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Annual Compliance Report

City of Anaheim
Canyon Power Plant

Anaheim, California

SCAQMD
Facility ID: 153992

CEC Permit Number:
800-2010-001-CMF

Docket Number:
07-AFC-9C

2021
Period Range
January 1, 2021 through December 31, 2021

Review and Certification

I have reviewed both technically and editorially all details, calculations, results conclusions and other appropriate written material contained herein and hereby certify that to the best of my knowledge the material presented is true, accurate and complete.

I certify that the information contained in this report is true, accurate, and complete.

Ronald Hoffard	Generation Plant Manager
Name	Title
	1/31/2022
Signature	Date

Canyon Power Plant

Annual Compliance Report

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List of Attachments

Acronyms and Abbreviations

BHP	Break horse power
Btu	British thermal unit
BACT	Best available control technology
CARB	California Air Resources Board
CFR	Code of Federal Regulations
CO	Carbon Monoxide
CO_2	Carbon Dioxide
COA	City of Anaheim
CFR	Code of Federal Regulations
CPP	Canyon Power Plant
CT	Combustion turbine
DAHS	Data acquisition and handling
TDS	Total dissolved solids
DPF	Diesel particulate filter
EPA	Environmental Protection Agency
F.	Fahrenheit
ICE	Internal combustion engine
lbs/hr	pounds per hour
lb/lb-mol	pound per pound mol
MW	mega watts
MMBtu	million British thermal units
mmcf	million cubic feet
NH_3	ammonia
NO	Nitrogen Oxide
NO_x	Oxides of Nitrogen
NO_2	Nitrogen Dioxide
O_2	Oxygen
ppm	parts per million
ppmc	parts per million corrected to 15% O_2
RATA	relative accuracy test audit
ROG	Reactive Organic Compounds
RTU	remote terminal unit
scf	standard cubic feet (standard temperature = 68 degrees F)
SCR	selective catalytic reactor
SCAQMD	South Coast Air Quality Management District
unit	The term unit refers to the boiler/steam turbine
VOC	Volatile Organic Compounds

1.0 Facility Description:

The City of Anaheim's (COA) Canyon Power Plant (CPP) facility is located at 3071 Miraloma Avenue in Anaheim California.

The facility consists of four natural gas fired General Electric, Model LM6000PC Sprint, simple cycle combustion turbine with water injection. The gas turbine was designed with a maximum heat input of 479 MMBtu per hour with a 46 degree Fahrenheit (F.) inlet air temperature. The units are equipped with an inlet air chiller designed to maintain the gas turbine inlet temperature at 46 degrees F. at full load.

Each unit is capable of generating 50.95 megawatts.

Carbon Monoxide (CO) emission from the gas turbine are controlled by utilizing a CO oxidation catalyst located between the gas turbine and the selective catalytic reactor (SCR). The CO oxidation catalyst controls the unit's CO and volatile organic compounds (VOC) emissions. The catalyst is guaranteed to reduce the unit's CO emission rate to a maximum of 4 ppm corrected to 15% O_2 (ppmc) and the VOC to 2 ppmc, both emission rates are based on a one (1) hour averages, dry basis at 15% O_2. The CO catalyst system was designed and supplied by Englehard/BASF.

The NO_x emissions from the gas turbine are controlled by the utilizing two (2) independent systems or techniques in series. The first system utilized on this unit is the water injection system.

Water is injected into the combustor suppressing the flame temperature and reducing the 1-hour average NO_x concentration to approximately 25 ppmc at 15% oxygen prior to entry into the SCR.

The second NO_x control system utilized by the unit is the NH_3/SCR system. After passing through the CO catalyst, the exhaust gases pass through an ammonia injection grid on its way to the SCR. The ammonia (NH_3) used at this facility is in the form a 19% by weight solution of ammonium hydroxide.

The SCR catalyst utilized by the unit for NO_x control was provided by Cormetech. The reaction between the NH_3 and the SCR catalyst reduces the existing NO_x to elemental nitrogen and water, resulting in NO_x concentrations in the exhaust gas at no greater than 2.5 ppmv at 15% O2 on a 1-hour average. The ammonia slip must be maintained below 5 ppm at 15% O2. Each SCR is vented through a dedicated stack, which is 11.8 ft. diameter and 86 ft. high.

The facility is also equipped with an 1141 BHP diesel emergency internal combustion engine (ICE) (black start engine) will be used to start up the plant in the event of a loss of grid power.

The ICE, is a Caterpillar, Model C-27, rated at 1141 BHP and fired on ultra low sulfur diesel fuel. The ICE, will serve to provide power to the plant during blackout conditions. The engine is certified by the SCAQMD as an EPA Tier 2 engine on 12/31/2010. The engine is required to be permitted, rather than registered, because CPP is a RECLAIM/Title V facility.

The black start engine will be used only in emergency situations where grid power from the COA's 69 kV system is unavailable to start the CTs. The black start engine will provide power to the turbine starter motors and various other necessary pieces of support equipment to get one of the gas turbines started. Once one of the turbines has been started and providing power to the

grid, the black start engine will be shut down.

The SCAQMD's rules limit operation of an emergency ICE to 50 hours per year.

The black start engine incorporates a diesel particulate filter (DPF), which is required by LAER. The Caterpillar DPF is designed to control the particulate emissions from diesel engines. The DPF consists of 2 filters, each 15-inches diameter by 15-inches long. The DPF system has been verified by CARB under Executive Order DE-14-006-01 to reduce emissions of diesel particulate matter consistent with a Level 3 device (greater than or equal to 85 percent reduction), when used with ultra low sulfur diesel with 15 ppm or lower sulfur content. As the DPF is CARB verified, a source test is not required. With the DPF, the particulate matter emissions from the engine is reduced from 0.15 g/bhp-hr to 0.0225 g/bhp-hr.

The DPF consists of a catalyzed cordierite ceramic honeycomb with hundreds of parallel channels, is designed to reduce emissions of particulate, carbon monoxide and hydrocarbons. The catalyst on the ceramic walls oxidizes carbon monoxide into carbon dioxide, and hydrocarbons into water and carbon dioxide. The arrangement of the channels is such that the exhaust gases carrying the carbon particles are forced through the fine pores of the walls, which filter out the particles. As the carbon particles are collected on the ceramic walls, the backpressure on the engine will increase. When the temperature of the exhaust is equal to or greater than 300 ºC (572 ºF) for at least 30% of the duty cycle, the catalyst interacts with the collected particulates to burn the particulates into carbon dioxide and water vapor, which will pass through the DPF.

CANYON POWER PLANT

ANNUAL COMPLIANCE REPORT

ATTACHMENT 1

COMPLIANCE MATRIX

CANYON POWER PLANT COMPLIANCE MATRIX

CY 2021 SCAQMD COMPLIANCE

AQMD Requirement	Limit	Limit	Period	Unit 1 Done	Unit 1 Due	Unit 2 Done	Unit 2 Due	Unit 3 Done	Unit 3 Due	Unit 4 Done	Unit 4 Due	Canyon Site Done	Canyon Site Due
CEMS Calibration Stack and Turbine	each 24 hours	Daily prior to fires lit	Daily	Daily	Daily	Daily	Daily	Daily	Daily	Daily	Daily		
NOx pounds		RECLAIM RTC Holdings per AQMD records 60 days after the end of each quarter	Daily	Daily	Daily	Daily	Daily	Daily	Daily	Daily	Daily		
NOx pounds monthly Electronic			15 days at the end of the month									1/3/22	2/15/22
NOx pounds quarterly Electronic			30 days at the end of the Quarter									1/3/22	4/30/22
QCER			30 days at the end of the first 3 calendar Quarters									1/27/22	4/30/22
NOx pounds Annual Permit Emissions Program report (APEP)			60 days after the end of the calendar year									1/27/22	2/28/23
RATA - RECLAIM/Acid Rain		Relative accuracy test of CEMS equipment	Every Six months or annually if incentive is met	7/12/21	9/30/22	7/13/21	9/30/22	10/13/21	6/30/22	5/18/21	6/30/22		
RATA - CO Spiking 218			Annually	7/12/21	9/30/22	7/13/21	9/30/22	10/13/21	6/30/22	5/18/21	6/30/22		
Ammonia slip		5 PPM	Every quarter 1st year then annually	7/12/21	9/30/22	7/13/21	9/30/22	10/13/21	6/30/22	5/18/21	6/30/22		
		1.67 lb/hr; 2.0 ppm; .06 lb/MMbtu per unit	Every 3 years	7/21-22/20	9/30/23	7/23-24/20	9/30/23	10/13-14/20	12/31/23	114-5/20	6/30/22		
Particulate PM (per Permit met the 3-year cycle on 2017)		1.67 lb/hr	Every 18 months in a 3 year period	2/8/16	not required	2/9/16	not required	11/4/15	not required	114-5/20	6/30/22		
Fuel Flow, Pressure, & Temperature calibration	pass or fail	2% accuracy	Annually	4/29/21	4/29/22	5/3/21	5/3/22	5/3/21	5/3/22	4/29/21	4/29/22		
SCR Inlet temperature probe calibration			Annually	1/13/21	1/13/22	1/13/21	1/13/22	1/13/21	1/13/22	1/13/21	1/13/22		
SCR differential pressure calibration	pass or fail	2% accuracy	Annually	1/12/21	1/12/22	1/12/21	1/12/22	1/12/21	1/12/22	1/12/21	1/12/22		
Ammonia flow meter	pass or fail	2% accuracy	Annually	3/25/21	3/25/22	4/1/21	4/1/22	4/12/21	4/12/22	4/6/21	4/6/22		
CEMS enclosure Temperature element calibration	pass or fail	2% accuracy	Daily	Daily	Daily	Daily	Daily	Daily	Daily	Daily	Daily		
Regenerate Diesel Particulate Filter	Every 24 Cold starts or Back Pressure (Yellow light) greater then 36 INCH/H2O											2/25/20	24 starts
Diesel NOx pounds quarterly electronic		RECLAIM RTC Holdings	15 days after the end of the quarter									1/3/22	4/30/22
Power Washer NOx Pounds Qtrly Electronic												1/3/22	4/30/22
~~Diesel tune up (Annual)~~	~~Manufactures specifications~~	~~4 degrees retarded~~	~~Annually~~									~~July 20~~	~~7/30/21~~
Metal Coating Log - Rule 1107 (VOC)		Log coatings used on site	Annually									12/31/21	12/31/22
Natural Gas Sample analysis	Manufactures specifications	0.25 grains H2S/100 scf	Monthly									12/3/21	1/15/22
218 report (non-RECLAIM elements)		PPM & Emission Rates	Semi-annual									7/27/21	1/30/22
Title V Permit Renewal		Compliance Report	Every 5 years; Apply 180 days prior to expiration;									8/20/21	8/18/26
Title V 500 SAM Report		Compliance Report	Semi-annual									1/27/22	7/30/22
Title V 500 ACC Report		Compliance Report	Annually									1/27/22	3/1/23
Annual Emissions Report (AER)		Compliance Report	75 days at the end of calendar year									3/15/21	3/1/22
RECLAIM equipment breakdown	Upon Discovery	Upon Discovery	Verbal report to AQMD within 1 hour of discovery										
Non-RECLAIM equipment breakdown	Upon Discovery	Upon Discovery	Verbal report to AQMD within 24 hours of discovery										
Stack NOx Limit	2.5 parts per million	2.5 PPM	60 minute average										
Ammonia Slip Limit	5 parts per million	5 PPM	60 minute average										
Start-up NOx Limit	14.27 pounds	14.27 lbs per 60 min	60 minute average										
Shut-down NOx Limit	4.07 pounds	4.07 lbs per 60 min	10 minutes average										
**Maintenance Operations NOx Limit	44.0 pounds	44.0 lbs in any hour	60 minute average										
CO Limit	4.0 parts per million	4 PPM	60 minute average										
Start-up CO Limit	11.6 pounds	11.6 lbs per 60 min	60 minute average										
Shut-down CO Limit	4.15 pounds	4.15 lbs per 60 min	10 minute average										
**Maintenance Operations CO Limit	19.5 pounds	19.4 lbs in any hour	60 minute average										
ROG Limit	2.0 parts per million	2 PPM	60 minute average										
Start-up ROG Limit	1.29 pounds	1.29 lbs per 60 min	60 minute average										
Shut-down ROG Limit	1.27 pounds	1.27 lbs per 60 min	10 minutes average										
VOC Limit	412 pounds	412 lb/mo per unit	Monthly										
PM-10 Limit	540 pounds	540 lb/mo per unit	Monthly										
SOX Limit	108 pounds	108 lb/mo per unit	Monthly										
VOC Limit	3608 pounds	3608 lbs/yr per unit	Annual										
PM-10 Limit	4822 pounds	4822 lbs/yer per unit	Annual										
SOX Limit	971 pounds	971 lbs/year per unit	Annual										
Start-ups Limit	240 pounds	540 starts per unit	Year										

CANYON POWER PLANT COMPLIANCE MATRIX

CY 2021 SCAQMD 500-N REPORTS

No.	Unit No.	Description	AQMD Permit Limit	Actual Emissions	Duration	Date of Episode	Reported to AQMD	500N sent to AQMD	Inspector Site Visit	Notice of Violation	Responsible	Resolution/Comments

No 500-N Reports submitted in 2021

CANYON POWER PLANT COMPLIANCE MATRIX

CY 2021 ENFORCEMENT ACTION NOTICES

*NOV	P66140	On 11/4 the PM10 source test limit exceeded the 1.67 lbs/hr and a retest occurred on 12/10 with passing results.	11/4/21	12/10/20	12/10/20	Hoffard/Hernandez	A retest was scheduled on 12/10 which resulted in a value 1.41 lbs/hr below the limit.

CANYON POWER PLANT COMPLIANCE MATRIX

CY 2021 CEC REPORTING

CEC Requirement	Period	Last Done	Next Due	Responsibility	Comments
CEC 1304	varies one to two months after the quarter	1/19/22	4/30/22	Hoffard/Hernandez	
CEC 1304b	Semi-Annual	1/31/21	7/31/21	Stambler/Hoffard	
CEC Annual Report	30 days at end of calender year	2/10/21	1/31/22	Hoffard/Hernandez	
CEC Quarterly Operations Report	30 days at end of each quarter	1/31/22	4/30/22	Hoffard/Hernandez	
Building and structure inspection	Semi-annually	12/30/21	6/30/22	Hernandez	
Legionella/TDS - PM10 calculation	Quarterly	12/6/21	3/30/22	Hoffard/Truesdail	

CANYON POWER PLANT COMPLIANCE MATRIX

CY 2021 CAISO REPORTING

CAISO Requirement	Period	Canyon Site Done	Canyon Site Due	Canyon Site Done	Canyon Site Due	Responsibility	Comments
		Spring		Fall			
Planned Outage Schedule	Annual Spring & Fall Outages	5/2/21	5/30/23	12/1/22	12/30/23	Hoffard	
DPG recertification	Triannually	3/30/20	3/30/23		NA	Hoffard/Trimark	Changed to 3 yrs per Trimark
NERC MOD 027 / 026 / 027	5 Years			12/31/20	12/31/25	Hoffard	Replaces WECC testing

CANYON POWER PLANT COMPLIANCE MATRIX

CY 2021 CAL ARP

California Accidental Release Prevention Program	Period	Last Done	Next Due	Responsibility
Hazard Review - 19% Aqua Ammonia System	Every 5 years	03/15/20	3/14/25	Hoffard/AFD
Compliance Audit	Every three years	2/19/20	2/19/23	Ralph McCaffrey
Ammonia Refresher Training (INACTIVE)	Every three years	N/A	N/A	Hoffard/McCaffrey
Ammonia Sensor Testing	Annual	7/7/21	7/6/22	Hoffard/McCaffrey
Ammonia Emergency Stop (E-Stop) Test	Annual	7/8/21	7/7/22	Hoffard/McCaffrey

CANYON POWER PLANT COMPLIANCE MATRIX

CY 2021 CAL ARP

California Accidental Release Prevention Program	Period	Last Done	Next Due	Responsibility
Hazard Review - 19% Aqua Ammonia System	Every 5 years	03/15/20	3/14/25	Hoffard/AFD
Compliance Audit	Every three years	2/19/20	2/19/23	Ralph McCaffrey
Ammonia Refresher Training (INACTIVE)	Every three years	N/A	N/A	Hoffard/McCaffrey
Ammonia Sensor Testing	Annual	7/7/21	7/6/22	Hoffard/McCaffrey
Ammonia Emergency Stop (E-Stop) Test	Annual	7/8/21	7/7/22	Hoffard/McCaffrey

California Air Resources Board
Stationary Equipment Refrigerant Management Program (RMP)
Canyon Power Plant (CPP) Compliance Guidance

Compliance Year: **2020**

Facility Size Classification: Large (at least 1 unit w/≥ 2000 lbs high GWP-refrigerant capacity)

Annual Fee: **$370.00** (Fees must be paid annually by the reporting deadline)

No. of Refrigeration Systems: 2 (CH-100, CH-200)

Location(s): Both chillers are located in the Northeast portion of facility footprint, just South of two water storage tanks.

Refrigeration System Specifications

CH-100: Centrifugal Chiller w/5200 lbs R-123 (full charge), Trane, Model No. CDHF3000, Serial No. L10B00882;
> ALDS ID: **301-IRF A**: Vulcain/Honeywell, Model No. 301-EM, Concentration Monitor (Direct System), 2 Infared Sensors

			Done		
Last System Audit:	**Next audit target:**	6/30/2021	8/9/21	**Deadline:**	12/31/2021
Last Calibration:	**Next calibration target:**	6/30/2021	8/9/21	**Deadline:**	12/31/2021

CH-100: Centrifugal Chiller w/5200 lbs R-123 (full charge), Trane, Model No. CDHF3000, Serial No. L10A00350;
>ALDS ID: **301-IRF B**: Vulcain/Honeywell, Model No. 301-EM, Concentration Monitor (Direct System), 2 Infared Sensors

Last System Audit:	**Next audit target:**	6/30/2021	8/9/21	**Deadline:**	12/31/2021
Last Calibration:	**Next calibration target:**	6/30/2021	8/9/21	**Deadline:**	12/31/2021

CARB Reporting (due by 3/1 each year)

Last CARB Report: 2/23/2021 for 2020 **Next reporting deadline:** 3/1/2022 (Fee payment due on or before this date)

Automatic Leak Detection System Requirements

●Each system must be audited and calibrated using manufacturer's recommended procedures to ensure that the system:

1.) accurately detects a concentration level of 10 parts per million of vapor of the specific refrigerant used in the system; and
2.) alerts the operator when a refrigerant concentration of 100 parts per million of vapor of the specific refrigerant is reached.

●The audit and calibration must be completed on each leak detection system at least once per calendar year.

●If an automatic leak detection system alerts plant operators, a leak inspection must be conducted within 24 hours after the system alert.
●This leak inspection must be completed using a calibrated refrigerant leak detection device or a bubble test to aonfirm a refrigerant leak and to determine the leak location(s).
●If during a required leak inspection or at any time oil residue is observed indicating a refrigerant leak, a leak inspection must be conducted using a calibrated refrigerant leak detection device or a bubble test to confrim the leak.
●A leak inspection must be conducted using a calibrated refrigerant leak detection device, a bubble test, or observation of oil residue, each time an additional refrigerant charge equal to or greater than 5 pounds, or one percent of the refrigeration system full charge (whichever is greater), is added to the system.

Leak Repairs and Subsequent Leak Inspection Requirements

●A refrigerant leak must be repaired by an EPA-certified technician holding a current and active C38 - Refrigerantion Contractor's license, or by an employee of a contractor with these qualifications.
> A contractor's license is not required if:
1.) a City employee services or repairs the system and wages are sole compensation; or
2.) the City performs the service or repair through one undertaking, or by one or more contracts, and the aggregate contract price for labor, materials, and all other items is less than $500; or
3.) the service or repair is performed pursuant to a contract entered into before 1/1/2011, by the City.

●Leaks must be repaired within 14 days of detection, unless a longer time period is allowed (*)

*45-day allowance if ANY of the following criteria is met:
1.) A certified technician is not available to complete the repair or replace the component(s). This must be documented in writing per recordkeeping requirements;
2.) The parts necessary to repair a refrigerant leak are unavailable, and the operator obtains a written statement from the refrigeration system or component manufacturer or distributor stating that the parts are unavailable. This must be documented in writing per recordkeeping requirements; or
3.) The re refrigerant leak repair requires an inductrial process shutdown that results in a process temporarily ceasing to manufacture the intermediate or final product that is produced when the industrial process refrigeration appliance is in operation.

*120-day allowance if ALL of the following criteria is met:

1.) The facility is an entity subject to Mandetory Greenhouse Gas Emissions Reporting requirements;
2.) The refrigeration system is an inductrial process refrigeration applicance;
3.) The refrigerant leak repair requires an industrial process shutdown that results in a process temporarily ceasing to manufacture the intermediate or final product that is produced when the industrial process refrigeration appliance is in operation; and
4.) Written records are maintained to document that all of the conditions are met.

●An initial verification test must be performed upon completion of refrigerant leak repairs.

●A follow-up verification test must be conducted on the complete refrigeration system after the initial verification test.
> If the system was evacuated during the refrigerant leak repair, then this test should be conducted when the system is operating at normal operating characteristics and conditions.
> If the system was not evacuated during the refrigerant leak repair, then the follow-up verification test requirement is satisfied once the required changes are made to return the refrigeration system to normal operating characteristics and conditions.

●If either the initial or follow-up verification tests indicate that a refrigerant leak is still occuring, the leak must be repaired within 14 days (unless a longer time period is allowed*).
> A retrofit or retirement plan may also be prepared in lieu of this repair.

●If a follow-up verification test indicates that a refrigerant leak has not been successfully repaired within the 14 days allowed, and no exemption has been received, then:
> successfully repair the leak within 45 days of the initial leak detection; or
> prepare a retrofit or retirement plan within 60 days of the initial leak detection.

●If a follow-up verification test indicates that a refrigerant leak has not been successfully repaired within the 45 days allowed(*), and no exemption has been received, then:
> prepare a retrofit or retirement plan within 60 days of the initial leak detection.

●If a follow-up verification test indicates that a refrigerant leak has not been successfully repaired within the 120 days allowed(*), and no exemption has been received, then:
> prepare a retrofit or retirement plan within 135 days of the initial leak detection.

Retrofit or Retirement Plan Requirements

●If required to prepare a retirement or retrofit plan, the plan must establish a schedule to retrofit or retire the leaking system no later than six months after the intial leak detection, and all work must be completed during the 6-month period.
●The plan must be kept on-site where the leaking system is located.
●If a refrigeration system is to be retired and replaced, the plan must include information specific to the new refrigeration system to be constructed or installed. (**)
●If a refrigeration system is to be retrofitted, the plan must include information specific to the refrigeration system after the retrofit has been completed. (**)

** A retrofit or retirement plan must include the following information:

1.) The system identification number of the refrigeration system being retired or retrofitted;
2.) equipment type;
3.) equipment manufacturer;
4.) equipment model or description;
5.) intended physical location of the refrigeration system through schematic or floor plan with locations clearly noted;
6.) temperature classification (i.e., low, medium, other);
7.) full charge of refrigeration system;
8.) type of refrigerant used;
9.) if the refrigeration system is to be retired and replaced, a plan to dispose of the retired system;
10.) a timetable which includes, at a minimum:
    > the date installation, construction, or retrofit of the refrigeration system is expected to begin, and
    > the expected completion date of the installation, construction, or retrofit of the refrigeration system; and
11.) A signature by a representative of the facility, including the date.

●If the system is being mothballed, these requirements do not apply until the day that the refrigeration system resumes operation at a facility.
●If an exemption has been received, then the preparation and implementation of a retrofit or retirement plan is not required during the exemption time period. If an exemption request has been submitted, then the plan preparation or implementation is not required until a final exemption determination is made.

Recordkeeping Requirements

●Maintain the following records for a minimum of 5 years:

1.) All registration information required by the rule;
2.) documentation of all leak detection systems, leak inspections, and automatic leak detection system annual audit and calibrations;
3.) records of refrigeration system service and refrigerant leak repairs, and any documentation of conditions allowing repair to be

conducted more than 14 days after leak detection;

4.) retrofit or retirement plans;
5.) all CARB reports;
6.) any application for exemption, and any notification of an exemption approved, denied, revoked, or modified;
7.) invoices for all refrigerant purchases;
8.) records of all shipments of refrigerants for reclamation or destruction, to include:
    - > Name and address of the person the refrigerant was shipped to;
    - > Weight in pounds of refrigerant shipped;
    - > type of refrigerant shipped;
    - > date of shipment;
    - > purpose of shipment (i.e., reclamation, destruction, etc.);
9.) records of all refrigeration systems component data, measurements, calculations and assumptions used to determine the full charge.

CANYON POWER PLANT COMPLIANCE MATRIX

CY 2021 CITY REPORTING

Anaheim Requirement	Period	Last Done	Next Due	Responsibility
Certified (Facility) Fire Protection Systems Inspection	Semi-Annual	12/8/21	12/7/22	Hoffard
Electric protection relays	5-years	11/14/18	11/13/23	Hoffard
8-Hour refresher HAZWOPER	Annual	6/17/21	6/16/22	Hoffard/Ralph McCaffrey
Oil Spill Prevention, Control and Countermeasure Plan	5-years	12/21/21	12/21/26	McCaffrey/Hoffard
Hazardous Materials Business Plans (CERS)	Annual	3/24/21	3/24/22	McCaffrey/Hernandez

CANYON POWER PLANT COMPLIANCE MATRIX

CY 2021 EIA REPORTING

EIA Requirement	Period	Last Done	Next Due	Responsibility	Comments
EIA 860-A	Annual	3/1/21	3/1/22	Hoffard/Hernandez	
EIA-923-M	Monthly	1/5/22	2/15/22	Hoffard/Hernandez	

CANYON POWER PLANT COMPLIANCE MATRIX

CY 2021 OSHA REPORTING

OSHA Requirement	Period	Unit 1 Done	Unit 1 Due	Unit 2 Done	Unit 2 Due	Unit 3 Done	Unit 3 Due	Unit 4 Done	Unit 4 Due	Canyon Site Done	Canyon Site Due	Responsible
LM6000 Overhead Crane inspection	Annually	12/9/22	12/8/23	12/9/22	12/8/23	12/11/22	12/10/23	12/11/21	12/10/22			Hoffard
Warehouse Crane inspection	Annually									12/9/21	12/8/22	Hoffard
LM6000 Overhead Crane load test	Every 4 years	12/9/20	12/9/24	12/11/20	12/11/24	5/10/21	5/9/25	12/12/21	12/12/25			Hoffard
Warehouse Crane load test	Every 4 years									12/16/20	12/16/24	Hoffard
Fuel Gas system safeties - CTG	Tri-Annual									5/27/19	5/27/22	Hoffard
Fuel Gas system safeties - Gas Yard	Tri-Annual									5/27/19	5/27/22	Hoffard
Instrument Air system safeties	Every 5 years									10/30/21	10/30/26	Hoffard
Ammonia tank system safeties	Updated Every 4 years									6/21/21	6/20/25	Hoffard
Air Pressure tank inspection / permit renewal	Every 5 years									11/1/21	11/1/26	Hoffard/HSB insurance

CANYON POWER PLANT COMPLIANCE MATRIX

CY 2021 EPA REPORTING

EPA Requirement	Period	Unit 1 Done	Unit 1 Due	Unit 2 Done	Unit 2 Due	Unit 3 Done	Unit 3 Due	Unit 4 Done	Unit 4 Due	Responsible
Linearity Test	anytime within the quarter	10/4/21	3/30/22	10/5/21	3/30/22	10/6/22	3/30/22	10/7/22	3/30/22	Montrose/Hoffard/Hernandez
Electronic Data Report (EDR) EPA	30 days at the end of the Quarter	1/19/22	4/30/22	1/19/22	4/30/22	1/19/22	4/30/22	1/19/22	4/30/22	B&W/Hernandez/Hoffard
Greenhouse gas monitoring report	Annually	3/22/21	3/30/22	3/22/21	3/30/22	3/22/21	3/30/22	3/22/21	3/30/22	Hernandez/Hoffard
EPA Form 500 ACC	Annually	1/27/22	3/1/23	1/27/22	3/1/23	1/27/22	3/1/23	1/27/22	3/1/23	Hernandez/Hoffard

Spill Prevention, Control and Countermeasures Plan	Period	Last Done	Next Due	Responsibility	Comments
SPCC Facility Inspection	Monthly	12/8/21	1/8/22	Hernandez	

CANYON POWER PLANT COMPLIANCE MATRIX

CY 2021 FIRE CODE REPORTING

Fire Code Requirement	Period	Last Done	Next Due	Responsibility
Fire detection system certification	Annual	5/17/21	5/16/22	Hoffard/Fire Protection Systems
Fire detection system inspection	Semi-annual	12/8/21	12/7/22	Hoffard/Fire Protection Systems
CO 2 cylinder (weight)	Annual	5/17/21	5/16/22	Hoffard/Fire Protection Systems

CANYON POWER PLANT COMPLIANCE MATRIX

CY 2021 OCSD REPORTING

OCSD Requirement	Period	Last Done	Next Due	Responsibility
Permit # 1-600296				
Effluent Meter reading Report	Monthly	1/3/22	2/20/22	Operator/Hoffard/Hernandez
Effluent Sample collection (BOD/TSS)	semi-annual	10/12/21	4/1/22	Sanks/Hernandez/Hoffard
Effluent Meter Certification/Cal	Annual	1/20/22	1/10/23	Sanks/Hernandez/Hoffard
Class I Permit Renewal	every 2 years	3/31/21	3/31/23	Sanks/Hernandez/Hoffard
Backflow Inspection	Annual	11/3/20	11/30/21	Hernandez/Hoffard
Reclaim Water Testing (City of Anaheim)	Every 3 years	12/16/20	12/30/23	Hoffard/Hernandez

CANYON POWER PLANT COMPLIANCE MATRIX

CY 2021 WQMP REPORTING

Storm Drain Systems	Period	Last Done	Next Due	Responsibility
Catch Basins (25) inspection	Semi-Annual (in-house)	4/14/21	6/30/22	Hernandez/Hoffard
Infiltration Vault	Annual Inspection	4/14/21	6/30/22	Hernandez/Hoffard
Contech Storm Filters	Annual Inspection	4/14/21	6/30/22	Hernandez/Hoffard

CANYON POWER PLANT

ANNUAL COMPLIANCE REPORT

ATTACHMENT 2

FACILITY OPERATIONAL STATUS REPORT

Overall Project Status

Canyon Power Plant construction was completed in August 2011. Units 3 and 4 were ready for commercial operation on July 27, 2011. Units 1 and 2 were ready for commercial operation on September 15, 2011.

All four gas turbines completed commissioning and were in commercial operation for the entire compliance year 2021.

No changes to the operational status of the facility implemented or planned in 2021 year.

CANYON POWER PLANT

ANNUAL COMPLIANCE REPORT

ATTACHMENT 3

CEC APPROVED POST CERTIFICATION CHANGES

No California Energy Commission (CEC) approved post certification changes

On August 19, 2021 South Coast AQMD issued the final Title V Facility Permit Renewal and the revision included the following updates:

- Condition 14.2 removed
- Condition F67.1 added: continuous operations not required when necessary Calibration, Maintenance or repair activities are performed.
- Condition 29.2 removed: method 5.3 or EPA Method 17

CANYON POWER PLANT

ANNUAL COMPLIANCE REPORT

ATTACHMENT 4

MISSED SUBMITTAL DEADLINES

Canyon Power Plant submitted all required compliance reports on the due dates and no missed submittal deadlines for CY 2021.

CANYON POWER PLANT

ANNUAL COMPLIANCE REPORT

ATTACHMENT 5

PERMIT FILINGS AND PERMITS ISSUED

DURING THE PERIOD

Canyon Power Plant submitted a Title V Renewal application and SCAQMD issue the final Title V Facility Permit to Canyon Power Plant on August 20, 2021.

CANYON POWER PLANT

ANNUAL COMPLIANCE REPORT

ATTACHMENT 6

PROJECTED COMPLIANCE TESTING

FOR THE NEXT YEAR

Projected Environmental Compliance Testing schedule in CY 2022:

Compliance Test	Frequency	Scheduled Quarter
NH3 Slip Test	Annual	2Q; 3Q
RATA Test	Annual or Semi-Annual	2Q; 3Q
Cooling Tower TDS/PM10	Quarterly	All four Quarters
Cooling Tower Legionella	Quarterly	All four Quarters
Fuel H_2S Test	Monthly	January through December
Fuel Flow Accuracy	Annual	2Q
SCR Differential Pressure	Annual	2Q
SCR Inlet Temperature	Annual	2Q
NH3 Flow Meter Calibration	Annual	2Q
Linearity/CGA Test	Quarterly	All four Quarters
PM10/SO_2/VOC	Triennial	None
PM10	Every 18 months for 3 years	2Q

CANYON POWER PLANT

VARIOUS COMPLIANCE REPORTS

ATTACHMENT 7

ADDITIONS TO ON-SITE COMPLIANCE FILE

PLANT COMPLIANCE REPORTS

California Energy Commission (CEC)

- Quarterly reports
- Quarterly 1304 Report
- Annual report
- Potable water use records
- Cooling Tower Legionella test report
- Cooling Tower TDS test reports
- Monthly Natural gas burn records
- Monthly Reclaim water use reports
- Monthly Potable water use reports

California Independent System Operator (CAISO)

- Certificate of Compliance

California Air Resource Board (CARB)

- Greenhouse gas records
- Annual refrigerant report
- Annual SF6 use report
- Refrigerant monitor calibration report

Diesel Engine

- Maintenance Reports
- Fuel purchase records
- Engine run-time records
- Hi-Back calibration report
- Engine tune up report

U.S. Energy Information Administration (EIA)

- Annual/Monthly EIA 923 report
- Annual EIA 860 report

Environmental Protection Agency (EPA)

- Part 98 Greenhouse Gas reports
- Certificate of Representation forms
- Quarterly Acid Rain report
- Quarterly Acid Rain report & feedback report
- Annual Form 500-ACC

Regional Clean Air Market (RECLAIM)

- Daily submittals
- Monthly submittals
- Quarterly submittals
- SCAQMD QCER Forms

- SCAQMD 500-N Forms
- SCAQMD 500-SAM Forms
- SCAQMD 500-ACC Form
- SCAQMD APEP Form
- SCAQMD AER Report
- SCAQMD Rule 218 Semi-annual reports
- RECLAIM RTC holdings records

South Coast Air Quality Management District (SCAQMD)

- NOV & NTCs issued by the SCAQMD
- SCAQMD responses to 500-N forms
- Monthly Natural H_2S gas test reports

Orange County Sanitation District (OCSAN)

- Monthly Effluent Water reports
- Semi-annual

Calibration Records

- Fuel flow meter calibration report
- Water flow meter calibration report
- NH3 flow meter calibration report
- SCR DP transducer calibration report
- SCR inlet temperature transducer Cal report
- SCR outlet temperature transducer Cal report

Calibration gas logs

- Linearity test reports
- Part 75 RATA test reports
- RECLAIM RATA test reports
- Rule 218 (CO) RATA test reports
- NH3 slip test reports

Triennial compliance testing

- VOC, PM10 and ROG emissions

CANYON POWER PLANT

ANNUAL COMPLIANCE REPORT

ATTACHMENT 8

UN-PLANNED FACILITY CLOSURE PLAN REVIEW

An "Un-Planned Facility Closure Plan" was drafted and submitted to the California Energy Commission (CEC) in the First Quarter of 2014. At this time, no revisions or changes are required.

CANYON POWER PLANT

ANNUAL COMPLIANCE REPORT

ATTACHMENT 9

Notice of Violation Notice to Comply Issued in CY 2021

One (1) Notice of Violation
Issued by a Regulatory Agency in the CY 2021

No Notices to Comply
Issued by a Regulatory Agency in the CY 2021

South Coast Air Quality Management District
21865 COPLEY DRIVE, DIAMOND BAR, CA 91765-4178

P 66140

NOTICE OF VIOLATION

DATE OF VIOLATION		
Month: 11	Day: 04	Year: 2020

Facility Name:	Facility ID#:	Sector:
CANYON POWER PLANT	153992	OE

Location Address:	City:	Zip:
3071 E MIRALOMA AVE	ANAHEIM	92806

Mailing Address:	City:	Zip:
3071 E MIRALOMA AVE	ANAHEIM	92806

YOU ARE HEREBY NOTIFIED THAT YOU HAVE BEEN CITED FOR ONE OR MORE VIOLATIONS OF THE SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT (SCAQMD) RULES, STATE LAW OR FEDERAL LAW. IF PROVEN, SUCH VIOLATION(S) MAY RESULT IN THE IMPOSITION OF CIVIL OR CRIMINAL PENALTIES.

EACH DAY A VIOLATION OCCURS MAY BE HANDLED AS A SEPARATE OFFENSE REGARDLESS OF WHETHER OR NOT ADDITIONAL NOTICES OF VIOLATION ARE ISSUED.

DESCRIPTION OF VIOLATIONS

#	Authority*	Code Section or Rule No.	SCAQMD Permit to Operate or CARB Registration No.	Condition No. (If Applicable)	Description of Violation
1	☑ SCAQMD ☐ CH&SC ☐ CCR ☐ CFR	2004 (f)(1)		D29.3	FAILURE OF FACILITY PERMIT HOLDER TO COMPLY WITH PERMIT CONDITION D29.3, EXCEEDING THE PM EMISSION RATE OF 1.67 lbs/hour IN DEVICE D19.
2	☑ SCAQMD ☐ CH&SC ☐ CCR ☐ CFR	3002 (c)(1)		D29.3	FAILURE OF FACILITY PERMIT HOLDER TO COMPLY WITH PERMIT CONDITION D29.3, EXCEEDING THE PM EMISSION RATE OF 1.67 lbs/hour IN DEVICE D19.
3	☐ SCAQMD ☐ CH&SC ☐ CCR ☐ CFR				
4	☐ SCAQMD ☐ CH&SC ☐ CCR ☐ CFR				
5	☐ SCAQMD ☐ CH&SC ☐ CCR ☐ CFR				

Served To:	Phone:	Served By:	Date Notice Served:
BERTHA HERNÁNDEZ	714.765.7481	CHRISTER BALUYOT	01/27/2021

Title:	Email:	Phone No:	Email:
ENVIRONMENTAL SERVICES SPECIALIST	BHERNANDEZ@ANAHEIM.NET	☑ 909-396-3054 ☐ 310-233-	CBALUYOT @ aqmd.gov

*Key to Authority Abbreviations:
SCAQMD – South Coast Air Quality Management District
CH&SC – California Health and Safety Code
CCR – California Code of Regulations
CFR – Code of Federal Regulations

Method of Service:
☐ In Person ☑ Certified Mail & E-MAIL

ORIGINAL

SCAQMD FORM 500-N
Title V – Deviations, Emergencies & Breakdowns
Submitted by Canyon Power Plant

Canyon Power Plant did not experience any Deviations, Emergencies & Breakdowns in 2021

CANYON POWER PLANT

ANNUAL COMPLIANCE REPORT

ATTACHMENT 10

CONDITION HAZ-1

List of Hazardous Materials contained at the facility:

- **Aqua Ammonia 19%**
- **Acetylene**
- **Argon**
- **Oxygen**
- **Batteries**
- **Bromine**
- **Calibration gases for the CEMS**
- **CO_2**
- **Diesel Fuel**
- **Fire suppression chemicals**
- **Florescent light bulbs**
- **Freon for the chiller systems R-123**
- **Gas Turbine oil**
- **Gas compressor oil**
- **Reagents for the water treatment system**
- **SF6 in switch gear**
- **Anti-scalent RL 9007**
- **ChemTreat BL124**
- **Microbiocide ChemTreat CL2156**
- **ChemTreat CL6855**
- **12.5% Sodium Hypochlorite Solution**
- **RL 1125**
- **Simple Green**
- **ChemTreat CL41**
- **ChemTreat CL6855**
- **Powerback Concentrate with Anti-Foam Agent**
- **Unleaded gasoline**
- **Propane**

Location Information		Chemical Identification			Fire Code Hazard Class Information				
1a*	201	205	207*	209	210a	210b	212	214*	215
CERSID	ChemicalLocation	ChemicalName	CommonName	CASNumber	PFCodeHazardClass	SFCodeHazardClass	RadioActive	PhysicalState	LargestContainer
10445230	RO WATER TREATMENT		ANTISCALENT RL 9007				N	b	350
10445230	AMMONIA STORAGE TANK		AQUA AMMONIA (19%)		5	31	N	b	10000
10445230	BENEATH BACK-UP GENERATOR		DIESEL FUEL		2		N	b	500
10445230	IN TURBINE ENGINES and DRUM STORAGE AREA		MOBIL JET OIL II		3		N	b	150
10445230	ELECTRIC GENERATORS AND DRUM STORAGE AREA		MOBIL DTE LIGHT OIL		4		N	b	500
10445230	HYDRAULIC STARTERS AND DRUM STORAGE AREA		MOBIL DTE 25 OIL		4		N	b	55
10445230	NATURAL GAS COMPRESSORS AND DRUM STORAGE AREA		MOBIL PEGASUS 805 OIL		4		N	b	55
10445230	IN TRANSFORMERS		MINERAL OIL		4		N	b	5680
10445230	NEAR COOLING TOWER AND IN DRUM STORAGE AREA		BIOCIDE (CHEMTREAT CL41)				N	b	330
10445230	NEAR COOLING TOWER AND IN DRUM STORAGE AREA		SODIUM HYPOCHLORITE SOLUTION		5		N	b	330
10445230	WAREHOUSE AND NEAR EXHAUST TOWERS		CALIBRATION GAS				N	c	150
10445230	DRUM STORAGE AREA	PROPANE	PROPANE	74-98-6	8		N	c	290
10445230	SUBSTATION BUILDING	SULFUR HEXAFLUORIDE	SF6	2551-62-4			N	c	2400
10445230	IN FIRE FIGHTING EQUIPMENT - VARIOUS AREAS	CARBON DIOXIDE	CO2	124-38-9			N	c	437
10445230	Chiller Enclosure	Freon R-123	Freon	306-83-2			N	b	920
10445230	WATER TREATMENT		MICROBIOCIDE CL206 CHEMTREAT				N	b	120
10445230	WATER TREATMENT		ChemTreat BL 124		5		N	b	320
10445230	WATER TREATMENT		ChemTreat CL 2156		5		N	b	320
10445230	WATER TREATMENT		ChemTreat CL6855		5		N	b	320
10445230	DRUM STORAGE AREA		Simple Green				N	b	55
10445230	DRUM STORAGE AREA		Formula 2530-LT (Garrat Callahan)				N	b	55
10445230	DRUM STORAGE AREA		POWERBACK CONCENTRATE WITH ANTIFOAM AGENT				N	b	55
10445230	DRUM STORAGE AREA	Oil	WASTE OIL	8012-95-1	4		N	b	55
10445230	SHOP-WAREHOUSE	Acetylene	Acetylene	74-86-2	33	8	N	c	225
10445230	SHOP-WAREHOUSE	Oxygen	Oxygen Gas	7782-44-7	18		N	c	250
10445230	STORAGE AREA	Argon	ARGON	70355-97-4			N	c	125

CALIFORNIA
AIR RESOURCES BOARD
Phone: 1 (916) 324-2517
Email: reftrackinfo@arb.ca.gov

File Report for "Canyon Power Plant"

Year of Filing: 2020 **Submitted Date: 02/23/2021**

Company Profile

Company Name : **City of Anaheim** Federal tax ID : ********970**

Contact Person Details

Person Name : **Mr. Ronald Hoffard (Generation Manager)**

Phone : **Contact: 7147654536**

Email : **rhoffard@anaheim.net**

Mailing Address Information

3071 East Miraloma Ave.
Anaheim, 92806
CA

Billing Address Information

3071 East Miraloma Ave.
Anaheim, 92806
Anaheim

Facility Profile

Facility Name : **Canyon Power Plant** Federal tax ID : ********970**

Contact Person Details

Person Name : **Mr. Ronald Hoffard (Generation Manager)**

Phone : **Contact: 7147654536**

Email : **rhoffard@anaheim.net**

Mailing Address Information

3071 East Miraloma Ave.
Anaheim, 92806
CA

Billing Address Information

3071 East Miraloma Ave.
Anaheim, 92806
Anaheim

Refrigeration System Listing

Number	System ID	Full Charge (lbs)	Refrigerant Type	Installation Date	Temperature Class	Equipment Type	Manufacturer	Operational Status	Model	Model Year	Serial Number	Location	Floor Plan (Y/N)
1	CH-100	5200.00	R-123	05/12/2011	Medium	Chiller (Refrigeration/Industrial Process Cooling)	Trane	Normal Operation	CDHF3000	2011	L10A00350	North side of facility, in dedicated chiller enclosure.	Y
2	CH-200	5200.00	R-123	05/12/2011	Medium	Chiller (Refrigeration/Industrial Process Cooling)	Trane	Normal Operation	CDHF3000	2011	L10B00882	North side of facility in dedicated chiller enclosure.	Y

Leak detection System

Number	ALD ID	Refrigeration System ID	Installation Date	ALD Type	Detection Limit	Alarm Set Point	Concentration Monitor Type	Manufacturer	Number of Sensors	Sensor Type	Sensor Manufacturer	Location of Sensors/Inlets
1	301-IRF A	CH-100CH-200	05/12/2011	Concentration Monitor (Direct System)	10.00	100	0	Honeywell	2	Infra red	Vulcain/honeywell	1 foot above floor

Refrigeration System Inspection and Servicing

Number	Service Date	System ID	Leaks Detected?	Date Leak Detected	Date Leak Repaired	Number of Days	Refrigerant Added (lbs)	Cause of Leak	Service Provided	Date of Initial VT	Date of Follow-up VT	Purpose of Added Refrigerant	Technician Name	Certificate #	Certificate Type
1	09/04/2020	CH-100	No			0	0.00								
2	09/04/2020	CH-200	No			0	0.00								
3	05/08/2020	CH-100	No			0	0.00								
4	05/08/2020	CH-200	No			0	0.00								
5	05/06/2020	CH-100	No			0	0.00								
6	05/06/2020	CH-200	No			0	0.00								
7	03/16/2020	CH-100	No			0	0.00								
8	03/16/2020	CH-200	No			0	0.00								
9	03/15/2020	CH-100	No			0	0.00								
10	03/15/2020	CH-200	No			0	0.00								
11	01/29/2020	CH-100	No			0	0.00								
12	02/11/2020	CH-100	No			0	0.00								

Leak Detection System Inspection and Servicing

Number	Service Date	ALD ID	Service Type	Description of Service
1	09/08/2020	301-IRF A	Calibration	Performed calibration test on Ref monitor. Both sensors calibrated.

Refrigerant Purchase Information

Type	Total Purchased (lbs.)	Total Charged (lbs.)	Total Recovered (lbs.)	Total Stored (lbs.)	Total Shipped (lbs.)
R-123	0.00	0.00	0.00	0.00	0.00

Comment

Submitted By: Ronald Hoffard

CALIFORNIA
AIR RESOURCES BOARD
Phone: (916) 324-2517
Email: rmp@arb.ca.gov
URL: www.arb.ca.gov/rmp/rmp.htm

Invoice Detail

Invoice No: 119973 **Invoice For Year:** 2020 **ARB REFERENCE CODE:** RMP **Dated:** 02/23/2021

City of Anaheim				
#	Facility Name	Amount Due($)	Exemption	Total ($)
1	Canyon Power Plant (CIT003-001)	370.00	0	370.00
TOTAL CHARGES				370.00

Please return a copy on the invoice with your payment to the address below.
"Checks should be made payable to the California Air Resources Board.
If required for your company records, the CARB Federal Tax ID is 68-0288069. A $10 service fee may apply for returned checks."

Air Resources Board

Attn: Accounting

P.O. Box 1436

1001 I St., Floor 20

Sacramento, CA 95812-1436

CALIFORNIA
AIR RESOURCES BOARD
Phone: (916) 324-2517
Email: reftrackinfo@arb.ca.gov

Online Payment Receipt

Invoice No:	**119973**	**Dated:**	**2021-02-23**
Invoice For Year:	**2020**		
Payment Amount:	**$370.00**		
ARB Reference Code:	**RMP**		
Transaction Time:	**02/23/2021 11:22:00 AM**		
Payment Transaction Id:	**230221A43-B26B09B1-E571-4ADC-875F-2174480D90A7**		
Payment Result:	**APPROVAL**		
Payment Approval Code:	**066496**		

CANYON POWER PLANT

ANNUAL COMPLIANCE REPORT

ATTACHMENT 11

CONDITION HAZ-8

In the annual compliance report, the project owner shall include the following statements:

"All current project employee and appropriate contractor background investigations have been performed and that updated certification statements have been appended to the operations security plan".

All current project employee and appropriate contractor background investigations have been performed and that updated certification statements have been appended to the operations security plan.

"The operations security plan includes all current hazardous materials transport vendor certifications for security plans and employee background investigations".

The operations security plan includes all current hazardous materials transport vendor certifications for security plans and employee background investigations.

CANYON POWER PLANT

ANNUAL COMPLIANCE REPORT

ATTACHMENT 12

SOIL & WATER USE REPORT-7

Monthly Water Reading Reports

Company: City of Anaheim/Canyon Power Plant
Plant Location: 3071 E. Miraloma Ave.
City/State/Zip: Anaheim, CA 92806

Period Start: 1/1/2021
Period End: 12/31/2021

Recycle Water Usage

Annual Total Gallons	Annual Total Acre Feet	Monthly Average Gallons	Monthly Average Acre Feet	Monthly Minimum Gallons	Monthly Minimum Acre Feet	Monthly Maximum Gallons	Monthly Maximum Acre Feet	Average Gallons Per Day
12,390,147	38.02	1,032,512	3.17	512,728	1.57	2,324,827	7.13	33,941

Company: City of Anaheim/Canyon Power Plant
Plant Location: 3071 E. Miraloma Ave.
City/State/Zip: Anaheim, CA 92806

Period Start: 1/1/2021
Period End: 12/31/2021

Potable Water Usage

Annual Total Gallons	Annual Total Acre Feet	Monthly Average Gallons	Monthly Average Acre Feet	Monthly Minimum Gallons	Monthly Minimum Acre Feet	Monthly Maximum Gallons	Monthly Maximum Acre Feet	Average Gallons Per Day
864,349	2.65	36,015	0.11	0.00	0.00	603,676	1.85	1,171

Annual Data

	Recycle Water		Portable Water	
	Annual Total Acre Feet	Annual Total Gallons	Annual Total Acre Feet	Annual Total Gallons
2018	73.09	23,817,912	6.99	2,277,132
2019	60.04	19,563,004	0.33	106,201
2020	38.02	12,390,147	2.65	864,349
Average	57.05	18,590,354	3.32	1,082,561
Min	38.02	12,390,147	0.33	106,201
Max	73.09	23,817,912	6.99	2,277,132

Company: City of Anaheim
Plant Location: 3071 E. Miraloma Ave.
City/State/Zip: Anaheim, CA 92806

Period Start: 1/1/2021
Period End: 12/31/2021

Recycled Water Usage

Date	Start Cubic-ft	End Cubic-ft	Total Cubic-ft	Month gal	Daily gal	Month Acre-ft
1/1/2021	23,142,474	23,217,100	74,626	558,239.79	18,007.74	1.71
2/1/2021	23,217,100	23,322,400	105,300	787,696.65	28,132.02	2.42
3/1/2021	23,322,400	23,426,300	103,900	777,223.95	25,071.74	2.39
4/1/2021	23,426,300	23,494,842	68,542	512,728.43	17,090.95	1.57
5/1/2021	23,494,842	23,612,700	117,858	881,636.77	28,439.90	2.71
6/1/2021	23,612,700	23,857,800	245,100	1,833,470.55	61,115.69	5.63
7/1/2021	23,857,800	24,168,585	310,785	2,324,827.19	74,994.43	7.13
8/1/2021	24,168,585	24,297,200	128,615	962,104.51	31,035.63	2.95
9/1/2021	24,297,200	24,481,300	184,100	1,377,160.05	45,905.34	4.23
10/1/2021	24,481,300	24,618,300	137,000	1,024,828.50	33,058.98	3.15
11/1/2021	24,618,300	24,727,900	109,600	819,862.80	27,328.76	2.52
12/1/2021	24,727,900	24,798,800	70,900	530,367.45	17,108.63	1.63
		Annual Total:	1,656,326.00	12,390,146.64		38.02
		Average:	138,027.17	1,032,512.22	33,940.82	3.17
		Monthly Minimum:	68,542.00	512,728.43		1.57
		Monthly Maximum:	310,785.00	2,324,827.19		7.13

Company: City of Anaheim
Plant Location: 3071 E. Miraloma Ave.
City/State/Zip: Anaheim, CA 92806

Period Start: 1/1/2021
Period End: 12/31/2021

Potable Water Usage

HCF-1

Date	Start Cubic-ft	End Cubic-ft	Total Cubic-ft	Month gal	Daily gal	Month Acre-ft
1/1/2021	945,484	945,500	16.00	119.69	3.86	0.00
2/1/2021	945,500	945,500	0.00	0.00	0.00	0.00
3/1/2021	945,500	945,500	0.00	0.00	0.00	0.00
4/1/2021	945,500	945,500	0.00	0.00	0.00	0.00
5/1/2021	945,500	945,600	100.00	748.05	24.13	0.00
6/1/2021	945,600	945,600	0.00	0.00	0.00	0.00
7/1/2021	945,600	945,600	0.00	0.00	0.00	0.00
8/1/2021	945,600	1,026,300	80,700.00	603,676.35	19,473.43	1.85
9/1/2021	1,026,300	1,045,300	19,000.00	142,129.50	4,737.65	0.44
10/1/2021	1,045,300	1,045,300	0.00	0.00	0.00	0.00
11/1/2021	1,045,300	1,045,300	0.00	0.00	0.00	0.00
12/1/2021	1,045,300	1,045,500	200.00	1,496.10	48.26	0.00
		Annual Total:	100,016.00	748,169.69		2.30
		Average:	8,334.67	62,347.47	2,023.94	0.19
		Monthly Minimum:	0.00	0.00		0.00
		Monthly Maximum:	80,700.00	603,676.35		1.85

HCF-2

Date	Start Cubic-ft	End Cubic-ft	Total Cubic-ft	Month gal	Daily gal	Month Acre-ft
1/1/2021	247,196.00	247,532.00	336.00	2,513.45	81.08	0.01
2/1/2021	247,532.00	248,834.00	1,302.00	9,739.61	347.84	0.03
3/1/2021	248,834.00	249,533.00	699.00	5,228.87	168.67	0.02
4/1/2021	249,533.00	250,185.00	652.00	4,877.29	162.58	0.01
5/1/2021	250,185.00	251,161.00	976.00	7,300.97	235.52	0.02
6/1/2021	251,161.00	251,976.00	815.00	6,096.61	203.22	0.02
7/1/2021	251,976.00	252,830.00	854.00	6,388.35	206.08	0.02
8/1/2021	252,830.00	257,282.00	4,452.00	33,303.19	1,074.30	0.10
9/1/2021	257,282.00	259,273.00	1,991.00	14,893.68	496.46	0.05
10/1/2021	259,273.00	260,412.00	1,139.00	8,520.29	274.85	0.03
11/1/2021	260,412.00	261,729.00	1,317.00	9,851.82	328.39	0.03
12/1/2021	261,729.00	262,727.00	998.00	7,465.54	240.82	0.02
		Annual Total:	15,531.00	116,179.65		0.36
		Average:	1,294.25	9,681.64	318.32	0.03
		Monthly Minimum:	336.00	2,513.45		0.01
		Monthly Maximum:	4,452.00	33,303.19		0.10

Summary for both meters

Annual Total:	115,547.00	864,349.33		2.65
Average:	4,814.46	36,014.56	1171.13	0.11
Monthly Minimum:	0.00	0.00		0.00
Monthly Maximum:	80,700.00	603,676.35		1.85

OCWD/Anaheim Distribution & Sale of GWRS Water Supplied

TO	**Anaheim Public Utilities Dept.**	CUSTOMER ID:	**20250**	METER ID:	**21024735**
	Attn: Al Shaikh	RATE:	**$689 / AF**	UNIT:	**GALLONS**
	201 S. Anaheim Blvd. Suite #601	ACCOUNT:	**1001.41500**	MULTIPLIER:	**X1000**
	Anaheim, CA 92805	AGMT NO:	**6075**	FISCAL YEAR:	**2020-2021**
				READ DATE:	**6/29/2021**

LOCATION:	CANYON POWER PLANT (CPP)					
MONTH:	**JULY 2020**	**AUGUST 2020**	**SEPT 2020**	**OCT 2020**	**NOV 2020**	**DEC 2020**
(1) Beginning Read	182,495	184,549	187,998	190,542	192,539	193,254
(2) Ending Read	184,549	187,998	190,542	192,539	193,254	194,216
Total Units (Gallons x1000)	2,054,000	3,449,000	2,544,000	1,997,000	715,000	962,000
Total Acre Feet	6.31	10.59	7.81	6.13	2.20	2.95
Old Rate $602/AF:	**$3,798.62**	**$6,375.18**	**$0.00**			
New Rate $689/AF:	**$4,347.59**	**$7,296.51**	**$5,381.09**	**$4,223.57**	**$1,515.80**	**$2,032.55**
Difference:	**$548.97**	**$921.33**	**$5,381.09**			

LOCATION:	CANYON POWER PLANT (CPP)					
MONTH:	**JAN 2021**	**FEB 2021**	**MAR 2021**	**APR 2021**	**MAY 2021**	**JUNE 2021**
(1) Beginning Read	194,216	194,667	195,545	196,274	196,873	197,727
(2) Ending Read	194,667	195,545	196,274	196,873	197,727	199,678
Total Units (Gallons x1000)	451,000	878,000	729,000	599,000	85,400	1,951,000
Total Acre Feet	1.38	2.70	2.24	1.84	0.26	5.99
AMOUNT DUE:	**$950.82**	**$1,860.30**	**$1,543.36**	**$1,267.02**	**$179.14**	**$4,127.11**

OCWD/Anaheim Distribution & Sale of GWRS Water Supplied

TO	**Anaheim Public Utilities Dept.**	CUSTOMER ID:	**20250**	METER ID:	**21024735**
	Attn: Al Shaikh	RATE:	**$689 / AF**	UNIT:	**GALLONS**
	201 S. Anaheim Blvd. Suite #601	ACCOUNT:	**1001.41500**	MULTIPLIER:	**X1000**
	Anaheim, CA 92805	AGMT NO:	**6075**	FISCAL YEAR:	**2021-2022**
				READ DATE:	**12/30/2021**

LOCATION:	CANYON POWER PLANT (CPP)					
MONTH:	**JULY 2021**	**AUGUST 2021**	**SEPT 2021**	**OCT 2021**	**NOV 2021**	**DEC 2021**
(1) Beginning Read	199,678	201,912	203,150	204,597	205,525	206,527
(2) Ending Read	201,912	203,150	204,597	205,525	206,527	206,994
Total Units (Gallons x1000)	2,234,000	1,238,000	1,447,000	928,000	1,002,000	467,000
Total Acre Feet	6.86	3.80	4.44	2.85	3.08	1.43
Old Rate $689/AF:	**$4,726.54**	**$2,618.20**	**$3,059.16**	**$1,963.65**	**$2,122.12**	**$985.27**
New Rate $/AF:						
Difference:	**$0.00**	**$0.00**	**$0.00**	**$0.00**	**$0.00**	**$0.00**

LOCATION:	CANYON POWER PLANT (CPP)					
MONTH:	**JAN 2022**	**FEB 2022**	**MAR 2022**	**APR 2022**	**MAY 2022**	**JUNE 2022**
(1) Beginning Read	206,994	0	0	0	0	0
(2) Ending Read						
Total Units (Gallons x1000)	-206,994,000	0	0	0	0	0
Total Acre Feet	-635.47	0.00	0.00	0.00	0.00	0.00
AMOUNT DUE:	**$0.00**	**$0.00**	**$0.00**	**$0.00**	**$0.00**	**$0.00**

Wastewater Flow Meter Calibration Report

Flowtrace
A Division of The Conservtech Group

5875 Rickenbacker Road
Commerce, CA 90040
323-867-9044
fax: 323-867-9045

January 24, 2022

Mr. Kevin Nugent
Source Control Program
Orange County Sanitation Districts
10844 Ellis Avenue
Fountain Valley, CA 92708

Subject: Effluent Flow Meter Hydraulic Calibration Report

Facility: City of Anaheim
Canyon Power Plant
3071 E. Miraloma Ave.
Anaheim, CA 92806
I.W. Permit No. 1-600296

Dear Mr. Nugent,

Enclosed is our report on the effluent flow meter hydraulic calibration completed at the subject facility on January 20, 2022. The calibration was conducted in accordance with requirements of the Orange County Sanitation District, and the meter was determined to be operating within ± 5% accuracy limits for the entire range tested.

If you have any questions regarding this calibration report, please contact me directly, or Bertha A. Hernandez, Environmental Services Specialist.

Sincerely,

Robert J. MacDonald, P.E., CPP
President & Principal Engineer

Enclosures

cc: Bertha A. Hernandez, Environmental Services Specialist

WASTEWATER FLOW METER
HYDRAULIC CALIBRATION

PREPARED BY

Flowtrace
A Division of The Conservtech Group

FOR

City of Anaheim
Canyon Power Plant
3071 E. Miraloma Ave.
Anaheim, CA 92806

I.W. Permit No. 1-600296

January 20, 2022

The Conservtech Group / Flowtrace Division | 5875 Rickenbacker Road | Commerce | California | 90040
phone: 323-867-9044 | fax: 323-867-9045

EFFLUENT FLOW METER CALIBRATION REPORT

Company Name: City of Anaheim Permit No.: 1-600296

Discharge Address: 3071 E. Miraloma Ave. Anaheim, CA 92806

Mailing Address: 201 S. Anaheim Blvd. Suite 1101 Anaheim, CA 92805

Meter Location *[Use Meter Location Form (page 3) to identify location]*

☐ a ☐ b ☐ c ☐ d ☒ Other: (Attach sketch)

Effluent Meter Description

Open Channel

A. Flume:
- ☐ Parshall Flume
- ☐ Palmer-Bowlus Flume
- ☐ Trapezoidal
- ☐ Other, Specify:

B. Weir.
- ☐ V-notch
- ☐ Rectangular
- ☐ Trapezoidal
- ☐ Other, Specify:

C. Other
Description:

In-line
- ☒ Magnetic
- ☐ Propeller
- ☐ Ultrasonic
- ☐ Other, Specify:

Effluent Meter Description

Primary Element

Size: 4"

Manufacturer: Badger

Meter Series 2000

Secondary Element

Manufacturer: N/A

Recorder's 100% span = N/A GPM

Totalizer Units: = 1 Gallons per Count

Sampling Signal Contact Closure Frequency: 1 closure per N/A gallons discharged.

Current Facility Wastewater Discharge Rate to Sewer Determined by Calibration Engineer

Average 200 GPM

Peak 300 GPM

EFFLUENT FLOW METER CALIBRATION REPORT

5. Calibration Results

Type of Calibration: [X] Hydraulic [ ] Instrument

Calibration System		Existing Meter				Error (%)	
Flow Rate GPM	Total Discharge Gallons	Primary Element's Head	Flow Rate, GPM Indicator	Recorder	Total Discharge Gallons	Recorder	Totalizer
272	851	--	280	--	876	--	2.9%
248	769	--	255	--	791	--	2.9%
197	605	--	202	--	619	--	2.3%
154	470	--	156	--	477	--	1.5%
103	322	--	105	--	326	--	1.2%

A copy of all data collected and of any calculations performed must be attached to this form.

6. Method of Calibration Results *(attach additional sheets if necessary)*

Hydraulic: (For in line flow meters describe calibration/simulator system)

Various flow rates were achieved using 150' of 2.5" fire hose from a local hydrant to the test meter. A 2" Halliburton turbine was used to measure the water flow. At each rate tested, the meter totalizer was timed using an electronic stopwatch for a number of counts. The accumulated volume was then compared to the actual volume to determine the totalizer accuracy.

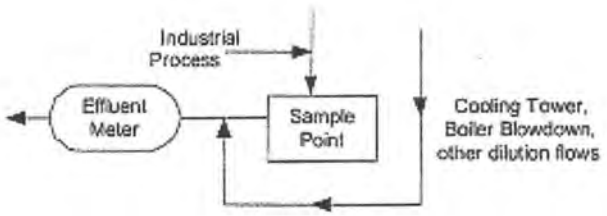
Instrument:

7. Corrective Measures *(describe condition of flow meter prior to calibration and state if any adjustments were made):*

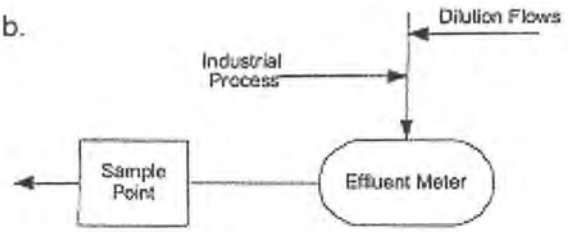
No corrective measures were required.

EFFLUENT FLOW METER LOCATION FORM

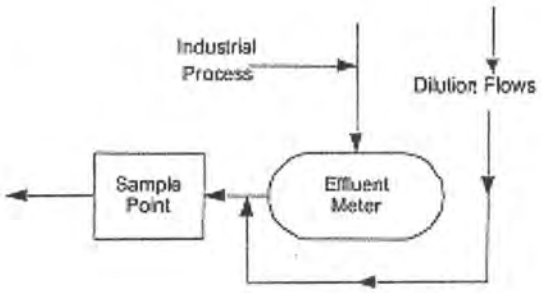
☐ a.



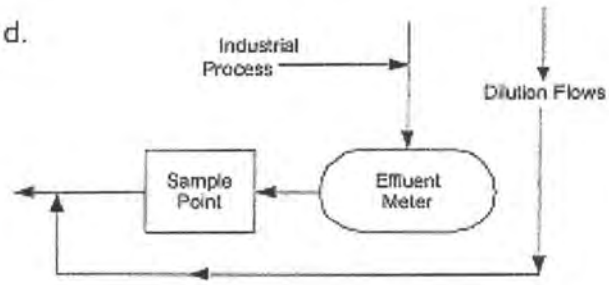
☐ b.



☐ c.



☐ d.

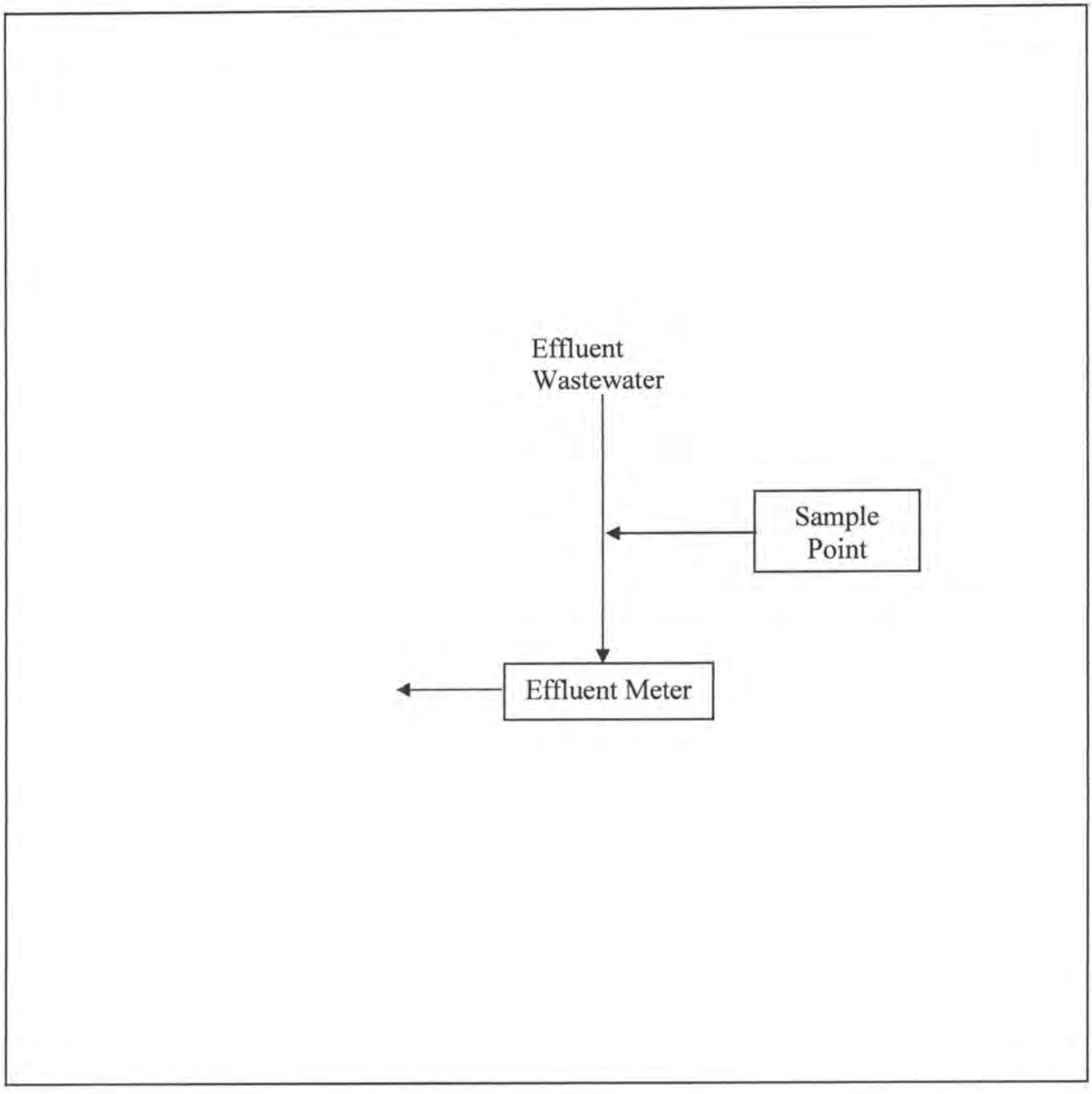


☒ Other

Please provide a schematic of the location of the effluent flow meter

Attachment:

Effluent Flow Meter Location



EFFLUENT FLOW METER MAINTENANCE RECORDS

Company Name: City of Anaheim Permit No.: 1-600296

Discharge Address: 3071 E. Miraloma Ave., Anaheim, CA 92806

Mailing Address: 201 S. Anaheim Blvd., Suite 1101, Anaheim, CA 92805

Name of Responsible Person : Bertha A Hernandez Telephone No. 714-765-4536

Recorder's 100% span = N/A GPM Totalizer: 1 Gallons per Count

Type of Flow Meter: 4" Badger Meter Series 2000

Recorder Chart Change Frequency: ☐ Daily ☐ Weekly ☐ Monthly *(not applicable)*

REGULAR CLEANING MAINTENANCE				
Primary Element Cleaned	Level Measuring Equipment Cleaned	Other (describe)	Date	By
N/A	N/A	Hydraulic Calibration by Flowtrace Division of The Conservtech Group	02/11/15	Yip / Paz
N/A	N/A	Hydraulic Calibration by Flowtrace Division of The Conservtech Group	02/11/16	Yip / Paz
N/A	N/A	Hydraulic Calibration by Flowtrace Division of The Conservtech Group	02/09/17	Yip / Paz
N/A	N/A	Hydraulic Calibration by Flowtrace Division of The Conservtech Group	01/10/18	Yip / Vitug
N/A	N/A	Hydraulic Calibration by Flowtrace Division of The Conservtech Group	01/10/19	Paz / Gomez
N/A	N/A	Hydraulic Calibration by Flowtrace Division of The Conservtech Group	01/10/20	Yip / Gomez
N/A	N/A	Hydraulic Calibration by Flowtrace Division of The Conservtech Group	01/20/21	Yip / Gomez
N/A	N/A	Hydraulic Calibration by Flowtrace Division of The Conservtech Group	01/20/22	Yip / Gomez

CERTIFICATION OF CALIBRATION CHECK

(Certification of Test Results by a California Registered Professional Engineer)

I hereby certify that I am knowledgeable in the field of wastewater flow measurement and that I have supervised the calibration of the flow monitoring system as described on the previous page, and also have reviewed and approved all details of the method of calibration. I consider the calibration method and procedures used to be technically sound, and assume professional responsibility for the validity and accuracy of the results reported.

(Signature)

REGISTERED PROFESSIONAL ENGINEER ROBERT J. MACDONALD M 29874 Exp 6/30/22 MECHANICAL STATE OF CALIFORNIA

Robert J. MacDonald, P.E.
(Full Name – Please Print or Type)

M29874 Expires 6/30/22	**Mechanical**	1/24/2022
(California Professional Engineering Certification No.)	(Engineering Discipline)	(Date)

CERTIFICATION OF TEST RESULTS BY
AN ADMINISTRATIVE OFFICIAL OF THE COMPANY

City of Anaheim	**1-600296**
(Company Name)	(Permit No.)

I hereby certify that the flow monitoring system certified as properly calibrated above is so arranged and operated, so as to accurately measure and record the industrial wastewater flow to the sewer system.

(Signature)

RONALD HOFFARD
(Full Name – Please Print or Type)

GENERATION PLANT MANAGER	1/28/2022
(Administrative Position in Company)	(Date)

Appendix:

Calculations Sheet
Field Calibration Data
Calibration Certificate

DICK MUNNS COMPANY
LIQUID & GAS FLOW CALIBRATION

ISO 17025:2017
ACCREDITED LABORATORY
Cert# CL-122

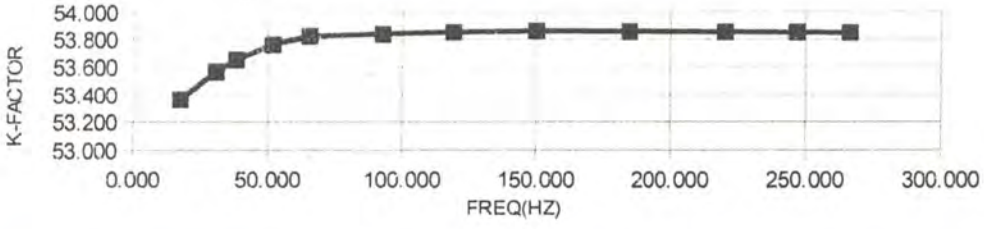
IAS
ACCREDITED
Calibration Laboratory

CERTIFICATE OF CALIBRATION

CUSTOMER:	**CONSERVTECH** COMMERCE, CA	**CALIBRATION DATE:**	08/20/21
VSR NUMBER:	9454	**CALIBRATION DUE:**	08/20/22
INST. MANUFACTURER:	HALLIBURTON	**PROCEDURE:**	NAVAIR17-20MG,NIST250
INST. DESCRIPTION:	TURBINE METER	**CALIBRATION FLUID:**	H2O @ 70°F
MODEL NUMBER:	458.99101 (2")	**ARRIVAL CONDITIONS:**	WITHIN MFG. SPEC.
SERIAL NUMBER:	2BF3677	**RETURNED CONDITIONS:**	WITHIN MFG. SPEC.
RATED ACCURACY:	+/- .5% R.D.	**AMBIENT CONDITIONS:**	759mmHGA 55%RH 72°F
UNCERTAINTY GIVEN:	TOTAL measurement uncertainty +/-.151% RD K=2	**CERTIFICATE FILE #:**	420148.2021

NOTES: **** DECISION RULE: NO PFA % | CALIBRATED WITH DMC. MAG COIL ****

TEST POINT NUMBER	INDICATED UUT FREQ(HZ)	DM.STD. ACTUAL GPM	ACTUAL K-FACTOR PUL|GAL.
1	17.337	19.493	53.363
2	30.554	34.226	53.562
3	38.194	42.715	53.650
4	51.678	57.677	53.760
5	65.285	72.780	53.821
6	92.731	103.350	53.835
7	118.942	132.525	53.850
8	150.044	167.158	53.857
9	184.572	205.639	53.853
10	220.069	245.202	53.850
11	246.702	274.896	53.846
12	266.194	296.632	53.843



STANDARDS USED:

A14 (VOLUME PROVER 5-50GPM)+/- .02% BY VOLUME CMC +/- .151% RD FLOW TRACE# 1446135470,1453296155	DUE	11/30/21
A710 (ENDRESS+HAUSER 0-1000GPM) +/- .022% BY VOLUME CMC +/-.15% RD FLOW TRACE# 1446135470,14248463640	DUE	06/10/22
A350 (PLATFORM SCALE & TANK: 10,000LBS/ 50-2000GPM) +/- .075 BY MASS TRACE# 1446135470,148647626	DUE	11/30/21

All instruments used in the performance of the shown calibration have traceability to the National Institute of Standards and Technology (NIST). The uncertainty ratio between the calibration standards (DM.STD.) and the Unit Under Test (UUT) is a minimum of 4:1, unless otherwise noted. Calibration has been performed according to the shown procedure. The use of IAS/ILAC logo indicates calibrations are in accordance to ISO/IEC 17025:2017.

Dick Munns Company · 11133 Winners Circle, Los Alamitos, CA 90720
Phone: 714-827-1215 · www.dickmunns.com

Issuing Date: 08/20/2021 Approved By: Cal. Technician: E.A.

Calibrated at: ✓ Lab
___ On-Site (Customer's)

Recorder:

MAX = – GPM

AVG = 200

PK = 300

Sampler:

Contact Closure = N/A gallons/pulse

Totalizer:

Finish: 102906840

Start: 102902017

Diff: 4823

MULT: 1

Total: 4823 gallons

Client: City of Anaheim - Canyon Power Plant

Date: 1/20/22 IW#: 1-600296

Element: 4" Pipe

Instrument: 4" Badger Meter M2000

Recorder : --

Calibrated Flows and Data

Turbine		Manometer - inches					Duration	Total	Meter		Recorder			Totalizer	
									W.C.	Flow	Reading		Error	Total	Error
cycles	gpm	+	-	Δ	w.c.	gpm	min	gal	in.	gpm	%	gpm	%	gal	%
	272						3.13	851		280				876	2.9
	248						3.10	769		255				791	2.9
	197						3.07	605		202				619	2.3
	154						3.05	470		156				477	1.5
	103						3.13	322		105				326	1.2

Calibration Type

_____ Instrumentation

_X_ Hydraulic

Hydraulic Meter Used:

_____ Turbine Meter, 1", Haliburton, Threaded

_____ Turbine Meter, 1.5", XO Technologies, 150# Flange

_X_ Turbine Meter, 2", Haliburton, flanged

_____ Turbine Meter, 4", XO Technologies, 150# Flange

_____ Turbine Meter, 4", Haliburton, flanged

_____ Other: _____

K: 4.86

Notes:

① 3318 − 2442 = 876 @ 3:08

② 4636 − 3845 = 791 @ 3:06

③ 5593 − 4974 = 619 @ 3:04

④ 6308 − 5831 = 477 @ 3:03

⑤ 6785 − 6459 = 326 @ 3:08

CANYON POWER PLANT

ANNUAL COMPLIANCE REPORT

ATTACHMENT 13

SOIL & WATER REPORTS-8

OCSD Wastewater Quality Semi-Annual Monitoring Reports

TX Result Report

P 1
04/30/2021 08:24
Serial No. A7PY011022705
TC: 57289

Addressee	Start Time	Time	Prints	Result	Note
OCSD	04-30 08:23	00:01:20	008/008	OK	

Note TMR:Timer TX, POL:Polling, ORG:Original Size Setting, FME:Frame Erase TX, DPG:Page Separation TX, MIX:Mixed Original TX, CALL:Manual TX, CSRC:CSRC, FWD:Forward, PC:PC-FAX, BND:Double-Sided Binding Direction, SP:Special Original, FCODE:F-Code, RTX:Re-TX, RLY:Relay, MBX:Confidential, BUL:Bulletin, SIP:SIP Fax, IPADR:IP Address Fax, I-FAX:Internet Fax

Result OK: Communication OK, S-OK: Stop Communication, PW-OFF: Power Switch OFF, TEL: RX from TEL, NG: Other Error, Cont: Continue, No Ans: No Answer, Refuse: Receipt Refused, Busy: Busy, M-Full:Memory Full, LOVR:Receiving length Over, POVR:Receiving page Over, FIL:File Error, DC:Decode Error, MDN:MDN Response Error, DSN:DSN Response Error, PRINT:Compulsory Memory Document Print, DEL:Compulsory Memory Document Delete, SEND:Compulsory Memory Document Send.

CITY OF ANAHEIM

PULIC UTILITIES DEPARTMENT

Environmental Services

Letter of Transmittal

To:	Ms. Mila Kleinbergs Orange County Sanitation District Resource Protection Division 10844 Ellis Avenue Fountain Valley, CA 92708-7018	Date:	04/30/2021
		Project	Canyon Power Plant 3071 E. Miraloma Ave. Anaheim, CA 92806
		Subject:	Semi-Annual Self-Monitoring

We are sending you:

Copy of Original	Description
1	Completed Semi-Annual Form OCSD Self-Monitoring Form for City of Anaheim Canyon Power Plant (Permit No. 1-600296).

These are transmitted:

- [1] As requested
- [ ] For approval
- [ ] For your action
- [ ] For your review
- [ ] For your files
- [ ] For your information

Via: [ ] US Mail [X] FAX # 8 of pgs. (714) 593-7799 [ ] Hand Delivery

Remarks: Please contact me at (714) 765-7481 or bhernandez@anaheim.net if you have any questions regarding this submittal.

By: Bertha A Hernandez, Environmental Services Specialist

City of Anaheim Public Utilities Department
Environmental Services Division
200 S. Anaheim Boulevard, Suite 1101
Anaheim, CA 92807

CITY OF ANAHEIM
PULIC UTILITIES DEPARTMENT
Environmental Services
Letter of Transmittal

To:	Ms. Mila Kleinbergs Orange County Sanitation District Resource Protection Division 10844 Ellis Avenue Fountain Valley, CA 92708-7018	Date:	04/30/2021
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[ ]	For approval	[ ]	For your review	[ ]	For your information

Via: [ ] US Mail [X] FAX # 8 of pgs. (714) 593-7799 [ ] Hand Delivery

Remarks: Please contact me at (714) 765-7481 or bhernandez@anaheim.net if you have any questions regarding this submittal.

By: Bertha A Hernandez. Environmental Services Specialist

City of Anaheim Public Utilities Department
Environmental Services Division
200 S. Anaheim Boulevard, Suite 1101
Anaheim, CA 92807

IM KN

ORANGE COUNTY SANITATION DISTRICT
SELF-MONITORING FORM

March 15, 2021

Ronald Hoffard, GENERATION PLANT MANAGER
City of Anaheim, Canyon Power Plant
3071 E Miraloma Ave.
Anaheim, CA 92806

Subject: **REMINDER TO CONDUCT SELF-MONITORING**
Permit No. 1-600296

Please be reminded that Self-Monitoring must be conducted between **April 01, 2021 -- April 16, 2021** in accordance with your company's permit requirements. Self-Monitoring must be conducted during a production day in accordance with the guidelines detailed in your company's permit.

It is your responsibility to comply with the requirements set forth in your company's permit. Failure to comply with all the directives, conditions, and requirements of the permit may result in enforcement action against your company.

If your company's permit shows a self-monitoring requirement for total toxic organics (TTOs) and your company has received a waiver from this self-monitoring, you are now required to submit a signed TTOs SMR form to us to comply with the TTO waiver requirements of the U.S. Environmental Protection Agency. Please indicate in the "Sample Comments" that you have received a TTOs self-monitoring waiver from us.

For permittees that have monthly as well as quarterly and/or semi-annual self-monitoring requirements, the forms may list more than the SMR constituents required for the monthly self-monitoring. We ask that you adhere to your permit's self-monitoring requirements and sample only for the constituent(s) required on a monthly basis, except when the quarterly and semi-annual self-monitoring are also required in the same month, in which case all constituents listed on the form must be analyzed for as specified in your permit.

Finally, for those who are required to submit meter readings, a list of the meter readings submitted within the last year is attached to the SMR form for your reference and comparison to current readings.

Thank you for your patience and cooperation. If you have any questions, please contact Mila Kleinbergs at 714-593-7408.

Mila Kleinbergs
Senior Engineer

IM KN

ORANGE COUNTY SANITATION DISTRICT
SELF-MONITORING FORM

SMR No.: S-145454
SMR Type: Standard
City of Anaheim, Canyon Power Plant
General Pretreatment Regulations For Existing And New Sources Of Pollution

Permit No. 1-600296

Sampling Dates: **04/01/2021 to 04/16/2021** Submit By Date: **04/30/2021**

Sample Start Date: 4/14/2021 Sample End Date: 4/15/2021

Sample Start Time: 1140 Sample End Time: 1150

Sampling Point Location: Sampling Structure located in the center of the site

Contact Person: RONALD HOFFARD Contact Phone: 714-765-4536

Contact Email: RHOFFARD@ANAHEIM.NET

☐ **No Discharge**

Water Meter Readings: *(If this is a batch discharge, enter volume only)*

Location	Meter Type	Meter ID	Stop Reading	Start Reading	Volume	Units	Digits	Int
Center of site adjacent to the final clarifier/vault	Effluent Flow Meter	EM-1-600296	97860551	97848065	12486	G	9	

Composite

Sample Results: *(If constituent is not detected or is less than detection limit, enter as reported in the lab results.)*

Constituent	Result	Units	EPA Method
BOD T	ND	mg/L	SM5210B
TSS	ND	mg/L	SM2540D

Sample Comments:

Please note that OCSD's fax number has changed. Please use the new fax number (714) 378-1277 effective immediately if submitting completed form by fax.

To Submit Data - Fax: (714) 378-1277 or
Mail: Orange County Sanitation District, Resource Protection Division, 10844 Ellis Avenue, Fountain Valley, CA, 92708-7018

Questions: Contact Isabel Melendez at 714-593-7313

RH Ronald Hoffard, please initial each page and submit all pages

IM KN

ORANGE COUNTY SANITATION DISTRICT
SELF-MONITORING FORM

SMR No.: S-145454
SMR Type: Standard
City of Anaheim, Canyon Power Plant
General Pretreatment Regulations For Existing And New Sources Of Pollution

Permit No. 1-600295

This form must be completely filled out and Laboratory Analysis Report and Chain of Custody must be attached.

Please check if composite sample was obtained using an automatic sampling device: ( ) Yes ( ) No

In accordance with 40 CFR 403.12, the results presented herein must be verified and signed under penalty of perjury by: (i) a responsible corporate officer, (ii) general partner or proprietor; or (iii) a representative who has responsibility for the overall operation of the permitted facility, who has been authorized by the corporate officer, general partner or proprietor to sign such reports, and such authorization has been made in writing and submitted to the District.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.[40 C.F.R. § 403.6(a)(2)(ii) (2005)]

R Hoffard — 4/29/21

Signature (Ronald Hoffard) Title (GENERATION PLANT MANAGER) Date

RONALD HOFFARD

Print Name

To Submit Data - Fax: (714) 378-1277 or
Mail: Orange County Sanitation District, Resource Protection Division, 10844 Ellis Avenue, Fountain Valley, CA. 92708-7018

Questions: Contact Isabel Melendez at 714-593-7313

RH Ronald Hoffard, please initial each page and submit all pages

IM KN

ORANGE COUNTY SANITATION DISTRICT
SELF-MONITORING FORM

SMR No.: S-145454
SMR Type: Standard
City of Anaheim, Canyon Power Plant
General Pretreatment Regulations For Existing And New Sources Of Pollution

Permit No. 1-600296

Sample Location: Compliance Equipment

Meter Type	Name	Event ID	Start - End Date	Reading End	Reading Start	Vol	
EFFLUENT	EM-1-600296	145453	10/12/2020 - 10/13/2020	95804724 Gallon	95766786 Gallon	37938	GPD
EFFLUENT	EM-1-600296	145452	4/8/2020 - 4/9/2020	91636048 Gallon	91616086 Gallon	19962	GPD

To Submit Data - Fax: (714) 378-1277 or
Mail: Orange County Sanitation District, Resource Protection Division, 10844 Ellis Avenue, Fountain Valley, CA, 92708-7018

Questions: Contact Isabel Melendez at 714-593-7313

RH Ronald Hoffard, please initial each page and submit all pages

ALS Group USA, Corp.
3337 Michelson Drive, Suite CN750
Irvine, CA 92612
T +1 714 730 6239

Report

Client: **Canyon Power Plant**
3071 E Miraloma Ave
Anaheim, CA 92806

Work Order No.: 21D0196
Printed: 04/29/2021

Attention: Bertha Hernandez
Project Name: Canyon Power Plant Semi-Annually Wastewater
Project Number: Canyon Power Plant
P.O. Number: MA-106-491110 (exp 8/31/18)

CASE NARRATIVE

Date & Time Installed: 04/14/2021; 11:40 AM
Date & Time Removed: 04/15/2021; 11:50 AM

Flow Start Number: 97848065 GAL
Flow Stop Number: 97860551 GAL
Total Flow, GPD: 12486

SAMPLE RECEIPT SUMMARY

Sample ID	Laboratory ID	Matrix	Type	Date Sampled	Date Received
1-600296 Composite	21D0196-01	Wastewater	Composite	04/15/2021 11:45	04/15/2021 15:46

DEFINITIONS

Symbol	Definition
C	GGA (BS1) recovery was below the method acceptance limit.
DF	Dilution Factor
MDL	Method Detection Limit
ND	Not Detected
RL	Reporting Limit

Respectfully yours,

Shelly Brady

Shelly Brady
Customer Service Manager

Client: Canyon Power Plant

Project Name: Canyon Power Plant Semi-Annually Wastewater
Project Number: Canyon Power Plant Printed: 04/29/2021

1-600296 Composite

21D0196-01 (Wastewater)

Analyte	Result	RL	Units	DF	Batch	Analyzed	Analyst	Method	Notes
ALS Group USA, Corp.									
Wet Chemistry									
Total Dissolved Solids	**139**	49.0	mg/L	1	2104559	04/29/2021 16:00	SMC	SM 2540 C	
Total Suspended Solids	ND	2.50	mg/L	1	2104560	04/23/2021 18:00	SMC	SM 2540 D	
General Chemistry									
Biochemical Oxygen Demand	ND	2.00	mg/L	1	2104389	04/21/2021 14:37	SMC	SM 5210B - 5 Day	C

CHAIN OF CUSTODY

IRUESDAIL LABORATORIES, INC.
3337 Michelson Drive, Suite CN750, Irvine, CA 92612
(714) 730-6239 - FAX (714) 730-6462

21D0196

METHODS

[X] TURNAROUND TIME Normal TAT

DATE: 4/14 - 4/15/21 PAGE: 1 OF 1

COMPANY	City of Anaheim, Canyon Power Plant
CONTACT	Victor Carnaggio/Ronald Hoffard
PHONE	(714) 765-4260/**4536** FAX (714) 666-2410
ADDRESS	3071 E. Miraloma Ave.
	Anaheim, CA 92806
	Bill/Ship To: Southern California Public Power Authority
SAMPLES (SIGNATURE)	

SAMPLE I.D.	DATE	TIME	DESCRIPTION	TDS	TSS	BOD												NUMBER OF CONTAINERS	COMMENTS
52-2-758	4-15-21	11:45	COMP	X	X	X													Temp – 21.4 ph - 8.0

Chain of Custody Signature Record

1.	Relinquished Signature	AES	4-15-21 1546
2.	Received Signature	AES	4/15/21 1546
3.	Relinquished Signature	Company/ Agency	Date/ Time
4.	Received Signature	Company/ Agency	Date/ Time
5.	Relinquished Signature	Company/ Agency	Date/ Time
6.	Received Signature	Company/ Agency	Date/ Time

LABORATORY SAMPLE LOG-IN
(Enter following line items on invoice):

TOTAL NUMBER OF CONTAINERS

SAMPLE CONDITIONS:

RECEIVED

Cool [ ] Warm [ ]

2-4/1-5 3.6/2.5

Yes [ ] No [ ]

SPECIAL REQUIREMENTS:

TX Result Report

P 1
10/26/2021 13:32
Serial No. A7PY011022705
TC: 64494

Addressee	Start Time	Time	Prints	Result	Note
OCSD	10-26 13:31	00:01:19	008/008	OK	

Note TMR:Timer TX, POL:Polling, ORG:Original Size Setting, FME:Frame Erase TX, DPG:Page Separation TX, MIX:Mixed Original TX, CALL:Manual TX, CSRC:CSRC, FWD:Forward, PC:PC-FAX, BND:Double-Sided Binding Direction, SP:Special Original, FCODE:F-code, RTX:Re-TX, RLY:Relay, MBX:Confidential, BUL:Bulletin, SIP:SIP Fax, IPADR:IP Address Fax, I-FAX:Internet Fax

Result OK: Communication OK, S-OK: Stop Communication, PW-OFF: Power Switch OFF, TEL: RX from TEL, NG: Other Error, Cont: Continue, No Ans: No Answer, Refuse: Receipt Refused, Busy: Busy, M-Full:Memory Full, LOVR:Receiving length Over, POVR:Receiving page Over, FIL:File Error, DC:Decode Error, MDN:MDN Response Error, DSN:DSN Response Error, PRINT:Compulsory Memory Document Print, DEL:Compulsory Memory Document Delete, SEND:Compulsory Memory Document Send.

CITY OF ANAHEIM

PULIC UTILITIES DEPARTMENT

Environmental Services

Letter of Transmittal

To:	Ms. Mila Kleinbergs Orange County Sanitation District Resource Protection Division 10844 Ellis Avenue Fountain Valley, CA 92708-7018	Date:	10/26/2021
		Project	Canyon Power Plant 3071 E. Miraloma Ave. Anaheim, CA 92806
		Subject:	Semi-Annual Self-Monitoring

We are sending you:

Copy of Original	Description
1	Completed Semi-Annual Form OCSD Self-Monitoring Form for City of Anaheim Canyon Power Plant (Permit No. 1-600296).

These are transmitted:

[1] As requested [ ] For your action [ ] For your files
[ ] For approval [ ] For your review [ ] For your information

Via: [ ] US Mail [X] FAX # 8 of pgs. (714) 378-1277 [ ] Hand Delivery

Remarks: Please contact me at (714) 765-7481 or bhernandez@anaheim.net if you have any questions regarding this submittal.

By: Bertha A Hernandez, Environmental Services Specialist

City of Anaheim Public Utilities Department
Environmental Services Division
200 S. Anaheim Boulevard, Suite 1101
Anaheim, CA 92807

CITY OF ANAHEIM
PULIC UTILITIES DEPARTMENT
Environmental Services
Letter of Transmittal

To:	Ms. Mila Kleinbergs Orange County Sanitation District Resource Protection Division 10844 Ellis Avenue Fountain Valley, CA 92708-7018	Date:	10/26/2021
		Project	Canyon Power Plant 3071 E. Miraloma Ave. Anaheim, CA 92806
		Subject:	Semi-Annual Self-Monitoring

We are sending you:

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These are transmitted:

[1]	As requested	[ ]	For your action	[ ]	For your files
[ ]	For approval	[ ]	For your review	[ ]	For your information

Via: [ ] US Mail [X] FAX # 8 of pgs. (714) 378-1277 [ ] Hand Delivery

Remarks: Please contact me at (714) 765-7481 or bhernandez@anaheim.net if you have any questions regarding this submittal.

By: Bertha A Hernandez, Environmental Services Specialist

IM KN

OCSAN
ORANGE COUNTY SANITATION DISTRICT

ORANGE COUNTY SANITATION DISTRICT
SELF-MONITORING FORM

September 15, 2021

Ronald Hoffard, Generation Plant Manager
City of Anaheim, Canyon Power Plant
3071 E. Miraloma Ave.
Anaheim, CA 92806

Subject: **REMINDER TO CONDUCT SELF-MONITORING**
Permit No. 1-600296

Please be reminded that Self-Monitoring must be conducted between **October 01, 2021 – October 16, 2021** in accordance with your company's permit requirements. Self-Monitoring must be conducted during a production day in accordance with the guidelines detailed in your company's permit.

It is your responsibility to comply with the requirements set forth in your company's permit. Failure to comply with all the directives, conditions, and requirements of the permit may result in enforcement action against your company.

If your company's permit shows a self-monitoring requirement for total toxic organics (TTOs) and your company has received a waiver from this self-monitoring, you are now required to submit a signed TTOs SMR form to us to comply with the TTO waiver requirements of the U.S. Environmental Protection Agency. Please indicate in the "Sample Comments" that you have received a TTOs self-monitoring waiver from us.

For permittees that have monthly as well as quarterly and/or semi-annual self-monitoring requirements, the forms may list more than the SMR constituents required for the monthly self-monitoring. We ask that you adhere to your permit's self-monitoring requirements and sample only for the constituent(s) required on a monthly basis except when the quarterly and semi-annual self-monitoring are also required in the same month, in which case all constituents listed on the form must be analyzed for as specified in your permit.

Finally, for those who are required to submit meter readings, a list of the meter readings submitted within the last year is attached to the SMR form for your reference and comparison to current readings.

Thank you for your patience and cooperation. If you have any questions, please contact Jason Daniel at 714-593-7013.

Jason Daniel
Engineering Supervisor

IM KN

OC SAN
ORANGE COUNTY SANITATION DISTRICT

ORANGE COUNTY SANITATION DISTRICT
SELF-MONITORING FORM

SMR No.: S-167682
SMR Type: Standard
City of Anaheim, Canyon Power Plant
General Pretreatment Regulations For Existing And New Sources Of Pollution

Permit No. 1-600296

Sampling Dates: **10/01/2021 to 10/16/2021**
Submit By Date: **10/31/2021**
Sample Start Date: 10-12-2021
Sample End Date: 10-13-2021
Sample Start Time: 11:00 AM
Sample End Time: 11:00 AM
Sampling Point Location: Sampling Structure located in the center of the site

Contact Person: RONALD HOFFARD
Contact Phone: 714-765-4536
Contact Email: RHOFFARD@ANAHEIM.NET

☐ **No Discharge**

Water Meter Readings: *(If this is a batch discharge, enter volume only)*

Location	Meter Type	Meter ID	Stop Reading	Start Reading	Volume	Units	Digits	Int
Center of site adjacent to the final clarifier/vault	Effluent Flow Meter	EM_1_600296	101481799	101466710	15089	G	9	

Composite

Sample Results: *(If constituent is not detected or is less than detection limit, enter as reported in the lab results.)*

Constituent	Result	Units	EPA Method
BOD T	8.33	mg/L	SM 5210 B
TSS	ND	mg/L	SM 2540 D

Sample Comments:

Please note that OC San's fax number has changed. Please use the new fax number (714) 378-1277 effective immediately if submitting completed form by fax.

To Submit Data - Fax: (714) 378-1277 or
Mail: Orange County Sanitation District, Resource Protection Division, 10844 Ellis Avenue, Fountain Valley, CA, 92708-7018

Questions: Contact Isabel Melendez at 714-593-7313

RH Ronald Hoffard, please initial each page and submit all pages

IM KN

OCSAN
ORANGE COUNTY SANITATION DISTRICT

ORANGE COUNTY SANITATION DISTRICT
SELF-MONITORING FORM

SMR No.: S-167682
SMR Type: Standard
City of Anaheim, Canyon Power Plant
General Pretreatment Regulations For Existing And New Sources Of Pollution

Permit No. 1-600296

This form must be completely filled out and Laboratory Analysis Report and Chain of Custody must be attached.

Please check if composite sample was obtained using an automatic sampling device: (X) Yes ( ) No

In accordance with 40 CFR 403.12, the results presented herein must be verified and signed under penalty of perjury by: (i) a responsible corporate officer; (ii) general partner or proprietor; or (iii) a representative who has responsibility for the overall operation of the permitted facility, who has been authorized by the corporate officer, general partner or proprietor to sign such reports, and such authorization has been made in writing and submitted to the District.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.[40 C.F.R. § 403.6(a)(2)(ii) (2005)]

R Hoffard — 10/26/21

Signature (Ronald Hoffard) **Title (Generation Plant Manager)** **Date**

RONALD HOFFARD

Print Name

To Submit Data - Fax: (714) 378-1277 or
Mail: Orange County Sanitation District, Resource Protection Division, 10844 Ellis Avenue, Fountain Valley, CA, 92708-7018

Questions: Contact Isabel Melendez at 714-593-7313

RH Ronald Hoffard, please initial each page and submit all pages

IM KN

OCSAN
ORANGE COUNTY SANITATION DISTRICT

ORANGE COUNTY SANITATION DISTRICT
SELF-MONITORING FORM

SMR No.: S-167682
SMR Type: Standard
City of Anaheim, Canyon Power Plant
General Pretreatment Regulations For Existing And New Sources Of Pollution

Permit No. 1-600296

Sample Location: Compliance

Meter Type	Equipment Name	Event ID	Start - End Date	Reading End	Reading Start	Vol	
EFFLUENT	EM_1_600296	145454	4/14/2021 - 4/15/2021	97860551 Gallon	97848065 Gallon	12400	GPD
EFFLUENT	EM_1_600296	145453	10/12/2020 - 10/13/2020	95804724 Gallon	95766786 Gallon	37938	GPD

To Submit Data - Fax: (714) 378-1277 or
Mail: Orange County Sanitation District, Resource Protection Division, 10844 Ellis Avenue, Fountain Valley, CA, 92708-7018

Questions: Contact Isabel Melendez at 714-593-7313

RH Ronald Hoffard, please initial each page and submit all pages

ALS Group USA, Corp.
3337 Michelson Drive, Suite CN750
Irvine, CA 92612
T +1 714 730 6239

Report

Client: **Canyon Power Plant**
3071 E Miraloma Ave
Anaheim, CA 92806

Work Order No.: 21J0169
Printed: 10/22/2021

Attention: Bertha Hernandez
Project Name: Canyon Power Plant Semi-Annually Wastewater
Project Number: Canyon Power Plant
P.O. Number: MA-106-491110 (exp 8/31/18)

CASE NARRATIVE

Date & Time Sample Start: 10/12/2021; 11:00 AM
Date & Time Sample Stop: 10/13/2021; 11:00 AM

Date & Time Meter Read Start: 10/12/2021; 11:00 AM
Date & Time Meter Read Stop: 10/13/2021; 13:45 PM

Flow Start Number: 101466710
Flow Stop Number: 101481799
Total Flow, GPD: 15089

SAMPLE RECEIPT SUMMARY

Sample ID	Laboratory ID	Matrix	Type	Date Sampled	Date Received
1-600296 Composite	21J0169-01	Wastewater	Composite	10/13/2021 13:45	10/13/2021 14:42

DEFINITIONS

Symbol	Definition
C	Blank unseeded and blank seeded oxygen depletions were above their respective method acceptance limits.
DF	Dilution Factor
MDL	Method Detection Limit
ND	Not Detected
RL	Reporting Limit

Respectfully yours,

Shelly Brady

Shelly Brady
Customer Service Manager

Client: Canyon Power Plant

Project Name: Canyon Power Plant Semi-Annually Wastewater
Project Number: Canyon Power Plant
Printed: 10/22/2021

1-600296 Composite

21J0169-01 (Wastewater)

Analyte	Result	RL	Units	DF	Batch	Analyzed	Analyst	Method	Notes
ALS Group USA, Corp.									
Wet Chemistry									
Total Dissolved Solids	147	49.0	mg/L	1	2110342	10/20/2021 14:00	SMC	SM 2540 C	
Total Suspended Solids	ND	2.50	mg/L	1	2110310	10/15/2021 17:48	LRR	SM 2540 D	
General Chemistry									
Biochemical Oxygen Demand	8.33	2.00	mg/L	1	2110324	10/19/2021 15:23	SMC	SM 5210B - 5 Day	C

CHAIN OF CUSTODY

ALS GROUP USA - IRVIN#
3337 Michelson Drive, Suite CN750, Irvine, CA 92612
(714) 730-6239 - FAX (714) 730-6462

21 J0169

[X] TURNAROUND TIME Normal TAT
DATE: 10/12 to 10/13/21 PAGE: 1 OF 1

METHODS

COMPANY	City of Anaheim, Canyon Power Plant
CONTACT	Victor Carnaggio/Ronald Hoffard
PHONE	(714) 765-4260/**4536** FAX (714) 666-2410
ADDRESS	3071 E. Miraloma Ave.
	Anaheim, CA 92806
	Bill/Ship To: Southern California Public Power Authorit
SAMPLES (SIGNATURE)	

SAMPLE I.D.	DATE	TIME	DESCRIPTION	TDS	TSS	BOD	NUMBER OF CONTAINERS	COMMENTS
52-2-758	10-13-21	13:45	COMP	X	X	X	3	PO# Ronald Hoffard Semi-Annually pH = 9.23 Temp = 23.1°

Chain of Custody Signature Record

1.	Relinquished Signature	ALS Company/ Agenc	10-13-21/ 2:42 Date/ Time
2.	Received Signature	Company/ Agenc	Date/ Time
3.	Relinquished Signature	Company/ Agenc	Date/ Time
4.	Received Signature	Company/ Agenc	Date/ Time
5.	Relinquished Signature	Company/ Agenc	Date/ Time
6.	Received Signature	Company/ Agenc	Date/ Time

LABORATORY SAMPLE LOG-IN
(Enter following line items on invoice):

3 **TOTAL NUMBER OF CONTAINERS**

SAMPLE CONDITIONS:

RECEIVED

Cool [ ] Warm [ ]
2.7 | 4.2

Yes [ ] No [ ]

SPECIAL REQUIREMENTS:

OC Sanitation District

No Violations or Corrective Actions
To report for CY 2021

CANYON POWER PLANT

ANNUAL COMPLIANCE REPORT

ATTACHMENT 14

VIS-4

SURFACE TREATMENT OF PROJECT STRUCTURES AND BUILDINGS

VIS-4: Surface Treatment of Project Structures and Buildings

Condition of Certification VIS-4 requires a status report of the surface treatment maintenance for the structures and buildings in the Annual Compliance Report. The report shall specify the following:

1. **The condition of surfaces of all structures and buildings at the end of the reporting year 2021:**
    a. Butler Building (Administrative and Warehouse)
    b. Main Electrical Enclosure (MEE)
    c. Balance of Plan (BOPEE)
    d. Substation Building
    e. Chiller
    f. RO Skid (open wall with roof sheet metal covering)
        i. The exterior building material is fabricated sheet metal. The colors and finishes do not create excessive glare and consistent with local policies and ordinances. All structure and buildings visual inspection showed no trouble items and all are in good working order.
    g. Gas Turbines (4 identical units)
2. **Maintenance activities that occurred in CY 2021:**
    a. May Planned Outage
        i. Semi-annual maintenance performed
    b. December Planned Outage
        i. Semi-annual maintenance performed
3. **Schedule maintenance activities for CY 2022:**
    a. May 2021 Planned Outage
        i. Semi-annual maintenance
    b. December 2021 Planned Outage
        i. Semi-annual maintenance

Status report regarding condition of Structures and Buildings

The photographs below shows the surface treatment of project structures and buildings. All buildings comply with condition VIS-4.

Warehouse Building (12/29/21)

Administrative Building (12/29/21)

Main Electrical Enclosure Building (12/29/21)

Substation Building (12/29/21)

Chiller Building (12/29/21)

RO Skid Structure (12/29/21)

Balance of Plant Building (12/29/21)

LM 6000 Turbines (12/29/21)

CANYON POWER PLANT

ANNUAL COMPLIANCE REPORT

ATTACHMENT 15

LANDSCAPE SCREENING

VIS-5: Landscape Screening

Condition of Certification VIS-5 requires a status report in the Annual Compliance Report regarding landscape maintenance activities. At the Canyon Power Plant the landscape maintenance activities were performed according to the contract and consistent with policies and requirements of the City of Anaheim plan and zoning ordinance.

The contracted company performed the following landscape maintenance activities:

Contracted Landscape Services – Landscape West Mgmt. Service, Inc. (Period: Jan 1, through December 31, 2020).

Activity Type	Frequency
Weed Control	2x/wk.
Landscape areas	
Hardscape areas	
Gravel areas	1x/Mo
Fertilization	2x/year
Shrubs	
Ground cover	
Trees	
Pest Control	As needed
Rodents	
Irrigation Maintenance	As needed
Inspect all Sprinklers/Systems	
Trees	As needed
Canopy Trees	
Maintenance/Clean-Up	2x/wk.
Ground Cover and Shrubs	
Trash & Litter at Landscape area	
Trash & Litter at enclosed gravel areas	
Monthly Inspection	

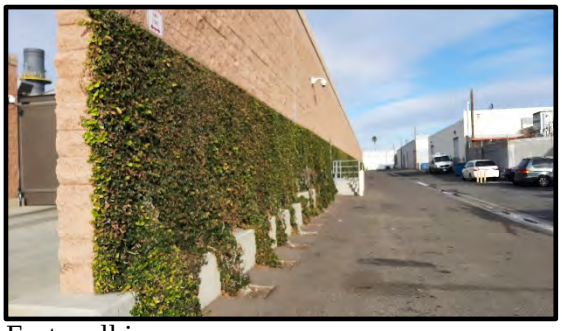
The photographs below taken by staff on 12/29/2021 of the landscape maintenance demonstrating compliance pursuant VIS-5 condition:

Landscaping - Exterior Plants

Miraloma Avenue, south wall

Miraloma Avenue, south wall

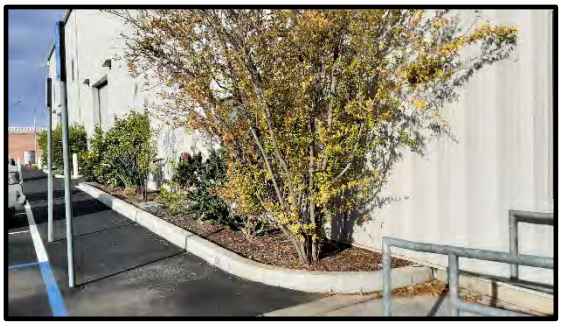
Miraloma Avenue, south wall



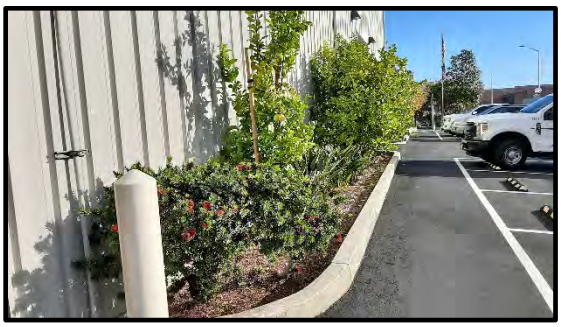
East-wall ivy

Landscaping - Interior Plant

Administration Building Planter



Admin and Warehouse Building Planter



Warehouse Building Planter

CANYON POWER PLANT

ANNUAL COMPLIANCE REPORT

ATTACHMENT 16

AQ-9
NH3 SLIP TESTING

TEST REPORT FOR
3Q21 AMMONIA SLIP TEST
AT CANYON POWER PLANT UNIT 1
FACILITY ID: 153992, DEVICE ID: D1

Prepared For:

Canyon Power Plant
3071 E. Mira Loma Ave.
Anaheim, California 92806

For Submittal To:

South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, California 91765-4178

Prepared By:

Montrose Air Quality Services, LLC
1631 E. St. Andrew Pl.
Santa Ana, California 92705
(714) 282-8240

John Groenenboom

Test Date: **July 12, 2021**
Production Date: **August 4, 2021**
Report Number: **W002AS-010224-RT-2666**

ACCREDITED
TO ASTM D7036 ONLY
CERT #3925.01

CONFIDENTIALITY STATEMENT

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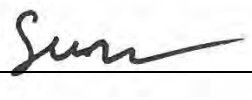
REVIEW AND CERTIFICATION

All work, calculations, and other activities and tasks performed and presented in this document were carried out by me or under my direction and supervision. I hereby certify that, to the best of my knowledge, Montrose operated in conformance with the requirements of the Montrose Quality Management System and ASTM D7036-04 during this test project.

Signature:  Date: 8/4/2021

Name: John Groenenboom Title: Client Project Manager

I have reviewed, technically and editorially, details, calculations, results, conclusions, and other appropriate written materials contained herein. I hereby certify that, to the best of my knowledge, the presented material is authentic, accurate, and conforms to the requirements of the Montrose Quality Management System and ASTM D7036-04.

Signature:  Date: 8/4/2021

Name: Surya Adhikari Title: QC Reporting Manager

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1.0 INTRODUCTION AND SUMMARY

Montrose Air Quality Services, LLC (MAQS) was contracted by the Canyon Power Plant to perform an ammonia slip test at Unit 1 as required by the facility Permit (Facility ID 153992) Condition Number D29.2. This report documents the results of the ammonia slip tests performed on July 12, 2021. The test was performed by John Groenenboom, Randy Monzon, and Danny Avila of MAQS. John Groenenboom was the on-site Qualified Individual for MAQS. MAQS qualifies as an independent testing laboratory under SCAQMD Rule 304 (no conflict of interest) and is certified by the SCAQMD to conduct testing for criteria pollutants according to District Methods. Bertha Hernandez coordinated the test for Canyon Power Plant.

The test consisted of duplicate ammonia tests performed at 49 MW. The test program followed the procedures described in the initial compliance test protocol (MAQS document R038842). The results of the test are summarized in Table 1-1. The table shows that the ammonia slip from this unit was less than the permitted limit of 5 ppm corrected to 15% O_2.

TABLE 1-1
AMMONIA SLIP TEST RESULTS SUMMARY
CANYON POWER PLANT
UNIT 1
JULY 12, 2021

Parameter/Units	Result(1)	Limit
NH_3		
ppm	1.5	--
ppmc	1.3	5

(1) Maximum of duplicate runs, as required by SCAQMD Method 207.1

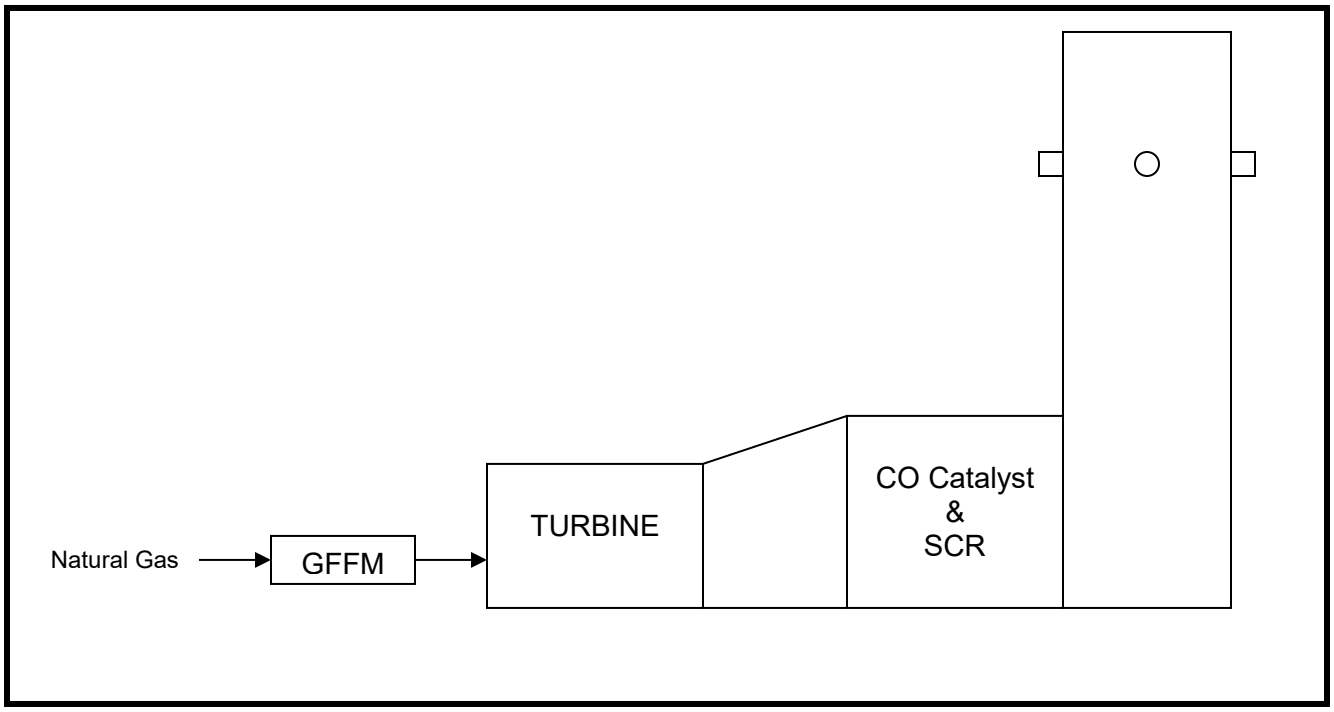
Section 2 of this document provides a brief description of the unit, test conditions, sample location, and CEMS. Details of the test procedures are provided in Section 3. Section 4 provides the results of each individual test. All raw data, calculations, quality assurance data, unit operating conditions, and CEMS data are provided in the appendices.

2.0 UNIT DESCRIPTION

2.1 UNIT DESCRIPTION

The City of Anaheim Canyon Power Plant is located at 3071 E. Mira Loma Avenue, Anaheim, California 92806. The facility consists of four identical generating units. Each unit consists of a natural gas fired, GE Model LM6000PC Sprint simple cycle, gas turbine. The units are natural gas fired with a rated heat input of 479 MMBtu per hour at 46°F, with water injection. The units are equipped with a CO catalyst and Selective Catalytic Reduction (SCR) system for NO_x control. Figure 2-1 presents a block diagram of the unit.

FIGURE 2-1
UNIT BLOCK DIAGRAM
CANYON POWER PLANT
UNIT 1



Stack Inside Diameter:	11 feet, 8 inches
Distance from Upstream Disturbance:	23 feet, 4 inches (2.0 Diameters)
Distance from Stack Exit:	16 feet, 6 inches (1.4 Diameters)

2.2 TEST CONDITIONS

The tests were performed with the unit operating at an average load of 49 MW. Tests were performed while the unit was firing natural gas and operating under normal conditions. Unit operation was established by the Canyon Power Plant operators.

2.3 SAMPLE LOCATION

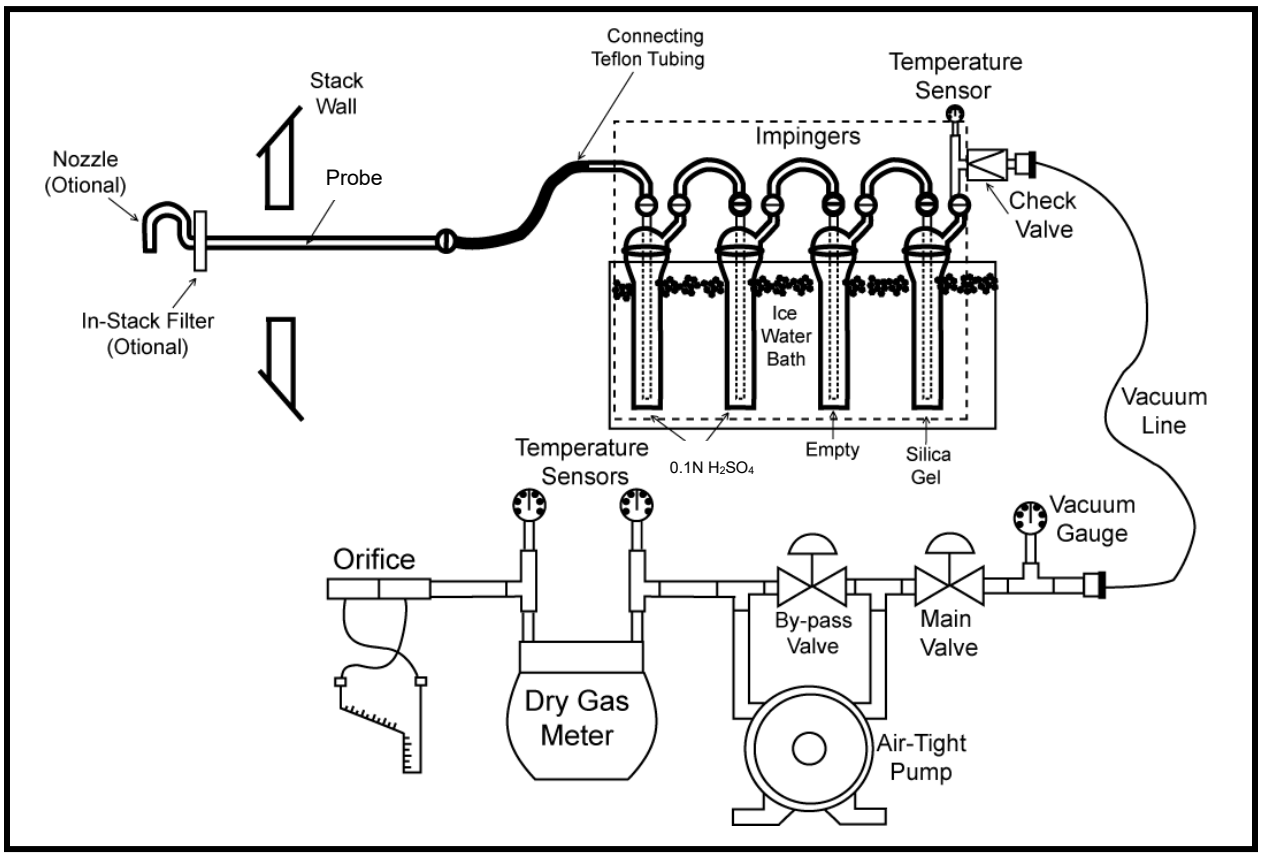
The measurements were made from sample ports located on the exhaust stack. There are four sample ports equally spaced at this location. The stack inside diameter at the sample plane is 11 feet, 8 inches. The sample ports are located 23 feet, 4 inches (2.0 diameters) downstream of the nearest flow disturbance and 16 feet, 6 inches (1.4 diameters) from the stack exit.

3.0 TEST DESCRIPTION

Flue gas samples were collected non-isokinetically using a SCAQMD Method 207.1 sample train. The samples were collected using a 12-point traverse at the exhaust stack location. Each test was performed over a 60 minute interval. The sample gas was drawn through a titanium probe, Teflon sample line, two impingers each containing 100 ml of 0.1N H_2SO_4, an empty impinger, an impinger containing silica gel, and a dry gas meter. The optional nozzle and filter were not used since the source is natural gas fired. The contents of the sample line and the first three impingers were recovered and analyzed by SCAQMD Method 207.1 for ammonia concentration by Ion Specific Electrode analysis. Figure 3-1 presents a diagram of the sampling equipment.

Stack O_2 and NO_x concentrations and stack volumetric flow rate data were recorded from the Continuous Emission Monitoring System (CEMS) which is installed on the unit. These data were used to correct the ammonia concentration to 15% O_2.

FIGURE 3-1
SCAQMD METHOD 207.1 SAMPLE EQUIPMENT



4.0 TEST RESULTS AND OVERVIEW

4.1 TEST RESULTS

The results of the test are summarized in Table 4-1. The results show that the ammonia slip was 1.3 ppm @ 15% O_2 which is less than the permitted limit of 5 ppm @ 15% O_2.

TABLE 4-1
AMMONIA SLIP TEST RESULTS
CANYON POWER PLANT
UNIT 1
JULY 12, 2021

Parameter/Units	Run 1	Run 2	Average	Maximum(1)	Limit
Test	1-NH_3-U1	2-NH_3-U1			--
Date	7/12/2021	7/12/2021			--
Time	1603/1706	1731/1834			--
O_2, %(2)	14.43	14.44	14.44	--	--
Stack Flow, dscfm @ T_{ref}(2)	226,121	228,091	227,106	--	--
NO_x, ppmc(2)	2.3	2.4	2.3	--	2.5
NH_3					
ppm	1.5	1.5	1.5	1.5	--
ppmc	1.3	1.3	1.3	1.3	5
lb/hr	0.9	0.9	0.9	0.9	--
lb/MMBtu	0.002	0.002	0.002	0.002	--
lb/MMSCF	1.9	1.9	1.9	1.9	--

(1) Maximum of duplicate test runs, as required by SCAQMD Method 207.1
(2) From facility CEMS

4.2 TEST OVERVIEW

The test program was successful in meeting the program objectives. The sample train was leak checked before and after the test and all QA/QC requirements of SCAQMD Method 207.1 were satisfied.

APPENDIX A
RAW DATA

Appendix A.1
Sample Data Sheets

MONTROSE AIR QUALITY SERVICES

WET CHEMICAL SAMPLING SYSTEM DATA AND WORKSHEET

JG 7/12/21

CLIENT: SCPPA
LOCATION: Canyon
DATE: 7/12/21
RUN NO: 1 thru 3
OPERATOR: RA [illegible]
METER BOX NO: 33 WCS
METER ΔH@: 1.68
METER Yd: 0.992
STACK AREA, FT²: 160.00
TRAVERSE POINTS, MIN/POINT: 5/10
ΔH= _____ X ΔP:
Probe Condition, pre/post test: good/good
Silica Gel Expended, Y/N: N
Filter Condition after Test: NA
Check Weight: 500.0/500.0

AMBIENT TEMPERATURE: 80°
BAROMETRIC PRESSURE: 24.68
ASSUMED MOISTURE: 11.5
PITOT TUBE COEFF, Cp: 0.84
PROBE ID NO/MATERIAL: SS/titanium
PROBE LENGTH: 8'
NOZZLE ID NO/ MATERIAL:
NOZZLE DIAMETER:
FILTER NO/TYPE:
PRE-TEST LEAK RATE: 0.002 CFM@ 15" in. Hg.
POST-TEST LEAK RATE: 0.002 CFM@ 20" in. Hg.
PITOT LEAK CHECK - PRE: N/A POST: N/A
CHAIN OF CUSTODY: SAMPLE CUSTODIAN JG
SAMPLER RAD
SAMPLE CUSTODIAN JG

Imp. #	Contents	Post-Test	Pre-Test	Difference
1	0.1 H_2SO_4	872.9	~~764.0~~ 763.1	688.8
2	0.1 H_2SO_4	678.8	677.8	
3	MT	622.6	620.6	
4	SG	937.7	924.9	
LR		100	100	
Total:				

Point	Time	Meter Volume, ft³	ΔP in. H_2O	ΔH in. H_2O	Stack Temp, °F	Probe Temp, °F	Filter Temp, °F	Imp. Out Temp, °F	Meter Temp, °F In	Meter Temp, °F Out	Vacuum in. Hg.	O_2 %	Pstatic in. H_2O
3	1603	383.395	N/A	1.0	N/A	N/A	N/A	58	79	77	3		N/A
2	1608												
1	1613												
E	1618												
3	1619	391.320		1.0				56	84	81	3		
2	1624												
1	1629												
E	1634												
3	1635	400.465		1.0				54	87	83	3		
2	1640												
1	1645												
E	1650												
3	1651	407.595		1.0				54	89	85	3		
2	1656												
1	1701												
E	1706	418.595											
Average:													

Comments: _____

MONTROSE
AIR QUALITY SERVICE

WET CHEMICAL SAMPLING SYSTEM DATA AND WORKSHEET

CLIENT: SCPPA
LOCATION: Canyon 1
DATE: 7/12/21
RUN NO: 2 - NH3
OPERATOR: Pimonzon
METER BOX NO: 23 WCS
METER ΔH@: 1.859
METER Yd: 0.992
STACK AREA, FT^2: 106.9
TRAVERSE POINTS, MIN/POINT: 5/12
ΔH= ______ X ΔP:
Probe Condition, pre/post test: good/good
Silica Gel Expended, Y/N: N
Filter Condition after Test: NA
Check Weight: 500.1

AMBIENT TEMPERATURE: 80°
BAROMETRIC PRESSURE: 29.6"
ASSUMED MOISTURE: 10%
PITOT TUBE COEFF, Cp: NA
PROBE ID NO/MATERIAL: Titanium
PROBE LENGTH: 8'
NOZZLE ID NO/ MATERIAL: NA
NOZZLE DIAMETER:
FILTER NO/TYPE:
PRE-TEST LEAK RATE: : <0.002 CFM@ 12" in. Hg.
POST-TEST LEAK RATE: <0.002 CFM@ 10" in. Hg.
PITOT LEAK CHECK - PRE: NM POST: NA
CHAIN OF CUSTODY: SAMPLE CUSTODIAN JG
SAMPLER Reed
SAMPLE CUSTODIAN JG

Imp. #	Contents	Post-Test	- Pre-Test	= Difference
1	0.1 H_2SO_4	760.7	575.5	
2	0.1 H_2SO_4	645.6	644.6	
3	MT	576.8	576.7	
4	SG	931.2	922.0	
LR		Ø	102	
Total:				

Point	Time	Meter Volume, ft^3	ΔP in. H_2O	ΔH in. H_2O	Stack Temp, °F	Probe Temp, °F	Filter Temp, °F	Imp. Out Temp, °F	Meter Temp, °F In	Meter Temp, °F Out	Vacuum in. Hg.	O_2 %	Pstatic in. H_2O
3	1731	419.480	NA	1.5	NM	NA	NA	59	84	81	3		NA
2	1736												
1	1741												
E	1746												
3	1747	428.370		1.0				57	86	84	3		
2	1752												
1	1757												
E	1802												
3	1803	437.605		1.0				54	84	80	3		
2	1808												
1	1813												
E	1818												
3	1819	446.505		1.0				56	82	80	3		
2	1824												
1	1829												
E	1834	455.625											
Average:													

Comments:

DS834048

Date of last revision 2/14/2017

Master Document Storage\Forms\Datasheets\Field Datasheets

MONTROSE

WET CHEMICAL SAMPLING SYSTEM DATA AND WORKSHEET

CLIENT: SCPPA
LOCATION: Canyon 1
DATE: 7/12/21
RUN NO: FB-N4
OPERATOR: RMontes
METER BOX NO: 23-WCS
METER ΔH@: 1.6859
METER Yd: .992
STACK AREA, FT²: 106.9
TRAVERSE POINTS, MIN/POINT: NA
ΔH= _____ X ΔP:
Probe Condition, pre/post test: good
Silica Gel Expended, Y/N: N
Filter Condition after Test: NA
Check Weight: 500.0 / 500.0

AMBIENT TEMPERATURE: 80
BAROMETRIC PRESSURE: 29.68
ASSUMED MOISTURE: NA
PITOT TUBE COEFF, Cp:
PROBE ID NO/MATERIAL: NA / Ti
PROBE LENGTH: 8'
NOZZLE ID NO/ MATERIAL:
NOZZLE DIAMETER: NA
FILTER NO/TYPE:
PRE-TEST LEAK RATE: : 0.005 CFM@ 14" in. Hg.
POST-TEST LEAK RATE: : _____ CFM@ _____ in. Hg.
PITOT LEAK CHECK - PRE: _____ POST: _____
CHAIN OF CUSTODY: SAMPLE CUSTODIAN JG
SAMPLER RMo
SAMPLE CUSTODIAN SO

Imp. #	Contents	Post-Test	Pre-Test	= Difference
1	0.1 H_2SO_4	685.0	685.2	
2	0.1 H_2SO_4	677.9	677.9	
3	MT	620.6	620.8	
4	SG	933.7	933.7	
CR		0	100	
Total:				

Point	Time	Meter Volume, ft³	ΔP in. H_2O	ΔH in. H_2O	Stack Temp, °F	Probe Temp, °F	Filter Temp, °F	Imp. Out Temp, °F	Meter Temp, °F In	Meter Temp, °F Out	Vacuum in. Hg.	O_2 %	Pstatic in. H_2O
Average:													

Comments: _____

1-NH3-U1

Point	Meter Volume	Delta H	Tm In	Tm Out
6	382.245	1.0	79	77
5			84	81
4			87	83
3			89	85
2				
1				
Stop				
6				
5				
4				
3				
2				
1				
Stop	418.595			
Result	**36.350**	**1.0**		**83.1**

Impinger Weights

#	Post-Test	Pre-Test	Difference
1	872.9	688.8	184.1
2	678.8	677.8	1.0
3	622.6	620.6	2.0
4	933.7	924.9	8.8
Line Rinse	0.0	100.0	-100.0
			95.9

2-NH3-U1

Point	Meter Volume	Delta H	Tm In	Tm Out
6	419.480	1.0	84	81
5			86	84
4			84	80
3			82	80
2				
1				
Stop				
6				
5				
4				
3				
2				
1				
Stop	455.625			
Result	**36.145**	**1.0**		**82.6**

Impinger Weights

#	Post-Test	Pre-Test	Difference
1	760.7	575.5	185.2
2	645.6	644.6	1.0
3	576.8	576.7	0.1
4	931.2	922.6	8.6
Line Rinse	0.0	100.0	-100.0
			94.9

Appendix A.2
Laboratory Data

MONTROSE

AMMONIA BY ION SELECTIVE ELECTRODE ANALYSIS

Project #: PBOJ-10227.4 District Method: SCAQMD 207.1 Sample Date: 7/12/2021

Client/Location: SCPPA Calibration Date: 7/14/21 Analysis Date: 7/14/21

Sample Location: Haynes Calibration Curve: y = -59.1114x + 95.8114 Analyst's Initials: LM

Test #'s: 1-2-1044-031 R^2: 0.9998 Room Temperature (°C): 20

Sample	Total Vol. (mL)	Electrode Potential (mV)	Conc. µg NH_3 – N / ml	Cavg (µg NH_3 – N / ml)	µg NH_3 / sample	T (°C)	Blue after + ISA (Y/N)	pH	% R
Standard Check: 28 µg NH_3/ml	—	9.9	28.404	28.294	—	20.0	Y	—	1.050
		10.1	28.184			20.0	Y		
1-NH_3	530.3	83.7	1.603	1.597	1029.203	20.0	Y	<2	—
		83.9	1.590			20.0	Y		
2-NH_3	534.7	84.6	1.548	1.557	1011.806	20.0	Y	<2	—
		84.3	1.566			20.0	Y		
Spike: 1-NH_3 +2ml 1000ppm NH_3	—	16.4	22.051	21.838	—	20.0	Y	—	105.41
		16.9	21.625			20.0	Y		
Standard Check: 28 µg NH3/ml	—	9.9	28.404	28.460	—	20.0	Y	—	1.641
		9.8	28.515			20.0	Y		
Reagent Blank 0.1N H_2SO_4	—	197.5	0.014	0.019	—	20.0	Y	—	—
		197.7	0.019			20.0	Y		
DI H_2O Blank	—	201.0	0.017	0.017	—	20.0	Y	—	—
		200.9	0.017			20.0	Y		
Field Blank	373.8	197.7	0.019	0.019	8.653	20.0	Y	22	—
		197.3	0.019			20.0	Y		
Standard Check: 28 µg NH3/ml	—	9.5	28.850	28.794	—	20.0	Y	—	2.850
		9.6	28.738			20.0	Y		

Notes: Total volume of samples and standards used: 100 ml * LM 7/14/2021

Volume of pH adjusting ISA used in ml: 2 ml

Absorbing solution: 0.1N H_2SO_4

Calculations: Conc. (µg NH_3 – N / ml) = $10^{(P-B)/M}$; (P = electrode potential, B = y-intercept and M = slope)

Cavg = average result of duplicate analyses (µg NH_3 – N / ml) = (C1+C2)/2

µg NH_3 / sample = Cavg* 17.03/ 14.01 * TV

mg / sample = µg /sample ÷ 1000

ppm NH_3 = mg NH_3/sample x 1/Vmstd x 1/454000 x SV/17 x 10^6

AMMONIA BY ION SELECTIVE ELECTRODE ANALYSIS CALCULATION

Project Number:	PROJ-10224
Client/ Location:	SCPPA
Sample Location:	Stack
District Method:	SCAQMD 207.1
Sample Date:	7/12/2021
Analysis Date:	7/14/2021
Analyst's Initials:	LM
Calibration Curve Slope	-59.1114
Y-intercept	95.8114
R^2	0.9998

Sample	P mV	Conc. µg NH_3 /ml as N	C avg as N	TV (ml)	C avg as NH_3	µg NH_3/ sample
28 ug NH_3 / ml as N	9.9	28.404				
Repeat 28ug NH_3/ml as N	10.1	28.184	28.294	NA	34.393	NA
1-NH_3	83.7	1.603				
Repeat 1- NH_3	83.9	1.590	1.597	530.3	1.941	1029.203
2-NH3	84.3	1.566				
Repeat 2- NH3	84.6	1.548	1.557	534.7	1.892	1011.806
spike 1-NH_3	16.4	22.051				
Repeat 1-NH3 spike	16.9	21.625	21.838	NA	26.545	NA
28 NH_3/ml as N	9.9	28.404				
Repeat 28 ug NH_3/ml as N	9.8	28.515	28.460	NA	34.594	NA
Reagent Blank	197.5	0.019				
Repeat Reagent Blank	197.7	0.019	0.019	NA	0.023	NA
Field Blank	197.7	0.019				
Repeat Field Blank	197.3	0.019	0.019	373.8	0.023	8.653
DI H2O Blank	201.0	0.017				
Repeat DI H2O Blank	200.9	0.017	0.017	NA	0.020	NA
28 NH_3/ml as N	9.5	28.850				
Repeat 28 ug NH_3/ml as N	9.6	28.738	28.794	NA	35.001	NA

Notes:

Measured Concentration of Ammonia (C) in µg NH_3 / ml as N

$C=10^{(P-B)/M}$

P = electrode potential (mV), M=slope and B=intercept

Average Measured Ammonia Concentration (Cavg) = (C1 + C2)/2

where C1, C2 results from duplicate analyses (µg NH_3 /ml as N)

Cavg (µg NH_3/ml as NH_3) = Cavg (µg NH_3/ ml as N) * 17.03/ 14.01

µg NH_3 / sample = Cavg (µg NH_3/ml as NH_3) * TV

Used 100 ml of samples and standards with 2 ml ISA and constant stirring rate.

All solutions turned blue and remained blue with ISA unless otherwise indicated.

Sample PH and Temperatures can be found on the laboratory datasheet.

Maximum samples (including blanks) between 28 ug/ml check standard is 5 samples analyzed in duplicate.

AMMONIA BY ION SELECTIVE ELECTRODE ANALYSIS QUALITY CONTROL

Project Number: PROJ-10224
Client/ Location: SCPPA
Sample Location: Stack
District Method: SCAQMD 207.1
Sample Date: 7/12/2021
Analysis Date: 7/14/2021
Analyst's Initials: LM

Sample	% recovery	RPD %	RPA %
28 ug NH3 / ml as N epeat 28ug NH3/ml as	NA	0.78	1.050
1-NH3 Repeat 1- NH3	NA	0.78	NA
2-NH3 Repeat 2- NH3	NA	1.17	NA
spike 1-NH3 Repeat 1-NH3 spike	105.41	1.95	NA
28 NH3/ml as N epeat 28 ug NH3/ml as	NA	-0.39	1.641
Reagent Blank Repeat Reagent Blank	NA	0.78	NA
Field Blank Repeat Field Blank	NA	-1.56	NA
DI H2O Blank Repeat DI H2O Blank	NA	-0.39	NA
28 NH3/ml as N epeat 28 ug NH3/ml as	NA	0.39	2.836

Notes:

spike: 100 ml sample + 2 ml (1000 µg NH_3 / ml as N)

Matrix Spike Percent Recovery (%R)

%R = (C spike*0.104 - Csample*0.102)/2 *100

Cspike = average result of matrix spike (µg NH_3/ ml as N)

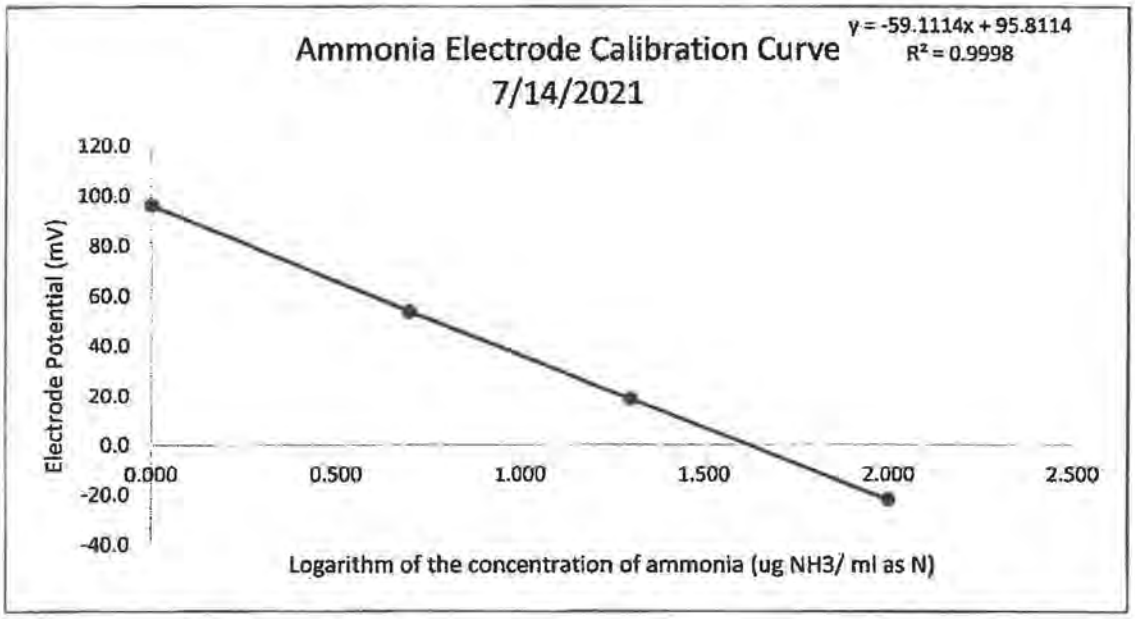
Relative Percent Difference (RPD) = (C1-C2)/ Cavg *100 (must be 5% or less)

Relative Percent Accuracy (RPA) (must be 10% or less)

RPA = (Cavg-theoretical value of standard)/ theoretical value of standard * 100

AMMONIA ELECTRODE CALIBRATION CURVE

NH_3 concentration (μg NH_3 / ml as N)	log NH_3 concentration	Electrode potential (mV)	Sample Temperature (C)	Room Temperature (C)
1	0.000	96.4	20	20
5	0.699	53.7	20	20
20	1.301	18.7	20	20
100	2.000	-22.0	20	20



slope	-59.1114
y-intercept	95.8114

Concentration (μg NH_3 / ml as N)	Value LR line	Difference	% Difference
1	0.9773	-0.0227	-2.2667
5	5.1571	0.1571	3.1424
20	20.1609	0.1609	0.8045
100	98.4102	-1.5898	-1.5898

Calculation:

Regression Line: $P=M*\log(\mu g \text{ of } NH_3/ \text{ ml as N})+B$

Measured Concentration of Ammonia (C) in μg / ml NH_3 as N: $C=10^{(P-B)/M}$

where P = electrode potential, M= slope (must be -57±3) and B= intercept

All standards were prepared in 0.04N H_2SO_4 and allowed to equilibrate to room temperature.

MONTROSE

AMMONIA BY ION SELECTIVE ELECTRODE ANALYSIS CALIBRATION DATA

District Method: SCAQMD 207.1

Calibration Date: 7/14/2021

Calibration Curve: y = -59.1179x + 95.8114

R^2 0.9998

Analyst's Initials: LM

Thermometer #: NA

ISE Electrode #: 15

Calibration Standard (µg NH_3 / ml as N)	Electrode Potential (mV)	Solution Temperature (°C)	Room Temperature (°C)
1	96.4	20.0	20.0
5	53.7	20.0	20.0
20	18.7	20.0	20.0
100	-22.0	20.0	20.0

Notes:

Total volume of samples and standards used: 100 ml
Volume of pH adjusting ISA used in ml: 2 ml
Absorbing solution: 0.04 N H_2SO_4
Slope of the calibration curve shall be between -54 to -60
R^2 must be 0.9997 or greater
Calibration solutions, sample solutions and Calibration Verification standard temperature within ± 2°C

CHAIN OF CUSTODY

CLIENT: SCPPA PROJECT NUMBER: PROJ- TEST DATE(S): 7/12 and 7/13

LOCATION: Canyon 1 and 2 SAMPLER(S): RMO

SAMPLE LOCATION: Stack PROJECT MANAGER: JG

TEST METHOD(S): SCAQMD 207.1 DATE DUE: Normal

OUTSIDE LAB REQUIRED? NO COMPLIANCE TEST? Yes

DATE	TIME	TEST #	SAMPLE DESCRIPTION	CONTAINERS	SAMPLER	COMMENTS
7/12/2021		1-NH3-1	Probe, Line, Impingers	1	RMO	
7/12/2021		2-NH3-1	Probe, Line, Impingers	1	RMO	
7/12/2021		FB-NH3-1	Probe, Line, Impingers	1	RMO	
7/13/2021		1-NH3-2	Probe, Line, Impingers	1	RMO	
7/13/2021		2-NH3-2	Probe, Line, Impingers	1	RMO	
7/13/2021		FB-NH3-2	Probe, Line, Impingers	1	RMO	
7/12/2021		RB-NH3	DI H2O	1	JG	
7/12/2021		RB-NH3	0.1 N H2SO4	1	JG	

RELEASED BY	DATE/TIME	RECEIVED BY	DATE/TIME
Kelly Morgan	7/14/21 820 AM	Yim-Noi Clean	7/14/21 820 am

ANALYSIS REQUIRED:

Appendix A.3
QA/QC Data

SEMI-ANNUAL DRY GAS METER/ORIFICE CALIBRATION

Orifice Method - Triplicate Runs/Four Calibration Points
English Meter Box Units, English K' Factor
Filename: M:\Santa Ana\Equipment\Test Equipment\Calibrations\Dry Gas Meters\23-WCS\2021\[23-WCS Semi Annual Cal 7-8-2021.xl
File Modified From: APEX 522 Series Meter box Calibration
Revised: 4/8/2005

ID #: C-5000
ID #: 23-WCS
Date: 7/8/2021
Bar. Pressure: 29.84 (in. Hg)
Performed By: L.Olivares
Meter Serial #:

DRY GAS METER READINGS									CRITICAL ORIFICE READINGS					
		Volume	Volume	Volume	Initial Temps.		Final Temps.		Orifice	K' Orifice	Actual	Ambient Temperature		
dH	Time	Initial	Final	Total	Inlet	Outlet	Inlet	Outlet	Serial#	Coefficient	Vacuum	Initial	Final	Average
(in H2O)	(min)	(cu ft)	(cu ft)	(cu ft)	(deg F)	(deg F)	(deg F)	(deg F)	(number)	(see above)	(in Hg)	(deg F)	(deg F)	(deg F)
0.13	26.00	304.600	310.120	5.520	89.0	86.0	89.0	87.0	33	0.1552	16.0	79.0	79.0	79.0
0.13	26.00	310.120	315.645	5.525	89.0	87.0	89.0	87.0	33	0.1552	16.0	79.0	79.0	79.0
0.13	26.00	315.645	321.225	5.580	89.0	87.0	89.0	88.0	33	0.1552	16.0	79.0	79.0	79.0
0.58	12.00	288.000	293.375	5.375	89.0	85.0	89.0	85.0	48	0.3346	18.0	79.0	79.0	79.0
0.58	12.00	293.375	298.745	5.370	89.0	85.0	89.0	86.0	48	0.3346	18.0	79.0	79.0	79.0
0.58	12.00	298.745	304.120	5.375	89.0	86.0	89.0	86.0	48	0.3346	18.0	79.0	79.0	79.0
1.70	7.00	270.600	276.070	5.470	92.0	82.0	92.0	83.0	63	0.5918	17.0	79.0	79.0	79.0
1.70	7.00	276.070	281.540	5.470	92.0	83.0	92.0	84.0	63	0.5918	17.0	79.0	79.0	79.0
1.70	7.00	281.540	287.030	5.490	92.0	84.0	92.0	84.0	63	0.5918	17.0	79.0	79.0	79.0
3.00	5.00	254.000	259.150	5.150	88.0	80.0	91.0	81.0	73	0.7681	12.5	78.0	78.0	78.0
3.00	5.00	259.150	264.270	5.120	91.0	81.0	93.0	81.0	73	0.7681	12.5	78.0	78.0	78.0
3.00	5.00	264.270	269.405	5.135	93.0	81.0	93.0	83.0	73	0.7681	12.5	78.0	78.0	78.0

RY GAS METER		ORIFICE			DRY GAS METER CALIBRATION FACTOR	ORIFICE CALIBRATION FACTOR	Individual Run	Individual Orifice	Orifice Average	Orifice Average
VOLUME CORRECTED Vm(std) (cu ft)	VOLUME CORRECTED Vm(std) (liters)	VOLUME CORRECTED Vcr(std) (cu ft)	VOLUME CORRECTED Vcr(std) (liters)	VOLUME NOMINAL Vcr (cu ft)	Y Value (number)	dH@ Value (in H2O)	0.95 < Y < 1.05?	Ymax - Ymin < 0.010?	0.98 < Y/Yd < 1.02?	dH@ - dH@ av < 0.155?
5.306	150.3	5.185	146.8	5.309	0.977	1.772	Pass			
5.309	150.3	5.185	146.8	5.309	0.977	1.770	Pass			
5.359	151.8	5.185	146.8	5.309	0.968	1.768	Pass			
				Average	**0.974**	**1.770**		Pass	Pass	Pass
5.160	146.7	5.161	146.1	5.284	0.996	1.704	Pass			
5.173	146.5	5.161	146.1	5.284	0.998	1.703	Pass			
5.175	146.6	5.161	146.1	5.284	0.997	1.701	Pass			
				Average	**0.997**	**1.703**		Pass	Pass	Pass
5.283	149.6	5.324	150.8	5.452	1.008	1.605	Pass			
5.279	149.5	5.324	150.8	5.452	1.009	1.602	Pass			
5.295	150.0	5.324	150.8	5.452	1.005	1.600	Pass			
				Average	**1.007**	**1.602**		Pass	Pass	Pass
5.011	141.9	4.941	139.9	5.050	0.986	1.684	Pass			
4.968	140.7	4.941	139.9	5.050	0.995	1.682	Pass			
4.973	140.8	4.941	139.9	5.050	0.993	1.679	Pass			
				Average	**0.991**	**1.682**		Pass	Pass	Pass

Average Yd: 0.992 **dH@: 1.669**

Q @ dH = 1: 0.577

SIGNED: Signature on File Date: 7/8/2021

MONTROSE
AIR QUALITY SERVICES

DIGITAL TEMPERATURE READOUT CALIBRATION

Digital Temperature Readout ID: 23 WCS
Readout Description: Control Box
Date: 7/6/2021
Performed By: RD/DA/RM

Calibrated Thermocouple ID: TC-CAL
T1 Reference Thermometer ID: 313010
T2 Reference Thermometer ID: 242196
T3 Reference Thermometer ID: 242167

T/C I.D.	Readout	T/C - Readout °F				Reference Thermometer °F				Difference		
TC-CAL	I.D.	Reading 1	Reading 2	Reading 3	Average	Reading 1	Reading 2	Reading 3	Average	°F	%, (°R)	
T3 (OIL)	23 WCS	357	357	357	357	358	358	358	358	1.0	0.1%	Pass
T2 (Boiling H_2O)	23 WCS	214	214	214	214	212	212	212	212	2.0	0.3%	Pass
T1 (Ice/Water)	23 WCS	33	33	33	33	32	32	32	32	1.0	0.2%	Pass

1) Difference % (°R) = Difference (°F) / (Average Tref + 460)
2) Pass if all Differences are less than 1.5% (°R)

Thermocouple Source Readings

	T/C Source	T/C - Readout °F				T/C Source °F				Difference		
	S/N	Reading 1	Reading 2	Reading 3	Average	Reading 1	Reading 2	Reading 3	Average	°F	%, (°R)	
T4 (~650 F)	129103	650	650	650	650	650	650	650	650	0.0	0.0%	Pass
T3 (~370 F)	129103	370	370	370	370	370	370	370	370	0.0	0.0%	Pass
T2 (~212 F)	129103	213	213	213	213	212	212	212	212	1.0	0.1%	Pass
T1 (~32 F)	129103	32	32	32	32	32	32	32	32	0.0	0.0%	Pass

1) Difference % (°R) = Difference (°F) / (Average Tref + 460)
2) Pass if all Differences are less than 1.5% (°R)

Barometric Pressure Determination	
Date: 07/12/21 Data By: JG Reference: https://forecast.weather.gov/MapClick.php?lat=33.8329&lon=-117.9152	
Reference Barometer ID	FW0063 Fullerton CSU (F0063)
Reference Barometer Location	Lat: 33.8805°NLon: 117.88417°WElev: 247ft.
Reference Barometer Other Info.	
Reference Barometer Indication, corrected to sea level	29.95
Reference Barometer Reference Elevation	247
Reference Barometer Actual Pressure	29.70
Test Barometer Location/Site	Canyon Power Plant
Location/Site Elevation	212
Location/Site Barometric Pressure	29.74
Sampling Location Height (above/below site elevation)	60
Sampling Location Barometric Pressure	**29.68**

APPENDIX B
FACILITY CEMS DATA

1-NH3

CEMTEK KVB-Enertec NetDAHS© Version 47.0

Average Values Report
Generated: 7/12/2021 19:41

Company: City Of Anaheim
Plant: 3071 Miraloma Ave.,
City/St: Anaheim, CA, 92806
Source: 1

Period Start: 7/12/2021 16:03
Period End: 7/12/2021 17:05
Validation Type: 1/1 min
Averaging Period: 1 min
Type: Block Avg

Period Start:	Average 1_O2 %	Average 1_NOXPPM ppm	Average 1_NOX_CORR ppm	Average 1_NOX_LBHR #/hr	Average 1_NOX_LBMM #/MBTU	Average 1_GasFlow kscfh	Average 1_LOAD MW	Average 1_STACKFLW kscfm	Average 1_COPPM ppm	Average 1_CO_CORR ppm	Average 1_CO_LBHR #/hr
07/12/2021 16:03	14.43	2.54	2.32	4.42	0.009	467.5	49.01	230.2	3.55	3.24	3.58
07/12/2021 16:04	14.43	2.54	2.32	4.41	0.009	467.1	49.03	230.0	3.57	3.26	3.58
07/12/2021 16:05	14.43	2.54	2.32	4.41	0.009	466.9	49.03	229.9	3.60	3.28	3.63
07/12/2021 16:06	14.43	2.54	2.32	4.40	0.009	465.5	48.84	229.2	3.59	3.27	3.57
07/12/2021 16:07	14.44	2.55	2.33	4.38	0.009	463.9	48.77	228.8	3.54	3.23	3.56
07/12/2021 16:08	14.45	2.58	2.36	4.40	0.009	465.1	48.74	229.7	3.48	3.18	3.47
07/12/2021 16:09	14.44	2.58	2.36	4.32	0.009	457.6	48.00	225.7	3.47	3.17	3.41
07/12/2021 16:10	14.47	2.54	2.33	4.33	0.009	458.2	48.24	227.0	3.38	3.10	3.37
07/12/2021 16:11	14.46	2.62	2.40	4.34	0.009	459.6	48.32	227.4	3.21	2.94	3.19
07/12/2021 16:12	14.45	2.74	2.51	4.35	0.009	460.3	48.35	227.3	3.02	2.76	3.00
07/12/2021 16:13	14.44	2.69	2.46	4.36	0.009	461.2	48.34	227.5	3.07	2.80	3.05
07/12/2021 16:14	14.43	2.53	2.31	4.39	0.009	464.3	48.44	228.6	3.19	2.91	3.17
07/12/2021 16:15	14.44	2.30	2.10	3.90	0.008	464.7	48.61	229.1	3.37	3.08	3.37
07/12/2021 16:16	14.43	2.19	2.00	3.43	0.007	466.3	48.73	229.6	3.52	3.21	3.53
07/12/2021 16:17	14.43	2.31	2.11	3.91	0.008	465.9	48.75	229.4	3.57	3.26	3.57
07/12/2021 16:18	14.43	2.44	2.23	3.92	0.008	466.2	48.78	229.5	3.51	3.20	3.52
07/12/2021 16:19	14.43	2.53	2.31	4.41	0.009	467.1	48.83	230.0	3.51	3.20	3.53
07/12/2021 16:20	14.42	2.54	2.31	4.41	0.009	467.1	48.82	229.7	3.52	3.20	3.53
07/12/2021 16:21	14.43	2.52	2.30	3.92	0.008	467.2	48.84	230.1	3.56	3.25	3.58
07/12/2021 16:22	14.42	2.51	2.29	3.93	0.008	467.8	48.84	230.0	3.57	3.25	3.59
07/12/2021 16:23	14.42	2.51	2.29	3.93	0.008	467.7	48.86	229.9	3.58	3.26	3.59
07/12/2021 16:24	14.42	2.50	2.28	3.93	0.008	467.5	48.85	229.8	3.57	3.25	3.58
07/12/2021 16:25	14.42	2.50	2.28	3.93	0.008	467.8	48.88	230.0	3.56	3.24	3.59
07/12/2021 16:26	14.42	2.52	2.29	3.93	0.008	467.6	48.89	229.9	3.55	3.23	3.58
07/12/2021 16:27	14.42	2.53	2.30	3.93	0.008	467.4	48.89	229.8	3.55	3.23	3.58
07/12/2021 16:28	14.42	2.53	2.30	3.93	0.008	467.8	48.88	230.0	3.55	3.23	3.59
07/12/2021 16:29	14.42	2.53	2.30	3.93	0.008	467.6	48.87	229.9	3.55	3.23	3.58
07/12/2021 16:30	14.42	2.53	2.30	3.93	0.008	467.9	48.89	230.0	3.58	3.26	3.59
07/12/2021 16:31	14.42	2.53	2.30	3.93	0.008	468.0	48.88	230.1	3.60	3.28	3.64
07/12/2021 16:32	14.42	2.51	2.29	3.93	0.008	467.9	48.90	230.0	3.60	3.28	3.64
07/12/2021 16:33	14.42	2.50	2.28	3.93	0.008	468.3	48.95	230.2	3.61	3.29	3.64
07/12/2021 16:34	14.42	2.51	2.29	3.93	0.008	468.3	48.95	230.2	3.60	3.28	3.64
07/12/2021 16:35	14.42	2.51	2.29	3.93	0.008	468.3	48.95	230.2	3.60	3.28	3.64
07/12/2021 16:36	14.42	2.51	2.29	3.93	0.008	468.0	48.91	230.1	3.60	3.28	3.64
07/12/2021 16:37	14.42	2.52	2.29	3.93	0.008	467.8	48.89	230.0	3.61	3.29	3.63
07/12/2021 16:38	14.42	2.51	2.29	3.93	0.008	468.2	48.96	230.2	3.61	3.29	3.64
07/12/2021 16:39	14.42	2.50	2.28	3.93	0.008	468.2	48.92	230.2	3.62	3.30	3.64
07/12/2021 16:40	14.41	2.49	2.26	3.93	0.008	468.2	48.97	229.8	3.64	3.31	3.64
07/12/2021 16:41	14.40	2.46	2.23	3.93	0.008	467.9	48.93	229.3	3.68	3.34	3.68
07/12/2021 16:42	14.42	2.42	2.20	3.91	0.008	465.8	48.70	229.0	3.75	3.41	3.77
07/12/2021 16:43	14.45	2.33	2.13	3.92	0.008	467.0	48.76	230.7	3.90	3.57	3.92
07/12/2021 16:44	14.41	2.19	1.99	3.43	0.007	467.0	48.85	229.3	4.05	3.68	4.07
07/12/2021 16:45	14.42	2.52	2.29	3.92	0.008	466.9	48.88	229.5	3.91	3.56	3.92
07/12/2021 16:46	14.42	2.91	2.65	4.90	0.010	466.8	48.89	229.5	3.58	3.26	3.58
07/12/2021 16:47	14.42	2.89	2.63	4.90	0.010	467.0	48.92	229.6	3.38	3.08	3.38
07/12/2021 16:48	14.42	2.82	2.57	4.41	0.009	466.9	48.88	229.5	3.36	3.06	3.38
07/12/2021 16:49	14.42	2.77	2.52	4.42	0.009	467.3	48.88	229.7	3.36	3.06	3.39

Period Start:	Average 1_O2 %	Average 1_NOXPPM ppm	Average 1_NOX_CORR ppm	Average 1_NOX_LBHR #/hr	Average 1_NOX_LBMM #/MBTU	Average 1_GasFlow kscfh	Average 1_LOAD MW	Average 1_STACKFLW kscfm	Average 1_COPPM ppm	Average 1_CO_CORR ppm	Average 1_CO_LBHR #/hr
07/12/2021 16:50	14.42	2.72	2.48	4.42	0.009	467.6	48.90	229.9	3.38	3.08	3.39
07/12/2021 16:51	14.42	2.67	2.43	4.41	0.009	467.0	48.88	229.6	3.39	3.09	3.38
07/12/2021 16:52	14.42	2.65	2.41	4.41	0.009	466.9	48.89	229.5	3.37	3.07	3.38
07/12/2021 16:53	14.42	2.67	2.43	4.41	0.009	466.9	48.89	229.5	3.36	3.06	3.38
07/12/2021 16:54	14.42	2.67	2.43	4.42	0.009	467.8	48.89	230.0	3.35	3.05	3.34
07/12/2021 16:55	14.42	2.63	2.39	4.42	0.009	467.8	48.93	230.0	3.37	3.07	3.39
07/12/2021 16:56	14.42	2.58	2.35	4.42	0.009	467.5	48.91	229.8	3.39	3.09	3.39
07/12/2021 16:57	14.42	2.57	2.34	4.42	0.009	467.7	48.92	229.9	3.42	3.11	3.44
07/12/2021 16:58	14.42	2.57	2.34	4.42	0.009	467.8	48.93	230.0	3.44	3.13	3.44
07/12/2021 16:59	14.42	2.58	2.35	4.42	0.009	467.7	48.91	229.9	3.42	3.11	3.44
07/12/2021 17:00	14.42	2.58	2.35	4.42	0.009	467.9	48.91	230.0	3.42	3.11	3.44
07/12/2021 17:01	14.42	2.57	2.34	4.42	0.009	467.6	48.91	229.9	3.42	3.11	3.44
07/12/2021 17:02	14.42	2.58	2.35	4.42	0.009	467.7	48.92	229.9	3.42	3.11	3.44
07/12/2021 17:03	14.42	2.57	2.34	4.42	0.009	467.6	48.92	229.9	3.43	3.12	3.44
07/12/2021 17:04	14.42	2.57	2.34	4.42	0.009	467.6	48.89	229.9	3.43	3.12	3.44
07/12/2021 17:05	14.42	2.57	2.34	4.42	0.009	467.7	48.92	229.9	3.42	3.11	3.44
Daily Average*	**14.43**	**2.55**	**2.32**	**4.18**	**0.009**	**466.6**	**48.82**	**229.6**	**3.50**	**3.19**	**3.52**
Maximum*	**14.47**	**2.91**	**2.65**	**4.90**	**0.010**	**468.3**	**49.03**	**230.7**	**4.05**	**3.68**	**4.07**
	07/12/2021 16:10	07/12/2021 16:46	07/12/2021 16:46	07/12/2021 16:47	07/12/2021 16:47	07/12/2021 16:35	07/12/2021 16:05	07/12/2021 16:43	07/12/2021 16:44	07/12/2021 16:44	07/12/2021 16:44
Minimum*	**14.40**	**2.19**	**1.99**	**3.43**	**0.007**	**457.6**	**48.00**	**225.7**	**3.02**	**2.76**	**3.00**
	07/12/2021 16:41	07/12/2021 16:44	07/12/2021 16:44	07/12/2021 16:44	07/12/2021 16:44	07/12/2021 16:09	07/12/2021 16:09	07/12/2021 16:09	07/12/2021 16:12	07/12/2021 16:12	07/12/2021 16:12

* Does not include Invalid Averaging Periods ("N/A")

Average Values Report
Generated: 7/12/2021 20:35

Company: City Of Anaheim
Plant: 3071 Miraloma Ave.,
City/St: Anaheim, CA, 92806
Source: 1

Period Start: 7/12/2021 19:31
Period End: 7/12/2021 20:33
Validation Type: 1/1 min
Averaging Period: 1 min
Type: Block Avg

Period Start:	Average 1_O2 %	Average 1_NOXPPM ppm	Average 1_NOX_CORR ppm	Average 1_NOX_LBHR #/hr	Average 1_NOX_LBMM #/MBTU	Average 1_GasFlow kscfh	Average 1_LOAD MW	Average 1_STACKFLW kscfm	Average 1_COPPM ppm	Average 1_CO_CORR ppm	Average 1_CO_LBHR #/hr
07/12/2021 19:31	14.43	2.56	2.33	4.44	0.009	470.2	49.02	231.5	3.61	3.29	3.65
07/12/2021 19:32	14.43	2.56	2.33	4.44	0.009	470.0	49.06	231.4	3.61	3.29	3.65
07/12/2021 19:33	14.43	2.56	2.33	4.44	0.009	469.9	49.01	231.4	3.62	3.30	3.65
07/12/2021 19:34	14.43	2.57	2.34	4.44	0.009	470.1	49.02	231.5	3.61	3.29	3.65
07/12/2021 19:35	14.43	2.59	2.36	4.44	0.009	470.0	49.04	231.4	3.61	3.29	3.65
07/12/2021 19:36	14.43	2.58	2.35	4.44	0.009	470.0	49.05	231.4	3.62	3.30	3.65
07/12/2021 19:37	14.43	2.56	2.33	4.44	0.009	470.1	49.05	231.5	3.60	3.28	3.65
07/12/2021 19:38	14.43	2.56	2.33	4.44	0.009	470.0	49.03	231.4	3.59	3.27	3.60
07/12/2021 19:39	14.42	2.57	2.34	4.44	0.009	470.1	49.04	231.1	3.59	3.27	3.60
07/12/2021 19:40	14.42	2.57	2.34	4.44	0.009	470.3	49.05	231.2	3.60	3.28	3.65
07/12/2021 19:41	14.43	2.58	2.35	4.44	0.009	469.8	49.01	231.3	3.60	3.28	3.65
07/12/2021 19:42	14.44	2.62	2.39	4.44	0.009	469.8	49.04	231.7	3.57	3.26	3.60
07/12/2021 19:43	14.43	2.62	2.39	4.44	0.009	470.2	49.04	231.5	3.57	3.26	3.60
07/12/2021 19:44	14.43	2.57	2.34	4.44	0.009	469.9	49.01	231.4	3.60	3.28	3.65
07/12/2021 19:45	14.44	2.55	2.33	4.44	0.009	469.8	49.04	231.7	3.64	3.32	3.70
07/12/2021 19:46	14.44	2.55	2.33	4.44	0.009	470.0	49.03	231.8	3.65	3.33	3.70
07/12/2021 19:47	14.43	2.55	2.33	4.44	0.009	470.0	49.06	231.4	3.65	3.33	3.70
07/12/2021 19:48	14.44	2.56	2.34	4.44	0.009	469.9	49.04	231.7	3.64	3.32	3.70
07/12/2021 19:49	14.44	2.56	2.34	4.44	0.009	470.1	49.03	231.8	3.65	3.33	3.70
07/12/2021 19:50	14.44	2.57	2.35	4.44	0.009	470.0	49.04	231.8	3.64	3.32	3.70
07/12/2021 19:51	14.43	2.57	2.34	4.44	0.009	470.1	49.03	231.5	3.64	3.32	3.65
07/12/2021 19:52	14.43	2.58	2.35	4.44	0.009	470.2	49.04	231.5	3.64	3.32	3.65
07/12/2021 19:53	14.43	2.58	2.35	4.44	0.009	470.1	49.08	231.5	3.63	3.31	3.65
07/12/2021 19:54	14.43	2.57	2.34	4.45	0.009	470.4	49.04	231.6	3.63	3.31	3.65
07/12/2021 19:55	14.43	2.57	2.34	4.45	0.009	470.4	49.05	231.6	3.62	3.30	3.65
07/12/2021 19:56	14.43	2.58	2.35	4.44	0.009	470.2	49.02	231.5	3.63	3.31	3.65
07/12/2021 19:57	14.43	2.59	2.36	4.44	0.009	470.0	49.04	231.4	3.63	3.31	3.65
07/12/2021 19:58	14.43	2.58	2.35	4.44	0.009	469.9	49.03	231.4	3.62	3.30	3.65
07/12/2021 19:59	14.43	2.58	2.35	4.44	0.009	470.0	49.02	231.4	3.61	3.29	3.65
07/12/2021 20:00	14.43	2.57	2.34	4.44	0.009	470.0	49.03	231.4	3.60	3.28	3.65
07/12/2021 20:01	14.43	2.58	2.35	4.44	0.009	470.0	49.03	231.4	3.60	3.28	3.65
07/12/2021 20:02	14.43	2.57	2.34	4.44	0.009	469.8	49.02	231.3	3.61	3.29	3.65
07/12/2021 20:03	14.44	2.57	2.35	4.44	0.009	469.9	49.02	231.7	3.62	3.31	3.65
07/12/2021 20:04	14.44	2.59	2.37	4.44	0.009	469.9	49.04	231.7	3.62	3.31	3.65
07/12/2021 20:05	14.44	2.58	2.36	4.44	0.009	469.9	49.04	231.7	3.62	3.31	3.65
07/12/2021 20:06	14.43	2.57	2.34	4.44	0.009	470.0	49.02	231.4	3.65	3.33	3.70
07/12/2021 20:07	14.43	2.56	2.33	4.44	0.009	470.1	49.04	231.5	3.68	3.36	3.70
07/12/2021 20:08	14.43	2.55	2.33	4.44	0.009	470.1	49.04	231.5	3.67	3.35	3.70
07/12/2021 20:09	14.43	2.55	2.33	4.44	0.009	470.0	49.04	231.4	3.66	3.34	3.70
07/12/2021 20:10	14.43	2.56	2.33	4.44	0.009	470.1	49.05	231.5	3.65	3.33	3.70
07/12/2021 20:11	14.43	2.62	2.39	4.44	0.009	470.0	49.03	231.4	3.65	3.33	3.70
07/12/2021 20:12	14.43	2.63	2.40	4.44	0.009	469.8	49.02	231.3	3.65	3.33	3.70
07/12/2021 20:13	14.43	2.59	2.36	4.44	0.009	470.1	49.01	231.5	3.65	3.33	3.70
07/12/2021 20:14	14.44	2.59	2.37	4.44	0.009	469.9	49.02	231.7	3.66	3.34	3.70
07/12/2021 20:15	14.44	2.59	2.37	4.44	0.009	469.8	49.02	231.7	3.67	3.35	3.70
07/12/2021 20:16	14.44	2.59	2.37	4.44	0.009	470.0	49.04	231.8	3.67	3.35	3.70
07/12/2021 20:17	14.45	2.59	2.37	4.44	0.009	469.9	49.02	232.1	3.65	3.34	3.70

2 NHg

Period Start:	Average 1_O2 %	Average 1_NOXPPM ppm	Average 1_NOX_CORR ppm	Average 1_NOX_LBHR #/hr	Average 1_NOX_LBMM #/MBTU	Average 1_GasFlow kscfh	Average 1_LOAD MW	Average 1_STACKFLW kscfm	Average 1_COPPM ppm	Average 1_CO_CORR ppm	Average 1_CO_LBHR #/hr
07/12/2021 20:18	14.45	2.58	2.36	4.44	0.009	470.0	49.05	232.1	3.65	3.34	3.70
07/12/2021 20:19	14.45	2.57	2.35	4.44	0.009	469.9	49.03	232.1	3.66	3.35	3.70
07/12/2021 20:20	14.45	2.57	2.35	4.44	0.009	469.9	49.03	232.1	3.66	3.35	3.70
07/12/2021 20:21	14.45	2.58	2.36	4.44	0.009	470.1	49.05	232.2	3.66	3.35	3.70
07/12/2021 20:22	14.44	2.58	2.36	4.44	0.009	470.1	49.03	231.8	3.67	3.35	3.70
07/12/2021 20:23	14.44	2.59	2.37	4.44	0.009	469.8	49.04	231.7	3.67	3.35	3.70
07/12/2021 20:24	14.44	2.58	2.36	4.44	0.009	469.6	49.00	231.6	3.66	3.34	3.70
07/12/2021 20:25	14.44	2.58	2.36	4.44	0.009	469.9	49.04	231.7	3.66	3.34	3.70
07/12/2021 20:26	14.43	2.57	2.34	4.44	0.009	469.9	49.02	231.4	3.66	3.34	3.70
07/12/2021 20:27	14.44	2.56	2.34	4.44	0.009	469.8	49.05	231.7	3.67	3.35	3.70
07/12/2021 20:28	14.44	2.56	2.34	4.44	0.009	470.1	49.03	231.8	3.68	3.36	3.70
07/12/2021 20:29	14.44	2.57	2.35	4.44	0.009	469.9	49.06	231.7	3.69	3.37	3.75
07/12/2021 20:30	14.45	2.56	2.34	4.44	0.009	469.8	49.04	232.0	3.69	3.38	3.75
07/12/2021 20:31	14.44	2.56	2.34	4.44	0.009	469.8	49.05	231.7	3.70	3.38	3.75
07/12/2021 20:32	14.44	2.58	2.36	4.44	0.009	470.0	49.02	231.8	3.68	3.36	3.70
07/12/2021 20:33	14.44	2.58	2.36	4.44	0.009	469.9	49.04	231.7	3.67	3.35	3.70
Daily Average*	**14.44**	**2.58**	**2.35**	**4.44**	**0.009**	**470.0**	**49.03**	**231.6**	**3.64**	**3.32**	**3.68**
Maximum*	**14.45**	**2.63**	**2.40**	**4.45**	**0.009**	**470.4**	**49.08**	**232.2**	**3.70**	**3.38**	**3.75**
	07/12/2021 20:30	07/12/2021 20:12	07/12/2021 20:12	07/12/2021 19:55	07/12/2021 20:33	07/12/2021 19:55	07/12/2021 19:53	07/12/2021 20:21	07/12/2021 20:31	07/12/2021 20:31	07/12/2021 20:31
Minimum*	**14.42**	**2.55**	**2.33**	**4.44**	**0.009**	**469.6**	**49.00**	**231.1**	**3.57**	**3.26**	**3.60**
	07/12/2021 19:40	07/12/2021 20:09	07/12/2021 20:10	07/12/2021 20:33	07/12/2021 20:33	07/12/2021 20:24	07/12/2021 20:24	07/12/2021 19:39	07/12/2021 19:43	07/12/2021 19:43	07/12/2021 19:43

* Does not include Invalid Averaging Periods ("N/A")

APPENDIX C
CALCULATIONS

Appendix C.1
General Emissions Calculations

GENERAL EMISSIONS CALCULATIONS

I. Stack Gas Velocity

A. Stack gas molecular weight, lb/lb-mole

$MW_{dry} = 0.44 * \%\ CO_2 + 0.32 * \%\ O_2 + 0.28 * \%\ N_2$

$MW_{wet} = MW_{dry} * (1 - B_{wo}) + 18 * B_{wo}$

B. Absolute stack pressure, iwg

$$P_s = P_{bar} + \frac{P_{sg}}{13.6}$$

C. Stack gas velocity, ft/sec

$$V_s = 2.9 * C_p * \sqrt{\Delta P} * \sqrt{T_s} * \sqrt{\frac{29.92 * 28.95}{P_s * MW_{wet}}}$$

II. Moisture

A. Sample gas volume, dscf

$$V_{mstd} = 0.03342 * V_m * \left(P_{bar} + \frac{\Delta H}{13.6}\right) * \frac{T_{ref}}{T_m} * Y_d$$

B. Water vapor volume, scf

$$V_{wstd} = 0.0472 * V_{ic} * \frac{T_{ref}}{528°R}$$

C. Moisture content, dimensionless

$$B_{wo} = \frac{V_{wstd}}{(V_{mstd} + V_{wstd})}$$

III. Stack Gas Volumetric Flow Rate

A. Actual stack gas volumetric flow rate, wacfm

$Q = V_s * A_s * 60$

B. Standard stack gas flow rate, dscfm

$$Q_{sd} = Q * (1 - B_{wo}) * \frac{T_{ref}}{T_s} * \frac{P_s}{29.92}$$

IV. Gaseous Mass Emission Rates, lb/hr

$$M = \frac{ppm * MW_i * Q_{sd} * 60}{SV * 10^6}$$

V. Emission Rates, lb/MMBtu

$$\frac{lb}{MMBtu} = \frac{ppm * MW_i * F}{SV * 10^6} * \frac{20.9}{20.9 - \%\ O_2}$$

VI. Percent Isokinetic

$$I = \frac{17.32 * T_s\ (V_{mstd})}{(1 - B_{wo})\ 0 * V_s * P_s * Dn^2} * \frac{520°R}{T_{ref}}$$

VII. Particulate Emissions

(a) Grain loading, gr/dscf
$C = 0.01543\ (M_n/V_{m\ std})$

(b) Grain loading at 12% CO_2, gr/dscf
$C_{12\%}\ CO_2 = C\ (12/\%\ CO_2)$

(c) Mass emissions, lb/hr
$M = C * Q_{sd} * (60\ min/hr) / (7000\ gr/lb)$

(d) Particulate emission factor

$$lb/10^6\ Btu = Cx\ \frac{1\ lb}{7000\ gr} * F * \frac{20.9}{20.9 - \%\ O_2}$$

Nomenclature:

A_s	=	stack area, ft^2
B_{wo}	=	flue gas moisture content, dimensionless
$C_{12\%CO2}$	=	particulate grain loading, gr/dscf corrected to 12% CO_2
C	=	particulate grain loading, gr/dscf
C_p	=	pitot calibration factor, dimensionless
Dn	=	nozzle diameter, inches
F	=	fuel F-Factor, dscf/MMBtu @ 0% O_2
H	=	orifice differential pressure, iwg
I	=	% isokinetics
M_n	=	mass of collected particulate, mg
M_i	=	mass emission rate of specie i, lb/hr
MW	=	molecular weight of flue gas, lb/lb-mole
M_{wi}	=	molecular weight of specie i:
	SO_2:	64
	NO_x:	46
	CO:	28
	HC:	16
0	=	sample time, minutes
ΔP	=	average velocity head, iwg = $(\sqrt{\Delta P})^2$
P_{bar}	=	barometric pressure, inches Hg
P_s	=	stack absolute pressure, inches Hg
P_{sg}	=	stack static pressure, iwb
Q	=	wet stack flow rate at actual conditions, wacfm
Q_{sd}	=	dry standard stack flow rate, dscfm
SV	=	specific molar volume of an ideal gas at standard conditions, ft^3/lb-mole
T_m	=	meter temperature, °R
T_{ref}	=	reference temperature, °R
T_s	=	stack temperature, °R
V_s	=	stack gas velocity, ft/sec
V_{lc}	=	volume of liquid collected in impingers, ml
V_m	=	uncorrected dry meter volume, dcf
V_{mstd}	=	dry meter volume at standard conditions, dscf
V_{wstd}	=	volume of water vapor at standard conditions, scf
Y_d	=	meter calibration coefficient

Appendix C.2
Spreadsheet Summaries

SCAQMD 207.1 EXAMPLE CALCULATION
TEST NUMBER: 1-NH3-U1

Identifier	Description	Units	Equation	Value
A	Reference Temperature	F	--	60
B	Reference Temperature	R	A + 460	520
C	Meter Calibration Factor (Yd)	--	--	0.992
D	Barometric Pressure	" Hg	--	29.68
E	Meter Volume	acf	--	36.350
F	Meter Temperature	F	--	83.1
G	Meter Temperature	R	F + 460	543.1
H	Delta H	" H_2O	--	1.0
I	Meter Volume (standard)	dscf	0.03342 * E * (D + H/13.6) * B/G * C	34.331
J	Liquid Collected	grams	--	95.9
K	Water vapor volume	scf	0.0472 * J * B/528	4.458
L	Moisture Content	--	K/(K + I)	0.115
M	Gas Constant	ft-lbf/lb-mole-R	--	1545.33
N	Specific Molar Volume	SCF/lb-mole	385.3 * B / 528	379.5
O	F-Factor	dscf/MMBtu	--	8,710
P	HHV	Btu/SCF	--	1,050
Q	Mass Conversion Factor	lb/ug	--	2.2046E-09
R	O_2 Correction Factor	--	--	15
S	Stack Flow Rate @ 68 F	dscfm	--	229,600
T	Stack Flow Rate @ Tref	dscfm	S * B/528	226,121
U	Mass NH_3	ug	--	1,029
V	Mass NH_3	lb	U * Q	2.27E-06
W	MW of NH_3	lb/lb-mole	--	17.03
X	NH_3	ppm	$(V * N * 10^6)/(I * W)$	1.5
Y	Flue Gas O_2	%	--	14.43
Z	NH_3	ppmc	X * (20.9 - R)/(20.9 - Y)	1.3
AA	NH_3	lb/hr	$X * T * W * 60/(N * 10^6)$	0.9
AB	NH_3	lb/MMBtu	$(X * W * O)/(385.3 * 10^6) * 20.9/(20.9 - Y)$	0.002
AC	NH_3	lb/MMSCF	AB * P	1.9

Note:

(1) Some values may be slightly different from those shown on the run sheets due to round off errors. This page is intended to show the calculation methodology only.

SCAQMD METHOD 207.1
DATA WORKSHEET AND SUMMARY

Facility	**Canyon**		Parameter		**NH_3**
Unit	**U1**		Fuel		**Natural gas**
Sample Location	**Stack**		Data By		**JG**
Test Number	1-NH3-U1	2-NH3-U1	Average	Maximum	Limit
Reference Temperature (°F)	60	60			
Test Date	7/12/2021	7/12/2021			
Test Method	SCAQMD 207.1	SCAQMD 207.1			
Sample Train	23-WCS	23-WCS			
Meter Calibration Factor	0.992	0.992			
Stack Area (ft^2)	106.90	106.90			
Sample Time (Minutes)	60	60			
Barometric Pressure ("Hg)	29.68	29.68			
Start/Stop Time	1603/1706	1731/1834			
Meter Volume (acf)	36.350	36.145			
Meter Temperature (°F)	83.1	82.6			
Meter Pressure (iwg)	1.0	1.0			
Liquid Volume (ml)	95.9	94.9			
Stack O_2 (%)	14.43	14.44	14.44	(from facility CEMS)	
Unit Load (MW)	49	49	48.9		
Standard Sample Volume (SCF)	34.331	34.169			
Moisture Fraction	0.115	0.114			
Stack Flow Rate (dscfm, 68 °F)	229,600	231,600	230,600	(from facility CEMS)	
Stack Flow Rate (@ Tref)	226,121	228,091	227,106		
Gas Constant (ft-lbf/lb-mole-R)	1545.33	1545.33			
Molecular Weight NH_3 (lb/lb-mole)	17.03	17.03			
Specific Molar Volume (ft^3/lb-mole)	379.5	379.5			
F-Factor (dscf/MMBtu)	8,710	8,710			
HHV(Btu/SCF)	1,050	1,050			
Mass Conversion (lb/ug)	2.2046E-09	2.2046E-09			
O_2 Correction Factor (%)	15	15			
Mass NH_3 (ug)	1,029	1,012			
Mass NH_3 (lb)	2.27E-06	2.23E-06			
NH_3 (ppmv, flue gas)	1.47	1.45	1.46	1.47	
NH_3 (ppmv @ O_2 Correction Factor)	1.34	1.33	1.34	1.34	5
NH_3 (lb/hr)	0.90	0.89	0.89	0.90	
NH_3 (lb/MMBtu)	0.002	0.002	0.002	0.002	
NH_3 (lb/MMSCF)	1.92	1.90	1.91	1.92	

Note: SCAQMD Method 207.1 requires the higher of the duplicate runs be reported as the test result.

APPENDIX D
QUALITY ASSURANCE

Appendix D.1
Quality Assurance Program Summary

QUALITY ASSURANCE PROGRAM SUMMARY

As part of Montrose Air Quality Services, LLC (Montrose) ASTM D7036-04 certification, Montrose is committed to providing emission related data which is complete, precise, accurate, representative, and comparable. Montrose quality assurance program and procedures are designed to ensure that the data meet or exceed the requirements of each test method for each of these items. The quality assurance program consists of the following items:

- Assignment of an Internal QA Officer
- Development and use of an internal QA Manual
- Personnel training
- Equipment maintenance and calibration
- Knowledge of current test methods
- Chain-of-custody
- QA reviews of test programs

Assignment of an Internal QA Officer: Montrose has assigned an internal QA Officer who is responsible for administering all aspects of the QA program.

Internal Quality Assurance Manual: Montrose has prepared a QA Manual according to the requirements of ASTM D7036-04 and guidelines issued by EPA. The manual documents and formalizes all of Montrose's QA efforts. The manual is revised upon periodic review and as Montrose adds capabilities. The QA manual provides details on the items provided in this summary.

Personnel Testing and Training: Personnel testing and training is essential to the production of high quality test results. Montrose training programs include:

- A requirement for all technical personnel to read and understand the test methods performed
- A requirement for all technical personnel to read and understand the Montrose QA manual
- In-house testing and training
- Quality Assurance meetings
- Third party testing where available
- Maintenance of training records.

Equipment Maintenance and Calibration: All laboratory and field equipment used as a part of Montrose's emission measurement programs is maintained according to manufacturer's recommendations. A summary of the major equipment maintenance schedules is summarized in Table 1. In addition to routine maintenance, calibrations are performed on all sampling equipment according to the procedures outlined in the applicable test method. The calibration intervals and techniques for major equipment components is summarized in Table 2. The calibration technique may vary to meet regulatory agency requirements.

Knowledge of Current Test Methods: Montrose maintains current copies of EPA, ARB, and SCAQMD Source Test Manuals and Rules and Regulations.

Chain-of-Custody: Montrose maintains chain-of-custody documentation on all data sheets and samples. Samples are stored in a locked area accessible only to Montrose source test personnel. Data sheets are kept in the custody of the originator, program manager, or in locked storage until return to Montrose office. Electronic field data is duplicated for backup on secure storage media. The original data sheets are used for report preparation and any additions are initialed and dated.

QA Reviews: Periodic field, laboratory, and report reviews are performed by the in-house QA coordinator. Periodically, test plans are reviewed to ensure proper test methods are selected and reports are reviewed to ensure that the methods were followed and any deviations from the methods are justified and documented.

ASTM D7036-04 Required Information

Uncertainty Statement

Montrose is qualified to conduct this test program and has established a quality management system that led to accreditation with ASTM Standard D7036-04 (Standard Practice for Competence of Air Emission Testing Bodies). Montrose participates in annual functional assessments for conformance with D7036-04 which are conducted by the American Association for Laboratory Accreditation (A2LA). All testing performed by Montrose is supervised on site by at least one Qualified Individual (QI) as defined in D7036-04 Section 8.3.2. Data quality objectives for estimating measurement uncertainty within the documented limits in the test methods are met by using approved test protocols for each project as defined in D7036-04 Sections 7.2.1 and 12.10. Additional quality assurance information is presented in the report appendices.

Performance Data

Performance data are available for review.

Qualified Personnel

A qualified individual (QI), defined by performance on a third party or internal test on the test methods, will be present on each test event.

Plant Entry and Safety Requirements

Plant Entry

All test personnel are required to check in with the guard at the entrance gate or other designated area. Specific details are provided by the facility and project manager.

Safety Requirements

All personnel shall have the following personal protective equipment (PPE) and wear them where designated:

- Hard Hat
- Safety Glasses
- Steel Toe Boots
- Hearing Protection
- Gloves
- High Temperature Gloves (if required)

The following safety measures will be followed:

- Good housekeeping
- SDS for all on-site hazardous materials
- Confine selves to necessary areas (stack platform, mobile laboratory, CEMS data acquisition system, control room, administrative areas)
- Knowledge of evacuation procedures

Each facility will provide plant specific safety training.

TABLE 1
EQUIPMENT MAINTENANCE SCHEDULE

Equipment	Acceptance Limits	Frequency of Service	Methods of Service
Pumps	1. Absence of leaks 2. Ability to draw manufacturers required vacuum and flow	As recommended by manufacturer	1. Visual inspection 2. Clean 3. Replace parts 4. Leak check
Flow Meters	1. Free mechanical movement	As recommended by manufacturer	1. Visual inspection 2. Clean 3. Calibrate
Sampling Instruments	1. Absence of malfunction 2. Proper response to zero span gas	As recommended by manufacturer	As recommended by manufacturer
Integrated Sampling Tanks	1. Absence of leaks	Depends on nature of use	1. Steam clean 2. Leak check
Mobile Van Sampling System	1. Absence of leaks	Depends on nature of use	1. Change filters 2. Change gas dryer 3. Leak check 4. Check for system contamination
Sampling lines	1. Sample degradation less than 2%	After each test series	1. Blow dry, inert gas through line until dry

TABLE 2
MAJOR SAMPLING EQUIPMENT CALIBRATION REQUIREMENTS

Sampling Equipment	Calibration Frequency	Calibration Procedure	Acceptable Calibration Criteria
Continuous Analyzers	Before and After Each Test Day	3-point calibration error test	< 2% of analyzer range
Continuous Analyzers	Before and After Each Test Run	2-point sample system bias check	< 5% of analyzer range
Continuous Analyzers	After Each Test Run	2-point analyzer drift determination	< 3% of analyzer range
CEMS System	Beginning of Each Day	leak check	< 1 in. Hg decrease in 5 min. at > 20 in. Hg
Continuous Analyzers	Semi-Annually	3-point linearity	< 1% of analyzer range
NO_x Analyzer	Daily	NO_2 -> NO converter efficiency	> 90%
Differential Pressure Gauges (except for manometers)	Semi-Annually	Correction factor based on 5-point comparison to standard	+/- 5%
Differential Pressure Gauges (except for manometers)	Bi-Monthly	3-point comparison to standard, no correction factor	+/- 5%
Barometer	Semi-Annually	Adjusted to mercury-in-glass or National Weather Service Station	+/- 0.1 inches Hg
Dry Gas Meter	Semi-Annually	Calibration check at 4 flow rates using a NIST traceable standard	+/- 2%
Dry Gas Meter	Bi-Monthly	Calibration check at 2 flow rates using a NIST traceable standard	+/- 2% of semi-annual factor
Dry Gas Meter Orifice	Annually	4-point calibration for ΔH@	--
Temperature Sensors	Semi-Annually	3-point calibration vs. NIST traceable standard	+/- 1.5%

Note: Calibration requirements that meet applicable regulatory agency requirements will be used.

Appendix D.2
SCAQMD and STAC Certifications

South Coast
Air Quality Management District
21865 Copley Drive, Diamond Bar, CA 91765-4178
(909) 396-2000 • www.aqmd.gov

September 9, 2020

Mr. John Peterson
Montrose Air Quality Services, LLC
1631 E. Saint Andrew Place
Santa Ana, CA 92705

Subject: LAP Approval Notice
Reference # 96LA1220

Dear Mr. Peterson:

We have reviewed your renewal letter under the South Coast Air Quality Management District's Laboratory Approval Program (LAP). We are pleased to inform you that your firm is approved for the period beginning September 30, 2020, and ending September 30, 2021 for the following methods, subject to the requirements in the LAP Conditions For Approval Agreement and conditions listed in the attachment to this letter:

Methods 1-4	Methods 5.1, 5.2, 5.3, 6.1
Methods 10.1 and 100.1	Methods 25.1 and 25.3 (Sampling)
USEPA CTM-030 and ASTM D6522-00	Rule 1121/ 1146.2 Protocol

Rule 1420/1420.1/1420.2 – (Lead) Source and Ambient Sampling

Your LAP approval to perform nitrogen oxide emissions compliance testing for Rule 1121/ 1146.2 Protocols includes satellite facilities located at:

McKenna Boiler 1510 North Spring Street Los Angeles, CA 90012	Noritz America Corp. 11160 Grace Avenue Fountain Valley, CA 92708	Ajax Boiler, Inc. 2701 S. Harbor Blvd. Santa Ana, CA 92704

Laundry Building of VA Greater Los Angeles Healthcare System
508 Constitution Avenue
Los Angeles, CA 90049

Thank you for participating in the LAP. Your cooperation helps us to achieve the goal of the LAP: to maintain high standards of quality in the sampling and analysis of source emissions. You may direct any questions or information to LAP Coordinator, Glenn Kasai. He may be reached by telephone at (909) 396-2271, or via e-mail at gkasai@aqmd.gov.

Sincerely,

D. Sarkar

Dipankar Sarkar
Program Supervisor
Source Test Engineering

DS:GK/gk
Attachment

200909 LapRenewalRev.doc

STACK TESTING ACCREDITATION COUNCIL

American Association for Laboratory Accreditation

Accredited Air Emission Testing Body

A2LA has accredited

MONTROSE AIR QUALITY SERVICES

In recognition of the successful completion of the joint A2LA and Stack Testing Accreditation Council (STAC) evaluation process, this laboratory is accredited to perform testing activities in compliance with ASTM D7036:2004 - Standard Practice for Competence of Air Emission Testing Bodies.

Presented this 11th day of February 2020.

Vice President, Accreditation Services
For the Accreditation Council
Certificate Number 3925.01
Valid to February 28, 2022

This accreditation program is not included under the A2LA ILAC Mutual Recognition Arrangement.

Appendix D.3
Individual QI Certificate

CERTIFICATE OF COMPLETION

John Groenenboom

This document certifies that this individual has passed a comprehensive examination and is now a Qualified Individual (QI) as defined in Section 8.3 of ASTM D7036-04 for the following method(s):

SCAQMD Methods 1.1 – 4.1

Certificate Number: 002-2017-58

Tate Strickler, Accreditation Director

DATE OF ISSUE: 1/18/17

DATE OF EXPIRATION: 1/18/22

MONTROSE ENVIRONMENTAL

CERTIFICATE OF COMPLETION

John Groenenboom

This document certifies that this individual has passed a comprehensive examination and is now a Qualified Individual (QI) as defined in Section 8.3 of ASTM D7036-04 for the following method(s):

SCAQMD Method 207.1

Certificate Number: 002-2017-51

Tate Strickler, Accreditation Director

DATE OF ISSUE: 1/17/17

DATE OF EXPIRATION: 1/17/22

MONTROSE ENVIRONMENTAL

Appendix D.4
Statement of No Conflict of Interest

STATEMENT OF NO CONFLICT OF INTEREST AS AN INDEPENDENT TESTING LABORATORY

(To be completed by authorized source testing firm representative and included in source test report)

The following facility and equipment were tested by my source testing firm and are the subjects of this statement:

Facility ID:	**153992**
Date(s) Tested:	**July 12, 2021**
Facility Name:	**Canyon Power**
Equipment Address:	**3071 E. Mira Loma Ave.**
	Anaheim, California 92806
Equipment Tested:	**Unit 1**
Device ID, A/N, P/N:	**D1**

I state, as its legally authorized representative, that the source testing firm of:

Source Test Firm: Montrose Air Quality Services, LLC

Business Address: 1631 E. St. Andrew Pl.

Santa Ana, California 92705

is an "Independent Testing Laboratory" as defined in ***District Rule 304(k):***

For the purposes of this Rule, when an independent testing laboratory is used for the purposes of establishing compliance with District rules or to obtain a District permit to operate, it must meet all of the following criteria:

(1) The testing laboratory shall have no financial interest in the company or facility being tested, or in the parent company, or any subsidiary thereof -

(2) The company or facility being tested, or parent company or any subsidiary thereof, shall have no financial interest in the testing laboratory;

(3) Any company or facility responsible for the emission of significant quantities of pollutants to the atmosphere, or parent company or any subsidiary thereof shall have no financial interest in the testing laboratory; and

(4) The testing laboratory shall not be in partnership with, own or be owned by, in part or in full, the contractor who has provided or installed equipment (basic or control), or monitoring systems, or is providing maintenance for installed equipment or monitoring systems, for the company being tested.

Furthermore, I state that any contracts or agreements entered into by my source testing firm and the facility referenced above, or its designated contractor(s), either verbal or written, are not contingent upon the outcome of the source testing, or the source testing information provided to the SCAQMD.

Signature: _____ **Date:** **8/4/2021**

John Groenenboom	**Client Project Manager**	**(714) 279-6777**	**8/4/2021**
(Name)	(Title)	(Phone)	(Date)

FORM ST-110 :stevforl.doc (Revised 11/18/98

APPENDIX E
APPLICABLE PERMIT SECTIONS

FACILITY PERMIT TO OPERATE
CANYON POWER PLANT

SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS

The operator shall comply with the terms and conditions set forth below:

Equipment	ID No.	Connected To	RECLAIM Source Type/ Monitoring Unit	Emissions * And Requirements	Conditions
Process 1: POWER GENERATION					
GAS TURBINE, NO. 1, NATURAL GAS, GENERAL ELECTRIC, MODEL LM6000PC SPRINT, SIMPLE CYCLE, 479 MMBTU/HR AT 46 DEG F, WITH INLET CHILLING, WITH WATER INJECTION WITH A/N: 555828 GENERATOR, 50.95 MW	D1	C3	NOX: MAJOR SOURCE**	**CO**: 4 PPMV NATURAL GAS (4) **[RULE 1303(a)(1)-BACT, 5-10-1996;** *RULE 1303(a)(1) -BACT, 12-6-2002*]; **CO**: 2000 PPMV NATURAL GAS (5) **[RULE 407, 4-2-1982]**; **NOX**: 2.5 PPMV NATURAL GAS (4) **[RULE 2005, 6-3-2011]**; **NOX**: 25 PPMV NATURAL GAS (8) **[40CFR 60 Subpart KKKK, 7-6-2006]**; **PM10**: 0.01 GRAINS/SCF NATURAL GAS (5A) **[RULE 475, 10-8-1976;** *RULE 475, 8-7-1978*]; **PM10**: 0.1 GRAINS/SCF NATURAL GAS (5) **[RULE 409, 8-7-1981]**; **PM10**: 1.67 LBS/HR NATURAL GAS (5C) **[RULE 1303(b)(2)-Offset, 5-10-1996;** *RULE 1303(b)(2) -Offset, 12-6-2002*]; **PM10**: 11 LBS/HR NATURAL GAS (5B) **[RULE 475, 10-8-1976;** *RULE 475, 8-7-1978*]; **SO2**: (9) **[40CFR 72 - Acid Rain Provisions, 11-24-1997]**; **SOX**: 0.06 LBS/MMBTU NATURAL GAS (8) **[40CFR 60 Subpart KKKK, 7-6-2006]**; **VOC**: 2 PPMV NATURAL GAS (4) **[RULE 1303(a)(1)-BACT, 5-10-1996;** *RULE 1303(a)(1)-BACT, 12-6-2002*]	A63.1, A99.1, A99.2, A99.3, A195.1, A195.2, A195.3, A327.1, B61.1, D12.1, D29.2, D29.3, D82.1, D82.2, E193.1, H23.1, I298.1, K40.1

* (1) (1A) (1B) Denotes RECLAIM emission factor
(2) (2A) (2B) Denotes RECLAIM emission rate
(3) Denotes RECLAIM concentration limit
(4) Denotes BACT emission limit
(5) (5A) (5B) Denotes command and control emission limit
(6) Denotes air toxic control rule limit
(7) Denotes NSR applicability limit
(8) (8A) (8B) Denotes 40 CFR limit (e.g. NSPS, NESHAPS, etc.)
(9) See App B for Emission Limits
(10) See section J for NESHAP/MACT requirements

** Refer to section F and G of this permit to determine the monitoring, recordkeeping and reporting requirements for this device.

FACILITY PERMIT TO OPERATE
CANYON POWER PLANT

SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS

The operator shall comply with the terms and conditions set forth below:

Equipment	ID No.	Connected To	RECLAIM Source Type/ Monitoring Unit	Emissions* And Requirements	Conditions
Process 1: POWER GENERATION					
CO OXIDATION CATALYST, NO. 1, BASF, 110 CUBIC FEET OF TOTAL CATALYST VOLUME A/N: 476654	C3	D1 C4			
SELECTIVE CATALYTIC REDUCTION, NO. 1, CORMETECH CMHT-21, 1012 CU.FT.; WIDTH: 2 FT 6 IN; HEIGHT: 25 FT 9 IN; LENGTH: 18 FT WITH A/N: 476654 AMMONIA INJECTION	C4	C3 S6		**NB3**: 5 PPMV NATURAL GAS (4) **[RULE 1303(a)(1)-BACT, 5-10-1996;** *RULE 1303(a)(1) -BACT, 12-6-2002***]**	A195.4, D12.2, D12.3, D12.4, E179.1, E179.2, E193.1
STACK, TURBINE NO. 1, HEIGHT: 86 FT ; DIAMETER: 11 FT 8 IN A/N: 555828	S6	C4			

* (1) (1A) (1B) Denotes RECLAIM emission factor (2) (2A) (2B) Denotes RECLAIM emission rate
(3) Denotes RECLAIM concentration limit (4) Denotes BACT emission limit
(5) (5A) (5B) Denotes command and control emission limit (6) Denotes air toxic control rule limit
(7) Denotes NSR applicability limit (8) (8A) (8B) Denotes 40 CFR limit (e.g. NSPS, NESHAPS, etc.)
(9) See App B for Emission Limits (10) See section J for NESHAP/MACT requirements

** Refer to section F and G of this permit to determine the monitoring, recordkeeping and reporting requirements for this device.

SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS

The operator shall comply with the terms and conditions set forth below:

[Devices subject to this condition : C4, C10, C16, C22]

D12.5 The operator shall install and maintain a(n) non-resettable elapsed time meter to accurately indicate the elapsed operating time of the engine.

[**RULE 1110.2, 2-1-2008;** RULE 1110.2, 9-7-2012; **RULE 1303(b)(2)-Offset, 5-10-1996;** RULE 1303(b)(2)-Offset, 12-6-2002; RULE 1401, 9-10-2010; RULE 1470, 5-4-2012; **RULE 2012, 5-6-2005; 40CFR 60 Subpart IIII, 1-30-2013]**

[Devices subject to this condition : D25]

D29.2 The operator shall conduct source test(s) for the pollutant(s) identified below.

Pollutant(s) to be tested	Required Test Method(s)	Averaging Time	Test Location
NH3 emissions	District method 207.1 and 5.3 or EPA method 17	1 hour	Outlet of the SCR serving this equipment

SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS

The operator shall comply with the terms and conditions set forth below:

The test(s) shall be conducted at least quarterly during the first twelve months of operation and at least annually thereafter. The AQMD shall be notified of the date and time of the test at least 10 days prior to the test.

If the turbine is not in operation during one calendar year, then no testing is required during that calendar year.

The NOx concentration, as determined by the CEMS, shall be simultaneously recorded during the ammonia slip test. If the CEMS is inoperable, a test shall be conducted to determine the NOx emissions using District Method 100.1 measured over a 60 minute averaging time period.

The test shall be conducted and the results submitted to the District within 60 days after the test date.

The test shall be conducted to demonstrate compliance with the Rule 1303 concentration limit.

[RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(a)(1)-BACT, 12-6-2002]

[Devices subject to this condition : D1, D7, D13, D19]

D29.3 The operator shall conduct source test(s) for the pollutant(s) identified below.

Pollutant(s) to be tested	Required Test Method(s)	Sampling Time	Test Location
SOX emissions	AQMD Laboratory Method 307-91	Not Applicable	Fuel sample
VOC emissions	District Method 25.3	1 hour	Outlet of the SCR serving this equipment
PM emissions	District method 5.1	4 hours	Outlet of the SCR serving this equipment

THIS IS THE LAST PAGE OF THIS DOCUMENT

If you have any questions, please contact one of the following individuals by email or phone.

Name: Mr. John Groenenboom
Title: Client Project Manager
Region: West
Email: JGroenenboom@montrose-env.com
Phone: (714) 279-6777

Name: Mr. Matt McCune
Title: Regional Vice President
Region: West
Email: MMccune@montrose-env.com
Phone: (714) 279-6777

TEST REPORT FOR
3Q21 AMMONIA SLIP TEST
AT CANYON POWER PLANT UNIT 2
FACILITY ID: 153992, DEVICE ID: D7

Prepared For:

Canyon Power Plant
3071 E. Mira Loma Ave.
Anaheim, California 92806

For Submittal To:

South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, California 91765-4178

Prepared By:

Montrose Air Quality Services, LLC
1631 E. St. Andrew Pl.
Santa Ana, California 92705
(714) 282-8240

John Groenenboom

Test Date: **July 13, 2021**
Production Date: **August 4, 2021**
Report Number: **W002AS-010224-RT-2668**

ACCREDITED
TO ASTM D7036 ONLY
CERT #3925.01

CONFIDENTIALITY STATEMENT

Except as otherwise required by law or regulation, this information contained in this communication is intended exclusively for the individual or entity to which it is addressed. This communication may contain information that is proprietary, privileged or confidential or otherwise legally exempt from disclosure. If you are not the named addressee, you are not authorized to read, print, retain, copy, or disseminate this message or any part of it.

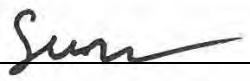
REVIEW AND CERTIFICATION

All work, calculations, and other activities and tasks performed and presented in this document were carried out by me or under my direction and supervision. I hereby certify that, to the best of my knowledge, Montrose operated in conformance with the requirements of the Montrose Quality Management System and ASTM D7036-04 during this test project.

Signature:  Date: 8/4/2021

Name: John Groenenboom Title: Client Project Manager

I have reviewed, technically and editorially, details, calculations, results, conclusions, and other appropriate written materials contained herein. I hereby certify that, to the best of my knowledge, the presented material is authentic, accurate, and conforms to the requirements of the Montrose Quality Management System and ASTM D7036-04.

Signature:  Date: 8/4/2021

Name: Surya Adhikari Title: QC Reporting Manager

TABLE OF CONTENTS

1.0 INTRODUCTION AND SUMMARY

Montrose Air Quality Services, LLC (MAQS), was contracted by the Canyon Power Plant to perform an ammonia slip test at Unit 2 as required by the facility Permit (Facility ID 153992) Condition Number D29.2. This report documents the results of the ammonia slip tests performed on July 13, 2021. The tests were performed by John Groenenboom, Danny Avila, and Randy Monzon. John Groenenboom was the on-site Qualified Individual for MAQS. MAQS qualifies as an independent testing laboratory under SCAQMD Rule 304 (no conflict of interest) and is certified by the SCAQMD to conduct testing for criteria pollutants according to District Methods. Bertha Hernandez coordinated the test for Canyon Power Plant.

The test consisted of duplicate ammonia tests performed at 49 MW. The test program followed the procedures described in the initial compliance test protocol (MAQS document R038842). The results of the test are summarized in Table 1-1. The table shows that the ammonia slip from this unit was less than the permitted limit of 5 ppm corrected to 15% O_2.

TABLE 1-1
AMMONIA SLIP TEST RESULTS SUMMARY
CANYON POWER PLANT
UNIT 2
JULY 13, 2021

Parameter	Result(1)	Limit
NH_3		
ppm	1.8	--
ppmc	1.7	5

(1) Maximum of duplicate runs, as required by SCAQMD Method 207.1

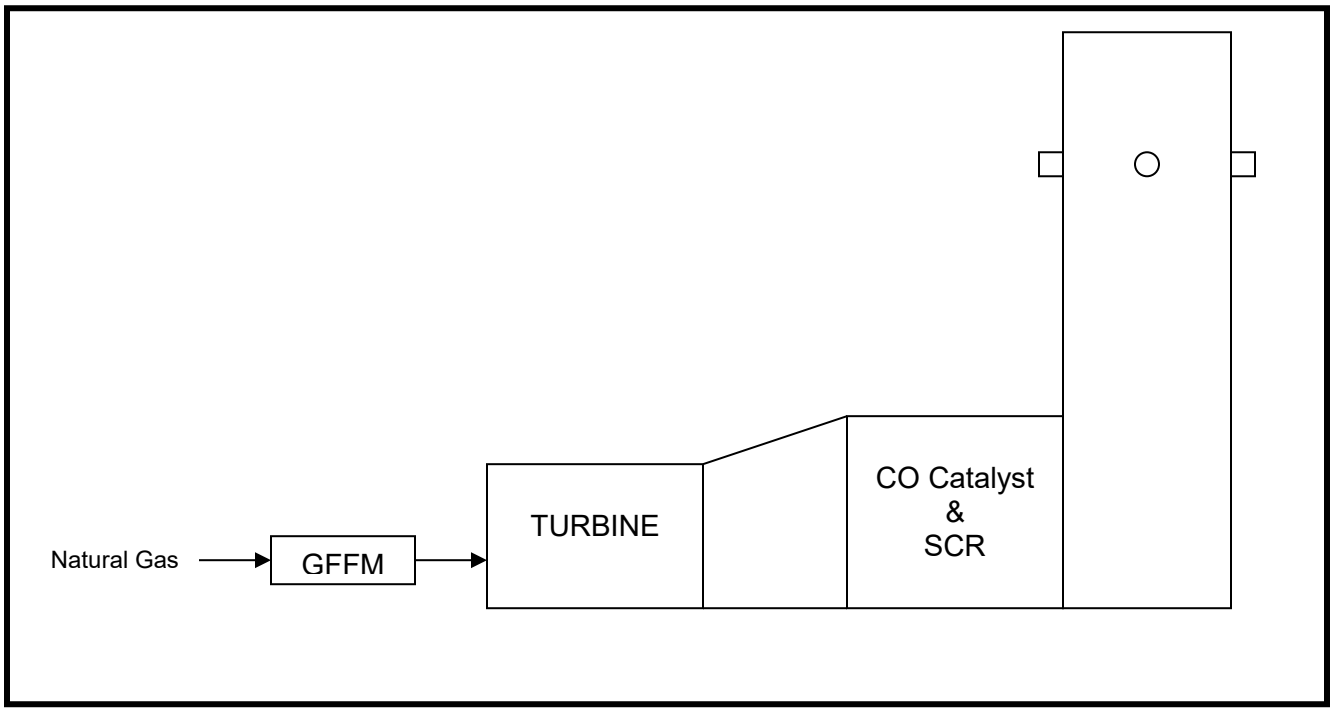
Section 2 of this document provides a brief description of the unit, test conditions, sample location, and CEMS. Details of the test procedures are provided in Section 3. Section 4 provides the results of each individual test. All raw data, calculations, quality assurance data, unit operating conditions, and CEMS data are provided in the appendices.

2.0 UNIT DESCRIPTION

2.1 UNIT DESCRIPTION

The City of Anaheim Canyon Power Plant is located at 3071 E. Mira Loma Avenue, Anaheim, California 92806. The facility consists of four identical generating units. Each unit consists of a natural gas fired, GE Model LM6000PC Sprint simple cycle, gas turbine. The units are natural gas fired with a rated heat input of 479 MMBtu per hour at 46°F, with water injection. The units are equipped with a CO catalyst and Selective Catalytic Reduction (SCR) system for NO_x control. Figure 2-1 presents a block diagram of the unit.

FIGURE 2-1
UNIT BLOCK DIAGRAM
CANYON POWER PLANT



Stack Inside Diameter:	11 feet, 8 inches
Distance from Upstream Disturbance:	23 feet, 4 inches (2.0 Diameters)
Distance from Stack Exit:	16 feet, 6 inches (1.4 Diameters)

2.2 TEST CONDITIONS

The tests were performed with the unit operating at an average load of 49 MW. Tests were performed while the unit was firing natural gas and operating under normal conditions. Unit operation was established by the Canyon Power Plant operators.

2.3 SAMPLE LOCATION

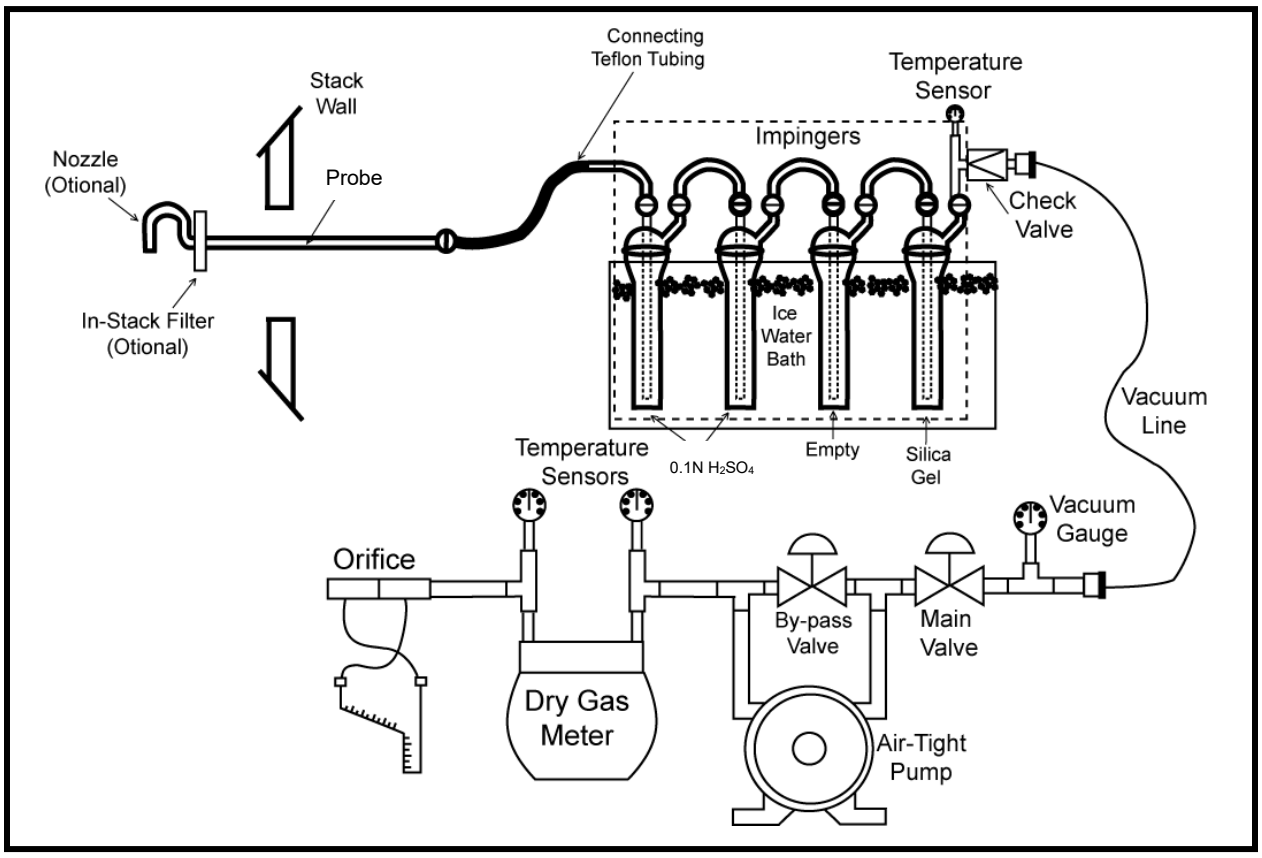
The measurements were made from sample ports located on the exhaust stack. There are four sample ports equally spaced at this location. The stack inside diameter at the sample plane is 11 feet, 8 inches. The sample ports are located 23 feet, 4 inches (2.0 diameters) downstream of the nearest flow disturbance and 16 feet, 6 inches (1.4 diameters) from the stack exit.

3.0 TEST DESCRIPTION

Flue gas samples were collected non-isokinetically using a SCAQMD Method 207.1 sample train. The samples were collected using a 12-point traverse at the exhaust stack location. Each test was performed over a 60 minute interval. The sample gas was drawn through a titanium probe, Teflon sample line, two impingers each containing 100 ml of 0.1N H_2SO_4, an empty impinger, an impinger containing silica gel, and a dry gas meter. The optional nozzle and filter were not used since the source is natural gas fired. The contents of the sample line and the first three impingers were recovered and analyzed by SCAQMD Method 207.1 for ammonia concentration by Ion Specific Electrode analysis. Figure 3-1 presents a diagram of the sampling equipment.

Stack O_2 and NO_x concentrations and stack volumetric flow rate data were recorded from the Continuous Emission Monitoring System (CEMS) which is installed on the unit. These data were used to correct the ammonia concentration to 15% O_2.

FIGURE 3-1
SCAQMD METHOD 207.1 SAMPLE EQUIPMENT



4.0 TEST RESULTS AND OVERVIEW

4.1 TEST RESULTS

The results of the test are summarized in Table 4-1. The results show that the ammonia slip was 1.7 ppm @ 15% O_2 which is less than the permitted limit of 5 ppm @ 15% O_2.

TABLE 4-1
AMMONIA SLIP TEST RESULTS
CANYON POWER PLANT
UNIT 2
JULY 13, 2021

Parameter/Units	Run 1	Run 2	Average	Maximum(1)	Limit
Test	1-NH_3-U2	2-NH_3-U2			--
Date	7/13/2021	7/13/2021			--
Time	1553/1656	1735/1838			--
O_2, %(2)	14.62	14.61	14.62	--	--
Stack Flow, dscfm @ T_{ref}(2)	232,129	233,212	232,670	--	--
NO_x, ppmc(2)	2.3	2.3	2.3	--	2.5
NH_3					
ppm	1.8	1.8	1.8	1.8	--
ppmc	1.7	1.7	1.7	1.7	5
lb/hr	1.1	1.1	1.1	1.1	--
lb/MMBtu	0.002	0.002	0.002	0.002	--
lb/MMSCF	2.4	2.4	2.4	2.4	--

(1) Maximum of duplicate test runs, as required by SCAQMD Method 207.1
(2) From facility CEMS

4.2 TEST OVERVIEW

The test program was successful in meeting the program objectives. The sample train was leak checked before and after the test and all QA/QC requirements of SCAQMD Method 207.1 were satisfied.

APPENDIX A
RAW DATA

Appendix A.1
Sample Data Sheets

MONTROSE
AIR QUALITY SERVICES

WET CHEMICAL SAMPLING SYSTEM DATA AND WORKSHEET

CLIENT: SCPPA
LOCATION: Canyon 2
DATE: 7/13/21
RUN NO: 1-NH3
OPERATOR: R Monzon
METER BOX NO: 23 WCS
METER ΔH@: 1.689
METER Yd: 0.992
STACK AREA, FT²: 106.4
TRAVERSE POINTS, MIN/POINT: 5/12
ΔH= ______ X ΔP:
Probe Condition, pre/post test: good/good
Silica Gel Expended, Y/N: N
Filter Condition after Test: NA
Check Weight: 500.0

AMBIENT TEMPERATURE: 83°
BAROMETRIC PRESSURE: 29.69
ASSUMED MOISTURE: 4
PITOT TUBE COEFF, Cp: NA
PROBE ID NO/MATERIAL: Titanium
PROBE LENGTH: 8'
NOZZLE ID NO/ MATERIAL: NA
NOZZLE DIAMETER:
FILTER NO/TYPE:
PRE-TEST LEAK RATE: <0.001 CFM@ 14" in. Hg.
POST-TEST LEAK RATE: <0.001 CFM@ 10" in. Hg.
PITOT LEAK CHECK - PRE: N/A POST: N/A
CHAIN OF CUSTODY: SAMPLE CUSTODIAN JG
SAMPLER RMO
SAMPLE CUSTODIAN JG

Imp. #	Contents	Post-Test - Pre-Test = Difference	
1	0.1 H_2SO_4	754.9	578.8
2	0.1 H_2SO_4	650.8	648.0
3	MT	578.0	576.8
4	SG	992.4	982.6
LR		Ø 100	
Total:			

Point	Time	Meter Volume, ft³	ΔP in. H_2O	ΔH in. H_2O	Stack Temp, °F	Probe Temp, °F	Filter Temp, °F	Imp. Out Temp, °F	Meter Temp, °F In	Meter Temp, °F Out	Vacuum in. Hg.	O_2 %	Pstatic in. H_2O
3	1553	573.565	N/A	1.0	N/A	N/A	N/A	59	88	85	3		N/A
2	1558												
1	1603												
E	1608												
3	1609	582.760		1.0				56	91	88	3		
2	1614												
1	1619												
E	1624												
3	1625	591.535		1.0				54	92	88	3		
2	1630												
1	1635												
E	1640												
3	1641	600.270		1.0				55	93	89	3		
2	1646												
1	1651												
E	1656	609.735											
Average:													

Comments:

MONTROSE
AIR QUALITY SERVICES

WET CHEMICAL SAMPLING SYSTEM DATA AND WORKSHEET

CLIENT: SCPPA
LOCATION: Canyon
DATE: 7/13/21
RUN NO: 2-NH3
OPERATOR: RMenzon
METER BOX NO: 23 WCS
METER ΔH@: 1.689
METER Yd: 0.992
STACK AREA, FT^2: 106.2
TRAVERSE POINTS, MIN/POINT: 5/12
ΔH= ______ X ΔP:
Probe Condition, pre/post test: good/good
Silica Gel Expended, Y/N: P
Filter Condition after Test: NA
Check Weight: 500.0/500.0

AMBIENT TEMPERATURE: 83°
BAROMETRIC PRESSURE: 29.69
ASSUMED MOISTURE: 11
PITOT TUBE COEFF, Cp: NA
PROBE ID NO/MATERIAL: Ti/Ti/mung
PROBE LENGTH: 8'
NOZZLE ID NO/ MATERIAL: NA
NOZZLE DIAMETER: NA
FILTER NO/TYPE: NA
PRE-TEST LEAK RATE: <0.002 CFM@ 12'' in. Hg.
POST-TEST LEAK RATE: <0.003 CFM@ 10'' in. Hg.
PITOT LEAK CHECK - PRE: NA POST: NA
CHAIN OF CUSTODY: SAMPLE CUSTODIAN JG
SAMPLER RMM
SAMPLE CUSTODIAN JG

Imp. #	Contents	Post-Test	- Pre-Test	= Difference
1	0.1 NH_2SO_4	867.6	690.6	
2	0.1 H_2SO_4	683.0	682.0	
3	MT	56 2.75 746.1	621.9	
4	SG	622.5	893.9	
UR		901.3 Ø	100	
Total:				

Point	Time	Meter Volume, ft^3	ΔP in. H_2O	ΔH in. H_2O	Stack Temp, °F	Probe Temp, °F	Filter Temp, °F	Imp. Out Temp, °F	Meter Temp, °F In	Meter Temp, °F Out	Vacuum in. Hg.	O_2 %	Pstatic in. H_2O
3	1735	611.910	NA	1.0	NA	NA	NA	57	90	87	3		NA
2	1740												
1	1745												
E	1750												
3	1751	620.895		1.0				56	92	89	3		
2	1756												
1	1801												
E	1806												
3	1807	630.000		1.0				54	91	87	3		
2	1812												
1	1817												
E	1822												
3	1823	638.905		1.0				54	89	86	3		
2	1828												
1	1833												
E	1838	648.110											
Average:													

Comments:

MONTROSE AIR QUALITY

WET CHEMICAL SAMPLING SYSTEM DATA AND WORKSHEET

CLIENT: SCPPA
LOCATION: Canyon 2
DATE: 7/13/24
RUN NO: FB - NH3
OPERATOR: R Monzon
METER BOX NO: 23 WCS
METER ΔH@: 1.6859
METER Yd: 0.9973
STACK AREA, FT²: 106.9
TRAVERSE POINTS, MIN/POINT: NA
ΔH= _____ X ΔP:
Probe Condition, pre/post test: good
Silica Gel Expended, Y/N: N
Filter Condition after Test: NA
Check Weight: 500.0 / 500.0

AMBIENT TEMPERATURE: 83
BAROMETRIC PRESSURE: 29.69
ASSUMED MOISTURE: NA
PITOT TUBE COEFF, Cp:
PROBE ID NO/MATERIAL: NA / T
PROBE LENGTH: 8'
NOZZLE ID NO/ MATERIAL:
NOZZLE DIAMETER: NA
FILTER NO/TYPE:
PRE-TEST LEAK RATE: : 0.005 CFM@ 8 in. Hg.
POST-TEST LEAK RATE: : _____ CFM@ _____ in. Hg.
PITOT LEAK CHECK - PRE: NA POST: NA
CHAIN OF CUSTODY: SAMPLE CUSTODIAN JG
SAMPLER
SAMPLE CUSTODIAN JG

Imp. #	Contents	Post-Test	Pre-Test	Difference
1	0.1 H_2SO_4	681.8	582.1	
2	0.1 H_2SO_4	648.8	648.8	
3	MT	576.6	576.5	
4	SG	992.4	992.4	
4R		0	100	
Total:				

Point	Time	Meter Volume, ft³	ΔP in. H_2O	ΔH in. H_2O	Stack Temp, °F	Probe Temp, °F	Filter Temp, °F	Imp. Out Temp, °F	Meter Temp, °F In	Meter Temp, °F Out	Vacuum in. Hg.	O_2 %	Pstatic in. H_2O
Average:													

Comments:

1-NH3-U2

Point	Meter Volume	Delta H	Tm In	Tm Out
6	573.565	1.0	88	85
5			91	88
4			92	88
3			93	89
2				
1				
Stop				
6				
5				
4				
3				
2				
1				
Stop	609.735			
Result	**36.170**	**1.0**		**89.3**

Impinger Weights

#	Post-Test	Pre-Test	Difference
1	754.9	578.8	176.1
2	650.8	648.0	2.8
3	578.0	576.8	1.2
4	992.4	982.6	9.8
Line Rinse	0.0	100.0	-100.0
			89.9

2-NH3-U2

Point	Meter Volume	Delta H	Tm In	Tm Out
6	611.910	1.0	90	87
5			92	89
4			91	87
3			89	86
2				
1				
Stop				
6				
5				
4				
3				
2				
1				
Stop	648.110			
Result	**36.200**	**1.0**		**88.9**

Impinger Weights

#	Post-Test	Pre-Test	Difference
1	867.6	690.6	177.0
2	683.0	682.0	1.0
3	622.5	621.9	0.6
4	901.3	893.9	7.4
Line Rinse	0.0	100.0	-100.0
			86.0

Appendix A.2
Laboratory Data

MONTROSE

AMMONIA BY ION SELECTIVE ELECTRODE ANALYSIS

Project #: PRJ0-010224 | District Method: SCAQMD 207.1 | Sample Date: 7/13/2021
Client/Location: SCPPA | Calibration Date: 7/14/2021 | Analysis Date: 7/14/2021
Sample Location: Unit 2 | Calibration Curve: y = -59.1114x + 95.8114 | Analyst's Initials: LM
Test #'s: 1-2-NH3-02 | R²: 0.9998 | Room Temperature (°C): 20.0

Sample	Total Vol. (mL)	Electrode Potential (mV)	Conc. µg NH3 – N / ml	Cavg (µg NH3 – N / ml)	µg NH3 / sample	T (°C)	Blue after + ISA (Y/N)	pH	% R
Standard Check: 28 µg NH3/ml	—	9.5	28.850	28.794	—	20.0	Y	—	2.836
		9.6	28.738			20.0	Y		
1-NH3	509.9	77.8	2.017	2.021	1252.596	20.0	Y	11	—
		77.7	2.025			20.0	Y		
2-NH3	551.6	80.3	1.830	1.819	1219.777	20.0	Y	11	—
		80.6	1.809			20.0	Y		
Spike: 1-NH3 +2ml 1000ppm NH3	—	16.1	22.310	22.137	—	20.0	Y	—	104.81
		16.5	21.965			20.0	Y		
Standard Check: 28 µg NH3/ml	—	9.5	28.850	28.794	—	20.0	Y	—	2.836
		9.6	28.738			20.0	Y		
Reagent Blank 0.1N H_2SO_4	—	197.5	0.019	0.019	—	20.0	Y	—	—
		197.7	0.019			20.0	Y		
DI H_2O Blank	—	201.0	0.017	0.017	—	20.0	Y	—	—
		200.9	0.017			20.0	Y		
Field Blank	396.3	195.5	0.021	0.021	9.916	20.0	Y	11	—
		195.5	0.021			20.0	Y		
Standard Check: 28 µg NH3/ml	—	9.4	28.963	28.963	—	20.0	Y	—	3.458
		9.4	28.963			20.0	Y		

LM 7/14/2021

Notes: Total volume of samples and standards used: 100 ml
Volume of pH adjusting ISA used in ml: 2ml
Absorbing solution: 0.1N H_2SO_4

Calculations: Conc. (µg NH3 – N / ml) = $10^{(P-B)/M}$; (P = electrode potential, B = y-intercept and M = slope)
Cavg = average result of duplicate analyses (µg NH3 – N / ml) = (C1+C2)/2
µg NH3 / sample = Cavg* 17.03/ 14.01 * TV
mg / sample = µg /sample ÷ 1000
ppm NH3 = mg NH3/sample x 1/Vmstd x 1/454000 x SV/17 x 10^6

AMMONIA BY ION SELECTIVE ELECTRODE ANALYSIS CALCULATION

Project Number:	PROJ-10224
Client/ Location:	SCPPA
Sample Location:	Stack
District Method:	SCAQMD 207.1
Sample Date:	7/13/2021
Analysis Date:	7/14/2021
Analyst's Initials:	LM
Calibration Curve Slope	-59.1114
Y-intercept	95.8114
R^2	0.9998

Sample	P mV	Conc. µg NH_3 /ml as N	C avg as N	TV (ml)	C avg as NH_3	µg NH_3/ sample
28 ug NH_3 / ml as N	9.5	28.850				
Repeat 28ug NH_3/ml as N	9.6	28.738	28.794	NA	35.001	NA
1-NH_3	77.8	2.017				
Repeat 1- NH_3	77.7	2.025	2.021	509.9	2.457	1252.596
2-NH3	80.3	1.830				
Repeat 2- NH3	80.6	1.809	1.819	551.6	2.211	1219.777
spike 1-NH_3	16.1	22.310				
Repeat 1-NH3 spike	16.5	21.965	22.137	NA	26.909	NA
28 NH_3/ml as N	9.5	28.850				
Repeat 28 ug NH_3/ml as N	9.6	28.738	28.794	NA	35.001	NA
Reagent Blank	197.5	0.019				
Repeat Reagent Blank	197.7	0.019	0.019	NA	0.023	NA
Field Blank	195.5	0.021				
Repeat Field Blank	195.5	0.021	0.021	396.3	0.025	9.916
DI H2O Blank	201.0	0.017				
Repeat DI H2O Blank	200.9	0.017	0.017	NA	0.020	NA
28 NH_3/ml as N	9.4	28.963				
Repeat 28 ug NH_3/ml as N	9.4	28.963	28.963	NA	35.206	NA

Notes:

Measured Concentration of Ammonia (C) in µg NH_3 / ml as N

$C=10^{(P-B)/M}$

P = electrode potential (mV), M=slope and B=intercept

Average Measured Ammonia Concentration (Cavg) = (C1 + C2)/2

where C1, C2 results from duplicate analyses (µg NH_3/ml as N)

Cavg (µg NH_3/ml as NH_3) = Cavg (µg NH_3/ ml as N) * 17.03/ 14.01

µg NH_3 / sample = Cavg (µg NH_3/ml as NH_3) * TV

Used 100 ml of samples and standards with 2 ml ISA and constant stirring rate.

All solutions turned blue and remained blue with ISA unless otherwise indicated.

Sample PH and Temperatures can be found on the laboratory datasheet.

Maximum samples (including blanks) between 28 ug/ml check standard is 5 samples analyzed in duplicate.

AMMONIA BY ION SELECTIVE ELECTRODE ANALYSIS QUALITY CONTROL

Project Number: PROJ-10224
Client/ Location: SCPPA
Sample Location: Stack
District Method: SCAQMD 207.1
Sample Date: 7/13/2021
Analysis Date: 7/14/2021
Analyst's Initials: LM

Sample	% recovery	RPD %	RPA %
28 ug NH3 / ml as N epeat 28ug NH3/ml as	NA	0.39	2.836
1-NH3 Repeat 1- NH3	NA	-0.39	NA
2-NH3 Repeat 2- NH3	NA	1.17	NA
spike 1-NH3 Repeat 1-NH3 spike	104.81	1.56	NA
28 NH3/ml as N epeat 28 ug NH3/ml as	NA	0.39	2.836
Reagent Blank Repeat Reagent Blank	NA	0.78	NA
Field Blank Repeat Field Blank	NA	0.00	NA
DI H2O Blank Repeat DI H2O Blank	NA	-0.39	NA
28 NH3/ml as N epeat 28 ug NH3/ml as	NA	0.00	3.438

Notes:

spike: 100 ml sample + 2 ml (1000 µg NH_3 / ml as N)

Matrix Spike Percent Recovery (%R)

%R = (C spike*0.104 - Csample*0.102)/2 *100

Cspike = average result of matrix spike (µg NH_3/ ml as N)

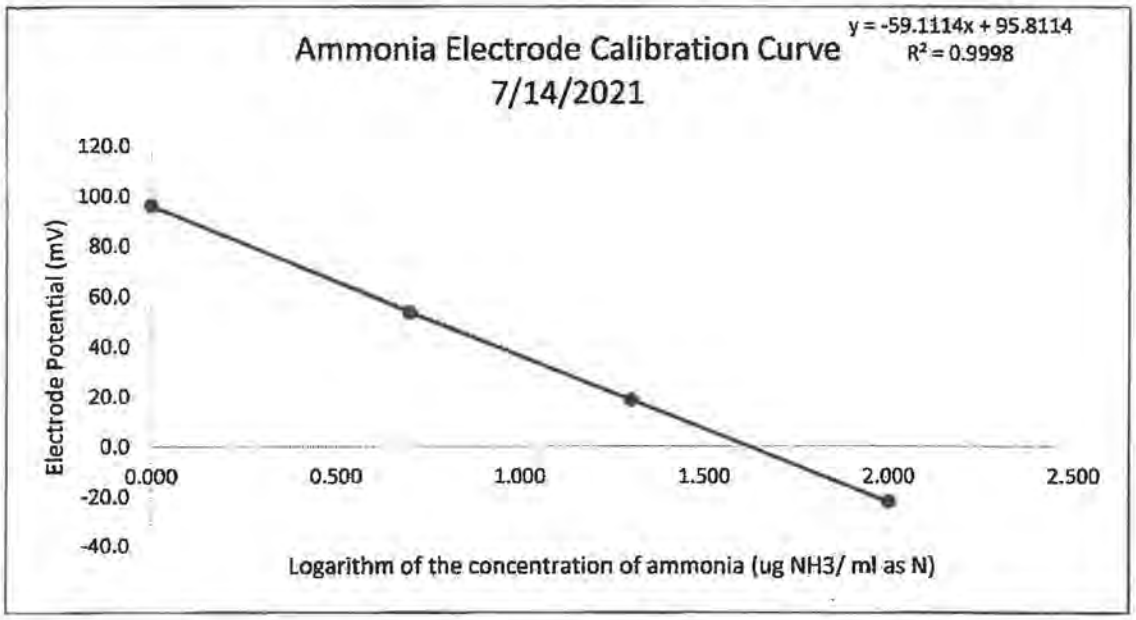
Relative Percent Difference (RPD) = (C1-C2)/ Cavg *100 (must be 5% or less)

Relative Percent Accuracy (RPA) (must be 10% or less)

RPA = (Cavg-theoretical value of standard)/ theoretical value of standard * 100

AMMONIA ELECTRODE CALIBRATION CURVE

NH_3 concentration (μg NH_3 / ml as N)	log NH_3 concentration	Electrode potential (mV)	Sample Temperature (C)	Room Temperature (C)
1	0.000	96.4	20	20
5	0.699	53.7	20	20
20	1.301	18.7	20	20
100	2.000	-22.0	20	20



slope	-59.1114
y-intercept	95.8114

Concentration (μg NH_3 / ml as N)	Value LR line	Difference	% Difference
1	0.9773	-0.0227	-2.2667
5	5.1571	0.1571	3.1424
20	20.1609	0.1609	0.8045
100	98.4102	-1.5898	-1.5898

Calculation:

Regression Line: $P=M*\log(\mu g \text{ of } NH_3/ \text{ ml as N})+B$

Measured Concentration of Ammonia (C) in μg / ml NH_3 as N: $C=10^{(P-B)/M}$

where P = electrode potential, M= slope (must be -57±3) and B= intercept

All standards were prepared in 0.04N H_2SO_4 and allowed to equilibrate to room temperature.

MONTROSE

AMMONIA BY ION SELECTIVE ELECTRODE ANALYSIS CALIBRATION DATA

District Method: SCAQMD 207.1

Calibration Date: 7/14/2021

Calibration Curve: y = -59.1174x + 953.8114

R^2 0.9998

Analyst's Initials: LM

Thermometer #: NA

ISE Electrode #: 15

Calibration Standard (µg NH_3 / ml as N)	Electrode Potential (mV)	Solution Temperature (°C)	Room Temperature (°C)
1	96.4	20.0	20.0
5	53.7	20.0	20.0
20	18.7	20.0	20.0
100	-22.0	20.0	20.0

Notes:

Total volume of samples and standards used: 100 ml
Volume of pH adjusting ISA used in ml: 2 ml
Absorbing solution: 0.04 N H_2SO_4
Slope of the calibration curve shall be between -54 to -60
R^2 must be 0.9997 or greater
Calibration solutions, sample solutions and Calibration Verification standard temperature within ± 2°C

CHAIN OF CUSTODY

CLIENT: SCPPA PROJECT NUMBER: PROJ- TEST DATE(S): 7/12 and 7/13

LOCATION: Canyon 1 and 2 SAMPLER(S): RMO

SAMPLE LOCATION: Stack PROJECT MANAGER: JG

TEST METHOD(S): SCAQMD 207.1 DATE DUE: Normal

OUTSIDE LAB REQUIRED?: NO COMPLIANCE TEST? Yes

DATE	TIME	TEST #	SAMPLE DESCRIPTION	CONTAINERS	SAMPLER	COMMENTS
7/12/2021		1-NH3-1	Probe, Line, Impingers	1	RMO	
7/12/2021		2-NH3-1	Probe, Line, Impingers	1	RMO	
7/12/2021		FB-NH3-1	Probe, Line, Impingers	1	RMO	
7/13/2021		1-NH3-2	Probe, Line, Impingers	1	RMO	
7/13/2021		2-NH3-2	Probe, Line, Impingers	1	RMO	
7/13/2021		FB-NH3-2	Probe, Line, Impingers	1	RMO	
7/12/2021		RB-NH3	DI H2O	1	JG	
7/12/2021		RB-NH3	0.1 N H2SO4	1	JG	

RELEASED BY	DATE/TIME	RECEIVED BY	DATE/TIME
Kayley Monroe	7/14/21 820 AM	Yim Ngi Chan	7/14/21 820 am

ANALYSIS REQUIRED:

Appendix A.3
QA/QC Data

SEMI-ANNUAL DRY GAS METER/ORIFICE CALIBRATION

Orifice Method - Triplicate Runs/Four Calibration Points
English Meter Box Units, English K' Factor
Filename: M:\Santa Ana\Equipment\Test Equipment\Calibrations\Dry Gas Meters\23-WCS\2021\[23-WCS Semi Annual Cal 7-8-2021.xl
File Modified From: APEX 522 Series Meter box Calibration
Revised: 4/8/2005

ID #: C-5000 / 23-WCS
Date: 7/8/2021
Bar. Pressure: 29.84 (in. Hg)
Performed By: L.Olivares
Meter Serial #:

DRY GAS METER READINGS									CRITICAL ORIFICE READINGS					
		Volume	Volume	Volume	Initial Temps.		Final Temps.		Orifice	K' Orifice	Actual	Ambient Temperature		
dH (in H2O)	Time (min)	Initial (cu ft)	Final (cu ft)	Total (cu ft)	Inlet (deg F)	Outlet (deg F)	Inlet (deg F)	Outlet (deg F)	Serial# (number)	Coefficient (see above)	Vacuum (in Hg)	Initial (deg F)	Final (deg F)	Average (deg F)
0.13	26.00	304.600	310.120	5.520	89.0	86.0	89.0	87.0	33	0.1552	16.0	79.0	79.0	79.0
0.13	26.00	310.120	315.645	5.525	89.0	87.0	89.0	87.0	33	0.1552	16.0	79.0	79.0	79.0
0.13	26.00	315.645	321.225	5.580	89.0	87.0	89.0	88.0	33	0.1552	16.0	79.0	79.0	79.0
0.58	12.00	288.000	293.375	5.375	89.0	85.0	89.0	85.0	48	0.3346	18.0	79.0	79.0	79.0
0.58	12.00	293.375	298.745	5.370	89.0	85.0	89.0	86.0	48	0.3346	18.0	79.0	79.0	79.0
0.58	12.00	298.745	304.120	5.375	89.0	86.0	89.0	86.0	48	0.3346	18.0	79.0	79.0	79.0
1.70	7.00	270.600	276.070	5.470	92.0	82.0	92.0	83.0	63	0.5918	17.0	79.0	79.0	79.0
1.70	7.00	276.070	281.540	5.470	92.0	83.0	92.0	84.0	63	0.5918	17.0	79.0	79.0	79.0
1.70	7.00	281.540	287.030	5.490	92.0	84.0	92.0	84.0	63	0.5918	17.0	79.0	79.0	79.0
3.00	5.00	254.000	259.150	5.150	88.0	80.0	91.0	81.0	73	0.7681	12.5	78.0	78.0	78.0
3.00	5.00	259.150	264.270	5.120	91.0	81.0	93.0	81.0	73	0.7681	12.5	78.0	78.0	78.0
3.00	5.00	264.270	269.405	5.135	93.0	81.0	93.0	83.0	73	0.7681	12.5	78.0	78.0	78.0

DRY GAS METER		ORIFICE				DRY GAS METER CALIBRATION FACTOR	ORIFICE CALIBRATION FACTOR	Individual Run	Individual Orifice	Orifice Average	Orifice Average
VOLUME CORRECTED Vm(std) (cu ft)	VOLUME CORRECTED Vm(std) (liters)	VOLUME CORRECTED Vcr(std) (cu ft)	VOLUME CORRECTED Vcr(std) (liters)	VOLUME NOMINAL Vcr (cu ft)		Y Value (number)	dH@ Value (in H2O)	0.95 < Y < 1.05?	Ymax - Ymin < 0.010?	0.98 < Y/Yd < 1.02?	dH@ - dH@ av < 0.155?
5.306	150.3	5.185	146.8	5.309		0.977	1.772	**Pass**			
5.309	150.3	5.185	146.8	5.309		0.977	1.770	**Pass**			
5.359	151.8	5.185	146.8	5.309		0.968	1.768	**Pass**			
					Average	**0.974**	**1.770**		**Pass**	**Pass**	**Pass**
5.180	146.7	5.161	146.1	5.284		0.996	1.704	**Pass**			
5.173	146.5	5.161	146.1	5.284		0.998	1.703	**Pass**			
5.175	146.6	5.161	146.1	5.284		0.997	1.701	**Pass**			
					Average	**0.997**	**1.703**		**Pass**	**Pass**	**Pass**
5.283	149.6	5.324	150.8	5.452		1.008	1.605	**Pass**			
5.279	149.5	5.324	150.8	5.452		1.009	1.602	**Pass**			
5.295	150.0	5.324	150.8	5.452		1.005	1.600	**Pass**			
					Average	**1.007**	**1.602**		**Pass**	**Pass**	**Pass**
5.011	141.9	4.941	139.9	5.050		0.986	1.684	**Pass**			
4.968	140.7	4.941	139.9	5.050		0.995	1.682	**Pass**			
4.973	140.8	4.941	139.9	5.050		0.993	1.679	**Pass**			
					Average	**0.991**	**1.682**		**Pass**	**Pass**	**Pass**

Average Yd: 0.992 **dH@: 1.689**

Q @ dH = 1: 0.577

SIGNED: Signature on File Date 7/8/2021

MONTROSE
AIR QUALITY SERVICES

DIGITAL TEMPERATURE READOUT CALIBRATION

Digital Temperature Readout ID: 23 WCS
Readout Description: Control Box
Date: 7/6/2021
Performed By: RD/DA/RM

Calibrated Thermocouple ID: TC-CAL
T1 Reference Thermometer ID: 313010
T2 Reference Thermometer ID: 242196
T3 Reference Thermometer ID: 242167

T/C I.D. TC-CAL	Readout I.D.	T/C - Readout °F				Reference Thermometer °F				Difference		
		Reading 1	Reading 2	Reading 3	Average	Reading 1	Reading 2	Reading 3	Average	°F	%, (°R)	
T3 (OIL)	23 WCS	357	357	357	357	358	358	358	358	1.0	0.1%	Pass
T2 (Boiling H_2O)	23 WCS	214	214	214	214	212	212	212	212	2.0	0.3%	Pass
T1 (Ice/Water)	23 WCS	33	33	33	33	32	32	32	32	1.0	0.2%	Pass

1) Difference % (°R) = Difference (°F) / (Average Tref + 460)
2) Pass if all Differences are less than 1.5% (°R)

Thermocouple Source Readings

	T/C Source S/N	T/C - Readout °F				T/C Source °F				Difference		
		Reading 1	Reading 2	Reading 3	Average	Reading 1	Reading 2	Reading 3	Average	°F	%, (°R)	
T4 (~650 F)	129103	650	650	650	650	650	650	650	650	0.0	0.0%	Pass
T3 (~370 F)	129103	370	370	370	370	370	370	370	370	0.0	0.0%	Pass
T2 (~212 F)	129103	213	213	213	213	212	212	212	212	1.0	0.1%	Pass
T1 (~32 F)	129103	32	32	32	32	32	32	32	32	0.0	0.0%	Pass

1) Difference % (°R) = Difference (°F) / (Average Tref + 460)
2) Pass if all Differences are less than 1.5% (°R)

Barometric Pressure Determination	
Date: 07/13/21	
Data By: JG	
Reference: https://forecast.weather.gov/MapClick.php?lat=33.8329&lon=-117.9152	
Reference Barometer ID	FW0063 Fullerton CSU (F0063)
Reference Barometer Location	Lat: 33.8805°NLon: 117.88417°WElev: 247ft.
Reference Barometer Other Info.	
Reference Barometer Indication, corrected to sea level	29.96
Reference Barometer Reference Elevation	247
Reference Barometer Actual Pressure	29.71
Test Barometer Location/Site	Canyon Power Plant
Location/Site Elevation	212
Location/Site Barometric Pressure	29.75
Sampling Location Height (above/below site elevation)	60
Sampling Location Barometric Pressure	**29.69**

APPENDIX B
FACILITY CEMS DATA

CEMTEK KVB-Enertec NetDAHS©

Version 47.0

Average Values Report
Generated: 7/13/2021 18:22

Company: City Of Anaheim
Plant: 3071 Miraloma Ave.,
City/St: Anaheim, CA, 92806
Source: 2

Period Start: 7/13/2021 15:53
Period End: 7/13/2021 16:55
Validation Type: 1/1 min
Averaging Period: 1 min
Type: Block Avg

Period Start:	Average 2_O2 %	Average 2_NOXPPM ppm	Average 2_NOX_CORR ppm	Average 2_NOX_LBHR #/hr	Average 2_NOX_LBMM #/MBTU	Average 2_GasFlow kscfh	Average 2_LOAD MW	Average 2_STACKFLW kscfm	Average 2_COPPM ppm	Average 2_CO_CORR ppm	Average 2_CO_LBHR #/hr
07/13/2021 15:53	14.62	2.49	2.34	4.38	0.009	463.9	48.80	235.3	3.06	2.87	3.12
07/13/2021 15:54	14.62	2.49	2.34	4.38	0.009	463.9	48.80	235.3	3.05	2.87	3.12
07/13/2021 15:55	14.63	2.50	2.35	4.38	0.009	463.6	48.77	235.6	3.05	2.87	3.12
07/13/2021 15:56	14.63	2.49	2.34	4.38	0.009	463.7	48.81	235.6	3.07	2.89	3.16
07/13/2021 15:57	14.63	2.48	2.33	4.38	0.009	464.0	48.83	235.8	3.09	2.91	3.17
07/13/2021 15:58	14.63	2.48	2.33	4.38	0.009	464.0	48.80	235.8	3.10	2.92	3.17
07/13/2021 15:59	14.63	2.47	2.32	4.38	0.009	463.6	48.78	235.6	3.11	2.93	3.21
07/13/2021 16:00	14.63	2.47	2.32	4.38	0.009	463.5	48.70	235.5	3.10	2.92	3.16
07/13/2021 16:01	14.64	2.45	2.31	4.37	0.009	462.9	48.69	235.5	3.11	2.93	3.21
07/13/2021 16:02	14.64	2.44	2.30	3.88	0.008	462.1	48.62	235.2	3.13	2.95	3.20
07/13/2021 16:03	14.65	2.42	2.28	3.88	0.008	462.3	48.66	235.6	3.14	2.96	3.20
07/13/2021 16:04	14.64	2.39	2.25	3.89	0.008	463.3	48.75	235.8	3.15	2.97	3.26
07/13/2021 16:05	14.63	2.39	2.25	3.90	0.008	464.0	48.82	235.8	3.16	2.97	3.26
07/13/2021 16:06	14.63	2.42	2.28	3.90	0.008	463.9	48.82	235.7	3.14	2.95	3.21
07/13/2021 16:07	14.63	2.45	2.31	3.90	0.008	463.9	48.82	235.7	3.13	2.95	3.21
07/13/2021 16:08	14.63	2.46	2.31	4.39	0.009	464.1	48.81	235.8	3.11	2.93	3.22
07/13/2021 16:09	14.63	2.47	2.32	4.38	0.009	463.9	48.77	235.7	3.10	2.92	3.17
07/13/2021 16:10	14.63	2.48	2.33	4.38	0.009	463.9	48.78	235.7	3.11	2.93	3.21
07/13/2021 16:11	14.63	2.48	2.33	4.38	0.009	464.0	48.78	235.8	3.11	2.93	3.22
07/13/2021 16:12	14.62	2.49	2.34	4.39	0.009	464.2	48.77	235.5	3.10	2.91	3.17
07/13/2021 16:13	14.63	2.49	2.34	4.39	0.009	464.1	48.78	235.8	3.09	2.91	3.17
07/13/2021 16:14	14.63	2.48	2.33	4.38	0.009	464.0	48.79	235.8	3.10	2.92	3.17
07/13/2021 16:15	14.62	2.47	2.32	4.39	0.009	464.1	48.80	235.4	3.09	2.90	3.17
07/13/2021 16:16	14.62	2.47	2.32	4.38	0.009	464.0	48.79	235.4	3.09	2.90	3.17
07/13/2021 16:17	14.63	2.47	2.32	4.39	0.009	464.1	48.79	235.8	3.07	2.89	3.17
07/13/2021 16:18	14.63	2.47	2.32	4.38	0.009	464.0	48.79	235.8	3.08	2.90	3.17
07/13/2021 16:19	14.63	2.46	2.31	4.38	0.009	463.8	48.79	235.7	3.11	2.93	3.21
07/13/2021 16:20	14.63	2.47	2.32	4.39	0.009	464.3	48.79	235.9	3.13	2.95	3.22
07/13/2021 16:21	14.62	2.47	2.32	4.39	0.009	464.3	48.80	235.5	3.13	2.94	3.22
07/13/2021 16:22	14.62	2.46	2.31	4.39	0.009	464.3	48.83	235.5	3.14	2.95	3.22
07/13/2021 16:23	14.61	2.46	2.31	4.39	0.009	464.4	48.80	235.2	3.13	2.94	3.22
07/13/2021 16:24	14.61	2.46	2.31	4.39	0.009	464.4	48.80	235.2	3.12	2.93	3.22
07/13/2021 16:25	14.62	2.46	2.31	4.38	0.009	464.0	48.80	235.4	3.11	2.92	3.22
07/13/2021 16:26	14.62	2.46	2.31	4.39	0.009	464.5	48.79	235.6	3.10	2.91	3.17
07/13/2021 16:27	14.62	2.46	2.31	4.39	0.009	464.5	48.79	235.6	3.10	2.91	3.17
07/13/2021 16:28	14.63	2.46	2.31	4.39	0.009	464.4	48.82	235.9	3.10	2.92	3.17
07/13/2021 16:29	14.63	2.45	2.31	3.90	0.008	464.5	48.81	236.0	3.10	2.92	3.17
07/13/2021 16:30	14.63	2.44	2.30	3.90	0.008	464.0	48.79	235.8	3.10	2.92	3.17
07/13/2021 16:31	14.62	2.44	2.29	3.90	0.008	464.8	48.81	235.8	3.12	2.93	3.22
07/13/2021 16:32	14.62	2.46	2.31	4.39	0.009	464.6	48.82	235.7	3.13	2.94	3.22
07/13/2021 16:33	14.62	2.47	2.32	4.39	0.009	464.2	48.81	235.5	3.13	2.94	3.22
07/13/2021 16:34	14.62	2.46	2.31	4.39	0.009	464.6	48.80	235.7	3.13	2.94	3.22
07/13/2021 16:35	14.63	2.44	2.30	3.90	0.008	464.5	48.81	236.0	3.14	2.95	3.22
07/13/2021 16:36	14.63	2.45	2.31	3.90	0.008	464.8	48.83	236.1	3.13	2.95	3.22
07/13/2021 16:37	14.62	2.45	2.30	3.90	0.008	464.7	48.84	235.7	3.13	2.94	3.22
07/13/2021 16:38	14.61	2.46	2.31	4.39	0.009	464.9	48.83	235.4	3.12	2.93	3.22
07/13/2021 16:39	14.62	2.46	2.31	4.39	0.009	464.7	48.81	235.7	3.11	2.92	3.22

Period Start:	Average 2_O2 %	Average 2_NOXPPM ppm	Average 2_NOX_CORR ppm	Average 2_NOX_LBHR #/hr	Average 2_NOX_LBMM #/MBTU	Average 2_GasFlow kscfh	Average 2_LOAD MW	Average 2_STACKFLW kscfm	Average 2_COPPM ppm	Average 2_CO_CORR ppm	Average 2_CO_LBHR #/hr
07/13/2021 16:40	14.62	2.45	2.30	3.90	0.008	464.6	48.83	235.7	3.12	2.93	3.22
07/13/2021 16:41	14.62	2.45	2.30	3.90	0.008	464.6	48.82	235.7	3.13	2.94	3.22
07/13/2021 16:42	14.62	2.46	2.31	4.39	0.009	465.0	48.81	235.9	3.13	2.94	3.22
07/13/2021 16:43	14.62	2.46	2.31	4.39	0.009	464.4	48.82	235.6	3.13	2.94	3.22
07/13/2021 16:44	14.61	2.46	2.31	4.39	0.009	464.6	48.80	235.3	3.14	2.95	3.22
07/13/2021 16:45	14.61	2.46	2.31	4.39	0.009	464.6	48.81	235.3	3.13	2.94	3.22
07/13/2021 16:46	14.62	2.45	2.30	3.90	0.008	464.9	48.82	235.8	3.13	2.94	3.22
07/13/2021 16:47	14.62	2.44	2.29	3.90	0.008	464.8	48.82	235.8	3.12	2.93	3.22
07/13/2021 16:48	14.61	2.44	2.29	3.91	0.008	465.1	48.84	235.6	3.12	2.93	3.22
07/13/2021 16:49	14.63	2.45	2.31	3.91	0.008	465.0	48.85	236.3	3.11	2.93	3.22
07/13/2021 16:50	14.61	2.44	2.29	3.91	0.008	465.2	48.88	235.6	3.13	2.94	3.22
07/13/2021 16:51	14.62	2.45	2.30	3.91	0.008	465.0	48.86	235.9	3.14	2.95	3.22
07/13/2021 16:52	14.63	2.45	2.31	3.90	0.008	464.9	48.83	236.2	3.15	2.96	3.22
07/13/2021 16:53	14.61	2.44	2.29	3.91	0.008	465.1	48.85	235.6	3.17	2.97	3.27
07/13/2021 16:54	14.61	2.43	2.28	3.91	0.008	465.1	48.86	235.6	3.17	2.97	3.27
07/13/2021 16:55	14.62	2.44	2.29	3.91	0.008	465.2	48.85	236.0	3.14	2.95	3.22
Daily Average*	**14.62**	**2.46**	**2.31**	**4.20**	**0.009**	**464.3**	**48.80**	**235.7**	**3.12**	**2.93**	**3.20**
Maximum*	**14.65**	**2.50**	**2.35**	**4.39**	**0.009**	**465.2**	**48.88**	**236.3**	**3.17**	**2.97**	**3.27**
	07/13/2021 16:03	07/13/2021 15:55	07/13/2021 15:55	07/13/2021 16:45	07/13/2021 16:45	07/13/2021 16:55	07/13/2021 16:50	07/13/2021 16:49	07/13/2021 16:54	07/13/2021 16:54	07/13/2021 16:54
Minimum*	**14.61**	**2.39**	**2.25**	**3.88**	**0.008**	**462.1**	**48.62**	**235.2**	**3.05**	**2.87**	**3.12**
	07/13/2021 16:54	07/13/2021 16:05	07/13/2021 16:05	07/13/2021 16:03	07/13/2021 16:55	07/13/2021 16:02	07/13/2021 16:02	07/13/2021 16:24	07/13/2021 15:55	07/13/2021 15:55	07/13/2021 15:55

* Does not include Invalid Averaging Periods ("N/A")

CEMTEK KVB-Enertec NetDAHS©

Version 47.0

Average Values Report
Generated: 7/13/2021 19:39

Company: City Of Anaheim
Plant: 3071 Miraloma Ave.,
City/St: Anaheim, CA, 92806
Source: 2

Period Start: 7/13/2021 17:35
Period End: 7/13/2021 18:37
Validation Type: 1/1 min
Averaging Period: 1 min
Type: Block Avg

Period Start:	Average 2_O2 %	Average 2_NOXPPM ppm	Average 2_NOX_CORR ppm	Average 2_NOX_LBHR #/hr	Average 2_NOX_LBMM #/MBTU	Average 2_GasFlow kscfh	Average 2_LOAD MW	Average 2_STACKFLW kscfm	Average 2_COPPM ppm	Average 2_CO_CORR ppm	Average 2_CO_LBHR #/hr
07/13/2021 17:35	14.61	2.63	2.47	4.39	0.009	464.9	48.63	235.4	2.99	2.80	3.08
07/13/2021 17:36	14.61	2.62	2.46	4.40	0.009	465.1	48.67	235.6	2.99	2.80	3.08
07/13/2021 17:37	14.62	2.63	2.47	4.40	0.009	465.2	48.66	236.0	2.99	2.81	3.08
07/13/2021 17:38	14.62	2.63	2.47	4.39	0.009	464.9	48.65	235.8	2.99	2.81	3.08
07/13/2021 17:39	14.62	2.63	2.47	4.40	0.009	465.5	48.69	236.1	3.00	2.82	3.08
07/13/2021 17:40	14.62	2.62	2.46	4.41	0.009	466.4	48.74	236.6	3.02	2.84	3.13
07/13/2021 17:41	14.61	2.56	2.40	4.41	0.009	466.2	48.73	236.1	3.08	2.89	3.18
07/13/2021 17:42	14.61	2.50	2.34	4.40	0.009	466.0	48.72	236.0	3.13	2.94	3.23
07/13/2021 17:43	14.61	2.50	2.34	4.41	0.009	466.6	48.73	236.3	3.14	2.95	3.23
07/13/2021 17:44	14.61	2.50	2.34	4.41	0.009	466.7	48.77	236.4	3.13	2.94	3.23
07/13/2021 17:45	14.61	2.49	2.34	4.41	0.009	466.7	48.79	236.4	3.12	2.93	3.23
07/13/2021 17:46	14.60	2.50	2.34	4.41	0.009	466.4	48.77	235.8	3.12	2.92	3.23
07/13/2021 17:47	14.60	2.50	2.34	4.42	0.009	467.4	48.84	236.4	3.12	2.92	3.24
07/13/2021 17:48	14.60	2.46	2.30	3.93	0.008	467.5	48.84	236.4	3.17	2.97	3.29
07/13/2021 17:49	14.60	2.42	2.27	3.93	0.008	467.8	48.85	236.6	3.24	3.03	3.34
07/13/2021 17:50	14.60	2.40	2.25	3.93	0.008	467.7	48.86	236.5	3.29	3.08	3.39
07/13/2021 17:51	14.60	2.38	2.23	3.93	0.008	468.1	48.86	236.7	3.31	3.10	3.44
07/13/2021 17:52	14.60	2.37	2.22	3.93	0.008	468.1	48.86	236.7	3.31	3.10	3.44
07/13/2021 17:53	14.60	2.36	2.21	3.93	0.008	468.2	48.87	236.7	3.32	3.11	3.44
07/13/2021 17:54	14.60	2.37	2.22	3.93	0.008	468.3	48.88	236.8	3.33	3.12	3.44
07/13/2021 17:55	14.60	2.36	2.21	3.93	0.008	468.1	48.86	236.7	3.33	3.12	3.44
07/13/2021 17:56	14.60	2.36	2.21	3.93	0.008	468.2	48.91	236.7	3.32	3.11	3.44
07/13/2021 17:57	14.60	2.37	2.22	3.94	0.008	468.5	48.90	236.9	3.32	3.11	3.44
07/13/2021 17:58	14.60	2.37	2.22	3.93	0.008	468.1	48.89	236.7	3.34	3.13	3.44
07/13/2021 17:59	14.60	2.37	2.22	3.94	0.008	468.7	48.94	237.0	3.35	3.14	3.44
07/13/2021 18:00	14.59	2.34	2.19	3.94	0.008	468.7	48.89	236.6	3.40	3.18	3.49
07/13/2021 18:01	14.62	2.25	2.11	3.92	0.008	466.1	48.79	236.4	3.51	3.30	3.62
07/13/2021 18:02	14.60	2.30	2.15	3.92	0.008	467.1	48.85	236.2	3.44	3.22	3.53
07/13/2021 18:03	14.60	2.47	2.31	4.42	0.009	467.3	48.84	236.3	3.27	3.06	3.39
07/13/2021 18:04	14.60	2.51	2.35	4.42	0.009	467.2	48.83	236.3	3.18	2.98	3.29
07/13/2021 18:05	14.60	2.50	2.34	4.42	0.009	467.7	48.87	236.5	3.20	3.00	3.29
07/13/2021 18:06	14.60	2.47	2.31	4.43	0.009	468.3	48.89	236.8	3.25	3.04	3.34
07/13/2021 18:07	14.60	2.42	2.27	3.94	0.008	468.6	48.89	236.9	3.33	3.12	3.44
07/13/2021 18:08	14.60	2.35	2.20	3.94	0.008	468.8	48.89	237.0	3.42	3.20	3.54
07/13/2021 18:09	14.60	2.31	2.16	3.94	0.008	469.0	48.86	237.2	3.49	3.27	3.60
07/13/2021 18:10	14.60	2.33	2.18	3.94	0.008	468.9	48.87	237.1	3.47	3.25	3.59
07/13/2021 18:11	14.60	2.35	2.20	3.94	0.008	468.7	48.85	237.0	3.42	3.20	3.54
07/13/2021 18:12	14.60	2.35	2.20	3.94	0.008	468.5	48.85	236.9	3.40	3.18	3.49
07/13/2021 18:13	14.60	2.37	2.22	3.94	0.008	468.8	48.85	237.0	3.41	3.19	3.54
07/13/2021 18:14	14.60	2.39	2.24	3.93	0.008	468.2	48.85	236.7	3.43	3.21	3.54
07/13/2021 18:15	14.60	2.41	2.26	3.93	0.008	468.4	48.86	236.8	3.40	3.18	3.49
07/13/2021 18:16	14.60	2.46	2.30	3.93	0.008	468.1	48.84	236.7	3.34	3.13	3.44
07/13/2021 18:17	14.60	2.49	2.33	4.43	0.009	468.3	48.87	236.8	3.31	3.10	3.44
07/13/2021 18:18	14.60	2.45	2.29	3.93	0.008	468.4	48.86	236.8	3.34	3.13	3.44
07/13/2021 18:19	14.60	2.42	2.27	3.93	0.008	468.3	48.86	236.8	3.37	3.16	3.49
07/13/2021 18:20	14.60	2.44	2.29	3.93	0.008	468.4	48.87	236.8	3.36	3.15	3.49
07/13/2021 18:21	14.60	2.45	2.29	3.94	0.008	468.5	48.87	236.9	3.35	3.14	3.44

Period Start:	Average 2_O2 %	Average 2_NOXPPM ppm	Average 2_NOX_CORR ppm	Average 2_NOX_LBHR #/hr	Average 2_NOX_LBMM #/MBTU	Average 2_GasFlow kscfh	Average 2_LOAD MW	Average 2_STACKFLW kscfm	Average 2_COPPM ppm	Average 2_CO_CORR ppm	Average 2_CO_LBHR #/hr
07/13/2021 18:22	14.60	2.42	2.27	3.94	0.008	468.8	48.90	237.0	3.36	3.15	3.49
07/13/2021 18:23	14.60	2.39	2.24	3.94	0.008	468.7	48.89	237.0	3.40	3.18	3.49
07/13/2021 18:24	14.60	2.38	2.23	3.93	0.008	468.3	48.88	236.8	3.45	3.23	3.54
07/13/2021 18:25	14.60	2.39	2.24	3.94	0.008	468.7	48.90	237.0	3.47	3.25	3.59
07/13/2021 18:26	14.60	2.38	2.23	3.94	0.008	468.7	48.90	237.0	3.47	3.25	3.59
07/13/2021 18:27	14.60	2.37	2.22	3.94	0.008	468.7	48.89	237.0	3.47	3.25	3.59
07/13/2021 18:28	14.60	2.35	2.20	3.94	0.008	468.5	48.82	236.9	3.48	3.26	3.59
07/13/2021 18:29	14.61	2.33	2.19	3.94	0.008	468.5	48.81	237.3	3.48	3.26	3.59
07/13/2021 18:30	14.61	2.31	2.17	3.93	0.008	468.2	48.79	237.1	3.51	3.29	3.64
07/13/2021 18:31	14.61	2.28	2.14	3.93	0.008	468.4	48.80	237.2	3.55	3.33	3.69
07/13/2021 18:32	14.62	2.26	2.12	3.93	0.008	467.9	48.71	237.4	3.58	3.36	3.68
07/13/2021 18:33	14.63	2.25	2.12	3.93	0.008	467.9	48.69	237.7	3.59	3.38	3.73
07/13/2021 18:34	14.63	2.24	2.11	3.94	0.008	468.8	48.69	238.2	3.63	3.42	3.79
07/13/2021 18:35	14.63	2.19	2.06	3.94	0.008	469.4	48.74	238.5	3.72	3.50	3.89
07/13/2021 18:36	14.63	2.10	1.98	3.45	0.007	469.1	48.71	238.4	3.83	3.60	3.99
07/13/2021 18:37	14.63	2.06	1.94	3.44	0.007	468.7	48.64	238.1	3.89	3.66	4.04
Daily Average*	**14.61**	**2.40**	**2.25**	**4.05**	**0.008**	**467.8**	**48.82**	**236.8**	**3.34**	**3.13**	**3.45**
Maximum*	**14.63**	**2.63**	**2.47**	**4.43**	**0.009**	**469.4**	**48.94**	**238.5**	**3.89**	**3.66**	**4.04**
	07/13/2021 18:37	07/13/2021 17:39	07/13/2021 17:39	07/13/2021 18:17	07/13/2021 18:17	07/13/2021 18:35	07/13/2021 17:59	07/13/2021 18:35	07/13/2021 18:37	07/13/2021 18:37	07/13/2021 18:37
Minimum*	**14.59**	**2.06**	**1.94**	**3.44**	**0.007**	**464.9**	**48.63**	**235.4**	**2.99**	**2.80**	**3.08**
	07/13/2021 18:00	07/13/2021 18:37	07/13/2021 18:37	07/13/2021 18:37	07/13/2021 18:37	07/13/2021 17:38	07/13/2021 17:35	07/13/2021 17:35	07/13/2021 17:38	07/13/2021 17:36	07/13/2021 17:39

* Does not include Invalid Averaging Periods ("N/A")

APPENDIX C
CALCULATIONS

Appendix C.1
General Emissions Calculations

GENERAL EMISSIONS CALCULATIONS

I. Stack Gas Velocity

A. Stack gas molecular weight, lb/lb-mole

$MW_{dry} = 0.44 * \%\ CO_2 + 0.32 * \%\ O_2 + 0.28 * \%\ N_2$

$MW_{wet} = MW_{dry} * (1 - B_{wo}) + 18 * B_{wo}$

B. Absolute stack pressure, iwg

$$P_s = P_{bar} + \frac{P_{sg}}{13.6}$$

C. Stack gas velocity, ft/sec

$$V_s = 2.9 * C_p * \sqrt{\Delta P} * \sqrt{T_s} * \sqrt{\frac{29.92 * 28.95}{P_s * MW_{wet}}}$$

II. Moisture

A. Sample gas volume, dscf

$$V_{mstd} = 0.03342 * V_m * \left(P_{bar} + \frac{\Delta H}{13.6}\right) * \frac{T_{ref}}{T_m} * Y_d$$

B. Water vapor volume, scf

$$V_{wstd} = 0.0472 * V_{ic} * \frac{T_{ref}}{528°R}$$

C. Moisture content, dimensionless

$$B_{wo} = \frac{V_{wstd}}{(V_{mstd} + V_{wstd})}$$

III. Stack Gas Volumetric Flow Rate

A. Actual stack gas volumetric flow rate, wacfm

$Q = V_s * A_s * 60$

B. Standard stack gas flow rate, dscfm

$$Q_{sd} = Q * (1 - B_{wo}) * \frac{T_{ref}}{T_s} * \frac{P_s}{29.92}$$

IV. Gaseous Mass Emission Rates, lb/hr

$$M = \frac{ppm * MW_i * Q_{sd} * 60}{SV * 10^6}$$

V. Emission Rates, lb/MMBtu

$$\frac{lb}{MMBtu} = \frac{ppm * MW_i * F}{SV * 10^6} * \frac{20.9}{20.9 - \%\ O_2}$$

VI. Percent Isokinetic

$$I = \frac{17.32 * T_s\ (V_{mstd})}{(1 - B_{wo})\ 0 * V_s * P_s * Dn^2} * \frac{520°R}{T_{ref}}$$

VII. Particulate Emissions

(a) Grain loading, gr/dscf
$C = 0.01543\ (M_n/V_{m\ std})$

(b) Grain loading at 12% CO_2, gr/dscf
$C_{12\%}\ CO_2 = C\ (12/\%\ CO_2)$

(c) Mass emissions, lb/hr
$M = C * Q_{sd} * (60\ min/hr) / (7000\ gr/lb)$

(d) Particulate emission factor

$$lb/10^6\ Btu = Cx\ \frac{1\ lb}{7000\ gr} * F * \frac{20.9}{20.9 - \%\ O_2}$$

Nomenclature:

A_s	=	stack area, ft^2
B_{wo}	=	flue gas moisture content, dimensionless
$C_{12\%CO2}$	=	particulate grain loading, gr/dscf corrected to 12% CO_2
C	=	particulate grain loading, gr/dscf
C_p	=	pitot calibration factor, dimensionless
Dn	=	nozzle diameter, inches
F	=	fuel F-Factor, dscf/MMBtu @ 0% O_2
H	=	orifice differential pressure, iwg
I	=	% isokinetics
M_n	=	mass of collected particulate, mg
M_i	=	mass emission rate of specie i, lb/hr
MW	=	molecular weight of flue gas, lb/lb-mole
M_{wi}	=	molecular weight of specie i:
	SO_2:	64
	NO_x:	46
	CO:	28
	HC:	16
0	=	sample time, minutes
ΔP	=	average velocity head, iwg = $(\sqrt{\Delta P})^2$
P_{bar}	=	barometric pressure, inches Hg
P_s	=	stack absolute pressure, inches Hg
P_{sg}	=	stack static pressure, iwb
Q	=	wet stack flow rate at actual conditions, wacfm
Q_{sd}	=	dry standard stack flow rate, dscfm
SV	=	specific molar volume of an ideal gas at standard conditions, ft^3/lb-mole
T_m	=	meter temperature, °R
T_{ref}	=	reference temperature, °R
T_s	=	stack temperature, °R
V_s	=	stack gas velocity, ft/sec
V_{lc}	=	volume of liquid collected in impingers, ml
V_m	=	uncorrected dry meter volume, dcf
V_{mstd}	=	dry meter volume at standard conditions, dscf
V_{wstd}	=	volume of water vapor at standard conditions, scf
Y_d	=	meter calibration coefficient

Appendix C.2
Spreadsheet Summaries

SCAQMD 207.1 EXAMPLE CALCULATION
TEST NUMBER: 1-NH3-U2

Identifier	Description	Units	Equation	Value
A	Reference Temperature	F	--	60
B	Reference Temperature	R	A + 460	520
C	Meter Calibration Factor (Yd)	--	--	0.992
D	Barometric Pressure	" Hg	--	29.69
E	Meter Volume	acf	--	36.170
F	Meter Temperature	F	--	89.3
G	Meter Temperature	R	F + 460	549.3
H	Delta H	" H_2O	--	1.0
I	Meter Volume (standard)	dscf	0.03342 * E * (D + H/13.6) * B/G * C	33.787
J	Liquid Collected	grams	--	89.9
K	Water vapor volume	scf	0.0472 * J * B/528	4.179
L	Moisture Content	--	K/(K + I)	0.110
M	Gas Constant	ft-lbf/lb-mole-R	--	1545.33
N	Specific Molar Volume	SCF/lb-mole	385.3 * B / 528	379.5
O	F-Factor	dscf/MMBtu	--	8,710
P	HHV	Btu/SCF	--	1,050
Q	Mass Conversion Factor	lb/ug	--	2.2046E-09
R	O_2 Correction Factor	--	--	15
S	Stack Flow Rate @ 68 F	dscfm	--	235,700
T	Stack Flow Rate @ Tref	dscfm	S * B/528	232,129
U	Mass NH_3	ug	--	1,253
V	Mass NH_3	lb	U * Q	2.76E-06
W	MW of NH_3	lb/lb-mole	--	17.03
X	NH_3	ppm	$(V * N * 10^6)/(I * W)$	1.8
Y	Flue Gas O_2	%	--	14.62
Z	NH_3	ppmc	X * (20.9 - R)/(20.9 - Y)	1.7
AA	NH_3	lb/hr	$X * T * W * 60/(N * 10^6)$	1.1
AB	NH_3	lb/MMBtu	$(X * W * O)/(385.3 * 10^6) * 20.9/(20.9 - Y)$	0.002
AC	NH_3	lb/MMSCF	AB * P	2.4

Note:

(1) Some values may be slightly different from those shown on the run sheets due to round off errors. This page is intended to show the calculation methodology only.

SCAQMD METHOD 207.1
DATA WORKSHEET AND SUMMARY

Facility	Canyon		Parameter		NH_3
Unit	U2		Fuel		Natural gas
Sample Location	Stack		Data By		JG
Test Number	1-NH3-U2	2-NH3-U2	Average	Maximum	Limit
Reference Temperature (°F)	60	60			
Test Date	7/13/2021	7/13/2021			
Test Method	SCAQMD 207.1	SCAQMD 207.1			
Sample Train	23-WCS	23-WCS			
Meter Calibration Factor	0.992	0.992			
Stack Area (ft^2)	106.90	106.90			
Sample Time (Minutes)	60	60			
Barometric Pressure ("Hg)	29.69	29.69			
Start/Stop Time	1553/1656	1735/1838			
Meter Volume (acf)	36.170	36.200			
Meter Temperature (°F)	89.3	88.9			
Meter Pressure (iwg)	1.0	1.0			
Liquid Volume (ml)	89.9	86.0			
Stack O_2 (%)	14.62	14.61	14.62	(from facility CEMS)	
Unit Load (MW)	49	49	48.8		
Standard Sample Volume (SCF)	33.787	33.839			
Moisture Fraction	0.110	0.106			
Stack Flow Rate (dscfm, 68 °F)	235,700	236,800	236,250	(from facility CEMS)	
Stack Flow Rate (@ Tref)	232,129	233,212	232,670		
Gas Constant (ft-lbf/lb-mole-R)	1545.33	1545.33			
Molecular Weight NH_3 (lb/lb-mole)	17.03	17.03			
Specific Molar Volume (ft^3/lb-mole)	379.5	379.5			
F-Factor (dscf/MMBtu)	8,710	8,710			
HHV(Btu/SCF)	1,050	1,050			
Mass Conversion (lb/ug)	2.2046E-09	2.2046E-09			
O_2 Correction Factor (%)	15	15			
Mass NH_3 (ug)	1,253	1,220			
Mass NH_3 (lb)	2.76E-06	2.69E-06			
NH_3 (ppmv, flue gas)	1.82	1.77	1.80	1.82	
NH_3 (ppmv @ O_2 Correction Factor)	1.71	1.66	1.69	1.71	5
NH_3 (lb/hr)	1.14	1.11	1.12	1.14	
NH_3 (lb/MMBtu)	0.002	0.002	0.002	0.002	
NH_3 (lb/MMSCF)	2.45	2.37	2.41	2.45	

Note: SCAQMD Method 207.1 requires the higher of the duplicate runs be reported as the test result.

APPENDIX D
QUALITY ASSURANCE

Appendix D.1
Quality Assurance Program Summary

QUALITY ASSURANCE PROGRAM SUMMARY

As part of Montrose Air Quality Services, LLC (Montrose) ASTM D7036-04 certification, Montrose is committed to providing emission related data which is complete, precise, accurate, representative, and comparable. Montrose quality assurance program and procedures are designed to ensure that the data meet or exceed the requirements of each test method for each of these items. The quality assurance program consists of the following items:

- Assignment of an Internal QA Officer
- Development and use of an internal QA Manual
- Personnel training
- Equipment maintenance and calibration
- Knowledge of current test methods
- Chain-of-custody
- QA reviews of test programs

Assignment of an Internal QA Officer: Montrose has assigned an internal QA Officer who is responsible for administering all aspects of the QA program.

Internal Quality Assurance Manual: Montrose has prepared a QA Manual according to the requirements of ASTM D7036-04 and guidelines issued by EPA. The manual documents and formalizes all of Montrose's QA efforts. The manual is revised upon periodic review and as Montrose adds capabilities. The QA manual provides details on the items provided in this summary.

Personnel Testing and Training: Personnel testing and training is essential to the production of high quality test results. Montrose training programs include:

- A requirement for all technical personnel to read and understand the test methods performed
- A requirement for all technical personnel to read and understand the Montrose QA manual
- In-house testing and training
- Quality Assurance meetings
- Third party testing where available
- Maintenance of training records.

Equipment Maintenance and Calibration: All laboratory and field equipment used as a part of Montrose's emission measurement programs is maintained according to manufacturer's recommendations. A summary of the major equipment maintenance schedules is summarized in Table 1. In addition to routine maintenance, calibrations are performed on all sampling equipment according to the procedures outlined in the applicable test method. The calibration intervals and techniques for major equipment components is summarized in Table 2. The calibration technique may vary to meet regulatory agency requirements.

Knowledge of Current Test Methods: Montrose maintains current copies of EPA, ARB, and SCAQMD Source Test Manuals and Rules and Regulations.

Chain-of-Custody: Montrose maintains chain-of-custody documentation on all data sheets and samples. Samples are stored in a locked area accessible only to Montrose source test personnel. Data sheets are kept in the custody of the originator, program manager, or in locked storage until return to Montrose office. Electronic field data is duplicated for backup on secure storage media. The original data sheets are used for report preparation and any additions are initialed and dated.

QA Reviews: Periodic field, laboratory, and report reviews are performed by the in-house QA coordinator. Periodically, test plans are reviewed to ensure proper test methods are selected and reports are reviewed to ensure that the methods were followed and any deviations from the methods are justified and documented.

ASTM D7036-04 Required Information

Uncertainty Statement

Montrose is qualified to conduct this test program and has established a quality management system that led to accreditation with ASTM Standard D7036-04 (Standard Practice for Competence of Air Emission Testing Bodies). Montrose participates in annual functional assessments for conformance with D7036-04 which are conducted by the American Association for Laboratory Accreditation (A2LA). All testing performed by Montrose is supervised on site by at least one Qualified Individual (QI) as defined in D7036-04 Section 8.3.2. Data quality objectives for estimating measurement uncertainty within the documented limits in the test methods are met by using approved test protocols for each project as defined in D7036-04 Sections 7.2.1 and 12.10. Additional quality assurance information is presented in the report appendices.

Performance Data

Performance data are available for review.

Qualified Personnel

A qualified individual (QI), defined by performance on a third party or internal test on the test methods, will be present on each test event.

Plant Entry and Safety Requirements

Plant Entry

All test personnel are required to check in with the guard at the entrance gate or other designated area. Specific details are provided by the facility and project manager.

Safety Requirements

All personnel shall have the following personal protective equipment (PPE) and wear them where designated:

- Hard Hat
- Safety Glasses
- Steel Toe Boots
- Hearing Protection
- Gloves
- High Temperature Gloves (if required)

The following safety measures will be followed:

- Good housekeeping
- SDS for all on-site hazardous materials
- Confine selves to necessary areas (stack platform, mobile laboratory, CEMS data acquisition system, control room, administrative areas)
- Knowledge of evacuation procedures

Each facility will provide plant specific safety training.

TABLE 1
EQUIPMENT MAINTENANCE SCHEDULE

Equipment	Acceptance Limits	Frequency of Service	Methods of Service
Pumps	1. Absence of leaks 2. Ability to draw manufacturers required vacuum and flow	As recommended by manufacturer	1. Visual inspection 2. Clean 3. Replace parts 4. Leak check
Flow Meters	1. Free mechanical movement	As recommended by manufacturer	1. Visual inspection 2. Clean 3. Calibrate
Sampling Instruments	1. Absence of malfunction 2. Proper response to zero span gas	As recommended by manufacturer	As recommended by manufacturer
Integrated Sampling Tanks	1. Absence of leaks	Depends on nature of use	1. Steam clean 2. Leak check
Mobile Van Sampling System	1. Absence of leaks	Depends on nature of use	1. Change filters 2. Change gas dryer 3. Leak check 4. Check for system contamination
Sampling lines	1. Sample degradation less than 2%	After each test series	1. Blow dry, inert gas through line until dry

TABLE 2
MAJOR SAMPLING EQUIPMENT CALIBRATION REQUIREMENTS

Sampling Equipment	Calibration Frequency	Calibration Procedure	Acceptable Calibration Criteria
Continuous Analyzers	Before and After Each Test Day	3-point calibration error test	< 2% of analyzer range
Continuous Analyzers	Before and After Each Test Run	2-point sample system bias check	< 5% of analyzer range
Continuous Analyzers	After Each Test Run	2-point analyzer drift determination	< 3% of analyzer range
CEMS System	Beginning of Each Day	leak check	< 1 in. Hg decrease in 5 min. at > 20 in. Hg
Continuous Analyzers	Semi-Annually	3-point linearity	< 1% of analyzer range
NO_x Analyzer	Daily	NO_2 -> NO converter efficiency	> 90%
Differential Pressure Gauges (except for manometers)	Semi-Annually	Correction factor based on 5-point comparison to standard	+/- 5%
Differential Pressure Gauges (except for manometers)	Bi-Monthly	3-point comparison to standard, no correction factor	+/- 5%
Barometer	Semi-Annually	Adjusted to mercury-in-glass or National Weather Service Station	+/- 0.1 inches Hg
Dry Gas Meter	Semi-Annually	Calibration check at 4 flow rates using a NIST traceable standard	+/- 2%
Dry Gas Meter	Bi-Monthly	Calibration check at 2 flow rates using a NIST traceable standard	+/- 2% of semi-annual factor
Dry Gas Meter Orifice	Annually	4-point calibration for ΔH@	--
Temperature Sensors	Semi-Annually	3-point calibration vs. NIST traceable standard	+/- 1.5%

Note: Calibration requirements that meet applicable regulatory agency requirements will be used.

Appendix D.2
SCAQMD and STAC Certifications

South Coast
Air Quality Management District
21865 Copley Drive, Diamond Bar, CA 91765-4178
(909) 396-2000 • www.aqmd.gov

September 9, 2020

Mr. John Peterson
Montrose Air Quality Services, LLC
1631 E. Saint Andrew Place
Santa Ana, CA 92705

Subject: LAP Approval Notice
Reference # 96LA1220

Dear Mr. Peterson:

We have reviewed your renewal letter under the South Coast Air Quality Management District's Laboratory Approval Program (LAP). We are pleased to inform you that your firm is approved for the period beginning September 30, 2020, and ending September 30, 2021 for the following methods, subject to the requirements in the LAP Conditions For Approval Agreement and conditions listed in the attachment to this letter:

Methods 1-4	Methods 5.1, 5.2, 5.3, 6.1
Methods 10.1 and 100.1	Methods 25.1 and 25.3 (Sampling)
USEPA CTM-030 and ASTM D6522-00	Rule 1121/ 1146.2 Protocol

Rule 1420/1420.1/1420.2 – (Lead) Source and Ambient Sampling

Your LAP approval to perform nitrogen oxide emissions compliance testing for Rule 1121/ 1146.2 Protocols includes satellite facilities located at:

McKenna Boiler 1510 North Spring Street Los Angeles, CA 90012	Noritz America Corp. 11160 Grace Avenue Fountain Valley, CA 92708	Ajax Boiler, Inc. 2701 S. Harbor Blvd. Santa Ana, CA 92704

Laundry Building of VA Greater Los Angeles Healthcare System
508 Constitution Avenue
Los Angeles, CA 90049

Thank you for participating in the LAP. Your cooperation helps us to achieve the goal of the LAP: to maintain high standards of quality in the sampling and analysis of source emissions. You may direct any questions or information to LAP Coordinator, Glenn Kasai. He may be reached by telephone at (909) 396-2271, or via e-mail at gkasai@aqmd.gov.

Sincerely,

D. Sarkar

Dipankar Sarkar
Program Supervisor
Source Test Engineering

DS:GK/gk
Attachment

200909 LapRenewalRev.doc

STAC
STACK TESTING ACCREDITATION COUNCIL

American Association for Laboratory Accreditation

Accredited Air Emission Testing Body

A2LA has accredited

MONTROSE AIR QUALITY SERVICES

In recognition of the successful completion of the joint A2LA and Stack Testing Accreditation Council (STAC) evaluation process, this laboratory is accredited to perform testing activities in compliance with ASTM D7036:2004 - Standard Practice for Competence of Air Emission Testing Bodies.

Presented this 11th day of February 2020.

Vice President, Accreditation Services
For the Accreditation Council
Certificate Number 3925.01
Valid to February 28, 2022

This accreditation program is not included under the A2LA ILAC Mutual Recognition Arrangement.

MONTROSE AIR QUALITY SERVICES

Appendix D.3
Individual Qi Certificate

CERTIFICATE OF COMPLETION

John Groenenboom

This document certifies that this individual has passed a comprehensive examination and is now a Qualified Individual (QI) as defined in Section 8.3 of ASTM D7036-04 for the following method(s):

SCAQMD Methods 1.1 – 4.1

Certificate Number: 002-2017-58

Tate Strickler, Accreditation Director

DATE OF ISSUE: 1/18/17

DATE OF EXPIRATION: 1/18/22

MONTROSE ENVIRONMENTAL

CERTIFICATE OF COMPLETION

John Groenenboom

This document certifies that this individual has passed a comprehensive examination and is now a Qualified Individual (QI) as defined in Section 8.3 of ASTM D7036-04 for the following method(s):

SCAQMD Method 207.1

Certificate Number: 002-2017-51

Tate Strickler, Accreditation Director

DATE OF ISSUE: 1/17/17

DATE OF EXPIRATION: 1/17/22

MONTROSE ENVIRONMENTAL

Appendix D.4
Statement of No Conflict of Interest

STATEMENT OF NO CONFLICT OF INTEREST AS AN INDEPENDENT TESTING LABORATORY

(To be completed by authorized source testing firm representative and included in source test report)

The following facility and equipment were tested by my source testing firm and are the subjects of this statement:

Facility ID:	**153992**
Date(s) Tested:	**July 13, 2021**
Facility Name:	**Canyon Power**
Equipment Address:	**3071 E. Mira Loma Ave.**
	Anaheim, California 92806
Equipment Tested:	**Unit 2**
Device ID, A/N, P/N:	**D7**

I state, as its legally authorized representative, that the source testing firm of:

Source Test Firm: Montrose Air Quality Services, LLC

Business Address: 1631 E. St. Andrew Pl.

Santa Ana, California 92705

is an "Independent Testing Laboratory" as defined in ***District Rule 304(k):***

For the purposes of this Rule, when an independent testing laboratory is used for the purposes of establishing compliance with District rules or to obtain a District permit to operate, it must meet all of the following criteria:

(1) The testing laboratory shall have no financial interest in the company or facility being tested, or in the parent company, or any subsidiary thereof -

(2) The company or facility being tested, or parent company or any subsidiary thereof, shall have no financial interest in the testing laboratory;

(3) Any company or facility responsible for the emission of significant quantities of pollutants to the atmosphere, or parent company or any subsidiary thereof shall have no financial interest in the testing laboratory; and

(4) The testing laboratory shall not be in partnership with, own or be owned by, in part or in full, the contractor who has provided or installed equipment (basic or control), or monitoring systems, or is providing maintenance for installed equipment or monitoring systems, for the company being tested.

Furthermore, I state that any contracts or agreements entered into by my source testing firm and the facility referenced above, or its designated contractor(s), either verbal or written, are not contingent upon the outcome of the source testing, or the source testing information provided to the SCAQMD.

Signature: _____ **Date:** **8/4/2021**

John Groenenboom	**Client Project Manager**	**(714) 279-6777**	**8/4/2021**
(Name)	(Title)	(Phone)	(Date)

FORM ST-110 :stevforl.doc (Revised 11/18/98

APPENDIX E
APPLICABLE PERMIT SECTIONS

FACILITY PERMIT TO OPERATE
CANYON POWER PLANT

SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS

The operator shall comply with the terms and conditions set forth below:

Equipment	ID No.	Connected To	RECLAIM Source Type/ Monitoring Unit	Emissions * And Requirements	Conditions
Process 1: POWER GENERATION					
GAS TURBINE, NO. 2, NATURAL GAS, GENERAL ELECTRIC, MODEL LM6000PC SPRINT, SIMPLE CYCLE, 479 MMBTU/HR AT 46 DEG F, WITH INLET CHILLING, WITH WATER INJECTION WITH A/N: 555829 GENERATOR, 50.95 MW	D7	C9	NOX: MAJOR SOURCE**	**CO**: 4 PPMV NATURAL GAS (4) **[RULE 1303(a)(1)-BACT, 5-10-1996;** *RULE 1303(a)(1) -BACT, 12-6-2002*]; **CO**: 2000 PPMV NATURAL GAS (5) **[RULE 407, 4-2-1982]; NOX**: 2.5 PPMV NATURAL GAS (4) **[RULE 2005, 6-3-2011]; NOX**: 25 PPMV NATURAL GAS (8) **[40CFR 60 Subpart KKKK, 7-6-2006]; PM10**: 0.01 GRAINS/SCF NATURAL GAS (5A) **[RULE 475, 10-8-1976;** *RULE 475, 8-7-1978*]; **PM10**: 0.1 GRAINS/SCF NATURAL GAS (5) **[RULE 409, 8-7-1981]; PM10**: 1.67 LBS/HR NATURAL GAS (5C) **[RULE 1303(b)(2)-Offset, 5-10-1996;** *RULE 1303(b)(2) -Offset, 12-6-2002*]; **PM10**: 11 LBS/HR NATURAL GAS (5B) **[RULE 475, 10-8-1976;** *RULE 475, 8-7-1978*]; **SO2**: (9) **[40CFR 72 - Acid Rain Provisions, 11-24-1997]; SOX**: 0.06 LBS/MMBTU NATURAL GAS (8) **[40CFR 60 Subpart KKKK, 7-6-2006]; VOC**: 2 PPMV NATURAL GAS (4) **[RULE 1303(a)(1)-BACT, 5-10-1996;** *RULE 1303(a)(1)-BACT, 12-6-2002*]	A63.1, A99.1, A99.2, A99.3, A195.1, A195.2, A195.3, A327.1, B61.1, D12.1, D29.2, D29.3, D82.1, D82.2, E193.1, H23.1, I298.2, K40.1

* (1) (1A) (1B) Denotes RECLAIM emission factor
(2) (2A) (2B) Denotes RECLAIM emission rate
(3) Denotes RECLAIM concentration limit
(4) Denotes BACT emission limit
(5) (5A) (5B) Denotes command and control emission limit
(6) Denotes air toxic control rule limit
(7) Denotes NSR applicability limit
(8) (8A) (8B) Denotes 40 CFR limit (e.g. NSPS, NESHAPS, etc.)
(9) See App B for Emission Limits
(10) See section J for NESHAP/MACT requirements

** Refer to section F and G of this permit to determine the monitoring, recordkeeping and reporting requirements for this device.

FACILITY PERMIT TO OPERATE
CANYON POWER PLANT

SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS

The operator shall comply with the terms and conditions set forth below:

Equipment	ID No.	Connected To	RECLAIM Source Type/ Monitoring Unit	Emissions* And Requirements	Conditions
PROCESS 1: POWER GENERATION					
CO OXIDATION CATALYST, NO. 2, BASF, 110 CUBIC FEET OF TOTAL CATALYST VOLUME A/N: 476657	C9	D7 C10			
SELECTIVE CATALYTIC REDUCTION, NO. 2, CORMETECH CMHT-21, 1012 CU.FT.; WIDTH: 2 FT 6 IN; HEIGHT: 25 FT 9 IN; LENGTH: 18 FT WITH A/N: 476657 AMMONIA INJECTION	C10	C9 S12		NH3: 5 PPMV NATURAL GAS (4) [RULE 1303(a)(1)-BACT, 5-10-1996; *RULE 1303(a)(1) -BACT, 12-6-2002*]	A195.5, D12.2, D12.3, D12.4, E179.1, E179.2, E193.1
STACK, TURBINE NO. 2, HEIGHT: 86 FT ; DIAMETER: 11 FT 8 IN A/N: 555829	S12	C10			

* (1) (1A) (1B) Denotes RECLAIM emission factor (2) (2A) (2B) Denotes RECLAIM emission rate
(3) Denotes RECLAIM concentration limit (4) Denotes BACT emission limit
(5) (5A) (5B) Denotes command and control emission limit (6) Denotes air toxic control rule limit
(7) Denotes NSR applicability limit (8) (8A) (8B) Denotes 40 CFR limit (e.g. NSPS, NESHAPS, etc.)
(9) See App B for Emission Limits (10) See section J for NESHAP/MACT requirements

** Refer to section F and G of this permit to determine the monitoring, recordkeeping and reporting requirements for this device.

SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS

The operator shall comply with the terms and conditions set forth below:

[Devices subject to this condition : C4, C10, C16, C22]

D12.5 The operator shall install and maintain a(n) non-resettable elapsed time meter to accurately indicate the elapsed operating time of the engine.

[**RULE 1110.2, 2-1-2008;** RULE 1110.2, 9-7-2012; **RULE 1303(b)(2)-Offset, 5-10-1996;** RULE 1303(b)(2)-Offset, 12-6-2002; RULE 1401, 9-10-2010; RULE 1470, 5-4-2012; **RULE 2012, 5-6-2005; 40CFR 60 Subpart IIII, 1-30-2013**]

[Devices subject to this condition : D25]

D29.2 The operator shall conduct source test(s) for the pollutant(s) identified below.

Pollutant(s) to be tested	Required Test Method(s)	Averaging Time	Test Location
NH3 emissions	District method 207.1 and 5.3 or EPA method 17	1 hour	Outlet of the SCR serving this equipment

SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS

The operator shall comply with the terms and conditions set forth below:

The test(s) shall be conducted at least quarterly during the first twelve months of operation and at least annually thereafter. The AQMD shall be notified of the date and time of the test at least 10 days prior to the test.

If the turbine is not in operation during one calendar year, then no testing is required during that calendar year.

The NOx concentration, as determined by the CEMS, shall be simultaneously recorded during the ammonia slip test. If the CEMS is inoperable, a test shall be conducted to determine the NOx emissions using District Method 100.1 measured over a 60 minute averaging time period.

The test shall be conducted and the results submitted to the District within 60 days after the test date.

The test shall be conducted to demonstrate compliance with the Rule 1303 concentration limit.

[RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(a)(1)-BACT, 12-6-2002]

[Devices subject to this condition : D1, D7, D13, D19]

D29.3 The operator shall conduct source test(s) for the pollutant(s) identified below.

Pollutant(s) to be tested	Required Test Method(s)	Sampling Time	Test Location
SOX emissions	AQMD Laboratory Method 307-91	Not Applicable	Fuel sample
VOC emissions	District Method 25.3	1 hour	Outlet of the SCR serving this equipment
PM emissions	District method 5.1	4 hours	Outlet of the SCR serving this equipment

THIS IS THE LAST PAGE OF THIS DOCUMENT

If you have any questions, please contact one of the following individuals by email or phone.

Name: Mr. John Groenenboom
Title: Client Project Manager
Region: West
Email: JGroenenboom@montrose-env.com
Phone: (714) 279-6777

Name: Mr. Matt McCune
Title: Regional Vice President
Region: West
Email: MMccune@montrose-env.com
Phone: (714) 279-6777

TEST REPORT FOR
4Q21 AMMONIA SLIP TEST
AT CANYON POWER PLANT UNIT 3
FACILITY ID: 153992, DEVICE ID: D13

Prepared For:

Canyon Power Plant
3071 E. Mira Loma Avenue
Anaheim, California 92806

For Submittal To:

South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, California 91765-4178

Prepared By:

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John Groenenboom

Test Date: **October 13, 2021**
Production Date: **October 21, 2021**
Report Number: **W002AS-011390-RT-2923**

ACCREDITED
TO ASTM D7036 ONLY
CERT #3925.01

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REVIEW AND CERTIFICATION

All work, calculations, and other activities and tasks performed and presented in this document were carried out by me or under my direction and supervision. I hereby certify that, to the best of my knowledge, Montrose operated in conformance with the requirements of the Montrose Quality Management System and ASTM D7036-04 during this test project.

Signature:  Date: 10/21/2021

Name: John Groenenboom Title: Client Project Manager

I have reviewed, technically and editorially, details, calculations, results, conclusions, and other appropriate written materials contained herein. I hereby certify that, to the best of my knowledge, the presented material is authentic, accurate, and conforms to the requirements of the Montrose Quality Management System and ASTM D7036-04.

Signature:  Date: 10/21/2021

Name: Surya Adhikari Title: Reporting QC Manager

TABLE OF CONTENTS

1.0 INTRODUCTION AND SUMMARY

Montrose Air Quality Services, LLC (MAQS) was contracted by the Canyon Power Plant to perform an ammonia slip test at Unit 3 as required by the facility Permit (Facility ID 153992) Condition Number D29.2. This report documents the results of the ammonia slip tests performed on October 13, 2021. The test was performed by John Groenenboom, Michael Chowsanitphon, Randy Monzon, Nestor Gonzalez, and Alfred Stewart. John Groenenboom was the on-site Qualified Individual for MAQS. Ms. Bertha Hernandez coordinated the test for Canyon Power Plant.

The test consisted of duplicate ammonia tests performed at 50 MW. The test program followed the procedures described in the initial compliance test protocol (MAQS document R038842). The results of the test are summarized in Table 1-1. The table shows that the ammonia slip from this unit was less than the permitted limit of 5 ppm corrected to 15% O_2.

TABLE 1-1
AMMONIA SLIP TEST RESULTS SUMMARY
CANYON POWER PLANT
UNIT 3
OCTOBER 13, 2021

Parameter/Units	Result[(1)]	Limit
NH_3		
ppm	1.7	--
ppm @ 15% O_2	1.5	5

(1) Maximum of duplicate runs, as required by SCAQMD Method 207.1.

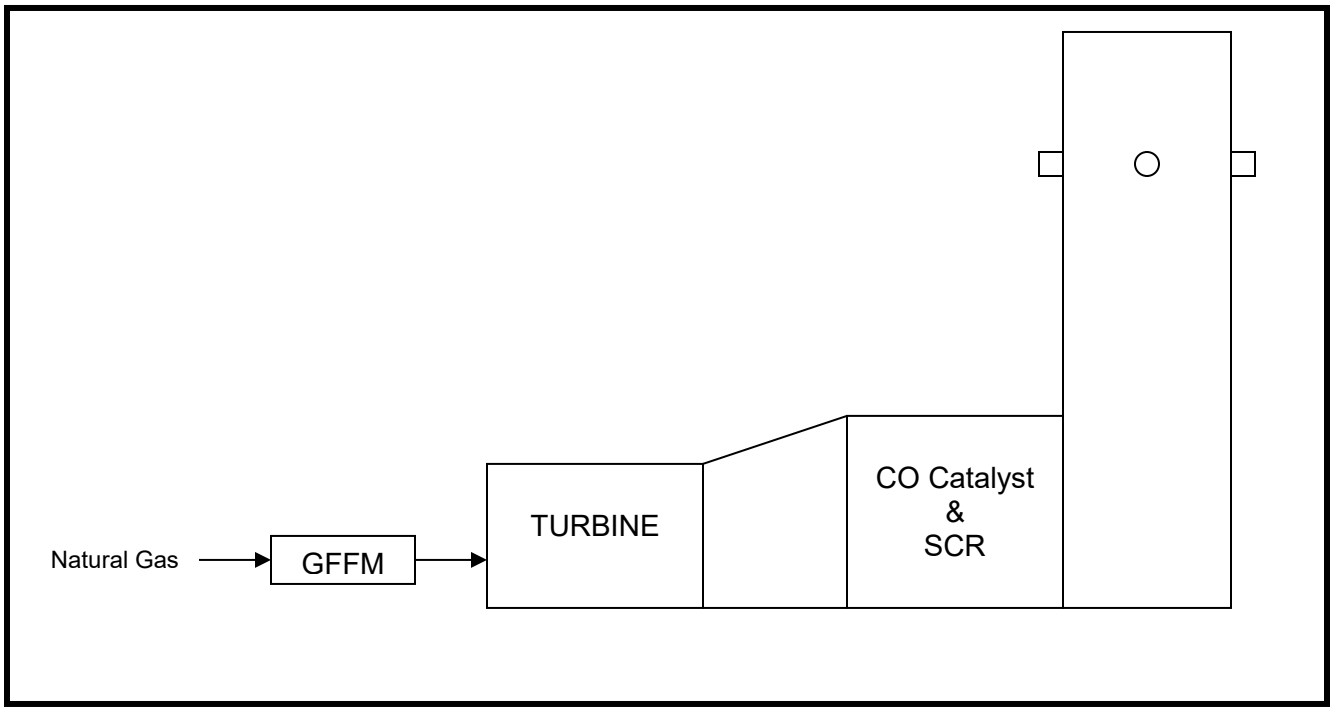
Section 2 of this document provides a brief description of the unit, test conditions, sample location, and CEMS. Details of the test procedures are provided in Section 3. Section 4 provides the results of each individual test. All raw data, calculations, quality assurance data, unit operating conditions, and CEMS data are provided in the appendices.

2.0 UNIT AND CEMS DESCRIPTION

2.1 UNIT DESCRIPTION

The City of Anaheim Canyon Power Plant is located at 3071 E. Mira Loma Avenue, Anaheim, California 92806. The facility consists of four identical generating units. Each unit consists of a natural gas fired, GE Model LM6000PC Sprint simple cycle, gas turbine. The units are natural gas fired with a rated heat input of 479 MMBtu per hour at 46°F, with water injection. The units are equipped with a CO oxidation catalyst and Selective Catalytic Reduction (SCR) system for emissions controls. Figure 2-1 presents a block diagram of the unit.

FIGURE 2-1
UNIT BLOCK DIAGRAM
CANYON POWER PLANT
UNIT 3



Stack Inside Diameter:	11 feet, 8 inches
Distance from Upstream Disturbance:	23 feet, 4 inches (2.0 Diameters)
Distance from Stack Exit:	16 feet, 6 inches (1.4 Diameters)

2.2 CEMS DESCRIPTION

NO_x emissions from the unit is monitored by a dry, extractive Continuous Emission Monitoring System (CEMS). Stack flow rate is determined from fuel flow rate, O_2 concentration, standard F-Factor, and fuel higher heating value using EPA Method 19.

2.3 TEST CONDITIONS

The tests were performed with the unit operating at an average load of 50 MW. Tests were performed while the unit was firing natural gas and operating under normal conditions. Unit operation was established by the Canyon Power Plant operators.

2.4 SAMPLE LOCATION

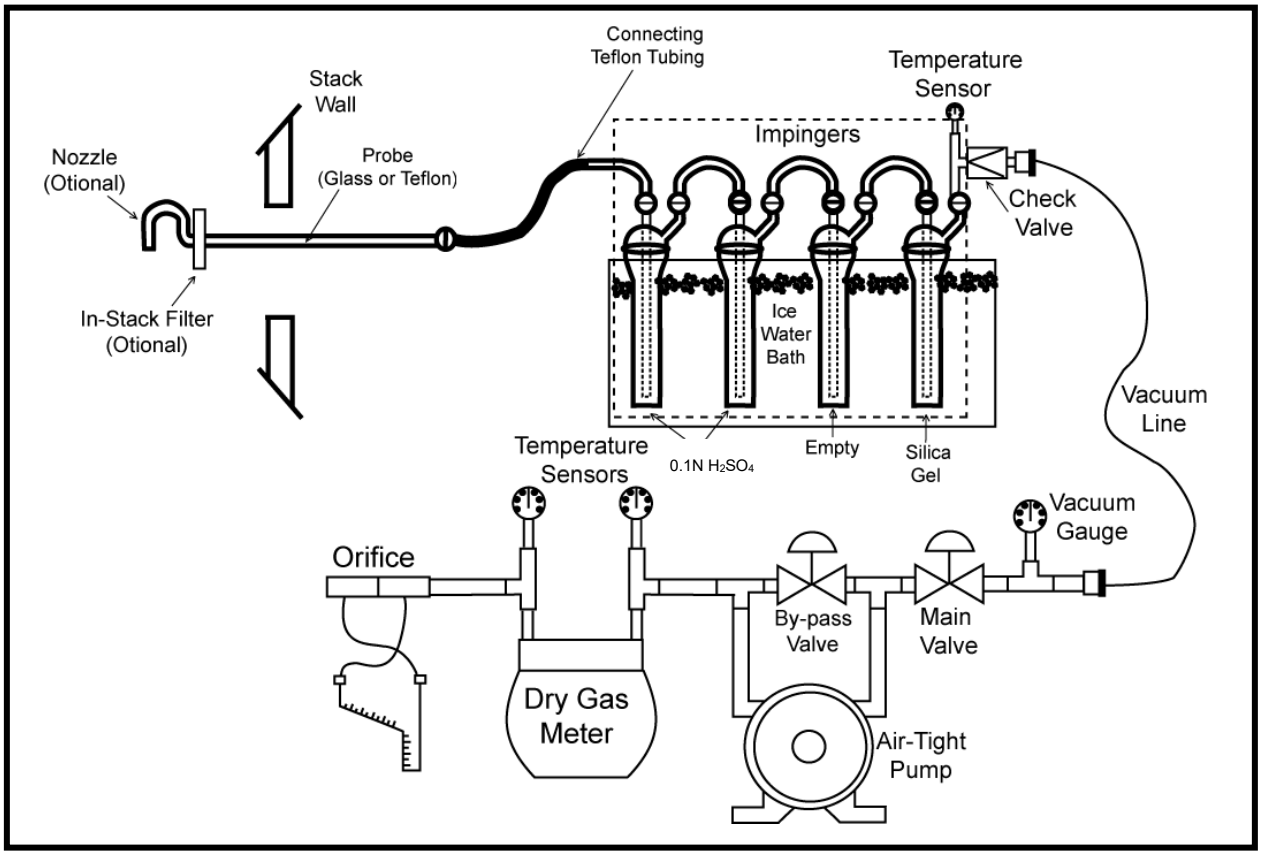
The measurements were made from sample ports located on the exhaust stack. There are four sample ports equally spaced at this location. The stack inside diameter at the sample plane is 11 feet, 8 inches. The sample ports are located 23 feet, 4 inches (2.0 diameters) downstream of the nearest flow disturbance and 16 feet, 6 inches (1.4 diameters) from the stack exit.

3.0 TEST DESCRIPTION

Flue gas samples were collected non-isokinetically using a SCAQMD Method 207.1 sample train. The samples were collected using a 12-point traverse at the exhaust stack location. Each test was performed over a 60 minute interval. The sample gas was drawn through a titanium probe, Teflon sample line, two impingers each containing 100 ml of 0.1N H_2SO_4, an empty impinger, an impinger containing silica gel, and a dry gas meter. The optional nozzle and filter were not used since the source is natural gas fired. The contents of the sample line and the first three impingers were recovered and analyzed by SCAQMD Method 207.1 for ammonia concentration by Ion Specific Electrode analysis. Figure 3-1 presents a diagram of the sample train.

Stack NO_x and O_2 concentrations and stack volumetric flow rate data were recorded from the Continuous Emission Monitoring System (CEMS) which is installed on the unit. These data were used to correct the ammonia concentration to 15% O_2.

FIGURE 3-1
SCAQMD METHOD 207.1 SAMPLE TRAIN



4.0 TEST RESULTS

The results of the test are summarized in Table 4-1. The results show that the maximum ammonia slip was 1.5 ppm @ 15% O_2 which is less than the permitted limit of 5 ppm @ 15% O_2.

TABLE 4-1
AMMONIA SLIP TEST RESULTS
CANYON POWER PLANT
UNIT 3
OCTOBER 13, 2021

Parameter/Units	Run 1	Run 2	Average	Maximum(1)	Limit
Test	1-NH_3-U3	2-NH_3-U3			--
Date	10/13/2021	10/13/2021			--
Time	1735/1838	1911/2014			--
O_2, %(2)	14.38	14.37	14.38	--	--
Stack Flow, dscfm @ T_{ref}(2)	227,303	226,811	227,057	--	--
NO_x, ppmc(2)	2.1	2.2	2.1	--	2.5
NH_3					
ppm	1.7	1.5	1.6	1.7	--
ppm @ 15% O_2	1.5	1.4	1.4	1.5	5
lb/hr	1	0.9	1.0	1.0	--
lb/MMBtu	0.002	0.002	0.002	0.002	--
lb/MMSCF	2.1	2	2.1	2.1	--

(1) Maximum of duplicate test runs, as required by SCAQMD Method 207.1
(2) From facility CEMS

APPENDIX A
RAW DATA

Appendix A.1
Sample Data Sheets

MONTROSE
AIR QUALITY SERVICES

WET CHEMICAL SAMPLING SYSTEM DATA AND WORKSHEET

CLIENT: Canyon
LOCATION: Unit 3
DATE: 10/13/21
RUN NO: 1-NH3
OPERATOR: RMO, DS
METER BOX NO: 10 RM
METER ΔH@: 1.927
METER Yd: 0.990
STACK AREA, FT²: 106.9
TRAVERSE POINTS, MIN/POINT: 5/12
ΔH= NA X ΔP:
Probe Condition, pre/post test: good/good
Silica Gel Expended, Y/N: N
Filter Condition after Test: NA
Check Weight: 499.9/500.0

AMBIENT TEMPERATURE: 70°
BAROMETRIC PRESSURE: 29.20
ASSUMED MOISTURE: 12
PITOT TUBE COEFF, Cp: NA
PROBE ID NO/MATERIAL: NA / Ti
PROBE LENGTH: 7'
NOZZLE ID NO/ MATERIAL:
NOZZLE DIAMETER: N/A
FILTER NO/TYPE:
PRE-TEST LEAK RATE: 0.003 CFM@ 12" in. Hg.
POST-TEST LEAK RATE: 0.003 CFM@ 10" in. Hg.
PITOT LEAK CHECK - PRE: NO POST: NA
CHAIN OF CUSTODY: SAMPLE CUSTODIAN JG
SAMPLER RMO
SAMPLE CUSTODIAN JG

Imp. #	Contents	Post-Test	Pre-Test	= Difference
1	0.1 H_2SO_4	888.8	713.4	
2	0.1 H_2SO_4	704.0	703.3	
3	MT	664.2	663.2	
4	SG	958.3	946.8	
LR	DI H_2O		100	
Total:				

Point	Time	Meter Volume, ft³	ΔP in. H_2O	ΔH in. H_2O	Stack Temp, °F	Probe Temp, °F	Filter Temp, °F	Imp. Out Temp, °F	Meter Temp, °F In	Meter Temp, °F Out	Vacuum in. Hg.	O_2 %	Pstatic in. H_2O
W 3	1735	830.955	NA	1.0	NA	NA	NA	58	72	69	4		NA
2	1740	833.430		1.0				56	72	69	4		
1	1745	836.875		1.0				56	73	69	4		
E	1750							58					
N 3	1751	839.300		1.0				56	71	68	4		
2	1756	842.220		1.0				55	71	68	4		
1	1801	844.960		1.0				55	70	67	4		
E	1806												
E 3	1807	847.745		1.0				54	70	67	4		
2	1812	850.460		1.0				54	69	67	4		
1	1817	853.190		1.0				55	69	66	4		
E	1822	855											
S 3	1823	855.940		1.0				55	69	66	4		
2	1828	858.900		1.0				56	68	66	4		
1	1833	861.395		1.0				56	68	66	4		
E	1838	864.165											
Average:													

Comments:

MONTROSE
AIR QUALITY SERVICES

WET CHEMICAL SAMPLING SYSTEM DATA AND WORKSHEET

CLIENT: Canyon
LOCATION: Unit 3
DATE: 10/13/21
RUN NO: 2-NH3
OPERATOR: PMD, NC
METER BOX NO: 10 PTM
METER ΔH@: 1.927
METER Yd: 0.990
STACK AREA, FT²: 106.9
TRAVERSE POINTS, MIN/POINT: 5/12
ΔH= NA X ΔP:
Probe Condition, pre/post test: good/good
Silica Gel Expended, Y/N: N
Filter Condition after Test: NA
Check Weight: 499.9/500.0

AMBIENT TEMPERATURE: 70°
BAROMETRIC PRESSURE: 29.20
ASSUMED MOISTURE: 11%
PITOT TUBE COEFF, Cp: NA
PROBE ID NO/MATERIAL: NA / Ti
PROBE LENGTH: 7'
NOZZLE ID NO/ MATERIAL:
NOZZLE DIAMETER: NA
FILTER NO/TYPE:
PRE-TEST LEAK RATE: 0.002 CFM@ 12" in. Hg.
POST-TEST LEAK RATE: 0.002 CFM@ 10" in. Hg.
PITOT LEAK CHECK - PRE: NA POST: NA
CHAIN OF CUSTODY: SAMPLE CUSTODIAN JG
SAMPLER PMD
SAMPLE CUSTODIAN MC

Imp. #	Contents	Post-Test	Pre-Test	= Difference
1	0.1 NH_2SO_4	869.4	690.7	
2	0.1 NH_2SO_4	718.5	717.8	
3	NA	597.2	597.0	
4	SG	923.4	915.5	
CR	DI H_2O	0	100	
Total:				

Point	Time	Meter Volume, ft³	ΔP in. H_2O	ΔH in. H_2O	Stack Temp, °F	Probe Temp, °F	Filter Temp, °F	Imp. Out Temp, °F	Meter Temp, °F In	Meter Temp, °F Out	Vacuum in. Hg.	O_2 %	Pstatic in. H_2O
3	1911	865.500	NA	1.0	NA	NA	NA	58	70	69	4		NA
2	1916	868.270		1.0				56	70	68	4		
1	1921	871.750		1.0				54	69	68	4		
E	1926												
3	1927	873.500		1.0				59	69	69	4		
2	1932	876.110		1.0				56	69	67	4		
1	1937	878.780		1.0				54	68	67	4		
E	1942												
3	1943	881.445		1.0				56	68	66	4		
2	1948	884.210		1.0				55	68	66	4		
1	1953	886.900		1.0				55	69	67	4		
E	1958												
3	1959	889.650		1.0				57	68	67	4		
2	2004	892.410		1.0				55	67	66	4		
1	2009	895.150		1.0				55	67	66	4		
E	2014	897.705											
Average:													

Comments:

MONTROSE

WET CHEMICAL SAMPLING SYSTEM DATA AND WORKSHEET – STANDARD

CLIENT: SCPPA Canyon
LOCATION: Unit 3
DATE: 10/13/21
RUN NO: EB-NH3
OPERATOR: w RRO/NO
METER BOX NO: 10 PQM
METER ΔH@: 1.927
METER Yd: 0.990
STACK AREA, FT^2: 106.9
TRAVERSE POINTS, MIN/POINT: NA
ΔH= NA X ΔP:
Probe Condition, pre/post test: good
Silica Gel Expanded, Y/N: N
Filter Condition after Test: NA
Check Weight: 499.9 / 500.0

AMBIENT TEMPERATURE: 70°
BAROMETRIC PRESSURE: 29.70
ASSUMED MOISTURE: NA
PITOT TUBE COEFF, Cp: NA
PROBE ID NO/MATERIAL: NA / Ti
PROBE LENGTH: 7'
NOZZLE ID NO/ MATERIAL: NA
NOZZLE DIAMETER:
FILTER NO/TYPE:
PRE-TEST LEAK RATE: 0.002 CFM@ 12" in. Hg.
POST-TEST LEAK RATE: : CFM@ in. Hg.
PITOT LEAK CHECK - PRE: NA POST: NA
CHAIN OF CUSTODY: SAMPLE CUSTODIAN JG
SAMPLER
SAMPLE CUSTODIAN JG

Imp. #	Contents	Post-Test	- Pre-Test	= Difference
1	0.1 H_2SO_4	791.2	691.3	
2	0.1 H_2SO_4	715.9	715.8	
3	MT	597.1	597.1	
4	SG	915.7	915.5	
LR		Ø	100	
Total:				

Point	Time	Meter Volume, ft^3	ΔP in. H_2O	ΔH in. H_2O	Stack Temp, °F	Probe Temp, °F	Filter Temp, °F	Imp. Out Temp, °F	Meter Temp, °F In	Meter Temp, °F Out	Vacuum in. Hg.	O_2 %	P. static in. H_2O
Average:													

Comments:

DS834049

1-NH3-U3

Point	Meter Volume	Delta H	Tm In	Tm Out
6	830.955	1.0	72	69
5			72	69
4			73	68
3			71	68
2			71	68
1			70	67
Stop			70	67
6			69	67
5			69	66
4			69	66
3			68	66
2			68	66
1				
Stop	864.165			
Result	**33.210**	**1.0**		**68.7**

Impinger Weights

#	Post-Test	Pre-Test	Difference
1	888.8	713.4	175.4
2	704.0	703.3	0.7
3	664.2	663.2	1.0
4	958.3	946.8	11.5
Line Rinse	0.0	100.0	-100.0
			88.6

2-NH3-U3

Point	Meter Volume	Delta H	Tm In	Tm Out
6	865.500	1.0	70	69
5			70	68
4			69	68
3			69	69
2			68	67
1			68	67
Stop			68	66
6			68	66
5			69	67
4			68	67
3			67	66
2			67	66
1				
Stop	897.705			
Result	**32.205**	**1.0**		**67.8**

Impinger Weights

#	Post-Test	Pre-Test	Difference
1	869.4	690.7	178.7
2	718.5	717.8	0.7
3	597.2	597.0	0.2
4	923.8	915.5	8.3
Line Rinse	0.0	100.0	-100.0
			87.9

Appendix A.2
Laboratory Data

AMMONIA BY ION SELECTIVE ELECTRODE ANALYSIS CALCULATION

Project Number:	PROJ-011390
Client/ Location:	SCPPA CANYON
Sample Location:	Unit 3
District Method:	SCAQMD 207.1
Sample Date:	10/13/2021
Analysis Date:	10/19/2021
Analyst's Initials:	KC
Calibration Curve Slope	-57.8598
Y-intercept	87.6098
R^2	1.0000

Sample	P mV	Conc. µg NH_3 /ml as N	C avg as N	TV (ml)	C avg as NH_3	µg NH_3/ sample
28 ug NH_3 / ml as N	3.0	28.995				
Repeat 28 ug NH_3/ml as N	3.1	28.880	28.938	NA	35.175	NA
1-NH3	74.7	1.672				
	75.2	1.639	1.655	540.4	2.012	1087.212
2-NH3	75.3	1.632				
	75.8	1.600	1.616	491.5	1.964	965.501
spike 2-NH_3	10.9	21.173				
	10.5	21.513	21.343	NA	25.944	NA
28 NH_3/ml as N	3.0	28.995				
Repeat 28 ug NH_3/ml as N	3.2	28.765	28.880	NA	35.106	NA
Reagent Blank	188.2	0.018				
Repeat Reagent Blank	187.9	0.018	0.018	NA	0.022	NA
Field Blank	186.1	0.020				
Repeat Field Blank	185.2	0.021	0.020	428.3	0.025	10.523
DI H2O Blank	186.9	0.019				
Repeat DI H2O Blank	187.2	0.019	0.019	NA	0.023	NA
28 NH_3/ml as N	3.1	28.880				
Repeat 28 ug NH_3/ml as N	3.1	28.880	28.880	NA	35.105	NA

Notes:

Measured Concentration of Ammonia (C) in µg NH_3 / ml as N

$C=10^{(P-B)/M}$

P = electrode potential (mV), M=slope and B=intercept

Average Measured Ammonia Concentration (Cavg) = (C1 + C2)/2

where C1, C2 results from duplicate analyses (µg NH_3 /ml as N)

Cavg (µg NH_3/ml as NH_3) = Cavg (µg NH_3/ ml as N) * 17.03/ 14.01

µg NH_3 / sample = Cavg (µg NH_3/ml as NH_3) * TV

Used 100 ml of samples and standards with 2 ml ISA and constant stirring rate.

All solutions turned blue and remained blue with ISA unless otherwise indicated.

Sample PH and Temperatures can be found on the laboratory datasheet.

Maximum samples (including blanks) between 28 ug/ml check standard is 5 samples analyzed in duplicate.

AMMONIA BY ION SELECTIVE ELECTRODE ANALYSIS QUALITY CONTROL

Project Number:	PROJ-011390
Client/ Location:	SCPPA CANYON
Sample Location:	Unit 3
District Method:	SCAQMD 207.1
Sample Date:	10/13/2021
Analysis Date:	10/19/2021
Analyst's Initials:	KC

Sample	% recovery	RPD %	RPA %
28 ug NH3 / ml as N Repeat 28 ug NH3/ml as N	NA	0.40	3.348
1-NH3	NA	1.99	NA
2-NH3	NA	1.99	NA
spike 2-NH3	102.74	-1.59	NA
28 NH3/ml as N Repeat 28 ug NH3/ml as N	NA	0.80	3.143
Reagent Blank Repeat Reagent Blank	NA	-1.19	NA
Field Blank Repeat Field Blank	NA	-3.58	NA
DI H2O Blank Repeat DI H2O Blank	NA	1.19	NA
28 NH3/ml as N Repeat 28 ug NH3/ml as N	NA	0.00	3.143

Notes:

spike: 100 ml sample + 2 ml (1000 μg NH_3 / ml as N)

Matrix Spike Percent Recovery (%R)

%R = (C spike*0.104 - Csample*0.102)/2 *100

Cspike = average result of matrix spike (μg NH_3/ ml as N)

Relative Percent Difference (RPD) = (C1-C2)/ Cavg *100 (must be 5% or less)

Relative Percent Accuracy (RPA) (must be 10% or less)

RPA = (Cavg-theoretical value of standard)/ theoretical value of standard * 100

MONTROSE

AMMONIA BY ION SELECTIVE ELECTRODE ANALYSIS

Project #: PROJ-011391 District Method: SCAQMD 207.1 Sample Date: 10/13/21

Client/Location: SCPPA/Canyon Calibration Date: 10/19/21 Analysis Date: 10/19/21

Sample Location: U3 Stack Calibration Curve: y=-57.8598x+87.6098 Analyst's Initials: KC

Test #'s: 1,2-NH3 R²: 1.0000 Room Temperature (°C): 20.9

Sample	Total Vol. (mL)	Electrode Potential (mV)	Conc. µg NH_3 – N / ml	Cavg (µg NH_3 – N / ml)	µg NH_3 / sample	T (°C)	Blue after + ISA (Y/N)	pH	% R
Standard Check: 28 µg NH_3/ml	—	3.0	28.995	28.938	—	21.6	Y	✓	103
		3.1	28.880			21.6	Y		
1-NH_3	540.4	74.7	1.672	1.655	1087.212	21.7	Y	<2	—
		75.2	1.639			21.7	Y		
2-NH_3	491.5	75.3	1.632	1.616	965.501	21.4	Y	<2	—
		75.8	1.600			21.4	Y		
Spike: 2-NH3 +2ml 1000ppm NH_3	—	10.9	21.173	21.343	—	21.5	Y	—	103
		10.5	21.513			21.5	Y		
Standard Check: 28 µg NH3/ml	—	3.0	28.995	28.880	—	21.7	Y	—	103
		3.1	28.765			21.7	Y		
Reagent Blank 0.1N H_2SO_4	—	188.2	0.018	0.018	—	21.3	Y	—	—
		187.9	0.018			21.3	Y		
DI H_2O Blank	—	186.9	0.019	0.019	—	21.4	Y	—	—
		187.2	0.019			21.4	Y		
Field Blank	428.3	186.1	0.020	0.020	10.523	21.4	Y	<2	—
		185.2	0.021			21.4	Y		
Standard Check: 28 µg NH3/ml	—	3.1	28.880	28.880	—	21.7	Y	—	103
		3.1	28.880			21.7	Y		

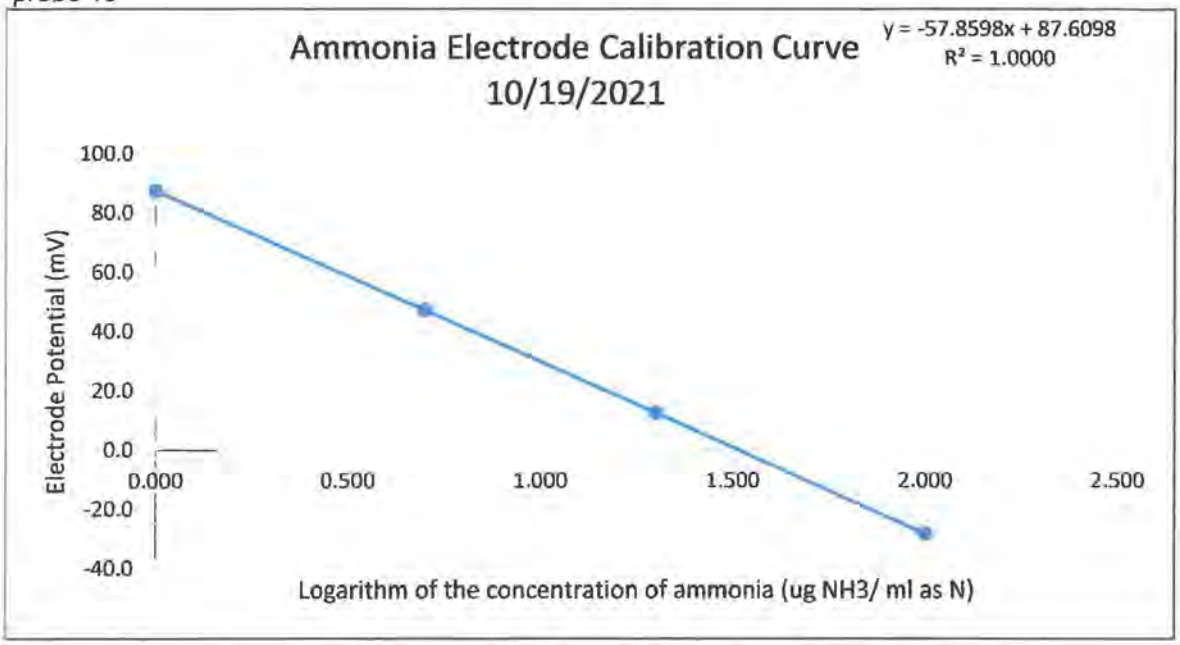
Notes: Total volume of samples and standards used: 100 mL
Volume of pH adjusting ISA used in ml: 2mL
Absorbing solution: 0.1N H_2SO_4

Calculations: Conc. (µg NH_3 – N / ml) = $10^{(P-B)/M}$; (P = electrode potential, B = y-intercept and M = slope)
Cavg = average result of duplicate analyses (µg NH_3 – N / ml) = (C1+C2)/2
µg NH_3 / sample = Cavg* 17.03/ 14.01 * TV
mg / sample = µg /sample ÷ 1000
ppm NH_3 = mg NH_3/sample x 1/Vmstd x 1/454000 x SV/17 x 10^6

AMMONIA ELECTRODE CALIBRATION CURVE

NH_3 concentration (μg NH_3 / ml as N)	log NH_3 concentration	Electrode potential (mV)	Sample Temperature (C)	Room Temperature (C)
1	0.000	87.5	21.2	20.9
5	0.699	47.3	21.1	20.9
20	1.301	12.4	21.1	20.9
100	2.000	-28.2	21.1	20.9

probe 13



slope	-57.8598
y-intercept	87.6098

Concentration (μg NH_3 / ml as N)	Value LR line	Difference	% Difference
1	1.0044	0.0044	0.4378
5	4.9737	-0.0263	-0.5258
20	19.9463	-0.0537	-0.2684
100	100.3597	0.3597	0.3597

Calculation:

Regression Line: P=M*log(μg of NH_3/ ml as N)+B

Measured Concentration of Ammonia (C) in μg / ml NH_3 as N: $C=10^{(P-B)/M}$

where P = electrode potential, M= slope (must be -57±3) and B= intercept

All standards were prepared in 0.04N H_2SO_4 and allowed to equilibrate to room temperature.

MONTROSE
AIR QUALITY SERVICES

AMMONIA BY ION SELECTIVE ELECTRODE ANALYSIS CALIBRATION DATA

District Method: SCAQMD 207.1

Calibration Date: 10/19/21

Calibration Curve: y = -57.8598x + 87.6098

R^2 1.0000

Analyst's Initials: KC

Thermometer #: XY1-11920

ISE Electrode #: 13

Calibration Standard (µg NH_3 / ml as N)	Electrode Potential (mV)	Solution Temperature (°C)	Room Temperature (°C)
1	87.5	21.2	20.9
5	47.3	21.1	20.9
20	12.4	21.1	20.9
100	-28.2	21.1	20.9

Notes:

Total volume of samples and standards used: 100mL
Volume of pH adjusting ISA used in ml: 2mL
Absorbing solution: 0.04N H_2SO_4
Slope of the calibration curve shall be between -54 to -60
R^2 must be 0.9997 or greater
Calibration solutions, sample solutions and Calibration Verification standard temperature within ± 2°C

Appendix A.3
QA/QC Data

Barometric Pressure Determination	
Date: 10/13/21	
Data By: JG	
Reference: https://forecast.weather.gov/MapClick.php?lat=33.8329&lon=-117.9152	
Reference Barometer ID	FW0063 Fullerton CSU (F0063)
Reference Barometer Location	Lat: 33.8805°NLon: 117.88417°WElev: 247ft.
Reference Barometer Other Info.	15 Oct 10:53 am PDT
Reference Barometer Indication, corrected to sea level	29.97
Reference Barometer Reference Elevation	247
Reference Barometer Actual Pressure	29.72
Test Barometer Location/Site	Canyon Power Plant
Location/Site Elevation	212
Location/Site Barometric Pressure	29.76
Sampling Location Height (above/below site elevation)	60
Sampling Location Barometric Pressure	**29.70**

SEMI-ANNUAL DRY GAS METER/ORIFICE CALIBRATION

Orifice Method - Triplicate Runs/Four Calibration Points
English Meter Box Units, English K' Factor
Filename: M:\Santa Ana\Equipment\Test Equipment\Calibrations\Dry Gas Meters\10-P&M\2021\[10P&M Semi Annual Cal 8-26-2021.xls
File Modified From: APEX 522 Series Meter box Calibration
Revised: 4/8/2005

Model #: SN. 9873864
ID #: 10 P&M
Date: 8/26/2021
Bar. Pressure: 29.78 (in. Hg)
Performed By: L.Olivares

DRY GAS METER READINGS									CRITICAL ORIFICE READINGS					
					Initial Temps.		Final Temps.					Ambient Temperature		
dH (in H2O)	Time (min)	Volume Initial (cu ft)	Volume Final (cu ft)	Volume Total (cu ft)	Inlet (deg F)	Outlet (deg F)	Inlet (deg F)	Outlet (deg F)	Orifice Serial# (number)	K' Orifice Coefficient (see above)	Actual Vacuum (in Hg)	Initial (deg F)	Final (deg F)	Average (deg F)
0.14	26.00	232.700	238.195	5.495	81.0	81.0	84.0	83.0	AA-33	0.1574	18.0	78.0	77.0	77.5
0.14	26.00	238.195	243.690	5.495	84.0	83.0	86.0	85.0	AA-33	0.1574	18.0	77.0	78.0	77.5
0.14	26.00	243.690	249.245	5.555	86.0	85.0	87.0	86.0	AA-33	0.1574	18.0	78.0	80.0	79.0
0.72	12.00	252.200	257.775	5.575	88.0	87.0	89.0	87.0	QI-48	0.3434	18.0	79.0	77.0	78.0
0.72	12.00	257.775	263.370	5.595	89.0	87.0	89.0	87.0	QI-48	0.3434	18.0	77.0	78.0	77.5
0.72	12.00	263.370	268.960	5.590	89.0	87.0	90.0	87.0	QI-48	0.3434	18.0	78.0	80.0	79.0
2.10	7.00	272.800	278.455	5.655	92.0	88.0	93.0	88.0	QI-63	0.5994	16.0	77.0	78.0	77.5
2.10	7.00	278.455	284.125	5.670	93.0	88.0	95.0	88.0	QI-63	0.5994	16.0	78.0	78.0	78.0
2.10	7.00	284.125	289.805	5.680	95.0	88.0	95.0	88.0	QI-63	0.5994	16.0	78.0	78.0	78.0
3.90	5.00	291.600	297.075	5.475	96.0	88.0	97.0	89.0	AA-73	0.8121	16.0	77.0	77.0	77.0
3.90	5.00	297.075	302.540	5.465	97.0	89.0	98.0	89.0	AA-73	0.8121	16.0	77.0	77.0	77.0
3.90	5.00	302.540	308.030	5.490	98.0	89.0	99.0	89.0	AA-73	0.8121	16.0	77.0	77.0	77.0

DRY GAS METER		ORIFICE			DRY GAS METER CALIBRATION FACTOR	ORIFICE CALIBRATION FACTOR	Individual Run	Individual Orifice	Orifice Average	Orifice Average
VOLUME CORRECTED Vm(std) (cu ft)	VOLUME CORRECTED Vm(std) (liters)	VOLUME CORRECTED Vcr(std) (cu ft)	VOLUME CORRECTED Vcr(std) (liters)	VOLUME NOMINAL Vcr (cu ft)	Y Value (number)	dH@ Value (in H2O)	0.95 < Y < 1.05?	Ymax - Ymin < 0.010?	0.98 < Y/Yd < 1.02?	dH@ - dH@ av < 0.155?
5.325	150.8	5.257	148.9	5.379	0.987	1.868	Pass			
5.303	150.2	5.257	148.9	5.379	0.991	1.861	Pass			
5.346	151.4	5.249	148.7	5.386	0.982	1.861	Pass			
				Average	**0.987**	**1.863**		Pass	Pass	Pass
5.356	151.7	5.291	149.8	5.418	0.988	**2.002**	Pass			
5.373	152.2	5.293	149.9	5.416	0.985	2.000	Pass			
5.366	152.0	5.286	149.7	5.423	0.985	2.005	Pass			
				Average	**0.986**	**2.002**		Pass	Pass	Pass
5.427	153.7	5.390	152.6	5.514	0.993	**1.911**	Pass			
5.434	153.9	5.387	152.6	5.517	0.991	1.913	Pass			
5.438	154.0	5.387	152.6	5.517	0.991	1.913	Pass			
				Average	**0.992**	**1.912**		Pass	Pass	Pass
5.256	148.8	5.218	147.8	5.334	0.993	1.930	Pass			
5.239	148.4	5.218	147.8	5.334	0.996	1.928	Pass			
5.258	148.9	5.218	147.8	5.334	0.992	1.928	Pass			
				Average	**0.994**	**1.929**		Pass	Pass	Pass

Average Yd: **0.990** dH@: **1.927**

Q @ dH = 1: **0.540**

SIGNED: Signature on file Date: 8/26/2021

MONTROSE

DIGITAL TEMPERATURE READOUT CALIBRATION

Digital Temperature Readout ID: PTC-72
Readout Description: Handheld
Date: 7/6/2021
Performed By: RD/DA/RM

Calibrated Thermocouple ID: TC-CAL
T1 Reference Thermometer ID: 313010
T2 Reference Thermometer ID: 242196
T3 Reference Thermometer ID: 242167

T/C I.D. TC-CAL	Readout I.D.	T/C - Readout °F				Reference Thermometer °F				Difference		
		Reading 1	Reading 2	Reading 3	Average	Reading 1	Reading 2	Reading 3	Average	°F	%, (°R)	
T3 (OIL)	PTC-72	357	357	357	357	358	358	358	358	1.0	0.1%	Pass
T2 (Boiling H_2O)	PTC-72	213	213	213	213	212	212	212	212	1.0	0.1%	Pass
T1 (Ice/Water)	PTC-72	32	32	32	32	32	32	32	32	0.0	0.0%	Pass

1) Difference % (°R) = Difference (°F) / (Average Tref + 460)
2) Pass if all Differences are less than 1.5% (°R)

Thermocouple Source Readings

	T/C Source S/N	T/C - Readout °F				T/C Source °F				Difference		
		Reading 1	Reading 2	Reading 3	Average	Reading 1	Reading 2	Reading 3	Average	°F	%, (°R)	
T4 (~650 F)	129103	650	650	650	650	650	650	650	650	0.0	0.0%	Pass
T3 (~370 F)	129103	371	371	371	371	370	370	370	370	1.0	0.1%	Pass
T2 (~212 F)	129103	210	210	210	210	212	212	212	212	2.0	0.3%	Pass
T1 (~32 F)	129103	33	33	33	33	32	32	32	32	1.0	0.2%	Pass

1) Difference % (°R) = Difference (°F) / (Average Tref + 460)
2) Pass if all Differences are less than 1.5% (°R)

CHAIN OF CUSTODY

CLIENT: SCPPA PROJECT NUMBER: PROJ-~~011391~~ 011390 JG TEST DATE(S): 10/13/2021

LOCATION: Canyon SAMPLER(S): RMO/NG

SAMPLE LOCATION: Unit 3 PROJECT MANAGER: JG

TEST METHOD(S): SCAQMD 207.1 DATE DUE: Normal

OUTSIDE LAB REQUIRED? NO COMPLIANCE TEST? Yes

DATE	TIME	TEST #	SAMPLE DESCRIPTION	CONTAINERS	SAMPLER	COMMENTS
10/13/2021		1-NH3	Probe, Line, Impingers	1	RMO/NG	
10/13/2021		2-NH3	Probe, Line, Impingers	1	RMO/NG	
10/13/2021		FB-NH3	Probe, Line, Impingers	1	RMO/NG	
10/13/2021		RB-NH3	DIH2O	1	JG	
10/13/2021		RB-NH3	0.1 N H2SO4	1	JG	

RELEASED BY	DATE/TIME	RECEIVED BY	DATE/TIME
	10/15/21 0800 to lab	Yim-Nei L (LAB)	10/19/21 9:00am

ANALYSIS REQUIRED: Samples stored at 42.5 °F

APPENDIX B
FACILITY CEMS DATA

1-NH3

CEMTEK KVB-Enertec NetDAHS©

Version 47.0

Average Values Report
Generated: 10/13/2021 23:39

Company: City Of Anaheim
Plant: 3071 Miraloma Ave.,
City/St: Anaheim, CA, 92806
Source: 3

Period Start: 10/13/2021 17:35
Period End: 10/13/2021 18:37
Validation Type: 1/1 min
Averaging Period: 1 min
Type: Block Avg

Period Start:	Average 3_O2 %	Average 3_NOXPPM ppm	Average 3_NOX_CORR ppm	Average 3_NOX_LBHR #/hr	Average 3_NOX_LBMM #/MBTU	Average 3_NH3_Flow #/hr	Average 3_Nh3SlpuC ppmC	Average 3_Nh3_Conc Multi	Average 3_Nh3_CF Multi	Average 3_GasFlow kscfh	Average 3_LOAD MW	Average 3_STACKFLW kscfm
10/13/2021 17:35	14.40	2.74	2.49	4.45	0.009	74.37	3.83	0.191	0.370	471.3	49.85	231.0
10/13/2021 17:36	14.38	2.67	2.42	4.46	0.009	74.36	3.93	0.191	0.370	472.3	49.76	230.8
10/13/2021 17:37	14.38	2.54	2.30	3.97	0.008	74.30	3.97	0.191	0.370	472.2	50.02	230.7
10/13/2021 17:38	14.38	2.45	2.22	3.97	0.008	74.34	3.97	0.191	0.370	472.1	49.94	230.7
10/13/2021 17:39	14.39	2.42	2.19	3.96	0.008	74.54	3.99	0.191	0.370	471.7	50.01	230.8
10/13/2021 17:40	14.38	2.42	2.19	3.96	0.008	74.37	3.99	0.191	0.370	471.7	50.13	230.5
10/13/2021 17:41	14.38	2.44	2.21	3.96	0.008	74.40	4.02	0.191	0.370	471.1	50.00	230.2
10/13/2021 17:42	14.38	2.39	2.16	3.96	0.008	74.39	4.01	0.191	0.370	471.4	49.80	230.3
10/13/2021 17:43	14.39	2.37	2.15	3.96	0.008	74.42	3.98	0.191	0.370	471.0	49.85	230.5
10/13/2021 17:44	14.39	2.38	2.16	3.96	0.008	74.45	3.96	0.191	0.370	471.7	49.87	230.8
10/13/2021 17:45	14.38	2.38	2.15	3.97	0.008	74.39	4.01	0.191	0.370	472.1	49.88	230.7
10/13/2021 17:46	14.39	2.40	2.18	3.96	0.008	74.40	4.01	0.191	0.370	471.8	49.94	230.9
10/13/2021 17:47	14.39	2.42	2.19	3.97	0.008	74.39	3.98	0.191	0.370	472.1	50.11	231.0
10/13/2021 17:48	14.38	2.41	2.18	3.96	0.008	74.46	4.03	0.191	0.370	471.6	49.97	230.4
10/13/2021 17:49	14.39	2.41	2.18	3.96	0.008	74.39	3.99	0.191	0.370	471.1	49.94	230.6
10/13/2021 17:50	14.39	2.43	2.20	3.96	0.008	74.24	3.98	0.191	0.370	471.8	49.99	230.9
10/13/2021 17:51	14.40	2.42	2.20	3.96	0.008	74.41	3.97	0.191	0.370	471.9	49.79	231.3
10/13/2021 17:52	14.39	2.38	2.16	3.96	0.008	74.35	3.98	0.191	0.370	471.8	49.77	230.9
10/13/2021 17:53	14.39	2.37	2.15	3.96	0.008	74.41	3.97	0.191	0.370	471.8	50.02	230.9
10/13/2021 17:54	14.39	2.42	2.19	3.96	0.008	74.49	4.02	0.191	0.370	471.9	49.85	230.9
10/13/2021 17:55	14.39	2.42	2.19	3.96	0.008	74.40	4.01	0.191	0.370	471.5	50.09	230.7
10/13/2021 17:56	14.39	2.39	2.17	3.96	0.008	74.38	4.02	0.191	0.370	471.4	49.83	230.7
10/13/2021 17:57	14.39	2.38	2.16	3.97	0.008	74.36	4.01	0.191	0.370	472.6	49.87	231.3
10/13/2021 17:58	14.39	2.38	2.16	3.97	0.008	74.58	4.00	0.191	0.370	472.7	50.03	231.3
10/13/2021 17:59	14.39	2.38	2.16	3.96	0.008	74.54	4.04	0.191	0.370	471.8	49.97	230.9
10/13/2021 18:00	14.39	2.35	2.13	3.97	0.008	74.57	4.02	0.191	0.370	472.3	49.88	231.1
10/13/2021 18:01	14.40	2.31	2.10	3.97	0.008	74.32	3.94	0.191	0.370	472.3	50.06	231.5
10/13/2021 18:02	14.39	2.30	2.08	3.97	0.008	74.40	3.98	0.191	0.370	472.1	49.74	231.0
10/13/2021 18:03	14.39	2.33	2.11	3.97	0.008	74.51	4.00	0.191	0.370	472.3	49.79	231.1
10/13/2021 18:04	14.39	2.35	2.13	3.97	0.008	74.45	4.03	0.191	0.370	472.1	50.01	231.0
10/13/2021 18:05	14.38	2.35	2.13	3.97	0.008	74.37	4.01	0.191	0.370	472.5	50.00	230.9
10/13/2021 18:06	14.39	2.36	2.14	3.97	0.008	74.39	3.98	0.191	0.370	472.7	49.95	231.3
10/13/2021 18:07	14.39	2.38	2.16	3.97	0.008	74.51	4.03	0.191	0.370	472.3	49.81	231.1
10/13/2021 18:08	14.38	2.39	2.16	3.97	0.008	74.37	4.01	0.191	0.370	472.7	49.86	230.9
10/13/2021 18:09	14.38	2.35	2.13	3.97	0.008	74.43	4.04	0.191	0.370	472.3	49.77	230.8
10/13/2021 18:10	14.39	2.31	2.09	3.97	0.008	74.57	4.00	0.191	0.370	472.9	50.00	231.4
10/13/2021 18:11	14.39	2.32	2.10	3.98	0.008	74.40	3.94	0.191	0.370	473.8	50.02	231.9
10/13/2021 18:12	14.39	2.32	2.10	3.96	0.008	74.43	4.01	0.191	0.370	472.0	49.86	231.0
10/13/2021 18:13	14.38	2.34	2.12	3.97	0.008	74.45	4.06	0.191	0.370	473.0	50.01	231.1
10/13/2021 18:14	14.38	2.35	2.13	3.97	0.008	74.50	4.06	0.191	0.370	473.0	49.92	231.1
10/13/2021 18:15	14.37	2.34	2.11	3.97	0.008	74.49	4.09	0.191	0.370	472.3	50.19	230.4
10/13/2021 18:16	14.37	2.34	2.11	3.97	0.008	74.48	4.07	0.191	0.370	472.4	49.97	230.5
10/13/2021 18:17	14.36	2.33	2.10	3.97	0.008	74.31	4.09	0.191	0.370	472.4	49.86	230.1
10/13/2021 18:18	14.36	2.31	2.08	3.97	0.008	74.59	4.11	0.191	0.370	473.1	49.87	230.5
10/13/2021 18:19	14.36	2.29	2.07	3.97	0.008	74.59	4.12	0.191	0.370	472.7	49.81	230.2
10/13/2021 18:20	14.37	2.25	2.03	3.47	0.007	74.38	4.04	0.191	0.370	472.7	50.09	230.6
10/13/2021 18:21	14.37	2.25	2.03	3.48	0.007	74.30	4.03	0.191	0.370	472.9	49.90	230.7
10/13/2021 18:22	14.38	2.26	2.05	3.97	0.008	74.48	4.00	0.191	0.370	473.1	49.87	231.2
10/13/2021 18:23	14.37	2.24	2.02	3.48	0.007	74.61	4.05	0.191	0.370	473.2	50.07	230.9
10/13/2021 18:24	14.37	2.23	2.01	3.48	0.007	74.40	4.03	0.191	0.370	473.2	50.02	230.9
10/13/2021 18:25	14.35	2.23	2.01	3.48	0.007	74.45	4.14	0.191	0.370	472.9	49.96	230.0
10/13/2021 18:26	14.35	2.24	2.02	3.48	0.007	74.38	4.11	0.191	0.370	473.3	50.06	230.2

Period Start:	Average 3_O2 %	Average 3_NOXPPM ppm	Average 3_NOX_CORR ppm	Average 3_NOX_LBHR #/hr	Average 3_NOX_LBMM #/MBTU	Average 3_NH3_Flow #/hr	Average 3_Nh3S1puC ppmC	Average 3_Nh3_Conc Multi	Average 3_Nh3_CF Multi	Average 3_GasFlow kscfh	Average 3_LOAD MW	Average 3_STACKFLW kscfm
10/13/2021 18:27	14.36	2.24	2.02	3.47	0.007	74.46	4.12	0.191	0.370	472.7	49.89	230.2
10/13/2021 18:28	14.36	2.23	2.01	3.48	0.007	74.46	4.14	0.191	0.370	473.4	49.88	230.6
10/13/2021 18:29	14.36	2.22	2.00	3.48	0.007	74.67	4.17	0.191	0.370	472.9	49.91	230.3
10/13/2021 18:30	14.36	2.22	2.00	3.47	0.007	74.57	4.17	0.191	0.370	472.6	49.84	230.2
10/13/2021 18:31	14.37	2.21	2.00	3.47	0.007	74.55	4.13	0.191	0.370	472.2	50.00	230.4
10/13/2021 18:32	14.37	2.22	2.01	3.47	0.007	74.54	4.10	0.191	0.370	472.4	49.83	230.5
10/13/2021 18:33	14.37	2.25	2.03	3.47	0.007	74.51	4.11	0.191	0.370	472.6	49.89	230.5
10/13/2021 18:34	14.37	2.26	2.04	3.97	0.008	74.57	4.11	0.191	0.370	472.4	49.93	230.5
10/13/2021 18:35	14.37	2.24	2.02	3.47	0.007	74.59	4.15	0.191	0.370	472.4	49.94	230.5
10/13/2021 18:36	14.37	2.24	2.02	3.48	0.007	74.53	4.13	0.191	0.370	473.3	49.89	230.9
10/13/2021 18:37	14.36	2.23	2.01	3.47	0.007	74.59	4.18	0.191	0.370	472.4	49.97	230.1
Daily Average*	**14.38**	**2.35**	**2.12**	**3.86**	**0.008**	**74.45**	**4.03**	**0.191**	**0.370**	**472.3**	**49.93**	**230.8**
Maximum*	**14.40**	**2.74**	**2.49**	**4.46**	**0.009**	**74.67**	**4.18**	**0.191**	**0.370**	**473.8**	**50.19**	**231.9**
	10/13/2021 18:01	10/13/2021 17:35	10/13/2021 17:35	10/13/2021 17:36	10/13/2021 17:36	10/13/2021 18:29	10/13/2021 18:37	10/13/2021 18:37	10/13/2021 18:37	10/13/2021 18:11	10/13/2021 18:15	10/13/2021 18:11
Minimum*	**14.35**	**2.21**	**2.00**	**3.47**	**0.007**	**74.24**	**3.83**	**0.191**	**0.370**	**471.0**	**49.74**	**230.0**
	10/13/2021 18:26	10/13/2021 18:31	10/13/2021 18:31	10/13/2021 18:37	10/13/2021 18:37	10/13/2021 17:50	10/13/2021 17:35	10/13/2021 18:37	10/13/2021 18:37	10/13/2021 17:43	10/13/2021 18:02	10/13/2021 18:25

* Does not include Invalid Averaging Periods ("N/A")

CEMTEK KVB-Enertec NetDAHS©

2-NH3

Version 47.0

Average Values Report
Generated: 10/13/2021 23:40

Company: City Of Anaheim
Plant: 3071 Miraloma Ave.,
City/St: Anaheim, CA, 92806
Source: 3

Period Start: 10/13/2021 19:11
Period End: 10/13/2021 20:13
Validation Type: 1/1 min
Averaging Period: 1 min
Type: Block Avg

Period Start:	Average 3_O2 %	Average 3_NOXPPM ppm	Average 3_NOX_CORR ppm	Average 3_NOX_LBHR #/hr	Average 3_NOX_LBMM #/MBTU	Average 3_NH3_Flow #/hr	Average 3_Nh3SlpuC ppmC	Average 3_Nh3_Conc Multi	Average 3_Nh3_CF Multi	Average 3_GasFlow kscfh	Average 3_LOAD MW	Average 3_STACKFLW kscfm
10/13/2021 19:11	14.37	2.40	2.17	3.97	0.008	74.73	4.08	0.191	0.370	472.4	49.99	230.5
10/13/2021 19:12	14.37	2.43	2.20	3.96	0.008	74.56	4.08	0.191	0.370	471.7	49.90	230.1
10/13/2021 19:13	14.36	2.44	2.20	3.97	0.008	74.52	4.09	0.191	0.370	472.5	49.90	230.1
10/13/2021 19:14	14.37	2.44	2.20	3.97	0.008	74.61	4.08	0.191	0.370	472.1	49.86	230.3
10/13/2021 19:15	14.35	2.44	2.20	3.97	0.008	74.61	4.12	0.191	0.370	472.4	50.01	229.7
10/13/2021 19:16	14.36	2.42	2.18	3.96	0.008	74.58	4.08	0.191	0.370	472.0	49.90	229.9
10/13/2021 19:17	14.36	2.41	2.17	3.97	0.008	74.57	4.06	0.191	0.370	472.7	49.93	230.2
10/13/2021 19:18	14.38	2.38	2.15	3.97	0.008	74.55	3.98	0.191	0.370	472.3	49.85	230.8
10/13/2021 19:19	14.38	2.40	2.17	3.96	0.008	74.56	4.02	0.191	0.370	471.4	49.92	230.3
10/13/2021 19:20	14.37	2.40	2.17	3.96	0.008	74.64	4.06	0.191	0.370	472.0	50.08	230.3
10/13/2021 19:21	14.37	2.38	2.15	3.97	0.008	74.65	4.06	0.191	0.370	472.1	49.92	230.3
10/13/2021 19:22	14.37	2.38	2.15	3.96	0.008	74.60	4.08	0.191	0.370	471.8	49.85	230.2
10/13/2021 19:23	14.37	2.36	2.13	3.97	0.008	74.79	4.10	0.191	0.370	472.2	49.97	230.4
10/13/2021 19:24	14.37	2.36	2.13	3.97	0.008	74.70	4.08	0.191	0.370	472.1	49.81	230.3
10/13/2021 19:25	14.37	2.38	2.15	3.96	0.008	74.57	4.07	0.191	0.370	471.8	49.88	230.2
10/13/2021 19:26	14.37	2.40	2.17	3.97	0.008	74.51	4.06	0.191	0.370	472.6	49.90	230.5
10/13/2021 19:27	14.37	2.41	2.18	3.97	0.008	74.57	4.05	0.191	0.370	472.5	50.04	230.5
10/13/2021 19:28	14.38	2.40	2.17	3.97	0.008	74.64	4.04	0.191	0.370	472.4	50.02	230.8
10/13/2021 19:29	14.38	2.38	2.15	3.97	0.008	74.57	4.01	0.191	0.370	472.4	49.93	230.8
10/13/2021 19:30	14.37	2.36	2.13	3.97	0.008	74.68	4.05	0.191	0.370	472.6	49.87	230.5
10/13/2021 19:31	14.37	2.38	2.15	3.96	0.008	74.74	4.10	0.191	0.370	471.8	49.91	230.2
10/13/2021 19:32	14.37	2.39	2.16	3.97	0.008	74.66	4.05	0.191	0.370	472.5	50.02	230.5
10/13/2021 19:33	14.36	2.36	2.13	3.97	0.008	74.63	4.08	0.191	0.370	472.1	50.04	230.0
10/13/2021 19:34	14.36	2.37	2.14	3.97	0.008	74.67	4.09	0.191	0.370	472.3	49.87	230.1
10/13/2021 19:35	14.36	2.37	2.14	3.97	0.008	74.58	4.11	0.191	0.370	472.5	50.34	230.1
10/13/2021 19:36	14.37	2.35	2.12	3.96	0.008	74.81	4.10	0.191	0.370	471.9	49.92	230.2
10/13/2021 19:37	14.37	2.32	2.10	3.97	0.008	74.66	4.06	0.191	0.370	472.5	49.93	230.5
10/13/2021 19:38	14.37	2.30	2.08	3.97	0.008	74.58	4.05	0.191	0.370	473.0	49.87	230.8
10/13/2021 19:39	14.37	2.31	2.09	3.97	0.008	74.67	4.08	0.191	0.370	472.5	49.88	230.5
10/13/2021 19:40	14.36	2.30	2.07	3.97	0.008	74.75	4.13	0.191	0.370	472.1	50.06	230.0
10/13/2021 19:41	14.36	2.30	2.07	3.97	0.008	74.59	4.09	0.191	0.370	472.6	49.91	230.2
10/13/2021 19:42	14.36	2.29	2.07	3.97	0.008	74.72	4.10	0.191	0.370	472.5	49.82	230.1
10/13/2021 19:43	14.36	2.28	2.06	3.97	0.008	74.70	4.11	0.191	0.370	472.5	49.84	230.1
10/13/2021 19:44	14.36	2.28	2.06	3.97	0.008	74.78	4.13	0.191	0.370	472.7	49.90	230.2
10/13/2021 19:45	14.37	2.31	2.09	3.97	0.008	74.58	4.08	0.191	0.370	472.8	49.99	230.6
10/13/2021 19:46	14.36	2.33	2.10	3.97	0.008	74.63	4.15	0.191	0.370	472.4	49.90	230.1
10/13/2021 19:47	14.37	2.31	2.09	3.97	0.008	74.63	4.08	0.191	0.370	472.3	49.85	230.4
10/13/2021 19:48	14.38	2.37	2.14	3.97	0.008	74.84	4.02	0.191	0.370	472.5	49.89	230.9
10/13/2021 19:49	14.38	2.44	2.21	3.97	0.008	74.79	4.00	0.191	0.370	472.1	50.04	230.7
10/13/2021 19:50	14.37	2.44	2.20	3.96	0.008	74.68	4.07	0.191	0.370	471.3	49.89	229.9
10/13/2021 19:51	14.36	2.46	2.22	3.97	0.008	74.72	4.10	0.191	0.370	472.7	49.95	230.2
10/13/2021 19:52	14.35	2.49	2.24	3.97	0.008	74.49	4.07	0.191	0.370	472.3	49.90	229.7
10/13/2021 19:53	14.35	2.52	2.27	3.97	0.008	74.62	4.07	0.191	0.370	473.0	50.01	230.1
10/13/2021 19:54	14.35	2.50	2.25	3.97	0.008	74.71	4.08	0.191	0.370	472.8	49.92	229.9
10/13/2021 19:55	14.36	2.49	2.25	3.97	0.008	74.62	4.07	0.191	0.370	472.3	49.86	230.1
10/13/2021 19:56	14.37	2.49	2.25	3.97	0.008	74.74	4.04	0.191	0.370	472.5	50.12	230.5
10/13/2021 19:57	14.37	2.49	2.25	3.97	0.008	74.56	4.00	0.191	0.370	472.2	50.11	230.4
10/13/2021 19:58	14.37	2.48	2.24	3.97	0.008	74.71	4.02	0.191	0.370	472.8	49.93	230.6
10/13/2021 19:59	14.36	2.47	2.23	3.97	0.008	74.64	4.06	0.191	0.370	472.8	50.02	230.3
10/13/2021 20:00	14.36	2.48	2.24	3.97	0.008	74.70	4.04	0.191	0.370	472.7	49.95	230.2
10/13/2021 20:01	14.36	2.46	2.22	3.96	0.008	74.63	4.04	0.191	0.370	471.8	49.91	229.8
10/13/2021 20:02	14.36	2.46	2.22	3.97	0.008	74.77	4.09	0.191	0.370	472.1	50.09	230.0

Period Start:	Average 3_O2 %	Average 3_NOXPPM ppm	Average 3_NOX_CORR ppm	Average 3_NOX_LBHR #/hr	Average 3_NOX_LBMM #/MBTU	Average 3_NH3_Flow #/hr	Average 3_Nh3SlpuC ppmC	Average 3_Nh3_Conc Multi	Average 3_Nh3_CF Multi	Average 3_GasFlow kscfh	Average 3_LOAD MW	Average 3_STACKFLW kscfm
10/13/2021 20:03	14.36	2.47	2.23	3.97	0.008	74.70	4.08	0.191	0.370	472.4	49.89	230.1
10/13/2021 20:04	14.36	2.46	2.22	3.97	0.008	74.71	4.08	0.191	0.370	472.3	49.87	230.1
10/13/2021 20:05	14.37	2.47	2.23	3.97	0.008	74.74	4.03	0.191	0.370	472.5	49.93	230.5
10/13/2021 20:06	14.37	2.47	2.23	3.97	0.008	74.72	4.03	0.191	0.370	472.8	50.03	230.6
10/13/2021 20:07	14.36	2.45	2.21	3.97	0.008	74.69	4.06	0.191	0.370	472.6	49.75	230.2
10/13/2021 20:08	14.36	2.45	2.21	3.97	0.008	74.61	3.99	0.191	0.370	473.1	50.01	230.5
10/13/2021 20:09	14.36	2.47	2.23	3.97	0.008	74.66	4.04	0.191	0.370	472.6	49.84	230.2
10/13/2021 20:10	14.36	2.46	2.22	3.97	0.008	74.59	4.04	0.191	0.370	472.2	49.88	230.0
10/13/2021 20:11	14.37	2.47	2.23	3.97	0.008	74.75	4.05	0.191	0.370	472.7	49.84	230.6
10/13/2021 20:12	14.37	2.46	2.22	3.97	0.008	74.74	4.03	0.191	0.370	472.9	50.05	230.7
10/13/2021 20:13	14.36	2.42	2.18	3.97	0.008	74.64	4.05	0.191	0.370	472.2	49.78	230.0
Daily Average*	**14.37**	**2.41**	**2.17**	**3.97**	**0.008**	**74.66**	**4.06**	**0.191**	**0.370**	**472.4**	**49.94**	**230.3**
Maximum*	**14.38**	**2.52**	**2.27**	**3.97**	**0.008**	**74.84**	**4.15**	**0.191**	**0.370**	**473.1**	**50.34**	**230.9**
	10/13/2021 19:49	10/13/2021 19:53	10/13/2021 19:53	10/13/2021 20:13	10/13/2021 20:13	10/13/2021 19:48	10/13/2021 19:46	10/13/2021 20:13	10/13/2021 20:13	10/13/2021 20:08	10/13/2021 19:35	10/13/2021 19:48
Minimum*	**14.35**	**2.28**	**2.06**	**3.96**	**0.008**	**74.49**	**3.98**	**0.191**	**0.370**	**471.3**	**49.75**	**229.7**
	10/13/2021 19:54	10/13/2021 19:44	10/13/2021 19:44	10/13/2021 20:01	10/13/2021 20:13	10/13/2021 19:52	10/13/2021 19:18	10/13/2021 20:13	10/13/2021 20:13	10/13/2021 19:50	10/13/2021 20:07	10/13/2021 19:52

* Does not include Invalid Averaging Periods ("N/A")

APPENDIX C
CALCULATIONS

Appendix C.1
General Emissions Calculations

GENERAL EMISSIONS CALCULATIONS

I. Stack Gas Velocity

A. Stack gas molecular weight, lb/lb-mole

$MW_{dry} = 0.44 * \%\ CO_2 + 0.32 * \%\ O_2 + 0.28 * \%\ N_2$

$MW_{wet} = MW_{dry} * (1 - B_{wo}) + 18 * B_{wo}$

B. Absolute stack pressure, iwg

$$P_s = P_{bar} + \frac{P_{sg}}{13.6}$$

C. Stack gas velocity, ft/sec

$$V_s = 2.9 * C_p * \sqrt{\Delta P} * \sqrt{T_s} * \sqrt{\frac{29.92 * 28.95}{P_s * MW_{wet}}}$$

II. Moisture

A. Sample gas volume, dscf

$$V_{mstd} = 0.03342 * V_m * \left(P_{bar} + \frac{\Delta H}{13.6}\right) * \frac{T_{ref}}{T_m} * Y_d$$

B. Water vapor volume, scf

$$V_{wstd} = 0.0472 * V_{ic} * \frac{T_{ref}}{528°R}$$

C. Moisture content, dimensionless

$$B_{wo} = \frac{V_{wstd}}{(V_{mstd} + V_{wstd})}$$

III. Stack Gas Volumetric Flow Rate

A. Actual stack gas volumetric flow rate, wacfm

$Q = V_s * A_s * 60$

B. Standard stack gas flow rate, dscfm

$$Q_{sd} = Q * (1 - B_{wo}) * \frac{T_{ref}}{T_s} * \frac{P_s}{29.92}$$

IV. Gaseous Mass Emission Rates, lb/hr

$$M = \frac{ppm * MW_i * Q_{sd} * 60}{SV * 10^6}$$

V. Emission Rates, lb/MMBtu

$$\frac{lb}{MMBtu} = \frac{ppm * MW_i * F}{SV * 10^6} * \frac{20.9}{20.9 - \%\ O_2}$$

VI. Percent Isokinetic

$$I = \frac{17.32 * T_s\ (V_{mstd})}{(1 - B_{wo})\ 0 * V_s * P_s * Dn^2} * \frac{520°R}{T_{ref}}$$

VII. Particulate Emissions

(a) Grain loading, gr/dscf
$C = 0.01543\ (M_n/V_{m\ std})$

(b) Grain loading at 12% CO_2, gr/dscf
$C_{12\%}\ CO_2 = C\ (12/\%\ CO_2)$

(c) Mass emissions, lb/hr
$M = C * Q_{sd} * (60\ min/hr) / (7000\ gr/lb)$

(d) Particulate emission factor

$$lb/10^6\ Btu = Cx\ \frac{1\ lb}{7000\ gr} * F * \frac{20.9}{20.9 - \%\ O_2}$$

Nomenclature:

A_s	=	stack area, ft^2
B_{wo}	=	flue gas moisture content, dimensionless
$C_{12\%CO2}$	=	particulate grain loading, gr/dscf corrected to 12% CO_2
C	=	particulate grain loading, gr/dscf
C_p	=	pitot calibration factor, dimensionless
Dn	=	nozzle diameter, inches
F	=	fuel F-Factor, dscf/MMBtu @ 0% O_2
H	=	orifice differential pressure, iwg
I	=	% isokinetics
M_n	=	mass of collected particulate, mg
M_i	=	mass emission rate of specie i, lb/hr
MW	=	molecular weight of flue gas, lb/lb-mole
M_{wi}	=	molecular weight of specie i:
	SO_2:	64
	NO_x:	46
	CO:	28
	HC:	16
0	=	sample time, minutes
ΔP	=	average velocity head, iwg = $(\sqrt{\Delta P})^2$
P_{bar}	=	barometric pressure, inches Hg
P_s	=	stack absolute pressure, inches Hg
P_{sg}	=	stack static pressure, iwb
Q	=	wet stack flow rate at actual conditions, wacfm
Q_{sd}	=	dry standard stack flow rate, dscfm
SV	=	specific molar volume of an ideal gas at standard conditions, ft^3/lb-mole
T_m	=	meter temperature, °R
T_{ref}	=	reference temperature, °R
T_s	=	stack temperature, °R
V_s	=	stack gas velocity, ft/sec
V_{lc}	=	volume of liquid collected in impingers, ml
V_m	=	uncorrected dry meter volume, dcf
V_{mstd}	=	dry meter volume at standard conditions, dscf
V_{wstd}	=	volume of water vapor at standard conditions, scf
Y_d	=	meter calibration coefficient

Appendix C.2
Spreadsheet Summaries

SCAQMD 207.1 EXAMPLE CALCULATION
TEST NUMBER: 1-NH3-U3

Identifier	Description	Units	Equation	Value
A	Reference Temperature	F	--	60
B	Reference Temperature	R	A + 460	520
C	Meter Calibration Factor (Yd)	--	--	0.990
D	Barometric Pressure	" Hg	--	29.70
E	Meter Volume	acf	--	33.210
F	Meter Temperature	F	--	68.7
G	Meter Temperature	R	F + 460	528.7
H	Delta H	" H_2O	--	1.0
I	Meter Volume (standard)	dscf	0.03342 * E * (D + H/13.6) * B/G * C	32.176
J	Liquid Collected	grams	--	88.6
K	Water vapor volume	scf	0.0472 * J * B/528	4.119
L	Moisture Content	--	K/(K + I)	0.113
M	Gas Constant	ft-lbf/lb-mole-R	--	1545.33
N	Specific Molar Volume	SCF/lb-mole	385.3 * B / 528	379.5
O	F-Factor	dscf/MMBtu	--	8,710
P	HHV	Btu/SCF	--	1,050
Q	Mass Conversion Factor	lb/ug	--	2.2046E-09
R	O_2 Correction Factor	--	--	15
S	Stack Flow Rate @ 68 F	dscfm	--	230,800
T	Stack Flow Rate @ Tref	dscfm	S * B/528	227,303
U	Mass NH_3	ug	--	1,087
V	Mass NH_3	lb	U * Q	2.40E-06
W	MW of NH_3	lb/lb-mole	--	17.03
X	NH_3	ppm	$(V * N * 10^b)/(I * W)$	1.7
Y	Flue Gas O_2	%	--	14.38
Z	NH_3	ppmc	X * (20.9 - R)/(20.9 - Y)	1.5
AA	NH_3	lb/hr	$X * T * W * 60/(N * 10^b)$	1.0
AB	NH_3	lb/MMBtu	$(X * W * O)/(385.3 * 10^b) * 20.9/(20.9 - Y)$	0.002
AC	NH_3	lb/MMSCF	AB * P	2.2

Note:

(1) Some values may be slightly different from those shown on the run sheets due to round off errors. This page is intended to show the calculation methodology only.

SCAQMD METHOD 207.1
DATA WORKSHEET AND SUMMARY

Facility	**Canyon**		Parameter		**NH_3**
Unit	**U3**		Fuel		**Natural gas**
Sample Location	**Stack**		Data By		**JG**
Test Number	1-NH3-U3	2-NH3-U3	Average	Maximum	Limit
Reference Temperature (°F)	60	60			
Test Date	10/13/2021	10/13/2021			
Test Method	SCAQMD 207.1	SCAQMD 207.1			
Sample Train	10-P&M	10-P&M			
Meter Calibration Factor	0.990	0.990			
Stack Area (ft^2)	106.90	106.90			
Sample Time (Minutes)	60	60			
Barometric Pressure ("Hg)	29.70	29.70			
Start/Stop Time	1735/1838	1911/2014			
Meter Volume (acf)	33.210	32.205			
Meter Temperature (°F)	68.7	67.8			
Meter Pressure (iwg)	1.0	1.0			
Liquid Volume (ml)	88.6	87.9			
Stack O_2 (%)	14.38	14.37	14.38	(from facility CEMS)	
Unit Load (MW)	50	50	49.9		
Standard Sample Volume (SCF)	32.176	31.256			
Moisture Fraction	0.113	0.116			
Stack Flow Rate (dscfm, 68 °F)	230,800	230,300	230,550	(from facility CEMS)	
Stack Flow Rate (@ Tref)	227,303	226,811	227,057		
Gas Constant (ft-lbf/lb-mole-R)	1545.33	1545.33			
Molecular Weight NH_3 (lb/lb-mole)	17.03	17.03			
Specific Molar Volume (ft^3/lb-mole)	379.5	379.5			
F-Factor (dscf/MMBtu)	8,710	8,710			
HHV(Btu/SCF)	1,050	1,050			
Mass Conversion (lb/ug)	2.2046E-09	2.2046E-09			
O_2 Correction Factor (%)	15	15			
Mass NH_3 (ug)	1,087	966			
Mass NH_3 (lb)	2.40E-06	2.13E-06			
NH_3 (ppmv, flue gas)	1.7	1.5	1.6	1.7	
NH_3 (ppmv @ O_2 Correction Factor)	1.5	1.4	1.4	1.5	5
NH_3 (lb/hr)	1.0	0.9	1.0	1.0	
NH_3 (lb/MMBtu)	0.002	0.002	0.002	0.002	
NH_3 (lb/MMSCF)	2.1	2.0	2.1	2.1	

Note: SCAQMD Method 207.1 requires the higher of the duplicate runs be reported as the test result.

APPENDIX D
QUALITY ASSURANCE

Appendix D.1
Quality Assurance Program Summary

QUALITY ASSURANCE PROGRAM SUMMARY

As part of Montrose Air Quality Services, LLC (MAQS) ASTM D7036-04 certification, MAQS is committed to providing emission related data which is complete, precise, accurate, representative, and comparable. MAQS quality assurance program and procedures are designed to ensure that the data meet or exceed the requirements of each test method for each of these items. The quality assurance program consists of the following items:

- Assignment of an Internal QA Officer
- Development and use of an internal QA Manual
- Personnel training
- Equipment maintenance and calibration
- Knowledge of current test methods
- Chain-of-custody
- QA reviews of test programs

Assignment of an Internal QA Officer: MAQS has assigned an internal QA Officer who is responsible for administering all aspects of the QA program.

Internal Quality Assurance Manual: MAQS has prepared a QA Manual according to the requirements of ASTM D7036-04 and guidelines issued by EPA. The manual documents and formalizes all of MAQS QA efforts. The manual is revised upon periodic review and as MAQS adds capabilities. The QA manual provides details on the items provided in this summary.

Personnel Testing and Training: Personnel testing and training is essential to the production of high quality test results. MAQS training programs include:

- A requirement for all technical personnel to read and understand the test methods performed
- A requirement for all technical personnel to read and understand the MAQS QA manual
- In-house testing and training
- Quality Assurance meetings
- Third party testing where available
- Maintenance of training records.

Equipment Maintenance and Calibration: All laboratory and field equipment used as a part of MAQS emission measurement programs is maintained according to manufacturer's recommendations. A summary of the major equipment maintenance schedules is summarized in Table 1. In addition to routine maintenance, calibrations are performed on all sampling equipment according to the procedures outlined in the applicable test method. The calibration intervals and techniques for major equipment components is summarized in Table 2. The calibration technique may vary to meet regulatory agency requirements.

Knowledge of Current Test Methods: MAQS maintains current copies of EPA, ARB, and SCAQMD Source Test Manuals and Rules and Regulations.

Chain-of-Custody: MAQS maintains chain-of-custody documentation on all data sheets and samples. Samples are stored in a locked area accessible only to MAQS source test personnel. Data sheets are kept in the custody of the originator, program manager, or in locked storage until return to MAQS office. Electronic field data is duplicated for backup on secure storage media. The original data sheets are used for report preparation and any additions are initialed and dated.

QA Reviews: Periodic field, laboratory, and report reviews are performed by the in-house QA coordinator. Periodically, test plans are reviewed to ensure proper test methods are selected and reports are reviewed to ensure that the methods were followed and any deviations from the methods are justified and documented.

ASTM D7036-04 Required Information

Uncertainty Statement

Montrose is qualified to conduct this test program and has established a quality management system that led to accreditation with ASTM Standard D7036-04 (Standard Practice for Competence of Air Emission Testing Bodies). Montrose participates in annual functional assessments for conformance with D7036-04 which are conducted by the American Association for Laboratory Accreditation (A2LA). All testing performed by Montrose is supervised on site by at least one Qualified Individual (QI) as defined in D7036-04 Section 8.3.2. Data quality objectives for estimating measurement uncertainty within the documented limits in the test methods are met by using approved test protocols for each project as defined in D7036-04 Sections 7.2.1 and 12.10. Additional quality assurance information is presented in the report appendices.

Performance Data

Performance data are available for review.

Qualified Personnel

A qualified individual (QI), defined by performance on a third party or internal test on the test methods, is present on each test event.

Plant Entry and Safety Requirements

Plant Entry

All test personnel are required to check in with the guard at the entrance gate or other designated area. Specific details are provided by the facility and project manager.

Safety Requirements

All personnel shall have the following personal protective equipment (PPE) and wear them where designated:

- Hard Hat
- Safety Glasses
- Steel Toe Boots
- Hearing Protection
- Gloves
- High Temperature Gloves (if required)

The following safety measures will be followed:

- Good housekeeping
- SDS for all on-site hazardous materials
- Confine selves to necessary areas (stack platform, mobile laboratory, CEMS data acquisition system, control room, administrative areas)
- Knowledge of evacuation procedures

Each facility will provide plant specific safety training.

TABLE 1
EQUIPMENT MAINTENANCE SCHEDULE

Equipment	Acceptance Limits	Frequency of Service	Methods of Service
Pumps	1. Absence of leaks 2. Ability to draw manufacturers required vacuum and flow	As recommended by manufacturer	1. Visual inspection 2. Clean 3. Replace parts 4. Leak check
Flow Meters	1. Free mechanical movement	As recommended by manufacturer	1. Visual inspection 2. Clean 3. Calibrate
Sampling Instruments	1. Absence of malfunction 2. Proper response to zero span gas	As recommended by manufacturer	As recommended by manufacturer
Integrated Sampling Tanks	1. Absence of leaks	Depends on nature of use	1. Steam clean 2. Leak check
Mobile Van Sampling System	1. Absence of leaks	Depends on nature of use	1. Change filters 2. Change gas dryer 3. Leak check 4. Check for system contamination
Sampling lines	1. Sample degradation less than 2%	After each test series	1. Blow dry, inert gas through line until dry

TABLE 2
MAJOR SAMPLING EQUIPMENT CALIBRATION REQUIREMENTS

Sampling Equipment	Calibration Frequency	Calibration Procedure	Acceptable Calibration Criteria
Continuous Analyzers	Before and After Each Test Day	3-point calibration error test	< 2% of analyzer range
Continuous Analyzers	Before and After Each Test Run	2-point sample system bias check	< 5% of analyzer range
Continuous Analyzers	After Each Test Run	2-point analyzer drift determination	< 3% of analyzer range
CEMS System	Beginning of Each Day	leak check	< 1 in. Hg decrease in 5 min. at > 20 in. Hg
Continuous Analyzers	Semi-Annually	3-point linearity	< 1% of analyzer range
NO_x Analyzer	Daily	NO_2 -> NO converter efficiency	> 90%
Differential Pressure Gauges (except for manometers)	Semi-Annually	Correction factor based on 5-point comparison to standard	+/- 5%
Differential Pressure Gauges (except for manometers)	Bi-Monthly	3-point comparison to standard, no correction factor	+/- 5%
Barometer	Semi-Annually	Adjusted to mercury-in-glass or National Weather Service Station	+/- 0.1 inches Hg
Dry Gas Meter	Semi-Annually	Calibration check at 4 flow rates using a NIST traceable standard	+/- 2%
Dry Gas Meter	Bi-Monthly	Calibration check at 2 flow rates using a NIST traceable standard	+/- 2% of semi-annual factor
Dry Gas Meter Orifice	Annually	4-point calibration for $\Delta H@$	--
Temperature Sensors	Semi-Annually	3-point calibration vs. NIST traceable standard	+/- 1.5%

Note: Calibration requirements will be used that meet applicable regulatory agency requirements.

Appendix D.2
SCAQMD and STAC Certifications

South Coast
Air Quality Management District
21865 Copley Drive, Diamond Bar, CA 91765-4178
(909) 396-2000 • www.aqmd.gov

September 1, 2021

Mr. John Peterson
Montrose Air Quality Services, LLC
1631 E. Saint Andrew Place
Santa Ana, CA 92705

Subject: LAP Approval Notice
Reference # 96LA1220

Dear Mr. Peterson:

We have reviewed your renewal letter under the South Coast Air Quality Management District's Laboratory Approval Program (LAP). We are pleased to inform you that your firm is approved for the period beginning September 30, 2021, and ending September 30, 2022 for the following methods, subject to the requirements in the LAP Conditions For Approval Agreement and conditions listed in the attachment to this letter:

South Coast AQMD Methods 1-4	South Coast AQMD Methods 5.1, 5.2, 5.3, 6.1
South Coast AQMD Methods 10.1 and 100.1	South Coast AQMD Methods 25.1 and 25.3 (Sampling)
USEPA CTM-030 and ASTM D6522-00	Rule 1121/ 1146.2 Protocol
Rule 1420/1420.1/1420.2 – (Lead) Source and Ambient Sampling	

Your LAP approval to perform nitrogen oxide emissions compliance testing for Rule 1121/ 1146.2 Protocols includes satellite facilities located at:

McKenna Boiler 1510 North Spring Street Los Angeles, CA 90012	Noritz America Corp. 11160 Grace Avenue Fountain Valley, CA 92708	Ajax Boiler, Inc. 2701 S. Harbor Blvd. Santa Ana, CA 92704
VA Laundry Bldg., Greater LA Healthcare Sys. 508 Constitution Avenue Los Angeles, CA 90049	So Cal Gas – Engr Analysis Ctr, Bldg H 8101 Rosemead Blvd Pico Rivera, CA 90660	

Thank you for participating in the LAP. Your cooperation helps us to achieve the goal of the LAP: to maintain high standards of quality in the sampling and analysis of source emissions. You may direct any questions or information to LAP Coordinator, Colin Eckerle. He may be reached by telephone at (909) 396-2476, or via e-mail at ceckerle@aqmd.gov.

Sincerely,

D. Sarkar

Dipankar Sarkar
Program Supervisor
Source Test Engineering

DS:CE
Attachment

210901 LapRenewal.doc

STAC
STACK TESTING ACCREDITATION COUNCIL

American Association for Laboratory Accreditation

Accredited Air Emission Testing Body

A2LA has accredited

MONTROSE AIR QUALITY SERVICES

In recognition of the successful completion of the joint A2LA and Stack Testing Accreditation Council (STAC) evaluation process, this laboratory is accredited to perform testing activities in compliance with ASTM D7036:2004 - Standard Practice for Competence of Air Emission Testing Bodies.

Presented this 11th day of February 2020.

Vice President, Accreditation Services
For the Accreditation Council
Certificate Number 3925.01
Valid to February 28, 2022

This accreditation program is not included under the A2LA ILAC Mutual Recognition Arrangement.

MONTROSE AIR QUALITY SERVICES

Appendix D.3
Individual QI Certificate

CERTIFICATE OF COMPLETION

John Groenenboom

This document certifies that this individual has passed a comprehensive examination and is now a Qualified Individual (QI) as defined in Section 8.3 of ASTM D7036-04 for the following method(s):

SCAQMD Methods 1.1 – 4.1

Certificate Number: 002-2017-58

Tate Strickler, Accreditation Director

DATE OF ISSUE: 1/18/17

DATE OF EXPIRATION: 1/18/22

MONTROSE ENVIRONMENTAL

CERTIFICATE OF COMPLETION

John Groenenboom

This document certifies that this individual has passed a comprehensive examination and is now a Qualified Individual (QI) as defined in Section 8.3 of ASTM D7036-04 for the following method(s):

SCAQMD Method 207.1

Certificate Number: 002-2017-51

Tate Strickler, Accreditation Director

DATE OF ISSUE: 1/17/17

DATE OF EXPIRATION: 1/17/22

MONTROSE ENVIRONMENTAL

Appendix D.4
Statement of No Conflict of Interest

STATEMENT OF NO CONFLICT OF INTEREST AS AN INDEPENDENT TESTING LABORATORY

(To be completed by authorized source testing firm representative and included in source test report)

The following facility and equipment were tested by my source testing firm and are the subjects of this statement:

Facility ID:	**153992**
Date(s) Tested:	**October 13, 2021**
Facility Name:	**Canyon Power Plant**
Equipment Address:	**3071 E. Mira Loma Ave.**
	Anaheim, California 92806
Equipment Tested:	**Unit 3**
Device ID, A/N, P/N:	**D13**

I state, as its legally authorized representative, that the source testing firm of:

Source Test Firm: Montrose Air Quality Services, LLC

Business Address: 1631 E. St. Andrew Pl.

Santa Ana, California 92705

is an "Independent Testing Laboratory" as defined in ***District Rule 304(k):***

For the purposes of this Rule, when an independent testing laboratory is used for the purposes of establishing compliance with District rules or to obtain a District permit to operate, it must meet all of the following criteria:

(1) The testing laboratory shall have no financial interest in the company or facility being tested, or in the parent company, or any subsidiary thereof -

(2) The company or facility being tested, or parent company or any subsidiary thereof, shall have no financial interest in the testing laboratory;

(3) Any company or facility responsible for the emission of significant quantities of pollutants to the atmosphere, or parent company or any subsidiary thereof shall have no financial interest in the testing laboratory; and

(4) The testing laboratory shall not be in partnership with, own or be owned by, in part or in full, the contractor who has provided or installed equipment (basic or control), or monitoring systems, or is providing maintenance for installed equipment or monitoring systems, for the company being tested.

Furthermore, I state that any contracts or agreements entered into by my source testing firm and the facility referenced above, or its designated contractor(s), either verbal or written, are not contingent upon the outcome of the source testing, or the source testing information provided to the SCAQMD.

Signature: _____ **Date:** **10/21/2021**

John Groenenboom	**Client Project Manager**	**(714) 279-6777**	**10/21/23021**
(Name)	(Title)	(Phone)	(Date)

FORM ST-110 :stevforl.doc (Revised 11/18/98

APPENDIX E
APPLICABLE PERMIT SECTIONS

FACILITY PERMIT TO OPERATE
CANYON POWER PLANT

SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS

The operator shall comply with the terms and conditions set forth below:

Equipment	ID No.	Connected To	RECLAIM Source Type/ Monitoring Unit	Emissions * And Requirements	Conditions
Process 1: POWER GENERATION					
GAS TURBINE, NO. 3, NATURAL GAS, GENERAL ELECTRIC, MODEL LM6000PC SPRINT, SIMPLE CYCLE, 479 MMBTU/HR AT 46 DEG F, WITH INLET CHILLING, WITH WATER INJECTION WITH A/N: 555830 GENERATOR, 50.95 MW	D13	C15	NOX: MAJOR SOURCE**	**CO**: 4 PPMV NATURAL GAS (4) **[RULE 1303(a)(1)-BACT, 5-10-1996;** *RULE 1303(a)(1) -BACT, 12-6-2002*]; **CO**: 2000 PPMV NATURAL GAS (5) **[RULE 407, 4-2-1982]**; **NOX**: 2.5 PPMV NATURAL GAS (4) **[RULE 2005, 6-3-2011]**; **NOX**: 25 PPMV NATURAL GAS (8) **[40CFR 60 Subpart KKKK, 7-6-2006]**; **PM10**: 0.01 GRAINS/SCF NATURAL GAS (5A) **[RULE 475, 10-8-1976;** *RULE 475, 8-7-1978*]; **PM10**: 0.1 GRAINS/SCF NATURAL GAS (5) **[RULE 409, 8-7-1981]**; **PM10**: 1.67 LBS/HR NATURAL GAS (5C) **[RULE 1303(b)(2)-Offset, 5-10-1996;** *RULE 1303(b)(2) -Offset, 12-6-2002*]; **PM10**: 11 LBS/HR NATURAL GAS (5B) **[RULE 475, 10-8-1976;** *RULE 475, 8-7-1978*]; **SO2**: (9) **[40CFR 72 - Acid Rain Provisions, 11-24-1997]**; **SOX**: 0.06 LBS/MMBTU NATURAL GAS (8) **[40CFR 60 Subpart KKKK, 7-6-2006]**; **VOC**: 2 PPMV NATURAL GAS (4) **[RULE 1303(a)(1)-BACT, 5-10-1996;** *RULE 1303(a)(1)-BACT, 12-6-2002*]	A63.1, A99.1, A99.2, A99.3, A195.1, A195.2, A195.3, A327.1, B61.1, D12.1, D29.2, D29.3, D82.1, D82.2, E193.1, H23.1, I298.3, K40.1

* (1) (1A) (1B) Denotes RECLAIM emission factor
(2) (2A) (2B) Denotes RECLAIM emission rate
(3) Denotes RECLAIM concentration limit
(4) Denotes BACT emission limit
(5) (5A) (5B) Denotes command and control emission limit
(6) Denotes air toxic control rule limit
(7) Denotes NSR applicability limit
(8) (8A) (8B) Denotes 40 CFR limit (e.g. NSPS, NESHAPS, etc.)
(9) See App B for Emission Limits
(10) See section J for NESHAP/MACT requirements

** Refer to section F and G of this permit to determine the monitoring, recordkeeping and reporting requirements for this device.

FACILITY PERMIT TO OPERATE
CANYON POWER PLANT

SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS

The operator shall comply with the terms and conditions set forth below:

Equipment	ID No.	Connected To	RECLAIM Source Type/ Monitoring Unit	Emissions* And Requirements	Conditions
Process 1: POWER GENERATION					
CO OXIDATION CATALYST, NO. 3, BASF, 110 CUBIC FEET OF TOTAL CATALYST VOLUME A/N: 476660	C15	D13 C16			
SELECTIVE CATALYTIC REDUCTION, NO. 3, CORMETECH CMHT-21, 1012 CU.FT.; WIDTH: 2 FT 6 IN; HEIGHT: 25 FT 9 IN; LENGTH: 18 FT WITH A/N: 476660 AMMONIA INJECTION	C16	C15 S18		NH3: 5 PPMV NATURAL GAS (4) [**RULE 1303(a)(1)-BACT**, 5-10-1996; *RULE 1303(a)(1) -BACT, 12-6-2002*]	A195.6, D12.2, D12.3, D12.4, E179.1, E179.2, E193.1
STACK, TURBINE NO. 3, HEIGHT: 86 FT ; DIAMETER: 11 FT 8 IN A/N: 555830	S18	C16			

* (1) (1A) (1B) Denotes RECLAIM emission factor
(2) (2A) (2B) Denotes RECLAIM emission rate
(3) Denotes RECLAIM concentration limit
(4) Denotes BACT emission limit
(5) (5A) (5B) Denotes command and control emission limit
(6) Denotes air toxic control rule limit
(7) Denotes NSR applicability limit
(8) (8A) (8B) Denotes 40 CFR limit (e.g. NSPS, NESHAPS, etc.)
(9) See App B for Emission Limits
(10) See section J for NESHAP/MACT requirements

** Refer to section F and G of this permit to determine the monitoring, recordkeeping and reporting requirements for this device.

SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS

The operator shall comply with the terms and conditions set forth below:

[Devices subject to this condition : C4, C10, C16, C22]

D12.5 The operator shall install and maintain a(n) non-resettable elapsed time meter to accurately indicate the elapsed operating time of the engine.

[RULE 1110.2, 2-1-2008; RULE 1110.2, 9-7-2012; **RULE 1303(b)(2)-Offset, 5-10-1996;** RULE 1303(b)(2)-Offset, 12-6-2002; RULE 1401, 9-10-2010; RULE 1470, 5-4-2012; **RULE 2012, 5-6-2005; 40CFR 60 Subpart IIII, 1-30-2013]**

[Devices subject to this condition : D25]

D29.2 The operator shall conduct source test(s) for the pollutant(s) identified below.

Pollutant(s) to be tested	Required Test Method(s)	Averaging Time	Test Location
NH3 emissions	District method 207.1 and 5.3 or EPA method 17	1 hour	Outlet of the SCR serving this equipment

SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS

The operator shall comply with the terms and conditions set forth below:

The test(s) shall be conducted at least quarterly during the first twelve months of operation and at least annually thereafter. The AQMD shall be notified of the date and time of the test at least 10 days prior to the test.

If the turbine is not in operation during one calendar year, then no testing is required during that calendar year.

The NOx concentration, as determined by the CEMS, shall be simultaneously recorded during the ammonia slip test. If the CEMS is inoperable, a test shall be conducted to determine the NOx emissions using District Method 100.1 measured over a 60 minute averaging time period.

The test shall be conducted and the results submitted to the District within 60 days after the test date.

The test shall be conducted to demonstrate compliance with the Rule 1303 concentration limit.

[RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(a)(1)-BACT, 12-6-2002]

[Devices subject to this condition : D1, D7, D13, D19]

D29.3 The operator shall conduct source test(s) for the pollutant(s) identified below.

Pollutant(s) to be tested	Required Test Method(s)	Sampling Time	Test Location
SOX emissions	AQMD Laboratory Method 307-91	Not Applicable	Fuel sample
VOC emissions	District Method 25.3	1 hour	Outlet of the SCR serving this equipment
PM emissions	District method 5.1	4 hours	Outlet of the SCR serving this equipment

THIS IS THE LAST PAGE OF THIS DOCUMENT

If you have any questions, please contact one of the following individuals by email or phone.

Name:	Mr. John Groenenboom
Title:	Client Project Manager
Region:	West
Email:	JGroenenboom@montrose-env.com
Phone:	(714) 279-6777

Name:	Mr. Matt McCune
Title:	Regional Vice President
Region:	West
Email:	MMccune@montrose-env.com
Phone:	(714) 279-6777

TEST REPORT FOR
2Q21 AMMONIA SLIP TEST
AT CANYON POWER PLANT UNIT 4
FACILITY ID 153992, DEVICE ID D19

Prepared For:

Canyon Power Plant
3071 E. Mira Loma Avenue.
Anaheim, California 92806

For Submittal To:

South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, California 91765-4178

Prepared By:

Montrose Air Quality Services, LLC
1631 E. St. Andrew Pl.
Santa Ana, California 92705
(714) 279-6777

John Groenenboom

Test Date: **May 18, 2021**
Production Date: **June 28, 2021**
Report Number: **W002AS-009222-RT-2486**

ACCREDITED
TO ASTM D7036 ONLY
CERT #3925.01

CONFIDENTIALITY STATEMENT

Except as otherwise required by law or regulation, this information contained in this communication is intended exclusively for the individual or entity to which it is addressed. This communication may contain information that is proprietary, privileged or confidential or otherwise legally exempt from disclosure. If you are not the named addressee, you are not authorized to read, print, retain, copy, or disseminate this message or any part of it.

REVIEW AND CERTIFICATION

All work, calculations, and other activities and tasks performed and presented in this document were carried out by me or under my direction and supervision. I hereby certify that, to the best of my knowledge, Montrose operated in conformance with the requirements of the Montrose Quality Management System and ASTM D7036-04 during this test project.

Signature:  Date: 6/28/2021

Name: John Groenenboom Title: Client Project Manager

I have reviewed, technically and editorially, details, calculations, results, conclusions, and other appropriate written materials contained herein. I hereby certify that, to the best of my knowledge, the presented material is authentic, accurate, and conforms to the requirements of the Montrose Quality Management System and ASTM D7036-04.

Signature:  Date: 6/28/2021

Name: Michael Chowsanitphon Title: Reporting Manager

TABLE OF CONTENTS

1.0 INTRODUCTION AND SUMMARY

Montrose Air Quality Services, LLC (MAQS) was contracted by the Canyon Power Plant to perform an ammonia slip test at Unit 4 as required by the facility Permit (Facility ID 153992) Condition Number D29.2. This report documents the results of the ammonia slip tests performed on May 18, 2021. The test was performed by John Groenenboom, Takuma Terakado, Daniel Avila, and Kevin Vo. John Groenenboom was the on-site Qualified Individual for MAQS. Ms. Bertha Hernandez coordinated the test for Canyon Power Plant.

The test consisted of duplicate ammonia tests performed at 50.2 MW. The test program followed the procedures described in the initial compliance test protocol (MAQS document R038842). The results of the test are summarized in Table 1-1. The table shows that the ammonia slip from this unit was less than the permitted limit of 5 ppm corrected to 15% O_2.

TABLE 1-1
AMMONIA SLIP TEST RESULTS
CANYON POWER PLANT
UNIT 4
MAY 18, 2021

Parameter/Units	Result(1)	Limit
NH_3		
ppm	1.6	--
ppmc	1.4	5

(1) Maximum of duplicate runs, as required by SCAQMD Method 207.1

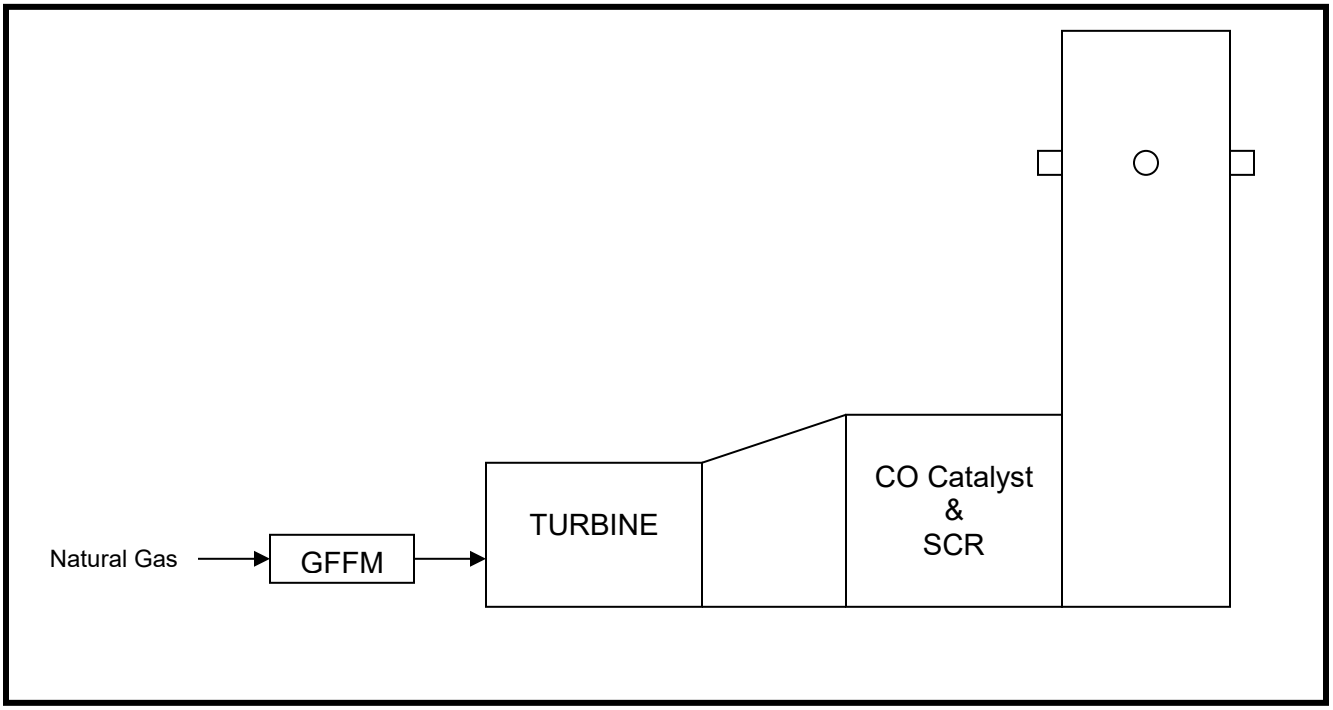
Section 2 of this document provides a brief description of the unit, test conditions, sample location, and CEMS. Details of the test procedures are provided in Section 3. Section 4 provides the results of each individual test. All raw data, calculations, quality assurance data, unit operating conditions, and CEMS data are provided in the appendices.

2.0 UNIT AND CEMS DESCRIPTION

2.1 UNIT DESCRIPTION

The City of Anaheim Canyon Power Plant is located at 3071 E. Mira Loma Avenue, Anaheim, California 92806. The facility consists of four identical generating units. Each unit consists of a natural gas fired, GE Model LM6000PC Sprint simple cycle, gas turbine. The units are natural gas fired with a rated heat input of 479 MMBtu per hour at 46°F, with water injection. The units are equipped with a CO catalyst and Selective Catalytic Reduction (SCR) system for NO_x control. Figure 2-1 presents a block diagram of the unit.

FIGURE 2-1
UNIT BLOCK DIAGRAM
CANYON POWER PLANT
UNIT 4



Stack Inside Diameter:	11 feet, 8 inches
Distance from Upstream Disturbance:	23 feet, 4 inches (2.0 Diameters)
Distance from Stack Exit:	16 feet, 6 inches (1.4 Diameters)

2.2 TEST CONDITIONS

The tests were performed with the unit operating at an average load of 50.2 MW. Tests were performed while the unit was firing natural gas and operating under normal conditions. Unit operation was established by the Canyon Power Plant operators.

2.3 SAMPLE LOCATION

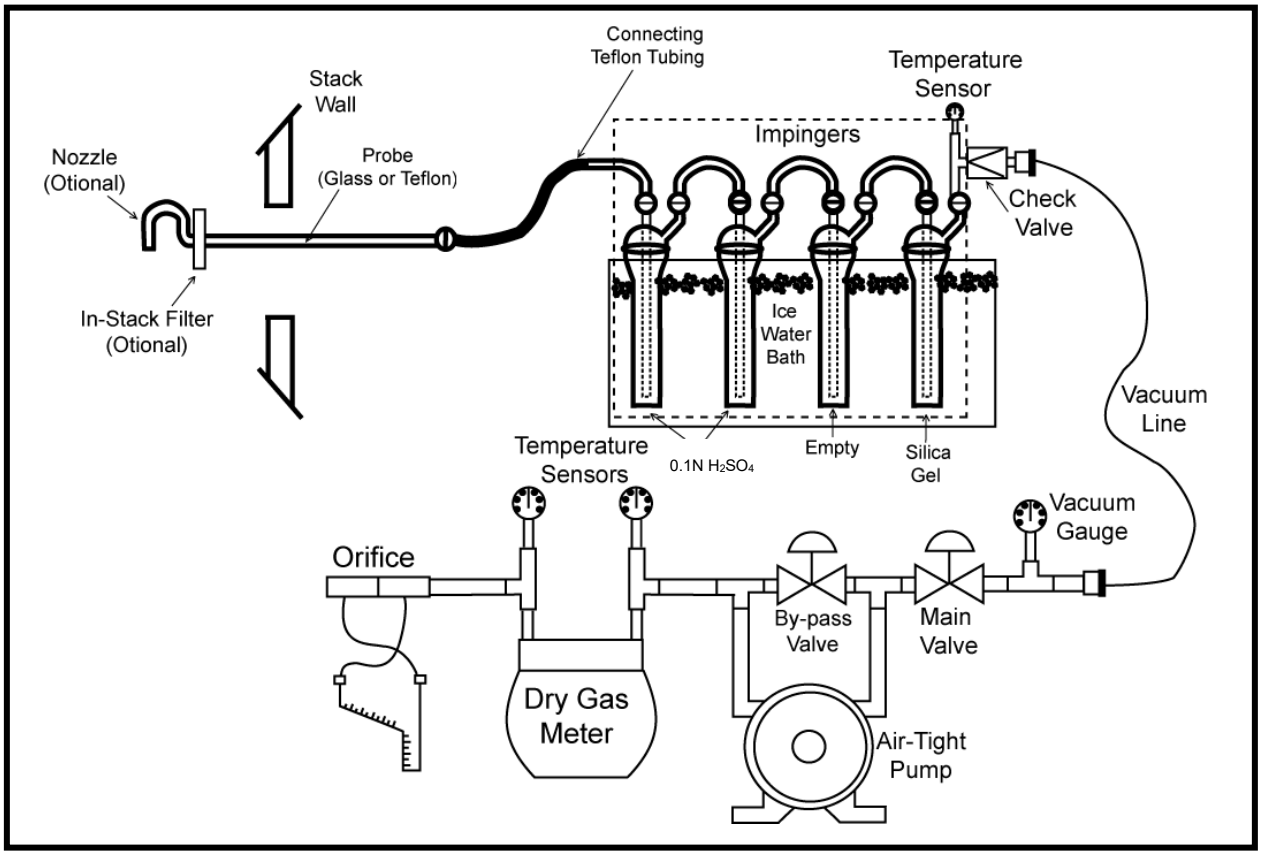
The measurements were made from sample ports located on the exhaust stack. There are four sample ports equally spaced at this location. The stack inside diameter at the sample plane is 11 feet, 8 inches. The sample ports are located 23 feet, 4 inches (2.0 diameters) downstream of the nearest flow disturbance and 16 feet, 6 inches (1.4 diameters) from the stack exit.

3.0 TEST DESCRIPTION

Flue gas samples were collected non-isokinetically using a SCAQMD Method 207.1 sample train. The samples were collected using a 12-point traverse at the exhaust stack location. Each test was performed over a 60 minute interval. The sample gas was drawn through a Titanium probe, Teflon sample line, two impingers each containing 100 ml of 0.1N H_2SO_4, an empty impinger, an impinger containing silica gel, and a dry gas meter. The optional nozzle and filter were not used since the source is natural gas fired. The contents of the sample line and the first three impingers were recovered and analyzed by SCAQMD Method 207.1 for ammonia concentration by Ion Specific Electrode analysis. Figure 3-1 presents a diagram of the sampling equipment.

Stack O_2 and NO_x concentrations and stack volumetric flow rate data were recorded from the Continuous Emission Monitoring System (CEMS) which is installed on the unit. These data were used to correct the ammonia concentration to 15% O_2.

FIGURE 3-1
SCAQMD METHOD 207.1 SAMPLING EQUIPMENT



4.0 RESULTS AND OVERVIEW

4.1 TEST RESULTS

The results of the test are summarized in Table 4-1. The results show that the maximum ammonia slip was 1.4 ppm @ 15% O_2 which is less than the permitted limit of 5 ppm @ 15% O_2.

TABLE 4-1
AMMONIA SLIP TEST RESULTS
CANYON POWER PLANT
UNIT 4
MAY 18, 2021

Parameter/Units	Run 1	Run 2	Average	Maximum(1)	Limit
Test	1-NH_3-U4	2-NH_3-U4			--
Date	5/18/2021	5/18/2021			--
Time	1457/1603	1635/1741			--
O_2, %(2)	14.32	14.32	14.32	--	--
Stack Flow, dscfm @ T_{ref}(2)	228,091	227,795	227,943	--	--
NO_x, ppmc(2)	2.3	2.3	2.3	--	2.5
NH_3					
ppm	1.6	1.3	1.4	1.6	--
ppmc	1.4	1.1	1.3	1.4	5
lb/hr	1.0	0.8	0.9	1.0	--
lb/MMBtu	0.002	0.002	0.002	0.002	--
lb/MMSCF	2.1	1.6	1.8	2.1	--

(1) Maximum of duplicate test runs, as required by SCAQMD Method 207.1
(2) From facility CEMS

4.2 TEST OVERVIEW

The test program was successful in meeting the program objectives. The QA/QC requirements of SCAQMD Method 207.1 were met. The results are considered representative of the source at the time of the tests.

APPENDIX A
RAW DATA

Appendix A.1
Sample Data Sheets

MONTROSE
AIR QUALITY SERVICES

WET CHEMICAL SAMPLING SYSTEM DATA AND WORKSHEET

CLIENT: SCPPA
LOCATION: Canyon 4
DATE: 5/18/21
RUN NO: 1-NH3-4
OPERATOR: D. Avila
METER BOX NO: 31-WCS
METER ΔH@: 0.550
METER Yd: 0.993
STACK AREA, FT²: 106.9
TRAVERSE POINTS, MIN/POINT: 5/12
ΔH= NA X ΔP:
Probe Condition, pre/post test: good/good
Silica Gel Expended, Y/N: N
Filter Condition after Test: NA
Check Weight: 500.0

AMBIENT TEMPERATURE: 73~
BAROMETRIC PRESSURE: 29.72
ASSUMED MOISTURE: 11%
PITOT TUBE COEFF, Cp: N/A
PROBE ID NO/MATERIAL: N/A / Titanium
PROBE LENGTH: 10'
NOZZLE ID NO/ MATERIAL: N/A
NOZZLE DIAMETER: N/A
FILTER NO/TYPE: N/A
PRE-TEST LEAK RATE: : 0.005 CFM@ 11" in. Hg.
POST-TEST LEAK RATE: : 0.002 CFM@ 13" in. Hg.
PITOT LEAK CHECK - PRE: ✓ 5/18 POST: ✓ 5/18
CHAIN OF CUSTODY: SAMPLE CUSTODIAN JL
SAMPLER DA
SAMPLE CUSTODIAN JG

Imp. #	Contents	Post-Test	Pre-Test	= Difference
1	H_2SO_4	902.1	701.7	
2	H_2SO_4	688.9	688.4	
3	MT	616.8	615.6	
4	SG	986.2	972.7	
CR		Ø	100	
Total:				

Point	Time	Meter Volume, ft³	ΔP in. H_2O	ΔH in. H_2O	Stack Temp, °F	Probe Temp, °F	Filter Temp, °F	Imp. Out Temp, °F	Meter Temp, °F In	Meter Temp, °F Out	Vacuum in. Hg.	O_2 %	Pstatic in. H_2O
S 3	1457	304.909	N/A	1.5	N/A	N/A	N/A	55	77	75	6"	NA	-1.1
2	1502												
1	1507			1.5				55	76	75	6"		
E	1512	314.932											
E 3	1514	314.932		1.5				55	74	72	6"		
2	1519												
1	1524			1.5				55	73	71	6"		
E	1529	324.817											
N 3	1531	324.817		1.5				57	75	73	6"		
2	1536												
1	1541			1.5				57	74	73	6"		
E	1546	334.816											
W 3	1548	334.816		1.5				58	76	74	6"		
2	1553												
1	1558			1.5				58	77	73	6"		
E	1603	344.719											
Average:													

Comments:

MONTROSE
AIR QUALITY SERVICES

WET CHEMICAL SAMPLING SYSTEM DATA AND WORKSHEET

CLIENT: Canyon
LOCATION: Unit 4
DATE: 5/18/21
RUN NO: 2 NH3
OPERATOR: D. Avila
METER BOX NO: 31-WCS
METER ΔH@: 0.550
METER Yd: 0.993
STACK AREA, FT²: 106.9
TRAVERSE POINTS, MIN/POINT: 5/12
ΔH= NA X ΔP:
Probe Condition, pre/post test: good
Silica Gel Expended, Y/N: N
Filter Condition after Test: N
Check Weight: 500.0/500.0

AMBIENT TEMPERATURE: 73~
BAROMETRIC PRESSURE: 29.72
ASSUMED MOISTURE: 11
PITOT TUBE COEFF, Cp: N/A
PROBE ID NO/MATERIAL: N/A / Titanium
PROBE LENGTH: 10'
NOZZLE ID NO/ MATERIAL:
NOZZLE DIAMETER: N/A
FILTER NO/TYPE:
PRE-TEST LEAK RATE: : 0.007 CFM@ 12" in. Hg.
POST-TEST LEAK RATE: : 0.005 CFM@ 14" in. Hg.
PITOT LEAK CHECK - PRE: — POST: —
CHAIN OF CUSTODY: SAMPLE CUSTODIAN JD
SAMPLER DA
SAMPLE CUSTODIAN JD

Imp. #	Contents	Post-Test	Pre-Test	Difference
1	H_2SO_4	908.4	713.2	
2	H_2SO_4	694.5	693.8	
3	MT	649.0	648.0	
4	SG	895.2	881.0	
LR		Ø	100	
Total:				

Point	Time	Meter Volume, ft³	ΔP in. H₂O	ΔH in. H₂O	Stack Temp, °F	Probe Temp, °F	Filter Temp, °F	Imp. Out Temp, °F	Meter Temp, °F In	Meter Temp, °F Out	Vacuum in. Hg.	O₂ %	Pstatic in. H₂O
S 3	1635	346.744	N/A	1.5	N/A	N/A	N/A	54	76	75	5"	NA	-1.1
2	1640												
1	1645			1.5				54	75	73	5"		
E	1650	356.762											
C 3	1652	356.762		1.5				55	76	74	5"		
2	1657												
1	1702			1.5				55	77	75	5"		
E	1707	366.805											
N 3	1709	366.805		1.5				55	76	75	5"		
2	1714												
1	1719			1.5				55	76	73	5"		
E	1724	376.691											
W 3	1726	376.691		1.5				56	77	74	5"		
2	1731												
1	1736			1.5				58	76	73	5"		
E	1741	386.606											
Average:													

Comments:

1-NH3-U4

Point	Meter Volume	Delta H	Tm In	Tm Out
6	304.909	1.5	77	75
5			76	75
4			74	72
3			73	71
2			75	73
1			74	73
Stop			76	74
6			77	73
5				
4				
3				
2				
1				
Stop	344.719			
Result	**39.810**	**1.5**		**74.3**

Impinger Weights

#	Post-Test	Pre-Test	Difference
1	902.1	701.7	200.4
2	688.9	688.4	0.5
3	616.8	615.6	1.2
4	986.2	972.7	13.5
Line Rinse	0.0	100.0	-100.0
			115.6

2-NH3-U4

Point	Meter Volume	Delta H	Tm In	Tm Out
6	346.744	1.5	76	75
5			75	73
4			76	74
3			77	75
2			76	75
1			76	73
Stop			77	74
6			76	73
5				
4				
3				
2				
1				
Stop	386.606			
Result	**39.862**	**1.5**		**75.1**

Impinger Weights

#	Post-Test	Pre-Test	Difference
1	908.4	713.2	195.2
2	694.5	693.8	0.7
3	649.0	648.0	1.0
4	895.2	881.0	14.2
Line Rinse	0.0	100.0	-100.0
			111.1

2Q21 Canyon 4 NH3
6/9/2021
1:40 PM

MONTROSE
AIR QUALITY SERVICES

WET CHEMICAL SAMPLING SYSTEM DATA AND WORKSHEET

CLIENT: SCPPA
LOCATION: Canyon 4
DATE: 5/18/21
RUN NO: FB-NM3
OPERATOR: D. Avila
METER BOX NO: 31-WCS
METER ΔH@: 1.556
METER Yd: .993
STACK AREA, FT²: 106.9
TRAVERSE POINTS, MIN/POINT: 5/12
ΔH= _____ X ΔP:
Probe Condition, pre/post test: Good
Silica Gel Expended, Y/N: N
Filter Condition after Test: NA
Check Weight: 500.0/500.0

AMBIENT TEMPERATURE: 70
BAROMETRIC PRESSURE: 29.72
ASSUMED MOISTURE: NA
PITOT TUBE COEFF, Cp: NA
PROBE ID NO/MATERIAL: NA / Ti
PROBE LENGTH: 10'
NOZZLE ID NO/ MATERIAL: NA
NOZZLE DIAMETER:
FILTER NO/TYPE:
PRE-TEST LEAK RATE: <0.002 CFM@ 12" in. Hg.
POST-TEST LEAK RATE: _____ CFM@ _____ in. Hg.
PITOT LEAK CHECK - PRE: _____ POST: _____
CHAIN OF CUSTODY: SAMPLE CUSTODIAN JG
SAMPLER DK
SAMPLE CUSTODIAN JG

Imp. #	Contents	Post-Test	Pre-Test	= Difference
1	H_2SO_4	818.0	718.3	
2	H_2SO_4	709.1	709.1	
3	Mt	650.4	650.2	
4	SG	895.2	895.2	
LR		Ø	100	
Total:				

Point	Time	Meter Volume, ft³	ΔP in. H₂O	ΔH in. H₂O	Stack Temp, °F	Probe Temp, °F	Filter Temp, °F	Imp. Out Temp, °F	Meter Temp, °F In	Meter Temp, °F Out	Vacuum in. Hg.	O₂ %	Pstatic in. H₂O
Average:													

Comments: _____

Date of last revision 2/14/2017

DS834048
Master Document Storage\Forms\Datasheets\Field Datasheets

Appendix A.2
Laboratory Data

MONTROSE

AMMONIA BY ION SELECTIVE ELECTRODE ANALYSIS

Project #: PROJ-009222 District Method: SCAQMD 207.1 Sample Date: 05/18/2021
Client/Location: SCPPA Calibration Date: 05/19/2021 Analysis Date: 05/19/2021
Sample Location: Unit 4 Calibration Curve: Y=-57.9426X+88.8426 Analyst's Initials: HS
Test #'s: NH_3 R^2: 1.0000 Room Temperature (°C): 21

Sample	Total Vol. (mL)	Electrode Potential (mV)	Conc. µg NH_3 – N / ml	Cavg (µg NH_3 – N / ml)	µg NH_3 / sample	T (°C)	Blue after + ISA (Y/N)	pH	% R
Standard Check: 28 µg NH_3/ml		4.9	28.101	28.045		22.0	Y		100%
		5.0	27.989			22.0	Y		
1-NH_3	551.9	73.0	1.877	1.866	1251.626	21.9	Y	<2	
		73.0	1.855			21.9	Y		
2-NH_3	529.0	77.9	1.545	1.539	990.499	22.0	Y	<2	
		78.1	1.532			21.9	Y		
Spike: 2-NH_3+2ml 1000ppm NH_3		13.0	20.367	20.367		22.0	Y		98%
		13.0	20.367			22.0	Y		
Standard Check: 28 µg NH3/ml		4.9	28.101	28.269		21.3	Y		101%
		4.0	28.428			21.7	Y		
Reagent Blank 0.1N H_2SO_4		179.8	0.027	0.027		21.9	Y		
		180.0	0.027			21.9	Y		
DI H_2O Blank		200.0	0.012	0.012		22.0	Y		
		200.7	0.012			22.5	Y		
Field Blank		180.9	0.020	0.020		21.4	Y		
		181.0	0.020			21.7	Y		
Standard Check: 28 µg NH3/ml		5.0	27.989	28.045		21.0	Y		100%
		4.9	28.101			21.0	Y		

Notes: Total volume of samples and standards used: 100 ml
Volume of pH adjusting ISA used in ml: 2 ml
Absorbing solution: 0.1N H_2SO_4

Calculations: Conc. (µg NH_3 – N / ml) = $10^{(P-B)/M}$; (P = electrode potential, B = y-intercept and M = slope)
Cavg = average result of duplicate analyses (µg NH_3 – N / ml) = (C1+C2)/2
µg NH_3 / sample = Cavg* 17.03/ 14.01 * TV
mg / sample = µg /sample ÷ 1000
ppm NH_3 = mg NH_3/sample x 1/Vmstd x 1/454000 x SV/17 x 10^6

AMMONIA BY ION SELECTIVE ELECTRODE ANALYSIS CALCULATION

Client/ Location: SCPPA- Canyon
Sample Location: Unit 4
District Method: SCAQMD 207.1
Sample Date: ~~5/19/2021~~ 5/18/21 KC 6/28/21
Analysis Date: ~~5/19/2021~~ 5/17
Analyst's Initials: HS
Calibration Curve Slope -57.9426
Y-intercept 88.8426
R^2

Sample	P mV	Conc. µg NH_3 /ml as N	C avg as N	TV (ml)	C avg as NH_3	µg NH_3/ sample
28 ug NH_3 / ml as N	4.9	28.101				
repeat 28 ug NH_3/ml as N	5.0	27.989	28.045	NA	34.091	NA
1-NH3	73.0	1.877				
repeat 1- NH_3	73.3	1.855	1.866	551.9	2.268	1251.626
2-NH_3	77.9	1.545				
repeat 2- NH_3	78.1	1.532	1.539	529.8	1.870	990.499
spike 2-NH_3	13.0	20.367				
repeat spike	13.0	20.367	20.367	NA	24.757	NA
28 NH_3/ml as N	4.9	28.101				
repeat 28 ug NH_3/ml as N	4.6	28.438	28.269	NA	34.363	NA
Field Blank	180.9	0.026				
repeat Field Blank	181.0	0.026	0.026	501.7	0.031	NA
Reagent Blank	179.8	0.027				
repeat Reagent Blank	180.0	0.027	0.027	NA	0.033	NA
DI H2O Blank	200.6	0.012				
Repeat DI H2O Blank	200.7	0.012	0.012	NA	0.014	NA
28 NH_3/ml as N	5.0	27.989				
repeat 28 ug NH_3/ml as N	4.9	28.101	28.045	NA	34.091	NA

Notes:

Measured Concentration of Ammonia (C) in µg NH_3 / ml as N

$C=10^{(P-B)/M}$

P = electrode potential (mV), M=slope and B=intercept

Average Measured Ammonia Concentration (Cavg) = (C1 + C2)/2

where C1, C2 results from duplicate analyses (µg NH_3 /ml as N)

Cavg (µg NH_3/ml as NH_3) = Cavg (µg NH_3/ ml as N) * 17.03/ 14.01

µg NH_3 / sample = Cavg (µg NH_3/ml as NH_3) * TV

Used 100 ml of samples and standards with 2 ml ISA and constant stirring rate.

All solutions turned blue and remained blue with ISA unless otherwise indicated.

Sample PH and Temperatures can be found on the laboratory datasheet.

Maximum samples (including blanks) between 28 ug/ml check standard is 5 samples analyzed in duplicate.

AMMONIA BY ION SELECTIVE ELECTRODE ANALYSIS QUALITY CONTROL

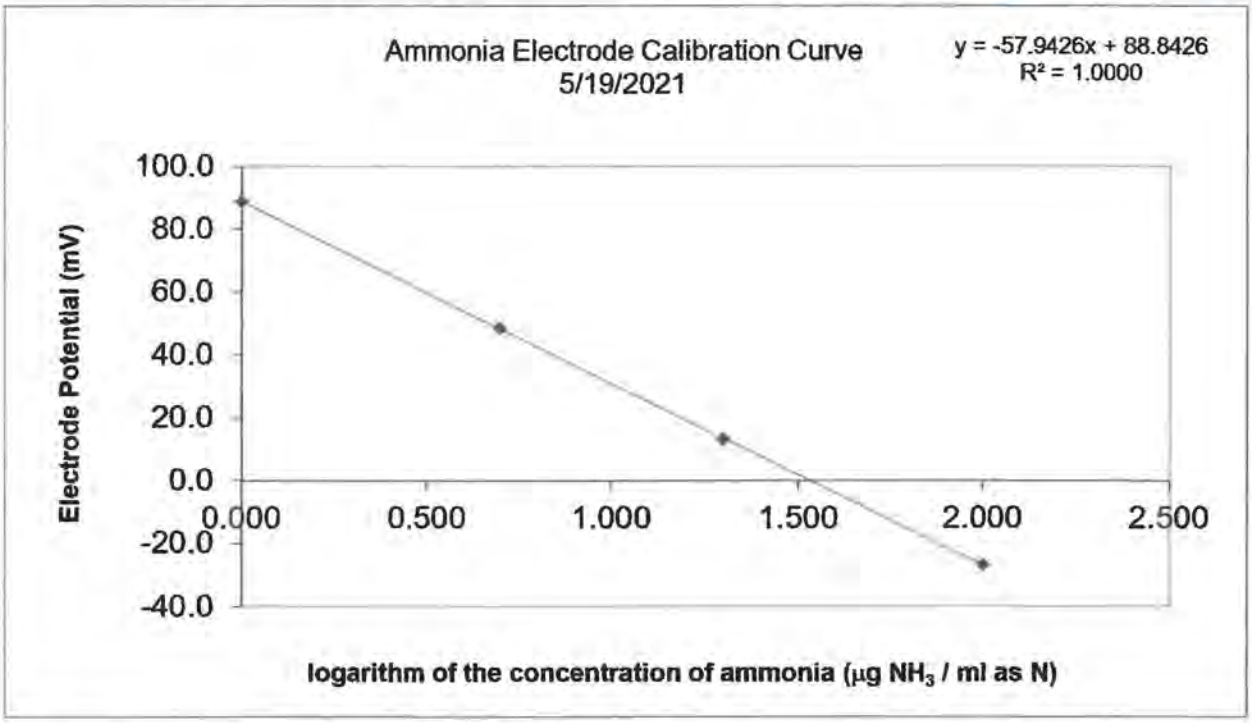
Client/ Location: SCPPA- Canyon
Sample Location: Unit 4
District Method: SCAQMD 207.1
Sample Date: ~~5/19/2021~~ 5/18/21 KC 6/28/21
Analysis Date: 5/19/2021
Analyst's Initials: HS

Sample	% recovery	RPD %	RPA %
28 ug NH_3 / ml as N repeat 28 ug NH_3/ml as N	NA	0.40	0.161
1-NH3 repeat 1- NH3	NA	1.19	NA
2-NH3 repeat 2- NH3	NA	0.79	NA
spike 2-NH3 repeat spike	98.06	0.00	NA
28 NH_3/ml as N repeat 28 ug NH_3/ml as N	NA	-1.19	0.962
Field Blank repeat Field Blank	NA	0.40	NA
Reagent Blank repeat Reagent Blank	NA	0.79	NA
DI H2O Blank Repeat DI H2O Blank	NA	0.40	NA
28 NH_3/ml as N repeat 28 ug NH_3/ml as N	NA	-0.40	0.161

Notes:
spike: 100 ml sample + 2 ml (1000 µg NH_3 / ml as N)
Matrix Spike Percent Recovery (%R)
%R = (C spike*0.104 - Csample*0.102)/2 *100
Cspike = average result of matrix spike (µg NH_3/ ml as N)
Relative Percent Difference (RPD) = (C1-C2)/ Cavg *100 (must be 5% or less)
Relative Percent Accuracy (RPA) (must be 10% or less)
RPA = (Cavg-theoretical value of standard)/ theoretical value of standard * 100

AMMONIA ELECTRODE CALIBRATION CURVE

NH_3 concentration (μg NH_3 / ml as N)	log NH_3 concentration	Electrode potential (mV)	Sample Temperature (C)	Room Temperature (C)
1	0.000	88.8	22	21
5	0.699	48.6	22	21
20	1.301	13.1	22	21
100	2.000	-26.9	22	21



slope	-57.9426
y-intercept	88.8426

Concentration (μg NH_3 / ml as N)	Value LR line	Difference	% Difference
1	1.0017	0.0017	0.1694
5	4.9491	-0.0509	-1.0182
20	20.2862	0.2862	1.4310
100	99.4350	-0.5650	-0.5650

Calculation:

Regression Line: P=M*log(μg of NH_3/ ml as N)+B

Measured Concentration of Ammonia (C) in μg / ml NH_3 as N: $C=10^{(P-B)/M}$

where P = electrode potential, M= slope (must be -57±3) and B= intercept

All standards were prepared in 0.04N H_2SO_4 and allowed to equilibrate to room temperature.

MONTROSE
AIR QUALITY SERVICES

AMMONIA BY ION SELECTIVE ELECTRODE ANALYSIS CALIBRATION DATA

District Method: SCAQMD 207.1

Calibration Date: 05/19/2021

Calibration Curve: y=-57.94266x+88.84266

R^2 1.0000

Analyst's Initials: HS

Thermometer #: 1

ISE Electrode #: 17

Calibration Standard (µg NH_3 / ml as N)	Electrode Potential (mV)	Solution Temperature (°C)	Room Temperature (°C)
1	88.8	22	21
5	48.6	22	21
20	13.1	22	21
100	-26.9	22	21

Notes:

Total volume of samples and standards used: 100ml
Volume of pH adjusting ISA used in ml: 2ml
Absorbing solution: 0.04N H_2SO_4
Slope of the calibration curve shall be between -54 to -60
R^2 must be 0.9997 or greater
Calibration solutions, sample solutions and Calibration Verification standard temperature within ± 2°C

CHAIN OF CUSTODY

CLIENT: SCPPA | PROJECT #: PROJ_009222 | TEST DATE(S): 5/18/2021

LOCATION: U4 | SAMPLER(S): DA, KV,ROM

SAMPLE LOCATION: Stack | PROJECT MANAGER: JG

TEST METHOD(S): SCAQMD 207.1 | DATE DUE: 5/25/2021

OUTSIDE LAB REQUIRED?: No | COMPLIANCE TEST?: Yes

DATE	TIME	TEST #	SAMPLE DESCRIPTION	CONTAINERS	SAMPLER	COMMENTS
5/18/2021	1457/1603	1-NH3-U4	Probe, Line, Impingers	1	DA, KV,ROM	
5/18/2021	1635/1741	2-NH3-U4	Probe, Line, Impingers	1	DA, KV,ROM	
5/18/2021		Reagent Blank	0.1 N H_2SO_4	1	JG	
5/18/2021		Reagent Blank	DI H2O	1	JG	
5/18/2021		Field Blank	Probe, Line, Impingers	1	DA, KV,ROM	

RELEASED BY	DATE/TIME	RECEIVED BY	DATE/TIME
Rovina	5-18-21 1200		5/19/2021 @ 0805

ANALYSIS REQUIRED: NH_3 by SCAQMD 207.1 (ISE)

Appendix A.3
QA/QC Data

SEMI-ANNUAL DRY GAS METER/ORIFICE CALIBRATION

Orifice Method - Triplicate Runs/Four Calibration Points
English Meter Box Units, English K' Factor
Filename: M:\Santa Ana\Equipment\Test Equipment\Calibrations\Dry Gas Meters\31-WCS\2021\[31WCS Semi Annual Cal 1-15-2021.x
File Modified From: APEX 522 Series Meter box Calibration
Revised: 4/8/2005

ID #: C-5000
Date: 31-WCS
Bar. Pressure: 1/15/2021
Performed By: 30.17 (In. Hg)
Meter Serial #: L.Olivares

DRY GAS METER READINGS									CRITICAL ORIFICE READINGS					
					Initial Temps.		Final Temps.					Ambient Temperature		
dH (In H2O)	Time (min)	Volume Initial (cu ft)	Volume Final (cu ft)	Volume Total (cu ft)	Inlet (deg F)	Outlet (deg F)	Inlet (deg F)	Outlet (deg F)	Orifice Serial# (number)	K' Orifice Coefficient (see above)	Actual Vacuum (in Hg)	Initial (deg F)	Final (deg F)	Average (deg F)
0.13	26.00	256.600	262.003	5.403	80.0	79.0	80.0	79.0	33	0.1552	19.0	66.0	66.0	66.0
0.13	26.00	262.003	267.400	5.397	80.0	79.0	82.0	81.0	33	0.1552	19.0	66.0	66.0	66.0
0.13	26.00	267.400	272.801	5.401	82.0	81.0	84.0	83.0	33	0.1552	19.0	66.0	66.0	66.0
0.62	12.00	239.500	244.938	5.438	83.0	77.0	81.0	78.0	48	0.3346	17.0	67.0	67.0	67.0
0.62	12.00	244.938	250.328	5.390	81.0	78.0	82.0	78.0	48	0.3346	17.0	67.0	67.0	67.0
0.62	12.00	250.328	255.728	5.400	82.0	78.0	81.0	78.0	48	0.3346	17.0	67.0	67.0	67.0
2.10	7.00	221.100	226.580	5.480	79.0	73.0	82.0	74.0	63	0.5918	14.0	66.0	66.0	66.0
2.10	7.00	226.580	232.072	5.492	82.0	74.0	84.0	75.0	63	0.5918	14.0	66.0	66.0	66.0
2.10	7.00	232.072	237.556	5.484	84.0	84.0	86.0	76.0	63	0.5918	14.0	66.0	66.0	66.0
3.60	5.00	204.100	209.208	5.108	73.0	68.0	78.0	69.0	73	0.7681	13.0	66.0	66.0	66.0
3.60	5.00	209.208	214.309	5.101	78.0	69.0	82.0	70.0	73	0.7681	13.0	66.0	66.0	66.0
3.60	5.00	214.309	219.419	5.110	82.0	70.0	84.0	72.0	73	0.7681	13.0	66.0	66.0	66.0

RY GAS METER		ORIFICE			DRY GAS METER CALIBRATION FACTOR	ORIFICE CALIBRATION FACTOR	Individual Run	Individual Orifice	Orifice Average	Orifice Average
VOLUME CORRECTED Vm(std) (cu ft)	VOLUME CORRECTED Vm(std) (liters)	VOLUME CORRECTED Vcr(std) (cu ft)	VOLUME CORRECTED Vcr(std) (liters)	VOLUME NOMINAL Vcr (cu ft)	Y Value (number)	dH@ Value (in H2O)	0.95 < Y < 1.05?	Ymax - Ymin < 0.010?	0.98 < Y/Yd < 1.02?	dH@ - dH@ av < 0.155?
5.332	151.0	5.307	150.3	5.245	0.995	1.734	Pass			
5.316	150.5	5.307	150.3	5.245	0.998	1.731	Pass			
5.300	150.1	5.307	150.3	5.245	1.001	1.724	Pass			
				Average	**0.998**	**1.730**		Pass	Pass	Pass
5.370	152.1	5.277	149.4	5.225	0.983	1.787	Pass			
5.323	150.7	5.277	149.4	5.225	0.991	1.785	Pass			
5.332	151.0	5.277	149.4	5.225	0.990	1.785	Pass			
				Average	**0.988**	**1.785**		Pass	Pass	Pass
5.459	154.6	5.449	154.3	5.386	0.998	1.945	Pass			
5.453	154.4	5.449	154.3	5.386	0.999	1.942	Pass			
5.410	153.2	5.449	154.3	5.386	1.007	1.922	Pass			
				Average	**1.002**	**1.936**		Pass	Pass	Pass
5.155	146.0	5.052	143.1	4.993	0.980	1.998	Pass			
5.121	145.0	5.052	143.1	4.993	0.987	1.994	Pass			
5.109	144.7	5.052	143.1	4.993	0.989	1.989	Pass			
				Average	**0.985**	**1.994**		Pass	Pass	Pass

Average Yd:	**0.993**	**dH@:**	**1.861**
		Q @ dH = 1:	**0.650**

SIGNED: Signature on File Date: 1/15/2021

MONTROSE

DIGITAL TEMPERATURE READOUT CALIBRATION

Digital Temperature Readout ID: 31-WCS
Readout Description: Control Box
Date: 1/4/2021
Performed By: RD/DA/RM/DH

Calibrated Thermocouple ID: TC-CAL
T1 Reference Thermometer ID: 313010
T2 Reference Thermometer ID: 242196
T3 Reference Thermometer ID: 242167

T/C I.D.	Readout	T/C - Readout °F				Reference Thermometer °F				Difference		
TC-CAL	I.D.	Reading 1	Reading 2	Reading 3	Average	Reading 1	Reading 2	Reading 3	Average	°F	%, (°R)	
T3 (OIL)	31-WCS	352	352	352	352	352	352	352	352	0.0	0.0%	Pass
T2 (Boiling H_2O)	31-WCS	214	214	214	214	212	212	212	212	2.0	0.3%	Pass
T1 (Ice/Water)	31-WCS	33	33	33	33	32	32	32	32	1.0	0.2%	Pass

1) Difference % (°R) = Difference (°F) / (Average Tref + 460)
2) Pass if all Differences are less than 1.5% (°R)

Thermocouple Source Readings

	T/C Source	T/C - Readout °F				T/C Source °F				Difference		
	S/N	Reading 1	Reading 2	Reading 3	Average	Reading 1	Reading 2	Reading 3	Average	°F	%, (°R)	
T4 (~650 F)	129103	653	653	653	653	650	650	650	650	3.0	0.3%	Pass
T3 (~370 F)	129103	371	371	371	371	370	370	370	370	1.0	0.1%	Pass
T2 (~212 F)	129103	213	213	213	213	212	212	212	212	1.0	0.1%	Pass
T1 (~32 F)	129103	34	34	34	34	32	32	32	32	2.0	0.4%	Pass

1) Difference % (°R) = Difference (°F) / (Average Tref + 460)
2) Pass if all Differences are less than 1.5% (°R)

Barometric Pressure Determination

Date: 05/18/21

Data By: TT

Reference: https://forecast.weather.gov/MapClick.php?lat=33.8329&lon=-117.9152#.X9DIHNhKiUk

Reference Barometer ID	FW0063 Fullerton CSU (F0063)
Reference Barometer Location	Lat: 33.8805°NLon: 117.88417°WElev: 247ft.
Reference Barometer Other Info.	18 May 12:54 PM PDT
Reference Barometer Indication, corrected to sea level	29.99
Reference Barometer Reference Elevation	247
Reference Barometer Actual Pressure	29.74
Test Barometer Location/Site	Canyon Power Plant
Location/Site Elevation	212
Location/Site Barometric Pressure	29.78
Sampling Location Height (above/below site elevation)	60
Sampling Location Barometric Pressure	29.72

APPENDIX B
FACILITY CEMS DATA

APPENDIX C
CALCULATIONS

1-NH3

CEMTEK KVB-Enertec NetDAHS© Version 47.0

Average Values Report
Generated: 5/18/2021 17:32

Company: City Of Anaheim
Plant: 3071 Miraloma Ave.,
City/St: Anaheim, CA, 92806
Source: 4

Period Start: 5/18/2021 14:57
Period End: 5/18/2021 16:02
Validation Type: 1/1 min
Averaging Period: 1 min
Type: Block Avg

Period Start:	Average 4_O2 %	Average 4_NOXPPM ppm	Average 4_NOX_CORR ppm	Average 4_NOX_LBMM #/MBTU	Average 4_NOX_LBHR #/hr	Average 4_COPPM ppm	Average 4_CO_CORR ppm	Average 4_CO_LBHR #/hr	Average 4_CO_LBMM #/MBTU	Average 4_GasFlow kscfh	Average 4_LOAD MW	Average 4_STACKFLW kscfm
05/18/2021 14:57	14.32	2.41	2.16	0.008	4.02	3.58	3.21	3.62	0.0072	478.3	50.06	231.6
05/18/2021 14:58	14.32	2.39	2.14	0.008	4.02	3.58	3.21	3.62	0.0072	478.7	50.18	231.7
05/18/2021 14:59	14.32	2.38	2.13	0.008	4.02	3.58	3.21	3.62	0.0072	479.0	50.18	231.9
05/18/2021 15:00	14.32	2.37	2.13	0.008	4.02	3.59	3.22	3.62	0.0072	478.4	50.12	231.6
05/18/2021 15:01	14.33	2.36	2.12	0.008	4.02	3.62	3.25	3.67	0.0073	478.2	50.08	231.9
05/18/2021 15:02	14.33	2.36	2.12	0.008	4.02	3.64	3.27	3.67	0.0073	478.7	50.25	232.1
05/18/2021 15:03	14.32	2.35	2.11	0.008	4.02	3.65	3.27	3.66	0.0073	478.1	50.10	231.5
05/18/2021 15:04	14.33	2.36	2.12	0.008	4.02	3.65	3.28	3.72	0.0074	478.2	50.27	231.9
05/18/2021 15:05	14.32	2.38	2.13	0.008	4.02	3.66	3.28	3.72	0.0074	478.6	50.23	231.7
05/18/2021 15:06	14.32	2.42	2.17	0.008	4.02	3.67	3.29	3.72	0.0074	478.9	50.17	231.8
05/18/2021 15:07	14.32	2.47	2.21	0.008	4.02	3.64	3.26	3.67	0.0073	478.3	50.18	231.6
05/18/2021 15:08	14.32	2.51	2.25	0.008	4.02	3.59	3.22	3.62	0.0072	478.2	50.24	231.5
05/18/2021 15:09	14.33	2.53	2.27	0.008	4.02	3.55	3.19	3.62	0.0072	478.4	50.29	232.0
05/18/2021 15:10	14.32	2.50	2.24	0.008	4.02	3.56	3.19	3.62	0.0072	478.4	50.08	231.6
05/18/2021 15:11	14.32	2.50	2.24	0.008	4.02	3.59	3.22	3.62	0.0072	478.3	50.10	231.6
05/18/2021 15:12	14.32	2.51	2.25	0.008	4.02	3.60	3.23	3.62	0.0072	478.4	50.16	231.6
05/18/2021 15:13	14.32	2.51	2.25	0.008	4.02	3.59	3.22	3.61	0.0072	478.1	50.36	231.5
05/18/2021 15:14	14.32	2.53	2.27	0.008	4.02	3.59	3.22	3.62	0.0072	478.6	50.26	231.7
05/18/2021 15:15	14.32	2.52	2.26	0.008	4.02	3.60	3.23	3.62	0.0072	478.2	50.14	231.5
05/18/2021 15:16	14.32	2.51	2.25	0.008	4.01	3.61	3.24	3.66	0.0073	477.9	50.13	231.4
05/18/2021 15:17	14.33	2.52	2.26	0.008	4.02	3.59	3.22	3.62	0.0072	478.6	50.26	232.1
05/18/2021 15:18	14.32	2.52	2.26	0.008	4.02	3.59	3.22	3.61	0.0072	478.0	50.09	231.4
05/18/2021 15:19	14.33	2.51	2.25	0.008	4.02	3.60	3.23	3.66	0.0073	478.0	50.13	231.8
05/18/2021 15:20	14.32	2.53	2.27	0.008	4.01	3.60	3.23	3.61	0.0072	477.7	50.31	231.3
05/18/2021 15:21	14.32	2.54	2.28	0.008	4.02	3.60	3.23	3.62	0.0072	478.6	50.22	231.7
05/18/2021 15:22	14.32	2.54	2.28	0.008	4.02	3.60	3.23	3.61	0.0072	478.1	50.11	231.5
05/18/2021 15:23	14.32	2.56	2.30	0.008	4.01	3.60	3.23	3.61	0.0072	477.7	50.08	231.3
05/18/2021 15:24	14.32	2.56	2.30	0.008	4.02	3.60	3.23	3.61	0.0072	478.1	50.17	231.5
05/18/2021 15:25	14.33	2.54	2.28	0.008	4.02	3.61	3.24	3.66	0.0073	478.1	50.07	231.8
05/18/2021 15:26	14.32	2.52	2.26	0.008	4.02	3.62	3.25	3.67	0.0073	478.7	50.18	231.7
05/18/2021 15:27	14.32	2.51	2.25	0.008	4.02	3.60	3.23	3.62	0.0072	478.4	50.36	231.6
05/18/2021 15:28	14.32	2.51	2.25	0.008	4.02	3.58	3.21	3.62	0.0072	478.5	50.20	231.7
05/18/2021 15:29	14.32	2.52	2.26	0.008	4.02	3.57	3.20	3.62	0.0072	478.4	50.25	231.6
05/18/2021 15:30	14.32	2.54	2.28	0.008	4.01	3.58	3.21	3.61	0.0072	477.9	50.20	231.4
05/18/2021 15:31	14.33	2.54	2.28	0.008	4.01	3.60	3.23	3.61	0.0072	477.9	50.16	231.4
05/18/2021 15:32	14.32	2.54	2.28	0.008	4.01	3.61	3.24	3.66	0.0073	477.8	50.25	231.3
05/18/2021 15:33	14.32	2.54	2.28	0.008	4.02	3.60	3.23	3.61	0.0072	478.1	50.31	231.5
05/18/2021 15:34	14.32	2.53	2.27	0.008	4.02	3.60	3.23	3.62	0.0072	478.3	50.21	231.6
05/18/2021 15:35	14.32	2.54	2.28	0.008	4.02	3.61	3.24	3.67	0.0073	478.2	50.10	231.5
05/18/2021 15:36	14.32	2.54	2.28	0.008	4.02	3.60	3.23	3.62	0.0072	478.3	50.15	231.6
05/18/2021 15:37	14.32	2.54	2.28	0.008	4.02	3.58	3.21	3.61	0.0072	478.1	50.18	231.5
05/18/2021 15:38	14.32	2.53	2.27	0.008	4.02	3.58	3.21	3.62	0.0072	478.7	50.14	231.7
05/18/2021 15:39	14.31	2.54	2.27	0.008	4.02	3.57	3.20	3.62	0.0072	478.2	50.10	231.2
05/18/2021 15:40	14.31	2.56	2.29	0.008	4.02	3.58	3.21	3.61	0.0072	478.0	50.15	231.1
05/18/2021 15:41	14.32	2.56	2.30	0.008	4.02	3.58	3.21	3.62	0.0072	478.2	50.11	231.5
05/18/2021 15:42	14.32	2.55	2.29	0.008	4.01	3.60	3.23	3.61	0.0072	477.8	50.23	231.3
05/18/2021 15:43	14.32	2.55	2.29	0.008	4.02	3.60	3.23	3.62	0.0072	478.6	50.22	231.7
05/18/2021 15:44	14.32	2.55	2.29	0.008	4.02	3.60	3.23	3.62	0.0072	478.2	50.16	231.5
05/18/2021 15:45	14.32	2.55	2.29	0.008	4.02	3.58	3.21	3.61	0.0072	478.1	50.22	231.5
05/18/2021 15:46	14.32	2.55	2.29	0.008	4.02	3.57	3.20	3.62	0.0072	478.2	50.18	231.5
05/18/2021 15:47	14.32	2.55	2.29	0.008	4.02	3.56	3.19	3.62	0.0072	478.4	50.10	231.6
05/18/2021 15:48	14.32	2.54	2.28	0.008	4.02	3.56	3.19	3.62	0.0072	478.8	50.22	231.8

Period Start:	Average 4_O2 %	Average 4_NOXPPM ppm	Average 4_NOX_CORR ppm	Average 4_NOX_LBMM #/MBTU	Average 4_NOX_LBHR #/hr	Average 4_COPPM ppm	Average 4_CO_CORR ppm	Average 4_CO_LBHR #/hr	Average 4_CO_LBMM #/MBTU	Average 4_GasFlow kscfh	Average 4_LOAD MW	Average 4_STACKFLW kscfm
05/18/2021 15:49	14.31	2.54	2.27	0.008	4.02	3.58	3.21	3.62	0.0072	478.4	50.23	231.3
05/18/2021 15:50	14.32	2.55	2.29	0.008	4.02	3.57	3.20	3.62	0.0072	478.2	50.26	231.5
05/18/2021 15:51	14.31	2.56	2.29	0.008	4.02	3.56	3.19	3.62	0.0072	478.5	50.35	231.3
05/18/2021 15:52	14.32	2.55	2.29	0.008	4.02	3.56	3.19	3.61	0.0072	478.0	50.16	231.4
05/18/2021 15:53	14.32	2.55	2.29	0.008	4.02	3.58	3.21	3.62	0.0072	478.3	50.23	231.6
05/18/2021 15:54	14.31	2.55	2.28	0.008	4.02	3.58	3.21	3.61	0.0072	478.0	50.24	231.1
05/18/2021 15:55	14.32	2.55	2.29	0.008	4.02	3.56	3.19	3.62	0.0072	478.7	50.31	231.7
05/18/2021 15:56	14.32	2.56	2.30	0.008	4.02	3.55	3.18	3.57	0.0071	478.4	50.19	231.6
05/18/2021 15:57	14.31	2.55	2.28	0.008	4.02	3.55	3.18	3.56	0.0071	478.2	50.19	231.2
05/18/2021 15:58	14.31	2.55	2.28	0.008	4.02	3.55	3.18	3.56	0.0071	478.2	49.99	231.2
05/18/2021 15:59	14.32	2.56	2.30	0.008	4.02	3.55	3.18	3.57	0.0071	478.3	50.26	231.6
05/18/2021 16:00	14.32	2.55	2.29	0.008	4.02	3.57	3.20	3.61	0.0072	478.1	50.24	231.5
05/18/2021 16:01	14.31	2.55	2.28	0.008	4.01	3.58	3.21	3.61	0.0072	477.9	50.09	231.0
05/18/2021 16:02	14.32	2.56	2.30	0.008	4.02	3.58	3.21	3.61	0.0072	478.1	50.30	231.5
Daily Average*	**14.32**	**2.51**	**2.25**	**0.008**	**4.02**	**3.59**	**3.22**	**3.63**	**0.0072**	**478.3**	**50.19**	**231.6**
Maximum*	**14.33**	**2.56**	**2.30**	**0.008**	**4.02**	**3.67**	**3.29**	**3.72**	**0.0074**	**479.0**	**50.36**	**232.1**
	05/18/2021 15:25	05/18/2021 16:02	05/18/2021 16:02	05/18/2021 16:02	05/18/2021 16:02	05/18/2021 15:06	05/18/2021 15:06	05/18/2021 15:06	05/18/2021 15:06	05/18/2021 14:59	05/18/2021 15:27	05/18/2021 15:17
Minimum*	**14.31**	**2.35**	**2.11**	**0.008**	**4.01**	**3.55**	**3.18**	**3.56**	**0.0071**	**477.7**	**49.99**	**231.0**
	05/18/2021 16:01	05/18/2021 15:03	05/18/2021 15:03	05/18/2021 16:02	05/18/2021 16:01	05/18/2021 15:59	05/18/2021 15:59	05/18/2021 15:58	05/18/2021 15:59	05/18/2021 15:23	05/18/2021 15:58	05/18/2021 16:01

* Does not include Invalid Averaging Periods ("N/A")

CEMTEK KVB-Enertec NetDAHS®

Version 47.0

NH3-2

Average Values Report
Generated: 5/18/2021 19:17

Company: City Of Anaheim
Plant: 3071 Miraloma Ave.,
City/St: Anaheim, CA, 92806
Source: 4

Period Start: 5/18/2021 16:35
Period End: 5/18/2021 17:40
Validation Type: 1/1 min
Averaging Period: 1 min
Type: Block Avg

Period Start:	Average 4_O2 %	Average 4_NOXPPM ppm	Average 4_NOX_CORR ppm	Average 4_NOX_LBMM #/MBTU	Average 4_NOX_LBHR #/hr	Average 4_COPPM ppm	Average 4_CO_CORR ppm	Average 4_CO_LBHR #/hr	Average 4_CO_LBMM #/MBTU	Average 4_GasFlow kscfh	Average 4_LOAD MW	Average 4_STACKFLW kscfm
05/18/2021 16:35	14.32	2.50	2.24	0.008	4.02	3.58	3.21	3.62	0.0072	478.3	50.31	231.6
05/18/2021 16:36	14.31	2.51	2.25	0.008	4.02	3.58	3.21	3.61	0.0072	478.0	50.14	231.1
05/18/2021 16:37	14.32	2.54	2.28	0.008	4.01	3.56	3.19	3.61	0.0072	477.2	50.30	231.1
05/18/2021 16:38	14.32	2.55	2.29	0.008	4.02	3.56	3.19	3.61	0.0072	478.1	50.11	231.5
05/18/2021 16:39	14.31	2.54	2.27	0.008	4.02	3.56	3.19	3.61	0.0072	478.1	50.15	231.1
05/18/2021 16:40	14.32	2.54	2.28	0.008	4.01	3.55	3.18	3.56	0.0071	477.9	50.32	231.4
05/18/2021 16:41	14.32	2.55	2.29	0.008	4.01	3.54	3.17	3.56	0.0071	477.6	50.10	231.2
05/18/2021 16:42	14.32	2.54	2.28	0.008	4.02	3.53	3.17	3.56	0.0071	478.2	50.10	231.5
05/18/2021 16:43	14.32	2.53	2.27	0.008	4.01	3.53	3.17	3.56	0.0071	477.9	50.29	231.4
05/18/2021 16:44	14.31	2.54	2.27	0.008	4.01	3.52	3.15	3.56	0.0071	477.4	50.04	230.8
05/18/2021 16:45	14.32	2.55	2.29	0.008	4.01	3.53	3.17	3.56	0.0071	477.8	50.22	231.3
05/18/2021 16:46	14.32	2.55	2.29	0.008	4.01	3.55	3.18	3.56	0.0071	477.9	50.08	231.4
05/18/2021 16:47	14.32	2.54	2.28	0.008	4.02	3.57	3.20	3.61	0.0072	478.0	50.09	231.4
05/18/2021 16:48	14.32	2.53	2.27	0.008	4.01	3.56	3.19	3.61	0.0072	477.4	50.19	231.1
05/18/2021 16:49	14.32	2.55	2.29	0.008	4.02	3.56	3.19	3.62	0.0072	478.4	50.14	231.6
05/18/2021 16:50	14.32	2.55	2.29	0.008	4.01	3.57	3.20	3.61	0.0072	477.6	50.24	231.2
05/18/2021 16:51	14.32	2.55	2.29	0.008	4.01	3.57	3.20	3.61	0.0072	477.4	50.22	231.1
05/18/2021 16:52	14.32	2.55	2.29	0.008	4.01	3.56	3.19	3.61	0.0072	477.9	50.17	231.4
05/18/2021 16:53	14.32	2.54	2.28	0.008	4.01	3.55	3.18	3.56	0.0071	477.7	50.08	231.3
05/18/2021 16:54	14.32	2.54	2.28	0.008	4.01	3.56	3.19	3.61	0.0072	477.5	50.22	231.2
05/18/2021 16:55	14.32	2.56	2.30	0.008	4.01	3.57	3.20	3.61	0.0072	477.8	50.18	231.3
05/18/2021 16:56	14.32	2.57	2.30	0.008	4.01	3.55	3.18	3.56	0.0071	477.4	50.03	231.1
05/18/2021 16:57	14.31	2.58	2.31	0.009	4.51	3.54	3.17	3.56	0.0071	477.0	50.24	230.6
05/18/2021 16:58	14.32	2.59	2.32	0.009	4.52	3.53	3.17	3.56	0.0071	477.8	50.29	231.3
05/18/2021 16:59	14.32	2.60	2.33	0.009	4.51	3.52	3.16	3.56	0.0071	477.7	50.23	231.3
05/18/2021 17:00	14.32	2.60	2.33	0.009	4.52	3.50	3.14	3.51	0.0070	478.0	50.30	231.4
05/18/2021 17:01	14.31	2.60	2.33	0.009	4.51	3.50	3.13	3.51	0.0070	477.5	50.24	230.8
05/18/2021 17:02	14.31	2.58	2.31	0.009	4.52	3.51	3.14	3.52	0.0070	478.4	50.21	231.3
05/18/2021 17:03	14.32	2.57	2.30	0.008	4.02	3.54	3.17	3.57	0.0071	478.7	50.22	231.7
05/18/2021 17:04	14.32	2.56	2.30	0.008	4.02	3.58	3.21	3.62	0.0072	478.4	50.39	231.6
05/18/2021 17:05	14.32	2.55	2.29	0.008	4.02	3.60	3.23	3.62	0.0072	478.4	50.13	231.6
05/18/2021 17:06	14.32	2.55	2.29	0.008	4.01	3.61	3.24	3.66	0.0073	477.9	50.21	231.4
05/18/2021 17:07	14.32	2.55	2.29	0.008	4.01	3.61	3.24	3.66	0.0073	476.9	50.22	230.9
05/18/2021 17:08	14.31	2.57	2.30	0.008	4.00	3.56	3.19	3.60	0.0072	476.5	50.16	230.3
05/18/2021 17:09	14.32	2.64	2.37	0.009	4.50	3.46	3.10	3.50	0.0070	476.1	50.26	230.5
05/18/2021 17:10	14.31	2.71	2.43	0.009	4.50	3.38	3.03	3.40	0.0068	476.1	50.21	230.1
05/18/2021 17:11	14.32	2.72	2.44	0.009	4.50	3.36	3.01	3.40	0.0068	475.9	50.37	230.4
05/18/2021 17:12	14.32	2.64	2.37	0.009	4.49	3.40	3.05	3.40	0.0068	475.6	50.07	230.3
05/18/2021 17:13	14.32	2.52	2.26	0.008	4.00	3.42	3.07	3.45	0.0069	476.1	50.31	230.5
05/18/2021 17:14	14.32	2.49	2.23	0.008	4.00	3.42	3.07	3.45	0.0069	475.6	50.25	230.3
05/18/2021 17:15	14.32	2.49	2.23	0.008	4.00	3.41	3.06	3.45	0.0069	476.5	50.32	230.7
05/18/2021 17:16	14.32	2.47	2.21	0.008	4.00	3.45	3.09	3.45	0.0069	476.6	50.09	230.7
05/18/2021 17:17	14.32	2.42	2.17	0.008	4.01	3.50	3.14	3.51	0.0070	477.8	50.10	231.3
05/18/2021 17:18	14.32	2.38	2.13	0.008	4.02	3.56	3.19	3.62	0.0072	478.3	50.18	231.6
05/18/2021 17:19	14.32	2.35	2.11	0.008	4.02	3.62	3.25	3.67	0.0073	478.5	50.37	231.7
05/18/2021 17:20	14.32	2.35	2.11	0.008	4.02	3.67	3.29	3.72	0.0074	478.7	50.19	231.7
05/18/2021 17:21	14.31	2.32	2.08	0.008	4.03	3.72	3.33	3.78	0.0075	479.7	50.30	231.9
05/18/2021 17:22	14.32	2.34	2.10	0.008	4.03	3.75	3.36	3.77	0.0075	479.2	50.13	232.0
05/18/2021 17:23	14.32	2.41	2.16	0.008	4.02	3.74	3.35	3.77	0.0075	478.8	50.27	231.8
05/18/2021 17:24	14.32	2.47	2.21	0.008	4.02	3.70	3.32	3.72	0.0074	479.0	50.24	231.9
05/18/2021 17:25	14.32	2.49	2.23	0.008	4.02	3.67	3.29	3.72	0.0074	478.7	50.17	231.7
05/18/2021 17:26	14.32	2.48	2.22	0.008	4.02	3.65	3.27	3.67	0.0073	478.8	50.21	231.8

Period Start:	Average 4_O2 %	Average 4_NOXPPM ppm	Average 4_NOX_CORR ppm	Average 4_NOX_LBMM #/MBTU	Average 4_NOX_LBHR #/hr	Average 4_COPPM ppm	Average 4_CO_CORR ppm	Average 4_CO_LBHR #/hr	Average 4_CO_LBMM #/MBTU	Average 4_GasFlow kscfh	Average 4_LOAD MW	Average 4_STACKFLW kscfm
05/18/2021 17:27	14.31	2.48	2.22	0.008	4.03	3.64	3.26	3.67	0.0073	479.4	50.38	231.8
05/18/2021 17:28	14.32	2.49	2.23	0.008	4.02	3.64	3.26	3.67	0.0073	478.6	50.18	231.7
05/18/2021 17:29	14.32	2.50	2.24	0.008	4.02	3.64	3.26	3.67	0.0073	478.9	50.19	231.8
05/18/2021 17:30	14.32	2.49	2.23	0.008	4.02	3.64	3.26	3.67	0.0073	478.9	50.42	231.8
05/18/2021 17:31	14.32	2.49	2.23	0.008	4.02	3.65	3.27	3.66	0.0073	478.0	50.48	231.4
05/18/2021 17:32	14.34	2.49	2.24	0.008	4.02	3.64	3.27	3.67	0.0073	478.4	50.11	232.3
05/18/2021 17:33	14.32	2.47	2.21	0.008	4.02	3.65	3.27	3.67	0.0073	478.3	50.35	231.6
05/18/2021 17:34	14.32	2.47	2.21	0.008	4.01	3.64	3.26	3.66	0.0073	477.8	50.18	231.3
05/18/2021 17:35	14.32	2.50	2.24	0.008	4.01	3.60	3.23	3.61	0.0072	477.9	50.26	231.4
05/18/2021 17:36	14.33	2.52	2.26	0.008	4.01	3.57	3.21	3.61	0.0072	477.5	50.23	231.5
05/18/2021 17:37	14.32	2.52	2.26	0.008	4.01	3.56	3.19	3.61	0.0072	477.8	50.10	231.3
05/18/2021 17:38	14.32	2.54	2.28	0.008	4.01	3.56	3.19	3.61	0.0072	477.6	50.17	231.2
05/18/2021 17:39	14.33	2.56	2.30	0.008	4.00	3.55	3.19	3.60	0.0072	476.8	50.27	231.2
05/18/2021 17:40	14.32	2.58	2.31	0.009	4.51	3.54	3.17	3.56	0.0071	477.4	50.09	231.1
Daily Average*	**14.32**	**2.52**	**2.26**	**0.008**	**4.10**	**3.56**	**3.19**	**3.60**	**0.0072**	**477.8**	**50.21**	**231.3**
Maximum*	**14.34**	**2.72**	**2.44**	**0.009**	**4.52**	**3.75**	**3.36**	**3.78**	**0.0075**	**479.7**	**50.48**	**232.3**
	05/18/2021 17:32	05/18/2021 17:11	05/18/2021 17:11	05/18/2021 17:40	05/18/2021 17:02	05/18/2021 17:22	05/18/2021 17:22	05/18/2021 17:21	05/18/2021 17:23	05/18/2021 17:21	05/18/2021 17:31	05/18/2021 17:32
Minimum*	**14.31**	**2.32**	**2.08**	**0.008**	**4.00**	**3.36**	**3.01**	**3.40**	**0.0068**	**475.6**	**50.03**	**230.1**
	05/18/2021 17:27	05/18/2021 17:21	05/18/2021 17:21	05/18/2021 17:39	05/18/2021 17:39	05/18/2021 17:11	05/18/2021 17:11	05/18/2021 17:12	05/18/2021 17:12	05/18/2021 17:14	05/18/2021 16:56	05/18/2021 17:10

* Does not include Invalid Averaging Periods ("N/A")

Appendix C.1
General Emissions Calculations

GENERAL EMISSIONS CALCULATIONS

I. Stack Gas Velocity

A. Stack gas molecular weight, lb/lb-mole

$MW_{dry} = 0.44 * \% CO_2 + 0.32 * \% O_2 + 0.28 * \% N_2$

$MW_{wet} = MW_{dry} * (1 - B_{wo}) + 18 * B_{wo}$

B. Absolute stack pressure, iwg

$$P_s = P_{bar} + \frac{P_{sg}}{13.6}$$

C. Stack gas velocity, ft/sec

$$V_s = 2.9 * C_p * \sqrt{\Delta P} * \sqrt{T_s} * \sqrt{\frac{29.92 - 28.95}{P_s * MW_{wet}}}$$

II. Moisture

A. Sample gas volume, dscf

$$V_{mstd} = 0.03342 * V_m * \left(P_{bar} + \frac{\Delta H}{13.6}\right) * \frac{T_{ref}}{T_m} * Y_d$$

B. Water vapor volume, scf

$$V_{wstd} = 0.0472 * V_{ic} * \frac{T_{ref}}{528°R}$$

C. Moisture content, dimensionless

$$B_{wo} = \frac{V_{wstd}}{(V_{mstd} + V_{wstd})}$$

III. Stack Gas Volumetric Flow Rate

A. Actual stack gas volumetric flow rate, wacfm

$Q = V_s * A_s * 60$

B. Standard stack gas flow rate, dscfm

$$Q_{sd} = Q * (1 - B_{wo}) * \frac{T_{ref}}{T_s} * \frac{P_s}{29.92}$$

IV. Gaseous Mass Emission Rates, lb/hr

$$M = \frac{ppm * MW_i * Q_{sd} * 60}{SV * 10^6}$$

V. Emission Rates, lb/MMBtu

$$\frac{lb}{MMBtu} = \frac{ppm * MW_i * F}{SV * 10^6} * \frac{20.9}{20.9 - \%\ O_2}$$

VI. Percent Isokinetic

$$I = \frac{17.32 * T_s\ (V_{mstd})}{(1 - B_{wo})\ 0 * V_s * P_s * Dn^2} * \frac{520°R}{T_{ref}}$$

VII. Particulate Emissions

(a) Grain loading, gr/dscf
$C = 0.01543\ (M_n/V_{m\ std})$

(b) Grain loading at 12% CO_2, gr/dscf
$C_{12\%}\ CO_2 = C\ (12/\%\ CO_2)$

(c) Mass emissions, lb/hr
$M = C * Q_{sd} * (60\ min/hr) / (7000\ gr/lb)$

(d) Particulate emission factor

$$lb/10^6\ Btu = Cx\ \frac{1\ lb}{7000\ gr} * F * \frac{20.9}{20.9 - \%\ O_2}$$

Nomenclature:

A_s	=	stack area, ft^2
B_{wo}	=	flue gas moisture content, dimensionless
$C_{12\%CO2}$	=	particulate grain loading, gr/dscf corrected to 12% CO_2
C	=	particulate grain loading, gr/dscf
C_p	=	pitot calibration factor, dimensionless
Dn	=	nozzle diameter, inches
F	=	fuel F-Factor, dscf/MMBtu @ 0% O_2
H	=	orifice differential pressure, iwg
I	=	% isokinetics
M_n	=	mass of collected particulate, mg
M_i	=	mass emission rate of specie i, lb/hr
MW	=	molecular weight of flue gas, lb/lb-mole
M_{wi}	=	molecular weight of specie i:
	SO_2:	64
	NO_x:	46
	CO:	28
	HC:	16
0	=	sample time, minutes
ΔP	=	average velocity head, iwg = $(\sqrt{\Delta P})^2$
P_{bar}	=	barometric pressure, inches Hg
P_s	=	stack absolute pressure, inches Hg
P_{sg}	=	stack static pressure, iwb
Q	=	wet stack flow rate at actual conditions, wacfm
Q_{sd}	=	dry standard stack flow rate, dscfm
SV	=	specific molar volume of an ideal gas at standard conditions, ft^3/lb-mole
T_m	=	meter temperature, °R
T_{ref}	=	reference temperature, °R
T_s	=	stack temperature, °R
V_s	=	stack gas velocity, ft/sec
V_{lc}	=	volume of liquid collected in impingers, ml
V_m	=	uncorrected dry meter volume, dcf
V_{mstd}	=	dry meter volume at standard conditions, dscf
V_{wstd}	=	volume of water vapor at standard conditions, scf
Y_d	=	meter calibration coefficient

Appendix C.2
Spreadsheet Summaries

SCAQMD 207.1 EXAMPLE CALCULATION
TEST NUMBER: 1-NH3-U4

Identifier	Description	Units	Equation	Value
A	Reference Temperature	F	--	60
B	Reference Temperature	R	A + 460	520
C	Meter Calibration Factor (Yd)	--	--	0.993
D	Barometric Pressure	" Hg	--	29.72
E	Meter Volume	acf	--	39.810
F	Meter Temperature	F	--	74.3
G	Meter Temperature	R	F + 460	534.3
H	Delta H	" H_2O	--	1.5
I	Meter Volume (standard)	dscf	0.03342 * E * (D + H/13.6) * B/G * C	38.355
J	Liquid Collected	grams	--	115.6
K	Water vapor volume	scf	0.0472 * J * B/528	5.374
L	Moisture Content	--	K/(K + I)	0.123
M	Gas Constant	ft-lbf/lb-mole-R	--	1545.33
N	Specific Molar Volume	SCF/lb-mole	385.3 * B / 528	379.5
O	F-Factor	dscf/MMBtu	--	8,710
P	HHV	Btu/SCF	--	1,050
Q	Mass Conversion Factor	lb/ug	--	2.2046E-09
R	O_2 Correction Factor	--	--	15
S	Stack Flow Rate @ 68 F	dscfm	--	231,600
T	Stack Flow Rate @ Tref	dscfm	S * B/528	228,091
U	Mass NH_3	ug	--	1,252
V	Mass NH_3	lb	U * Q	2.76E-06
W	MW of NH_3	lb/lb-mole	--	17.03
X	NH_3	ppm	$(V * N * 10^6)/(I * W)$	1.6
Y	Flue Gas O_2	%	--	14.32
Z	NH_3	ppmc	X * (20.9 - R)/(20.9 - Y)	1.4
AA	NH_3	lb/hr	$X * T * W * 60/(N * 10^6)$	1.0
AB	NH_3	lb/MMBtu	$(X * W * O)/(385.3 * 10^6) * 20.9/(20.9 - Y)$	0.002
AC	NH_3	lb/MMSCF	AB * P	2.1

Note:

(1) Some values may be slightly different from those shown on the run sheets due to round off errors. This page is intended to show the calculation methodology only.

SCAQMD METHOD 207.1
DATA WORKSHEET AND SUMMARY

Facility	**Canyon**		Parameter		**NH_3**
Unit	**U4**		Fuel		**Natural gas**
Sample Location	**Stack**		Data By		**TT**
Test Number	1-NH3-U4	2-NH3-U4	Average	Maximum	Limit
Reference Temperature (°F)	60	60			
Test Date	5/18/2021	5/18/2021			
Test Method	SCAQMD 207.1	SCAQMD 207.1			
Sample Train	31-WCS	31-WCS			
Meter Calibration Factor	0.993	0.993			
Stack Area (ft^2)	106.90	106.90			
Sample Time (Minutes)	60	60			
Barometric Pressure ("Hg)	29.72	29.72			
Start/Stop Time	1457/1603	1635/1741			
Meter Volume (acf)	39.810	39.862			
Meter Temperature (°F)	74.3	75.1			
Meter Pressure (iwg)	1.5	1.5			
Liquid Volume (ml)	115.6	111.1			
Stack O_2 (%)	14.32	14.32	14.32	(from facility CEMS)	
Unit Load (MW)	50.2	50.2	50.2		
Standard Sample Volume (SCF)	38.355	38.348			
Moisture Fraction	0.123	0.119			
Stack Flow Rate (dscfm, 68 °F)	231,600	231,300	231,450	(from facility CEMS)	
Stack Flow Rate (@ Tref)	228,091	227,795	227,943		
Gas Constant (ft-lbf/lb-mole-R)	1545.33	1545.33			
Molecular Weight NH_3 (lb/lb-mole)	17.03	17.03			
Specific Molar Volume (ft^3/lb-mole)	379.5	379.5			
F-Factor (dscf/MMBtu)	8,710	8,710			
HHV(Btu/SCF)	1,050	1,050			
Mass Conversion (lb/ug)	2.2046E-09	2.2046E-09			
O_2 Correction Factor (%)	15	15			
Mass NH_3 (ug)	1,252	990			
Mass NH_3 (lb)	2.76E-06	2.18E-06			
NH_3 (ppmv, flue gas)	1.6	1.3	1.4	1.6	
NH_3 (ppmv @ O_2 Correction Factor)	1.4	1.1	1.3	1.4	5
NH_3 (lb/hr)	1.0	0.8	0.9	1.0	
NH_3 (lb/MMBtu)	0.002	0.002	0.002	0.002	
NH_3 (lb/MMSCF)	2.1	1.6	1.8	2.1	

Note: SCAQMD Method 207.1 requires the higher of the duplicate runs be reported as the test result.

APPENDIX D
QUALITY ASSURANCE

Appendix D.1
Quality Assurance Program Summary

QUALITY ASSURANCE PROGRAM SUMMARY

As part of Montrose Air Quality Services, LLC (MAQS) ASTM D7036-04 certification, MAQS is committed to providing emission related data which is complete, precise, accurate, representative, and comparable. MAQS quality assurance program and procedures are designed to ensure that the data meet or exceed the requirements of each test method for each of these items. The quality assurance program consists of the following items:

- Assignment of an Internal QA Officer
- Development and use of an internal QA Manual
- Personnel training
- Equipment maintenance and calibration
- Knowledge of current test methods
- Chain-of-custody
- QA reviews of test programs

Assignment of an Internal QA Officer: MAQS has assigned an internal QA Officer who is responsible for administering all aspects of the QA program.

Internal Quality Assurance Manual: MAQS has prepared a QA Manual according to the requirements of ASTM D7036-04 and guidelines issued by EPA. The manual documents and formalizes all of MAQS QA efforts. The manual is revised upon periodic review and as MAQS adds capabilities. The QA manual provides details on the items provided in this summary.

Personnel Testing and Training: Personnel testing and training is essential to the production of high quality test results. MAQS training programs include:

- A requirement for all technical personnel to read and understand the test methods performed
- A requirement for all technical personnel to read and understand the MAQS QA manual
- In-house testing and training
- Quality Assurance meetings
- Third party testing where available
- Maintenance of training records.

Equipment Maintenance and Calibration: All laboratory and field equipment used as a part of MAQS emission measurement programs is maintained according to manufacturer's recommendations. A summary of the major equipment maintenance schedules is summarized in Table 1. In addition to routine maintenance, calibrations are performed on all sampling equipment according to the procedures outlined in the applicable test method. The calibration intervals and techniques for major equipment components is summarized in Table 2. The calibration technique may vary to meet regulatory agency requirements.

Knowledge of Current Test Methods: MAQS maintains current copies of EPA, ARB, and SCAQMD Source Test Manuals and Rules and Regulations.

Chain-of-Custody: MAQS maintains chain-of-custody documentation on all data sheets and samples. Samples are stored in a locked area accessible only to MAQS source test personnel. Data sheets are kept in the custody of the originator, program manager, or in locked storage until return to MAQS office. Electronic field data is duplicated for backup on secure storage media. The original data sheets are used for report preparation and any additions are initialed and dated.

QA Reviews: Periodic field, laboratory, and report reviews are performed by the in-house QA coordinator. Periodically, test plans are reviewed to ensure proper test methods are selected and reports are reviewed to ensure that the methods were followed and any deviations from the methods are justified and documented.

ASTM D7036-04 Required Information

Uncertainty Statement

Montrose is qualified to conduct this test program and has established a quality management system that led to accreditation with ASTM Standard D7036-04 (Standard Practice for Competence of Air Emission Testing Bodies). Montrose participates in annual functional assessments for conformance with D7036-04 which are conducted by the American Association for Laboratory Accreditation (A2LA). All testing performed by Montrose is supervised on site by at least one Qualified Individual (QI) as defined in D7036-04 Section 8.3.2. Data quality objectives for estimating measurement uncertainty within the documented limits in the test methods are met by using approved test protocols for each project as defined in D7036-04 Sections 7.2.1 and 12.10. Additional quality assurance information is presented in the report appendices.

Performance Data

Performance data are available for review.

Qualified Personnel

A qualified individual (QI), defined by performance on a third party or internal test on the test methods, will be present on each test event.

Plant Entry and Safety Requirements

Plant Entry

All test personnel are required to check in with the guard at the entrance gate or other designated area. Specific details are provided by the facility and project manager.

Safety Requirements

All personnel shall have the following personal protective equipment (PPE) and wear them where designated:

- Hard Hat
- Safety Glasses
- Steel Toe Boots
- Hearing Protection
- Gloves
- High Temperature Gloves (if required)

The following safety measures will be followed:

- Good housekeeping
- SDS for all on-site hazardous materials
- Confine selves to necessary areas (stack platform, mobile laboratory, CEMS data acquisition system, control room, administrative areas)
- Knowledge of evacuation procedures

Each facility will provide plant specific safety training.

TABLE 1
EQUIPMENT MAINTENANCE SCHEDULE

Equipment	Acceptance Limits	Frequency of Service	Methods of Service
Pumps	1. Absence of leaks 2. Ability to draw manufacturers required vacuum and flow	As recommended by manufacturer	1. Visual inspection 2. Clean 3. Replace parts 4. Leak check
Flow Meters	1. Free mechanical movement	As recommended by manufacturer	1. Visual inspection 2. Clean 3. Calibrate
Sampling Instruments	1. Absence of malfunction 2. Proper response to zero span gas	As recommended by manufacturer	As recommended by manufacturer
Integrated Sampling Tanks	1. Absence of leaks	Depends on nature of use	1. Steam clean 2. Leak check
Mobile Van Sampling System	1. Absence of leaks	Depends on nature of use	1. Change filters 2. Change gas dryer 3. Leak check 4. Check for system contamination
Sampling lines	1. Sample degradation less than 2%	After each test series	1. Blow dry, inert gas through line until dry

TABLE 2
MAJOR SAMPLING EQUIPMENT CALIBRATION REQUIREMENTS

Sampling Equipment	Calibration Frequency	Calibration Procedure	Acceptable Calibration Criteria
Continuous Analyzers	Before and After Each Test Day	3-point calibration error test	< 2% of analyzer range
Continuous Analyzers	Before and After Each Test Run	2-point sample system bias check	< 5% of analyzer range
Continuous Analyzers	After Each Test Run	2-point analyzer drift determination	< 3% of analyzer range
CEMS System	Beginning of Each Day	leak check	< 1 in. Hg decrease in 5 min. at > 20 in. Hg
Continuous Analyzers	Semi-Annually	3-point linearity	< 1% of analyzer range
NO_x Analyzer	Daily	NO_2 -> NO converter efficiency	> 90%
Differential Pressure Gauges (except for manometers)	Semi-Annually	Correction factor based on 5-point comparison to standard	+/- 5%
Differential Pressure Gauges (except for manometers)	Bi-Monthly	3-point comparison to standard, no correction factor	+/- 5%
Barometer	Semi-Annually	Adjusted to mercury-in-glass or National Weather Service Station	+/- 0.1 inches Hg
Dry Gas Meter	Semi-Annually	Calibration check at 4 flow rates using a NIST traceable standard	+/- 2%
Dry Gas Meter	Bi-Monthly	Calibration check at 2 flow rates using a NIST traceable standard	+/- 2% of semi-annual factor
Dry Gas Meter Orifice	Annually	4-point calibration for ΔH@	--
Temperature Sensors	Semi-Annually	3-point calibration vs. NIST traceable standard	+/- 1.5%

Note: Calibration requirements will be used that meet applicable regulatory agency requirements.

Appendix D.2
SCAQMD and STAC Certifications

South Coast
Air Quality Management District
21865 Copley Drive, Diamond Bar, CA 91765-4178
(909) 396-2000 • www.aqmd.gov

September 9, 2020

Mr. John Peterson
Montrose Air Quality Services, LLC
1631 E. Saint Andrew Place
Santa Ana, CA 92705

Subject: LAP Approval Notice
Reference # 96LA1220

Dear Mr. Peterson:

We have reviewed your renewal letter under the South Coast Air Quality Management District's Laboratory Approval Program (LAP). We are pleased to inform you that your firm is approved for the period beginning September 30, 2020, and ending September 30, 2021 for the following methods, subject to the requirements in the LAP Conditions For Approval Agreement and conditions listed in the attachment to this letter:

Methods 1-4	Methods 5.1, 5.2, 5.3, 6.1
Methods 10.1 and 100.1	Methods 25.1 and 25.3 (Sampling)
USEPA CTM-030 and ASTM D6522-00	Rule 1121/ 1146.2 Protocol

Rule 1420/1420.1/1420.2 – (Lead) Source and Ambient Sampling

Your LAP approval to perform nitrogen oxide emissions compliance testing for Rule 1121/ 1146.2 Protocols includes satellite facilities located at:

McKenna Boiler 1510 North Spring Street Los Angeles, CA 90012	Noritz America Corp. 11160 Grace Avenue Fountain Valley, CA 92708	Ajax Boiler, Inc. 2701 S. Harbor Blvd. Santa Ana, CA 92704

Laundry Building of VA Greater Los Angeles Healthcare System
508 Constitution Avenue
Los Angeles, CA 90049

Thank you for participating in the LAP. Your cooperation helps us to achieve the goal of the LAP: to maintain high standards of quality in the sampling and analysis of source emissions. You may direct any questions or information to LAP Coordinator, Glenn Kasai. He may be reached by telephone at (909) 396-2271, or via e-mail at gkasai@aqmd.gov.

Sincerely,

D. Sarkar

Dipankar Sarkar
Program Supervisor
Source Test Engineering

DS:GK/gk
Attachment

200909 LapRenewalRev.doc

STACK TESTING ACCREDITATION COUNCIL

American Association for Laboratory Accreditation

Accredited Air Emission Testing Body

A2LA has accredited

MONTROSE AIR QUALITY SERVICES

In recognition of the successful completion of the joint A2LA and Stack Testing Accreditation Council (STAC) evaluation process, this laboratory is accredited to perform testing activities in compliance with ASTM D7036:2004 - Standard Practice for Competence of Air Emission Testing Bodies.

Presented this 11th day of February 2020.

Vice President, Accreditation Services
For the Accreditation Council
Certificate Number 3925.01
Valid to February 28, 2022

This accreditation program is not included under the A2LA ILAC Mutual Recognition Arrangement.

Appendix D.3
Individual QI Certificate

CERTIFICATE OF COMPLETION

John Groenenboom

This document certifies that this individual has passed a comprehensive examination and is now a Qualified Individual (QI) as defined in Section 8.3 of ASTM D7036-04 for the following method(s):

SCAQMD Methods 1.1 – 4.1

Certificate Number: 002-2017-58

Tate Strickler, Accreditation Director

DATE OF ISSUE: 1/18/17

DATE OF EXPIRATION: 1/18/22

MONTROSE ENVIRONMENTAL

CERTIFICATE OF COMPLETION

John Groenenboom

This document certifies that this individual has passed a comprehensive examination and is now a Qualified Individual (QI) as defined in Section 8.3 of ASTM D7036-04 for the following method(s):

SCAQMD Method 207.1

Certificate Number: 002-2017-51

Tate Strickler, Accreditation Director

DATE OF ISSUE: 1/17/17

DATE OF EXPIRATION: 1/17/22

MONTROSE ENVIRONMENTAL

APPENDIX E
APPLICABLE PERMIT SECTIONS

FACILITY PERMIT TO OPERATE
CANYON POWER PLANT

SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS

The operator shall comply with the terms and conditions set forth below:

Equipment	ID No.	Connected To	RECLAIM Source Type/ Monitoring Unit	Emissions * And Requirements	Conditions
Process 1: POWER GENERATION					
GAS TURBINE, NO. 4, NATURAL GAS, GENERAL ELECTRIC, MODEL LM6000PC SPRINT, SIMPLE CYCLE, 479 MMBTU/HR AT 46 DEG F, WITH INLET CHILLING, WITH WATER INJECTION WITH A/N: 555831 GENERATOR, 50.95 MW	D19	C21	NOX: MAJOR SOURCE**	**CO**: 4 PPMV NATURAL GAS (4) **[RULE 1303(a)(1)-BACT, 5-10-1996;** *RULE 1303(a)(1) -BACT, 12-6-2002*]; **CO**: 2000 PPMV NATURAL GAS (5) **[RULE 407, 4-2-1982]**; **NOX**: 2.5 PPMV NATURAL GAS (4) **[RULE 2005, 6-3-2011]**; **NOX**: 25 PPMV NATURAL GAS (8) **[40CFR 60 Subpart KKKK, 7-6-2006]**; **PM10**: 0.01 GRAINS/SCF NATURAL GAS (5A) **[RULE 475, 10-8-1976;** *RULE 475, 8-7-1978*]; **PM10**: 0.1 GRAINS/SCF NATURAL GAS (5) **[RULE 409, 8-7-1981]**; **PM10**: 1.67 LBS/HR NATURAL GAS (5C) **[RULE 1303(b)(2)-Offset, 5-10-1996;** *RULE 1303(b)(2) -Offset, 12-6-2002*]; **PM10**: 11 LBS/HR NATURAL GAS (5B) **[RULE 475, 10-8-1976;** *RULE 475, 8-7-1978*]; **SO2**: (9) **[40CFR 72 - Acid Rain Provisions, 11-24-1997]**; **SOX**: 0.06 LBS/MMBTU NATURAL GAS (8) **[40CFR 60 Subpart KKKK, 7-6-2006]**; **VOC**: 2 PPMV NATURAL GAS (4) **[RULE 1303(a)(1)-BACT, 5-10-1996;** *RULE 1303(a)(1)-BACT, 12-6-2002*]	A63.1, A99.1, A99.2, A99.3, A195.1, A195.2, A195.3, A327.1, B61.1, D12.1, D29.2, D29.3, D82.1, D82.2, E193.1, H23.1, I298.4, K40.1

* (1) (1A) (1B) Denotes RECLAIM emission factor (2) (2A) (2B) Denotes RECLAIM emission rate
(3) Denotes RECLAIM concentration limit (4) Denotes BACT emission limit
(5) (5A) (5B) Denotes command and control emission limit (6) Denotes air toxic control rule limit
(7) Denotes NSR applicability limit (8) (8A) (8B) Denotes 40 CFR limit (e.g. NSPS, NESHAPS, etc.)
(9) See App B for Emission Limits (10) See section J for NESHAP/MACT requirements

** Refer to section F and G of this permit to determine the monitoring, recordkeeping and reporting requirements for this device.

FACILITY PERMIT TO OPERATE
CANYON POWER PLANT

SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS

The operator shall comply with the terms and conditions set forth below:

Equipment	ID No.	Connected To	RECLAIM Source Type/ Monitoring Unit	Emissions * And Requirements	Conditions
Process 1: POWER GENERATION					
CO OXIDATION CATALYST, NO. 4, BASF, 110 CUBIC FEET OF TOTAL CATALYST VOLUME A/N: 476663	C21	D19 C22			
SELECTIVE CATALYTIC REDUCTION, NO. 4, CORMETECH CMHT-21, 1012 CU.FT.; WIDTH: 2 FT 6 IN; HEIGHT: 25 FT 9 IN; LENGTH: 18 FT WITH A/N: 476663 AMMONIA INJECTION	C22	C21 S24		**NH3**: 5 PPMV NATURAL GAS (4) **[RULE 1303(a)(1)-BACT, 5-10-1996;** *RULE 1303(a)(1) -BACT, 12-6-2002*]	A195.7, D12.2, D12.3, D12.4, E179.1, E179.2, E193.1
STACK, TURBINE NO. 4, HEIGHT: 86 FT ; DIAMETER: 11 FT 8 IN A/N: 555831	S24	C22			
System 2: INTERNAL COMBUSTION ENGINE					

* (1) (1A) (1B) Denotes RECLAIM emission factor
(2) (2A) (2B) Denotes RECLAIM emission rate
(3) Denotes RECLAIM concentration limit
(4) Denotes BACT emission limit
(5) (5A) (5B) Denotes command and control emission limit
(6) Denotes air toxic control rule limit
(7) Denotes NSR applicability limit
(8) (8A) (8B) Denotes 40 CFR limit (e.g. NSPS, NESHAPS, etc.)
(9) See App B for Emission Limits
(10) See section J for NESHAP/MACT requirements

** Refer to section F and G of this permit to determine the monitoring, recordkeeping and reporting requirements for this device.

SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS

The operator shall comply with the terms and conditions set forth below:

[Devices subject to this condition : C4, C10, C16, C22]

D12.5 The operator shall install and maintain a(n) non-resettable elapsed time meter to accurately indicate the elapsed operating time of the engine.

[RULE 1110.2, 2-1-2008; RULE 1110.2, 9-7-2012; **RULE 1303(b)(2)-Offset, 5-10-1996;** RULE 1303(b)(2)-Offset, 12-6-2002; RULE 1401, 9-10-2010; RULE 1470, 5-4-2012; **RULE 2012, 5-6-2005; 40CFR 60 Subpart IIII, 1-30-2013]**

[Devices subject to this condition : D25]

D29.2 The operator shall conduct source test(s) for the pollutant(s) identified below.

Pollutant(s) to be tested	Required Test Method(s)	Averaging Time	Test Location
NH3 emissions	District method 207.1 and 5.3 or EPA method 17	1 hour	Outlet of the SCR serving this equipment

THIS IS THE LAST PAGE OF THIS DOCUMENT

If you have any questions, please contact one of the following individuals by email or phone.

Name: Mr. John Groenenboom
Title: Client Project Manager
Region: West
Email: JGroenenboom@montrose-env.com
Phone: (714) 279-6777

Name: Mr. Matt McCune
Title: Regional Vice President
Region: West
Email: MMccune@montrose-env.com
Phone: (714) 279-6777

CANYON POWER PLANT

ANNUAL COMPLIANCE REPORT

ATTACHMENT 17

AQ-14 & AQ-24
RTC INVENTORY

South Coast
Air Quality Management District
21865 Copley Drive, Diamond Bar, CA 91765-4178
(909) 396-2000 • www.aqmd.gov

December 30, 2020

Ronald Hoffard
Generation Plant Manager
Canyon Power Plant (ID: 153992)
3071 E Miraloma Ave
Anaheim, CA 92806

Dear Mr. Hoffard:

Enclosed is your re-issued Facility Permit for Compliance Year 2021 (January 1, 2021 – December 31, 2021). This reissuance is an Administrative Permit Revision to your RECLAIM/Title V Facility Permit and includes the Title Page, Table of Contents, and Section B (RECLAIM Annual Emission Allocations) in accordance with Rule 2002(b)(4).

Please review the enclosed Section B carefully, as it will be part of your official Facility Permit. The changes are stated below. Please note that the South Coast Air Quality Management District (South Coast AQMD) rules allow you to appeal the terms and conditions of any sections of the enclosed Facility Permit by petitioning the Hearing Board within thirty days of receipt of the permit.

We recently sent you an invoice for the annual operating renewal fee for your facility permit. This must be paid on or before the due date indicated on the invoice or your facility permit will expire due to non-payment of fees.

A. Facility Permit

The enclosed Facility Permit contains changes described as follows:

1. The revision numbers and dates of the Title Page and the Table of Contents have been updated to reflect the reissuance of the relevant permit sections.

2. Section B – RECLAIM Annual Emission Allocation

   Section B has been updated to reflect all approved RECLAIM Trading Credit (RTC) transactions approved as of December 18, 2020. Therefore, if you have submitted any RTC transactions in December, please review your records carefully to ensure that you take into account any RTC transactions that have not been approved as of that date and make necessary changes to your facility's RTC balances when reconciling your facility's emissions.

In addition, the South Coast AQMD has updated Section B of the Facility Permit to list your facility's allocation balances for the next fifteen years pursuant to Rule 2002(b)(4). Also, your facility's Starting Allocation and Non-Tradable RTCs in Compliance Year 1994 are listed within this section. This establishes the level used to determine compliance with Rule 2005(c)(4) and applicability of Rule 2005(e) – Trading Zone Restrictions.

B. Appeals

As previously mentioned, if you determine that certain changes or clarifications need to be made to the enclosed permit, you may appeal the terms and conditions by petitioning the Hearing Board within thirty days of receipt. If you determine there are administrative errors in these permit sections, please notify South Coast AQMD staff within thirty days of receipt of your permit sections. Your facility is still bound by the requirements of your entire Facility Permit while your appeal is under consideration by South Coast AQMD staff and/or Hearing Board.

Any comments or questions regarding your RECLAIM Facility Permit may be directed to Rizaldy Calungcagin, Senior Air Quality Engineer at (909) 396-2315 or contact rcalungcagin@aqmd.gov.

Sincerely,

Thomas G. Liebel
Senior Engineering Manager
Energy/Public Services/Waste Management/Terminals

Enclosure

cc: Sheila Tsai, U.S. EPA (via cdx.epa.gov)
Rafael Reynosa, Sr. Enforcement Manager – Compliance

South Coast Air Quality Management District
21865 Copley Drive, Diamond Bar, CA 91765-4178

Title Page
Facility ID: 153992
Revision #: 16
Date: January 01, 2021

FACILITY PERMIT TO OPERATE

CANYON POWER PLANT
3071 E MIRALOMA AVE
ANAHEIM, CA 92806

NOTICE

IN ACCORDANCE WITH RULE 206, THIS PERMIT TO OPERATE OR A COPY THEREOF MUST BE KEPT AT THE LOCATION FOR WHICH IT IS ISSUED.

THIS PERMIT DOES NOT AUTHORIZE THE EMISSION OF AIR CONTAMINANTS IN EXCESS OF THOSE ALLOWED BY DIVISION 26 OF THE HEALTH AND SAFETY CODE OF THE STATE OF CALIFORNIA OR THE RULES OF THE SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT. THIS PERMIT SHALL NOT BE CONSTRUED AS PERMISSION TO VIOLATE EXISTING LAWS, ORDINANCES, REGULATIONS OR STATUTES OF ANY OTHER FEDERAL, STATE OR LOCAL GOVERNMENTAL AGENCIES.

Wayne Nastri
Executive Officer

By _____
Amir Dejbakhsh
Deputy Executive Officer
Engineering and Permitting

South Coast Air Quality Management District
21865 Copley Drive, Diamond Bar, CA 91765-4178

Table of Content
Facility ID: 153992
Revision #: 16
Date: January 01, 2021

FACILITY PERMIT TO OPERATE
CANYON POWER PLANT

TABLE OF CONTENTS

FACILITY PERMIT TO OPERATE
CANYON POWER PLANT

SECTION B: RECLAIM ANNUAL EMISSION ALLOCATION

The annual allocation of NOx RECLAIM Trading Credits (RTCs) for this facility is calculated pursuant to Rule 2002. Total NOx emission shall not exceed such annual allocations unless the operator obtains RTCs corresponding to the facility's increased emissions in compliance with Rules 2005 and 2007.

The level of Starting Allocation plus Non-Tradable Credits used to determine compliance with Rule 2005(c)(4) and applicability of Rule 2005(e) - Trading Zone Restrictions is listed on the last page of this Section.

The following table lists the annual allocations that were issued to this facility and the amounts of RTCs held by this facility on the day of printing this Section.

RECLAIM POLLUTANT ANNUAL ALLOCATION (POUNDS)

Year Begin (month/year)	Year End (month/year)	Zone	NOx RTC Initially Allocated	NOx RTC[1] Holding as of 01/01/2021 (pounds)	Non-Tradable[2] Non-Usable RTCs (pounds)
7/2018	6/2019	Coastal	0	17217	1292
1/2019	12/2019	Coastal	0	5516	1648
7/2019	6/2020	Coastal	0	11792	1292
1/2020	12/2020	Coastal	0	37283	3248
7/2020	6/2021	Coastal	0	29245	2548
1/2021	12/2021	Coastal	0	33988	3295
7/2021	6/2022	Coastal	0	26660	2585
1/2022	12/2022	Coastal	0	27445	6543
7/2022	6/2023	Coastal	0	21527	5133
1/2023	12/2023	Coastal	0	27445	0
7/2023	6/2024	Coastal	0	21527	0
1/2024	12/2024	Coastal	0	27445	0
7/2024	6/2025	Coastal	0	21527	0
1/2025	12/2025	Coastal	0	27445	0
7/2025	6/2026	Coastal	0	21527	0
1/2026	12/2026	Coastal	0	27445	0
7/2026	6/2027	Coastal	0	21527	0

Footnotes:

1. This number may change due to pending trades, emissions reported under Quarterly Certification of Emissions Report (QCER) and Annual Permit Emission Program (APEP) Report required pursuant to Rule 2004, or deductions made pursuant to Rule 2010(b). The most recent total RTC information can be obtained from the District's RTC Listing.

2. The use of such credits is subject to restrictions set forth in paragraph (f)(1) of Rule 2002.

FACILITY PERMIT TO OPERATE
CANYON POWER PLANT

SECTION B: RECLAIM ANNUAL EMISSION ALLOCATION

The annual allocation of NOx RECLAIM Trading Credits (RTCs) for this facility is calculated pursuant to Rule 2002. Total NOx emission shall not exceed such annual allocations unless the operator obtains RTCs corresponding to the facility's increased emissions in compliance with Rules 2005 and 2007.

The level of Starting Allocation plus Non-Tradable Credits used to determine compliance with Rule 2005(c)(4) and applicability of Rule 2005(e) - Trading Zone Restrictions is listed on the last page of this Section.

The following table lists the annual allocations that were issued to this facility and the amounts of RTCs held by this facility on the day of printing this Section.

RECLAIM POLLUTANT ANNUAL ALLOCATION (POUNDS)

Year Begin (month/year)	Year End	Zone	NOx RTC Initially Allocated	NOx RTC[1] Holding as of 01/01/2021 (pounds)	Non-Tradable[2] Non-Usable RTCs (pounds)
1/2027	12/2027	Coastal	0	27445	0
7/2027	6/2028	Coastal	0	21527	0
1/2028	12/2028	Coastal	0	27445	0
7/2028	6/2029	Coastal	0	21527	0
1/2029	12/2029	Coastal	0	27445	0
7/2029	6/2030	Coastal	0	21527	0
1/2030	12/2030	Coastal	0	27445	0
7/2030	6/2031	Coastal	0	21527	0
1/2031	12/2031	Coastal	0	27445	0
7/2031	6/2032	Coastal	0	21527	0
1/2032	12/2032	Coastal	0	27445	0
7/2032	6/2033	Coastal	0	21527	0
1/2033	12/2033	Coastal	0	27445	0
7/2033	6/2034	Coastal	0	21527	0
1/2034	12/2034	Coastal	0	27445	0
7/2034	6/2035	Coastal	0	21527	0
1/2035	12/2035	Coastal	0	27445	0

Footnotes:

1. This number may change due to pending trades, emissions reported under Quarterly Certification of Emissions Report (QCER) and Annual Permit Emission Program (APEP) Report required pursuant to Rule 2004, or deductions made pursuant to Rule 2010(b). The most recent total RTC information can be obtained from the District's RTC Listing.

2. The use of such credits is subject to restrictions set forth in paragraph (f)(1) of Rule 2002.

FACILITY PERMIT TO OPERATE
CANYON POWER PLANT

SECTION B: RECLAIM ANNUAL EMISSION ALLOCATION

The annual allocation of NOx RECLAIM Trading Credits (RTCs) for this facility is calculated pursuant to Rule 2002. Total NOx emission shall not exceed such annual allocations unless the operator obtains RTCs corresponding to the facility's increased emissions in compliance with Rules 2005 and 2007.

The level of Starting Allocation plus Non-Tradable Credits used to determine compliance with Rule 2005(c)(4) and applicability of Rule 2005(e) - Trading Zone Restrictions is listed on the last page of this Section.

The following table lists the annual allocations that were issued to this facility and the amounts of RTCs held by this facility on the day of printing this Section.

RECLAIM POLLUTANT ANNUAL ALLOCATION (POUNDS)

Year Begin (month/year)	Year End	Zone	NOx RTC Initially Allocated	NOx RTC[1] Holding as of 01/01/2021 (pounds)	Non-Tradable[2] Non-Usable RTCs (pounds)
7/2035	6/2036	Coastal	0	21527	0
1/2036	12/2036	Coastal	0	27445	0

Footnotes:

1. This number may change due to pending trades, emissions reported under Quarterly Certification of Emissions Report (QCER) and Annual Permit Emission Program (APEP) Report required pursuant to Rule 2004, or deductions made pursuant to Rule 2010(b). The most recent total RTC information can be obtained from the District's RTC Listing.

2. The use of such credits is subject to restrictions set forth in paragraph (f)(1) of Rule 2002.

FACILITY PERMIT TO OPERATE
CANYON POWER PLANT

SECTION B: RECLAIM ANNUAL EMISSION ALLOCATION

The annual allocation of RECLAIM Trading Credits (RTCs) for this facility is calculated pursuant to Rule 2002. If the facility submits a permit application to increase in an annual allocation to a level greater than the facility's starting Allocation plus Non-Tradable credits as listed below, the application will be evaluated for compliance with Rule 2005 (c)(4). Rule 2005 (e) - Trading Zone Restrictions applies if an annual allocation is increased to a level greater than the facility's Starting Allocation plus Non-Tradable Credits:

Year Begin (month/year)	Year End (month/year)	Zone	RTC Starting Allocation (pounds)	Non-Tradable Credits(NTC) (pounds)

CANYON POWER PLANT

ANNUAL COMPLIANCE REPORT

ATTACHMENT 18

AQ-17
NH3 FLOW METER ACCURACY REPORTS

HRD 6

HOMER R. DULIN CO.

729 EAST WILLOW STREET
SIGNAL HILL, CALIFORNIA 90755
(562) 424-8533 FAX (562) 426-7707

CERT. NO. 3-351-21

CALIBRATION CERTIFICATION

SUBMITTED BY: CITY OF ANAHEIM

FLOWMETER SERIAL NO: . MFG. SERIAL NO: 14136005

MANUFACTURER: MICRO MOTION MODEL: CMF025M313NQBUEZZZ

TUBE NO: N/A FLOAT NO: N/A

DATA IS: As Found/As Left ; In Tolerance

See Remarks ☑

Calibrated @ customer's facility ☐

REMARKS: DIRECT READING ELECTRONIC INDICATOR TRANSMITTER S/N: 14136005, CALIBRATED IN LBS/HR H2O @ 75°F. SP.GR. 1.0 METER READING'S ARE AVERAGED READING'S. METER VERY UNSTABLE.

ACCURACY ± 1% RATE

INDICATED		ACTUAL	
LB/H		LBS/HR	
149.06		150.01	
131.09		132.01	
121.06		122.01	
113.22		114.51	
94.22		95.00	
76.90		77.51	
58.57		59.00	
38.21		38.50	
28.45		28.50	
19.01		19.00	

Flowmeter Certified with HOMER R. DULIN CO.

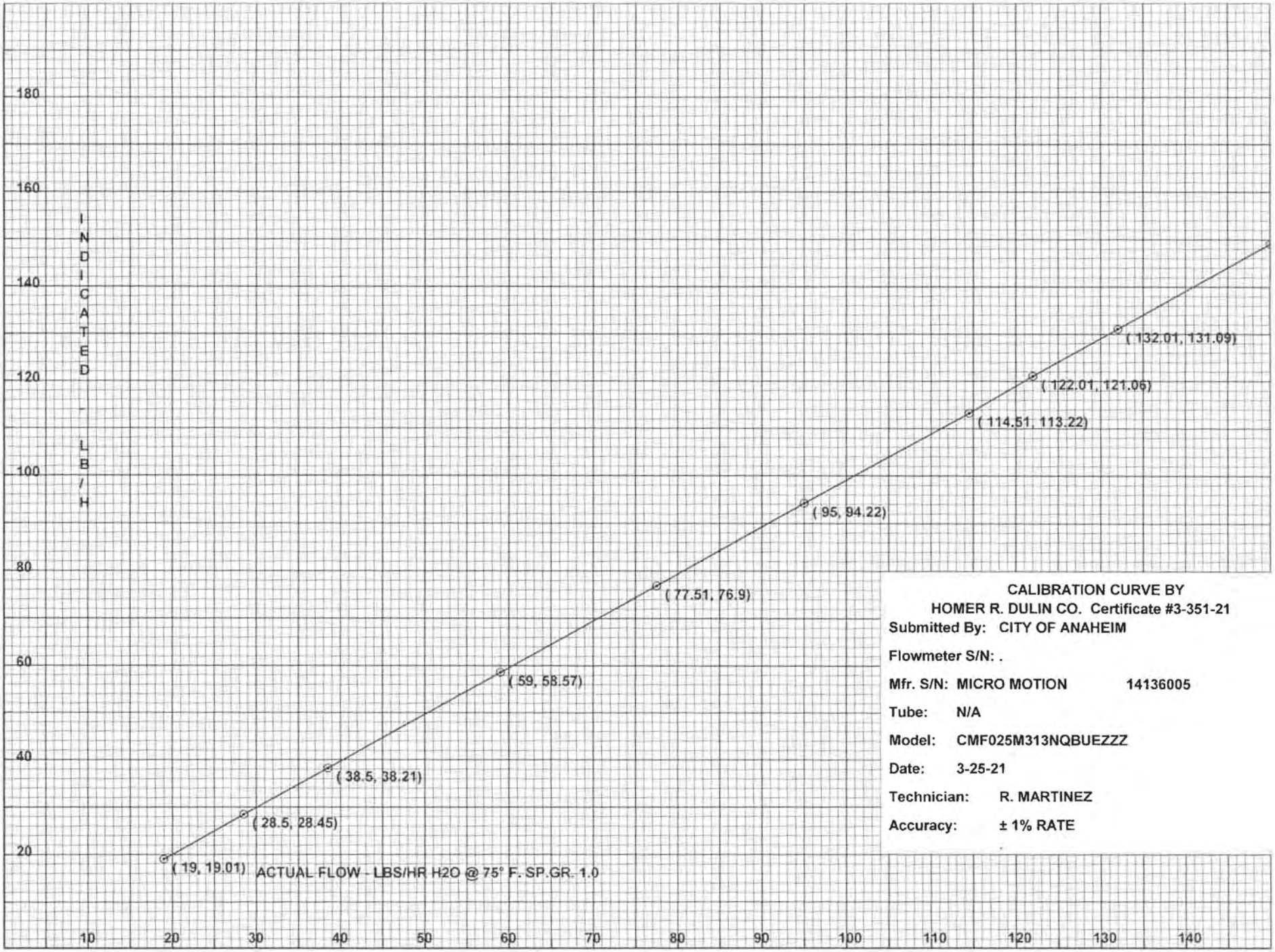
Equip. No. 11605 Accuracy 0.005% Equip. Cal. Date: 8/29/18 Cal. Due: 8/29/21

NIST Cert. No. TEST# MS 15560 Procedure No: ISA:RP 16.6

Our standards are certified by or are traceable to the National Institute of Standards and Technology and systems comply with MIL-STD 45662A, ANSI/NCSL Z540.3, ISO/IEC 17025, and ISO 10012. The collective uncertainty of the standards used in this calibration does not exceed 25% of the certified accuracy of the instrument under test. This document may not be reproduced, except in full, without prior written approval of the Homer R. Dulin Co. Rev.1 Dated 8/19/14

P.O. No SCPPA-2100041 Shipper No. .

3-25-21	3-25-22	R. MARTINEZ Rogelio Martinez
CALIBRATION DATE	RECALIBRATION DUE	CALIBRATION TECHNICIAN



CALIBRATION CURVE BY
HOMER R. DULIN CO. Certificate #3-351-21

Submitted By: CITY OF ANAHEIM

Flowmeter S/N: .

Mfr. S/N: MICRO MOTION 14136005

Tube: N/A

Model: CMF025M313NQBUEZZZ

Date: 3-25-21

Technician: R. MARTINEZ

Accuracy: ± 1% RATE

HOMER R. DULIN CO.
729 EAST WILLOW STREET
SIGNAL HILL, CALIFORNIA 90755
(562) 424-8533 FAX (562) 426-7707

CERT. NO. 4-101-21

CALIBRATION CERTIFICATION

SUBMITTED BY: CITY OF ANAHEIM

FLOWMETER SERIAL NO: . MFG. SERIAL NO: 14236418

MANUFACTURER: MICRO MOTION MODEL: CMF025M313NQBUEZZZ

TUBE NO: . FLOAT NO: .

DATA IS: As Found/As Left ; In Tolerance See Remarks ☑

Calibrated @ customer's facility ☐

REMARKS: DIRECT READING ELECTRONIC INDICATOR TRANSMITTER S/N: 14138117, CALIBRATED IN LBS/HR H2O @ 75° F. SP.GR. 1.0 - METER IS UNSTABLE

ACCURACY ± 1% RATE

INDICATED		ACTUAL	
LB/H		LBS/HR	
149.08		149.06	
130.08		130.01	
110.15		110.11	
94.36		94.46	
81.37		81.51	
70.79		70.61	
50.77		50.55	
36.08		35.95	
26.14		26.05	
17.47		17.50	

Flowmeter Certified with HOMER R. DULIN CO.

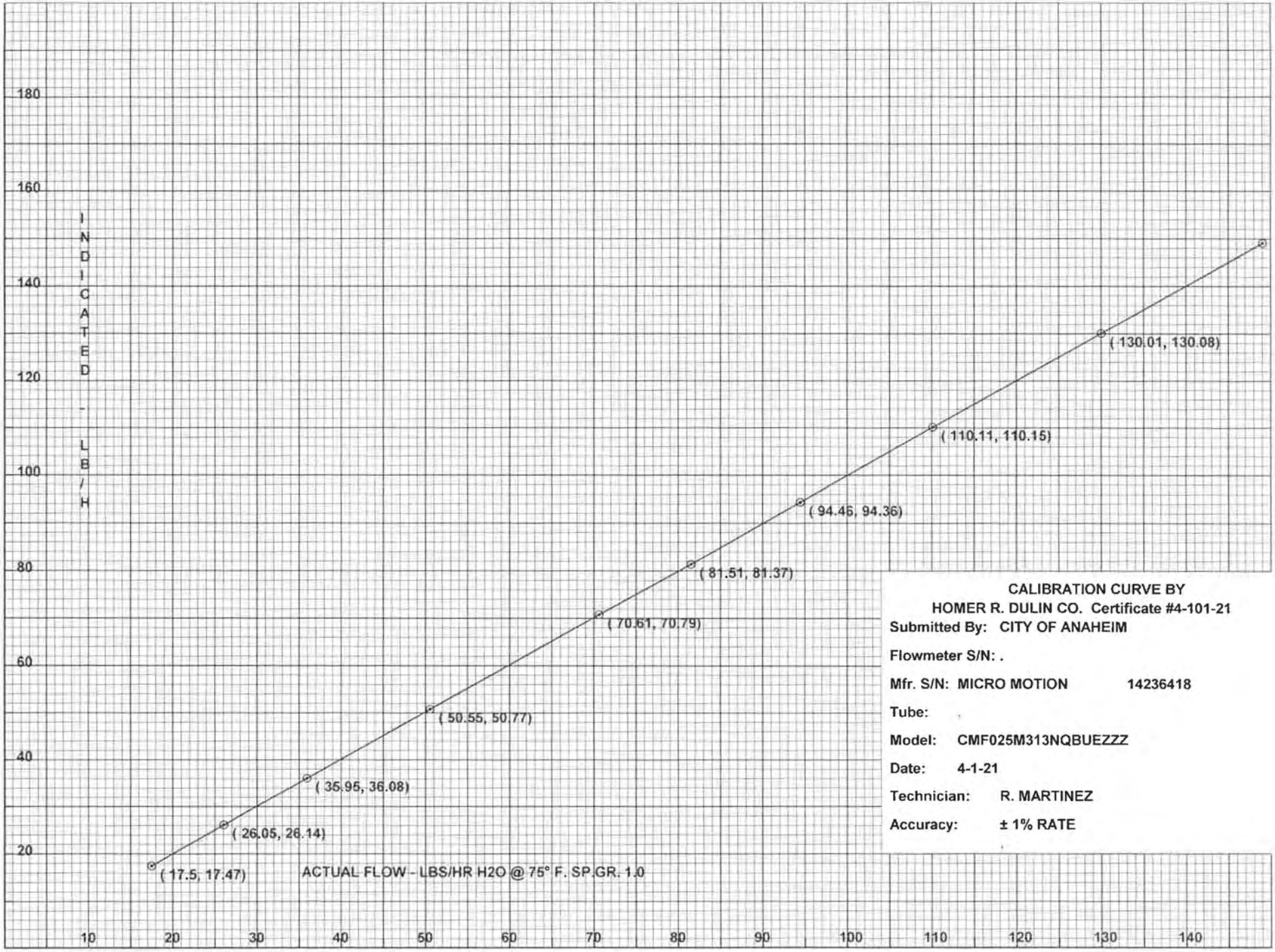
Equip. No. 11605 Accuracy 0.005% Equip. Cal. Date: 8/29/18 Cal. Due: 8/29/21

NIST Cert. No. TEST# MS 15560 Procedure No: ISA:RP 16.6

Our standards are certified by or are traceable to the National Institute of Standards and Technology and systems comply with MIL-STD 45662A, ANSI/NCSL Z540.3, ISO/IEC 17025, and ISO 10012. The collective uncertainty of the standards used in this calibration does not exceed 25% of the certified accuracy of the instrument under test. This document may not be reproduced, except in full, without prior written approval of the Homer R. Dulin Co. Rev.1 Dated 8/19/14

P.O. No . Shipper No. .

4-1-21	4-1-22	R. MARTINEZ Rogelio Martinez
CALIBRATION DATE	RECALIBRATION DUE	CALIBRATION TECHNICIAN


INDICATED - LB/H
ACTUAL FLOW - LBS/HR H2O @ 75° F. SP.GR. 1.0
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(26.05, 26.14)
(35.95, 36.08)
(50.55, 50.77)
(70.61, 70.79)
(81.51, 81.37)
(94.46, 94.36)
(110.11, 110.15)
(130.01, 130.08)
CALIBRATION CURVE BY
HOMER R. DULIN CO. Certificate #4-101-21
Submitted By: CITY OF ANAHEIM
Flowmeter S/N: .
Mfr. S/N: MICRO MOTION 14236418
Tube:
Model: CMF025M313NQBUEZZZ
Date: 4-1-21
Technician: R. MARTINEZ
Accuracy: ± 1% RATE

HRD 6

HOMER R. DULIN CO.

729 EAST WILLOW STREET
SIGNAL HILL, CALIFORNIA 90755
(562) 424-8533 FAX (562) 426-7707

CERT. NO. 4-131-21

CALIBRATION CERTIFICATION

SUBMITTED BY: CITY OF ANAHEIM

FLOWMETER SERIAL NO: . MFG. SERIAL NO: 14139410

MANUFACTURER: MICRO MOTION MODEL: CMF025M313NQBUEZZZ

TUBE NO: N/A FLOAT NO: N/A

DATA IS: As Found/As Left ; In Tolerance See Remarks ☑

Calibrated @ customer's facility ☐

REMARKS: DIRECT READING ELECTRONIC INDICATOR TRANSMITTER S/N: 14139410, CALIBRATED IN LBS/HR H2O @ 75° F. SP.GR. 1.0 METER IS UNSTABLE

ACCURACY ± 1% RATE

INDICATED		ACTUAL	
LB/HR		LBS/HR	
150.50		150.01	
135.00		134.11	
121.70		121.16	
106.20		106.00	
92.00		91.81	
78.00		77.61	
63.40		63.01	
49.00		48.90	
34.70		34.55	
19.80		19.85	

Flowmeter Certified with HOMER R. DULIN CO.

Equip. No. 11605 Accuracy 0.005% Equip. Cal. Date: 8/29/18 Cal. Due: 8/29/21

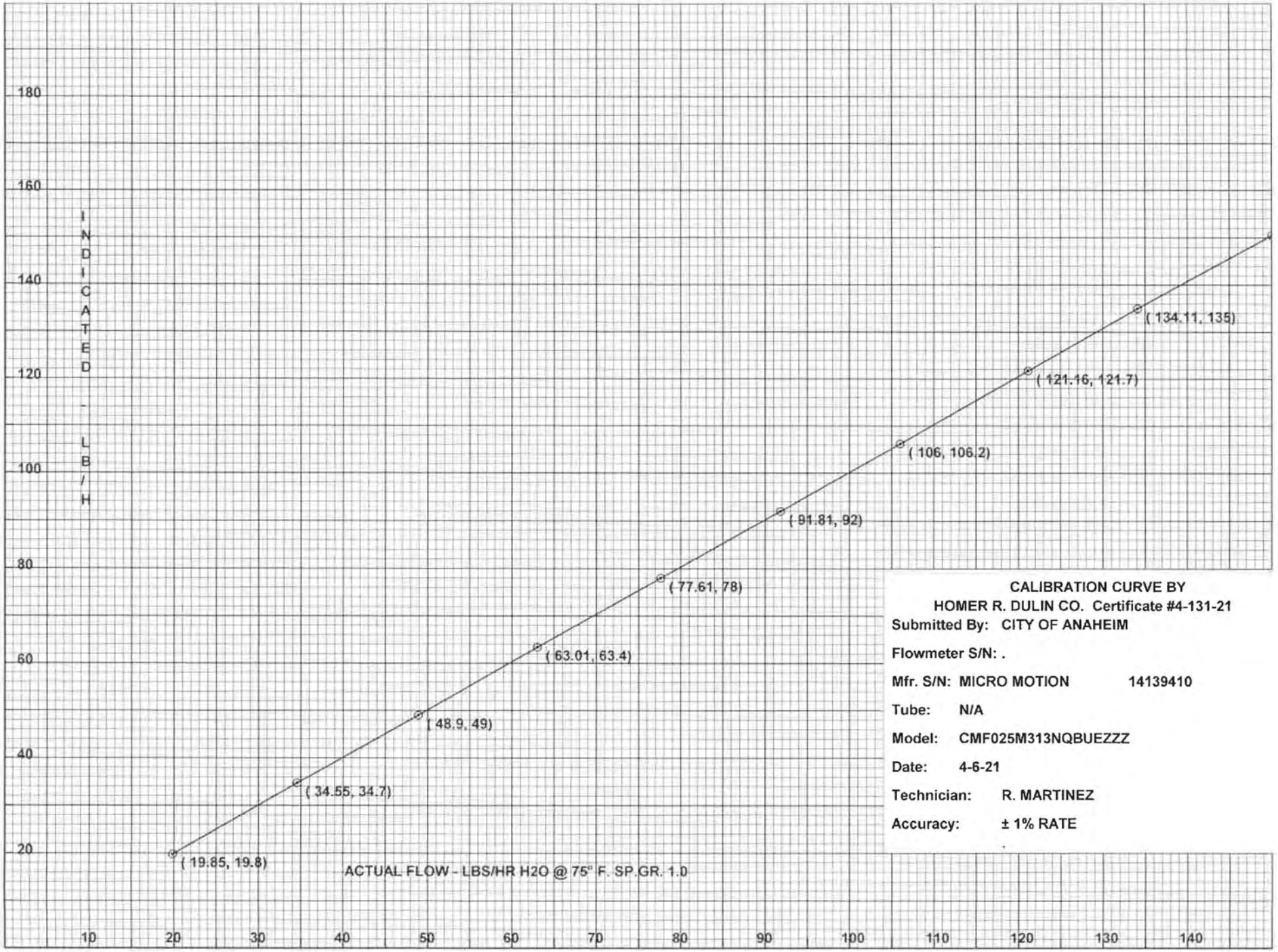
NIST Cert. No. TEST# MS 15560 Procedure No: ISA:RP 16.6

Our standards are certified by or are traceable to the National Institute of Standards and Technology and systems comply with MIL-STD 45662A, ANSI/NCSL Z540.3, ISO/IEC 17025, and ISO 10012. The collective uncertainty of the standards used in this calibration does not exceed 25% of the certified accuracy of the instrument under test. This document may not be reproduced, except in full, without prior written approval of the Homer R. Dulin Co. Rev.1 Dated 8/19/14

P.O. No SCPPA-2100041 Shipper No. .

4-6-21	4-6-22	R. MARTINEZ Rogelio Martinez
CALIBRATION DATE	RECALIBRATION DUE	CALIBRATION TECHNICIAN

HRD 6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ACTUAL FLOW - LBS/HR H2O @ 75° F. SP.GR. 1.0
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(34.55, 34.7)
(48.9, 49)
(63.01, 63.4)
(77.61, 78)
(91.81, 92)
(106, 106.2)
(121.16, 121.7)
(134.11, 135)
CALIBRATION CURVE BY
HOMER R. DULIN CO. Certificate #4-131-21
Submitted By: CITY OF ANAHEIM
Flowmeter S/N: .
Mfr. S/N: MICRO MOTION 14139410
Tube: N/A
Model: CMF025M313NQBUEZZZ
Date: 4-6-21
Technician: R. MARTINEZ
Accuracy: ± 1% RATE

HOMER R. DULIN CO.
729 EAST WILLOW STREET
SIGNAL HILL, CALIFORNIA 90755
(562) 424-8533 FAX (562) 426-7707

CERT. NO. 4-198-21

CALIBRATION CERTIFICATION

SUBMITTED BY: CITY OF ANAHEIM

FLOWMETER SERIAL NO: . MFG. SERIAL NO: 14832375

MANUFACTURER: MICRO MOTION MODEL: CMF025M313N2BAEZZZ

TUBE NO: N/A FLOAT NO: N/A

DATA IS: As Found/As Left ; In Tolerance See Remarks ☐

Calibrated @ customer's facility ☐

REMARKS: DIRECT READING ELECTRONIC INDICATOR TRANSMITTER S/N: 14832375, CALIBRATED IN LBS/HR H2O @ 75° F. SP.GR. 1.0

ACCURACY ± 1% RATE

INDICATED		ACTUAL	
LB/HR		LBS/HR	
150.0		150.24	
134.2		134.75	
121.6		122.03	
109.4		109.89	
91.7		92.07	
77.0		77.28	
62.4		62.43	
50.3		50.16	
37.0		36.96	
19.9		19.80	

Flowmeter Certified with HOMER R. DULIN CO.

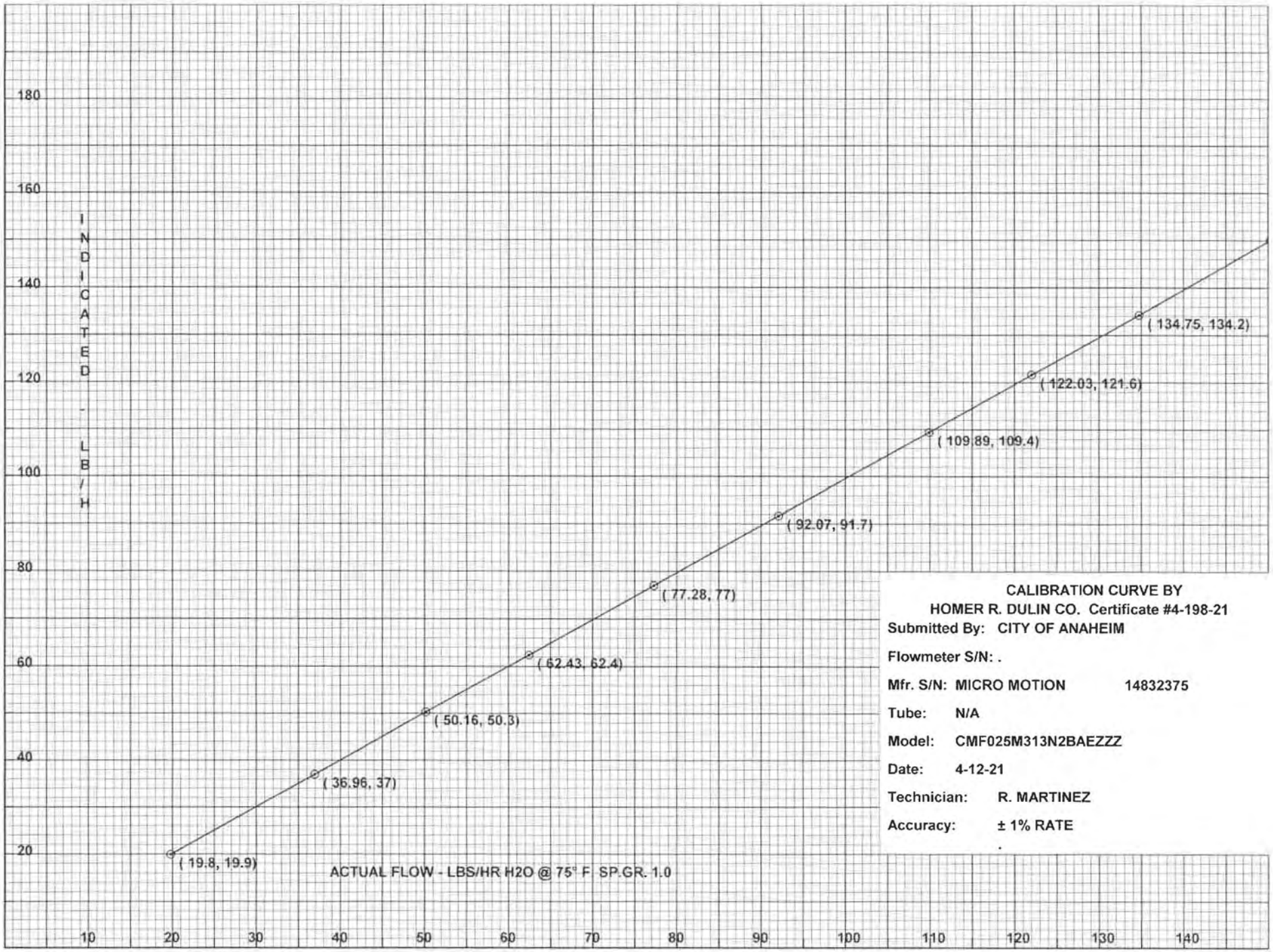
Equip. No. 11605 Accuracy 0.005% Equip. Cal. Date: 8/29/18 Cal. Due: 8/29/21

NIST Cert. No. TEST# MS 15560 Procedure No: ISA:RP 16.6

Our standards are certified by or are traceable to the National Institute of Standards and Technology and systems comply with MIL-STD 45662A, ANSI/NCSL Z540.3, ISO/IEC 17025, and ISO 10012. The collective uncertainty of the standards used in this calibration does not exceed 25% of the certified accuracy of the instrument under test. This document may not be reproduced, except in full, without prior written approval of the Homer R. Dulin Co. Rev.1 Dated 8/19/14

P.O. No SCPPA-2100041 Shipper No. .

4-12-21	4-12-22	R. MARTINEZ Rogelio Martinez
CALIBRATION DATE	RECALIBRATION DUE	CALIBRATION TECHNICIAN


INDICATED - LB/H
ACTUAL FLOW - LBS/HR H2O @ 75° F SP.GR. 1.0
(19.8, 19.9)
(36.96, 37)
(50.16, 50.3)
(62.43, 62.4)
(77.28, 77)
(92.07, 91.7)
(109.89, 109.4)
(122.03, 121.6)
(134.75, 134.2)
CALIBRATION CURVE BY
HOMER R. DULIN CO. Certificate #4-198-21
Submitted By: CITY OF ANAHEIM
Flowmeter S/N: .
Mfr. S/N: MICRO MOTION 14832375
Tube: N/A
Model: CMF025M313N2BAEZZZ
Date: 4-12-21
Technician: R. MARTINEZ
Accuracy: ± 1% RATE

CANYON POWER PLANT

ANNUAL COMPLIANCE REPORT

ATTACHMENT 19

AQ-18
SCR INLET TEMPERATURE SENSOR

CALIBRATION REPORTS

Calibration: SCR Inlet Temperature
Unit 1 TE-403A-403D

Calibration Certificate

Certificate Number:

Position ID: 1-TE-403A

Printed: 1/14/2021 7:06:59 AM
Printed by: vnguyen
CMX Version: 2.11.214.0 (2.11)

Position

Name	SCR INLET TEMP
Work Order Number	
Location	NH3 INJ SKID
Plant	CANYON/ERU/U1/

Device

Device ID	1-TE-403A	
Serial Number		
Manufacturer		
Rangeability		
Operating		Operating Humidity

Function

Name	U1 SCR INLET TEMP (ud)	
Transfer Function	Linear	
Range	100 ... 1000 °F	100 ... 1000 °F

Calibration Event

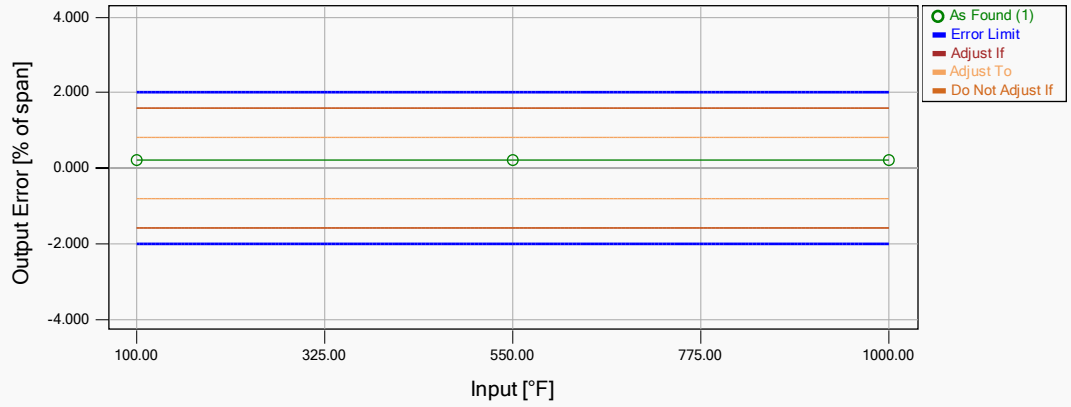
Calibration time	1/13/2021 10:36:18 AM	
Next Calibration		
Environment		Environment

Calibration Procedure

Due Date	1/13/2022	Interval	1 years
Reject If Error >	2 % of span		
Adjust To Error <	40 % of Reject If Error	Classification	
Calibration Strategy			

Calibrators

Input Calibrator	MC6 : 605835	Due Date: 4/21/2021
Input Module	TC-R-OUT/ TC1 : 65279	Due Date: 4/22/2021
Output Calibrator		Due Date:
Output Module		Due Date:



1. As Found

PASSED, DO NOT ADJUST

Maximum Error: 0.222 % of span

Nominal Input [°F]	Actual Input [°F]	Nominal Output [°F]	Actual Output [°F]	Found Error [% of span]
100.0	100.00	100.0	102.000	0.222
550.0	550.00	550.0	552.000	0.222
1000.0	1000.00	1000.0	1002.000	0.222

Calibration Note:

Calibrated by: VINCENT NGUYEN
1/13/2021 10:36:18 AM

Calibration Certificate

Certificate Number:

Position ID: 1-TE-403B

Printed: 1/14/2021 7:06:59 AM
Printed by: vnguyen
CMX Version: 2.11.214.0 (2.11)

Position

Name	SCR INLET TEMP
Work Order Number	
Location	NH3 INJ SKID
Plant	CANYON/ERU/U1/

Device

Device ID	1-TE-403B	
Serial Number		
Manufacturer		
Rangeability		
Operating		Operating Humidity

Function

Name	U1 SCR INLET TEMP (ud)	
Transfer Function	Linear	
Range	100 ... 1000 °F	100 ... 1000 °F

Calibration Event

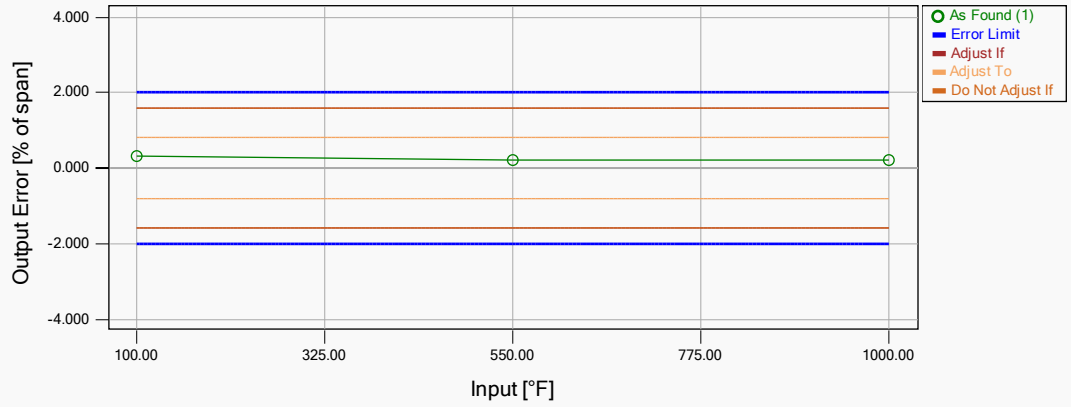
Calibration time	1/13/2021 10:34:32 AM	
Next Calibration		
Environment		Environment

Calibration Procedure

Due Date	1/13/2022	Interval	1 years
Reject If Error >	2 % of span		
Adjust To Error <	40 % of Reject If Error	Classification	
Calibration Strategy			

Calibrators

Input Calibrator	MC6 : 605835	Due Date: 4/21/2021
Input Module	TC-R-OUT/ TC1 : 65279	Due Date: 4/22/2021
Output Calibrator		Due Date:
Output Module		Due Date:



1. As Found

PASSED, DO NOT ADJUST

Maximum Error: 0.332 % of span

Nominal Input [°F]	Actual Input [°F]	Nominal Output [°F]	Actual Output [°F]	Found Error [% of span]
100.0	100.01	100.0	103.000	0.332
550.0	550.01	550.0	552.000	0.221
1000.0	1000.00	1000.0	1002.000	0.222

Calibration Note:

Calibrated by: VINCENT NGUYEN
1/13/2021 10:34:32 AM

Calibration Certificate

Certificate Number:

Position ID: 1-TE-403C

Printed: 1/14/2021 7:06:59 AM
Printed by: vnguyen
CMX Version: 2.11.214.0 (2.11)

Position

Name	SCR INLET TEMP
Work Order Number	
Location	NH3 INJ SKID
Plant	CANYON/ERU/U1/

Device

Device ID	1-TE-403C	
Serial Number		
Manufacturer		
Rangeability		
Operating		Operating Humidity

Function

Name	U1 SCR INLET TEMP (ud)	
Transfer Function	Linear	
Range	100 ... 1000 °F	100 ... 1000 °F

Calibration Event

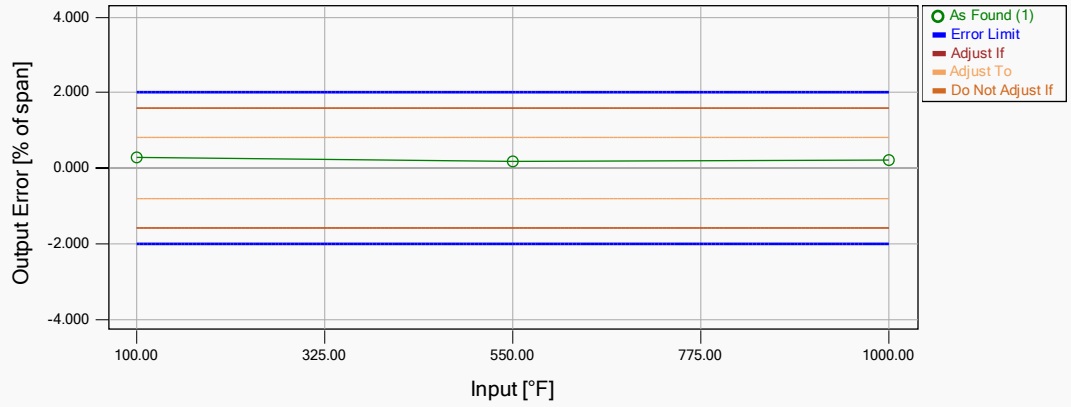
Calibration time	1/13/2021 10:47:52 AM	
Next Calibration		
Environment		Environment

Calibration Procedure

Due Date	1/13/2022	Interval	1 years
Reject If Error >	2 % of span		
Adjust To Error <	40 % of Reject If Error	Classification	
Calibration Strategy			

Calibrators

Input Calibrator	MC6 : 605835	Due Date: 4/21/2021
Input Module	TC-R-OUT/ TC1 : 65279	Due Date: 4/22/2021
Output Calibrator		Due Date:
Output Module		Due Date:



1. As Found

PASSED, DO NOT ADJUST

Maximum Error: 0.278 % of span

Nominal Input [°F]	Actual Input [°F]	Nominal Output [°F]	Actual Output [°F]	Found Error [% of span]
100.0	100.00	100.0	102.500	0.278
550.0	550.00	550.0	551.500	0.167
1000.0	1000.00	1000.0	1002.000	0.222

Calibration Note:

Calibrated by: VINCENT NGUYEN
1/13/2021 10:47:52 AM

Calibration Certificate

Certificate Number:

Position ID: 1-TE-403D

Printed: 1/14/2021 7:06:59 AM
Printed by: vnguyen
CMX Version: 2.11.214.0 (2.11)

Position

Name	SCR INLET TEMP
Work Order Number	
Location	NH3 INJ SKID
Plant	CANYON/ERU/U1/

Device

Device ID	1-TE-403D	
Serial Number		
Manufacturer		
Rangeability		
Operating		Operating Humidity

Function

Name	U1 SCR INLET TEMP (ud)	
Transfer Function	Linear	
Range	100 ... 1000 °F	100 ... 1000 °F

Calibration Event

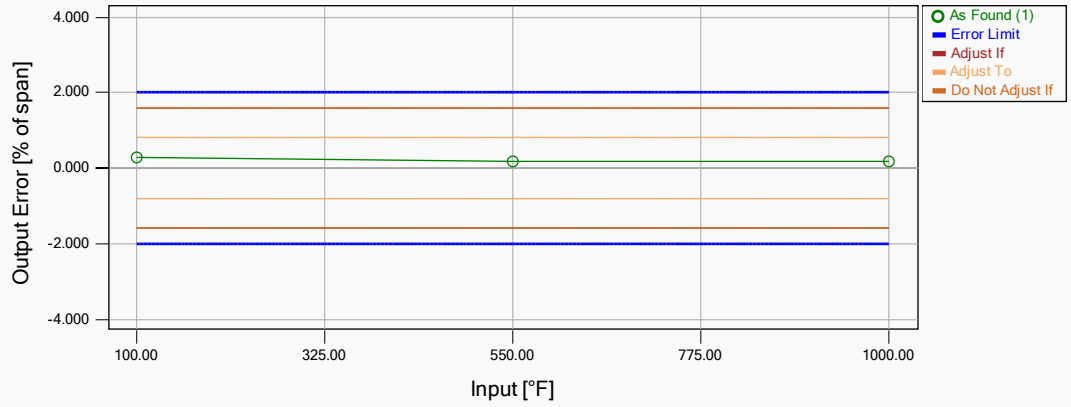
Calibration time	1/13/2021 10:43:47 AM	
Next Calibration		
Environment		Environment

Calibration Procedure

Due Date	1/13/2022	Interval	1 years
Reject If Error >	2 % of span		
Adjust To Error <	40 % of Reject If Error	Classification	
Calibration Strategy			

Calibrators

Input Calibrator	MC6 : 605835	Due Date: 4/21/2021
Input Module	TC-R-OUT/ TC1 : 65279	Due Date: 4/22/2021
Output Calibrator		Due Date:
Output Module		Due Date:



1. As Found

PASSED, DO NOT ADJUST

Maximum Error: 0.278 % of span

Nominal Input [°F]	Actual Input [°F]	Nominal Output [°F]	Actual Output [°F]	Found Error [% of span]
100.0	100.00	100.0	102.500	0.278
550.0	550.00	550.0	551.500	0.167
1000.0	1000.00	1000.0	1001.500	0.167

Calibration Note:

Calibrated by: VINCENT NGUYEN
1/13/2021 10:43:47 AM

Calibration: SCR Inlet Temperature
Unit 2 TE-403A-403D

Calibration Certificate

Certificate Number:

Position ID: 2-TE-403A

Printed: 1/14/2021 7:11:03 AM
Printed by: vnguyen
CMX Version: 2.11.214.0 (2.11)

Position

Name	SCR INLET TEMP
Work Order Number	
Location	NH3 INJ SKID
Plant	CANYON/ERU/U2/

Device

Device ID	2-TE-403A	
Serial Number		
Manufacturer		
Rangeability		
Operating		Operating Humidity

Function

Name	U2 SCR INLET TEMP (ud)	
Transfer Function	Linear	
Range	100 ... 1000 °F	100 ... 1000 °F

Calibration Event

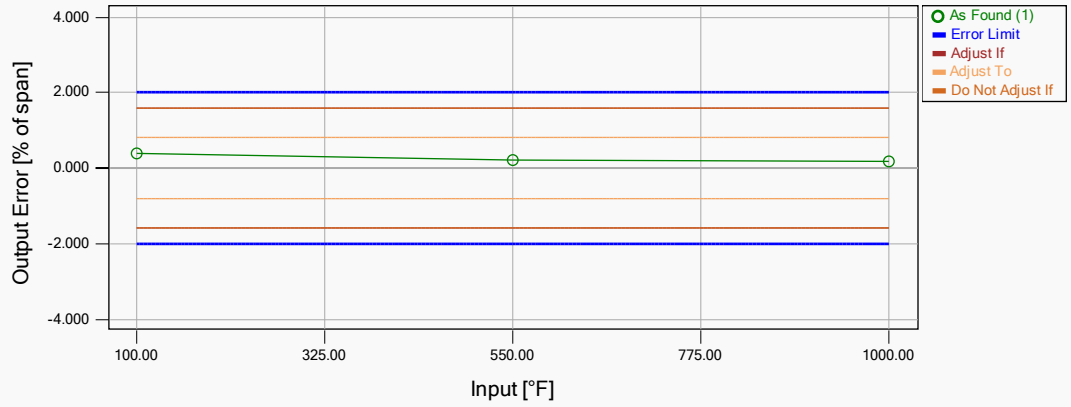
Calibration time	1/13/2021 11:54:57 AM	
Next Calibration		
Environment		Environment

Calibration Procedure

Due Date	1/13/2022	Interval	1 years
Reject If Error >	2 % of span		
Adjust To Error <	40 % of Reject If Error	Classification	
Calibration Strategy			

Calibrators

Input Calibrator	MC6 : 605835	Due Date: 4/21/2021
Input Module	TC-R-OUT/ TC1 : 65279	Due Date: 4/22/2021
Output Calibrator		Due Date:
Output Module		Due Date:



1. As Found

PASSED, DO NOT ADJUST

Maximum Error: 0.387 % of span

Nominal Input [°F]	Actual Input [°F]	Nominal Output [°F]	Actual Output [°F]	Found Error [% of span]
100.0	100.02	100.0	103.500	0.387
550.0	550.01	550.0	552.000	0.221
1000.0	1000.02	1000.0	1001.500	0.164

Calibration Note:

Calibrated by: VINCENT NGUYEN
1/13/2021 11:54:57 AM

Calibration Certificate

Certificate Number:

Position ID: 2-TE-403B

Printed: 1/14/2021 7:11:03 AM
Printed by: vnguyen
CMX Version: 2.11.214.0 (2.11)

Position

Name	SCR INLET TEMP
Work Order Number	
Location	NH3 INJ SKID
Plant	CANYON/ERU/U2/

Device

Device ID	2-TE-403B	
Serial Number		
Manufacturer		
Rangeability		
Operating		Operating Humidity

Function

Name	U2 SCR INLET TEMP (ud)	
Transfer Function	Linear	
Range	100 ... 1000 °F	100 ... 1000 °F

Calibration Event

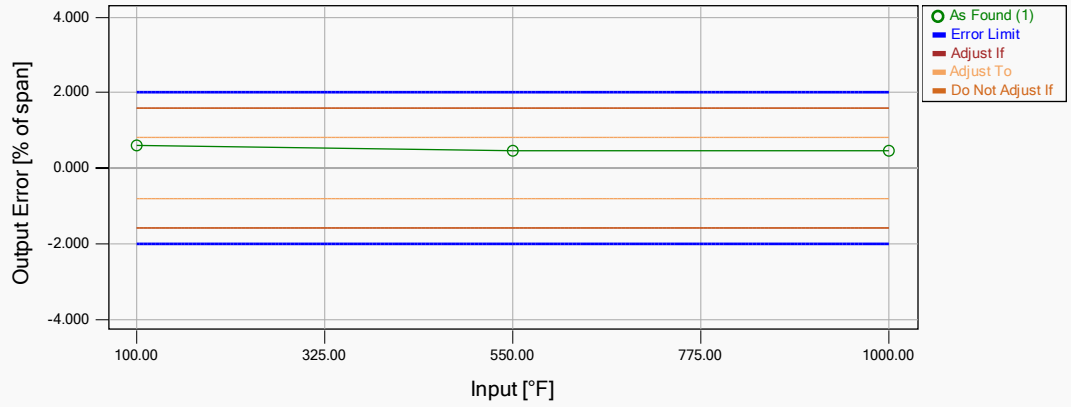
Calibration time	1/13/2021 11:59:30 AM	
Next Calibration		
Environment		Environment

Calibration Procedure

Due Date	1/13/2022	Interval	1 years
Reject If Error >	2 % of span		
Adjust To Error <	40 % of Reject If Error	Classification	
Calibration Strategy			

Calibrators

Input Calibrator	MC6 : 605835	Due Date: 4/21/2021
Input Module	TC-R-OUT/ TC1 : 65279	Due Date: 4/22/2021
Output Calibrator		Due Date:
Output Module		Due Date:



1. As Found

PASSED, DO NOT ADJUST

Maximum Error: 0.608 % of span

Nominal Input [°F]	Actual Input [°F]	Nominal Output [°F]	Actual Output [°F]	Found Error [% of span]
100.0	100.03	100.0	105.500	0.608
550.0	550.03	550.0	554.000	0.441
1000.0	1000.03	1000.0	1004.000	0.441

Calibration Note:

Calibrated by: VINCENT NGUYEN
1/13/2021 11:59:30 AM

Calibration Certificate

Certificate Number:

Position ID: 2-TE-403C

Printed: 1/14/2021 7:11:03 AM
Printed by: vnguyen
CMX Version: 2.11.214.0 (2.11)

Position

Name	SCR INLET TEMP
Work Order Number	
Location	NH3 INJ SKID
Plant	CANYON/ERU/U2/

Device

Device ID	2-TE-403C	
Serial Number		
Manufacturer		
Rangeability		
Operating		Operating Humidity

Function

Name	U2 SCR INLET TEMP (ud)	
Transfer Function	Linear	
Range	100 ... 1000 °F	100 ... 1000 °F

Calibration Event

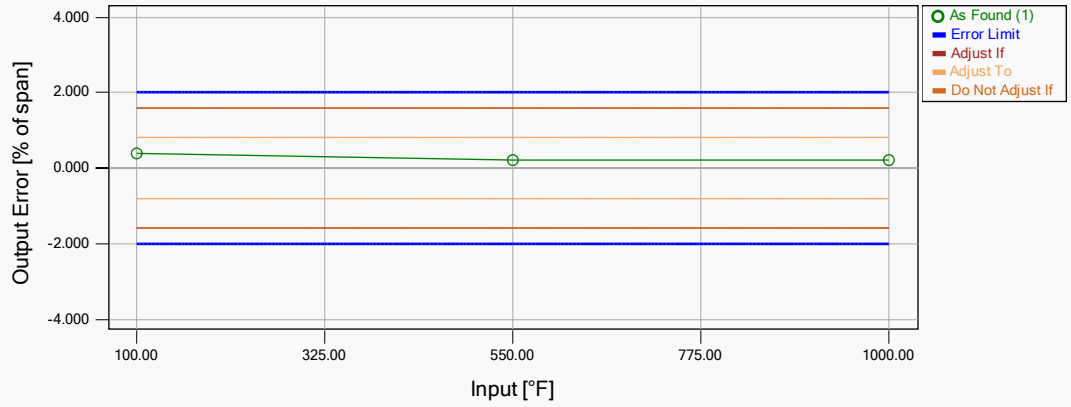
Calibration time	1/13/2021 12:03:41 PM	
Next Calibration		
Environment		Environment

Calibration Procedure

Due Date	1/13/2022	Interval	1 years
Reject If Error >	2 % of span		
Adjust To Error <	40 % of Reject If Error	Classification	
Calibration Strategy			

Calibrators

Input Calibrator	MC6 : 605835	Due Date: 4/21/2021
Input Module	TC-R-OUT/ TC1 : 65279	Due Date: 4/22/2021
Output Calibrator		Due Date:
Output Module		Due Date:



1. As Found

PASSED, DO NOT ADJUST

Maximum Error: 0.387 % of span

Nominal Input [°F]	Actual Input [°F]	Nominal Output [°F]	Actual Output [°F]	Found Error [% of span]
100.0	100.02	100.0	103.500	0.387
550.0	550.02	550.0	552.000	0.220
1000.0	1000.01	1000.0	1002.000	0.221

Calibration Note:

Calibrated by: VINCENT NGUYEN
1/13/2021 12:03:41 PM

Calibration Certificate

Certificate Number:

Position ID: 2-TE-403D

Printed: 1/14/2021 7:11:03 AM
Printed by: vnguyen
CMX Version: 2.11.214.0 (2.11)

Position

Name	SCR INLET TEMP
Work Order Number	
Location	NH3 INJ SKID
Plant	CANYON/ERU/U2/

Device

Device ID	2-TE-403D	
Serial Number		
Manufacturer		
Rangeability		
Operating		Operating Humidity

Function

Name	U2 SCR INLET TEMP (ud)	
Transfer Function	Linear	
Range	100 ... 1000 °F	100 ... 1000 °F

Calibration Event

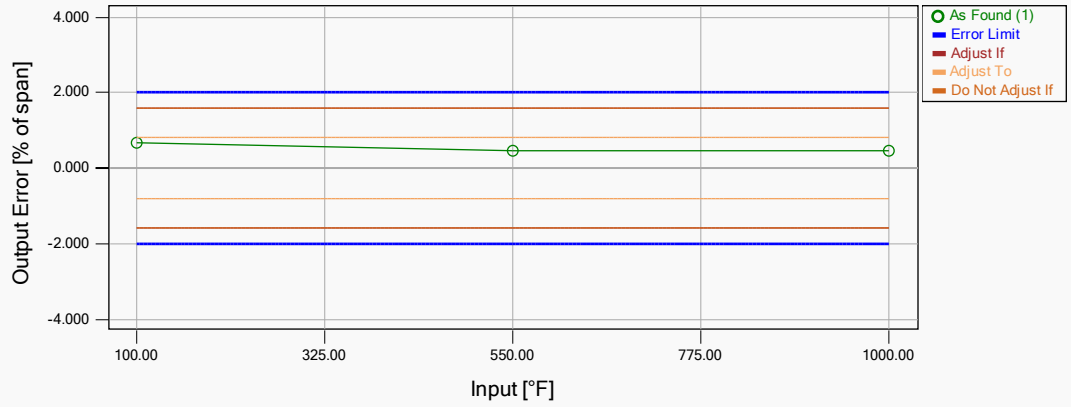
Calibration time	1/13/2021 12:08:14 PM	
Next Calibration		
Environment		Environment

Calibration Procedure

Due Date	1/13/2022	Interval	1 years
Reject If Error >	2 % of span		
Adjust To Error <	40 % of Reject If Error	Classification	
Calibration Strategy			

Calibrators

Input Calibrator	MC6 : 605835	Due Date: 4/21/2021
Input Module	TC-R-OUT/ TC1 : 65279	Due Date: 4/22/2021
Output Calibrator		Due Date:
Output Module		Due Date:



1. As Found

PASSED, DO NOT ADJUST

Maximum Error: 0.664 % of span

Nominal Input [°F]	Actual Input [°F]	Nominal Output [°F]	Actual Output [°F]	Found Error [% of span]
100.0	100.02	100.0	106.000	0.664
550.0	550.02	550.0	554.000	0.442
1000.0	1000.02	1000.0	1004.000	0.442

Calibration Note:

Calibrated by: VINCENT NGUYEN
1/13/2021 12:08:14 PM

Calibration: SCR Inlet Temperature
Unit 3 TE-403A-403D

Calibration Certificate

Certificate Number:

Position ID: 3-TE-403A

Printed: 1/14/2021 7:12:05 AM
Printed by: vnguyen
CMX Version: 2.11.214.0 (2.11)

Position

Name	SCR INLET TEMP
Work Order Number	
Location	NH3 INJ SKID
Plant	CANYON/ERU/U3/

Device

Device ID	3-TE-403A	
Serial Number		
Manufacturer		
Rangeability		
Operating		Operating Humidity

Function

Name	U3 SCR INLET TEMP (ud)	
Transfer Function	Linear	
Range	100 ... 1000 °F	100 ... 1000 °F

Calibration Event

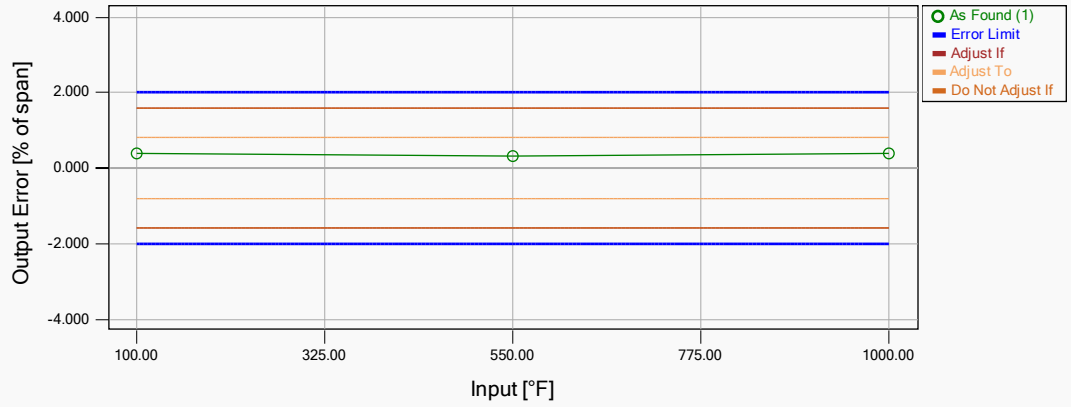
Calibration time	1/13/2021 12:42:46 PM	
Next Calibration		
Environment		Environment

Calibration Procedure

Due Date	1/13/2022	Interval	1 years
Reject If Error >	2 % of span		
Adjust To Error <	40 % of Reject If Error	Classification	
Calibration Strategy			

Calibrators

Input Calibrator	MC6 : 605835	Due Date: 4/21/2021
Input Module	TC-R-OUT/ TC1 : 65279	Due Date: 4/22/2021
Output Calibrator		Due Date:
Output Module		Due Date:



1. As Found

PASSED, DO NOT ADJUST

Maximum Error: 0.388 % of span

Nominal Input [°F]	Actual Input [°F]	Nominal Output [°F]	Actual Output [°F]	Found Error [% of span]
100.0	100.01	100.0	103.500	0.388
550.0	550.01	550.0	553.000	0.332
1000.0	1000.01	1000.0	1003.500	0.388

Calibration Note:

Calibrated by: VINCENT NGUYEN
1/13/2021 12:42:46 PM

Calibration Certificate

Certificate Number:

Position ID: 3-TE-403B

Printed: 1/14/2021 7:12:05 AM
Printed by: vnguyen
CMX Version: 2.11.214.0 (2.11)

Position

Name	SCR INLET TEMP
Work Order Number	
Location	NH3 INJ SKID
Plant	CANYON/ERU/U3/

Device

Device ID	3-TE-403B	
Serial Number		
Manufacturer		
Rangeability		
Operating		Operating Humidity

Function

Name	U3 SCR INLET TEMP (ud)	
Transfer Function	Linear	
Range	100 ... 1000 °F	100 ... 1000 °F

Calibration Event

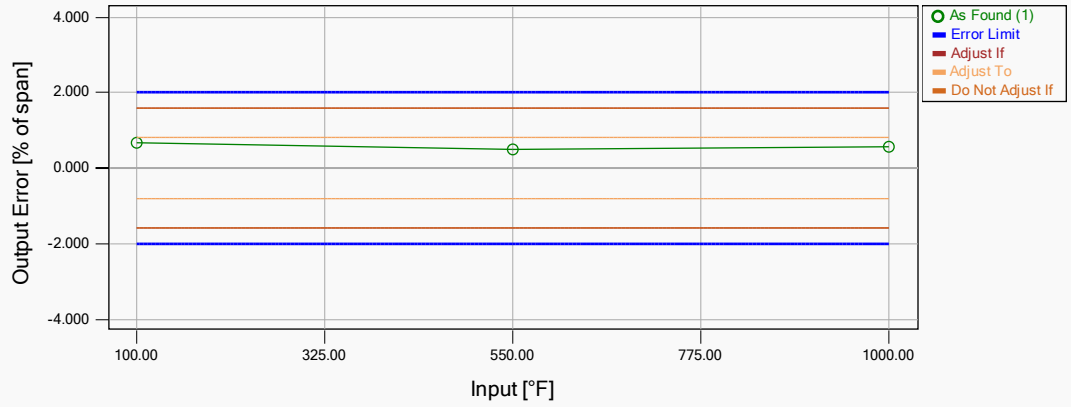
Calibration time	1/13/2021 12:47:03 PM	
Next Calibration		
Environment		Environment

Calibration Procedure

Due Date	1/13/2022	Interval	1 years
Reject If Error >	2 % of span		
Adjust To Error <	40 % of Reject If Error	Classification	
Calibration Strategy			

Calibrators

Input Calibrator	MC6 : 605835	Due Date: 4/21/2021
Input Module	TC-R-OUT/ TC1 : 65279	Due Date: 4/22/2021
Output Calibrator		Due Date:
Output Module		Due Date:



1. As Found

PASSED, DO NOT ADJUST

Maximum Error: 0.666 % of span

Nominal Input [°F]	Actual Input [°F]	Nominal Output [°F]	Actual Output [°F]	Found Error [% of span]
100.0	100.01	100.0	106.000	0.666
550.0	550.01	550.0	554.500	0.499
1000.0	1000.01	1000.0	1005.000	0.554

Calibration Note:

Calibrated by: VINCENT NGUYEN
1/13/2021 12:47:03 PM

Calibration Certificate

Certificate Number:

Position ID: 3-TE-403C

Printed: 1/14/2021 7:12:05 AM
Printed by: vnguyen
CMX Version: 2.11.214.0 (2.11)

Position

Name	SCR INLET TEMP
Work Order Number	
Location	NH3 INJ SKID
Plant	CANYON/ERU/U3/

Device

Device ID	3-TE-403C	
Serial Number		
Manufacturer		
Rangeability		
Operating		Operating Humidity

Function

Name	U3 SCR INLET TEMP (ud)	
Transfer Function	Linear	
Range	100 ... 1000 °F	100 ... 1000 °F

Calibration Event

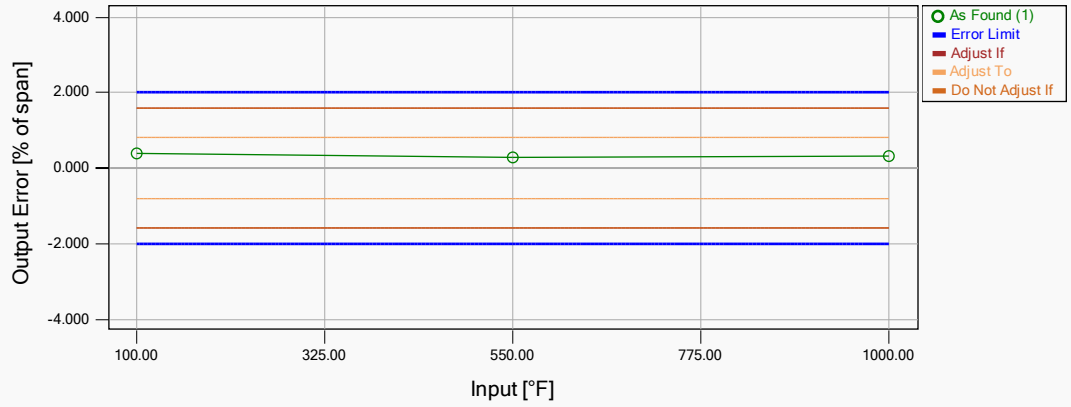
Calibration time	1/13/2021 12:51:02 PM	
Next Calibration		
Environment		Environment

Calibration Procedure

Due Date	1/13/2022	Interval	1 years
Reject If Error >	2 % of span		
Adjust To Error <	40 % of Reject If Error	Classification	
Calibration Strategy			

Calibrators

Input Calibrator	MC6 : 605835	Due Date: 4/21/2021
Input Module	TC-R-OUT/ TC1 : 65279	Due Date: 4/22/2021
Output Calibrator		Due Date:
Output Module		Due Date:



1. As Found

PASSED, DO NOT ADJUST

Maximum Error: 0.388 % of span

Nominal Input [°F]	Actual Input [°F]	Nominal Output [°F]	Actual Output [°F]	Found Error [% of span]
100.0	100.01	100.0	103.500	0.388
550.0	550.01	550.0	552.500	0.277
1000.0	1000.01	1000.0	1003.000	0.332

Calibration Note:

Calibrated by: VINCENT NGUYEN
1/13/2021 12:51:02 PM

Calibration Certificate

Certificate Number:

Position ID: 3-TE-403D

Printed: 1/14/2021 7:12:05 AM
Printed by: vnguyen
CMX Version: 2.11.214.0 (2.11)

Position

Name	SCR INLET TEMP
Work Order Number	
Location	NH3 INJ SKID
Plant	CANYON/ERU/U3/

Device

Device ID	3-TE-403D	
Serial Number		
Manufacturer		
Rangeability		
Operating		Operating Humidity

Function

Name	U3 SCR INLET TEMP (ud)	
Transfer Function	Linear	
Range	100 ... 1000 °F	100 ... 1000 °F

Calibration Event

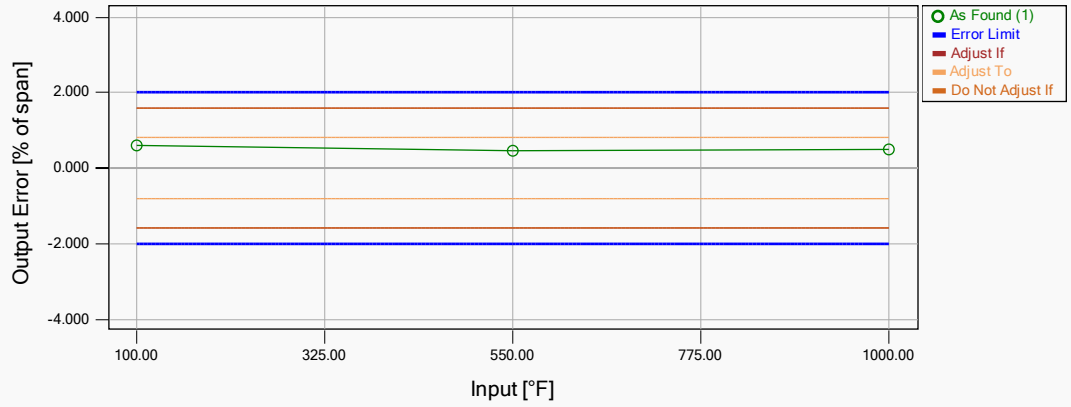
Calibration time	1/13/2021 12:56:43 PM	
Next Calibration		
Environment		Environment

Calibration Procedure

Due Date	1/13/2022	Interval	1 years
Reject If Error >	2 % of span		
Adjust To Error <	40 % of Reject If Error	Classification	
Calibration Strategy			

Calibrators

Input Calibrator	MC6 : 605835	Due Date: 4/21/2021
Input Module	TC-R-OUT/ TC1 : 65279	Due Date: 4/22/2021
Output Calibrator		Due Date:
Output Module		Due Date:



1. As Found

PASSED, DO NOT ADJUST

Maximum Error: 0.609 % of span

Nominal Input [°F]	Actual Input [°F]	Nominal Output [°F]	Actual Output [°F]	Found Error [% of span]
100.0	100.02	100.0	105.500	0.609
550.0	550.01	550.0	554.000	0.443
1000.0	1000.01	1000.0	1004.500	0.499

Calibration Note:

Calibrated by: VINCENT NGUYEN
1/13/2021 12:56:43 PM

Calibration: SCR Inlet Temperature
Unit 4 TE-403A-403D

Calibration Certificate

Certificate Number:

Position ID: 4-TE-403A

Printed: 1/14/2021 7:13:06 AM
Printed by: vnguyen
CMX Version: 2.11.214.0 (2.11)

Position

Name	SCR INLET TEMP
Work Order Number	
Location	NH3 INJ SKID
Plant	CANYON/ERU/U4/

Device

Device ID	4-TE-403A	
Serial Number		
Manufacturer		
Rangeability		
Operating		Operating Humidity

Function

Name	U4 SCR INLET TEMP (ud)	
Transfer Function	Linear	
Range	100 ... 1000 °F	100 ... 1000 °F

Calibration Event

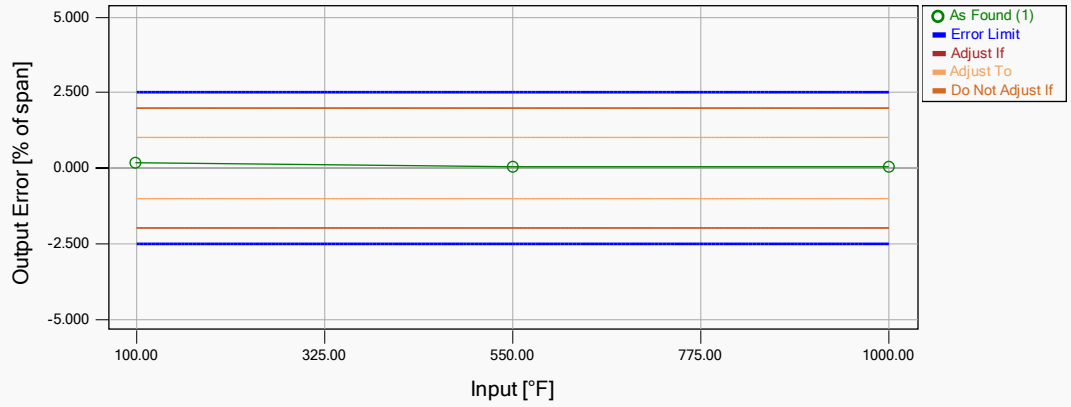
Calibration time	1/13/2021 1:25:48 PM	
Next Calibration		
Environment		Environment

Calibration Procedure

Due Date	1/13/2022	Interval	1 years
Reject If Error >	2.5 % of span		
Adjust To Error <	40 % of Reject If Error	Classification	
Calibration Strategy			

Calibrators

Input Calibrator	MC6 : 605835	Due Date: 4/21/2021
Input Module	TC-R-OUT/ TC1 : 65279	Due Date: 4/22/2021
Output Calibrator		Due Date:
Output Module		Due Date:



1. As Found

PASSED, DO NOT ADJUST

Maximum Error: 0.168 % of span

Nominal Input [°F]	Actual Input [°F]	Nominal Output [°F]	Actual Output [°F]	Found Error [% of span]
100.0	99.99	100.0	101.500	0.168
550.0	550.00	550.0	550.500	0.056
1000.0	1000.00	1000.0	1000.500	0.056

Calibration Note:

Calibrated by: VINCENT NGUYEN
1/13/2021 1:25:48 PM

Calibration Certificate

Certificate Number:

Position ID: 4-TE-403B

Printed: 1/14/2021 7:13:06 AM
Printed by: vnguyen
CMX Version: 2.11.214.0 (2.11)

Position

Name	SCR INLET TEMP
Work Order Number	
Location	NH3 INJ SKID
Plant	CANYON/ERU/U4/

Device

Device ID	4-TE-403B	
Serial Number		
Manufacturer		
Rangeability		
Operating		Operating Humidity

Function

Name	U4 SCR INLET TEMP (ud)	
Transfer Function	Linear	
Range	100 ... 1000 °F	100 ... 1000 °F

Calibration Event

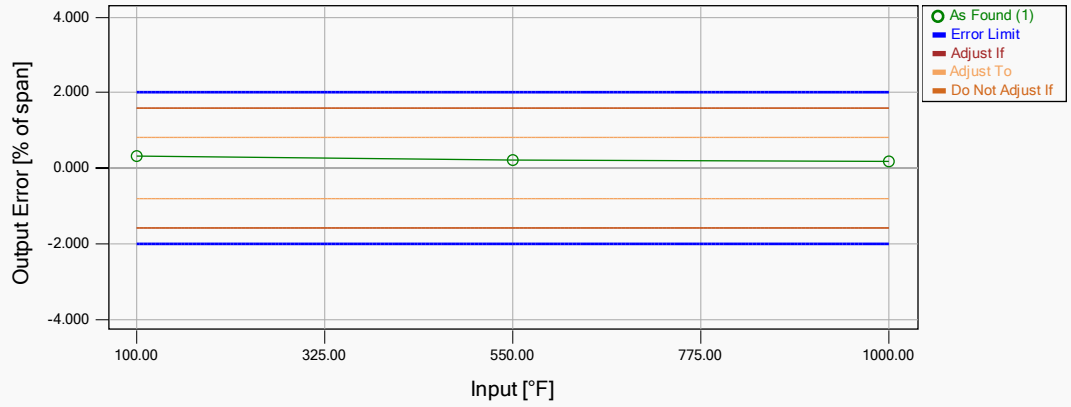
Calibration time	1/13/2021 1:30:43 PM	
Next Calibration		
Environment		Environment

Calibration Procedure

Due Date	1/13/2022	Interval	1 years
Reject If Error >	2 % of span		
Adjust To Error <	40 % of Reject If Error	Classification	
Calibration Strategy			

Calibrators

Input Calibrator	MC6 : 605835	Due Date: 4/21/2021
Input Module	TC-R-OUT/ TC1 : 65279	Due Date: 4/22/2021
Output Calibrator		Due Date:
Output Module		Due Date:



1. As Found

PASSED, DO NOT ADJUST

Maximum Error: 0.332 % of span

Nominal Input [°F]	Actual Input [°F]	Nominal Output [°F]	Actual Output [°F]	Found Error [% of span]
100.0	100.01	100.0	103.000	0.332
550.0	550.00	550.0	552.000	0.222
1000.0	1000.00	1000.0	1001.500	0.167

Calibration Note:

Calibrated by: VINCENT NGUYEN
1/13/2021 1:30:43 PM

Calibration Certificate

Certificate Number:

Position ID: 4-TE-403C

Printed: 1/14/2021 7:13:06 AM
Printed by: vnguyen
CMX Version: 2.11.214.0 (2.11)

Position

Name	SCR INLET TEMP
Work Order Number	
Location	NH3 INJ SKID
Plant	CANYON/ERU/U4/

Device

Device ID	4-TE-403C	
Serial Number		
Manufacturer		
Rangeability		
Operating		Operating Humidity

Function

Name	U4 SCR INLET TEMP (ud)	
Transfer Function	Linear	
Range	100 ... 1000 °F	100 ... 1000 °F

Calibration Event

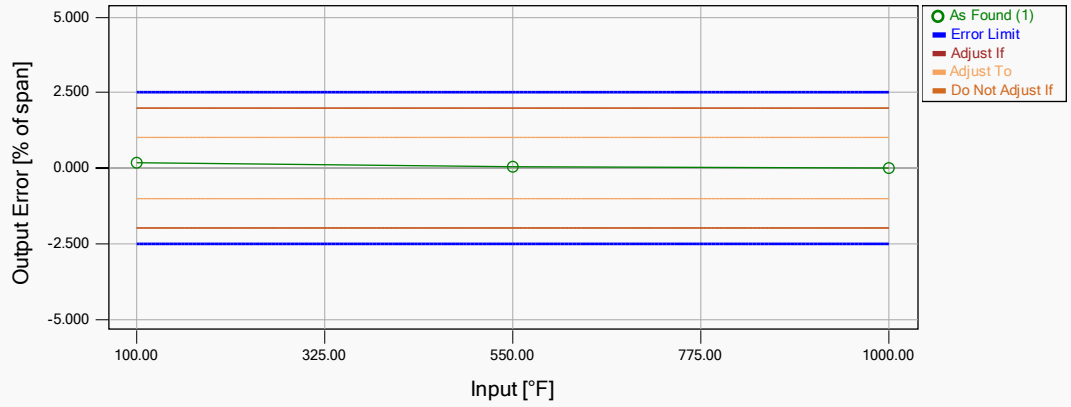
Calibration time	1/13/2021 1:34:33 PM	
Next Calibration		
Environment		Environment

Calibration Procedure

Due Date	1/13/2022	Interval	1 years
Reject If Error >	2.5 % of span		
Adjust To Error <	40 % of Reject If Error	Classification	
Calibration Strategy			

Calibrators

Input Calibrator	MC6 : 605835	Due Date: 4/21/2021
Input Module	TC-R-OUT/ TC1 : 65279	Due Date: 4/22/2021
Output Calibrator		Due Date:
Output Module		Due Date:



1. As Found

PASSED, DO NOT ADJUST

Maximum Error: 0.166 % of span

Nominal Input [°F]	Actual Input [°F]	Nominal Output [°F]	Actual Output [°F]	Found Error [% of span]
100.0	100.01	100.0	101.500	0.166
550.0	550.01	550.0	550.500	0.054
1000.0	1000.00	1000.0	1000.000	0.000

Calibration Note:

Calibrated by: VINCENT NGUYEN
1/13/2021 1:34:33 PM

Calibration Certificate

Certificate Number:

Position ID: 4-TE-403D

Printed: 1/14/2021 7:13:06 AM
Printed by: vnguyen
CMX Version: 2.11.214.0 (2.11)

Position

Name	SCR INLET TEMP
Work Order Number	
Location	NH3 INJ SKID
Plant	CANYON/ERU/U4/

Device

Device ID	4-TE-403D	
Serial Number		
Manufacturer		
Rangeability		
Operating		Operating Humidity

Function

Name	U4 SCR INLET TEMP (ud)	
Transfer Function	Linear	
Range	100 ... 1000 °F	100 ... 1000 °F

Calibration Event

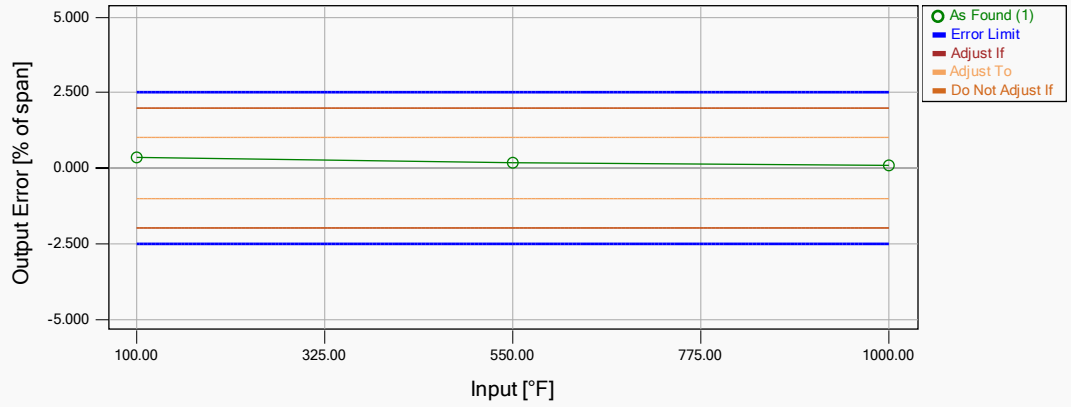
Calibration time	1/13/2021 1:38:10 PM	
Next Calibration		
Environment		Environment

Calibration Procedure

Due Date	1/13/2022	Interval	1 years
Reject If Error >	2.5 % of span		
Adjust To Error <	40 % of Reject If Error	Classification	
Calibration Strategy			

Calibrators

Input Calibrator	MC6 : 605835	Due Date: 4/21/2021
Input Module	TC-R-OUT/ TC1 : 65279	Due Date: 4/22/2021
Output Calibrator		Due Date:
Output Module		Due Date:



1. As Found

PASSED, DO NOT ADJUST

Maximum Error: 0.333 % of span

Nominal Input [°F]	Actual Input [°F]	Nominal Output [°F]	Actual Output [°F]	Found Error [% of span]
100.0	100.00	100.0	103.000	0.333
550.0	550.00	550.0	551.500	0.167
1000.0	1000.01	1000.0	1001.000	0.110

Calibration Note:

Calibrated by: VINCENT NGUYEN
1/13/2021 1:38:10 PM

CANYON POWER PLANT

ANNUAL COMPLIANCE REPORT

ATTACHMENT 20

AQ-19
SCR DIFFERENTIAL PRESSURE SENSOR

CALIBRATION REPORTS

Calibration Certificate

Certificate Number:

Position ID: 1-PDIT-403

Printed: 1/12/2021 2:06:36 PM
Printed by: vnguyen
CMX Version: 2.11.214.0 (2.11)

Position

Name	U1 SCR DP
Work Order Number	
Location	U1 ERU
Plant	CANYON/ERU/U1/

Device

Device ID	1-PDIT-403
Serial Number	
Manufacturer	Rosemount 3051S2CD1A2F12A1AB3E5L4M5Q4
Rangeability	
Operating	Operating Humidity

Function

Name	U1 SCR DP (ud)	
Transfer Function	Linear	
Range	0 ... 10 inH2O (G)	4 ... 20 mA

Calibration Event

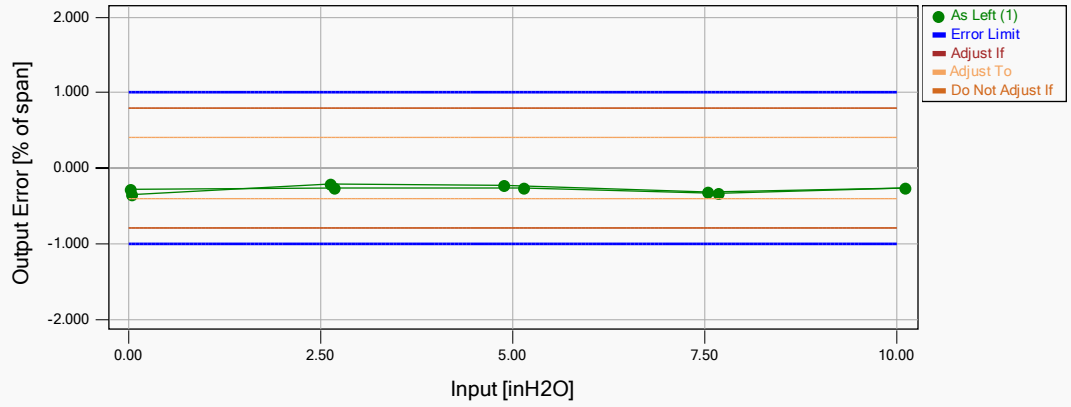
Calibration time	1/12/2021 9:38:16 AM
Next Calibration	
Environment	Environment

Calibration Procedure

Due Date	1/12/2022	Interval	1 years
Reject If Error >	1 % of span		
Adjust To Error <	40 % of Reject If Error	Classification	
Calibration Strategy			

Calibrators

Input Calibrator	MC6 : 605835	Due Date: 4/21/2021
Input Module	P2C : 69381	Due Date: 4/22/2021
Output Calibrator	MC6 : 605835	Due Date: 4/21/2021
Output Module	IN : 25613	Due Date: 4/21/2021



1. As Left

PASSED, DO NOT ADJUST

Maximum Error: -0.347 % of span

Nominal Input [inH2O]	Actual Input [inH2O]	Nominal Output [mA]	Actual Output [mA]	Found Error [% of span]
0.0000	0.05	4.0000	4.0245	-0.347
2.500	2.63	8.000	8.1734	-0.216
5.000	4.88	12.000	11.7723	-0.223
7.500	7.54	16.000	16.0135	-0.316
10.000	10.12	20.000	20.1496	-0.265
7.500	7.68	16.000	16.2355	-0.328
5.000	5.15	12.000	12.1971	-0.268
2.500	2.68	8.000	8.2452	-0.268
0.0000	0.03	4.0000	4.0035	-0.278

Calibration Note: PERFORMED A/D & PRESS CAL TO RAISE ZERO

Calibrated by: VINCENT NGUYEN
1/12/2021 9:38:16 AM

Calibration Certificate

Certificate Number:

Position ID: 2-PDIT-403

Printed: 1/12/2021 2:07:15 PM
Printed by: vnguyen
CMX Version: 2.11.214.0 (2.11)

Position

Name	U2 SCR DP
Work Order Number	
Location	U2 ERU
Plant	CANYON/ERU/U2/

Device

Device ID	2-PDIT-403
Serial Number	
Manufacturer	Rosemount 3051S2CD1A2F12A1AB3E5L4M5Q4
Rangeability	
Operating	Operating Humidity

Function

Name	U2 SCR DP (ud)	
Transfer Function	Linear	
Range	0 ... 10 inH2O (G)	4 ... 20 mA

Calibration Event

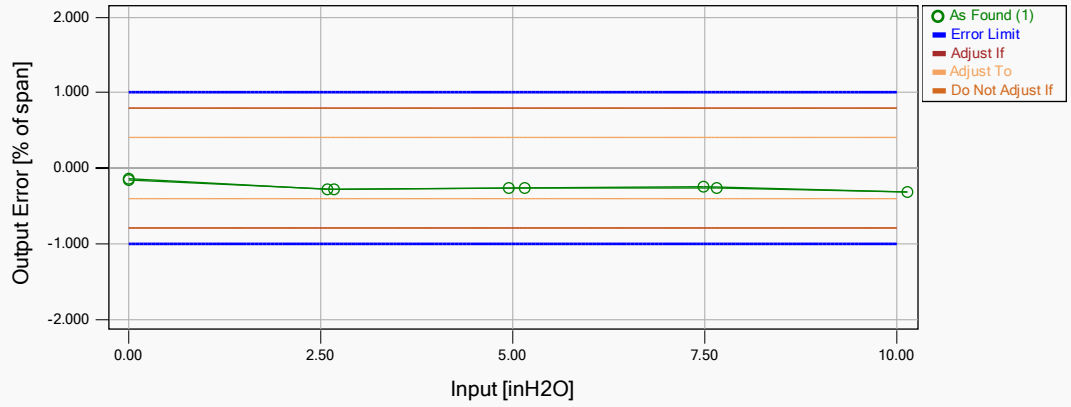
Calibration time	1/12/2021 10:33:00 AM
Next Calibration	
Environment	Environment

Calibration Procedure

Due Date	1/12/2022	Interval	1 years
Reject If Error >	1 % of span		
Adjust To Error <	40 % of Reject If Error	Classification	
Calibration Strategy			

Calibrators

Input Calibrator	MC6 : 605835	Due Date: 4/21/2021
Input Module	P2C : 69381	Due Date: 4/22/2021
Output Calibrator	MC6 : 605835	Due Date: 4/21/2021
Output Module	IN : 25613	Due Date: 4/21/2021



1. As Found

PASSED, DO NOT ADJUST

Maximum Error: -0.315 % of span

Nominal Input [inH2O]	Actual Input [inH2O]	Nominal Output [mA]	Actual Output [mA]	Found Error [% of span]
0.0000	0.00	4.0000	3.9784	-0.135
2.500	2.60	8.000	8.1153	-0.279
5.000	4.95	12.000	11.8768	-0.270
7.500	7.49	16.000	15.9452	-0.243
10.000	10.14	20.000	20.1736	-0.315
7.500	7.66	16.000	16.2142	-0.261
5.000	5.17	12.000	12.2302	-0.261
2.500	2.68	8.000	8.2426	-0.284
0.0000	0.00	4.0000	3.9757	-0.152

Calibration Note:

Calibrated by: VINCENT NGUYEN
1/12/2021 10:33:00 AM

Calibration Certificate

Certificate Number:

Position ID: 3-PDIT-403

Printed: 1/12/2021 2:07:46 PM
Printed by: vnguyen
CMX Version: 2.11.214.0 (2.11)

Position

Name	U3 SCR DP
Work Order Number	
Location	U3 ERU
Plant	CANYON/ERU/U3/

Device

Device ID	3-PDIT-403
Serial Number	
Manufacturer	Rosemount 3051S2CD1A2F12A1AB3E5L4M5Q4
Rangeability	
Operating	Operating Humidity

Function

Name	U3 SCR DP (ud)	
Transfer Function	Linear	
Range	0 ... 10 inH2O (G)	4 ... 20 mA

Calibration Event

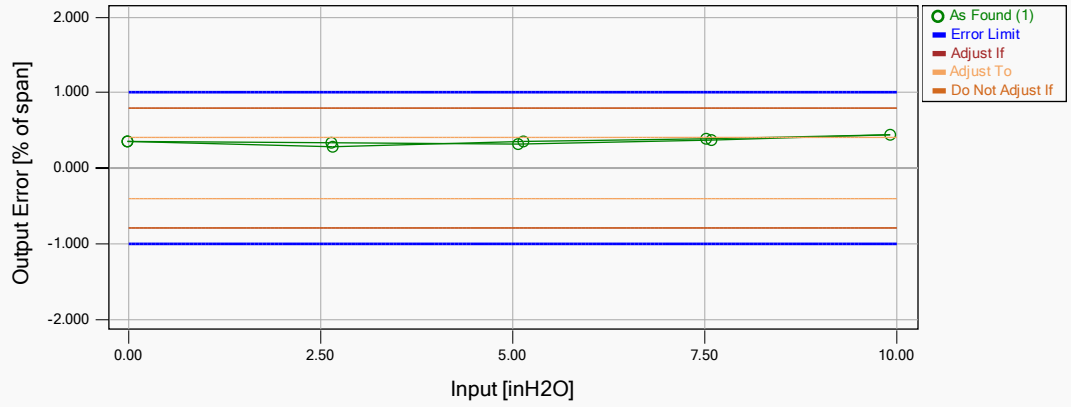
Calibration time	1/12/2021 11:07:42 AM
Next Calibration	
Environment	Environment

Calibration Procedure

Due Date	1/12/2022	Interval	1 years
Reject If Error >	1 % of span		
Adjust To Error <	40 % of Reject If Error	Classification	
Calibration Strategy			

Calibrators

Input Calibrator	MC6 : 605835	Due Date: 4/21/2021
Input Module	P2C : 69381	Due Date: 4/22/2021
Output Calibrator	MC6 : 605835	Due Date: 4/21/2021
Output Module	IN : 25613	Due Date: 4/21/2021



1. As Found

PASSED, DO NOT ADJUST

Maximum Error: 0.449 % of span

Nominal Input [inH2O]	Actual Input [inH2O]	Nominal Output [mA]	Actual Output [mA]	Found Error [% of span]
0.0000	-0.01	4.0000	4.0396	0.348
2.500	2.66	8.000	8.3001	0.276
5.000	5.14	12.000	12.2800	0.350
7.500	7.53	16.000	16.1114	0.396
10.000	9.92	20.000	19.9439	0.449
7.500	7.59	16.000	16.2041	0.376
5.000	5.07	12.000	12.1624	0.315
2.500	2.65	8.000	8.2938	0.336
0.0000	-0.01	4.0000	4.0391	0.344

Calibration Note:

Calibrated by: VINCENT NGUYEN
1/12/2021 11:07:42 AM

Calibration Certificate

Certificate Number:

Position ID: 4-PDIT-403

Printed: 1/12/2021 2:08:21 PM
Printed by: vnguyen
CMX Version: 2.11.214.0 (2.11)

Position

Name	U4 SCR DP
Work Order Number	
Location	U4 ERU
Plant	CANYON/ERU/U4/

Device

Device ID	4-PDIT-403	
Serial Number	393481	
Manufacturer	Rosemount 3051C	
Rangeability		
Operating		Operating Humidity

Function

Name	U4 SCR DP (ud)	
Transfer Function	Linear	
Range	0 ... 10 inH2O (G)	4 ... 20 mA

Calibration Event

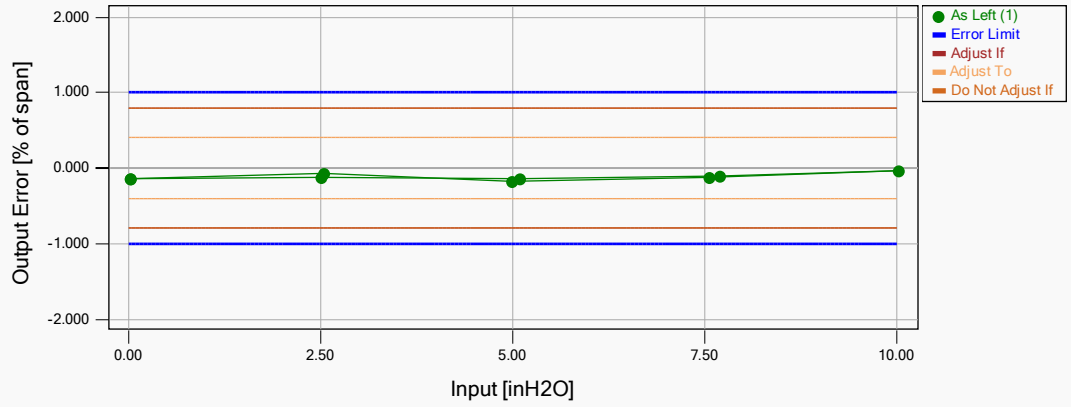
Calibration time	1/12/2021 1:24:30 PM	
Next Calibration		
Environment		Environment

Calibration Procedure

Due Date	1/12/2022	Interval	1 years
Reject If Error >	1 % of span		
Adjust To Error <	40 % of Reject If Error	Classification	
Calibration Strategy			

Calibrators

Input Calibrator	MC6 : 605835	Due Date: 4/21/2021
Input Module	P2C : 69381	Due Date: 4/22/2021
Output Calibrator	MC6 : 605835	Due Date: 4/21/2021
Output Module	IN : 25613	Due Date: 4/21/2021



1. As Left

PASSED, DO NOT ADJUST

Maximum Error: -0.168 % of span

Nominal Input [inH2O]	Actual Input [inH2O]	Nominal Output [mA]	Actual Output [mA]	Found Error [% of span]
0.0000	0.02	4.0000	4.0104	-0.135
2.500	2.51	8.000	7.9957	-0.127
5.000	5.09	12.000	12.1201	-0.149
7.500	7.69	16.000	16.2858~	-0.114~
10.000	10.03	20.000	20.0423	-0.036
7.500	7.56	16.000	16.0753	-0.129
5.000	4.99	12.000	11.9571	-0.168
2.500	2.55	8.000	8.0696	-0.065
0.0000	0.02	4.0000	4.0095	-0.141

Calibration Note: PERFORMED A/D & PRESS CAL

Calibrated by: VINCENT NGUYEN
1/12/2021 1:24:30 PM

CANYON POWER PLANT

ANNUAL COMPLIANCE REPORT

ATTACHMENT 21

WASTE-10
COOLING TOWER SLUDGE TESTING

No Sludge developed for CY 2021

THIS IS THE LAST PAGE OF THIS DOCUMENT