LLC Permit No. B2183 Major Facility Review Permit (Title V Permit) 30-Day Title V Non-Compliance Report – RCA No. 06R33

Dear Mr. Kino:

In accordance with the Major Facility Review Permit (Title V Permit) for the Metcalf Energy Center (the "Facility"), this letter is submitted pursuant to Section I.F. of the Title V Permit, which requires submission of a written report within 30 calendar days of the discovery of any instance of potential non-compliance. In an abundance of caution, the Facility previously reported the event described in this report pursuant to the 96-hour and 10-day reporting requirements imposed by its Title V Permit and District rules and, through submission of this report, is seeking the District's concurrence that such an event does not constitute a violation of the Facility's Title V Permit.

On July 22, 2014, during an attempted start-up on Unit 2 that began at 1150 hours, the Facility concluded that it was unlikely to be able to complete the startup and maintain compliance with the CO mass emissions limit of 2,514 pounds (lb.) CO per start-up event contained in Condition #18310, Part 21. Therefore, prior to exceeding this limit, at 1232 hours, the shutdown sequence was commenced for Unit 2. Once the shutdown command was initiated, it took the unit 12 minutes before fuel flow ceased to the unit. During this run, the unit never reached normal operations and transitioned straight from start-up mode to shutdown mode. Mass emissions from the time the unit was started-up until initiation of the shutdown sequence did not exceed the relevant start-up limit. Nor did emissions from the time the shutdown limit of 902 lb. CO.

However, the definitions of start-up and shutdown appearing in the permit do not account for the scenario described above; instead they assume that the unit transitions from start-up mode to normal operations and from normal operations into shutdown mode. "Gas Turbine Start-up Mode" is defined as, "[t]he lesser of the first 180 minutes of continuous fuel flow to the Gas Turbine after fuel flow is initiated or the period of time from Gas Turbine fuel flow initiation until the Gas Turbine achieves two consecutive data points in compliance with the emission concentration limits of conditions 20(b) and 20(d)" (NOx and CO). (Cond. #18310, Definitions, Part 20(b) and (d)). Thus, unless and until the CEMS records two consecutive data points in compliance with the NOx and CO concentration limits, the Facility's data acquisition and handling system (DAHS) assumes that the unit remains in start-up mode and records all emissions as such. Likewise, the definition of "Gas Turbine Shutdown Mode" assumes that a shutdown does not commence until non-compliance with the same concentration limits.

Accordingly, in a situation as was experienced on July 22, 2014, the DAHS programming defaulted to an assumption that all the run minutes occurred during start-up mode and that the unit never entered shutdown mode – despite the fact that the shutdown sequence had been commenced and completed. As a consequence, the DAHS over-estimated the total mass emissions for the event and indicated an exceedance of the start-up limit of 2,514 lb CO, even though the total emissions from the time the unit was started-up until the shutdown sequence was initiated remained in compliance. Further, the DAHS underestimated the shutdown emissions (i.e., the DAHS treated some of the shutdown

Mr. Wayne Kino Director, Enforcement and Compliance Division August 1, 2014 Page 2

minutes as start-up minutes), even though the emissions from the time shutdown commenced likewise remained in compliance (below the corresponding shutdown limit of 902 lb. CO per shutdown event). In light of this DAHS indication and in an abundance of caution, the Facility reported an indicated exceedance of the start-up mass emissions limit.

The Facility submits that here the most practical and logical application of the permit terms, and the separate mass emissions limits applicable to each of start-up and shutdown modes, is to conclude that the unit was in start-up mode only until such time as the shutdown sequence was initiated. Thereafter, the unit operated in shutdown mode until cessation of fuel flow (for 12 minutes) and the emissions are properly classified as in "shutdown". As indicated above, when applied in this manner, no exceedance of either the start-up or the shutdown limits occurred. Attached hereto as Appendix 1 is what the errant DAHS report would reflect were the entire event on July 22, 2014 treated as a start-up event. Further, attached hereto as Appendix 2 is an exemplar of what the DAHS report should reflect, given the facts of the event (i.e., representing the commencement of the shutdown sequence).

Accordingly, as a corrective action with respect to this event, the Facility has modified the DAHS process codes for this particular event to accurately reflect the commencement and completion of the shutdown sequence, as is reflected on the attached Appendix 2.

The DAHS process codes will be managed similarly during any future events when the startup and shutdown periods, as defined by the permit, overlap.

If you have any questions or require additional information, please contact Rosemary Silva, EHS Specialist, at 408-361-4954.

Based on information and belief formed after reasonable inquiry, the statements and information in this document are true, accurate and complete.

Sincerely,

White

Terry Mathoney Authorized Representative and General Manager Metcalf Energy Center, LLC

CC: David Williams, Calpine Barbara McBride, Calpine Katherine Piper, Calpine Region IX, EPA Eric Veerkemp, CEC AQ-36

APPENDIX 1

Metcalf
San Jose, CA
Turbine-2 Hourly Emissions Report
July 22, 2014 - Hour 11

NOx ppm @ NOx ib/mmi	1-Hr Emis 15% O2 - 2.5 * Btu - 0.00904 *	ision Limits NOx Ib	Mhr - 19.2 *	CO pr CO lb	3-Hr R om @15% O2 - 4 /mmBtu - 0.0088		on Limits CO Ib/hr 13 Slip ppm @	- 18.7 * 215% O2 - 5 *		· ·
NOx ppm	NOx ppm @15% O2	NOx lb/mmBtu	NOx ib/hr	СО ррт	CO ppm @15% O2	CO Ib/mmBtu	CO lb/hr	NH3 ppm Slip @15% O2	SCR NOx	Process Status
Down	Down	Down	Down	Down	Down	Down	Down	Down	Down	
Down	Down	Down	Down	Down	Down	Down	Down	Down	Down	Down
Down	Down	Down	Down ·	Down	Down	Down	Down	Down	Down	Down
Down	Down	Down	Down	Down	Down	Down	Down	Down		. Down
Down	Down	Боwл	Down	Down	Down	Down	Down	Down	Down Down	Down
Down	Down	Down	Down	Down	Down	Down	Down	Down	Down	Down Down
Down	Down	Down	Down	Down	Down	Down	Down	Down	Down	Down
Down	Down	Down	Down	Down	Down	Down	Down	Down	Down	Down
Down	Down	Down	Down	Down	Down	Down	Down	Down	Down	Down
Down	Down	Down	Down	Down	Down	Down	Down	Down	Down	Down
Down	Down	Down	Down	Down	Down	Down	Down	Down	Down	Down
Down	Down	Down	Down	Down	Down	Down	Down	Down	Down	Down
Down	Down	Down	Down	Down	Down	Down	Down	Down	Down	Down
Down	Down	Down	Down	Down	Down	Down	Down	Down	Down	Down
DCal	DCal	DCal	DCal	DCal	DCai	DCal	DCal	DCai	DCal	Down
DCal	DCal	DCal	DCai	DCal	DCai	DCal	DCal	DCal	DCal	Down
DCal	DCal	DCal	DCal	DCal	DCal	DCal	DCal	DCal	DCal	Down
DCal	DCal	DCal	DCai	DCal	DCal	DCal	DCal	DCal	DCal	Down
DCal	DCal	DCal	DCal	DCal	DCal	DCal	DCal	DCal	DCal	
DCal	DCal	DCal	DCal	DCal	DCal	DCal	DCal	DCal	DCal	Down
DCal	DCal	DCal	DCal	DCal	DCal	DÇal	DCal	DCai	DCal	Down
DCal	DCal	DCal	DCal	DCal	DCal	. DCal	DCal	DCal	DCal	Down Down
DCal	DCai	DCal	DCal	DCal	DCal	DCal	DCal	DCal	DCai	
DCal	DCal	DCal	DCai	DCal	DCal	DCal	DCal	DCal	DCal	Down
DCal	DCal	DCai	DCal	DCal	DCal	DCal	DCal	DCal	DCai DCai	Down
DCal	DCal	DCal	DCal	DCal	DCai	DCal	DCal	DCal	DCal	Down
DCal	DCal	DCal	DCal	DCal	DCal		•			Down
•										Down
										Down
		•							1	Down Down
	DCai DCai DCai	DCal DCal DCal DCal	DCal DCal DCal DCal DCal DCal	DCal DCal DCal DCal DCal DCal DCal DCal	DCal DCal DCal DCal DCal DCal DCal DCal	DCal DCal DCal DCal DCal DCal DCal DCal	DCal DCal DCal DCal DCal DCal DCal DCal DCal DCal DCal DCal DCal DCal DCal DCal DCal DCal DCal DCal	DCai DCai <th< td=""><td>DCal DCal <th< td=""><td>DCal DCal <th< td=""></th<></td></th<></td></th<>	DCal DCal <th< td=""><td>DCal DCal <th< td=""></th<></td></th<>	DCal DCal <th< td=""></th<>

CeDAR Reports 7/25/2014 11:18 AM, Turbine-2 Hourty Emissions Report

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Minute	02%	NOx ppm	NOx ppm @15% O2	NOx Ib/mmBtu	NOx lb/hr	CO ppm	CO ppm @15% O2	CO lb/mmBtu	CO lb/hr	NH3 ppm Slip @15% O2	SCR NOx	Process Status
11:30	DCal	DCal	DCal	DCal	DCal	DCal	DCal	DCal	DCal	DCal	Down	Down
11:31	DCal	DCal	DCai	DCal	DCai	DCal	DCal	DCal	DCal	DCal	Down	Down
11:32	ĐCal	DCal	DCal	DCal	DCal	DCal	DCal	DCal	DCal	DCal	Down	Down
11:33	DCal	DCal	DCal	DCal	DCal	DCal	DCal	DCal	DCal	DCal	Down	Down
11:34	DCal	DCal	DCal	DCal	DCal	DCai	DCal	DCal	DCal	DCal	Down	Down
11:35	DCal	DCal	DCal	DCal	DCal	DCal	DCal	DCal	DCal	DCal	Down	Down
11:36	DCal	DCal	DCal	DCal	DCal	DCal	DCal	DCal	DCal	DCal	Down	Down
11:37	DCal	DCal	DCal	DCal	DCal	DCal	DCal	DCal	DCal	DCal	Down	Down
11:38	Down	Down	Down	Down	Down	Down	Down	Down	Down	Down	Down	Down
11:39	Down	Down	Down	Down	Down	Down	Down	Down	Down	Down	Down	Down
11:40	Down	Down	Down	Down	Down	Down	Down	Down	Down	Down	Down	Down
11:41	Down	Down	Down	Down	Down	Down	Down	Down	Down	Down	Down	Down
11:42	Down	Down	Down	Down	Down	Down	Down	Down	Down	Down	Down	Down
11:43	Down	Down	Down	Down	Down	Down	Down	Down	Down	Down	Down	Down
11:44	Down	Down	Down	Down	Down	Down	Down	Down	Down	Down	Down	Down
11:45	Down	Down	Down	Down	Down	Down	Down	Down	Down	Down	Down	Down
11:46	Down	Down	Down	Down	Down	Down	Dowm	Down	Down	Down	Down	Down
11:47	Down	Down	Down	Down	Down	Down	Down	Down	Down	Down	Down	Down
11:48	Down	Down	Down	Down	Down	Down	Down	Down	Down	Down	Down	Down
11:49	Down	Down	Down	Down	Down	Down	Down	Down	Down	Down	Down	Down
11:50	20.95	0.00	inval	inval	Inval	0.00	Inval	Inval	Inval	Down	0.0	Hot S/U
11:51	20.77	0.00	Invai	inval	Inval	0.23	Inval	lnval	inval	Down	0.4	Hot S/U
11:52	18.21	3.33	7.30	0.02685	4.93	258,93	567.91	1.2707	233.35	Down	1.0	Hot S/U
11:53	18.20	4.87	10.64	0.03912	8.60	799.88	1747.89	3.9110	860.06	Down	1.0	Hot S/U
11:54	18.00	5.80	11.80	0.04338	11.41	909.07	1849.49	4.1383	1088.29	Down	1.1	Hot S/U
11:55	17.99	7.33	14.86	0.05463	16.72	939.70	1905.23	4.2630	1304.74	Down	1.4	Hot S/U
11:56	17.99	8.78	17.80	0.06544	24.92	960.68	1947.77	.4.3582	1659.93	Down	1.6	Hot S/U
11:57	17.99	9.87	20.01	0.07356	31.85	998.72	2024.90	4.5308	1961.91	Down	1.8	Hot S/U
11:58	18.15	10.39	22.29	0.08194	39.01	1103.10	2366.65	5.2955	2521.12	Down	2.1	Hot S/U
11:59	18,13	11.66	24.84	0.09129	48.01	1181.42	2516.38	5.6305	2961.42	Down	2.5	Hot S/U
Average	18.6	6.2	0.0 *	DCai *		715.2	1834.6	4.1051		Down	1.3	Hot S/U
Total 3-Hr Ring			•		DCal *		NSD*	Down *	213.59 Down *	Down*		

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* - Excluding Startup and Shutdown

CeDAR Reports 7/23/2014 6:04 AM, Turbine-? Hourly Emissions Report

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Metcalf San Jose, CA **Turbine-2 Houriy Emissions Report** July 22, 2014 - Hour 12

			1-Hr Emis 215% O2 - 2.5* Btu - 0.00904*	sion Limits NOx Ib	/hr - 19.2 *		3-Hr R 2m @15% O2 - 4 /mmBtu - 0.0088		ion Limits CO Ib/hr - NH3 Slip ppm @			
Minute	02%	NOx ppm	NOx ppm @15% O2	NOx lb/mmBtu	NOx lb/hr	CO ppm	СО ррт @15% О2	CO lb/mmBtu	CO lb/hr	NH3 ppm Slip @15% O2	SCR NOx	Process Status
12:00	18.53	12.05	30.00	0.11027	60.25	1090.65	2715.12	6.0752	3319.31	Down	2.4	Hot S/U
12:01	18.62	12.74	32.97	0.12119	67.31	920.95	2383.16	5.3324	2961.83	Down	2.4	Hot S/U
12:02	18.58	14.33	36.44	0.13396	74.10	953.62	2425.15	5.4264	3001.73	Down	3.1	Hot S/U
12:03	18.59	15.31	39.10	0.14374	79.19	970.00	2477.49	5.5435	3053.92	Down	3.5	Hot S/U
12:04	18.59	16.02	40.92	0.15041	85.59	979.17	2500.91	5.5959	3184.30	Down	3.5 3.8	Hot S/U
12:05	18.58	16.35	41.58	0.15285	86.63	983.12	2500.18	5.5942	3170.63	Down	4.2	Hot S/U
12:06	18.52	17.00	42.14	0.15492	89.91	1034.92	2565.56	5.7405	3331.63	Down	4.6	Hot S/U
12:07	18.44	17.82	42.74	0.15711	92.96	1102.98	2645.36	5.9191	3502.41	Down	5.1	Hot S/U
12:08	18.37	18.66	43.52	0.15996	· 96.83	1180.75	2753.53	6.1611	3729.39	Down	5.6	Hot S/U
12:09	18.29	19.37	43.79	0.16096	98,89	1248.33	2821.90	6.3141	3879,28	Down	6.2	Hot S/U
12:10	18.22	20.15	44,36	0.16307	102.04	1316.02	2897.21	6.4826	4056.25	Down	6.7	Hot S/U
12:11	18.14	20.86	44.59	0.16392	104.43	1381.48	2953.16	6.6078	4209.53	Down	7.2	Hot S/U
12:12	18.06	21.50	44.67	0.16419	106.83	1445.60	3003.18	6.7197	4372.21	Down	7.7	
12:13	17.98	22.18	44.82	0.16474	109.43	1518.15	3067.49	6.8636	4559.18	Down	8.3	Hot S/U
12:14	17.89	22.48	44.06	0.16198	109.80	1593.92	3124,29	6.9907	4559.18	Down .		Hot S/U
12:15	17.80	22.82	43.43	0.15965	110.03	1660.08	3159.51	7.0695	4872.27		8.9	Hot S/U
12:16	17.71	23.13	42.78	0.15726	110.88	1710.28	3153.51	7.0778	4990.32	Down	9.3	Hot S/U
12:17	17.63	23.27	41.99	0.15434	110.57	1755.00	3166.51			Down	9.8	Hot S/U
12:18	17.55	23,40	41.21	0.15149	110.57	1780.80	3136.33	7.0852	5075.82	Down	10.1	Hot S/U/
12:19	17.46	23.56	40.41	0.14854				7.0177	5122.91	Down	10.1	Hot S/Ur
12:20	17.37	23.50	39,56	0.146543	110.46 109.79	1785.70	3062.68	6.8529	5095.87	Down	10.0	Hot S/U
12:21	17.28	23.80	38.79	0.14545		1777.23	2970.44	6.6465	5017.70	Down	9.8	Hot S/U
12:22	17.20	23.00	37.84		109.26	1749.15	2850.83	6.3788	4887.94	Down	9.5	Hot S/U*
12:23	17.11			0.13910	108.48	1715.75	2735.93	6.1217	4774.19	Down	9,1	Hot S/U-
12:23	•	23.57	36.69	0.13488	106.72	1670.07	2599.85	5.8173	4602.71	Down	8.7	Hot S/U*
12:24	17.02	23.26	35.37	0.13002	104.35	1614.47	2454.99	5.4931	4408.49	Down	8.3	Hot S/U-
	16.93	23.06	34.27	0.12598	102.53	1557.40	2314.52	5.1788	4214.93	Down	8.1	Hot S/U
12:26	16.84	23.39	33.99	0.12495	103.11 -	1501.35	2181.77	4.8818	4028.57	Down	7.9	Hot SAJ -
12:27	16.75	23.80	33.84	0.12438	103.49	1416.55	2013.89	4.5062	3749.26	Down	7.9	Hot S/U~
12:28	16.66	24.03	33.44	0.12292	103.94	1301.07	1810.45	4.0510	3425.62	Down	8.0	Hot S/U 🗸
12:29	16.62	23.36	32.20	0.11837	101.97	1247.53	1719.73	3.8480	3315.02	Down	8.1	Hot S/U <

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CeDAR Reports 7/23/2014 6:04 AM, Turbine-2 Hourly Emissions Report

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Minute ,	02%	NOx ррлл	NOx ppm @15% O2	NOx ib/mmBtu	NOx (b/hr	CO ppm	CO ppm @15% O2	CO lb/mmBtu	CO [.] ib/hr	NH3 ppm Slip @15% O2	SCR NOx	Process Status
12:30	16.47	22.78	30.34	0.11152	96.83	1371.12	1826.10	4.0860	3547.85	Down		
12:31	16.44	22.18	29.34	0.10786	90.96	1147.82	1518.42	3.3975	2865.29	Down	8.1	Hot S/U
12:32	16.71	20.01	28.18	0.10358	82.42	1265,45	1781.90	3.9871	3172.74	Down	8.1	Hot S/⊍ ✓
12:33	17.04	17.89	27.34	0.10052	74.29	1124.62	1718.98	3.8463	2842.68	Down	8.2 8.1	Hot S/U /
12:34	17.41	16.71	28.25	0.10384	71.33	1054.90	1783.36	3.9903	2741.04	Down		Hot S/U
12:35	17.76	15.49	29.11	0.10699	67.19	967.02	1817.01	4.0656	2553.13	Down	8.5 8.5	Hot S/U -
12:36	18.11	13.65	28.87	0.10611	61.34	683.55	1445.50	3.2344	1869.85	Down	8.0	Hot S/U
12:37	18.48	11.16	27.21	0.10002	52.61	409.95	999.46	2.2363	1176.20	Down	7.0	Hot S/U-
12:38	18.71	9.00	24.25	0.08913	47.49	221.68	597.22	1,3363	711.94	Down	6.6	Hot S/U
12:39	18.78	8.96	24.94	0.09166	49.46	188.55	524.74	1.1741	633,51	Down	6.4	Hot S/U-
12:40	18.85	9.08	26.13	0.09606	52.92	173.93	500.58	1.1201	617.06	Down	6.4 6.4	Hot S/U -
12:41	18.91	8.94	26.51	0.09743	54.34	165.83	491.66	1.1001	613.53	Down	· · · · · · · · · · · · · · · · · · ·	Hot S/U
12:42	18.96	8.86	26.95	0.09905	52.99	162.30	493.59	1.1044	590.89	Down	6.4	Hot S/U -
12:43	Down	Down	Down	Down	Down	Down	Down	Down	Down	Down	6.6 Down	Hot S/U 🗸
12:44	Down	Down	Down	Down	Down	Down	Down	Down	Down	Down	Down	Down
12:45	Down	Down	Down	Down	Down	Down	Down	Down	Down	Down		Down
12:46	Down	Dewn	Down	Down	Down	Down	Down	Down	Down	Down	Down Down	Down
12:47	Down	Down	Down	Down	Down	Down	Down	Down	Down	Down		Down
12:48	Down	Down	Down	Down	Down	Down	Down	Down	Down	Down	Down	Down
12:49	Down	Down	Down	Down	Down	Down	Down	Down	Down	Down	Down	Down
12:50	Down	. Down	Down	Down	Down	Down	Down	Down	Down	Down	Down	Down
12:51	Down	Down	Down	Down	Down	Down	Down	Down	Down	Down	Down	Down
12:52	Down	Down	Down	Down	Down	Down	Down	Down	Down		Down	Down
12:53	Down	Down	Down	Down	Down	Down	Down	Down	Down	Down	Down	Down
12:54	Down	Down	Down	Down	Down	Down	Down	Down	Down	Down	Down	Down
12:55	Down	Down	Down	Down	Down	Down	Down	Down	Down	Down	Down	Down
12:56	Down	Down	Down	Down	Down	Down	Down	Down	-	Down	Down	Down
12:57	Down	Down	Down	Down	Down	Down	Down	Down.	Down	Down	Down	Down
12:58	Down	Down	Down	Down	Down	Down			Down	Down	Down	Down
12:59	Down	Down	Down	Down	Down	Down	Down Down	Down Down	Down Down	Down Down	Down Down	Down Down
verage	17.8	18.7	0.0 *	Down *		1183.7	2252.8	5.0408		Down	7,2	Hot S/U
Total Hr Ring					Down*		NSD *	Down*	2451,99 Down *	Down*	f.£	notoro

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* - Excluding Startup and Shutdown

CeDAR Reports 7/23/2014 6:04 AM, Turbine-2 Hourly Emissions Report

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VPPENDIX 2

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REVISED REPORT

Metcaif San Jose, CA **Turbine-2 Hourly Emissions Report** July 22, 2014 - Hour 11

			1-Hr Emis 15% O2 - 2.5 * Btu - 0.00904 *	ssion Limits NOx lb	ion Limits NOx lb/hr - 19.2 *		3-Hr Rolling Emiss CO ppm @15% O2 - 4 * CO lb/mmBtu - 0.0088 *			- 18.7 * 215% O2 - 5 *		
Minute	02%	NOx ppm	NOx ppm @15% O2	NOx Ib/mmBtu	NOx Ib/hr	CO ppm	CO ppm @15% Q2	CO Ib/mmBtu	CO lb/hr	NH3 ppm Slip @15% O2	SCR NOx	Process Status
11:00	Down	Down	Down	Down	Down	Down	Down	Down	Down	Down	Down	Down
11:01	Down	Down	Down	Down	Down	Down	Down	Down	Down	Down	Down	Down
11:02	Down	Down	Down	Down	Down	Down	Down	Down	Down	Down	Down	Down
11:03	Down	Down	Down	Down	Down	Down	Down	Down	Down	Down	Down	. Down
11:04	Down	Down	Down	Down	Down	Down	Down	Down	Down	Down	Down	Down
11:05	Down	Down	Down	Down	Down	Down	Down	Down	Down	Down	Down	Down
11:06	Доwл	Down	Down	Down	Down	Down	Down	Down	Down	Down	Down	Down
11:07	Down	Down	Down	Down	Down	Down	Down	Down	Down	Down	Down	Down
11:08	Down	Down	Down	Down	Down	Down	Down	Down	Down	Down	Down	Down
11:09	Down	Down	Down	Down	Down	Down	Down	Down	Down	Down	Down	Down
11:10	Down	Down	Down	Down	Down	Down	Down	Down	Down	Down	Доми	Down
11:11	Down	Down	Down	Down	Down	Down	Down	Down	Down	Down	Down	Down
11:12	Down	Down	Down	Down	Down	Down	Down	Down	Down	Down	Down	Down
11:13	Down	Down	Down	Down	Down	Down	Down	Down	Down	Down	Down	Down
11:14	DCal	DCal	DCal	DCal	DCal	DCal	DCal	DCal	DCal	DCal	DCal	Down
11:15	DCal	DCal	DCai	DCal	DCal	DCal	DCal	DCal	DCal	DCal	DCal	Down
11:16	DCal	DCal	DCai	DCal	DCal	DCal	DCai ·	DCal	DCal	DCal	DCal	Down
11:17	DCal	DCal	DCal	DCai	DCal	DCal	DCai	DCal	DCal	DCal	DCal	Down
11:18	DCal	DCal	DCal	DCal	DCal	DCal	DCal	DCai	DCal	DCal	DCal	Down
11:19	DCal	DCal	DCal	DCal	DCal	DCal	DCal	DCai ·		DCal	DCal	Down
11:20	DCal	DCal	DCal	DCal	DCal	DCal	DCal	DCal	DCal	DCal	DCal	Down
11:21	DCai	DCal	DCal	DCal	DCal	DCal	DCal	DCal	DCal	DCal	DCal	Down
11:22	DCal	DCal	DCal	DCal	DCal	DCal	DCal	DCal	DCal	DCal	DCai	
11:23	DCal	DCal	DCal	DCal	DCal	DÇal	DCal	DCal	DCal	DCal	DCal	Down
11:24	DCal	DCal	DCal	DCal	DCal	DCal	DCal	DCal	DCal	DCal	DCal	Down
11:25	DCal	DCal	DCal	DCal	DCal	DCal	DCal	DCal	DCal	DCal	DCal	Down Down
11:26	DCal	DCal	DCal	DCal	DCal	DCal	DCal	DCal	DCal	DCal	DCal	Down
· 11:27	DCal	DCal	DCal	DCai	DCal	DCal	DCal	DCal	DCal	DCal	DCal	
11:28	DCai	DCal	DCal	DCal	DCal	DCal	DCal	DCal	DCal	DCal		Down
11:29	DCal	DCal	DCal	DCal	DCal	DCal	DCal	DCal	DCal		Down	Down
1	L .		•				Dual	17Gall	ucai	DCal	Down	Down

CeDAR Reports 7/25/2014 11:18 AM, Turbine-2 Hourty Emissions Report

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Minute	02%	NOx ppm	NOx ppm @15% O2	NOx Ib/mmBtu	NOx lb/hr	CO ppm	CO ppm @15% O2	CO lb/mmBtu	CO lb/hr	NH3 ppm Slip @15% O2	SCR NOx	Process Status
11:30	DCal	DCal	DCal	DCal	DCal	DCai	DCal	DCal	DCal	DCal	Down	Down
11:31	DCal	DCal	DCai	DCal	DCal	DCal	DCal	DCal	DCal	DCal	Down	Down
11:32	DCal	DCal	DCal	DCal	DCal	DCal	DCal	DCal	DCal	DCai	Down	Down
11:33	DCal	DCal	DCal	DCal	DCal	DCal	DCal	DCal	DCal	DCal	Down	Down
11:34	DCal	DCal	DCal	DCal	DCal	DCal	DCal	DCal	DCal	DCal	Down	Down
11:35	DCal	DCal	DCal	DCal	DCal	DCal	DCal	DCal	DCal	DCal	Down	Down
11:36	DCal	DCal	DCal	DCai	DCal	DCal	DCal	DCal	DCal	DCal	Down	Down
11:37 .	DCal	DCal	DCai	DCai	DCal	DCai	DCal	DCai	DCal	DCal	Down	Down
11:38	Down	Down	Down	Down	Down	Down	Down	Down	Down	Down	Down	Down
11:39	Down	Down	Down	Down	Down	Down	Down	Down	Down	Down	Down	Down
11:40	Down	Down	Down	Down	Down	Down	Down	Down	Down	Down	Down	Down
11:41	Down	Down	Down	Down	Down	Down	Down	Down	Down	Down	Down	Down
11:42	Down	Down	Down	Down	Down	Down	Down	Down	Down	Down	Down	Down
11:43	Down	Down	Down	Down	Down	Down	Down	Down	Down	Down	Down	Down
11:44	Down	Down	Down	Down	Down	Down	Down	Down	Down	Down	Down	Down
11:45	Down	Down	Down	Down	Down	Down	Down	Down	Down	Down	Down	Down
11:46	Down	Down	Down	Down	Down	Down	Down	Down	Down	Down	Down	Down
11:47	Down	Down	Down	Down	Down	Down	Down	Down	Down	Down	Down	Down
11:48	Down	' Down	Down	Down	Down	Down	Down	Down	Down	Down	Down	Down
11:49	Down	Down	Down	Down	Down	Down	Down	Down	Down	Down	Down	Down
11:50	20.95	0.00	Inval	Inval	inval	0.00	Inval	Inval	Invat	Down	0.0	Hot S/U
11:51	20.77	0.00	Inval	Invai	Inval	0.23	Inval	Inval	Invai	Down	0.4	Hot S/U
11:52	18.21	3.33	7.30	0.02685	4.93	258.93	567.91	1.2707	233.35	Down	1.0	Hot S/U
11:53	18.20	4.87	10.64	0.03912	8.60	799.88	1747.89	3,9110	860.06	Down	1.0	Hot S/U
11:54	18.00	5.80	11.80	0.04338	11.41	909.07	1849.49	4.1383	1088.29	Down	1.1	Hot S/U
11:55	17.99	7.33	14.86	0.05463	16.72	939.70	1905.23	4.2630	1304.74	Down	1.4	Hot S/U
11:56	17.99	8.78	17.80	0.06544	24.92	960.68	1947.77	4.3582	1659.93	Down	1.6	Hot S/U
11:57	.17.99	9.87	20.01	0.07356	31.85	998.72	2024.90	4.5308	1961.91	Down	1.8	Hot S/U
11:58	18.15	10.39	22.29	0.08194	39.01	1103.10	2366.65	5.2955	2521.12	Down	2,1	Hot S/U
11:59	18.13	11.66	24.84	0.09129	48.01.	1181.42	2516.38	5.6305	2961.42	Down	2.1	Hot S/U Hot S/U
Average Total	18.6	6.2	0.0 *	DCal *		715.2	1834.6	4.1051		Down	1,3	Hot S/U
3-Hr Ring					DCal *		NSD*	Down*	213.59 Down *	Down *		

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* - Excluding Startup and Shutdown

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Metcalf San Jose, CA Turbine-2 Hourly Emissions Report July 22, 2014 - Hour 12

		NOx ppm @	15% 02-2.5*	sion Limits NOx Ib	sion Limits NOx Ib/hr - 19.2 *		3-Hr R 0m @15% O2 - 4	Iolling Emissi	on Limits CO (b/hr -	49.7 *		
		NOx ib/mm	Btu - 0.00904 *		······	CO 16	/mmBtu - 0.0086		H3 Slip ppm @			
Minute	02%	NOx ppm	NOx ppm @15% O2	NOx Ib/mmBtu	NOx ib/hr	CO ppm	СО ррт @15% О2	CO lb/mmBtu	CO lb/hr	NH3 ppm Slip @15% O2	SCR NOx	Process Status
12:00	18.53	12.05	30.00	0.11027	60.25	1090.65	2715.12	6.0752	3319.31	Down	2.4	Het C/l 1
12:01	18.62	12.74	32.97	0.12119	67.31	920.95	2383.16	5.3324	2961.83	Down	2. 4 2.6	Hot S/U Hot S/U
12:02	18.58	14.33	36.44	0.13396	74.10	953.62	2425.15	5.4264	3001.73	Down	2.0 3.1	Hot S/U
12:03	18.59	15.31	39.10	0.14374	79.19	970.00	2477.49	5.5435	3053.92	Down	3.5	Hot S/U
12:04	18.59	16.02	40.92	0.15041	85.59	979.17	2500.91	5.5959	3184.30	Down	3.8	Hot S/U Hot S/U
12:05	18.58	16.35	41.58	0.15285	86.63	983.12	2500.18	5.5942	3170.63	Down	4.2	Hot S/U
12:06	18.52	17.00	42.14	0.15492	89.91	1034.92	2565.56	5.7405	3331.63	Down	4.6	Hot S/U
12:07	18.44	17.82	42.74	0.15711	92.96	1102.98	2645.36	5,9191	3502.41	Down	5.1	Hot S/U
12:08	18.37	18.66	43.52	0.15996	96.83	1180.75	2753.53	6.1611	3729.39	Down	5.6	Hot S/U
12:09	18.29	19.37	43.79	0.16096	98.89	1248.33	2821.90	6.3141	3879.28	Down	5.8 6.2	Hot S/U
12:10	18.22	20.15	44.36	0.16307	102.04	1316.02	2897.21	6.4826	4056,25	Down	6.7	Hot S/U
12;11	18.14	20.86	44.59	0.16392	104.43	1381.48	2953.16	6.6078	4209.53	Down	7.2	Hot S/U
12:12	18.06	21.50	44.67	0.16419	106.83	1445.60	3003.18	6.7197	4372.21	Down	7.7	Hot S/U
12:13	17.98	22.18	44.82	0.16474	109.43	1518.15	3067.49	6.8636	4559.18	Down	8.3	Hot S/U
12:14	17.89	22.48	44.06	0.16198	109.80	1593.92	3124.29	6.9907	4738.69	Down	8.9	Hot S/U
12:15	17.80	22.82	43.43	0.15965	110.03	1660.08	3159.51	7.0695	4872.27	Down	9.3	Hot S/U
12:16	17.71	23.13	42.78	0.15726	110.88	1710.28	3163,21	7.0778	4990.32	Down	9.8	Hot S/U
12:17	17.63	23.27	41.99	0:15434	110.57	1755.00	3166.51	7.0852	5075.82	Down	9.8 10.1	Hot S/U
12:18	17.55	23,40	41.21	0.15149	110.59	1780.80	3136.33	7.0177	5122.91	Down	10.1	Hot S/U
12:19	17.46	23.56	40.41	0.14854	110.46	1785.70	3062.68	6.8529	5095.87	Down	10.1	Hot S/U Hot S/U
12:20	17.37	23.67	39.56	0.14543	109.79	1777.23	2970.44	6.6465	5017.70	Down	10.0 9.8	Hot SAU Hot S/U
12:21	17.28	23.80	38.79	0.14259	109.26	1749.15	2850,83	6.3788	4887.94	Down	9.8 9.5	
12:22	17.20	23.73	37.84	0.13910	.108.48	1715.75	2735.93	6.1217	4007.94		9.5 9.1	Hot S/U
12:23	17.11	23,57	36.69	0.13488	106.72	1670.07	2599.85	5.8173	4602.71	, Down		Hot S/U
12:24	17.02	23.26	35.37	0.13002	104.35	1614.47	2555.05	5.6173		, Down	8.7	Hot S/U
12:25	16.93	23.06	34.27	0.12598	104.55				4408.49	Down	8.3	Hot S/U
12:26	16.84	23.39	33.99	0.12595	102.55	1557.40 1501.35	2314.52 2181.77	5.1788	4214.93	Down	8.1	Hot S/U
12:27	16.75	23.80	33.84	0.12495	103.49			4.8818	4028.57	Down	7.9	Hot S/U
12:28	16.66	23.00	· 33.44	0.12438	103.49	1416.55	2013.89	4.5062	3749.26	Down	.7.9	Hot S/U
12:29	16.62	23.36	33.44	0.12292		1301.07	1810.45	4.0510	3425.62	Down	8.0	Hot S/U
·		20.00	32.20	0.11637	101.97	1247.53	1719.73	3.8480	3315.02	Down	8.1	Hot S/U

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Minute	02%	NOx ppm	NOx ppm @15% O2	NOx Ib/mmBtu	NOx lb/hr	CO ppm	CO ppm @15% O2	CO lb/mmBtu	CO lb/hr	NH3 ppm Slip @15% O2	SCR NOx	Process Status
12:30	16.47	22.78	30.34	0.11152	96.83	1371.12	1826.10	4.0860	3547.85	Down		Hot S/U
12:31	16.44	22.18	29.34	0.10786	90.96	1147.82	1518.42	3.3975	2865,29	Down	8.1	Hot S/U
12:32	16.71	20.01	28.18	0.10358	82.42	1265.45	1781.90	3.9871	3172.74	Down	8.2	Shutdown
12:33	17.04	17.8 9	27.34	0.10052	74.29	1124.62	1718.98	3.8463	2842.68	Down	8.1	Shutdown
12:34	17.41	16.71	28.25	0.10384	71.33	1054.90	1783.36	3.9903	2741.04	Down	8.5	Shutdown
12:35	17.76	15.49	29.11	0.10699	· 67.19	967.02	1817.01	4.0656	2553,13	Down	8.5	Shutdown
12:36	18.11	13.65	28.87	0.10611	61.34	683.55	1445.50	3.2344	1869.85	Down	8.0	Shutdown
12:37	18.48	11.16	27.21	0.10002	52.61	409.95	999.46	2.2363	1176.20	Down	7.0	Shutdown
12:38	18.71	9.00	24.25	0.08913	47.49	221.68	597.22	1.3363	711.94	Down	6.6	Shutdown
12:39	18.78	8.96	24.94	0.09166	49.46	188.55	524.74	1.1741	633.51	Down	. 6.4	Shutdown
12:40	18.85	9.08	26.13	0.09606	52.92	173.93	500.58	1.1201	617.06	Down	6.4	Shutdown
12:41	18.91	8.94	26.51	0.09743	54.34	165,83	491.66	1.1001	613.53	Down	6.4	Shutdown
12:42	18.96	8.86	26.95	0.09905	52.99	162,30	493.59	1.1044	590.89	Down	6.6	- Shutdown
12:43	Down	Down	Down	Down	Down	Down	Down	Down	Down	Down	Down	Shutdowr
12:44	Down	Down	Down	Down	Down	Down	Down	Down	Down	Down	Down	Down
12:45	Down	Down	Down	Down	Down	Down	Down	Down	Down	Down	Down	. Down
12:46	Down	Down	Down	Down	.Down	Down	Down	Down	Down	Down	Down	Down
12:47	Down	Down	Down	Down	Down	Down	Down	Down	Down	Down	Down	Down
12:48	Down	Down	Down	Down	Down	Down	Down	Down ·	Down	Down	Down	1
12:49	Down	Down	Down	Down	Down	Down	Down	Down	Down	Down	Down	Down
12:50	Down	Down	Đown	Down	Down	Down	Down	Down	Down	Down	Down	Down
12:51	Down	Down	Down	Down	Down	Down	Down	Down	Down	Down		Down
12:52	Down	Down	Down	Down	Down	Down	Down	Down	Down	Down	Down	Down
12:53	Down	Down	Down	Down	Down	Down	Down	Down	Down		Down	Down
12:54	Down	Down	Down	Down	Down	Down	Down	Down		Down	Down	Down
12:55	Down	Down	Down	Down	Down	Down	Down	Down	Down	Down	Down	Down
12:56	Down	Down	Down	Down .	Down	Down	Down		Down	Down	Down	. Down
12:57	Down	Down	Down	Down				Down	Down	Down	Down	Down
12:58	Down	Down	Down		Down	Down	Down	Down	Down	Down	Down	Down
12:59	Down	Down		Down	Down	Down	Down	Down	Down	Down	Down	Down
. 2.00		DOWN	Down	Down	Down	Down	Down	Down	Down	Down	Down	Down
Average Total	17.8	18.7	0.0 *	Down *	Down *	1183.7	2252.8	5.0408	2454.00	Down	7.2	Hot S/U
3-Hr Ring	· .				LOWII		NSD *	Down*	2451.99 Down *	Down.*		

- Excluding Startup and Shutdown

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CeDAR Reports 7/25/2014 11:18 AM, Turbine-2 Hourly Emissions Report

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		Faxe	1509 70 70
BAY AREA AIRQUALITY MANAGEMENT DISTRICT	COMPLIANCE & ENFORCEMEN RCA NO DGREG		Notification Form Reportable Compliance Activity (RCA)
· .		See back of form t	or instructions \rightarrow
	S REQUESTING BREAKDOWN RELIEF (//y BREAKDOWN REFERENCE #:	(Regulation 1-431	and 1-432)
	NDICATES EXCESS EMISSION or EXCU		522.7, 1-523.3, 1-542)
	S INOPERATIVE (Regulation 1-522.4, 1- ly INOPERATIVE MONITOR REFERENC		
	IS RELEASED FROM RELIEF DEVICE (<i>ly</i> PRD REFERENCE #:	(PRD) (Regulation	n 8-28-401)
SITE INF	ORMATION AND DESCRIPTION INFORM	MATION (REQUIR	ED)
Company	METCALF ENERGY CENTER	Site #	B2183
Address	1 BLANCHARD ROAD, COYOTE	Source #	S2
Reported by	ROSEMARY SILVA	Phone #	408-361-4954
Indicated Excess	2.6 NOx ppm and 0.0094 lb./mmBTU	Fax #	408-361-4949
Allowable Limit	2.5 NOx ppm and 0.00904 lb./mmBTU 8/7/2014 12:00pm	Averaging Time	1-HR
Start Time/Date Monitor/device type(s)	X CEM CLM Parame	Clear Time tric ►PRD	1:00pm
Monitor description(s)			► Non-monitor
	D D Dpacity D Lead D ► Akthrough (VOC) D Temperature ► Steam	H ₂ S ► TRS Gauge Pressure ► Wind Speer X ► Other (descrit	►Flow
X ▶ppm ▶ppb ▶psig ▶pH	→ min/hr > 20%	▶inches H₂O ▶Other (describe) Ib	►mmHg ./mmBTU
Event Description: The DAHS indicated that, on limits were exceeded. Investig	8/7/2014 from 1200-1300 CEMS time, the NOx ppn gation is underway.	n and NOx lb. /mmBTl	J one-hour emissions

	District Us	e Only		
Received by		Date	Time	

1 Blanchard Rd. Coyote, CA 95013

September 5, 2014

Mr. Wayne Kino (wkino@baaqmd.gov) Director, Enforcement and Compliance Division Bay Area Air Quality Management District 939 Ellis Street San Francisco, CA 94109

RE: Metcalf Energy Center, LLC Permit No. B2183 Major Facility Review Permit (Title V Permit) 30-Day Title V Non-Compliance Report – RCA No. 06R50

Dear Mr. Kino:

In accordance with the Major Facility Review Permit (Title V Permit) for the Metcalf Energy Center (the "Facility"), this letter is intended to satisfy the 30-day follow-up reporting requirement as required by Section I.F of the Title V Permit. The Title V Permit initial 10-day notification for this event was previously submitted to the District on August 8, 2014.

On August 7, 2014, Combustion Turbine #2 experienced an indicated excess of the NO_x 1-hour rolling average emission limit of 2.5 ppm and the NOx lb./mmBTU 1-hour rolling average emission limit of 0.00904, as stated in Condition 20a of the Title V Permit. At 1119 hours (CEMS time), Unit 2 began a daily calibration. However, during the calibration the NOx inlet analyzer pump failed and caused the calibration to fail. The CEMS was placed into maintenance to replace the failed pump at 1137 hours and remained in maintenance until 1221 hours, at which time a manual calibration was performed. The CEMS returned to normal operations at 1245 hours and was well in compliance with permit limits until 1247 hours. As the emissions control system attempted to balance itself after coming out of maintenance, the emissions increased above permit limits from 1247 to 1254 hours before finally stabilizing in compliance at 1255 hours. As presented in Table I, the CEMS was in operation for a total of 15 minutes during hour 1200, and the reported NOx emissions were 2.6 ppm and 0.0094 lb./MMBtu.

During normal CEMS operation periods, the NOx emissions are managed by adjusting the ammonia flow based on the NOx emission concentration exiting the stack. However, during CEMS maintenance periods, when the NOx emissions are not known, the ammonia flow is controlled by a predictive methodology that is based on the combustion turbine fuel valve position. This predictive methodology helps ensure that the NOx emissions do not spike if the unit load changes substantially during the CEMS maintenance period.

During the event on August 7, 2014, the emissions control system took several minutes to stabilize the NOx emissions after coming out of CEMS maintenance. During the last few minutes of the system's calibration, the unit load, and correspondingly the heat input, was decreasing. As designed, the predictive control system began to decrease ammonia injection. Then, immediately after the CEMS completed calibration, unit load and heat input began to ramp up. Because the ammonia valve had already received a signal to decrease flow, the system took several minutes to adjust and to begin increasing ammonia flow in accordance with the load change. This period resulted in eight minutes of higher than 2.5 ppm NOx emissions.

The predictive methodology worked as designed during the event, however, because the hour only consisted of 15 data points, the few minutes of high emissions data resulted in an indicated excess emissions event that was not accurately representative of an average for the entire hour. Had the hourly average emissions been calculated for the entire hour (as opposed to only 15 minutes of data), based on data substitution for a similar operating hour, the average emissions for hour 1200 would have been 1.9 ppm and 0.00697 lb/MMBiu – well within the permit limits as presented in Table 2. Based on inlet NOx, heat input and ammonia flow, the NOx emissions during hour 1000 on April 14, 2014 were used to substitute stack NOx data for the periods of maintenance and calibration observed on August 7, 2014 during hour 1200. As presented in the attached Table 2, the average NOx emissions are substituted for the maintenance and calibration periods during hour 1200 on August 7, 2014, the average NOx emissions are actually 1.9 ppm and 0.00616 lb./mmBTU, which are below the permit limits.

In sum, the fifteen data points collected during the event do not provide an accurate assessment of the hourly emissions during hour 1200 on August 7, 2014. This is further supported by the Federal CEMS regulations contained in 40 CFR Parts 60 and 75, which require the collection of a minimum of 2 data points separated by at least 15 minutes in time to validate a clock hour of data. For example, had the CEMS been in operation for only one more minute during the subject hour 1200 and included the value of 0.71 ppm and 0.00261 lb./mmBTU (note these values were taken from the first data point in the following 1300 hour), the hourly average as calculated by the

Mr. Wayne Kino Director, Enforcement and Compliance Division September 2, 2014 Page 2

DAHS would have been 2.4 ppm and 0.00897 lb./mmBTU, in compliance with the permit limits. By utilizing data substitution during the hour 1200 maintenance period, the facility has demonstrated that the actual NOx emissions during hour 1200 were well below the 2.5-ppm and 0.0094 lb./mmBTU permit limit, and that no actual excess emissions occurred.

To help ensure that indicated excess emissions do not occur during similar operating scenarios in the future, the facility is in the process of further tuning the predictive NOx control methodology, so that emissions remain more stable when the system is transitioning between the predictive and normal NOx control methodologies.

If you have any questions or require additional information, please contact Rosemary Silva, EHS Specialist, at 408-361-4954.

Based on information and belief formed after reasonable inquiry, the statements and information in this document are true, accurate and complete.

Sincerely,

my Mhan

Terry Mahoney Authorized Representative and General Manager Metcalf Energy Center, LLC

Attachments

CC: Bruce Carlson, Calpine David Williams, Calpine Barbara McBride, Calpine Katherine Piper, Calpine

	(Turbine - 2) Process		(Turbine - 2) Normal	SURED DATA	(Turbine - 2) Total	······	ana manganan na <u>ma</u>
limestamp	Code 1-Min	ppm @15% O2 1-	Ops NOx lb/mmBtu	(Turbine - 2) SCR NOx ppm 1-Min	Heat Input	(Turbine - 2) Megawatts 1-Min	(Turbine - 2) Ni Flow 1-Min lb/
2/7/2014 12:00		Min	1-Min		mmBtu/hr 1-Min		
3/7/2014 12:00	8		MAINT	MAINT	1629.3	147	220.4
3/7/2014 12:01	8		MAINT	MAINT	1622.4	146.7	216.
3/7/2014 12:02	8	MAINT	MAINT	MAINT	1622.4	146.7	217.3
3/7/2014 12:03	8	MAINT	MAINT	MAINT	1624.7	146.5	216.
3/7/2014 12:04	8	MAINT	MAINT	MAINT	1624.7	146.5	216.
3/7/2014 12:05	8	MAINT	MAINT	MAINT	1627	146.7	216.
/7/2014 12:06	8	MAINT	MAINT	MAINT	1624.7	146.7	216.
/7/2014 12:07	8	MAINT	MAINT	MAINT	1640.8	148.8	216.
/7/2014 12:08	8	MAINT	MAINT	MAINT	1686.6	153.5	223.
/7/2014 12:09	8	MAINT	MAINT	MAINT	1730.2	158.3	233.
/7/2014 12:10	8	MAINT	MAINT	MAINT	1750.8	160.6	240.
/7/2014 12:11	8	MAINT	MAINT	MAINT	1759.9	161.4	246
/7/2014 12:12	8	MAINT	MAINT	MAINT	1759.9	161.5	246.
/7/2014 12:13	8	MAINT	MAINT	MAINT	1759.9	161.2	246.
/7/2014 12:14	8	MAINT	MAINT	MAINT	1755.4	160.8	247.1
/7/2014 12:15	8	MAINT	MAINT	MAINT	1750.8	160.1	245.
/7/2014 12:16	8	MAINT	MAINT	MAINT	1716.4	156.6	244.
/7/2014 12:17	8	MAINT	MAINT	MAINT	1670.6	151.2	239.
/7/2014 12:18	8	MAINT	MAINT	MAINT	1636.2	148.8	229.
/7/2014 12:19	8	MAINT	MAINT	MAINT	1640.8	148.7	222.
/7/2014 12:20	8	MAINT	MAINT	MAINT	1638.5	148.7	220.0
/7/2014 12:21	8	MAINT	MAINT	MAINT	1640.8	148.8	218.0
/7/2014 12:22	8	CAL	CAL	CAL	1640.8	148.0	218.
/7/2014 12:23	8	CAL	CAL	CAL	1640.8	149.1	218.2
7/2014 12:24	8	CAL	CAL	CAL	1640.8	149.3	
/7/2014 12:25	8	CAL	CAL	CAL	1645.4	149.5	217.
7/2014 12:26	8	CAL	CAL	CAL	1647.6		217.3
7/2014 12:27	- 8	CAL	CAL	CAL	1645.4	149.4	217.0
7/2014 12:28	8	CAL	CAL	CAL	1656.8	149.2	218.5
7/2014 12:29	8	CAL	CAL	CAL	1702.6	<u>151.1</u>	221.6
7/2014 12:30	8	CAL	CAL	CAL	1702.8	155.5	229.9
7/2014 12:31	8	CAL	CAL	CAL		159.2	237.6
7/2014 12:32	8	CAL	CAL	CAL	1741.6	159.7	241.7
7/2014 12:33	8	CAL	CAL		1746.2	159.7	244.3
7/2014 12:34	8	CAL	CAL	CAL	1748.5	159.8	245.
7/2014 12:35	8	CAL			1727.9	157.6	243.9
7/2014 12:36			CAL	20.9	1700.4	155.2	240.6
7/2014 12:38	8	CAL	CAL	20.9	1695.8	154.5	238.6
7/2014 12:38	8	CAL	CAL	21.3	1691.2	154.6	237.5
	8	CAL	CAL	20.3	1688.9	154.1	238.7
7/2014 12:39	8	CAL	CAL	20.8	1688.9	153.7	237.8
7/2014 12:40	8	CAL	CAL	21.2	1686.6	154.2	237.3
7/2014 12:41	8	CAL	CAL	21.2	1686.6	153.8	237.8
7/2014 12:42	8	CAL	CAL	20.9	1688.9	153.8	236.6
7/2014 12:43	8	CAL	CAL	21	1672.9	152	236.5
7/2014 12:44	8	CAL	CAL	20.9	1652.2	150.1	230.9
7/2014 12:45	8	1.60	0.0059	21.1	1684.3	153.9	201.4
7/2014 12:46	8	1.86	0.0068	21.4	1718.7	157.6	160.8
7/2014 12:47	8	2.64	0.0097	22	1730.2	158	151.
7/2014 12:48	8	3.36	0.0124	22.3	1730.2	158.1	152.0
7/2014 12:49	8	3.64	0.0134	21.5	1725.6	158.2	157.2
7/2014 12:50	8	3.65	0.0134	21.6	1723.3	157.6	165.1
7/2014 12:51	8	3.70	0.0136	21.7	1739.3	159.2	175.6
7/2014 12:52	8	3.65	0.0134	21.9	1759,9	161.2	209.3
7/2014 12:53	8	3.46	0.0127	22,2	1764.5	161.5	
7/2014 12:54	8	2.84	0.0104	22.5	1766.8	161.5	250.4
7/2014 12:55	8	2.19	0.0080	22.9	1764.5		285.20
7/2014 12:56	8	1.86	0.0069	22.3		161.6	291.4
7/2014 12:57	8	1.80	0.0055		1764.5 1764 5	161.9	304.48
7/2014 12:58	8	1.49		22.4	1764.5	161.9	316.34
	8	1.32	0.0048	22.8	1741.6	159.1	318.44
7/2014 12:59			0.0040	20.8	1663.7	150.6	330.91

			able 2: CeDAR 1-Mir	nute Data			
Timestamp	(Turbine - 2) Process Code 1-Min	(Turbine - 2) NOx ppm @15% O2 1- Min	(Turbine - 2) Normal Ops NOx lb/mmBtu 1-Min	(Turbine - 2) SCR NOx ppm 1-Min	(Turbine - 2) Total Heat Input mmBtu/hr 1-Min	(Turbine - 2) Megawatts 1-Min	(Turbine - 2) NH3 Flow 1-Min lb/hr
4/14/2014 10:00	8	1.89	0.0069	24.5	1613	146.8	197.78
4/14/2014 10:01	8	2.06	0.0076	25.2	1660.8	151.6	205.15
4/14/2014 10:02	8	2.17	0.008	25.4	1704.1	157	214.94
4/14/2014 10:03	8	1.79	0.0066	23.5	1708.7	157.6	218.21
4/14/2014 10:04	8	1.34	0.0049	22	1692.7	155.6	210.47
4/14/2014 10:05	8	1.42	0.0052	23.7	1676.8	153.8	205.2
4/14/2014 10:06	8	1.76	0.0065	25.6	1663.1	151.7	207.07
4/14/2014 10:07	8	1.91	0.007	26	1640.3	149.4	213.27
4/14/2014 10:08	8	1.89	0.0069	26	1617.5	146.3	215.31
4/14/2014 10:09 4/14/2014 10:10	8 8	1.82	0.0067	25.8	1585.6	143	217.44
4/14/2014 10:10	8	1.69 1.63	0.0062	25.8	1556	139.5	216.77
4/14/2014 10:12	8	1.59	0.006 0.0058	25.8	1531	136.1	214.64
4/14/2014 10:13	8	1.55	0.0055	25.8 25.4	1503.6 1528.7	133.4	212.56
4/14/2014 10:14	8	1.52	0.0056	25.4	1528.7	136.5 140.9	209.42
4/14/2014 10:15	8	1.56	0.0057	25.1	1603.9	145.5	209.08 209.1
4/14/2014 10:16	8	1.64	0.006	25.1	1647.2	145.5	209.1
4/14/2014 10:17	8	1.79	0.0066	25.7	1688.2	156.2	209.7
4/14/2014 10:18	8	1.71	0.0063	24.6	1690.4	155.2	215.79
4/14/2014 10:19	8	1.65	0.006	24.4	1688.2	154.8	213.3
4/14/2014 10:20	8	1.61	0.0059	24.4	1681.3	154.1	209.01
4/14/2014 10:21	8	1.73	0.0064	25.3	1676.8	15 3.1	208.46
4/14/2014 10:22	8	1.81	0.0066	25.4	1667.7	152.2	210.72
4/14/2014 10:23	8	1.82	0.0067	25.8	1667.7	152.3	213.39
4/14/2014 10:24	8	1.86	0.0068	25.8	1672.2	152.5	216.11
4/14/2014 10:25	8	1.8	0.0066	25.8	1676.8	153	218.19
4/14/2014 10:26	8	1.81	0.0067	25.3	1681.3	153.4	218.93
4/14/2014 10:27	8	1.73	0.0064	25.8	1685.9	154.2	219.38
4/14/2014 10:28	8	1.75	0.0064	25.7	1683.6	154.1	219.4
4/14/2014 10:29 4/14/2014 10:30	8	1.71	0.0063	25.6	1683.6	153.9	218.73
4/14/2014 10:30	8 8	1.68 1.68	0.0062	25.4	1683.6	153.8	219.08
4/14/2014 10:32	8	1.08	0.0062 0.0065	25.6	1683.6	154	219.73
4/14/2014 10:33	8	1.70	0.0062	26 25.5	1683.6	153.9	219.95
4/14/2014 10:34	8	1.67	0.0062	25.3	1683.6 1681.3	153.6 153.3	221.52
4/14/2014 10:35	- 8	1.59	0.0059	25.4	1679.1	153.5	221.17 218.39
4/14/2014 10:36	8	1.6	0.0059	25.5	1679.1	153.5	218.59
4/14/2014 10:37	8	1.72	0.0063	25.7	1679.1	153.4	217.4
4/14/2014 10:38	8	1.72	0.0063	25.7	1679.1	153.4	217.62
4/14/2014 10:39	8	1.74	0.0064	25.2	1679.1	153.4	218.94
4/14/2014 10:40	8	1.72	0.0063	25.4	1681.3	153.3	217.38
4/14/2014 10:41	8	1.8	0.0066	25.6	1681.3	153.5	217.91
4/14/2014 10:42	8	1.73	0.0064	24.9	1683.6	153.9	218.12
4/14/2014 10:43	8	1.66	0.0061	24.9	1708.7	157.3	217.88
4/14/2014 10:44	8	1.53	0.0056	23.4	1742.8	161.3	215.54
4/14/2014 10:45	8	1.36	0.005	22	1779.3	165.2	207.15
4/14/2014 10:46	8	1.32	0.0049	21.6	1829.4	170.4	200.34
4/14/2014 10:47	8	1.57	0.0058	22.9	1856.8	173.2	199.78
4/14/2014 10:48 4/14/2014 10:49	8	2.25	0.0083	25.8	1865.9	173.9	209.19
4/14/2014 10:49	8 8	2.66	0.0098	26.9	1861.3	173.4	222.69
4/14/2014 10:51	8	2.6 2.16	0.0095 0.0079	26.5 25.3	1852.2	172.4	236.47
4/14/2014 10:52	8	1.81	0.0067	25.3 24.8	1843.1 1849.9	171.5	239.69
4/14/2014 10:53	8	1.65	0.0061	24.8	1849.9	172.4	236.48
4/14/2014 10:54	8	1.05	0.0045	24.1 20.1	1829.4 1811.2	170.5	236.03
4/14/2014 10:55	8	0.8	0.0029	19.1	1811.2	168.8 167.7	225.3
4/14/2014 10:56	8	0.8	0.003	18.7	1790.7	166.8	203.93 189.56
4/14/2014 10:57	8	0.86	0.0032	18.5	1783.8	165.8	178.58
4/14/2014 10:58	8	1.02	0.0037	18.9	1751.9	162.7	169.08
4/14/2014 10:59	8	1.23	0.0045	19.3	1706.4	157	162.04
		1.7	0.00616	24.5	1697.7	155.7	212.9
							· ;

1000 - 00 - 00 - 00 - 00 - 00 - 00 - 00			(Turbine - 2) Normal				
limestamp	(Turbine - 2) Process	(Turbine - 2) NOx ppm	Ops NOx lb/mmBtu	(Turbine - 2) SCR NOx	(Turbine - 2) Total	(Turbine - 2)	(Turbine -
meatump	Code 1-Min	@15% O2 1-Min		ppm 1-Min	Heat Input	Megawatts 1-Min	NH3 Flow 1
8/7/2014 12:00	8	1.7	1-Min 0.00616	BAAINT	mmBtu/hr 1-Min	-	lb/hr
8/7/2014 12:01	8	1.7		MAINT	1629.3	147	22
3/7/2014 12:02	8	1.7	0.00616	MAINT	1622.4	146.7	2:
3/7/2014 12:02	8	1.7	0.00616 0.00616	MAINT	1622.4	146.7	2:
3/7/2014 12:03	8	1.7		MAINT	1624.7	146.5	2:
3/7/2014 12:04	8	1.7	0.00616 0.00616	MAINT	1624.7	146.5	2:
3/7/2014 12:05	8			MAINT	1627	146.7	2:
3/7/2014 12:00	8	1.7	0.00616	MAINT	1624.7	146.7	2:
3/7/2014 12:08	8	1.7	0.00616	MAINT	1640.8	148.8	2:
3/7/2014 12:08 3/7/2014 12:09		1.7	0.00616	MAINT	1686.6	153.5	22
3/7/2014 12:09 3/7/2014 12:10	8	1.7	0.00616	MAINT	1730.2	158.3	2
5/7/2014 12:10 5/7/2014 12:11		1.7	0.00616	MAINT	1750.8	160.6	24
7/2014 12:11	8	1.7	0.00616	MAINT	1759.9	161.4	2
	8	1.7	0.00616	MAINT	1759.9	161.5	24
/7/2014 12:13	8	1.7	0.00616	MAINT	1759.9	161.2	24
/7/2014 12:14	8	1.7	0.00616	MAINT	1755.4	160.8	24
/7/2014 12:15	8	1.7	0.00616	MAINT	1750.8	160.1	24
/7/2014 12:16	8	1.7	0.00616	MAINT	1716.4	156.6	24
/7/2014 12:17	8	1.7	0.00616	MAINT	1670.6	151.2	23
/7/2014 12:18	8	1.7	0.00616	MAINT	1636.2	148.8	22
/7/2014 12:19	8	1.7	0.00616	MAINT	1640.8	148.7	22
/7/2014 12:20	8	1.7	0.00616	MAINT	1638.5	148.7	22
/7/2014 12:21	8	1.7	0.00616	MAINT	1640.8	148.8	21
/7/2014 12:22	8	1.7	0.00616	CAL	1640.8	149	21
/7/2014 12:23	8	1.7	0.00616	CAL	1640.8	149.1	21
/7/2014 12:24	8	1.7	0.00616	CAL	1640.8	149.3	21
/7/2014 12:25	8	1.7	0.00616	CAL	1645.4	149.6	21
/7/2014 12:26	8	1.7 ·	0.00616	CAL	1647.6	149.4	21
7/2014 12:27	8	1.7	0.00616	CAL	1645.4	149.2	21
/7/2014 12:28	8	1.7	0.00616	CAL	1656.8	151,1	22
/7/2014 12:29	8	1.7	0.00616	CAL	1702.6	155.5	22
/7/2014 12:30	8	1.7	0.00616	CAL	1737	159.2	23
/7/2014 12:31	8	1.7	0.00616	CAL	1741.6	159.7	24:
7/2014 12:32	8	1.7	0.00616	CAL	1746.2	159.7	24
7/2014 12:33	8	1.7	0.00616	CAL	1748.5	159.8	24
7/2014 12:34	8	1.7	0.00616	CAL	1727.9	157.6	243
7/2014 12:35	8	1.7	0.00616	20.9	1700.4	155.2	240
7/2014 12:36	8	1.7	0.00616	20.9	1695.8	154.5	23
7/2014 12:37	8	1.7	0.00616	21.3	1691.2	154.6	237
7/2014 12:38	8	1.7	0.00616	20.3	1688.9	154.1	238
7/2014 12:39	8	1.7	0.00616	20.8	1688.9	153.7	237
7/2014 12:40	8	1.7	0.00616	21.2	1686.6	154.2	237
7/2014 12:41	8	1.7	0.00616	21.2	1686.6	153.8	237
7/2014 12:42	8	1.7	0.00516	20.9	1688.9	153.8	236
7/2014 12:43	8	1.7	0.00616	21	1672.9	155.0	236
7/2014 12:44	8	1.7	0.00616	20.9	1652.2	150.1	230
7/2014 12:45	8	1.6	0.0059	21.1	1684.3	153.9	201
7/2014 12:46	8	1.86	0.0068	21.4	1718.7	155.5	160
7/2014 12:47	8	2.64	0.0097	22	1730.2	158	15
7/2014 12:48	8	3.36	0.0124	22.3	1730.2	158.1	152
7/2014 12:49	8	3.64	0.0124	22.5	1725.6	158.2	
7/2014 12:50	8	3.65	0.0134	21.5	1723.3	158.2	157 165
7/2014 12:51	8	3.7	0.0136	21.0	1739.3	157.6	
7/2014 12:52	8	3.65	0.0130	21.7	1759.9		175
7/2014 12:52	8	3.46	0.0134			161.2	209
7/2014 12:53	8	2.84	0.0127	22.2	1764.5	161.5	250
7/2014 12:54 7/2014 12:55				22.5	1766.8	161.5	285
	8	2.19	0.008	22.9	1764.5	161.6	291
7/2014 12:56	8	1.86	0.0069	22.3	1764.5	161.9	304
7/2014 12:57	8	1.49	0.0055	22.4	1764.5	161.9	316
7/2014 12:58	8	1.32	0.0048	22.8	1741.6	159.1	318
7/2014 12:59	8	1.1	0.004	20.8	1663.7	150.6	330.

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COMPLIANCE & ENFORCEMENT DIVISION

Notification Form

Reportable Compliance Activity (RCA)

MANAGEMENT DISTRICT	BD#06T000 E	E# 06T001	Compliance Activity (RCA)
		See back of form	for instructions \rightarrow
	REQUESTING BREAKDOW!		1 and 1-432)
	NDICATES EXCESS EMISSIO IY EXCESS or EXCURSION R		1-522.7, 1-523.3, 1-542)
	S INOPERATIVE (Regulation by INOPERATIVE MONITOR R		
	IS RELEASED FROM RELIEF by PRD REFERENCE #:	DEVICE (PRD) (Regulation	on 8-28-401)
SITE INF	ORMATION AND DESCRIPTION	ON INFORMATION (REQUI	RED)
Company	METCALF ENERGY CENTER	Site #	B2183
Address	1 BLANCHARD ROAD, COYOTE	Source #	S1
Reported by	ROSEMARY SILVA	Phone #	408-361-4954
Indicated Excess	14.23 NH3 Slip ppm @ 15% O2	Fax #	408-361-4949
Allowable Limit	5 NH3 Slip ppm @ 15% O2	Averaging Time	3-HR
Start Time/Date	12/30/2014 23:00	Clear Time	23:59
Monitor/device type(s)	►CEM ►GLM X	► Parametric ► PRD	► Non-monitor
Monitor description(s)			
	or not functioning due to inoper		
$\square \triangleright O_2 \square \triangleright H_2 ($			► Flow
► Hydrocarbon Brea ► Wind Direction	ktnrougn (VOC)	am ► Wind Spee	
Unit(s) of Measurement	► Stea		nbe)
X ▶ppm ▶ppb	▶min/hr > 20%	►inches H ₂ O	►mm <u>Hg</u>
▶ psig ▶ pH	► ⁰ Fahrenheit	► Other (describe)	

Event Description:

The DAHS indicated that, on 12/30/2014 from 2300-2359, the NH3 Slip ppm @ 15% O2 three-hour emission limit was exceeded due to a breakdown of the SCR NOx pump. Investigation is underway.

	District Use Only		
Received by	Date	Time	

1 Blanchard Rd. Coyote, CA 95013

January 28, 2015

MAIL STOP: RCA 30-DAY REPORT Compliance and Enforcement Division Bay Area Air Quality Management District 939 Ellis Street San Francisco, CA 94109

Mr. Wayne Kino (wkino@baaqmd.gov) Director, Enforcement and Compliance Division Bay Area Air Quality Management District 939 Ellis Street San Francisco, CA 94109

RE: Metcalf Energy Center, LLC Permit No. B2183 Major Facility Review Permit (Title V Permit) 30-Day Title V Non-Compliance Report and Breakdown Report – RCA Nos. 06T00 and 06T01

To Whom It May Concern:

In accordance with the Major Facility Review Permit (Title V Permit) for the Metcalf Energy Center, LLC (the "Facility"), this letter is satisfies the 30-day follow-up reporting requirements required by Section I.F of the Title V Permit as well as Regulation 1-432 for Breakdown Requests. The breakdown report and the Title V Permit 10-day deviation notification were submitted to the District on December 31, 2014.

On December 30, 2014 during the 2300 hour, Combustion Turbine #1 experienced an indicated excess of the NH3 Slip 3-hour rolling average emission limit of 5 ppm, as stated in Condition 20e of the Title V Permit. The ammonia slip data recorded during this period was not representative of actual emissions, and the actual 3-hour rolling average ammonia slip emissions were within the permit limit.

At 22:48 the SCR NOx ppm values dropped to zero. The SCR NOx concentration is used to calculate NH3 Slip value. Therefore, when the SCR NOx emissions, which typically range from 26 ppm to 33 ppm during normal operations, were recorded as zero, the calculated ammonia slip concentrations dramatically increased. The initial reported SCR NOx and ammonia slip emissions are presented in Table 1.

Troubleshooting on the SCR NOx analyzer began immediately after the operator received a high ammonia slip alarm at 22:48 and determined that the analyzer's internal sample pump had failed. The CEMS was placed into maintenance at 23:04 and a technician was called to the site. Additional troubleshooting efforts identified the cause of the sample pump failure as the failure of the analyzer internal cooling fan. The internal cooling fan and sample pump were replaced, and the CEMS was placed back into service at 01:20.

An estimate of the actual ammonia slip emissions during this event was calculated using SCR NOx data from the most recent period of unit operations at similar process conditions. This data is represented in Table 2 and indicates that actual ammonia slip emissions never exceeded the permit limit.

In order to help prevent this event in the future, the Facility has implemented a new periodic preventative maintenance work order, to replace all the CEMS analyzers internal cooling fans.

If you have any questions or require additional information, please contact Rosemary Silva, EHS Specialist, at 408-361-4954.

MAILSTOP: RCA 30-DAY REPORT Mr. Wayne Kino January 22, 2015 Page 2

Based on information and belief formed after reasonable inquiry, the statements and information in this document are true, accurate and complete.

Sincerely,

6 A Terry Mahoney General Manager

General Manager Metcalf Energy Center, LLC

Cc: Katherine Piper Region IX Eric Veerkamp

Calpine Corp. EPA CEC, AQ-34

		Tables	BROGDAD	EDIDATA		
	<u></u>	Table	the state of the set of the state of the set of the	EDDATA	1. F. Mar and a states	
Timestare	(Turbine - 1)	(Turbine - 1)	(Turbine - 1)	(Turbine - 1)	(Turbine - 1)	(Turbine - 1)
Timestamp	NOx ppm @15% O2		Total Heat Input	NH3 ppm @15% O2	Megawatts 1-Min	NH3 Flow 1-Min
12/30/2014 22:00	1-Min 2.14	1-Min 27.2	mmBtu/hr 1-Min 1841.6	1-Min	•	lb/hr
12/30/2014 22:00		27.2			175	227.63
12/30/2014 22:02		27.5	1843.9		175	227.44
12/30/2014 22:02	2.10	27.5	1843.9		175	227.51
12/30/2014 22:04	2.18		1846.2		175	227.61
12/30/2014 22:05	2.18	27.6 27.8	1846.2	3.33	174.8	229.75
12/30/2014 22:06	2.25	27.8	1846.2	3.3	175	230.02
12/30/2014 22:07	2.23	28.1	1843.9	3.14	175	230.09
12/30/2014 22:08	2.23	28	1846.2 1843.9	3.24 3.54	174.8	232.89
12/30/2014 22:09	2.23	23	1843.9		174.9	233.89
12/30/2014 22:10	2.04	27.3	1845.5	3.69 3.93	174.9	233.94
12/30/2014 22:11	2.02	27.3	1840.2	3.79	175.3 175	233.99
12/30/2014 22:12	1.85	26.7	1869.8	3.9		234.05
12/30/2014 22:13	1.86	26.8	1867.8	3.5	175.1 175	232.2
12/30/2014 22:14	1.94	27.2	1870	3.24	175.1	229.76
12/30/2014 22:15	2.09	27.8	1865.7	2.81		228.44
12/30/2014 22:16	2.19	27.9	1865.6	2.81	175.1 175	226.3 227.65
12/30/2014 22:17	2.25	28.2	1868	2.86	175	227.65
12/30/2014 22:18	2.31	28.4	1867.9	2.86	174.8	
12/30/2014 22:19	2.19	27.6	1863.3	3.57	174.6	229.08
12/30/2014 22:20	2.07	27.1	1867.8	3.72	174.6	231.03
12/30/2014 22:21	2.11	28	1870.2	3.1	174.8	231.21 231.17
12/30/2014 22:22	2.25	28.7	1867.9	2.76	174.8	231.17
12/30/2014 22:23	2.22	28	1863.3	3.31	174.5	231.12
12/30/2014 22:24	2.11	27.6	1863.3	3.66	174.4	232.19
12/30/2014 22:25	2.16	28.3	1867.8	3.04	174.7	234.08
12/30/2014 22:26	2.22	28.1	1843.9	3.77	174.9	232.27
12/30/2014 22:27	2.23	27.7	1841.6	3.89	174.8	234.67
12/30/2014 22:28	2.12	27.4	1839.4	4.01	174.5	234.74
12/30/2014 22:29	2.17	27.9	1839.4	3.75	174.5	235.62
12/30/2014 22:30	2.07	27.4	1841.6	4.1	174.7	236.93
12/30/2014 22:31	2.04	27.9	1843.9	3.6	174.8	235.63
12/30/2014 22:32	2.1	27.9	1839.4	3.6	174.1	234.69
12/30/2014 22:33	2.13	27.7	1832.5	3.97	173.7	236.04
12/30/2014 22:34	2.17	28.4	1837.1	3.54	174	236.25
12/30/2014 22:35	2.22	28.5	1834.8	3.54	174	236.34
12/30/2014 22:36	2.19	28.3	1837.1	3.74	174	237.35
12/30/2014 22:37	2.15	28.1	1834.8	3.92	174.3	238.33
12/30/2014 22:38	2.16	28.4	1837.1	3.69	174.4	238.22
12/30/2014 22:39	2.2	28.6	1834.8	3.56	173.8	238.31
12/30/2014 22:40	2.21	28.5	1834.8	3.75	173.9	238.93
12/30/2014 22:41	2.13	28.1	1834.8	4.17	174	240.25
12/30/2014 22:42	2.06	27.9	1837.1	4.21	174	240.44
12/30/2014 22:43	2	27.9	1834.8	4.17	174.2	240.2
12/30/2014 22:44	2.01	27.8	1834.8	4.02	174	238.11
12/30/2014 22:45	1.97	27.6	1830.2	4.1	173.6	237.95
12/30/2014 22:46	2	27.7	1832.5	3.88	174.1	236.51
12/30/2014 22:47	2.11	25.7	1832.5	5.4	173.9	235.36
12/30/2014 22:48	2.16	1.8	1837.1	23.19	174.6	235.18
12/30/2014 22:49	2.22	0	1841.6	23.22	174.8	221.82
12/30/2014 22:50	2,32	0	1843.9	21.6	175.1	204.37
12/30/2014 22:51	2.71	0	1843.9	22.35	175.2	208.48
12/30/2014 22:52	2.74	0	1846.2	25.81	175	244.5
12/30/2014 22:53	2.18	0	1846.2	25.53	175	246.61

······································	(Turbine - 1)	(Turbine - 1)	(Turbine - 1)	(Turbine - 1)	<u>112 - FHULLAN</u> COLORIA <u>I</u> S	(Turbine -
Timestamp	NOx ppm @15% O		Total Heat Input	NH3 ppm @15% O2	(Turbine - 1)	NH3 Flow 1
	1-Min	1-Min	mmBtu/hr 1-Min	1-Min	Megawatts 1-Min	lb/hr
12/30/2014 22:54			1846.2		175	זמ עמו ג
12/30/2014 22:55	-		1843.9		174.9	2
12/30/2014 22:56			1843.9	16.54	174.9	
12/30/2014 22:57			1843.9	14.37		1
12/30/2014 22:58			1843.9		174.8	1
12/30/2014 22:59	3.2			25.94	175	2
12/30/2014 22:09			1832.5	45.69	173.3	4
12/30/2014 23:00			1789.1	45.12	168.6	
	0.42		1754.8	45.28	165.3	4
12/30/2014 23:02	0.3		1743.4	29.6	163.7	
12/30/2014 23:03	0.53	-	1706.8	5.84	159.1	
12/30/2014 23:04	MAINT	MAINT	1674.8	MAINT	155	
12/30/2014 23:05	MAINT	MAINT	1670.3	MAINT	154.7	3
12/30/2014 23:06	MAINT	MAINT	1670.3	MAINT	154.7	4
12/30/2014 23:07	MAINT	MAINT	1674.8	MAINT	154.8	2
12/30/2014 23:08	MAINT	MAINT	1674.8	MAINT	154.9	2
12/30/2014 23:09	MAINT	MAINT	1674.8	MAINT	155	2
12/30/2014 23:10	MAINT	MAINT	1672.5	MAINT	155.1	2
12/30/2014 23:11	MAINT	MAINT	1674.8	MAINT	155.1	
12/30/2014 23:12	MAINT	MAINT	1674.8	MAINT	155	2
12/30/2014 23:13	MAINT	MAINT	1672.5	MAINT	154.8	2
12/30/2014 23:14	MAINT	MAINT	1674.8	MAINT	154.7	2
12/30/2014 23:15	MAINT	MAINT	1684	MAINT	155.9	2
12/30/2014 23:16	MAINT	MAINT	1716	MAINT	160.5	2
12/30/2014 23:17	MAINT	MAINT	1752.5	MAINT	164.3	24
12/30/2014 23:18	MAINT	MAINT	1757.1	MAINT	165	2:
12/30/2014 23:19	MAINT	MAINT	1757.1	MAINT	164.8	2:
12/30/2014 23:20	MAINT	MAINT	1757.1	MAINT	165	
12/30/2014 23:21	MAINT	MAINT	1757.1	MAINT	165	2:
12/30/2014 23:22	MAINT	MAINT	1759.4	MAINT	164.8	
12/30/2014 23:23	MAINT	MAINT	1755.4	MAINT		25
12/30/2014 23:24	MAINT	MAINT			164.9	25
12/30/2014 23:25	MAINT		1761.7	MAINT	165.1	25
		MAINT	1759.4	MAINT	164.8	25
12/30/2014 23:26	MAINT	MAINT	1757.1	MAINT	164.8	25
12/30/2014 23:27	MAINT	MAINT	1754.8	MAINT	164.4	25
12/30/2014 23:28	MAINT	MAINT	. 1754.8	MAINT	164.6	25
12/30/2014 23:29	MAINT	MAINT	1752.5	MAINT	164.4	25
12/30/2014 23:30	MAINT	MAINT	1754.8	MAINT	164.7	2
12/30/2014 23:31	MAINT	MAINT	1754.8	MAINT	164.8	25
12/30/2014 23:32	MAINT	MAINT	1777.7	MAINT	167.2	2
12/30/2014 23:33	MAINT	MAINT	1798.2	MAINT	169.4	25
12/30/2014 23:34	MAINT	MAINT	1800.5	MAINT	169.8	25
12/30/2014 23:35	MAINT	MAINT	1800.5	MAINT	169.9	25
12/30/2014 23:36	MAINT	MAINT	1800.5	MAINT	169.9	25
12/30/2014 23:37	MAINT	MAINT	1793.7	MAINT	169.6	25
12/30/2014 23:38	MAINT	MAINT	1793.7	MAINT	169.5	25
12/30/2014 23:39	MAINT	MAINT	1793.7	MAINT	169.6	25
12/30/2014 23:40	MAINT	MAINT	1795.9	MAINT	170.1	25
12/30/2014 23:41	MAINT	MAINT	1800.5	MAINT	170.1	25
12/30/2014 23:42	MAINT	MAINT	1798.2	MAINT	170.1	25
12/30/2014 23:43	MAINT	MAINT	1798.2	MAINT	169.8	
12/30/2014 23:44	MAINT	MAINT	1798.2	MAINT	170	25
12/30/2014 23:45	MAINT	MAINT	1795.9	MAINT		25
12/30/2014 23:45	MAINT	MAINT	1802.8		170	250
12/30/2014 23:46	MAINT	MAINT	1802.8	MAINT MAINT	170.5 171.8	2:

server a server a server a server as a		1	L: REPORT	And the state of the		
T :	(Turbine - 1)	(Turbine - 1)	(Turbine - 1)	(Turbine - 1)	(Turbine - 1)	(Turbine - 1)
Timestamp	NOx ppm @15% O2		Total Heat Input	NH3 ppm @15% O2	Megawatts 1-Min	NH3 Flow 1-M
12/30/2014 23:48	1-Min MAINT	1-Min MAINT	mmBtu/hr 1-Min 1814.2	1-Min	171.0	lb/hr
12/30/2014 23:48					171.8	25
	MAINT	MAINT	1814.2		172	256
12/30/2014 23:50	MAINT	MAINT	1814.2		172	256
12/30/2014 23:51	MAINT	MAINT	1816.5		172.1	256
12/30/2014 23:52	MAINT	MAINT	1816.5		171.9	256
12/30/2014 23:53	MAINT	MAINT	1816.5		172	256
12/30/2014 23:54	MAINT	MAINT	1816.5		172	2
12/30/2014 23:55	MAINT	MAINT	1816.5		171.9	256
12/30/2014 23:56	MAINT	MAINT	1816.5		171.9	256
12/30/2014 23:57	MAINT	MAINT	1814.2		171.8	256
12/30/2014 23:58	MAINT	MAINT	18 11.9		172	256
12/30/2014 23:59	MAINT	MAINT	1814.2	MAINT	172	256
12/31/2014 0:00	MAINT	MAINT	1814.2	MAINT	171.8	256
12/31/2014 0:01	MAINT	MAINT	1816.5	MAINT	172	256
12/31/2014 0:02	MAINT	MAINT	1818.8	MAINT	172.2	256
12/31/2014 0:03	MAINT	MAINT	1818.8	MAINT	172.1	256
12/31/2014 0:04	MAINT	MAINT	1818.8	MAINT	172.1	250
12/31/2014 0:05	MAINT	MAINT	1816.5	MAINT	172.1	256
12/31/2014 0:06	MAINT	MAINT	1814.2	MAINT	172.1	256
12/31/2014 0:07	MAINT	MAINT	1814.2	MAINT	171.8	256
12/31/2014 0:08	MAINT	MAINT	1816.5	MAINT	172.2	256
12/31/2014 0:09	MAINT	MAINT	1816.5	MAINT	171.9	256
12/31/2014 0:10	MAINT	MAINT	1814.2	MAINT	172.1	256
12/31/2014 0:11	MAINT	MAINT	1816.5	MAINT	172.1	256
12/31/2014 0:12	MAINT	MAINT	1816.5	MAINT	171.5	250
12/31/2014 0:13	MAINT	MAINT	1816.5	MAINT	171.8	
12/31/2014 0:14	MAINT	MAINT	1818.8	MAINT		256
12/31/2014 0:14	MAINT	MAINT	1816.5		172	256
				MAINT	171.8	256
12/31/2014 0:16	MAINT	MAINT	1811.9	MAINT	171.8	256
12/31/2014 0:17	MAINT	MAINT	1814.2	MAINT	172.2	256
12/31/2014 0:18	MAINT	MAINT	1814.2	MAINT	171.9	256
12/31/2014 0:19	MAINT	MAINT	1816.5	MAINT	172	256
12/31/2014 0:20	MAINT	MAINT	1814.2	MAINT	172.1	256
12/31/2014 0:21	MAINT	MAINT	1816.5	MAINT	171.9	256
12/31/2014 0:22	MAINT	MAINT	1816.5	MAINT	171.9	25
12/31/2014 0:23	MAINT	MAINT	1816.5	MAINT	171.9	256
12/31/2014 0:24	MAINT	MAINT	1816.5	MAINT	171.8	256
12/31/2014 0:25	MAINT	MAINT	1814.2	MAINT	171.8	256
12/31/2014 0:26	MAINT	MAINT	1816.5	MAINT	172.1	256
12/31/2014 0:27	MAINT	MAINT	1814.2	MAINT	172	256
12/31/2014 0:28	MAINT	MAINT	1811.9	MAINT	171.8	256
12/31/2014 0:29	MAINT	MAINT	1816.5	MAINT	171.8	256
12/31/2014 0:30	MAINT	MAINT	1816.5	MAINT	172	256
12/31/2014 0:31	MAINT	MAINT	1816.5	MAINT	172.2	25
12/31/2014 0:32	MAINT	MAINT	1816.5	MAINT	172.1	256
12/31/2014 0:33	MAINT	MAINT	1816.5	MAINT	171.8	256
12/31/2014 0:34	MAINT	MAINT	1811.9	MAINT	171.8	256
12/31/2014 0:35	MAINT	MAINT	1811.9	MAINT	171.9	256
12/31/2014 0:35	MAINT	MAINT	1814.2	MAINT	171.9	
12/31/2014 0:38	MAINT	MAINT	1814.2	MAINT		256
12/31/2014 0:37			1816.5		171.9	256
		MAINT		MAINT	171.8	256
12/31/2014 0:39	MAINT	MAINT	1816.5	MAINT	172.1	256.
12/31/2014 0:40	MAINT	MAINT	1814.2	MAINT	172	256
12/31/2014 0:41	MAINT	MAINT	1814.2	MAINT	172.1	256.

للا المتشاهد للله	<u>in statistic statistics</u> in st	Table 1	ন সমন প্রদান করে বাবে বিষয়	u ala a sugar hala asala ne a s		
	(Turbine - 1)	(Turbine - 1)	(Turbine - 1)	(Turbine - 1)	(Turbine - 1)	(Turbine - 1)
Timestamp	NOx ppm @15% 02		Total Heat Input	NH3 ppm @15% O2	Megawatts 1-Min	NH3 Flow 1-Min
10/01/0014 0.40	1-Min MAINT	1-Min	mmBtu/hr 1-Min	1-Min	-	lb/hr
12/31/2014 0:42		MAINT	1816.5		172	256.28
12/31/2014 0:43	MAINT	MAINT	1816.5		171.9	256
12/31/2014 0:44	MAINT	MAINT	1814.2		172	256.21
12/31/2014 0:45	MAINT	MAINT	1814.2		172.1	256.06
12/31/2014 0:46	MAINT	MAINT	1811.9		171.8	256.25
12/31/2014 0:47	MAINT	MAINT	1814.2		171.9	256.36
12/31/2014 0:48	MAINT	MAINT	1814.2		172.1	256.29
12/31/2014 0:49	MAINT	MAINT	1811.9	MAINT	172	256.38
12/31/2014 0:50	MAINT	MAINT	1814.2	MAINT	172.1	256.14
12/31/2014 0:51	MAINT	MAINT	1816.5	MAINT	171.9	256.28
12/31/2014 0:52	MAINT	MAINT	1816.5	MAINT	172.1	256.3
12/31/2014 0:53	MAINT	MAINT	1814.2	MAINT	172.1	256.49
12/31/2014 0:54	MAINT	MAINT	1816.5	MAINT	171.9	256.37
12/31/2014 0:55	MAINT	MAINT	1811.9	MAINT	172	256.32
12/31/2014 0:56	MAINT	MAINT	1814.2	MAINT	172	256.19
12/31/2014 0:57	MAINT	MAINT	1814.2	MAINT	171.9	256.05
12/31/2014 0:58	MAINT	MAINT	1811.9	MAINT	172.2	256.31
12/31/2014 0:59	MAINT	MAINT	1814.2	MAINT	172.1	256.31
12/31/2014 1:00	MAINT	MAINT	1811.9	MAINT	172.1	256.2
12/31/2014 1:01	MAINT	MAINT	1814.2	MAINT	171.9	256.18
12/31/2014 1:02	MAINT	MAINT	1814.2	MAINT	171.9	256.24
12/31/2014 1:03	MAINT	MAINT	1816.5	MAINT	172	256.24
12/31/2014 1:04	MAINT	MAINT	1814.2	MAINT	172	255.85
12/31/2014 1:05	MAINT	MAINT	1814.2	MAINT	171.9	256.02
12/31/2014 1:06	MAINT	MAINT	1811.9	MAINT	171.9	255.92
12/31/2014 1:07	MAINT	MAINT	1814.2	MAINT	172	256.08
12/31/2014 1:08	MAINT	MAINT	1814.2	MAINT	171.9	256.21
.2/31/2014 1:09	MAINT	MAINT	1814.2	MAINT	1 71.9	255.91
12/31/2014 1:10	MAINT	MAINT	1814.2	MAINT	171.9	255.9
12/31/2014 1:11	MAINT	MAINT	1814.2	MAINT	172	255.99
12/31/2014 1:12	MAINT	MAINT	1814.2	MAINT	171.9	255.84
12/31/2014 1:13	MAINT	MAINT	1811.9	MAINT	172	255.89
12/31/2014 1:14	MAINT	MAINT	1816.5	MAINT	172	256.08
12/31/2014 1:15	MAINT	MAINT	1814.2	MAINT	171.8	234.68
12/31/2014 1:16	MAINT	MAINT	1809.6	MAINT	172	211.73
12/31/2014 1:17	MAINT	MAINT	1811.9	MAINT	171.9	236.4
12/31/2014 1:18	MAINT	MAINT	1811.9	MAINT	172	237.55
12/31/2014 1:19	MAINT	MAINT	1814.2	MAINT	171.9	243.88
12/31/2014 1:20	2.47	30.8	1816.5	3.31	172	246.67
12/31/2014 1:21	2.4	30.7	1814.2	3.4	172	247.08
12/31/2014 1:22	2.38	30.7	1814.2	3.34	172	
12/31/2014 1:23	2.34	30.7	1814.2	3.28	172	246.86
12/31/2014 1:24	2.41	30.8	1814.2	3.33	172	247.1
12/31/2014 1:25	2.39	30.7	1811.9	3.73	171.8	249.89
12/31/2014 1:26	2.29	30.7	1811.9	3.73	171.8	250.97
12/31/2014 1:27	2.33	31.1	1811.9	3.66	172.1	252.89
12/31/2014 1:28	2.29	31.2	1809.6	3.91	171.9	256.26
12/31/2014 1:29	2.22	30.9	1814.2	4.01	172	256.86
12/31/2014 1:30	2.14	30.7	1814.2	4.29	172	259.46
12/31/2014 1:31	2.11	30.9	1811.9	4.26	172	260.05
12/31/2014 1:32	2.08	31	1811.9	4.19	171.9	260.11
12/31/2014 1:33	2.08	31.1	1814.2	4.29	171.8	261.72
12/31/2014 1:34	2.03	31.2	1811.9	4.25	172	262.06
12/31/2014 1:35	6.VT	31.2	1814.2	7.20	116	202.00

		Table 1	: REPORT	ED DATA		
Timestamp	(Turbine - 1) NOx ppm @15% O2 1-Min	(Turbine - 1) SCR NOx ppm 1-Min	(Turbine - 1) Total Heat Input mmBtu/hr 1-Min	(Turbine - 1) NH3 ppm @15% O2 1-Min	(Turbine - 1) Megawatts 1-Min	(Turbine - 1) NH3 Flow 1-Min Ib/hr
12/31/2014 1:36	2.02	31.2	1811.9	4.16	171.8	261.78
12/31/2014 1:37	2	31.3	1814.2	4.07	172	262.65
12/31/2014 1:38	1.97	31.1	1811.9	4.2	172	262.59
12/31/2014 1:39	1.94	31	1811.9	4.14	172	261.59
12/31/2014 1:40	1.95	30.9	1814.2	4.22	172.1	260.92
12/31/2014 1:41	1.95	31.1	1814.2	4	172.1	259.91
12/31/2014 1:42	1.95	31	1814.2	3.94	171.8	259
12/31/2014 1:43	1.96	31.1	1811.9	3.83	171.9	258.03
12/31/2014 1:44	2.03	31.3	1814.2	3.75	172	258.45
12/31/2014 1:45	2.05	31.3	1811.9	3.69	171.7	258.01
12/31/2014 1:46	2.06	31.6	1809.6	3.62	172.1	258.41
12/31/2014 1:47	2.16	31.7	1811.9	3.88	171.9	260.91
12/31/2014 1:48	2.14	31.8	1811.9	3.86	172	261.21
12/31/2014 1:49	2.14	31.8	1811.9	3.93	171.9	262.02
12/31/2014 1:50	2.06	31.4	1811.9	4.26	172.1	263,39
12/31/2014 1:51	2.02	31.5	1814.2	4.11	171.9	263.69
12/31/2014 1:52	2.01	31.4	1811.9	4.25	171.8	263.91
12/31/2014 1:53	2.03	31.6	1811.9	4.05	172.1	263.63
12/31/2014 1:54	1.99	31.4	1809.6	4.16	171.9	263.7
12/31/2014 1:55	1.97	31.3	1811.9	4.16	171,7	263.16
12/31/2014 1:56	2.03	31.7	1807.4	4.01	171.9	262.79
12/31/2014 1:57	2.02	31.5	1809.6	4.19	172	263.48
12/31/2014 1:58	2.01	31.6	1811.9	4.13	172	264,12
12/31/2014 1:59	1.99	31.5	1811.9	4.05	172	263.22

			TADU	3 2 - RECA	LCULATIED	DATA			
	(Turbine - 1)	Updated SCR NOx	(Turbine - 1)	(Turbine - 1)	(Turbine - 1)	(Turbine - 1)	(Turbine - 1)		
Timestamp	NOx ppm @15% 02 1-Min	ppm	SCR NOx ppm 1-Min	Total Heat Input mmBtu/hr 1-Min	NH3 ppm @15% O2 1-Min	Megawatts 1-Min	NH3 Flow 1-Min ib/hr	NH3 inlet	NH3 Slip
12/30/2014 22:00	2.14		27.2	1841.6	3.35	175	227.63		3.35
12/30/2014 22:01	2.12	-	27.3	1843.9	3.24		227.44	-	3.24
12/30/2014 22:02	2.16		27.5	1843.9	3.18	175	227.51	•	3.18
12/30/2014 22:03	2.2		27.4	1846.2	3.26		227.61	•	3,26
12/30/2014 22:04 12/30/2014 22:05	2.18 2.24		27.6	1846.2	3.33		229.75	•	3.33
12/30/2014 22:06	2.24		27.8 28.1	1846.2 1843.9	3.3	175 175	230.02	•	3.3
12/30/2014 22:07	2.34		28.4	1846.2	3.14 3.24	175	230.09 232,89	•	3.14
12/30/2014 22:08	2.23		28	1843.9	3.54	174.9	232,89	:	3.24 3.54
12/30/2014 22:09	2.17	-	27.7	1843.9	3.69	174,9	233.94		3.69
12/30/2014 22:10	2.04		27.3	1846.2	3.93	175.3	233.99	-	3.93
12/30/2014 22:11	2,02		27.1	1870.6	3.79	175	234,05	-	3.79
12/30/2014 22:12 12/30/2014 22:13	1.85 1.86	-	26.7 26.8	1869.8	3.9	175.1	232.2	•	3.9
12/30/2014 22:14	1.88		20.8	1867.8 1870	3.6 3.24	175 175.1	229.76	•	3.6
12/30/2014 22:15	2.09	•	27.8	1865.7	2.81	175.1	228.44 226.3	:	3.24 2.81
12/30/2014 22:16	2.19	-	27.9	1865,6	2.92	175	227.65		2.81
12/30/2014 22:17	2.25	-	28.2	1868	2.86	174.8	228.32	-	2.86
12/30/2014 22:18	2.31	•	28.4	1867.9	2.86	174.8	229.08		2.86
12/30/2014 22:19	2.19	•	27.6	1853.3	3.57	174.6	231.03	•	3.57
12/30/2014 22:20 12/30/2014 22:21	2.07 2.11	-	27.1	1867.8	3.72	174.6	231.21	•	3.72
12/30/2014 22:22	2.11	-	28 28.7	1870.2 1867.9	3.1 2.76	174.8	231.17	•	3.1
12/30/2014 22:23	2.22	•	28	1863.3	3.31	174.8 174.5	231.12 232.19		2.76
12/30/2014 22:24	2.11	•	27.6	1863.3	3.66	174.4	234.08		3.31 3.66
12/30/2014 22:25	2.16	-	28.3	1867.8	3.04	174.7	232.27	-	3.04
12/30/2014 22:26	2.22	-	28.1	1843.9	3.77	174.9	234.29	-	3.77
12/30/2014 22:27	2.23	-	27.7	1841.6	3.89	174.8	234.67	•	3.89
12/30/2014 22:28	2.12	•	27.4	1839.4	4.01	174.5	234.74	•	4.01
12/30/2014 22:29 12/30/2014 22:30	2.17 2.07	•	27.9	1839.4	3.75	174.5	235.62	•	3.75
12/30/2014 22:30	2.07		27.4 27.9	1841.6 1843.9	4.1 3.6	174.7 174.8	236.93	•	4.1
12/30/2014 22:32	2.1	•	27.9	1839.4	3.6	174.8	235.63 234.69	•	3.6
12/30/2014 22:33	2.13	-	27.7	1832.5	3.97	173.7	234.69		3.6 3.97
12/30/2014 22:34	2.17	-	28.4	1837.1	3.54	174	236.25		3.54
12/30/2014 22:35	2.22	-	28.5	1834.8	3.54	174	236.34	•	3.54
12/30/2014 22:36	2.19	•	28.3	1837.1	3.74	174	237.35	•	3.74
12/30/2014 22:37	2.15	-	28.1	1834.8	3.92	174.3	238.33	•	3.92
12/30/2014 22:38 12/30/2014 22:39	2.16 2.2	•	28.4 28.6	1837.1	3.69	174.4	238.22	•	3.69
12/30/2014 22:40	2.21		28.5	1834.8 1834.8	3.56 3.75	173.8 173.9	238.31 238.93	-	3.56
12/30/2014 22:41	2.13	•	28.1	1834.8	4.17	174	240.25	•	3.75 4.17
12/30/2014 22:42	2.06	-	27.9	1837.1	4.21	174	240.44	-	4.21
12/30/2014 22:43	2	-	27.9	1834.8	4.17	174.2	240.2	-	4,17
12/30/2014 22:44	2.01	-	27.8	1834.8	4.02	174	238.11	-	4.02
12/30/2014 22:45	1.97	-	27.6	1830.2	4.1	173.6	237.95	•	4.1
12/30/2014 22:46 12/30/2014 22:47	2 2,11	•	27.7 25.7	1832.5 1832.5	3.88	174.1	236.51	•	3.88
12/30/2014 22:48	2.16	29,4	1.8	1832.5	5.4 23.19	173.9 174.6	235.36 235.18		5,4
12/30/2014 22:49	2.22	29.4	0	1841.6	23.22	174.8	235.18	30.S 28.8	2.4 1.0
12/30/2014 22:50	2.32	29.4	0	1843.9	21.6	175.1	204.37	26.4	2.7
12/30/2014 22:51	2.71	29.4	0	1843.9	22.35	175.2	208.48	27.0	2.0
12/30/2014 22:52	2.74	29.4	0	1846.2	25.81	175	244.5	31.5	3.6
12/30/2014 22:53	2.18	29.4	0	1846.2	25.53	175	246.61	31.7	3.4
12/30/2014 22:54 12/30/2014 22:55	1.92 1.83	29.4 29.4	0	1846.2	25.27	175	246.58	31.7	3.1
12/30/2014 22:55	1.85	29.4	0	1843.9 1843.9	24.64 16.54	174.9 174.9	240.32	30.9	2.5
12/30/2014 22:57	2.88	29.4	ő	1843.9	14.37	174.5	155.93 123.99	20.1 16.0	7.8
12/30/2014 22:58	4.4	29.4	0	1843.9	25.94	175	230.79	29.8	10.1 3.6
12/30/2014 22:59	3.23	29.4	0	1832.5	45.69	173.3	444.33	57.6	23.4
				E.	7.8			1000	
12/30/2014 23:00	0.9	29.4	0	1789.1	45.12	168.6	448.1	59.4	23.1
12/30/2014 23:01 12/30/2014 23:02	0.42	29.4	0	1754.8	45.28	165.3	445.27	60.5	23.4
12/30/2014 23:02	0.35	29.4 29.4	0 0	1743.4 1706.8	29.6 5 84	163.7	288.5	39.5	7.B ¹
12/30/2014 23:03	2.1	29.4	MAINT	1/05.8 1674.8	5.84 MAINT	159.1 155	52.05	7.3	18.2
12/30/2014 23:05	2.1	29.4	MAINT	1670.3	MAINT	155	66.56 378.21	9.5 54.0	15.4
12/30/2014 23:06	2.1	29.4	MAINT	1670,3	MAINT	154.7	474.45	54.0 67.8	19.8 30.0
12/30/2014 23:07	2.1	29.4	MAINT	1674.8	MAINT	154.8	290.41	41.4	10.4
12/30/2014 23:08	2.1	29.4	MAINT	1674.8	MAINT	154.9	245,72	35.0	5.7
12/30/2014 23:09	2.1	29.4	MAINT	1574.8	MAINT	155	225,65	32.1	3.6
12/30/2014 23:10 12/30/2014 23:11	2.1	29.4	MAINT	1672.5	MAINT	155.1	223.56	31.9	3.4
12/30/2014 23:11	2.1 2.1	29.4 29.4	MAINT MAINT	1674.8 1674.8	MAINT MAINT	155.1	224.9	32.0	3.5
12/30/2014 23:12	2.1	29.4	MAINT	1672.5	MAINT	155 154.8	234.55 234.36	33.4 33.4	4.5
		· · ·			·	20110	207.30	~~~	4.5

			TAR	32 - RECA					
	(Turbine - 1)	<u> </u>		And a second	an an taon ang pantang kanalan	200000	der angen and der and and an out of the		
Timestamp	NOx ppm @15%	Updated SCR NOx	(Turbine - 1) SCR NOx ppm	(Turbine - 1)	(Turbine - 1)	(Turbine - 1)	(Turbine - 1)		
	O2 1-Min	ppm	1-Min	Total Heat Input mmBtu/hr 1-Min	NH3 ppm @15% O2 1-Min	Megawatts 1-Min	NH3 Flow 1-Min lb/hr	NH3 Inlet	NH3 Slip
12/30/2014 23:14	2.1	29.4	MAINT	-					
12/30/2014 23:15	2.1	29.4	MAINT	1674.8 1684	MAINT	154.7	235.49	33.5	4.6
12/30/2014 23:16	2.1	29.4	MAINT	1716	MAINT	155.9 160.5	233.93	33.1	4.3
12/30/2014 23:17	2.1	29.4	MAINT	1752.5	MAINT	164.3	241.89 245.95	33.6 33.5	4.7
12/30/2014 23:18	2.1	29.4	MAINT	1757.1	MAINT	165	255.85	34.7	4.6 5.5
12/30/2014 23:19	2.1	29.4	MAINT	1757.1	MAINT	164.8	256.37	34.8	5.6
12/30/2014 23:20	2.1	29.4	MAINT	1757.1	MAINT	165	256.58	34.8	5.6
12/30/2014 23:21	2.1	29.4	MAINT	1757.1	MAINT	155	255.39	34.8	5.6
12/30/2014 23:22	2.1	29.4	MAINT	1759.4	MAINT	164.8	256,49	34,8	5.6
12/30/2014 23:23	2.1	29,4	MAINT	1761.7	MAINT	164.9	256.44	34.7	5.5
12/30/2014 23:24	2.1	29.4	MAINT	1761.7	MAINT	165.1	255.34	34.7	5.5
12/30/2014 23:25 12/30/2014 23:26	2.1 2.1	29.4	MAINT	1759.4	MAINT	164.8	256.36	34.8	S,5
12/30/2014 23:27	2.1	29.4 29.4	MAINT	1757.1	MAINT	164.8	256.37	34.8	5.6
12/30/2014 23:28	2.1	29.4	MAINT	1754.8 1754.8	MAINT	164.4	256.49	34.9	5.6
12/30/2014 23:29	2.1	29.4	MAINT	1753.5	MAINT	164.6 164.4	256.42	34.9	5.6
12/30/2014 23:30	2.1	29.4	MAINT	1754.8	MAINT	164.7	256.34 256.4	34,9	5.6
12/30/2014 23:31	2.1	29.4	MAINT	1754.8	MAINT	164.8	256.26	34.9	5.6
12/30/2014 23:32	2.1	29.4	MAINT	1777.7	MAINT	164.8	256.26	34.8 34.4	5.6 5.3
12/30/2014 23:33	2.1	29.4	MAINT	1798.2	MAINT	169.4	256.23	34.4 34.0	5.3
12/30/2014 23:34	2.1	29.4	MAINT	1800.5	MAINT	169.8	256.13	33.9	4.9
12/30/2014 23:35	2.1	29,4	MAINT	1800.5	MAINT	169.9	256.26	34.0	4.9
12/30/2014 23:36	2.1	29.4	MAINT	1800.5	MAINT	169.9	256.27	34.0	4.9
12/30/2014 23:37	2.1	29.4	MAINT	1793.7	MAINT	169.6	256.35	34.1	5.0
12/30/2014 23:38	2.1	29.4	MAINT	1793.7	MAINT	169.5	256.42	34,1	5.1
12/30/2014 23:39	2.1	29.4	MAINT	1793.7	MAINT	169.6	256.43	34.1	5.1
12/30/2014 23:40	2.1	29.4	MAINT	1795,9	MAINT	170.1	256.27	34.0	5.0
12/30/2014 23:41	2.1	29.4	MAINT	1800.5	MAINT	170.1	256.31	34,0	4.9
12/30/2014 23:42 12/30/2014 23:43	2.1 2.1	29.4 29.4	MAINT	1798.2	MAINT	170.1	256.35	34.0	5.0
12/30/2014 23:44	2.1	29.4	MAINT	1798.2	MAINT	169.8	256.33	34.0	5.0
12/30/2014 23:45	2.1	29.4	MAINT	1798.2 1795.9	MAINT	170	256.46	34.0	5.0
12/30/2014 23:46	2.1	29.4	MAINT	1793.9	MAINT MAINT	170	256.28	34.0	5.0
12/30/2014 23:47	2.1	29.4	MAINT	1802.8	MAINT	170.5 171.8	256.2	33.9	4,9
12/30/2014 23:48	2.1	29.4	MAINT	1814.2	MAINT	171.8	256.25	33.7	4.7
12/30/2014 23:49	2.1	29,4	MAINT	1814.2	MAINT	172	256.19	33.7 33.7	4.8
12/30/2014 23:50	2.1	29.4	MAINT	1814,2	MAINT	172	256.21	33.7	4.7
12/30/2014 23:51	2.1	29.4	MAINT	1816.5	MAINT	172.1	256.14	33.6	4.7
12/30/2014 23:52	2.1	29.4	MAINT	1816.5	MAINT	171.9	256.33	33.7	4.7
12/30/2014 23:53	2.1	29.4	MAINT	1816.5	MAINT	172	256.39	33.7	4.7
12/30/2014 23:54	2.1	29.4	MAINT	1816,5	MAINT	172	256.1	33.6	4.7
12/30/2014 23:55	2.1	29.4	MAINT	1816.5	MAINT	171.9	256.17	33.6	4.7
12/30/2014 23:56	2.1	29.4	MAINT	1816.5	MAINT	171.9	256.34	33.7	4.7
12/30/2014 23:57	2.1	29.4	MAINT	1814.2	MAINT	171.8	256.08	33.7	4.7
12/30/2014 23:58 12/30/2014 23:59	2,1 2,1	29.4	MAINT	1811.9	MAINT	172	256.31	33.8	4.8
12/30/2014 25:59	2.1	29.4	MAINT	1814.2	MAINT	172	256,16	33,7	4.7
12/31/2014 0:00	2.1	29.4	MAINT			474.0			68
12/31/2014 0:01	2.1	29.4	MAINT	1814.2 1816.5	MAINT MAINT	171.8	256.05	33.7	4.7
12/31/2014 0:02	2.1	29.4	MAINT	1818.8	MAINT	172 172.2	256.13	33.6	4.7
12/31/2014 0:03	2.1	29.4	MAINT	1818.8	MAINT	172.2	256.38	33.6	4.7
12/31/2014 0:04	2.1	29.4	MAINT	1818.8	MAINT	172.1	256.24 256.33	33.6	4.7
12/31/2014 0:05	2.1	29.4	MAINT	1816.5	MAINT	172.1	256.16	33.6 33.6	4.7
12/31/2014 0:06	2.1	29.4	MAINT	1814.2	MAINT	172.1	256.13	33.5	4.7 4.7
12/31/2014 0:07	2.1	29.4	MAINT	1814.2	MAINT	171.8	256.21	33.7	4.7
12/31/2014 0:08	2.1	29.4	MAINT	1816.5	MAINT	172.2	256.11	33.6	4.7
12/31/2014 0:09	2.1	29.4	MAINT	1816.5	MAINT	171.9	256.24	33.7	4.7
12/31/2014 0:10	2.1	29.4	MAINT	1814.2	MAINT	172.1	256.12	33.7	4.7
12/31/2014 0:11	2.1	29.4	MAINT	1816.5	MAINT	171.9	256.16	33.6	4.7
12/31/2014 0:12	2.1	29,4	MAINT	1816.5	MAINT	171.8	256.16	33.6	4.7
12/31/2014 0:13	2.1	29.4	MAINT	1816.5	MAINT	172	256,35	33.7	4.7
12/31/2014 0:14	2.1	29.4	MAINT	1818.8	MAINT	172	256.28	33.6	4.7
12/31/2014 0:15 12/31/2014 0:16	2.1	29.4	MAINT	1816.5	MAINT	171.8	256.46	33.7	4.7
12/31/2014 0:16	2.1	29.4 29.4	MAINT	1811.9	MAINT	171.8	256.29	33.7	4.8
12/31/2014 0:18	2.1	29.4	MAINT MAINT	1814.2 1814.2	MAINT	172.2	256.26	33,7	4.7
12/31/2014 0:18	2.1	29.4	MAINT	1814.2 1816.5	MAINT MAINT	171.9	256.12	33.7	4.7
12/31/2014 0:20	2.1	29.4	MAINT	1816.5	MAINT	172	256.32	33.7	4.7
12/31/2014 0:21	2.1	29.4	MAINT	1816.5	MAINT	172.1 171. 9	256.04	33.7	4.7
12/31/2014 0:22	2.1	29.4	MAINT	1816.5	MAINT	171.9	256.17	33.6	4.7
12/31/2014 0:23	2.1	29.4	MAINT	1816.5	MAINT	171.9	256.2 256.28	33.7 33.7	4.7
12/31/2014 0:24	2.1	29.4	MAINT	1816.5	MAINT	171.8	256.28	33,6	4.7 4.7
12/31/2014 0:25	2.1	29.4	MAINT	1814.2	MAINT	171.8	256.34	33.0	4.7 4.8
12/31/2014 0:26	2.1	29.4	MAINT	1816.5	MAINT	172.1	256.31	33.7	4.8
12/31/2014 0:27	2,1	29.4	MAINT	1814.2	MAINT	172	256.24	33.7	4.7
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Intenting Under 1 Under 1 Under 2		n nerot i su brit Maria		TABU	32-NECA	GENANUDI	DAITA			
International and the set of the		•	lindated SC8 NOv	(Turbine - 1)	(Turbine - 1)	(Turbine - 1)	(Turbing 1)	(Turbing 1)		
Display Data memory is an analysis Data memory is an analysis Display Display <thdisplay< th=""> <thdisplay< th=""> <thdisp< td=""><td>Timestamp</td><td>••</td><td></td><td>SCR NOx ppm</td><td></td><td></td><td>• • •</td><td>• •</td><td>NH3 Inlet</td><td>NH3 Slip</td></thdisp<></thdisplay<></thdisplay<>	Timestamp	••		SCR NOx ppm			• • •	• •	NH3 Inlet	NH3 Slip
13/12/1016 D29 2.1 38.4 MAMIT 118.5 MAMIT 17.2 25.5 33.7 47. 13/12/1016 D2 2.1 38.4 MAMIT 113.5 MAMIT 17.2 22.5 33.7 47. 13/12/1016 D2 2.1 38.4 MAMIT 113.5 MAMIT 17.2 22.5 33.7 47. 13/12/1016 D2 2.1 2.8 MAMIT 113.5 MAMIT 17.2 22.5 33.7 42. 13/12/1016 D2 2.1 2.8 MAMIT 113.5 MAMIT 17.1 22.5 33.7 42. 13/12/1016 D2 2.1 2.8 MAMIT 113.2 MAMIT 113.2 2.8 33.7 4.7 13/12/1016 D2 2.1 2.8 MAMIT 113.2 MAMIT 113.2 2.8 33.7 4.7 13/12/1016 D2 2.1 2.8 MAMIT 113.2 MAMIT 113.2 MAMIT 113.2 MAMIT 113.2 34.7 17 </td <td></td> <td></td> <td></td> <td>1</td> <td>mmBtu/hr 1-Min</td> <td>1-Min</td> <td>wegewater z-wait</td> <td></td> <td></td> <td>i</td>				1	mmBtu/hr 1-Min	1-Min	wegewater z-wait			i
121/20/2016 200 2.1 29.4 MAMPT 110.5 MAMPT 110.2 MAMPT										
12/2/2016.003 2.1 3.4 MANT 135.5 MANT 17.2 26.2 3.7 4.7 12/2/2016.03 2.1 3.4 MANT 131.5 MANT 17.2 25.5 3.8 4.7 12/2/2016.03 2.1 3.4 MANT 131.5 MANT 131.4 25.6 3.7 4.7 12/2/2016.03 2.1 2.4 MANT 131.5 MANT 131.4 25.6 3.7 4.7 12/2/2016.03 2.1 2.4 MANT 131.4 25.4 MANT 131.4 25.6 3.7 4.7 12/2/2016.04 2.1 2.4 MANT 131.4 3.4 MANT 131.4 3.6 3.7 4.7 12/2/2016.04 1.1 2.4 MANT 131.5 MANT 172.3 25.5 3.7 4.7 12/2/2016.04 1.1 2.4 MANT 131.5 MANT 172.3 25.5 3.7 4.7 12/2/2016.04 1.1 2.4 MANT 131.5 MANT 172.3 25.5 3.7 4.7 12/2/2016.04 1.1 2.4 MANT 131.5 MANT 172.3 25.5 3.7 4.7										
12/12/12/12/12/12 23.4 MANT 135.5 MANT 127.2 25.6 33.7 4.7 12/12/12/14/34 3.1 3.4 MANT 131.9 MANT 131.9 35.6 33.7 4.7 12/12/12/14/34 3.1 3.4 MANT 131.9 MANT 131.9 35.6 33.7 4.8 12/12/12/14/34 3.1 3.4 MANT 131.9 MANT 131.9 35.7 4.7 12/12/12/14/34 3.1 3.4 MANT 131.5 MANT 171.2 35.8 33.7 4.7 12/12/12/14/34 3.1 3.4 MANT 131.5 MANT 171.7 23.6 3.7 4.7 12/12/12/14/14 3.1 2.5.4 MANT 131.5 MANT 172.7 23.6 3.7 4.7 12/12/12/14/14 3.1 2.5.4 MANT 131.5 MANT 172.7 23.6 3.7 4.7 12/12/12/14/14/14 5.1 2.5.4 <t< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></t<>										
13/12/1014 23.4 13.4.4 MANT 1312.5 MANT 17.1.2 23.6.3 3.7. 4.2. 13/12/1014 23.1.2 23.4.4 MANT 131.5. MANT 17.1.3 23.6.4 23.7. 4.2. 13/12/1014 23.1.2 23.4.4 MANT 131.5. MANT 17.1.3 23.6.4 23.7. 4.2. 13/12/1014 23.4.2 23.4.4 MANT 131.5. MANT 17.1.3 23.6.2 23.7. 4.2. 13/12/1014 23.4.2 23.4.4 MANT 131.5. MANT 17.2. 25.8.3 23.7. 4.7. 13/12/1014 23.4.2 23.4.4 MANT 131.5. MANT 17.2. 25.8.3 3.7. 4.7. 13/12/1014 23.4.2 23.4.4 MANT 131.5. MANT 17.2. 25.6.3 3.7. 4.7. 13/12/1014 23.4.1 MANT 131.5. MANT 17.2. 25.6.3 3.7. 4.7. 13/12/1014 23.4.2 MANT 131.2 MANT 17.2.3 25.6.3 3.7. 4.7. 13/12/1014 23.4.4 MANT 131.2 MANT 131.2 3.8.4.4 3.7. 4.7. <td>· · · ·</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	· · · ·									
13/12/1004 054 2.1 2.34 MART 131.9 MART 171.8 252.8 32.7 4.8 12/0/1004 057 2.1 2.34 MART 131.5 MART 171.9 255.37 30.7 4.8 12/0/1004 057 2.1 2.34 MART 131.6.5 MART 172.9 255.37 30.7 4.7 12/0/1004 059 2.1 2.34 MART 131.6.2 MART 172.1 255.23 30.7 4.7 12/0/1014 062 2.1 2.34 MART 131.6.2 MART 131.6.2 MART 132.8 30.7 4.7 12/0/1014 064 2.1 2.34 MART 131.5.3 MART 172.9 256.0 30.7 4.7 12/0/1014 064 2.1 2.34 MART 131.3.5 MART 172.9 256.2 30.7 4.7 12/0/1014 064 2.1 2.34 MART 131.3.5 MART 172.9 256.2 30.7 4.7	12/31/2014 0:33	2.1	29.4	MAINT				,		
12/12/004 0:5 2.1 254 MART 181.2 PART 171.2 253.7 407 12/2/014 0:3 2.1 234 MART 181.4.2 MART 171.4 255.27 33.7 4.7 12/2/014 0:3 2.1 234 MART 181.4.2 MART 171.4 255.27 33.7 4.7 12/2/014 0:3 2.1 234 MART 181.2 MART 171.2 255.27 33.7 4.7 12/2/014 0:4 2.1 234 MART 181.2 MART 171.2 255.8 35.6 4.7 12/2/014 0:4 2.1 234 MART 181.2 MART 172.1 256.0 33.7 4.7 12/2/014 0:46 2.1 234 MART 181.2 MART 172.1 256.0 33.7 4.7 12/2/014 0:46 2.1 234 MART 181.4.2 MART 172.1 256.0 33.7 4.7 12/2/014 0:46 2.1 2.34 MART 181.4.2 MART 172.1 256.4 33.7 4.7				MAINT	1811.9	MAINT	171.8			:
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	12/31/2014 1:41	1.95		31.1	1814.2	4	172.1	259.91	•	

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Timestamp	(Turbine - 1) NOx ppm @15% O2 1-Min	Updated SCR NOx ppm	(Turbine - 1) SCR NOx ppm 1-Min	(Turbine - 1) Total Heat input mmBtu/hr 1-Min	(Turbine - 1) NH3 ppm @15% O2 1-Min	(Turbine - 1) Megawatts 1-Min	(Turbine - 1) NH3 Flow 1-Min lb/hr	NH3 Inlet	NH3 Slip
12/31/2014 1:42	1.95	+	31	1814.2	3.94	171.8	259	•	3.94
12/31/2014 1:43	1.96	-	31.1	1811.9	3.83	171.9	258.03		3.83
12/31/2014 1:44	2.03	-	31.3	1814.2	3.75		258.45	-	3.75
12/31/2014 1:45	2.05	-	31.3	1811.9	3.69	171.7	258,01		3.69
12/31/2014 1:46	2.06	-	31.6	1809.6	3.62	172.1	258.41	-	3.62
12/31/2014 1:47	2.16	-	31.7	1811.9	3,88	171.9	260.91		3.88
12/31/2014 1:48	2.14	-	31.8	1811.9	3.86	172	261.21	•	3,86
12/31/2014 1:49	2.14	-	31.8	1811.9	3.93	171.9	262.02		3.93
12/31/2014 1:50	2.06	-	31.4	1811.9	4.26	172.1	263.39		4.26
12/31/2014 1:51	2.02	-	31.5	1814.2	4.11	171.9	263,69	•	4.11
12/31/2014 1:52	2.01	- !	31.4	1811.9	4.25	171.8	263.91		4.25
12/31/2014 1:53	2.03	-	31.6	1811.9	4.05	172.1	263.63		4.05
12/31/2014 1:54	1.99	-	31.4	1809,5	4.16	171.9	263.7	•	4.16
12/31/2014 1:55	1.97	-	31,3	1811.9	4.16	171.7	263.16		4.16
12/31/2014 1:55	2.03	-	31.7	1807.4	4.01	171.9	262.79	-	4.01
12/31/2014 1:57	2.02	-	31.5	1809.6	4.19	172	263.48	-	4.19
12/31/2014 1:58	2.01	-	31.6	1811.9	4.13	172	264.12	-	4.13
12/31/2014 1:59	1.99	-	31.5	1811.9	4.05	172	263.22	-	4.05
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Appendix 10

Metcalf Energy Center Plume Log

Cooling Tower Plumes

Date December 28, 2014	Start Time 7:21	End time 8:21	Total Time 1:00	Event Plume	Relative Humidity 88%	Temperature 37 deg F	Duct Burners Off	Plume Abatement on
Total Cooling Tov	wer Plume H	lours:	1:00					
Remedial Actions 1	o Be Taken							
 The Operator will ve The Operator will ve Curtail supplementation 	erify that the lou	vers were co						
Stack Plumes							an sa sang sa <u>ang sing sing sa</u> sa sa	an in 1970, an canadighters
Date No Plume Events in N	Start Time ovember 2014	End time	Total Time	Event	Relative Humidity	Temperature	Duct Burners	Plume Abatement
Total Stack Plum	e Hours:		0:00					
Remedial Action	ns Taken							
1 The Operator will ev	perate the econ	omizer bypas	s valve.					
1. The Operator will of								
2. Curtail steam injecti		ustion turbine	(called PAG	steam).				

Metcalf Energy Center Plume Log

Cooling Tower Plumes									
End time	Total Time	Event	Relative Humidity	Temperature	Duct Burners	Plume Abatement			
F									
9:30	2:00	Plume	69%	51 deg F	Off	On			
8:21	1:00	Plume	88%	37 deg F	Off	On			
	End time	End time Total Time	End time Total Time Event	End time Total Time Event Relative Humidity	9:30 2:00 Plume 69% 51 deg F	End time Total Time Event Relative Humidity Temperature Duct Burners			

Total Cooling Tower Plume Hours YTD: 3:00

Remedial Actions To Be Taken

1. The Operator will verify that the plume abatement was in service.

2. The Operator will verify that the louvers were completely opened.

3. Curtail supplementary firing in the HRSG.

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Stack Plumes

Date No Plume Events in Ja	Start Time nuary 2014	End time	Total Time	Event	Relative Humidity	Temperature	Duct Burners	Plume Abatement
No Plume Events in Fe	bruary 2014							
No Plume Events in Ma	arch 2014							
No Plume Events in Ap	nii 2014							
No Plume Events in Ma	ay 2014							
No Plume Events in Ju	ne 2014							
No Plume Events in Ju	ly 2014							
No Plume Events in Au	igust 2014							
No Plume Events in Se	ptember 2014	4						
No Plume Events in Oc	tober 2014							
No Plume Events in No	vember 2014							
No Plume Events in De	cember 2014							
Total Stack Plume H	lours YTD:		0:00					
Remedial Actions	Taken							
1. The Operator will operator will operator will operator 2. Curtail steam injectio 3. Curtail supplementar	n to the comb	oustion turbin		steam).				
ar Nahiman a contrational contra	averationing, "Ava me	erativita era krauer	ur sa harr har		ningen up ogsekke eksensetsere e	en der der Kannen auf der Kannen d	anan ar an a series - se	ana politika sa shi si sava a